Thermal Trendsetter Spectrum / Proofsetter
MPE Firmware 1.61 Release Notes

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1. SCOPE

This document describes changes to the Thermal Trendsetter Spectrum/Proofsetter firmware for version 1.61. The intended audience for this document consists of product development, integration, production, field service, and response center personnel at Creo.

2. PRELIMINARY CHECKLIST (READ BEFORE YOU BEGIN!)

Please ensure the following checklist is performed before the upgrade is started.

1. ☐ If you are upgrading a base Trendsetter to a Spectrum (installing the proofing hardware for the first time), you must first upgrade the base Trendsetter to MPE firmware version **2.50b**. If this is a base Trendsetter you are upgrading, use the **list version** command and record the following.

   Current Trendsetter MPE version: _____

   You must then upgrade the MPE firmware to base Trendsetter **V2.50b** before continuing. Ensure that you have read the Thermal 3244 Trendsetter MPE Firmware Version 2.50b Release Notes and have the firmware available.

2. ☐ Using the **list version** command, record the following:

   Current MPE version: _____

   Current head version: _____

3. ☐ Ensure you have the TTSS161.HEX file available. This is the Spectrum/Proofsetter firmware 1.61.

4. ☐ Version 1.61 is only compatible with Head Version 1.80 and above. If the current head version is less than 1.80, then you will need to upgrade the head after the Spectrum/Proofsetter MPE firmware has been loaded. Ensure that you have read the Thermal Head Firmware Version 1.80 Release Notes and have the firmware available.

5. ☐ Ensure that you allocate at least 2 hours for testing the system.

3. UPGRADE PROCEDURE

To load the MPE firmware, please perform the following steps:

1. Load new firmware (see Appendix D).
2. Reset the machine with the **reset** command.
3. This f/w release is only compatible with Thermal Head firmware 1.80 and above. If the thermal head firmware is less than 1.80, you will need to upgrade the Thermal Head firmware **NOW**. See Thermal Head Firmware Version 1.80 Release Notes for more details.

4. Reset the machine with the **reset** command.

5. Issue the **nvs upgrade <previous version>** command (for example: **nvs upgrade 1.40**) where <previous version> is the current MPE version recorded above in *Section 2. Preliminary Checklist*. Ensure that this command completes successfully with the **upgrade complete** message and no error messages.

6. All the NVS values changed during the upgrade are displayed on the diagnostic monitor. Please save these as a log file to the workstation in the following format:

   E:\NVS\UPGRADE*yymmdd*.txt where *yymmdd* is the date of the upgrade.

   Upgrade file name: E:\NVS_____.txt

7. Reset the machine with the **reset** command.

8. Save all current NVS using the **nvs dump** command. Save the files to the workstation directory E:\Service\Nvs. Use the file names in the form of S<#>_VXXX.nvs for the nvs dump diff file (# is the machine number and XXX is the firmware version without the decimal point).

   nvs dump file name: _____

4. NVS CHANGES

The following table details which NVS parameters have changed in this release.

4.1 New NVS Parameters

The following table details which NVS parameters are added in this release:

NVS System	Param Name	Default	Range	Upgrade Value	Description	Refer to Section
alproof	**crefl**	**0.100**	**0 to 10**	**0.100**	Reflectivity of carrier for carrier verify.	5.1
alproof	**vrpc**	**0**	**0 to 1**	**0**	Vacuum roller pre-clean	5.2
alproof	**mp**	**0**	**0 to 1**	**---**	Manual mode proofing	5.3
drum	**dt**	**0**	**0 to 1**	**0**	Drum type	5.9
sys	**wjo**	**250.000**	**0 to 10.000**	**250.000**	Whisker jet delay offset	5.11
debris	**nfc**	**2226.510**	**-10000.000 to 10000.000**	**2226.510**	Nozzle flow constant	5.12
debris	**nfe**	**2053.038**	**-10000.000 to 10000.000**	**2053.038**	Nozzle flow exponent	5.12
debris	**bfc**	**2789.703**	**-10000.000 to 10000.000**	**2789.703**	Bellmouth flow constant	5.12

debris	**bfe**	**1839.091**	**-10000.000 to 10000.000**	**1839.091**	Bellmouth flow exponent	5.12
debris	**se**	**0**	**-408**	**8848**	Site elevation	5.12
debris	**pz**	**0.125**	**-10000.000 to 10000.000**	**0.125**	Pressure zero	5.12
debris	**pnmax**	**6.227**	**-10000.000 to 10000.000**	**6.227**	Max nozzle pressure	5.12
debris	**pbmax**	**24.880**	**-10000.000 to 10000.000**	**24.880**	Max bellmouth pressure	5.12
debris	**pbmaxdiff**	**2.490**	**-10000.000 to 10000.000**	**2.490**	Max bellmouth pressure difference	5.12
debris	**fz**	**17.000**	**-10000.000 to 10000.000**	**17.000**	Flow zero	5.12
debris	**fl**	**65.000**	**-10000.000 to 10000.000**	**65.000**	Flow low	5.12
debris	**fmin**	**71.000**	**-10000.000 to 10000.000**	**71.000**	Flow minimum	5.12
debris	**fmar**	**76.000**	**-10000.000 to 10000.000**	**76.000**	Flow marginal	5.12
debris	**fmaxdiff**	**8.500**	**-10000.000 to 10000.000**	**8.500**	Flow maximum difference	5.12
debris	**nsi**	**1**	**0 to 1**	**1**	Nozzle sensor installed	5.12
debris	**bod**	**300**	**0 to 30000**	**300**	Blower off delay	5.12
debris	**nst**	**0**	**0 to 4**	**0**	Nozzle sensor type	5.12
debris	**maxfcrs**	**3.000**	**-10000.000 to 10000.000**	**3.000**	Maximum flow rate change (Setra)	5.12
debris	**maxfcrm**	**14.000**	**-10000.000 to 10000.000**	**14.000**	Maximum flow rate change (Motorola)	5.12
debris	**pce**	**1125.000**	**0 to 10000.000**	**1125.000**	Pressure correction exponent	5.12
sys	**scon**	**1**	**0 to 1**	**0**	SCON installed	5.12
sys	**sbaud**	**9600**	**9600 to 19200**	**9600**	SCON baud rate	5.12
media	**dopt**	**0**	**0 to 7**	**---**	Debris option	5.12
media	**ei**	**0**	**0 to 100**	**0**	Emissions intensity	5.12

4.2 Changed NVS Parameters

The following table documents which NVS parameters have been changed in this release:

NVS System	Param Name	Default	Range	Upgrade Value	Description	Refer to Section
alproof	**cdp**	**0**	**0 to 2**	**---**	Carrier drum preclean	5.13
alproof	**uramps**	**0**	**0 to 1**	**0**	Unload ramp sensor	6.1

5. NEW FUNCTIONALITY

The following describes new functionality in 1.61.

5.1 Carrier Reflectivity

Due to variability in carrier reflectivity, some carriers would consistently fail carrier verify during the hole edge detect phase. This check is redundant as the vacuum pressure check would detect misalignment of the carrier. The option is now available to disable this check by setting the NVS parameter *alproof crefl* to 0. This is the recommended setting. However, if the check is thought to be required, then it is now possible to set the reflectivity value of the carrier. The default and upgrade value is *0.100* which was the previously hardcoded value of surface reflectivity used. This value can be adjusted as required such that carrier verify is successful. Note that when the carrier detect is being performed, the media values used will be the following:

- Thickness: 305
- Surface depth: 0

5.2 Vacuum Roller Cleaning

The ability to pre-clean the vacuum roller before each receiver load was added to reduce the amount of dirt and debris that can negatively affect Dupont proofing media. It can be enabled/disabled using the *alproof vrpc* parameter.

5.3 Manual Mode Proofing

Manual mode proofing requires that the user load each donor individually and that the button is depressed for the receiver and each donor. Manual mode utilizes a different cassette that holds a receiver and a single donor. Prompts have been added to prompt the user to load on successive donors. Any Spectrum/Proofsetter model can be have this option enabled and disabled. The NVS parameter *alproof mp* indicates the status of this option as does the **option** command.

