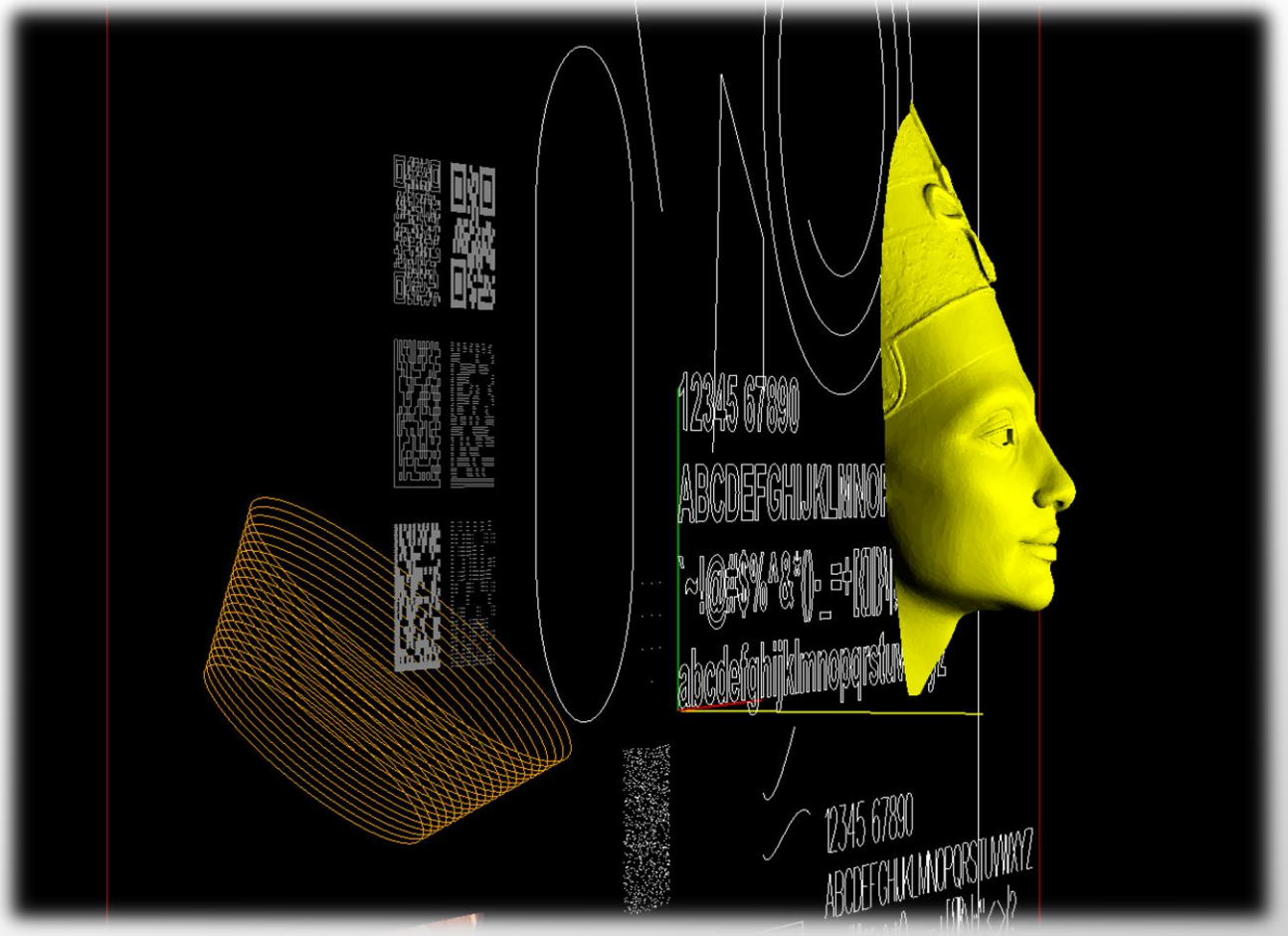

SIRIUS2

v.1.42

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hcchoi@spirallab.co.kr

http://spirallab.co.kr

What’s Advantages ?

- Support SCANLAB RTC4,5,6 and XL-SCAN(by syncAXIS) with multiple instances
- Support Powerful 3D render engine by OpenGL
- Support 2D, 3D scanner field correction
- Support unlimited vector data by automatically
- Support powerful options like as MoF, 2nd head, 3D, Ramp, sky writing, …
- Support measurement scanner trajectory and plot to graph
- Support many kinds of laser sources to control
- Support many kinds of powermeters
- Support various visible and control entities
- Support remote control by communication
- Support powerful C# script engine
- Easy to integrate own laser application
- Multiple demo projects for easy to use

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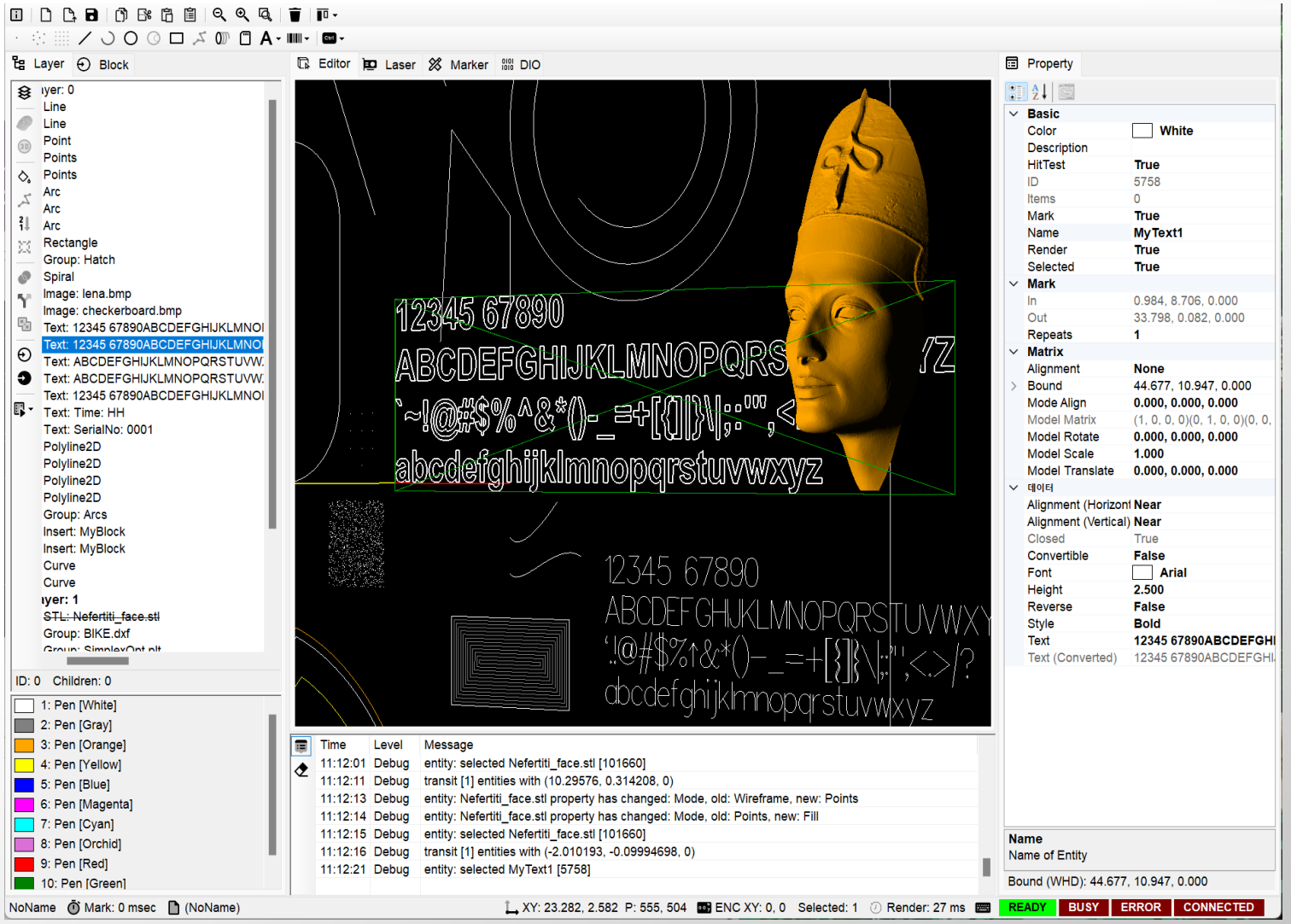
Built in 3D Editor

SiriusEditorControl



- Powerful 3D render engine by OpenGL
- Perspective view with free camera
- Show list of entities at Treeview
- Configurable pen parameters
- Editable entity properties
- Integrated RTC and laser control
- Customizable marker control
- Output log message
- UserControl and open-sourced

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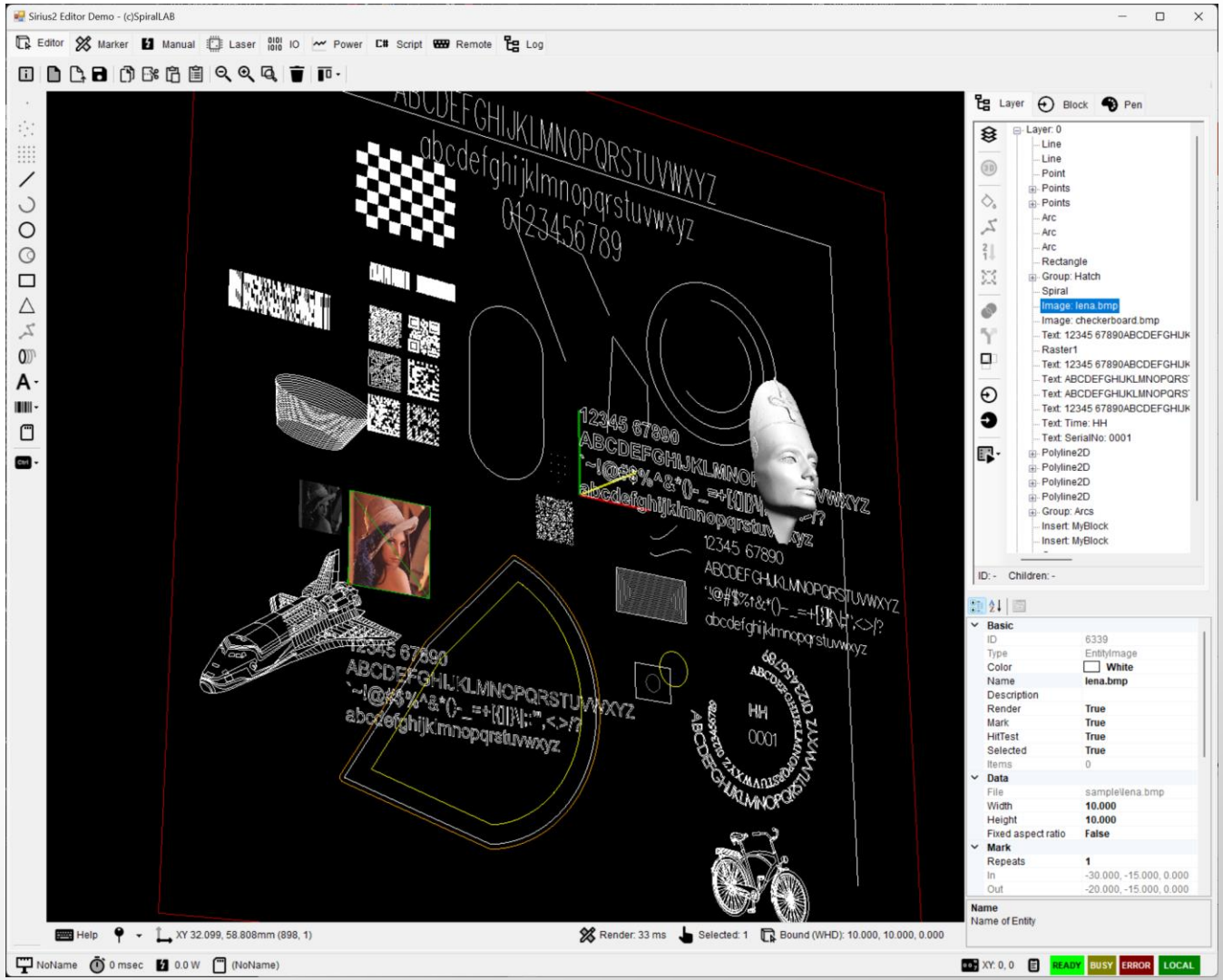
Built in 3D Editor

SiriusEditorControlV2



- UserControl (2nd version)
- More space for editor region
- Open-sourced

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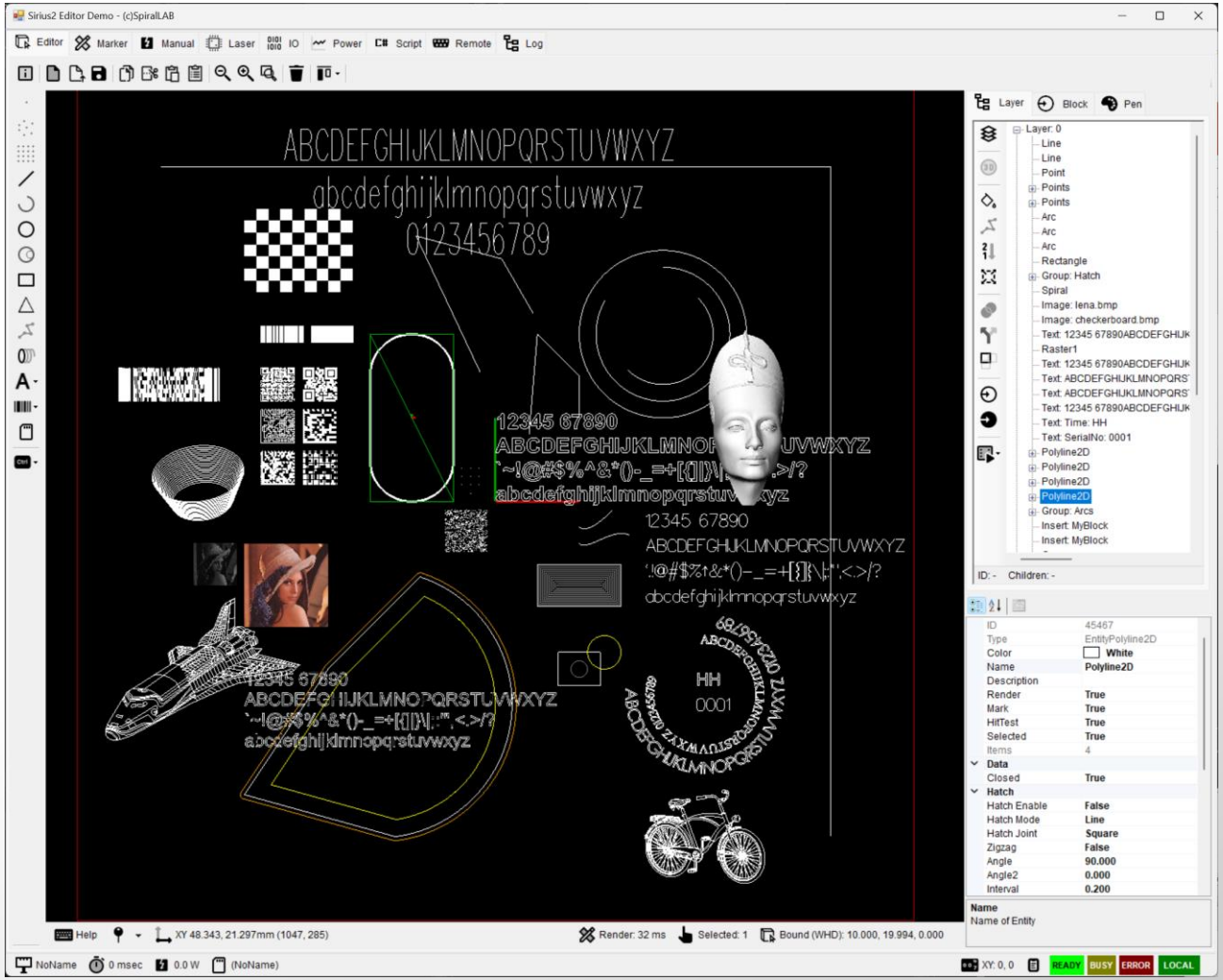
Supported Entities



- Point(s), Line, Arc, Polyline, Triangle, Rectangle, Spiral, Trepan, Curve, Raster
- Layer, Group, Block and Block insert
- Text, SiriusText, ImageText, Circular text
- HPGL, Image, Stitched image, DXF, PDF, ZPL(zebra programming language)
- Barcode, QRCode, DataMatrix, PDF417
- Plane, Cone(or cylinder), STL(Stereo lithography), Point cloud for 3D
- And various control entities

