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)

2023.11.23 fixed) rename name as control to marker (v.1.11.920)

2023.12.11 removed) Status,End (v.1.13.965)

2024.03.15 Draft version (v.1.21.1120)

2024.03.21 added) script (v.1.22.1140)

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

- For TCP/IP
    - Server Port: 50001

- 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
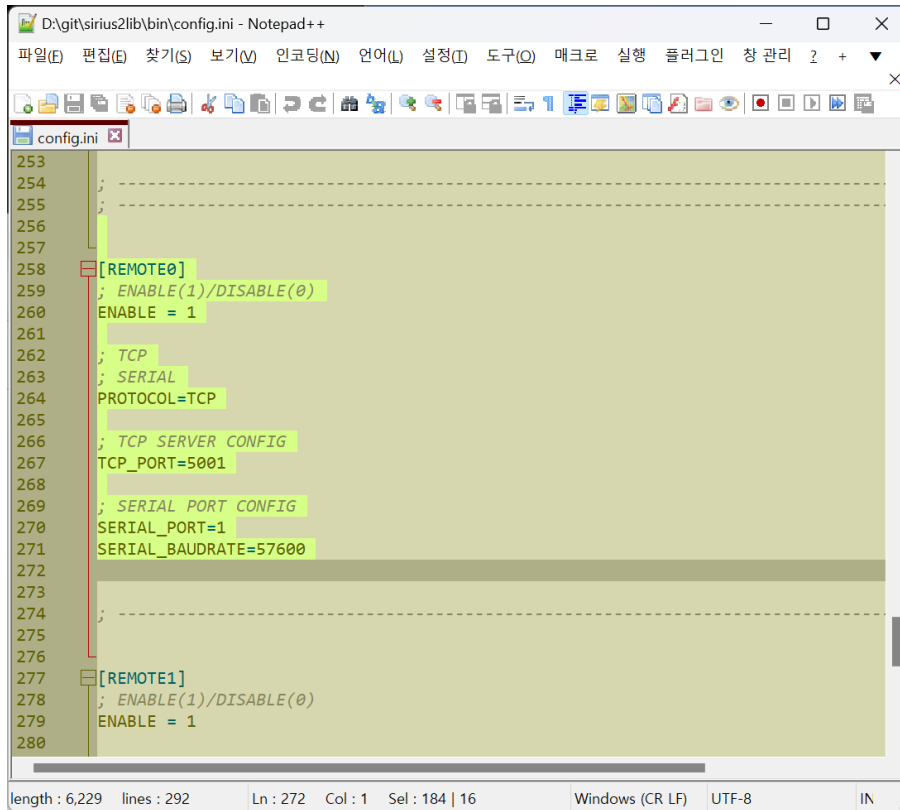
    ENABLE=1

    ; 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 marker offsets (dx,dy,dz,angle z, …)

