Trendsetter II ContinuousLoad and Trendsetter II ContinuousLoad Spectrum MCE Firmware Version 1.20 Release Notes

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1. SCOPE

This document contains information you need to know to use the Early Production Release 1.20 of the MCE Trendsetter II ContinuousLoad and ContinuousLoad Spectrum firmware. Sections include New Features, Bugs Fixed since the last release (1.16), Known Bugs, Device Configuration and Device Calibration. The intended audience is test engineers and service personnel.

Please refer to the TechPlanet firmware documentation pages or the Creo Service CD-ROM for information on commands, error messages, and NVS parameters for the Trendsetter MCE.

Common acronyms used in this document are defined in Appendix A.

2. FORMATTING CONVENTIONS

The formatting conventions used in this document are as follows:

all NVS parameters are in italics and

commands to be typed into the diagnostic terminal are in bold as well as the diagnostic command responses.

3. UPGRADE PROCEDURE

To upgrade the MCE firmware, please perform the following steps:

1. This step must be performed before upgrading the firmware:

> **Important!**
>
> **You must upgrade ServiceShell before upgrading firmware.**
> **Use the new FirmwareUpgrade script to upgrade all the firmware.**
>
> Service Shell should always be upgraded before upgrading firmware. However, it is particularly important to upgrade to Service Shell 2.5 for this firmware version because the new upgrade script includes a special procedure that is required for properly installing the new versions of firmware.
>
> **It is critical that the new BOOT module be downloaded *before* any other new firmware module, including main firmware, POST, Xilinx, etc.** For example, if you download new main firmware onto an MCE with BOOT v1.09, the new main firmware will fail to run. To recover from this, you will have to download the previous version of whatever module(s) you have downloaded and then proceed by downloading the new BOOT. For this reason, it is highly recommended to use the new Firmware Upgrade script whenever you need to download new firmware to the MCE. See *Section 4.9 New FW Directory*.

2. For the rest of the Upgrade Procedure, please see the detailed upgrade document *FirmwareUpgrade.pdf*. This document can be opened from the script view in ServiceShell by right-clicking on the Firmware Upgrade script, and clicking Help for selected script. Then click the link to the pdf file:



The *FirmwareUpgrade.pdf* file can also be found in the d:\ServiceShell\Scripts\device folder.

4. NEW FEATURES AND CHANGES

4.1 NVS Changes

The following table details new and changed NVS parameters in this release.

NVS System	Param Name	Old Default	New Default	Description	Refer to Section
carriage	**Imove**	**5.000**	**7.000**	Increased Iplot and Imove for the new higher current carriage amp	--
carriage	**Iplot**	**5.000**	**7.000**	Increased Iplot and Imove for the new higher current carriage amp	--

4.2 Test Plot Applet support

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

This version of firmware supports the Service Shell Test Plot Applet for making series plots. This applet replaces the old series plot script **MCE_TrendsetterSeriesTestPlots.spt**.

4.3 Variable Mainscan Resolution option

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

The Variable Mainscan Resolution (VMR) option has been implemented for customers requiring lenticular printing ability. This involves scaling the output to a specific non-integer resolution in the mainscan direction.

Image data for VMR will contain TIFF tags specifying the rendered resolution and required output resolution in the mainscan direction. PrintConsole will pass these values to the MCE, which will produce pixels of the correct mainscan size.

The VMR option must be enabled before attempting to image such a file. Use the following command to do this:

```
option vmr enable
```

Additionally, because VMR may require resolutions slightly greater than normal (to shrink the image), you must configure the device limit for maximum mainscan resolution. It is recommended that if images are typically 2400 DPI that you configure the resolution limit to 2400 + 3.2%, which is 2477. Use this command:

```
feature <password> 25 2477
```

Use the **feature list** command to check the existing limits. Limit 25 is the mainscan resolution maximum.

You can test VMR using diagnostic plots. If the VMR option is enabled, you can use the following command to set the rendered (input) resolution of the image and the desired output resolution:

```
mode vmr <rendered> <output>
```

For example, **mode vmr 2412 2415.973** will set the input mainscan resolution for the next diagnostic plot to be 2412 DPI and the output mainscan resolution to be 2415.973 DPI. The subscan resolution stays the same as it was.

