Command	Category	Title	Description	Response
IN	Home	Go to the home in pos.	This command can only be used if the last action was "OUT", it will move the axis to the position it was before the "OUT" command was issued less the was set by "OFFSET"	A
INSET	Home	Home In Set	This set the fixed home in position. If no fixed home in is set the position when you home out is used.	A
OFFSET	Home	Set Home in offset	This sets the home in Offset for use by the "IN" command.	A when setting else x, y, z values for offset
OUT	Home	Move to Home Out	This will move to the home out position, which must have been set by "SET"	A
SET	Home	Set Home Out position.	This sets the position the manipulator will go to when "OUT" is sent to the current position.	A if move allowed else E
SETSTEP	Home	Set Step Size	This sets the step which the Step button will do after a home in.	A when setting else x, y, z values for step
HIGHL	Limits	Set High Limit	Used to set the High limit point on the linear sensor, or report back what the value is.	A if setting or the value.
LIMITS	Limits	Limits	This reports the status of the limit switches in hexadecimal notation. The order is as below. Z+Z-Y+Y-X+X- so 1 would mean the X- limit are hit.	As described
LOWL	Limits	Set Low Limit	Used to set the Low limit point on the linear sensor, or report back what the value is.	A if setting or the value.
MODE	Limits	Set Mode	Sets the Mode for limit switch operation. 0 is the default mode used if the driven device has limit switches. 1 is used if the device has linear sensors. 2 is for limit switch ring main. With no arguments the value is returned.	A when setting else the value for step
?	Misc	Query Mode	Used to report the values on the linear motion sensors	X, y, z, a
ANGLE	Misc	Approach Angle	This sets the approach angle for the manipulators x, and z-axis. The approach is enabled after an angle is sent.	The angle of the rotary sensor in degrees
APROACH	Misc	Enable approach	This enables or disables the approach, an argument of 1 enables, while 0 disables.	A when setting else 1 when approach enabled, or 0 when disabled.
CLEAR	Misc	Clear Point	This will clear the list of stored points.	Returns A if talking directly to the card, NO RETURN if through a control board.

Command	Category	Title	Description	Response
DATE	Misc	Make Date and version	This reports the Firmware Version, compile date and compile time.	Version 2.11 tab Date DATE tab Time TIME
DEAD	Misc	Set Dead-Band	This changes the central dead band on a joystick; it is largely redundant as most control is via cubes.	A when setting else dead-band.
ID	Misc	Report ID	Reports the card ID number which is determined by the slot in the rack or the Rotary switch on the rack.	Id number
PROG	Misc	Enter Program mode	This puts the unit into programming mode, ready for Firmware updates.	PROGRAM MODE
REGOTO	Misc	Re-map the GOTO button	As RESAVE but for the go to button.	A
RESAVE	Misc	Re-map the SAVE button	This command is used to change the function when the save command is sent from the joystick or control software. It may be followed by any of the commands and that command will replace the existing function.	A
RESET	Misc	Restart with defaults.	This restores default values for speed, current, and position and restarts the controller.	No Response
S	Misc	Report Status	This reports the status of the axis so host software can tell if anything is moving.	0 when Motors Idle 1-5 when in point to point move 6 for joystick moves 7 for ant velocity moves
SAVE	Misc	Save Point	Saves the current point on the motion card.	A
SERIAL	Misc	Serial Number	Reports the card serial number.	serial
TTL	Misc	Set TTL	Sets the TTL output flag for end of moves.	A when setting else the value for step
VER	Misc	Report Version	Reports the Firmware software version number of the card.	Version
ZONLY	Misc	Set Z Only	Sets a flag to say that only Z points are stored for saved points on the card.	A when setting else the value for step
ZSCALE	Misc	UMS Z Scale	Stores a value to scale the Z Speed for UMS. The allowable range is 1 to 10.	A when setting else the value for step
ABS	Move	Move Absolute	This moves to a new Absolute position for the three axes. Tabs, commas or spaces separate the arguments. “ABS X Y Z” where X, Y, and Z are positions.	A if move allowed else no response

