Cambridge Technology

ScanMaster™
Software Suite

Release Notes

Contents

Version 1.5.0

Introduction

Purpose

This document provides an overview of the new features and enhancements introduced in version 1.5.0 of ScanMaster™ Designer.

The document is separated into several chapters - ScanMaster™ Designer, ScanScript, ScanMaster™ API, Universal API and EC1000 Firmware.

ScanMaster™ Designer

New Features

- Improvements were made to handle large documents:
    - Added streaming mode for all the Marking and Tracing options (Project, Active Image & Selected Shapes).
    - Allowed user to set “streaming images as a default” in preferences and project settings
    - SMD downloads only the active image with the Marking/Tracing options, whereas earlier all the images were downloaded.

Fixes

- Removed memory leaks related to Garbage Collection
- Raster pulse width mode frequency calculation error fixed
- Fixed Undo Issue in Text editor
- Fixed improper initialization of LaserModSyncSrc in EC1000 laser configuration

ScanScript

New Features

- ScanImage streaming support

Enhancements

- Added the optional argument distanceThreshold to Motf.TriggerOnIo()

ScanMaster™ API

New Features

- VectorImage streaming support
- Silent installation mode support

Enhancements

- Corrected cycle time calculation after image optimization
- RTC compatibility mode changes in supported EC1000 controller configuration
- Script changes if scan device independent data is used to create the ScanDocument
- Added offset unit type for all UserConfiguration and PerformanceAdjustment property pages in EC1000 device configuration editor
- Removed version checking when loading device configuration files for EC1000 device configuration editor

Fixes

- Fixed Abort exception handling issue when a job is started and stopped repetitively
- Fixed Null Reference exception issue
- Fixed bounding rectangle results for the FileDocument.GetBoundingRectangle command

Universal API

No Change

EC1000 Firmware

New Features

- Full 20-bit Lightning II support over XY2-100
- Added streaming of large vector images from SM-API to avoid out of memory issues.
- Added RTC coordinate system and ".ctb" file processing compatibility (90deg rotation in field).

Enhancements

- Permitted rotational corrections that are both positive and negative around zero.
- Added a LaserFire XML command to permit overlapped laser firing with jumps to the next location.
- Added encoder selection as an attribute to the MOTFWaitForCount XML command.
- Added support for checking the XY2-100 Status bits (SetXY2ErrorCheckMode) and causing an exception when they go into an error state.
- Added script support for setting Motf.DelayCompensation
- Eliminated BroadcastMonitor from Startup menu to avoid conflicts when it got launched via the scheduler on login.
- Made laser pipeline 4 signals wide and put FPK through it.
- Generalize the ability to inhibit updating any XY2-100 axis.

- Switched to using hashCode tags to search the deferred segment list to speed it up during execution.
- Added delay parameter to Mark/JumpAbsList command
- Added MOTF_COUNT_2 to register readback
- Optimized the ScriptEngine output buffer size to match the FPGA ring-buffer segment size to avoid garbage collect issues.
- Added support for MotfTriggerEx in the XML API, ScanScript, and the FPGA.
- Added XY2AxisDisable command
- Added support for floating-point (mm) or 32-bit integer (bits) offsets in the performance and user files
- Fixed problem with LaserModDelay not working when in synchronous laser modulation mode
- Check for server versions >= 270 before trying a getCalFactors priority message

Version 1.4.1

Introduction

Purpose

This document provides an overview of the new features and enhancements introduced in version 1.4.1 of ScanMaster™ Designer.

The document is separated into several chapters - ScanMaster™ Designer, ScanScript, ScanMaster™ API, Universal API and EC1000 Firmware.

ScanMaster™ Designer

New Features

- Direct support for Lightning II systems is not available. Visit our website to learn more about this revolutionary technology.
- Language support for Chinese added.

Enhancements

- Improved support for SPI G4 lasers - user can enter any pulse waveform value within 0-127. Frequency is set for known waveforms only.
- Application Preferences selection of large imported vector images display
- Groups having zero width or height are supported
- Z-values of shapes in group, rectangular / polar array are accumulated
- Rectangle, Symmetric polyline, Circle and Ellipse have the Clockwise property shown in the property grid
- Jump speed visibility can be changed using laser settings
- HelpIndex updated with Z compensation pages
- Spiral maximum allowed rotation count increased to 10000
- Minimum limit for line spacing of the following was changed to 1 bit - Spiral pitch, Hatch, Barcode, DataMatrix, QR Code Text hatching
- Raster image DPI minimum limit reduced to 10
- Supporting 20-Bit correction table for future enhancements

ScanScript

New Features

- Support for Lightning II systems added

Enhancements

- Disabled variable polygon delay application for the last MarkAbs just before Motf.StopTrackingAndJump
- Math.Round support added
- EC1000 wobble overlap percentage calculation error fixed
- Io.WriteDigital and Io.WriteAnalog functions, flushImmediate optional argument added for EC1000
- System.EnableZCompensation() and System.DisableZCompensation() functions implemented
- Laser.PointerEnable() and Laser.PointerDisable() implemented
- Added System.Abort() for EC1000
- IO script error messages improvements
- In EC1000 modified LaserOnDelay so that it is used as the Velocity compensation limit if Velocity
- Comp is turned on. This gives shape level control.