Unlike on the MPE, you do not have to configure resolution modes for VMR images. When the non-integer output resolution is specified, any existing resolution modes are ignored.

Additional work is required for this feature to prohibit customers from enabling the option or otherwise doing lenticular imaging without paying for the option. This work includes limiting the range on the GC mainscan scale parameter, limiting the selections for resolution modes, and password protecting the VMR option. This will be included in the next major firmware release.

4.4 Vacuum levels now expressed in kilopascals

Applies to:
⇨ Trendsetter II ContinuousLoad Spectrum

All Spectrum vacuum levels are now expressed in kPa instead of raw ADC values. This includes NVS vacuum threshold parameters, diagnostic output and monitor commands. The reason for this change is so that if new sensors are installed in the machine, the thresholds will still remain the same, as they are in real-world units rather than arbitrary hardware-specific units. Furthermore, the raw ADC values on the MCE differ from those on the MPE, so to avoid confusion for field service personnel we should not present them as the same.

The following table summarizes the changes to NVS parameters. Old raw ADC-based parameters have been replaced by new kPa-based parameters.

Group	Old ADC Parameter	New kPa Parameter	New Default
mhproof	*DvacOffset*	*DvacReference*	0.000 kPa
mhproof	*DvacCarrierThres*	*DvacCarrierThres*	5.500 kPa
mhproof	*Vr4VacOffset*	*Vr4VacReference*	21.000 kPa
mhproof	*Vr8VacOffset*	*Vr8VacReference*	21.000 kPa
mhproof	*VrVacOnThres*	*VrVacOnThres*	9.000 kPa
mhproof	*VrVacGrabThres*	*VrVacGrabThres*	60.000 kPa

proof	*DvacRecThres*	*DvacRecThres*	26.000 kPa (4up and 4up mini), 14.000 kPa (8up),
proof	*DvacDonThres*	*DvacDonThres*	60.000 kPa (4up and 4up mini), 54.000 kPa (8up)
proof	*DvacGenThres*	*DvacGenThres*	56.000 kPa (4up and 4up mini), 50.000 kPa (8up)
proof	*DvacUnloadThres*	*Obsolete - removed*	N/A

Use the **proof cal** command, as before, to calibrate the following parameters:

- *DvacReference*
- *DvacCarrierThres*
- *Vr4VacReference*
- *Vr8VacReference*

The **dvac** and **vr** commands have been modified to display vacuum levels in kPa only. The **dvac hold** command now accepts a target pressure in kPa only.

When you upgrade the firmware from 1.14.09 or older to the new firmware, the vacuum references and thresholds will all be at their defaults. Therefore you must run **proof cal** after upgrading the firmware. If you downgrade back to the previously loaded version of firmware, the old NVS parameters will be automatically restored.

4.5 Proof margin type 2 (Fuji) changed

Applies to:
⇨ Trendsetter II ContinuousLoad Spectrum

The old proof margin type 2 settings were ¾ inch at LEC side and ¼ inch at TEC side. These have been changed in this version of firmware to 3/5 inch (15.24 mm) at LEC side and 2/5 inch (10.16 mm) at TEC side.

4.6 New UnloadOffsetAdjust parameter

Applies to:
⇨ Trendsetter II ContinuousLoad Spectrum

A new parameter in the mhproof group has been added, called UnloadOffsetAdjust. This parameter, measured in millimeters (up to three decimal places), is used to adjust the distance onto the proofing media that the vacuum roller is placed when grabbing it for unloading. This is

intended to calibrate the system. If a positive value is specified, the offset is decreased. If a negative value is specified, the offset is increased.

The default value is 0.000 mm. For example, if the *proof unloadoffset* parameter is set to 8, but when actually grabbing the media the VR is measured as being only 6 mm from the media edge, then set the unload offset adjust to -2 mm. In order to set this value properly, careful measurement of the actual unload offset must be made when unloading proof media.