The command to enable/disable manual mode is **option manualmode enable "<password>"**. Note that *alproof mp* cannot be modified using the **set** command.

Manual proofing configured machines will display the following text in response to a **list version** command:

```
Thermal 3244 S Trendsetter Spectrum EL - Master Processor Electronics *

        *** Manual Proofing ***

        MPE Firmware Version 1.61
```

IMPORTANT: Please do not disable manual mode proofing on machines that configured as such. The customer must have purchased the upgrade to automatic proofing.

5.4 MST Support

This release supports the MST console and unlimited media. To enable/disable support for the media manager, use the **option media_manager enable/disable** command. For more information, refer to the MST documentation.

5.5 Flat Panel Test Patterns

The following test patterns have been added to this version of Spectrum/Proofsetter firmware:

- 131 Flatpanel Horizontal Red Bars
- 132 Flatpanel Horizontal Green Bars
- 133 Flatpanel Horizontal Blue Bars
- 134 Flatpanel Horizontal Black Matrix
- 135 Flatpanel Vertical Red Bars
- 136 Flatpanel Vertical Green Bars
- 137 Flatpanel Vertical Blue Bars
- 138 Flatpanel Vertical Black Matrix
- 139 Flatpanel Horizontal & Vertical Bars

5.6 8-Up Proofing on TS 400

For a 4-page device, it is now possible to perform 8-up proofing while restricting the device to 4 page plating. To enable/disable this option, use the **option proof8up <enable/disable> "<password>"** command.

Note that when modifying an existing 4-page device in the field, it will be necessary to remove the carriage stop tabs and adjust the value of *carriage cph* for the default 8-page carriage stop tabs. You may use the procedure described at

http://techplanet.creo.com/firmware/CTP/documentation/nvs/carriage_cal_cph.html

but please ensure that *alproof crefl* is set correctly in order for the hole edge detects to work. If the adjustment to *carriage cph* is not performed, edge detection will fail when imaging.

5.7 Addition of New Models

The following models were added to this version of firmware:

List version	*Set config type*	Plate/Film media	Proofing media
3244 F Trendsetter Spectrum EL	"SP8LF"	OW=0	OW=1 + Beam Balance
3244 V Trendsetter Spectrum EL	"SP8LV"	OW=0	OW=1 + Beam Balance
3244 S Trendsetter Spectrum E-Model Quantum Imaging	"SP8AS"	OW=1	OW=1
3244 F Trendsetter Spectrum E-Model Quantum Imaging	"SP8AF"	OW=1	OW=1

Note that the E-Model devices (i.e. SP8A*) have no geometric correction or temperature compensation. These are not "true" E-Model devices as this version of firmware does not support the full implementation for P33 Imaging.

The following models are carried over from previous versions of firmware:

List version	*Set config type*	Plate/Film media	Proofing media
3230 S Trendsetter Spectrum EL	"SP4LS"	OW=1	OW=1 + Beam Balance
3230 V Trendsetter Spectrum EL	"SP4LV"	OW=0	OW=1 + Beam Balance
3230 S Trendsetter Spectrum	"SP4RS"	OW=1	OW=1
3230 V Trendsetter Spectrum	"SP4RV"	OW=0	OW=1
3244 S Trendsetter Spectrum EL	"SP8LS"	OW=1	OW=1 + Beam Balance
3244 S Trendsetter Spectrum	"SP8RS"	OW=1	OW=1
3244 F Trendsetter Spectrum	"SP8RF"	OW=0	OW=1
3244 V Trendsetter Spectrum	"SP8RV"	OW=0	OW=1
3230 Trendsetter Spectrum	"SP4R"	OW=0	OW=1
3244 Trendsetter Spectrum	"SP8R"	OW=0	OW=1
3244 Proofsetter	"PS8R"	NA	OW=1
3230 Proofsetter	"PS4R"	NA	OW=1

5.8 Overwriting Disable Option for Test Plots

When performing test plots, it is possible to disable overwriting on a per plot basis by using the **noow** switch to the plot command. This allows non-overwritten test plots to be performed on Entry Imaging devices that force overwriting to maintain image quality. The syntax of the **plot** command is as follows:

```
plot [<pattern#> [<tenths>] [h] [noow]
```

For series plots:

```
plot [<pattern#>] [<series type>] [<series start>] [<series step>] [noow]
```

Note that it is not necessary to use the **noow** switch for the **plot synch** series plot as overwriting is turned off for this plot by default. There is no way to enable overwriting for the **plot synch** command.

5.9 Drum Type Parameter

A drum type parameter, *drum dt*, was added to account for use of MCE drums on MPE machines. This parameter allows the loading of smaller plates (12”x9”) when it is set to 1 (this was done to accommodate Sumi Printing). Other machines should default this parameter to 0 which allows the smallest plate size to be 14.5”x11.2”.

5.10 Load Plate Sensor Disabled During Carrier Loads

This was added due to problems with the load plate sensor reading the carrier. This is an intermittent problem and stems from the sensor being designed for use with 90% white paper. As a result, the black surface of the carrier can present some problems to this sensor and the use of the sensor to measure the length of the carrier during loading has been disabled. The sensor is still used to detect whether the carrier has been placed into the device before pressing the button during loading as well as checking for the carrier to be removed before closing the exit door upon unloading.

5.11 Whisker Jet Delay

The whisker jet delay was added in order to solve problems with artifacts near the home and away edges of the plate. The parameter, *sys wjo*, specifies the distance from the home and away edges at which the whisker jet is turn on and off, respectively. The default setting of 250mils will turn on the whisker jet ¼” from the start of the plate and turn it off ¼” from the end of the plate. If this results in artifacts on the plate, please set this parameter to 0.

5.12 Universal Debris Removal Cabinet Support

This release provides support for the Universal Debris Removal Cabinet (UDRC) that replaces the Morgan Cabinet. The base model UDRC-B is backwards compatible with the Morgan Cabinet and supports Particulate Only Collection (POC) debris removal. The UDRC-L model supports POC and Particulate and Chemical Collection (PACC) debris removal. The parameters

sys dbin, *sys scon*, and *sys sbaud* are used to configure the device to support each type of debris removal.

The table below shows what values these parameters must be set to:

Debris Cabinet Type	***dbin***	***scon***	***sbaud***
None	0	0	9600
Morgan, UDRC-B	1	0	9600
UDRC-L	2	1	9600

The previous debris related configuration options in the *media* NVS subsystem (*media <n> abl, media <n> dr*) have been replaced by *media <n> dopt* which uses bit positions to enable or disable debris options. Bit position 0 (decimal 1) is for the whisker jet and replaces the *dr* parameter. Bit position 1 (decimal 2) is for POC debris removal and replaces the *abl* parameter. The value of *media <n> dopt* is set when doing an **nvs upgrade** and depends on the values that were in *abl* and *dr*. For example, if both *dr* and *abl* were set, then *media <n> dopt* would be set to 3 after the **nvs upgrade** command. It is possible to view the values permitted for this parameter on the device by using the **debris option** command. The following table summarizes the possible values for *media <n> dopt*:

Debris Option**	**Options Enabled**
1	Whisker jet only
2	POC debris removal only (no whisker jet)
3	Whisker jet and POC debris removal
4	CTP PACC debris removal only (no whisker jet)
5	Whisker jet and CTP PACC debris removal
8	Flexo PACC debris removal only (no whisker jet) *
9	Whisker jet and Flexo PACC debris removal *

* Option not applicable for Trendsetter

** All options not indicated on this table are invalid.

Due to the potential for releasing dangerous substances when PACC debris removal is not enabled when required (both CTP and Flexo), the parameter *media <n> dopt* is protected from inadvertent modification by means of a password. In order to set a value for this parameter, use the following command:

`set media <n> dopt "hazardous" <debris option>`

The command syntax for the new debris support replaces the previous command of **dr** with the following:

Syntax: debris [option | (<#>|(whisker|poc|pacc)) [<on|off>] | all off]

Typical operations are:

debris - displays current task state

debris <debris option> - displays status of debris removal type(s)

debris <debris option> <on|off> - enables/disables specified debris removal type(s)

debris option – displays available debris options and values for those options

The <**debris option**> parameter may be one of **whisker**, **poc**, **pacc**, or a numeric value from the table above (i.e. **debris 3 on** will enable the whisker jet and the POC debris removal).

