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Appendix A Common Examples

Appendix B Frequently Asked Questions

Appendix C Error Messages

Appendix D System Administrator Notes

Appendix E Graphic Editor Menu Operations by LMC

Operation names used in **edt_operation** line mode command 565

Operation names used in **edt_layer_operation** LMC 570§

Chapter 1 *Overview*

Introduction

This manual is a reference manual for the line mode commands of the system. For a description of the use and operation of line mode commands see Doc.0204, Scripts.

Intended Readers

This manual is intended for system administrators and users in charge of automation.

Scope

The Line mode command reference manual (Doc.0206) is a part of the System Administrator book set (02). This manual, together with Doc.0204 Scripts, Doc.0203 System Management, and Doc.0205 The DFM Environment, are used to perform all automation and system administration tasks.

Organization of this Manual

Chapter 1 - is a general overview of the concepts covered by the book as well as the book scope and structure.

Chapter 2 - References to all the commands available including a description and parameters that are used.

Appendices are common to all manuals and are described in Doc.0103, Documentation Basics.

Chapter 2 *Command Reference*

The return value of line mode commands is given in a C-shell variable named COMANS (acronym for "COMmand ANSwer"). The return value of each line mode command appears in its description (not all line mode commands return a value).

acquire_job

| | |
|----------------|---|
| Command | acquire_job |
| Group | Engineering Toolkit |
| Descr. | Used for acquiring a job from the STAR 1000 system. |

| Parameter | Value |
|------------------|-------------------------|
| job | name of an existing job |
| db | name of an existing db |

add_arc

| | |
|-----------------|--|
| Command | add_arc |
| Group | Graphic Editor |
| Descr. | Adds an arc feature to all the affected layers. In addition to the specified parameters the current attributes are added as well (attributes that were set by the cur_atr_set command). |
| Response | Index of the last added features index |

| Parameter | Value |
|-------------------|--|
| attributes | Yes - add the current attributes No - no attributes |
| xc, yc | Legal coordinates - arc center |
| xs, ys | Legal coordinates - arc start |
| xe, ye | Legal coordinates - arc end |
| symbol | Existing symbol name |
| polarity | Positive, negative |
| direction | CW, CCW |

add_arc_ex

| | |
|--------------------|---|
| Command | add_arc_ex |
| Group | Graphic Editor |
| Description | Extension of the add_arc command. Allows deferent methods to define arc.Adds an arc feature to all the affected layers. In addition to the specified parameters the current attributes are added as well (attributes that were set by the cur_atr_set command). |
| Parameter | Value |
| attributes | Yes - add the current attributes No - no attributes |
| method | (a) start_end_edge, (b) start_end_angle, (c) start_end_radius, (d) start_center_angle, (e) start_center_length |
| xs, ys | Legal coordinates - arc start (for all methods) |
| xe, ye | Legal coordinates - arc end (for methods: a,b,c) |
| xc, yc | Legal coordinates - arc center (for methods: d,e) |
| xp, yp | Legal coordinates - point on the arc edge (for method: a) |
| angle | arc angle [0-360] (for methods: b,d) |
| radius | positive value (inch/mm) - arc radius (for method: c) |
| length | positive value (inch/mm) - arc length (for method: e) |
| symbol | Existing symbol name |
| polarity | Positive, negative |
| direction | CW, CCW |

add_circle

| | |
|--------------------|--|
| Command | add_circle |
| Group | Graphic Editor |
| Description | Extension of the add_arc command. Allows deferent methods to define circle.Adds an arc feature to all the affected layers. In addition to the specified parameters the current attributes are added as well (attributes that were set by the cur_atr_set command). |
| Response | Index of the last added features index |
| Parameter | Value |
| attributes | Yes - add the current attributes No - no attributes |
| method | (a) center_radius, (b) start_center, (c) start_edge_edge |
| xs, ys | Legal coordinates - circle start (for methods: b,c) |
| xc, yc | Legal coordinates - circle center (for methods: a,b) |
| xp1, yp1 | Legal coordinates - point on the circle edge (for method: c) |

| | |
|------------------|---|
| xp2, yp2 | Legal coordinates - point on the circle edge (for method: c) |
| radius | positive value (inch/mm) - arc radius (for method: a) |
| symbol | Existing symbol name |
| polarity | Positive, negative |
| direction | CW, CCW |

add_jtag_comp_id

| | |
|---------------------|--|
| Command | add_jtag_comp_id |
| Group | Graphic Editor |
| Description | Assign JTAG component ID as attribute |
| Response | None |
| Parameter | Value |
| jtag_comp_id | Integer value between 1 and 100. For all pads belonging to the same component. |

add_line

| | |
|-----------------|--|
| Command | add_line |
| Group | Graphic Editor |
| Descr. | Adds a line feature to all the affected layers. In addition to the specified parameters the current attributes are added as well (attributes that were set by the cur_atr_set command). |
| Response | Index of the last added features index |

| Parameter | Value |
|---------------------------|--|
| attributes | Yes - add the current attributes No - no attributes |
| xs, ys, xe, ye | Legal coordinates - start and end points |
| symbol | Existing symbol name |
| polarity | Positive, negative |

add_pad

| | |
|-----------------|---|
| Command | add_pad |
| Group | Graphic Editor |
| Descr. | Adds a pad feature to all the affected layers. In addition to the specified parameters the current attributes are added as well (attributes that were set by the cur_atr_set command). |
| Response | Index of the last added features. |

| Parameter | Value |
|-----------------------------|--|
| attributes | Yes - add the current attr No - no attributes |
| x, y | Legal coordinates - pad location |
| symbol | Existing symbol name |
| polarity | Positive, negative |
| angle | 0, 90, 180, 270 |
| mirror | Yes, No - around X axis |
| nx, ny | nx, ny >= 1 number of pads in matrix |
| dx, dy | dx, dy >= 0 (mils) matrix delta |
| x scale, y scale | > 0 - in this case the pad will be broken |

add_polyline_crv

| | |
|-----------------|------------------------------|
| Command | add_polyline_crv |
| Group | Graphic Editor |
| Descr. | Adds a polyline curve points |
| Response | None |

| | |
|------------------|---|
| Parameter | Value |
| xc, yc | Legal coordinates for arc center point |
| xe, ye | Legal coordinates for arc end point |
| cw | yes - clockwise no - counter clockwise |

add_polyline_end

| | |
|-----------------|--|
| Command | add_polyline_end |
| Group | Graphic Editor |
| Descr. | Closes a polyline (series of line features). |
| Response | None |

| | |
|-------------------|--|
| Parameter | Value |
| attributes | Yes - add the current attr No - no attributes |
| symbol | Existing symbol name |
| polarity | Positive, negative |

add_polyline_strt

| | |
|-----------------|--------------------------|
| Command | add_polyline_strt |
| Descr. | Starts polyline. |
| Group | Graphic Editor |
| Response | None |

add_polyline_xy

| | |
|-----------------|------------------------|
| Command | add_polyline_xy |
| Group | Graphic Editor |
| Descr. | Adds a polyline point. |
| Response | None |

| | |
|------------------|-------------------|
| Parameter | Value |
| x, y | Legal coordinates |

add_slot

| | |
|-----------------|--|
| Command | add_slot |
| Group | Graphic Editor |
| Descr. | Adds slot feature (= a line with its.drill_type attribute set) to all the affected layers. |
| Response | None |

| Parameter | Value |
|---------------------------|---|
| symbol | A legal line symbol name - example: r201 |
| x_center, y_center | Legal coordinates - slots middle point (inch/mm) |
| len | Positive value - slot len (inch/mm) |
| angle | Positive integer (0 - 360) - slot angle (degree) |
| dcode | Positive integer (0 -> none) - slot dcode |
| drill_type | Plate - plated hole nplate - non-plated hole via - via hole |

add_surf_end

| | |
|-----------------|--|
| Command | add_surf_end |
| Group | Graphic Editor |
| Descr. | The command closes a surface, and adds it to the work and affected layers. |
| Response | Index of the last added features index |

| Parameter | Value |
|-------------------|--|
| attributes | Yes - add the current attributes No - no attributes |
| polarity | Positive, negative |

add_surf_hole_end

| | |
|-----------------|-----------------------------------|
| Command | add_surf_hole_end |
| Group | Graphic Editor |
| Descr. | The command closes a surface hole |
| Response | None |

add_surf_hole_strt

| | |
|-----------------|--------------------------------------|
| Command | add_surf_hole_strt |
| Group | Graphic Editor |
| Descr. | The command starts a surface polygon |
| Response | None |

| | |
|------------------|---------------------------------|
| Parameter | Value |
| x, y | Legal coordinates - start point |

add_surf_poly_crv

| | |
|-----------------|--------------------------|
| Command | add_surf_poly_crv |
| Group | Graphic Editor |
| Descr. | Adds a polygon curve. |
| Response | None |

| | |
|------------------|---|
| Parameter | Value |
| xc, yc | Legal coordinates - curve center point |
| xe, ye | Legal coordinates - curve end point |
| cw | Yes - clockwise No - counter clockwise |

add_surf_poly_end

| | |
|-----------------|---------------------------|
| Command | add_surf_poly_end |
| Group | Graphic Editor |
| Descr. | Closes a surface polygon. |
| Response | None |

add_surf_poly_seg

| | |
|-----------------|--------------------------|
| Command | add_surf_poly_seg |
| Group | Graphic Editor |
| Descr. | Adds a polygon segment. |
| Response | None |

| | |
|------------------|---------------------------------------|
| Parameter | Value |
| x, y | Legal coordinates - segment end point |

add_surf_poly_strt

| | |
|-----------------|---------------------------|
| Command | add_surf_poly_strt |
| Group | Graphic Editor |
| Descr. | Starts a surface polygon. |
| Response | None |

| | |
|------------------|---------------------------------|
| Parameter | Value |
| x, y | Legal coordinates - start point |

add_surf_strt

| | |
|-----------------|---------------------------|
| Command | add_surf_strt |
| Group | Graphic Editor |
| Descr. | Starts a surface feature. |
| Response | None |

add_teardrop

| | |
|-----------------|--|
| Command | add_teardrop |
| Group | Graphic Editor |
| Descr. | Adds a teardrop to a single selected pad |
| Response | None |

| | |
|-----------------------|--|
| Parameter | Descr. |
| xstart, ystart | Point on a line. Used to define the line. Note: For mode=mouse , used as a start point of the teardrop. |
| type | Triangular, Filleted, Oval |
| size | Widths of the lines/arcs for tear drop creation |
| mode | Teardrop start point definition mode mouse - mouse click center - distance from pad center edge - distance from pad edge angle - maximum angle (only for type=triangular) radius - radius (only for type=filleted) |
| value | Value used as distance for mode=center/edge, or used as a radius for mode=radius. |
| max_angle | 0-90 |

| | |
|------------------|--|
| side | left, right, both |
| add_short | Add short teardrop lines. Values = no, yes (default=no) |
| del_old | Delete part of line replaced by teardrop. Values = no/yes(def=yes) |

add_text

| | |
|-----------------|--|
| Command | add_text |
| Group | Graphic Editor |
| Descr. | Adds a text feature to all the affected layers. In addition to the specified parameters the current attributes are added as well (attributes that were set by the cur_attr_set command). The added text feature may be a string, barcode, or canned text. |
| Response | Index of the last added features index |

| Parameter | Value |
|---------------------------|---|
| attributes | Yes - add the current attr No - no attributes |
| type | String, barcode, orb_plot_stamp_str, orb_plot_stamp_bar, canned_text |
| x, y | Legal coordinates - text position |
| text | Free text - text string (may be a dynamic text) |
| x_size, y_size | 0 < size < 0.2 inches - character size relevant if type = 'string' |
| w_factor | 0.0 < w_factor - font line width factor relevant if type == 'string' |
| polarity | Positive, negative |
| angle | 0, 90, 180, 270 |
| mirror | Yes, No - around X axis |
| fontname | Must be 'standard' - at this stage only the standard font is supported |
| bar_type | upc39 - relevant if type = 'barcode' |
| bar_char_set | ASCII, full_ascii |
| bar_checksum | Yes - add checksum info No - no checksum info |
| bar_background | Yes, No |
| bar_add_string | Yes - addition text string No - no string |
| bar_add_string_pos | Top, bottom |
| bar_width | Width > 0 (inches) - element width |
| bar_height | Height > 0 (inches) - barcode height |
| bar_marks | If yes (default), corner marks are added to ECC-200 barcodes. If no , corner marks are not added to ECC-200 barcodes. |
| ver | 0 - old version 1 - new text version - (only for the version controls scripts compatibility the position of the text The version controls the position of the text. |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---------|-------|---------|-------|---------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|-------|---------|--|---------|--|---------|--|---------|--|--|
| matrix | The additional parameter Matrix can be used when you select the barcode type ECC-200. (All other barcode types do not show this extra parameter.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Matrix can receive any of the following values: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table><tr><td>8x18</td><td>12x12</td><td>14x14</td><td>16x48</td><td>22x22</td><td>32x32</td><td>44x44</td><td>64x64</td><td>80x80</td></tr><tr><td>8x32</td><td>12x26</td><td>16x16</td><td>18x18</td><td>24x24</td><td>36x36</td><td>48x48</td><td>72x72</td><td>88x88</td></tr><tr><td>10x10</td><td>12x36</td><td>16x36</td><td>20x20</td><td>26x26</td><td>40x40</td><td>52x52</td><td></td><td>96x96</td></tr><tr><td colspan="2">104x104</td><td colspan="2">120x120</td><td colspan="2">132x132</td><td colspan="3">144x144</td></tr></table> | | | | | | | | | 8x18 | 12x12 | 14x14 | 16x48 | 22x22 | 32x32 | 44x44 | 64x64 | 80x80 | 8x32 | 12x26 | 16x16 | 18x18 | 24x24 | 36x36 | 48x48 | 72x72 | 88x88 | 10x10 | 12x36 | 16x36 | 20x20 | 26x26 | 40x40 | 52x52 | | 96x96 | 104x104 | | 120x120 | | 132x132 | | 144x144 | | |
| 8x18 | 12x12 | 14x14 | 16x48 | 22x22 | 32x32 | 44x44 | 64x64 | 80x80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8x32 | 12x26 | 16x16 | 18x18 | 24x24 | 36x36 | 48x48 | 72x72 | 88x88 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10x10 | 12x36 | 16x36 | 20x20 | 26x26 | 40x40 | 52x52 | | 96x96 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 104x104 | | 120x120 | | 132x132 | | 144x144 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

adv_filter_reset

| | |
|--------------------|--|
| Command | adv_filter_reset |
| Group | Graphic Editor |
| Description | Resets all advanced filter values in the feature filter to their default values. |
| Parameter | Description |
| filter_name | Legal entity name - Required by the commands that use the filter parameters. |

adv_filter_set

| | |
|---------------------------------------|---|
| Command | adv_filter_set |
| Group | Graphic Editor |
| Description | The command is used for setting parameters for the Advanced Features Filter. |
| Parameter | Description |
| filter_name | Legal entity name - Required by the commands that use the filter parameters. |
| update_popup | Yes - Update the UI popup to display the new values No - No update |
| active | Yes - the filter is active No - the filter is inactive |
| limit_box | Yes - the limit box filter is active No - the limit box filter is inactive |
| min_dx, max_dx, min_dy, max_dy | [>=0] (inch/mm) - Defines ranges used if limit_box=yes |
| bound_box | Yes - the bounding box filter is active No - the bounding box filter is inactive |

| | |
|--|--|
| min_width max_width min_length max_length | [>=0] (inch/mm) - Bounding box ranges used if bound_box=yes |
| selected | Yes - selected features only No - non-selected features only Any - any features (filter inactive) |
| attributes | Yes - features with attributes only No - features without attributes only Any - any features (filter inactive) |
| arc_values | Yes - the arc values filter is active No - the arc values filter is inactive |
| min_sweep_angle max_sweep_angle | [0.0° - 360.0 °] - Arc sweep angle range used if arc_values= yes |
| min_diameter max_diameter | [>=0] (inch/mm) - Arc diameter range used if arc_values= yes |
| arc_direction | CW - arc clockwise direction only CCW - arc counterclockwise direction only Any - any arc direction (filter inactive) |
| srf_values | Yes - the surface values filter is active No - the surface values filter is inactive |
| min_islands, max_islands | [>=0] - Surface islands number range used if srf_values= yes |
| min_holes, max_holes | [>=0] - Surface holes number range used if srf_values= yes |
| min_edges, max_edges | [>=0] - Surface edges number range used if srf_values= yes |
| srf_area | Yes - the surface area filter is active No - the surface area filter is inactive |
| min_area, max_area | [>=0] (inch² or mm²) - Surface area value range used if srf_values= yes |
| rotations | Pad/text rotation filter definition 0;90;180;270 - Specific orthogonal angle values; filter is active Other - rotation angle range; filter is active "" - pad/text rotation; filter is inactive |
| min_rotation max_rotation | [0.0 - 360.0] degrees - Rotation angle range used if rotations=other |
| mirror | Yes - mirrored pad/text features only No - non-mirrored pad/text features only Any - mirror filter inactive |
| txt_types | Text types filter definition: string; barcode; plot_stamp; canned_text "" - text types filter is inactive |
| str_len | Yes - the text string length filter is active No - the text string length filter is inactive |

| | |
|--|--|
| min_str_len max_str_len | [>=0] - Text string length range used if str_len=yes |
| min_arc_len max_arc_len | Minimum and maximum arc length Value: [>=0] (inch/mm) |
| fontname | Font names list separated by semicolons(; "" - font name filter is inactive |
| indexes | List of features to be included Example: 4;12:34;65;80:89 Indexes or indexes ranges separated by semicolon (;). Indexes range is an index pair separated by colons (:). |

affected_filter

| | |
|-----------------|--|
| Command | affected_filter |
| Group | Graphic Editor |
| Descr. | Used for setting the affected layers according to a special filter. The filter is a textual string that contains the layer type, context, side and polarity. The format is the same as for the dfm layer filter. |
| Response | None |

| | |
|------------------|---------------|
| Parameter | Descr. |
| filter | Layers filter |

affected_layer

| | |
|-----------------|------------------------------|
| Command | affected_layer |
| Group | Graphic Editor |
| Descr. | Sets/unsets affected layers. |
| Response | None |

| | |
|------------------|--|
| Parameter | Value |
| name | Entity name |
| mode | Single - according to 'name' All - set all step layers Board - set the board layers (matrix context == 'board') |
| affected | Yes - set to be affected No - unset the layer(s) |

aoi_add_pad

| | |
|-----------------|---------------------|
| Command | aoi_add_pad |
| Group | Mania AOI Interface |
| Descr. | Add circular area . |
| Response | None |

| | |
|------------------|--------------|
| Parameter | Value |
|------------------|--------------|

| | |
|-------------|--|
| x, y | Legal coordinate value - Position - Inch |
| rad | 0 - max double - Radius |

aoi_add_rect

| | |
|-----------------|---------------------------|
| Command | <code>aoi_add_rect</code> |
| Group | Mania AOI Interface |
| Descr. | Add rectangular area |
| Response | None |

| Parameter | Value |
|-----------------------------|--|
| <code>x1, y1, x2, y2</code> | Legal coordinate value - Position - Inch |

aoi_affect

| | |
|-----------------|----------------------------|
| Command | <code>aoi_affect</code> |
| Group | Mania AOI Interface |
| Descr. | Set a logical layer on/off |
| Response | None |

| Parameter | Value |
|-------------------|---|
| <code>num</code> | Legal logical layer index - layer index |
| <code>mode</code> | Single, all |

aoi_align

| | |
|-----------------|------------------------|
| Command | <code>aoi_align</code> |
| Group | Mania AOI Interface |
| Descr. | Set board alignment. |
| Response | None |

| Parameter | Value |
|---------------------|-----------------|
| <code>mirror</code> | Yes / No |
| <code>angle</code> | 0, 90, 180, 270 |

aoi_attrib_set

| | |
|-----------------|--|
| Command | <code>aoi_attrib_set</code> |
| Group | Mania AOI Interface |
| Descr. | Set area attributes in parameter layers. |
| Response | None |

| Parameter | Value |
|--------------------------|----------------|
| <code>chk_add</code> | Yes / no |
| <code>chk_mis</code> | Yes / no |
| <code>sensitivity</code> | High, low, med |
| <code>space</code> | Space value |
| <code>track</code> | Track value |

aoi_auto_scan

| | |
|-----------------|--|
| Command | <code>aoi_auto_scan</code> |
| Group | Mania AOI Interface |
| Descr. | Automatic calculation of general-dr scan area. |
| Response | None |

| Parameter | Value |
|-------------------|-----------|
| <code>step</code> | Step name |

aoi_chklist_run

| | |
|-----------------|---|
| Command | <code>aoi_chklist_run</code> |
| Group | Mania AOI Interface |
| Descr. | Run checklist for AOI analysis of DRC errors. |
| Response | None |

| Parameter | Value |
|------------------------|--|
| <code>step</code> | Step name |
| <code>name</code> | Checklist name |
| <code>keep_lyrs</code> | Keep measurement layers created by checklist. True/False |

aoi_close

| | |
|-----------------|-----------------------------|
| Command | aoi_close |
| Group | Mania AOI Interface |
| Descr. | Closes the Mania interface. |
| Response | None |

aoi_disp

| | |
|-----------------|-----------------------|
| Command | copy_sr |
| Group | Mania AOI Interface |
| Descr. | Set display elements. |
| Response | None |

| | |
|-------------------|--------------|
| Parameter | Value |
| profile | Yes / no |
| origin | Yes / no |
| scan_table | Yes / no |

aoi_drill

| | |
|-----------------|--|
| Command | aoi_drill |
| Group | Mania AOI Interface |
| Descr. | Generates the set's drill data from the job. |
| Response | None |

| | |
|------------------|---|
| Parameter | Value |
| step | Existing step name |
| layer | Existing layer name. Reveal only if use_all = False. |
| use_all | Yes / no. Perform for all drill layers. |
| enlarge | How much to enlarge drills. |

aoi_open

| | |
|-----------------|----------------------------|
| Command | <code>aoi_open</code> |
| Group | Mania AOI Interface |
| Descr. | Opens the Mania interface. |
| Response | None |

| | |
|------------------|-------------------|
| Parameter | Value |
| <code>job</code> | Existing job name |

aoi_output

| | |
|-----------------|----------------------------|
| Command | <code>aoi_output</code> |
| Group | Mania AOI Interface |
| Descr. | Generate AOI output files. |
| Response | None |

aoi_poly_add_seg

| | |
|-----------------|---------------------------------|
| Command | <code>aoi_poly_add_seg</code> |
| Group | Mania AOI Interface |
| Descr. | Add a segment to polygonal area |
| Response | None |

| | |
|-------------------|---|
| Parameter | Value |
| <code>x, y</code> | Legal coordinate value. - Position - Inch |

aoi_poly_close

| | |
|-----------------|-----------------------------|
| Command | <code>aoi_poly_close</code> |
| Group | Mania AOI Interface |
| Descr. | Closes a polygonal area |
| Response | None |

aoi_poly_start

| | |
|-----------------|------------------------|
| Command | aoi_poly_start |
| Group | Mania AOI Interface |
| Descr. | Start a polygonal area |
| Response | None |

| | |
|------------------|---|
| Parameter | Value |
| x, y | Legal coordinate value. Position - Inch |

aoi_register

| | |
|-----------------|--------------------------|
| Command | aoi_register |
| Group | Mania AOI Interface |
| Descr. | Set registration offset. |
| Response | None |

| | |
|-------------------|---|
| Parameter | Value |
| xoff, yoff | Legal coordinate value. Offset - units. |

aoi_units

| | |
|-----------------|--|
| Command | aoi_units |
| Group | Mania AOI Interface |
| Descr. | The command is used for setting the CURRENT working units. |
| Response | None |

| | |
|------------------|--------------|
| Parameter | Value |
| units | Inch, mm |

arc2lines

| | |
|-----------------|--|
| Command | arc2lines |
| Group | Graphic Editor |
| Descr. | Breaks an arc to lines according to a tolerance value specified by the user. |
| Response | None |

| | |
|---------------------|--|
| Parameter | Value |
| arc_line_tol | Positive integer - specifies the maximum allowed distance (in PIXELS) between arc and replacing lines. |

arrow_movement

| | |
|-----------------|---|
| Command | arrow_movement |
| Group | Graphic Editor |
| Descr. | Sets arrow movement size used by pressing <Alt> together with one of the arrow buttons. |
| Response | None |

| | |
|------------------|--|
| Parameter | Value |
| size | [0..1000]mils - required movement size |

attach_f_attr2symb

| | |
|-----------------|---|
| Command | attach_f_attr2symb |
| Group | Graphic Editor |
| Descr. | The command is used for attaching features attribute to the current symbol. (Store the attributes into the .attached_f_attr attribute) |
| Response | None |

| | |
|-------------------|---|
| Parameter | Value |
| attributes | Existing attribute names separated by semicolon ';' characters. |

attr_to_cad_netlist

| | |
|-----------------|--|
| Command | attr_to_cad_netlist |
| Group | Graphic Editor |
| Descr. | The command calls the routine that compares between REFERENCE and CURRENT netlists and display the results in the "Online Netlist Compare" window. |
| Response | None |

| | |
|------------------|--------------------|
| Parameter | Value |
| job | Existing job name |
| step | Existing step name |
| recalc | yes/no |

autopan_apply_trans

| | |
|-----------------|--|
| Command | autopan_apply_trans |
| Group | Panelization Package |
| Descr. | The command applies either flip or rotate transformation to the part of the panelized steps. |
| Response | None |

| Parameter | Value |
|------------------|-----------------------------------|
| job | Existing job name |
| panel | Panel step name |
| pcb | Name of a step to be panelized |
| scheme | Existing panelization scheme name |

autopan_delete

| | |
|-----------------|---|
| Command | autopan_delete |
| Group | Panelization Package |
| Descr. | Delete from panel layers all objects added either by the patterns fill procedure or in accordance with the placement rules. |
| Response | None |

| Parameter | Value |
|------------------|--|
| job | Existing job name |
| panel | Panel step name |
| pcb | Name of a step to be panelized |
| mode | fill - delete objects added by the 'patterns fill' . objects - delete objects added in accordance with the placement rules. Note: The use of MISC layers in panelization is controlled by the two parameter values listed below. These values are similar to fill and object , but instead apply to all board and misc layers. fill_all_layers - delete objects added by the 'patterns fill' . objects_all_layers - delete objects added in accordance with the placement rules/directives. |

autopan_fill

| | |
|-----------------|---|
| Command | autopan_fill |
| Group | Panelization Package |
| Descr. | The command adds features / coupons to the panel layer using placement rules. |
| Response | None |

| Parameter | Value |
|------------------|-----------------------------------|
| job | Existing job name |
| panel | Panel step name |
| pcb | Name of a step to be panelized |
| scheme | Existing panelization scheme name |

autopan_place_objects

| | |
|-----------------|---|
| Command | autopan_place_objects |
| Group | Panelization Package |
| Descr. | The command adds features / coupons to the panel layer using placement rules. |
| Response | None |

| Parameter | Value |
|------------------|-----------------------------------|
| job | Existing job name |
| panel | Panel step name |
| pcb | Name of a step to be panelized |
| scheme | Existing panelization scheme name |

autopan_place_pcb

| | |
|-----------------|--|
| Command | autopan_place_pcb |
| Group | Panelization Package |
| Descr. | The command creates (if needed) a panel step and panelizes a given PCB either automatically or manually. |
| Response | None |

| Parameter | Value |
|---------------|--|
| job | Existing job name |
| panel | Panel step name |
| pcb | Name of a step to be panelized |
| scheme | Existing panelization scheme name |
| mode | best - panelize according to panel class providing the best space utilization primary - panelize according to the primary panel class preview - open Automatic Step & Repeat Popup with allowed panel classes manual - open Automatic Step & Repeat Popup with all available (in library) panel classes |

backup_job_backup

| Command | backup_job_backup |
|--------------------|---|
| Group | Engineering Toolkit |
| Description | Backup a job from the application database to a backup repository |
| Response | None |
| Parameter | Value |
| repo | Name of target job repository |
| job | Name of job to back up |
| mode | Method of storing job in repository: directory, tar, tar_gzip |

backup_job_delete

| Command | backup_job_delete |
|--------------------|--|
| Group | Engineering Toolkit |
| Description | Deletes a job from a backup repository |
| Response | None |
| Parameter | Value |
| job | Job name |
| ver | Job version number (or 0 for last job version) |
| date_time | (Optional) Date and Time when job was backed up. Parameter has the following format: dd-MMM-yy HH:mm:ss (Leading zeroes required). Example: 02-Jul-12 09:35:03 Note: date_time overrides ver |

backup_job_list

| | |
|--------------------|--|
| Command | backup_job_list |
| Group | Engineering Toolkit |
| Description | Builds a backup repository job list in a file containing lines of <job_name> <job_ver> |
| Response | None |
| <hr/> | |
| Parameter | Value |
| path | Path to report |

backup_job_properties

| | |
|--------------------|--|
| Command | backup_job_properties |
| Group | Engineering Toolkit |
| Description | Builds a backup repository job list in a file containing lines of <job_name> <job_ver> |
| Response | Job properties in the following order: <job_name> <ver> <repository_name> <date> <time> <format> <application> <oper> <customer> |
| <hr/> | |
| Parameter | Value |
| job | Job name |
| ver | Job version number (or 0 for last job version) |

backup_job_restore

| | |
|--------------------|---|
| Command | backup_job_restore |
| Group | Engineering Toolkit |
| Description | Restores a job from backup repository to the application database |
| Response | None |
| <hr/> | |
| Parameter | Value |
| job | Job name |
| ver | Job version number (or 0 for last job version) |
| date_time | (Optional) Date and Time when job was backed up. Parameter has the following format: dd-MMM-yy HH:mm:ss (Leading zeroes required). Example: 02-Jul-12 09:35:03 Note: date_time overrides ver |

| | |
|-----------------|----------------------------------|
| dest_job | New name for restored job |
| dest_db | Name of destination job database |

backup_job_tool_close

| | |
|--------------------|------------------------------|
| Command | backup_job_tool_close |
| Group | Engineering Toolkit |
| Description | Closes the job backup window |
| Response | None |

backup_job_tool_open

| | |
|--------------------|-----------------------------|
| Command | backup_job_tool_open |
| Group | Engineering Toolkit |
| Description | Opens the job backup window |
| Response | None |

| | |
|------------------|---|
| Parameter | Value |
| jobs | List of job names. Names separated by semicolons (;). |

break_feat

| | |
|-----------------|---|
| Command | break_feat |
| Group | Graphic Editor |
| Descr. | Breaks the feature into two features at the selected point. |
| Response | None |

| | |
|------------------|--|
| Parameter | Value |
| index | Feature index in the work layer |
| x, y | Legal coordinates of feature coordinates |
| length | Length of break in mils |
| tol | Snap tolerance. Value range: 0 <= tol (mils) |

build_text

| | |
|-----------------|-----------------------------------|
| Command | build_text |
| Group | Graphic Editor |
| Descr. | Builds text string based on font. |
| Response | None |

| | |
|------------------|---|
| Parameter | Value |
| x, y | Legal coordinates of pad location |
| pix_size | Pixel size in mils (microns) Range: 0.1 - 100.0 mils |
| text | Text string to create (up to 200 characters) |
| font | Name of font, or an X fontset. Allowed up to 300 characters |

build_xtext

| | |
|-----------------|--|
| Command | build_xtext |
| Group | Graphic Editor |
| Descr. | Builds text string based on X-server font. |
| Response | None |

| | |
|------------------|-----------------------------------|
| Parameter | Value |
| x, y | Legal coordinates of pad location |

| | |
|-------------------|---|
| pix_size | Pixel size in mils (microns) Range: 0.1 - 100.0 mils |
| text | Text string to create (up to 200 characters) |
| font | Name of font, or an X fontset. Allowed up to 300 characters |
| contourize | Values: No/Yes |
| rotation | Values: 0.0 ... 360 |
| polarity | From set polarity field. Values: positive/negative |

bus_create_triplet

| | |
|-----------------|---|
| Command | bus_create_triplet |
| Group | Graphic Editor |
| Descr. | Create bus triplet for all bus tracks crossed by lines and controlled by anchor points. |
| Response | None |

| Parameter | Value |
|--|---|
| mode | Reroute mode. Values: fixed_length, fixed_points. |
| bus_x1, bus_y1 bus_x2, bus_y2 | Legal coordinates of 1st and 2nd points of a line to define bus triplet. |
| anchor_x1, anchor_y1 anchor_x2, anchor_y2 | Legal coordinates of 1st and 2nd anchor points. |
| tol | Legal coordinates for searching tolerance. |
| shift | Legal coordinates for bus traces shift. |
| direction | Values: positive; negative. If positive, traces are moved along positive Y-Axis or (if traces are vertical) along positive X-Axis direction. |

bus_move_triplet

| | |
|-----------------|---|
| Command | bus_move_triplet |
| Group | Graphic Editor |
| Descr. | Move triplets for all bus tracks crossed by line. |
| Response | None |

| Parameter | Value |
|--|---|
| mode | Triplet movement mode. Values: fixed_length, fixed_points. |
| bus_x1, bus_y1 bus_x2, bus_y2 | Legal coordinates of 1st and 2nd points of a line to define bus triplet. |
| shift | Legal coordinates for bus traces shift. |
| direction | Values: positive; negative. If positive, traces are moved along positive Y-Axis or (if traces are vertical) along positive X-Axis direction. |

bus_space_evenly

| | |
|--------------------|--|
| Command | bus_space_evenly |
| Group | Graphic Editor |
| Description | Space evenly a selected set of bus tracks. |
| Response | None |

| Parameter | Value |
|-------------------|--|
| mode | Values: across / up / down - direction of spacing (default = across) |
| reference | Values: none / features / points / profile - reference object (default = none) |
| space_type | Defines space type t2t: Trace-To-Trace space (default) t2r: Trace-To-Reference space even: Trace-to-reference and Trace-to-trace spacing are calculated evenly: all are given an equal value. |
| space | Space in current units between traces (if space_type=t2t) or between trace and reference (if space_type=t2r). Note: Ignored when reference = none |
| r1x, r1y | 1st reference point to define a bus section |
| r2x, r2y | 2nd reference point to define a bus section |

bus_unify_angles

| | |
|-----------------|---|
| Command | bus_unify_angles |
| Group | Graphic Editor |
| Descr. | Makes parallel all tracks crossed by line in a bus section. |
| Response | None |

| Parameter | Value |
|------------------------------------|--|
| r1x, r1y r2x, r2y | Legal coordinates of 1st and 2nd reference points to define bus. |

cadnet_reduce_points_to_center_comm

| | |
|-----------------|--|
| Command | cadnet_reduce_points_to_center_comm |
| Group | CAMTEK AOI |
| Descr. | The command reduces the CAD netlist points dimension to a default radius of 0.2 mil. |
| Response | 1 on success, 0 on failure |

| Parameter | Value |
|------------------|--|
| job | Existing job name |
| step | Existing step name |
| radius | Radius of reduced net points. Value in mils. |

camtek_close

| | |
|-----------------|---|
| Command | camtek_close |
| Group | CAMTEK AOI |
| Descr. | The command closes the CAMTEK interface and releases the license. |
| Response | None |

| Parameter | Value |
|------------------|--------------|
| | |

camtek_copy

| | |
|----------------|--|
| Command | camtek_copy |
| Group | Engineering Toolkit |
| Descr. | The command is used for copying a CAMTEK entity. |

| Parameter | Value |
|---------------------|----------------------------|
| source_layer | Existing layer - name |
| source_name | CAMTEK AOI - set entity |
| dest_name | Destination AOI - set name |

camtek_create

| | |
|----------------|---|
| Command | camtek_create |
| Group | Engineering Toolkit |
| Descr. | The command is used for creating a CAMTEK entity. |

| | |
|------------------|-------------------------|
| Parameter | Value |
| name | CAMTEK AOI - set entity |

camtek_delete

| | |
|----------------|---|
| Command | camtek_delete |
| Group | Engineering Toolkit |
| Descr. | The command is used for deleting a CAMTEK entity. |

| | |
|------------------|-------------------------|
| Parameter | Value |
| name | CAMTEK AOI - set entity |

camtek_exclusion

| | |
|----------------|---|
| Command | camtek_exclusion |
| Group | Engineering Toolkit |
| Descr. | The command is used for defining exclusion zones. |

| | |
|--------------------|---|
| Parameter | Value |
| oper | Set - defined zone Delete - delete a zone Clear - delete all zones |
| mode | Auto - sets areas between the step & repeat and the scan area Semi_automatic - rectangle corners are duplicated to all step & repeat Manual - specify coordinates |
| margin | Mils/microns from the step & repeat |
| x1,y1,x2,y2 | Rectangle corners |

camtek_exclusion_circle

| | |
|----------------|---|
| Command | camtek_exclusion_circle |
| Group | Output |
| Descr. | The command is used for defining circular exclusion zones |

| Parameter | Value |
|------------------|---|
| oper | Set - defined zone Delete - delete a zone Clear - delete all zones |
| mode | auto - sets areas between the s&r and the scan area semi_automatic - rectangle corners are duplicated to all S&R manual - specify coordinates |
| margin | mils/microns from the s&r |
| xc,yc,rad | circle center & rad |

camtek_exclusion_poly_add_vertex

| | |
|----------------|---|
| Command | camtek_exclusion_poly_add_vertex |
| Group | Output |
| Descr. | Add a point to the polygonal exclusion zone |

| Parameter | Value |
|-------------|---------------------------|
| x, y | Units - point coordinates |

camtek_exclusion_poly_close

| | |
|----------------|--|
| Command | camtek_exclusion_poly_close |
| Group | Output |
| Descr. | The command is used for closing a polygonal exclusion zone |

camtek_exclusion_poly_start

| | |
|----------------|---|
| Command | camtek_exclusion_poly_start |
| Group | Output |
| Descr. | The command is used for starting a polygonal exclusion zone |

camtek_open

| | |
|-----------------|---|
| Command | camtek_open |
| Group | CAMTEK AOI |
| Descr. | The command opens the CAMTEK interface. |
| Response | None |

| | |
|------------------|--------------|
| Parameter | Value |
| | |

camtek_output

| | |
|----------------|---|
| Command | camtek_output |
| Group | Engineering Toolkit |
| Descr. | The command is used for outputting a CAMTEK entity. |

| | |
|-------------------------|--|
| Parameter | Value |
| out_path | Output pathname |
| send_mess | Yes - send a message to the AOI machine No - create the files with no message |
| ignore_comm_errs | Yes - ignore any comm. errors with the AOI system, and continue creating the files No - abort after the first communication error |
| ip_addr | IP address |

camtek_output_entity

| | |
|----------------|---|
| Command | camtek_output_entity |
| Group | Engineering Toolkit |
| Descr. | The command is used for adding a layer and aoiset entities pair to the output list. |

| | |
|------------------|--------------|
| Parameter | Value |
| layer | Layer name |
| aoiset | AOIset name |

camtek_output_reset

| | |
|----------------|----------------------------|
| Command | camtek_output_reset |
|----------------|----------------------------|

| | |
|---------------|--|
| Group | Engineering Toolkit |
| Descr. | The command is used for resetting the output entities list, that is used by the 'camtek_output' command. |

camtek_output_send

| | |
|----------------|--|
| Command | camtek_output_send |
| Group | Engineering Toolkit |
| Descr. | The command is used for sending a message without output |

| | |
|------------------|-----------------|
| Parameter | Value |
| out_path | Output pathname |
| ip_addr | IP address |

camtek_params

| | |
|----------------|---|
| Command | camtek_params |
| Group | Engineering Toolkit |
| Descr. | The command is used for setting general parameters. |

| | |
|----------------------------------|--|
| Parameter | Value |
| angle | 0, 90, 180, 270 |
| mirror | Yes - mirror in X, No |
| x_scale y_scale | 0.95 <= scale <= 1.05 |
| polarity | Positive, negative |
| drills | Yes - add drill information No - no drill |
| etch | Mils/microns - etch factor |
| calib | Calibration type |
| res | Mils/microns - resolution |
| thickness | Mils/microns |
| lam_type | Core, foil - lamination type |
| machine | Artwork, panel |

camtek_reg_method

| | |
|----------------|---|
| Command | camtek_reg_method |
| Group | Engineering Toolkit |
| Descr. | The command is used for defining the registration method. |

| | |
|------------------|--------------|
| Parameter | Value |
| method | 1-10 |

camtek_reg_pins

| | |
|----------------|---|
| Command | camtek_reg_pins |
| Group | Engineering Toolkit |
| Descr. | The command is used for defining the registration pins. |

| | |
|--------------------|----------------|
| Parameter | Value |
| oper | Set, clear |
| x1,y1,x2,y2 | For the 2 pins |

camtek_rename

| | |
|----------------|---|
| Command | camtek_rename |
| Group | Engineering Toolkit |
| Descr. | The command is used for renaming a CAMTEK entity. |

| | |
|------------------|-------------------------|
| Parameter | Value |
| name | CAMTEK AOI - set entity |
| new_name | New name |

camtek_scan_area

| | |
|----------------|---|
| Command | camtek_scan_area |
| Group | Engineering Toolkit |
| Descr. | The command is used for defining the scan area. |

| Parameter | Value |
|--------------------|--|
| mode | Auto - take the bounding limits of the step & repeat Manual - specify coordinates |
| margin | In mils/microns - for 'auto' |
| x1,y1,x2,y2 | Rectangle corners |
| step | Existing step name or '**' |

camtek_set_cur

| | |
|----------------|---|
| Command | camtek_set_cur |
| Group | Engineering Toolkit |
| Descr. | The command is used for setting the current entity names. |

| Parameter | Value |
|--------------|-------------------------|
| job | Existing job name |
| step | Existing step name |
| layer | Existing layer name |
| name | CAMTEK AOI - set entity |

camtek_units

| | |
|----------------|---------------------------------|
| Command | camtek_units |
| Group | Engineering Toolkit |
| Descr. | Sets the package working units. |

| Parameter | Value |
|--------------|----------|
| units | Inch, mm |

cdr_add_align_target_no_snap

| | |
|----------------|--|
| Command | cdr_add_align_target_no_snap |
| Group | Orbotech AOI Interface |
| Descr. | Adds Alignment Target. Command is activated by double-clicking (or pressing Enter) when a highlighted feature already exists. It may also be used for supplying a target coordinate by script, without any snapping performed. |

| Parameter | Value |
|---------------|--|
| color | copper/background |
| x,y | legal coordinate value |
| symbol | standard symbols: stage1 through stage10 (as defined by set_work_stages) |

cdr_add_aoi_pan_pcb

| | |
|----------------|--|
| Command | cdr_add_aoi_pan_pcb |
| Group | Orbotech AOI Interface |
| Descr. | Creates or changes a PCB for AOI panelization. |

| Parameter | Value |
|-----------------|-----------------------------------|
| pcb_name | number between 1 and 100 |
| x1 | PCB bottom left X coord in Inches |
| y1 | PCB bottom left Y coord in Inches |
| x2 | PCB top right X coord in Inches |
| y2 | PCB top right Y coord in Inches |
| anchor_x | PCB anchor_x coord in Inches |
| anchor_y | PCB anchor_y coord in Inches |

cdr_add_aoi_pan_rpcb

| | |
|----------------|---|
| Command | cdr_add_aoi_pan_rpcb |
| Group | Orbotech AOI Interface |
| Descr. | Adds a repeat line for a PCB in AOI panelization. |

| Parameter | Value |
|-----------------|------------------------------|
| pcb_name | number between 1 and 100 |
| anchor_x | PCB anchor_x coord in Inches |

| | |
|-----------------|--|
| anchor_y | PCB anchor_y coord in Inches |
| nx | number of repetition in x direction |
| ny | number of repetition in y direction |
| dx | X axis distance between same features of neighboring PCBs. |
| dy | Y axis distance between same features of neighboring PCBs. |
| angle | 0,90,180, or 270 degree clockwise rotation of PCB. |
| mirror | Yes, No: mirror rotation of PCB. |
| refresh | should be 'Yes' from line mode command. |

cdr_advanced_output

| | |
|-----------------|---|
| Command | cdr_advanced_output |
| Group | PC/I Interface |
| Descr. | Create Orbotech PC/I advanced output (aoiimg + aoiprogram) using Genesis anchor term (instead of Xpert's term origin) |
| Response | None |

| Parameter | Legal Values | Comment |
|-------------------------------|---------------------|--|
| aoiimg | yes/no | |
| aoiprogram | yes/no | |
| units | inch,mm | inch ==> img - mil prog - mil mm ==> img - micron prog - mm |
| path | | output path |
| scale_x, scale_y | 0.001 - 9.99 | scale factor in Xpert, scale is in % (100% --> 1.0) |
| anchor_mode | zero, center, other | |
| anchor_x, anchor_y | | around which coordinate to scale |
| pcb, rpcb | yes/no | |
| bound_inspect | yes/no | if PCB/RPCB output, auto set INSPECT to PCBs bounding box |
| target_machine | pc14/inspire | |
| break_surf | yes/no | |
| break_arc | yes/no | |
| break_sr | yes/no | |

| | |
|--------------------|--|
| break_fsyms | yes/no |
| min_brush | 0 < min_brush <= 100.0 mils for break_surf == 'yes' |
| job | new job name |
| lyr | existing layer |
| set | existing set |
| new_lyr | new layer name |

cdr_affect_by_filter

| | |
|----------------|---|
| Command | cdr_affect_by_filter |
| Group | Orbotech AOI Interface |
| Descr. | Used for setting the affected layers according to a special filter. The filter is a textual string that contains the layer type, context, side and polarity. The format is the same as for the dfm and editor layer filter. |

| | |
|------------------|---------------|
| Parameter | Value |
| filter | Layers filter |

cdr_affected_layer

| | |
|----------------|--|
| Command | cdr_affected_layer |
| Group | Orbotech AOI Interface |
| Descr. | Sets/unsets the Orbotech AOI affected layer. |

| Parameter | Value |
|-----------------|--|
| layer | name of layer |
| mode | on: set to be affected off: unset the layer |
| set_name | which cdr set to make active |

cdr_align_target

| | |
|----------------|---|
| Command | cdr_align_target |
| Group | Orbotech AOI Interface |
| Descr. | Adds Alignment Target. Command is activated by a single mouse click that highlights the snap feature candidate. |

| Parameter | Value |
|---------------|--|
| color | copper/background |
| x,y | legal coordinate value |
| symbol | standard symbols: stage1 through stage10 (as defined by set_work_stages) |

cdr_align_target_add

| | |
|----------------|--|
| Command | cdr_align_target_add |
| Group | Orbotech AOI Interface |
| Descr. | Adds Alignment Target. Command is activated by double-clicking (or pressing Enter) when no features are highlighted. |

| Parameter | Value |
|-------------------|--|
| color | copper/background |
| x,y | legal coordinate value |
| symbol | standard symbols: stage1 through stage10 (as defined by set_work_stages) |
| mode | SELECT_MODE/ DISPLAY_MODE |
| serial_num | How many snapping repetitions |

cdr_align_target_clear

| | |
|----------------|-------------------------------|
| Command | cdr_align_target_clear |
| Group | Orbotech AOI Interface |
| Descr. | Delete ALL Alignment Targets |

cdr_align_target_del

| | |
|----------------|-----------------------------|
| Command | cdr_align_target_del |
| Group | Orbotech AOI Interface |
| Descr. | Delete Alignment Target |

| | |
|------------------|------------------------|
| Parameter | Value |
| x,y | legal coordinate value |

cdr_annular_ring_sz

| | |
|----------------|---|
| Command | cdr_annular_ring_sz |
| Group | Orbotech AOI Interface |
| Descr. | Set Nominal And Minimal Annular Ring Parameters |

| | |
|---------------------|--------------------------------|
| Parameter | Value |
| nom_ann_ring | Nominal Annular Ring Parameter |
| min_ann_ring | Minimal Annular Ring Parameter |

cdr_aoiprogram_in

| | |
|----------------|---|
| Command | cdr_aoiprogram_in |
| Group | Orbotech AOI Interface |
| Descr. | Reads AOIprog file and converts it to Orbotech AOI set for each affected layer. |

| | |
|------------------|--------------|
| Parameter | Value |
|------------------|--------------|

| | |
|------------------------|--------------------------------------|
| aoiprogram file | An existing aoiprogram file |
| aoihdr file | An existing aoihdr file is mandatory |

cdr_auto_zone

| | |
|----------------|---|
| Command | cdr_auto_zone |
| Group | Orbotech AOI Interface |
| Descr. | Set Exclusion Zone around drill/texts Automatically |

| Parameter | Value |
|----------------------------|---|
| mode | drill/text/mask |
| for drill/mask mode | |
| file | Name of drill (or mask) file |
| symbol | Symbol in file to be used for masking |
| for text mode | |
| margin | 0.0...100.0 mils |
| pcb panel | Detect text in pcb, panel, or both |
| run_dfm | Run legend DFM, which may add attributes to original data |

cdr_autosetup_control

| | |
|----------------|---|
| Command | cdr_autosetup_control |
| Group | Orbotech AOI Interface |
| Descr. | Controls the automatic setup activation |

| Parameter | Value |
|-----------------------------|--|
| autosetup | enable/disable |
| cfg_outer, cfg_inner | Configuration files to be used for automatic setup |

cdr_calib_point

| | |
|----------------|------------------------|
| Command | cdr_calib_point |
| Group | Orbotech AOI Interface |
| Descr. | Set Calibration Point |

| | |
|------------------|---|
| Parameter | Value |
| x, y | Legal coordinate value Position - Inch should be inside the panel. |

cdr_calib_target_clear

| | |
|----------------|--------------------------------|
| Command | cdr_target_clear |
| Group | Orbotech AOI Interface |
| Descr. | Delete All Calibration Targets |

| | |
|------------------|--------------|
| Parameter | Value |
|------------------|--------------|

cdr_calib_target_del

| | |
|----------------|-----------------------------|
| Command | cdr_calib_target_del |
| Group | Orbotech AOI Interface |
| Descr. | Delete Calibration Target |

| | |
|------------------|--|
| Parameter | Value |
| x, y | Legal coordinate value Position - Inch if needed, point is snapped. |

cdr_change_zone_type

| | |
|----------------|-------------------------------|
| Command | cdr_change_zone_type |
| Group | Orbotech AOI Interface |
| Descr. | Change type of Exclusion Zone |

| | |
|------------------|------------------------|
| Parameter | Value |
| select | single/area |
| x1,y1 | legal coordinate value |
| x2,y2 | legal coordinate value |
| type | new type to assign |

cdr_clear_areas

| | |
|----------------|----------------------------|
| Command | cdr_clear_areas |
| Group | Orbotech AOI Interface |
| Descr. | Clear all inspection areas |

cdr_clear_layers

| | |
|----------------|-----------------------------------|
| Command | cdr_clear_layers |
| Group | Orbotech AOI Interface |
| Descr. | Clears the display of all layers. |

cdr_clear_panelization

| | |
|----------------|--|
| Command | cdr_clear_panelization |
| Group | Orbotech AOI Interface |
| Descr. | Clears user-defined AOI panelization from all CDR-sets belonging to the loaded step. |

cdr_clear_select_output_lyrs

| | |
|---------------------------|--|
| Command | cdr_clear_select_output_lyrs |
| Group | Orbotech AOI Manager |
| Description | Clears the list of layers selected for output. |
| Parameter | Value |
| output_ format | prog_img, opfx |

cdr_clear_zones

| | |
|----------------|---------------------------|
| Command | cdr_clear_zones |
| Group | Orbotech AOI Interface |
| Descr. | Clear all Exclusion Zones |

cdr_close

| | |
|----------------|---|
| Command | cdr_close |
| Group | Orbotech AOI Interface |
| Descr. | The command is used for closing i/f & releasing of license. |

cdr_copy_set

| | |
|----------------|---|
| Command | cdr_copy_set |
| Group | Orbotech AOI Interface |
| Descr. | Copy a set from a source layer to (possibly many) destination layers, in the same step. |

| | |
|---------------------|--|
| Parameter | Value |
| source_layer | An existing source layer |
| dest_layers | A list of layer names, separated by “;”. (In c-shell, the list should be quoted) |

cdr_copy_sets_by_name

| | |
|----------------|--|
| Command | cdr_copy_sets_by_name |
| Group | PC/I Interface |
| Descr. | The command is used for copying set(s) from a source layer to a destination layer, in the same step and job. Names of the copied sets may be supplied. |

| | |
|-------------------|---|
| Parameter | Value |
| from_layer | existing source layer name |
| to_layer | existing destination layer name |
| from_sets | A list of source set names. Names are separated by a semicolon ';' . |
| to_sets | A list of destination set names. Names are separated by a semicolon ';' . |

cdr_create_histogram_data

| | |
|----------------|----------------------------------|
| Command | cdr_create_histogram_data |
| Group | PC/I Interface |
| Descr. | Create histogram data |

| | |
|------------------|--------------|
| Parameter | Value |
|------------------|--------------|

cdr_del_aoi_pan_pcb

| | |
|----------------|---|
| Command | cdr_del_aoi_pan_pcb |
| Group | Orbotech AOI Interface |
| Descr. | Deletes a PCB defined in AOI panelization |

| Parameter | Value |
|------------------|--|
| pcb | Existing PCB name, as defined in AOI panelization. |

cdr_del_aoi_pan_rpcb_comm

| | |
|----------------|--|
| Command | cdr_del_aoi_pan_rpcb_comm |
| Group | Orbotech AOI Interface |
| Descr. | Deletes a repeat line for a PCB in AOI panelization. |

| Parameter | Value |
|------------------|--|
| pcb_name | number between 1 and 100 |
| anchor_x | PCB anchor_x coord in Inches |
| anchor_y | PCB anchor_y coord in Inches |
| nx | number of repetition in x direction |
| ny | number of repetition in y direction |
| dx | X axis distance between same features of neighboring PCBs. |
| dy | Y axis distance between same features of neighboring PCBs. |
| angle | 0,90,180, or 270 degree clockwise rotation of PCB. |
| mirror | Yes, No: mirror rotation of PCB. |
| refresh | should be 'Yes' from line mode command. |

cdr_delete_area

| | |
|----------------|------------------------|
| Command | cdr_delete_ares |
| Group | Orbotech AOI Interface |
| Descr. | Delete inspection area |

| Parameter | Value |
|------------------|------------------------|
| select | single/area |
| x1,y1 | legal coordinate value |
| x2,y2 | legal coordinate value |

cdr_delete_inspect_area

| | |
|----------------|---|
| Command | cdr_delete_inspect_ares |
| Group | Orbotech AOI Interface |
| Descr. | Delete inspection area. NOTE: duplicate yes/no is NOT a param: a zone is deleted as it was added. |

| | |
|------------------|--|
| Parameter | Value |
| select | Selection mode. Values: single/area |
| x1,y1 | Legal coordinate value. Position - Inch 1st corner for area: a single point for single. |
| x2,y2 | Legal coordinate value. Position - Inch 2nd corner for area: none for single. |

cdr_delete_sets

| | |
|----------------|--|
| Command | cdr_delete_sets |
| Group | Orbotech AOI Interface |
| Descr. | The command is used for deleting cdr14-sets. |

| | |
|------------------|--|
| Parameter | Value |
| layers | A list of layer names, separated by “;”. |

cdr_delete_sets_by_name

| | |
|----------------|---|
| Command | cdr_delete_sets_by_name |
| Group | PC/I Interface |
| Descr. | The command is used for deleting cdr-sets. The cdr-sets are identified by their name. |

| | |
|------------------|---|
| Parameter | Value |
| layer | layer name |
| sets | A list of set names. Names are separated by a semicolon ';' . |

cdr_delete_zone

| | |
|----------------|------------------------|
| Command | cdr_delete_zone |
| Group | Orbotech AOI Interface |
| Descr. | cdr14_delete_zone |

| | |
|------------------|------------------------|
| Parameter | Value |
| select | single/area |
| x1,y1 | legal coordinate value |
| x2,y2 | legal coordinate value |

cdr_dish_down_point_add

| | |
|----------------|--------------------------------|
| Command | cdr_dish_down_point_add |
| Group | Orbotech AOI Interface |
| Descr. | Add Dish Down Point |

| | |
|------------------|-----------------------------|
| Parameter | Value |
| x, y | position of Dish Down point |

cdr_display_align_target

| | |
|----------------|--|
| Command | cdr_display_align_target |
| Group | Orbotech AOI Interface |
| Descr. | Displays (highlights) the next possible Alignment Target, before actually adding the target. |

| | |
|----------------------|--|
| Parameter | Value |
| x, y | mouse press point |
| serial_number | Set by Genesis. For internal use only. |
| snap_layer | Specifies layer where alignment target is located if alignment target is located in a layer other than the work layer. |

cdr_display_layer

| | |
|----------------|--|
| Command | cdr_display_layer |
| Group | Orbotech AOI Interface |
| Descr. | Displays or clears a layer (either a physical layer or a logical layer displaying the inspection area or the defined targets). |

| | |
|------------------|---|
| Parameter | Value |
| name | Name of layer. "all" may be used in order to hide all layers. |
| type | physical/area/target |
| display | Yes/No |

cdr_drill_layer

| | |
|----------------|---|
| Command | cdr_drill_layer |
| Group | Orbotech AOI Interface |
| Descr. | Set an “active” drill layer for a single Production Stage |

| Parameter | Value |
|--------------------|---------------------------|
| stage | stage name |
| drill_layer | one of job’s drill layers |

cdr_drill_layers

| | |
|----------------|--|
| Command | cdr_drill_layers |
| Group | Orbotech AOI Interface |
| Descr. | Set drill layer(s) for multiple production stages. |

| Parameter | Value |
|--|---|
| drill_layers | One or more of the job’s drill layers. Drill layers must be piercing all affected layers. |
| stage1 ... stage10 | Working stage(s) as defined by set_work_stages . |

cdr_features

| | | |
|--------------------|---------------|---|
| Command | | cdr_features |
| Group | | Orbotech AOI Manager |
| Description | | Sets flags indicating a particular type of feature exists in a layer |
| Parameter | | Value |
| | | These parameters can receive the following values: yes/no/unknown/manual |
| pads | clearances | |
| lines | cross_hatch | |
| smds | through_holes | |
| nfps | blind_via | |
| thermals | micro_via | |
| | | |
| | | These parameters set the range (minimum and maximum values) permitted for each type of feature. Valid range: 0 - 10000 |
| min_pad | | |
| max_pad | | |
| min_line | | |
| max_line | | |
| min_smd | | |
| max_smd | | |
| min_nfp | | |
| max_nfp | | |
| min_thermal | | |
| max_thermal | | |
| min_clearance | | |
| max_clearance | | |
| min_through_hole | | |
| max_through_hole | | |
| min_blind_via | | |
| max_blind_via | | |
| min_micro_via | | |
| max_micro_via | | |

cdr_get_affected_layers

| | |
|--------------------|--|
| Command | cdr_get_affected_layers |
| Group | Orbotech AOI Manager |
| Description | The command is used for getting the names of the affected layers in the cdr interface. |
| Returns | List of Layers |

cdr_get_flow_stage_status

| | |
|--------------------|---|
| Command | cdr_get_flow_stage_status |
| Group | Orbotech AOI Manager |
| Description | The command is used for finding the red/green status of a flow stage. |
| Returns | green or red |
| Parameter | Value |
| flow_stage | Stage of flow. Values: prms,stage,frs,inspect, exclude, align_tgts, alignment, vrs_tgts |

cdr_get_job

| | |
|--------------------|--|
| Command | cdr_get_job |
| Group | Orbotech AOI Manager |
| Description | Returns the name of the job currently loaded in the cdr interface. |

cdr_get_machine

| | |
|--------------------|---|
| Command | cdr_get_machine |
| Group | Orbotech AOI Manager |
| Description | The command is used for getting the name of the machine loaded in the cdr interface |
| Returns | machine name |

cdr_get_nom_hole

| | |
|--------------------|--|
| Command | cdr_get_nom_hole |
| Group | Orbotech AOI Manager |
| Description | Returns the layer's nominal hole size when given the layer name. |
| Parameter | Value |
| layer | name of an existing drill layer |

cdr_get_nom_line

| | |
|--------------------|---|
| Command | cdr_get_nom_line |
| Group | Orbotech AOI Manager |
| Description | The command activates an analysis that calculates the layer's nominal line and returns it. Note: Requires auto setup license |
| Returns | Line width in mils or microns - depending on AOI interface units |
| Parameter | Value |
| layer | name of an existing layer |

cdr_get_nom_space

| | |
|--------------------|--|
| Command | cdr_get_nom_space |
| Group | Orbotech AOI Manager |
| Description | The command activated an analysis that calculates the layer's nominal spacing and returns it. |
| Returns | Nominal spacing of the type required in mils or microns - depending on AOI interface units. Note: Requires auto setup license |
| Parameter | Value |
| layer | name of an existing layer |
| space type | Options: nom_space; nom_nfp_space; nom_plane_space. |

cdr_get_step

| | |
|--------------------|--|
| Command | cdr_get_step |
| Group | Orbotech AOI Manager |
| Description | The command is used for getting the name of the step loaded in the cdr interface |

cdr_hist_create_data

| | |
|----------------|---|
| Command | cdr_hist_create_data |
| Group | Orbotech AOI Interface |
| Descr. | Add a histogram to a list of requested histograms to be calculated for the layer. |

| | |
|------------------------------|----------------------------|
| Parameter | Value |
| hist_ f_type | pads/lines/clearances/etc. |
| hist_ create_type | merge |
| hist_ sort_type | width |

cdr_hist_create_histograms

| | |
|----------------|--|
| Command | cdr_hist_create_histograms |
| Group | Orbotech AOI Interface |
| Descr. | Calculate and create requested histograms specified by the line mode command cdr_hist_create_data . |

cdr_hist_init_create_prms

| | |
|----------------|---|
| Command | cdr_hist_init_create_prms |
| Group | Orbotech AOI Interface |
| Descr. | Initialize list of requested histograms to be calculated for the layer. |

cdr_histogram_add

| | |
|----------------|---------------------------|
| Command | cdr_histogram_add |
| Group | Orbotech AOI Interface |
| Descr. | Add a row to an histogram |

| Parameter | Value |
|---------------|---|
| size | size of feature or spacing |
| count | count of appearances of feature/spacing of specified size |
| length | accumulated length (for lines histogram only) |

cdr_histogram_end

| | |
|----------------|---|
| Command | cdr_histogram_end |
| Group | Orbotech AOI Interface |
| Descr. | Marks end of data for current histogram |

cdr_histogram_start

| | |
|----------------|------------------------------|
| Command | cdr_histogram_start |
| Group | Orbotech AOI Interface |
| Descr. | Start setting histogram data |

| Parameter | Value |
|-------------|---|
| type | histogram type (pads/lines/etc.) |
| by | width/length. applicable only for SMDs. |

cdr_impedance_target_add

| | |
|----------------|---------------------------------|
| Command | cdr_impedance_target_add |
| Group | Orbotech AOI Interface |
| Descr. | Adds Impedance Control Target |

| Parameter | Value |
|------------|------------------------|
| x,y | legal coordinate value |

cdr_impedance_target_clear

| | |
|----------------|-----------------------------------|
| Command | cdr_impedance_target_clear |
| Group | Orbotech AOI Interface |
| Descr. | Clears Impedance Control Target |

| | |
|------------------|------------------------|
| Parameter | Value |
| x,y | legal coordinate value |

cdr_impedance_target_del

| | |
|----------------|----------------------------------|
| Command | cdr_impedance_target_del |
| Group | Orbotech AOI Interface |
| Descr. | Deletes Impedance Control Target |

| | |
|------------------|------------------------|
| Parameter | Value |
| x,y | legal coordinate value |

cdr_inspect_circ

| | |
|----------------|--------------------------------|
| Command | cdr_inspect_circ |
| Group | Orbotech AOI Interface |
| Descr. | Add a circular Inspection Area |

| | |
|-------------------------|-------------------------------|
| Parameter | Value |
| duplicate | yes/no |
| x1,y1, x2,y2 | legal coordinate value |
| type | legal zone type Default = ALL |

cdr_inspect_poly_add_seg

| | |
|----------------|--|
| Command | cdr_inspect_poly_add_seg |
| Group | Orbotech AOI Interface |
| Descr. | Add a segment to polygonal Inspection Area |

cdr_inspect_poly_close

| | |
|----------------|-----------------------------------|
| Command | cdr_inspect_poly_close |
| Group | Orbotech AOI Interface |
| Descr. | Close a polygonal Inspection Area |

cdr_inspect_poly_start

| | |
|----------------|-----------------------------------|
| Command | cdr_inspect_poly_start |
| Group | Orbotech AOI Interface |
| Descr. | Start a polygonal Inspection Area |

| | |
|------------------|------------------------|
| Parameter | Value |
| duplicate | yes/no |
| x,y | legal coordinate value |
| type | legal zone type |

cdr_inspect_rect

| | |
|----------------|-----------------------------------|
| Command | cdr_inspect_rect |
| Group | Orbotech AOI Interface |
| Descr. | Add a rectangular Inspection area |

| | |
|------------------|------------------------|
| Parameter | Value |
| duplicate | yes/no |
| x,y | legal coordinate value |
| type | legal zone type |

cdr_label_point

| | |
|----------------|--|
| Command | cdr_label_point |
| Group | Orbotech AOI Interface |
| Descr. | Set coordinate of start point of a label printed by printer. |

| | |
|------------------|---|
| Parameter | Value |
| x, y | Legal coordinate value. Position - Inch should be inside the panel. |

cdr_label_target_clear

| | |
|----------------|--------------------------|
| Command | cdr_label_target_clear |
| Group | Orbotech AOI Interface |
| Descr. | Delete All Label Targets |

cdr_label_target_del

| | |
|----------------|------------------------|
| Command | cdr_label_target_del |
| Group | Orbotech AOI Interface |
| Descr. | Delete Label Target |

| | |
|------------------|--------------|
| Parameter | Value |
|------------------|--------------|

cdr_laser_drl_sz

| | |
|----------------|--|
| Command | cdr_laser_drl_sz |
| Group | Orbotech AOI Interface |
| Descr. | Set nominal and minimum Laser Drill parameters |

| | |
|----------------------|---------------------------|
| Parameter | Value |
| nom_laser_drl | Nominal laser drill value |
| min_laser_drl | Minimum laser drill value |

cdr_line_width

| | |
|----------------|--|
| Command | cdr_line_width |
| Group | Orbotech AOI Interface |
| Descr. | Set Orbotech AOI nominal and minimal Line Width Parameters |

| Parameter | Value |
|------------------|---------------|
| nom_width | 0.5 - 128 mil |
| min_width | 0.5 - 128 mil |

cdr_manual_align

| | |
|----------------|---|
| Command | cdr_manual_align |
| Group | Orbotech AOI Interface |
| Descr. | Set Alignment Manually (without using a toolset number) |