This parameter replaces the *mhproof mpo* parameter on the MPE.

4.7 Cleanmode parameter moved

Applies to:
⇨ Trendsetter II ContinuousLoad Spectrum

The cleanmode parameter has been moved from the mhproof group to the proof group. This was done so that different clean modes could be configured for different proof types. For example, a site may have normal 4up proofs and Fuji 4up proofs configured, each of which has different cleaning mode requirements.

4.8 4800 DPI Mainscan Resolution

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

The firmware can now be configured to support 4800 DPI resolution in the mainscan direction. To do this, use the following command:

```
feature <password> 25 4800
```

Note that this is the same command used to increase the maximum mainscan resolution for VMR.

4.9 New FW Directory

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

The firmware binaries have been rearranged in the Flash ROM on the MCE to provide more space for the main firmware. This rearranging is accomplished by the latest version of the BOOT module, 1.12. The important effect of this is that new firmware will not find other modules unless they have been moved to their new locations by the new BOOT module first. For example, if you download new main firmware onto an MCE with BOOT v1.09, the new main firmware will fail to run because it cannot find the Xilinx module any more. **It is critical that the new BOOT module be downloaded *before* any other new firmware module, including main firmware, POST, Xilinx, etc.** If you fail to do this, you will have to download the previous version of whatever module you have downloaded and then proceed by downloading

the new BOOT. For this reason, it is highly recommended to use the Firmware Upgrade script whenever you need to download new firmware to the MCE.

4.10 New Default Carrier Thickness parameter

Applies to:
⇨ Trendsetter II ContinuousLoad Spectrum

A new parameter in the *prd* group called *DefaultCarrierThk* has been added. Use this parameter to set the carrier thickness for all types of media other than proofing media. This includes Dylux.

4.11 PLL Stability Check

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

For version 1.76 or greater of Xilinx, the MCE firmware will now wait until the PLL has stabilized after enabling it before beginning focus learn at the start of a plot. If stabilization does not occur after 10 seconds, the plot is aborted with error code 38161: "The Phase Lock Loop did not stabilize." This new feature should not affect the throughput of the machine in any significant way.

4.12 New Lockout command

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

This was actually in the 1.14 release of firmware as well, but was not included in the release notes, so it is here. There is a new command with the following syntax:

```
lockout [<enable|disable>]
```

This command allows the operator to lock out workstation access to the device. While locked out, the workstation cannot submit jobs. This allows the operator to perform testing on the device without interference from the workstation. Use the command **lockout** to display the current lockout status.

4.13 New Head command

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

A new command has been added to view and initialize the HMS (head media stats) parameters in the TH1.7x head. The syntax for this command is:

```
head stats media [init] <slots+>
```

The command **head stats media** displays the head media statistics by slot number and media name. The command **head stats media init <index>** will initialize the head media statistics for the specified slot to zero. The command **head stats media init <start index> <end index>** will initialize head media stats for the slots from start to end to zero.

This command may be useful for any script that sets up a new head.

4.14 Increased Maximum Subscan Limit for 4UP Devices

Applies to:
⇨ *Trendsetter II 400 ContinuousLoad*
⇨ *Trendsetter II 400 ContinuousLoad Spectrum*

The default device limit for maximum subscan plate size was increased from 762mm to 839mm. This applies to all 4UP device configurations for Base, Spectrum, Autoloader, and ContinuousLoad models. The same change was made for maximum subscan film size.

5. BUGS FIXED

The following bugs have been fixed in this release of the firmware.

5.1 PRS 2919: Device does not report if Fanbox Panel is closed

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

When the fanbox panel, or any other panel for that matter, is closed, a message indicating “all faults cleared” is displayed.

5.2 PRS 6104: Plate wrong size. Recovery has extra unnecessary step.

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

There used to be two suspend prompts that would appear when the measured plate size is incorrect. The second unnecessary suspend is now skipped when unloading a plate with an incorrect mainscan size.