For more information, please see the UDRC Operator Manual.

5.13 Carrier Load Drum Preclean

The *alproof cdp* parameter was modified to allow extra drum cleaning cycles before a carrier load. Setting this parameter to 2 will configure the device to perform two cycles of drum cleaning and vacuum roller cleaning prior to loading a carrier.

6. BUG FIXES

The following items are bug fixes added to 1.61.

6.1 Unload Ramp Sensor

Possibly as a result of changes in proofing media, the unload ramp sensor may experience difficulty detecting media resulting in unload errors. In accordance with plans to remove the unload ramp sensor in the near future, this version of firmware will disable the sensor in NVS when the **nvs upgrade** command is issued.

6.2 Focus Learn Fix

The focus learn fix in Spectrum firmware 1.53 did not correctly perform focus learn when overwriting is turned on. This caused approximately 1” of out of focus swaths at the start of plot. This problem is fixed in this release.

6.3 Positive Plate Un-imaged Strip

A fix has been implemented in this version of firmware that fixes the un-imaged sliver at the end (away edge) of positive plate images. The artifact was caused by the firmware filling with the wrong pattern at the end of a positive (inverted) plot.

In order to provide more flexibility in the “cleaning” of positive plates, the parameter, *sys eis*, has been changed to allow for values from 0 to 2. This value indicates the number of swaths to add on to the end of the image in order to fully “clean” the plate. Typically, setting this value to 1 or 2 should be sufficient although it is suggested that it be left at 0 unless there is a problem.

7. KNOWN PROBLEMS

This section deals with known problems when using Spectrum 1.61 MPE firmware.

Appendix A: 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.

Appendix B: Common Acronyms

MPE	Main Processor Electronics
CTP	Computer to Plate (this includes Trendsetters and Platesetters)
NVS	Non-Volatile-Storage
TTS	Thermal 3244 Trendsetter
TTSS	Thermal Trendsetter Spectrum
TTSP	Thermal Proofsetter
T324	Thermal 3244 Platesetter
GVLF	Green VLF Platesetter
TVLF	Thermal VLF Platesetter
GVTS	Green VLF Trendsetter
TVTS	Thermal VLF Trendsetter

Appendix C: Backing UP and Restoring NVS RAM

The NVS RAM in recorder machines provides the following:

- Storage for machine-dependent "configuration and calibration 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.

At power-up, the contents of NVS RAM are copied to regular volatile RAM in the recorder and that is where they are used by the firmware. If any of these parameters are changed for any reason they must be copied back to NVS RAM or the changes will not be preserved after the next power-up. Changing individual NVS parameters is therefore a two-step process:

1. A parameter is first changed in a volatile RAM copy of the parameter
2. The changed value is saved (i.e. copied) to the NVS memory

Generally, there is no need to change "state" variables in NVS RAM since they simply contain a record of where the machine is (or was) during various tasks.

Whenever firmware is upgraded in a recorder machine, some of the NVS calibration and configuration parameters will typically need to be upgraded as well. Simply loading new firmware into a machine will not upgrade the NVS. Steps must be taken to ensure that the NVS is properly configured for the new firmware. This process may be partly or wholly accomplished with the **nvs upgrade** command available from the recorder monitor. In some cases, however it will be necessary for the installer to make certain upgrade configurations depending on the hardware that is present in the particular machine. Instructions on how and when to use **nvs upgrade** as well as any special machine-dependent upgrade procedures will be included near the beginning of this release note.

IMPORTANT: BEFORE UPGRADING THE FIRMWARE OF ANY RECORDER MACHINE YOU MUST BACKUP THE CONTENTS OF THE CURRENT NVS MEMORY IN CASE IT BECOMES NECESSARY TO REVERT TO THE PREVIOUSLY INSTALLED VERSION OF FIRMWARE!

Procedure to Backup and Restore NVS

IMPORTANT: PRIOR TO BACKUP AND RESTORE NVS, ENSURE ALL MEDIA ON THE DRUM IS UNLOADED VIA DIAGNOSTIC MONITOR OR WORKSTATION COMMANDS.

Previous release notes specified two separate procedures for backing up and restoring NVS memory. There is now only one simplified procedure to follow. This procedure is used to save the entire 32k of NVS RAM. The "**fsave all**" monitor command is used to download the NVS memory to a file and the "**fload memory**" command is used to upload the NVS memory from a file. An overview of the general procedure is shown below

Backing up NVS:

1. Open a log file to collect data that is displayed on the monitor screen
2. Issue a monitor command to allow the desired data to be displayed (and therefore also collected in the log file).
3. Close the log file

Restoring NVS:

1. Issue a command at the monitor that readies the recorder to read a log file.
2. Send the log file to the recorder

Detailed instructions for accomplishing these general steps using various terminal configurations are given in further on in this appendix. An NVS dump file made according to the procedure that follows will be exactly 79508 bytes long. If your file is exactly this long there is a very high probability that it is not corrupt. If you require more assurance concerning the integrity of the file you may examine it with a text editor or listing utility and check for the following:

- The file must consist of exactly 995 lines.
- The first 992 lines will be 78 characters long and look similar to the following

```
S2258000004E56532056657273696F6E203200AAAA55555555555555555555555555555555AABD
```

- Line 993 will be 76 characters long and look similar to the following:

```
S224807FE05555555D5555755575D55DD775555555AA6EAAABBAAAAAAE998E823A4A9FFED671
```

- Lines 994 and 995 (the last two lines) will look exactly like this:

```
S9030000FC
END OF NVS MEMORY DUMP - Close log file and hit [Y] (Y/N)
```

Terminal Program Setup

The PCPLUS terminal utility is usually used for NVS backup and restore. This utility may be run from either DOS (or a DOS window) or it may be used with a "Windows" style interface. It is assumed that the terminal program will be run on the system workstation. If it is run on another PC it may be necessary to change all the hard drive reference letters in this appendix from E: to C:. Any files created on the C: drive of a separate PC (i.e. terminal) should be copied over to the workstation on drive E: for archival purposes The following subsections show the necessary changes to the default configurations of the PCPLUS programs.

Setting up PROCOMM Plus for DOS (version 2.0)

Hit "Alt-S" and select "Protocol Options" and "General Options"
Set "Abort transfer if CD lost" to "No"

Hit "Esc" to return to "Protocol Options" menu and choose "Ascii"
Set "Character Pacing (milliseconds)" to "0"
Set "Line Pacing (1/10 sec)" to "0"
Set" Pace Character" to "126"
Save and exit

Setting up PROCOMM Plus for Windows 95 (version 4.0)

Under "Setup" - "System" - "System Options…"
Select "Data" Tab
Select "Path" Tab
On the "Capture Path" entry line, set a path for the capture file. For example, E:\NVS (This specifies only the capture file path, not the filename itself). The filename will be prompted for at the time a download is begun.
Select "OK"

Under "Setup" - "Data" - "Transfer Protocol…"
Under "CR options - upload" select "Don't translate CR"
Under "LF options - upload" select "Don't translate LF"
Under "CR options - download" select "Don't translate CR"
Under "LF options - download" select "Don't translate LF"
Be sure to check the "Use" box and specify "~" for the line pace character
Select "OK"

Under "Setup" - "Data" - "Setup Files…"
Under "Meta Keys" select "None"
Under "Translate Table" select "None"
Under "Capture" select "None"
Select "Setup" (brings up "Capture File Options" window).