ScanMaster™ API

New Features

- Support for Lightning II systems added

Enhancements

- SC500 card initialization is now done during the connection of the card.
- Correction file upload API implemented for EC1000, with Script error generation for errors found during correction table file loading
- EC1000 device configuration support for changing the start-up job
- Added Chinese and Turkish resources to the SMAPI installer.

Universal API

No Change

EC1000 Firmware

Enhancements

- DFMDLL
  - Move_absolute was behaving as a move_relative (because reset_device was being called every time).
  - Updated to now use the new Stepper motor model.
- EC1000WIN32.dll
  - Changed C++ implementation of this .NET toWin32 bridge from deprecated clr:OldSyntax to new c++/cli.
- LecSession

  - Add new support for Arcs <ArcAbs>Xcenter,Ycenter,sweepAngle</ArcAbs> Matrix_params);
  - Added two new functions versions of sendCorrectionData(

- RTC Emulation
  - </Data> xml termination would be missing on a job list following an empty list send.
  - Add new support for n_arcs_abs( ) and n_arc_rel( )
  - Converting Scanlab .CTB correction file into our XML format.
  - Fix filename extension compare to be case-insensitive.
  - get_status( ) was not reporting busy status while job still running.
  - Mark/Jump scaling were wrong and always produced out of range <jumpAbs>32535,32535</jumpAbs>.
- ScriptEngine
  - Add support for new SMD features: Laser pointer enable/disable supported; Io.WriteDigital and Io.WriteAnalog functions, flushImmediate optional argument supported.
  - Addded port 7 (BUSY) to WriteDigital capability
  - Added ports 8-15 for access to DIO bits via ARM to FPGA PORT_H interface
  - math.round functionality added.
  - realtime transformation enable
- Server
  - Add 20-bit Correction table support
- Session
  - Add attachSession( ) & detachSession( ) calls to disconnect from EC1000 w/o stopping running Jobs.
- SettleCheckMode command gained an additional argument to support explicit setting of the SettleCheckDelay which was implicitly done via the LaserOnDelay attribute of the JumpAndFireList command.

Fixes

- BroadcastMonitor:
  - Make sure only one instance can run. Installer was launching two instances under windows 7.
  - BroadcastMonitor Tool wouldn't run from Windows 7 Startup folder, so installer was changed to start it via Task Scheduler.
  - EC1000UAPI starts BroacastMonitor if it is not running, as it needs it to find EC1000s.
- <MarkAbsList> did not handle User units and float numbers.
- Client: Padding pixels in raster mode 0 & 1.
- EC1000WIN32: When pc had more than 1 Local IP address it did not find controllers.
- FirmwareLoader: Sometimes reports error "No controller selected".
- FPGA: Ver. 270130703 fixed a problem when aborting the ArcAbs command.
- Lec_FPGA.bin: FPGA would crash after 5-10 consecutive sendStreamData( ) sendPriorityData(ABORT)
- RTC emulation: Crash of load_correction_file( ) if file was not found.

- ScriptEngine:
  - Error message added to invalid laser property names.
  - Fixed preload job error not shown.
  - Wobble period calculation error fixed.
  - Fix missing StartupJob parameter in the SMD Config Editor (with new SMD v1.4.1)
- Server:
  - Fixed correction table adjustment method when tweaking it via transform;
  - Enabled XY2 Extended Addressing Mode;
  - Changed rotation direction to be consistent with Cal conventions
  - Moved the system enable bit setting to the end of the initialization section as a more appropriate point to indicate the ready state
- Session: fix loginSession( ) when it is called after detachSession( ).
- UAPI: fix Empty list recognition.

Version 1.4.0

Introduction

Purpose

This document provides an overview of the new features and enhancements introduced in version 1.4 of ScanMaster™ Designer.

The document is separated into several chapters - ScanMaster™ Designer, ScanScript, ScanMaster™ API, Universal API and EC1000 Firmware.

ScanMaster™ Designer

New Features

Role Based Access Control

The Role Based Access control module allows restricting access to functionality by managing user permissions.

In this model, roles are created and permissions to perform certain operations are assigned to them. Users are then associated with a role which restricts their access to the functionality for which they have been authorized.

Features:

- User validation for every entity that is controlled by user permission
- User / role creation & modification
- User permission view & edit
- Machine-specific Login data file
- User / Role import & export
- User login / logout times are logged in a text file
- Managed through a new tab in Preferences

Enhancements

- Signed Client DLLs, Tools and Installers work better under Windows 7 (32-bit and 64-bit), and eliminate the need for a Right-Click "Run as Administrator" activation.
  Verified Publisher is “Cambridge Technology Inc.”.
- A default User script can be defined in Preferences and Project Settings.

ScanScript

Enhancements

Performance improvements

- Improved Server ScriptEngine performance to run more Real-Time by changing its priority so it is not interrupted by other threads in the system.
- Added System.SetActiveCorrectiontable to dynamically change the active correction table of the EC1000 / SM1000 controller.
- Laser regulation and speed regulation script functions argument validations implemented for EC1000 / SM1000 MOTF.
- Implemented geometric scaling of planar XY corrections based on Z height value to support EC1000 / SM1000 3D corrections.
- Report function now supports boolean argument.
- Modified ToNumber() method to output negative value of a converted number, rather than showing it in two's complement format.