| Parameter | Value |
|---------------------------|--|
| offset_x, offset_y | Anchor position |
| rotate | 0/90/180/270 (Clockwise). Note: Parameter receives Genesis transformations, i.e. the rotate parameter now receives CW angles. |
| mirror | Mirrors specific axis (Yes/No) |
| polarity | Positive/negative |
| create_toolset | Used to create toolset |
| toolset number | Number of the created toolset (integer number) |

cdr_mark_point

| | |
|----------------|--|
| Command | cdr_mark_point |
| Group | Orbotech AOI Interface |
| Descr. | Set coordinate of point used by marker |

| Parameter | Value |
|------------|-------------|
| x,y | coordinates |

cdr_mark_target_clear

| | |
|----------------|-------------------------|
| Command | cdr_mark_target_clear |
| Group | Orbotech AOI Interface |
| Descr. | Delete All Mark Targets |

cdr_mark_target_del

| | |
|----------------|------------------------|
| Command | cdr_mark_target_del |
| Group | Orbotech AOI Interface |
| Descr. | Delete Mark point |

| | |
|------------------|--------------|
| Parameter | Value |
| x,y | coordinates |

cdr_multi_line_width

| | |
|----------------|---|
| Command | cdr_line_width |
| Group | Orbotech AOI Interface |
| Descr. | Set Orbotech AOI Multiple Line Width Parameters |

| | |
|----------------------------------|---------------|
| Parameter | Value |
| nom_width | 0.5 - 128 mil |
| min1 through min4 | 0.5 - 128 mil |
| max1 through mzx4 | 0.5 - 128 mil |

cdr_new_set

| | |
|----------------|---|
| Command | cdr_new_set |
| Group | Orbotech AOI Interface |
| Descr. | The command is used to create new cdr-sets. |

| Parameter | Value |
|----------------|-------------------------|
| layer | Layer name |
| new-set | A non-existing set name |

cdr_nfp_spacing

| | |
|----------------|--|
| Command | cdr_nfp_spacing |
| Group | Orbotech AOI Interface |
| Descr. | Set nominal and minimum NFP spacing parameters |

| Parameter | Value |
|----------------------|---------------------------|
| nom_nfp_space | Nominal NFP spacing value |
| min_nfp_space | Minimum NFP spacing value |

cdr_open

| | |
|----------------|---|
| Command | cdr_open |
| Group | Orbotech AOI Interface |
| Descr. | Opens the AOI interface & reads license file. |

| | |
|------------------|--------------|
| Parameter | Value |
| job | job name |
| interface | v300 |

cdr_opfx_output

| | |
|----------------|------------------------|
| Command | cdr_opfx_output |
| Group | Orbotech AOI Interface |
| Descr. | Creates OPFX output |

| | |
|-------------------------|--|
| Parameter | Value |
| units | inch/mm |
| units_factor | with units_factor 0.01 (default); 2.34 is translated to 234 in OPFX file |
| path | Output path. By default - the AOI Manager's spool directory |
| scale_x, scale_y | Scale factors to be applied on output. Scale factor of 1.0 means no scale. |
| target_machine | v300 |
| break_surf | Yes - fill surface features with a series of lines. The Minimal brush text field appears. No - keep surface features as contours. |
| break_arc | Yes - arc features will be represented by a series of line features. No - arc features appear as arcs. |
| break_sr | Controls whether the Step & Repeat information will be maintained or a flat layer will be created. |
| break_fsyms | Yes - special symbols will be broken into their primitive features. |
| min_brush | Displayed if break_sr= Yes. Specifies the minimum brush size used to fill surfaces during AOI output. Default value controlled by the configuration parameter out_fill_min_brush . |
| upkit | no |

cdr_output

| | |
|----------------|---|
| Command | cdr_output |
| Group | Orbotech AOI Interface |
| Descr. | create Orbotech AOI output (AOIIMG + AOIPROG) |

| Parameter | Value |
|-----------------------------------|--|
| aoiimg | yes/no |
| aoipro | yes/no |
| units | inch/mm |
| path | output path |
| scale_x: scale_y | 0.001 - 9.99 |
| anchor_ mode | zero/center/other |
| target_ machine | PC14/ Inspire |
| break_surf | yes/no |
| break_arc | yes/no |
| break_sr | yes/no |
| break_ fsyms | yes/no |
| bound_ inspect | yes/no |
| min_brush | mils (default = 4 mil) |
| layers | string ; layer names separated by semicolons (;) |
| output_ names | string ; names of output files separated by semicolons (;) |

cdr_pan_down

| | |
|----------------|-----------------------------------|
| Command | cdr_pan_down |
| Group | Orbotech AOI Interface |
| Descr. | Pan the cdr graphic display down. |

| Parameter | Value |
|------------------|--------------|
| percent | 1.0 - 100.0 |

cdr_pan_left

| | |
|----------------|-----------------------------------|
| Command | cdr_pan_left |
| Group | Orbotech AOI Interface |
| Descr. | Pan the cdr graphic display left. |

| | |
|------------------|--------------|
| Parameter | Value |
| percent | 1.0 - 100.0 |

cdr_pan_right

| | |
|----------------|------------------------------------|
| Command | cdr_pan_right |
| Group | Orbotech AOI Interface |
| Descr. | Pan the cdr graphic display right. |

| | |
|------------------|--------------|
| Parameter | Value |
| percent | 1.0 - 100.0 |

cdr_pan_up

| | |
|----------------|---------------------------------|
| Command | cdr_pan_up |
| Group | Orbotech AOI Interface |
| Descr. | Pan the cdr graphic display up. |

| | |
|------------------|--------------|
| Parameter | Value |
| percent | 1.0 - 100.0 |

cdr_production

| | |
|----------------|-----------------------------------|
| Command | cdr_production |
| Group | Orbotech AOI Interface |
| Descr. | Set layer's production parameters |

| | |
|------------------|---------------------------|
| Parameter | Value |
| lyr_type | inner/outer/in_with_holes |

| | |
|-----------------|--|
| pattern | signal/pg/mixed/solder/laser_drl/photo_drl |
| polarity | positive / negative |

cdr_reg_point

| | |
|----------------|--|
| Command | cdr_reg_point |
| Group | Orbotech AOI Interface |
| Descr. | Sets a registration target for a CDRset of type cdr14. |

| | |
|------------------|--------------|
| Parameter | Value |
| x,y | coordinates |

cdr_reg_point_clear

| | |
|----------------|--|
| Command | cdr_reg_point_clear |
| Group | Orbotech AOI Interface |
| Descr. | Clears all registration target for a CDRset of type cdr14. |

| | |
|------------------|--------------|
| Parameter | Value |
| x,y | coordinates |

cdr_reg_point_del

| | |
|----------------|---|
| Command | cdr_reg_point_del |
| Group | Orbotech AOI Interface |
| Descr. | Deletes a registration target for a CDRset of type cdr14. |

| | |
|------------------|--------------|
| Parameter | Value |
| x,y | coordinates |

cdr_reload_config

| | |
|----------------|---|
| Command | cdr_reload_config |
| Group | PC/I Interface |
| Descr. | Reread cdr14.ini file and the environment variables |

cdr_rename_sets

| | |
|----------------|--|
| Command | cdr_rename_sets |
| Group | PC/I Interface |
| Descr. | The command is used for renaming cdr14-sets. |

| Parameter | Value |
|--------------------|----------------------|
| layer | layer name |
| current_set | An existing set name |
| new_set | A new set name |

cdr_resolution

| | |
|----------------|-------------------------------|
| Command | cdr_resolution |
| Group | Orbotech AOI Interface |
| Descr. | Set AOI inspection resolution |

| Parameter | Value |
|-------------------|---|
| resolution | 0 denotes that resolution will be automatically selected by the AOI Manager according to layer characteristics. |

cdr_rule_file

| | |
|----------------|---|
| Command | cdr_rule_file |
| Group | Orbotech AOI Interface |
| Descr. | Set rule file to be used by AOI Manager to complete setup |

| Parameter | Value |
|------------------|--|
| rule_file | existing rule file name, listed in rules_list |

cdr_scanner_align_target_add

| | |
|----------------|-------------------------------------|
| Command | cdr_scanner_align_target_add |
| Group | Orbotech AOI Interface |
| Descr. | Adds Scanner Alignment Target. |

| | |
|------------------|------------------------|
| Parameter | Value |
| x,y | legal coordinate value |

cdr_scanner_align_target_clear

| | |
|----------------|-----------------------------------|
| Command | cdr_scn_align_target_clear |
| Group | Orbotech AOI Interface |
| Descr. | Clears Scanner Alignment Target. |

| | |
|------------------|------------------------|
| Parameter | Value |
| x,y | legal coordinate value |

cdr_scanner_align_target_del

| | |
|----------------|-------------------------------------|
| Command | cdr_scanner_align_target_del |
| Group | Orbotech AOI Interface |
| Descr. | Deletes Scanner Alignment Target. |

| | |
|------------------|------------------------|
| Parameter | Value |
| x,y | legal coordinate value |

cdr_set_apr

| | |
|----------------|---|
| Command | cdr_set_apr |
| Group | Orbotech AOI Interface |
| Descr. | Set Orbotech AOI Pads/Holes/Clearances Parameters |

| | |
|------------------|--------------|
| Parameter | Value |
|------------------|--------------|

| | |
|--|-----------------------|
| type | pads/holes/clearances |
| apr1 through apr8 | existing symbol names |

cdr_set_area

| | |
|----------------|--|
| Command | cdr_set_area |
| Group | Orbotech AOI Interface |
| Descr. | In Auto mode, select the steps to be inspected for the creation of inspection area. In Manual mode, manually define the inspection area by supplying two corners. |

| Parameter | Value |
|------------------------------|------------------------------------|
| Mode | Auto or Manual |
| Auto mode | |
| steps | Step names, separated by ';'. |
| margin_x | 0.0 - 200.0 mil |
| margin_y | 0.0 - 200.0 mil |
| Manual mode | |
| x1,y1 x2,y2 | Corner measurements in Manual mode |

cdr_set_area_auto

| | |
|----------------|---|
| Command | cdr_set_area_auto |
| Group | PC/I Interface |
| Descr. | Manually select the steps to be inspected, for the creation of inspection area. |

| Parameter | Value |
|------------------------|---|
| steps | step names, separated by semicolon ';' - steps to be used for the creation of the inspection area |
| margin_x | 0.0 - 100.0 mil - width area-margin |
| margin_y | 0.0 - 100.0 mil - height area-margin |
| inspected_steps | step names, separated by semicolon ';' - steps which actually are relevant for the inspection |

cdr_set_display_profile

| | |
|----------------|--------------------------------|
| Command | cdr_set_display_profile |
| Group | Orbotech AOI Interface |
| Descr. | Sets display profile mode. |

| Parameter | Value |
|----------------|--------|
| display | no/yes |

cdr_set_display_sr

| | |
|----------------|---------------------------|
| Command | cdr_set_display_sr |
| Group | Orbotech AOI Interface |
| Descr. | Sets display-sr mode. |

| Parameter | Value |
|----------------|--------|
| display | no/yes |

cdr_set_flow_entry_status

| | |
|----------------|---|
| Command | cdr_set_flow_wntry_status |
| Group | Orbotech AOI Interface |
| Descr. | The command is used for finding the red/green status of a flow stage. |

| Parameter | Value |
|----------------|--------|
| display | no/yes |

cdr_set_graphic_cursor

| | |
|----------------|-------------------------------|
| Command | cdr_set_graphic_cursor |
| Group | Orbotech AOI Interface |
| Descr. | Sets graphic_cursor mode. |

| | |
|------------------|---------------------|
| Parameter | Value |
| mode | regular/full-screen |

cdr_set_hole_clr

| | |
|----------------|---|
| Command | cdr_set_hole_clr |
| Group | Orbotech AOI Interface |
| Descr. | In CDRsets of type cdr14, defines up to 8 holes or clearances that appear in the holes/clearances list. |

| | |
|------------------|--|
| Parameter | Value |
| | Existing symbol names. Ex: Apr1 through Apr8 |

cdr_set_multi_layer

| | |
|----------------|----------------------------|
| Command | cdr_set_multi_layer |
| Group | Orbotech AOI Interface |
| Descr. | Sets multi-layer mode. |

| | |
|------------------|--------------|
| Parameter | Value |
| mode | regular/many |

cdr_set_output_layer

| | |
|----------------|---|
| Command | cdr_set_output_layer |
| Group | Orbotech AOI Interface |
| Descr. | Select a layer to be output. Rename the output file if going to aoiprogram/aoiimg output. |

| | |
|---------------------------|---|
| Parameter | Value |
| output_ format | prog_img, opfx |
| job | new job name |
| lyr | original layer name |
| file_name | new layer name Output file name will be: <new_job_name> @ <new_layer_name> |

cdr_set_pad

| | |
|----------------|--|
| Command | cdr_set_pad |
| Group | Orbotech AOI Interface |
| Descr. | In CDRsets of type cdr14, defines up to 8 pads that appear in pads list. |

| | |
|------------------|--|
| Parameter | Value |
| | Existing symbol names. Ex: Apr1 through Apr8 |

cdr_set_popview_connectors

| | |
|----------------|-----------------------------------|
| Command | cdr_set_popview_connectors |
| Group | Orbotech AOI Interface |
| Descr. | Sets popview_connectors mode. |

| Parameter | Value |
|------------------|--------------|
| mode | show/hide |

cdr_set_stage

| | |
|----------------|--|
| Command | cdr_set_stage |
| Group | Orbotech AOI Interface |
| Descr. | Select a production stage for which the layer should be inspected, |

| Parameter | Value |
|----------------------|--|
| stage | stage name (bare_copper, laser_drill etc.) |
| drill | name of drill layer(s) which drills the layer |
| priority | 1-10 (1 = high); processing priority for the AOI manager |
| copper_weight | for selection of etch (optional.) |
| etch | etch value |
| classes | class file name |
| material | panel material (optional) |
| panel_thick | panel thickness (optional) |

cdr_set_step

| | |
|----------------|------------------------|
| Command | cdr_set_step |
| Group | Orbotech AOI Interface |
| Descr. | Sets the current step. |

| Parameter | Value |
|------------------|------------------------------|
| job | existing job name |
| step | existing step name |
| set_name | which cdr set to make active |

cdr_set_units

| | |
|----------------|---------------------------------|
| Command | cdr_set_units |
| Group | Orbotech AOI Interface |
| Descr. | Sets the current working units. |

| | |
|------------------|--------------|
| Parameter | Value |
| units | inch,mm |

cdr_set_width_mode

| | |
|----------------|---------------------------|
| Command | cdr_set_width_mode |
| Group | Orbotech AOI Interface |
| Descr. | Sets width mode. |

| | |
|------------------|----------------|
| Parameter | Value |
| mode | on/outline/off |

cdr_spacing

| | |
|----------------|---|
| Command | cdr_spacing |
| Group | Orbotech AOI Interface |
| Descr. | Set Orbotech AOI Nominal and Minimal Spacing Parameters |

| | |
|------------------|------------------|
| Parameter | Value |
| nom_space | as in line width |
| min_space | as in line width |

cdr_stage_classes

| | |
|----------------|--|
| Command | cdr_stage_classes |
| Group | Orbotech AOI Interface |
| Descr. | Set Orbotech AOI Class Names for Production Stages NOTE: This command receives more than one class name. PC39 rest to one class only is validated in the following routine. Supply for each stage a list of class names (separated by ';'). NOTE: Stage is identified not by name, but by its index in the available stages list!!! |

| | |
|---------------------------|---|
| Parameter | Value |
| stage1 ... stage10 | stageX through stageY list of classes for each stage, separated by ',' |

cdr_stage_etch

| | |
|----------------|--|
| Command | cdr_stage_etch |
| Group | Orbotech AOI Interface |
| Descr. | Set Orbotech AOI Etch Factor for the Production Stages |

| | |
|-------------------|--|
| Parameter | Value |
| etch | -255 mil to + 255 mil |
| use-config | yes/no stage X through stageY, as defined by cdr14_work_stage |

cdr_stage_pc14_register

| | |
|----------------|---|
| Command | cdr_stage_pc14_register |
| Group | Orbotech AOI Interface |
| Descr. | Set used pc14 table for production stage(s) |

| | |
|------------------|---|
| Parameter | Value |
| table | Defined pc14 table name. Basic pc14 table (24x36, 36x36 etc..). |

cdr_stage_v300_register

| | |
|----------------|--------------------------------|
| Command | cdr_stage_v300_register |
| Group | Orbotech AOI Interface |
| Descr. | Register board on v300 table |

| Parameter | Value |
|-----------------------------------|--|
| table | table name (standard/wide/large/extra_large) |
| pin1: pin2: | pin names |
| stage1.. stage10 | stage names |

cdr_table

| | |
|----------------|--|
| Command | cdr_table |
| Group | Orbotech AOI Interface |
| Descr. | Define the table to be used for layer inspection |

| Parameter | Value |
|--------------|--|
| table | table name (standard/wide/large/extra_large) |

cdr_target_db

| | |
|----------------|-----------------------------|
| Command | cdr_target_db |
| Group | Orbotech AOI Interface |
| Descr. | Set layer's target database |

| Parameter | Value |
|-----------------|--|
| arget_db | symbolic name of target database, as it appears in the db_dirs_list file. |

cdr_thickness_target_add

| | |
|----------------|---------------------------------|
| Command | cdr_thickness_target_add |
| Group | Orbotech AOI Interface |
| Descr. | Adds Thickness Target |

| Parameter | Value |
|------------|------------------------|
| x,y | legal coordinate value |

cdr_thickness_target_clear

| | |
|----------------|-----------------------------------|
| Command | cdr_thickness_target_clear |
| Group | Orbotech AOI Interface |
| Descr. | Clears Thickness Target |

| Parameter | Value |
|------------|------------------------|
| x,y | legal coordinate value |

cdr_thickness_target_delete

| | |
|----------------|------------------------------------|
| Command | cdr_thickness_target_delete |
| Group | Orbotech AOI Interface |
| Descr. | Deletes Thickness Target |

| Parameter | Value |
|------------|------------------------|
| x,y | legal coordinate value |

cdr_tooling_target

| | |
|----------------|--|
| Command | cdr_tooling_target |
| Group | Orbotech AOI Interface |
| Descr. | Set Tooling Target (i.e AOI datum point) |

| | |
|------------------|-------------------------|
| Parameter | Value |
| x,y | legal coordinate number |

cdr_tooling_target_clear

| | |
|----------------|---|
| Command | cdr_tooling_target_clear |
| Group | Orbotech AOI Interface |
| Descr. | Deletes all tooling targets for a CDRset of type cdr14. |

| | |
|------------------|-------------------------|
| Parameter | Value |
| x,y | legal coordinate number |

cdr_tooling_target_del

| | |
|----------------|--|
| Command | cdr_tooling_target_del |
| Group | Orbotech AOI Interface |
| Descr. | Deletes a tooling target for a CDRset of type cdr14. |

| | |
|------------------|-------------------------|
| Parameter | Value |
| x,y | legal coordinate number |

cdr_toolset

| | |
|----------------|--|
| Command | cdr_toolset |
| Group | Orbotech AOI Interface |
| Descr. | Set Alignment acc. to predefined toolset |

| | |
|------------------|---|
| Parameter | Value |
| number | some integer number stage1 through stage10 (as defined by set_work_stages) |

cdr_unalign

| | |
|----------------|-------------------------------|
| Command | cdr_unalign |
| Group | Orbotech AOI Interface |
| Descr. | Unalign all production stages |

cdr_undo

| | |
|----------------|---|
| Command | cdr_undo |
| Group | Orbotech AOI Interface |
| Descr. | Undo last inspection area / exclusion zone / alignment target operation |

cdr_vrs_target_add

| | |
|----------------|---------------------------|
| Command | cdr_vrs_target_add |
| Group | Orbotech AOI Interface |
| Descr. | add VRS target |

| | |
|------------------|-------------------------|
| Parameter | Value |
| x,y | legal coordinate number |

cdr_vrs_target_clear

| | |
|----------------|--------------------------------|
| Command | cdr_vrs_target_clear |
| Group | Orbotech AOI Interface |
| Descr. | Delete all layer's VRS targets |

cdr_vrs_target_del

| | |
|----------------|---------------------------|
| Command | cdr_vrs_target_del |
| Group | Orbotech AOI Interface |
| Descr. | Delete VRS target |

| | |
|------------------|-------------------------|
| Parameter | Value |
| x,y | legal coordinate number |

cdr_work_layer

| | |
|----------------|--------------------------------------|
| Command | cdr_work_layer |
| Group | Orbotech AOI Interface |
| Descr. | Assigns the Orbotech AOI work layer. |

| | |
|------------------|------------------------------|
| Parameter | Value |
| layer | name of layer |
| set_name | which cdr set to make active |

cdr_work_stage

| | |
|----------------|----------------------------------|
| Command | cdr_work_stage |
| Group | Orbotech AOI Interface |
| Descr. | Sets Orbotech AOI working stages |

| | |
|-----------------------------|--|
| Parameter | Value |
| Stage 1 thru Stage 10 | A predefined workstage name as it appears in the cdr configuration file. |

cdr_zone_circ

| | |
|----------------|-------------------------------|
| Command | cdr_zone_circ |
| Group | Orbotech AOI Interface |
| Descr. | Add a circular Exclusion Zone |

| | |
|-------------------------|-------------------------------|
| Parameter | Value |
| duplicate | yes/no |
| x1,y1, x2,y2 | legal coordinate value |
| type | legal zone type Default = ALL |

cdr_zone_poly_add_seg

| | |
|----------------|---------------------------------|
| Command | cdr_zone_poly_add_seg |
| Group | Orbotech AOI Interface |
| Descr. | Add a segment to polygonal zone |

| | |
|------------------|------------------------|
| Parameter | Value |
| x,y | legal coordinate value |

cdr_zone_poly_close

| | |
|----------------|----------------------------|
| Command | cdr_zone_poly_close |
| Group | Orbotech AOI Interface |
| Descr. | Close a polygonal zone |

| | |
|------------------|--------------|
| Parameter | Value |
| | none |

cdr_zone_poly_start

| | |
|----------------|----------------------------|
| Command | cdr_zone_poly_start |
| Group | Orbotech AOI Interface |
| Descr. | Start a polygonal zone |

| | |
|------------------|-------------------------------|
| Parameter | Value |
| duplicate | yes/no |
| x,y | legal coordinate value |
| type | legal zone type Default = ALL |

cdr_zone_rect

| | |
|----------------|----------------------------------|
| Command | cdr_zone_rect |
| Group | Orbotech AOI Interface |
| Descr. | Add a rectangular Exclusion Zone |

| | |
|------------------|--|
| Parameter | Value |
| | duplicate: yes/no x1,y1,x2,y2: legal coordinate value type: legal zone type |
| type | legal zone type Default = ALL |

cdr_zoom_area

| | |
|----------------|----------------------|
| Command | cdr_zoom_area |
|----------------|----------------------|

| | |
|---------------|---------------------------------------|
| Group | Orbotech AOI Interface |
| Descr. | Zoom the display to a specified area. |

| Parameter | Value | Comment |
|------------------|-------------------|----------------|
| x1,y1 | legal coordinates | first corner |
| x2,y2 | legal coordinates | second corner |

cdr_zoom_back

| | |
|----------------|---|
| Command | <code>cdr_zoom_back</code> |
| Group | Orbotech AOI Interface |
| Descr. | Zoom the display back to previous zoom. |

cdr_zoom_home

| | |
|----------------|----------------------------|
| Command | <code>cdr_zoom_home</code> |
| Group | Orbotech AOI Interface |
| Descr. | Zoom the display home. |

cdr_zoom_in

| | |
|----------------|--------------------------|
| Command | <code>cdr_zoom_in</code> |
| Group | Orbotech AOI Interface |
| Descr. | Zoom the display in. |

cdr_zoom_out

| | |
|----------------|---------------------------|
| Command | <code>cdr_zoom_out</code> |
| Group | Orbotech AOI Interface |
| Descr. | Zoom the display out. |

cdr14_add_aoi_pan_pcb

Obsolete. Use `cdr_add_aoi_pan_pcb`

cdr14_add_aoi_pan_rpcb

Obsolete. Use `cdr_add_aoi_pan_rpcb`

cdr14_affected_layer

Obsolete. Use `cdr_affected_layer`

cdr14_align_target_add

Obsolete. Use `cdr_align_target_add`

cdr14_align_target_clear

Obsolete. Use `cdr_align_target_clear`

cdr14_align_target_del

Obsolete. Use `cdr_align_target_del`

cdr14_aoiprog_in

Obsolete. Use `cdr_aoiprog_in`

cdr14_auto_zone

Obsolete. Use `cdr_auto_zone`

cdr14_change_zone_type

Obsolete. Use `cdr_change_zone_type`

cdr14_clear_panelization

Obsolete. Use `cdr_clear_panelization`

cdr14_clear_zones

Obsolete. Use `cdr_clear_zones`

cdr14_close

Obsolete. Use `cdr_close`

cdr14_copy_set

Obsolete. Use `cdr_copy_set`

cdr_del_aoi_pan_pcb

Obsolete. Use `cdr_del_aoi_pan_pcb`

cdr_del_aoi_pan_rpcb_comm

Obsolete. Use `cdr_del_aoi_pan_rpcb_comm`

cdr14_delete_sets

Obsolete. Use `cdr_delete_sets`

cdr14_delete_zone

Obsolete. Use `cdr_delete_zone`

cdr14_drill_layer

Obsolete. Use `cdr_drill_layer`

cdr14_line_width

Obsolete. Use `cdr_line_width`

cdr14_manual_align

Obsolete. Use `cdr_manual_align`

cdr14_multi_line_width

Obsolete. Use `cdr_multi_line_width`

cdr14_output

Obsolete. Use `cdr_output`

cdr14_pan_down

Obsolete. Use `cdr_pan_down`

cdr14_pan_left

Obsolete. Use `cdr_pan_left`

cdr14_pan_right

Obsolete. Use `cdr_pan_right`

cdr14_pan_up

Obsolete. Use `cdr_pan_up`

cdr14_set_apr

Obsolete. Use `cdr_set_apr`

cdr14_set_area

Obsolete. Use `cdr_set_area`

cdr14_set_display_profile

Obsolete. Use `cdr_set_display_profile`

cdr14_set_display_sr

Obsolete. Use `cdr_set_display_sr`

cdr14_set_graphic_cursor

Obsolete. Use `cdr_set_graphic_cursor`

cdr14_set_multi_layer

Obsolete. Use `cdr_set_multi_layer`

cdr14_set_popview_connectors

Obsolete. Use `cdr_set_popview_connectors`

cdr14_set_step

Obsolete. Use `cdr_set_step`

cdr14_set_units

Obsolete. Use `cdr_set_units`

cdr14_set_width_mode

Obsolete. Use `cdr_set_width_mode`

cdr14_spacing

Obsolete. Use `cdr_spacing`

cdr14_stage_classes

Obsolete. Use `cdr_stage_classes`

cdr14_stage_etch

Obsolete. Use `cdr_stage_etch`

cdr14_tooling_target

Obsolete. Use `cdr_tooling_target`

cdr14_toolset

Obsolete. Use `cdr_toolset`

cdr14_work_layer

Obsolete. Use `cdr_work_layer`

cdr14_work_stage

Obsolete. Use `cdr_work_stage`

cdr14_zone_circ

Obsolete. Use `cdr_zone_circ`

cdr14_zone_poly_add_seg

Obsolete. Use `cdr_zone_poly_add_seg`

cdr14_zone_poly_close

Obsolete. Use `cdr_zone_poly_close`

cdr14_zone_poly_start

Obsolete. Use `cdr_zone_poly_start`

cdr14_zone_rect

Obsolete. Use `cdr_zone_rect`

cdr14_zoom_area

Obsolete. Use `cdr_zoom_area`

cdr14_zoom_back

Obsolete. Use `cdr_zoom_back`

cdr14_zoom_home

Obsolete. Use `cdr_zoom_home`

cdr14_zoom_in

Obsolete. Use `cdr_zoom_in`

cdr14_zoom_out

Obsolete. Use `cdr_zoom_out`

chain_add

| | |
|----------------|---|
| Command | <code>chain_add</code> |
| Group | Graphic Editor |
| Descr. | The routine is used for adding a new rout chain. The selected features are taken to be part of the chain. |

| Parameter | Value |
|----------------------------|---------------------------------------|
| layer | Existing rout layer |
| chain | Chain ≥ 1 |
| size | Tool size (inch) |
| comp | None, left, right - Rout compensation |
| flag | Special rout flag ≥ 0 |
| feed | Feed Rate ≥ 0 |
| speed | Spindle speed ≥ 0 |
| first | First f |
| chng_ direction | If to change dir of first f |

chain_add_pilot

| | |
|----------------|--|
| Command | <code>chain_add_pilot</code> |
| Group | Graphic Editor |
| Descr. | The routine is used for adding pilot holes in a list of rout chains. |

| Parameter | Value |
|----------------------------|--|
| layer | Existing rout layer name |
| pilot size | Tool size in inch |
| offset_ along | Tool offset along the chain (mil/mk) (+) -> Offset along the chain direction (-) -> Opposite |
| offset_ perpend | Tool offset perpendicular to the chain (mil/mk) (+) -> Right offset from chain direction (-) -> Left offset from chain direction |

chain_append

| | |
|----------------|--|
| Command | chain_append |
| Group | Graphic Editor |
| Descr. | The routine is used for a appending a new rout chain. The selected features are taken to be part of the chain. |

| | |
|------------------|----------------------|
| Parameter | Value |
| layer | Existing rout layer |
| after | Feature to add after |

chain_cancel

| | |
|----------------|---|
| Command | chain_cancel |
| Group | Graphic Editor |
| Descr. | The routine is used for canceling a list of rout chains. If there are selected features then only the selected ones that belongs to the specific chains will be deleted |

| | |
|--|----------------------------------|
| Parameter | Value |
| layer | Existing rout layer name |
| renumber_ sequential ly | Values = [no/yes] (default = no) |

chain_change

| | |
|----------------|--|
| Command | chain_change |
| Group | Graphic Editor |
| Descr. | The routine is used for changing the parameters of an existing rout chain. |

| | |
|------------------|---------------------------------------|
| Parameter | Value |
| layer | Existing rout layer |
| size | Tool size (inch) |
| comp | None, left, right - Rout compensation |
| flag | Special rout flag >= 0 |
| feed | Feed Rate >= 0 |
| speed | Spindle speed >= 0 |

chain_change_dir

| | |
|----------------|--|
| Command | chain_change_dir |
| Group | Graphic Editor |
| Descr. | The routine is used for changing the direction of a chain. |

| | |
|------------------|--------------------------|
| Parameter | Value |
| layer | Existing rout layer name |

chain_change_num

| | |
|----------------|--|
| Command | chain_change_num |
| Group | Graphic Editor |
| Descr. | The routine is used for changing the chain number. |

| | |
|-------------------------------|----------------------------------|
| Parameter | Value |
| layer | Existing rout layer name |
| chain | Chain >= 1 |
| new_chain | Chain >= 1 |
| renumber_ sequentially | Values = [no/yes] (default = no) |

chain_del_pilot

| | |
|----------------|--|
| Command | chain_del_pilot |
| Group | Graphic Editor |
| Descr. | The routine is used for deleting pilot holes in a list of rout chains. |

| | |
|------------------|--------------------------|
| Parameter | Value |
| layer | Existing rout layer name |

chain_insert

| | |
|----------------|---|
| Command | chain_insert |
| Group | Graphic Editor |
| Descr. | The routine is used for inserting rout chains into others |

| | |
|--|----------------------------------|
| Parameter | Value |
| layer | Existing rout layer name |
| renumber_ sequential ly | Values = [no/yes] (default = no) |

chain_list_add

| | |
|----------------|--|
| Command | chain_list_add |
| Group | Graphic Editor |
| Descr. | The routine is used for adding a chain number to a list, that is used by some of the other 'chain' line mode commands (e.g: chain_cancel , chain_change). |

| | |
|------------------|--------------|
| Parameter | Value |
| chain | Chain >= 1 |

chain_list_reset

| | |
|----------------|---|
| Command | chain_list_reset |
| Group | Graphic Editor |
| Descr. | The routine is used for resetting the 'chains' list, that is used by some of the other 'chain' line mode commands (e.g chain_cancel , chain_change). |

chain_merge

| | |
|-----------------|--|
| Command: | chain_merge |
| Group | Graphic Editor |
| Descr. | The routine is used for merging a list of rout chains. |

| | |
|--|----------------------------------|
| Parameter | Value |
| layer | Existing rout layer name |
| renumber_ sequential ly | Values = [no/yes] (default = no) |

chain_pocket

| | |
|----------------|--|
| Command | chain_pocket |
| Group | Graphic Editor |
| Descr. | The routine is used for setting the pocket of a chain. |

| Parameter | Value |
|-------------------|--|
| layer | Existing rout layer |
| mode | Pocket mode (delete/concentric) |
| size | Tool size for pocketing (current units) |
| feed | Feed Rate >= 0 |
| overlap | Overlap size (current units) |
| pocket_dir | Sets pocket direction (Standard; Opposite) |

chain_set_plunge

| | |
|----------------|--|
| Command | chain_set_plunge |
| Group | Graphic Editor |
| Descr. | The routine is used for setting the plunge of a chain. |

| Parameter | Value |
|-----------------|---|
| layer | Existing rout layer name |
| type | Corner/inline/open |
| mode | According to type straight / chamfer / arc |
| inl_mode | straight; overlap; arc; diag; diag_ang (only for type = inline) |
| len1 | Length of offsets (inch) |
| len2 | Length of offsets (inch) |
| len3 | Length of offsets (inch) |
| len4 | Length of offsets (inch) |
| val1 | Length of offsets (inch) |
| val2 | Length of offsets (inch) |
| ang1 | Angle (grad) |
| ang2 | Angle (grad) |
| ifeed | Plunge Feed Rate >= 0 |
| ofeed | Cutoff Feed Rate >= 0 |

| | |
|-----------------------|---|
| start_of_chain | Defines whether the start of the chain moves to the plunge Yes = Start of chain moves to the plunge No = Start of chain does not move to the plunge |
| apply_to | Defines the connected feature sequences to which the plunge will be added. Possible values include: all/closed/closed_int/closed_ext |

chain_split

| | |
|-----------------|---|
| Command: | chain_split |
| Group | Graphic Editor |
| Descr. | The command is used for splitting a selected chain into sequences of connected features and creation of a separate chain for each sequence. |

| Parameter | Value |
|------------------------------|--|
| layer | Existing rout layer name |
| chain | chain number (Must be 1 or larger) |
| mode | subchains - splitting sequences of connected features and creating a separate chain for each sequence from_feat - splitting into two chains where the second chain begins from the selected one extract - splitting into two chains where second chain includes all selected features |
| renumber_sequentially | Values = [no/yes] (default = no) |

change_arc_center

| Command | change_arc_center |
|--------------------|--|
| Group | Graphic Editor |
| Description | Changes arc center without changing its start/end point. |
| Parameter | Value |
| x, y | legal coordinates |

change_arc_radius

| | |
|--------------------|--|
| Command | change_arc_radius |
| Group | Graphic Editor |
| Description | Transformation of an arc by changing its radius. |

| | |
|---------------------|-------------------------------------|
| Parameter | Value |
| radius | arc radius positive value (inch/mm) |
| keep_tangent | Values: No (default), Yes |

change_edge

| | |
|-----------------|-------------------------------------|
| Command: | change_edge |
| Group | Graphic Editor |
| Descr. | Transformation of a contour vertex. |

| | |
|-----------------------|--|
| Parameter | Value |
| edge_x, edge_y | Legal coordinates (inches/mm) - coordinates of a point on edge (before change). |
| new_type | Segment / curve - new type of edge. |
| new_center_xy | Legal coordinates (inches/mm) - new center's coordinates (used only if edge is a curve). |
| new_cw | Clockwise / counter clockwise - new direction of edge (used only if edge is a curve). |

change_step_dependency

| | |
|-----------------|----------------------------------|
| Command: | change_step_dependency |
| Group | Engineering Toolkit (Job Matrix) |
| Descr. | |

| Parameter | Value |
|------------------|--------------------------|
| job | Legal job name |
| step | Legal step name |
| operation | Values: release, restore |

check_inout

| | |
|-----------------|--|
| Command | check_inout |
| Group | Locks Manager |
| Descr. | Used for Checking In/out elements |
| Response | If mode = test: no - not checked out yes <user> - checked out by user |

| Parameter | Value |
|------------------|---|
| mode | In, out, test |
| type | Job, step, layer, symbol, stack, wheel, matrix, form, flow, font template, path |
| job | Job name |
| step | Step name - job must be defined |
| layer | Layer name - job and step must be defined |
| symbol | Symbol name - job must be defined |
| stackup | Stackup name - job must be defined |
| matrix | Matrix name - job must be defined |
| wheel | Wheel name - job must be defined |
| form | Form name |
| flow | Flow name |
| template | Template name |
| font | Font name |
| path | Any path - can be used by user |

check_resized_sym

| | |
|--------------------|---|
| Command | check_resized_sym |
| Group | Graphic Editor |
| Description | <p>The Check resized symbols procedure checks that a base symbol (construct or construct+X), after being resized by a factor (YYY), graphically matches the resized symbol (construct_inc_YYY or construct+X_inc_YYY). If the resized symbol does not match the base symbol, or the base symbol does not exist (i.e. is not found in the list of defined symbols), then the resized symbol is given a prefix (PPPconstruct_inc_YYY or PPPconstruct+X_inc_YYY).</p> <p>Onscreen, in the Engineering Toolkit, the default prefix is ____ (for menu activation). The procedure checks all symbols, or only selected symbols.</p> |
| Response | |
| Parameter | Value |
| job | Name of currently open job |
| prefix | Prefix to be added to non-matching resized symbols Default = ____ |
| out_file | Legal or empty file path. If out_file is not defined, renamed symbols list will be written to the log file. |
| write_mode | replace - replace existing out_file append - add to the end of an existing file |

checkin_group_comm

| | |
|--------------------|---|
| Command | checkin_group_comm |
| Group | Graphic Editor |
| Description | Checks in Orbotech DI license. Used by the DI output script |
| Response | |

checkout_group_comm

| | |
|--------------------|--|
| Command | checkout_group_comm |
| Group | Graphic Editor |
| Description | Checks out Orbotech DI license. Used by the DI output script |
| Response | |

chklist_cadd

| | |
|----------------|-------------------------------|
| Command | chklist_cadd |
| Group | Graphic Editor |
| Descr. | Adds an action to a checklist |

| | |
|------------------|---|
| Parameter | Value |
| chklist | Entity name |
| action | The name of the action (see <i>chklist_single</i>) |
| erf | The name of the ERF model |
| params | A string representing the parameters of the check |
| row | The row to insert the check (0 = last) |

chklist_cdel

| | |
|----------------|------------------------------------|
| Command | chklist_cdel |
| Group | Graphic Editor |
| Descr. | Deletes an action from a checklist |

| | |
|------------------|---------------|
| Parameter | Value |
| chklist | Entity name |
| nact | Action number |

chklist_close

| | |
|----------------|-------------------------------|
| Command | chklist_close |
| Group | Graphic Editor |
| Descr. | Closes an action display page |

| | |
|------------------|--|
| Parameter | Value |
| chklist | Entity name |
| mode | Hide - Only hide the page Destroy - Destroys the displayed page Unload_res - destroy the displayed page and free all memory occupied by results. Note: You must save the job if you wish to store the checklist results. Otherwise after this command is executed with mode= unload_res, checklist results will be lost. |

chklist_create

| | |
|-----------------|--|
| Command | chklist_create |
| Group | Graphic Editor |
| Descr. | Creates a new checklist entity. If a checklist by this name exists, it is overwritten. |
| Response | None |

| | |
|------------------|--------------|
| Parameter | Value |
| chklist | Entity name |

chklist_create_lyrs

| | |
|----------------|--|
| Command | chklist_create_lyrs |
| Group | Graphic Editor |
| Descr. | Creates measurements and mark layers for the given checklist |

| | |
|------------------|--|
| Parameter | Value |
| chklist | Entity name |
| severity | The severity of the measure - (3 = all)(0 = red) |
| suffix | A suffix string - Suffix max length = 10 |

chklist_cupd

| | |
|----------------|--|
| Command | chklist_cupd |
| Group | Graphic Editor |
| Descr. | Updates the parameters of an action in a checklist |

| | |
|------------------|---|
| Parameter | Value |
| chklist | Entity name |
| nact | Action number |
| params | A string - representing the parameters of the check |
| mode | Regular or online |

chklist_delete

| | |
|----------------|-------------------------------------|
| Command | chklist_delete |
| Group | Graphic Editor |
| Descr. | Deletes the checklist from the step |

| | |
|------------------|--------------|
| Parameter | Value |
| chklist | Entity name |

chklist_erf

| | |
|----------------|---|
| Command | chklist_erf |
| Group | Graphic Editor |
| Descr. | Updates the ERF model of an action in a checklist |

| Parameter | Value |
|----------------|---------------------------|
| chklist | Entity name |
| nact | Action number |
| erf | The name of the ERD model |

chklist_erf_range

| | |
|----------------|--|
| Command | chklist_erf_range |
| Group | Graphic Editor |
| Descr. | Updates one range in an ERF model of an action in a checklist. The changes applied in this command affect the display of the current results but is not saved on disk. |

| Parameter | Value |
|------------------|---------------------------------------|
| chklist | Entity name |
| nact | Action number |
| erf | The name of the ERF model |
| category | The name of the category |
| range | The values to use in a (n;n;n) format |
| redisplay | |

chklist_from_lib

| | |
|----------------|---|
| Command | chklist_from_lib |
| Group | Graphic Editor |
| Descr. | Copies a checklist from the library to the job (entity must not exist in the job) |

| Parameter | Value |
|----------------|-------------|
| chklist | Entity name |

chklist_get_attr

| | |
|-----------------|--|
| Command | chklist_get_attr |
| Group | Graphic Editor |
| Descr. | Returns the text value of a report attribute |
| Response | Text attribute value |

| | |
|------------------|-----------------------|
| Parameter | Value |
| chklist | Entity name |
| nact | Action number |
| attr | Name of the attribute |

chklist_hist_close

| | |
|----------------|--|
| Command | chklist_hist_close |
| Group | Graphic Editor |
| Descr. | Closes the histogram of an action in a checklist |

| | |
|------------------|---------------|
| Parameter | Value |
| chklist | Entity name |
| nact | Action number |

chklist_hist_show

| | |
|----------------|---|
| Command | chklist_hist_show |
| Group | Graphic Editor |
| Descr. | Shows the histogram of an action in a checklist |

| | |
|------------------|---------------|
| Parameter | Value |
| chklist | Entity name |
| nact | Action number |

chklist_next_meas

| | |
|----------------|---|
| Command | chklist_next_meas |
| Group | Graphic Editor |
| Descr. | Moves to the next measurement if one result viewer is open for an editor and a category is selected for this viewer. May be used to bind a hot key to the “--->” button of the result viewer. |

chklist_ol_upd

| | |
|----------------|---|
| Command | chklist_ol_upd |
| Group | Graphic Editor |
| Descr. | Updates the online range values for an action |

| | |
|------------------|--|
| Parameter | Value |
| chklist | Entity name |
| nact | Action number |
| range | The name of the range - e.g. p2p, p2c,... |
| value | The minimal value for alarm (-1 when the range should be unused) |

chklist_open

| | |
|----------------|---|
| Command | chklist_open |
| Group | Graphic Editor |
| Descr. | Opens an action display page (use after close with destroy) |

| | |
|------------------|--------------|
| Parameter | Value |
| chklist | Entity name |

chklist_pclear

| | |
|----------------|-------------------------|
| Command | chklist_pclear |
| Group | Graphic Editor |
| Descr. | clears the paste buffer |

chklist_pcopy

| | |
|----------------|--|
| Command | chklist_pcopy |
| Group | Graphic Editor |
| Descr. | Copies an action from the checklist to the paste buffer. |

| | |
|------------------|----------------------|
| Parameter | Value |
| chklist | Entity name |
| nact | The number of action |

chklist_ppaste

| | |
|----------------|---|
| Command | chklist_ppaste |
| Group | Graphic Editor |
| Descr. | Copies an action from the paste buffer to the checklist |

| | |
|------------------|--|
| Parameter | Value |
| chklist | Entity name |
| row | The row to insert the check - (0 = last) |

chklist_prev_meas

| | |
|----------------|---|
| Command | chklist_prev_meas |
| Group | Graphic Editor |
| Descr. | Moves to the previous measurement if one result viewer is open for an editor and a category is selected for this viewer. May be used to bind a hot key to the “<---” button of the result viewer. |

chklist_rename

| | |
|----------------|-----------------------|
| Command | chklist_rename |
| Group | Graphic Editor |
| Descr. | Renames a checklist |

| | |
|------------------|-----------------|
| Parameter | Value |
| chklist | Entity name |
| new name | New entity name |

chklist_report_cat

| | |
|----------------|--|
| Command | chklist_report_cat |
| Group | Graphic Editor |
| Descr. | reports_all_categories of a checklist to a file in the following format: <pre>.chklist <name> .action <name> .category <int_name> <screen_name> <n1> <n2> <n3> <n4> <n5>action <name> .category <int_name> <screen_name> <n1> <n2> <n3> <n4> <n5></pre> <int_name> and <screen_name> are surrounded by quotes <n1>..<n5> are the number of measurements in the red, yellow, green,... ranges. The file can be easily processed by awk, perl or any other tool to generate a user defined report |

| Parameter | Legal |
|-----------------|------------------|
| chklist | Entity name |
| out_file | Output file name |

chklist_reread

| | |
|----------------|--|
| Command | chklist_reread |
| Group | Graphic Editor |
| Descr. | Rereads a checklist to memory from disk (overwriting changes done in memory) |

| Parameter | Value |
|----------------|-------------|
| chklist | Entity name |

chklist_reread_all_erfs

| | |
|----------------|---|
| Command | chklist_reread_all_erfs |
| Group | Graphic Editor |
| Descr. | Description : Re-reads the ERF models of all external actions |

chklist_reread_erf

| | |
|----------------|---|
| Command | chklist_reread_erf |
| Group | Graphic Editor |
| Descr. | Re-reads the checklist action's ERF from the disk |

| Parameter | Value |
|----------------|----------------|
| chklist | checklist name |
| nact | action number |

chklist_res_close

| | |
|----------------|--|
| Command | chklist_res_close |
| Group | Graphic Editor |
| Descr. | Closes the results of an action in a checklist |

| Parameter | Value |
|----------------|---|
| chklist | Entity name |
| nact | Action number |
| mode | Close - action results are being unloaded from memory. Hide - result viewer gets hidden. |

chklist_res_del

| | |
|--------------------|---|
| Command | chklist_res_del |
| Group | Graphic Editor |
| Description | Delete action in DFM/DRC results viewer |

| Parameter | Value |
|----------------|---------------|
| chklist | Entity name |
| nact | Action number |

chklist_res_exp

| | |
|----------------|--|
| Command | chklist_res_exp |
| Group | Graphic Editor |
| Descr. | Exports the report of an action to a file or printer |

| Parameter | Value |
|----------------|---|
| chklist | Entity name |
| nact | Action number |
| source | All, report or attributes |
| dest | Printer or file |
| fname | Name of file to create file (in /genesis/tmp) |

chklist_res_goto_measure

| | |
|----------------|---|
| Command | chklist_res_goto_measure |
| Group | Graphic Editor |
| Descr. | Sets “current” measure of results viewer’s selected category (see chklist_res_sel_category). This is similar to manually setting measure index in the result viewer popup. |

| Parameter | Value |
|----------------|---|
| chklist | Entity name |
| nact | Action number |
| ind | Positive integer - index of measurement (1,2, ... n). |

chklist_res_ref

| | |
|--------------------|--------------------------------------|
| Command | chklist_res_ref |
| Group | Graphic Editor |
| Description | REF action in DFM/DRC results viewer |

| Parameter | Value |
|----------------|---------------|
| chklist | Entity name |
| nact | Action number |

chklist_res_sel_category

| | |
|----------------|--|
| Command | chklist_res_sel_category |
| Group | Graphic Editor |
| Descr. | Select a checklist's result category according to title or ERF name of category. Error is returned if no such category exists in action. |

| | |
|------------------|--|
| Parameter | Value |
| chklist | Entity name |
| nact | Action number |
| category | Entity name - title/ERF name of category to select (insensitive to case) |

chklist_res_sel_layer

| | |
|--------------------|---|
| Command | chklist_res_sel_layer |
| Group | Graphic Editor |
| Description | Select/Unselect a layer in the DFM/DRC results viewer |

| | |
|------------------|---|
| Parameter | Value |
| chklist | Entity name |
| nact | Action number |
| name | Entity name of layer to select/unselect |
| select | Yes, No |

chklist_res_set_cat_filter

| | |
|--------------------|--|
| Command | chklist_res_set_cat_filter |
| Group | Graphic Editor |
| Description | Select/Unselect a category filter string in DFM/DRC results viewer |

| | |
|------------------|---------------------------------------|
| Parameter | Value |
| chklist | Entity name |
| nact | Action number |
| filter | Category filter string (default "**") |

chklist_res_undo

| | |
|--------------------|---------------------------------------|
| Command | chklist_res_undo |
| Group | Graphic Editor |
| Description | Undo action in DFM/DRC results viewer |

| | |
|------------------|---------------|
| Parameter | Value |
| chklist | Entity name |
| nact | Action number |

chklist_res_update

| | |
|--------------------|---|
| Command | chklist_res_update |
| Group | Graphic Editor |
| Description | Update action in DFM/DRC results viewer |

chklist_res_set_severity

| | |
|----------------|--|
| Command | chklist_res_set_severity |
| Group | Graphic Editor |
| Descr. | Sets results viewer's current severity |

| Parameter | Value |
|-----------------|--|
| chklist | Entity name |
| nact | Action number |
| severity | 0,1,...(n-1) where 0 stands for the first severity option & (n-1) is the last - severity level |

chklist_res_show

| | |
|----------------|---|
| Command | chklist_res_show |
| Group | Graphic Editor |
| Descr. | Shows the results of an action in a checklist |

| Parameter | Value |
|----------------|-------------------------|
| chklist | Entity name |
| nact | Action number |
| x | x coordinate for window |
| y | y coordinate for window |
| w | Width for window |
| h | Height for window |

chklist_res_snapshot

| | |
|----------------|--|
| Command | chklist_res_snapshot |
| Group | Graphic Editor |
| Descr. | <p>Creates snapshot file(s) of the current measurement viewed in the checklist result viewer. Three files are created in the directory given by path:</p> <p style="padding-left: 40px;"><name>.txt - contains one line measurement info: chklist, act#, act, name, category, layer, x/y, size, sev level, ERF value</p> <p style="padding-left: 40px;"><name>.nte - contains a user defined note</p> <p style="padding-left: 40px;"><name>.xpm - contains the xpm graphic snapshot of the measurement</p> <p style="padding-left: 40px;"><name> = the last component of the path name</p> |

| Parameter | Value |
|-----------------|--|
| chklist | Name of checklist |
| nact | Action number (1..n) |
| mode | Acombination of txt; nte; xpm |
| note | A user given note Use ~ for a new line character Use ^ for comma (,) character |
| dir_path | Directory to write the files |

chklist_run

| | |
|----------------|---|
| Command | chklist_run |
| Group | Graphic Editor |
| Descr. | Runs all or part of the checklist actions |

| | |
|------------------|---|
| Parameter | Value |
| chklist | Entity name |
| nact | a - run all checks u - run out of date checks s - run selected checks |
| area | Global - all step area Local - only screen area Profile - only inside profile |

chklist_select_act

| | |
|----------------|--|
| Command | chklist_select_act |
| Group | Graphic Editor |
| Descr. | select/deselect an action of a checklist |

| | |
|------------------|---------------|
| Parameter | Value |
| chklist | Entity name |
| nact | Action number |
| select | Yes, No |

chklist_show

| | |
|----------------|--|
| Command | chklist_show |
| Group | Graphic Editor |
| Descr. | Shows the checklist page (Use after close with hide) |

| | |
|------------------|--------------|
| Parameter | Value |
| chklist | Entity name |

chklist_single

| | |
|----------------|---|
| Command | chklist_single |
| Group | Graphic Editor |
| Descr. | Pops up a single DFM or ANALYSIS window for operating an Analysis or DFM action NOT within a checklist. |

| | |
|------------------|---|
| Parameter | Value |
| action | Action name |
| show | Yes - display the screen No - do not display |

chklist_to_lib

| | |
|----------------|---|
| Command | chklist_to_lib |
| Group | Graphic Editor |
| Descr. | Copies a checklist from the job to the library (entity must not exist in the library) |

| | |
|------------------|--------------|
| Parameter | Value |
| chklist | Entity name |

chklist_upd_erf

| | |
|----------------|-------------------------------------|
| Command | chklist_to_lib |
| Group | Graphic Editor |
| Descr. | Updates the ERF models of an action |

| | |
|------------------|---------------|
| Parameter | Value |
| chklist | Entity name |
| nact | action number |

clb_add_line_point

| | |
|----------------|--|
| Command | clb_add_line_point |
| Group | Graphic Editor |
| Descr. | To create line bundle user need to define two polylines between which the bundle is added. This command adds the next point to the polyline. |

clb_change_line_widths

| | |
|----------------|---|
| Command | clb_change_line_widths |
| Group | Graphic Editor |
| Descr. | Changes the widths of the last closed guide line. |

| | |
|------------------|--------------|
| Parameter | Value |
| widths | |

clb_remove_line_point

| | |
|----------------|---|
| Command | clb_remove_line_point |
| Group | Graphic Editor |
| Descr. | To create line bundle user need to define two polylines between which the bundle is added. This command removes the last point to the polyline. |

clear_highlight

| | |
|----------------|--|
| Command | clear_highlight |
| Group | Graphic Editor |
| Descr. | Clears the features highlight display. |

clear_layers

| | |
|----------------|---------------------------------------|
| Command | clear_layers |
| Group | Graphic Editor |
| Descr. | Clears the display of all the layers. |

clip_area_end

| | |
|----------------|---|
| Command | clip_area_end |
| Group | Graphic Editor |
| Descr. | The command closes the clip area, and executes on the specified layers. |

| | |
|--------------------|--|
| Parameter | Value |
| layers_mode | layer_name - specified dest layer affected_layers - copy to all the affected layers |
| layer | Entity name - if (layers_mode = layer_name) |
| area | Manual, profile |
| area_type | Rectangle, polygon - if (area = manual) |
| inout | Inside, outside |
| contour_cut | Cut features touching border via contour operation or like lines, pads etc. |
| margin | In mils |

clip_area_strt

| | |
|----------------|-----------------------------------|
| Command | clip_area_strt |
| Group | Graphic Editor |
| Descr. | Command for starting a clip area. |

clip_area_xy

| | |
|----------------|---|
| Command | clip_area_xy |
| Group | Graphic Editor |
| Descr. | Command for adding a polygon/rectangle point. |

| | |
|------------------|------------------------|
| Parameter | Value |
| x, y | Legal x, y coordinates |

clipb_open_job

| | |
|---------------------------------|---|
| Command | clipb_open_job |
| Group | Engineering Toolkit |
| Description | The clipb_open_job command is used to open a job (reading it from the database into the memory) and change the clipboard view. |
| Parameter | Value |
| job | Existing job name |
| update____ clipboard | no - (default) does not update clipboard view_job - changes a clipboard to view the job entities (matrix, steps, symbols, etc.) new_window - opens the job in a separate clipboard window |

close_auto_panelize

| | |
|--------------------|---|
| Command | close_auto_panelize |
| Group | Panelization Package |
| Description | The close_auto_panelize command closes the Auto Panelization Manager window. |
| Parameter | Value |
| | |
| | |

close_flow

| | |
|----------------|---------------------|
| Command | close_flow |
| Group | Work Flows |
| Descr. | Closes a given flow |

| | |
|------------------|------------------|
| Parameter | Value |
| job | Name of the job |
| flow | Name of the flow |

close_form

| | |
|----------------|---------------------|
| Command | close_form |
| Group | Work Forms |
| Descr. | Closes a given form |

| | |
|------------------|------------------|
| Parameter | Value |
| job | Name of the job |
| form | Name of the form |

close_job

| | |
|----------------|---|
| Command | close_job |
| Group | Engineering Toolkit |
| Descr. | Used for closing a job in the memory (releasing the allocated memory and closing the editing session). If the job was changed in the memory, the changes will be lost. |

| | |
|------------------|--------------------------------|
| Parameter | Value |
| job | Name of an existing opened job |

close_toolkit

| | |
|----------------|---|
| Command | close_toolkit |
| Group | Engineering Toolkit |
| Descr. | Used for closing (killing) the GET process. |

| | |
|------------------|---|
| Parameter | Value |
| save_log | Yes - save log in logs dir No - doesn't save |

colors_change

| | |
|--------------------|---|
| Command | colors_change |
| Group | Graphic Editor |
| Description | The command is used for changing a color of a single plane. |
| Response | Previous color of the plane in rrggbb format. |
| Parameter | Description |
| Plane | Plane name from the list: bg,l1,l2,l3,l4,rb,hl,sl |
| color | New plane color in rrggbb format. Range - 000000 .. 999999 |

colors_restore

| | |
|--------------------|--|
| Command | colors_restore |
| Group | Graphic Editor |
| Description | The command is used to restore previously stored colors of all planes. |

colors_set

| | |
|----------------------------|---|
| Command | colors_set |
| Group | Graphic Editor |
| Command Description | The colors_set command is used for setting the user colors in system mode. You can switch between a user-saved color scheme and system color values. |
| Parameter | Value |
| mode | Sets user mode. Possible values: user , system , default . Default mode uses color scheme that is found (in order from first to last) in user/host/system . |

colors_store

| | |
|--------------------|---|
| Command | colors_store |
| Group | Graphic Editor |
| Description | The command is used for storing the current colors of all planes for future restorations. |

comp_atr_from_prop

| | |
|----------------|--|
| Command | comp_atr_from_prop |
| Group | Graphic Editor |
| Descr. | The command is valid only for component layers. It sets the attribute value according to a given property value. Properties are external values imported from the CAD system. They consist of a text value and a list of float values. |

| Parameter | Value |
|-------------------|---|
| side | Top, bottom or both |
| attribute | Name of an existing attribute |
| property | Name of an existing property |
| prop_index | 0 --> - text value 1-n --> - float value |
| prop_units | Inch or mm |
| overwrite | Yes or No |
| selected | Yes / No Yes - works only on selected components. No - work globally. |

comp_height_map

| | |
|-----------------|--|
| Command | comp_height_map |
| Group | Graphic Editor |
| Descr. | The command is valid only for component layers. It calculates and displays the height map for top, bottom or both component layers |
| Response | min_height max_height |

| Parameter | Value |
|-------------|---------------------|
| side | Top, bottom or both |

comp_hist_close

| | |
|----------------|---------------------------------------|
| Command | comp_hist_close |
| Group | Graphic Editor |
| Descr. | Closes component histogram of a layer |

| | |
|------------------|----------------------|
| Parameter | Value |
| layer | Component layer name |

comp_hist_open

| | |
|----------------|--------------------------------------|
| Command | comp_hist_open |
| Group | Graphic Editor |
| Descr. | Opens component histogram of a layer |

| | |
|------------------|--------------------------------------|
| Parameter | Value |
| layer | Component layer name |
| select | Yes / No - Selected components only? |
| raise | Yes / No - Raise window |

comp_hmap_close

| | |
|----------------|---|
| Command | comp_hmap_close |
| Group | Graphic Editor |
| Descr. | The command closes the height map popup |

comp_hmap_open

| | |
|----------------|--|
| Command | comp_hmap_open |
| Group | Graphic Editor |
| Descr. | The command opens the height map popup |

comp_options_close

| | |
|----------------|--|
| Command | comp_options_close |
| Group | Graphic Editor |
| Descr. | The command closes the component options popup |

comp_options_open

| | |
|----------------|---|
| Command | comp_options_open |
| Group | Graphic Editor |
| Descr. | The command opens the component options popup |

compare_job_lib_sym

| | |
|--------------------|---|
| Command | compare_job_lib_sym |
| Group | Graphic Editor |
| Description | Used for comparing job symbols and library symbols. If a job symbol has a counterpart with the same name in the library, the symbols will be compared. All non-identical symbols list will be written to the report file. |
| Response | Number of non-identical symbols |
| Parameter | Description |
| job | Name of an existing open job. |
| out_file | Legal or empty file pathname. If not empty, non-identical symbols list will be written to the file. |
| write_mode | replace - replace existing file append - append to the end of an existing file |

LMC **compare_job_lib_sym** is used to compare job symbols and library symbols.