In "Capture File Options" window"
Disable "Write text as it appears on screen"
Disable "Write filtered text with no emulation escapes"
Enable "Write raw text including all escapes"
Enable "Overwrite existing capture file"
Enable "Query for file name when capture is started"

Detailed NVS Backup Procedure

Steps	Using PCPLUS in a DOS window	Using PCPLUS with windows interface
Prepare recorder to dump all NVS	**fsave all** Y/N prompt appears, ignore for now	**fsave all** Y/N prompt appears, ignore for now
Open log file	**Alt-F1** Pop-up window prompts for a filename	**Alt-F1** Pop-up window prompts for a filename
Name log file	Enter a path plus a name that includes the firmware version before upgrade e.g. **E:\NVS\xxx.MEM** (where xxx is the version number).	Enter filename (without path or extension) that includes the firmware version before upgrade. e.g. **xxx**. (where xxx is the version number). Pcplus adds a ".CAP" extension to this name and uses the previously defined path. Click "OK".
Dump entire NVS to log file	**Y** Data is displayed as it is dumped. The dump will take a few minutes. Eventually the following message is displayed: END OF NVS MEMORY DUMP - Close log file and hit [Y] (Y/N)	**Y** Data is displayed as it is dumped. The dump will take a few minutes. Eventually the following message is displayed: END OF NVS MEMORY DUMP - Close log file and hit [Y] (Y/N)
Close log file	**Alt-F1**	**Alt-F1**
Confirm end of download	**Y**	**Y**
Rename file	Not necessary	Rename the file: **E:\NVS\xxx.CAP** To: **E:NVS\xxx.MEM**

Detailed NVS Restore Procedures

Steps	Using PCPLUS in a DOS window	Using PCPLUS with windows interface
Initialize NVS	**nvs init all creo** All NVS firmware defaults written to NVS	**nvs init all creo** All NVS firmware defaults are written to NVS
Reset the recorder	**reset** Ensures NVS is copied to active RAM	**reset** Ensures NVS is copied to active RAM
Prepare recorder to receive all NVS	**fload memory** "Begin upload…" message appears	**fload memory** "Begin upload…" message appears
Prepare to upload	**PgUp** Pop-up window prompts for protocol	Select "Data" - "Send File"
Select ASCII	**A** Filename prompt appears	ASCII protocol was already selected when PCPLUS was set up.
Enter NVS filename	Enter the path and name of the previously saved configuration file e.g. **E:\FW\xxx.MEM** after hitting ENTER the upload will begin. Pace characters are displayed as the upload progresses. This stops when the upload completes. This will be followed by a "Transfer Successful" message.	Navigate to **E:\FW\xxx.MEM** and Select "Open" Button. The load begins and a "progress" window appears that tracks the progress of the load. When transfer is 100% done a "Transfer Successful" message will appear. Close the progress window.
Reset the recorder	**reset** Ensures NVS is copied to active RAM	**reset** Ensures NVS is copied to active RAM

Appendix D: Loading Firmware

Before loading firmware it is assumed that the installer is running either "Procomm Plus" for DOS or "Procomm Plus" for Windows 95 at the system workstation. It is further assumed that all of the necessary program options have been set up as described in Appendix C "Backing Up And Restoring NVS" and that the "Allegro" software is not running on the workstation.

Steps	Using PCPLUS in a DOS window	Using PCPLUS with windows interface	Using Windows "Terminal" Program
Copy firmware to workstation hard drive:	Create a directory on the WS hard drive to hold the new firmware. Give it a meaningful name that includes the version number for example: **E:\FW\xxx**	Create a directory on the WS hard drive to hold the new firmware. Give it a meaningful name that includes the version number for example: **E:\FW\xxx**	
Jump to the bootstrap loader	**reset boot** (Bootstrap loader will sign on and display messages)	**reset boot** (Bootstrap loader will sign on and display messages)	
Change baud rate to 38400	hit **Alt-P**, select menu item **7**, hit **Esc**	Click baud rate button and select 38400	
ready to load	**fload bank 0**	**fload bank 0**	
Prepare to upload	**PgUp** (A pop-up window prompts for protocol)	Select "Data" - "Send File"	
Select ASCII	**A** (Filename prompt appears)	(ASCII protocol is already selected)	
Enter firmware filename	Enter the path and name of the firmware. Hitting ENTER starts upload Pace characters displayed during load and stop when complete	Navigate to the path and firmware file name. Select the "Open" The load begins. Progress is graphically displayed.	
Reset	**reset**	**reset**	
Change baud rate to 9600	hit **Alt-P**, select menu item **5**, hit **Esc**	Click baud rate button and select 9600	

Appendix E: NVS Backup/Restore and Loading Firmware using Service Shell

Terminal Program Setup

For a detailed terminal setup guide please refer to the system documentation under the "Help" menu in Service Shell.

Service Shell is composed of two parts: Service Host and Service Shell Client. The Service Shell is a **client (**Service Shell Client) application that connects to a remote service host **server (**Service Host) to provide access to the CreoScitex devices. Therefore, in order to communicate with the device, you have to ensure that Service Host is running. If the Service Host is started, you should have a "Service Host" icon  in the system tray.

- If you do not have this icon, you need to start Service Host. To do so, select Start menu/Program/CreoScitex Service Shell and click on "Service Host".
- If you do have this icon and it is red, right click on it and select "Start Service".

When the Service Host is running, you can connect to it using the Service Shell Client. To start the Service Shell Client, select Start menu/Program/CreoScitex Service Shell and click on "Service Shell Client". You will then need to enter the name of the server you wish to communicate with. The Server name is simply the name of the machine running Service Host connected to the device you wish to talk to.

To set up the proper baud rate (9600), com port and monitor fonts go to the "File" menu and select "Preferences…". In the preferences window, select the "COM Port – MPE" preference and then click on the "Edit Preferences…" button to make the required changes.

Important!

When the firmware prompts you for a "Y/N" reply or more generally, when the firmware prompts you for a single character reply, as in the example below:

Example:

```
>> fsave all

Begin download and then press 'Y' to continue ('N' to cancel) (Y/N)
```

You should always follow your answer by the <shift enter> combination rather than only the <enter> key. When Service Shell detects the <shift enter> key, it does not append the carriage return character to your answer.

In cases where the <shift enter> combination is specifically required, the following is an example of the output you would get if you were to use the <enter> key only:

```
>> fsave all

Begin download and then press 'Y' to continue ('N' to cancel) (Y/N)
```

```
y
S2258000004E56532056657273696F6E2032000000280000004102200038183040084000302028
Download Aborted!
```

Note: For newer version of firmware (January 2001) both <shift enter> and <enter> keys will be accepted by the firmware.

NVS Backup Procedure: manually cutting and pasting data

We recommend that you minimize the number of diagnostic messages sent to the monitor window when highlighting NVS backup text to copy. To do so, make sure the device is idle and that all verbose fields are set to zero ("set verbose xxx 0"). Although this is not mandatory, it will greatly facilitate the task.

Steps for Backing up NVS:

- In Windows, open notepad through start menu/programs/accessories.
- In the Service Shell Device Monitor press <enter> a few times to ensure you are at the bottom of the monitor screen.
- Set a bookmark (handy feature) by right clicking the mouse in the monitor window. Select a bookmark colour of your choice. The bookmark will make it easy for you to find the beginning of your NVS backup.
- Enter the command "**fsave all**". Once the device has finished outputting the backup data to your monitor screen (approx. 5 min), click on the coloured square on the right, which matches the colour bookmark that you set. This will bring you back to the beginning of the NVS backup.
- Start highlighting with the first line that looks similar to this:

```
S2258000004E56532056657273696F6E203200AAAA55555555555555555555555555555555AABD
```

Use the "Page Down" key or scroll down with the scroll bar on the left until you reach the end of the back up. The end of the backup will either look like this:

```
S9030000FC
END OF NVS MEMORY DUMP - Close log file and hit [Y] (Y/N)
```

Or like this depending how recent the firmware version is. (Firmware version and compile date will vary depending on the version you are using):

```
S9030000FC
Thermal VLF Trendsetter - Master Processor Electronics *
    MPE Firmware Version 1.50
```

```
        Feb 02 2001 11:48:42

END OF NVS MEMORY DUMP - Close log file and hit [Y] (Y/N)
```

- Once you have the entire text highlighted (include version information as well, it will not interfere when loaded back into the device), right click on the highlighted portion and select “Copy to Clipboard”.
- Make your notepad window active, right click on that window and choose Paste from the menu. Your notepad should now contain the hex data you copied from Service Shell. Ensure that the file has no blank lines before the hex data starts, otherwise the file will not load properly.