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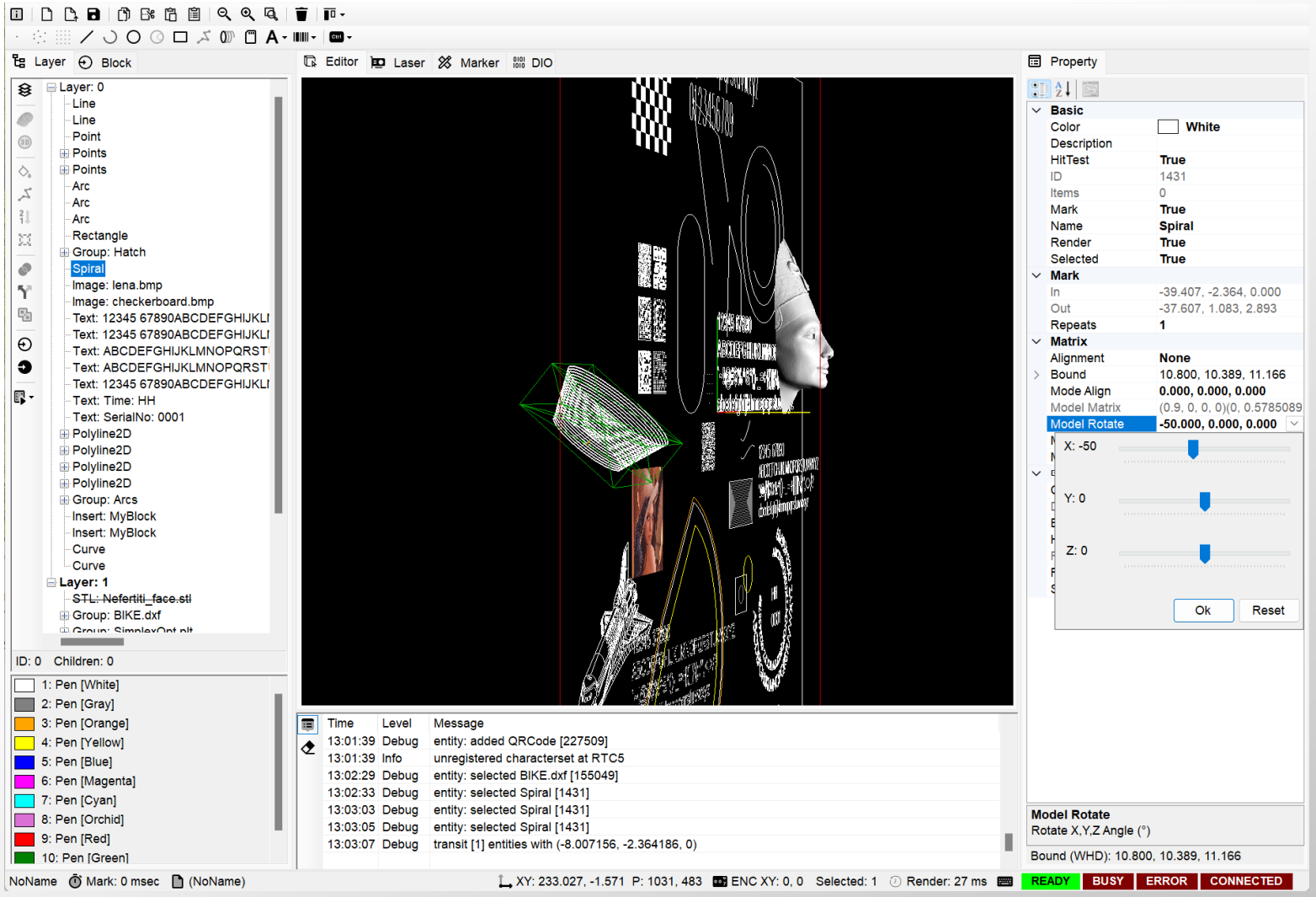
Supported 4x4 Model Matrix



- All entities can be manipulated(transit, rotate, scale) by x,y and z axes
- Free movable camera (or rotate by yaw, pitch)
- Entity's model matrix =
  Align matrix *
  Scale matrix *
  Rotate matrix *
  Translate matrix
- Final output (xyz) =
  Commanded (xyz) *
  Entity model matrix *
  RTC matrix stack

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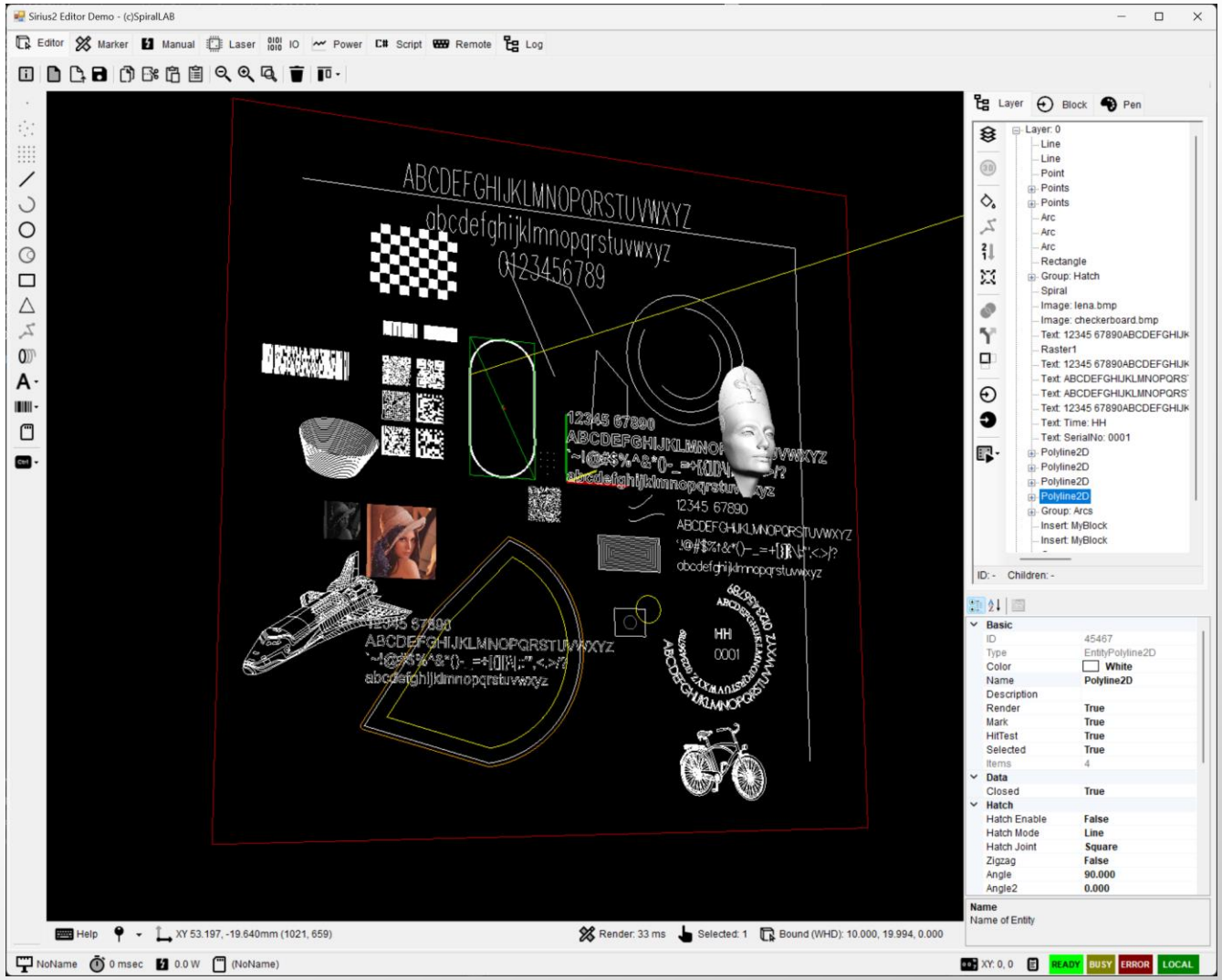
Simulation Mark



- Preview order of laser process by jump and mark
- Easy to analyze path to marks
- Selectable simulation speed by slow, normal and fast
- Also, followable look at camera

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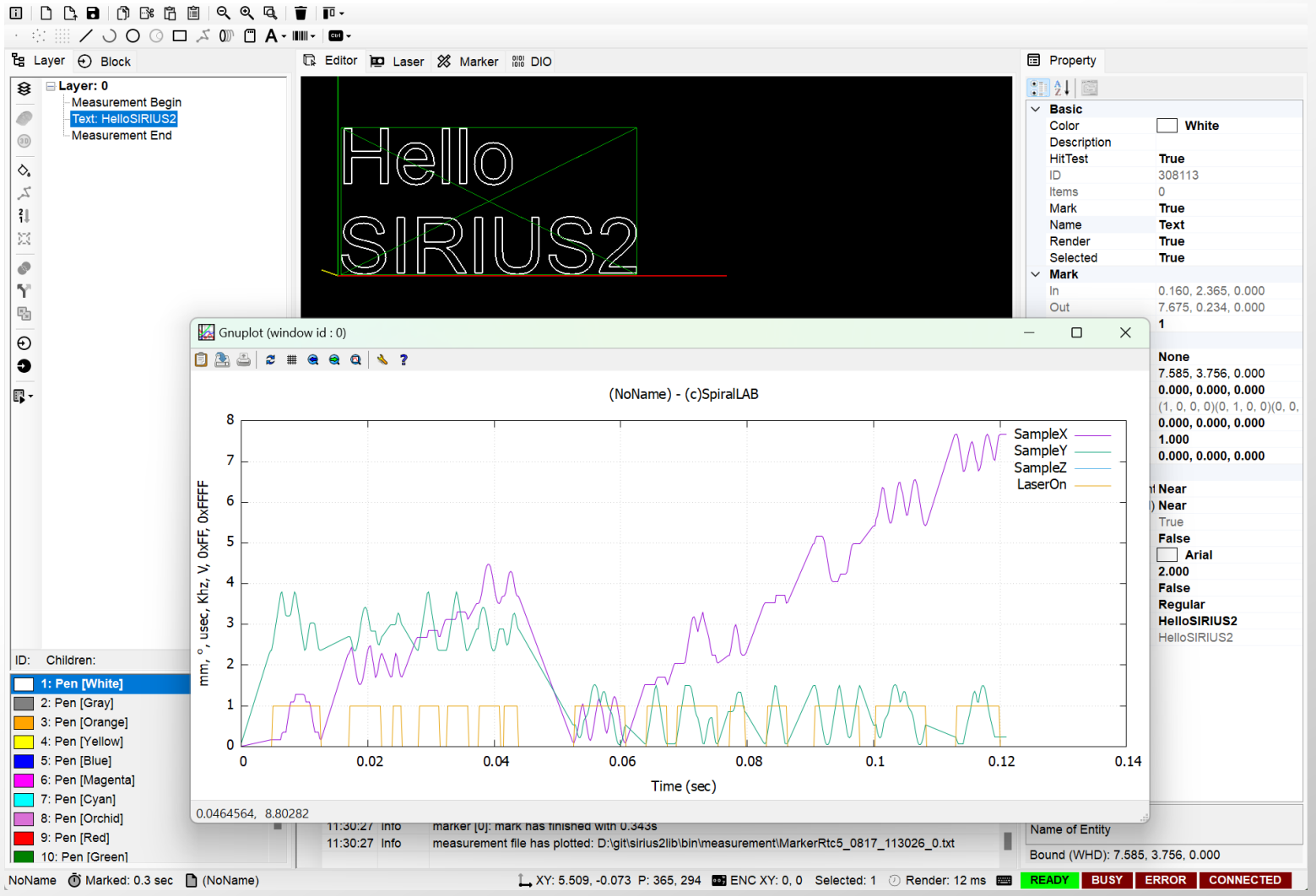
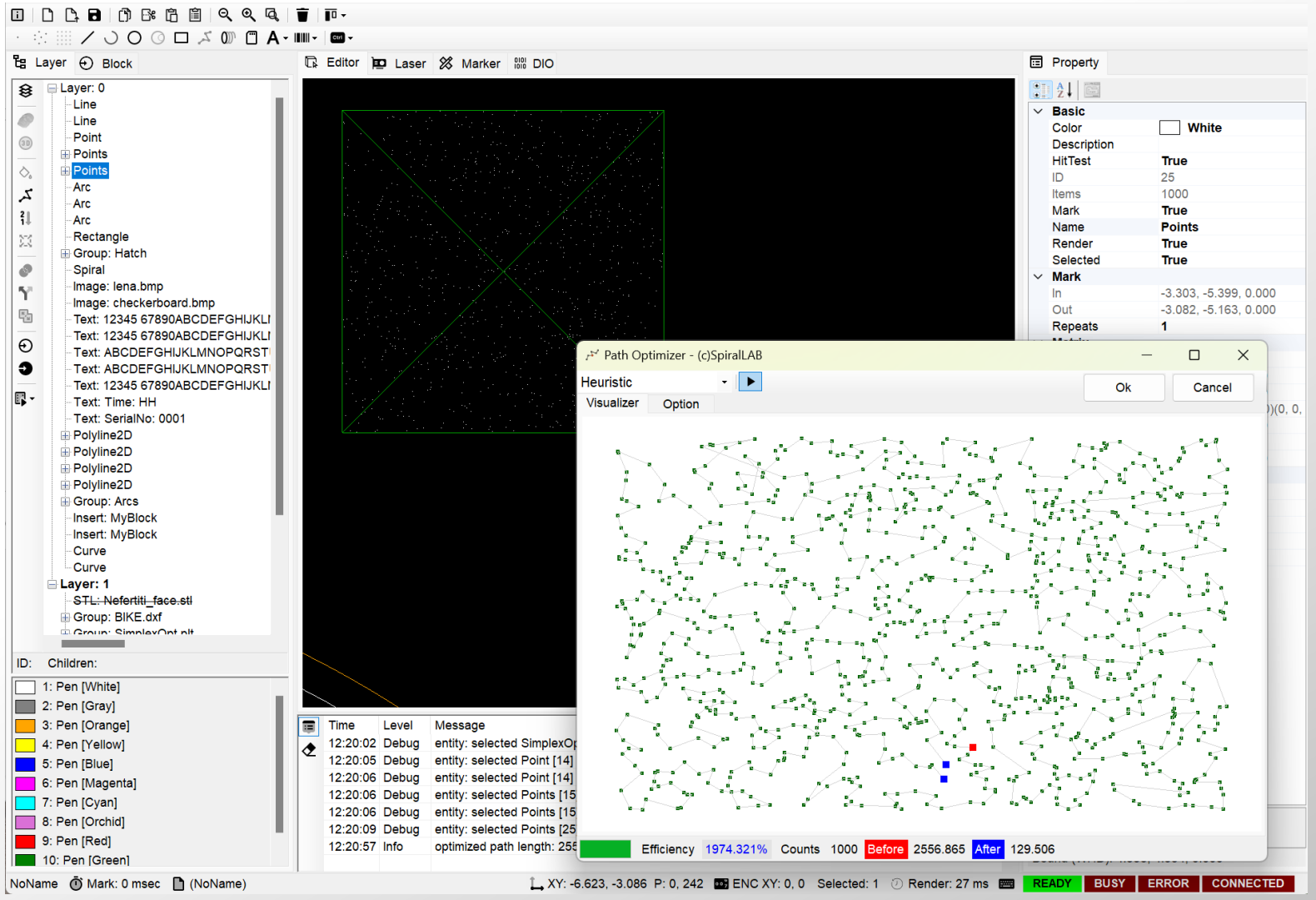
Measurement



- Measurement output scanner trajectory and laser signals at realtime
- Plot as graph by ‘gnuplot’
- Sampling up to 100KHz with 8 channels
- For example, gather scanner x,y,z trajectory with LASERON signal

Path Optimizer



- Optimize pathes to reduce processing time
- like as simple, heuristic, rotate, …
- Path optimizer can be works combined with all child entities
- Supported reference positions: in, out or center

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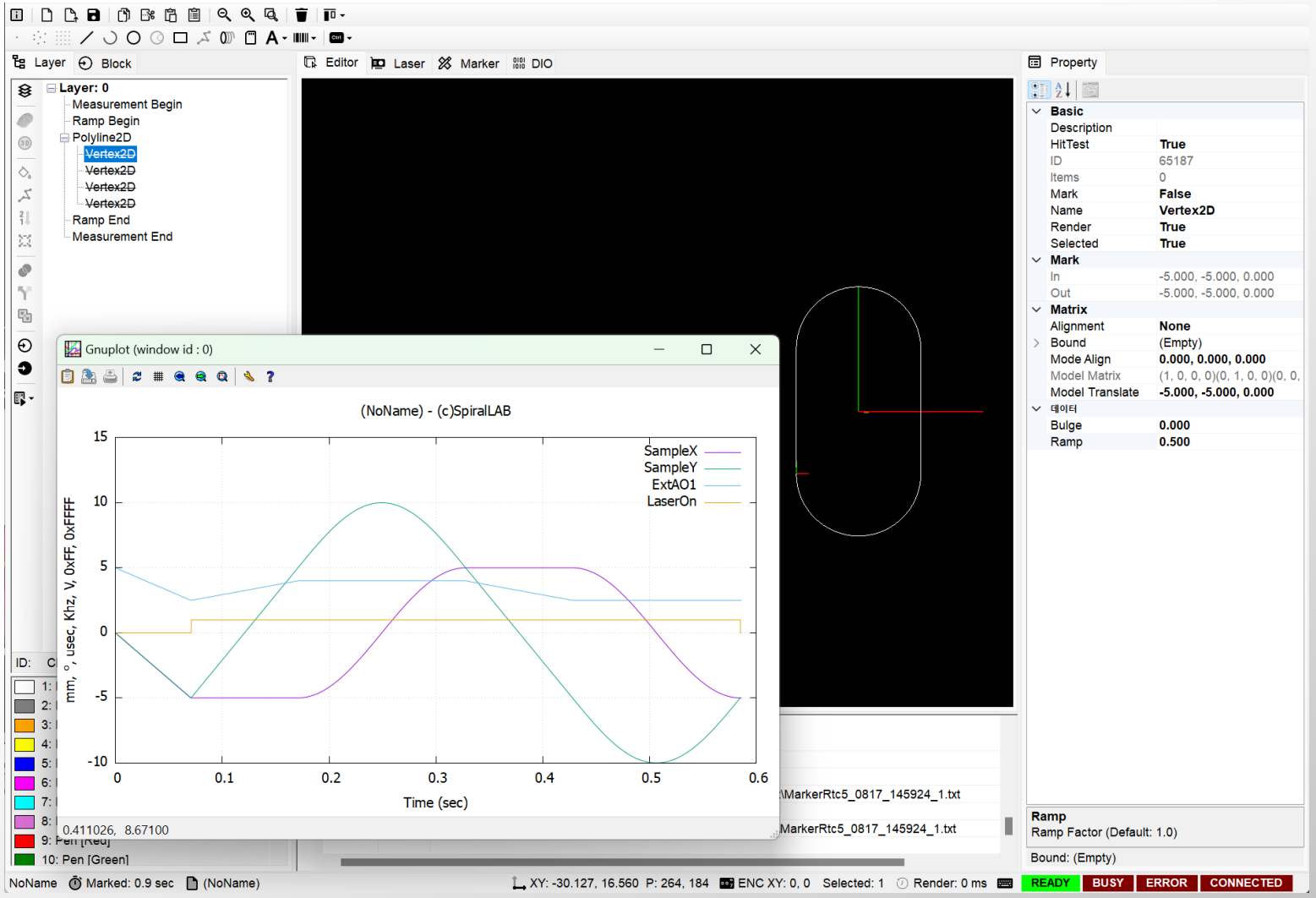
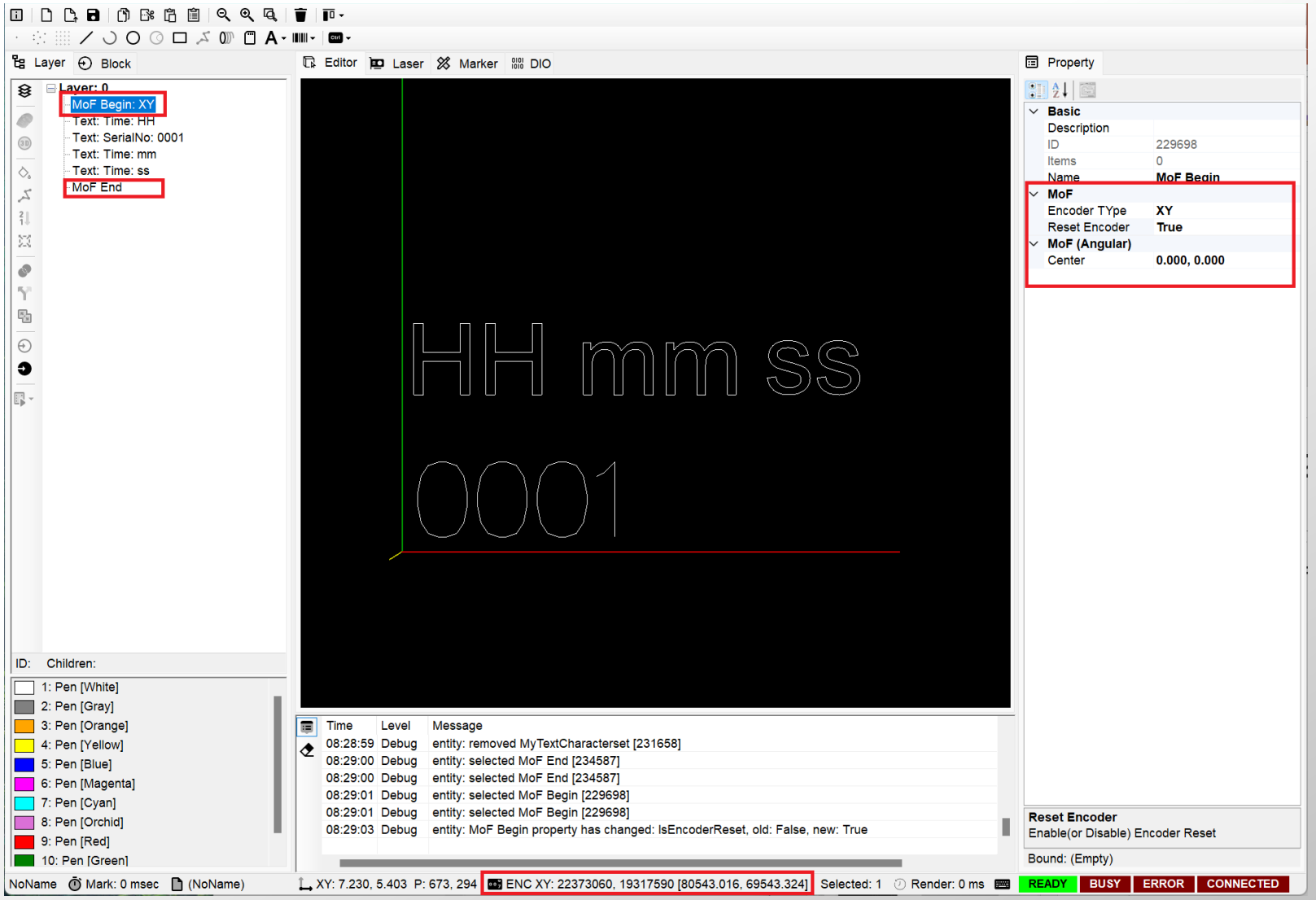
Ramp(Automatic Laser Control)