5.3 PRS 6128: (Manual Spectrum) Drum vac should turn on after hitting the load button.

Applies to:
⇨ Trendsetter II ContinuousLoad Spectrum

Modified loading sequence so that drum vacuum is not turned on until after the load button has been pressed. It used to be turned on prior to the button being pressed, which could cause the pump to be active for a long time if the operator was slow.

5.4 PRS 6133: Why is the carrier sr 0.04 for MCE when MPE's default is 0.1?

Applies to:
⇨ Trendsetter II ContinuousLoad Spectrum

The default carrier surface reflectivity has been changed from 0.040 to 0.100 to match the MPE.

5.5 PRS 6170: Cable detect errors on firmware reset

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

The firmware now waits until the power has finished coming on before starting to monitor cable presence detects. This is because some cable presence detects take awhile to settle. When the power has finished coming on, they will have all settled, so the Carriage Motor Presence fault will no longer be erroneously reported.

5.6 PRS 6175: Pll crashes if you try to enable it with a drum speed of 1 RPM

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

The firmware would crash with the following commands:

```
>> drum spin 1
>> pll on
```

This has been fixed.

5.7 PRS 6185: Message leak

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

The problem was caused by the implementation of the **fw dir** command. If performed while plotting, this command would consume too much CPU, causing the system to crash. This has been fixed.

5.8 PRS 6186: list version should report the version of the pattern block

Applies to:
⇨ Trendsetter II ContinuousLoad Spectrum

The **list version** command now reports the version of the overwriting data file. The format of the command is now as follows:

```
>> list version
Version Information:
-----------------------------------------------------
FW: TSMCE Sep 11 2003 16:55:46 *** Engineering Firmware ***
    Version: 1.17.11 Build No: 08240
    Built using Baseline #2859 - Sep 11 2003
```

```
HW: Master Control Electronics Hardware Board (MCE)
    MCE PCB Version is 06
    MCE PCB Population Option Number 02.
Xilinx Version: 1.77
OVWR File Version: 1.05
Machine Serial Number: 0001
*** Command Complete
```

5.9 PRS 6206: 'Plot series enable' doesn't handle failures very well - especially the first plot

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

The problem was a result of edge detection only being performed for the first plot of a series, regardless of whether it succeeded or not. This has been fixed so that edge detection will only be skipped if it was *successfully* performed for a previous plot in the series.

5.10 PRS 6210: Invert flag under the media slot should be password protected

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

The invert flag under the media group is now password protected just like the media name.

5.11 PRS 6416: Investigation need for mscan duplicate - Paul Holt discovery on 1200dpi news machine

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

A long-standing bug in the firmware caused this. Basically, the calculations for ortho slope and plate rotation have never worked properly if rectangular pixels are involved, i.e. mainscan duplicate is not equal to subscan duplicate. This has been fixed.

5.12 PRS 6472: Flush initiated by TPA does not flush properly

Applies to:
⇨ Trendsetter II ContinuousLoad Spectrum

This was not limited to flushes originating from TPA. This was caused by incorrect vacuum thresholds being used to check if these media were loaded on the drum. The correct vacuum thresholds are now used.

5.13 PRS 6522: FW does not check the drum initialization before starting autoloader job

Applies to:
⇨ *Trendsetter II ContinuousLoad*
⇨ *Trendsetter II ContinuousLoad Spectrum*

If the drum became de-initialized due to a safety loop break (such as a door being opened), the firmware did not initialize the drum before starting the next autoload job. This would cause the firmware to get into a deadlock on the next autoload and would require a reset to continue. This has been fixed for the cases where there is no media loading or unloading when the loop is broken. In the case that the loop is broken during a pick, load, or unload, there is still a bug that the drum may not be properly initialized and a reset will be required to continue.

5.14 PRS 6562: 'Prompt array full, cannot make new prompt' after canceling 25 jobs

Applies to:
⇨ *Trendsetter II ContinuousLoad*
⇨ *Trendsetter II ContinuousLoad Spectrum*

Operator prompts were not being properly released internally to firmware when the CANCEL button was pressed on PrintConsole's load prompt. If 15-25 cancels had been accumulated before the firmware was reset, the operator prompts would stop appearing and the 'Prompt array full' error message would be generated by firmware. This has been fixed so jobs can be canceled without limit.