ScanMaster™ API

New Features

Advanced Features Licensing

A licensing scheme was introduced for advanced features to maintain the rich, competitive feature-set of the API while allowing users to pay only for the advanced features they need.

- DXF file reading, Shape exploding and Bounding box calculation.
- 15-day evaluation license provided by default.

Shape Exploding/Bounding box calculations

Classes are introduced that allow exploding complex shapes into primitive shapes such as line, dot, elliptic arc, arc and polyline. This capability also allows defining the bounding box of all shapes.

- Etl.Hardware.Extension.Files renamed to Etl.Hardware.Extension.
- ShapeExplodeHelper class introduced which can explode the given shape to primitive shapes.
- Individual characters exploding supported.
- BoundingBoxHelper class introduced which can calculate bounding box of shapes.
- ShapeExplodeHelper and BoundingBoxHelper supports the following shapes:
  - Linear Barcode Shape
  - Data Matrix Barcode Shape
  - QR Code Barcode Shape
  - Spiral Shape

  - Hatch Shape
  - Circle
  - Elliptical Arc
- Added new shape exploding API and Bounding box API samples (ExtensionShapesSample).

Dynamic Text / Arc Text Hatching

Classes are introduced that allow hatching of dynamic Text and Arc Text shapes.

- DynamicText hatch properties including:
  - <textvar>.Hatch.Angle
  - <textvar>.Hatch.LineSpace
  - <textvar>.Hatch.Style (enum LineHatchStyle)

Marking Order

Marking order and inclusion of hatch and / or outline is supported for dynamic linear barcodes, datamarix and QrCodes, as well as DynamicText and Arc Text.

- property name is MarkingOrder (enum MarkingOrder)

File, Image & Font Support

- Custom exception (FileReadingException) is generated when trying to open a file type that is not supported.
- OVF font absolute path is now supported.

Version Compatibility Checking

Compatibility with ScanMaster™ versions of Script Engine and FPGA are now verified.

Enhancements

Raster Marking Improvements

- Raw data with 16 bits/pixel support for Jump and Fire mode.
- Raster scan line shifting supported (Lagging support).
- RasterImageShape.Port property type changed from 'int' to 'PowerPort'.

Miscellaneous

- Laser sync source selection implemented in the Device configuration editor.
- Removed the Z argument from HatchShape boundary accepting functions, and made old functions obsolete.

Universal API

Enhancements

- Repaired U-API UA_wait() operation for delays <10
- Added return errors codes during UA_connect().

EC1000 Firmware

Enhancements

- Implemented automatic defaulting to using old XML rev 1.0. (in LecSession.dll) if 2nd parameter timeout is no supplied for sendStreamData()
- Improved Server JobEngine performance when adding new JobSegments to Engine while it is still running other preloaded jobSegments.
- Improved Server ScriptEngine performance by changing its priority so it runs more Real-Time and is not interrupted by other threads in system.
- Changed Server Broadcast support to reduce internal memory Garbage Collection.
- Changed default API Tuner KeepAlive Frequency and Timeout values from 15 & 20 to 5 & 10 respectively to prevent unwanted disconnects.
- Added a Server Timeout to prevent ReceiveFromSocket() hanging due to disconnecting the Ethernet cable during FTP functions.
- Fixed LocalMgr crash that occurred when rerunning a very large job. This happened because memory was not released at end of the run.

Tools

- API Tuner
  - Add EC1000 Debug console via Telnet.
  - Updated the user manual to include new support for debugging the EC1000 Server.
- RTC4 Emulator
  - Change how mark_speed and jump_speed are handled so it creates a float for num bits per step.
  - Implement set_softstart_mode( ) in the U-API
  - Correct implementation of set_list_mode( ) for Circular mode
- Broadcast Monitor
  - Start tool hidden only via cmd-line flag else it starts on foreground.
  - Corrected failure to read all Targets StatusInfo when more than one controller is available.
- Firmware Loader:
  - Will not succeed if it is run with only Touch Display checked.

Version 1.3.0

Introduction

Purpose

This document describes key new features that are introduced in the ScanMaster^{TM} Designer version 1.3.0, as well as changes from previous versions.

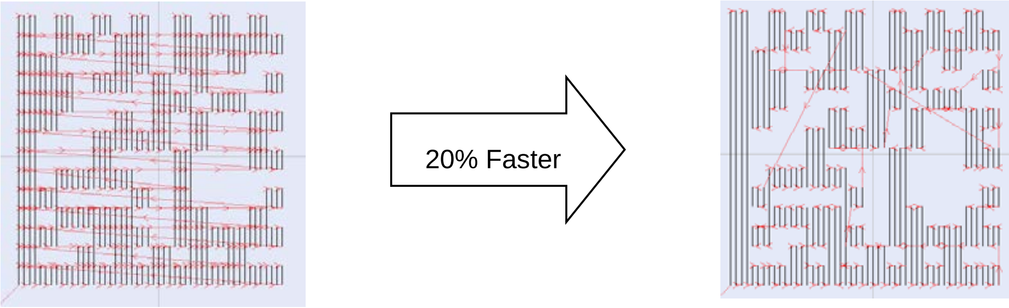
The document is organized in three parts – ScanMaster Designer, ScanScript and ScanMaster API. The information presented in the ScanMaster Designer and ScanScript sections is also applicable for ScanMaster API users unless indicated otherwise.