- Ramp(aka. ALC by defined vector)
- Each vertex with ramp scale factor
- Example: Output Analog1
- Starting: 5V
- First vertex: 2.5V = (X0.5)

XY(or angular) Marking on the fly



- MoF with XY Encoder
- MoF with Angular Encoder
- Wait for encoder by position (under, over or auto)

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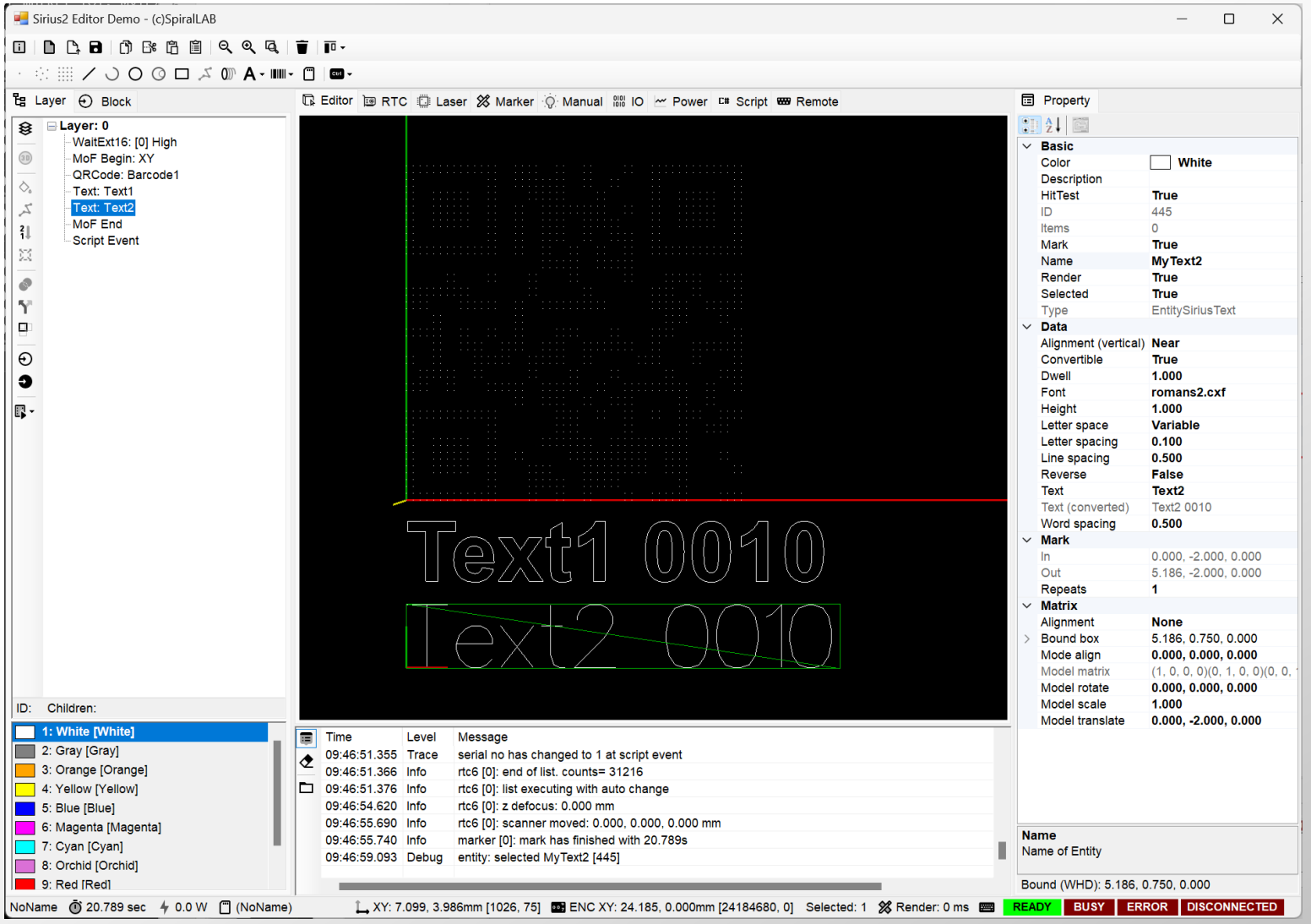
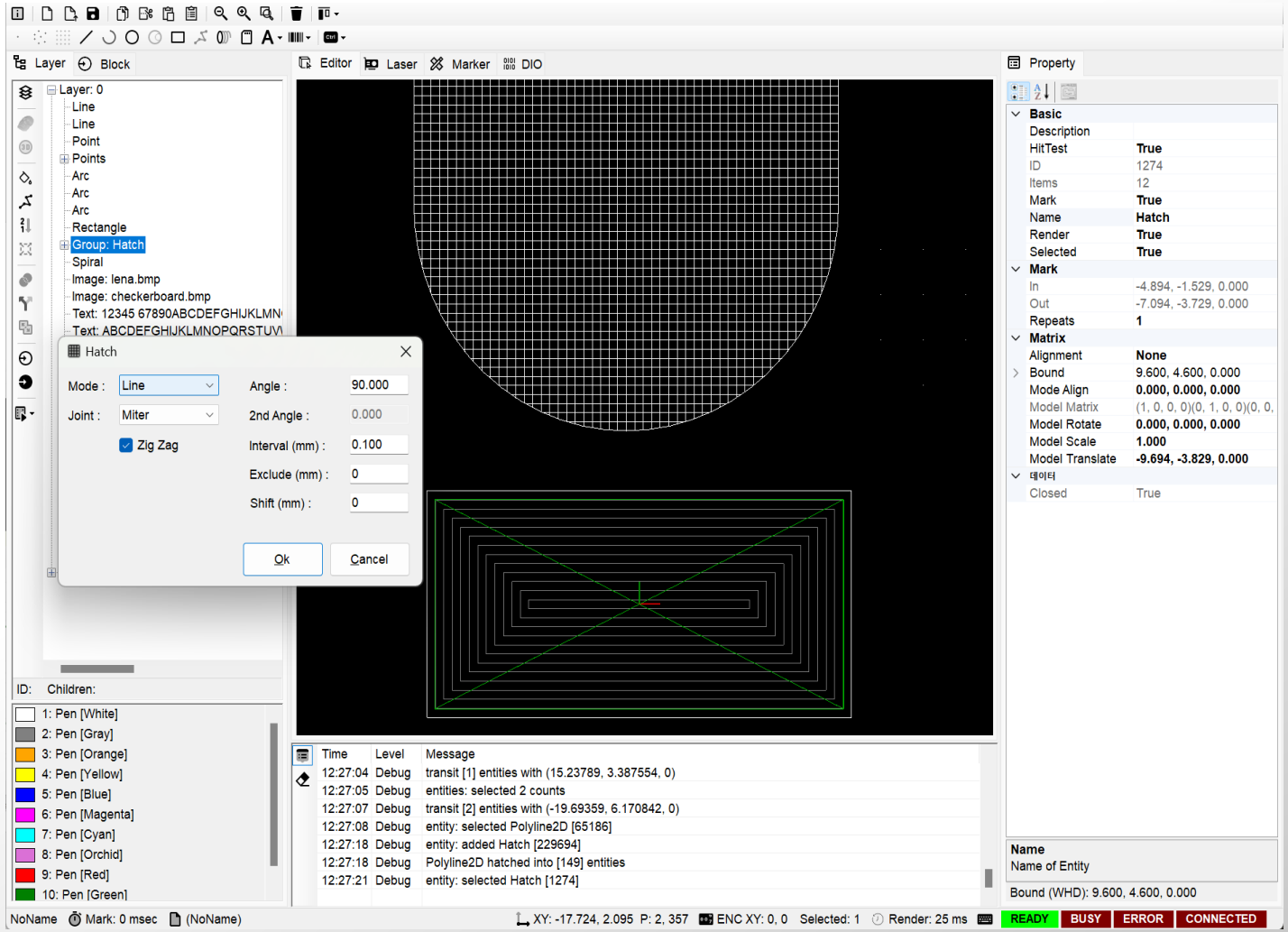
Wait trigger and MoF start (Example)



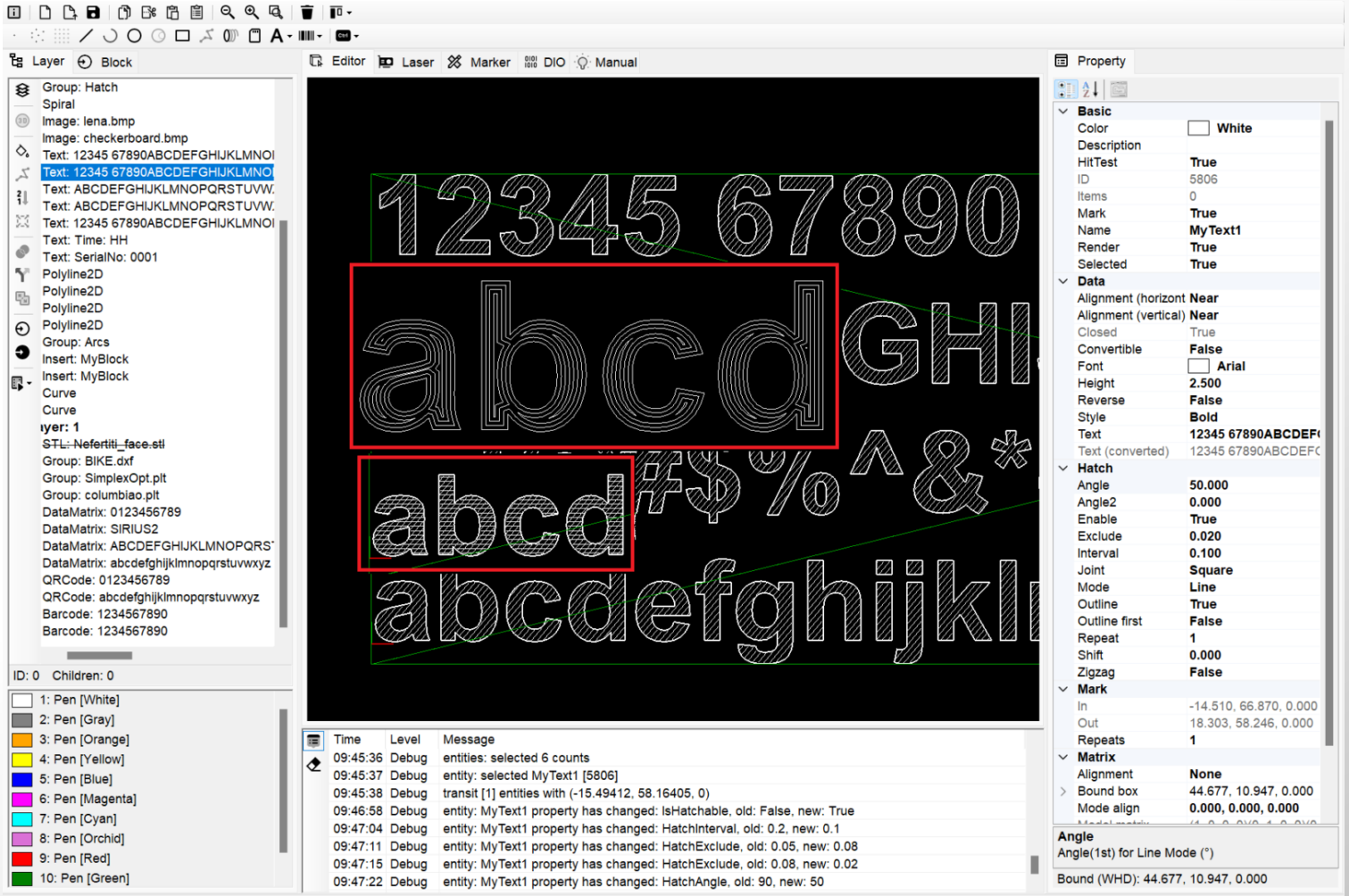
- Waiting trigger from D.IN0 at EXTENSION1 PORT goes to rising edge

Extract Hatch Pattern



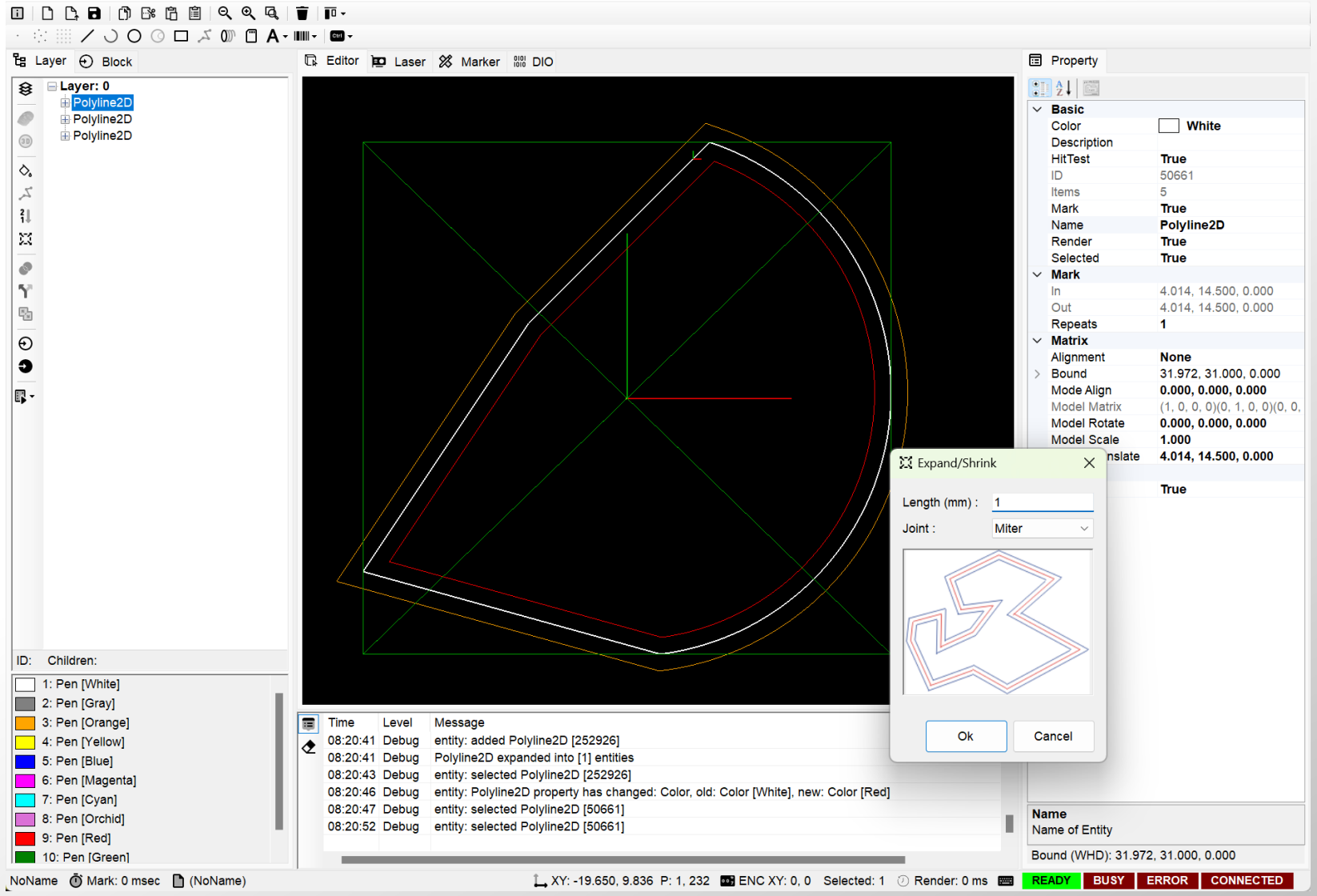
- Closed path are support to do hatch.
- Supported mode are line, cross line and polygon
- Editable hatch angle, interval, exclude length also.