5.15 PRS 6584: MCON - While Tuning, 2 different media got loaded in the same slot (#6)

Applies to:
⇨ *Trendsetter II ContinuousLoad Spectrum*

Ensure that a media slot is marked as most recently used when the media data block for that slot is downloaded from the workstation, even if no data actually needs to be written because nothing has changed since the last time it was written.

5.16 PRS 6585: MCON - with 2 Slots Empty, MCON loaded a media into a used slot

Applies to:
⇨ *Trendsetter II ContinuousLoad Spectrum*

Empty media slots are now automatically considered least recently used when finding a slot to write a new media data block to.

5.17 PRS 6593: Same media was loaded to different media slot when Media Console is enabled

Applies to:
⇨ Trendsetter II ContinuousLoad Spectrum

When writing a media data block, if the given MIMID is found in an existing slot, verify that the media name, colour and mode match. When searching slots for a MIMID, skip over slots that do not have a media name defined.

5.18 PRS 6641: FW - MCON related: Failing to configure media or do anything else via MCON

Applies to:
⇨ Trendsetter II ContinuousLoad Spectrum

Media data block reads and writes were attempting to access all 112 stroke correction table entries for the media. This is invalid if the stroke width is less than 224. We now limit the access to the first (swidth / 2) entries in the SCORR table. This only affects AP0 (TH1.x).

5.19 Media thickness not getting sent to head properly with *media* command

Applies to:
⇨ Trendsetter II ContinuousLoad Spectrum

The **media <n>** command was not sending the proper media thickness to the head, in particular if proofing media was being selected. This could result in inaccurate surface reflectivity readings from the **focus cal reflect** command. This has been fixed.

5.20 Image artifacts when using Mainscan Pixel Replication

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

When imaging 1200 x 1200 DPI files on a 2400 DPI head, typically an image mode is set up with mainscan and subscan duplication factors set to 2. However, this caused an artifact to appear in the form of thin gaps between swaths. A workaround was to set the mainscan duplication factor to 1 instead. This is no longer required, the problem with mainscan duplication at 2 has been fixed.

5.21 Increased Delay After Plate Rotation

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

The delay after rotating a plate was increased to 500ms from 100ms because some rotators would prematurely sense that the rotate was complete. This would cause the plate would end up skewed because the unload vacuum would turn off before the plate had rotated 90 degrees. The increased delay will fix this problem.

5.22 PRS 6437: FW crashed, then PC crashed - when changing wenable from 0 to 1 while plotting

Applies to:
⇨ *Trendsetter II ContinuousLoad Spectrum*

A background task was created for processing the Media Data Block Read and Write commands, so that they do not block other RCON commands from being processed.

5.23 PRS 6704: When trying to image Dylux, complains that Max Throughput is 0 microns

Applies to:
⇨ *Trendsetter II ContinuousLoad*
⇨ *Trendsetter II ContinuousLoad Spectrum*

The maximum blueline (Dylux) throughput is now based on the maximum plating throughput, not the maximum proofing throughput, so that all plating devices can use blueline.

6. KNOWN BUGS

This section lists the known problems that have not been fixed for this release of the firmware. Where possible, workarounds to the problems are described.

6.1 PRS 3020: Unable to single step (spectrum step) a carrier load successfully. (Spectrum Step Enable)

6.2 PRS 3029: set hdm x ds 0 is not allowed to be set, value out of range. This is set to zero to enable the sv (surface velocity parameter) to be used instead.

6.3 PRS 3030: Max plate size specified cannot load due to this error - Error! Max main scan size capable by the drum is 832.500 (mm)!

The error message is misleading. The problem is that the TECAdjust parameter needs to be increased to load a plate with this size. Any plate larger than 832.5 mm in the mainscan direction must have sufficient margin on the trailing edge clamp.

6.4 PRS 3034: Media type for film loaded through the cassettes is required. Currently we are patching it, identifying it as a donor.