NO BLANK LINES AT THE TOP OF THE FILE!

```
S2258000004E56532056657273696F6E203200AAAA55555555555555555555555555555555AABD
```

- Save the notepad file as serial#nvs.txt. Example: B525nvs.txt

NVS Restore Procedure

Restoring NVS with Service Shell requires that you know the path to the location of your backup file. If you are downloading firmware remotely, the file to be downloaded has to be located on the Server, which is the computer directly connected to the machine.

In the Service Shell Device Monitor enter the command “**fload memory**”. After the message “Begin ASCII transfer now” appears in the device monitor window, enter the “**sendfile** pathname\filename” command.

Example:

```
>> fload memory
Loading memory:
      File format     = Motorola S-Record
      Pace character  = '~' (ASCII value 126)
      Begin ASCII transfer now ...
sendfile c:\temp\B525nvs.txt
```

Service Shell will then proceed to upload the NVS backup file. A progress bar will be displayed at the bottom. You may close the download progress window, after the download is completed, by clicking on the  at the bottom right corner.

Please Note:

1) If you forget to enter the “**fload memory**” command before issuing the **sendfile** command the following will be displayed:

```
sendfile c:\temp\B525nvs.txt
>> S2258000004E56532056657273696F6E203200000028000000410220003818304008400030202 8
m                                                    ^m Invalid command
>> S225800021002220000000084000000800040840040048000800280000200030000218800400F1
m                                                    ^m Invalid command
>> S225800042800020001104282000004024081010006420800420200008105404080020200404 87
m                                                    ^m Invalid command
>> S225800063022020
<MPE> Can't send data chunk at offset=0x00000000
m              ^m Invalid command
```

2) Downloading from a mapped drive may not work depending on the version of Service Shell you are using. If you get the error shown below using a mapped drive and you are positive you mapped the drive correctly, copy the file to the local server drive. Retype the **sendfile** command with the corrected path name and press enter.

Error you may get using a map drive:

```
<ERROR> Cannot find firmware file
```

Loading Firmware

Loading firmware with Service Shell requires that you know the path to the location of your firmware file. If you are downloading firmware remotely, the file to be downloaded has to be located on the Server, which is the computer directly connected to the machine.

To download firmware, use the following command: "**download** pathname\filename"

Example:

```
download d:\temp\tvts_150.hex
```

Service Shell will then proceed to download the firmware file. A progress bar will be displayed at the bottom. You may close the download progress window, after the download is completed, by clicking on the ☒ at the bottom right corner.

If you are upgrading firmware you must enter the **nvs upgrade** command. To use the command correctly you must know the version you are upgrading from.

Example:

If someone was to upgrade from version 2.5 to 3.0 he or she would enter:

```
nvs upgrade 2.5
```

After the firmware version 3.0 was loaded.

Firmware download filename accepted by Service Shell:

It is important when downloading firmware through Service Shell using the **download** command to use the official ".hex" filename. Service Shell detects the kind of download it has to perform based on the filename. Therefore, if you enter a filename that is not recognized by Service Shell, the download will not proceed. For MPE based machine, the name convention is:

Format: UUUU_xxx.hex,

UUUU - the four letter machine identifier

xxx - the firmware version.

Example: TTSB_250.hex

Aborted Download

When initiating downloading the current firmware is first erased off the MPE before the new firmware is loaded. If the firmware load is interrupted by a corrupt file or is manually aborted during the loading process, all that will remain is boot code. No prompt will appear because the MPE is now running boot code, which is set at a different baud rate (38400 bps). The normal diagnostic baud rate is set at 9600 bps. Even though no prompt shows up, do not be alarmed. The **download** command will still work and the firmware download can be restarted. Therefore, if this happens, reenter the **download** command. (Note: the up arrow brings back previously entered command!)

Download command: "**download** pathname\filename"

Please Note:

Downloading from a mapped drive may or may not work depending on the version of service shell you are using. If you get the following error using a mapped drive <ERROR> Cannot find firmware file and you are positive you mapped the file correctly. Copy the file to the local server drive. Retype the **download** command with the corrected path name and press enter.

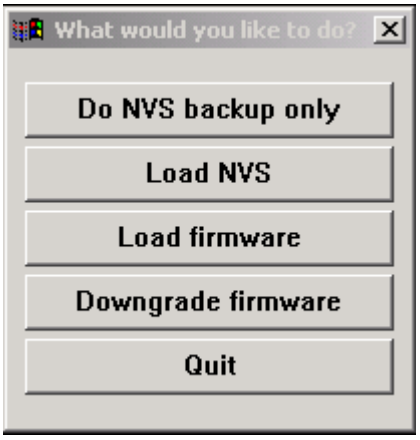
Appendix F: A Useful Service Shell Script available in Service Shell version 2.3

The firmware upgrade script, **FirmwareUpgrade_MPE.spt**, can be found by, left clicking on the script icon then left clicking on the "device" group.

To execute the script highlight the FirmwareUpgrade_MPE script by left clicking on it.

In the same column at the bottom, left click on the Run button. This will execute the script.

The script will prompt you with four choices:



When running either the "Do NVS backup only", "Load Firmware" or the "Downgrade firmware" option the script will do two things: 1) generate a folder or folders for backup files and 2) generate backup files for the user. Here are some details about the folders and files generated by the script:

The folder or folders generated by this script follow the format below:

Format: UUUUSNssssTTTTFWxxx

UUUU - four letter machine identifier

SN - denotes serial number

ssss - device serial number located under "set sys sn" or "set config serial"

TTTT - file type generated (nvs, dump, upgradelog)

FW - denotes firmware

xxx - current firmware version when the file was generated.

Example: TVTSSN0525FW250

The files generated by this script follow the format below:

Format: UUUUssssTTTTxxxTHyyy.fmw

UUUU - four letter machine identifier

ssss - device serial number located under “set sys sn” or “set config serial”

TTTT - file type generated (nvs, dump, upgradelog)

xxx - current firmware version when the file was generated.

yyy - current head firmware version when the file was generated.

Example: TVTS0525dump250TH180.fmw

The script will generate the same filenames when executed more than once with the same firmware version. To prevent the overwriting of files, the script will keep up to 10 of the same filenames before it begins to overwrite files. When a duplicate file is found the extension is changed from .fmw to .fm0 and will increment .fm1, .fm2, .fm3… until it reaches .fm9. After .fm9 is reached the script will start back at .fm0 again. The most recent file always has .fmw extension.

Script path name retention:

The script generates a file to keep a copy of the previous paths of the files loaded and generated, to aid the user. The next time the script is executed it will use the same paths and file names that were used the last time the script was run. The paths are kept in a file loadfmwMPE.txt under ServiceShell\bin.

Special cases and error reporting:

Important!

If your firmware or NVS download is aborted (while running the script), the only way to recover is to manually download firmware or NVS. The script will not work properly if the download was aborted. Please refer to *Loading Firmware* or *NVS Restore Procedures* section below for further instructions.

Older versions of firmware may not recognize commands or may not follow the correct format. In these cases default settings will be used:

ZZZZ - for the four letter machine identifier

0.00 - for the firmware version

0.0 - for the head firmware version

Here is an example of a message the script will output:

WARNING: Timeout waiting for head version, to display head firmware version number. Assigning 0.00 to the files head version number

No Firmware Version Available

In the case where no firmware version is found in a firmware upgrade, the script will prompt the user to issue a NVS upgrade manually. It is then up the user to determine from what firmware version to upgrade from.