Text with Hatch



- Closed figures likes as Text are support various hatch patterns

Expand/Shrink



- Closed path are support to do expand/shrink
- To compensate laser spot size (also, bite or tool size compensate)

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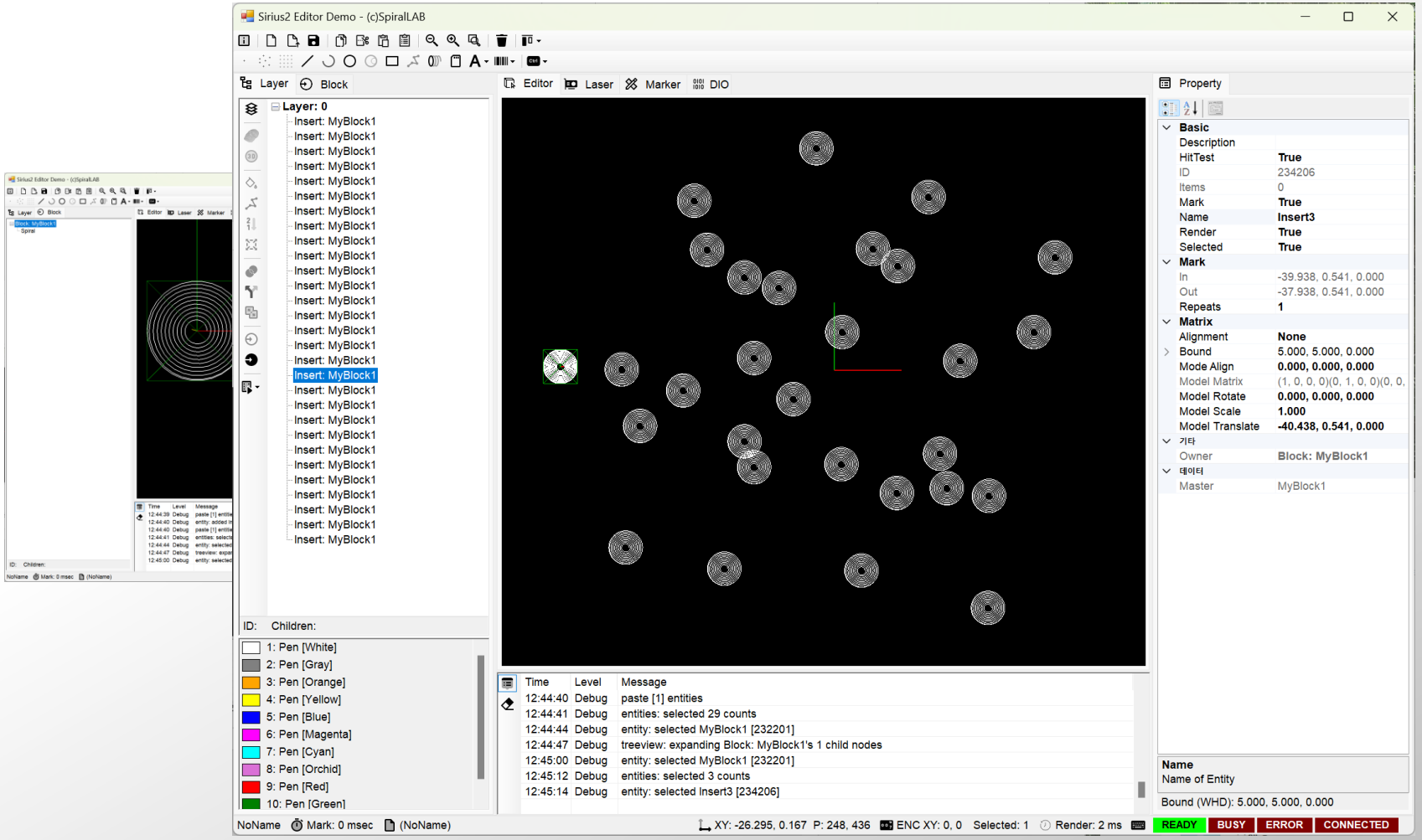
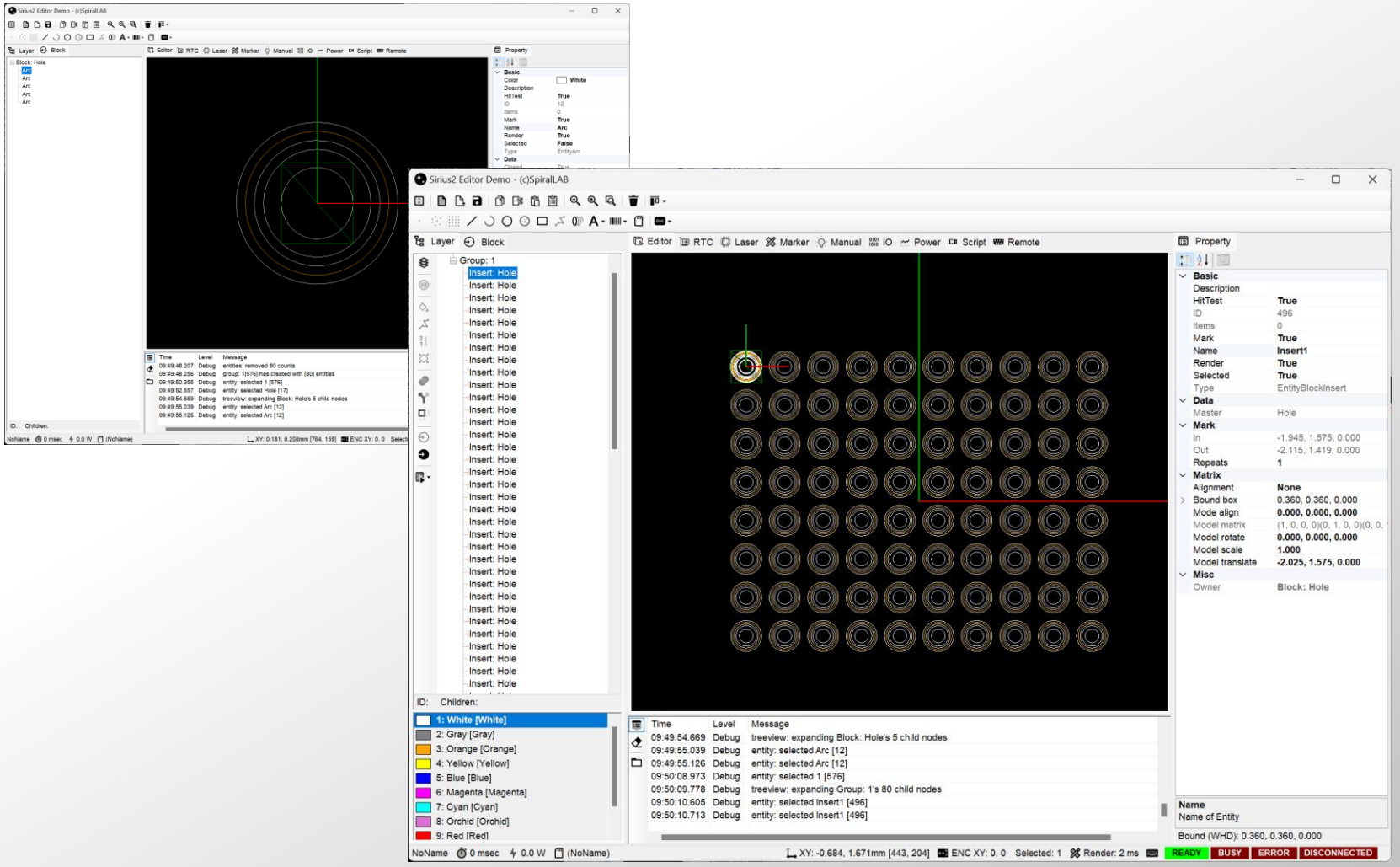
Block and BlockInsert



- Block and BlockInsert are supported
- Can be created as master block by user
- Can be inserted block also

Block and BlockInsert (Example)



- Block insert with offset(x,y,z and anglez)
- PoP(Package on package) by laser drilling (aka. TSV)
- Editable each ‘Hole’
- Create array of holes

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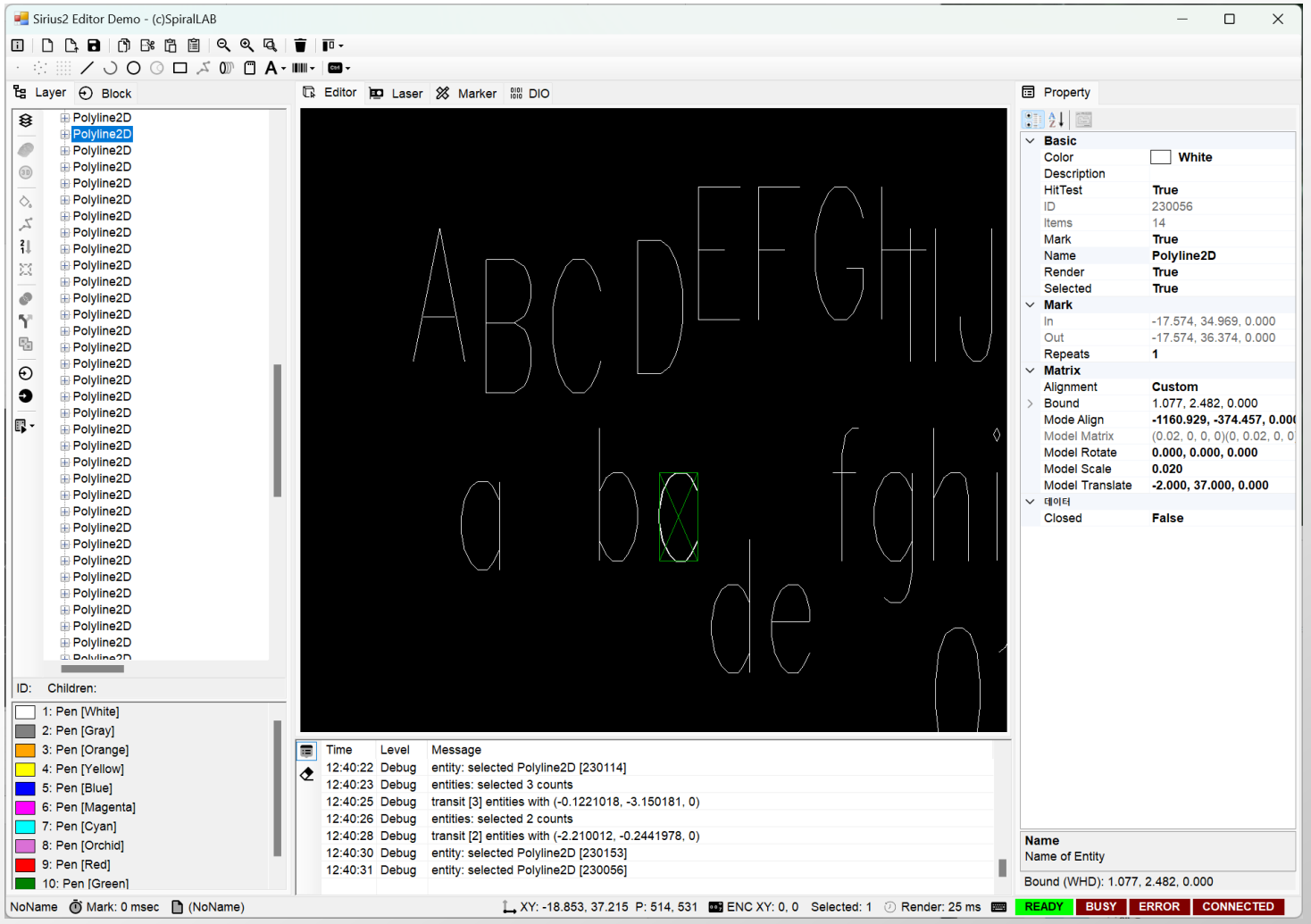
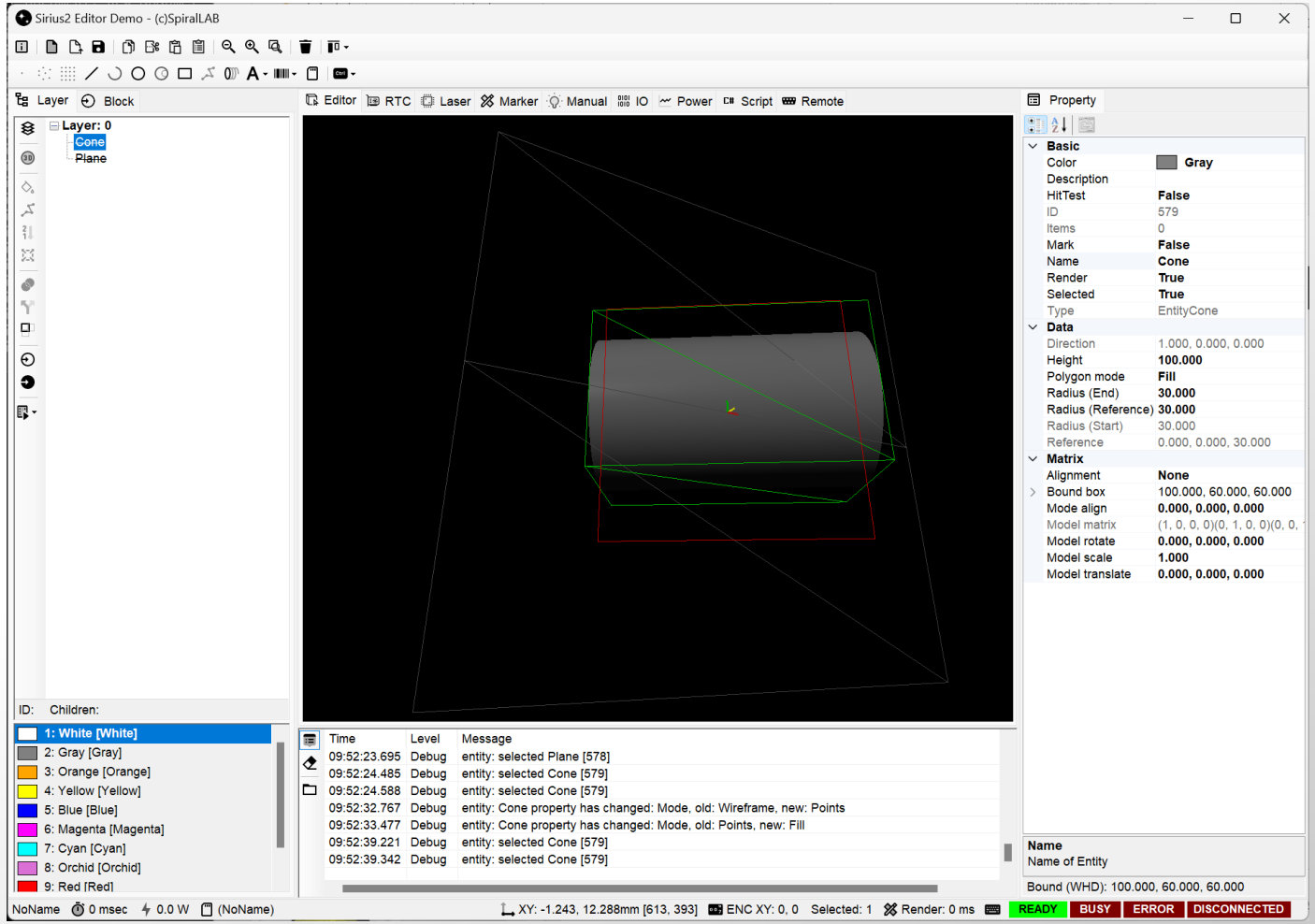
Explode to Primitive Type



- Explode entity into primitive type
- Example: Group-> Polylines -> Line and arc

3D Field Correction



- Plane, Cylinder and Cone shapes
- Apply new 3d correction file and mark 2d vector data at 3d surface easily