6.5 PRS 3036: "scan sp" group does not follow the proper naming convention. If the bit is a sensor the name should have the word sensor in it

6.6 PRS 6013: Warning message required on media/hdm NVS change with media manager enabled

6.7 PRS 6044: 'set ehi tstk 0' should warn user that this setting is zero when beam balance should be preformed

6.8 PRS 6089: Using 'Sim mh' - 'the current command has been preempted' occurs.

6.9 PRS 6131: Firmware fails to unload after cancelling. (Perhaps related to the media handler being previously enabled)

6.10 PRS 6176: Aborting a plot (with vbs = customer) sometimes causes the carriage never to return

6.11 PRS 6255: Gapless imaging set when firmware sent an 8up proof.

6.12 PRS 6325: Unable to read LIONEL board info with list version all command.

6.13 PRS 6489: Add readable diagnostic messages for DCAPI and TPA commands

6.14 PRS 6507: Spectrum stuck in 'set drum status to carrier on' after the drum vac timeout error

6.15 PRS 6508: TAP test plot job failed in 'timeout waiting for strip to complete'

6.16 PRS 6566: Firmware crash.... PC could not recover

6.17 PRS 6605: No suspend prompt on TPA jobs if error occurred while plotting

6.18 PRS 6632: Plate too small on load, creates havoc

6.19 PRS 6633: Jobs failed in [DRS:Drum servo control missing interrupts] intermittently

6.20 Alarm buzzer not working properly

The alarm buzzer does not sound when a suspend occurs during a proof. The behaviour of the alarm buzzer with respect to suspends needs to be properly defined and implemented. There is currently no PRS entry for this problem.

6.21 PRS6313: FW restarting when opening door during load

The firmware may reset itself if any safety interlock (fan box door, safety override, etc.) is broken during loading or imaging. The device may stay in boot mode and require a “reset” to continue.

7. DEVICE CONFIGURATION PROCEDURES

7.1 Configuring the Device Model

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

All available model configurations can be displayed using the **config** command by itself. The model is configured using the **config <password> <model>** command, for example (command is case-sensitive):

config <password> SP8RV

After using this command and setting the options appropriately (see next section), reset the machine and use the **config** command on its own to verify that the model was set correctly.

7.2 Enabling Options

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

Use the **option** command to list all options, and enable/disable options applicable to the model. Ideally, all required NVS parameters would be configured automatically when the model is configured. This has not yet been done, in part because a single model can have different options that change its characteristics. The following list defines what settings must be verified when a model or feature is changed (do **access dev** first to gain access to commands):

- **option autoloader disable** enabled for all Autoloader configurations
- **option rotator enable** enabled if rotator is installed on Autoloader models
- **option spectrum enable** enabled for all Spectrum configurations
- **option debris udrcb enable** if UDRC-B is installed
- **option debris udrcl enable** if UDRC-L is installed

After using this command, reset the machine then use the **option** command on its own to verify that the options were set correctly.

7.3 Using Dylux

Applies to:
⇨ Trendsetter II ContinuousLoad Spectrum

The procedure for setting up Dylux media on the MCE is slightly different than the MPE. The carrier thickness for Dylux is set using the following command:

set prd defaultcarrierthk xxx

The media type must be set to “blueline”, using this command:

set media x type 18

When loading Dylux media from the diagnostic prompt, you must specify the image side with the load command, as in this example:

load m 770 s 1055 is 1

The “is <n>” parameter specifies which side you are loading, either 1 or 2. Consult the syntax of the load command for more information. Note that if you do not specify the media index of the Dylux media in the load command, you must specify the media type as “i 18”, meaning blueline.

One more note about Dylux: for the MPE you are instructed to specify a subscan dimension that is one inch smaller than the actual size of the media in PrintConsole. The reason is because the MPE firmware adds a 0.5” margin at the home and away edges of the media. This is *not* done for the MCE. You must specify the correct size of the media in PrintConsole. If you desire the 0.5” margins for Dylux jobs, specify them in PrintConsole.

