

Thermal 2 Exposure Head

Firmware Installation Procedure

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Revision History

Revision	Date	Author	Comments
A	15 May 2006	Ken Dyck	Created for thermal 2 firmware
B	24 Aug 2006	Ken Dyck	Added instructions for using installation executable on GMCE based machines.

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1. HOST/EXPOSURE HEAD COMPATIBILITY

Thermal 2 head firmware is distributed as part of a controlled release package or patch. This firmware has been qualified against certain versions of MPE and MCE firmware for each output device. Head firmware should only be loaded as part of a controlled release package. If you are installing a replacement head:

- Refer to **TechPlanet > Output > All CTP Devices Home Page > Controlled releases** to determine whether or not the firmware in the head is compatible with the device control software and firmware.
    - If it is compatible, install the head without changing any firmware.
    - If the head firmware is out-of-spec for the controlled release, upgrade the head firmware to the version supported by the controlled release.
- If the device control software and firmware are out-of-date, determine if an upgrade path exists for a newer controlled release. If an upgrade path exists, upgrade the host to the correct controlled release. Otherwise, a head downgrade may be necessary.

2. GETTING STARTED

This document provides general information for thermal 2 exposure heads installed on host devices.

Note: This document does not provide specific information about any host platform.

Formatting conventions used in this document:

- All references to monitor commands are in `courier font`. Monitor commands for the exposure head are preceded by the `TH2 >` prompt and monitor commands for the host are preceded by the >> prompt.
- All references to NVS parameters are in *italics*.
- All references to scripts are **bold**.

3. LASER SAFETY PRACTICES

To use this document, you *must* have attended an exposure head introductory course given by the Kodak service training department, product specialist, or engineering support team. You must be familiar with the necessary safety precautions when working with a thermal head.

DANGER: *Never operate the device with the write laser beam on and a door open. Do not use the service bypass jigs to bypass the door interlocks.*

4. RELATED RESOURCES

- Thermal 2 exposure head home page: **TechPlanet** > **Output** > **Thermal Heads** > **Thermal 2.x** (http://techplanet.creo.com/output/heads/thermal_2/nav/index.htm)
- Thermal 2 exposure head firmware: **TechPlanet** > **Output** > **Thermal Heads** > **Thermal 2.x > Control/settings > Firmware releases** (http://techplanet.creo.com/firmware/CTP/Head/Thermal2/versions.htm)

- Service Shell: **TechPlanet** > **Output** > **Service Tools** > **Service Shell** (http://techplanet.creo.com/output/service_tools/service_shell/nav/v2-x/index.htm)
- Controlled Releases: **TechPlanet** > **Output** > **All CTP Devices** > **Control/settings** (http://techplanet.creo.com/output/computer_to_plate/all_ctp/nav/control-set.htm)

5. PRELIMINARY CHECKLIST

Before you upgrade the exposure head firmware, complete this preliminary checklist:

1. ☐ **Verify the hardware version of the exposure head** by typing the following monitor commands:

   ```
   >> redirect pass
   >> th2 "ver"
   ```

   If the "`Control board`" version is less than 2, replace the exposure head with a more recent version before you upgrade the exposure head firmware.

2. ☐ **Determine if an upgrade of the host firmware is required.** An upgrade of the host firmware is *not* required to upgrade the exposure head firmware. However, an upgrade of the host firmware may be required to take advantage of the new functionality of the exposure head.

3. ☐ **Ensure the thermal 2 firmware files are available.**

4. ☐ **Turn off the following applications**:

   - Allegro Workstation
   - Print Console
   - Prinergy

6. UPGRADING THE FIRMWARE (MCE / MPE)

1. If the host firmware is being updated, upgrade the host firmware *first*, prior to upgrading the head. For more information see the controlled release version tables on the TechPlanet Controlled Releases site (these versions are updated frequently).