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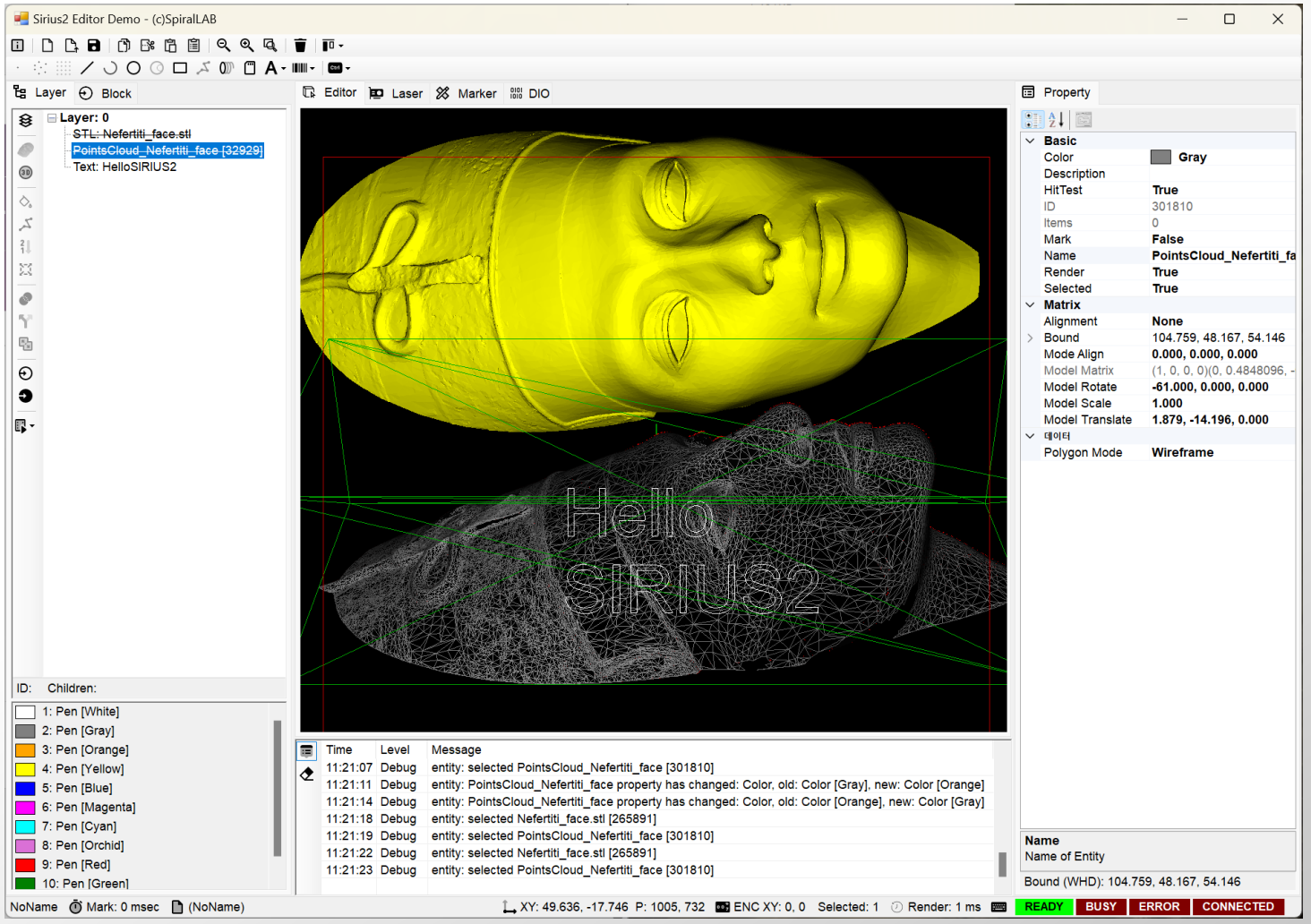
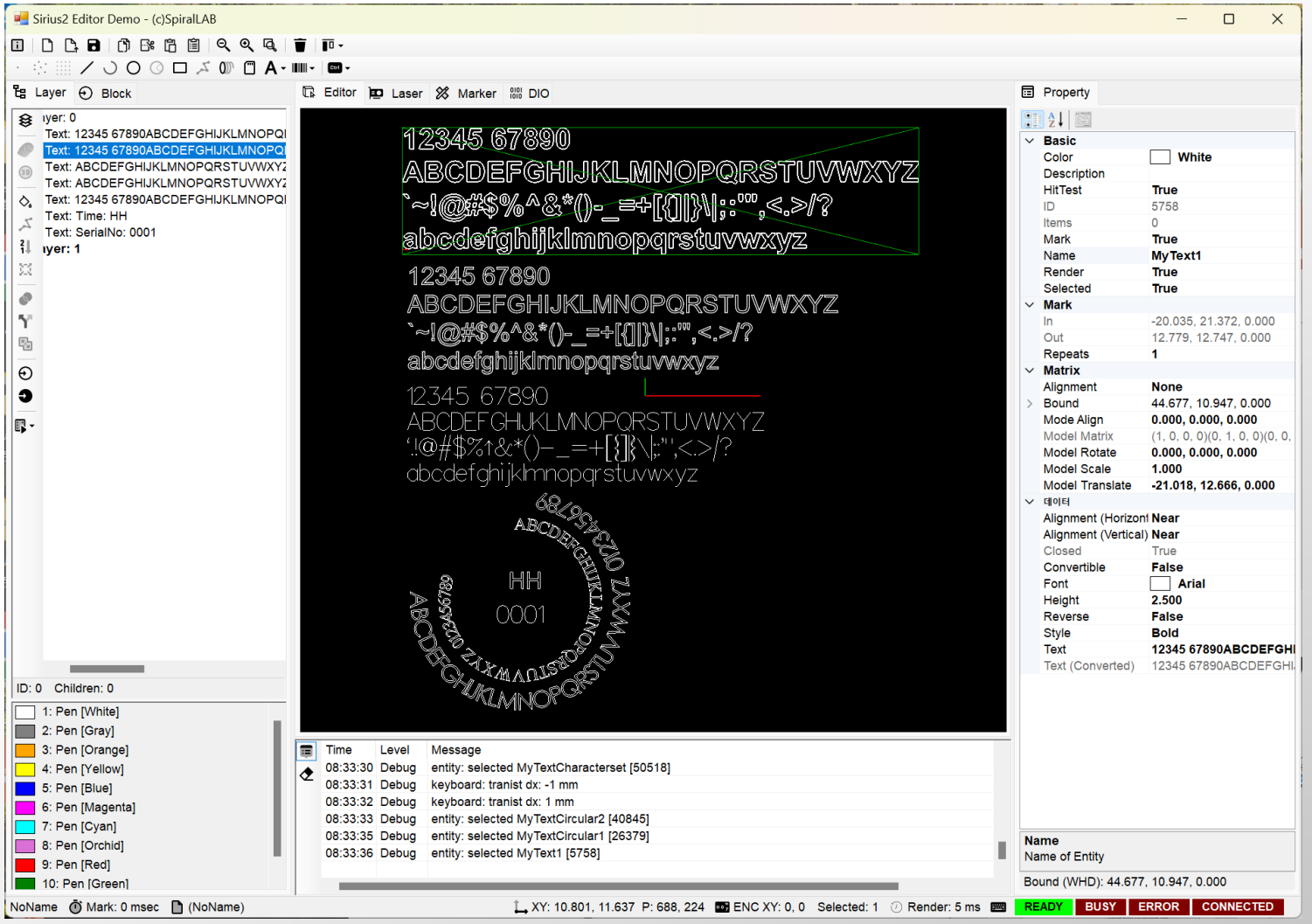
3D Field Correction



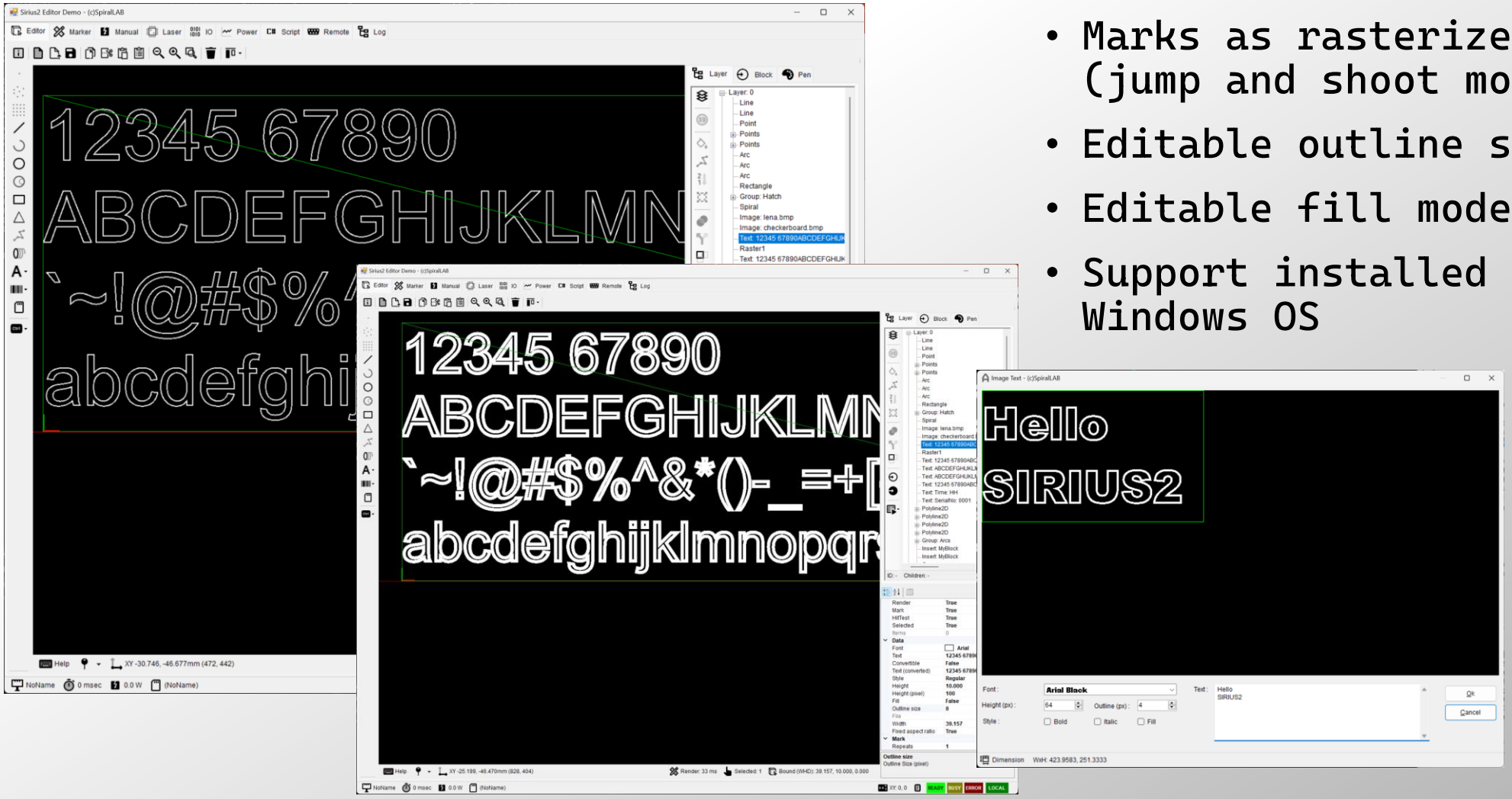
- Extract points cloud from surface 3D model and convert new 3d correction file
- Apply new 3d correction file and mark 2d vector data at 3d surface easily

Various Text



- Text: installed font files at Windows (like as true type font)
- ImageText: Marks as rasterized operation
- SiriusText: open sourced font file format (like as cxf, lff)
- Circular text : installed font files
- Characterset text : register(or download) into RTC buffer (used by date, time, serial no)

Image Text



- Marks as rasterized operation (jump and shoot mode)
- Editable outline size
- Editable fill mode
- Support installed fonts at Windows OS

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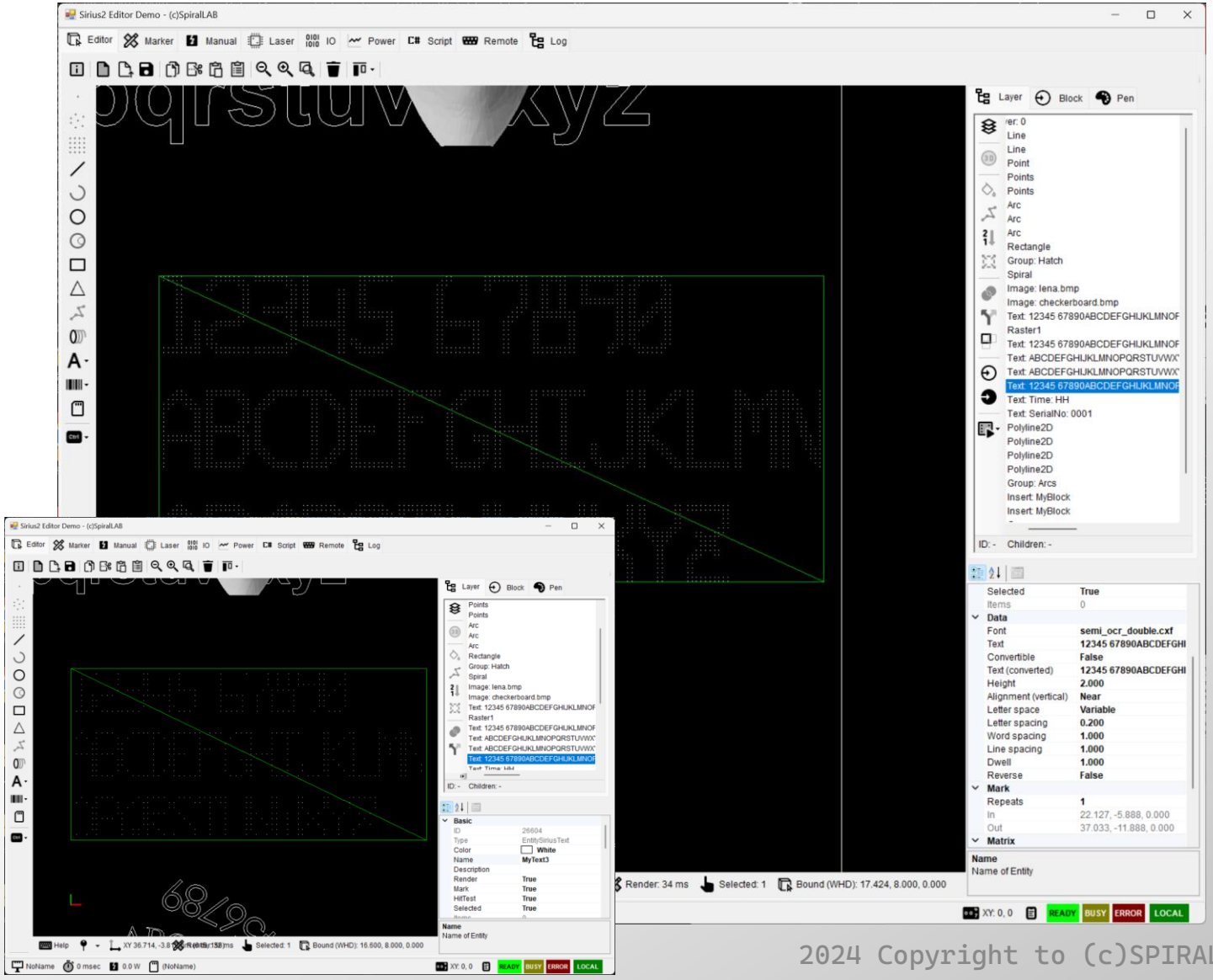
Sirius Text (for SEMI OCR Font)



- Specific font format for SEMI OCR Font
- Marks as rasterized operation (jump and shoot mode)
- Mark each pixels during specific time(or dwell time)
- Single(or double) dots format

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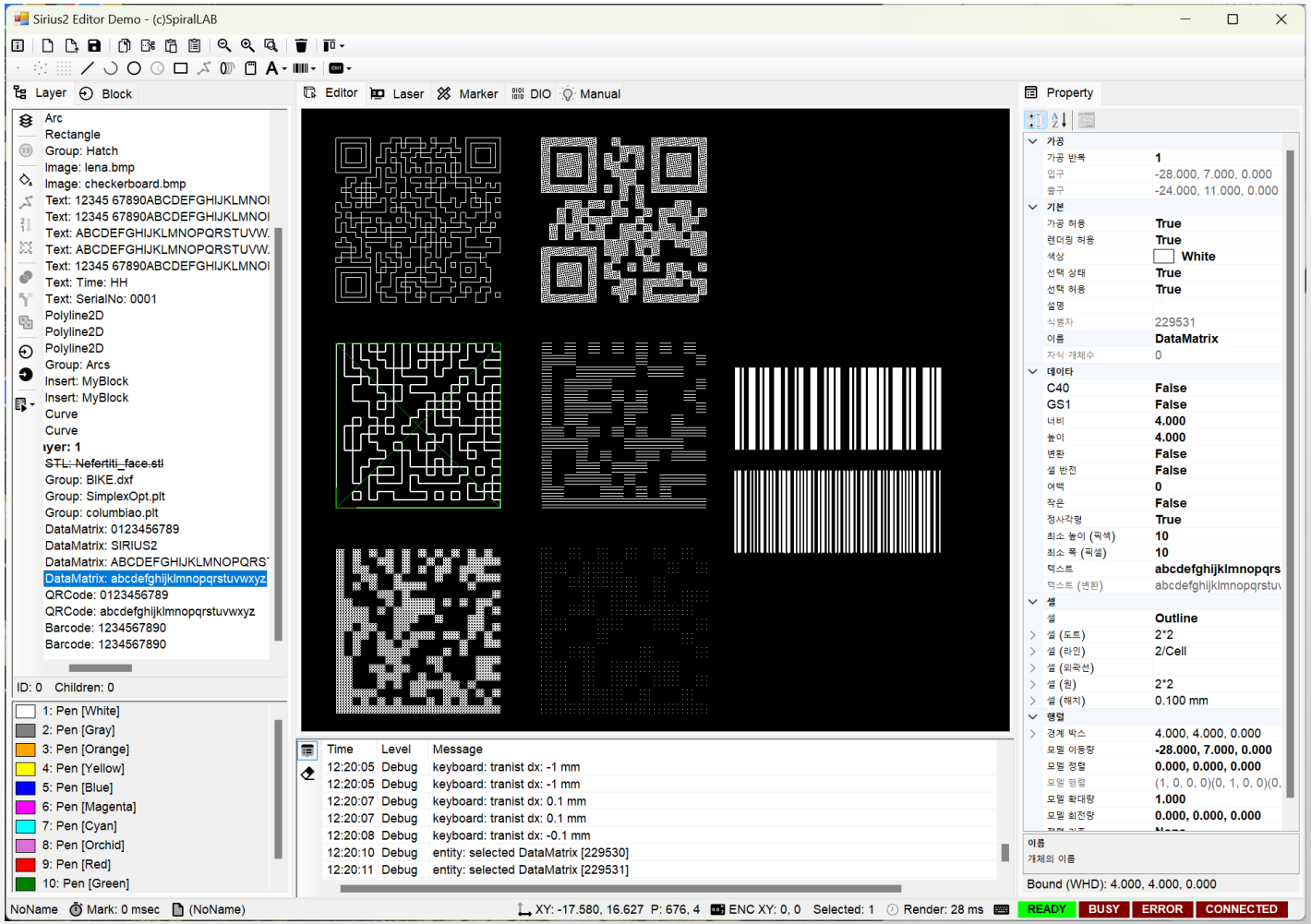
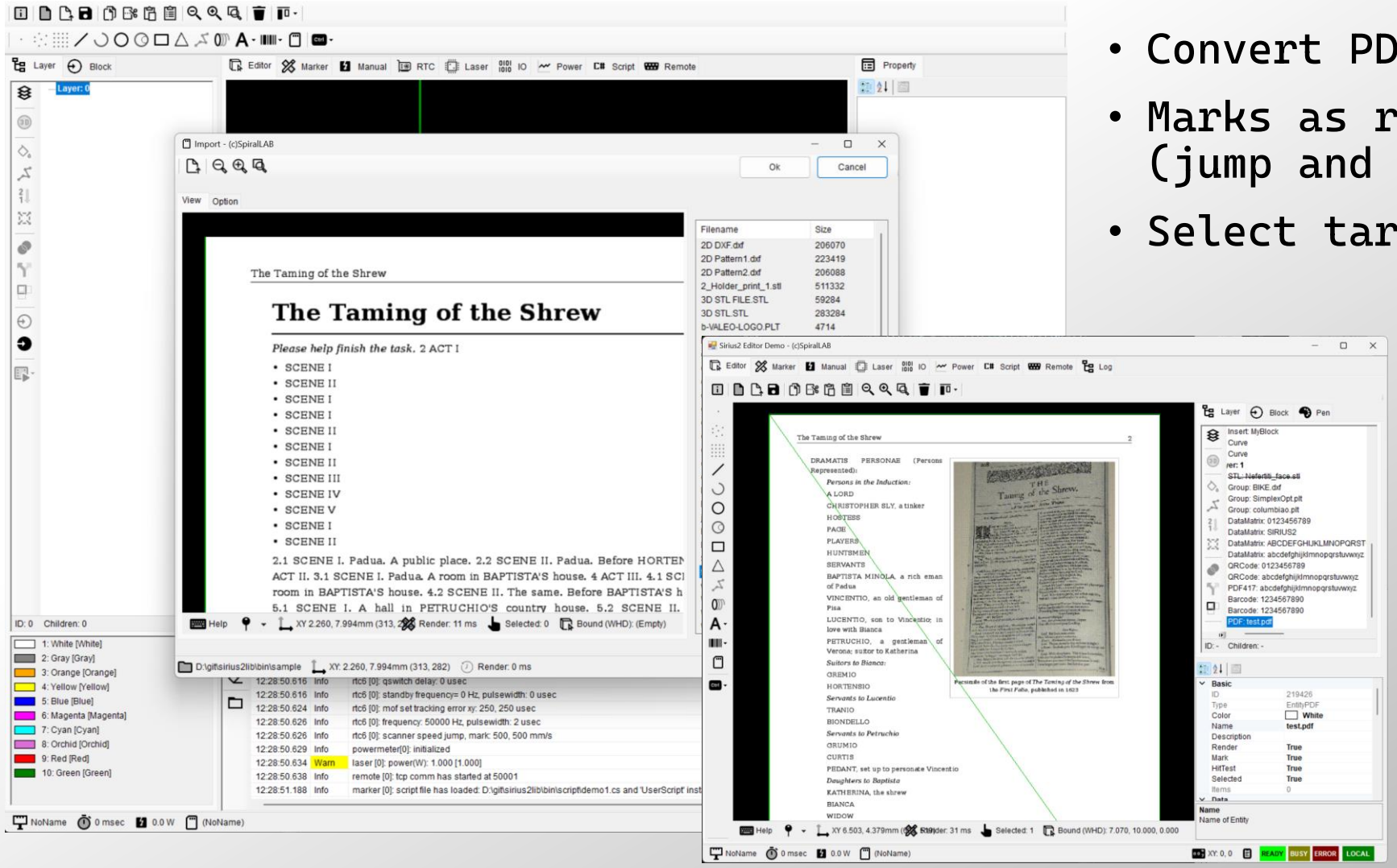
Various Barcode Cells