ScanMaster Designer

New Features

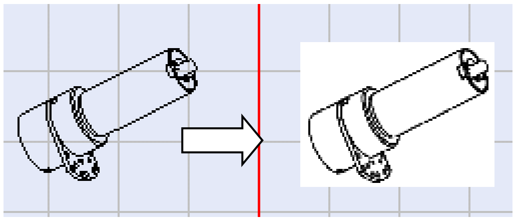
Path Optimizer

This feature optimizes the marking order of multiple shapes to decrease the number of jumps performed by the scanning mirror, therefore reducing the overall job's cycle time.



To utilize it, select the shapes you want to optimize and click Path Optimize on the Tools menu.

Vector to Raster Conversion



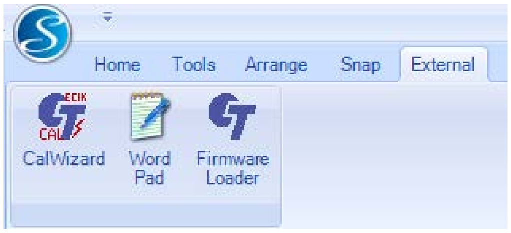
Vector graphics are made of lines and curves called vectors. They are processed by following the specific parts of the pattern.

Raster (Bitmap) graphics are made of a grid of colored dots called pixels. They are processed by running the laser beam back and forth in the selected marking direction to cover the full area of the image.

Marking a Raster image is more time consuming and less defined in terms of outline lines and filling, however some applications can benefit from using raster marking.

This feature allows the user to import a vector graphics image onto the SMD canvas and convert it to a raster image by right-clicking on the image and selecting Convert to Raster Image

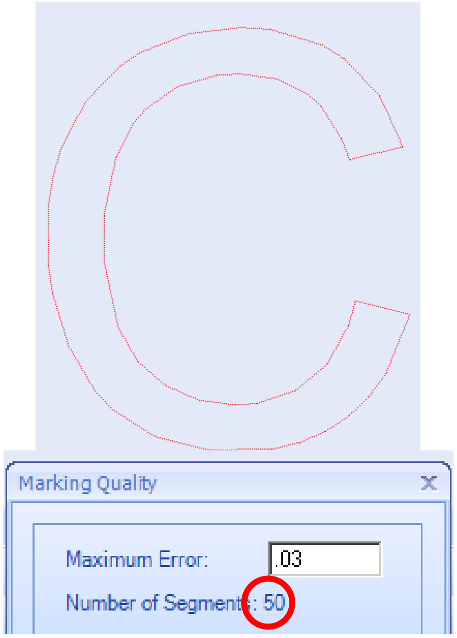
External Utilities Support



This feature allows the user to add items to the "External" Ribbon that launch external applications from within ScanMaster™ Designer.

Text Quality Marking Support

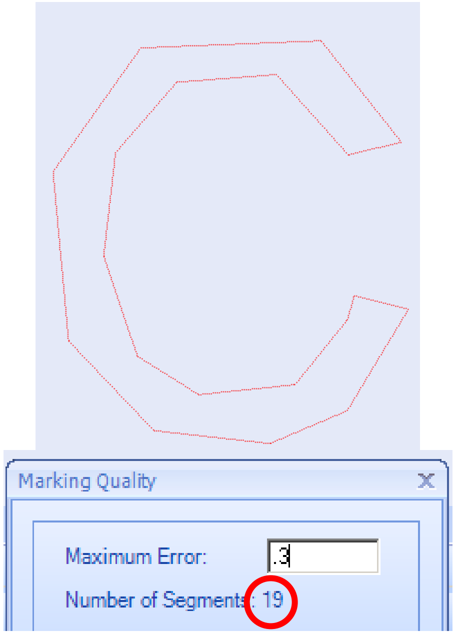
This feature applies the Marking Quality optimization to text objects to provide the user with the ability to compromise quality for increased throughput.



Marking Quality

Maximum Error: .03

Number of Segments: 50



Marking Quality

Maximum Error: .3

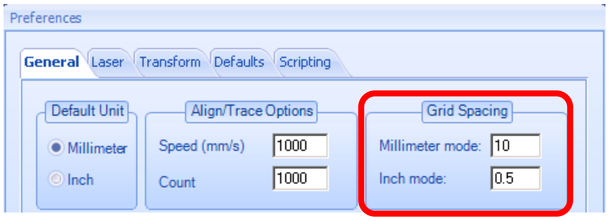
Number of Segments: 19

IME and OCR-A / OCR-B Fonts

ScanMaster Designer’s Text Editor now supports IME (Input Method Editor - components that allow you to enter characters in different languages using a standard keyboard) as well as the two OCR fonts.

Grid Spacing Control

The grid’s spacing can now be set in the Preferences window, Grid Spacing section.



Default Unit
● Millimeter
○ Inch

Align/Trace Options
Speed (mm/s) 1000
Count 1000

Grid Spacing
Millimeter mode: 10
Inch mode: 0.5

QR Code Support

QR Code is now available as one of the Barcode shape options. To run the QR Code as a dynamic text, contact CTI for an updated license for your controller.

Raster Marking on Cylindrical Objects

When marking a Raster image on a cylindrical surface, the laser beam may go out of focus at the far edges of curvature. The marking surface must be rotated to position the marked Raster line directly underneath the marking head. To synchronize this process a script is called after a pre-defined number of lines are marked.