compare_layers

| | |
|-----------------|--|
| Command | compare_layers |
| Group | Graphic Editor |
| Descr. | The command is used for performing a picture (pix by pix) compare between 2 layers. |
| Response | The number of boxes that have differences. If there are no differences the response will be 0. |

| Parameter | Value |
|----------------------|--|
| layer1 | Layer in the current step |
| job2 | Name of second job |
| step2 | Can be a different step in the same job |
| layer2 | Second layer name |
| layer2_ext | |
| tol | 0.03 <= tol <= 10 mils. Default=1 mil |
| map_layer | Legal layer name |
| map_layer_res | 10 <= map_layer_res <= 1000 mils. Default=200 mils. |
| ignore_attr | Enables filtering by attribute value in Compare Layer or Step Compare actions. |

compensate_layer

| | |
|----------------|--|
| Command | compensate_layer |
| Group | Graphic Editor |
| Descr. | The command compensates the source layer and creates a new layer (dest_layer) with the compensated features. |

| Parameter | Value |
|------------------------|---|
| source_layer | Entity name |
| dest_layer | Entity name - destination layer |
| dest_layer_type | Destination layer type Rout - Destination layer will be created of type Rout and all rout attributes will be saved. Document - Destination layer will be created of type Document and all rout attributes will be deleted |

config_edit

| | |
|----------------|--|
| Command | config_edit |
| Group | Configuration Manager |
| Descr. | Used for changing/adding config params |

| Parameter | Value |
|--------------|----------------------|
| name | Param name |
| value | Param value |
| mode | User, host or system |

connect_bus

| | |
|----------------|--|
| Command | connect_bus |
| Group | Graphic Editor |
| Descr. | Connects bus tracks between selected cross lines |

| Parameter | Value |
|--|--|
| type | Connection type. Values: straight, round, chamfer |
| mode | For increasing_radius: next_radius = prev_radius + space, with (space = (space1 + space2) / 2) For constant_radius: next_radius = inner_radius |
| inner_radius | Positive value (mil/mm) |
| tapered | Values: No, Yes. Perform tapering. |
| bus1x1, bus1y1 bus1x2, bus1y2 | Legal coordinates 1st and 2nd points of a line to define bus start. |
| bus2x1, bus2y1 bus2x2, bus2y2 | Legal coordinates 1st and 2nd points of a line to define bus end. |

contourize_layer

| | |
|----------------|--|
| Command | contourize_layer |
| Group | Graphic Editor |
| Descr. | The command performs boolean operation on all features in affected layer, truncates layer, and adds newly create surfaces. |

| Parameter | Value |
|-------------------------|---|
| accuracy | Specifies a max allowed distance between selected feature and resulting contour . Values: Double value: 0 < accuracy < 2 mil |
| break_to_islands | Values: Yes, No. If yes , each island will be created as a separate surface otherwise all islands will be in one surface. |
| clean_hole_size | 0.0 <= size <= 8000.0 mils |
| clean_hole_mode | x_or_y, x_and_y, area |

coord_abs

| | |
|---------|------------------------|
| Command | <code>coord_abs</code> |
|---------|------------------------|

coord_inc

| | |
|---------|------------------------|
| Command | <code>coord_inc</code> |
|---------|------------------------|

copper_area

| | |
|-----------------|---|
| Command | copper_area |
| Group | Graphic Editor |
| Descr. | The command calculates the copper area of a layer (s). The operation is performed on the raster image of the layer. The distribution map and the thermal map are created for the user interface popup, and cannot be accessed through the command (at this stage...). |
| Response | Contains the total copper value + the copper percentage. Syntax: ccccc ppppp (cccc - copper area, ppppp -percentage). |

| Parameter | Value |
|---------------------------------------|--|
| layer1 | Existing layer name |
| layer2 | Existing layer name |
| drills | Yes - take the drill layers into account the drill layers are taken according to job matrix No - no drill layers |
| drills_ source | Matrix - take from matrix Manual - take the list of drills rather than from the matrix |
| resolution | 1/4, 1/2, 1 mils - rasterization resolution |
| resolution_ value | Resolution value in the current units. Range [1mic ... 2mil] Note: (used only if parameter resolution not defined). |
| thickness | 0 <= thickness - used for calculating drill cylinder area |
| x_boxes, y_boxes | 1 <= num <= 200 - number of boxes for the distribution map |
| area | Yes - use the specified area (x1, y1, x2, y1) No - copper area for the whole layer |
| x1, y1, x2, y2 | Legal coordinates - rectangle corners |
| dist_map | Yes - create distribution map No - no distribution map |
| f_type | All - all features Selected - only selected features |
| out_file | Output file (optional) |
| out_layer | First / second / sum - what layer to display in out_file . |
| consider_ rout | Yes: rout features are considered when calculating the copper area. No: rout features are not considered when calculating the copper area. Note: This feature is implemented only if the parameter drill=yes in either line mode command copper_area or exposed_area . |
| edges | Values = [no/yes] (default = no). If yes, consider copper edges when calculating total copper area in a layer. |
| consider_ _thickness | Thickness of copper edge areas. Values = [0..Max Coordinate] in mil/my. Useful only when edges=yes . |

copper_area_ex

| | |
|-----------------|--|
| Command | copper_area_ex |
| Group | Graphic Editor |
| Descr. | <p>This command is identical to the line mode command copper_area, with the following differences:</p> <p>parameter dist_map is eliminated:</p> <p>parameters x_boxes and y_boxes will be replaced by the new parameter box_size. box_size uses the current units (mil/mk).</p> <p>The command calculates the copper area of a layer (s). The operation is performed on the raster image of the layer. The distribution map and the thermal map are created for the user interface popup, and cannot be accessed through the command (at this stage...).</p> |
| Response | <p>Contains the total copper value + the copper percentage.</p> <p>Syntax: ccccc ppppp (cccc - copper area, ppppp -percentage).</p> |

| Parameter | Value |
|---------------------------|--|
| layer1 | Existing layer name |
| layer2 | Existing layer name |
| drills | Yes - take the drill layers into account the drill layers are taken according to job matrix No - no drill layers |
| drills_source | Matrix - take from matrix Manual - take the list of drills rather than from the matrix |
| resolution | 1/4, 1/2, 1 mils - rasterization resolution |
| resolution_value | Resolution value in the current units. Range [1mic ... 2mil] Note: (used only if parameter resolution not defined). |
| thickness | 0 <= thickness - used for calculating drill cylinder area |
| box_size | box_size uses the current units (mil/mk) |
| area | Yes - use the specified area (x1, y1, x2, y1) No - copper area for the whole layer |
| x1, y1, x2, y2 | Legal coordinates - rectangle corners |
| f_type | All - all features Selected - only selected features |
| out_file | Output file (optional) |
| out_layer | First / second / sum - what layer to display in out_file . |
| edges | Values = [no/yes] (default = no). If yes, consider copper edges when calculating total copper area in a layer. |
| consider_thickness | Thickness of copper edge areas. Values = [0..Max Coordinate] in mil/my. Useful only when edges=yes . |

copper_distr_map_save

| | |
|---------------------|---|
| Command | copper_distr_map_save |
| Group | Graphic Editor |
| Description | Saves copper distribution map in JPEG format. (Output may be performed only if copper calculation has been already done.) |
| Parameter | Description |
| out_layer | What layer map to output Values=first / second / sum |
| colors_level | Color resolution = (100%) / level Values=[5..10] (Def=10) |
| boxes_level | Boxes number = (calc.boxes) / level Values=[1..10] (Def=5) |
| out_file | File path to save copper distribution map Values=Legal file path |

copper_drls_add

| | |
|----------------|--|
| Command | copper_drls_add |
| Group | Graphic Editor |
| Descr. | The command adds a drill layer for the copper area calc. |

| | |
|------------------|--------------------------------|
| Parameter | Value |
| layer | Existing drill layer name |
| thickness | Thickness / depth of the drill |

copper_drls_reset

| | |
|----------------|---|
| Command | copper_drls_reset |
| Group | Graphic Editor |
| Descr. | The command is used for resetting a drill layers list that is used for the copper area measurement. |

copy_and_clip

| | |
|----------------|----------------------|
| Command | copy_and_clip |
| Group | Graphic Editor |
| Descr. | |

| Parameter | Value |
|-------------------|--|
| dst | Affected / layer_name |
| dst_lyr | Name of an existing layer |
| clip_prf | Values: No, Yes. |
| clip_stps | Names of existing steps separated by ";" . |
| clip_ftrs | Values: No, Yes. |
| clip_space | Value in inches |

copy_aoi_set

| | |
|----------------|--|
| Command | create_aoi_entity |
| Group | Mania AOI Interface |
| Descr. | The command is used for setting the current entity names |

| Parameter | Value |
|---------------------|----------------------|
| source_layer | Existing layer name |
| source_set | Existing set name |
| layer | Existing layer name |
| set | MANIA AOI set entity |

copy_entity

| | |
|----------------|--|
| Command | copy_entity |
| Group | Engineering Toolkit |
| Descr. | Used for copying an entity. If the target entity already exists, it will be overwritten. |

| Parameter | Value |
|----------------------|---|
| type | Job, step, symbol, stackup, wheel, matrix |
| source_job | Existing job name |
| source_name | Existing entity name |
| dest_job | Existing job name - only if type!= job |
| dest_name | Entity name |
| dest_database | Specifies the destination database name. Used only if type is job . |

copy_feat

| | |
|----------------|--|
| Command | copy_feat |
| Group | Graphic Editor |
| Descr. | Copies a feature in all the affected layers. |

| Parameter | Value |
|---------------|---|
| index | Feature index in the work layer.(Optional) If index is not specified, Genesis looks for the feature according to coordinates. |
| x, y | Legal coordinates - feature coordinates |
| dx, dy | Legal coordinates - shift values |
| tol | 0 <= tol (mils) - snap tolerance |

copy_flow

| | |
|----------------|---------------------------|
| Command | copy_flow |
| Group | Work Flows |
| Descr. | Copies flows between jobs |

| | |
|------------------|-------------------|
| Parameter | Value |
| src_job | Job to copy from |
| src_flow | Flow to copy from |
| dst_job | Job to copy to |
| dst_flow | Flow to copy to |

copy_form

| | |
|----------------|---------------------------|
| Command | copy_form |
| Group | WorkForms |
| Descr. | Copies forms between jobs |

| | |
|------------------|-------------------|
| Parameter | Value |
| src_job | Job to copy from |
| src_form | Form to copy from |
| dst_job | Job to copy to |
| dst_form | Form to copy to |

copy_layer

| | |
|----------------|--|
| Command | copy_layer |
| Group | Graphic Editor |
| Descr. | The command copies a layer to another layer. If the destination layer does not exist, it will be created and added to end of the matrix. |

| Parameter | Value |
|---------------------|--|
| source_job | Existing job name |
| source_step | Entity name - from the job or from the library |
| source_layer | Entity name - dest |
| dest | layer_name - Specified dest layer Entity name - destination layer affected_layers - Copy to all the affected layers |
| dest_layer | Entity name |
| mode | Replace - replace the dest layer(s) Append - add to the end of dest layer(s) |
| invert | Yes - invert the features polarity No - no invert |
| copy_notes | Defines whether to copy layer notes when layer features are copied. Values: - No (default) - Do not copy layer notes. - Yes - Copy layer notes. |
| copy_attrs | Defines whether to copy layer attributes when layer features are copied. Values: - No (default) - Do not copy layer attributes. - Yes - Copy layer attributes. - New layer only - Copy new layers only |

copy_lyr_display_step

| | |
|----------------|---|
| Command | copy_lyr_display_step |
| Group | Graphic Editor |
| Descr. | The command displays the step instance that overlaps the given x,y coordinates. |

| Parameter | Value |
|------------------|--|
| step_name | Step that is nested in the editor's step. |
| x, y | Legal coordinates. In pcb_datum mode: x,y = coord of insertion point in pcb terms. In pcb_bounding box mode: x,y = dx,dy from selected corner. |

copy_lyr_from_another_stp

| | |
|----------------|--|
| Command | copy_lyr_from_another_stp |
| Group | Graphic Editor |
| Descr. | The command copies data from lyr[i]stp[i] to lyr[j]stp[j]. |

| Parameter | Value |
|-----------------------------|--------------------------------------|
| src_stp | Name of source step |
| src_lyr | Name of source layer |
| dst_lyr | Name of destination layer |
| copy_sr | Copy S&R data. Values: no/yes |
| ref step x,y | x, y coords |
| delete_ src_data | Delete source data. Values: No, Yes. |

copy_lyr_select_step

| | |
|----------------|---|
| Command | copy_lyr_select_step |
| Group | Graphic Editor |
| Descr. | The command select the step instance that overlaps the given x,y coordinates as a reference step. |

| Parameter | Value |
|------------------|--|
| step_name | Step that is nested in the editor's step. |
| x, y | Legal coordinates. In pcb_datum mode: x,y = coord of insertion point in pcb terms. In pcb_bounding box mode: x,y = dx,dy from selected corner. |

copy_profile

| | |
|--------------------|---|
| Command | copy_profile |
| Group | Graphic Editor |
| Description | Copies profile of a source step into another step currently being worked on in the Graphic Editor |
| Parameter | Description |
| from_job | Job to copy profile from |
| from_step | Step to copy profile from |

copy_sr

| | |
|----------------|----------------------------------|
| Command | copy_sr |
| Group | Mania AOI Interface |
| Descr. | Step & Repeat selected features. |

copy_stripped_job

| | |
|----------------|--|
| Command | copy_stripped_job |
| Group | Engineering Toolkit |
| Descr. | Used for copying part of the job. If the job exists, it will be overwritten. |

| | |
|----------------------|---|
| Parameter | Value |
| source_job | Existing job name |
| dest_job | existing_job_name |
| dest_database | Destination database name |
| del_elements | List of elements to delete. Separate list elements with a semicolon (;). |
| steps_mode | include or exclude |
| steps | list of steps to include/exclude. Separate list elements with a semicolon (;). List may contain wildcard filter. |
| lyrs_mode | include or exclude |
| include_lyrs | list of layers to include/exclude. Separate list elements with a semicolon (;). List may contain wildcard filter. |

coupons_frame

| | |
|----------------|---|
| Command | coupons_frame |
| Group | Graphic Editor |
| Descr. | The command is used for copying the step & repeat data of a source step to the edited step. The main usage is for setting the fixed coupons location in the penalization procedure. |

| | |
|------------------|---|
| Parameter | Value |
| step | Step that exists in the job or in the library |

cr_misc_drill_comm

| | |
|----------------|--|
| Command | cr_misc_drill_comm |
| Group | Electrical Testing |
| Descr. | The command is used for to create a misc drill layer for et: set drill output. This command works on current et-set, so the set_current... command should be issued beforehand. |

| | |
|------------------|--------------|
| Parameter | Value |
| split | Split number |
| side | Top / bottom |
| plate | Number |
| layer | Layer name |

cre_drills_map

| | |
|----------------|--|
| Command | cre_drills_map |
| Group | Graphic Editor |
| Descr. | The command creates a layer with markers that represent the drills. On the right bottom side there is a summary table. |

| Parameter | Value | | | | | | | | |
|------------------------|--|------|------|-------|------|------|-----|--------|--|
| layer | Existing layer name | | | | | | | | |
| map_layer | | | | | | | | | |
| preserve_attr | Yes - all feature attributes are copied to the corresponding markers on the drill map layer. | | | | | | | | |
| draw_origin | Yes - draws X,Y origin on drill maps No - | | | | | | | | |
| units | Inch, mil, mm | | | | | | | | |
| mark_dim | Marker diameter dimension | | | | | | | | |
| mark_line_width | Width of marker line. | | | | | | | | |
| sr | Defines whether to include Step & Repeat. Values: No/ Yes. Default = No. | | | | | | | | |
| define_via_type | Controls whether additional via types are defined Values: No/ Yes. Default = No. No - drill type is one of Plt/Npt/Via Yes - drill type is one of: Plt/Npt/Via/Lasr/Phot/Pres | | | | | | | | |
| slots | Defines whether to define via types. Values: No/ Yes, By Length. Default = No. | | | | | | | | |
| notype | Controls how drills that have no type (and no assigned dcode) will be displayed in the drill map. Values: plt/blank/abort . Default = plt (plated). blank - drill has no type abort - The command will abort if any drills like this are found. | | | | | | | | |
| columns | Semicolon separated list of columns in Drill Tool Manager from which to create the new layer. Column types: <table border="1"> <tr> <td>Tool</td><td>+Tol</td></tr> <tr> <td>Count</td><td>-Tol</td></tr> <tr> <td>Type</td><td>Des</td></tr> <tr> <td>Finish</td><td></td></tr> </table> | Tool | +Tol | Count | -Tol | Type | Des | Finish | |
| Tool | +Tol | | | | | | | | |
| Count | -Tol | | | | | | | | |
| Type | Des | | | | | | | | |
| Finish | | | | | | | | | |

| | |
|--------------------|--|
| table_pos | Controls positioning of the drill map table. Possible values: top, bottom, left, right. Default value: right. Note: Choose the desired table_pos value <i>before</i> choosing table_align. |
| table_align | Controls slignment of the drill map table. Possible values: top, bottom, left, right, middle. Default value: bottom. |
| sort_by | Sort drill tools by parameter value. Permitted values: none:tool:type:size |
| sort_dir | Determines sorting direction. Permitted values: incr:decr (Increasing:Decreasing) |

create_aoi_entity

| | |
|----------------|---|
| Command | create_aoi_entity |
| Group | Mania AOI Interface |
| Descr. | The command is used for creating a MANIA AOI entity |

| Parameter | Value |
|------------------|----------------------|
| name | MANIA AOI set entity |

create_area_layer

| | |
|----------------|-----------------------------------|
| Command | create_area_layer |
| Group | Graphic Editor |
| Descr. | The command creates an area layer |

| Parameter | Value |
|------------------------|--------------------------------------|
| src_lyr | Name of source layer |
| dst_lyr | Name of destination layer |
| delete_src_data | Delete source data. Values: No, Yes. |
| surface2area | Values: No, Yes. |
| outline2area | Values: No, Yes. |

create_bus

| | |
|----------------|------------------------------------|
| Command | create_bus |
| Group | Graphic Editor |
| Descr. | Routine connects two rows of pads. |

| Parameter | Value |
|---|-------|
| rect1_x1, rect1_y1 | |
| rect1_x2, rect1_y2 | |
| rect2_x1, rect2_y1 | |
| rect2_x2, rect2_y2 | |
| min_vh_ space | |
| min_ diagonal_ space | |
| min_seg_ length | |
| line_ widths | |

create_bus_add_guideline

| | |
|----------------|--|
| Command | create_bus_add_guideline |
| Group | Graphic Editor |
| Descr. | To create bus in manual mode, user must define at least one guideline. This command adds a new guideline. |

| Parameter | Value |
|--------------------------------|-------|
| xs,ys, xe, ye | |

create_die

| | |
|------------------------|--|
| Command | create_die |
| Group | |
| Description | Create Automatic die shape |
| Parameter | Description |
| step_name | Name of step |
| anchors | no value - all instanced x1:y1+x2:y2+x3:y3 - list of anchor points |
| profile_spacing | Minimum spacing between profile and die (in mils/microns) |
| min_radius | Minimum turning radius (in mils/microns) |
| line_width | Die line width (in mils/microns) |
| one_up_target | Target layer for 1-up die |
| total_target | Target layer for full die |

create_doc_layer

| | |
|----------------|---|
| Command | create_doc_layer |
| Group | |
| Descr. | The command creates a document from the source layer and creates a new layer (dest_layer) with the compensated features. |

| | |
|---------------------|---------------------------------|
| Parameter | Value |
| source_layer | entity_name |
| dest_layer | entity_name (destination layer) |

create_empty_eda

| | |
|----------------|--|
| Command | create_empty_eda |
| Group | Engineering Toolkit |
| Descr. | The command is used to create for a job an empty structure of 'component' layers (top and bottom), and an empty eda object |

| Parameter | Value |
|------------------|----------------------|
| job_name | Job name to work on |
| step_name | Step name inside job |

create_entity

| | |
|----------------|-----------------------------|
| Command | create_entity |
| Group | Engineering Toolkit |
| Descr. | Used for creating entities. |

| Parameter | Value |
|------------------|--|
| job | Name of an existing opened job |
| is_fw | Yes - framework entity (form, flow- according to the 'fw_type' parameter) No - CAM entity (according to the 'type' param) |
| type | Job, step, symbol, stackup, wheel, matrix |
| fw_type | Form, flow |
| name | Legal entity name |
| db | Db name (in case of job) |

create_exposed_area_layer

| | |
|----------------|--|
| Command | create_exposed_area_layer |
| Group | Graphic Editor |
| Descr. | The command creates an exposed area layer. |

| | |
|------------------------|--------------------------------------|
| Parameter | Value |
| src_lyr | Name of source layer |
| dst_lyr | Name of destination layer |
| delete_src_data | Delete source data. Values: No, Yes. |
| surface2area | Values: No, Yes. |
| outline2area | Values: No, Yes. |

create_flow

| | |
|----------------|-------------------------------|
| Command | create_flow |
| Group | Work Flows |
| Descr. | Creates a new flow in the job |

| | |
|------------------|------------------|
| Parameter | Value |
| flow | Name of the flow |

create_form

| | |
|----------------|-------------------------------|
| Command | create_form |
| Group | WorkForms |
| Descr. | Creates a new form in the job |

| | |
|------------------|------------------|
| Parameter | Value |
| form | Name of the form |

create_layer

| | |
|----------------|---|
| Command | create_layer |
| Group | Graphic Editor |
| Descr. | The command is used for creating a new layer. |

| | |
|------------------|---|
| Parameter | Value |
| layer | New layer name |
| context | Board, misc |
| type | Signal, solder_mask ,,,,etc |
| polarity | Positive, negative |
| ins_layer | Existing layer or EMPTY string - for adding the layer to the end of the list |
| location | Values: [before; after] Default = before, to ensure backwards compatibility |

create_line_bundle

| | |
|----------------|---|
| Command | create_line_bundle |
| Group | Graphic Editor |
| Descr. | Create a line bundle between the two polylines which were defined by the LMC clb_add_line_point. |

| | |
|------------------|--------------|
| Parameter | Value |
| num_lines | |

create_mask_features

| | |
|----------------|------------------------------------|
| Command | create_mask_features |
| Group | Graphic Editor |
| Descr. | The command creates mask features. |

| | |
|------------------------------|---|
| Parameter | Value |
| areas_ margin | Any number |
| edge_ margin | Any number |
| required_ radius | Any positive number |
| max_sliver_ _size | Any positive number |
| feature_ type | Values: outline, surface. |
| line_width | Any positive number. Used if feature_type=outline. |
| exclude_ areas | List of existing area layer names, with names separated by semicolon (;) character. |

create_part_panel

| | |
|----------------|-------------------------------------|
| Command | create_part_panel |
| Group | Graphic Editor |
| Descr. | Command to create a new panel step. |

| Parameter | Value |
|--------------------------|--|
| panel_name | Name of the new panel step |
| part_name | Name of the new part step |
| panelization_mode | <p>Mode of panelization. Values:</p> <p>By_dim - Create a new panel. Panel profile is set according to values of dim_x and dim_y. S&R is automatically calculated for best utilization of panel space. After clicking OK, a new Graphic Editor opens and displays the new panel.</p> <p>Best - Create a new panel step, and search for the dimensions that give the best utilization. Panel profile is set according to the selected dimensions. S&R is automatically calculated. After clicking OK, a new Graphic Editor opens and displays the new panel.</p> <p>Manual - Create a new panel step according to user-defined dimensions. S&R is not calculated. After clicking OK, a new Graphic Editor opens and displays the new panel.</p> <p>Sr_Table - Create new panel step. After clicking OK, a new Graphic Editor opens and displays the new panel, and the S&R Table Popup opens.</p> <p>Sr_Editor - Create a new panel step. After clicking OK, After clicking OK, a new Graphic Editor opens and displays the new panel, and the S&R Editor opens.</p> |
| dim_x, dim_y | Dimensions of the panel profile |
| active_margins | If set to Yes, panelization should keep margins |
| top_active | margin from top |
| bottom_active | margin from bottom |
| left_active | margin from left |
| right_active | margin from right |
| step_margin_x | x margin between part steps |
| step_margin_y | y margin between part steps |

create_part_step

| | |
|----------------|-------------------------------|
| Command | <code>create_part-step</code> |
| Group | Graphic Editor |
| Descr. | |

| | |
|------------------------------|--|
| Parameter | Value |
| <code>area_lyr</code> | Area layer from which to create the part step. |
| <code>step_name</code> | |
| <code>profile_type</code> | |
| <code>margin</code> | |
| <code>copy_lyrs</code> | |
| <code>copy_mode</code> | |
| <code>delete_src_data</code> | Delete source data. |

create_shapelist

| | |
|----------------|---|
| Command | create_shapelist |
| Group | Graphic Editor |
| Descr. | Used to create a shapelist for the specified layer. |

| | |
|------------------|--------------|
| Parameter | Value |
| layer | layer name |

create_sym_from_pict

| | |
|----------------|---|
| Command | create_sym_from_pict |
| Group | Graphic Editor |
| Descr. | The command reads a picture file and creates a symbol entity. |

| | |
|------------------|-----------------------|
| Parameter | Value |
| job | Existing job name |
| symbol | Symbol name to create |
| file | Input file name |

cur_atr_reset

| | |
|----------------|---|
| Command | cur_atr_reset |
| Group | Graphic Editor |
| Descr. | The command resets the current attributes list. |

cur_atr_set

| | |
|----------------|--|
| Command | cur_atr_set |
| Group | Graphic Editor |
| Descr. | The command sets the current attributes list. The list issued by several command (e.g - add_pad,,,,,). |

| | |
|------------------|---------------------------------|
| Parameter | Value |
| attribute | Existing attribute name |
| text | Free text - for text attributes |
| option | Option string - for option |
| int | Integer value - for integer |
| float | Float value - for float |

curves2segs

| | |
|----------------|--|
| Command | curves2segs |
| Group | Graphic Editor |
| Descr. | Breaks a curve edge to segment edges according to a tolerance value specified by user. |

| | |
|----------------------|---|
| Parameter | Value |
| curve_seg_tol | Specifies the max allowed distance (in PIXELS) between curve & replacing segments. Legal value is a positive integer. |

datum

| | |
|----------------|--|
| Command | datum |
| Group | Graphic Editor |
| Descr. | Sets the step datum point (used for step & repeat and for the pattern fill functions). |

| | |
|------------------|------------------------------------|
| Parameter | Value |
| x, y | Legal coordinates - datum position |

db_create

| | |
|----------------|--|
| Command | db_create |
| Group | Engineering Toolkit |
| Descr. | Create a new database entry in the local dblist. |

| | |
|------------------|----------------------|
| Parameter | Value |
| name | name of the database |
| path | database path |

db_del

| | |
|----------------|---|
| Command | db_del |
| Group | Engineering Toolkit |
| Descr. | Used for deleting database from the current dblist. |

db_rename

| | |
|----------------|---|
| Command | <code>db_rename</code> |
| Group | Engineering Toolkit |
| Descr. | Used for renaming database in the current dblist. |

| | |
|-----------------------|---------------------------|
| Parameter | Value |
| <code>name</code> | name of existing database |
| <code>new_name</code> | new name of the database |

delete_aoi_set

| | |
|----------------|---|
| Command | delete_aoi_set |
| Group | Mania AOI Interface |
| Descr. | The command is used for setting the current entity names. |

| | |
|------------------|----------------------|
| Parameter | Value |
| layer | Existing layer name |
| set | MANIA AOI set entity |

delete_comp

| | |
|----------------|--|
| Command | delete_comp |
| Group | Graphic Editor |
| Descr. | The command is used for deleting component information from both sides of the board. |

delete_entity

| | |
|----------------|-----------------------------|
| Command | delete_entity |
| Group | Engineering Toolkit |
| Descr. | Used for deleting entities. |

| | |
|------------------|--|
| Parameter | Value |
| job | Name of an existing opened job |
| type | Job, step, symbol, stackup, symbol deletion is wheel, matrix - not supported at this stage |
| name | Existing entity name |

delete_feat

| | |
|----------------|---|
| Command | delete_feat |
| Group | Graphic Editor |
| Descr. | Deletes a feature from all the affected layers. |

| Parameter | Value |
|--------------|---|
| index | Feature index in the work layer. (Optional) If index is not specified, Genesis looks for the feature according to coordinates. |
| x, y | Feature coordinates |
| tol | 0 <= tol (mils) - snap tolerance |
| mode | whole - delete entire feature. intersect - delete part of the feature limited of the nearest intersections from both sides of the given feature (not used on the affected layers). |

delete_flow

| | |
|----------------|-----------------------------|
| Command | delete_flow |
| Group | Work Flows |
| Descr. | Deletes a flow from the job |

| Parameter | Value |
|-------------|------------------|
| job | Name of the job |
| flow | Name of the flow |

delete_form

| | |
|----------------|-----------------------------|
| Command | delete_form |
| Group | WorkForms |
| Descr. | Deletes a form from the job |

| Parameter | Value |
|-------------|------------------|
| job | Name of the job |
| form | Name of the form |

delete_layer

| | |
|----------------|---|
| Command | delete_layer |
| Group | Graphic Editor |
| Descr. | The command is used for deleting an existing layer. |

| | |
|------------------|---------------------|
| Parameter | Value |
| layer | Existing layer name |

delete_selected

| | |
|----------------|------------------------|
| Command | delete_selected |
| Group | Mania AOI Interface |
| Descr. | Delete selected areas. |

delete_shapelist

| | |
|----------------|--|
| Command | delete_shapelist |
| Group | Graphic Editor |
| Descr. | The command is used closing the shapelist for given layer thus freeing the occupied memory |

| | |
|------------------|---------------------|
| Parameter | Value |
| layer | Existing layer name |

delete_stage

| | |
|----------------|---------------------------|
| Command | delete_stage |
| Group | Flow Builder |
| Descr. | Used for deleting stages. |

| | |
|------------------|---------------------------------------|
| Parameter | Value |
| flow | Name of flow - name of flow to delete |
| elem | Name of elem - name of elem to delete |

delete_unused_sym

| | |
|-----------------|--|
| Command | delete_unused_sym |
| Group | Engineering Toolkit |
| Descr. | Used for deleting all symbols which are not used |
| Response | Number of deleted symbols |

| | |
|------------------|--------------------------------|
| Parameter | Value |
| job | Name of an existing opened job |

delete_user_file

| | |
|----------------|-----------------------------------|
| Command | delete_user_file |
| Group | Engineering Toolkit |
| Descr. | Deletes files from User directory |

| | |
|------------------|---|
| Parameter | Value |
| job | Valid job name |
| file | Valid file name |
| mode | single (default) - to delete a file defined in parameter file all - to delete all files from the user directory |

dfilter_reset

| | |
|----------------|--------------------------------|
| Command | dfilter_reset |
| Group | Graphic Editor |
| Descr. | Resets (disables) drill-filter |

dfilter_set

| | |
|----------------|---|
| Command | dfilter_set |
| Group | Graphic Editor |
| Descr. | Insert/Remove a specific tool from drill-layer filter. If new layer is passed, the filter will first reset itself. Each selection/deselection of a Tool Number will automatically generate a separate dfilter_set line command. No special line mode command is needed to activate the Drill Filter. The filter remains active at the first insertion of a tool with a dfilter_set command, and remains active as long as a single tool is selected in the filter. |

| Parameter | Value |
|--------------------|---|
| layer | Entity name - name of drill layer to reset |
| tool | Positive integer - drill tool ID code |
| mode | Insert/remove tool from drill filter |
| min_spacing | Positive mil/micron - minimum gap between drills and the containing hole. |

delete_user_file

| | |
|----------------|-----------------------------------|
| Command | delete_user_file |
| Group | Engineering Toolkit |
| Descr. | Deletes files from User directory |

| Parameter | Value |
|-------------|---|
| job | Valid job name |
| file | Valid file name |
| mode | single (default) - to delete a file defined in parameter file all - to delete all files from the user directory |

di_close_jobrule_app

| | |
|----------------|--|
| Command | di_close_jobrule_app |
| Group | Orbotech DI Interface |
| Descr. | The command is used for closing the Job Rule application |

di_close_toolset_app

| | |
|----------------|--|
| Command | di_close_toolset_app |
| Group | Orbotech DI Interface |
| Descr. | The command is used for closing the Toolset application. |

di_fromsession_entry_reset

| | |
|----------------|--|
| Command | di_fromsession_entry_reset |
| Group | Orbotech DI Interface |
| Descr. | The command <i>resets</i> the layers list, which is used by the 'di_fromsession_save' command. |

di_fromsession_entry_set

| | |
|----------------|--|
| Command | di_fromsession_entry_set |
| Group | Orbotech DI Interface |
| Descr. | The command <i>sets</i> the layers list, which is used by the 'di_fromsession_save' command. |

di_fromsession_save

| | |
|----------------|---|
| Command | di_fromsession_save |
| Group | Orbotech DI Interface |
| Descr. | The command saves the toolset from the session. |

| | |
|------------------|--------------|
| Parameter | Value |
| toolset | |

dim_add

| | |
|----------------|---|
| Command | dim_add |
| Group | Graphic Editor |
| Descr. | Adds a dimension to the work layer. The source/destination may be new features so they are created first. The dimension graphics are set via the dim_grp_... cmds |

| Parameter | Value |
|-------------------------------|--|
| src_type | ext/feat |
| src_ind | -1 if new |
| src_x, src_y | x,y coordinates of source point - if src_ind = -1 |
| src_mode | ps,pe,all,pc |
| dst_type | ext/feat |
| dst_ind | -1 if new |
| dst_mode | ps,pe,all,pc |
| symbol | Existing symbol name |
| radius | Size of arc radius if arc |
| clockwise | Clockwise if arc |
| inner_arc | inner_arc / outer if arc |
| dx | Distance of dimension |
| dy | Distance of dimension |
| angle | Angle of dimension |
| linetype | Vertical, horizontal |
| dim_x | Coordinate of text pos |
| dim_y | Coordinate of text pos |
| ang_x | Coordinate of ang pos |
| ang_y | Coordinate of ang pos |
| recttype | Type of rectangle (if rect) |
| slottype | Type of slot (if slot) |
| dim_x2 | Coordinate of text pos |
| dim_y2 | Coordinate of text pos |
| dim_x3 | Coordinate of text pos |
| dim_y3 | Coordinate of text pos |
| dim_x4 | Coordinate of text pos |
| dim_y4 | Coordinate of text pos |
| srcs | One or two |
| src2_type | Ext / feat |
| src2_ind | -1 if new |

| | |
|---------------------------------|---|
| src2_x, src2_y | x,y coordinates of source point if src_ind = -1 |
| src2_mode | ps,pe,all,pc |

dim_change

| | |
|----------------|--|
| Command | dim_change |
| Group | Graphic Editor |
| Descr. | Changes a dimension on the work layer. |

| Parameter | Value |
|--------------|------------------------|
| index | Index of dimension |
| dx | Distance of dimension |
| dy | Distance of dimension |
| angle | Angle of dimension |
| dim_x | Coordinate of text pos |
| dim_y | Coordinate of text pos |
| ang_x | Coordinate of text pos |
| ang_y | Coordinate of text pos |

dim_creext

| | |
|----------------|--|
| Command | dim_creext |
| Group | Graphic Editor |
| Descr. | Create extended point on the work layer. |

| Parameter | Value |
|--------------|------------------------------|
| src_x | x coordinate of source point |
| src_y | y coordinate of source point |

dim_delete

| | |
|----------------|--|
| Command | dim_delete |
| Group | Graphic Editor |
| Descr. | Deletes a dimension on the work layer. |

| Parameter | Value |
|--------------|--------------------|
| index | Index of dimension |

dim_grp_params

| | |
|----------------|---|
| Command | dim_grp_params |
| Group | Graphic Editor |
| Descr. | Sets the parameters for dimension graphics. |

| Parameter | Value |
|---------------------|-------------------------|
| dim_arrmode | Edge/full/none |
| dim_boxmode | Square/round/none/empty |
| ang_arrmode | Edge/full/none |
| ang_boxmode | Square/round/none/empty |
| inline_mode | Yes, No |
| outline_mode | All/horizontal/vertical |
| font_type | Times/helvetica/courier |
| font_style | Med/bold |
| font_mode | Reg/italic |
| font_size | 10/12/14/18/24 |
| text_suffix | |

dimens_add

| | |
|----------------|--|
| Command | dimens_add |
| Group | Graphic Editor |
| Descr. | Adds a dimension to a dimension drawing. |

| Parameter | Value |
|-----------------------------|--|
| type | Values: horizontal, vertical |
| x1,x2,x3 | Legal coordinates |
| y1,y2,y3 | Legal coordinates |
| line_x, line_y | Legal coordinates |
| offset | Arrow offset, for radial dimension only. |
| prefix | String - up to 20 characters |
| suffix | String - up to 20 characters |
| value | String - up to 40 characters |
| tol_up, tol_down | String - up to 11 characters |
| note | String - up to 99 characters |

| | |
|-----------------------|------------------------------------|
| units | Values: mm,inch,mil,micron,deg,g,r |
| view_units | Values: No, Yes |
| underline | Values: No, Yes |
| merge_tol | Values: No, Yes |
| to_arc_center | Values: No, Yes |
| two_sided_diam | Values: No, Yes |
| magnify | Magnify dimension values by |

dimens_delete_at

| | |
|----------------|--|
| Command | dimens_delte_at |
| Group | Graphic Editor |
| Descr. | Adds a dimension to a dimension drawing. |

| Parameter | Value |
|------------------|-------------------|
| x,y | Legal coordinates |

dimens_delete_drawing

| | |
|----------------|------------------------------|
| Command | dimens_delte_drawing |
| Group | Graphic Editor |
| Descr. | Deletes a dimension drawing. |

| Parameter | Value |
|------------------|--------------|
| lyr_name | Layer name |

dimens_f2outline

| | |
|----------------|--|
| Command | dimens_f2outline |
| Group | Graphic Editor |
| Descr. | Convert display of features in drawing layer to outline. |

dimens_hide_edit

| | |
|----------------|--|
| Command | dimens_hide_edit |
| Group | Graphic Editor |
| Descr. | Hides the popup window for editing dimensions. |

dimens_hide_make_drawing

| | |
|----------------|--|
| Command | dimens_hide_make_drawing |
| Group | Graphic Editor |
| Descr. | Hides the popup window for creating a dimension drawing for a layer. |

dimens_magnify

| | |
|----------------|--------------------------------------|
| Command | dimens_magnify |
| Group | Graphic Editor |
| Descr. | Magnifies area of dimension drawing. |

| Parameter | Value |
|-------------------------------|-----------------|
| with_frame | Values: No, Yes |
| x_min, y_min | Target limits |
| x_max, y_max | Target limits |

dimens_make_drawing

| | |
|----------------|---|
| Command | dimens_make_drawing |
| Group | Graphic Editor |
| Descr. | Makes a layer into a drawing so that dimensions can later be added. |

| Parameter | Value |
|-------------------------------------|--|
| layer_name | Existing layer name |
| template_name | Name of drawing template in library |
| scale_percent | Drawing scale percentage - positive number |
| x_offset, y_offset | Offset for copying template - legal coordinate |

| | |
|--------------------------------|---|
| profile_ mode | How to copy the profile in. Values: none, step. |
| profile_ line_width | In points! Positive number |
| copy_ profiles | Step profiles to copy. Step names separated by semicolon (“;”). |

dimens_make_template

| | |
|----------------|--|
| Command | dimens_make_template |
| Group | Graphic Editor |
| Descr. | Makes a layer into a drawing so that dimensions can later be added |

| Parameter | Value |
|---------------------------------|---|
| layer_name | Existing layer name |
| template_ name | Name of drawing template in library |
| paper_ps_ size | A0, A1, A2, A3, A4, A5, B4, B5, letter, custom |
| paper_ orient | Paper orientation. Values; portrait, landscape. |
| paper_ width | In inches. Default value - 0. |
| paper_ height | In inches. Default value - 0. |
| paper_x, paper_y | Coordinate |
| active_x0, active_y0 | Coordinates of active area. |
| active_x1, active_y1 | Coordinates of active area. |

dimens_move_text

| | |
|----------------|--|
| Command | dimens_move_text |
| Group | Graphic Editor |
| Descr. | Selects a dimension at the specified location. |

| Parameter | Value |
|-----------------|---------------------|
| lyr_name | Existing layer name |

| | |
|--------------|------------------|
| index | Dimension index |
| x, y | Legal coordinate |

dimens_sel_clear

| | |
|----------------|-----------------------------|
| Command | dimens_sel_clear |
| Group | Graphic Editor |
| Descr. | Deletes selected dimensions |

dimens_sel_delete

| | |
|----------------|-----------------------------|
| Command | dimens_sel_delete |
| Group | Graphic Editor |
| Descr. | Deletes selected dimensions |

dimens_sel_single

| | |
|----------------|---|
| Command | dimens_sel_single |
| Group | Graphic Editor |
| Descr. | Selects a dimension at the specified location |

| | |
|------------------|------------------|
| Parameter | Value |
| x, y | Legal coordinate |

dimens_set_origin

| | |
|----------------|-------------------------------------|
| Command | dimens_set_origin |
| Group | Graphic Editor |
| Descr. | Set origin of the dimension drawing |

| | |
|------------------|---------------------|
| Parameter | Value |
| lyr_name | Existing layer name |
| x, y | Legal coordinate |

dimens_set_params

| | |
|----------------|--|
| Command | dimens_set_params |
| Group | Graphic Editor |
| Descr. | Set parameters of the dimension drawing. |

| Parameter | Value |
|---------------------------|---|
| lyr_name | Existing layer name |
| post_decimal_dist | 0-6 |
| post_decimal_pos | 0-6 |
| post_decimal_angle | 0-6 |
| line_width | In points. Range: 0-200. |
| font | Font name |
| top_margin | Range: 0-200 |
| bottom_margin | Range: 0-200 |
| left_margin | Range: 0-200 |
| right_margin | Range: 0-200 |
| ext_overlen | In mil/micron. Values: -1, 0-1000. |
| center_marker_len | In mil/micron. Values: -1, 0-1000. |
| baseline_spacing | In mil/micron. Values: -1, 0-1000. |
| feature_color | In rrgbbb format (-1 for no change). Values: 000000 - 999999. |
| dimens_color | In rrgbbb format (-1 for no change). Values: 000000 - 999999. |
| dimens_text_color | In rrgbbb format (-1 for no change). Values: 000000 - 999999. |
| profile_color | In rrgbbb format (-1 for no change). Values: 000000 - 999999. |

dimens_show_edit

| | |
|----------------|--|
| Command | dimens_show_edit |
| Group | Graphic Editor |
| Descr. | Shows the popup window for editing dimensions. |

dimens_show_make_drawing

| | |
|----------------|---|
| Command | dimens_show_make_drawing |
| Group | Graphic Editor |
| Descr. | Displays the popup window for creating a dimension drawing for a layer. |

dimens_to_lyr

| | |
|----------------|----------------------------|
| Command | dimens_to_lyr |
| Group | Graphic Editor |
| Descr. | Deletes dimension drawing. |

| | |
|--------------------|--------------|
| Parameter | Value |
| drawing_lyr | Layer name |
| new_lyr | Layer name |

dimens_update

| | |
|----------------|--|
| Command | dimens_update |
| Group | Graphic Editor |
| Descr. | Edits selected dimension in the dimension drawing. |

| | |
|-------------------------|--|
| Parameter | Value |
| lyr_name | Layer name |
| type | Values: horiz, vert, ... |
| x1, y1 | Legal coordinates |
| x2, y2 | Legal coordinates |
| x3, y3 | Legal coordinates |
| line_x, line_y | Legal coordinates |
| text_x, text_y | Legal coordinates |
| offset | Arrow offset, for radial dimension only. |
| prefix | String - up to 20 characters. |
| value | String - up to 40 characters. |
| tol_up, tol_down | String - up to 11 characters. |
| suffix | String - up to 20 characters. |

| | |
|-----------------------|---|
| note | String - up to 99 characters. |
| units | Possible values: mm,inch,mil,micron,deg,g,r |
| view_units | Values: no, yes. |
| underline | Values: no, yes. |
| merge_tol | Values: no, yes. |
| to_arc_center | Values: no, yes. |
| two_sided_diam | Values: no, yes. |

disp_off

| | |
|----------------|------------------------|
| Command | disp_off |
| Group | Engineering Toolkit |
| Descr. | Switch the display off |

disp_on

| | |
|----------------|-----------------------|
| Command | disp_on |
| Group | Engineering Toolkit |
| Descr. | switch the display on |

disp_snapshot

| | |
|----------------|---|
| Command | disp_snapshot |
| Group | Graphic Editor |
| Descr. | <p>Enables user to make a snapshot of the current graphic editor view and write it to a JPG file. If picture width and/or height is specified, the snapshot is scaled to fit the specified dimensions. If one or both dimension parameters are not specified, the graphic's current size is used.</p> <p>Examples below:</p> <p>COM disp_snapshot,file=/tmp/n1.jpg This line copies the graphic area to the file /tmp/n1.jpg.</p> <p>COM disp_snapshot,file=/tmp/n2.jpg,width=1000,height=1000 This line scales the graphic area and copy it to the file/tmp/n2.jpg</p> |

| Parameter | Value |
|---------------|---|
| file | Full path name of the jpg file to save the graphic into (including .jpg file extension) |
| width | Width of the picture in pixels |
| height | Height of the picture in pixels |

display_chain

| | |
|----------------|---|
| Command | display_chain |
| Group | Graphic Editor |
| Descr. | Sets the 'chain' display mode (display the chains features or not). |

| Parameter | Value |
|----------------|---|
| display | Yes - display the chain layer features No - do not display the chain |

display_comp

| | |
|----------------|---|
| Command | display_comp |
| Group | Graphic Editor |
| Descr. | Sets the component display mode (display the component or not). |

| Parameter | Value |
|----------------|--|
| display | Yes - display the comp layer features No - don't display the comp |

display_datum

| | |
|--------------------|---|
| Command | display_datum |
| Group | Graphic Editor |
| Description | Sets the datum and origin display mode |
| Parameter | Value |
| display | Values =[no;yes]. Default=yes for compatibility |

display_dim

| | |
|----------------|------------------------------------|
| Command | display_dim |
| Group | Graphic Editor |
| Descr. | Sets the 'dimension' display mode. |

| | |
|------------------|---|
| Parameter | Value |
| display | Yes - display the dimensions No - don't display the dimensions |

display_dim_msg

| | |
|----------------|--|
| Command | display_dim_msg |
| Group | Graphic Editor |
| Descr. | Sets the dimension message display mode (display the dimension message). |

| | |
|------------------|---|
| Parameter | Value |
| display | Yes - display the dimension msg No - don't display the dimension msg |

display_drill

| | |
|----------------|--|
| Command | display_drill |
| Group | Graphic Editor |
| Descr. | Sets the display mode of drill layer pads. |

| | |
|------------------|--|
| Parameter | Value |
| mode | Regular - actual pads image Markers - display special graphic markers (marker per tool) |

display_get_conf

| | |
|----------------|---|
| Command | <code>display_get_conf</code> |
| Group | Graphic Editor |
| Descr. | Obtains the current state of several display options and writes them to a specified file. |

| Parameter | Value | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|---|---------------|-------------------------------------|-----------------|--------------------------------------|--------------------------------------|--------------------------|-------------------|-----------------------------------|-------------------|-------------|--------------------|--|--------------------|--|------------------------|----------------------------|-------------|---------------------------|------------------|----------------------|-------------------|--------------------------------|
| file | full path name of the file where to save the options. | | | | | | | | | | | | | | | | | | | | | | |
| | <p>The options file has the following format:</p> <table border="0"> <tbody> <tr> <td>job=<jobname></td><td>job name of the current edited step</td></tr> <tr> <td>step=<stepname></td><td>step name of the current edited step</td></tr> <tr> <td>layers=<layer1>;<layer2>...;<layern></td><td>list of displayed layers</td></tr> <tr> <td>x1=<x_lower_left></td><td>world coordinates of graphic area</td></tr> <tr> <td>y1=<y_lower_left></td><td>(in inches)</td></tr> <tr> <td>x2=<x_upper_right></td><td></td></tr> <tr> <td>y2=<y_upper_right></td><td></td></tr> <tr> <td>width=<on outline off></td><td>current width display mode</td></tr> <tr> <td>sr=<yes no></td><td>display s&r features mode</td></tr> <tr> <td>profile=<yes no></td><td>display profile mode</td></tr> <tr> <td>negative=<yes no></td><td>display negative features mode</td></tr> </tbody> </table> | job=<jobname> | job name of the current edited step | step=<stepname> | step name of the current edited step | layers=<layer1>;<layer2>...;<layern> | list of displayed layers | x1=<x_lower_left> | world coordinates of graphic area | y1=<y_lower_left> | (in inches) | x2=<x_upper_right> | | y2=<y_upper_right> | | width=<on outline off> | current width display mode | sr=<yes no> | display s&r features mode | profile=<yes no> | display profile mode | negative=<yes no> | display negative features mode |
| job=<jobname> | job name of the current edited step | | | | | | | | | | | | | | | | | | | | | | |
| step=<stepname> | step name of the current edited step | | | | | | | | | | | | | | | | | | | | | | |
| layers=<layer1>;<layer2>...;<layern> | list of displayed layers | | | | | | | | | | | | | | | | | | | | | | |
| x1=<x_lower_left> | world coordinates of graphic area | | | | | | | | | | | | | | | | | | | | | | |
| y1=<y_lower_left> | (in inches) | | | | | | | | | | | | | | | | | | | | | | |
| x2=<x_upper_right> | | | | | | | | | | | | | | | | | | | | | | | |
| y2=<y_upper_right> | | | | | | | | | | | | | | | | | | | | | | | |
| width=<on outline off> | current width display mode | | | | | | | | | | | | | | | | | | | | | | |
| sr=<yes no> | display s&r features mode | | | | | | | | | | | | | | | | | | | | | | |
| profile=<yes no> | display profile mode | | | | | | | | | | | | | | | | | | | | | | |
| negative=<yes no> | display negative features mode | | | | | | | | | | | | | | | | | | | | | | |

display_grid

| | |
|----------------|-----------------------------|
| Command | <code>display_grid</code> |
| Group | Graphic Editor |
| Descr. | Sets the grid display mode. |

| Parameter | Value |
|-------------------------|--|
| mode | Off - no grid display Marks - '+' markers Net - full matrix grid Dots -dots |
| xgrid, ygrid | 0 < size <= max_coord grid size minimum limit = 0.1my |

display_layer

| | |
|----------------|----------------------------------|
| Command | display_layer |
| Group | Graphic Editor |
| Descr. | Displays or clears a step layer. |

| | |
|------------------|---|
| Parameter | Value |
| name | Entity name |
| display | Yes - display the layer No - clear the layer |
| number | 1 - 4 - graphical plane |

display_profile

| | |
|----------------|---|
| Command | display_profile |
| Group | Graphic Editor |
| Descr. | Sets the 'profile' display mode (display the profile or not). |

| | |
|------------------|--|
| Parameter | Value |
| display | Yes - display the profile No - don't display the prof |

display_sr

| | |
|----------------|---|
| Command | display_sr |
| Group | Graphic Editor |
| Descr. | Sets the 'step & repeat' display mode (display the sr features or not). |

| | |
|------------------|---|
| Parameter | Value |
| display | Yes - display the step & repeat layer features No - display only the step & repeat rout profiles |

display_text

| | |
|----------------|---|
| Command | display_text |
| Group | Graphic Editor |
| Descr. | Sets the display mode of dynamic text features. |

| | |
|------------------|---|
| Parameter | Value |
| mode | Value - dynamic text value (e.g - 08/08/94) Name - text name (e.g -\$date) |

display_text_file

| | |
|--------------------|---|
| Command | display_text_file |
| Group | Graphic Editor |
| Description | Enables display of popup text file. Format: display_text_file, title=TTTT, path=PPPP |
| Parameter | Description |
| title | Popup title. If title is not defined, title "File: <path>" will be used. |
| path | Full file path |

display_width

| | |
|----------------|------------------------------|
| Command | display_width |
| Group | Graphic Editor |
| Descr. | Sets the display width mode. |

| | |
|------------------|--|
| Parameter | Value |
| mode | On - full width Outline - outline display Off - skeleton display |

do_on_abort

| | |
|----------------|----------------------------|
| Command | do_on_abort |
| Group | Scripts |
| Descr. | What to do on script abort |

| | |
|------------------|---|
| Parameter | Value |
| script | Script path - full path of script to run on abort |
| user_data | String passed to script |

drawn_to_surface

| | |
|----------------|---|
| Command | drawn_to_surface |
| Group | Graphic Editor |
| Descr. | For automatic conversion of drawn surfaces to feature surfaces. |

| Parameter | Value |
|-----------------------------|--|
| type | Crosshatch, mixed, or power_ground - Defines a type of layer/fill used in the layer. Parameters of algorithm will change according to the type specified. |
| therm_analyze | Yes - drawn thermal pads will be excluded from contourization. |
| accuracy | Double Value 0 <accuracy<2 mil - Specifies a maximum allowable distance between selected feature and resulting contour. |
| min_hole_size | 0.0<= size <= 8000.0 mils - The minimum size of hole that can be created. |
| clean_hole_mode | x_or_y , x_and_y , area - The mode of the minimum size measurement. |
| prevent_complication | If the resulting contour contains more edges then the number of features that existed before the operation, decide whether or not to keep it as a contour. Possible values: Yes = Do not keep resulting contour as a contour. No = Keep resulting contour as a contour. |

drc_import

| | |
|----------------|--|
| Command | drc_import |
| Group | Mania AOI Interface |
| Descr. | Imports a layer into the DRC logical layer of the AOI set. |

| Parameter | Value |
|----------------|---------------------------------------|
| step | Existing step name |
| layer | Existing layer name |
| replace | Yes / no. Comment: - Replace / Add to |

drill_path

| | |
|----------------|-------------------|
| Command | drill_path |
| Group | Graphic Editor |

| | |
|-----------------|---|
| Descr. | The command calculates the length of the drill path for a layer. It takes into account only round pads. |
| Response | Drill path length |

| Parameter | Value |
|-------------------|--------------------------|
| layer_name | Entity name - layer name |

drill_rout_verific_update

| | |
|----------------|---|
| Command | drill_rout_verific_update |
| Group | Graphic Editor |
| Descr. | This command updates entries of all verification coupons. Depending on the mode selected, only drill or rout layers are updated, or both types of layers are updated. |

| Parameter | Value |
|--------------|--|
| Step | Existing panel step name |
| Mode | all - update all drill and rout layers drill - update all drill layers rout - update all rout layers single - update only one layer |
| Layer | Layer name to update (used with mode = single only) |

drill_rout_verific

| | |
|----------------|---|
| Command | drill_rout_verific |
| Group | Graphic Editor |
| Descr. | Used for the definition of a Drill/Rout verification coupon. The main usage is for setting the fixed coupons location in the panelization procedure. The verification coupon implementation uses specially-defined steps located on the panel. |

| Parameter | Value |
|---------------------------|--|
| center | defines min distance between holes/slots centers. |
| direct | [0, 90, 180, 270] - Direction of the row of verification holes/slots. (From Point calculation method only) |
| dist | Minimal distance (mil/micron) between verification holes/slots. |
| dist_t | spacing- defines min space between holes/slots edges |
| layer | Existing layer name. Each coupon may be associated with several layers. |
| method | none- (Default) Layer not used as a verification coupon. auto - Hole/slot positions, number of columns and row direction will be calculated to fit the specified area. from_point - Hole/slot positions will be calculated as a single row using specified Distance, Distance type, Start point and Row direction. If an edge of the specified area of the first coupon is reached, the next one will be taken. If no position is found for certain holes/slots, an error message will appear in the log file. |
| min_hits | Number of drills. If number of drills of a certain tool is less than required quantity the verification holes of this size will not be created. (Drill coupon type only) |
| min_size, max_size | Range of tool sizes (mil/micron) to be output into coupon area. |
| mode | se - Locate both coupons (start and end) in the same area. start - Start coupon only. end - End coupon only |
| order | Sequential order of the coupons of the same type and mode. |
| slot_ang | Slot angle [0 - 360 deg] (Rout coupon type only) |
| slot_len, | Slot length (mil/micron) should be greater or equal the value defined in the configuration parameter 'rout_min_move'. (Rout coupon type only) |
| split | Split number [1 or 2]. (Drill type coupon only) |
| step | Existing step name |
| type | none |
| xp, yp | Coordinates of the first point of verification coupon (inch/mm) (From Point calculation method only) |

drill_size_hook

| | |
|-----------------|---|
| Command | drill_size_hook |
| Group | Graphic Editor |
| Descr. | Used for executing the /genesis/sys/hooks/ drill_size script. It receives as input the drill params, and it returns the layer drill size, and drill bit. |
| Response | drill_size drill_bit The drill_size is in mils/microns (according to the working units). |

| Parameter | Value |
|--------------------|--|
| layer | Existing layer name or empty The layer name is string used for setting the \$JOB , and \$STEP variables of the script. If the layer is not specified the variables will not be specified. |
| thickness | 0 <= thickness - board thickness |
| user_params | String up to 64 chars - user parameters that are used for calculating the drill sizes |
| finish_size | 0 <= finish_size - finished hole size |
| type | Plate - plated holes Non - plated hole Via - via hole |
| min_tol | 0 <= min_tol - min allowed tolerance |
| max_tol | 0 <= max_tol - max allowed tolerance |
| bit | original "Drill Des" value. Default = " " |
| shape | Possible values: [hole, slot] |
| slot_len | value given in current units |

duplicate_entity

| | |
|----------------|---|
| Command | duplicate_entity |
| Group | Engineering Toolkit |
| Descr. | Used for duplicating entities. A new entity is created with a name that is an extension of the specified name. The specified entity is then copied to the new entity. |

| Parameter | Value |
|------------------|---|
| job | Name of an existing opened job |
| type | Job, step, symbol, stackup, wheel, matrix |
| name | Existing entity name |

edit_flow

| | |
|----------------|----------------------|
| Command | edit_flow |
| Group | Work Flows |
| Descr. | Changes a given flow |

| Parameter | Value |
|------------------|---|
| job | Name of the job |
| flow | Name of the main flow |
| stage | Name of the stage - when there are subflows, this should be the full path to the stage that needs to be edited. e.g. stage=f1/f2/s1 where s1 is a stage in subflow f2 which is in subflow f1 which is in main flow |
| value | Value of the element: <ul style="list-style-type: none"> - if type = switch: switch val - if type = cond: Yes / No - if type = stage: <ul style="list-style-type: none"> START - 'set start' END - 'set end' NOSTART- 'unset start' NOEND - 'unset end' |

edit_form

| | |
|----------------|----------------------|
| Command | edit_form |
| Group | Work Forms |
| Descr. | Changes a given form |

| Parameter | Value |
|------------------|-----------------------|
| job | Name of the job |
| form | Name of the form |
| elem | Name of the element |
| value | Value of the element |
| color | Color of the element |
| opt_name | Yes - for option name |
| callback | Yes - for option name |

edit_form_barcode

| | |
|----------------|--|
| Command | edit_form_barcode |
| Group | WorkForms |
| Descr. | Updates the barcode of a picture field Only upc39 currently supported |

| Parameter | Value |
|--------------------|---------------------------------------|
| job | Name of the job |
| form | Name of the form |
| elem | Name of picture element |
| full_ansi | Yes, No |
| checksum | Yes, No |
| height | Height of bar - in pixels |
| width | Width of bar - in pixels |
| bgd_color | Background color |
| fgd_color | Foreground color |
| text | Text to draw |
| text_pos | Position of text annotation |
| text_offset | Offset of text annotation - in pixels |
| font | Font of text annotation |

edit_form_list

| | |
|----------------|--|
| Command | edit_form_list |
| Group | WorkForms |
| Descr. | Changes a given form with a set of element values. This call can be used instead of edit_form when a number of elements need to be updated at once. |

| Parameter | Value |
|-----------------|--|
| job | Name of the job |
| form | Name of the form |
| opt_name | Yes - for option name |
| in_file | File that includes lines of the form each of the elems is updated elem = ELEM, value = VALUE |
| callback | Yes - for activate callbacks |
| color | |

editor_group

| | |
|-----------------|--|
| Command | editor_group |
| Group | Engineering Toolkit |
| Descr. | The command is used for getting the editor group of a specified step/symbol. The group number is important in scripts, where the group number must be specified. |
| Response | Group number or -1 if the entity does not have an open editor |

| Parameter | Value |
|----------------|---------------------------|
| job | Existing job name |
| is_step | Yes - step No - symbol |
| name | Existing step/symbol name |

editor_page_close

| | |
|----------------|---------------------------------|
| Command | editor_page_close |
| Group | Graphic Editor |
| Descr. | Closes / hides the editor page. |

edt_lyr_operation

| | |
|-----------------|--|
| Command | edt_lyr_operation |
| Group | Engineering Toolkit |
| Descr. | Performs the editor layer operation defined by layer name and an operation name. See Graphic Editor Menu Operations by LMC for details of permitted editor operations. |
| Response | None |

| | |
|------------------|---|
| Parameter | Value |
| layer | Existing layer name |
| name | A string representing a name of an editor menu operation. |

edt_operation

| | |
|-----------------|---|
| Command | edt_operation |
| Group | Engineering Toolkit |
| Descr. | Performs the editor operation defined by an operation name. See Graphic Editor Menu Operations by LMC for details of permitted editor operations. |
| Response | None |

| | |
|------------------|---|
| Parameter | Value |
| name | A string representing a name of an editor menu operation. |

edt_report_open

| | |
|--------------------|---|
| Command | edt_report_open |
| Group | Graphic Editor |
| Description | Enables opening any report of the types listed in the parameters section. Reports that can be opened include design2rout, cut_data, and rect2slot types. Note: The currently existing LMC report_open may be used only when a report window has already been opened. |
| Parameter | Description |
| report | Report types that can be opened by this command. Values = design2rout, cut_data, rect2slot, feat2drill |

ems_add_col

| | |
|----------------|------------------------|
| Command | ems_add_col |
| Group | Framework |
| Descr. | Add a column to a view |

| Parameter | Value |
|---------------------|--|
| view_name | Name - used when view_num = -1 |
| view_num | -1 - 100 - -1 => use name |
| col_src | Form_Text Form_Option Form_Scale |
| col_dept | Name - unused |
| col_ff_name | Name - form name |
| col_ff_field | Name - form elem name |
| ascend | No, Yes - sort order |
| where | 0-1000 |

ems_add_color

| | |
|----------------|----------------------------------|
| Command | ems_add_filter |
| Group | Framework |
| Descr. | Add a color condition to a view. |

| Parameter | Value |
|---------------------|---|
| view_name | Name - used when view_num = -1 |
| view_num | -1 - 100 - -1 => use name |
| col_src | Form_Text Form_Option Form_Scale |
| col_dept | Name - unused |
| col_ff_name | Name - form name |
| col_ff_field | Name - form elem name |
| relation | LT, GT, GE, LE, EQ, NEQ MATCH, NOT_MATCH - Wildcard matching |
| text | Any short string |
| color | 000000 - 999999 |
| where | 0 - 1000 |

ems_add_filter

| | |
|----------------|----------------------------------|
| Command | ems_add_filter |
| Group | Framework |
| Descr. | Add a filter condition to a view |

| Parameter | Value |
|---------------------|---|
| view_name | Name - used when view_num = -1 |
| view_num | -1 - 100 - -1 => use name |
| col_src | Form_Text Form_Option Form_Scale |
| col_dept | Name - unused |
| col_ff_name | Name - form name |
| col_ff_field | Name - form elem name |
| relation | LT, GT, GE, LE, EQ, NEQ MATCH, NOT_MATCH - Wildcard matching |
| text | Any short string |

ems_add_job

| | |
|----------------|----------------------------|
| Command | ems_add_job |
| Group | Framework |
| Descr. | Adds a job to a department |

| Parameter | Value |
|-------------|-------|
| dept | Name |
| job | Name |

ems_add_sort

| | |
|----------------|--------------------------------|
| Command | ems_add_sort |
| Group | Framework |
| Descr. | Add a sort condition to a view |

| Parameter | Value |
|---------------------|---|
| view_name | Name - used when view_num = -1 |
| view_num | -1 - 100 - -1 => use name |
| col_src | Form_Text Form_Option Form_Scale |
| col_dept | Name - Unused |
| col_ff_name | Name - Form name |
| col_ff_field | Name -Form elem name |
| ascend | No, Yes - sort order |
| where | 0-1000 |

ems_clean

| | |
|----------------|---------------------------------|
| Command | ems_clean |
| Group | Framework |
| Descr. | Updates all views from database |

ems_close

| | |
|----------------|------------------|
| Command | ems_close |
| Group | Framework |
| Descr. | Close view |

| Parameter | Value |
|------------------|--|
| view_name | name - used when view_num == -1 |
| view_num | -1 - 100 - -1 => use name |

ems_delall_col

| | |
|----------------|---------------------------------|
| Command | ems_delall_col |
| Group | Framework |
| Descr. | Deletes all columns from a view |

| | |
|------------------|------------------------------|
| Parameter | Value |
| view_name | Name - used when view_num=-1 |
| view_num | -1 - 100 - -1 => use name |

ems_delall_color

| | |
|----------------|--|
| Command | ems_delete_color |
| Group | Framework |
| Descr. | Deletes all color conditions from a view |

| | |
|------------------|------------------------------|
| Parameter | Value |
| view_name | Name - used when view_num=-1 |
| view_num | -1 - 100 - -1 => use name |

ems_delall_filter

| | |
|----------------|---|
| Command | ems_delall_filter |
| Group | Framework |
| Descr. | Deletes all filter conditions from a view |

| | |
|------------------|------------------------------|
| Parameter | Value |
| view_name | name - used when view_num=-1 |
| view_num | -1 - 100 - -1 => use name |

ems_delall_sort

| | |
|----------------|---|
| Command | ems_delall_sor |
| Group | Framework |
| Descr. | Deletes all sort conditions from a view |

| | |
|------------------|------------------------------|
| Parameter | Value |
| view_name | Name - used when view_num=-1 |
| view_num | -1 - 100 - -1 => use name |

ems_delete_col

| | |
|----------------|------------------------------|
| Command | ems_delete_col |
| Group | Framework |
| Descr. | Deletes a column from a view |

| | |
|------------------|------------------------------|
| Parameter | Value |
| view_name | name - used when view_num=-1 |
| view_num | -1 - 100 - -1 => use name |
| col_num | 0 - 1000 |

ems_delete_color

| | |
|----------------|--------------------------------------|
| Command | ems_delete_color |
| Group | Framework |
| Descr. | Delete a color condition from a view |

| | |
|------------------|------------------------------|
| Parameter | Value |
| view_name | Name - used when view_num=-1 |
| view_num | -1 - 100 - -1 => use name |
| col_num | 0 - 1000 |

ems_delete_filter

| | |
|----------------|---------------------------------------|
| Command | ems_delete_filter |
| Group | Framework |
| Descr. | Delete a filter condition from a view |

| | |
|------------------|------------------------------|
| Parameter | Value |
| view_name | Name - used when view_num=-1 |
| view_num | -1 - 100 - -1 => use name |
| col_num | 0 - 1000 |

ems_delete_sort

| | |
|----------------|-------------------------------------|
| Command | ems_delete_sort |
| Group | Framework |
| Descr. | Delete a sort condition from a view |

| | |
|------------------|------------------------------|
| Parameter | Value |
| view_name | Name - used when view_num=-1 |
| view_num | -1 - 100 - -1 => use name |
| col_num | 0 - 1000 |

ems_move_col

| | |
|----------------|-------------------------|
| Command | ems_move_col |
| Group | Framework |
| Descr. | Move a column in a view |

| | |
|------------------|------------------------------|
| Parameter | Value |
| view_name | Name - used when view_num=-1 |
| view_num | -1 - 100 - -1 => use name |
| old_num | 0 - 1000 |
| new_num | 0 - 1000 |

ems_move_color

| | |
|----------------|----------------------------------|
| Command | ems_move_color |
| Group | Framework |
| Descr. | Move a color condition in a view |

| | |
|------------------|---------------------------------------|
| Parameter | Value |
| view_name | Name - used when view_num = -1 |
| view_num | -1 - 100 - -1 => use name |
| old_num | 0 - 1000 |
| new_num | 0 - 1000 |

ems_move_sort

| | |
|----------------|----------------------------------|
| Command | ems_move_sort |
| Group | Framework |
| Descr. | Moves a sort condition in a view |

| | |
|------------------|--------------------------------------|
| Parameter | Value |
| view_name | name - used when view_num =-1 |
| view_num | -1 - 100 - -1 => use name |
| old_num | 0 - 1000 |
| new_num | 0 - 1000 |

ems_open

| | |
|----------------|-----------------|
| Command | ems_open |
| Group | Framework |
| Descr. | Open a view |

| | |
|------------------|---------------------------------|
| Parameter | Value |
| view_name | Name |
| name_only | Yes, No - always open new view? |

ems_print

| | |
|----------------|------------------------|
| Command | ems_print |
| Group | Framework |
| Descr. | Print a view to a file |

| | |
|------------------|---------------------------------------|
| Parameter | Value |
| view_name | Name - used when view_num = -1 |
| view_num | -1 - 100 - -1 => use name |
| path | Path |

ems_remove_job

| | |
|----------------|---------------------------------|
| Command | ems_remove_job |
| Group | Framework |
| Descr. | Removes a job from a department |

| | |
|------------------|--------------|
| Parameter | Value |
| dept | Name |
| job | Name |

ems_save

| | |
|----------------|-----------------|
| Command | ems_save |
| Group | Framework |
| Descr. | Saves view |

| | |
|------------------|------------------------------|
| Parameter | Value |
| view_name | Name - used when view_num=-1 |
| view_num | -1 - 100 - -1 => use name |

ems_save_as

| | |
|----------------|-------------------------------------|
| Command | ems_save_as |
| Group | Framework |
| Descr. | Saves a view under a different name |

| | |
|------------------|-------------------------------|
| Parameter | Value |
| view_name | Name - lused when view_num=-1 |
| view_num | -1 - 100 - -1 => use name |
| new_name | Name |

ems_set_dept

| | |
|----------------|-------------------------------------|
| Command | ems_set_dept |
| Group | Framework |
| Descr. | Sets the department of an open view |

| | |
|------------------|--------------------------------|
| Parameter | Value |
| view_name | Name - used when view_num = -1 |
| view_num | -1 - 100 - -1 => use name |
| dept | Name |

ems_set_value

| | |
|----------------|-----------------------------------|
| Command | ems_set_value |
| Group | Framework |
| Descr. | Sets a value of a cell in a view. |

| | |
|------------------|---------------------------------------|
| Parameter | Value |
| view_name | Name - used when view_num = -1 |
| view_num | -1 - 100 - -1 => use name |
| job | Name |
| col_num | 0 - 1000 |
| text | Any short string |

ems_update

| | |
|----------------|---------------------------------|
| Command | ems_update |
| Group | Framework |
| Descr. | Updates all views from database |

ems_view_copy

| | |
|----------------|----------------------|
| Command | ems_view_copy |
| Group | Framework |
| Descr. | Copies a view |

| | |
|----------------------|--------------|
| Parameter | Value |
| view_name | Name |
| new_view_name | Name |

ems_view_delete

| | |
|----------------|------------------------|
| Command | ems_view_delete |
| Group | Framework |
| Descr. | Deletes a view |

| | |
|------------------|--------------|
| Parameter | Value |
| view_name | Name |

ems_view_info

| | |
|----------------|----------------------|
| Command | ems_view_info |
| Group | Framework |
| Descr. | Get info of a view |

| | |
|------------------|---------------------------------------|
| Parameter | Value |
| view_name | Name - used when view_num = -1 |

| | |
|-----------------|---------------------------|
| view_num | -1 - 100 - -1 => use name |
| dept | Name |
| path | Path |

enhcont_chamfer_sel_corner

| | |
|----------------|--|
| Command | enhcont_chamfer_sel_corner |
| Group | Graphic Editor |
| Descr. | Chamfers the selected corner of a polygon. |

| | |
|------------------|----------------------------|
| Parameter | Value |
| x, y | New position of the corner |

enhcont_chamfer_sel_polys

| | |
|----------------|---|
| Command | enhcont_chamfer_sel_polys |
| Group | Graphic Editor |
| Descr. | Copies the selected polygons to the buffer. |

enhcont_cut_sel_polys

| | |
|----------------|---|
| Command | enhcont_cut_sel_polys |
| Group | Graphic Editor |
| Descr. | Copies the selected polygons to the buffer. |

enhcont_move_sel_polys

| | |
|----------------|-------------------------------|
| Command | enhcont_move_sel_polys |
| Group | Graphic Editor |
| Descr. | Moves the selected polygons. |

| | |
|------------------|--------------|
| Parameter | Value |
| dx, dy | Offset |

enhcont_move_sel_vertex

| | |
|----------------|-------------------------------------|
| Command | enhcont_move_sel_vertex |
| Group | Graphic Editor |
| Descr. | Moves the (single) selected vertex. |