- Marker: Marker commands

- Status: Marker 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

- Script: Query and update script's property value

- Select or Deselect: Query and select/deselect entities

- FieldCorrection: Popup scanner field correction 2D winforms
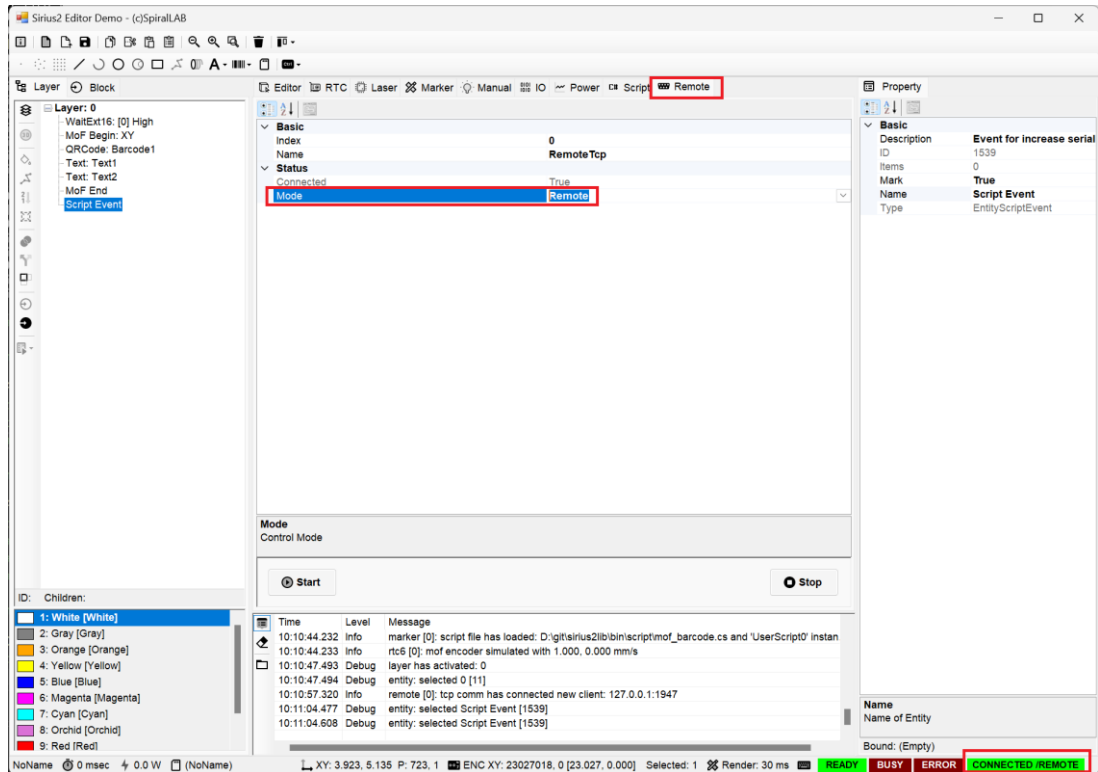
(Warning) User must switch mode as 'remote' to control by remotely

3. Recipe

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

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

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

4. Marker offsets

- 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. Marker command
- Command: Marker,Start (|Stop|Reset);
- Example: Marker,Start;
- Example: Marker,Stop;
- Example: Marker,Reset;
- Response: OK; or NG;

6. Marker status
- Query: Status;
- Response: Status,Error; (|Status,Busy;|Status,Ready;|Status,NotReady;)
- Auto Response: Status,Started; (|Status,Ended;)

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.Double,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. Script

- Query lists of script properties
- Format: Script, Properties;
- Example: Script,Properties;
- Response:
  OK;StartSerialNo,1;MaxSerialNo,10;SerialNo,1;Name,mof_barcode.cs;Description,incremented serial no;

- Query property value of script
- Format: Script, Name;
- Example: Script,StartSerialNo;
- Response: OK;Script,StartSerialNo,1;

- Command to set property value of entity
- Format: Script, Name, Value;
- Example: Script,StartSerialNo,100;
- Response: OK; or NG;

11. 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;

12. Field Correction 2D

- Command: FieldCorrection, Rows, Cols, Interval, ErrX1,ErrY1, ErrX2,ErrY2, …, , ErrXn,ErrYn;
- Example: FieldCorrection,3,3,10,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0;
- 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

13. Example

- Command: Recipe,test.sirius2;
- Response: OK;
- Command: Entity,QRCode1,SourceText,HELLO WORLD;
- Response: OK;
- Query: Status;
- Response: Status,Ready;
- Command: Marker,Start;
- Response: OK;
- Auto Response: Marker,Started;
- Query: Status;
- Response: Status,Busy;
  …
- Auto Response: Status,Ended;
- Query: Status;
- Response: Status,Ready;
- Command: Offset,2, -5,0,0,0, 5,0,0,0;
- Response: OK;
- Command: Marker,Start;
- Response: OK;
- Auto Response: Marker,Started;
- …
- Auto Response: Status,Ended;