Command	Category	Title	Description	Response
GOTO	Move	Go to saved point	This will move the manipulator to the next saved point.	Returns A if talking directly to the card, NO RETURN if through a control board.
JI, x, y, z	Move	Joy Input	This starts the manipulator moving at the velocity specified for each axis. The velocity is scaled by the Joystick deflection transformation, so the input number range should be -100 to +100 for each axis.	A if move allowed else E
JI, x, y, z, s	Move	Joy Input	As above by the fourth argument specifies if the speed should be scaled by Joy_Slow_Speed or Joy_Speed. See JSSPEED and JSPEED	A if move allowed else E
REL	Move	Move Relative	This moves to a new Relative position for the three axes i.e. it moves to the current position plus the values entered. . Tabs, commas or spaces separate the arguments. "REL X Y Z" where X, Y, and Z are positions.	A if move allowed else no response
STEP	Move	Step	Makes the motion card step the device by the distance set by SETSTEP.	A
STOP	Move	Move Stop	Stops the current motion.	A
VJ, x, y, z	Move	Virtual Joy	This starts the manipulator moving at the velocity specified for each axis.	A if move allowed else E
VJ, x, y, z, s	Move	Virtual Joy	As above by the fourth argument specifies if the speed should be scaled by Joy_Slow_Speed, Joy_Speed, or Creep. See JSSPEED and JSPEED. Creep allows for even slower speed than normal	A if move allowed else E
P	Pos	Report Pos	As Above	x, y, z
POS	Pos	Report Pos	This reports the position for all three Axis separated by tabs. It can also be used to enter new positions.	x, y, z
PX	Pos	Report Pos X	This reports the position for the X Axis. It can also be used to enter a new position.	X
PY	Pos	Report Pos Y	This reports the position for the Y Axis. It can also be used to enter a new position.	Y
PZ	Pos	Report Pos Z	This reports the position for the Z Axis. It can also be used to enter a new position.	Z
ZERO	Pos	Zero Pos	This sets the current position to 0,0,0.	A (this only works when stationary)

Command	Category	Title	Description	Response
BAUD	Release 2.24	Baud Rate	Will allow the user to change the baud rate to either 9600 or 38400. Use BAUD rate, where rate is 96 or 38	A
DESC	Release 2.24	Description	This will store a description field on the card; It will be used in LinLab to give more meaningful descriptions on the tabs.	If a string is entered after DESC an A is returned, else the stored description is returned.
CURRENT	Setting	Current	This sets the current for the controller in motion and at standby. "CURRENT Motion Standby" the values are in the range 1-255	A when setting else motion current space Standby Current
TYPE	Setting	Stage Type	This sets or reports the stage type. LINEAR = 1 UMS = 2 MMTP = 3 SLICEMASTER = 4 PATCHSTAR = 5 MMSP = 6 MMSP_Z = 7 PATCHSTAR_2 = 1.08 UMS_2 = 1.09 IMTP = 1.1 '1.10 SLICE_SCOPE = 1.11 CONDENSER = 1.12 MMBP = 1.13 IVM Manipulator = 1.14	A when setting else the value for step
ACC	Speed	Move Acceleration	This read/sets the acceleration for the manipulator.	A when setting else acceleration
FIRST	Speed	Move Start Speed	This sets the speed that the motion will start at.	A when setting else Start Speed
JACC	Speed	Joy Acceleration	This is the acceleration used for all fixed velocity moves. It will include Joy stick, Rotary device moves.	A when setting else the value for step
JS	Speed	Joystick speed	This adjusts the speed the Rotary Knob move the manipulator. If no argument is sent the current setting is returned.	A when setting else scaling number
JSPEED	Speed	Set Joy Speed	This sets the joy stick speed scaling for when the fast button is pressed or turned on. With no argument the value is returned.	A when setting else the value for step

Command	Category	Title	Description	Response
JSSPEED	Speed	Set Joy Slow Speed	This sets the joy stick slow speed scaling for when the fast button is pressed or turned on. With no argument the value is returned.	A when setting else the value for step
TOP	Speed	Move Top Speed	This reads/sets the top speed of the manipulator.	A when setting else top speed
JDX	Units	Reverse Joystick X Dir	This reverses the direction the joystick makes the axis go.	A
JDX n	Units	Set Reverse Flag for Joystick X Dir	A 1 will make the axes reverse direction a 0 will be the default direction. A '?' will report the status of the flag	A for 1 or 0 Flag state for '?'
JDY	Units	Reverse Joystick Y Dir	This reverses the direction the joystick makes the axis go.	A
JDY n	Units	Set Reverse Flag for Joystick Y Dir	A 1 will make the axes reverse direction a 0 will be the default direction. A '?' will report the status of the flag	A for 1 or 0 Flag state for '?'
JDZ	Units	Reverse Joystick Z Dir	This reverses the direction the joystick makes the axis go.	A
JDZ n	Units	Set Reverse Flag for Joystick Z Dir	A 1 will make the axes reverse direction a 0 will be the default direction. A '?' will report the status of the flag	A for 1 or 0 Flag state for '?'
UUX	Units	Move Set User Units X	This sets a multiplier, which will make the controller, move effectively larger steps for each step requested. The reported positions are also scaled accordingly. The command can also be used to reverse the direction of travel for software moves.	A when setting else User Units value to 2 decimal places.
UUY	Units	Move Set User Units Y	As Above	A when setting else User Units value to 2 decimal places.
UUZ	Units	Move Set User Units Z	As Above	A when setting else User Units value to 2 decimal places.