| | |
|------------------|-----------------------------|
| Parameter | Value |
| dx, d | New position of the corner. |

enhcont_paste_sel_polys

| | |
|----------------|--------------------------------|
| Command | enhcont_paste_sel_polys |
| Group | Graphic Editor |
| Descr. | Pastes the selected polygons. |

| | |
|------------------|--------------|
| Parameter | Value |
| lyr_name | |
| x,y | |

enhcont_remove_sel_vertex

| | |
|----------------|-----------------------------------|
| Command | enhcont_remove_sel_vertex |
| Group | Graphic Editor |
| Descr. | Removes (single) selected vertex. |

| | |
|------------------|-----------------------------|
| Parameter | Value |
| x,y | New position of the corner. |

enhcont_resize_sel_polys

| | |
|----------------|---------------------------------|
| Command | enhcont_resize_sel_polys |
| Group | Graphic Editor |
| Descr. | Resize the selected polygons. |

| | |
|---------------------|--------------|
| Parameter | Value |
| resize_value | |

enhcont_round_sel_corner

| | |
|----------------|--|
| Command | enhcont_round_sel_corner |
| Group | Graphic Editor |
| Descr. | Rounds the selected corner of a polygon. |

| | |
|------------------|----------------------------|
| Parameter | Value |
| x, y | New position of the corner |

enhcont_sel_clear

| | |
|----------------|----------------------------|
| Command | enhcont_sel_clear |
| Group | Graphic Editor |
| Descr. | Clear previous selections. |

enhcont_sel_edge

| | |
|----------------|--|
| Command | enhcont_sel_edge |
| Group | Graphic Editor |
| Descr. | Selects an edge within a polygon that is within a surface. |

| | |
|--------------------|---|
| Parameter | Value |
| x, y | Coordinates of a point inside the polygon and near the required edge. |
| select_mode | Replace previous selection Add to previous selection |

enhcont_sel_poly

| | |
|----------------|-------------------------------------|
| Command | enhcont_sel_poly |
| Group | Graphic Editor |
| Descr. | Selects a polygon within a surface. |

| | |
|-------------------------|---|
| Parameter | Value |
| lyr_name | Layer name |
| in_x, in_y | Coordinates of a point inside the polygon that we want to edit. |
| serial | |
| select_ mode | Replace previous selection Add to previous selection |

enhcont_sel_surf

| | |
|----------------|-------------------------|
| Command | enhcont_sel_surf |
| Group | Graphic Editor |
| Descr. | Selects a surface. |

| | |
|------------------|--------------|
| Parameter | Value |
| lyr_name | Layer name |

enhcont_sel_vertex

| | |
|----------------|--|
| Command | enhcont_sel_vertex |
| Group | Graphic Editor |
| Descr. | Selects an vertex within a polygon that is within a surface. |

| | |
|-------------------------|---|
| Parameter | Value |
| lyr_name | Layer name |
| x, y | Coordinates of a point inside the polygon that we want to edit. |
| select_ mode | Replace previous selection Add to previous selection |

enhcont_split_sel_edge

| | |
|----------------|--|
| Command | enhcont_split_sel_edge |
| Group | Graphic Editor |
| Descr. | Splits the selected edge of a polygon. |

| | |
|------------------|----------------------------|
| Parameter | Value |
| x, y | New position of the corner |

enhcont_stretch_sel_polys

| | |
|----------------|--------------------------------------|
| Command | enhcont_stretch_sel_polys |
| Group | Graphic Editor |
| Descr. | Stretches polygons within a surface. |

| | |
|------------------|--------------|
| Parameter | Value |
| dx, dy | Offset |

enhcont_unselect_edge

| | |
|----------------|-------------------------------------|
| Command | enhcont_unselect_edge |
| Group | Graphic Editor |
| Descr. | Selects a polygon within a surface. |

| | |
|------------------|---------------------------|
| Parameter | Value |
| serial | Index of edge to unselect |

enhcont_unselect_poly

| | |
|----------------|---------------------------------------|
| Command | enhcont_unselect_poly |
| Group | Graphic Editor |
| Descr. | Unselects a polygon within a surface. |

| | |
|------------------|------------------------------|
| Parameter | Value |
| serial | Index of polygon to unselect |

erf_editor_run

| | |
|----------------|---|
| Command | erf_editor_run |
| Group | ERF Editor |
| Descr. | Opens the ERF Editor from the command line. |

etm_3d_spacing

| | |
|----------------|-------------------------------|
| Command | etm_overwrite |
| Group | Electrical Testing |
| Descr. | Runs the 3d pin spacing check |

| | |
|-------------------|--|
| Parameter | Value |
| critical | 0.0 and higher Spacing closer than critical value will be reported in red severity level. |
| acceptable | 0.0 and higher Spacing equal or larger than critical will be reported in yellow severity level. |

etm_adapter_export

| | |
|----------------|---|
| Command | etm_adapter_export |
| Group | Electrical Testing |
| Descr. | Exports the selected adapter definition (ODB++) files in tar gzip format to the defined path. This enables easy transfer of adapter configurations. |

etm_adapter_import

| | |
|----------------|---|
| Command | etm_adapter_import |
| Group | Electrical Testing |
| Descr. | Imports an exported adapter configuration to the adapter database. This allows easy transfer of adapter configurations. |

etm_add_compensation_posts

| | |
|----------------|--|
| Command | etm_add_compensation_posts |
| Group | Electrical Testing |
| Descr. | Automatically adds compensation posts to the board and opens its report. |

etm_add_new_split

| | |
|----------------|------------------------------------|
| Command | etm_add_new_split |
| Group | Electrical Testing |
| Descr. | Create a new split for this ETset. |

etm_adj_verification

| | |
|----------------|--|
| Command | etm_adj_verification |
| Group | Electrical Testing |
| Descr. | Run the adjacency verification analysis. |

etm_clear_selections

| | |
|----------------|------------------------------|
| Command | etm_clear_selections |
| Group | Electrical Testing |
| Descr. | Clear all selected features. |

etm_compensate_deflection

| | |
|----------------|--|
| Command | etm_compensate_deflection |
| Group | Electrical Testing |
| Descr. | This activates the deflection compensation action. |

etm_create_new_revision

| | |
|----------------|---|
| Command | etm_create_new_revision |
| Group | Electrical Testing |
| Descr. | Fills the given et-set with testing information of a different et-set, as long as it is considered a new revision of the previous et-set. |

| Parameter | Value |
|-------------------|---|
| job | Current job name |
| step | Current step name |
| etset | Current ET set name |
| Prev_job | Previous revision job Note: Can be different than parameter job |
| Prev_step | Previous revision step name Note: Can be different than parameter step |
| Prev_etset | Current ET set name Note: <i>Must</i> be different than parameter et-set |

etm_drill_spacing

| | |
|----------------|--|
| Command | etm_drill_spacing |
| Group | Electrical Testing |
| Descr. | Runs the drill spacing check (wall thickness). |

| Parameter | Value |
|-------------------|--|
| critical | 0.0 and higher Spacing closer than critical value will be reported in red severity level. |
| acceptable | 0.0 and higher Spacing equal or larger than critical will be reported in yellow severity level. |

etm_electrical_testing_report

| | |
|----------------|--|
| Command | etm_electrical_testing_report |
| Group | Electrical Testing |
| Descr. | Opens the general printed report of the ETM. |

etm_etset_delete

| | |
|----------------|------------------------------------|
| Command | etm_etset_delete |
| Group | Electrical Testing |
| Descr. | Remove an ETset from the database. |

| | |
|-------------------|-------------------------|
| Parameter | Value |
| etset_name | Name of etset to delete |

etm_filter_high

| | |
|----------------|---|
| Command | etm_filter_high |
| Group | Electrical Testing |
| Descr. | Used for highlighting features in all/either of the sides according to the features filter, and to a specified, limited area. |

| Parameter | Value |
|---------------------------------------|--|
| active | Yes - the filter is active No (default) - the filter becomes inactive (all the following params are not relevant). |
| single_selection | Values: Yes, No (default). |
| window | all - whole board. Note: window = "no". in_split. Note: Specify x1,y1,x2,y2. out_split window s_r_one_up |
| side | Values: top / bot / both (default). |
| filter_type | Values: points (default), pins, nets, patterns. |
| point_test_type | Values: test_points (default), net_points, testable, non_plated. |
| point_filter | Values: end_pts, mid_pts, ann_ring. 'set' field. |
| pin_type | Values: probes (default), tooling. |
| pin_names | Symbol names to be included. Wild symbol names separated by ';' characters. |
| min_num_points, max_num_points | Minimum/Maximum number of points required within the net. |
| net_names | Symbol names to be included. Wild symbol names separated by ';' characters. |
| pt_in_net_test_type | Values: test_points (default), net_points, testable. |
| pt_in_net_filter | Values: end_pts, mid_pts. 'set' field. |
| drill_active | Yes - the drills are active No (default) - the filter becomes inactive (all the drill params are not relevant). |
| drill_fsyms | Symbol names to be included. Wild symbol names separated by ';' characters. |
| drill_type | Values: pth (default), npth, via |
| min_a_r, max_a_r | Annular ring size range. Expressed in current units. |
| pad_active | Yes - the pads are active No (default) - the filter becomes inactive (all the pad params are not relevant). |

| | |
|--|---|
| pad_fsyms | Symbol names to be included. Wild symbol names separated by ';' characters. |
| min_exp_ width max_exp_ width | Exposed width range for pads. Expressed in current units. |

etm_filter_select

| | |
|----------------|---|
| Command | etm_filter_select |
| Group | Electrical Testing |
| Descr. | Used for selecting features in all/either of the sides according to the features filter, and to a specified limited area. |

| Parameter | Value |
|---------------------------------------|--|
| active | Yes - the filter is active No (default) - the filter becomes inactive (all the following params are not relevant). |
| single_selection | Values: Yes, No (default). |
| window | all - whole board. Note: window = "no". in_split. Note: Specify x1,y1,x2,y2. out_split window s_r_one_up |
| side | Values: top / bot / both (default). |
| filter_type | Values: points (default), pins, nets, patterns. |
| point_test_type | Values: test_points (default), net_points, testable, non_plated. |
| point_filter | Values: end_pts, mid_pts, ann_ring. 'set' field. |
| pin_type | Values: probes (default), tooling. |
| pin_names | Symbol names to be included. Wild symbol names separated by ';' characters. |
| min_num_points, max_num_points | Minimum/Maximum number of points required within the net. |
| net_names | Symbol names to be included. Wild symbol names separated by ';' characters. |
| pt_in_net_test_type | Values: test_points (default), net_points, testable. |
| pt_in_net_filter | Values: end_pts, mid_pts. 'set' field. |
| drill_active | Yes - the drills are active No (default) - the filter becomes inactive (all the drill params are not relevant). |
| drill_fsyms | Symbol names to be included. Wild symbol names separated by ';' characters. |
| drill_type | Values: pth (default), npth, via |
| min_a_r, max_a_r | Annular ring size range. Expressed in current units. |
| pad_active | Yes - the pads are active No (default) - the filter becomes inactive (all the pad params are not relevant). |

| | |
|--|---|
| pad_fsyms | Symbol names to be included. Wild symbol names separated by ';' characters. |
| min_exp_ width max_exp_ width | Exposed width range for pads. Expressed in current units. |

etm_gen_comm

| | |
|----------------|---|
| Command | etm_gen_comm |
| Group | Electrical Testing |
| Descr. | This is the general command for handling ETM stages. An example of this line mode command used in a script is given below: COM etm_gen_com,etset=\$ETSET,split=split_1,action=info,stage=etm_p2p,\ dir_path=\$FULL_PATH,oper=2 |

| Parameter | Value |
|-----------------|---|
| etset | Current etset name |
| split | Current split name |
| action | Action to be performed. Open - will open the stage Run - will run the Automatic Main action of the stage Info - will return a file with information on the state of the stage. The information comes in the form of a variable: ETM_STAGE_ACCESSIBLE: 0 - stage cannot be accessed, 1 - stage can be opened. ETM_STAGE_STATE: What is the status of the stage, EMPTY - has no information (white stage), PART - stage has information but is not completed (cyan stage), DONE - stage has all the information needed (green stage). ETM_STAGE_I_STATE: same as ETM_STAGE_STATE but the values are numbers: 0 - EMPTY, 1 - PART, 2 - DONE. |
| stage | On what stage we are running the action, for example etm_net, etm_p2p, etm_p2g. |
| dir_path | The full path of the file that the info action will create. For other than the info action this parameter is not relevant and can be ignored. If using the info command, the script should source the file created after calling the command, and the file should be removed after use. |
| oper | What kind of button was pressed with the mouse, currently it takes no affect on the actions. |
| format | Output format |
| dir | |
| prefix | |
| suffix | |

etm_get_message_bar

| | |
|----------------|--|
| Command | etm_get_message_bar |
| Group | Netlist Optimizer |
| Descr. | Returns the current message that appears in the lower message bar in the ETM window. |

etm_improve_assign

| | |
|----------------|---|
| Command | etm_improve_assign |
| Group | Electrical Testing |
| Descr. | Run improvements to the standard pin-to-grid assignments. |

etm_lic_close

| | |
|----------------|---|
| Command | etm_lic_close |
| Group | Electrical Testing |
| Descr. | DescriptionCloses the ETM license currently being used. |

etm_net_to_ref_net

| | |
|----------------|--|
| Command | etm_net_to_ref_net |
| Group | Electrical Testing |
| Descr. | Copy the current ETM/Custom netlist in its present state to be the reference netlist of this step. |

etm_netlist_to_layers

| | |
|----------------|--|
| Command | etm_netlist_to_layers |
| Group | Electrical Testing |
| Descr. | Converts the ET netlist into layers in the job matrix. |

| | |
|---------------------|------------------------|
| Parameter | Value |
| top_lyr_name | Name for the top layer |

etm_nets_report

| | |
|----------------|------------------------|
| Command | etm_nets_report |
| Group | Electrical Testing |
| Descr. | Opens ETM nets report |

etm_optimisation_report

| | |
|----------------|---|
| Command | etm_optimisation_report |
| Group | Electrical Testing |
| Descr. | Opens the optimisation report of the ETM. |

| | |
|------------------|--|
| Parameter | Value |
| net_names | List of net names for which report is requested. |

etm_optimisation_summary

| | |
|----------------|---|
| Command | etm_optimisation_summary |
| Group | Electrical Testing |
| Descr. | The command is used for opening the ETM optimisation summary report of test points and net points histograms. |

etm_out

| | |
|----------------|---|
| Command | etm_out |
| Group | Electrical Testing |
| Descr. | The command is used for creating download files for etm |

| Parameter | Value |
|---------------|--|
| name | ETM command name - must appear in etm_proc -process set |
| job | Job name |
| step | Step name |
| etset | ET set name |
| split | Split number |
| format | Output format |
| dir | Output format |
| prefix | Output format |
| suffix | Output format |

etm_overwrite

| | |
|----------------|----------------------------------|
| Command | etm_overwrite |
| Group | Electrical Testing |
| Descr. | Sets the "action ignores" option |

| Parameter | Value |
|------------------|---|
| overwrite | Possible values: None/ user_defined/ assigned None - the automatic actions executed on all test points User_defined - actions ignore manually modified test points Assigned - actions ignore all assigned test points. |

etm_page_open

| | |
|----------------|----------------------|
| Command | etm_page_open |
| Group | Electrical Testing |
| Descr. | Opens the ETM window |

| Parameter | Value |
|------------------|--|
| job | Job name (Optional parameter. If available, job will be set as the working job.) |

etm_pg_net_recognition

| | |
|------------------------------|--|
| Command | etm_pg_net_recognition |
| Group | Electrical Testing Manager |
| Description | Enables recognition of power-ground nets |
| Parameter | Description |
| signal | no/yes |
| mixed | no/yes |
| pg | no/yes |
| include_external_lyrs | no/yes |
| min_pts_over_surface | integer >= 0 |
| min_num_holes | integer >= 0 |
| percent_of_prof_area | integer >= 0 |
| min_num_net_pts | integer >= 0 |
| min_num_drills | integer >= 0 |
| net_names | empty/ list of net names |

etm_pin_head_spacing

| | |
|----------------|---------------------------------|
| Command | etm_overwrite |
| Group | Electrical Testing |
| Descr. | Runs the pin head spacing check |

| | |
|-------------------|---|
| Parameter | Value |
| critical | 0.0 and higher Spacing closer than critical value will be reported in red severity. |
| acceptable | 0.0 and higher Spacing closer than required and higher than critical will be reported in yellow severity |

etm_pin_to_grid_report

| | |
|----------------|---|
| Command | etm_pin_to_grid_report |
| Group | Electrical Testing |
| Descr. | Opens the ETM pin to grid matching report |

etm_pins_report

| | |
|----------------|------------------------|
| Command | etm_pins_report |
| Group | Electrical Testing |
| Descr. | Opens ETM pins report |

etm_pins_validation

| | |
|----------------|---|
| Command | etm_pins_validation |
| Group | Electrical Testing |
| Descr. | Runs the pins usage validation and opens it report. |

etm_reset_page

| | |
|----------------|---|
| Command | etm_reset_page |
| Group | Electrical Testing |
| Descr. | Initializes and resets some variables when opening the ETM window. This command does not need to be activated from a script, it will be done automatically when opening the ETM window. |

etm_selected_items_report

| | |
|----------------|--|
| Command | etm_selected_items_report |
| Group | Electrical Testing |
| Descr. | Opens a report in which all selected items are reported. |

etm_semi_auto_split

| | |
|----------------|---|
| Command | etm_semi_auto_split |
| Group | Electrical Testing |
| Descr. | Creates a new split, and automatically moves or copies test points. |

etm_setup_flows

| | |
|----------------|--|
| Command | etm_setup_flows |
| Group | Electrical Testing |
| Descr. | Activates the correct working flow for the tester type. This command does not need to be activated from a script, it will be done automatically when split is created or opened. |

etm_sm_spacing

| | |
|----------------|-------------------------------|
| Command | etm_sm_spacing |
| Group | Electrical Testing |
| Descr. | Run the Solder Mask Analysis. |

etm_sr_create_from_table

| | |
|----------------|---|
| Command | etm_sr_create_from_table |
| Group | Electrical Testing |
| Descr. | Creates a not-flattened step & repeated et-set according to the step & repeat table of ETM. |

etm_sr_delete

| | |
|----------------|--|
| Command | etm_sr_delete |
| Group | Electrical Testing |
| Descr. | Removes the step & repeat information of a step & repeated et-set, but only for non-flattened et-sets. |

etm_sr_fill_table_from_step

| | |
|----------------|--|
| Command | etm_sr_fill_table_from_step |
| Group | Electrical Testing |
| Descr. | Fills the ETM step & repeat table according to the repetition of the current step in the given panel name. |

| | |
|------------------|--------------------|
| Parameter | Value |
| step | existing step name |

etm_sr_from_step

| | |
|----------------|--|
| Command | etm_sr_from_step |
| Group | Electrical Testing |
| Descr. | The command is used for filling the S&R table from a given panel step. |

| | |
|------------------|--------------------|
| Parameter | Value |
| step | existing step name |

etm_stress_analysis

| | |
|----------------|---------------------------------|
| Command | etm_units |
| Group | Electrical Testing |
| Descr. | Runs the stress analysis check. |

| | |
|------------------|---|
| Parameter | Value |
| critical | 0.0 and higher Should be bigger than excessive parameter |
| excessive | 0 and higher Should be smaller than critical parameter |

etm_test_points_report

| | |
|----------------|-------------------------------|
| Command | etm_test_points_report |
| Group | Electrical Testing |
| Descr. | Opens ETM test points report |

etm_through_hole_balance

| | |
|----------------|---|
| Command | etm_through_hole_balance |
| Group | Electrical Testing |
| Descr. | Runs the through hole balance action and opens its report. If more than one item is selected, the action will be done only on the selected items. |

etm_tool

| | |
|----------------|--|
| Command | etm_tool |
| Group | Electrical Testing |
| Descr. | The command is used to run a tool action. Command runs for the current et_set and split. |

| | |
|-------------------------|---|
| Parameter | Value |
| tool | tool name |
| mode | modifier(non,shift,ctrl,both) |
| global_set | yes or no - apply to selection. |
| x1,y1, x2,y2 | Location. Double-type value in current units. |

etm_undo

| | |
|----------------|--|
| Command | etm_undo |
| Group | Electrical Testing |
| Descr. | The command activates the undo option. |

etm_units

| | |
|----------------|---|
| Command | etm_units |
| Group | Electrical Testing |
| Descr. | Changes the units ETM is working with between Inches and MM |

| | |
|------------------|--------------|
| Parameter | Value |
| units | inches/mm |

etm_update_ref_netlist

| | |
|----------------|--|
| Command | etm_update_ref_netlist |
| Group | Electrical Testing |
| Descr. | To set a specific netlist to be the reference by which we create the ET netlist. |

| | |
|----------------------------|----------------------------------|
| Parameter | Value |
| step | Existing step name |
| source_ netlist | Values: "cad", "current", "cbc". |
| with_cad_ names | Values: Yes, No. |

etset_create

| | |
|----------------|--|
| Command | etset_create |
| Group | Electrical Testing |
| Descr. | The command is used for creating a new etset entity. |

| | |
|------------------|----------------------------------|
| Parameter | Value |
| name | Legal entity name - et set name |
| adapter | Legal entity name - adapter name |

etset_cur

| | |
|----------------|---|
| Command | etset_cur |
| Group | Electrical Testing |
| Descr. | The command is used for setting the CURRENT entity name that are used for all the other line mode commands. |

| | |
|------------------|---------------------|
| Parameter | Value |
| job | Existing job name |
| step | Existing step name |
| etset | Existing etset name |

etset_del_sub

| | |
|--------------------|------------------------------------|
| Command | etset_del_sub |
| Group | Electrical Testing Manager |
| Description | Enables deletion of sub-assemblies |
| Parameter | Description |
| job | Job name |
| step | Step name |
| layer_list | Name of layer list |

etset_open

| | |
|----------------|--|
| Command | etset_open |
| Group | Electrical Testing |
| Descr. | Used for opening an existing et-set or for creating a new one. |

| | |
|------------------|-------------------|
| Parameter | Value |
| name | Legal entity name |

export_job

| | |
|----------------|---|
| Command | export_job |
| Group | Engineering Toolkit |
| Descr. | Performs automatic export of Genesis 2000 job |

| | |
|------------------|---|
| Parameter | Value |
| job | Name of job to export |
| path | Directory to export job to |
| mode | tar_gzip , tar, directory |
| units | Values = "metric", "imperial". Only for XML |
| submode | Values = "full", "partial". Only for XML |

export_stripped_job

| | |
|----------------|-------------------------------------|
| Command | export_stripped_job |
| Group | Engineering Toolkit |
| Descr. | Used for exporting part of the job. |

| | |
|----------------------|---|
| Parameter | Value |
| job | existing job name |
| mode | directory, tar, tar_gzip |
| path | exported job path |
| overwrite | overwrite the job if exists |
| dest_database | Destination database name |
| del_elements | List of elements to delete. Separate list elements with a semicolon (;). |
| del_steps | List of steps to delete. Separate list elements with a semicolon (;). List may contain wildcard filter. |

| | |
|----------------------|--|
| include_steps | list of steps to include. Separate list elements with a semicolon (;). List may contain wildcard filter. |
| del_lyrs | list of layers to delete. Separate list elements with a semicolon (;). List may contain wildcard filter. |
| include_lyrs | list of layers to include Separate list elements with a semicolon (;). List may contain wildcard filter. |

exposed_area

| | |
|-----------------|--|
| Command | exposed_area |
| Group | Graphic Editor |
| Descr. | Calculates the exposed area of a layer/s; the operation is performed on the raster image of the layer using a user-defined mask layer. The distribution map and the thermal map are created for the user interface popup and cannot be accessed with this command. |
| Response | Contains the total exposed value + the copper percentage. Syntax: ccccc ppppp (cccc - exposed area, ppppp - percentage). |

| | |
|-----------------------------|--|
| Parameter | Value |
| layer1 | Existing layer name |
| mask1 | Layer1's mask layer |
| layer2 | Existing layer name |
| mask2 | Layer2's mask layer, needed only when layer2 is defined |
| drills | Yes - considers drill layers No - no drill layers |
| drills_ source | Matrix - take from Job Matrix Manual - take list of drills |
| resolution | 1/4, 1/2, 1 mils to define precision of rasterization calculation |
| thickness | 0 <= thickness (depth of drills, used to calculate drill barrel area) |
| x_boxes, y_boxes | 1 <= num <= 200 to define number of boxes (of copper distribution) in X,Y axes |
| area | Yes - use specified area (x1, y1, x2, y2) No - copper area for whole layer |
| x1, y1, x2, y2 | Legal coordinates to define rectangular area corners |
| dist_map | Yes - create distribution map No - no distribution map |
| f_type | All - all features are selected Selected - only selected features. |
| out_file | Output file (optional) |
| out_layer | First/second/sum - what layer to display in out_file . |
| consider_ rout | Yes: rout features are considered when calculating the copper area. No: rout features are not considered when calculating the copper area. Note: This feature is implemented only if the parameter drill=yes in either line mode command copper_area or exposed_area . |
| edges | Values = [no/yes] (default = no). If yes, consider copper edges when calculating total copper area in a layer. |

| Parameter | Value |
|--------------------------------|--|
| consider _thickness | Thickness of copper edge areas. Values = [0..Max Coordinate] in mil/my. Useful only when edges=yes . |
| multi_mask _mode | Defines how to consider two or more mask layers used to define exposed areas. Values: or (default) = Use area covered by at list one mask. and = Use only area covered by all masks. |

exposed_area_ex

| | |
|-----------------|---|
| Command | exposed_area_ex |
| Group | Graphic Editor |
| Descr. | <p>This command is identical the line mode command exposed_area, with the following differences:</p> <p>parameter dist_map is eliminated:</p> <p>parameters x_boxes and y_boxes will be replaced by the new parameter box_size. box_size uses the current units (mil/mk).</p> <p>Calculates the exposed area of a layer/s; the operation is performed on the raster image of the layer using a user-defined mask layer. The distribution map and the thermal map are created for the user interface popup and cannot be accessed with this command.</p> |
| Response | <p>Contains the total exposed value + the copper percentage.</p> <p>Syntax: ccccc ppppp (cccc - exposed area, ppppp - percentage).</p> |

| Parameter | Value |
|---------------------------|--|
| layer1 | Existing layer name |
| mask1 | Layer1's mask layer |
| layer2 | Existing layer name |
| mask2 | Layer2's mask layer, needed only when layer2 is defined |
| drills | Yes - considers drill layers No - no drill layers |
| drills_source | Matrix - take from Job Matrix Manual - take list of drills |
| resolution | 1/4, 1/2, 1 mils to define precision of rasterization calculation |
| thickness | 0 <= thickness (depth of drills, used to calculate drill barrel area) |
| box_size | box_size uses the current units (mil/mk). |
| area | Yes - use specified area (x1, y1, x2, y2) No - copper area for whole layer |
| x1, y1, x2, y2 | Legal coordinates to define rectangular area corners |
| f_type | All - all features are selected Selected - only selected features. |
| out_file | Output file (optional) |
| out_layer | First/second/sum - what layer to display in out_file . |
| edges | Values = [no/yes] (default = no). If yes, consider copper edges when calculating total copper area in a layer. |
| consider_thickness | Thickness of copper edge areas. Values = [0..Max Coordinate] in mil/my. Useful only when edges=yes . |

feat2outline_partial

| | |
|---------------------------|---|
| Command | feat2outline_partial |
| Group | Graphic Editor |
| Description | Create a feature outline from lines and arc features, and save a portion of the new outline. |
| Parameter | Value |
| index | Feature index in the work layer. Range: 1 ... MAXINT. |
| width | Outline width. Range: > = 0.0 |
| location | Values: on_edge, inner, outer |
| offset | >0 - enlarge; <0 - diminish. Range: -100 .. +100 inch. |
| keep_ original | Values: No, Yes. Default=No. |
| part_dir | Partial outline direction. Values: [ccw/cw][Counterclockwise/clockwise] (Default=cw) |
| xs, ys, xe, ye | Start/end outline points. Legal coordinates Note: Feature is defined by index and start/end points on the feature edge. |

feat_hist_close

| | |
|--------------------|---|
| Command | feat_hist_close |
| Group | Graphic Editor |
| Description | The feat_hist_close command closes the layer features histogram. |
| Parameter | Value |
| layer | Existing layer name |
| type | features - features histogram slots - slot features histogram (drill layer only) sr - features histogram (+S&R) attributes - supports Attributes Histogram Popup |

feat_hist_open

| | |
|--------------------|---|
| Command | feat_hist_open |
| Group | Graphic Editor |
| Description | The feat_hist_open command opens the Layer Features histogram. |
| Parameter | Value |
| layer | Existing layer name |
| type | features - features histogram slots - slot features histogram (drill layer only) sr - features histogram (+S&R) attributes - supports Attributes Histogram Popup |

feat_hist_update

| | |
|----------------|--|
| Command | feat_hist_update |
| Group | Graphic Editor |
| Descr. | Controls the update mode of the feature histograms popups. |

| Parameter | Value |
|------------------|---|
| automatic | Yes - the histogram is updated after every editing change No - no update after changes |

fill_params

| | |
|----------------|--|
| Command | fill_params |
| Group | Graphic Editor |
| Descr. | Sets the contour fill parameters, that are used by all the commands that require the filling function (the command does not perform any filling!!!). |

| Parameter | Value |
|-----------------------|--|
| type | Solid - full copper fill Pattern - fill with symbol |
| origin_type | Datum - step datum Limits - lower left corner of the specified area |
| solid_type | Surface - create a surface feature - Relevant if type = solid Fill - vectoric fill |
| min_brush | 0 < size < max size - Relevant if solid_type = fill |
| use_acrs | Yes - Use arcs in fill No - do not use arcs in fill (Relevant if solid_type == fill) |
| symbol | Entity name - Relevant if type = 'pattern' |
| dx, dy | Fill pattern step 0 < size < max_size - Relevant if type = 'pattern' |
| break_partial | Yes - break partial special symbols - Relevant if type = 'pattern' No - if the special symbol is not fully contained in the contour - don't add it!!! |
| cut_prims | Yes - polygon cut of symbols that intersect with the fill contour - relevant if type = pattern No - intersecting features are eliminated |
| outline_draw | Yes - outline is drawn around the islands and holes No - no outline |
| outline_width | 0 <= width <= max_size - relevant if outline_draw = 'yes' |
| outline_invert | Yes - invert the polarity of the outline - relevant if outline_draw = 'yes' No - use the same polarity as the pattern |

film1_get_utilization

| | |
|-----------------|--|
| Command | film1_get_utilization |
| Group | Graphic Editor |
| Descr. | The routine is used for getting a report of utilization of a layer film in percentage. |
| Response | Utilization as percentage |

| Parameter | Value |
|------------------|-------------------------------|
| job_name | In which the film was created |
| stp_name | In which the film was created |
| film_name | Film layer name |

film1_lyrs_report

| | |
|----------------|---|
| Command | film1_lyrs_report |
| Group | Graphic Editor |
| Descr. | The routine is used for getting a report of lyrics list that were entered to a layer film |

| Parameter | Value |
|------------------|-------------------------------|
| job_name | In which the film was created |
| stp_name | In which the film was created |
| film_name | Of film |
| path | Of output file |

film1_prms_report

| | |
|----------------|--|
| Command | film1_prms_report |
| Group | Graphic Editor |
| Descr. | The routine is used for getting a report of lyrics parameters that were entered to a layer film. |

| Parameter | Value |
|------------------|-------------------------------|
| job_name | In which the film was created |
| stp_name | In which the film was created |
| film_name | Of film |
| path | Of output file |

films_chng_prms

| | |
|----------------|--|
| Command | films_chng_prms |
| Descr. | The routine is used for changing parameters of selected layers in the films optimization layers list |

| Parameter | Value |
|-----------------|--|
| polarity | Positive / negative |
| mirror | in x |
| comp | -10 <= comp <= 10(mils) - compensation(resize) value |
| xscale | .95 < scale <= 1.05 |
| yscale | .95 < scale <= 1.05 |

films_close

| | |
|----------------|---|
| Command | films_close |
| Group | Graphic Editor |
| Descr. | The routine is used for closing the films popup (if open) and releasing the license . The command is not generated by the GUI, therefore should be added manually to scripts generated by session recording in order to free license. |

films_del_exploited

| | |
|----------------|---|
| Command | films_del_exploited |
| Group | Graphic Editor |
| Descr. | The routine is used for removing the placed layers from the film optimization layers list |

films_delete

| | |
|----------------|---|
| Command | films_delete |
| Group | Graphic Editor |
| Descr. | The routine is used for deleting selected layers from the film optimization layers list |

films_force

| | |
|----------------|--|
| Command | films_force |
| Group | Graphic Editor |
| Descr. | The routine is used for forcing output of selected layers from film optimization layers list on the next run |

| | |
|------------------|------------------|
| Parameter | Value |
| force | force / no force |

films_lyr_add

| | |
|----------------|---|
| Command | films_lyr_add |
| Group | Graphic Editor |
| Descr. | The routine is used for adding a new layer to the films optimization layers |

| | |
|------------------|--|
| Parameter | Value |
| job | Existing job name |
| step | Existing step name |
| layer | Existing layer name |
| polarity | Positive / negative |
| mirror | in x |
| comp | -10 <= comp <= 10 (mils)compensation(resize) value |
| xscale | .95 < scale <= 1.05 |
| yscale | .95 < scale <= 1.05 |
| repeat | Number of times to repeat layer |

films_lyrs_list_add

| | |
|----------------|---|
| Command | films_lyrs_list_add |
| Group | Graphic Editor |
| Descr. | The routine is used for adding a layer num to a list, that is used by some of the other films line mode commands (e.g: films_chng_prms...) |

| | |
|------------------|--------------|
| Parameter | Value |
| lyr | Layer >= 1 |

films_lyrs_list_add_by_filmn

| | |
|----------------|---|
| Command | films_lyrs_list_add_by_filmn |
| Group | Graphic Editor |
| Descr. | The routine is used for adding layers to the selected list, that belongs to a certain film. the list is used later by some of the other 'film' line mode commands (e.g: films_chng_prms...) |

| | |
|------------------|-------------------|
| Parameter | Value |
| name | Output layer name |

films_lyrs_list_num_sel

| | |
|-----------------|---|
| Command | films_lyrs_list_num_sel |
| Group | Graphic Editor |
| Descr. | The routine is used to return the number of currently selected layers. The command can only be used from scripts and it counts layers which were selected using line mode commands films_lyrs_list_add or films_lyrs_list_sel_all only. |
| Response | Num of selected layers |

films_lyrs_list_reset

| | |
|----------------|---|
| Command | films_lyrs_list_reset |
| Group | Graphic Editor |
| Descr. | The routine is used for resetting the layers listing the film optimization popup, that is used by some of the other 'films' line mode commands (e.g: film_chng_prms...) |

films_lyrs_list_sel_all

| | |
|----------------|--|
| Command | films_lyrs_list_sel_all |
| Group | Graphic Editor |
| Descr. | The routine is used for the selection of all layers in films-optimization popup, that is used by some of the other 'films' line mode commands (eg: films_chng_prms...) |

films_lyrs_report

| | |
|----------------|---|
| Command | films_lyrs_report |
| Group | Graphic Editor |
| Descr. | The routine is used for getting a report of lyrics list that are intended to be put inside films. |

| | |
|------------------|----------------|
| Parameter | Value |
| path | Of output file |

films_open_popup

| | |
|----------------|--|
| Command | films_open_popup |
| Group | Graphic Editor |
| Descr. | The routine is used for opening the films optimization popup. It is needed because scripts must run with open popup. |

films_prms_report

| | |
|----------------|---|
| Command | films_prms_report |
| Group | Graphic Editor |
| Descr. | The routine is used for getting a report of film parameters that are used when creating films |

| | |
|------------------|----------------|
| Parameter | Value |
| path | Of output file |

films_rem_done_mark

| | |
|----------------|--|
| Command | films_rem_done_mark |
| Group | Graphic Editor |
| Descr. | The routine is used for removing the done mark (film num) from all the layers that were entered to a film from the film optimization layers list |

films_repeat

| | |
|----------------|--|
| Command | films_repeat |
| Group | Graphic Editor |
| Descr. | The routine is used for repeating selected layers in the films optimization layers list <i>n</i> times |

| | |
|------------------|-----------------|
| Parameter | Value |
| repeat | Times to repeat |

films_reset_sizes

| | |
|----------------|--|
| Command | films_reset_sizes |
| Group | Graphic Editor |
| Descr. | The routine is used for resetting the list of films sizes that can be used by film opt |

films_run

| | |
|----------------|--|
| Command | films_run |
| Group | Graphic Editor |
| Descr. | The routine is used for running the film optimization on the selected layers from the film optimization layers list <i>l</i> |

films_set_flm_size

| | |
|----------------|---|
| Command | films_set_flm_size |
| Group | Graphic Editor |
| Descr. | The routine is used for adding film size to the list of can be used-sizes |

| | |
|------------------|--------------|
| Parameter | Value |
| name | Of film |
| width | In inches |
| height | In inches |

films_set_params

| | |
|----------------|--|
| Command | films_set_params |
| Group | Graphic Editor |
| Descr. | The routine is used for setting the parameters for film optimization |

| Parameter | Value |
|-------------------------------|---|
| format | 0 => "Gerber" 1 => "Pentax" 2 => "Gerber274x"3 => "AutoPlot" 4 => "PAR" 5 => "EXCIMG" 6 => "RPD" 7 => "Other" |
| top_ distance | Between layers |
| bottom_ distance | Between layers |
| left_ distance | Between layers |
| right_ distance | Between layers |
| text_ size | |
| utilization | Percent |
| dev_jobs | Films will include lyrs from same job |
| auto_text | Yes, No |
| text_kind | Relevant if auto text |
| layer_ serial | None or Same_film |
| output_ layer_name | Output layer name |
| output_s_ prefix | Output layer serial prefix |
| specific_ job | If source is run on specific job |
| source | - All - Selected - Undone - specific_job |
| scale_anchor | "prof_center", "prof_origin" - Anchor for scaling |
| scale_mode | "all", "scale_feat", "unscale_targ" - Layer scaling mode |

| | |
|--------------------------|--|
| fixed_ orient | Yes, No |
| layer_ limits | “minimal”, “profile”, “step” - limits of output layer. |

films_sizes_report

| | |
|----------------|--|
| Command | films_sizes_report |
| Group | Graphic Editor |
| Descr. | The routine is used for getting a report of film sizes that are used when creating films |

| | |
|------------------|----------------|
| Parameter | Value |
| path | Of output file |

filter_area_end

| | |
|----------------|--|
| Command | filter_area_end |
| Group | Graphic Editor |
| Descr. | Used for selecting features in all of the affected layers according to the features filter, and to a specified polygon/rectangle area. |

| | |
|---------------------------------|---|
| Parameter | Value |
| layer | If empty string all the affected layers are taken |
| filter_name | Entity name - as specified in the 'filter_set' command |
| operation | Select, unselect |
| area_type | None - no area filter Rectangle - x1,y1,x2,y2 specify the rect corners Polygon - up to 50 points |
| inside_area | Yes - features inside if area_type !=None No - outside the area |
| intersect_area | Yes - takes features that ALSO intersect the area - if area_type !=None No - only features that are inside/outside the area |
| lines_only | If yes => allow only lines in a certain length and angle limit to pass filter - no = default. |
| oval_only | If yes => allow only oval pads in a certain length and angle limit to pass filter - no = default. |
| min_len, max_len | Length limits (inch/mm) - used only if in lines_only mode max val = 250 inch |
| min_angle, max_angle | Angle limits (degree) - used only if in " xxxx_only " mode |

filter_area_strt

| | |
|----------------|---|
| Command | filter_area_strt |
| Group | Graphic Editor |
| Descr. | Command for starting an area selection (it resets the points list). |

filter_area_xy

| | |
|----------------|---|
| Command | filter_area_xy |
| Group | Graphic Editor |
| Descr. | Command for adding a polygon/rectangle point. |

| | |
|------------------|-----------------------|
| Parameter | Value |
| x, y | legal x,y coordinates |

filter_atr_logic

| | |
|--------------------|---|
| Command | filter_atr_logic |
| Group | Graphic Editor |
| Description | The command sets the filter attributes logic. |
| Parameter | Description |
| filter_name | Entity name. Required by the commands that use the filter parameters. |
| logic | Values = [and/or]. Filter attribute logic. Filter features with all listed in the filter attributes or with at least one listed attribute. |

filter_atr_reset

| | |
|----------------|--|
| Command | filter_atr_reset |
| Group | Graphic Editor |
| Descr. | Resets the attributes filter (clears it!!!). |

| | |
|--------------------|---|
| Parameter | Value |
| filter_name | Entity name - required by the commands that use the filter params |

filter_atr_set

| | |
|----------------|--|
| Command | filter_atr_set |
| Group | Graphic Editor |
| Descr. | Sets the attributes filter parameters. These parameters are used as part of the upper level features filter (set by the command - filter_set). |

| | |
|----------------------|--|
| Parameter | Value |
| filter_name | Entity name - required by the commands that use the filter params |
| attribute | Entity name - attribute name |
| condition | Yes - filter also by the feature attribute value No - filter only according to the attribute name |
| text | Free text - used for text attributes |
| option | Valid option value - used for option (based on the attribute attributes definition) |
| min_int_val | Valid integer value - used for integer attributes (minimal value) |
| max_float_val | Valid float value - used for float attributes (maximal value) |
| min_float_val | Valid float value - used for float attributes (minimal value) |

filter_comp_reset

| | |
|----------------|--|
| Command | filter_comp_reset |
| Group | Graphic Editor |
| Descr. | Resets the components filter (clears it!!!). |

| Parameter | Value |
|-------------------------|--|
| filter_ name | Entity name - required by the @Commands that use the filter params |

filter_comp_set

| | |
|----------------|---|
| Command | filter_comp_set |
| Group | Graphic Editor |
| Descr. | The command is used for setting the components filter parameters. The component filter is used for selecting components or feature which are part of certain components |

| Parameter | Value |
|----------------------|--|
| filter_name | Entity name - required by the @Commands that use the filter params |
| update_popup | Yes - update the popup according to the new values No - no update |
| ref_des_names | Wild Reference Designator - names separated by ';' chars |
| pkg_names | Wild packages - names separated by ';' chars |
| part_names | Wild part - names separated by ';' chars |
| net_names | Wild part - names separated by ';' chars |
| cpn_names | Wild customer part names separated by ';' chars |
| ipn_names | Wild internal part names separated by ';' chars |
| mpn_names | wild manufacturer part names separated by ';' chars |
| vendor_names | Wild vendor part names separated by ';' chars |
| bpkg_names | Wild package (from BOM info) names separated by ';' chars |
| min_length | Minimal length of component - Length = largest of the two dimensions |
| max_length | Maximal length of component - Length = largest of the two dimensions |
| min_width | Minimal width of component - Length = largest of the two dimensions |
| max_width | Maximal width of component - Length = largest of the two dimensions |
| min_pitch | Minimal pitch of component - Pitch = Distance between pad centroids |
| max_pitch | Maximal pitch of component |
| min_pin_count | Minimal number of pins of Component |
| max_pin_count | Maximal number of pins of Component |
| angles | 0-180;90-270;other |
| mirror | Yes, No |

filter_highlight

| | |
|----------------|--|
| Command | filter_highlight |
| Group | Graphic Editor |
| Descr. | Used for highlighting features according to a specified filter |

| Parameter | Value |
|----------------------------|---|
| layer | If empty string - all the affected layers are taken |
| filter_name | Entity name - as specified in the filter_set command |
| lines_only | If yes => allow only lines in a certain length and angle limit to pass filter - no = default. |
| ovals_only | If yes => allow only oval pads in a certain length and angle limit to pass filter - no = default. |
| min_len, max_len | Length limits (inch/mm) - used only if in XXXXX_only mode - max value = 250 inch |
| min_angle max_angle | Angle limits (degrees) - used only if in XXXXX_only |

filter_reset

| | |
|----------------|--|
| Command | filter_reset |
| Group | Graphic Editor |
| Descr. | Resets all the filter values to their default values |

| Parameter | Value |
|--------------------|---|
| filter_name | Entity name - required by the commands that use the filter params |

filter_set

| | |
|----------------|---|
| Command | filter_set |
| Group | Graphic Editor |
| Descr. | The command is used for setting the features filter parameters. The filter is used for various functions, such as 'features selection'. |

| Parameter | Value |
|---|--|
| filter_name | Entity name - required by the @Commands that use the filter params |
| update_popup | Yes - update the ui popup according to the new values No - no update |
| active | Yes - the filter is active No - the filter becomes inactive (all the following params are not relevant) |
| feat_types | - line - pad - surface - arc - text - set field |
| polarity | - positive - negative - set field |
| include_syms | Wild symbol names separated by ';' characters - symbol names to be included |
| exclude_syms | Wild symbol - names separated by ';' characters - symbol names to be excluded |
| <p>Ranges for Symbol Names</p> <p>You can define a range of Genesis symbols for use in selected Genesis filters, line mode commands, and popups. Two standard or semi-standard symbol names of the same type separated by a colon (:) define the range of symbols. All existing Genesis symbol types may be included in the list.</p> <p>Any symbol filter may be defined as a list of symbol definition names separated by a semicolon (;). Symbol definition names may be written using any of the following rules:</p> <ul style="list-style-type: none"> - Any legal symbol name. - Wild card name (a name with an asterisk mark (*). Examples: "s*" or "rect100x*" or "rect*x50" . - Note: The symbol definition name * (used by itself) means no filter. (All symbol names are ignored.) <p>r100:r300: matches all round symbols between 100 (inclusive) and 300 (inclusive). It matches r100 , r100.1 , r150.34 , r300, but does <i>not</i> match r99.99 or r300.1.</p> <p>rect20x30: rect100x50 matches all rectangle symbols where the width is between 20 and 100 and the length is between 30 and 50. It therefore matches rect20x40, rect100x50, and rect20.123x99.999, but does <i>not</i> match rect20x100.1</p> <p>Also applicable to Reference Selection Popup and Features Filter Popup. See Doc. 0601, The Graphic Editor, for more information.</p> | |
| profile | All - ignore the profile In - inside the profile Out - outside the profile |

| | |
|---------------------------------------|--|
| dcode | -1 for all or dcode number can also be used for drill tool numbers |
| text | Any valid string |
| slot | line and/or oval (Default=None) line - line slots should be filtered oval - oval slots should be filtered |
| slot_by | length and/or angle (Default = [length and angle]) length - line and/or oval should be filtered by length angle - line and/or oval should be filtered by angle |
| min_len, max_len | length limits (inch/mm). Parameters are only used if slot = line or/and oval and slot_by = length . |
| min_angle, max_angle | Single limits in range [-180° .. +180°] degrees (clockwise rotation). Parameters are only used if slot = line or/and oval and slot_by = angle . |

flash_edit_b_signal

| | |
|----------------|---|
| Command | flash_edit_b_signal |
| Group | Graphic Editor |
| Descr. | Performs auto editing in a small area according to a selected route and specified parameters. |

| Parameter | Value |
|-----------------|---|
| x, y | Legal coordinate pair |
| distance | Radius - radius around (x,y) |
| params | String - a string representing the parameters of the edit |

flash_edit_r_signal

| | |
|----------------|---|
| Command | flash_edit_r_signal |
| Group | Graphic Editor |
| Descr. | Performs auto editing according to a route achieved by manual tries |

| Parameter | Value |
|--------------|--|
| lname | Name of layer to do |
| route | String - a string representing the operation of the edit |

flatten_layer

| | |
|-----------------|--|
| Command | flatten_layer |
| Group | Graphic Editor |
| Descr. | The command receives as input a layer that contains step & repeat data, and it flattens it, and creates a new layer that contains the broken step & repeat features. |
| Response | Contains the total copper value + the copper percentage. Syntax: ccccc ppppp (cccc - copper area, ppppp - percentage). |

| Parameter | Value |
|---------------------|---------------------|
| source_layer | Existing layer name |
| target_layer | Layer to create |

flip_step

| | |
|----------------|---|
| Command | flip_step |
| Group | Panelization Package |
| Descr. | The command allows you to create a new step which is a flipped copy of a source step. |

| Parameter | Value |
|-------------------------|---|
| job | Existing job name |
| step | Name of existing step in the job to be flipped |
| new_step | Name of a new (flipped) step |
| new_layer_suffix | Suffix to be added to the name of layer created during the flipping procedure |
| mode | flipping mode, defines the mirroring of the layer features as being relative to either the <p style="margin-left: 40px;">axis (relative to line X=0) center (relative to line X = the middle point of the profile).</p> |

flow_info

| | |
|----------------|---------------------|
| Command | flow_info |
| Group | Work Flows |
| Descr. | Get info of a stage |

| Parameter | Value | | | | | | | | | | | | | | |
|---|--|-----------------------------|--------------------------------|---|--------------------------------|--------------------------------|--------------------------------|--------------------------------|-----------------------------|---|----------------------------|--|---------------------------|--|--|
| job | Name of the job | | | | | | | | | | | | | | |
| flow | Name of the main flow | | | | | | | | | | | | | | |
| stage | Name of the stage - when there are subflows, this should be the full path to the stage that needs to be edited. Example: stage=f1/f2/s1 where s1 is a stage in subflow f2 which is in subflow f1 which is in main flow | | | | | | | | | | | | | | |
| outfile | File to place output in The following output is generated: <table> <tr> <td>- stACTIVE = Yes, No</td><td>- stFORM = <stage form></td></tr> <tr> <td>- stTYPE = stage condition switch subflow</td><td>- stHELP = <stage help></td></tr> <tr> <td>- stNAME = <stage name></td><td>- stTIMESTART = start T</td></tr> <tr> <td>- stTEXT = <stage text></td><td>- stUSERSTART = user</td></tr> <tr> <td>- stVALUE(cond/switch) = val(stage/subflow) = NOSTART/START/END</td><td>- stTIMEEND = end T</td></tr> <tr> <td></td><td>- stUSEREND = user</td></tr> <tr> <td></td><td>- stTIMESTAGE = time of stage in seconds</td></tr> </table> | - stACTIVE = Yes, No | - stFORM = <stage form> | - stTYPE = stage condition switch subflow | - stHELP = <stage help> | - stNAME = <stage name> | - stTIMESTART = start T | - stTEXT = <stage text> | - stUSERSTART = user | - stVALUE(cond/switch) = val(stage/subflow) = NOSTART/START/END | - stTIMEEND = end T | | - stUSEREND = user | | - stTIMESTAGE = time of stage in seconds |
| - stACTIVE = Yes, No | - stFORM = <stage form> | | | | | | | | | | | | | | |
| - stTYPE = stage condition switch subflow | - stHELP = <stage help> | | | | | | | | | | | | | | |
| - stNAME = <stage name> | - stTIMESTART = start T | | | | | | | | | | | | | | |
| - stTEXT = <stage text> | - stUSERSTART = user | | | | | | | | | | | | | | |
| - stVALUE(cond/switch) = val(stage/subflow) = NOSTART/START/END | - stTIMEEND = end T | | | | | | | | | | | | | | |
| | - stUSEREND = user | | | | | | | | | | | | | | |
| | - stTIMESTAGE = time of stage in seconds | | | | | | | | | | | | | | |

form_callback_editor

| | |
|----------------|---|
| Command | form_callback_editor |
| Group | Work Forms |
| Descr. | Opens the system editor on a given callback script. This command is added in order to control the View>Edit option of a form according to user privilege. |

| | |
|------------------|-----------------------------|
| Parameter | Value |
| job | Name of the job |
| path | Path to the callback script |

form_elem_visibility

| | |
|----------------|--|
| Command | form_elem_visibility |
| Group | Work Forms |
| Descr. | Sets the specified element as enabled/disabled. This command affects only the current view of the form, and does not change the form definition in the database. |

| | |
|------------------|--------------------------------------|
| Parameter | Value |
| job | Name of the job |
| form | Name of form |
| elem | Name of element |
| mode | Sensitive, unsensitive, hide, unhide |

full_quote_analysis

| | |
|----------------|---|
| Command | full_quote_analysis |
| Group | Quote Analysis |
| Descr. | The command performs full quote analysis. |

| Parameter | Value |
|--------------------------|--|
| line | Values: No, Yes. |
| space | Values: No, Yes. |
| profiling | Values: No, Yes. |
| | Values: No, Yes. |
| smd | Values: No, Yes. |
| test | Values: No, Yes. |
| annular_ ring | Values: No, Yes. |
| drill | Values: No, Yes. |
| bga | Values: No, Yes. |
| specials | Values: No, Yes. |
| gold_ fingers | Values: No, Yes. |
| slots | Values: No, Yes. |
| copper_ area | Values: No, Yes. |
| rout_ spacing | Values: No, Yes. |
| sr_table | Values: No, Yes. |
| measurements | Values: minimal, typical. |
| test_by | Values: estimation, cad, current, current_based_cad. |
| work_on | Values: all_layers, outer_layers, inner_layers, active_layers. |

gen_etm_com

| | |
|----------------|---|
| Command | gen_etm_com |
| Group | Engineering Toolkit |
| Descr. | Used for running standard action and info action for etm flowchart states (process) |

| | |
|------------------|---|
| Parameter | Value |
| name | etm command name - must appear in etm_proc process set |
| etset | ET set name |
| split | Split number |
| oper | Split number |

gen_tool_command

| | |
|----------------|--|
| Command | gen_tool_command |
| Group | Engineering Toolkit |
| Descr. | General command used for adding tooling pins of any sort. This is the general line mode command that activates all ETM manual tools. |

| | |
|------------------|--------------|
| Parameter | Value |
| | |
| | |
| | |
| | |

generate_vrml

| | |
|----------------|---|
| Command | generate_vrml |
| Group | Graphic Editor |
| Descr. | The command generates a VRML file containing 3D info for the current step's component layer(s). |

| | |
|------------------|---|
| Parameter | Value |
| side | Top, bottom or both |
| show_pins | Yes, No (Descr.) Include component pins in VRML output? |
| fname | External file - external file to contain VRML information (output). |
| compress | Yes, No - Compress VRML output file? |

get_affect_layer

| | |
|-----------------|---|
| Command | get_affect_layer |
| Group | Graphic Editor |
| Descr. | The command is used for getting the names of the affected layers. |
| Response | layer1, layer2.....layern |

get_clipb_selected

| | |
|--------------------|---|
| Command | get_clipb_selected |
| Group | Engineering Toolkit |
| Description | Retrieves elements of the specified type located in the clipboards. |
| Response | List of selected elements |
| Parameter | Description |
| type | Values: jobs, job, steps, symbols, forms, user job refers to the top-level job content. Note: If an element is selected in two clipboards, it will be returned twice. |

get_disp_layers

| | |
|--------------------|--|
| Command | get_disp_layers |
| Group | Graphic Editor |
| Description | The get_disp_layers command is used to get the names of the currently displayed layers. |
| Response | layer1 layer2.....layern |

get_flow_entry_status

| | |
|-----------------|---|
| Command | get_flow_entry_status |
| Group | Orbotech AOI Manager |
| Descr. | The command is used for finding the red/green status of a flow entry. |
| Response | red/green |

| | |
|-------------------|--|
| Parameter | Value |
| flow_entry | Values: prms,stage,frs,inspect, exclude, align_tgts, alignment, vrs_tgts |

get_message_bar

| | |
|-----------------|--|
| Command | get_message_bar |
| Group | Graphic Editor |
| Descr. | Returns the text in the message box at the bottom of the Graphic Editor. The text is returned in \$ READANS . |
| Response | |

get_num_clipb

| | |
|--------------------|--|
| Command | get_num_clipb |
| Group | Engineering Toolkit |
| Description | Returns the number of active clipboards |
| Response | Number of open clipboards (including minimized clipboards) Note: Usually, only one clipboard is open. You can open a new clipboard by selecting a job and then select Actions > Open . |

get_origin

| | |
|-----------------|---|
| Command | get_origin |
| Group | Graphic Editor |
| Descr. | Gets the graphic origin. |
| Response | xxxx.xxxxxx yyyyyy.yyyyy (graphic origin) |

get_select_count

| | |
|-----------------|--|
| Command | get_select_count |
| Group | Graphic Editor |
| Descr. | The command is used for getting the number of selected features. |
| Response | nnnnn - number of selected features |

get_units

| | |
|-----------------|-------------------------|
| Command | get_units |
| Group | Graphic Editor |
| Descr. | Gets the current units. |
| Response | Inch/mm |

get_user_group

| | |
|--------------------|--|
| Command | get_user_group |
| Group | Engineering Toolkit |
| Description | The command returns the name of the group the user belongs to. |
| Response | user_group |

get_user_name

| | |
|-----------------|---|
| Command | get_user_name |
| Group | Engineering Toolkit |
| Descr. | The command returns the user name that is currently logged into the system. |
| Response | user_name |

get_user_permission

| | |
|--------------------|---|
| Command | get_user_permission |
| Group | Engineering Toolkit |
| Description | The command returns whether the user may run a certain command. |
| Response | user_permission |

| | |
|------------------|----------------------------------|
| Parameter | Value |
| command | The name of a line mode command. |

get_user_priv

| | |
|--------------------|--|
| Command | get_user_priv |
| Group | Engineering Toolkit |
| Description | The command returns 2 values: The first value is the user's privilege level. The second value is the group privileges of the user. |
| Response | user_privilege_level user_group_privilege_level |