Changes from Previous Version

Automatic Network Adaptor Detection

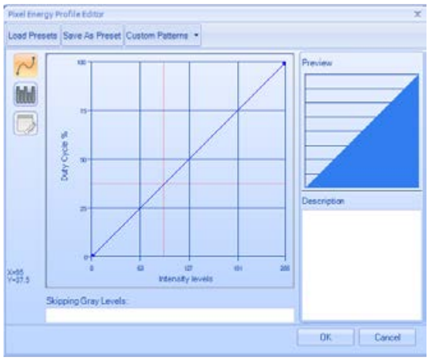
The user is no longer required to identify the network card used to communicate with the controller cards. Upon startup, ScanMaster Designer will scan through all available network cards and identify all available controllers. This change also includes the removal of the Network tab from the Preference window.

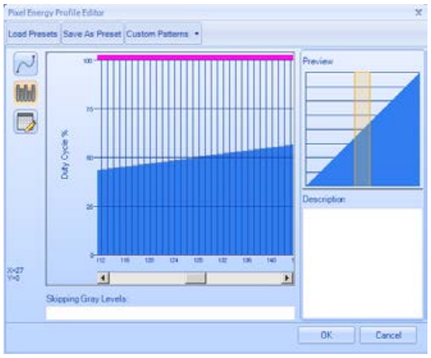
Raster Energy Profile Editor

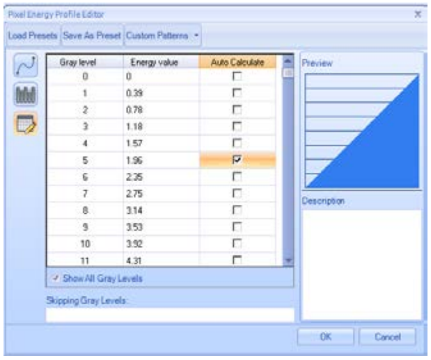
Few enhancements were made to the Pixel energy Profile editor for raster images:

1. The cursor’s X,Y coordinates are displayed.

2. Numerical energy percentage for specific intensity levels can be entered directly into a table.
3. Table entries between manual entries can be interpolated automatically.
4. Intensity levels that are to be skipped (ignored) can be defined manually.







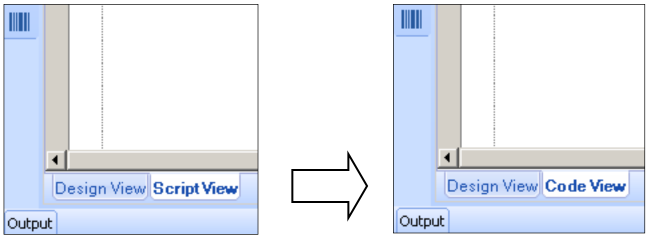
Gray level	Energy value	Auto Calculate
0	0	□
1	0.39	□
2	0.78	□
3	1.18	□
4	1.57	□
5	1.96	☑
6	2.35	□
7	2.75	□
8	3.14	□
9	3.53	□
10	3.92	□
11	4.31	□

Line Tool

The line tool was modified to insert a single line at a time, eliminating the need for the user to right-click and “End” the operation.

Image Bottom Tab Names

The “Script View” label at the lower-left corner of the image display was renamed to “Code View”.



ScanScript

New Features

User Interface Capability

Methods have been added to provide for clearing of the Output window, creation of a message pop-up and creation of a data entry input pop-up. These enable to engage the user in managing the flow of the job as well as feeding changeable data into a pre-defined job.

Extended Applications Support

Application extensions are compiled as Dynamic Link Libraries (DLLs) to enable various program functions such as communication with external devices, complex mathematical functions, computational intensive applications that are working in a separate host computer, any desired low level of functionality and other functionality that are not available with ScanMaster™ Designer's script. These extensions can be written in any .Net language.

System Commands Support

Send & Receive commands were added to ScanScript to allow communication with ScanMaster API. Both blocking (synchronous) and unblocking (asynchronous) types are available for the receive command.

Event Creation

This method generates an IO Event when an I/O condition is met (Not supported for SC500).

Laser On / Off

Methods have been added to explicitly turn the laser on and off.

Laser Timer

This feature enables elapsed time measurement (including pause and resume) by the hardware, providing a more accurate feedback. (Not supported by the SC500).

String Formatting

The format of dynamically changing strings can now be defined using the following sequence: [%[Flags][Width][Precision].Specifier:VariableName], with the following specifiers:

c	char	i	integer
d	decimal	o	octal
e	exponent	u	unsigned integer
f	float	x	hex
g	compact float	s	string

QR Code Support

QR Code barcodes can now be defined using ScanScript methods.

ScanMaster API

New Features

System Commands Support

Send and receive commands are now available to complement the ScanScript.ones.

Raster Marking on Cylindrical Objects

Similarly to ScanMaster Designer, SM-API supports progressing a cylindrical object while marking a raster image.

Laser On / Off

Laser signal turn on at the end of the job and turn off at beginning of the job via API (Not supported for SC500).

Changes from Previous Version

Laser Configuration

EC1000 laser configuration LsrModType renamed to LaserModType

Automatic Network Adaptor Detection

Like ScanMaster Designer, SM-API will scan all available network cards upon startup.