2. Generate baseline plots `plot 1` and **inchgrid.ps**. Comparing plots generated before and after the upgrade helps you troubleshoot any problems with image quality, geometric correction, or the geometric positioning of the exposure head.

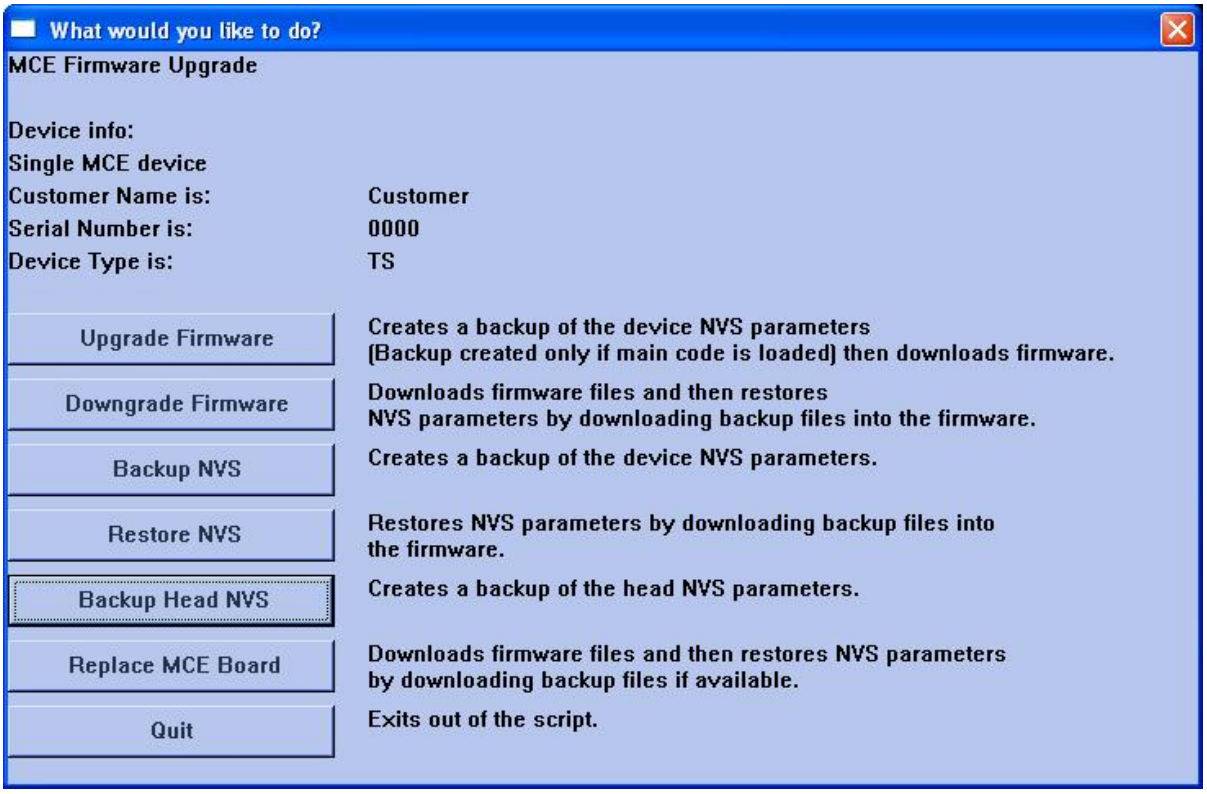
3. In Service Shell, click **Scripts** and select **Device.** Select **FirmwareUpgrade.spt**.

Note: For detailed information on **FirmwareUpgrade.spt**, right-click on the script name (see the following screen capture), or see the **ServiceShell\scripts\device** folder on your computer.