***Sample
Script***

```
COM get_user_priv
echo user privileges are $COMANS[1]
echo group privileges are $COMANS[2]
```

```
COM get_user_group
echo group is $COMANS
COM get_user_permission,command=open_job
echo Permission to run \"open_job\" is $COMANS
```

get_version

| | |
|-----------------|--|
| Command | get_version |
| Group | Engineering Toolkit |
| Descr. | The command returns the version number that is currently logged into the system. |
| Response | version |

get_work_layer

| | |
|-----------------|---|
| Command | get_work_layer |
| Group | Graphic Editor |
| Descr. | The command is used for getting the name of the work layer. |
| Response | work_layer (or empty string if there is no work layer) |

graphic_cursor

| | |
|----------------|--------------------------------|
| Command | graphic_cursor |
| Group | Graphic Editor |
| Descr. | Sets the graphic cursor style. |

| | |
|------------------|--|
| Parameter | Value |
| mode | Regular - cross cursor full_screen - full screen cross |

group_delete

| | |
|----------------|---------------------------------|
| Command | group_delete |
| Group | Login |
| Descr. | Used for deleting group entries |

| | |
|------------------|---------------|
| Parameter | Value |
| group | name of group |

group_edit

| | |
|----------------|--|
| Command | group_edit |
| Group | Login |
| Descr. | Used for changing/adding group entries |

| | |
|-------------------|-------------------------------------|
| Parameter | Value |
| group | Name of group |
| desc | Descr. |
| priv | 1 - 100 |
| autologout | minutes - minutes before autologout |

image_close_elpd

| | |
|----------------|---|
| Command | image_close_elpd |
| Group | Engineering Toolkit |
| Descr. | The command is used to close/hide the extended Layer Production Data (LPD) Popup. |

image_copy_elpd

| | |
|----------------|--|
| Command | image_copy_elpd |
| Group | Engineering Toolkit |
| Descr. | Copies extended Layer Production Data (LPD) for IMG output from one layer to another |

| Parameter | Value |
|------------------------|------------------------------------|
| src_job | Source job existing job name |
| src_step | Source step existing job name |
| src_layer | Source layer existing job name |
| src_device_type | Source device existing device_type |
| dst_job | Destination job name |
| dst_step | Destination step name |
| dst_layer | Destination layer name |
| dst_device_type | Destination device_type |

image_open_elpd

| | |
|--------------------|--|
| Command | image_open_elpd |
| Group | Engineering Toolkit & Graphic Editor |
| Description | Opens extended Layer Production Data (LPD) popup for IMG output. |
| Parameter | Value |
| job | Existing job name |
| step | Existing step name |
| layer | Existing layer name |
| units | inch, mm |
| device_type | Existing device type: "EITHER TYPE" (default), "LP7008", "XPRESS", "LP5008", "DP100" |

image_set_elpd

| | |
|----------------|--|
| Command | image_set_elpd |
| Descr. | Sets extended Layer Production Data (LPD) values for IMG output. |

| | |
|--------------------|-------------------------------|
| Parameter | Value |
| layer | Existing layer name |
| polarity | Positive/negative |
| speed | 0<= speed <=25 Note: 0 = auto |
| xstretch | Percent |
| ystrect | Percent |
| xshift | In inches |
| yshift | In inches |
| xmirror | In inches |
| ymirror | In inches |
| copper_area | In square inches |
| xcenter | In mils |
| ycenter | In mils |
| plot_kind1 | 0 for LP5000, 56 for LP5008 |
| plot_kind2 | 0 for LP5000, 56 for LP5008 |
| minvec | In mils |
| advec | In mils |
| minflash | In mils |
| adflash | In mils |
| conductors1 | In mils |

| | |
|--------------------|------------------------------|
| conductors2 | In mils |
| conductors3 | In mils |
| conductors4 | In mils |
| conductors5 | In mils |
| media | First / second / third |
| smoothing | Smooth / rough |
| swap_axes | no_swap / swap |

| ***** Extended LPD ***** | |
|------------------------------|--|
| Parameter | Value |
| define_ext_lpdp | Define regular or extended LPD Yes = extended LPD No = regular LPD |
| resolution_value | Plot resolution value (float value) |
| resolution_units | Plot resolution value units (mil/micron/inch/mm/dpi) |
| enlarge_polarity | Enlarge only the features of the specified polarity. Possible values = none/positive/negative/both. |
| enlarge_other | size_inversely = size inversely features of the other polarity leave_as_is = leave as is the features of the other polarity |
| enlarge_panel | Yes = enlarge panel elements as PCB elements |
| overlap | Yes = Allow the panel data to overlap the PCB No = Do not allow the panel data to overlap the PCB |
| enlarge_image_symbols | Yes = Enlarge Image symbols as regular features. |
| enlarge_0_vecs | Yes = enlarge zero length vectors as flashes |
| enlarge_symbols | Possible values: none/all/selected |
| enlarge_symbols_by | Enlarge all symbols by this value in mils |
| symbol_name1 | symbol name to enlarge |
| enlarge_by1 | enlarge "named symbol" by this value in mils |
| ***** | ***** |
| symbol_name10 | symbol name to enlarge Note:(Max of 10 named symbols can be enlarged) |
| enlarge_by10 | enlarge "named symbol" by this value in mils Note: (Max of 10 named symbols can be enlarged) |

image_set_elpd2

| | |
|----------------|--|
| Command | image_set_elpd2 |
| Descr. | Sets extended Layer Production Data (LPD) values for IMG output. The command has the same function and sets the same parameters as existing image_set_elpd command. The difference - the new command doesn't work in the context of a Graphic Editor. It has the following new parameters in addition to all those existing in the old command set. |

| Parameter | Value |
|--------------|------------|
| job | job name |
| step | step name |
| layer | layer name |

image_set_lpd

| | |
|----------------|---|
| Command | image_set_lpd |
| Descr. | Sets Layer Production Data (LPD) values for IMG output. |

| Parameter | Value |
|--------------------|---------------------|
| layer | Existing layer name |
| polarity | Positive/negative |
| speed | 0<= speed <=25 |
| xstretch | Percent |
| ystreht | Percent |
| xshift | In inches |
| yshift | In inches |
| mirror | In inches |
| ymirror | In inches |
| copper_area | In square inches |
| xcenter | In mils |
| ycenter | In mils |
| plot_kind1 | 0<=plot_kind1 <=25 |
| plot_kind2 | 0<=plot_kind2 <=25 |
| minvec | In mils |
| advec | In mils |
| minflash | In mils |
| adflash | In mils |
| conductors1 | In mils |

| | |
|--------------------|-------------------------------------|
| conductors2 | In mils |
| conductors3 | In mils |
| conductors4 | In mils |
| conductors5 | In mils |
| media | First / second / third |
| resolution | half_mil / quater_mil |
| smoothing | Smooth / rough |
| swap_axes | no_swap / swap |

impcpn_open

| | |
|--------------------|---|
| Command | impcpn_open |
| Group | Graphic Editor |
| Description | Opens the Impedance Coupon Generator application, and checks out the license. |

impcpn_close

| | |
|--------------------|--|
| Command | impcpn_open |
| Group | Graphic Editor |
| Description | Closes the Impedance Coupon Generator application, and releases the license. |

impcpn_edit_imptbl_start

| | |
|--------------------|---|
| Command | impcpn_edit_imptbl_start |
| Group | Graphic Editor |
| Description | Clears the table of constraints of the wizard. Clears the table of constraints of the step. |

impcpn_edit_imptbl_end

| | |
|--------------------|---|
| Command | impcpn_edit_imptbl_end |
| Group | Graphic Editor |
| Description | Copies the wizard's table of constraints to the table of constraints of the step. |

impcpn_add_cnst

| | |
|--------------------|---|
| Command | impcpn_add_cnst |
| Group | Graphic Editor |
| Description | Add a new constraint to the table of constraints of the wizard. |

| Parameter | Value |
|--|-----------------------------|
| test_lyr | Test layer name |
| test_model | Test model name |
| top_ref | Top reference layer name |
| bot_ref | Bottom reference layer name |
| lw_art | Artwork line widths |
| lw_orig | Required line width |
| spc_art | Artwork spacing |
| spc_orig | Required spacing |
| impedance | Required impedance |
| tol | Required tolerance |
| grp_id | Group number |
| All the above are constraint parameters. | |

impcpn_add_grp

| | |
|--------------------|-------------------------------------|
| Command | impcpn_add_grp |
| Group | Graphic Editor |
| Description | Defines a new group of constraints. |

| Parameter | Value |
|--------------------|---|
| coupon | Coupon name |
| layout | Layout name |
| grpId | Group number |
| ol_to_label | List of outer layers that need to be labeled. Names should be separated by ";". |
| ol_format | <p>In each target layer, a text will be added to every pad in the coupon. The text itself is defined by the format. The format can include the keywords listed below.</p> <p>\$NLJR Test or reference layer(s) number</p> <p>\$IMP Impedance</p> <p>\$TOL Tolerance for impedance</p> <p>\$LJR Test or reference layer/s name</p> <p>\$MODEL Test model name</p> <p>\$REQ_LINE Required line width</p> <p>\$ART_LINE Artwork line width</p> <p>\$REQ_SPC Required spacing</p> <p>\$ART_SPC Artwork spacing</p> <p>Each <i>keyword</i> in the format will be replace by a value; other characters will be copied as-is. See “Impedance Coupon Generator” in Doc. 0601, Graphic Editor, for details.</p> |
| il_to_label | List of outer layers that need to be labeled. Names should be separated by ";". |
| il_format | See ol_format above. |

impcpn_change_grp

| | |
|--------------------|--|
| Command | impcpn_change_grp |
| Group | Graphic Editor |
| Description | Changes the parameters of an existing group. |

| Parameter | Value |
|--------------------|--|
| coupon | Coupon name |
| layout | Layout name |
| grpId | Group number |
| ol_to_label | List of outer layers that need to be labeled. Names should be separated by ";". |
| ol_format | <p>In each target layer, a text will be added to every pad in the coupon. The text itself is defined by the format. The format can include the keywords listed below.</p> <p>\$NLyr Test or reference layer(s) number</p> <p>\$IMP Impedance</p> <p>\$TOL Tolerance for impedance</p> <p>\$LYR Test or reference layer/s name</p> <p>\$MODEL Test model name</p> <p>\$REQ_LINE Required line width</p> <p>\$ART_LINE Artwork line width</p> <p>\$REQ_SPC Required spacing</p> <p>\$ART_SPC Artwork spacing</p> <p>Each <i>keyword</i> in the format will be replaced by a value; other characters will be copied as-is. See "Impedance Coupon Generator" in Doc. 0601, Graphic Editor, for details.</p> |
| il_to_label | List of outer layers that need to be labeled. Names should be separated by ";". |
| il_format | See ol_format above. |

impcpn_delete_grp

| | |
|--------------------|---------------------------|
| Command | impcpn_delete_grp |
| Group | Graphic Editor |
| Description | Delete an existing group. |

| | |
|------------------|--------------|
| Parameter | Value |
| grp_id | Group number |

impcpn_edit_impgrps_start

| | |
|--------------------|---------------------------------------|
| Command | impcpn_edit_impgrps_start |
| Group | Graphic Editor |
| Description | Delete all impedance groups from step |

impcpn_generate_cpns

| | |
|--------------------|---|
| Command | impcpn_generate_cpns |
| Group | Graphic Editor |
| Description | Create impedance coupon according to constraints and parameters defined by previous line mode commands. |

impcpn_read_cfg

| | |
|--------------------|---|
| Command | impcpn_read_cfg |
| Group | Graphic Editor |
| Description | Reads the configuration file of the Impedance Coupon Generator. |

impcpn_read_io_grp

| | |
|--------------------|--|
| Command | impcpn_read_io_grp |
| Group | Graphic Editor |
| Description | Read all parameters from csv file and create coupon. |

| | |
|------------------|-----------------------|
| Parameter | Value |
| file_name | Full path to csv file |

impcpn_set_cpn_prms

| | |
|--------------------------|--|
| Command | impcpn_set_cpn_prms |
| Group | Impedance Coupon Generator |
| Description | Define Impedance Coupon Generator parameters |
| Parameter | Description |
| drill | Name of a drill layer |
| drill_size | Drill pad size. If not defined, drill size is taken from layout configuration. |
| add_tooling_holes | Add_tooling_holes - yes/no. If yes ICG adds tooling holes to the coupon. |
| plane_shield | plane_shield - yes/no. If yes, coupon shielding will be a plane shielding. |
| dotted_shield | dotted_shield - yes/no. If yes, coupon shielding will be a dotted shielding. |
| pad_sym | Symbol for dotted shielding. |
| pad_dx, pad_dy | dx, dy for dotted shielding. |
| prefix | Prefix for coupon step name |
| suffix | Suffix for coupon step name |
| split_grp | split-grp - yes/no. If yes, ICG will create as many coupons as necessary in order to allocate all required impedance constraints. If no, if ICG fails to allocate all required constraints in one coupon, it will not create additional coupons, and will return a message. |
| shrink | Values: none, lib, whole, half, quarter. None - Final coupon size will be the size the user defined. Lib - Coupon size may be shrunk to one of the available coupon sizes. Available coupon sizes are either the sizes defined in shrink_dims parameter, or if shrink_dims is not defined, one of the coupon sizes defined in the configuration file. Whole - Minimum coupon size is calculated, and coupon size will be shrunk to minimum, rounded to a whole number. Half - Minimum coupon size is calculated, and coupon size will be shrunk to minimum, rounded to a multiple of half. Quarter - Minimum coupon size is calculated, and coupon size will be shrunk to minimum, rounded to a multiple of quarter. |
| shrink_dims | List of available coupon sizes (for shrink = lib), separated by ";". |
| min_line | Minimal line widths (according to manufacturing limits). |
| min_space | Minimal space widths (according to manufacturing limits). |

impcpn_set_grp_rules

| | |
|--------------------|-----------------------------|
| Command | impcpn_set_grp_rules |
| Group | Graphic Editor |
| Description | Sets grouping rules |

| Parameter | Value |
|-------------------|--|
| mixing_by | Values: test_model;spans;ref_lyrs;impedance. |
| limit_cnst | If FALSE - MAX_CONSTRAINTS is used for max_se , max_df and max_any . |
| max_se | Range: 0,1 .. MAX_CONSTRAINTS (def: 0=unlimited) Maximum Single Ended per Test Layer Used if mixing by test model is not allowed and limit_cnst == TRUE. |
| max_df | Range: 0,1 .. MAX_CONSTRAINTS (def: 0=unlimited) Maximum Differential per Test Layer Used if mixing by test model is not allowed and limit_cnst == TRUE. |
| max_any | 0,1 .. MAX_CONSTRAINTS (def: 0=unlimited) Maximum Constraints per Test Layer Used if mixing by test model is allowed and limit_cnst == TRUE. |

impcpn_set_grps

| | |
|--------------------|------------------------------|
| Command | impcpn_set_grps |
| Group | Graphic Editor |
| Description | Sets step's impedance groups |

impcpn_set_subass

| | |
|--------------------|---|
| Command | impcpn_set_subass |
| Group | Graphic Editor |
| Description | The command sets the impedance coupon subassembly data. |

| Parameter | Value |
|---------------|--|
| layers | Top and bottom layers. Values: top;bottom. |
| drills | drl_name1(drl_size1);drl_name2(drl_size2) |
| mode | Values: reset,add,change,delete |

import_job

| | |
|----------------|--|
| Command | import_job |
| Group | Engineering Toolkit |
| Descr. | Performs automatic import of Genesis 2000 job that was previously exported |

| Parameter | Value |
|-------------------------|---|
| db | Genesis 2000 job database to which the job will be imported |
| path | file path of imported job |
| name | name of job in database after import |
| analyze_surfaces | Yes or No. If yes run the Surface Analyzer after importing. |
| verify_tgz | <p>Enables users to specify how to handle errors when reading a tgz file.</p> <p>Values:</p> <ul style="list-style-type: none"> - No - Most errors are ignored when reading a tgz file. - Yes - Errors encountered when reading a tgz file cause the file import operation to fail. <p>Note: This option only affects import of files with a tgz extension.</p> |

info

| | |
|----------------|---------------------------------------|
| Command | info |
| Group | Engineering Toolkit |
| Descr. | Used for getting database information |

| Parameter | Value |
|-------------------|--|
| args | Legal arguments string - will be described for the output information |
| out_file | Legal file pathname - will be described for the output information |
| write_mode | Replace - replace existing file append - to the end of an existing file |
| units | Inch, mm - output units |
| | <p>Note For more details see Scripts (Doc 0204). The y2k_info_4 configuration parameter determines the use of 4-digit year format.</p> |

inlink_config

| | |
|----------------|--|
| Command | inlink_config |
| Group | Engineering Toolkit |
| Descr. | The command runs the plug in for configuring InLink. |

inlink_data

| | |
|----------------|---|
| Command | inlink_data |
| Group | Engineering Toolkit |
| Descr. | The command runs the plug in for inputting InPlan data. |

| | |
|------------------|----------------------------------|
| Parameter | Value |
| job | Existing job name. Not required. |

input_auto

| | |
|----------------|---|
| Command | input_auto |
| Group | Engineering Toolkit |
| Descr. | The command performs a full automatic input translation. A full detailed report is created, and there is an option to copy the input directory to the job directory in the database. The command does not update the input screen. |

| Parameter | Value |
|--------------------------|--|
| path | Input directory/file path |
| job | Existing job name |
| step | Existing step name for layer formats |
| report_path | Legal file pathname |
| copy_to_job | Yes - at the end of the operation the input dir is copied to the job dir No - |
| no copy | |
| ident_script_path | Identification script path |
| trans_script_path | Translation script path |

input_copy

| | |
|----------------|---|
| Command | input_copy |
| Group | Engineering Toolkit |
| Descr. | Used for copying the original input dir to the job dir. The command does not update the input screen. |

| Parameter | Value |
|----------------------|---|
| path | Existing input directory |
| job | Existing job name - target job |
| delete_source | Yes - delete the source dir No - only copy |

input_cur_report

| | |
|----------------|---|
| Command | input_cur_report |
| Group | Engineering Toolkit |
| Descr. | The command is used for placing the current input session report into a file. |

| | |
|------------------|--------------|
| Parameter | Value |
| path | Report path |

input_dcodes_add

| | |
|----------------|---|
| Command | input_dcodes_add |
| Group | Engineering Toolkit |
| Descr. | The command is used for adding a gerber file pathname to the files list. This list is used by the input_dcodes_get command to get all the used dcodes. |

| | |
|--------------------|--|
| Parameter | Value |
| path | Gerber file path |
| data_type | ASCII, EBCDIC, binary |
| units | Inches, mm |
| coordinates | Absolute, incremental |
| zeroes | None, leading, trailing |
| decimal | Yes - decimal point (nf, nf2, is not required) No - no decimal point (nf1 and nf2 are required) |
| nf1, nf2 | 1<=nf1, nf2<=6 |
| separator | ‘*’, ‘\$’, ‘#’, NL (new line) |

input_dcodes_get

| | |
|----------------|---|
| Command | input_dcodes_get |
| Group | Engineering Toolkit |
| Descr. | The command uses the Gerber files list, that was created by calling the input_dcodes_reset and input_dcodes_add commands, to get a list of all the used dcodes. The list is placed in an ASCII file that contains a number per line. Each number is a dcode number. Even if the list is empty the file will be created. |

| | |
|--------------------|--------------|
| Parameter | Value |
| report_path | |

input_dcodes_match

| | |
|----------------|---|
| Command | input_dcodes_match |
| Group | Engineering Toolkit |
| Descr. | The command is used for comparing a specified job wheel with a dcodes list that was created by the input_dcodes_get command. It create a new file that contains the dcodes in the input file that don't have matching dcodes in the wheel. The output file contains a csH style array named - gUDCODES . The file can be 'sourced' in a csH script. |

| Parameter | Value |
|------------------------|--|
| job | Job name |
| wheel | Wheel name |
| inp_dcodes_list | Created by the input_dcodes_get command |
| script_path | Output script path |

input_dcodes_reset

| | |
|----------------|---|
| Command | input_dcodes_reset |
| Group | Engineering Toolkit |
| Descr. | Used for resetting the Gerber files list that is used by the input_dcodes_get command to get all the used dcodes of a specified Gerber files list. |

input_extract_hdr

| | |
|-----------------|---|
| Command | input_extract_hdr |
| Group | Engineering Toolkit |
| Descr. | Used for extracting the header sections for gerber, and excellon files. This is important for files that contain the dcode tables as well as the standard data. The command does not update the input screen. |
| Response | 'Yes, No' indicator whether a header was extracted or not. |

| Parameter | Value |
|------------------|--------------------------------------|
| format | Gerber, Pentax, Excellon1, Excellon2 |
| file_path | Gerber/ Excellon file |
| out_path | Extracted file path |
| separator | Gerber file separator |

input_hide_page

| | |
|----------------|------------------------|
| Command | input_hide_page |
| Group | Engineering Toolkit |
| Descr. | Hides the input page |

input_identify

| | |
|----------------|--|
| Command | input_identify |
| Group | Engineering Toolkit |
| Descr. | Performs an input identification to the specified input pathname. It creates a summary file in a 'csh' script format, that can be sourced. The command does not update the input screen. |

| Parameter | Value |
|-----------------------|---|
| path | Input directory / file path |
| job | Existing job name |
| script_path | Legal file pathname for output summary Note: The parameter giERROR was added to the output summary file found in the script_path of the input_identify line mode command). The parameter takes the value of the error message if Genesis selects a wheel template with errors (e.g. unassigned dcodes), or is an empty string if there are no errors in the selected wheel template. |
| unify | Yes to perform unification as part of identification |
| break_sr | Yes to break step & repeat |
| gbr_ext | Yes to extract wheel for Gerber file automatically |
| drl_ext | Yes to extract wheel for drill file automatically |
| gbr_units | Inch, mm, auto - units during Gerber file identification |
| drl_units | Inch, mm, auto - units during drill file identification |
| bgr_wtp_units | Inch, mm, auto - (Gerber). This parameter is used to filter out wheel templates with units of measurement that don't match the units specified by the line mode command. If the parameter is omitted, the default is auto . Example: If the value is Inch , then all the mm wheel templates are filtered out and are not used as candidates. |
| drl_wtp_units | Inch, mm, auto - (tool wheel). This parameter is used to filter out wheel templates with units of measurement that don't match the units specified by the line mode command. If the parameter is omitted, the default is auto . Example: If the value is Inch , then all the mm wheel templates are filtered out and are not used as candidates. |
| drl_wtp_filter | list of wild card expressions for drill wtp |
| drl_wtp_units | inch/mm/auto - drill wtp units during identification |
| drl_wtp_filter | (tool wheel) This parameter is a wild card expressions used to filter out wheel templates by name. If the parameter is omitted, the default is * . |
| gbr_wtp_filter | list of wild card expressions for gerber wtp |
| gbr_wtp_filter | (Gerber) This parameter is a wild card expressions used to filter out wheel templates by name. If the parameter is omitted, the default is * . |

| | |
|----------------------|--|
| gbr_wtp_units | inch/mm/auto - gerber wtp units during identification |
| wtp_dir | <p>Legal directory pathname for using wheel templates. (Default): Tells Genesis to use original wheel templates. dir_path: Specifies path to alternate wheel templates.</p> <p>Note: The directory contained in this parameter must contain the 'whltemps' library. This library should contain wheel templates. The parameter forces Genesis to use the wheel templates in this directory instead of wheel templates from the original wheel template directory.</p> |

input_manual

| | |
|----------------|--|
| Command | input_manual |
| Group | Engineering Toolkit |
| Descr. | The command executes a manual input operation for the files that were specified in the input_manual_set command. The command does not update the input screen. |

| Parameter | Value |
|--------------------|----------------------------------|
| script_path | Output 'csh' script report path. |

input_manual_reset

| | |
|----------------|---|
| Command | input_manual_reset |
| Group | Engineering Toolkit |
| Descr. | The command resets the input files list that is used by the input_manual command. The command does not update the input screen. |

input_manual_set

| | |
|----------------|--|
| Command | input_manual_set |
| Group | Engineering Toolkit |
| Descr. | The command adds an external file to the input list. Each entry includes the file path and all the required parameters. Multiple calls to this command creates a list that is used by the 'input_manual' command. This command does not perform any translations!!!! The command does not update the input screen. |

| Parameter | Value |
|--------------------|--|
| path | Existing file/dir pathname - input path |
| job | Existing job name - target job |
| step | Existing step name - target step (for layer formats) |
| format | Gerber, Gerber274x, Auto-plot image,Par, Excellon1, Excellon2, DFX, Mentor |
| data_type | ASCII, EBCDIC, EIA, binary -for all gerbers and excellon |
| units | Inch, mm |
| coordinates | Absolute, incremental |
| zeroes | None, leading, trailing |
| decimal | Yes - decimal point (nf1,nf2 is not required) No - no decimal point (nf1, and nf2 are required) |
| nf1, nf2 | Number format (1 <=n <=6) |

| | |
|----------------------------|---|
| nf_comp | 0 - Only read Netlist 1 - Also read Components - for Mentor Neutral files |
| separator | '*', '\$', '#', NL (new line) |
| tool_units | Inch, mm - for drill formats |
| signed_ coords | Yes No - for Wessel Files |
| layer | Entity name - target layer (for layer formats) |
| wheel | Existing wheel name for gerber format |
| wheel_ template | Existing wheel template or empty string |
| multiplier | 0.000001<=x ,= 1000000.0 - for DXF files |
| break_sr | True if break s&r |

input_set_params

| | |
|----------------|--|
| Command | input_set_params |
| Group | The Input Process |
| Descr. | The command completes all the fields at the input screen. No identification or translation is performed. |

| Parameters | Value |
|-----------------------|---|
| path | Input directory / file path |
| job | Existing job name |
| step | Existing step name - for layer formats |
| exclude | Files to include - file filter |
| wheels | Yes /No |
| gbr_template | Text |
| gbr_headlines | Yes / No |
| name | Text |
| tool_template | Text |
| tool_headlines | Yes / No |
| gbr_ext | Yes to extract wheel for gbr file automatically |
| gbr_units | Inch/mm/auto - units during gerber files identification |
| drl_ext | Yes to extract wheel for drill file automatically |
| drl_units | Inch/mm/auto - units during drill files identification |
| force | Yes / No - Forces the screen to be overwritten |

input_show_page

| | |
|----------------|-----------------------------------|
| Command | input_show_page |
| Group | Engineering Toolkit |
| Descr. | The command shows the input page. |

insert_stage

| | |
|----------------|----------------------------|
| Command | insert_stage |
| Group | Flow Builder |
| Descr. | Used for inserting stages. |

| | |
|------------------|--|
| Parameter | Value |
| flow | Name of flow to insert in to name - name of new elem |
| name | Name of new elem |
| type | Type new of elem child - name of child |
| child | Name of child |
| parent | Name of parent |

invert_feat

| | |
|----------------|--|
| Command | invert_feat |
| Group | Graphic Editor |
| Descr. | Inverts the polarity of a feature in all the affected layers |

| | |
|------------------|--|
| Parameter | Value |
| index | Feature index in the work layer. (Optional) If index is not specified, Genesis looks for the feature according to coordinates. |
| x, y | Legal coordinates - feature coordinates |
| tol | 0 <= tol (mils) - snap tolerance |

is_job_open_

| | |
|-----------------|--|
| Command | is_job_open |
| Group | Engineering Toolkit |
| Descr. | Checks if a job was opened in the toolkit. Also writes in users_list_file a list of all users that opened the job (this happens only when the users_list_file is specified). The users are written as followed: user_name@host_name.display_name |
| Response | yes - job is open in memory |

| | |
|------------------------|-------------------|
| Parameter | Value |
| job | Existing job name |
| users_list_file | File name |

jtag_copy_sr

| | |
|----------------|---|
| Command | jtag_copy_sr |
| Group | Engineering Toolkit |
| Descr. | Copy jtag features according to S&R table |

joblist_check

| | |
|----------------|---|
| Command | joblist_check |
| Group | Engineering Toolkit |
| Descr. | Check the joblist and delete entries that point to nonexistent database or job directories. Delete duplicate job entries. Add genesislib entry to the joblist if it exists in one database. |

license

| | |
|----------------|--|
| Command | license |
| Group | License Manager |
| Descr. | Used for opening/closing/reporting license options |

| Parameter | Value |
|------------------|--|
| op | Installed - report installed license options Usage - report used license options |
| name | Name of option if empty, will work on all options - wildcarding is allowed |
| out_file | Path to file for reports When op = installed the report generated will look like this: <pre><option> <total num seats> genesis 9 geditor 4</pre> when op = usage the report generated will look like this: <pre><option> <num seats used> <total num seats> genesis 2 9 geditor 1 4</pre> The field name can be used with the wildcard character * to get a partial report. |

lin_hist_update

| | |
|----------------|--|
| Command | lin_hist_update |
| Group | Graphic Editor |
| Descr. | Controls the update mode of the lines histograms popup |

| Parameter | Value |
|------------------|---|
| automatic | Yes - the histogram is updated after every editing change No - no update after changes |

list_open_jobs

| | |
|----------------|--|
| Command | list_open_jobs |
| Group | Engineering Toolkit |
| Descr. | Enables you to list all jobs opened sitewide and the user(s) that opened them. |

| Parameter | Value |
|-----------------------|---|
| file | File name The file format is: job_name user_name@host_name.display_name The same job_name can appear with different users each time. |
| user_list_file | The user_list_file parameter specifies the output file name. The file contains several lines per each opened job. Each line has the following format: job_name username@display.computer where username , display , and computer are correspondingly the names of the current user, the display and computer the user is working on. If some job is opened by more than one user, each user is listed in a separate line. |

local_scaling

| | |
|----------------|--|
| Command | local_scaling |
| Group | Orbotech DI Interface |
| Descr. | The command is used to perform local scaling of a step in favor of the DI machine. |

| Parameter | Value |
|------------------------|------------------------------|
| trg_lyrs | list of existing layer names |
| min_dist_to_prf | Expressed in mils |
| max_dist_to_prf | Expressed in mils |
| min_dist_to_ftr | Expressed in mils |
| min_dist_to_drl | Expressed in mils |
| dist_btw_trgs_x | Expressed in mils |
| dist_btw_trgs_y | Expressed in mils |
| max_trgs | |
| set_regist_trgs | Values: Yes, No. |

| | |
|-----------------------------|----------------------|
| single_sym _mode | Two options |
| single_ symbol | Standard symbol name |
| multi_ symbol_ul | Standard symbol name |
| multi_ symbol_uc | Standard symbol name |
| multi_ symbol_ur | Standard symbol name |
| multi_ symbol_ml | Standard symbol name |
| multi_ symbol_mc | Standard symbol name |
| multi_ symbol_mr | Standard symbol name |
| multi_ symbol_bl | Standard symbol name |
| multi_ symbol_bc | Standard symbol name |
| multi_ symbol_br | Standard symbol name |

lock

| | |
|-----------------|-------------------------------------|
| Command | lock |
| Group | Locks Manager |
| Descr. | Used for locking/unlocking elements |
| Response | Yes, No if op = test |

| Parameter | Value |
|------------------|---|
| op | Lock, Unlock, Test |
| mode | Read, Write, All - unlock only |
| type | Job, step, layer, symbol, stack, wheel, matrix, form, flow, font template, path |
| job | Job name |
| step | Step name - job must be defined |
| layer | Layer name - dopestter must be def |
| symbol | Symbol name - job must be defined |
| stackup | Stackup name - job must be defined |
| matrix | Matrix name - job must be defined |
| wheel | Wheel name - job must be defined |
| form | Form name |
| flow | Flow name |
| template | Template name |
| font | Font name |
| path | Any path - can be used by user |

lock_list_checkin_nonexistent_jobs

| | |
|----------------|---|
| Command | lock_list_checkin_nonexistent_jobs |
| Group | Engineering Toolkit |
| Descr. | Remove invalid jobs from the locks list. |

matrix_add_col

| | |
|----------------|---|
| Command | matrix_add_col |
| Group | Engineering Toolkit |
| Descr. | The command adds a new column at the end of a matrix. |

| Parameter | Value |
|---------------|--------------------------------|
| job | Name of an existing opened job |
| matrix | Existing matrix name |

matrix_add_layer

| | |
|-----------------|---|
| Command | matrix_add_layer |
| Group | Engineering Toolkit |
| Descr. | The command adds a new layer to the job matrix. The layer is created in all of the job steps. |
| Response | None |

| Parameter | Value |
|-----------------|---|
| job | Name of an existing opened job |
| matrix | Existing matrix name |
| layer | Entity name |
| row | Existing empty row |
| context | Board, misc |
| type | <ul style="list-style-type: none"> - signal - power_ground - mixed - solder_mask - silk_screen - solder_paste - drill - rout - document |
| polarity | Positive, negative |

matrix_add_row

| | |
|----------------|--|
| Command | matrix_add_row |
| Group | Engineering Toolkit |
| Descr. | The command adds a new row at the end of a matrix. |

| Parameter | Value |
|---------------|--------------------------------|
| job | Name of an existing opened job |
| matrix | Existing matrix name |

matrix_add_step

| | |
|----------------|--|
| Command | matrix_add_step |
| Group | Engineering Toolkit |
| Descr. | The command adds a new step to the matrix. The specified target column must exist, and be empty. |

| Parameter | Value |
|------------------|--------------------------------|
| job | Name of an existing opened job |
| matrix | Existing matrix name |
| step | Entity name |
| col | Existing empty column |

matrix_auto_rename_rows

| | |
|--------------------|---|
| Command | matrix_auto_rename_rows |
| Group | Engineering Toolkit |
| Description | Enables renaming rows (layers) in the Job Matrix using special renaming rules located in the new lyr_rename_rule file. |
| Parameter | Description |
| job | Name of the job which is to have its layers renamed. Sample: COM matrix_auto_rename_rows,job=elt.001 |

matrix_auto_rows

| | |
|----------------|---|
| Command | matrix_auto_rows |
| Group | Engineering Toolkit |
| Descr. | The routine is used for automatically re-arranging the rows according to the layer naming convention, as it is defined in the lyr_rule file. |

| | |
|------------------|--------------------------------|
| Parameter | Value |
| job | Name of an existing opened job |
| matrix | Existing matrix name |

matrix_copy_col

| | |
|----------------|--|
| Command | matrix_copy_col |
| Group | Engineering Toolkit |
| Descr. | The command copies a column in a job matrix. If the column contains a step name, the step data will be copied as well. |

| | |
|------------------|---------------------------------------|
| Parameter | Value |
| job | Name of an existing opened job |
| matrix | Existing matrix name |
| col | Existing column |
| ins_col | 1 <= ins_col - target location |

matrix_copy_row

| | |
|----------------|---|
| Command | matrix_copy_row |
| Group | Engineering Toolkit |
| Descr. | The command copies a row in a job matrix. If the row contains a layer name, the layer data of all the job steps will be copied as well. |

| | |
|------------------|---------------------------------------|
| Parameter | Value |
| job | Name of an existing opened job |
| matrix | Existing matrix name |
| row | Existing row |
| ins_row | 1 <= ins_row - target location |

matrix_delete_col

| | |
|----------------|--|
| Command | matrix_delete_col |
| Group | Engineering Toolkit |
| Descr. | The command deletes a column from a job matrix. If the column contains a step name, the step will be removed from the job. |

| | |
|------------------|--------------------------------|
| Parameter | Value |
| job | Name of an existing opened job |
| matrix | Existing matrix name |
| col | Existing column |

matrix_delete_row

| | |
|----------------|---|
| Command | matrix_delete_row |
| Group | Engineering Toolkit |
| Descr. | The command deletes a row from a matrix. If the row contains a layer name, the layer will be deleted from all the steps that are part of the job. |

| | |
|------------------|--------------------------------|
| Parameter | Value |
| job | Name of an existing opened job |
| matrix | Existing matrix name |
| row | Existing row |

matrix_dup_col

| | |
|----------------|--|
| Command | matrix_dup_col |
| Group | Engineering Toolkit |
| Descr. | The command duplicates a column in the job matrix, and places the new column after the input one. If the column contains a step name, the step entity will also be duplicated. |

| | |
|------------------|--------------------------------|
| Parameter | Value |
| job | Name of an existing opened job |
| matrix | Existing matrix name |
| col | Existing column |

matrix_dup_row

| | |
|----------------|---|
| Command | matrix_dup_row |
| Group | Engineering Toolkit |
| Descr. | The command duplicates a row in the job matrix, and places the new row after the input one. If the row contains a layer name, then the layers data in all the job steps will be duplicated as well. |

| Parameter | Value |
|---------------|--------------------------------|
| job | Name of an existing opened job |
| matrix | Existing matrix name |
| row | Existing row |

matrix_insert_col

| | |
|----------------|---|
| Command | matrix_insert_col |
| Group | Engineering Toolkit |
| Descr. | The command inserts a new column in a matrix. |

| Parameter | Value |
|---------------|--------------------------------|
| job | Name of an existing opened job |
| matrix | Existing matrix name |
| col | 1 <= col |

matrix_insert_row

| | |
|----------------|--|
| Command | matrix_insert_row |
| Group | Engineering Toolkit |
| Descr. | The command inserts a new row in a matrix. |

| Parameter | Value |
|---------------|--------------------------------|
| job | Name of an existing opened job |
| matrix | Existing matrix name |
| row | 1 <= row |

matrix_layer_context

| | |
|----------------|---|
| Command | matrix_layer_context |
| Group | Engineering Toolkit |
| Descr. | The command sets the layer context in the job matrix. |

| Parameter | Value |
|----------------|--------------------------------|
| job | Name of an existing opened job |
| matrix | Existing matrix name |
| layer | Existing layer name |
| context | Board, misc |

matrix_layer_drill

| | |
|----------------|---|
| Command | matrix_layer_drill |
| Group | Engineering Toolkit |
| Descr. | The command defines the start and end layers of a drill layer. If the drill layers contains only through holes, the specified layer names may be empty strings. |

| Parameter | Value |
|---------------|--------------------------------|
| job | Name of an existing opened job |
| matrix | Existing matrix name |
| layer | Existing drill layer name |
| start | Existing layer name |
| end | Existing layer name |

matrix_layer_invert_polar

| | |
|----------------|--|
| Command | matrix_layer_invert_polar |
| Group | Engineering Toolkit |
| Descr. | Inverts polarity for all features in selected layers in the Job Matrix |

| Parameter | Value |
|---------------|---|
| job | Name of existing open job |
| matrix | Name of existing job matrix |
| layers | Existing layer names separated by semicolons (;). |

matrix_layer_polar

| | |
|----------------|--|
| Command | matrix_layer_polar |
| Group | Engineering Toolkit |
| Descr. | The command sets the layer polarity in the job matrix. |

| Parameter | Value |
|------------------|--------------------------------|
| job | Name of an existing opened job |
| matrix | Existing matrix name |
| layer | Existing layer name |
| polarity | Positive, negative |

matrix_layer_type

| | |
|----------------|--|
| Command | matrix_layer_type |
| Group | Engineering Toolkit |
| Descr. | The command sets the layer type in the job matrix. |

| Parameter | Value |
|------------------|---|
| job | Name of an existing opened job |
| matrix | Existing matrix name |
| layer | Existing layer name |
| type | <ul style="list-style-type: none"> - signal - power_ground, - mixed, - solder_mask, - silk_screen, - solder_paste - drill - rout - document |

matrix_move_col

| | |
|----------------|---|
| Command | matrix_move_col |
| Group | Engineering Toolkit |
| Descr. | The command moves a column to a new location in a job matrix. |

| Parameter | Value |
|----------------|--------------------------------|
| job | Name of an existing opened job |
| matrix | Existing matrix name |
| col | Existing column |
| ins_col | 1 <= ins_col - new location |

matrix_move_row

| | |
|----------------|--|
| Command | matrix_move_row |
| Group | Engineering Toolkit |
| Descr. | The command moves a row to a new location in a job matrix. |

| Parameter | Value |
|----------------|--------------------------------|
| job | Name of an existing opened job |
| matrix | Existing matrix name |
| row | Existing row |
| ins_row | 1 <= ins_row - new location |

matrix_page_close

| | |
|----------------|--|
| Command | matrix_page_close |
| Group | Engineering Toolkit |
| Descr. | The routine is used for closing a matrix page. |

| Parameter | Value |
|---------------|--------------------------------|
| job | name of an existing opened job |
| matrix | existing matrix name |

matrix_refresh

| | |
|----------------|--|
| Command | matrix_refresh |
| Group | Engineering Toolkit |
| Descr. | Refreshes the display of a matrix popup. |

| Parameter | Value |
|------------------|--------------------------------|
| job | Name of an existing opened job |
| matrix | Existing matrix name |

matrix_rename_layer

| | |
|----------------|--|
| Command | matrix_rename_layer |
| Group | Engineering Toolkit |
| Descr. | The command renames a layer in the matrix. |

| Parameter | Value |
|------------------|--------------------------------|
| job | Name of an existing opened job |
| matrix | Existing matrix name |
| layer | Existing layer name |
| new_name | Entity name |

matrix_rename_step

| | |
|----------------|--|
| Command | matrix_rename_step |
| Group | Engineering Toolkit |
| Descr. | The command renames a step entry (column) in a job matrix. |

| Parameter | Value |
|------------------|--------------------------------|
| job | Name of an existing opened job |
| matrix | Existing matrix name |
| step | Existing step name |
| new_name | Entity name |

measure

| | |
|--------------------|---|
| Command | measure |
| Group | Graphic Editor |
| Description | Used in scripts to measure spacing between nets when feature coordinates are known. |
| Parameter | Description |
| x1,y1,x2,y2 | Coordinates |
| mode | Feature being measured. Values: point, net, contour, midpoint, annular ring. Note: x2,y2 are ignored when measuring annular ring. |

memory_usage

| | |
|----------------|--|
| Command | memory_usage |
| Group | N/A |
| Descr. | Returns the number of bytes allocated by Genesis routines. This number is less than the total of all memory used by Genesis' processes. Potential usage in automation : when allocated memory is larger than the predefined amount, the user may try to reduce memory usage by using other commands. For example: delete_shapelist. |

merge_layers

| | |
|----------------|---|
| Command | merge_layers |
| Group | Graphic Editor |
| Descr. | The command merges 2 layers (like the copy_layer command with 'mode' == 'append'). |

| Parameter | Value |
|---------------------|---|
| source_layer | Entity name |
| dest_layer | Entity name - destination layer |
| invert | Yes - invert the features polarity No - invert |

mirror_feat

| | |
|----------------|---|
| Command | mirror_feat |
| Group | Graphic Editor |
| Descr. | Mirrors a feature around it's axis point (in X axis). |

| Parameter | Value |
|------------------|--|
| index | Feature index in the work layer. (Optional) If index is not specified, Genesis looks for the feature according to coordinates. |
| x, y | Legal coordinates - feature coordinates |
| tol | 0 <= tol (mils) - snap tolerance |

mns_sel

| | |
|----------------|--|
| Command | mns_sel |
| Group | Graphic Editor |
| Descr. | Moves (shifts) all the selected features and stretch lines connected to the selected features in order to maintain connectivity. |

| | |
|-----------------------|--|
| Parameter | Value |
| dx, dy | Shift values. Must be legal coordinates. |
| limit_angle_45 | |

move_corner

| | |
|----------------|----------------------------------|
| Command | move_corner |
| Group | Graphic Editor |
| Descr. | Moves a contour corner (vertex). |

| | |
|---------------------|---|
| Parameter | Value |
| x, y | Legal coordinates (inches/mm) - corner coordinates before movement. |
| new_x, new_y | Legal coordinates (inches/mm) - new corner coordinates. |

move_feat

| | |
|----------------|---|
| Command | move_feat |
| Group | Graphic Editor |
| Descr. | Moves a feature in all the affected layers. |

| | |
|------------------|--|
| Parameter | Value |
| index | Feature index in the work layer. (Optional) If index is not specified, Genesis looks for the feature according to coordinates. |
| x, y | Legal coordinates - feature coordinates |
| dx, dy | Legal coordinates - shift values |
| tol | 0 <= tol (mils) - snap tolerance |

move_feat_to_nest_step

| | |
|----------------|---|
| Command | move_feat_to_nest_step |
| Group | Graphic Editor |
| Descr. | The command moves or moves and flattens all selected features on the work layer to the same layer of the step instance defined by name and its datum that overlaps the given x,y coordinates. |

| Parameter | Value |
|------------------|---|
| step_name | Name of the step that is nested in the editor's step. |
| x, y | Legal coordinates - coordinates of insertion point |
| operation | Move - move features to the selected nested step. Flatten - move features to the selected nested step and flatten them to the panel. |

move_hole

| | |
|----------------|--|
| Command | move_hole |
| Group | Graphic Editor |
| Descr. | Moves a contour hole (must be a hole with no inner islands). |

| Parameter | Value |
|---------------|--|
| x, y | Legal coordinates (inch/mm) - coordinates of a point within the hole to be moved |
| dx, dy | Legal coordinates (inch/mm) - shift values |

move_job

| | |
|----------------|--|
| Command | move_job |
| Group | Engineering Toolkit |
| Descr. | Used to move a job from one database to another. |

| Parameter | Value |
|----------------------|---|
| source_job | existing job name. may contain wildcard |
| dest_job | destination job name. Can be same as source_job |
| dest_database | destination database to move the job |

move_junction

| | |
|----------------|---|
| Command | move_junction |
| Group | Graphic Editor |
| Descr. | The line mode command mechanism use either lines indexes (IND1, IND2) or old junction coordinates (XJUNC, YJUNC) to select the junction to be moved. If you wish to use the first method - set line indexes only, XJUNC and YJUNC do not need to be set. Otherwise set both line indexes to 1 and place the old junction coordinates (x,y) in (XJUNC, YJUNC). |

| Parameter | Value |
|--|--|
| index1=<IND1> | Line-feature index in the work layer |
| index2=<IND2> | IND1, IND2 - junction line indexes |
| x=<XJUNC> y= <YJUNC> | Legal coordinates - coordinates XJUNC,YJUNC = old position of junction |
| new_x<NEWX> new_y<NEWY> | Legal coordinates - coordinates NEWX, NEWY = new position of junction |

Note When you are in **immediate online net mode** you cannot perform the command **move_junction**.

move_triplet

| | |
|----------------|----------------------|
| Command | move_triplet |
| Group | Graphic Editor |
| Descr. | Moves a line triplet |

| Parameter | Value |
|--|---|
| indexes (start, middle, end) | Triplet lines indexes in the work layer |
| shift | Legal coordinate - middle line shift |
| direction | Positive - movement is in positive Y-Axis direction, or if middle line is vertical, positive X-Axis direction Negative - |
| mode | fixed_length; fixed_angle - Triplet movement mode |

move_triplets

| | |
|----------------|--|
| Command | move_triplets |
| Group | Graphic Editor |
| Descr. | Moves a group of line triplets. Comment: Selected triplets' mid-lines should be of approximately the same angle |

| | |
|------------------|---|
| Parameter | Value |
| shift | Positive value, triplet shift (inch/mm) |
| direction | Positive - movement is in positive Y-Axis direction, or if middle line is vertical, positive X-Axis direction Negative - |
| mode | FIX_ANGLE / FIX_LENGTH |

mps_add_feature

| | |
|----------------|--|
| Command | mps_add_feature |
| Group | Graphic Editor |
| Descr. | Moves (shifts) pad stack of all the selected features. |

| | |
|------------------|--|
| Parameter | Value |
| x, y | Shift values. Must be legal coordinates. |

mps_sel

| | |
|----------------|--|
| Command | mps_sel |
| Group | Graphic Editor |
| Descr. | Moves (shifts) pad stack of all the selected features. |

| | |
|-------------------------|--|
| Parameter | Value |
| dx, dy | Shift values. Must be legal coordinates. |
| tolerance | |
| include_coverlay | Consider coverlay in pad stack calculations. Values: Yes, No. |
| limit_angle_45 | Trace angle should be a multiply of 45 degrees. Values: Yes, No. |
| include_via_only | Only via holes can be part of the stack. Values: Yes, No. |

multi_layer_disp

| | |
|----------------|--|
| Command | multi_layer_disp |
| Group | Graphic Editor |
| Descr. | Sets the display mode for multi layers. The default mode allows displaying up to 4 layers, with transparent colors. The 'many' mode allows the display of 120 layers in opaque colors. |

| | |
|-------------------|--|
| Parameter | Value |
| mode | Default - up to 4 transparent Many - up to 120 opaque |
| show_board | Yes, No Shows all board layers |

ncd_auto_all

| | |
|----------------|--|
| Command | ncd_auto_all |
| Group | Auto Drill Manager |
| Descr. | The command must be called after the machine name was set, and it automatically sets the whole NC-set. This is done based on the machine file parameters, and on the user defined hooks. |

| | |
|---------------------|--|
| Parameter | Value |
| create_drill | Yes - create the drill files No - only set the params |

ncd_cre_drill

| | |
|----------------|---|
| Command | ncd_cre_drill |
| Group | Auto Drill Manager |
| Descr. | The command creates the drill and NC files. |

ncd_cre_layer

| | |
|----------------|---|
| Command | ncd_cre_layer |
| Group | Auto Drill Manager |
| Descr. | The command creates a step layer that contains all the drills of the specified stages and splits. |

| Parameter | Value |
|------------------------|---|
| stage | Drill stage (1, 2, 3) |
| split | Split number (1, 2) |
| layer | Output layer name |
| profile_outline | Yes - add the profile outline No - no profile |
| type | Drills - drills Path - drills path |
| transform | Defines how the parameters from the registration popup affect the created layer. No (default) - only Scale Parameters affect the created layer. Yes - all transformation parameters (rotation, mirror, offset, version) affect the created layer. |

ncd_end

| | |
|----------------|---|
| Command | ncd_end |
| Group | Auto Drill Manager |
| Descr. | Used for setting the end coupon parameters separately from the start parameters. Note: To use this command, call ncd_start_end first to define the start coupon. Using this command on its own is meaningless. |

| Parameter | Value |
|-----------------------|--|
| split | 1, 2 - split number |
| x1, y1, x2, y2 | - bounding box of the coupon in panel coordinates. |

ncd_get_current

| | |
|-----------------|--|
| Command | ncd_get_current |
| Group | Auto Drill Manager |
| Descr. | To track the current nc-set with its corresponding job / step / layer. |
| Response | Either empty variable or array with four names: job/step/layer/nc-set (see example below). |

Example

```
#
COM ncd_get_current          # ask for current ncset
#
if ($#COMANS == 0) then      # array is empty
    echo "No current set"
else
    echo "Job is " $COMANS[1]
    echo "Step is " $COMANS[2]
```

```
    echo "Layer is " $COMANS[3]  
    echo "NC Set is " $COMANS[4]  
endif
```

ncd_ncf_export

| | |
|----------------|---|
| Command | ncd_ncf_export |
| Group | Auto Drill Manager |
| Descr. | The command is used for exporting the drill file from the NC-set. |

| Parameter | Value |
|--------------|-----------------------|
| stage | Drill stage (1, 2, 3) |
| split | Split number (1, 2) |
| dir | Directory path |
| name | File name |

ncd_order

| | |
|----------------|--|
| Command | ncd_order |
| Group | Auto Drill Manager |
| Descr. | The command is used for setting step & repeat order. |

| Parameter | Value |
|--|--|
| split | 1, 2 (split number) |
| sr_line, sr_nx, sr_ny | Step & repeat entry (for all parameters >= 1) 0 - for the step overlay |
| serial | 1, 2, 3,...- order from start -1,-2,-3,...- order from end 0 - no specific order |
| full | Yes - the step should be fully drilled, including ALL the tools No - the drills are drilled according to the global tools sequence |
| optional | Yes - indicates that the step should have the 'I' character for optional No - regular mode |

ncd_order_def

| | |
|----------------|--|
| Command | ncd_order_def |
| Group | Auto Drill Manager |
| Descr. | The command is used for setting the default step & repeat order, which is based on the step attributes: out_drill_order * and out_drill_full . |

| Parameter | Value |
|--------------|---------------------|
| split | 1, 2 (split number) |

ncd_register

| | |
|----------------|--|
| Command | ncd_register |
| Group | Auto Drill Manager |
| Descr. | The command is used for setting the registration values. |

| | |
|-------------------------------|---|
| Parameter | Value |
| angle | 0, 90, 180, 270 |
| mirror | Yes, No |
| xoff, yoff | Offset values |
| version | 1 - 8 - coordinates version |
| xorigin, yorigin, | |
| xscale, yscale | Scale factor (def = 1.0) 0.95 >= factor <= 1.05 |
| xscale_o, yscale_o | Scale anchor coordinates relative to the STEP |

ncd_report

| | |
|----------------|------------------------------------|
| Command | ncd_report |
| Group | Auto Drill Manager |
| Descr. | The command is used for ncd report |

| | |
|------------------|----------------|
| Parameter | Value |
| path | Directory path |

ncd_set_machine

| | |
|----------------|---|
| Command | ncd_set_machine |
| Group | Auto Drill Manager |
| Descr. | Used for setting the drill machine name, and some other parameters. |

| | |
|------------------|-----------------------|
| Parameter | Value |
| machine | Existing machine name |
| thickness | |

ncd_set_params

| | |
|----------------|--|
| Command | ncd_set_params |
| Group | Auto Drill Manager |
| Descr. | The command is used for setting several NC set parameters. |

| Parameter | Value |
|--------------------------|---|
| format | Excellon1, excellon2, sm1000, sm3000, pda, hitachi, wessel, posalux |
| zeroes | None, leading, trailing |
| units | Inch, mm |
| tool_units | Inch, mm |
| nf1, nf2 | 1-5 - numbering format decimal output coordinates |
| decimal | Yes, No |
| modal_coords | Yes, No |
| single_sr | Yes - for single step & repeat use a step & repeat block No - |
| repetition | sr - Step&repeat output mode subroutine - Subroutine output mode |
| sr_zero_set | yes - use the G93 command before the step & repeat block No - |
| optimize | Yes, No |
| iterations | >= 1 - number of opt.iterations |
| reduction_percent | >= 0.0 |
| break_sr | Yes, No - break step & repeat indicator |
| xspeed, yspeed | >= 0.001 inches per minute |
| rout_layer | |
| fixed_tools | Yes - the system assigns fixed tools according a tools table in the machine file No - no fixed assignment |
| incremental | Yes - Selects incremental mode for output No - Selects absolute mode for output. Note: If YES, each point's coordinates are given as an increment to a previous point. |
| tools_assign_mode | - increasing_size - increasing_count - decreasing_size - decreasing_count |
| cool_spread | Defines the minimal distance (in current units [mil/microns]) between succeeding hits during the board drilling process. |

ncd_start_end

| | |
|----------------|--|
| Command | ncd_start_end |
| Group | Auto Drill Manager |
| Descr. | The command is used for setting start/end coupon params. |

| Parameter | Value |
|--------------------|--|
| split | 1,2 - split number |
| start | Yes, No - Start drills |
| end | Yes, No - End drills |
| dist_t | Distance type between pads: center - distance between pad centers; spacing - distance between contours |
| min_dist | >= 0 - Minimal distance between holes (Mils/ microns) |
| min_hits | Allows exclude from coupon tools with hits quantity less then required. |
| min_size | Allows exclude from coupon tools with size less then required (Mils/ microns) |
| min_hits | Allows exclude from coupon tools with size greater then required (Mils/ microns) |
| x1,y1,x2,y2 | Bounding box of the coupon in panel coordinates |
| sort_t | Controls sequence order of the check drills |

ncd_table_apply

| | |
|----------------|---|
| Command | ncd_table_apply |
| Group | Auto Drill Manager |
| Descr. | Used for applying the nc-table that was created by the line mode command ncd_table_set . Default = No. |

| Parameter | Value |
|------------------|-------|
| by_length | |
| stages | |

ncd_table_close

| | |
|----------------|--|
| Command | ncd_table_close |
| Group | Auto Drill Manager |
| Descr. | The command is used to close the NC table. |

ncd_table_open

| | |
|--------------------|---|
| Command | ncd_table_open |
| Group | Auto Drill Manager |
| Description | The command is used to open the NC table. |

ncd_table_reset

| | |
|----------------|--|
| Command | ncd_table_reset |
| Group | Auto Drill Manager |
| Descr. | The command is used for resetting a temporary nc-table, that is set by the ncd_table_set command. |

ncd_table_set

| | |
|----------------|---|
| Command | ncd_table_set |
| Group | Auto Drill Manager |
| Descr. | The command is used for adding table entries. |

| Parameter | Value |
|-----------------------------------|---|
| shape | Hole, slot |
| type | Plate, nplate, via |
| size | Drill size (diameter) |
| cool_spread | Defines the minimal distance (in current units [mil/microns]) between succeeding hits during the board drilling process. Values: -1 - use global value 0 - do not perform Cool Spread analysis for the tool. > 0 - use this value as the Cool Spread value for the tool. |
| touch_copper | Yes, No - relevant only if the 'type' is 'nplate' |
| flag | >= 0 |
| count | Number of drills |
| finish_size | finish hole size (diameter) |
| min_tol, max_tol | Allowed tolerances |
| slot_len | Total slots length (inches) |
| des | Desingator (free text) |
| tool_size | |
| tool_order | Predefined Tool Order |

| | |
|---------------------------|---|
| tool_num | Predefined Tool Number |
| pilot | Yes, No - indicates if the entry represents a pilot drill |
| parent | Serial number of the pilot holes parent |
| mode | Regular, nibble, rout |
| spindle_ speed | In rpms |
| feed_rate | |
| nibble_type | Machine - done by the machine sw - broken by the system |
| max_hits | Maximal number of hits per bit |
| stage | Drill stage (1, 2, 3) |
| rout_mode | Sep - separate rout layer Same - same nc file |

ncd_table_slotbylen

| | |
|----------------|--|
| Command | ncd_table_slotbylen |
| Group | Auto Drill Manager |
| Descr. | For each tool that happens to be a slot, displays the slot length in the slot_length column. |

| | |
|------------------|---|
| Parameter | Value |
| by_length | Yes, each tool drill in the ADM table (type = slot) will be separated by length . |

ncd_tools_table

| | |
|----------------|--|
| Command | ncd_tools_table |
| Group | Auto Drill Manager |
| Descr. | The command is used for getting a summary tool table (tools do not include nibbles or tool bits). The tool counts are summarized per step. |

| | |
|------------------|-----------------------------|
| Parameter | Value |
| stage | Drill stage (1, 2, 3) |
| split | Split number (1, 2) |
| path | Pathname of the output file |

ncr_auto_all

| | |
|----------------|--|
| Command | ncr_auto_all |
| Group | Auto Rout Manager |
| Descr. | The command must be called after the machine name was set, and it automatically sets the whole NC-set. This is done based on the machine file parameters, and on the user defined hooks. |

| | |
|--------------------|---|
| Parameter | Value |
| create_rout | Yes - create the rout files No - only set the params |

ncr_cre_layer

| | |
|----------------|---|
| Command | ncr_cre_layer |
| Group | Auto Rout Manager |
| Descr. | The command creates a step layer that contains all the routs. |

| Parameter | Value |
|------------------------|---|
| layer | Output layer name |
| profile_outline | Yes - add the profile outline No - no profile |
| transform | Defines how the parameters from the registration popup affect the created layer. No (default) - only Scale Parameters affect the created layer. Yes - all transformation parameters (rotation, mirror, offset, version) affect the created layer. |

ncr_cre_rout

| | |
|----------------|--|
| Command | ncr_cre_rout |
| Group | Auto Rout Manager |
| Descr. | The command creates the rout and NC files. |

ncr_get_current

| | |
|-----------------|---|
| Command | ncr_get_current |
| Group | Auto Rout Manager |
| Descr. | To track the current nc-set with its corresponding job/step/layer |
| Response | Either empty variable or array with four names: job/step/layer/nc-set (see example below). |

Example

```
#
COM ncr_get_current          # ask for current ncset
#
if ($#COMANS == 0) then      # array is empty
    echo "No current set"
else
    echo "Job is " $COMANS[1]
    echo "Step is " $COMANS[2]
    echo "Layer is " $COMANS[3]
    echo "NC Set is " $COMANS[4]
endif
```

ncr_ncf_export

| | |
|----------------|--|
| Command | ncr_ncf_export |
| Group | Auto Rout Manager |
| Descr. | The command is used for exporting the NC files to an external directory. |

| | |
|------------------|----------------|
| Parameter | Value |
| dir | Directory path |
| name | File name |

ncr_order

| | |
|----------------|--|
| Command | ncr_order |
| Group | Auto Rout Manager |
| Descr. | Used for setting step & repeat order in the Auto Rout Managaer |

| Parameter | Value |
|---|--|
| sr_line, sr_nx sr_ny | Step & Repeat entry (for all parameters >= 1) 0 - for the step overlay - arrays can be separated by semicolon ';' |
| serial | 1, 2, 3,,,- order from start -1,-2,-3,,,- order from end 0 - no specific order |
| optional | Yes - indicates that the step should have the '/' character for optional rout No - regular mode |
| snake | Yes - use snake order No - use zigzag order |
| mode | One - assign numbering order for one step tblr, tblr, t - top lrtb, lrbt, b- bottom btrl, btlr, l- left rlbt, rltb r - right step enumeration, sequence, and direction |
| full | Full step order or partial according to nx, ny |
| nx | |
| ny | |

ncr_order_def

| | |
|-----------------|---|
| Command | ncr_order_def |
| Group | Auto Rout Manager |
| Descr. | The command is used for setting the default step & repeat order, which is based only on the step & repeat data. |
| Response | None |

ncr_order_des

| | |
|-----------------|---|
| Command | ncr_order_des |
| Group | Auto Rout Manager |
| Descr. | The command is used for setting the default step & repeat order. This order is based on both step & repeat data, and the step attribute 'out_rout_order'. |
| Response | None |

ncr_table_close

| | |
|----------------|--|
| Command | ncr_table_close |
| Group | Auto Rout Manager |
| Descr. | The command is used to close the NC table. |

ncr_table_open

| | |
|--------------------|---|
| Command | ncr_table_open |
| Group | Auto Rout Manager |
| Description | The command is used to open the NC table. |

ncr_register

| | |
|----------------|--|
| Command | ncr_register |
| Group | Auto Rout Manager |
| Descr. | The command is used for setting the registration values. |

| Parameter | Value |
|---------------------------|---|
| angle | 0, 90, 180, 270 |
| mirror | Yes, No |
| xoff, yoff | Offset values |
| version | 1 - 8 |
| xorigin, yorigin | Coordinates version |
| xscale, yscale | Scale factor (def = 1.0) 0.95 >= factor <= 1.05 |
| xscale_o, yscale_o | Scale anchor coordinates relative to the STEP |

ncr_report

| | |
|----------------|------------------------------------|
| Command | ncr_report |
| Group | Auto Rout Manager |
| Descr. | The command is used for ncr report |

| | |
|------------------|----------------|
| Parameter | Value |
| path | Directory path |

ncr_set_machine

| | |
|----------------|---|
| Command | ncr_set_machine |
| Group | Auto Rout Manager |
| Descr. | The command is used for setting the rout machine name, and some other parameters. |

| Parameter | Value |
|------------------|-----------------------|
| machine | Existing machine name |
| thickness | |

ncr_set_params

| | |
|----------------|--|
| Command | ncr_set_params |
| Group | Auto Rout Manager |
| Descr. | The command is used for setting several NC set parameters. |

| Parameter | Value |
|------------------------------|---|
| format | Excellon1, Excellon2, ATI, SM, PDA, Hitachi... |
| zeroes | None, leading, trailing |
| units | Inch, mm |
| tool_units | Inch, mm |
| nf1, nf2 | 1-5 - numbering format |
| decimal | Yes, No - decimal output coordinates |
| modal_coords | Yes No |
| single_sr | Yes - for single step & repeat use a step & repeat block no |
| drill_layer | |
| break_sr | Yes, No - break step & repeat indicator |
| ccw | Yes, No - ccw indicator |
| short_lines | None, box, angle, toolout - how to treat short lines (< half toolw) |
| press_down | Yes - No - pressure foot down in tool up |
| last_z_up | 16/17 - last up command |
| max_arc_ang 10-360 | Angle to break arc |
| sep_lyrs | Yes - No - Split output from separate layers for different rotations the layers used are the main layer with rotation suffixes: e.g. name90, name180, name270 |

| | |
|--------------------|--|
| allow_no_ | Yes - |
| chain_f | No - Output even if there are no chained features, ignore them |
| repetitions | Repetitions mode: S&R, subroutines, etc. |
| keep_table_ | No = steps will be output according to the "Step Order Definition" |
| order | Yes = steps will be output according to the "NC Table Popup" order. |

ncr_table_apply

| | |
|----------------|--|
| Command | ncr_table_apply |
| Group | Auto Rout Manager |
| Descr. | The command is used for applying the nc-table that was created by the line mode command ncr_table_set . |

ncr_table_close

| | |
|----------------|--|
| Command | ncr_table_close |
| Group | Auto Rout Manager |
| Descr. | The command is used to close the NC table. |

ncr_table_reset

| | |
|----------------|--|
| Command | ncr_table_reset |
| Group | Auto Rout Manager |
| Descr. | The command is used for resetting a temporary nc-table, that is set by the ncr_table_set command. |

ncr_table_set

| | |
|----------------|---|
| Command | ncr_table_set |
| Group | Auto Rout Manager |
| Descr. | The command is used for adding table entries. |

| Parameter | Value |
|----------------------|---|
| index | Index of entry |
| type | Chain, drill |
| step_name | Name of step |
| chain | # of chain |
| size | Size of tool |
| comp | Compensation None/right/left |
| path | Path of chain |
| count | Count of drills |
| flag | >= 0 |
| cw | Yes, No |
| tool_size | Size of tool (user) |
| duplicate | Yes, No - indicates if the entry represents a duplicate chain |
| parent | Parent serial (-1 if None) |
| comp_factor | Compensation factor |
| spindle_speed | In rpms |
| feed_rate | Inch/min |
| spiral | None, sw, machine |
| mode | Rout, drill |
| group | Newsome |
| order | Order index |
| optional | Yes - indicates that the chain should have the '/' character for optional rout No - regular mode |

ncrset_copy

| | |
|----------------|--|
| Command | ncrset_copy |
| Group | Auto Rout Manager |
| Descr. | The command is used for copying an existing NCset. |

| | |
|--------------------|---------------------|
| Parameter | Value |
| name | Existing NCset name |
| target_name | |

ncrset_create

| | |
|----------------|--|
| Command | ncrset_create |
| Group | Auto Rout Manager |
| Descr. | The command is used for creating a new ncset entity. |

| | |
|------------------|-------------------|
| Parameter | Value |
| name | Legal entity name |

ncrset_cur

| | |
|----------------|--|
| Command | ncrset_cur |
| Group | Auto Rout Manager |
| Descr. | The command is used for setting the CURRENT entity name that are used for all the other line mode commands. |

| | |
|------------------|---------------------|
| Parameter | Value |
| job | Existing job name |
| step | Existing step name |
| layer | Existing layer name |
| ncset | Existing ncset name |

ncrset_delete

| | |
|----------------|---|
| Command | ncrset_delete |
| Group | Auto Rout Manager |
| Descr. | The command is used for deleting an existing NCset. |

| | |
|------------------|---------------------|
| Parameter | Value |
| name | Existing NCset name |

ncrset_page_close

| | |
|----------------|---|
| Command | ncrset_page_close |
| Group | Auto Rout Manager |
| Descr. | The command is used for closing the package's window. |

ncrset_page_open

| | |
|----------------|---|
| Command | ncrset_page_open |
| Group | Auto Rout Manager |
| Descr. | The command is used for opening the package's window. |

ncrset_rename

| | |
|----------------|---|
| Command | ncrset_rename |
| Group | Auto Rout Manager |
| Descr. | The command is used for renaming an existing NCset. |

| | |
|------------------|-------------------------------------|
| Parameter | Value |
| name | Existing NCset name new_name |
| new_name | |

ncrset_units

| | |
|----------------|---|
| Command | ncrset_units |
| Group | Auto Rout Manager |
| Descr. | The command is used for setting the CURRENT working units. |

| | |
|------------------|--------------|
| Parameter | Value |
| units | Inch, mm |

ncset_copy

| | |
|----------------|--|
| Command | ncset_copy |
| Group | Auto Drill Manager |
| Descr. | The command is used for copying an existing NCset. |

| | |
|--------------------|---------------------|
| Parameter | Value |
| name | Existing NCset name |
| target_name | |

ncset_create

| | |
|----------------|--|
| Command | ncset_create |
| Group | Auto Drill Manager |
| Descr. | The command is used for creating a new ncset entity. |

| | |
|------------------|-------------------|
| Parameter | Value |
| name | Legal entity name |

ncset_cur

| | |
|----------------|--|
| Command | ncset_cur |
| Group | Auto Drill Manager |
| Descr. | The command is used for setting the CURRENT entity name that are used for all the other line mode commands. |

| Parameter | Value |
|--------------|---------------------|
| job | Existing job name |
| step | Existing step name |
| layer | Existing layer name |
| ncset | Existing ncset name |

ncset_delete

| | |
|----------------|---|
| Command | ncset_delete |
| Group | Auto Drill Manager |
| Descr. | The command is used for deleting an existing NCset. |

| | |
|------------------|---------------------|
| Parameter | Value |
| name | Existing NCset name |

ncset_page_close

| | |
|----------------|---|
| Command | ncset_page_close |
| Group | Auto Drill Manager |
| Descr. | The command is used for closing the package's window. |

ncset_page_open

| | |
|----------------|---|
| Command | ncset_page_open |
| Group | Auto Drill Manager |
| Descr. | The command is used for opening the package's window. |

ncset_rename

| | |
|----------------|---|
| Command | ncset_rename |
| Group | Auto Drill Manager |
| Descr. | The command is used for renaming an existing NCset. |

| | |
|------------------|---------------------------------------|
| Parameter | Value |
| name | Existing NCset name - new_name |

ncset_units

| | |
|----------------|---|
| Command | ncset_units |
| Group | Auto Drill Manager |
| Descr. | The command is used for setting the CURRENT working units. |

| | |
|------------------|--------------|
| Parameter | Value |
| units | inch, mm |

negative_data

| | |
|----------------|---|
| Command | negative_data |
| Group | Graphic Editor |
| Descr. | Sets the display mode of negative features. |

| | |
|------------------|---|
| Parameter | Value |
| mode | Clear - actual image Dim - stipple display |

netlist_auto_reg

| | |
|-----------------|--|
| Command | netlist_auto_reg |
| Group | Engineering Toolkit |
| Descr. | The command registers the CAD netlist of a step (if exists) with the rest of the step automatically. The automatic registration is attempted vs. the drill layer and the outer layers. |
| Response | 1 if succeeded, 0 if failed |

| | |
|------------------|--------------------|
| Parameter | Value |
| job | Existing job name |
| step | Existing step name |

netlist_compare

| | |
|----------------|---|
| Command | netlist_compare |
| Group | Engineering Toolkit |
| Descr. | The command displays the netlist analyzer window and optionally sets the job/step/type values of the window |

| Parameter | Value |
|--|--|
| job1 | Existing job name |
| step1 | Existing step name |
| type1 | CAD, refnet, current, curcad |
| job2 | Existing job name |
| step2 | Existing step name |
| type2 | CAD, refnet, current, curcad |
| display | None, top, bottom |
| filter_ ignore_ net_names | Controls appearance of shorts/broken filter. Default value is defined by the value of the configuration parameter net_filter_short_broken_options . |

netlist_control

| | |
|----------------|---|
| Command | netlist_control |
| Group | Engineering Toolkit |
| Descr. | The command controls some aspects of the netlist analyzer window such as the auto zoom, layer mode and filters. A non specified parameter will retain its previous value. |

| Parameter | Value |
|-------------------------------|---|
| auto_zoom | zoom_pan , pan_only or None |
| layers_ mode | Single, transparent, or multiple |
| filter1 | A list of wild card expressions for top netlist |
| filter2 | A list of wild card expressions for bot netlist |
| filter3 | A list of wild card expressions for opt netlist |

netlist_cur2ref_compare

| | |
|----------------|---|
| Command | netlist_cur2ref_compare |
| Group | Netlist |
| Descr. | The command calls the routine that compares between REFERENCE and CURRENT netlists and displays the results in the “Online Netlist Compare Window”. |

| Parameter | Value |
|------------------|--------------------|
| job | Existing job name |
| step | Existing step name |
| display | None, top, bottom |