Raster Modes Names

Raster mode PulseWidth-SinglePulse renamed to PulseWidth

Raster mode PulseWidth-MultiplePulses renamed to JumpAndFire

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Version 1.2.0

Introduction

Purpose

This document describes key new features that are introduced in the ScanMaster^{TM} Designer version 1.2.0, as well as changes from previous versions and known issues and limitations.

The document is organized in three parts – ScanMaster Designer, ScanScript and ScanMaster API. The information presented in the ScanMaster Designer and ScanScript sections is also applicable for ScanMaster API users unless indicated otherwise.

ScanMaster Designer

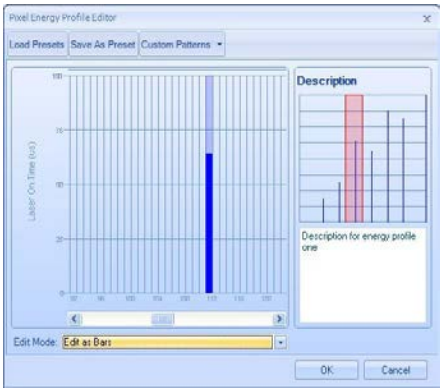
New Features

Power Correction

Power settings are corrected based on the Power Correction Table before being sent to the controller card.

Bar Graph Editor for Raster Energy Profile

The energy profile of a raster marking can now be edited in bar graph mode. This mode is better suited than curves to handle Dithered images that have only few colors, but can also be used for continuous tone images:

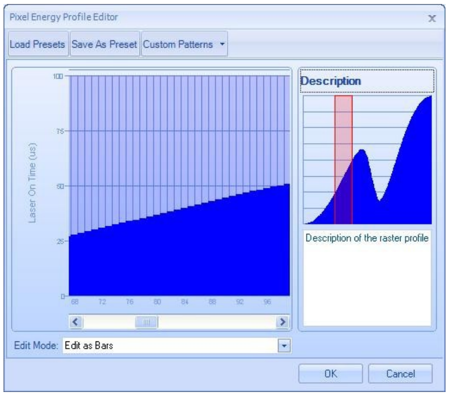


Pixel Energy Profile Editor

Edit Mode: Edit as Bars

Description for energy profile one

8-color Dithered Image



Description of the raster profile

Edit Mode: Edit as Bars

256-color Continuous tone image

SC500 Raster Marking

SC500 now supports raster marking in "Laser On Time" Pixel modulation mode (one of the there modes supported by the EC1000), using a Point & Shoot mechanism. Both the Dithered and Continuous tone images are supported, as are all the sub features (Scan Direction, etc.) in the raster mode as shown in the following image:

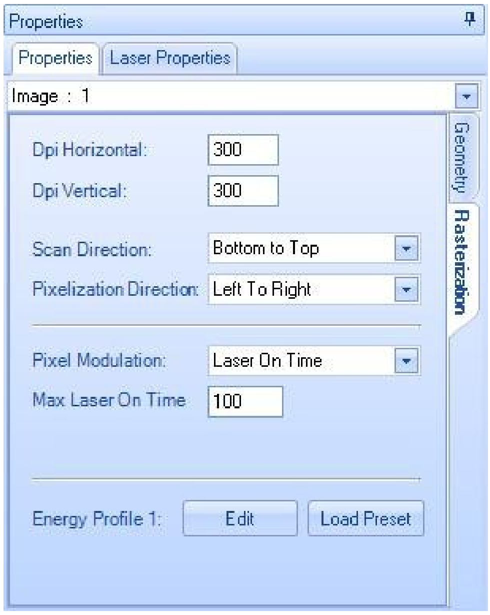


Image : 1

Dpi Horizontal: 300

Dpi Vertical: 300

Scan Direction: Bottom to Top

Pixelization Direction: Left To Right

Pixel Modulation: Laser On Time

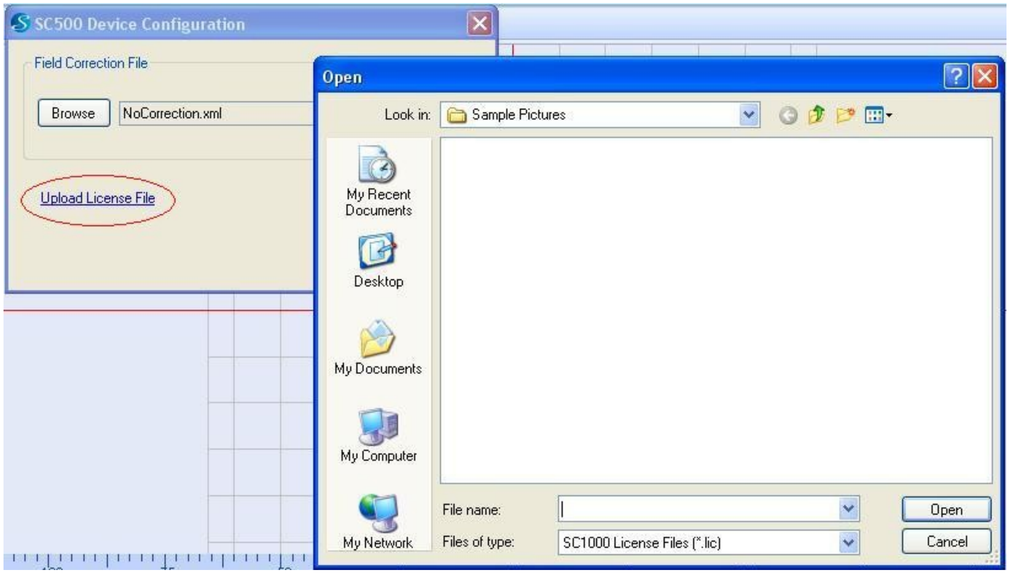
Max Laser On Time 100

Energy Profile 1:

SC500 License Upload

The SC500 license file can now be uploaded through the Device Configuration dialog box.