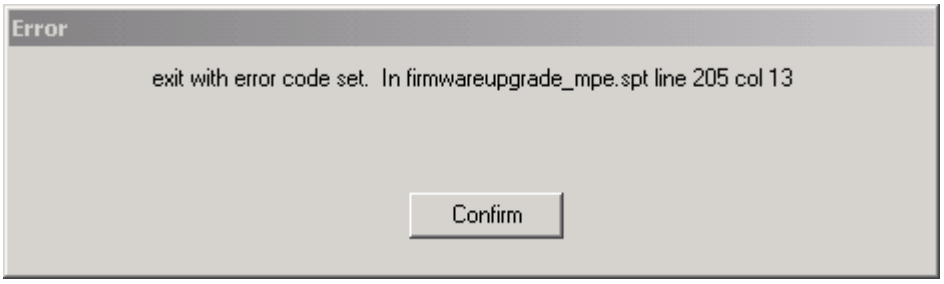
Aborting a script

If the script has an error or a user aborts it, the script will bring up a dialogue box:



Errors generated by the script

If the user aborts the script with the abort button only the above dialogue box will be displayed. If the script itself generated the error, the service shell window will change to: < Script > and the following dialogue box will be displayed.



This box gives the location of where the script exited or aborted. This is a current behavior of the splot service shell interface and may not be informative for the average user. It is best to close this dialogue box similar to one above and use the window selection bar to switch from the script window < Script > to the output window < Output >. For every error generated by the script there is an error displayed in the output window and in the device monitor window.

Switching to the output window should prove to be more useful for the average user rather than deciphering splot code, which is what is displayed in the < Script > window.

Commands from script not reaching terminal window

If you get the following error:

```
Check the terminal window to see if you are connected to the device.
(Hit Enter and check for >> prompt.)
Also check that commands from the script are reaching the terminal window.
```

If you are in fact connected to the device and the >> prompt is showing up, but you are still getting this same error. You should restart Service Shell Client and try running the script again.

Path name format in the device monitor (terminal window)

Path names are reformatted in the device monitor.

Example:

d:\firmware\tvts_150.hex

will appear in the log as:

;d:|firmware|tvts_150.hex

The '\' is exchanged with '|' because firmware uses a '\' or '/' to repeat the last command

The semicolon is included in the string so the firmware treats the text as a comment and not a command. This is done for any comment sent from the script to the device.

Running the script remotely

Running this script remotely is not supported. If you want to get around this you will have to do the following:

The HOST and REMOTE computer must have exactly the same directory structure. Example:

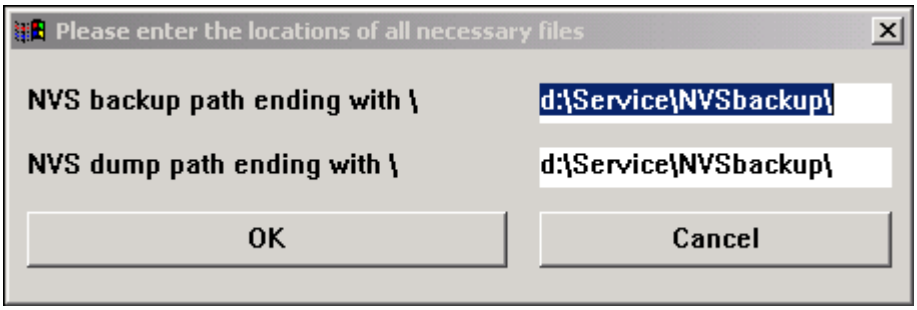
HOST: \\SN023\Ddrive\Firmware\tvts_150.hex
REMOTE: \\SN002\Ddrive\Firmware\tvts_150.hex

The REMOTE computer running the script only checks for files to be uploaded/downloaded on the REMOTE computer.

If you enter a different directory structure between the HOST and REMOTE computer, the script will fail on the download command sent to the device. The HOST will not find the file.

Do NVS backup only

The "Do NVS backup only" option generates a NVS backup file and a NVS dump file. The default paths for this option are displayed below:



Important!

If you modify the path ensure that you include a '\' at the end of the path.

The script is looking only for the locations where it should generate a folder or folders and files. Do not include a file name in the path name.

Here is an example of the folder or folders that will be generated under the path or paths specified by the user:

TVTSSN0245FW150

Here is an example of the files generated after this option is executed:

TVTS0245nvs150TH180.fmw

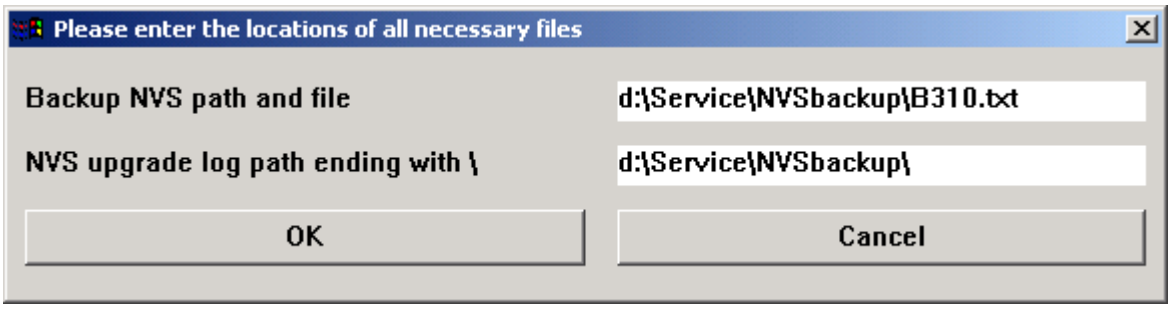
TVTS0245dump150TH180.fmw

A "Script Finished" button will appear when the script is complete.

Load NVS

The "Load NVS" option is used to load NVS.

The default paths for this option are displayed below:



Be sure to include the NVS backup filename in the path like in the example above.

NVS backup file can be altered, but it is recommended to use the same ones as generated by the script.

The script is looking only for the location where it should generate a folder and file for the NVS upgrade log. The NVS upgrade log may or may not happen, (more details below). Do not include a file name in the path name.

Here is an example of the folder that will be generated under the path specified by the user:

TVTSSN0618FW130

Here is an example of the file that may be generated after this option is executed:

TVTS0618upgradelog130.fmw

A NVS upgrade may be issued after the NVS is loaded, depending on the version of firmware the NVS fsave all file was created with.

If you loaded NVS onto a version of firmware that does not have the “set config ver” NVS parameter the script will complete and a “Script Finished” button will appear.

If you loaded NVS onto a version of firmware that does have the “set config ver” NVS parameter, and you loaded NVS that was created with an older version of firmware that had the “set config ver” NVS parameter. The script will output the message:

Upgrading NVS

A NVS upgrade log file will be created. A “Script Finished” button will appear when the script is complete.

If you loaded NVS onto a version of firmware that does have the “set config ver” NVS parameter, and you loaded NVS that was created with that same version of firmware. The script will output the message:

No need to upgrade NVS. The version of firmware that the NVS file was created with is the same as the current firmware version.

A “Script Finished” button will appear when the script is complete.

If you loaded NVS onto a version of firmware that does have the “set config ver” NVS parameter, and you loaded NVS that was created with a version of firmware that does not contain “set config ver”. The script will output the message:

You loaded a NVS file that was created from a version of older firmware that did not have NVS versioning in it.

Please issue a manual “NVS upgrade x.xx” to make “set config ver” non zero.

x.xx is the version of firmware that the NVS was created with.

A dialogue box will also appear to warn the user.

If you loaded NVS onto a version of firmware that does have the “set config ver” NVS parameter, and you loaded NVS that was created with a version of firmware newer than the one you loaded. The script will output the message:

You loaded a NVS file that was created from a version of firmware that is more recent than the firmware version you just downgraded to.