Example

```
#
COM netlist_cur2ref_compare # ask for current netlist
#
if ($#COMANS == 0) then      # array is empty
    echo "No current set"
else
    echo "Number of broken is " $COMANS[1]
    echo "Number of Shorted is " $COMANS[2]
    echo "Number of Missing is " $COMANS[3]
    echo "Number of Extra is " $COMANS[4]
endif
```

netlist_flip

| | |
|----------------|---|
| Command | netlist_flip |
| Group | Engineering Toolkit |
| Descr. | The command flips over the CAD netlist, assigning bottom contact points to top and top points to bottom |

| | |
|------------------|--------------------|
| Parameter | Value |
| job | Existing job name |
| step | Existing step name |

netlist_man_reg

| | |
|----------------|---|
| Command | netlist_man_reg |
| Group | Engineering Toolkit |
| Descr. | The command registers the CAD netlist of a step (if exists) with the rest of the step manually. |

| | |
|------------------|--------------------|
| Parameter | Value |
| job | Existing job name |
| step | Existing step name |
| dx | Shift in x |
| dy | Shift in y |

netlist_mode

| | |
|----------------|---|
| Command | netlist_mode |
| Group | Engineering Toolkit |
| Descr. | The command controls the operation mode of the netlist analyzer/optimizer window. The window can work in one of modes - compare or optimize |

| | |
|------------------|---------------------|
| Parameter | Value |
| mode | Compare or optimize |

netlist_opt_cfg_flds

| | |
|----------------|---|
| Command | netlist_mode |
| Group | Engineering Toolkit |
| Descr. | The command optimizes the argument set. |

| Parameter | Value |
|------------------------|---|
| job | existing job name |
| step | existing step name |
| type | CAD, refnet, current, curcad |
| test_mode | double,top,bot,flip -- test from both sides or from a single side |
| barrel | yes/no -- test hole barrels |
| test_vias | yes - if test hole barrels include vias no - if test hole barrels exclude vias |
| test_end_vias | yes/no -- to test points marked as 'via' if on end of nets. |
| def_path_access | comp/solid If not barrel test but double test from |
| test_smd | yes - Test all SMD no - Test ends only |
| test_pth | yes - test all PTH no - test net ends only (see vias) |
| test_isol_smd | yes - test isolated SMDs no - ignore (do not test) isolated SMDs |
| test_isol_pth | yes - test isolated PTHs no - ignore (do not test) isolated PTHs |
| test_pg | All,Therm,Syst -- How to test P&G |
| sm_opt | None,All,Selected -- How to use SolderMask |
| min_size_hole | size in mils -- Minimum hole size to test |
| min_size_ar | size in mils -- Minimum annular ring size required to test holes |
| test_on_ar | size in mils -- Test on annular ring starting size |
| min_ar_test | size in mils -- Minimum width of annular ring to test on |

netlist_optimize

| | |
|----------------|--|
| Command | netlist_optimize |
| Group | Engineering Toolkit |
| Descr. | The command optimizes the argument net |

| Parameter | Value |
|------------------|--|
| job | Existing job name |
| step | Existing step name |
| type | CAD, refnet, current, curcad |
| sm | Yes or No - consider or ignore solder mask |

netlist_page_close

| | |
|----------------|---|
| Command | netlist_page_close |
| Group | Engineering Toolkit |
| Descr. | The command closes the netlist analyzer page. The current values remain intact until the next open. |

netlist_page_open

| | |
|----------------|---|
| Command | netlist_page_open |
| Group | Engineering Toolkit |
| Descr. | The command displays the netlist analyzer window and optionally sets the job/step/type values of the window |

| Parameter | Value |
|------------------|---|
| set | Yes - set fields with next parameters No - do not set fields |
| job1 | Existing job name |
| step1 | Existing step name |
| type1 | CAD, refnet, current, curcad |
| job2 | Existing job name |
| step2 | Existing step name |
| type2 | CAD, refnet, current, curcad |

netlist_page_open_opt

| | |
|----------------|---|
| Command | netlist_page_open_opt |
| Group | Engineering Toolkit |
| Descr. | The command displays the netlist analyzer window in optimize mode and optionally sets the job/step values of the window |

| Parameter | Value |
|------------------|---|
| set | Yes - set fields with next parameters No - do not set fields |
| job | Existing job name |
| step | Existing step name |

netlist_partial_compare

| | |
|--------------------|---|
| Command | netlist_partial_compare |
| Group | Netlist analyzer |
| Description | Operates Partial Layer Compare as a command in a script |
| Response | shorted;missing;broken;extra (from bottom right-hand results buttons in Netlist Analyzer) |

| Parameter | Value |
|-------------------------------------|--|
| job1;job2 | existing job name |
| step1;step2 | existing step name |
| type1;type2 | cad, ref, ,cur, cur_cad |
| layer_list1; layer_list2 | list of layers appearing in the step An example of a layer list is: layer_list1=bottom\;dr_plt\;rout\; |
| batch_mode | no (always no for per sub-assembly mode): yes (always yes for per layer mode) |
| display | yes (If working with GUI) |

netlist_recalc

| | |
|-----------------|---|
| Command | netlist_recalc |
| Group | Engineering Toolkit |
| Descr. | The command calculates the requested net and optionally displays the net names in the netlist analyzer window top or bottom part. |
| Response | Number of nets calculated/retrieved |

| Parameter | Value |
|-------------------|--|
| job | Existing job name |
| step | Existing step name |
| type | CAD, refnet, current, curcad |
| display | Top, bottom |
| layer_list | List of layers appearing in the step An example of a layer list is: layer_list1=bottom\;dr_plt\;rout\; |

netlist_recalc_sm

| | |
|----------------|---|
| Command | netlist_recalc_sm |
| Group | Engineering Toolkit |
| Descr. | The command calculates the soldier mask cover for requested net |

| Parameter | Value |
|-------------|------------------------------|
| job | Existing job name |
| step | Existing step name |
| type | CAD, refnet, current, curcad |

netlist_reduce_reg

| | |
|----------------|--|
| Command | netlist_reduce_reg |
| Group | Netlist Analyzer |
| Descr. | The command reduces the CAD netlist points dimension to a default radius of 0.2 mil. |

| Parameter | Value |
|-------------|--------------------|
| job | Existing job name |
| step | Existing step name |

netlist_ref_update

| | |
|----------------|--|
| Command | netlist_ref_update |
| Group | Engineering Toolkit |
| Descr. | The command updates the reference netlist of a given step. The source can be the CAD netlist, the Current calculated netlist or 'none', in which case the reference will be deleted. |

| Parameter | Value |
|------------------|--|
| job | Existing job name |
| step | Existing step name |
| source | CAD, refnet, current, curcad, rtc, or None |
| radius | Value in mils. Default = 0. |

netlist_report_statistic

| | |
|----------------|--|
| Command | netlist_report_stastic |
| Group | Netlist Analyzer |
| Descr. | The command sends a report to the screen. The report can contain: total number of net points ("all") number of end points ("end") % end of total ("endprc") number of inner points ("inn") |

| Parameter | Value |
|------------------|--|
| mode | all: end: endprc :inn |
| out_file | output file for the netlist compare results (full pathname) |
| output | file: screen |

netlist_save_compare_results

| | |
|----------------|---|
| Command | netlist_save_compare_results |
| Group | Netlist Analyzer |
| Descr. | The command format saves the netlist compare results into an output file. |

| Parameter | Value |
|--|--|
| out_file | Output file for the netlistcompare results (full pathname) |
| output | file, screen |
| filter_ ignore_net _names | Controls Ignore Names filter for shorts/brokens |
| filter_nfp | Controls NFP Added/Removed filter for missing/extra |
| filter_ attr_diff | Controls Attribute Difference filter for missing/extra |
| filter_ extra_on_ pad | Controls Extra Pads on Copper filter for missing/extra |

netlist_save_partial_compare_results

| | |
|----------------|--|
| Command | netlist_save_partial_compare_results |
| Group | Netlist Analyzer |
| Descr. | This command formats and saves the netlist compare results into an output file, according to the partial netlist comparison modes. |

| Parameter | Value |
|--|--|
| out_file | Output file for the netlist compare results (full pathname) |
| output | Values: file, screen |
| filter_con nect_on_ board_net | Values: No, Yes |
| filter_nfp | Values: No, Yes |
| filter_ attr_diff | Values: No, Yes |
| filter_ extra_on_ pad | Values: No, Yes |

netlist_stagger

| | |
|----------------|--|
| Command | netlist_stagger |
| Group | Engineering Toolkit |
| Descr. | The command staggers smd-points in the argument step |

| | |
|------------------|-----------------------------|
| Parameter | Value |
| job | Existing job name |
| step | Existing step name |
| mode | One of the staggering types |

netlist_update_by_sm

| | |
|----------------|--|
| Command | netlist_update_by_sm |
| Group | Netlist |
| Descr. | Updates net point size according to sm clearance |

| Parameter | Value |
|------------------|------------------------------|
| job | Existing job name |
| step | Existing step name |
| type | CAD, refnet, current, curcad |

netlist2layer

| | |
|-----------------|--|
| Command | netlist2layer |
| Group | Graphic Editor |
| Descr. | The command is used for creation of a graphic layer with points corresponding each test point in net. Such layer may be used as drill layer for test plates creation |
| Response | The number of created layers |

| Parameter | Value |
|---------------------------|-----------------------------------|
| netlist | CAD, refnet, current, curcad |
| staggered | Yes, No |
| finished | Yes, No |
| optimized | Yes, No |
| comment | Yes, No |
| hole_size | Size in units - Default hole size |
| top_layer | Layer name |
| bot_layer | Layer name |
| through_layer | Layer name |
| inner_layer_prefix | Prefix for inner layer names |

note_add

| | |
|----------------|--------------------------------|
| Command | note_add |
| Group | Graphic Editor |
| Descr. | Adds a note to a wanted layer. |

| | |
|------------------|---------------------|
| Parameter | Value |
| layer | |
| x y | Coordinates of note |
| user | User name |

note_all_delete

| | |
|----------------|---|
| Command | note_all_delete |
| Group | Graphic Editor |
| Descr. | delete all notes from wanted layer by filter. |

| | |
|------------------|--------------|
| Parameter | Value |
| layer | |
| note_from | From dates |
| note_to | To date |
| user | User name |

note_change

| | |
|----------------|----------------------------------|
| Command | note_change |
| Group | Graphic Editor |
| Descr. | change a note in a wanted layer. |

| | |
|------------------|--------------|
| Parameter | Value |
| layer | |
| note_n | Note ind |
| user | User name |
| text | |

note_copy

| | |
|----------------|--------------------------------|
| Command | note_copy |
| Group | Graphic Editor |
| Descr. | copy a note to a wanted place. |

| Parameter | Value |
|---------------|---------------------|
| layer | |
| x | Coordinates of note |
| y | Coordinates of note |
| user | User name |
| note_n | note_n |

note_delete

| | |
|----------------|---------------------------------|
| Command | note_delete |
| Group | Graphic Editor |
| Descr. | delete a note from wanted layer |

| Parameter | Value |
|--------------|----------|
| layer | |
| ind | Note ind |

note_move

| | |
|----------------|-------------------------------|
| Command | note_move |
| Group | Graphic Editor |
| Descr. | Move a note to a wanted place |

| Parameter | Value |
|---------------|---------------------|
| layer | |
| x | Coordinates of note |
| y | Coordinates of note |
| user | User name |
| note_n | note_n |

note_page_close

| | |
|----------------|---|
| Command | note_pge_close |
| Group | Graphic Editor |
| Descr. | The command is used to close the electronic Notes page. |

note_page_show

| | |
|------------------|--|
| Command | note_pge_show |
| Group | Graphic Editor |
| Descr. | The command is used to open the electronic Notes page. |
| Parameter | Existing layer name |

odi_affect_layer

| | |
|-----------------|---|
| Command | odi_affect_layer |
| Group | Orbotech DI Interface |
| Descr. | The command is used to display/undisplay a layer. |
| Response | None |

| | |
|------------------|-------------------------|
| Parameter | Value |
| name | Valid OBD++ entity name |
| mode | Values: On, Off. |

odi_align_manual

| | |
|-----------------|---|
| Command | odi_align_manual |
| Group | Orbotech DI Interface |
| Descr. | The command is used setting the odiset alignment. |
| Response | None |

| Parameter | Value |
|-------------------------------|---|
| mirror | Values: No, Yes |
| rotation | Values: 0,90,180,270 |
| flip | Values: No, Yes |
| align_tool | Values: pins, ruler, manual, dim_late_select, out_late_select |
| align_type | Values: left, right, center, topleft_bottomright |
| ruler | |
| pin_name | |
| punch_pos | |
| symmetric | Values: No, Yes |
| x_offset, y_offset | |
| regist_ mode | Values: ccd/uv/beam |
| regist_ file | file name |
| work_mode | Values: flow/toolset |

odi_apply_jobrule

| | |
|-----------------|---|
| Command | odi_apply_jobrule |
| Group | Orbotech DI Interface |
| Descr. | The command is used for applying the jobrule. |
| Response | None |

| Parameter | Value |
|------------------|--------------|
| jobrule | |

odi_apply_toolset

| | |
|-----------------|---|
| Command | odi_apply_toolset |
| Group | Orbotech DI Interface |
| Descr. | The command is used for applying the toolset. |
| Response | None |

| | |
|------------------|--------------|
| Parameter | Value |
| toolset | |

odi_clear_layers

| | |
|-----------------|-----------------------------------|
| Command | odi_clear_layers |
| Group | Orbotech DI Interface |
| Descr. | Clears the display of all layers. |
| Response | None |

odi_close

| | |
|-----------------|--|
| Command | odi_close |
| Group | Orbotech DI Interface |
| Descr. | The command is used for closing the Orbotech DI Interface. |
| Response | None |

odi_copy_sets

| | |
|-----------------|--|
| Command | odi_copy_sets |
| Group | Orbotech DI Interface |
| Descr. | The command is used for coping ODI sets. |
| Response | None |

| | |
|-------------------|-------------------------|
| Parameter | Value |
| src_layer | Valid ODB++ entity name |
| dst_layers | Valid ODB++ entity name |

odi_del_jobrule_entry

| | |
|-----------------|--|
| Command | odi_del_jobrule_entry |
| Group | Orbotech DI Interface |
| Descr. | The command is used for deleting entries from the jobrule. |
| Response | None |

| | |
|------------------|--------------|
| Parameter | Value |
| type_name | |

odi_del_toolset_entry

| | |
|-----------------|--|
| Command | odi_del_toolset_entry |
| Group | Orbotech DI Interface |
| Descr. | The command is used for deleting entries from the toolset. |
| Response | None |

| Parameter | Value |
|------------------------|-------|
| <code>type_name</code> | |

odi_delete_clip

| | |
|-----------------|---|
| Command | <code>odi_delete_clip</code> |
| Group | Orbotech DI Interface |
| Descr. | The command is used for deleting the clip area of partner layers. |
| Response | None |

odi_delete_jobrule

| | |
|-----------------|--|
| Command | <code>odi_delete_clip</code> |
| Group | Orbotech DI Interface |
| Descr. | The command is used for deleting jobrules. |
| Response | None |

odi_delete_toolset

| | |
|-----------------|--|
| Command | <code>odi_delete_toolset</code> |
| Group | Orbotech DI Interface |
| Descr. | The command is used for deleting toolsets. |
| Response | None |

odi_delete_pair

| | |
|-----------------|---|
| Command | odi_delete_pair |
| Group | Orbotech DI Interface |
| Descr. | The command is used for deleting a single pair. |
| Response | None |

| | |
|------------------|-------------------------|
| Parameter | Value |
| lyr1_name | Valid OBD++ entity name |
| lyr2_name | Valid OBD++ entity name |
| side | Values: top/bottom |

odi_delete_sets

| | |
|-----------------|--|
| Command | odi_delete_sets |
| Group | Orbotech DI Interface |
| Descr. | The command is used for deleting ODI sets. |
| Response | None |

| | |
|------------------|----------------------------------|
| Parameter | Value |
| layers | List of valid odb++ entity names |
| sets | List of valid odb++ entity names |

odi_display_align

| | |
|-----------------|---|
| Command | odi_display_align |
| Group | Orbotech DI Interface |
| Descr. | The command is used when setting the ODIsset alignment. |
| Response | None |

| | |
|----------------------|--------------|
| Parameter | Value |
| display_align | |

odi_display_layer

| | |
|-----------------|---|
| Command | odi_display_layer |
| Group | Orbotech DI Interface |
| Descr. | The command is used to display/undisplay a layer. |
| Response | None |

| | |
|------------------|-------------------------|
| Parameter | Value |
| name | Valid OBD++ entity name |
| mode | Values: On, Off. |

odi_display_measure_fid_comm

| | |
|-----------------|--|
| Command | odi_display_measure_fid_comm |
| Group | Orbotech DI Interface |
| Descr. | The command is used to highlight the local scale fiducial. |
| Response | None |

| | |
|--------------------------------------|--------------|
| Parameter | Value |
| display_ measure_ fid | |

odi_display_multi_layers

| | |
|-----------------|---|
| Command | odi_display_multi_layers |
| Group | Orbotech DI Interface |
| Descr. | The command is used when setting the ODIsset alignment. |
| Response | None |

| | |
|---------------------------|--------------|
| Parameter | Value |
| display_ align | |

odi_display_profile

| | |
|-----------------|--|
| Command | odi_display_profile |
| Group | Orbotech DI Interface |
| Descr. | The command is used when setting the ODIset alignment. |
| Response | None |

| | |
|----------------------|--------------|
| Parameter | Value |
| display_align | |

odi_display_pv_connectors

| | |
|-----------------|--|
| Command | odi_display_pv_connectors |
| Group | Orbotech DI Interface |
| Descr. | The command is used when setting the ODIset alignment. |
| Response | None |

| | |
|----------------------|--------------|
| Parameter | Value |
| display_align | |

odi_display_reg_targets_comm

| | |
|-----------------|--|
| Command | odi_display_reg_targets_comm |
| Group | Orbotech DI Interface |
| Descr. | The command is used to highlight the registration targets. |
| Response | None |

| | |
|----------------------------|--------------|
| Parameter | Value |
| display_reg_targets | |

odi_display_sr

| | |
|-----------------|--|
| Command | odi_display_sr |
| Group | Orbotech DI Interface |
| Descr. | The command is used when setting the ODIset alignment. |
| Response | None |

| | |
|-------------------|--------------|
| Parameter | Value |
| display_sr | |

odi_display_table

| | |
|-----------------|--|
| Command | odi_display_table |
| Group | Orbotech DI Interface |
| Descr. | The command is used when setting the ODIset alignment. |
| Response | None |

| | |
|----------------------|--------------|
| Parameter | Value |
| display_align | |

odi_import_jobrule

| | |
|-----------------|---|
| Command | odi_import_jobrule |
| Group | Orbotech DI Interface |
| Descr. | The command is used for importing jobrules. |
| Response | None |

| | |
|------------------|--------------|
| Parameter | Value |
| jobrule | |

odi_import_toolset 1

| | |
|-----------------|---|
| Command | odi_import_toolset |
| Group | Orbotech DI Interface |
| Descr. | The command is used for importing toolsets. |
| Response | None |

| | |
|------------------|--------------|
| Parameter | Value |
| toolset | |

odi_open

| | |
|-----------------|--|
| Command | odi_open |
| Group | Orbotech DI Interface |
| Descr. | The command is used for opening the Orbotech DI interface. |
| Response | None |

| | |
|------------------|-------------------------|
| Parameter | Value |
| job | Valid ODB++ entity name |

odi_output

| | |
|-----------------|---------------------------------|
| Command | odi_output |
| Group | Orbotech DI Interface |
| Descr. | Output for Orbotech DI machine. |
| Response | None |

| | |
|-----------------------|-----------------------------|
| Parameter | Value |
| job | |
| step | |
| units_factor | Resolution of the OPFX file |
| units_type | Inch, MM |
| output_manager | |

| |
|------------------------------|
| machine_ name |
| path |
| customer_ name |
| free_text |
| copies |
| priority Values: 1-10 |
| serial <=1 |
| delivery_ date |
| override |
| archiving |
| break_sr |
| break_ fsyms |
| break_arc |
| scale_mode |

odi_output_layer_reset

| | |
|-----------------|--|
| Command | odi_output_layer_reset |
| Group | Orbotech DI Interface |
| Descr. | The command resets that output layers list, which is used by the 'output' command. |
| Response | None |

odi_output_layer_set

| | |
|-----------------|--|
| Command | odi_output_layer_set |
| Group | Orbotech DI Interface |
| Descr. | The command sets that output layers list, which is used by the 'output' command. |
| Response | None |

odi_output_show_page

| | |
|-----------------|------------------------------------|
| Command | odi_output_show_page |
| Group | Orbotech DI Interface |
| Descr. | The command shows the output page. |
| Response | None |

odi_pan_view

| | |
|-----------------|---|
| Command | odi_pan_view |
| Group | Orbotech DI Interface |
| Descr. | The command is used while setting the odiset alignment. |
| Response | None |

| | |
|------------------|--------------------|
| Parameter | Value |
| percent | Range: 1.0 - 100.0 |
| mode | |

odi_reload

| | |
|-----------------|--|
| Command | odi_reload |
| Group | Orbotech DI Interface |
| Descr. | The command is used for rereading the configuration files. |
| Response | None |

odi_reset_toolset_entries

| | |
|-----------------|---|
| Command | odi_reset_toolset_entries |
| Group | Orbotech DI Interface |
| Descr. | The command resets selected entries list, which is used when opening PROD/DI/CLIP/LAYOUT screens. |
| Response | None |

odi_save_as_jobrule

| | |
|-----------------|--|
| Command | odi_save_as_jobrule |
| Group | Orbotech DI Interface |
| Descr. | The command is used for duplicating an existing jobrule. |
| Response | None |

| | |
|------------------|--------------|
| Parameter | Value |
| jobrule | |

odi_save_as_toolset

| | |
|-----------------|--|
| Command | odi_save_as_toolset |
| Group | Orbotech DI Interface |
| Descr. | The command is used for duplicating an existing toolset. |
| Response | None |

| | |
|------------------|--------------|
| Parameter | Value |
| toolset | |

odi_save_jobrule

| | |
|-----------------|---|
| Command | odi_save_jobrule |
| Group | Orbotech DI Interface |
| Descr. | The command is used for saving jobrule. |
| Response | None |

odi_save_toolset

| | |
|-----------------|---|
| Command | odi_save_toolset |
| Group | Orbotech DI Interface |
| Descr. | The command is used for saving toolset. |
| Response | None |

odi_select_toolset_entry

| | |
|-----------------|--|
| Command | odi_select_toolset_entry |
| Group | Orbotech DI Interface |
| Descr. | The command sets/clears entry in the selected entries list which is used when opening PROD/DI/CLIP/LAYOUT screens. |
| Response | None |

| | |
|------------------|-----------------|
| Parameter | Value |
| mode | Values: on/off. |

odi_set_clip

| | |
|-----------------|--|
| Command | odi_set_clip |
| Group | Orbotech DI Interface |
| Descr. | The command is used for setting the clip area of partner layers. |
| Response | None |

| | |
|------------------|---|
| Parameter | Value |
| clip mode | Values: origin, center,img, prf, board. |

| | |
|-------------------------------------|----------------------|
| image | Values: 0,90,180,270 |
| rotation | |
| x_origin, y_origin | |
| widths | |
| height | |

odi_set_di_params

| | |
|-----------------|---|
| Command | odi_set_di_params |
| Group | Orbotech DI Interface |
| Descr. | The command is used for setting di parameters of affected layers. |
| Response | None |

| Parameter | Value |
|-------------------|----------------------------|
| resolution | Values: 0.25,0.125, 5, 2.5 |
| thickness | |
| resist | |
| treatment | |
| work_mode | Values: flow/toolset |

odi_set_jobrule

| | |
|-----------------|--|
| Command | odi_set_jobrule |
| Group | Orbotech DI Interface |
| Descr. | The command is used for setting a new jobrule. |
| Response | None |

| Parameter | Value |
|----------------|-------|
| jobrule | |

odi_set_jobrule_entry

| | |
|-----------------|---|
| Command | odi_set_jobrule_entry |
| Group | Orbotech DI Interface |
| Descr. | The command is used for setting a new entry in the jobrule. |
| Response | None |

| Parameter | Value |
|--------------------|---------------------|
| type_name | |
| toolset | |
| association | Values: type / name |

odi_set_jobrule_pair

| | |
|-----------------|--|
| Command | odi_set_jobrule_pair |
| Group | Orbotech DI Interface |
| Descr. | The command is used for setting a pairing mode in the jobrule. |
| Response | None |

| | |
|---------------------|--|
| Parameter | Value |
| pairing_mode | Values: single, foil, sheet, custom, predefined. |
| predef_name | Value: name for Predefined pair mode |

odi_set_machine

| | |
|-----------------|---|
| Command | odi_set_machine |
| Group | Orbotech DI Interface |
| Descr. | The command is used for setting a new machine in the Orbotech DI Interface. |
| Response | None |

| | |
|------------------|--------------|
| Parameter | Value |
| machine | |

odi_set_pair

| | |
|-----------------|--|
| Command | odi_set_pair |
| Group | Orbotech DI Interface |
| Descr. | The command is used for setting a single pair. |
| Response | None |

| | |
|------------------|-------------------------|
| Parameter | Value |
| lyr1_name | Valid OBD++ entity name |
| lyr2_name | Valid OBD++ entity name |
| side | Top / Bottom |

odi_set_prod_params

| | |
|-----------------|---|
| Command | odi_set_prod_params |
| Group | Orbotech DI Interface |
| Descr. | The command is used for setting production parameters of affected layers. |
| Response | None |

| Parameter | Value |
|--------------------|--|
| lyr_side | top/bottom |
| both_sides | no/yes |
| process | |
| polarity | positive/negative as prod data/inverse prod data,none_from_ts |
| scale_mode | without scale/fixed scale/ auto scale/one pass scale/fixed measure scale/auto segment scale/local scaling |
| accuracy | in mils |
| scale_x | percent was factor (percent/100) |
| scale_y | percent was factor (percent/100) |
| scale_cen_x | in inches |
| scale_cen_y | in inches |
| minvec | In mils |
| advec | In mils |
| minflash | In mils |
| adflash | In mils |
| conductors1 | In mils |
| conductors2 | In mils |
| conductors3 | In mils |
| conductors4 | In mils |
| conductors5 | In mils |

| ***** Extended LPD ***** | |
|--------------------------|---|
| Parameter | Value |
| enlarge_polarity | Enlarge only the features of the specified polarity. Possible values = none/positive/negative/both. |
| enlarge_other | size_inversely = size inversely features of the other polarity leave_as_is =leave as is the features of the other polarity |

| ***** Extended LPD ***** | |
|------------------------------|--|
| enlarge_panel | Yes = enlarge panel elements as PCB elements |
| overlap | Yes = Allow the panel data to overlap the PCB No = Do not allow the panel data to overlap the PCB |
| enlarge_image_symbols | Yes = Enlarge Image symbols as regular features. |
| enlarge_0_vecs | Yes = enlarge zero length vectors as flashes |
| enlarge_symbols | Possible values: none/all/selected |
| enlarge_symbols_by | Enlarge all symbols by this value in mils |
| symbol_name1 | symbol name to enlarge |
| enlarge_by1 | enlarge "named symbol" by this value in mils |
| ***** | ***** |
| symbol_name10 | symbol name to enlarge Note:(Max of 10 named symbols can be enlarged) |
| enlarge_by10 | enlarge "named symbol" by this value in mils Note: (Max of 10 named symbols can be enlarged) |
| work_mode | flow/toolset |

odi_set_step

| | |
|-----------------|--|
| Command | odi_set_step |
| Group | Orbotech DI Interface |
| Descr. | The command is used for setting a new step in the Orbotech DI Interface. |
| Response | None |

| Parameter | Value |
|------------------|-------------------------|
| job | Valid OBD++ entity name |
| step | Valid OBD++ entity name |
| set | Valid OBD++ entity name |

odi_set_toolset

| | |
|-----------------|--|
| Command | odi_set_toolset |
| Group | Orbotech DI Interface |
| Descr. | The command is used for setting a new toolset. |
| Response | None |

| | |
|------------------|--------------|
| Parameter | Value |
| toolset | |

odi_set_toolset_entry

| | |
|-----------------|---|
| Command | odi_set_toolset_entry |
| Group | Orbotech DI Interface |
| Descr. | The command is used for deleting an entry from a toolset. |
| Response | None |

| | |
|------------------|--------------|
| Parameter | Value |
| type_name | |

odi_set_units

| | |
|-----------------|--|
| Command | odi_set_units |
| Group | Orbotech DI Interface |
| Descr. | The command is used for setting the current working units. |
| Response | None |

| | |
|------------------|--------------|
| Parameter | Value |
| units | inch, mm |

odi_set_window

| | |
|-----------------|--|
| Command | odi_set_window |
| Group | Orbotech DI Interface |
| Descr. | The command is used for setting Interface or Output. |
| Response | None |

| | |
|----------------------------|--------------------|
| Parameter | Value |
| interface_ mode | interface / output |

odi_width_mode

| | |
|-----------------|---|
| Command | odi_width_mode |
| Group | Orbotech DI Interface |
| Descr. | The command is used for setting the ODIset alignment. |
| Response | None |

| | |
|---------------------------|--------------|
| Parameter | Value |
| display_ align | |

odi_work_layer

| | |
|-----------------|---|
| Command | odi_work_layer |
| Group | Orbotech DI Interface |
| Descr. | The command is used to display/undisplay a layer. |
| Response | None |

| | |
|------------------|-------------------------|
| Parameter | Value |
| name | Valid OBD++ entity name |

odi_zoom_area

| | |
|-----------------|--|
| Command | odi_zoom_area |
| Group | Orbotech DI Interface |
| Descr. | The command is used for setting the ODIsset alignment. |
| Response | None |

| | |
|------------------|---------------------------------|
| Parameter | Value |
| x1, y1 | First corner legal coordinates |
| x2, y2 | Second corner legal coordinates |

odi_zoom_back

| | |
|-----------------|--|
| Command | odi_zoom_back |
| Group | Orbotech DI Interface |
| Descr. | The command is used for setting the ODIsset alignment. |
| Response | None |

online_drc_clrref

| | |
|----------------|--|
| Command | online_drc_clrref |
| Group | Graphic Editor |
| Descr. | Clear the ONLINE DRC reference data. Successive checks will fail if any violation is found. |

online_drc_run

| | |
|-----------------|---|
| Command | online_drc_run |
| Group | Graphic Editor |
| Descr. | Perform the online DRC check according to the parameters set in the online_drc_set command. An area can be given as an additional parameter to the command for selective testing on this area. |
| Response | 0 if no violations found, 1 otherwise |

| Parameter | Value |
|------------------|-----------------------------------|
| x1, y1 | Legal coordinates - first corner |
| x2, y2 | Legal coordinates - second corner |

online_drc_set

| | |
|----------------|----------------------------|
| Command | online_drc_set |
| Group | Graphic Editor |
| Descr. | Sets values for online DRC |

| Parameter | Value |
|-------------------------|--|
| mode | Disabled - Do not check Deferred - check when instructed Immediate - check on each changed |
| chklist | Name of checklist for DRC |
| beep_ volume | None, low, medium or high |
| beep_tone | 200-1500 Khz |

online_drc_setref

| | |
|-----------------|--|
| Command | online_drc_setref |
| Group | Graphic Editor |
| Descr. | Save the last run results of the ONLINE DRC (or the analysis results marked as reference) as reference value for successive checks. |
| Response | Number of false alarms in reference |

| | |
|------------------|--------------|
| Parameter | Value |
| source | drc,analysis |

online_get_stat

| | |
|-----------------|--|
| Command | online_get_stat |
| Group | Graphic Editor |
| Descr. | Gets the mode and status of the current step |
| Response | <ul style="list-style-type: none"> - drc_mode - drc_stat - net_mode - net_stat <div style="margin-left: 400px;"> mode = disabled, deferred or immediate stat = red yellow or green </div> |

online_net_set

| | |
|----------------|--------------------------------------|
| Command | online_net_set |
| Group | Graphic Editor |
| Descr. | sets values for online netlist check |

| | |
|--------------------|--|
| Parameter | Value |
| mode | Disabled - Do not check Deferred - check when instructed Immediate - check on each changed |
| beep_volume | None, low, medium or high |
| beep_tone | 200-1500 Khz |

online_page_close

| | |
|----------------|--|
| Command | online_page_close |
| Group | Graphic Editor |
| Descr. | Pops up the DRC or NETLIST online page |

| | |
|------------------|----------------|
| Parameter | Value |
| type | Drc or netlist |

online_page_show

| | |
|----------------|--|
| Command | online_page_show |
| Group | Graphic Editor |
| Descr. | Pops up the DRC or NETLIST online page |

| | |
|------------------|----------------|
| Parameter | Value |
| type | DRC or netlist |

open_auto_panelize

| | |
|----------------|---|
| Command | open_auto_panelize |
| Group | Panelization Package |
| Descr. | The command opens the autopanelization manager window |

| | |
|------------------|-----------------------------------|
| Parameter | Value |
| job | Existing job name |
| panel | Panel step name |
| pcb | Existing PCB step name |
| scheme | Existing panelization scheme name |

open_entity

| | |
|-----------------|--|
| Command | open_entity |
| Group | Engineering Toolkit |
| Descr. | Used for opening job children entities. |
| Response | group - group number of the step/symbol editor that is used in the 'AUX set_group = group' command. |

| Parameter | Value |
|------------------|--|
| job | Name of an existing opened job |
| type | <ul style="list-style-type: none"> - stackup, - wheel, - matrix, - step - attributes, - panel_classes, - wheel_template |
| name | Existing entity name |
| iconic | Yes, No |

open_flowb

| | |
|----------------|--|
| Command | open_flowb |
| Group | Flow Builder |
| Descr. | The command is used for opening a flow for editing |

| Parameter | Value |
|------------------|--------------------|
| name | Existing flow name |

open_job

| | |
|----------------|---|
| Command | open_job |
| Group | Engineering Toolkit |
| Descr. | The command is used for opening a job (reading it from the database into the memory). |

| Parameter | Value |
|------------------|-------------------|
| job | Existing job name |

optimize_levels

| | |
|-----------------|--|
| Command | optimize_levels |
| Group | Graphic Editor |
| Descr. | The command is used for optimizing the number of positive negative levels. |
| Response | The number of positive negative levels after the operation. |

| | |
|------------------|------------------------|
| Parameter | Value |
| layer | Existing layer name |
| opt_layer | Optimized output layer |
| levels | Larger or equal to 1 |

origin

| | |
|----------------|--------------------------|
| Command | origin |
| Group | Graphic Editor |
| Descr. | Sets the graphic origin. |

| | |
|----------------------|--|
| Parameter | Value |
| x, y | Legal coordinate |
| push_in_stack | 0 or 1 - if 1 - new origin will be pushed into stack, enabling undo-origin command. |

origin_off

| | |
|----------------|--------------------------------|
| Command | origin_off |
| Group | Engineering Toolkit |
| Descr. | Switch the graphic origin off. |

origin_on

| | |
|----------------|-------------------------------|
| Command | origin_on |
| Group | Engineering Toolkit |
| Descr. | Switch the graphic origin on. |

output

| | |
|----------------|---|
| Command | output |
| Group | Engineering Toolkit |
| Descr. | Used for outputting steps data into external formats. The output is performed for all the layers that were defined using the command, output_layer_set . NOTE: The output line mode command writes (to the log) only parameters relevant to the chosen format. |

| Parameter | Value |
|----------------------|---|
| job | Existing job |
| step | Existing step |
| format | <ul style="list-style-type: none"> - Gerber, - Pentax, - Gerber274x, - Auto-plot, - Image, - Hpgl1, - Hpgl2, - DPF, - Execllon1, |
| dir_path | File pathname - target directory |
| prefix | String - prefix for the layer formats (e.g - gerber) |
| suffix | String - suffix for the layer formats (e.g - gerber) |
| break_sr | Yes - the step & repeat data is broken into single layer No - output step & repeat data - the parameters must a be YES for - <ul style="list-style-type: none"> - Gerber, - Gerber274x, - Auto-plot, - Hpgl1 - Hpgl2 |
| break_symbols | Yes - break special symbols (flat layer) No - output special symbols Note: The parameters must be YES for hpgl1, hpgl2, execllon1,execellon2 |
| break_text | Defines whether to break text during Boric DPF output. Values: <ul style="list-style-type: none"> - Yes (default) - Break text during output. - No - Do not break text during output. |
| break_arc | Yes - break arc features (flat layer) No - output arc features |
| scale_mode | All - scale all features nocontrol scale all except control features control Scale - scale only control features |
| surface_mode | Contour - Leave the surface as a contour (valid for -) fill - vectoric fill of the surfaces |
| min_brush | < min_brush <= 100.0 mils - for surface_mode == 'fill' |
| units | Inch, mm (for gerber,,etc) |
| coordinates | Absolute, incremental |
| zeroes | None, leading, trailing |
| nf1, nf2 | Number format (1 <= n <= 6) |

| | |
|-------------------------------|---|
| tool_units | Inch, mm (for drill formats) |
| x_anchor, y_anchor | Legal coordinates for the layer transformations |
| wheel | Existing wheel name for gerber output |
| netlist_type | CAD - CAD Reference - base line netlist Current - current netlist et_net - netlist created by ETM |
| line_units | Inch, mm - used for the command coordinates and sizes |
| override_ online | Yes, No - used to override incomplete online status |
| intensity | For RPD |
| film_type | For RPD |
| film_size | For RPD |
| resolution | For RPD |
| priority | For RPD |
| no_copies | For RPD |
| params_ _opt | Yes No - for Print |
| orientation | Automatic, Portrait, Landscape - for Print |
| title_opt | Fix, Auto, Fix+Auto, None - for Print |
| title | Print title - for Print |
| size_mode | A0, A1, A2, A3, A4, A5, B4, B5, Letter, Life, Scale, Other - for Print |
| width | For Print |
| height | For Print |
| scale | For Print |
| circuitest | Yes No |
| pads_ 2circles | Yes No - for Output of dxf pads ad 2 arcs or 1 empty circle |
| stagger | Yes No - whether to output the staggered coordinates or the base coordinates of a test point |
| test_thru | Yes - then thru-holes that are mid points will never the less get tested in Probot output. No - |
| test_ar_ above | Hole diameter in Mils/Micron - If 0 all holes are tested in the middle Otherwise - holes whose diameter is larger than this val will be tested on their annular rings |
| finished_ _drills | Yes No - Whether to output the finished drill hole size or layer size |
| feature_dim | Yes No - Whether to output feature dimensions to hole size in IPC |

| | |
|-------------------------------|--|
| draft | Yes No - For output of drawing files in draft mode in DXF output |
| nom_space | Nominal spacing Mil/Mic - Llyod Doyle format |
| nom_track | Nominal track width Mil/mic - Llyod Doyle format |
| auto_purge | Yes - Purge plotter outputs No - Do not purge plotter output |
| entry_num | 1-999 For plotter outputs |
| plot_copies | 1-255 For plotter outputs |
| dp100x_ alignment | Edge alignment for plotter outputs 2 point standard 3 point minimal 4 point split axis Point averaging |
| dp100x_clip | Center, Absolute - Plotter outputs |
| dp100x_ lamination | Lamination options for plotter outputs Single Foil Sheet Other |
| dp100x_ iserial | Plotter outputs |
| ins_s_drills | Values = Yes, No. For Lloyd Doyle output. |
| send_to_ plotter | Yes, No, None |
| cool_spread | Defines the minimal distance (in current units [mil/microns]) between succeeding hits during the board drilling process. This value is used in optimization. |
| use_ optimization | Defines whether or not to use optimization. Yes, No |
| drill_set | A list of pre-defined files defined in vf.config configuration file. |
| align_set | A list of pre-defined files defined in vf.config configuration file. |

output_etec_params

| | |
|----------------|------------------------------------|
| Command | output_etec_params |
| Group | Engineering Toolkit |
| Descr. | setting the output etec parameters |

| Parameters | Value |
|------------------------|--------------|
| machine | |
| alignment_type | |
| lamination | Foil / sheet |
| padding_blanks | |
| etec_format | |
| resist_name | |
| total_thickness | |
| resist_exposure | |
| core_type | |
| enable_clipping | |

output_layer_reset

| | |
|----------------|---|
| Command | output_layer_reset |
| Group | Engineering Toolkit |
| Descr. | The command resets that output layers list, which is used by the output command. |

output_layer_set

| | |
|----------------|---|
| Command | output_layer_set |
| Group | Engineering Toolkit |
| Descr. | The command adds a layer to the output list (layer name and transformation parameters). |

| Parameter | Value |
|-------------------------|---|
| layer | Existing layer name |
| angle | 0, 90, 180, 270 |
| mirror | Yes, No - around X axis |
| x_scale, y_scale | 95 < scale <= 1.05 only the feature coordinates are scaled |
| comp | -10 <= comp <= 10 (mils)compensation(resize) value |
| polarity | Positive, negative - used for: 274x, and image (panel header) |
| line_units | Inch, mm - used for the command coordinates and sizes |
| setupfile | Existing setupfile name |
| setupfile_active | TRUE, FALSE |

output_show_page

| | |
|----------------|------------------------------------|
| Command | output_show_page |
| Group | Engineering Toolkit |
| Descr. | The command shows the output page. |

p2p_auto

| | |
|----------------|------------------------------|
| Command | p2p_auto |
| Group | Graphic Editor |
| Descr. | automatic connect ext points |

| Parameter | Value |
|------------------------------|-------------------------------|
| p2p_auto_connect_last | If to connect last ext to 1st |
| p2p_from | Ext no to start from |
| p2p_to | Ext no to stop at |

pan_center

| | |
|----------------|---|
| Command | pan_center |
| Group | Graphic Editor |
| Descr. | Pan the center of the screen to a specified coordinate. |

| | |
|------------------|-------------------|
| Parameter | Value |
| x, y | Legal coordinates |

pan_down

| | |
|----------------|-------------------------------|
| Command | pan_down |
| Group | Graphic Editor |
| Descr. | Pan down the graphic display. |

| | |
|------------------|--------------|
| Parameter | Value |
| percent | 1.0 - 100.0 |

pan_feet

| | |
|----------------|-----------------------------------|
| Command | pan_feat |
| Group | Graphic Editor |
| Descr. | Pan to a specified layer feature. |

| | |
|------------------|--|
| Parameter | Value |
| layer | step layer name |
| index | existing feature index (< 1) |
| auto_zoom | Yes - the display is zoomed according to the feature size No - only panning |

pan_left

| | |
|----------------|-------------------------------|
| Command | pan_left |
| Group | Graphic Editor |
| Descr. | Pan left the graphic display. |

| Parameter | Value |
|----------------|-------------|
| percent | 1.0 - 100.0 |

pan_right

| | |
|----------------|--------------------------------|
| Command | pan_right |
| Group | Graphic Editor |
| Descr. | Pan right the graphic display. |

| | |
|------------------|--------------|
| Parameter | Value |
| percent | 1.0 - 100.0 |

pan_snake_bw

| | |
|----------------|-------------------------------|
| Command | pan_snake_bw |
| Group | Graphic Editor |
| Descr. | Snake panning - backward pan. |

pan_snake_cr

| | |
|----------------|---|
| Command | pan_snake_cr |
| Group | Graphic Editor |
| Descr. | Snake panning - initial current position. |

pan_snake_fw

| | |
|----------------|------------------------------|
| Command | pan_snake_fw |
| Group | Graphic Editor |
| Descr. | Snake panning - forward pan. |

pan_snake_ll

| | |
|----------------|--|
| Command | pan_snake_ll |
| Group | Graphic Editor |
| Descr. | Snake panning - initial lower left position. |

pan_snake_ur

| | |
|----------------|---|
| Command | pan_snake_ur |
| Group | Graphic Editor |
| Descr. | Snake panning - initial upper right position. |

pan_up

| | |
|----------------|-----------------------------|
| Command | pan_up |
| Group | Graphic Editor |
| Descr. | Pan up the graphic display. |

| | |
|------------------|--------------|
| Parameter | Value |
| percent | 1.0 - 100.0 |

panel_size

| | |
|----------------|---|
| Command | panel_size |
| Group | Graphic Editor |
| Descr. | Sets the panel (step) profile as a rectangle with a specified size. |

| | |
|--------------------------|--------------------|
| Parameter | Value |
| width, height | 0 <= size (inches) |

partial_layer

| | |
|----------------|--|
| Command | partial_layer |
| Group | Graphic Editor |
| Descr. | The command receives as input a layer name, and creates/deletes partial layer data that contains step & repeat data. |

| | |
|-------------------|-----------------------|
| Parameter | Value |
| operation | Create / Delete |
| apply_to | Affected / layer_name |
| layer_name | Existing layer name |

print

| | |
|----------------|--|
| Command | <code>print</code> |
| Group | Graphic Editor |
| Descr. | Prints graphic layers in pdf or postscript format. |

| Parameter | Value |
|----------------------|---|
| title | Allows a title to be printed at the top of each page. |
| layer_name | A semicolon separated list of layers. All layer types are supported. |
| dest | printer,preview,postscript,pdf |
| num_copies | Number of copies desired |
| dest_fname | Name of file to create when dest is pdf or postscript |
| paper_size | A0,A1,A2,A3,A4,A5 B4,B5 Letter Other |
| nx | number of images in horizontal axis |
| ny | number of images in vertical axis |
| orient | portrait, landscape, none (i.e. system to choose orientation) |
| paper_orient | portrait, landscape |
| paper_width | Paper width in inches, when "other" paper_size is specified |
| paper_length | Paper length in inches, when "other" paper_size is specified |
| auto_tray | |
| top_margin | page margin |
| bottom_margin | page margin |
| left_margin | page margin |
| right_margin | page margin |
| x_spacing | horizontal spacing between images |
| y_spacing | Reserved for future use |
| label_layers | Defines value of Label layers field in Print Layer Popup. Default value = No. Note: This parameter has no affect when the drawing_per_layer parameter is set to No. |
| paper_units | Enables custom paper sizes to be defined in either inches or millimeters. Permitted values: inch , mm . Default = inch . |

print_form

| | |
|----------------|---------------------|
| Command | print_form |
| Group | WorkForms |
| Descr. | Prints a given form |

| Parameter | Value |
|--------------------|--|
| job | Name of the job form |
| form | Name of the form |
| orientation | Auto, portrait, landscape |
| dest | Printer, file |
| dest_fname | <path> when dest=file |
| title | <string (up to 99 chars)> |
| ncopies | 1-50 |
| color | Color,gray,bw |
| size | A0, A3, A4, A5, B4, B5, letter, life, custom |
| width | 0 - 100 inches - For custom only |
| height | 0 - 100 inches - For custom only |
| with_title | Yes, No |
| ps_top | Top margin (inches) |
| ps_bottom | Bottom margin (inches) |
| ps_left | Left margin (inches) |
| ps_right | Right margin (inches) |

print_hide

| | |
|----------------|-----------------------------|
| Command | print_hide |
| Group | Graphic Editor |
| Descr. | Hides layer printing window |

print_show

| | |
|----------------|-----------------------------|
| Command | print_show |
| Group | Graphic Editor |
| Descr. | Shows layer printing window |

profile_limits

| | |
|----------------|--|
| Command | profile_limits |
| Group | Graphic Editor |
| Descr. | The command defines the step profile as the bounding box of all the step layers. |

profile_poly_crv

| | |
|----------------|-------------------------|
| Command | profile_poly_crv |
| Group | Graphic Editor |
| Descr. | Adds a polygon curve. |

| | |
|------------------|---|
| Parameter | Value |
| xc, yc | Legal coordinates - curve center point |
| xe, ye | Legal coordinates - curve end point |
| cw | Yes - clockwise No - counter clockwise |

profile_poly_end

| | |
|----------------|---------------------------|
| Command | profile_poly_end |
| Group | Graphic Editor |
| Descr. | Closes a profile polygon. |

profile_poly_seg

| | |
|----------------|-------------------------|
| Command | profile_poly_seg |
| Group | Graphic Editor |
| Descr. | Adds a polygon segment. |

| | |
|------------------|---------------------------------------|
| Parameter | Value |
| x, y | Legal coordinates - segment end point |

profile_poly_strt

| | |
|----------------|---------------------------|
| Command | profile_poly_strt |
| Group | Graphic Editor |
| Descr. | Starts a profile polygon. |

| | |
|------------------|---------------------------------|
| Parameter | Value |
| x, y | Legal coordinates - start point |

profile_rect

| | |
|----------------|-------------------------------------|
| Command | profile_rect |
| Group | Graphic Editor |
| Descr. | Defines a rectangular step profile. |

| | |
|---------------------------|---------------------------------------|
| Parameter | Value |
| x1, y1, x2, y2 | Legal coordinates - rectangle corners |

profile_sel

| | |
|----------------|---|
| Command | profile_sel |
| Group | Graphic Editor |
| Descr. | Defines a step profile according to the selected features. (The command does not yet operate). |

profile_to_rout

| | |
|----------------|---|
| Command | profile_to_rout |
| Group | Graphic Editor |
| Descr. | The command converts a step profile into a rout layer. If the layer does not exist, it will be created. |

| | |
|------------------|--|
| Parameter | Value |
| layer | Legal rout layer name line width |
| width | 0 <= width <= max size (mils) - line width |

profile_transform

| | |
|----------------|----------------------------|
| Command | profile_transform |
| Group | Graphic Editor |
| Descr. | Transforms a step profile. |

| | |
|------------------|--|
| Parameter | Value |
| x_offset | Profile X-offset values in current units (inch/mm) |
| y_offset | Profile Y-offset values in current units (inch/mm) |
| Resize by | Profile resize value in current units (inch/mm) |

pull_feat

| | |
|----------------|--|
| Command | pull_feat |
| Group | Graphic Editor |
| Descr. | Pulls a line feature into 2 connected lines. |

| Parameter | Value |
|-----------------------------|--|
| index | Feature index in the work layer. (Optional) If index is not specified, Genesis looks for the feature according to coordinates. |
| x, y | Legal coordinates - feature coordinates |
| tol | 0 <= tol (mils) - snap tolerance |
| x1s,y1s, x1e,y1e | (Descr.) - line number 1 |
| x2s,y2s, x2e,y2e | (Descr.) - line number 1 |

pv_cont_mode

| | |
|----------------|--|
| Command | pv_cont_mode |
| Group | Graphic Editor |
| Descr. | Sets a special popview mode that performs continuous display update when moving a popview. |

| Parameter | Value |
|------------------|---|
| mode | On - continuous update Off - update only when releasing the mouse button |

quote_analysis_open_screen

| | |
|----------------|--|
| Command | quote_analysis_open_screen |
| Group | Graphic Editor |
| Descr. | The command displays the quote summary window. |

| Parameter | Value |
|------------------|--------------------|
| page_num | |
| job | Existing job name |
| step | Existing step name |

read_form

| | |
|-----------------|--|
| Command | read_form |
| Group | WorkForms |
| Descr. | Returns the value of a form element |
| Response | The value of the field unless an "out_file" is supplied. |

| Parameter | Value |
|------------------|--|
| job | Name of the job |
| form | Name of the form |
| elem | Name of the element |
| opt_name | yes for option name |
| out_file | A path to a file which will be filled by the command with the value of the element. Useful for reading multiline text fields - if empty, the field is ignored. |

read_form_list

| | |
|----------------|---|
| Command | read_form_list |
| Group | WorkForms |
| Descr. | Reads a form and returns a file that contains a list of (elem,value) pairs. This call can be used instead of read_form when more than one element needs to be read. |

| Parameter | Value |
|------------------|--|
| job | Name of the job |
| form | Name of the form |
| opt_name | Yes for option name |
| in_file | File that includes lines of the form: elem = ELEM<empty string> - Each of the elems will be read |
| out_file | File that includes lines of the form: set gELEMS = (e1 e2 e3.) set gVALUES = (v1 v2 v3.) - All elems read of value of elem e1 is to of value of elem e1 is e1. en corresponds to the in_file list. |

recover_lost_jobs

| | |
|----------------|---|
| Command | recover_lost_jobs |
| Group | Engineering Toolkit |
| Descr. | Add entries to the joblist for each job directory in a database that is not in the joblist. |

rect_intersect

| | |
|-----------------|---|
| Command | rect_intersect |
| Group | Graphic Editor |
| Descr. | The command is used for checking if there are any intersections between a specified rectangle and the step features or the step & repeat profiles. No data is changed in this command. |
| Response | <p>The response contains 3 values in the following format:</p> <ul style="list-style-type: none"> • sr - {none - inside outside intersect} • feature - {Yes, No} • profile - {none - inside outside intersect} <p>The first value indicates if there was an intersection with the step & repeat profiles (also if inside).</p> <p>The second value indicates if there was an intersection with any of the features.</p> <p>The third value is used for specifying the location of the specified rectangle in relation to the step profile.</p> |

| Parameter | Value |
|---------------------------|---|
| x1, y1, x2, y2 | Legal coordinates - rectangle corners |
| layers_ mode | None - no features check All - check all layers Board - all board layers context == boardname - check the specified layer |
| layer | Existing layer name - if (layers_mode == layer) |
| sr_mode | None - no step & repeat check Nest - nest through the step& repeat data No nest - take the highest step & repeat level |
| check_ profile | Yes - check the relation with the step profile No - don't check the profile |

recv_mesg

| | |
|----------------|--|
| Command | recv_mesg |
| Group | Engineering Toolkit |
| Descr. | The command is used to/allow/deny messages to this process |

| | |
|------------------|--------------|
| Parameter | Value |
| accept | Yes, No |

register_comp

| | |
|-----------------|--|
| Command | register_comp |
| Group | Graphic Editor |
| Descr. | The command performs an automatic registration of the component layer(s) based on a given reference layer. |
| Response | None |

| | |
|------------------------|---------------------|
| Parameter | Value |
| reference_layer | Entity name |
| side | Top, bottom or both |

register_comp_manual

| | |
|-----------------|--|
| Command | register_comp_manual |
| Group | Graphic Editor |
| Descr. | The command registers the components according to a specified (dx,dy) value. |
| Response | None |

| | |
|------------------|---------------------|
| Parameter | Value |
| side | Top, bottom or both |
| dx, dy | Offset values |

register_layers

| | |
|----------------|---|
| Command | register_layers |
| Group | Graphic Editor |
| Descr. | The command performs an automatic registration of layers based on a specified reference layer. The layers must contain pads for the operation to succeed. |

| Parameter | Value |
|------------------------|--|
| reference_layer | Entity name |
| tolerance | Registration tolerance double |
| reg_mode | layer_name - specified reg layer affected_layers - register all the affected layers |
| register_layer | Entity name - if reg_mode == layer_name |

register_manual

| | |
|----------------|--|
| Command | register_manual |
| Group | Graphic Editor |
| Descr. | The command registers a layer according to a set of transformation parameters. The transformation is done in the following order: rotate, mirror, offset |

| Parameter | Value |
|---------------------------|--|
| layers | Layer1; layer2,,,,,layern - list of existing layers |
| x_anchor, y_anchor | For angle, mirror |
| x_off, y_off | Offset values |
| angle | 0, 90, 180, 270 - around x,y_anchor |
| mirror | Yes - x mirror around x,y_anchor No - no mirror around x,y_anchor |

regrid_jtag

| | |
|----------------|----------------------------------|
| Command | regrid_jtag |
| Group | Graphic Editor |
| Descr. | Regrid requested JTAG components |

| Parameter | Value |
|-------------------------|--|
| jtag_comp_ids | Integer value between 1 and 100 or all. Note: For all pads belonging to the same component. |
| jtag_layer | NULL, or any copper layer or "all_copper_layers" |
| jtag_req_pitch_x | Any positive value for the new delta_x between the jtag pads. Note: Value should be larger than the largest pad. |
| jtag_req_pitch_y | Any positive value for the new delta_y between the jtag pads. Note: Value should be larger than the largest pad. |
| jtag_anchor_x | Coordinate value: Any value is acceptable. |
| jtag_anchor_y | Coordinate value: Any value is acceptable. |
| apply_sm | Yes/No. Whether to move the SM & SP features as well. |
| online_netlist | Yes/No. Whether to run the netlist compare online. |

replace_jtag

| | |
|----------------|-----------------------------------|
| Command | replace_jtag |
| Group | Graphic Editor |
| Descr. | Replace requested JTAG components |

| Parameter | Value |
|----------------------|---|
| jtag_comp_ids | Integer value between 1 and 100 or all. Note: For all pads belonging to the same component. |
| jtag_layer | NULL, or any copper layer or "all_copper_layers" |
| jtag_source_x | Coordinate value: Any value is acceptable. |
| jtag_source_y | Coordinate value: Any value is acceptable. |
| jtag_target_x | Coordinate value: Any value is acceptable. |
| jtag_target_y | Coordinate value: Any value is acceptable. |

| | |
|----------------------------|---|
| replace_ mode | Cut or pull. Whether to cut the JTAG comp or to m'n's it. |
| rotate | 0 or 1 or 3. Rotation to be applied 0° or 90° or 180° only. |
| apply_sm | Yes/No. Whether to move the SM & SP features as well. |
| online_ netlist | Yes/No. Whether to run the netlist compare online. |

remove_hole

| | |
|----------------|--|
| Command | remove_hole |
| Group | Graphic Editor |
| Descr. | Removes a contour hole (must be a hole with no inner islands). |

| | |
|------------------|---|
| Parameter | Value |
| x,y | Legal coordinates (inch/mm) - coordinates of a point within the hole to be moved. |

remove_vertex

| | |
|----------------|---------------------------|
| Command | remove_vertex |
| Group | Graphic Editor |
| Descr. | Removal of contour vertex |

| | |
|------------------|--|
| Parameter | Value |
| x,y | Legal coordinates (inches/mm) - coordinates of vertex. |

rename_entity

| | |
|----------------|-----------------------------|
| Command | rename_entity |
| Group | Engineering Toolkit |
| Descr. | Used for renaming entities. |

| | |
|------------------|--|
| Parameter | Value |
| job | Name of an existing opened job |
| is_fw | Yes - framework entity (form, flow- according to the fw_type parameter) No - CAM entity (according to the type param) |
| type | <ul style="list-style-type: none"> - Job - Step - Symbol - Stackup - Wheel - Matrix - symbol renaming is not supported at this stage |
| fw_type | Form, flow |
| name | Existing entity name |
| new_name | Entity name |

rename_flow

| | |
|----------------|-------------------------------|
| Command | rename_flow |
| Group | Work Flows |
| Descr. | Renames a flow within the job |

| | |
|------------------|----------------------|
| Parameter | Value |
| job | Name of the job |
| flow | Name of the flow |
| new_flow | New name of the flow |

rename_form

| | |
|----------------|-------------------------------|
| Command | rename_form |
| Group | WorkForms |
| Descr. | Renames a form within the job |

| | |
|------------------|----------------------|
| Parameter | Value |
| job | Name of the job |
| form | Name of the form |
| new_form | New name of the form |

rename_layer

| | |
|----------------|---|
| Command | rename_layer |
| Group | Graphic Editor |
| Descr. | The command is used for renaming a layer (the matrix is updated). |

| | |
|------------------|-------------------------------------|
| Parameter | Value |
| name | Existing layer name |
| new_name | Entity name of a non-existing layer |

rename_stage

| | |
|----------------|---------------------------|
| Command | rename_stage |
| Group | Flow Builder |
| Descr. | Used for renaming stages. |

| Parameter | Value |
|-----------------|--|
| elem | Name of elem to rename |
| flow | Name of flow to rename elem - name of elem to rename |
| new_name | New name of elem |

repair_job

| | |
|-----------------|---------------------------|
| Command | repair_job |
| Group | Engineering Toolkit |
| Descr. | Check and/or repair a job |
| Response | Number of problems found |

| Parameter | Value | | | | | | | | | | | | | | | |
|-------------------|--|------------------|-----------------|---------------|-------------|------------|-------------|---------------|--------------|------------------|----------------|----------------|-----------------|-------------------|-------------|--|
| job | Existing job name. | | | | | | | | | | | | | | | |
| operation | Check; Repair. Repair also checks. | | | | | | | | | | | | | | | |
| repair_type | List of repair types below. Default: All. <div><table><tr><td>add_matrix_layer</td><td>add_matrix_step</td><td>create_matrix</td></tr><tr><td>create_step</td><td>delete_eda</td><td>copy_symbol</td></tr><tr><td>create_symbol</td><td>create_layer</td><td>delete_layer_sum</td></tr><tr><td>truncate_layer</td><td>repair_surface</td><td>delete_relation</td></tr><tr><td>use_standard_font</td><td>delete_font</td><td></td></tr></table></div> | add_matrix_layer | add_matrix_step | create_matrix | create_step | delete_eda | copy_symbol | create_symbol | create_layer | delete_layer_sum | truncate_layer | repair_surface | delete_relation | use_standard_font | delete_font | |
| add_matrix_layer | add_matrix_step | create_matrix | | | | | | | | | | | | | | |
| create_step | delete_eda | copy_symbol | | | | | | | | | | | | | | |
| create_symbol | create_layer | delete_layer_sum | | | | | | | | | | | | | | |
| truncate_layer | repair_surface | delete_relation | | | | | | | | | | | | | | |
| use_standard_font | delete_font | | | | | | | | | | | | | | | |
| report | Path or Display. Default: Display | | | | | | | | | | | | | | | |

report_cat_report

| | |
|----------------|---|
| Command | report_cat_report |
| Group | General Reports |
| Descr. | Report all categories of a report to a file in the following format : <pre>.report <name> .category <screen_name> <n1> <n2> <n3> <n4> .category <screen_name> <n1> <n2> <n3> <n4> ...</pre> Note: <screen_name> is surrounded by quotes. <n1>.. <n4> are the number of measurements in the red, yellow, green, and all ranges. |

| Parameter | Value |
|------------------|------------------|
| job | job name |
| step | step name |
| rep | report name |
| out_file | output file name |

report_close

| | |
|--------------------|--|
| Command | report_close |
| Group | Electrical Testing Manager |
| Description | Closes the requested report |
| Parameter | Value |
| job | Existing job name |
| step | Existing step name |
| report_name | Name of the report to open. Each report has its own unique name. |

report_get_max_severity

| | |
|-----------------|---|
| Command | report_get_max_severity |
| Group | |
| Descr. | Returns (writes into <out_file>) the maximum severity level of a specified report. Used in system automation. |
| Response | None |

| | |
|------------------|---------------------------------|
| Parameter | Value |
| job | working job name |
| step | working step name |
| rep_name | name of the report to open |
| out_file | name of the output file to open |

report_open

| | |
|----------------|----------------------------|
| Command | report_open |
| Group | Electrical Testing |
| Descr. | Opens the requested report |

| | |
|------------------|---|
| Parameter | Value |
| job | job name |
| step | step name |
| rep_name | Name of the report to open. Each report will have its own unique name. Check in the command line created when opening the report to get the report name. |

report_sel_category

| | |
|----------------|---|
| Command | report_sel_category |
| Group | General Reports |
| Descr. | Select all items in the current report category that are higher than the current level of severity. |

| | |
|------------------|---|
| Parameter | Value |
| job | job name |
| step | step name |
| rep | report name |
| cat | category name (English-only; case-insensitive) Note: If the category name contains a comma, add a backslash (\) before the comma. |
| severity | Options: red, yellow, green, or all |

report_sel_reset

| | |
|----------------|---|
| Command | report_sel_reset |
| Group | General Reports |
| Descr. | Reset the selected features that were selected from a report. |

| | |
|------------------|---|
| Parameter | Value |
| job | job name |
| step | step name |
| rep | Report name from which to reset the selected features |

reread_comp

| | |
|----------------|--|
| Command | reread_comp |
| Group | Graphic Editor |
| Descr. | The command re-reads the component info from the database. |

reread_layer

| | |
|----------------|---|
| Command | reread_layer |
| Group | Graphic Editor |
| Descr. | The command re-reads an existing layer from the database. |

| | |
|------------------|--------------|
| Parameter | Value |
| layer | Entity name |

reroute_trace

| | |
|----------------|--------------------------------------|
| Command | reroute_trace |
| Group | Graphic Editor |
| Descr. | Reroute a traces into triplet lines. |

| | |
|-------------------------|--|
| Parameter | Value |
| mode | Reroute mode |
| x1,y1, x2,y2 | Break points on the line. Any legal coordinates. If (mode==from_point), [x2,y2] defines the direction from [x1,y1]. |
| shift | Middle line shift. Any legal coordinates. |
| direction | Positive; negative. If positive - movement is in positive Y-Axis direction, or, if middle line is vertical, positive X-Axis direction. |
| tol | Snap tolerance. Range: 0 <= tol (in current units). |

resize_hole

| | |
|----------------|---|
| Command | resize_hole |
| Group | Graphic Editor |
| Descr. | Resizes a contour hole with no inner islands. |

| | |
|------------------|---|
| Parameter | Value |
| x, y | legal coordinates (inch/mm) - coordinates of a point within a hole. |
| resize_by | legal coordinates (mil/microns) - resize factor. |

restore_job_tool_close

| | |
|--------------------|-------------------------------|
| Command | restore_job_tool_close |
| Group | Engineering Toolkit |
| Description | Closes the job restore window |
| Response | None |

restore_job_tool_open

| | |
|--------------------|------------------------------|
| Command | restore_job_tool_open |
| Group | Engineering Toolkit |
| Description | Opens the job restore window |
| Response | None |

rotate_feat

| | |
|----------------|---|
| Command | rotate_feat |
| Group | Graphic Editor |
| Descr. | Rotates a feature around it's axis point. |

| Parameter | Value |
|------------------|---|
| index | Feature index in the work layer (Optional) If index is not specified, Genesis looks for the feature according to coordinates. |
| x, y | Legal coordinates - feature coordinates |
| angle | 0, 90, 180, 270 |
| tol | 0 <= tol (mils) - snap tolerance |

rotate_step

| | |
|----------------|--|
| Command | rotate_step |
| Group | Graphic Editor |
| Descr. | The command creates a step entry (column) in a job matrix by rotating the existing step. |

| Parameter | Value |
|-------------------------------|---|
| name | name of existing open job |
| step | existing step name |
| rotated_step | rotated step name |
| angle | rotation angle |
| mode | rotation mode: datum, center, or anchor datum - step datum point center- step profile center anchor- arbitrary point |
| units | Units for anchor point coordinates definition. Possible values = inches or mm. |
| anchor_x, anchor_y | legal coordinates for rotation anchor point |

round_bus

| | |
|----------------|------------------|
| Command | round_bus |
|----------------|------------------|

| | |
|---------------|---------------------------|
| Group | Graphic Editor |
| Descr. | Round selected bus tracks |

| Parameter | Value |
|--|--|
| mode | Increasing_radius: $\text{next_radius} = \text{prev_radius} + \text{space}$, where ($\text{space} = (\text{space1} + \text{space2}) / 2$) Constant_radius: $\text{next_radius} = \text{inner_radius}$ |
| inner_ radius | Positive value (mil/mm) |
| tapered | Perform tapering. No;yes. |
| bus1x1, bus1y1 bus1x2, bus1y2 | Legal coordinates. 1st and 2nd points of a line to define bus start. |
| bus2x1, bus2y1 bus2x2, bus2y2 | Legal coordinates. 1st and 2nd points of a line to define bus end. |

rout_edit

| | |
|----------------|--|
| Command | rout_edit |
| Group | Graphic Editor |
| Descr. | The command activates the rout editing package with a reference layer and destination layer as params. |

| | |
|-------------------|---------------------------------|
| Parameter | Value |
| ref_layer | Entity name |
| dest_layer | Entity name - destination layer |

save_flowb

| | |
|----------------|--------------------------------------|
| Command | save_flowb |
| Group | Flow Builder |
| Descr. | Used for saving a flow after editing |

| | |
|------------------|-------------------------------|
| Parameter | Value |
| name | Name of an existing open flow |

save_job

| | |
|----------------|---|
| Command | save_job |
| Group | Engineering Toolkit |
| Descr. | Used for saving a job (the changed entities are written to the database). |

| | |
|------------------|-----------------------------------|
| Parameter | Value |
| job | Name of an existing opened job |
| override | Yes to override online violations |

Note The **y2k_last_saved** configuration parameter determines the use of 4-digit year format in the **last_saved** stamp.