4. Run the script and click **Upgrade Firmware**. The upgrade script takes approximately 30 minutes to complete.

5. When it is finished, main dialog box displays. Click **Quit**.



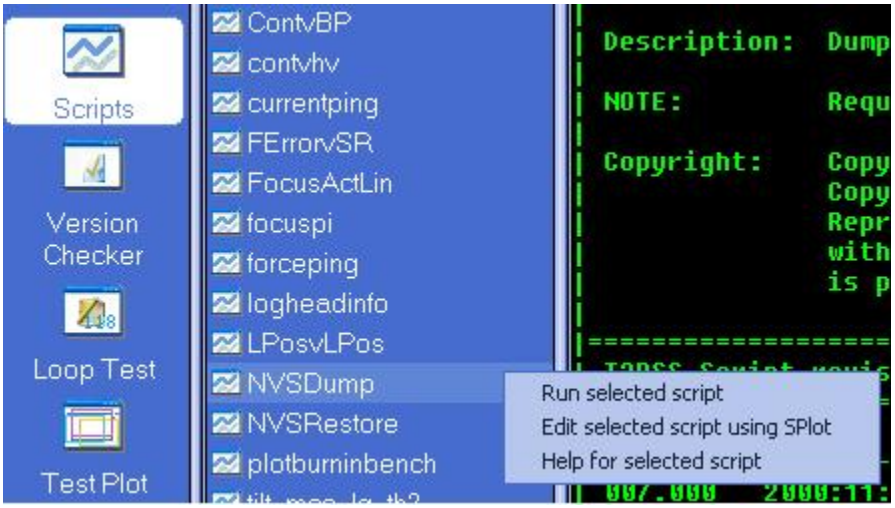
6. Re-generate `plot 1` and **inchgrid.ps**. The quality of the `plot 1` and the geometric correction and geometric positioning of the **inchgrid.ps** should be unaffected. Troubleshoot as needed.

7. After verifying the state of the host device, save the baseline NVS parameters on the exposure head by typing:
   ```
   >> redirect enable
   ```

8. Wait for the message `Redirect Mode=Enable` to appear. Type
   ```
   TH2 > prm save
   TH2 > redirect pass
   ```

7. UPGRADING THE FIRMWARE (GMCE)

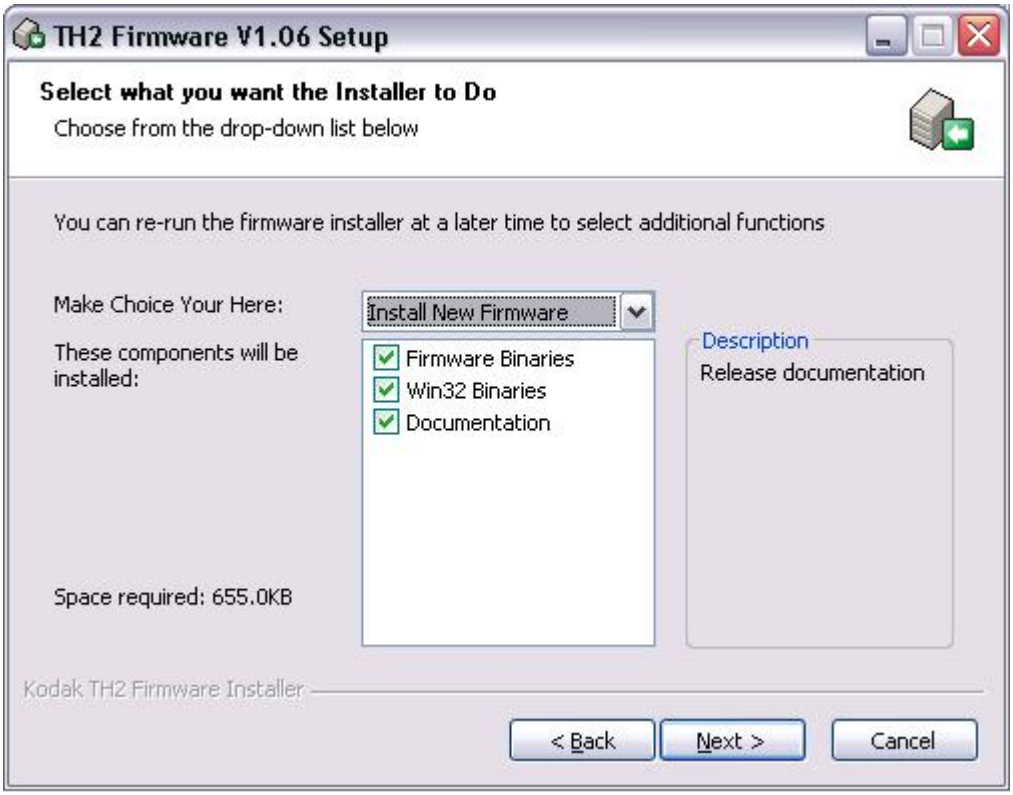
1. In Service Shell, click **Scripts** and select **TH2 Service**. Right-click on **NVSDump.spt**.
2. Select **Run selected script**. **NVSDump.spt** records the current parameters and writes the script results to the local script results folder on the data drive.