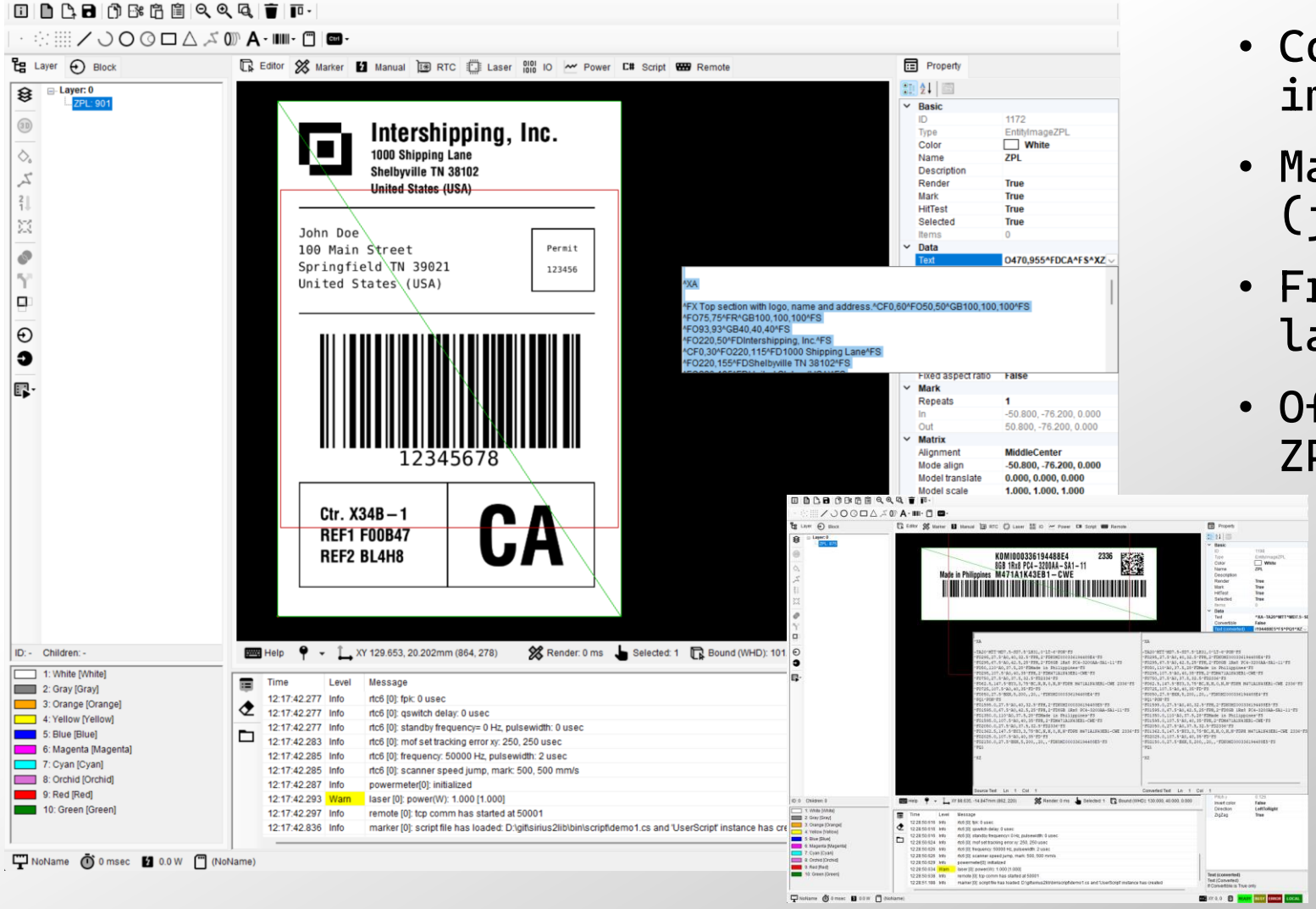
- Various barcode cell types : dots, lines, outline, circles and hatch
- DataMatrix, QRcode, PDF417 and 1D barcodes
- Barcode (also Text) data can be modified before mark at runtime with ease by event handler(or script function)

PDF format



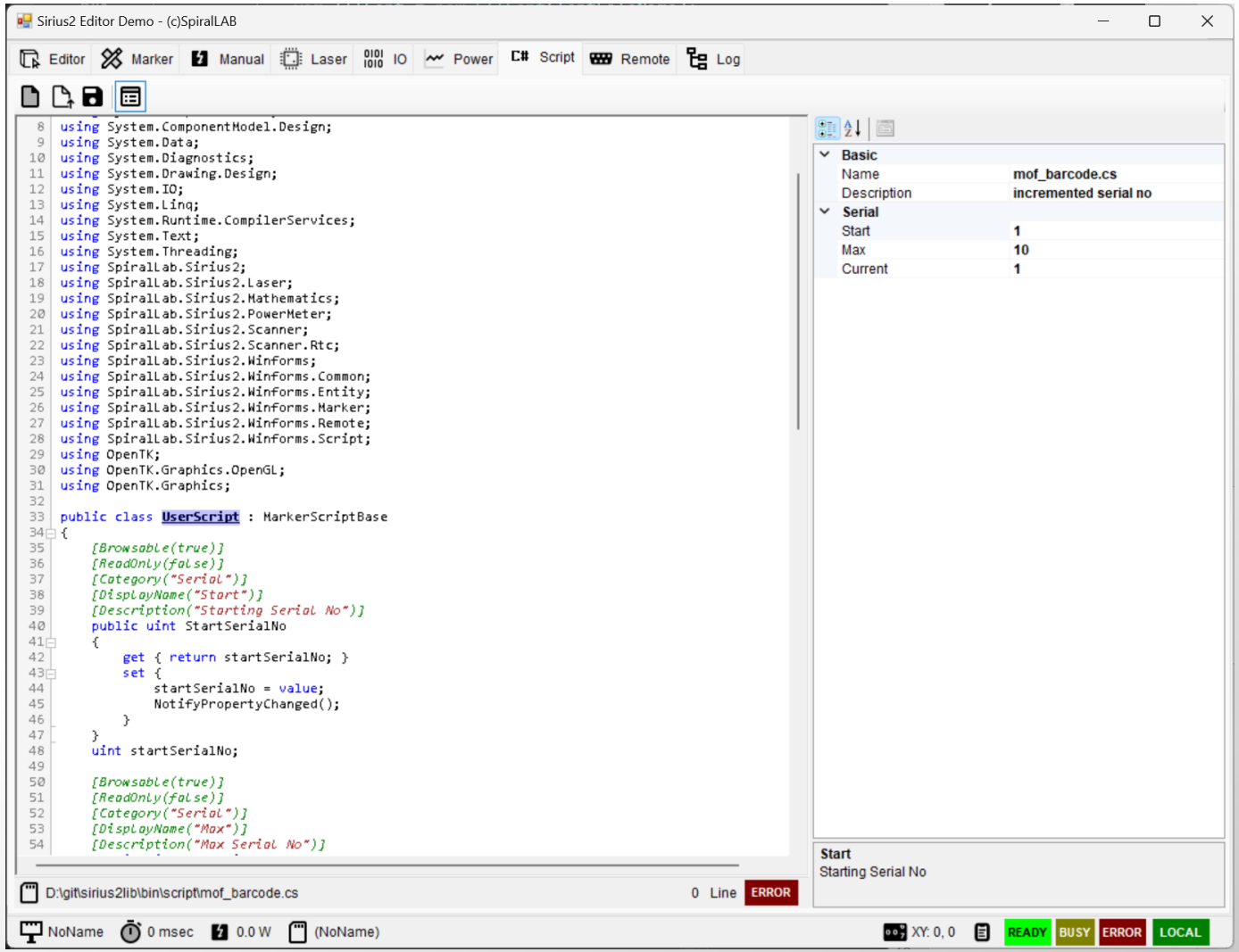
- Convert PDF format into image
- Marks as rasterized operation (jump and shoot mode)
- Select target page

ZPL(Zebra programming language)



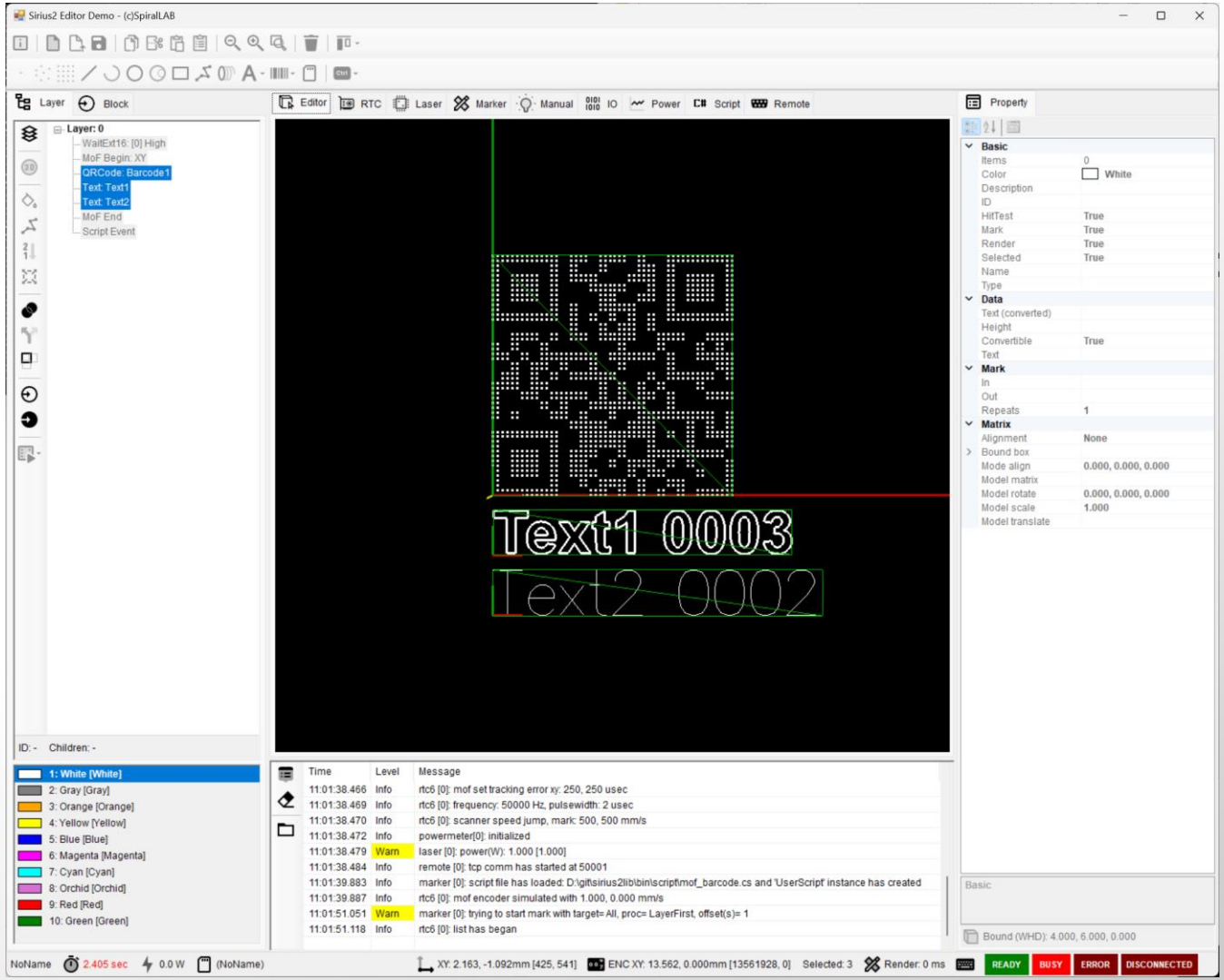
- Convert ZPL text format into image
- Marks as rasterized operation (jump and shoot mode)
- Free online mode by labelary.com API
- Offline mode by NeoDynamic ZPL printer SDK product

C# Script



- User can edit and compile script codes at runtime
- Editable barcode and text entity data by C# script at runtime
- For example: increase or reset serial number before marks by script code
- For example: update current time and date before marks by script code

C# Script with MoF + Barcode (Demo)



- Waiting external trigger : DIN0 at Extension Port
- Start x/y MoF with encoder reset
- Modified barcode and text data by C# script at runtime
- For example: Increase serial no
- End MoF
- Repeats (at Layer entity)

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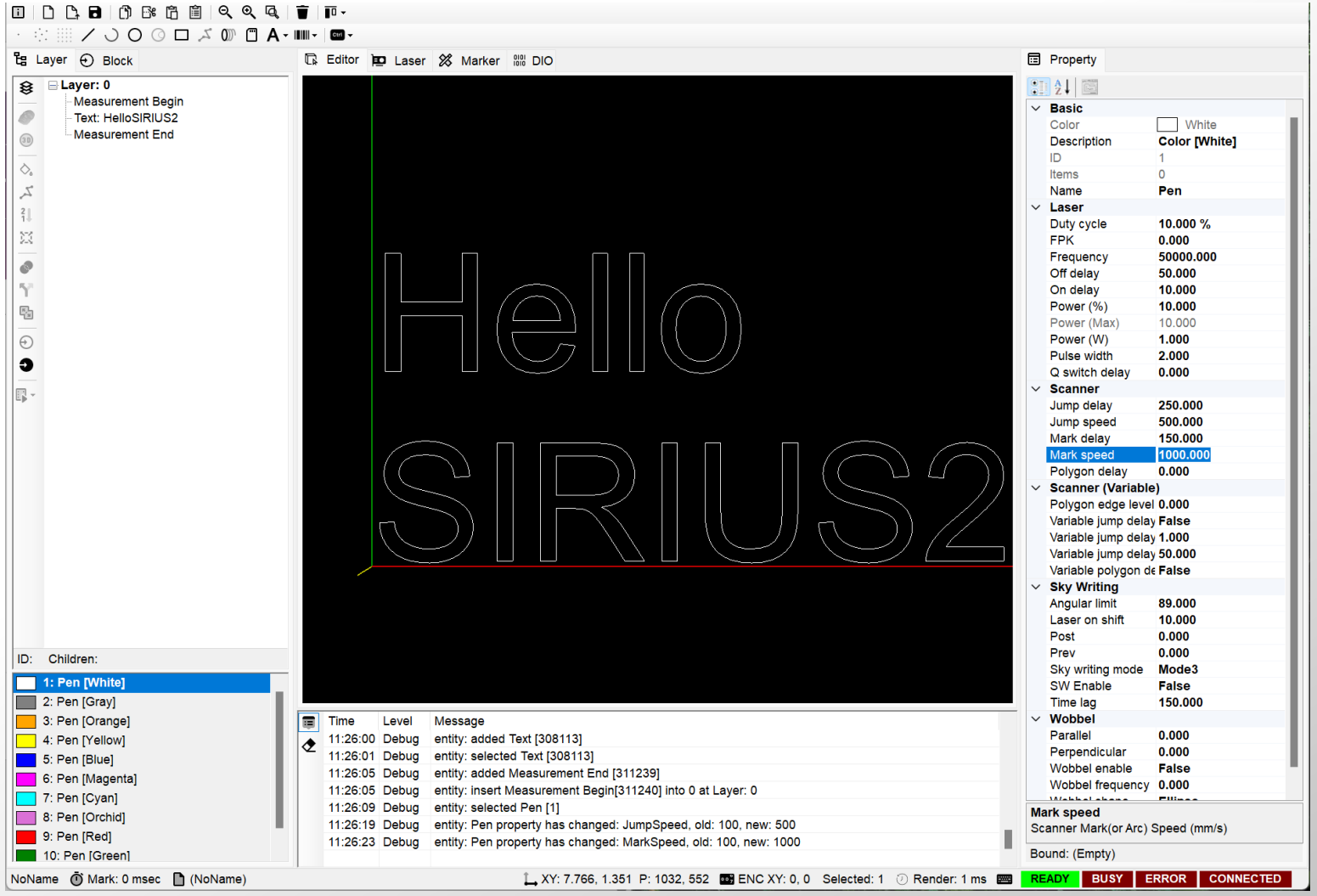
Pen Parameters