save_log_file

| | |
|--------------------|--|
| Command | save_log_file |
| Group | Graphic Editor |
| Description | Defines location and name of log file. |
| Parameter | Description |
| dir | Existing directory path (Default is logs dir) |
| prefix | String to be added to the beginning of file name |
| clear | [no/yes] - clear log file after save |

scaling_per_step_close

| | |
|--------------------|------------------------------------|
| Command | scaling_per_step_close |
| Group | Graphic Editor |
| Description | Closes the scaling per step popup. |

scaling_per_step_delete

| | |
|--------------------|---|
| Command | scaling_per_step_delete |
| Group | Graphic Editor |
| Description | Deletes defined scaling factors for the selected sub-steps. |

| | |
|-------------------|---|
| Parameter | Value |
| apply_to | Affected / layer_name |
| layer_name | Existing layer name. Used with apply_to=layer_name. |

scaling_per_step_popup

| | |
|--------------------|-----------------------------------|
| Command | scaling_per_step_popup |
| Group | Graphic Editor |
| Description | Opens the scaling per step popup. |

scaling_per_step_report

| | |
|--------------------|------------------------------------|
| Command | scaling_per_step_report |
| Group | Graphic Editor |
| Description | Opens the scaling per step report. |

scaling_per_step_set

| | |
|--------------------|---|
| Command | scaling_per_step_set |
| Group | Graphic Editor |
| Description | Sets/resets new scaling factors for the selected sub-steps. |

| | |
|---------------------------------|---|
| Parameter | Value |
| apply_to | Affected / layer_name |
| layer_name | Existing layer name. Used with apply_to=layer_name. |
| x_scaling, y_scaling | Required scaling factors. Range: 0.998 .. 1.002. |

script_bind_hide

| | |
|--------------------|---------------------------------|
| Command | script_bind_hide |
| Group | Graphic Editor |
| Description | Hides the script binding window |

script_bind_show

| | |
|--------------------|---------------------------------|
| Command | script_bind_show |
| Group | Graphic Editor |
| Description | Shows the script binding window |

script_debug_hide

| | |
|--------------------|----------------------------|
| Command | script_debug_hide |
| Group | Graphic Editor |
| Description | Hides the C-shell debugger |

script_debug_show

| | |
|--------------------|----------------------------|
| Command | script_debug_show |
| Group | Graphic Editor |
| Description | Shows the C-shell debugger |

script_do_on_abort

| | |
|----------------|--------------------------------|
| Command | script_do_on_abort |
| Group | |
| Descr. | What to do when script aborts. |

| | |
|------------------|--------------------------------------|
| Parameter | Value |
| script | Full path of script to run on abort. |
| user_data | String to be passed to script. |

script_ignore_error

| | |
|----------------|--|
| Command | script_ignore_error |
| Group | |
| Descr. | Set script error ignore level. This command can be used to ignore errors returning from a nested script. |

| | |
|------------------|--|
| Parameter | Value |
| value | 0 - normal error processing 1 - all errors are ignored, except error code 1 2 - all errors are ignored |

script_record

| | |
|----------------|-------------------------------|
| Command | script_record |
| Group | Scripts |
| Descr. | Enable/Disable recording mode |

| | |
|------------------|--------------------------------|
| Parameter | Value |
| mode | abs,inc,stop inc not supported |
| append | Yes, No append to session |

script_run

| | |
|----------------|-------------------|
| Command | script_run |
| Group | Scripts |
| Descr. | Run a script |

| | |
|------------------|---|
| Parameter | Value |
| name | Script name - according to dir mode or full path if starts with / |
| dirmode | Local/global - see name |
| params | Script params |
| env1 | Environment variable setting, e.g. JOB=jobname |
| env2 | e.g. STEP=stepname |
| env3 | e.g. STEP=stepname |
| env4 | e.g. STEP=stepname |

script_run_hide

| | |
|--------------------|-----------------------------|
| Command | script_run_hide |
| Group | Graphic Editor |
| Description | Hides the script run window |

script_run_show

| | |
|--------------------|-----------------------------|
| Command | script_run_show |
| Group | Graphic Editor |
| Description | Shows the script run window |

script_save

| | |
|----------------|--------------------|
| Command | script_save |
| Group | Scripts |
| Descr. | Save a script |

| | |
|------------------|--|
| Parameter | Value |
| name | Script name according to dirmode or full path if starts with / |
| dirmode | Local/global - see name |
| append | Yes, No add to existing scr |

secure_job

| | |
|----------------|---|
| Command | secure_job |
| Group | Engineering Toolkit |
| Descr. | Used for securing a job to the STAR 1000. |

| | |
|------------------|-------------------------|
| Parameter | Value |
| job | Name of an existing job |

sel_add_tapering

| | |
|-----------------|---|
| Command | sel_add_tapering |
| Group | Graphic Editor |
| Descr. | Adds tapered lines/arcs to selected line/arc features if they are connected to another line/arc with a different symbol size. |
| Response | None |

sel_all_feat

| | |
|----------------|--|
| Command | sel_all_feat |
| Group | Graphic Editor |
| Descr. | Selects all the features in all the affected layers. |

sel_board_net_feat

| | |
|----------------|---|
| Command | sel_board_net_feat |
| Group | Graphic Editor |
| Descr. | Selects all features that are part of the same board net. |

| | |
|--------------------|--|
| Parameter | Value |
| operation | Select, unselect |
| x, y | Feature coordinates. Legal coordinates. |
| tol | Snap tolerance. Range: 0 <= tol <= max coord |
| use_ffilter | Values = [no/yes] (default = no) |

sel_break

| | |
|----------------|---|
| Command | sel_break |
| Group | Graphic Editor |
| Descr. | Breaks all the selected features that are composed from special symbols into their primitives (round + square symbols). |

sel_break_isl_hole

| | |
|----------------|---|
| Command | sel_break_isl_hole |
| Group | Graphic Editor |
| Descr. | Breaks a selected surface into islands & holes surfaces which are placed in destination layers. Original contours are left unchanged. |

| | |
|----------------------|--|
| Parameter | Value |
| islands_layer | Entity name (output layer for islands) |
| holes_layer | Entity name (output layer for holes) |

sel_break_level

| | |
|--------------------|--|
| Command | sel_break_level |
| Group | Graphic Editor |
| Description | Defines inheritance of attributes during break symbol operations |
| Parameter | Description |
| attr_mode | Attribute inheritance mode: inherit : Primitives inherit all attributes from the parent symbol retain : Primitives retain their own attributes: they receive no attributes from the parent symbol. merge : Primitives merge attributes from both the parent symbol and their own attributes. |

sel_buffer_clear

| | |
|--------------------|--|
| Command | sel_buffer_clear |
| Group | Graphic Editor |
| Description | Clears the buffer (frees unused memory). |

sel_buffer_copy

| | |
|----------------|---|
| Command | sel_buffer_copy |
| Group | Graphic Editor |
| Descr. | The command copies all the selected features into the selection buffer (features can be pasted by the - sel_buffer_paste command). |

| | |
|-----------------------------------|--|
| Parameter | Value |
| x_datum, y_datum | Legal coordinates - pushed for the 'paste' operation |

sel_buffer_cut

| | |
|----------------|---|
| Command | sel_buffer_cut |
| Group | Graphic Editor |
| Descr. | The selected features are deleted after being copied to buffer. |

sel_buffer_options

| | |
|----------------|---|
| Command | sel_buffer_options |
| Group | Graphic Editor |
| Descr. | Defines the behavior of specific buffer operations, via the Buffer Options Popup. |

sel_buffer_paste

| | |
|----------------|---|
| Command | sel_buffer_paste |
| Group | Graphic Editor |
| Descr. | The command pastes the contents of the selection buffer in the affected layers at the specified location. |

| | |
|------------------|------------------------------------|
| Parameter | Value |
| x, y | Legal coordinates - paste position |

sel_change_atr

| | |
|----------------|--|
| Command | sel_change_atr |
| Group | Graphic Editor |
| Descr. | The command changes the attributes of all the selected features. The attribute values are set according to the cur_atr_set command (which sets the current attribute values). |

| | |
|------------------|--|
| Parameter | Value |
| mode | Add - add the new attribute values to the existing ones Replace - replace the existing attributes by the new ones |

sel_change_sym

| | |
|----------------|--|
| Command | sel_change_sym |
| Group | Graphic Editor |
| Descr. | Changes the symbol of all the selected features (lines,pads,arcs). |

| | |
|--------------------|---|
| Parameter | Value |
| symbol | Existing symbol |
| reset_angle | Controls angle of rotated pads. Possible values: Yes =Reset the angle of a rotated pad. No = Do not reset the angle of a rotated pad. |

sel_change_txt

| | |
|----------------|--|
| Command | sel_change_txt |
| Group | Graphic Editor |
| Descr. | Changes the text of all the selected (text) features |

| Parameter | Value |
|---------------------------|--|
| text | Text string |
| x_size, y_size | Size of text in inches or mm |
| w_factor | Font line width coefficient. The coefficient is calculated in units of 12 mils. For example: 1 = a width of 12 mils. 1.5 = a width of 18 mils. 2 = a width of 24 mils. |

sel_chng?_arc_dir

| | |
|----------------|--|
| Command | sel_chng?_arc_dir |
| Group | Graphic Editor |
| Descr. | Changes direction of all selected arcs |

sel_clean_holes

| | |
|----------------|--|
| Command | sel_clean_holes |
| Group | Graphic Editor |
| Descr. | The command is used for removing all the small holes from all the selected SURFACE features. |

| Parameter | Value |
|-------------------|--|
| max_size | 0.0<= size <= 8000.0 mils - Holes that are equal to or larger than max_size will NOT be removed.. |
| clean_mode | x_or_y, x_and_y, area - The mode of the maximum size measurement. |

sel_clean_surface

| | |
|----------------|--|
| Command | sel_clean_surface |
| Group | Graphic Editor |
| Descr. | Removal of small holes and islands and smoothing of contour edges. |

| | |
|-------------------|---|
| Parameter | Value |
| accuracy | Double Value 0 <accuracy<2 mil - Specifies a maximum allowable distance between selected feature and resulting contour. |
| max_size | 0.0<= size <= 8000.0 mils - Holes/islands that are equal to or larger than max_size will NOT be removed. |
| clean_mode | x_or_y, x_and_y, area - The mode of the maximum size measurement. |

sel_clear_feat

| | |
|----------------|---|
| Command | sel_clear_feat |
| Group | Graphic Editor |
| Descr. | Un-selects all the features in all the affected layers. |

sel_comp_change

| | |
|----------------|--------------------------------------|
| Command | sel_comp_change |
| Group | Graphic Editor |
| Descr. | Set components extention parameters. |

| | |
|-------------------|----------------------|
| Parameter | Value |
| package | Existing PACKGE name |
| vendor_mpn | Existing Vendor+MPN |

sel_cont_resize

| | |
|----------------|--|
| Command | sel_cont_resize |
| Group | Graphic Editor |
| Descr. | Contourizes and resizes the selected features. |

| | |
|-------------------------|--|
| Parameter | Value |
| accuracy | Double value $0 < \text{accuracy} < 2$ mil Specifies a maximum allowed distance between selected feature and resulting contour. |
| break_to_islands | Yes / No Yes - each island will be created as a separate surface. No - all islands will be one surface. |
| island_size | $-8000 \leq \text{size} \leq 8000$ mils |
| hole_size | $-8000 \leq \text{size} \leq 8000$ mils |
| drill_filter | Boolean True - use step's Drill Filter to filter holes. |

sel_cont2pad

| | |
|----------------|---|
| Command | sel_cont2pad |
| Group | Graphic Editor |
| Descr. | Transforms selected contours into matching pads |

| Parameter | Value |
|--------------------|--|
| match_tol | Tol >= 0 Tol <= 5.0 mils - tolerance to use for connections |
| restriction | A mask composed of the following options: 0 - No restrictions 1 - Only symmetric symbols 2 - A single island contour 4 - Only standard symbols 8 - Enable contour Comment: A set of limitations on the type of created contour |
| min_size | 0.01 mils <= min_size <= 10 mils |
| max_size | 1 mil < max_size <= 500 mils |
| suffix | Backup layer suffix |

sel_contourize

| | |
|----------------|---|
| Command | sel_contourize |
| Group | Graphic Editor |
| Descr. | The command converts all the selected features into contour (surface) features. |

| Parameter | Value |
|-------------------------|--|
| accuracy | Double value 0 < accuracy < 2 mil. Specifies a maximum allowable distance between selected feature and resulting contour |
| break_to_islands | Yes / No Yes - each island will be created as a separate surface, otherwise all islands will be in one surface. |
| clean_hole_size | 0.0<= size <= 8000.0 mils - The minimum size of hole that can be created. |
| clean_hole_mode | x_or_y, x_and_y, area - The mode of the minimum size measurement. |

sel_copy

| | |
|----------------|-----------------------------------|
| Command | sel_copy |
| Group | Graphic Editor |
| Descr. | Copies all the selected features. |

| Parameter | Value |
|------------------|---------------------------------|
| dx, dy | Legal coordinates - copy offset |

sel_copy_other

| | |
|----------------|--|
| Command | sel_copy_other |
| Group | Graphic Editor |
| Descr. | Copies all the selected features to a specified layer. |

| Parameter | Value |
|---------------------|---|
| dest | affected_layers - copy to all affected layers except for the layer that includes the selected features layer_name - use the 'target_layer' |
| target_layer | If the layer does not exist - it will be created. |
| invert | Yes, No invert polarity |
| dx, dy | Offset |
| size | Resize by (mils) |
| x_anchor | xxxxx |
| y_anchor | yyyyy |
| rotation | [0 - 360] degrees |
| mirror | [none, horizontal, vertical] |

sel_copy_repeat

| | |
|----------------|---|
| Command | sel_copy_repeat |
| Group | Graphic Editor |
| Descr. | The command step & repeats the selected features. |

| | |
|------------------|--------------------------|
| Parameter | Value |
| nx, ny | >= 0 - Number of repeats |
| dx, dy | Distance between repeats |

sel_create_profile

| | |
|----------------|---|
| Command | sel_create_profile |
| Group | Graphic Editor |
| Descr. | The command is used for creating a step profile from the selected features. The skeleton shapes of all the line/arc features are taken as a closed polygon. Gaps are closed by connecting segments. |

sel_create_step

| | |
|----------------|---|
| Command | sel_create_step |
| Group | Graphic Editor |
| Descr. | The command creates a step (multiple layers) based on the selected features. The new step is added to the job matrix. If the step already exists - it will be overwritten |

| | |
|-----------------------------|--|
| Parameter | Value |
| step | Entity name - created step name |
| x_datum, y_datum | Legal coordinates step datum point |
| delete | Yes - delete the selected features after the operation is complete No - no delete |

sel_create_sym

| | |
|----------------|--|
| Command | sel_create_sym |
| Group | Graphic Editor |
| Descr. | The command creates a special symbol that contains all the selected features. If the special symbol already exists - it will be overwritten. |

| | |
|-----------------------------|--|
| Parameter | Value |
| symbol | Entity name - created symbol name |
| x_datum, y_datum | Legal coordinates - symbol datum point |
| delete | Yes - delete the selected features after the operation is complete No - no delete |
| fill_dx, fill_dy | Fill > 0 (inches) - patter fill steps |
| retain_atr | Yes/No (default). If set to Yes , forces the features in the newly-created symbol to inherit the attributes of the feature from which they were created. |

sel_cut_data

| | |
|----------------|---|
| Command | sel_cut_data |
| Group | Graphic Editor |
| Descr. | Transforms selected features to polygons / contours |

| Parameter | Value |
|------------------------|---|
| con_tol | Tol >= 0.01 Tol <= 100.0 mils - maximum gap size that will be repaired automatically |
| det_tol | Tol >= 0.01 Tol <= 100.0 mils - maximum detected and reported gap size |
| rad_tol | Tol >= 0 Tol <= 5.0 mils - smoothing tolerance |
| filter_overlaps | Yes - to join overlapping and collinear segments before processing No - to leave them as is |
| use_order | Yes - if possible rely on the input order of features in layer No - rely only on geometry |
| delete_doubles | Yes - delete duplicate features from the layer No - don't delete duplicate features from the layer |
| ignore_width | Yes - use only skeletons of arcs and lines No - use line width |
| ignore_holes | Yes - ignore embedded polygons No - enter embedded poly as holes |

When run from a script, **sel_cut_data** sets a response string in the global \$COMANS variable. The string format is **cont probl warn info**, where

cont - number of created contours

probl - number of detected problems (number of items in red zone)

warn - number of generated warnings (number of items in yellow zone)

info - number of generated info items (number of items in green zone)

sel_decompose

| | |
|----------------|---|
| Command | sel_decompose |
| Group | Graphic Editor |
| Descr. | Decompose all selected SURFACE features. Shortcut: Ctrl-Alt-D |

sel_delete

| | |
|----------------|------------------------------------|
| Command | sel_delete |
| Group | Graphic Editor |
| Descr. | Deletes all the selected features. |

sel_delete_atr

| | |
|----------------|--|
| Command | sel_delete_atr |
| Group | Graphic Editor |
| Descr. | The command is used for deleting (removing) attribute assignments for all the selected features. |

| | |
|-------------------|--|
| Parameter | Value |
| attributes | Existing attribute names separated by ';' characters |
| mode | list - (default) the attributes defined in the parameter attributes will be deleted - all feature(s) attributes will be deleted (in this case parameter attributes not used) |

sel_delete_dup

| | |
|----------------|---|
| Command | sel_delete_dup |
| Group | Graphic Editor |
| Descr. | Deletes all duplicated features from the selected features. |

sel_design2rout

| | |
|----------------|---|
| Command | sel_design2rout |
| Group | Graphic Editor |
| Descr. | Transforms selected features to arcs and unites lines |

| | |
|------------------|---|
| Parameter | Value |
| con_tol | Tol >= 0 - tolerance to use for connections Tol <= 5.0 mils - tolerance to use for connections |
| rad_tol | Tol >= 0 - tolerance to use for matching arcs Tol <= 5.0 mils - tolerance to use for matching arcs |

sel_drawn

| | |
|----------------|--------------------------|
| Command | sel_drawn |
| Group | Graphic Editor |
| Descr. | To select drawn surfaces |

| Parameter | Value |
|----------------------|--|
| type | <ul style="list-style-type: none"> - Crosshatch - Mixed - Power ground Defines a type of layer/fill used in the layer. Parameters of algorithm will change according to the type specified. |
| therm_analyze | Yes - drawn thermal pads will be excluded from contourization. |

sel_extend_slots

| Command | sel_extend_slots |
|--------------------|--|
| Group | Graphic Editor |
| Description | Enables extending existing slots. |
| Parameter | Description |
| mode | Values = [ext_by/ext_to] Extend <i>by</i> defined value or extend <i>to</i> defined value. |
| size | Resize value. (If mode=ext_by , positive value to extend, negative value to shrink). |
| from | Values = [center; left_bot; right_top] -The point to be kept. |
| from | Specifies at what point to begin extending the slot. New Values: start , end . Correspond to Slot Start Point and Slot End Point. |

sel_feat2drill

| | |
|--------------------|---|
| Command | sel_feat2drill |
| Group | Graphic Editor |
| Description | Enables conversion of selected features to a drill pattern. |

| Parameter | Description | | | | | | | | | | | | | | |
|---------------------|---|--------------|--------------|--------------|-------------|---------------|-----------------|------------|--------------------|--------------|----------------|--------------|----------------|------------------|------------------|
| target_layer | Defines the layer on which the drill pattern will be created. If the layer name does not exist in the job, create it by typing a new layer name in the field. Set the layer type as misc/drill . | | | | | | | | | | | | | | |
| lyr_mode | Values: [append/overwrite] append (Default) - Add new features to the end of the target layer. overwrite - Replace the destination layer. | | | | | | | | | | | | | | |
| drill_type | Defines the drill attribute that should be assigned to the newly-created drills. <table> <tr> <td>undef</td><td>no attribute</td></tr> <tr> <td>plate</td><td>plated hole</td></tr> <tr> <td>nplate</td><td>non-plated hole</td></tr> <tr> <td>via</td><td>via hole (Default)</td></tr> <tr> <td>laser</td><td>subtype of via</td></tr> <tr> <td>photo</td><td>subtype of via</td></tr> <tr> <td>press_fit</td><td>subtype of plate</td></tr> </table> | undef | no attribute | plate | plated hole | nplate | non-plated hole | via | via hole (Default) | laser | subtype of via | photo | subtype of via | press_fit | subtype of plate |
| undef | no attribute | | | | | | | | | | | | | | |
| plate | plated hole | | | | | | | | | | | | | | |
| nplate | non-plated hole | | | | | | | | | | | | | | |
| via | via hole (Default) | | | | | | | | | | | | | | |
| laser | subtype of via | | | | | | | | | | | | | | |
| photo | subtype of via | | | | | | | | | | | | | | |
| press_fit | subtype of plate | | | | | | | | | | | | | | |
| outline_only | Values = [no/yes] (Default = no) When set to yes , only the feature outline is converted. This creates a drill sequence that follows all outlines in the feature, including outer feature limits as well as holes inside the drill pattern. | | | | | | | | | | | | | | |
| drill_size | Values: (> 0.0) Defines the drill size with which the pattern should be drilled. | | | | | | | | | | | | | | |
| pitch | Values: (> 0.0) Defines the pitch (distance between 2 consecutive drill centers) of the drills. | | | | | | | | | | | | | | |
| drill_size2 | Values: (>= 0.0) If there are large unfilled areas left after converting the pattern with the first drill size, try to fill these areas with the secondary drill size. This parameter is optional, and may be set to zero or left empty. In this case, only the first drill size will be used. | | | | | | | | | | | | | | |
| pitch2 | Values: (> 0.0 if drill_size2 defined) Defines the pitch for the secondary drill size. | | | | | | | | | | | | | | |
| min_rep_diff | Values: (>= 0.0) Defines the minimal difference between the original shape and the drill pattern that should be reported. Basically if you subtract from the original shape the obtained drill pattern (merge negative) and then contourize the result, any island that is bigger than this value in any direction should be reported as a difference. | | | | | | | | | | | | | | |

sel_feat2outline

| | |
|----------------|---|
| Command | sel_feat2outline |
| Group | Graphic Editor |
| Descr. | Replace all selected features by line and arc features of the selected features outlines. |

| Parameter | Value |
|----------------------|--|
| width | Outline width. Range: >= 0.0 |
| location | on_edge, inner, outer Default: on_edge |
| offset | Range: -100 .. +100 inch. Note: >0-enlarges; <0-reduces |
| keep_original | no/yes. Default = No |
| text2limit | no/yes. Default = No. |
| polarity | Outline polarity: as_feature, positive, negative |

sel_feat2outline_partial

| | |
|----------------|---|
| Command | feat2outline_partial |
| Group | Graphic Editor |
| Descr. | Transforms selected features to arcs and unites lines |

| Parameter | Value |
|------------------------------|---|
| width | xxx |
| location | [on_edge, inner, outer] (Default=on_edge) |
| offset | xxx |
| keep_original | [no/yes] (Default=no), |
| part_dir | [ccw/cw][Counterclockwise/clockwise] (Default=cw) |
| index, xs, ys, xe, ye | Feature is defined by index and start/end points on the feature edge. |
| polarity | Outline polarity: as_feature, positive, negative |

sel_fill

| | |
|----------------|---|
| Command | sel_fill |
| Group | Graphic Editor |
| Descr. | Fills all the selected SURFACE features. The filling is performed according to the fill_params command. |

sel_intersect_best

| | |
|---------|---|
| Command | sel_intersect_best |
| Group | Graphic Editor |
| Descr. | The command performs an intersection of two features that have been previously selected. The intersection can be a regular corner, an arc or a chamfer. |

| Parameter | Value |
|------------------------|---|
| function | find_contact - between lines find_circle - between lines find_plines - connecting arcs - or arc & pad by line find_lines - connecting arcs - or arc & arc by arc find_arcs - connecting non-intersecting lines and circles by arc |
| mode | Corner - regular intersection Round - rounded corner Chamfer - chamfer corner |
| radius | -100000 <= size <= 100000 mils - radius for round |
| length_x | -100000 <= size <= 100000 mils - length1 for chamfer |
| length_y | -100000 <= size <= 100000 mils - length2 for chamfer |
| type_x | Length / angle |
| type_y | Length / angle |
| show_all | Yes, No yes = all options |
| keep_remainder1 | Yes, No yes = leave rest of features |
| keep_remainder2 | Yes, No yes = leave rest of features |
| ang_x | Angle for chamfer |
| ang_y | Angle |

sel_intersect_coord

| | |
|----------------|---|
| Command | sel_intersect_coord |
| Group | Graphic Editor |
| Descr. | The command performs an intersection of two features that have been previously selected. The intersection can be a regular corner, an arc or a chamfer. choose the center point closest to x, y |

| Parameter | Value |
|------------------------|---|
| function | find_contact - between lines find_circle - between lines find_plines - connecting arcs - or arc & pad by line find_lines - connecting arcs - or arc & arc by arc find_arcs - connecting non-intersecting lines and circles by arc |
| mode | Corner - regular intersection Round - rounded corner Chamfer - chamfer corner |
| radius | -100000 <= size <= 100000 mils radius for round |
| length_x | -100000 <= size <= 100000 mils length1 for chamfer |
| length_y | -100000 <= size <= 100000 mils length2 for chamfer |
| type_x | Length / angle |
| type_y | Length / angle |
| x, y | Legal coordinates - feature coordinates |
| x2, y2 | Coordinates of an additional point near a tangent line. For use only when function = find_plines . (See function parameter above) |
| show_all | Yes - all options No - |
| keep_remainder1 | Yes - leave rest of features No - |
| keep_remainder2 | Yes - leave rest of features No - |
| ang_x | Angle for chamfer |
| ang_y | Angle |

sel_invert

| | |
|----------------|--|
| Command | sel_invert |
| Group | Graphic Editor |
| Descr. | Inverts the polarity of all the selected features. |

sel_join_clearance

| | |
|----------------|--|
| Command | sel_join_clearance |
| Group | Graphic Editor |
| Descr. | Connects a group of selected clearances by line or by polygon according to a predefined spacing. |

| | |
|------------------|--|
| Parameter | Value |
| join_by | line/polygon |
| spacing | Minimum distance to stay away from other clearances. Range: >= 0.0 |

sel_layer_feat

| | |
|----------------|---|
| Command | sel_layer_feat |
| Group | Graphic Editor |
| Descr. | Used for selecting a single feature in a specified layer. |

| | |
|------------------|--------------------------|
| Parameter | Value |
| operation | Select / unselect |
| layer | Entity name - step layer |
| index | Existing feature index |

sel_lines2acr

| | |
|----------------|---|
| Command | sel_lines2arc |
| Group | Graphic Editor |
| Descr. | Transforms a series of consecutive contiguous lines to an arc. This has been superseded by sel_design2rout. |

sel_line2pad

| | |
|----------------|--|
| Command | sel_line2pad |
| Group | Graphic Editor |
| Descr. | The command converts all the selected lines that have zero length into pads. |

sel_lines_length

| | |
|----------------|--|
| Command | sel_lines_length |
| Group | Graphic Editor |
| Descr. | Used for selecting line features according to their length and (possibly) an extra user-defined filters. Selection is made on all affected layers. |

| Parameter | Value |
|----------------------|---|
| filter_name | Entity name - as specified in the filter_set command |
| min_len | Positive value - minimal len(inch/mm) |
| max_len | Positive value - maximal len(inch/mm) |
| unselect_prev | Yes - unselected prev selections No - no selecting Comment: unselection performance on all layers |
| longest_only | Yes - select only longest line in each affected layer If yes- filter, min and max are ignored |

sel_move

| | |
|----------------|---|
| Command | sel_move |
| Group | Graphic Editor |
| Descr. | Moves (shifts) all the selected features. |

| | |
|------------------|----------------------------------|
| Parameter | Value |
| dx, dy | Legal coordinates - shift values |

sel_move_other

| | |
|----------------|---|
| Command | sel_move_other |
| Group | Graphic Editor |
| Descr. | Moves all the selected features to a specified layer. |

| | |
|---------------------|--|
| Parameter | Value |
| dx, dy | Offset |
| invert | Yes, No - invert polarity |
| mirror | [none, horizontal, vertical] |
| rotation | [0 - 360] degrees |
| size | Resize by (mils) |
| target_layer | If the layer does not exist it will be created |
| x_anchor | xxxxx |
| y_anchor | yyyyy |

sel_move_repeat

| | |
|----------------|---|
| Command | sel_move_repeat |
| Group | Graphic Editor |
| Descr. | The command moves by step & repeat selected features from a one-up step to a panel. |

| Parameter | Value |
|---------------------------------------|--|
| dest_step | Entity name - name of panel step |
| x_repeats, y_repeats | -1/0/+1 - num of repeats for x_repeats == 0 => nx == num of x repeats in panel matrix for x_repeats == +1 => nx == “ “ for x_repeats == -1 => nx == “ “ |
| delete_orig | Yes / No - If yes selected features are removed from orig (one-up) step |

sel_multi_feat

| | |
|----------------|---|
| Command | sel_multi_feat |
| Group | Graphic Editor |
| Descr. | Used for selecting multiple features according to specified filters. The selection is performed on all the affected layers. |

| Parameter | Value |
|---------------------|---|
| operation | Select, Unselect |
| feat_types | - line - pad - surface - arc - text 'set' field |
| include_syms | Wild symbol names (separated by ';' characters). |

sel_net_feat

| | |
|----------------|---|
| Command | sel_net_feat |
| Group | Graphic Editor |
| Descr. | Selects all the features that are part of the same net. The operation is performed on the work layer. |

| Parameter | Value |
|--------------------|---|
| operation | Select, unselect |
| x, y | Legal coordinates - feature coordinates |
| tol | 0 <= tol <= max coord - snap tolerance |
| use_ffilter | Values = [no/yes] (default = no) |

sel_offset_pad_edge

| | |
|----------------|---|
| Command | sel_offset_pad_edge |
| Group | Graphic Editor |
| Descr. | Replace all selected pads with new pads resized by the value specified in "offset" in the required direction: pad's position will be shifted by 1/2 this value in the required direction. |

| Parameter | Value |
|---------------|---|
| offset | Length of offsets. Note: >0-enlarge; <0-reduces |
| side | Required direction. Values: right, bottom, left, top, left-right, top-bottom |

sel_offset_poly

| | |
|----------------|---|
| Command | sel_offset_poly |
| Group | Graphic Editor |
| Descr. | Offsets a polyline that is formed by a series of selected features lines and/or arcs. |

| Parameter | Value |
|------------------|---|
| method | by_distance - offset in direction of point by_point - polyline should pass through the point |
| x, y | Legal point coordinates |
| distance | Range: -8000 <= size <= 8000 mils Note: by_distance method only |
| keep_orig | YES - a new polyline will be added to the existing NO - a new polyline will replace the existing |
| reselect | YES - a new polyline will be selected |

| | |
|------------------|--|
| sym_size | -1 <= size <= 50000 only for FLEX: (-1 = keep original size) |
| lines_num | 0 <= size <= 10000 only for FLEX |

sel_options

| | |
|----------------|--|
| Command | sel_options |
| Group | Graphic Editor |
| Descr. | Setting selection options that are used by the ui popup. |

| Parameter | Value |
|---------------------|--|
| clear_mode | <ul style="list-style-type: none"> - clear_after - clears the selected feat after an edit operation - clear_none - the selection remains |
| display_mode | <ul style="list-style-type: none"> - displayed_layers - display the selected features of the displayed layers only - all_layers - display the selected features of all the affected layers |
| area_inout | <ul style="list-style-type: none"> - Inside - select features that are inside the specified area - Outside - select features that are outside the specified area |
| area_select | Select, Unselect |

sel_orthogonal_stretch

| | |
|----------------|--|
| Command | sel_orthogonal_stretch |
| Group | Graphic Editor |
| Descr. | Moves and stretches a group of features that cross the rectangle limits in the opposite direction to the stretch |

| | |
|-------------------------------|----------------------------|
| Parameter | Value |
| diff | movement_amount |
| direction | Direction of stretching(4) |
| x_s, y_s, x_e, y_e | Rectangle selected |

sel_pad2line

| | |
|----------------|--|
| Command | sel_pad2line |
| Group | Graphic Editor |
| Descr. | The command converts all the selected pads into zero length lines. |

sel_pad2outline

| | |
|----------------|---|
| Command | sel_pad2outline |
| Group | Graphic Editor |
| Descr. | Used to reshape the big drill to rout path. |

sel_pads2slots

| | |
|----------------|--|
| Command | sel_pads2slots |
| Group | Graphic Editor |
| Descr. | Replaces all selected pads with slots of a given symbol, length, angle, dcode, and drill_type. Pad 's position of center and attributes (except for .drill attributes) will be copied into slot. |

| Parameter | Value |
|---------------------|---|
| symbol | Entity name - slot symbol name |
| len | Positive value - replacing slot len(inch/mm) |
| center_shift | Legal coordinates - allows optional shifting of slot center relative to replaced pad center; direction depends on angle of slot |
| angle | Positive integer (0 - 360) - replacing slot angle(deg) |
| slot_dcode | Positive integer (0-> no dcode) - replacing slot dcode |
| drill_type | plate - plated hole nplate - non-plated hole via - via hole |

sel_polarity

| | |
|----------------|--|
| Command | sel_polarity |
| Group | Graphic Editor |
| Descr. | Changes the polarity of all the selected features. |

sel_polyline_feat

| | |
|----------------|---|
| Command | sel_polyline_feat |
| Group | Graphic Editor |
| Descr. | Used for selecting all features belongs to the polyline crossing point (x,y) in all of the affected layers. |

| Parameter | Value |
|------------------|--|
| operation | Select, unselect |
| x, y | Legal coordinates - feature snap coordinates |
| tol | 0 <= tol - snap tolerance |

sel_rect2slot

| | |
|----------------|---|
| Command | sel_rect2slot |
| Group | Graphic Editor |
| Descr. | Replace all selected rectangles (surface, pad line) with slot(s). All attributes will be copied into slot. |

| | |
|------------------|--|
| Parameter | Value |
| mode | Work mode |
| autoset | Automatic tool set. Values: no/yes |
| max_tool | Max tool size. Range: >=0 (in current units) |
| overlap | Max tool overlap. Range: >=0 (in current units) |
| tool2 | Second tool size. Range: >=0 (in current units) |
| tolerance | Tolerance allowed to convert drawn or surface rectangles to real rectangle shapes. Range: >=0 (in current units). |

sel_ref_feat

| | |
|----------------|--|
| Command | sel_ref_feat |
| Group | Graphic Editor |
| Descr. | Selecting features by reference filter |

| Parameter | Value |
|------------------------|--|
| layer | A list of layers separated by semicolons. |
| use | What to use as a reference Filter - use the filter parameters on the reference layers features Select - use the selected features of the reference layers |
| mode | Mode of reference selection Touch - take all features touch reference features Disjoint - take all features not touching any reference features Cover - take all features fully covered by at least one reference feature Include - take all features that fully include at least one reference feature multi_cover - Selects all features fully covered by union of reference features for each reference layer. |
| f_types | - Line - Pad - Surface - Arc - Text - set field |
| polarity | Positive / Negative - 'set field' |
| include_syms | Wild symbol names (separated by ';' characters). area |
| exclude_syms | Wild symbol names separated symbol names to be by ';' characters - exclude |
| affected_layers | Defines a list of layers to be used as affected for selection purposes only. By default, if this list is empty or the parameter is not defined, the real affected layer list is used (previous behavior). |

Ranges for Symbol Names

Ranges for Symbol Names

You can define a range of Genesis symbols for use in selected Genesis filters, line mode commands, and popups. Two standard or semi-standard symbol names of the same type separated by a colon (:) define the range of symbols. All existing Genesis symbol types may be included in the list.

Any symbol filter may be defined as a list of symbol definition names separated by a semicolon (;). Symbol definition names may be written using any of the following rules:

- Any legal symbol name.
- Wild card name (a name with an asterisk mark (*)).
Examples: "s*" or "rect100x*" or "rect*x50" .

- **Note:** The symbol definition name * (used by itself) means no filter. (All symbol names are ignored.)

r100:r300: matches all round symbols between 100 (inclusive) and 300 (inclusive). It matches r100 , r100.1 , r150.34 , r300, but does *not* match r99.99 or r300.1.

rect20x30: rect100x50 matches all rectangle symbols where the width is between 20 and 100 and the length is between 30 and 50. It therefore matches rect20x40, rect100x50, and rect20.123x99.999, but does *not* match rect20x100.1

Also applicable to Reference Selection Popup and Features Filter Popup. See Doc. 0601, The Graphic Editor, for more information.

sel_replace_contour

| | |
|----------------|--|
| Command | sel_replace_contour |
| Group | Graphic Editor |
| Descr. | Replaces a selected surfaces contour with a new contour built from islands and holes. Original polarity is retained. |

| | |
|----------------------|---|
| Parameter | Value |
| island_layers | Entity name - island input layer |
| holes_layer | Entity name - holes input layer |
| remove_layer | Yes/No Yes - remove input layers after processing. |

sel_replace_surfaces

| | |
|----------------|---|
| Command | sel_replace_surfaces |
| Group | Graphic Editor |
| Descr. | Replaces a selected surface's contour with a new contour built from islands and holes layer. Original polarity is kept. |

| | |
|---------------------|--|
| Parameter | Value |
| island_layer | Entity name - islands input layer |
| holes_layer | Entity name - holes input layer |
| remove_layer | If yes - remove input layers after processing. |

sel_resize

| | |
|----------------|---|
| Command | sel_resize |
| Group | Graphic Editor |
| Descr. | Resizes all the selected features (enlarges or shrinks). Special symbol features are not affected by the command. |

| | |
|------------------|----------------------------|
| Parameter | Value |
| size | -8000 <= size <= 8000 mils |

sel_resize_factor

| | |
|----------------|---|
| Command | sel_resize_factor |
| Group | Graphic Editor |
| Descr. | Resizes all the selected features by a certain factor. Surfaces, and special features are not affected. |

| | |
|------------------|--------------|
| Parameter | Value |
| factor | > 0 |

sel_resize_poly

| | |
|----------------|--|
| Command | sel_resize_poly |
| Group | Graphic Editor |
| Descr. | Resizes a polygon that is formed by a series of selected features. |

| | |
|------------------|----------------------------|
| Parameter | Value |
| size | -8000 <= size <= 8000 mils |

sel_resize_surface

| | |
|----------------|--|
| Command | sel_resize_surface |
| Group | Graphic Editor |
| Descr. | Resizes all the selected surface features (enlarges or shrinks). |

| | |
|---------------------|---|
| Parameter | Value |
| island_size | -8000 <= size <= 8000 mils |
| hole_size | -8000 <= size <= 8000 mils |
| drill_filter | Boolean - If true, use the step's Drill Filter to filter holes. |

sel_reverse

| | |
|----------------|---|
| Command | sel_reverse |
| Group | Graphic Editor |
| Descr. | Used to unselect all the selected features, and select the unselected ones. |

sel_round_bundle_corner

| | |
|----------------|---|
| Command | sel_round_bundle_corner |
| Group | Graphic Editor |
| Descr. | The command rounds bundled line corners |

| Parameter | Value |
|--------------------|--------------|
| radius | |
| arc_sym | |
| sym | |
| min_arc_len | |
| max_ang | |

sel_scale_and_stretch

| | |
|----------------|--|
| Command | sel_scale_and_stretch |
| Group | Graphic Editor |
| Descr. | The command scales the selected features and stretches the conductores attached to them in order to maintain connectivity. |

| Parameter | Value |
|---------------------------|---|
| mode | - Anchor - transformations are performed around a specified anchor point. - Axis - around each feature axis point. |
| x_anchor, y_anchor | Legal coordinates. Applies only if mode == anchor. |
| x_scale, y_scale | Range: 0.0 - 1e6 . |

sel_single_feat

| | |
|----------------|--|
| Command | sel_single_feat |
| Group | Graphic Editor |
| Descr. | Used for selecting a single feature in all of the affected layers. |

| Parameter | Value |
|------------------|---|
| operation | Select, unselect |
| x, y | Legal coordinates - feature snap coordinates |
| tol | 0 <= tol - snap tolerance |
| cyclic | Yes - allow cyclic selection No - no -cyclic selection |

sel_space_evenly

| | |
|----------------|--|
| Command | sel_space_evenly |
| Group | Graphic Editor |
| Descr. | Space evenly a selected set of tracks. |

| Parameter | Value |
|---------------------|---|
| spacing_mode | Across / up / down, direction of spacing (default = Across) |
| fixed_space | Space between mid-lines in mil/micron (ignored when spacing Across) |
| 121_space | positive value (mil/mm): used only in across spacing mode |
| p21_space | positive value (mil/mm): used only in across spacing mode |

sel_stretch

| | |
|----------------|---|
| Command | sel_stretch |
| Group | Graphic Editor |
| Descr. | Stretches a group of selected parallel lines. |

| | |
|-------------------------|---|
| Parameter | Value |
| index | Line feature index |
| start | Yes - stretch start point No - stretch end point |
| x_new, y_new | New start / end location |

sel_substitute

| | |
|----------------|---|
| Command | sel_substitute |
| Group | Graphic Editor |
| Descr. | The command substitutes all occurrences of the selected features pattern by the user defined symbol which must exist or be a GENESIS standard. |

| | |
|-----------------------------|--|
| Parameter | Value |
| mode | Substitute values - if in SELECT mode, all parameters but tol are ignored. |
| symbol | Entity name - symbol name to use |
| tol | Tol >= 0 - tolerance Tol <= 10.0 mils - to use for matching |
| x_datum, y_datum | Legal coordinates - symbol datum point |
| decode | Integer:0 <=decode <= 85 - decode to use |

sel_surf2outline

| | |
|----------------|---|
| Command | sel_surf2outline |
| Group | Graphic Editor |
| Descr. | To convert legal Genesis surfaces to sequences of lines and arcs. |

| | |
|------------------|--|
| Parameter | Value |
| width | Width of features (lines and arcs) Range: [0.0 ...8000.0 mils] |

sel_transform

| | |
|----------------|---|
| Command | sel_transform |
| Group | Graphic Editor |
| Descr. | The command transforms all the selected features. Scaling of the features affects only the location. When rotating by an angle that is not a 90 degrees multiple, the special symbols are not rotated (only the features location). |

| Parameter | Value |
|-------------------------------|---|
| mode | Anchor - transformations are performed around a specified anchor point axis around each feature axis point |
| oper | Rotate;mirror;scale(mirror - in X axis) (mirror - in Y axis) - 'set' field |
| duplicate | No - operate on the selected features Yes - duplicate the selected features, and transform the duplicated ones |
| x_anchor, y_anchor | Legal coordinates - if mode == anchor |
| angle | 0.0 - 360.0 - if oper == rotate |
| x_scale, y_scale | 0.0 - 1e6.... - if oper == scale |
| x_offset, y_offset | |

send_mesg

| | |
|----------------|--|
| Command | send_mesg |
| Group | Engineering Toolkit |
| Descr. | The command is used to send a message to users |

| Parameter | Value |
|------------------|-------------------|
| dest | user@display.host |
| mesg | free text |

set_aoi_params

| | |
|----------------|-------------------------|
| Command | set_aoi_params |
| Group | Mania AOI Interface |
| Descr. | Set several parameters. |

| | |
|-------------------|---------------------|
| Parameter | Value |
| resolution | 0.0 - 100.0 |
| out_dir | Legal file pathname |

set_attach_lyrs

| | |
|-----------------|--|
| Command | set_attach_lyrs |
| Group | Graphic Editor |
| Descr. | The command updates the list of attached layers. |
| Response | None |

| | |
|--------------------|--------------------------------|
| Parameter | Value |
| job_name | Name of an existing opened job |
| lyr_name | Existing layer name |
| attach_lyrs | List of existing layers |

set_attribute

| | |
|----------------|--|
| Command | set_attribute |
| Group | Engineering Toolkit |
| Descr. | The routine is used for setting entity attributes. |

| Parameter | Value |
|------------------|--|
| type | <ul style="list-style-type: none">- Job- Step- Symbol- Layer- Wheel - entity type |
| job | existing job name |
| name1 | for type!= job |
| name2 | for type = layer |
| name3 | |
| attribute | existing attribute name |
| value | attribute value (string) |
| units | For units-dependent attributes. You can specify an attribute value in metric units (units=mm), and the value will be automatically converted to imperial units (either inches or mils, depending on attribute definition in the sysattr file). Either way, the attribute value is stored in <i>imperial</i> units. |

set_cur_aoi

| | |
|----------------|---|
| Command | set_cur_aoi |
| Group | Mania AOI Interface |
| Descr. | The command is used for setting the current entity names. |

| | |
|------------------|----------------------|
| Parameter | Value |
| job | Existing job name |
| step | Existing step name |
| layer | Existing layer name |
| name | MANIA AOI set entity |

set_form_focus

| | |
|----------------|--|
| Command | set_form_focus |
| Group | WorkForms |
| Descr. | Sets the focus to the specific element in the form |

| | |
|------------------|---------------------|
| Parameter | Value |
| job | Name of the job |
| form | Name of the form |
| elem | Name of the element |

set_group

| | |
|----------------|--|
| Command | set_group |
| Group | None |
| Descr. | Sets the group context of the current script. This command is run using AUX rather than COM. |

| | |
|------------------|---------------------------------|
| Parameter | Value |
| group | Group number of desired context |

set_job_access

| | |
|----------------|--|
| Command | set_job_access |
| Group | Engineering Toolkit |
| Descr. | Used for setting the access field of a job |

| | |
|------------------|-------------------------|
| Parameter | Value |
| job | Name of an existing job |
| access | Name of access group. |

set_nested_step

| | |
|----------------|---|
| Command | set_nested_step |
| Group | Engineering Toolkit |
| Descr. | Define nested step name and reference point to perform add features to panel nested step. Used in the commands: "add_pad", "add_line", "add_polyline_end", "add_slot", "add_arc", "add_surf_end", "add_text" |

| | |
|-------------------------------|----------------------|
| Parameter | Value |
| step | Existing step name |
| ref_x, ref_y | Step reference point |

set_out_name_attr

| | |
|-----------------|--|
| Command | set_out_name_attr |
| Group | Engineering Toolkit |
| Descr. | The routine is used for setting out_name step attribute. |
| Response | None |

| | |
|------------------|--------------------------|
| Parameter | Value |
| job | Existing job name |
| step | Existing step name |
| value | Attribute value (string) |

set_output_break

| | |
|----------------|--|
| Command | set_output_break |
| Group | |
| Descr. | The command is used for setting the “break” parameters in the “More” window of the output package. |

| Parameter | Value |
|---------------------|---|
| break_sr | Yes - step & repeat data is broken into a single layer No - output step & repeat data Note: parameter must be set to Yes for Gerber, auto-plot, and hpg12. |
| break_sybols | Yes - break special symbols (flat layer) No - output special symbols Note: parameter must be set to Yes for hpg11, hpg12, Excellon1, and Excellon2 |
| break_arc | Yes - break arc features (flat layer) No - output arc features |
| scale mode | All - scale all features nocontrol - scale all except control features control - scale control features only |

set_output_coords

| | |
|----------------|--|
| Command | set_output_coords |
| Group | |
| Descr. | Sets the coordinate parameters in the “More” window of the output package. |

| Parameter | Value |
|------------------|-----------------------------|
| units | inch mm |
| coords | absolute incremental |
| zeroes | none leading trailing |
| nf1, nf2 | number format (1-6) |

set_output_dxf

| | |
|----------------|---|
| Command | <code>set_output_dxf</code> |
| Group | |
| Descr. | Sets the dxf parameters in the “More” window of the output package. |

| Parameter | Value |
|---------------------|---|
| pads2circles | Yes No Note: For output of dxf pads add 2 arcs or 1 empty circle |
| draft_mode | Yes - Use draft mode No - Do not use draft mode |

set_output_net

| | |
|----------------|--|
| Command | <code>set_output_net</code> |
| Group | |
| Descr. | The command is used for setting the netlist parameters in the “More” window of the output package. |

| Parameter | Value |
|-----------------------------------|--|
| circuitest | Yes No Note: Used for output of complex net points where the top and bottom points differ. |
| stagger | Yes No Note: Whether to output the staggered coordinates or the base coordinates of a test point. |
| test_thru | Yes - Thru holes that are midpoints will nevertheless get tested in Probot output. No |
| test_ar_ above | Hole diameter in Mils/Microns. Note: If 0, all holes are tested in the middle. Otherwise holes whose diameter is larger than this value will be tested on their annular rings. |
| finished_ drills | Yes No Note: Output the finished drill hole size or layer size. |
| feature_ dim | Yes No Note: Output feature dimensions to hole size in IPC. |
| nom_track | Nominal track width in Mils/Microns (for Lloyd Doyle) |
| nom_space | Nominal spacing in Mils/Microns (for Lloyd Doyle) |

| | |
|---------------------------------|-----------|
| tooling | Yes No |
| shrink2gas ket | Yes No |
| trace | Yes No |
| adjacency | Yes No |

set_output_optimize

| | |
|----------------|--|
| Command | <code>set_output_optimize</code> |
| Group | |
| Descr. | Sets the optimization parameters in the “More” window of the output package. |

| Parameter | Value |
|--------------------------|--|
| optimize | Yes No |
| iterations | (1-20) Number of maximum iterations |
| reduction_percent | (1-20) Stop optimizing when reduction percent of an iteration reaches this point. |
| cool_spread | Defines the minimal distance (in current units [mil/microns]) between succeeding hits during the board drilling process. |

set_output_print

| | |
|----------------|---|
| Command | <code>set_output_print</code> |
| Group | |
| Descr. | Sets the print parameters in the “More” window of the output package. |

| Parameter | Value |
|--------------------|--|
| title_opt | Fix Auto Fix + Auto None |
| title | Up to 100 characters |
| size_mode | A0,A1,A2,A3,A4,A5 B4,B5 Letter Life Scale Other |
| width | Use if “Other” specified in “size_mode” |
| height | Use if “Other” specified in “size_mode” |
| scale | |
| orientation | Automatic Portrait Landscape |

set_output_rpd

| | |
|----------------|---|
| Command | <code>set_output_rpd</code> |
| Group | |
| Descr. | Sets the rpd parameters in the “More” window of the output package. |

| Parameter | Value |
|-------------------|--|
| intensity | Legal values from rpd.params (in hooks directory) |
| film_type | Legal values from rpd.params (in hooks directory) |
| film_size | Legal values from rpd.params (in hooks directory) |
| resolution | Legal values from rpd.params (in hooks directory) |
| priority | (0-100000) |
| no_copies | (1-1000) Number of copies |

set_output_surface

| | |
|----------------|---|
| Command | <code>set_output_surface</code> |
| Group | |
| Descr. | Sets the surface parameters in the “More” window of the output package. |

| Parameter | Value |
|---------------------|---|
| surface_mode | Contour-leaves the surface as a contour Fill - vectoric fill of the surfaces |
| min_brush | 0 < min_brush <= 100.0 mils Used for surface_mode 'Fill' |

set_output_tool_units

| | |
|----------------|---|
| Command | <code>set_output_tool_units</code> |
| Group | |
| Descr. | Sets the tool units in the “More” window of the output package. |

| Parameter | Value |
|-------------------|---------------------------------------|
| tool_units | inch mm Note: for drill formats |

set_output_wheel

| | |
|----------------|--|
| Command | <code>set_output_tool_units</code> |
| Group | |
| Descr. | Sets the wheel in the “More” window of the output package. |

| | |
|--------------------------------|-------------------------------------|
| Parameter | Value |
| <code>wheel_ output</code> | name of existing wheel (for Gerber) |

setup_flowb

| | |
|----------------|--|
| Command | setup_flowb |
| Group | Flow Builder |
| Descr. | The command is used for defining setup (cb) params |

| | |
|------------------|--------------------|
| Parameter | Value |
| flow | Existing flow name |
| start_act | |
| close_act | |
| stage_act | |
| auto_ | Yes - |
| update | No - |

show_flow

| | |
|----------------|------------------|
| Command | show_flow |
| Group | Work Flows |
| Descr. | shows the flow |

| | |
|------------------|--|
| Parameter | Value |
| job | Name of the job |
| flow | Name of the flow |
| updonly | Yes - only update (if displayed) No - displays always |

show_form

| | |
|----------------|-----------------------|
| Command | show_form |
| Group | Work Forms |
| Descr. | Displays a given form |

| Parameter | Value |
|------------------|--|
| job | Name of the job |
| form | Name of the form |
| updonly | Yes - only update (if displayed) No - Displays always |
| updelem | Name of the element to update (If updonly=YES) |

single_nest_feat

| | |
|----------------|---|
| Command | single_nest_feat |
| Group | Graphic Editor |
| Descr. | Single operation with a feature from the nested step. |

| Parameter | Value |
|------------------|--|
| operation | <ul style="list-style-type: none"> - delete - Delete entire feature - move, copy - Moves, copies a feature - stretch - Stretches a line feature - rotate - Rotates a feature around it's axis point - mirror - Mirrors a feature around it's axis point (in X axis) - invert - Inverts the polarity of a feature |
| step | Existing nested step name |
| layer | Existing nested step layer name |
| index | Existing feature index on the nested step layer |
| angle | 0.0 ... 360 - Rotation angle (rotation only) |
| dx, dy | Pad or line start point offset (move,copy and stretch) |
| dx2, dy2 | Line end point offset (stretch only) |

skip_current_command

| | |
|----------------|---|
| Command | skip_current_command |
| Group | Clipboard |
| Descr. | Prevents the line mode command to which this “pre” hook belongs from running, without preventing an error. This line mode command may be run only in a “pre” hook. Note: The other method of preventing a line mode command from running (exiting with nonzero status) generates an error. Note: See Appendix A to see this line mode command in use. |

skip_next_pre_hook

| | |
|----------------|--|
| Command | skip_next_pre_hook |
| Group | Clipboard |
| Descr. | Prevents the system from running the “pre” hook of the next line mode command that is run. If the line mode command that is run does not have a “pre” hook, this command has no effect. Note: See Appendix A to see this line mode command in use. |

snap_features

| | |
|--------------------|--|
| Command | snap_features |
| Group | Graphic Editor |
| Description | The snap_features command is used for setting the snap features to be used as snap features filter. |
| Parameter | Value |
| feat_types | Sets feature type. Possible values: line, pad, surface, arc, text, set field. |

snap_layer

| | |
|--------------------|---|
| Command | snap_layer |
| Group | Graphic Editor |
| Description | The snap_layer command is used for setting the snap layer. |
| Parameter | Value |
| name | Existing layer name |

snap_mode

| | |
|--------------------|---|
| Command | snap_mode |
| Group | Graphic Editor |
| Description | The snap_mode command is used for setting the snap mode |
| Parameter | Value |
| mode | Sets snap mode. Possible values: off ,grid, center, skeleton, edge, intersect, midpoint, profile. |

space_edit

| | |
|--------------------|--|
| Command | space_edit |
| Group | Graphic Editor |
| Description | Line mode command to operate the Interactive Spacing Editor . This command enables you to define spacing requirements between two selected features at the start of the editing process, and then provides the tools necessary to change one or both features in order to obtain the desired spacing. |

| | |
|-----------------------|--|
| Parameter | Value |
| spacing_mode | Values: smaller, bigger. Based on smaller/bigger spacing. |
| fidx1, fidx2 | 1st and 2nd feature indexes |
| layer1, layer2 | 1st and 2nd feature layer names |
| mode1, mode2 | 1st and 2nd feature repair modes. Available modes depends of feature type (none; shave; shave_by_surface; shrink; subtract; shift; move_triplet; reshape; reroute; reshape_shift). |
| common_shave | When using shave by line mode for both features on the same layer. Yes - use a single line to shave both features. No - use two lines to shave each feature. |
| space | Desired spacing between 1st and 2nd features. Values: [>0 .. 100] mil in current units. |
| shift | Shift space from the middle of the space from the first to the second feature. Values: [-50 .. +50] mil in current units. Note: (Used if mode1 & mode2 != none). Note: (Used if both mode1 & mode2 are not equal to None). |

space_edit_padstack_params

| | |
|--------------------|--|
| Command | space_edit_padstack_params |
| Group | Graphic Editor |
| Description | Change or create space between two features Features may be on the same or different layers |

| | |
|-------------------------|--|
| Parameter | Value |
| include_coverlay | Values: no/ yes. Consider coverlay in pad stack calculations |
| limit_angle_45 | Values: no/ yes. Trace angle should be a multiply of 45°. |
| include_via_only | Values: no/ yes. Only via holes can be part of the stack. |
| tolerance | Tolerance to build padstack. Range: >= 0 (in current units). |

space_preview_mode

| | |
|--------------------|---|
| Command | space_preview_mode |
| Group | Graphic Editor |
| Description | Sets a spacing preview mode that performs visual preview of the required spacing to maintain from other features. |

| | |
|------------------|--|
| Parameter | Value |
| size | Required movement size. Range: [0..1000]mils |

split_edge

| | |
|--------------------|-------------------------------|
| Command | split_edge |
| Group | Graphic Editor |
| Description | Splitting of a contours edge. |

| | |
|------------------|---|
| Parameter | Value |
| x,y | Legal coordinates (inch/mm) coordinates of split point. |

split_features

| | |
|---------------------|--|
| Command | split_features |
| Group | Graphic Editor |
| Description | Split Features option of Edit > Change |
| Parameter | Description |
| dir_mode | Direction mode. Defines snapping direction. any - Snap to any direction 45_deg - Snaps to closest 45 degree angle perpendicular - Perpendicular to the first line |
| mode | Possible splitting methods. Permitted values include: circle, line, polygon, profile, rect, ref_layer |
| overlap | Required overlap distance. Requires positive value (mil/mm). |
| x1, y1 | Legal coordinates: 1st point of a cutting-line/rect |
| x2, y2 | Legal coordinates: 2nd point of a cutting-line |
| ref_layer | Reference layer when mode is reference layer. |
| include_attr | Inclusion filter for reference layer features |
| exclude_attr | Exclusion filter for reference layer features |

Notes

- When **mode = line**, the x1, x2, y1, and y2 coordinates refer to the ends of the line.
- When **mode=rect**, the x1, x2, y1, and y2 coordinates refer to the two corners of the rectangle.
- When **mode=circle**, x1, y1 refers to the center of the circle, while x2, y2 refers to a point on the circle.
- When **mode=profile**, **ref_layer**, or **polygon**, the x1,y1,x2,y2 parameters have no effect.
- When **mode =polygon**, the line mode command must come after a series of **filter_area** commands, which define the splitting polygon.

filter_area_strt

filter_area_xy

filter_area_xy

filter_area_xy

The parameters **ref_layer**, **include_attr**, and **exclude_attr** are active only when **mode=ref_layer**.

split_open

| | |
|----------------|--|
| Command | split_open |
| Group | Electrical Testing |
| Descr. | Opens an existing split in currently opened et-set |

| | |
|------------------|---|
| Parameter | Value |
| split | The name of the existing split to open. |

sr_active

| | |
|----------------|---|
| Command | sr_active |
| Group | Graphic Editor |
| Descr. | Sets the step & repeat active area margins. |

| Parameter | Value |
|---|--|
| top, bottom, left, right | 0 < = size (the sizes must form a rectangle that is smaller than the panel size) |

sr_auto

| | |
|-----------------|---|
| Command | sr_auto |
| Group | Graphic Editor |
| Descr. | The command performs an automatic step & repeat function for a specified set of panel parameters. |
| Response | nnn uuu - nnn: number of repeats, uuu - utilization percentage |

| Parameter | Value |
|--|---|
| step | Existing step in the job or in the library - step & repeat entity |
| num_mode | Multiple - multiple repeats are allowed Single - single repeat is allowed |
| xmin, ymin | Legal coordinates - lower left corner of the panel |
| width, height | 0 <= size - panel size |
| panel_margin | 0 <= panel_margin - margin from the edge of the panel |
| step_margin | 0 <= step_margin - margin between the step profiles |
| gold_plate | Yes - consider gold plated connector no - no gold connectors |
| gold_side | Right, bottom, left, top - connector side on the repeated step |
| orientation | Any - horizontal and vertical horizontal vertical |
| evaluate | Yes - used only to evaluate the utilization (the calculated step & repeat is not applied) No - the step & repeat is also applied |
| active_margins | Yes - the panel_margin is not considered. The top_active ,,,etc are taken instead No - the panel_margin is used |
| top_active bottom_active left_active right_active | Active area margins (from the bottom_active panel edges) |

| | |
|---------------------------|--|
| step_xy_margin | Yes - No - |
| step_margin_x | |
| step_margin_y | |
| interlock_type | Default value = "none_interlock" Solutions that allow interlocking by one dimension can be defined as "interlock_type = interlock_1dim". Solutions that allow interlocking by two dimensions (sliding interlocking) can be defined as "interlock_type = interlock_2dim". |
| allow_any_rotation | Non-orthogonal rotations can be written as "allow_any_rotation = yes". This enables testing of non-orthogonal rotations. |

sr_auto_class

| | |
|-----------------|---|
| Command | sr_auto_class |
| Group | Graphic Editor |
| Descr. | The command performs a full automatic step & repeat operation. It is similar to the sr_auto but it takes all the panel constraints and possibilities from the panel classes file, and returns the best utilized panel. |
| Response | nnn uuu nnn: number of repeats uuu - utilization percentage |

| Parameter | Value |
|-----------------|--|
| step | Existing step in the job or step & repeat entity in the library |
| num_mode | Multiple - multiple repeats are allowed Single - single repeat is allowed |
| class | *filter (wildcard) - panel class filter |

sr_auto_popup

| | |
|----------------|--|
| Command | sr_auto_popup |
| Group | Graphic Editor |
| Descr. | This command is used for invoking the step & repeat popup. |

| Parameter | Value |
|--|--|
| step | Existing step in the job or in the library - step & repeat entity |
| mode | panel_classes , parameters |
| num_mode | Multiple - multiple repeats are allowed Single - single repeat is allowed |
| width, height | 0 <= size - panel size |
| panel_margin | 0 <= panel_margin - margin from the edge of the panel |
| step_margin | 0 <= step_margin - margin between the step profiles |
| orientation | Any - horizontal and vertical horizontal vertical |
| xmin, ymin | Lower left corner of panel |
| step_xy_margin | Yes - No - |
| step_margin_x step_margin_y | Margins between the step profiles |
| class | wild card filter (acts as panelization class filter) |

sr_tab_adjust

| | |
|------------------|---|
| Command | sr_tab_adjust |
| Group | Graphic Editor |
| Description | Enables the rounding of anchor points. |
| Parameter | Description |
| apply_to | The value to be rounded: anchor,distance, or all. |
| units | Units of measurement. |
| mode | Rounding mode. |
| digits | Number of digits after the decimal point. |

sr_tab_scaling

| | |
|--------------------|---|
| Command | sr_tab_scaling |
| Group | Graphic Editor |
| Description | Defines the Scale Steps Location Popup, which is located in the Step & Repeat Table Popup |

| | |
|-------------------------------------|---|
| Parameter | Value |
| x_anchor, y_anchor | defined in current units |
| x_scale, y_scale | scale factor > 0 |
| scale_on | Defines basis of scale factor for spacing gaps in Step & Repeats. Values: step datum (default), step center. |

sredit_align_steps

| | |
|----------------|--|
| Command | sredit_align_steps |
| Group | Graphic Editor |
| Descr. | Command to align all selected steps in a line, by specifying an axis for all steps relative to the specified position (x or y - accordingly to alignment direction). |

| | |
|------------------|---|
| Parameter | Value |
| mode | Alignment mode: left/top/right/bottom/hcenter/vcenter |
| pos | Legal coordinate |

sredit_break_sr_entry

| | |
|----------------|--|
| Command | sredit_break_sr_entry |
| Group | Graphic Editor |
| Descr. | Break the S&R table entries containing the selected steps. |

sredit_close

| | |
|----------------|---|
| Command | sredit_close |
| Group | Graphic Editor |
| Descr. | This command is used to close the step & repeat editor. |

sredit_copy_steps

| | |
|----------------|---|
| Command | sredit_copy_steps |
| Group | Graphic Editor |
| Descr. | The command is used to copy selected steps. |

| | |
|------------------|---------------------------------------|
| Parameter | Value |
| x, y | Legal source point coordinates |
| dx, dy | Coordinate offset to the target point |

sredit_del_steps

| | |
|----------------|---------------------------|
| Command | sredit_del_steps |
| Group | Graphic Editor |
| Descr. | Delete the selected steps |

sredit_flatten_sel

| | |
|-----------------|---|
| Command | sredit_flatten_sel |
| Group | Graphic Editor |
| Descr. | Set flatten selection mode (selection the lowest step level in the panel) |
| Response | None |

sredit_flip_steps

| | |
|----------------|---|
| Command | sredit_flip_steps |
| Group | Graphic Editor |
| Descr. | Command to flip or mirror selected steps. |

| | |
|------------------|---|
| Parameter | Value |
| oper | mirror - flips all layers; flip - also reverses the layers order (flips the board) |
| mode | set - all steps are set to the given value; toggle - toggle the mirror/flip state |
| value | no/yes |
| axis | step_center; step_datum; set_center; (Center means median of limits rectangle) |

sredit_keep_gap

| | |
|----------------|---|
| Command | sredit_keep_gap |
| Group | Graphic Editor |
| Descr. | Command to define whether or not to keep the S&R gap. |

| | |
|------------------|----------------------------|
| Parameter | Value |
| keep_gap | Values: No (default), Yes. |

sredit_keep_margin

| | |
|----------------|--|
| Command | sredit_keep_margin |
| Group | Graphic Editor |
| Descr. | Command to define whether or not to keep the S&R margin. |

| | |
|--------------------|----------------------------|
| Parameter | Value |
| keep_margin | Values: No (default), Yes. |

sredit_keep_sr_pattern

| | |
|----------------|--|
| Command | sredit_keep_sr_pattern |
| Group | Graphic Editor |
| Descr. | Command to define whether or not to keep the S&R pattern |

| | |
|----------------------|----------------------------|
| Parameter | Value |
| keep_sr_entry | Values: No (default), Yes. |

sredit_make_step_grid

| | |
|----------------|--|
| Command | sredit_make_step_grid |
| Group | Graphic Editor |
| Descr. | Selected steps are aligned as a grid and merged in a single S&R entry. |

| | |
|------------------|--------------|
| Parameter | Value |
| | |

sredit_merge_sr_entry

| | |
|----------------|--|
| Command | sredit_merge_sr_entry |
| Group | Graphic Editor |
| Descr. | Command for merging the selected steps into a single S&R entry. Steps should be aligned before using this command. |

| | |
|------------------|--------------|
| Parameter | Value |
| | |

sredit_move_steps

| | |
|----------------|---|
| Command | sredit_move_steps |
| Group | Graphic Editor |
| Descr. | The command is used to move selected steps. |

| | |
|------------------|---------------------------------------|
| Parameter | Value |
| x, y | Legal source point coordinates |
| dx, dy | Coordinate offset to the target point |

sredit_pack_steps

| | |
|----------------|---|
| Command | sredit_pack_steps |
| Group | Graphic Editor |
| Descr. | Command for automatic packaging of all selected steps. The selected steps are shifted towards the specified direction(s) until a specified horizontal and/or vertical gap is achieved between them. |

| | |
|------------------|---|
| Parameter | Value |
| mode | left/right/top/bottom/leftright/topbottom/hcenter/ |
| hgap | horizontal gap (Inch) |
| vgap | vertical gap (Inch) |
| pos, pos2 | Alignment positions (x or y - depends on direction) |

sredit_popup

| | |
|----------------|---|
| Command | sredit_popup |
| Group | Graphic Editor |
| Descr. | This command is used for invoking the step & repeat editor. |

sredit_reduce_nesting

| | |
|----------------|--|
| Command | sredit_reduce_nesting |
| Group | Graphic Editor |
| Descr. | Flatten the selected steps' S&R info - remove one sub panel level. |

| | |
|------------------|---|
| Parameter | Value |
| mode | one_highest - reduce highest levels only except_lowest - reduce all levels except lowest |

sredit_replace_steps

| | |
|----------------|---|
| Command | sredit_replace_steps |
| Group | Graphic Editor |
| Descr. | This command replaces all selected steps by the specified step. All other parameters (placement, angle, etc. are kept unchanged. The steps remain selected. |

| | |
|------------------|--------------------|
| Parameter | Value |
| name | Existing step name |

sredit_rotate_steps

| | |
|----------------|-----------------------------------|
| Command | sredit_rotate_steps |
| Group | Graphic Editor |
| Descr. | Command to rotate selected steps. |

| | |
|------------------|--|
| Parameter | Value |
| angle | 0, 90, 180, 270 |
| axis | step_center; step_datum; set_center; (Center means center of limits rectangle) |
| mode | set - all steps are set to the angle; by - all steps are rotated by the angle |

sredit_sel_area_end

| | |
|----------------|---|
| Command | sredit_sel_area_end |
| Group | Graphic Editor |
| Descr. | Command to finish selecting an area to be edited. |

| | |
|------------------|--------------------|
| Parameter | Value |
| area_type | rectangle, polygon |

sredit_sel_area_start

| | |
|----------------|---|
| Command | sredit_sel_area_start |
| Group | Graphic Editor |
| Descr. | Start rectangle or polygon selection process. |

