SIRIUS2

PROTOCOL for REMOTE COMMUNICATION

Revision History

> *2023.10.18 Initial version (v.1.5.830)*
>
> *2023.10.19 added) layer, select, deselect (v.1.6.840)*

1. Communication Methods: TCP/IP Server or SERIAL(RS-232)

- For TCP/IP
  - Server Port: 5001
- For Serial (RS-232)
  - COM Port: 1
  - Baud-rate: 57600 bps
  - Data bit: 8
  - Stop bit: 1
  - Parity: None
- Communication format are based on ASCII character
- Default separator: ','
- Default terminator: ';'
- Configurable setting at config.ini file

  [REMOTE0]

  ; 1= ENABLE, 0= DISABLE

  ENABLE=1

  ; TCP, SERIAL

  PROTOCOL=TCP

  ; TCP config

  TCP_PORT=5001

  ; SERIAL config

  SERIAL_PORT=2

  SERIAL_BAUDRATE=57600

2. List of commands

- Recipe: Query and change recipe file
- Offset: Update list of offsets (dx, dy, dz, angle z, …)
- Control: Control commands
- Status: Query status

- Entity: Query and update entity's property value

- Pen: Query and update pen's property value

- Layer: Query and update layer's property value

- Select or Deselect: Query and select/deselect entities

- FieldCorrection: Popup scanner field correction 2D winforms

3. Recipe
- Command: Recipe, Filename; (absolute path)
- Example: Recipe,C:\sirius2\bin\recipe\test.sirius2;
- Response: OK; or NG;

- Command: Recipe, Filename; (\recipe\ path)
- Example: Recipe,test.sirius2; (searching for \recipe)
- Response: OK; or NG;

- Query: Recipe;
- Response: OK;Recipe,C:\sirius2\bin\recipe\test.sirius2;

4. Offset
- Command: Offset,Count,x_1,y_1,z_1,$angle_1$, … , x_n,y_n,z_n,$angle_n$;
- Example: Offset,1,-5,1,0,2;
- Example: Offset,2,-5,0,0,0, 5,0,0,0;
- Response: OK; or NG;
- (Ref1) Transformation orders are rotate z and translate dx,dy,dz

5. Control
- Command: Control,Start (|Stop|Reset);
- Example: Control,Start;
- Example: Control,Stop;
- Example: Control,Reset;

- Response: OK; or NG;

6. Status
- Query: Status;
- Response: Status,Error; (|Status,Busy;|Status,Ready;|Status,NotReady;)

7. Entity
- Query lists of entity properties
- Format: Entity, Name, Properties;
- Example: Entity,Rectangle1,Properties;
- Response:
  OK;
  Width,10;
  Height,5;
  IsClosed,True;
  IsHatchable,False;
  HatchMode,Line;
  HatchJoint,Square;
  IsHatchZigZag,False;
  HatchAngle,90;
  HatchAngle2,0;
  HatchInterval,0.2;
  HatchExclude,0.05;
  HatchShift,0;
  HatchRepeat,1;
  IsHatchIncludeOutline,True;
  IsHatchOutlineFirst,False;
  Id,1260;
  TypeName,EntityRectangle;
  Color,Color [White];
  Name,Rectangle;
  IsRenderable,True;
  IsMarkerable,True;
  IsHitTestable,True;
  IsSelected,True;
  ChildCount,0;
  Alignment,None;
  ModelAlign,(0, 0, 0);
  ModelTranslate,(10, -10, 0);
  ModelScale,1;
  ModelRotate,(0, 0, 0);
  Repeats,1;
  In,(5, -7.5, 0);
  Out,(5, -7.5, 0);
  BBox,10.000, 5.000, 0.000;
  ModelMatrix,(1, 0, 0, 0)

```
(0, 1, 0, 0)
(0, 0, 1, 0)
(10, -10, 0, 1);
```

- Query property value of entity
- Format: Entity, Name, Property;
- Example: Entity,Rectangle1,Color;
- Response: OK;Entity,Rectangle1,Color,White;

- Example: Entity,Rectangle1,Width;
- Response: OK;Entity,Rectangle1,Width,10;

- Example: Entity,Rectangle1,ModelTranslate;
- Response: OK;Entity,Rectangle1,ModelTranslate,10,-10,0;

- Command to set property value of entity
- Format: Entity, Name, Property, Value;
- Example: Entity,Rectangle1,Color,Yellow;
- Response: OK; or NG;

- Example: Entity,Rectangle1,Width,11;
- Response: OK; or NG;