8. IMPORTANT DIFFERENCES FROM MPE

This section discusses service procedures that differ from MPE-based machines.

8.1 Setting the proof unload offset

Applies to:
⇨ Trendsetter II ContinuousLoad Spectrum

On the MPE, there are two parameters that control the distance between the edge of the media to the position where the vacuum roller contacts the media to peel it off the drum: the Unload Offset (UO) and the Media Pick Offset (MPO). These have been replaced on the MCE with a single parameter called the UnloadOffsetAdjust, measured in +/- mm.

The nominal unload offset on the MCE is 8 mm. Use the UnloadOffsetAdjust parameter to correct what is actually measured when an unload is performed. For example, if the unload offset is actually measured as 10 mm, then set the UnloadOffsetAdjust parameter to -2 to compensate to achieve the desired offset of 8 mm. For Fuji proof modes, where the desired offset may be 6 mm, if 4 mm is measured then set this parameter to +2.

8.2 Vacuum threshold units

Applies to:
⇨ Trendsetter II ContinuousLoad Spectrum

These have been changed from raw sensor values to kPa. This avoids confusion caused by reading different levels on different types of sensors. In other words, no matter what the raw sensor values are, the kPa values should remain the same.

9. DEVICE CALIBRATION PROCEDURES

If the firmware is being loaded into a new machine or the NVS parameters have been erased without making a backup, then the following NVS parameters must be calibrated:

9.1 Setting the Plate Measuring Sensor Offset

Applies to:
⇨ *Trendsetter II ContinuousLoad*
⇨ *Trendsetter II ContinuousLoad Spectrum*

The *mh DistSensorToLEC* parameter specifies the nominal distance between the Leading Edge Clamps (LEC) and the optical plate-measuring sensor on the load ramp. This parameter is used by the firmware to measure the main-scan size of plates as they are being wound onto the drum. On an Autoloader, to calibrate this parameter, place a stack of plates of a known size into the bay, load the correct plate size information from the workstation, and verify that the media mainscan size is correct by entering the **bay 1** command from the diagnostic terminal.

Type **load cal** through diagnostics. This will cause a plate to be loaded. The plate size will be measured and the *mh DistSensorToLEC* parameter will be calibrated as the plate is wound onto the drum. The new value is automatically updated and saved.

9.2 Calibrating the Unload Table Cup Rotate Position

Applies to:
⇨ *Trendsetter II ContinuousLoad*
⇨ *Trendsetter II ContinuousLoad Spectrum*

The *mhauto UtRotatorPos* parameter specifies the nominal position for the unload table traveler to move to before rotating the unload vacuum cups. The firmware moves the traveler to this position and checks the rotate position sensor before attempting to rotate the cups. If the sensor is not tripped, then the traveler is moved slowly towards the away end of the table until the sensor is tripped or the firmware gives up and suspends.

Calibrate this parameter with the unload table in the down position (use the **table down** command). Move the traveler home by typing **table home**. Then type **table move rotate**. This command will move the traveler to the position specified by *mhauto UtRotatorPos*. The center of the optical interrupter tab on the traveler should be 1-2 millimeters towards the home side of the rotate position sensor, and the sensor should be tripped (check the sensor using the **table** command). Adjust the position by changing the *mhauto UtRotatorPos* parameter and re-typing **table move rotate**. The new value is automatically saved when it is changed.

On machines with short unload tables (most Trendsetter 400 and NEWS machines), the *mhauto UtRotatorPos* parameter should be set to 500 to make sure the traveler stops in the correct place when it is dragging a plate along the unload table.

9.3 Enabling Plate Rotation

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

The rotator is enabled in firmware by typing **access expert** then **option rotator enable**. Plate rotation is controlled from Print Console. If the rotator option is enabled, then a "Rotate Plate" checkbox will show up in the Media Size settings in Print Console. If this box is checked, Print Console will tell the Trendsetter to rotate the plate during unload.

Without Print Console, rotation can be tested by typing:

- **load bay 1 r 1** to load a plate from the bay and tell it to rotate on unload, or
- **unload r 1** to unload the plate on the drum and tell it to rotate.