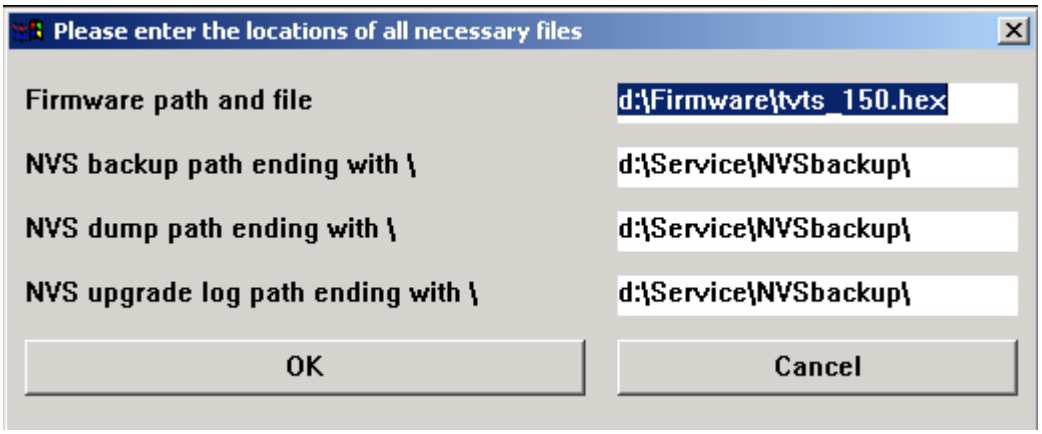
WARNING: THIS IS NOT RECOMMENDED!

A “Script did not complete!!!!!” dialogue box will appear. This is to make it clear to the user that the NVS loaded is not compatible with the version of firmware presently on the device.

Load Firmware

The “Load firmware” option generates a NVS backup file, and a NVS dump file, loads firmware and finally generates a NVS upgrade file.

The default paths for this option are displayed below:



Be sure to include the firmware filename in the path like in the example above.

It is also important when downloading firmware through Service Shell to use the official “.hex” filename. Service Shell detects the kind of download it has to perform based on the filename. Therefore, if you enter a filename that is not recognized by Service Shell, the download will not proceed. For MPE based machine, the name convention is:

Format: UUUU_xxx.hex

UUUU - the four letter machine identifier

xxx - the firmware version.

Example: TTSB_250.hex

If you modify the path for NVS files, ensure that you include a ‘\’ at the end of the path. The script is looking only for the locations to generate the files. The script does not require a file name. The script will generate the file name automatically. Do not include a file name in the path name.

Here is an example of the files generated after this option is executed:

TVTS0245nvs150.fmw

TVTS0245dump150.fmw

TVTS0245upgradelog150.fmw

A “Script Finished” button will appear when the script is complete.

Downgrade firmware

The “Downgrade firmware” option is used to revert back to an older version of firmware. The option, loads firmware and then loads a NVS backup file (specified by the user).

The default paths for this option are displayed below:



Be sure to include the firmware filename in the path like in the example above.

It is also important when downloading firmware through Service Shell to use the official “.hex” filename. Service Shell detects the kind of download it has to perform based on the filename. Therefore, if you enter a filename that is not recognized by Service Shell, the download will not proceed. For MPE based machine, the name convention is:

Format: UUUU_xxx.hex

UUUU - the four letter machine identifier

xxx - the firmware version.

Example: TTSB_250.hex

Be sure to include the NVS backup filename in the path like in the example above.

NVS backup file can be altered, but it is recommend to use the same ones as generated by the script.

The script is looking only for the location where it should generate a folder and file for the NVS upgrade log. The NVS upgrade log may or may not happen, (more details below). Do not include a file name in the path name.

Here is an example of the folder that will be generated under the path specified by the user:

TVTSSN0618FW130

Here is an example of the file that may be generated after this option is executed:

TVTS0618upgradelog130.fmw

A NVS upgrade may be issued after the NVS is loaded, depending on the version of firmware downgraded to and the version of firmware the NVS fsave all file was created with.

If you downgrade to a version of firmware that does not have the “set config ver” NVS parameter the script will complete and a “Script Finished” button will appear.

If you downgrade to a version of firmware that does have the “set config ver” NVS parameter, and you loaded NVS that was created with an older version of firmware that had the “set config ver” NVS parameter. The script will output the message:

Upgrading NVS

A NVS upgrade log file will be created. A “Script Finished” button will appear when the script is complete.

If you downgrade to a version of firmware that does have the “set config ver” NVS parameter, and you loaded NVS that was created with that same version of firmware. The script will output the message:

No need to upgrade NVS. The version of firmware that the NVS file was created with is the same as the current firmware version.

A “Script Finished” button will appear when the script is complete.

If you downgrade to a version of firmware that does have the “set config ver” NVS parameter, and you loaded NVS that was created with a version of firmware that does not contain “set config ver”. The script will output the message:

You loaded a NVS file that was created from a version of older firmware that did not have NVS versioning in it.

Please issue a manual “NVS upgrade x.xx” to make “set config ver” non zero.

x.xx is the version of firmware that the NVS was created with.

A dialogue box will also appear to warn the user.

If you downgrade to a version of firmware that does have the “set config ver” NVS parameter, and you loaded NVS that was created with a version of firmware newer than the one you loaded. The script will output the message:

You loaded a NVS file that was created from a version of firmware that is more recent than the firmware version you just downgraded to.

WARNING: THIS IS NOT RECOMMENDED!

A “Script did not complete!!!!!” dialog box will appear. This is to make it clear to the user that the NVS loaded is not compatible with the version of firmware the user downgraded to.

Appendix G: Spectrum Startup Procedure

When building a Spectrum, these three commands are called to setup the proofing related NVS parameters. The following is a list of these commands and the NVS parameters they change. The NVS settings listed here can be used as the factory recommended settings.

1. **proof startup** – this command added non-head dependant Proofsetter parameters to the NVS.

NVS System	Param Name	Upgrade Value	Description
media 1-8	**---**	**---**	All NVS parameters in media 1-8 locations in base Trendsetter are copied to media 1-8 locations in Proofsetter
media 1-8	**colour**	**""**	proofer_colour
media 1-8	**ssca**	**0**	sscan_scale_adjust
media 1-8	**ow**	**0**	overwriting
media 1-8	**mlc**	**0**	media_load_clean
media 1	**name**	**"Matchprint Laser"**	media_type_name - Only upgrade to this value if the media name is blank to begin with.
media 9-12	**name**	**"Matchprint Laser"**	media_type_name
media 13-16	**name**	**""**	media_type_name
media 9	**colour**	**"Cyan"**	proofer_colour
media 10	**colour**	**"Magenta"**	proofer_colour
media 11	**colour**	**"Yellow"**	proofer_colour
media 12	**colour**	**"Black"**	proofer_colour
media 13-16	**colour**	**""**	proofer_colour
media 9-12	**mcode**	**4**	media_code
media 13-16	**mcode**	**0**	media_code
media 9-16	**abl**	**0**	ablative
media 9-16	**sens**	**170.000**	default_sensitivity
media 9-16	**inv**	**0**	invert
media 9-16	**ssca**	**0**	sscan_scale_adjust
media 9-16	**cthk**	**381**	carrier_thickness
media 9-16	**escan**	**0**	extra_scanlines
media 9-16	**esp**	**50**	exp_series_pattern
media 9-12	**thk**	**102**	default_thickness
media 13-16	**thk**	**305**	default_thickness
media 9-12	**mdt**	**1000**	max_door_time
media 13-16	**mdt**	**0**	max_door_time
media 9	**sr**	**320**	surface_reflectivity
media 10	**sr**	**260**	surface_reflectivity
media 11	**sr**	**340**	surface_reflectivity