- Example: Entity,Rectangle1,ModelTranslate,0,0,0;
- Response: OK; or NG;

8. Pen

- Query lists of pen properties
- Format: Pen, Name, Properties;
- Example: Pen,White,Properties;
- Response:
  OK;
  Power,1;
  PowerMax,10;
  PowerPercentage,10;
  Frequency,50000;
  PulseWidth,2;
  PulsePeriod,20;
  PulsePitch,2;
  PulseDutyCycle,10.000 %;
  JumpSpeed,100;
  MarkSpeed,100;
  MinMarkSpeed,0;
  ApproxBlendLimit,0;
  Color,Color [White];
  LaserFpk,0;
  LaserQSwitchDelay,0;

```
        LaserOnDelay,10;
        LaserOffDelay,50;
        ScannerJumpDelay,250;
        ScannerMarkDelay,150;
        ScannerPolygonDelay,0;
        IsScannerVariablePolygonDelay,False;
        ScannerVariablePolygonDelayEdgeLevel,0;
        IsScannerVariableJumpDelay,False;
        ScannerVariableJumpDelayMin,50;
        ScannerVariableJumpLength,1;
        IsSkyWritingEnabled,False;
        SkyWritingMode,Mode3;
        LaserOnShift,10;
        TimeLag,150;
        Prev,0;
        Post,0;
        AngularLimit,89;
        IsWobbelEnabled,False;
        WobbelPerpendicular,0;
        WobbelParallel,0;
        WobbelFrequency,0;
        WobbelShape,Ellipse;
        Id,1;
        TypeName,EntityPen;
        Name,White;
        Description,Color [White];
        ChildCount,0;
```

- Query property value of pen
- Format: Pen, Name, Property;
- Example: Pen,White,MarkSpeed;
- Response: OK;Pen,White,MarkSpeed,100;

- Query: Pen,White,Frequency;
- Response: OK;Pen,White,Frequency,50000;

- Command to set property value of pen
- Format: Pen, Name, Property, Value;
- Example: Pen,White,MarkSpeed,1000;
- Response: OK; or NG;

- Command: Pen,White,Frequency,100000;
- Response: OK; or NG;

9. Layer

- Query lists of layer properties
- Format: Layer, Name, Properties;
- Example: Layer,0,Properties;
- Response:
  OK; MotionType,StageAndScanner;

```
BandWidth,2;
IsALC,False;
AlcSignal,Disabled;
AlcMode,Disabled;
AlcPercentage100,0;
AlcMinValue,0;
AlcMaxValue,0;
AlcByPositionTable,System.Collections.Generic.KeyValuePair`2[System.Do
uble,System.Double][];
Id,11;
TypeName,EntityLayer;
Name,0;
IsRenderable,True;
IsMarkerable,True;
IsSelected,True;
ChildCount,0;
Repeats,1;
In,(0, 0, 0);
Out,(0, 0, 0);
```

- Query property value of layer
- Format: Layer, 0, Property;
- Example: Layer,0,Name;
- Response: OK;Layer,0,Name,0;

10. Select or Deselect

- Query lists of selected entities
- Example: Select;
- Response:OK;Select,1,Arc1; (if 1 entity has select)
- Response:OK;Select,0; (if nothing has selected)
-

- Format: Select,Count,Name1,Name2,…;
- Example: Select,1,Arc1;
- Response: OK; or NG;

- Example: Select,2,Arc1,Arc2;
- Response: OK; or NG;

11. Field Correction 2D

- Command: FieldCorrection, Rows, Cols, Interval, ErrX1,ErrY1, ErrX2,ErrY2, …, , ErrXn,ErrYn;
- Example: FieldCorrection,3,3,10,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0;
- Response: OK; or NG;
- (Ref1) Row and Col are odd numbers only (3,5,7,9, …)
- (Ref2) ErrX, ErrY values are order from left top to right bottom

10. Example

- Command: Recipe,test.sirius2;
- Response: OK;
- Command: Entity,QRCode1,SourceText,HELLO WORLD;
- Response: OK;
- Query: Status;
- Response: Status,Ready;
- Command: Control,Start;
- Response:OK;
- Query: Status;
- Response: Status,Busy;
  …
- Response: Status,End; (by automatically)
- Query: Status;
- Response: Status,Ready;
- Command: Offset,2, -5,0,0,0, 5,0,0,0;
- Response: OK;
- Command: Control,Start;
- Response: OK;
- Response: Status,End; (by automatically)