9.4 Adjusting Eject Speed and Distance

Applies to:
⇨ Trendsetter II ContinuousLoad
⇨ Trendsetter II ContinuousLoad Spectrum

9.4.1 Eject distance

The plate will be pushed towards the processor at fast speed, then slowed down to match the processor intake speed.

The *exit FastDistance* parameter determines when the traveler slows down. This parameter should be set to the distance (in mm) from the traveler home position to the position of the far end of plate when the speed changes. To adjust this distance, enter **set exit fastdistance <nn>** where <nn> is the new value in millimeters.

To adjust the distance that the plate moves at slow speed, enter **set exit slowpush <nn>** where <nn> is the new distance value in millimeters.

The new values will be saved automatically when they are changed.

9.4.2 Eject speed

Enter **set exit velocity** to see the current slow speed setting.

Use the **table move <position> <velocity>** command to test different speeds and determine the best speed. Enter **set exit velocity <nn>** where <nn> is the new speed setting. The new value will automatically be saved.

APPENDIX A: COMMON ACRONYMS

BBR	Boot-block Recovery
CTP	Computer to Plate (this includes Trendsetters and Platesetters)
GENINE	Generic I/O Node Electronics Board
kPa	kilopascals
LIONEL	Little I/O Node Electronics Board
MCE	Master Control Electronics
NEWS	Trendsetter NEWS
NVS	Non-Volatile-Storage
PC	Print Console
PDB	Power Distribution Board
POST	Power-On Self Test
SP	Trendsetter Spectrum
TH1.7x	Thermal 1.7x Head
TH2	Thermal 2 Head
TS	Trendsetter – base model
TSAL	Trendsetter Autoloader
WS	Workstation

APPENDIX B: NVS BACKUP/RESTORE AND LOADING FIRMWARE

Service Shell is required to load new firmware, and to backup or restore NVS parameters. A script has been written to simplify these tasks.

As part of the Service Shell install, a script named **FirmwareUpgrade.spt** is copied to the Device scripts folder. A document describing how to configure Service Shell and how to use the script is also included in the **d:\ServiceShell\scripts\device** folder. Service Shell is installed on every workstation before it leaves the factory, so this document will be present on every workstation.

Inside Service Shell, left-click on the Scripts icon, then left-click on the Device group. Double-click on FirmwareUpgrade.spt to start the script. It is very important to use this script for the upgrade to make sure a full NVS backup is performed. Furthermore, this release of firmware requires a new BOOT module to be installed on the MCE, and requires the POST, Xilinx and OVWR modules to be re-installed. **If the new BOOT module is not installed before the new firmware is, the new firmware will not execute!** The upgrade script will take care of this for you, so it is important that you use it.

RAM vs. FLASH Parameters in MCE Machines

There are two separate types of NVS parameters that are accessed by the MCE firmware. Most parameters are stored in RAM. A few parameters that are not expected to be changed frequently are stored in Flash. Both sets of parameters must be backed up to fully capture the state of the machine; and both sets of parameters must be loaded onto a new board to restore the machine to its previous state. The FirmwareUpgrade.spt script automatically creates two separate files, one for each type of NVS, and expects both files when restoring parameters.

NVS parameters in general provide the following:

- Storage for machine-dependent parameters that must remain intact between power cycles.
- Storage for “state variables” that allow a machine to resume where it left off if power is cycled during loading or imaging.

All parameters are saved immediately as soon as they are changed.

When firmware is upgraded on a device, any new parameters will automatically be set to their default value. If a more complicated upgrade procedure is required, a script will be created to perform this upgrade, and this script will be released with the firmware.

IMPORTANT: BEFORE UPGRADING THE FIRMWARE OF ANY MACHINE YOU MUST BACKUP THE CONTENTS OF THE CURRENT NON-VOLATILE STORAGE IN CASE IT BECOMES NECESSARY TO REVERT TO THE PREVIOUSLY INSTALLED VERSION OF FIRMWARE!