- Configurable pen parameters
- Editable frequency and pulse width
- Editable scanner speed and delays
- Editable output laser power
- Enable/disable skywriting, wobble and more functions

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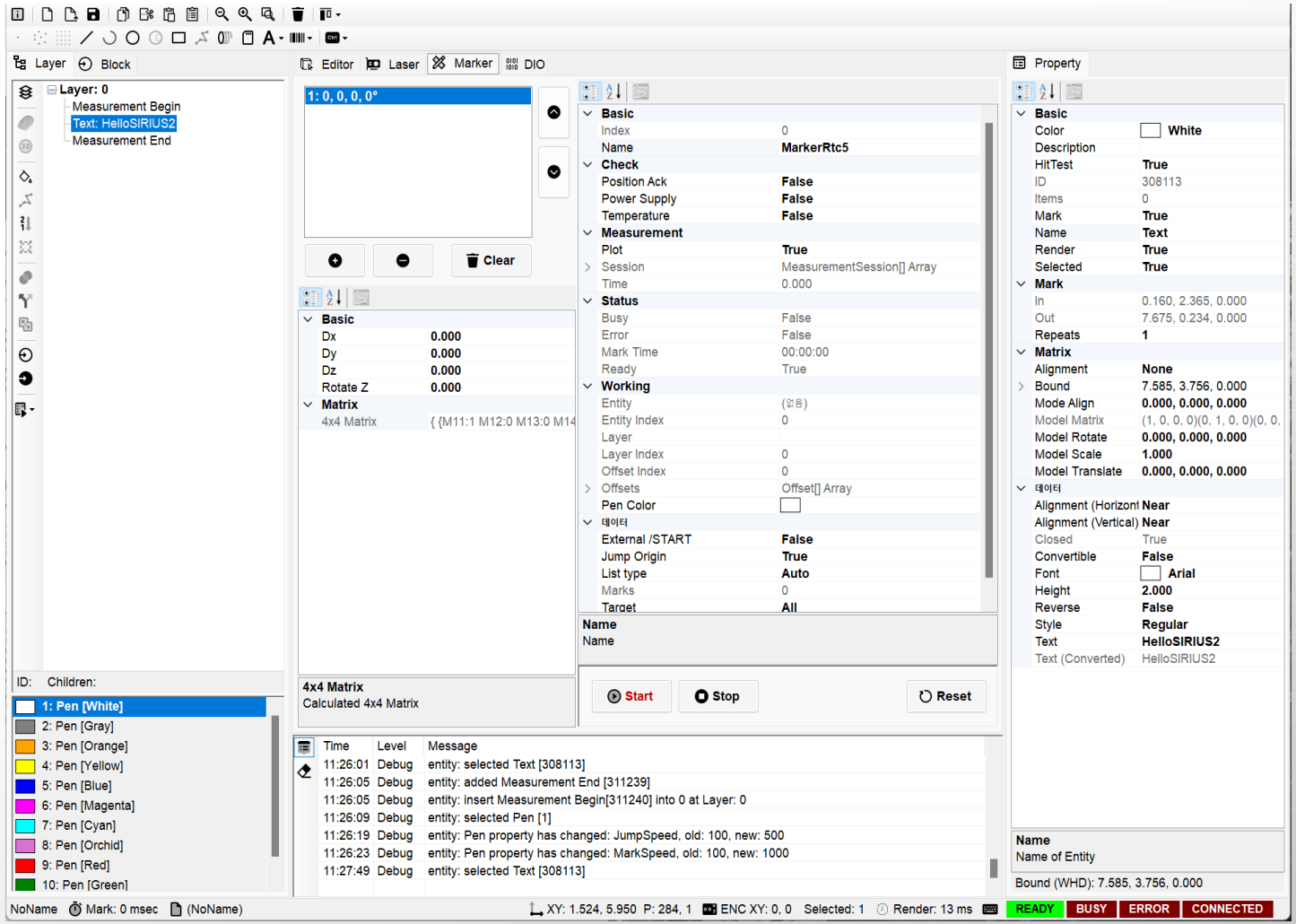
Integrate Marker Control



- Support multiple offset locations with dx,dy,dz and angle z
- Select various mark routines(or sequence)
- Ready for RTC marker
- Ready for syncAXIS marker
- User can modify marker routine (open sourced)

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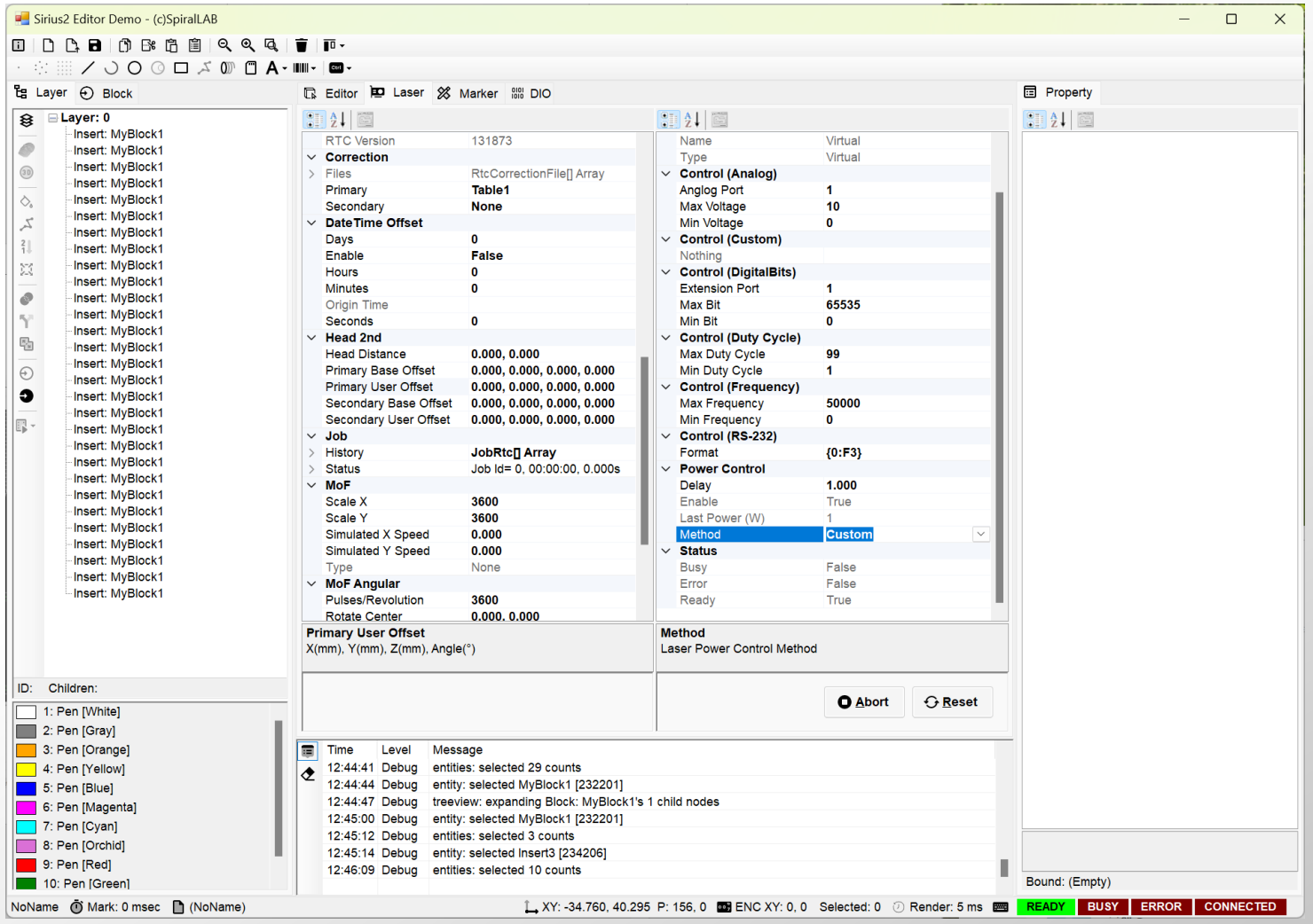
Integrated RTC and Laser Control



- Control and monitoring RTC controller
- Control and monitoring laser source

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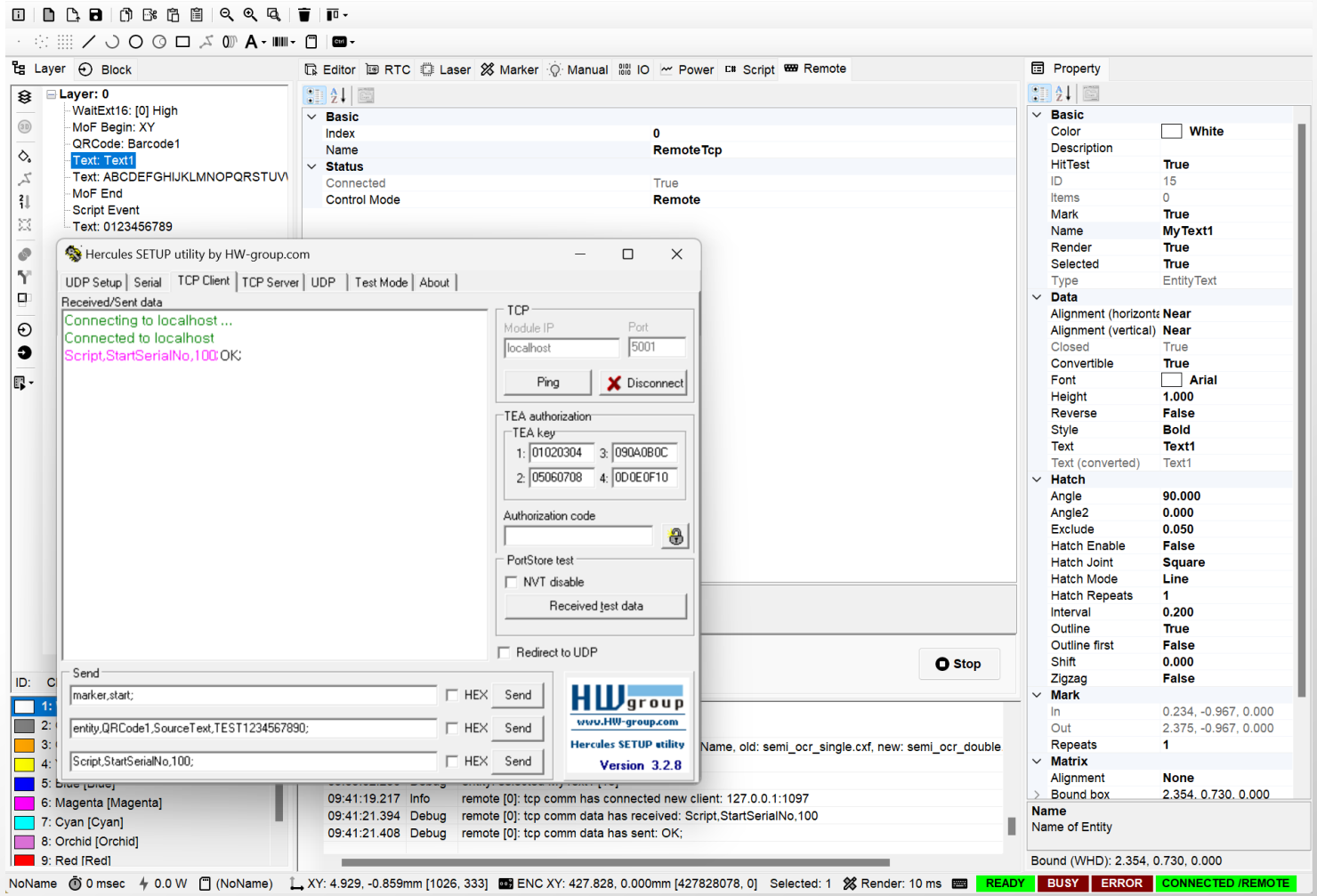
Remote Control



- Remote control by TCP/IP or SERIAL communication
- Example : change recipe, query marker status, control marker (start/stop/reset), read/write entity property values
- User can modify remote control routine

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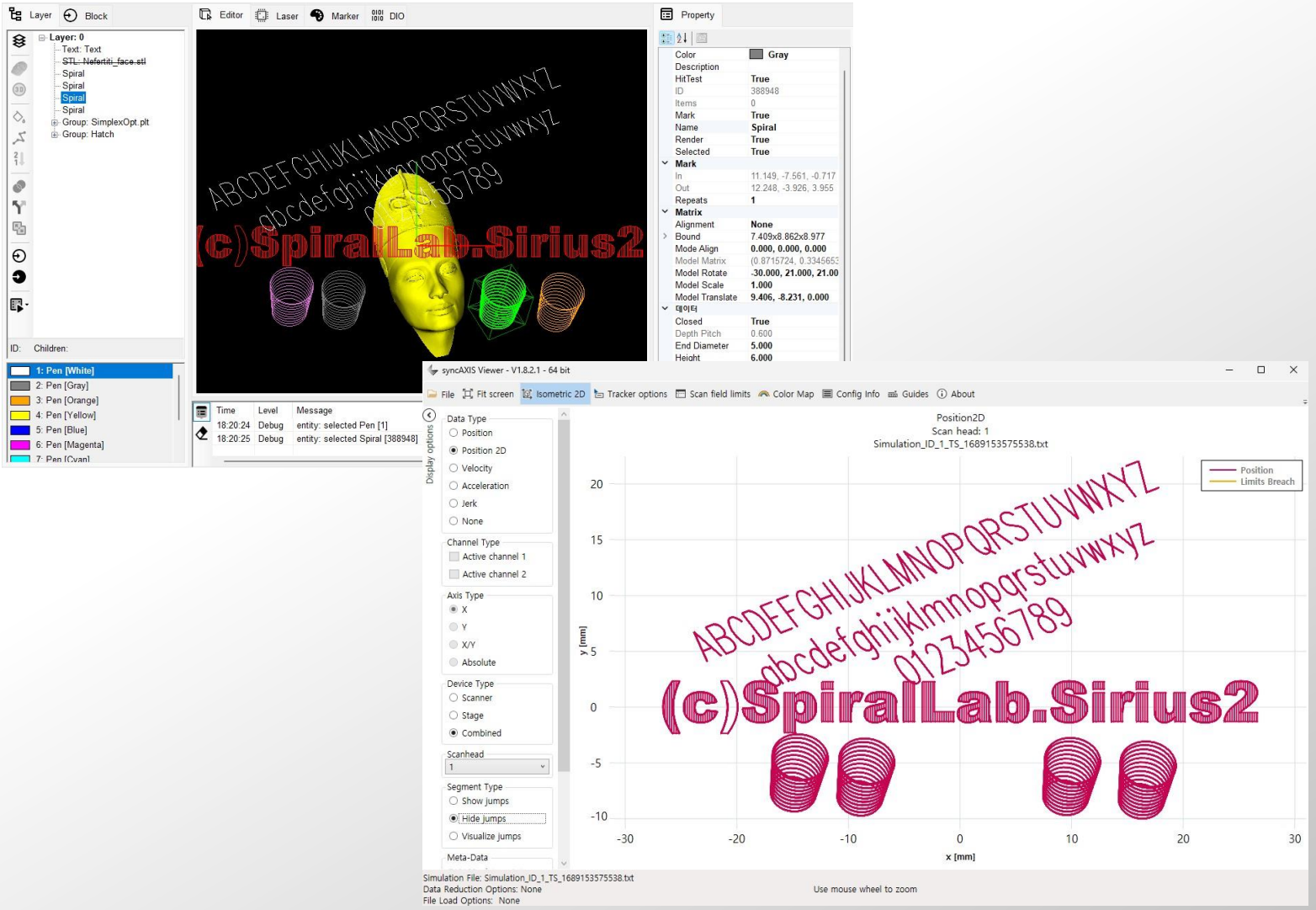
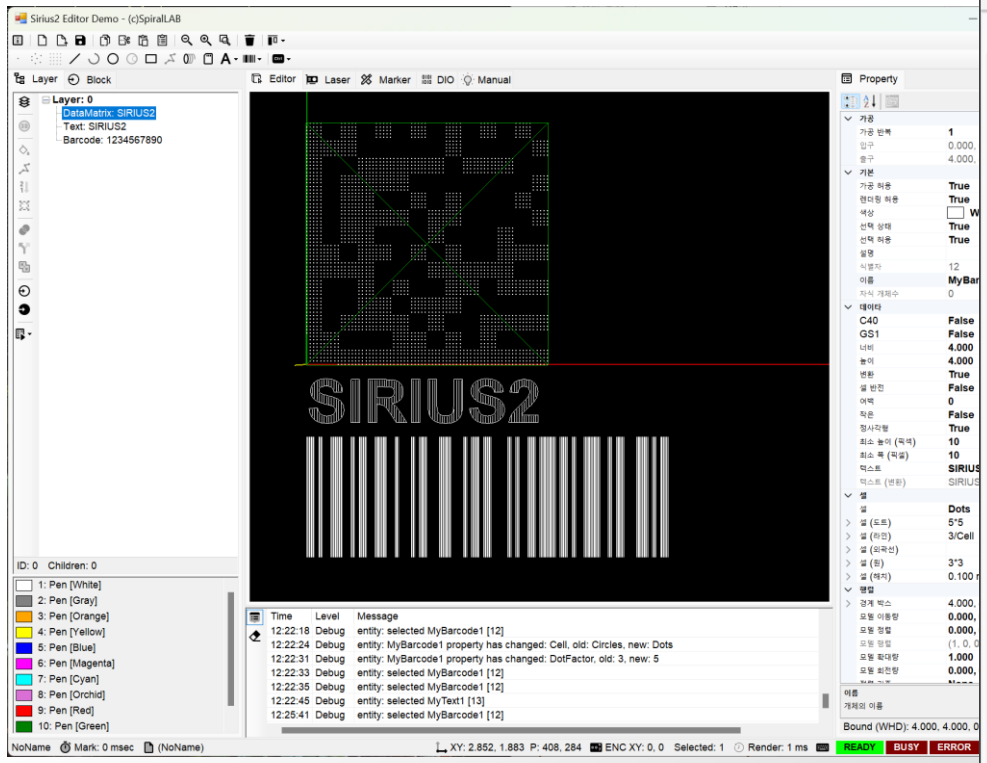
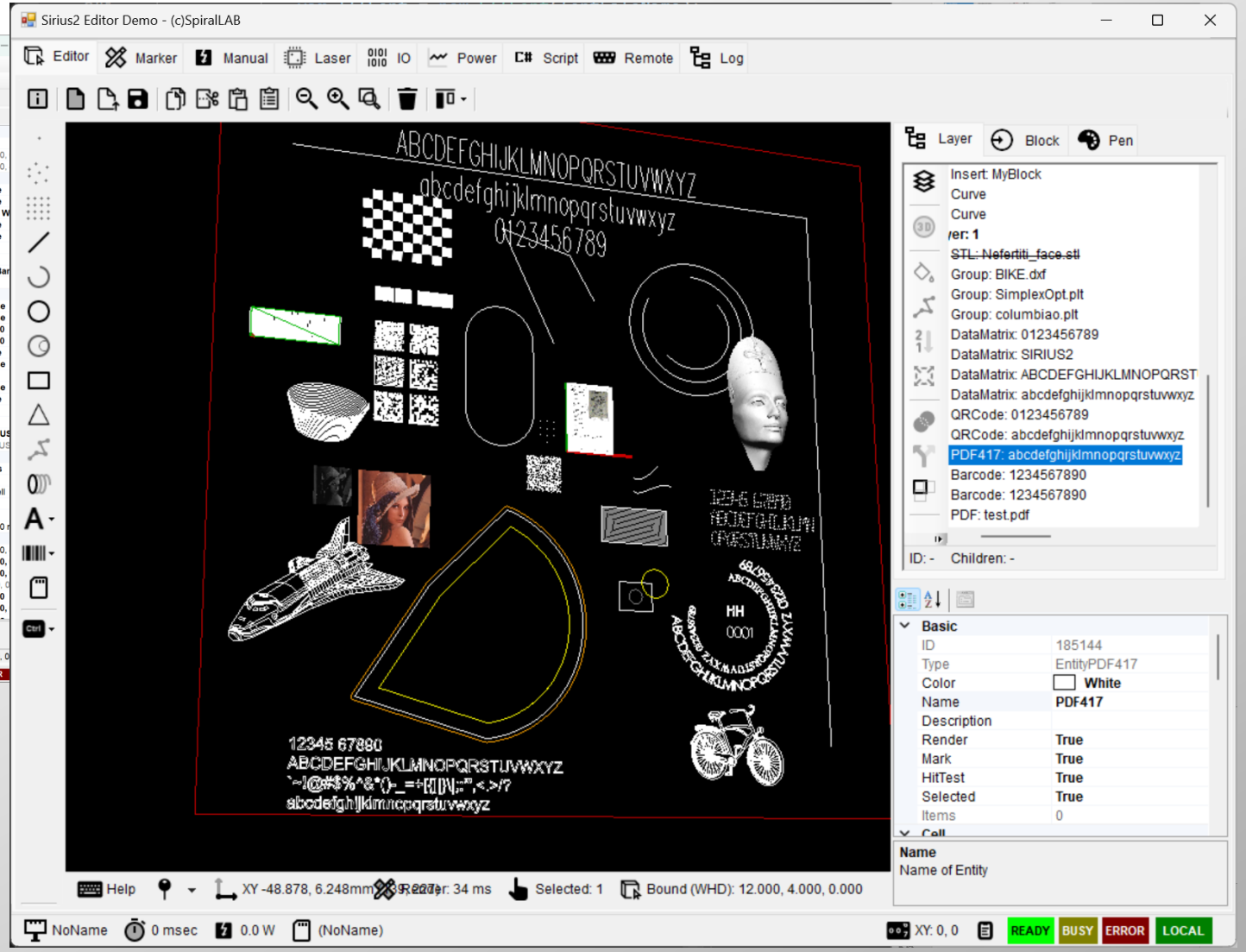
Integrated XL-SCAN