media 12	**sr**	**280**	surface_reflectivity
media 13-16	**sr**	**100**	surface_reflectivity
media 9	**sd**	**25**	surface_depth
media 10	**sd**	**55**	surface_depth
media 11	**sd**	**0**	surface_depth
media 12	**sd**	**45**	surface_depth
media 13-16	**sd**	**0**	surface_depth
media 9-13	**dr**	**0**	debris_removal
media 13-16	**dr**	**1**	debris_removal
media 9-13	**ow**	**1**	overwriting
media 13-16	**ow**	**0**	overwriting
media 9-16	**mlc**	**1**	media_load_clean
media 1-16	**owp**	**1**	Over_writing_pattern
proof 1	**name**	**"22x30_Proof"**	proof_type_name
proof 2	**name**	**"30x40_Proof"**	proof_type_name
proof 3	**name**	**"22x26_Proof"**	proof_type_name
proof 4	**name**	**"15x22_Proof"**	proof_type_name
proof 5-8	**name**	**""**	proof_type_name
proof 1-2	**rmsz**	**762**	receiver_msz
proof 3	**rmsz**	**660**	receiver_msz
proof 4	**rmsz**	**381**	receiver_msz
proof 5-8	**rmsz**	**0**	receiver_msz
proof 1, 3, 4	**rssz**	**559**	receiver_ssz
proof 2	**rssz**	**1016**	receiver_ssz
proof 5-8	**rssz**	**0**	receiver_ssz
proof 1-2	**dmsz**	**794**	donor_msz
proof 3	**dmsz**	**692**	donor_msz
proof 4	**dmsz**	**413**	donor_msz
proof 5-8	**dmsz**	**0**	donor_msz
proof 1-2	**rmss**	**41**	receiver_ms_shift
proof 3	**rmss**	**143**	receiver_ms_shift
proof 4	**rmss**	**422**	receiver_ms_shift
proof 5-8	**rmss**	**0**	receiver_ms_shift
proof 1-4	**dut**	**250**	dvac_unload_thresh
proof 5-8	**dut**	**0**	dvac_unload_thresh
proof 1-8	**ub**	**1**	use_border
proof 1, 3-8	**wf**	**0**	wide_format
proof 2	**wf**	**1**	wide_format
proof 1-4	**dvct**	**46**	dvac_carrier_thresh

proof 5-8	**dvct**	**0**	dvac_carrier_thresh
proof 1	**dvrt**	**220**	dvac_receiver_thresh
proof 2	**dvrt**	**120**	dvac_receiver_thresh
proof 3	**dvrt**	**220**	dvac_receiver_thresh
proof 4	**dvrt**	**300**	dvac_receiver_thresh
proof 5-8	**dvrt**	**0**	dvac_receiver_thresh
proof 1	**dvdt**	**500**	dvac_donor_thresh
proof 2	**dvdt**	**400**	dvac_donor_thresh
proof 3	**dvdt**	**500**	dvac_donor_thresh
proof 4	**dvdt**	**560**	dvac_donor_thresh
proof 5-8	**dvdt**	**0**	dvac_donor_thresh
proof 1-2	**rlhp**	**55**	rec_lower_hole_pos
proof 3	**rlhp**	**157**	rec_lower_hole_pos
proof 4	**rlhp**	**436**	rec_lower_hole_pos
proof 5-8	**rlhp**	**0**	rec_lower_hole_pos
proof 1-2	**dlhp**	**38**	donor_lower_hole_pos
proof 3	**dlhp**	**139**	donor_lower_hole_pos
proof 4	**dlhp**	**418**	donor_lower_hole_pos
proof 5-8	**dlhp**	**0**	donor_lower_hole_pos
proof 1-8	**rdc**	**0**	receiver_drum_clean
proof 1	**rlc**	**1**	receiver_load_clean
proof 2	**rlc**	**0**	receiver_load_clean
proof 3-4	**rlc**	**1**	receiver_load_clean
proof 5-8	**rlc**	**0**	receiver_load_clean
proof 1	**hpos**	**320**	hole_position
proof 1	**hpos**	**300**	hole_position
proof 1	**hpos**	**340**	hole_position
proof 1	**hpos**	**360**	hole_position
proof 5-8	**hpos**	**0**	hole_position
proof 1-8	**rams**	**0**	Rev_active_media_seal
proof 1-8	**rwon**	**0**	rec_wait_on_media
aldrv 1,2	**---**	**default**	all NVS parameters in aldrv 1 and aldrv 2 are saved to their default values.
alproof	**---**	**default**	all NVS parameters in alproof are saved to their default values.

2. **proof integrate** - this command added head dependant Proofsetter parameters to the NVS.

NVS System	Param Name	Upgrade Value	Description

hdm 1-8	**---**	**---**	All NVS parameters in hdm 1-8 locations in base Trendsetter are copied to hdm 1-8 locations in Proofsetter
hdm 9-12	**name**	**"Matchprint Laser"**	media_type_name
hdm 13-16	**name**	**""**	media_type_name
hdm 9	**colour**	**"Cyan"**	proofer_colour
hdm 10	**colour**	**"Magenta"**	proofer_colour
hdm 11	**colour**	**"Yellow"**	proofer_colour
hdm 12	**colour**	**"Black"**	proofer_colour
hdm 13-16	**colour**	**""**	proofer_colour
hdm 9-16	**bmcurve**	**0**	beam_curvature
hdm 9-12	**bmslope**	**-6**	beam_slope
hdm 13-16	**bmslope**	**0**	beam_slope
hdm 9-16	**fmode**	**0**	focus_mode
hdm 9-16	**fspeed**	**198.200**	fast_carriage_speed
hdm 9-16	**sspeed**	**133.300**	stnd_carriage_speed
hdm 9	**ds**	**105.000**	drum_speed
hdm 10	**ds**	**80.000**	drum_speed
hdm 11	**ds**	**120.000**	drum_speed
hdm12	**ds**	**80.000**	drum_speed
hdm 13-16	**ds**	**150.000**	drum_speed
hdm 9-12	**wpower**	**17.500**	wr_laser_power
hdm 13-16	**wpower**	**10.000**	wr_laser_power
hdm 9-16	**bmcurven**	**0**	beam_curvature_nrw
hdm 9-12	**bmslopen**	**-6**	beam_slope_nrw
hdm 13-16	**bmslopen**	**0**	beam_slope_nrw
hdm 9-12	**dsn**	**90.000**	drum_speed_nrw
hdm 13-16	**dsn**	**150.000**	drum_speed_nrw
hdm 9-12	**wpowern**	**16.000**	wr_laser_power_nrw
hdm 13-16	**wpowern**	**10.000**	wr_laser_power_nrw
hdm 9-16	**wpowers**	**0.000**	wr_laser_power_std

3. **nvs upgrade 1.22** – this command updates the NVS parameters changed.

NVS System	Param Name	Upgrade Value	Description
xmedia	**name**	**“”**	media_type_name
xmedia	**colour**	**“”**	proofer_colour
alproof	**sus**	**0**	smooth_unload_sequence
alproof	**masktray**	**0**	mask_load_tray
al	**soff**	**170**	sensor_offset

alproof	**dsslow**	**-4.000**	xunused
alproof	**pinchdist**	**50**	xunused4
alproof	**vrwait**	**25**	xunused5
alproof	**eover**	**0**	unused12
media	**owp**	**1**	ow_pattern
Proof 1-8	**rwon**	**0**	Rec_wait_on_media

4. **cal pressure** and **cal vac** - The analog pressure gauge mounted on the regulator is not accurate. The following procedure is used to set and calibrate the system pressure using the more accurate electronic pressure sensor. When performing this routine, you may need another person to read out the pressure readings on the diagnostic monitor to make the process easier. You will have to remove the access panel to the power distribution box with a flat screwdriver before starting this command. The routine performs an automatic calibration of the system pressure sensor, and then directs you through a short manual procedure to set the system pressure regulator properly. Type **cal pressure** to calibrate the system pressure and follow the instructions on the diagnostic monitor. The routine first directs you to turn off the air to the machine. Do this by pushing the orange rocker switch on the regulator manifold (inside the power distribution box). When directed to turn the air pressure back on do so using the orange rocker switch on the air regulator manifold again. You will then be directed to lower the system pressure to below 75 PSI. Do this by turning the black knob on the bottom of the regulator (inside the power distribution box). Finally you will be directed to slowly increase the system pressure until it reaches 80 PSI. If you increase the pressure too far you will have to start again. Note that the pressure readings are de-bounced for three seconds, so you must increase the system pressure very slowly and stop at 80 PSI for this routine to work.

5. **load cal** - The load ramp sensor must be recalibrated with this firmware. The following procedure is used to calibrate the sensor. Type **load <mainscan size in mm> cal** and load a plate of the correct mainscan size. The routine performs an automatic calibration of the load ramp sensor by changing the sensor_offset parameter.

After the system pressure is calibrated, the vacuum sensors must also be calibrated. Firstly, you must ensure that there is nothing (not even a carrier) on the drum before you start this procedure. Type **cal vac** to calibrate the vacuum sensors. This routine performs an automatic calibration of the vacuum sensor offsets. Wait until the command cully.