| | |
|------------------|--------------|
| Parameter | Value |
| | |

sredit_sel_area_xy

| | |
|----------------|---|
| Command | sredit_sel_area_xy |
| Group | Graphic Editor |
| Descr. | Command for adding a point to step selection area |

| | |
|------------------|-----------------------|
| Parameter | Value |
| x, y | Legal x,y coordinates |

sredit_sel_clear

| | |
|----------------|-----------------------------------|
| Command | sredit_sel_clear |
| Group | Graphic Editor |
| Descr. | Unselects all steps in the panel. |

sredit_sel_sr_entry

| | |
|----------------|---|
| Command | sredit_sel_sr_entry |
| Group | Graphic Editor |
| Descr. | The command is used to select s&r entry by line number. |

| | |
|------------------|-----------------------------|
| Parameter | Value |
| line | Line (entry) number [>=1] |

sredit_sel_sr_entry_xy

| | |
|----------------|---|
| Command | sredit_sel_sr_entry_xy |
| Group | Graphic Editor |
| Descr. | The command is used to select s&r entry by point coordinates. |

| | |
|------------------|-----------------------|
| Parameter | Value |
| x, y | Legal x,y coordinates |

sredit_sel_step_xy

| | |
|----------------|---|
| Command | sredit_sel_step_xy |
| Group | Graphic Editor |
| Descr. | Command for selection/unselection of a single step by a point inside. |

| | |
|------------------|--|
| Parameter | Value |
| x, y | Legal x,y coordinates |
| select | yes/no |
| cyclic | yes/no not used for select=no |

sredit_sel_step_xy_nest

| | |
|-----------------|---|
| Command | sredit_sel_step_xy_nest |
| Group | Graphic Editor |
| Descr. | Command for selection/unselection of a single step by a point inside using the cycle to decide to select pcb, array, panel. |
| Response | None |

| | |
|------------------|-----------------------|
| Parameter | Value |
| x, y | Legal x,y coordinates |
| select | yes/no |

sredit_sel_steps_name

| | |
|----------------|--|
| Command | sredit_sel_steps_name |
| Group | Graphic Editor |
| Descr. | Selects all steps with the specified name. |

| | |
|------------------|--------------------|
| Parameter | Value |
| name | Existing step name |

sredit_space_evenly

| | |
|----------------|--|
| Command | sredit_space_evenly |
| Group | Graphic Editor |
| Descr. | Command for creating even spacing between selected steps in a specified direction. Example: for horizontal spacing, the leftmost and rightmost steps are fixed and all other steps moved to the left or right so that all gaps between them are equal. Note: The command does not work with multiple rows (columns). |

| | |
|------------------|---------------------|
| Parameter | Value |
| mode | horizontal/vertical |

sr_fill

| | |
|----------------|--|
| Command | sr_fill |
| Group | Graphic Editor |
| Descr. | The command is used for pattern filling between the step & repeat data to the edited step edges. The fill parameters are according to the 'fill_params' command. |

| | |
|-----------------------|---|
| Parameter | Value |
| polarity | Positive, negative |
| step_margin | Size (inches) - margin from the step edges (panel) |
| step_max_dist | 0 <= size (inches) - maximal distance from the step edges |
| sr_margin | Size (inches)- margin from the step & repeat profiles |
| nest_sr | Yes - use the lowest level of step & repeat No - use the highest level of step & repeat |
| consider_feat | Yes - consider the layer features for filling No - consider the step & repeat only |
| feat_margin | 0 <= size (inches)margin from the layer features |
| consider_drill | Yes - consider the drill layer holes No - no drills |
| drill_margin | 0 <= size (inches)margin from the layer holes |
| dest | affected_layers - fill all the affected layers layer_name - use the specified layer name |
| layer | Existing step layer name if (dest == layer_name) |
| attributes | Yes - add the current attr No - no attributes |

sr_gold_side

| | |
|-----------------|---|
| Command | sr_gold_side |
| Group | Graphic Editor |
| Descr. | This command is used for getting the gold connectors position in a PCB - for the step & repeat operation. |
| Response | Contains the position as an angle - 0', '90', '180', '270', 'none' (no gold connectors in the step's outer layers). |

sr_popup

| | |
|----------------|--|
| Command | sr_popup |
| Group | Graphic Editor |
| Descr. | This command is used for invoking the step & repeat table. |

sr_popup_close

| | |
|----------------|---|
| Command | sr_popup_close |
| Group | Graphic Editor |
| Descr. | This command is used for closing the step & repeat table. |

sr_tab_add

| | |
|----------------|---|
| Command | sr_tab_add |
| Group | Graphic Editor |
| Descr. | The command adds an entry to the step & repeat table. |

| Parameter | Value |
|---------------|---|
| line | 0 <= line (0 - last line) line (entry) number |
| step | Step that exists in the job or in the library - step to be repeated |
| x, y | Legal coordinates - anchor point |
| nx, ny | 1 <= nx, ny - number of repeats in each axis |
| dx, dy | Distance between the repeats |
| angle | 0, 90, 180, 270 |
| mirror | Yes, No around X axis |

sr_tab_break

| | |
|----------------|--|
| Command | sr_tab_break |
| Group | Graphic Editor |
| Descr. | The command is used for breaking a single step & repeat line into several lines. |

| Parameter | Value |
|-------------|---------------------------------|
| line | 1 <= line - line (entry) number |

sr_tab_change

| | |
|----------------|--|
| Command | sr_tab_change |
| Group | Graphic Editor |
| Descr. | The command changes an entry to the step & repeat table. |

| Parameter | Value |
|---------------|---|
| line | 1 <= line - line (entry) number |
| step | Step that exists in the job or in the library - step to be repeated |
| x, y | Legal coordinates - anchor point |
| nx, ny | 1 <= nx, ny - number of repeats in each axis |
| dx, dy | 0 <= dx, dy - distance between the repeats |

| | |
|---------------|---------------------------|
| angle | 0, 90, 180, 270 |
| mirror | Yes - no Around X axis |

sr_tab_del

| | |
|----------------|--|
| Command | sr_tab_del |
| Group | Graphic Editor |
| Descr. | The command deletes an entry from the step & repeat table. |

| | |
|------------------|---------------------------------|
| Parameter | Value |
| line | 1 <= line - line (entry) number |

sr_tab_round_dist

| | |
|----------------|--|
| Command | sr_tab_round_dist |
| Group | Graphic Editor |
| Descr. | Rounds distances (dx,dy) between the repeats for every entry of the step & repeat table. |

| | |
|------------------|--|
| Parameter | Value |
| units | Units definition (inch/mm) |
| mode | Round mode (nearest/increase/decrease) |
| digits | Decimal digits number (0,1,2,3,4,5) |

stk_add_microvia_lyr

| | |
|----------------|-----------------------------|
| Command | stk_add_microvia_lyr |
| Group | Stackup Editor |
| Descr. | Set blind_microvia layer |

| | |
|------------------|--------------|
| Parameter | Value |
| lyr | Drill layer |

stk_add_seq_lyr

| | |
|----------------|---|
| Command | stk_add_seq_lyr |
| Group | Stackup Editor |
| Descr. | Set sequential layer with its lamination type |

| Parameter | Value |
|-----------------|---|
| lyr | Drill layer |
| lam_type | Lamination type of subassembly - auto, foil, sheet, mixed |
| top_lam | Top layer lamination, only when lam_type=mixed. Foil or sheet |

stk_auto_best

| | |
|-----------------|---|
| Command | stk_auto_best |
| Group | Stackup Editor |
| Descr. | Set stackup to best automatically generated stackup |
| Response | Success Note: Fails if conversion of stackup to new construct fails |

| Parameter | Value |
|-----------------------|---|
| outer_thick | oz (0 - 100) - Used for Fresh_Start only |
| inner_thick | oz (0 - 100) - Used for Fresh_Start only |
| top_lam_type | Foil Sheet |
| mode | Fresh_Start, Constraint_Based |
| symmetric | Yes / No Default = yes |
| iterations | 1-2000 How many iterations to run |
| choose_results | 1-2000 Which generated results to use. |
| reopen_results | Yes / No Use previously generated results |

stk_auto_open

| | |
|-----------------|---|
| Command | stk_auto_open |
| Group | Stackup Editor |
| Descr. | Set stackup to best automatically generated stackup |
| Response | Success |

| Parameter | Value |
|--------------------|--|
| outer_thick | oz (0 - 100) - Used for Fresh_Start only |
| inner_thick | oz (0 - 100) - Used for Fresh_Start only |
| lam_type | Foil Sheet |
| max_results | Positive |
| iterations | Positive |
| mode | Fresh Start, Constraint Based |
| method | Original/Diagnostic, Default=Original. Specifies auto stackup generation method. |
| sort_by | Values = Cost, Thick, Diff_Cores, Diff_prepregs |

stk_clear

| | |
|----------------|----------------------------------|
| Command | stk_clear |
| Group | Stackup Editor |
| Descr. | Clear all materials from stackup |

stk_close

| | |
|----------------|----------------------|
| Command | stk_close |
| Group | Stackup Editor |
| Descr. | Close stackup editor |

stk_copy

| | |
|-----------------|--|
| Command | stk_copy |
| Group | Stackup Editor |
| Descr. | Copy selected elements of stackup editor |
| Response | Number of stackup elements added |

stk_cut

| | |
|-----------------|---|
| Command | stk_cut |
| Group | Stackup Editor |
| Descr. | Cut selected elements of stackup editor |
| Response | Number of stackup elements cut |

stk_delete

| | |
|-----------------|--|
| Command | stk_delete |
| Group | Stackup Editor |
| Descr. | Delete selected elements of stackup editor |
| Response | Number of stackup elements deleted |

stk_deselect_all

| | |
|----------------|--------------------------------|
| Command | stk_deselect_all |
| Group | Stackup Editor |
| Descr. | Deselect elements of a stackup |

stk_etch

| | |
|----------------|---|
| Command | stk_etch |
| Group | Stackup Editor |
| Descr. | Etch off (or unEtch) an entire layer of foil from a selected core |

| | |
|------------------|--------------|
| Parameter | Value |
| operation | Etch, unetch |
| pos | Top, bottom |
| refresh | Yes, No |

stk_flip

| | |
|----------------|-----------------|
| Command | stk_flip |
| Group | Stackup Editor |

| | |
|-----------------|-----------------------------|
| Descr. | Flip stackup. |
| Response | Numbers of elements flipped |

| | |
|------------------|--|
| Parameter | Value |
| where | selected paste_buffer stackup |

stk_foil_units

| | |
|----------------|-------------------------------|
| Command | stk_foil_units |
| Group | Stackup Editor |
| Descr. | Set units displayed for foils |

| | |
|------------------|--------------|
| Parameter | Value |
| units | oz, g, mm |

stk_imp_add

| | |
|----------------|--------------------------|
| Command | stk_imp_add |
| Group | Stackup Editor |
| Descr. | Add impedance constraint |

stk_imp_adj_width

| | |
|----------------|---|
| Command | stk_imp_adj_width |
| Group | Stackup Editor |
| Descr. | Adjust line width to meet impedance constraints |

stk_imp_close

| | |
|----------------|------------------------|
| Command | stk_imp_close |
| Group | Stackup Editor |
| Descr. | Close impedance window |

stk_imp_delete

| | |
|----------------|-----------------------------|
| Command | stk_imp_delete |
| Group | Stackup Editor |
| Descr. | Delete impedance constraint |

stk_imp_improve

| | |
|----------------|---------------------------------------|
| Command | stk_imp_improve |
| Group | Stackup Editor |
| Descr. | Improve meeting impedance constraints |

stk_imp_init

| | |
|----------------|-----------------------------|
| Command | stk_imp_init |
| Group | Stackup Editor |
| Descr. | Initialize impedance matrix |

| Parameter | Value |
|------------------------------|---|
| line_width | Mil (0 - 100) -1 for using current value |
| spacing | Mil (0 - 100) -1 for using current value |
| etch_factor | Mil (0 - 100) -1 for using current value |
| width_variation | Mil (0 - 100) -1 for using current value |
| width_variation_units | Inch, mm, % |
| allowed_change | Mil (0 - 100) -1 for using current default |
| allowed_change_units | Inch, mm, % |
| freq | Mhz (0 - 2000) -1 for using current default |
| mask_permittivity | 0 - 100 1 for using current default |
| init_method | Manual Feature_Histogram Checklist |
| step | For init_method != manual |
| fixed_models | Yes - no |

stk_imp_open

| | |
|----------------|-----------------------|
| Command | stk_imp_open |
| Group | Stackup Editor |
| Descr. | Open impedance window |

stk_imp_refresh

| | |
|----------------|--------------------------|
| Command | stk_imp_refresh |
| Group | Stackup Editor |
| Descr. | Refresh impedance window |

stk_imp_select

| | |
|----------------|--|
| Command | stk_imp_select |
| Group | Stackup Editor |
| Descr. | Select impedance constraint of a stackup |

| | |
|------------------|--------------|
| Parameter | Value |
| row | >= 1 |
| col | >= 1 |
| selected | Yes, No |

stk_imp_set

| | |
|----------------|------------------------------------|
| Command | stk_imp_set |
| Group | Stackup Editor |
| Descr. | Set values of impedance constraint |

| Parameter | Value |
|-----------------------|---|
| model | <ul style="list-style-type: none"> • Microstrip Stripline • Dual Stripline • Differential Microstrip • Differential Stripline |
| line_width | Mil (0 - 100) -1 for using current value |
| line_width_tol | Mil (0 - 10) -1 for using current value |
| spacing | Mil (0 - 100) -1 for using current value |
| target_ohm | Ohm (0 - 500) -1 for using current value |
| target_tol | Ohm (0 - 100) -1 for using current value |
| lyr_name | Name of layer |
| dual_lyr_name | Name of layer for Dual_Stripline |
| ref1_name | Name of layer |
| ref2_name | Name of layer for Stripline |

stk_init_cpr

| | |
|-----------------|-------------------------------------|
| Command | stk_init_cpr |
| Group | Stackup Editor |
| Descr. | Initialize stack with copper layers |
| Response | number of layers |

| Parameter | Value |
|--------------------|--------------|
| outer_thick | Ounce values |
| inner_thick | Ounce values |

stk_insert

| | |
|-----------------|---------------------------------|
| Command | stk_insert |
| Group | Stackup Editor |
| Descr. | insert from buffer into stackup |
| Response | number of elements added |

| Parameter | Value |
|-------------------------|---|
| where | Before - preceding selected elements After - succeeding selected elements Start - start of stackup Replace - replace selected elements End - end of stackup |
| refresh | Yes, No Call stk_refresh later |
| upside | Yes, No Insert upside down |
| part_ number | Existing part - May include non-numeric |

stk_load_db

| | |
|----------------|---|
| Command | stk_load_db |
| Group | Stackup Editor |
| Descr. | Load the stackup database. Used to reload the stackup database. |

| Parameter | Value |
|-------------|--|
| path | Path or empty string Empty - read standard database |

stk_lyr

| | |
|-----------------|------------------------------------|
| Command | stk_lyr |
| Group | Stackup Editor |
| Descr. | Set/Unset layer display of stackup |
| Response | Number of copper layers in stackup |

| | |
|------------------|--------------|
| Parameter | Value |
| match | Yes, No |

stk_lyr_type

| | |
|-----------------|---|
| Command | stk_lyr_type |
| Group | Stackup Editor |
| Descr. | Set / Unset layer type display of stackup |
| Response | Number of copper layers in stackup |

| | |
|------------------|--------------|
| Parameter | Value |
| display | Yes, No |

stk_mirror

| | |
|-----------------|---|
| Command | stk_mirror |
| Group | Stackup Editor |
| Descr. | Set/Unset mirroring of stackup |
| Response | odd_mirror / even_mirror / no_mirror |

| | |
|------------------|--------------|
| Parameter | Value |
| mirror | Yes, No |

stk_part_num

| | |
|-----------------|---|
| Command | stk_part_num |
| Group | Stackup Editor |
| Descr. | Display part_num or name of materials in stackup |
| Response | Number of copper layers in stackup |

| | |
|------------------|--|
| Parameter | Value |
| part_num | No - display part name Yes - display part num |

stk_paste

| | |
|-----------------|--------------------------------|
| Command | stk_paste |
| Group | Stackup Editor |
| Descr. | Paste from buffer into stackup |
| Response | Number of elements added |

| | |
|------------------|---|
| Parameter | Value |
| where | Before - preceding selected elements After - succeeding selected elements Start - start of stackup Replace - replace selected elements End - end of stackup |

stk_refresh

| | |
|----------------|----------------------|
| Command | stk_refresh |
| Group | Stackup Editor |
| Descr. | close stackup editor |

stk_report

| | |
|----------------|-------------------------------|
| Command | stk_report |
| Group | Stackup Editor |
| Descr. | Create textual stackup report |

| Parameter | Value |
|------------------------------------|--|
| report_ type target | Normal - only one report type GUI, File |
| path | Legal path - Used only when target=file |

stk_reset_blind_microvia_list

| | |
|----------------|---|
| Command | stk_reset_blind_microvia_list |
| Group | Stackup Editor |
| Descr. | Reset the list of microvias defined by Set Microvia Layers popup. |
| Comment | Fails if conversion of stackup to new construct fails |

stk_reset_seq_lyr_list

| | |
|----------------|--|
| Command | stk_reset_seq_lyr_list |
| Group | Stackup Editor |
| Descr. | Reset the list of sequential lamination layers defined by the Sequential Lamination popup. |
| Comment | |

stk_select

| | |
|-----------------|-----------------------------------|
| Command | stk_select |
| Group | Stackup Editor |
| Descr. | Select element of a stackup |
| Response | Total number of selected elements |

| | |
|------------------|--------------|
| Parameter | Value |
| all | Yes, No |
| elem | >= 1 |
| additive | Yes, No |

stk_set_add

| | |
|----------------|---|
| Command | stk_set_add |
| Group | Stackup Editor |
| Descr. | Adds one material to the list of materials which a stackup is to be set to. |

stk_set_construct

| | |
|-----------------|---|
| Command | stk_set_construct |
| Group | Stackup Editor |
| Descr. | Set stack construct parameters |
| Response | 0 failure, 1 success Note Fails if conversion of stackup to new construct fails |

| | |
|------------------|---------------------------------|
| Parameter | Value |
| width | Inch (0 - 100) - 0 - don't care |
| height | Inch (0 - 100) - 0 - don't care |
| construct | Entity name |
| vendor | Entity name |

stk_set_do

| | |
|----------------|-------------------|
| Command | stk_set_do |
|----------------|-------------------|

| | |
|---------------|--|
| Group | Stackup Editor |
| Descr. | ends a series of stk_set_add commands |

stk_set_seq_lyr

| | |
|----------------|--------------------------------|
| Command | stk_set_seq_lyr |
| Group | Stackup Editor |
| Descr. | List of drill and rout layers. |

| | |
|------------------|---|
| Parameter | Value |
| lyrs | Specify which drill and rout layers are generated using sequential lamination. Example: COM stk_set_seq_lyr , lyrs=dr12:rout1:rout2 |

stk_set_start

| | |
|----------------|--|
| Command | stk_set_start |
| Group | Stackup Editor |
| Descr. | begins a series of stk_set_add commands |

stk_set_target

| | |
|----------------|-------------------------------|
| Command | stk_set_target |
| Group | Stackup Editor |
| Descr. | Set target stackup parameters |

| Parameter | Value |
|------------------------|--|
| thick | Mils (0 - 10000) |
| pos_tol | Mils (0 - 10000) |
| neg_tol | Mils (0 - 10000) |
| plate_thick | Mils (0 - 10000) - Copper plating |
| mask_thick | Mils (0 - 10000) - Silk screen & Solder mask |
| thick_type | Metal, plate,mask |
| copper_loss | Mils (-5 - 5) |
| via_plate_thick | Mils (0 - 10): Default=0 |

stk_set_validation

| | |
|----------------|-----------------------------------|
| Command | stk_set_validation |
| Group | Stackup Editor |
| Descr. | Set stackup validation parameters |

| Parameter | Value |
|-----------------------|---------------------------------|
| min_ppg_sheets | 0-100 mils. 0 - no constraints. |
| max_ppg_sheets | 0-100 mils. 0 - no constraints. |
| min_sep | 0-100 mils. 0 - no constraints. |
| max_sep | 0-100 mils. 0 - no constraints. |
| min_core_thick | 0-100 mils. 0 - no constraints. |
| max_core_thick | 0-100 mils. 0 - no constraints. |
| min_ppg_thick | 0-100 mils. 0 - no constraints. |
| max_ppg_thick | 0-100 mils. 0 - no constraints. |

stk_undo

| | |
|----------------|------------------------------------|
| Command | stk_undo |
| Group | Stackup Editor |
| Descr. | undo last stackup editor operation |

stk_units

| | |
|----------------|-----------------------------|
| Command | stk_units |
| Group | Stackup Editor |
| Descr. | Set units of stackup editor |

| | |
|------------------|--------------|
| Parameter | Value |
| units | Inch, mm,% |

stpcmp_change_units

| | |
|--------------------|--|
| Command | stpcmp_change_units |
| Group | Step Compare |
| Description | Controls the units in the Step Compare window, |

| | |
|------------------|--------------|
| Parameter | Value |
| units | [inch, mm] |

stpcmp_compare

| | |
|--------------------|--|
| Command | stpcmp_compare |
| Group | Step Compare |
| Description | The command runs the batch step compare operation. |

| Parameter | Value |
|--------------------|---|
| tol | 0.03 -10 mil (def=1)- Compare tolerance |
| map_res | 10-1000 mil (def=200) - Map resolution |
| ignore_attr | Ignore features with attribute specified here (multiple attribute names separated by ";") |
| area | global - all layer area profile - only inside profile |
| ignore_attr | Enables filtering by attribute value in Compare Layer or Step Compare actions. |
| consider_sr | Controls whether features in the Step and Repeat table affect the comparison. Default=Yes. |

stpcmp_control

| | |
|--------------------|--|
| Command | stpcmp_control |
| Group | Step Compare |
| Description | Controls some aspects of the Step Compare window such as the auto zoom, layer mode and filters. A parameter that is not specified will retain its previous value. |

| Parameter | Value |
|--------------------|--|
| layers_mode | [single, transparent, multiple] |
| disp_sr | [no, yes] - Display S&R features |
| disp_prof | [none, first, second, both] - Display profiles |
| filter1 | A list of wild card expressions for 1st layer list |
| filter2 | A list of wild card expressions for 2nd layer list |
| rules1 | Predefined layer rules to select layers for 1st layer list |
| rules2 | Predefined layer rules to select layers for 2nd layer list |

stpcmp_map_save

| | |
|--------------------|---|
| Command | stpcmp_map_save |
| Group | Step Compare |
| Description | The command copies a temporary compare map layer to the 1st or 2nd step. The second step considers transformation parameters. |

| Parameter | Value |
|-------------------|--|
| map_prefix | Required map layer prefix. Must be a legal layer name. |
| dist_step | [first; second; both] - destination step |
| res_num | Index number in the result list. Values: 0 .. maxint (0 -all) |

stpcmp_page_close

| | |
|--------------------|--|
| Command | stpcmp_page_close |
| Group | Step Compare |
| Description | The command closes the step compare page. The current values remain in memory until a new step compare page is opened. |

stpcmp_page_open

| | |
|--------------------|---|
| Command | stpcmp_page_open |
| Group | Step Compare |
| Description | The command displays the step compare window and optionally sets the job/step values of the window. |

| Parameter | Value |
|-------------------|--|
| job1 | existing job name |
| step | existing step name |
| job2 | existing job name |
| step2 | existing step name |
| force_init | Yes - (Default) init all jobs and steps if they are defined in the command No - init only if the first job in the page is not defined |

stpcmp_rep_save

| | |
|--------------------|---|
| Command | stpcmp_rep_save |
| Group | Step Compare |
| Description | The command creates and saves the compare report. |

| | |
|------------------|--|
| Parameter | Value |
| path | Required report path. Must be a legal file path. |

stpcmp_trans_params

| | |
|--------------------|---|
| Command | stpcmp_trans_params |
| Group | Step Compare |
| Description | The command sets the second step transformation parameters. |

| | |
|------------------------------------|--|
| Parameter | Value |
| oper | Options: [offset; rotate; x_mirror; y_mirror], where: x_mirror - mirror horizontally; y_mirror - mirror vertically |
| x_offset y_offset | Offset value in current units |
| angle | 0.0 - 360.0 (used if oper = rotate) |
| x_anchor y_anchor | Legal coordinates in current units (used if oper = rotate or mirror) |

stpnum_insertion_point

| | |
|----------------|--|
| Command | stpnum_insertion_point |
| Group | Graphic Editor |
| Descr. | The command sets the numbering insertion point of a given step |

| Parameter | Value |
|---------------------|--|
| step_name | Valid step name |
| method | |
| stp_ref_mode | pcb_datum or pcb_bounding_box |
| corner | bot_left, top_left , bot_right, top_right. Note: Relevant only with pcb_bounding_box |
| step_name | Step that is nested in the editor's step |
| x,y | Legal coordinates In pcb_datum mode: x,y = coord of insertion point in pcb turns In pcb_bounding box mode : x,y = dx,dy from selected corner |

stpnum_delete_ref_step

| | |
|----------------|--|
| Command | stpnum_delete_ref_step |
| Group | Graphic Editor |
| Descr. | The command deletes a reference step defined for pcb numbering |

| Parameter | Value |
|------------------|-----------------|
| step_name | Valid step name |

stpnum_flat_numbering

| | |
|----------------|--|
| Command | stpnum_flat_numbering |
| Group | Graphic Editor |
| Descr. | The command sets the numbering insertion point of a given step |

| Parameter | Value |
|-----------------------------|--|
| step_name | Valid step name - step that is nested in the editor's step. |
| method | See opts |
| text orientation | See opts |
| text_mirror | See opts |
| text_rotation | See opts |
| text_background | See opts |
| text_background_marg | Any positive number |
| text_type | See opts |
| x_size | Any positive number. Used if text_type = string |
| y_size | Any positive number. Used if text_type = string |
| line width | Any positive number. Used if text_type = string |
| hole size | Any positive number. Used if text_type = canned |
| del_prev_num | If YES, deletes all numbering text features for the define nesting step done before new numbering. Default = No. |

stpnum_nested_numbering

| | |
|----------------|---|
| Command | stpnum_flat_numbering |
| Group | Graphic Editor |
| Descr. | The command adds a unique number to each instance of each one of the selected steps. Use the commands stpnum_select_step & stpnum_set_step_params to select steps to be numbered. |

| Parameter | Value |
|-----------------------------|---|
| numbering_type | Flat, Nested |
| step_name | Valid step name - step that is nested in the editor's step. |
| Nested numbering | No, Yes |
| text orientation | See opts |
| text_mirror | See opts |
| text_rotation | See opts |
| text_background | See opts |
| text_background_marg | Any positive number |
| text_type | See opts |
| x_size | Any positive number. Used if text_type = string |
| y_size | Any positive number. Used if text_type = string |
| line width | Any positive number. Used if text_type = string |
| hole size | Any positive number. Used if text_type = canned |
| start_number | Any positive number. |
| continuous | No, Yes |

stpnum_display_step

| | |
|----------------|---|
| Command | stpnum_display_step |
| Group | Graphic Editor |
| Descr. | The command displays the step instance that overlaps the given x,y coordinates. |

| Parameter | Value |
|------------------|---|
| step_name | Valid step name - step that is nested in the editor's step. |
| x,y | Legal coordinates. In pcb_datum mode: x,y = coord of insertion point in pcb turns In pcb_bounding box mode : x,y = dx,dy from selected corner |

stpnum_select_step

| | |
|----------------|---|
| Command | stpnum_select_step |
| Group | Graphic Editor |
| Descr. | The command displays the step instance that overlaps the given x,y coordinates as a reference step. |

| Parameter | Value |
|------------------|---|
| step_name | Valid step name - step that is nested in the editor's step. |
| x,y | Legal coordinates. In pcb_datum mode: x,y = coord of insertion point in pcb turns In pcb_bounding box mode : x,y = dx,dy from selected corner |

stretch_feat

| | |
|----------------|--|
| Command | stretch_feat |
| Group | Graphic Editor |
| Descr. | Stretches a line feature in all the affected layers. |

| Parameter | Value |
|---------------|--|
| index | Feature index in the work layer. (Optional) If index is not specified, Genesis looks for the feature according to coordinates. |
| x, y | Legal coordinates - feature coordinates |
| xs, ys | Legal coordinates - new line start point |
| xe, ye | Legal coordinates - new line end point |
| tol | 0 <= tol (mils) - snap tolerance |

strip_job

| | |
|----------------|---------------------|
| Command | strip_job |
| Group | Engineering Toolkit |
| Descr. | Used to strip a job |

| Parameter | Value |
|---------------------|---|
| job | Existing job name |
| del_elements | List of elements to delete. Separate list elements with a semicolon (;). |
| steps_mode | include or exclude |
| steps | List of steps to include/exclude. Separate list elements with a semicolon (;). List may contain wildcard filter. |
| lyrs_mode | include or exclude |
| lyrs | list of layers to include/exclude. Separate list elements with a semicolon (;). List may contain wildcard filter. |

sub_pnl_exec

| | |
|----------------|--|
| Command | sub_pnl_exec |
| Group | Graphic Editor |
| Descr. | The command executes the sub-panel construction. |

| Parameter | Value |
|-----------------------------|--|
| step | New step name |
| x_datum, y_datum | Profile datum |
| action | All, affected - which layers to operate on |
| prf_ margin | Margin around the profile for features matching |
| keep_flat | Yes - keep the old flat layers |
| complete_ match | Yes - only if all the layers match - perform the operation No - perform a partial cut if not all layers match |
| cmp_tol | Compare tolerance (in mil/my). Range 0.0 to 1 mil. Default = 0.0 |
| map_size | Map size (in inch/mm). Range 0.0 to 1/10 limit. Default = 0.0 |

sub_pnl_open

| Command | sub_pnl_open |
|--------------------|--|
| Group | Graphic Editor |
| Description | Opens the subpanel optimizer |
| Parameter | Value |
| ref_layer | Reference layer to optimize |
| action | affected, all - Whether to optimize all layers or only affected layers |
| step | name of output step |

sub_pnl_close

| | |
|--------------------|-------------------------------|
| Command | sub_pnl_close |
| Group | Graphic Editor |
| Description | Closes the subpanel optimizer |

sub_pnl_poly_close

| | |
|--------------------|--|
| Command | sub_pnl_poly_close |
| Group | Graphic Editor |
| Description | Closes the polygon profile defined in subpanel optimization. Note: This line mode command should be called after completing all calls to sub_pnl_poly_seg and sub_pnl_poly_crv |

sub_pnl_poly_selected

| | |
|--------------------|---|
| Command | sub_pnl_poly_selected |
| Group | Graphic Editor |
| Description | Fails if conversion of stackup to new construct fails |
| Parameter | Value |
| lyr | Drill layer |

sub_pnl_preview_profile_open

| | |
|--------------------|---|
| Command | sub_pnl_preview_profile_open |
| Group | Graphic Editor |
| Description | Opens the subpanel optimization preview profile window. |

sub_pnl_preview_profile_close

| | |
|--------------------|--|
| Command | sub_pnl_preview_profile_close |
| Group | Graphic Editor |
| Description | Closes the subpanel optimization preview profile window. |

sub_pnl_preview_open

| | |
|--------------------|---|
| Command | sub_pnl_preview_open |
| Group | Graphic Editor |
| Description | Opens the subpanel optimization preview window. |

sub_pnl_preview_close

| | |
|--------------------|--|
| Command | sub_pnl_preview_close |
| Group | Graphic Editor |
| Description | Closes the subpanel optimization preview window. |

sub_pnl_preview_hl_match

| | |
|--------------------|---|
| Command | sub_pnl_preview_hl_match |
| Group | Graphic Editor |
| Description | Highlight features for previewing results of subpanel optimization. |

| | |
|------------------|--|
| Parameter | Value |
| layer | layer to view |
| hl | What to highlight (match, add, no_match_area, no_match_detail). See subpanel optimization documentation for explanations. Note: To unhighlight, use the clear_highlight line mode command |

sub_pnl_review_open

| | |
|--------------------|---|
| Command | sub_pnl_review_open |
| Group | Graphic Editor |
| Description | Opens the subpanel optimization review window |

sub_pnl_review_close

| | |
|--------------------|--|
| Command | sub_pnl_review_close |
| Group | Graphic Editor |
| Description | Closes the subpanel optimization review window |

sub_pnl_generate

| | |
|--------------------|-----------------------------------|
| Command | sub_pnl_generate |
| Group | Graphic Editor |
| Description | Generates the sub-panel S&R table |
| Response | None |

| | |
|---|---|
| Parameter | Value |
| x_datum, y_datum | Location of datum for new step |
| prf_margin | profile margin to use for new step (in inch/mm) |
| action | What layers to affect (affected,all) |
| layer | Reference layer for optimization |
| cmp_tol | Compare tolerance (in mil/my). Range 0.0 to 1 mil. Default = 0.0 |
| map_size | Map size (in inch/mm). Range 0.0 to 1/10 limit. Default = 0.0 |
| out_file | Where to store the generated S&R table. This parameter is optional. |
| Sample out_file generated when there is one entry in the S&R table: gSUB_OPTxa = (1.700) gSUB_OPTya = (10.4) gSUB_OPTnx = (3) gSUB_OPTny = (2) gSUB_OPTdx = (4.046) gSUB_OPTdy = (8.138) gSUB_OPTang = (0) Explanation gSUB_OPTxa - x coordinate of anchor in S&R table gSUB_OPTya - y coordinate of anchor in S&R table gSUB_OPTnx - Number of repeats in x-axis gSUB_OPTny - Number of repeats in y-axis gSUB_OPTdx - Difference between repeats in x axis gSUB_OPTdy - Difference between repeats in y axis gSUB_OPTang - Angle of step in S&R table | |

sub_pnl_one_up_register

| | |
|--------------------|--|
| Command | sub_pnl_one_up_register |
| Group | Graphic Editor |
| Description | Performs registration between a layer that appears as a one-up and layer which appears panelized and makes a copy of the features for all occurrences of the step. |
| Response | None |

| | |
|------------------|---|
| Parameter | Value |
| layer | Layer to register |
| ref_layer | Reference layer for optimization |
| last | Whether to register with the same copying and transformation as previously done in this session (yes,no). |

WARNING -This script is included as a sample to show how the subpanel optimization line mode commands may be used. It shows in what order the line mode commands may be called, and includes some documentation to explain what the script does. A useful script would be considerably more complicated, calculating values for coordinates and including program logic for decision making.

```
#
# Open Job & Step
#
COM open_job,job=ben.sp
COM open_entity,job=ben.sp,name=pnl
set group = $COMANS
AUX set_group,group=$group

set x_datum = 1.7
set y_datum = 10.4
set out_step = optimized

#
# Display layer
#
COM display_layer,name=1,display=yes,number=1
COM work_layer,name=1
COM zoom_home

#
# Open Subpanel optimizer
#
COM sub_pnl_open,ref_layer=1,step=$out_step,action=affected

#
# Selected features
#
COM clear_highlight
COM sel_clear_feat
```

```

COM sel_single_feat,operation=select,x=1.3408198819,
y=14.4954498031,tol=73.0263779528,cyclic=no
COM sel_single_feat,operation=select,x=4.6562190945,
y=12.4653154528,tol=73.0263779528,cyclic=yes
COM sel_single_feat,operation=select,x=3.633849311,
y=9.5880747047,tol=73.0263779528,cyclic=yes
COM sub_pnl_poly_selected
PAUSE By selected features
COM sel_clear_feat

#
# Select polygon
#
COM sub_pnl_poly_seg,x=1.0817613189,y=17.1427102362
COM sub_pnl_poly_seg,x=4.9860285433,y=17.1427102362
COM sub_pnl_poly_seg,x=4.9860285433,y=9.2712037402
COM sub_pnl_poly_seg,x=1.0817613189,y=9.2712037402
COM sub_pnl_poly_close
PAUSE By polygon

#
# Preview profile
#
COM sub_pnl_preview_profile_open
PAUSE Preview profile open
COM sub_pnl_preview_profile_close
PAUSE Preview profile close

#
# Generate
#
COM sub_pnl_generate,x_datum=$x_datum,y_datum=$y_datum,
prf_margin=0.1,action=affected,layer=1,out_file=/tmp/sr.$$
set num_steps = $COMANS
PAUSE Generated. Found $num_steps occurrences.
Check /tmp/sr.$$
\rm /tmp/sr.$$

#
# Preview
#
COM sub_pnl_preview_open
PAUSE Preview open
COM sub_pnl_preview_hl_match,hl=match,layer=1
PAUSE Highlighted match
COM clear_highlight
COM sub_pnl_preview_hl_match,hl=no_match_area,layer=1
PAUSE Highlighted no match area
COM clear_highlight
COM sub_pnl_preview_close
PAUSE Preview closed

```

```
#
# One up registration
#
COM sub_pnl_one_up_register,layer=pads,ref_layer=1,
last=no
COM sub_pnl_one_up_register,layer=x,ref_layer=1,last=yes
PAUSE Did one up registration for layer pads and layer x

#
# Execute
#
COM sub_pnl_exec,step=$out_step,x_datum=$x_datum,
y_datum=$y_datum,action=affected,prf_margin=0.1,
keep_flat=yes
PAUSE Optimization complete. "$out_step" step created

#
# Review
#
COM sub_pnl_review_open
PAUSE Review Open
COM sub_pnl_review_close
PAUSE Review Closed

#
# Close Subpanel optimization
#
COM sub_pnl_close
PAUSE Closed subpanel optimization - end
```

sub_pnl_poly_crv

| | |
|----------------|-------------------------|
| Command | sub_pnl_poly_crv |
| Group | Graphic Editor |
| Descr. | Adds a polygon curve. |

| | |
|------------------|---|
| Parameter | Value |
| xc, yc | Legal coordinates - curve center point |
| xe, ye | Legal coordinates - curve end point |
| cw | Yes - clockwise No - counter clockwise |

sub_pnl_poly_seg

| | |
|----------------|-------------------------|
| Command | sub_pnl_poly_seg |
| Group | Graphic Editor |
| Descr. | Adds a polygon segment. |

| | |
|------------------|---------------------------------------|
| Parameter | Value |
| x, y | Legal coordinates - segment end point |

sub_pnl_poly_strt

| | |
|----------------|---------------------------|
| Command | sub_pnl_poly_strt |
| Group | Graphic Editor |
| Descr. | Starts a profile polygon. |

| | |
|------------------|---------------------------------|
| Parameter | Value |
| x, y | Legal coordinates - start point |

sub_pnl_sr_add

| | |
|----------------|---|
| Command | sub_pnl_sr_add |
| Group | Graphic Editor |
| Descr. | The command adds an entry to the step & repeat table. |

| Parameter | Value |
|---------------|--|
| x, y | Legal coordinates - anchor point |
| nx, ny | 1 <= nx, ny - number of repeats in each axis |
| dx, dy | 0 <= dx, dy - distance between the repeats |
| angle | 0, 90, 180, 270 |

sub_pnl_sr_reset

| | |
|----------------|---|
| Command | sub_pnl_sr_reset |
| Group | Graphic Editor |
| Descr. | Resets the local sub-panel step & repeat table. |

therm_don_resize

| | |
|----------------|--|
| Command | therm_don_resize |
| Group | Graphic Editor |
| Descr. | Resizes selected thermals & donuts (enlarges or shrinks). Special symbol features are not affected by the command. |

| Parameter | Value |
|-------------|----------------------------|
| size | -8000 <= size <= 8000 mils |

tooling_holes_apply

| | |
|--------------------|----------------------------|
| Command | tooling_holes_apply |
| Group | |
| Description | Add tooling hole features. |

tooling_holes_calc

| | |
|------------------------------|-----------------------------------|
| Command | tooling_holes_calc |
| Group | |
| Description | Calculate tooling hole locations. |
| Parameter | Description |
| step | name of step |
| step_pos_ list | x1,y1+x2,y2+x3,y3 |
| nc_layers | semicolon separated list |
| hole_ spacing | |
| profile_ spacing | |
| cu_spacing | |
| drill_ spacing | |
| rout_ spacing | |
| hole_ location | corners, edges, inside, any |
| symmetry | no, yes, any |
| symmetry_ tol | |
| allow_ partial | no, yes |
| label_ x_size | |
| label_ y_size | |
| label_ line_width | |
| font | |

tooling_holes_reset

| | |
|--------------------|---|
| Command | tooling_holes_reset |
| Group | |
| Description | Reset the list of tooling hole pad stack rules. |

tooling_holes_set

| | |
|---------------------|---|
| Command | tooling_holes_set |
| Group | |
| Description | Add a tooling-hole pad-stack rule. |
| Parameter | Description |
| symbol | |
| layer_filter | Define layer filter rule. |
| label | Label to show near tooling hole. |
| polarity | Values: positive, negative, as_layer, inverted. |

tools_close

| | |
|----------------|----------------------------------|
| Command | tools_close |
| Group | Graphic Editor |
| Descr. | Used for closing the tools popup |

| | |
|------------------|---|
| Parameter | Value |
| force | If yes - tools popup is closed even if it was changed during the session. |

tools_combine

| | |
|----------------|---|
| Command | tools_combine |
| Group | Graphic Editor |
| Descr. | The command runs the hook combine_drill that will combine the tools. |

| | |
|------------------|---|
| Parameter | Value |
| layer | This layer name must already exist and appear in the layer field of the Drill Tool Manager. |

tools_frame

| | |
|----------------|---|
| Command | tools_frame |
| Group | Graphic Editor |
| Descr. | The command is used for copying the features data of a step to the edited step, for all the matching layer names. This is useful in cases where the tooling data is set at fixed locations. |

| | |
|------------------|---|
| Parameter | Value |
| step | Step that exists in the job source step or in the library |

tools_list_add

| | |
|----------------|---|
| Command | tools_list_add |
| Group | Graphic Editor |
| Descr. | The command is used for adding a tool to a table that is used by the tools_list_set command. |

| | |
|------------------|------------------------|
| Parameter | Value |
| num | 1 <= num - tool number |
| size | 0 <= size - drill size |

tools_list_reset

| | |
|----------------|---|
| Command | tools_list_reset |
| Group | Graphic Editor |
| Descr. | The command resets the tools list that is used by the - 'tools_list_set' command. |

tools_list_set

| | |
|----------------|----------------------------------|
| Command | tools_list_set |
| Group | Graphic Editor |
| Descr. | The command sets the tool sizes. |

| | |
|------------------|---------------------|
| Parameter | Value |
| layer | Existing layer name |

tools_merge

| | |
|----------------|---|
| Command | tools_merge |
| Group | Graphic Editor |
| Descr. | The command is used for merging tool entries that have the same values. |

| | |
|------------------|---------------------|
| Parameter | Value |
| layer | Existing layer name |

tools_merge_ex

| | |
|--------------------|---|
| Command | tools_merge_ex |
| Group | Drill Tool Manager |
| Description | Defines how tool merges are processed in the Drill Tool Manager |

| | |
|------------------|---|
| Parameter | Value |
| mode | merge - merge tools and update tool numbers merge_keep_tool - merge tools and keep tool numbers merge_and_sort - merge tools and sort tool entries |

tools_set

| | |
|--------------------|---|
| Command | tools_set |
| Group | Graphic Editor |
| Description | The command sets the tool parameters (including sizes) of a drill/rout layer. The tools table is defined by the commands: <ul style="list-style-type: none">• tools_tab_reset• tools_tab_add |

| | |
|--------------------|--|
| Parameter | Value |
| layer | Existing layer name |
| thickness | 0 <= thickness - board thickness |
| user_params | String up to 64 chars user parameters that are used for calculating the drill sizes |
| slots | No - Holes and slots with the same size use the same tool number Yes - Slots will be separated from holes of the same size By Length - Slots with the same tool size be separated by their length |

tools_show

| | |
|----------------|--|
| Command | tools_show |
| Group | Graphic Editor |
| Descr. | The command is used for showing the tools popup. |

| | |
|------------------|---------------------|
| Parameter | Value |
| layer | Existing layer name |

tools_tab_add

| | |
|----------------|--|
| Command | tools_tab_add |
| Group | Graphic Editor |
| Descr. | The command is used for adding a tool to a table that is used by the tools_set command. |

| | |
|------------------|---|
| Parameter | Value |
| num | 1 <= num - tool number |
| type | Plate - plated hole Nplate - non-plated Hole via - via hole |

| | |
|--------------------|---|
| type2 | standard - use with type: plate, nplate, via laser - use with type: via photo - use with type: via press_fit - use with type: plate |
| min_tol | 0 <= min_tol - min allowed tolerance |
| max_tol | 0 <= max_tol - max allowed tolerance |
| bit | String (up to 64 chars) - drill bit type(name) |
| finish_size | 0 <= finish_size - finished hole size |
| drill_size | 0 <= drill_size - calculated drill size |
| shape | Possible values: [hole, slot] |
| slot_len | value given in current units |
| combined | [No/Yes] (Default = No). Supports Combined Tools Option. |
| orig_size | (in current units) - original size for combined tools. Supports Combined Tools Option. |
| freeze | When freeze = no (default), drill_size hook can automatically readjust drill size. When freeze = yes , drill_size hook is prevented from readjusting the drill size. |

tools_tab_reset

| | |
|----------------|---|
| Command | tools_tab_reset |
| Group | Graphic Editor |
| Descr. | The command resets the tools list that is used by the tools_set command. |

truncate_dims

| | |
|----------------|--|
| Command | truncate_dims |
| Group | Graphic Editor |
| Descr. | The command is used for truncating a layer's dims. |

| | |
|------------------|--------------|
| Parameter | Value |
| layer | Entity name |

truncate_layer

| | |
|----------------|---|
| Command | truncate_layer |
| Group | Graphic Editor |
| Descr. | The command is used for truncating a layer's contents. The undo information is cleared. Thus, after running this command the undo operation cannot be performed. |

| | |
|------------------|--------------|
| Parameter | Value |
| layer | Entity name |

undo

| | |
|----------------|--------------------------------|
| Command | undo |
| Group | Graphic Editor |
| Descr. | Undoes the last editor change. |

undo_flowb

| | |
|----------------|----------------------------------|
| Command | undo_flowb |
| Group | Flow Builder |
| Descr. | Used for undoing last op in flow |

| Parameter | Value |
|-------------|----------------------------------|
| name | Name of an existing opened flow. |

units

| | |
|----------------|-------------------------|
| Command | units |
| Group | Graphic Editor |
| Descr. | Sets the working units. |

| | |
|------------------|--------------|
| Parameter | Value |
| type | Inch, mm |

unlink_stage

| | |
|----------------|----------------------------|
| Command | unlink_stage |
| Group | Flow Builder |
| Descr. | Used for unlinking stages. |

| | |
|------------------|-------------------------------|
| Parameter | Value |
| flow | Name of flow to unlink |
| elem | Name of elem to unlink |
| parent | Name of parent to unlink from |

unmerge_layer

| | |
|-----------------|--|
| Command | unmerge_layer |
| Group | Graphic Editor |
| Descr. | The command is used for unmerging a specified layer the layer is split into several layers for each polarity change. |
| Response | nnnn - number of created layers |

| | |
|------------------------|---|
| Parameter | Value |
| layer | Existing layer name |
| dest_suffix | Text with the allowed name characters - added to the source layer name |
| dest_max_layers | Maximal number of output layers (if there are more polarity changes no layers will be created and an error message will be displayed) |

update_clipboard

| | |
|----------------|---|
| Command | update_clipboard |
| Group | Engineering Toolkit |
| Descr. | The command is for updating/refreshing the clipboard windows. |

update_dependent_step

| | |
|----------------|------------------------------------|
| Command | update_dependent_step |
| Group | Engineering Toolkit |
| Descr. | Supports update of dependent steps |

| | |
|------------------|-----------------|
| Parameter | Value |
| job | valid job name |
| step | valid step name |

update_form

| | |
|----------------|---|
| Command | update_form |
| Group | WorkForms |
| Descr. | Updates a given form from the library (if needed and new) |

| | |
|------------------|------------------|
| Parameter | Value |
| job | Name of the job |
| form | Name of the form |

user_delete

| | |
|----------------|--------------------------------|
| Command | user_delete |
| Group | Login |
| Descr. | Used for deleting user entries |

| | |
|------------------|--------------------|
| Parameter | Value |
| name | Login name of user |

user_edit

| | |
|-----------------|---------------------------------------|
| Command | user_edit |
| Group | Login |
| Descr. | Used for changing/adding user entries |
| Response | None |

| | |
|-------------------|---------------------------|
| Parameter | Value |
| name | Login name of user |
| real_name | Real name of user |
| priv | 1 - 100 |
| autologout | Minutes before autologout |
| group | Group name |

view_layer

| | |
|-----------------|--|
| Command | view_layer |
| Group | Graphic Editor |
| Descr. | The command opens the Graphic Viewer for viewing layers. |
| Response | None |

| | |
|------------------|---|
| Parameter | Value |
| job | existing job name |
| step | existing step name |
| layer | existing layer name |
| reuse | Yes = Reuse existing popup. No = Do not reuse the existing popup. |

wheel_change_dcode

| | |
|----------------|-------------------------------------|
| Command | wheel_change_dcode |
| Group | Wheel Editor |
| Descr. | The command changes a dcode number. |

| | |
|------------------|--------------|
| Parameter | Value |
| dcode | 4 <= dcode |
| new_dcode | 4 <= dcode |

wheel_clear_all_comm

| | |
|----------------|---|
| Command | wheel_clear_all_comm |
| Group | Wheel Editor |
| Descr. | The command clears ALL the dcodes of a wheel. |

wheel_clear_dcodes

| | |
|----------------|--|
| Command | wheel_clear_dcodes |
| Group | Wheel Editor |
| Descr. | The command clears a list of dcode in a wheel. |

| | |
|------------------|--------------|
| Parameter | Value |
| dcode1-10 | 4 <= dcode |

wheel_current

| | |
|----------------|--|
| Command | wheel_current |
| Group | Wheel Editor |
| Descr. | The command is used for setting the current wheel name, which is used by all the other line mode commands. |

| | |
|------------------|----------------------------|
| Parameter | Value |
| job | Existing opened job name |
| wheel | Existing opened wheel name |

wheel_cust_trans

| | |
|----------------|---|
| Command | wheel_cust_trans |
| Group | Wheel Editor |
| Descr. | Translates a customer wheel, using the Genesis wheel templates library. |

| Parameter | Value |
|-------------------|--|
| wheel_path | Existing customer wheel path |
| mode | Automatic - the system tries to match the best Template - wheel template is specified |
| template | Existing template name - if mode == 'template' |

wheel_page_close

| | |
|----------------|----------------------------------|
| Command | wheel_page_close |
| Group | Wheel Editor |
| Descr. | The command closes a wheel page. |

wheel_set_dcode

| | |
|----------------|------------------------|
| Command | wheel_set_dcode |
| Group | Wheel Editor |
| Descr. | Sets a dcode symbol. |

| Parameter | Value |
|---------------|--|
| dcode | 4 <= dcode |
| symbol | Existing symbol name |
| line | -1 >= line - corresponding customer file line number |

wheel_undo

| | |
|----------------|---|
| Command | wheel_undo |
| Group | Wheel Editor |
| Descr. | The command undo the last change in a wheel, and restores the previous state. |

wheel_units

| | |
|----------------|---|
| Command | wheel_units |
| Group | Wheel Editor |
| Descr. | The command sets the working units (required for the symbol names in all the other line mode commands). |

| | |
|------------------|--------------|
| Parameter | Value |
| units | Inch, mm |

work_layer

| | |
|----------------|-------------------------|
| Command | work_layer |
| Group | Graphic Editor |
| Descr. | Assigns the work layer. |

| | |
|------------------|--------------|
| Parameter | Value |
| name | Entity name |

zoom_area

| | |
|----------------|---------------------------------------|
| Command | zoom_area |
| Group | Graphic Editor |
| Descr. | Zoom the display to a specified area. |

| | |
|------------------|-----------------------------------|
| Parameter | Value |
| x1, y1 | Legal coordinates - first corner |
| x2, y2 | Legal coordinates - second corner |

zoom_area_get

| | |
|--------------------|---|
| Command | zoom_area_get |
| Group | Graphic Editor |
| Description | The command is used to get the current display area zoom coordinates. |
| Response | zoom area: xmin ymin xmax ymax |

zoom_back

| | |
|----------------|-------------------------------------|
| Command | zoom_back |
| Group | Graphic Editor |
| Descr. | Go back to the previous zoom state. |

zoom_factor

| | |
|----------------|--|
| Command | zoom_factor |
| Group | Graphic Editor |
| Descr. | Change the zoom factor (without changing the center screen coordinates). |

| | |
|------------------|----------------------|
| Parameter | Value |
| factor | n:m (0 < n,m < 1000) |

zoom_home

| | |
|----------------|---|
| Command | zoom_home |
| Group | Graphic Editor |
| Descr. | Zoom the display to the step limits (+ margin). |

zoom_in

| | |
|----------------|----------------------|
| Command | zoom_in |
| Group | Graphic Editor |
| Descr. | Zoom the display in. |

zoom_out

| | |
|----------------|-----------------------|
| Command | zoom_out |
| Group | Graphic Editor |
| Descr. | Zoom the display out. |

zoom_pv_close

| | |
|----------------|-----------------------|
| Command | zoom_pv_close |
| Group | Graphic Editor |
| Descr. | Closes a popview (s). |

| | |
|------------------|---|
| Parameter | Value |
| all | Yes - close all popviews No - close only one popview |
| popview | bigger than 0 - popview number as it is returned from zoom_pv_open |

zoom_pv_move

| | |
|----------------|-------------------------|
| Command | zoom_pv_move |
| Group | Graphic Editor |
| Descr. | Move a pop-view window. |

| | |
|---------------------------|---|
| Parameter | Value |
| popview | Bigger than 0 - popview number as it is returned from zoom_pv_open |
| x1, y1, x2, y2 | New window size and position |

zoom_pv_open

| | |
|-----------------|--|
| Command | zoom_pv_open |
| Group | Graphic Editor |
| Descr. | Open a pop-view window. |
| Response | Popview number (can be used by the other popview commands) |

| | |
|---------------------------|--|
| Parameter | Value |
| x1, y1, x2, y2 | Legal coordinates - display coordinates |
| x_win, y_win- | 2000 < coord < 2000 - pop-view coordinates (screen coords) |
| w_win, h_win1 | < size < 2000 - window size (pixels) |

zoom_pv_print

| | |
|----------------|---|
| Command | zoom_pv_print |
| Group | Graphic Editor |
| Descr. | Print a pop-view window (creates a bitmap image). |

| | |
|------------------|---|
| Parameter | Value |
| popview | Bigger than 0 - popview number as it is returned from zoom_pv_open |
| fname | File name - output file name. File will be created in \$GENESIS_DIR/tmp. |

zoom_refresh

| | |
|----------------|------------------------------|
| Command | zoom_refresh |
| Group | Graphic Editor |
| Descr. | Refresh the graphic display. |

zoom_to_cursor

| | |
|----------------|--|
| Command | zoom_to_cursor |
| Group | Graphic Editor |
| Descr. | Controls if zoom uses cursor position or screen center to center zoom display. |

| | |
|-----------------------|--------------|
| Parameter | Value |
| zoom_to_cursor | yes/no |

Appendix A *Common Examples*

The following sample "netlist_page.pre" file demonstrates the use of the configuration parameters **skip_current_command** and **skip_next_pre_hook**.

```
# Filename: netlist_page_open.pre
# Retrieve line mode command parameters
source $1
# Prevent line mode command from running immediately after PAUSE
COM
# Verify that Operator wishes to open the netlist analyser
PAUSE Really open netlist analyser?
# Build parameter string
@ i = 1
set param = ""
while ($i < $#lnPARAM)
    set param = $param,$lnPARAM[$i]=$lnVAL[$i]
    @ i++
end
# Prevent this script from calling itself recursively
COM skip_next_pre_hook
# Really open Netlist analyser
COM netlist_page_open$param
```

Appendix B *Frequently Asked Questions*

To be completed.

Appendix C *Error Messages*

To be completed.

Appendix D *System Administrator Notes*

Appendix E *Graphic Editor Menu Operations by LMC*

Genesis enables you to execute most Graphic Editor operations via the line mode commands **edt_operation** and **edt_lyr_operation**.

LMC edt_operation, name=xxxxxxx

Enables you to execute Graphic Editor menu operations via line mode commands. **edt_operation** gets one parameter - **name**- that represents the specific operation to be executed.

Running this LMC has an effect similar to selecting a command from the Graphic Editor menu: select a menu item, open its GUI (if it has one), and activate the appropriate mouse mode if necessary.

LMC edt_lyr_operation, layer=yyyy, name=xxxxxxx

Enables you to open the Layer List menu (M3 [right-click] on the Layers List). **edt_lyr_operation** has two parameters: - **name**- that represents the specific operation to be executed, and **layer_name**- which specifies the layer on which the operation is to be carried out.

A table listing the names of Graphic Editor menu items and their corresponding line mode command is given below.

Operation names used in edt_operation line mode command

| Graphic Editor Main Menu Item | LMC Operation Name |
|-------------------------------|--------------------|
| File/Save | saveJob |
| File/Script/Run | runScript |
| File/Script/Record | recordScript |
| File/Script/History | scriptHistory |
| File/Script/Binding | bindScript |
| File/Script/Debug | debugScript |
| File/Script/Continue | resumeScript |
| File/Locks/Check Out | checkoutJob |
| File/Locks/Check In | checkinJob |
| File/Locks/Lock Status | jobCheckoutStatus |

| Graphic Editor Main Menu Item | LMC Operation Name |
|--|------------------------------|
| File/Print | drawPrint |
| File/Close | closeEditor |
| Edit/Undo | undo |
| Edit/Delete | deleteSelected |
| Edit/Move/Same layer | moveSameLayerSelected |
| Edit/Move/Other layer | moveOtherLayerSelected |
| Edit/Move/Stretch parallel lines | stretchParallelLinesSelected |
| Edit/Move/Orthogonal stretch | multiStretch |
| Edit/Move/Move triplets (fixed angle) | moveTripFAngleSelected |
| Edit/Move/Move triplets (fixed length) | moveTripFLengthSelected |
| Edit/Move/Move S&R to panel | moveRepeatToPanel |
| Edit/Copy/Same layer | copySameLayerSelected |
| Edit/Copy/Other layer | copyOtherLayerSelected |
| Edit/Copy/Step & Repeat | copyRepeatSelected |
| Edit/Resize/Global | resizeSelected |
| Edit/Resize/Surfaces | resizeSurfaceSelected |
| Edit/Resize/Resize Thermals And Donuts | thermDonResizeSelected |
| Edit/Resize/Contourize & Resize | contourizeResizeSelected |
| Edit/Resize/Polyline | offsetPolyline |
| Edit/Resize/By Factor | resizeFactorSelected |
| Edit/Transform | transformSelected |
| Edit/Connections | connections |
| Edit/Buffer/Cut | featuresBufferCut |
| Edit/Buffer/Copy | featuresBufferCopy |
| Edit/Buffer/Paste | featuresBufferPaste |
| Edit/Buffer/Clear | featuresBufferClear |
| Edit/Buffer/View | featuresBufferView |
| Edit/Buffer/Options | featuresBufferOptions |
| Edit/Reshape/Change Symbol | changeSymSelected |
| Edit/Reshape/Break | breakSelected |

| Graphic Editor Main Menu Item | LMC Operation Name |
|-------------------------------------|---------------------------|
| Edit/Reshape/Break To Islands,Holes | breakIslandsHolesSelected |
| Edit/Reshape/Replace Surface(s) | replaceSurfaceSelected |
| Edit/Reshape/Arc To Lines | arc2linesSelected |
| Edit/Reshape/Curve To Segments | curve2segsSelected |
| Edit/Reshape/Line To Pad | line2padSelected |
| Edit/Reshape/Contour To Pad | cont2padSelected |
| Edit/Reshape/Pad To Line | pad2lineSelected |
| Edit/Reshape/Pad To Outline | pad2outlineSelected |
| Edit/Reshape/Contourize | contourizeSelected |
| Edit/Reshape/Drawn to Surface | drawnToSurface |
| Edit/Reshape/Clean Holes | cleanHolesSelected |
| Edit/Reshape/Clean Surfaces | cleanSurfacesSelected |
| Edit/Reshape/Fill | fillSelected |
| Edit/Reshape/Decompose | decomposeSelected |
| Edit/Reshape/Design to Rout | design2routSelected |
| Edit/Reshape/Substitute | substitute |
| Edit/Reshape/Cutting Data | cutDataSelected |
| Edit/Reshape/Surface to Outline | surface2outlineSelected |
| Edit/Reshape/Change Arc Direction | chnngArcDirSelected |
| Edit/Polarity/Positive | polarityPositiveSelected |
| Edit/Polarity/Negative | polarityNegativeSelected |
| Edit/Polarity/Invert | invertSelected |
| Edit/Create/Step | createStpFromSelect |
| Edit/Create/Symbol | createSymbolSelected |
| Edit/Create/Profile | createProfileSelected |
| Edit/Change/Change Text | changeTextSelected |
| Edit/Change/Change Arc | changeArcRadius |
| Edit/Change/Pads To Slots | pads2slotsSelected |
| Edit/Change/Flash Editor | flashEditor |
| Edit/Change/Add Tapering | addTapering |

| Graphic Editor Main Menu Item | LMC Operation Name |
|--|----------------------|
| Edit/Change/Add Teardrop | addTeardrop |
| Edit/Change/Space Tracks Evenly | spaceTracksEvenly |
| Edit/Attributes/Change | atrChange |
| Edit/Attributes/Delete | atrDelete |
| Rout/Rout Dimensions | dimensions |
| Rout/Connections | connections |
| Rout/Chains | routsequence |
| Actions/Checklists/New | newChecklist |
| Actions/Checklists/Open | openChecklist |
| Actions/Checklists/Rename | renameChecklist |
| Actions/Checklists/Delete | deleteChecklist |
| Actions/Checklists/Copy From Library | copyChecklistFromLib |
| Actions/Checklists/Copy To Library | copyChecklistToLib |
| Actions/ERF Editor | editERF |
| Actions/Re-read ERFs | rereadERF |
| Actions/Netlist Analyzer | netlistAnalyze |
| Actions/Netlist Optimization | netlistOptimize |
| Actions/Output | outputOperations |
| Actions/Clear Select & Highlight | clearSelection |
| Actions/Reverse Selection | reverseSelection |
| Actions/Reference Selection | selByRef |
| Actions/Select Drawn | selectDrawn |
| Actions/Convert Netlist to Layers | netlist2layer |
| Actions/Extract Embedded CAD Netlist | extractCadNetlist |
| Actions/Notes | showNotes |
| Actions/ODB++ Message | odbMessage |
| Actions/Graphic Snapshot | printGraphics |
| Actions/Contour Operations/Move hole | moveHoleSelected |
| Actions/Contour Operations/Resize hole | resizeIslandHole |
| Actions/JTAG Operations/Actions | jtagActions |

| Graphic Editor Main Menu Item | LMC Operation Name |
|--|------------------------|
| Actions/JTAG Operations/Copy S&R | jtagCopyRepeatSelected |
| Actions/ Step Compare | stepsCompare |
| Actions/ Multi Layer Copy | multiLayerCopy |
| Actions/Quote Summary | quoteSummary |
| Options/Selection | selOptions |
| Options/Attributes | fttrAtr |
| Options/Graphic control | dispOptions |
| Options/Snap | gridOptions |
| Options/Measure | measure |
| Options/Fill parameters | patternFill |
| Options/Line parameters | lineParams |
| Options/Colors | colorsSettings |
| Options/Components | componentParams |
| Step/Attributes | propertiesStp |
| Step/Profile/Rectangle | createProfileRect |
| Step/Profile/Polygon | createProfilePoly |
| Step/Profile/Step limits | createProfileStpLimits |
| Step/Profile/Create Rout | profile2routSelected |
| Step/Datum Point | datumPoint |
| Step/Sub-Panel Optimization | subPnlOptimization |
| Step/Panelization/Panel size | panelPropSize |
| Step/Panelization/Active area | panelPropBorders |
| Step/Panelization/Step & Repeat/Automatic | autoPartPlace |
| Step/Panelization/Step & Repeat/Table | srTable |
| Step/Panelization/S&R Edit | srEdit |
| Step/Panelization/Coupons frame | stpCouponsFrame |
| Step/Panelization/Drill-Rout verification/Edit | stpVerifyEdit |
| Step/Panelization/Drill-Rout verification/Update Drill | stpVerifyUpdateDrill |
| Step/Panelization/Drill-Rout verification/Update Rout | stpVerifyUpdateRout |
| Step/Panelization/Drill-Rout verification/Update All | stpVerifyUpdateAll |

| Graphic Editor Main Menu Item | LMC Operation Name |
|-------------------------------------|--------------------|
| Step/Panelization/Pattern fill | patternFill |
| Step/Panelization/Tools frame | stpToolsFrame |
| Step/Panelization/ Scaling per step | stpPcbScale |
| Step/Pcb Numbering | pcbNumbering |
| Step/Film Optimization | filmOpt |
| Help/Library of Books | books |
| Help/Table of Contents | help |
| Help/Master Index | index |

Operation names used in `edt_layer_operation` LMC

| Graphic Editor (M3) Layer Menu Item | Operation Name |
|-------------------------------------|----------------|
| Features histogram | featureHist |
| Features histogram (+S&R) | featureHistSR |
| Slots histogram | slotsHist |
| Copy | copyLyr |
| Multi Layer Copy | multiLayerCopy |
| Merge | mergeLyr |
| Unmerge | splitLyr |
| Optimize levels | optimizeLyr |
| Fill profile | fillProfile |
| Register | registerLyr |
| Matrix/Create layer | addRow |
| Matrix/Rename layer | renameLyr |
| Matrix/Delete layer | deleteRow |
| Matrix/Create area layer | createAreaLyr |
| Attributes | properties |
| Notes | showNotes |
| Clip area | clipArea |
| Drill tools manager | showToolsMngr |

| Graphic Editor (M3) Layer Menu Item | Operation Name |
|--|-----------------------|
| Drill filter | drlFilter |
| Hole sizes | showHoleSizes |
| Create drill map | createDrillMap |
| Update verification coupons | updateVerCoupons |
| Re-read | rereadLyr |
| Truncate | clearLyr |
| Flatten | flattenLyr |
| Compare | lyrCompare |
| Text reference | textReference |
| Image Production Params | lyrLPD |
| Compensate | compensateLyr |
| Create Document | createDocument |
| Films content | filmsContent |
| Create shapelist | createShapelist |
| Delete shapelist | deleteShapelist |
| Components histogram | componentsHist |
| Height Map | heightMap |
| Weight-Density | densityMap |
| Delete Components | deleteComponents |