Right-click on a SC500 device and select Device Configuration from the menu. In the dialog box (shown in the following image), click on “Upload License File”:



SC500 Device Configuration

Field Correction File: NoCorrection.xml

Open

Look in: Sample Pictures

File name:

Files of type: SC1000 License Files (*.lic)

Changes from Previous Version

- Raster modes renamed and functioning changed as follows
  - “Pulse Width” renamed to “Pulse Width - Single Pulse” (EC1000 Only)
  - “Power” - No change (EC1000 Only)
  - “Laser On Time” - no change to name, but no more EC1000 support. (SC500 Only)
  - “Pulse Period with Duty Cycle” renamed to “Pulse Width - Multiple Pulses”. Accepts lead in, lead out and laser on time parameters (EC1000 Only).
- Hatch spacing minimum limit changed to 1 bit.
- Real time transformation, Velocity compensation and MOTF tracking defaults are set on job start.
- Marking and jumping now uses 32 bit instructions.
- SC500 laser "FPS Width" and "FPS Advance" made available for editing through device Configuration.

ScanScript

New Features

Velocity-based Power Compensation

The average laser power is now changed in real-time based on the simulated velocity of the scanners, compensating for the laser spot slowing down as the galvos trace out an arc or a sharp corner. If left uncorrected, this slowing down causes too much average laser power to be applied in the corners causing burning or cut-through where only partial penetration may be desired.

Two "controls" are available in ScanScript –

1. Aggressiveness – represents how close the galvos will be to the requested speed as they mark arcs and turn corners. The higher the number, the more aggressive the algorithm behaves in changing the laser modulation characteristics. A practical range of values is 500 to 5000.
2. Limit – represents the maximum compensation as a percentage of the normal marking power level. Its range is zero (maximum compensation) to 100% (no compensation).

For this release this feature is only accessible through ScanScript. It will be made available in SMD and SM-API in a near-future release.

Angle Unit Management

In ScanScript an Angle measuring unit can be set for a particular session where the set angle unit will be used whenever "angles" are encountered. You can change the angle measuring unit using the SetAngleUnits(AngleUnits angleUnits). Please refer the on-line help for more information.

Wait and Notify Events

Two events were added to ScanScript's Events library to help synchronizing scripting and marking engine execution flows. They are Wait and Notify events.

Wait Event

This command generates a notification from the marking engine to the script engine to hold execution of instructions in the script engine. Please refer the on-line help to get more information.

A sample program is shown below:

```
-- This program demonstrates the CreateWaitEvent method.
```

```
SetUnits(Units.Inches)                       -- Set units to be Inches

Laser.JumpSpeed = 250                    -- Set Laser Parameters

Laser.MarkSpeed = 150

Laser.JumpDelay = 150                    -- Set Delays

Laser.MarkDelay = 200


eventOne = Events.CreateWaitEvent()          -- Create an eventOne event to synchronize the script
                                                engine with the marking engine


eventTwo = Events.CreateWaitEvent()          -- Create an eventTwo event to synchronize the script
                                                engine with the marking engine


Image.Circle(0, 0, 1)                        -- Scan a circle with a radius of 1

eventOne.Schedule()                          -- Schedule eventOne

Image.Box(-1, -1, 2, 2)

eventTwo.Schedule()                          -- Schedule eventTwo


eventOne.Wait()                              -- Wait for eventOne notification

Report("Circle is marked")

eventTwo.Wait()                              -- Wait for eventTwo notification

Report("Rectangle is marked")
```

Notify Event

This command generates a notification to the event handler when marking has reached its scheduled position. Please refer the on-line help to get more information.

A sample program is shown below:

```
--This program demonstrates the CreateNotifyEvent method.
```

```
SetUnits(Units.Inches)                                  -- Set units to be Inches

Laser.JumpSpeed = 250                                   -- Set Laser Parameters

Laser.MarkSpeed = 150

Laser.JumpDelay = 150                                   -- Set Delays

Laser.MarkDelay = 200


socket = Network.OpenTcpSocket("192.168.1.102",5032)  -- Connect to the TCP server

event = Events.CreateNotifyEvent("PartCompleted")       -- Create a notify event


function PartCompleted(messageData)

 socket.Send(String.GetBytes("Part " ..messageData.." is completed.\n", Encoding.UTF8))

                                                        -- Encode the messageData as UTF8

end




for index = 1,100 do

 Image.Circle(0, 0, 1)

 event.Schedule(index)                       -- Scheduled the event and pass the index as a parameter

 sleep(100

end
```

Changes from Previous Version

- Raster marking “Pulse Width - Multiple Pulses” mode supported using JumpAndFireList command

ScanMaster API

New Features

Loading and Marking of “.sdw” Files

Project files (“.sdw”) that are saved with scanning information via ScanMaster^{TM} Designer can now be executed through SM-API. Once loaded the following changes can be made:

- ScanDocument.PreviewInfo
- ScanDocument.TransformMatrix2D
- ScanDocument.Offset
- ScanDocument.AfterCompletion

These changes are also applicable for device independent file formats.