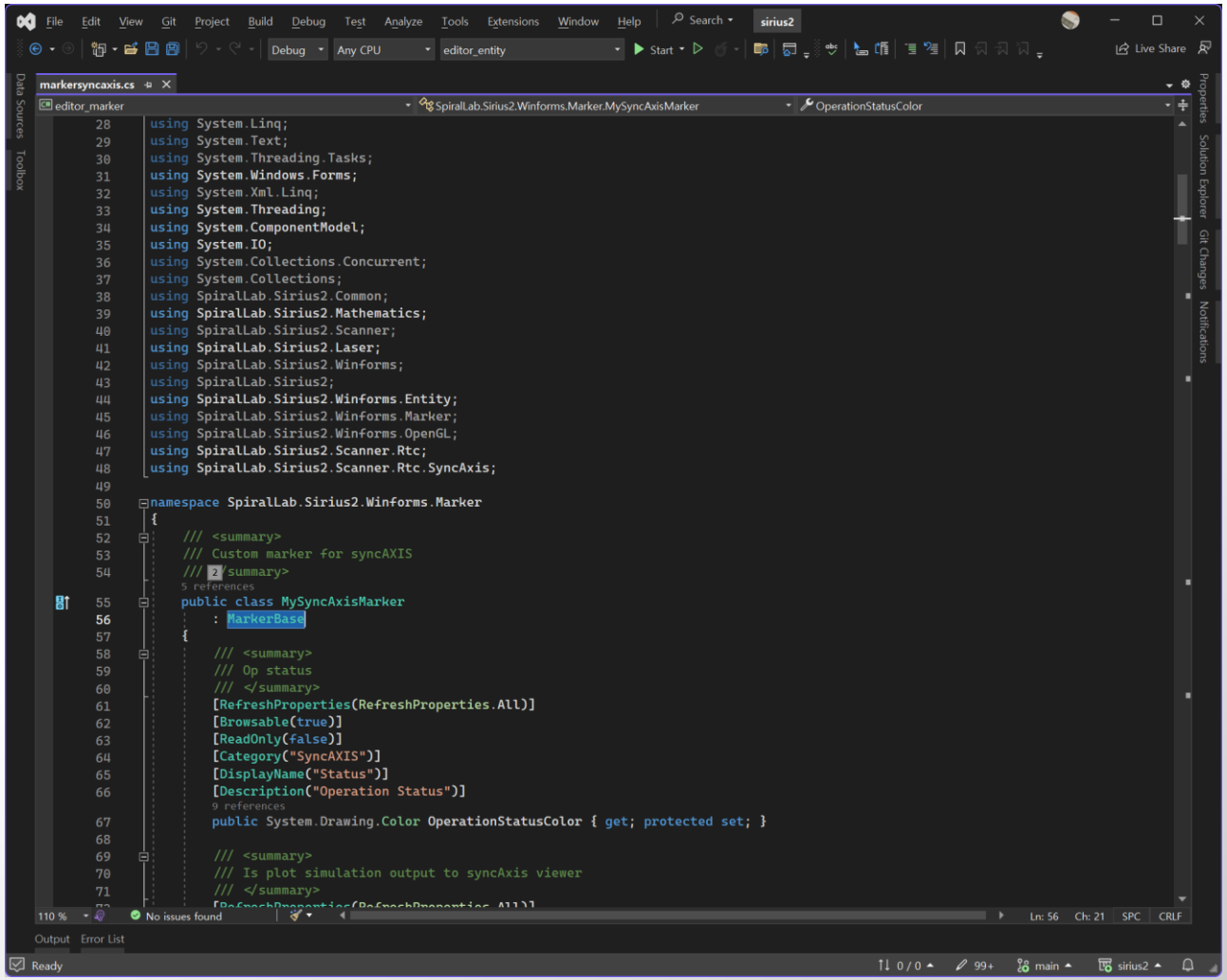
- Easy to change target control platform to XL-SCAN
- No need to modify program(source code)
- Commanded 3D (Z) positions are transformed into Z=0 by automatically
- Executed ‘syncAXIS Viewer’ at simulation mode by automatically

Powerful Demos





Customization

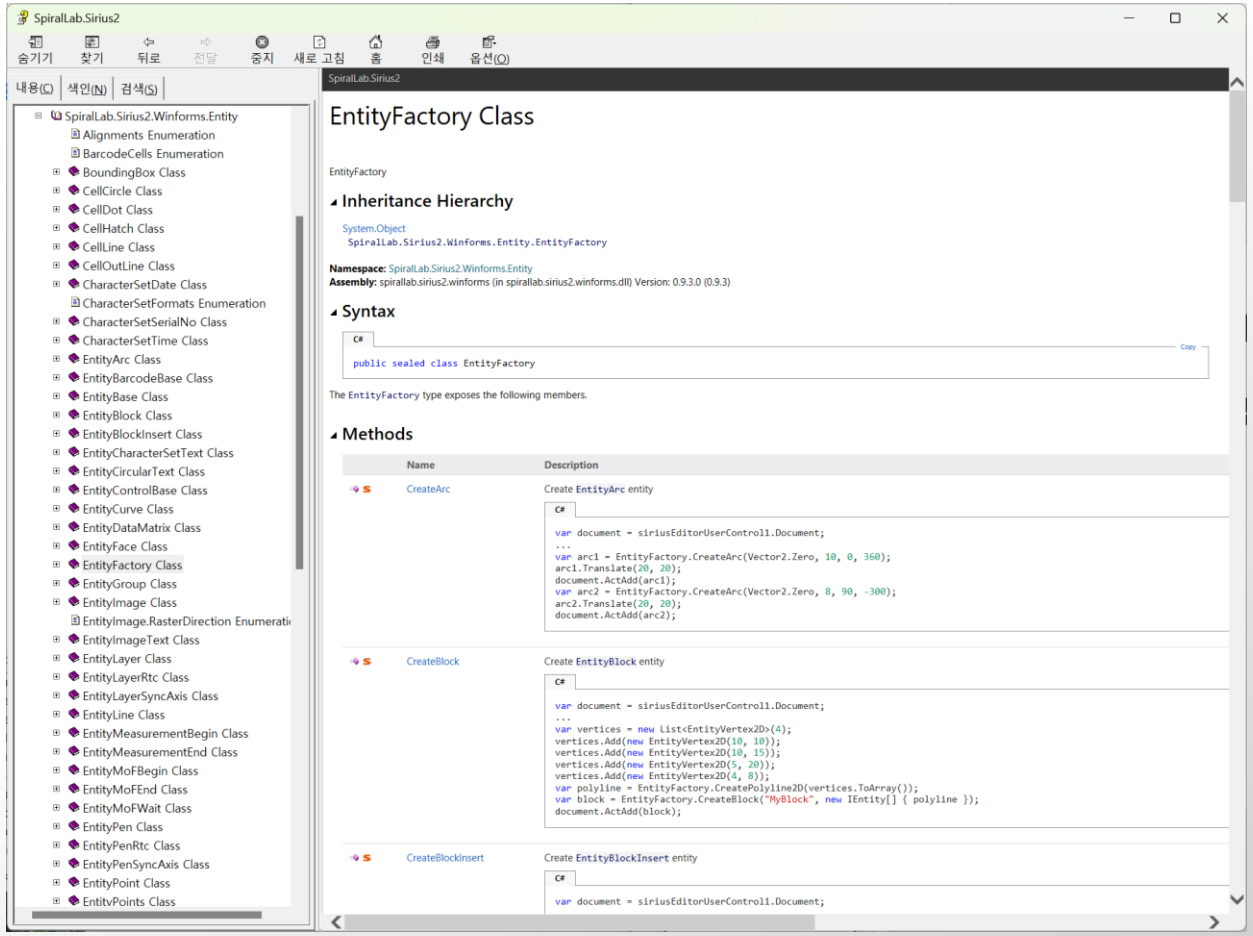


- User can be programm own laser application with easily
- Laser (open sourced)
- Marker (open sourced)
- Editor (open sourced)

Repository at GitHub

- Executable demo programs
- Customizable laser, marker and editors
- Repository : https://github.com/labspiral/sirius2

Documentation

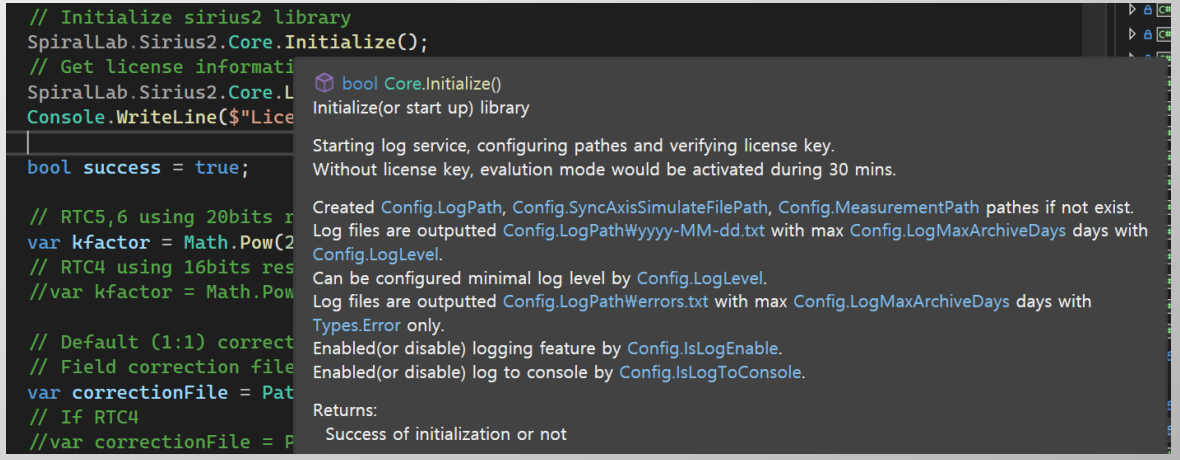


- Ready for SDK documentation
- Supported IntelliSense at Visual Studio

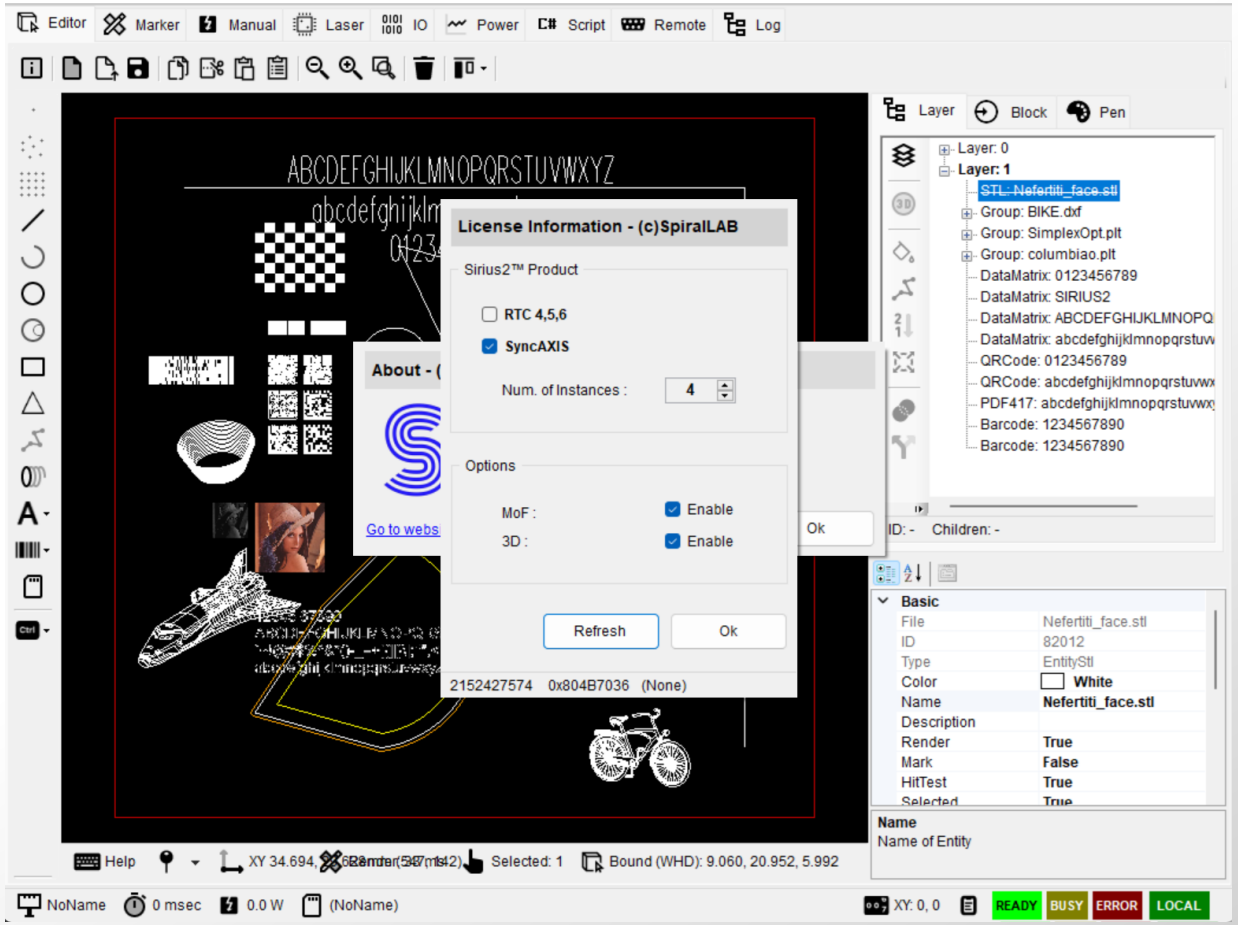
How to use SIRIUS2

- Clone(or Update) from https://github.com/labspiral/sirius2
- Copy bin/*.* files into output directory at your working project
- Add reference files into your working project
  - *spirallab.sirius2.dll*
  - *spirallab.sirius2.winforms.dll*
  - *opentk.dll*

- Will be helpful by Intellisense
  - *spirallab.sirius2.xml*
  - *spirallab.sirius2.winforms.xml*



License



- Product: RTC4,5,6 (or syncAXIS)
- Number of instances: 1~n
- Options
  - MoF: Processing on the fly based on encoder
  - 3D : 3D correction by calibration tool

Quotation request: hcchoi@spirallab.co.kr

Evaluation copy mode would be activated during 30 mins without license dongle key