License restrictions imposed on files created using ScanMaster^{TM} Designer are now applicable to “sdw” files loaded in SM-API.

SC500 Beam Homing

SC500 users can now define the required place move the beam to once the job is completed. The supported features are:

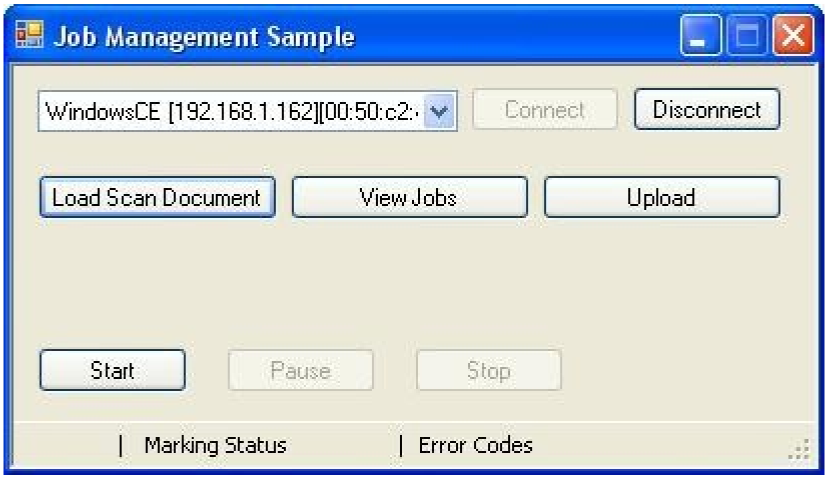
- Enable/Disable beam homing
- Beam home position
- Disable laser beam

Currently the beam homing speed is not configurable, but will be made available in a later version.

Sample Job Management Application

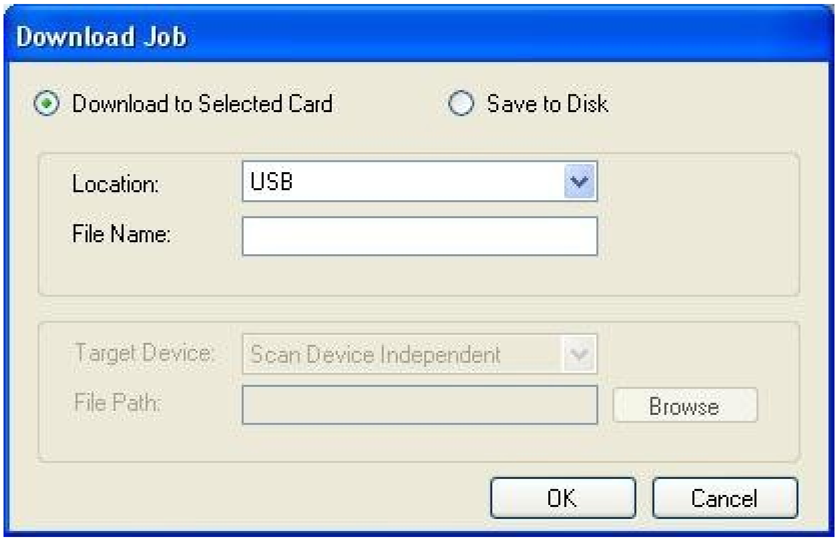
The new sample application is added to the samples folder to work with “Job uploading and running” methods. Through the sample application you can upload “.lsj” files as well as “.sdw” files that were saved enabling “Embed scanning information on saving” in the Preferences window.

Sample screen shots are given below:



WindowsCE [192.168.1.162][00:50:c2:·

Main screen



● Download to Selected Card ○ Save to Disk

Location: USB

File Name:

Target Device: Scan Device Independent

File Path:

Job downloading screen

Changes from Previous Version

- SetAngleUnits(AngleUnits angleUnits) supported
- PixelModulation enum field names changed
- RasterImageShape energyprofile2 removed. Energyprofile1 renamed to energyprofile
- RasterImageShape energy profile changed to accept a float array of length 256 having values between 0-1
- Motf.WaitForCount, Motf.WaitForTriggerCount accepts scaled encoder counts (bits)
- Syntax changed as Motf.WaitForCount(int count [, bool isAbsolute]), Motf.WaitForDistance(distance) and Motf.WaitForTriggerDistance(distance) implemented
- In APISC500 laser "FPS Width" and "FPS Advance" made available in the device configuration to change the values

Known Issues & Limitations

- Language support
- Win7 64bit support – Chinese vrsion
- OCR-A and OCR-B OVF fonts
- Opening multiple “.sdw” files at once
- Multiple text hatch selection
- SC500 Intent and architecture cannot support the following:
  - Unit Bit Mode
  - MOTF Commands
  - IO Commands
  - Interlock Configuration
  - More than one laser
  - Wobble Commands
  - RotateRealTime, TranslateRealTime Commands