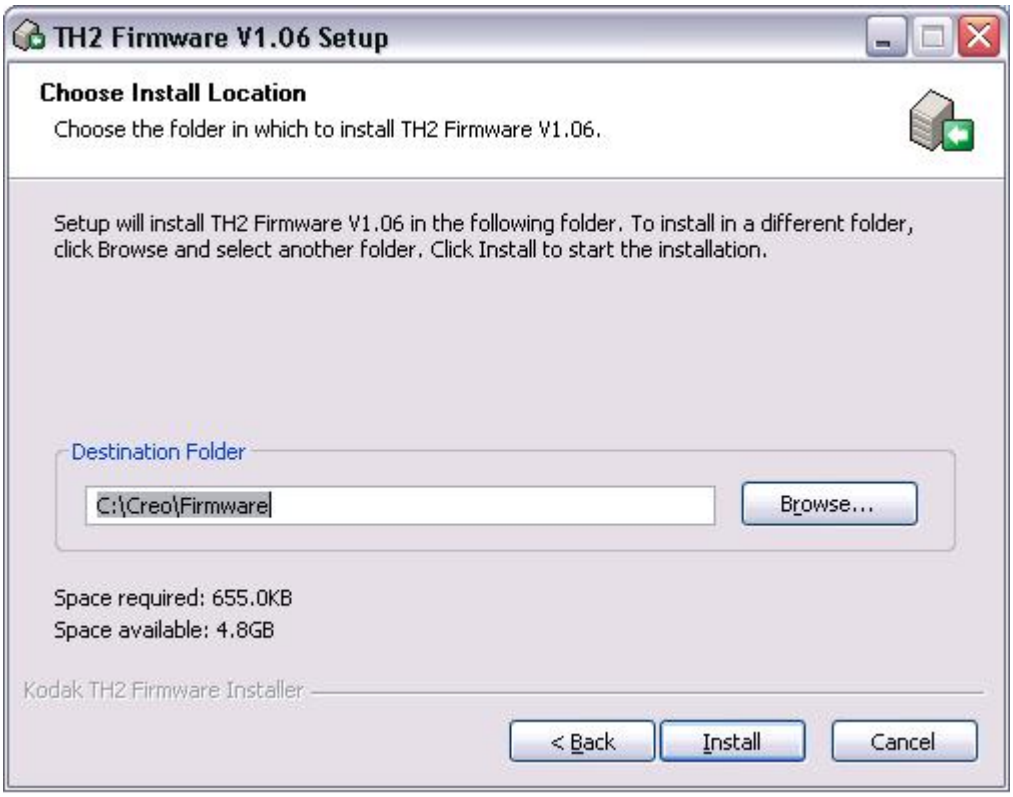
3. Browse to the .exe file for the firmware version that you want to install. To open the TH2 Firmware Setup Wizard, double-click the .exe file. The TH2 Firmware Setup dialog box appears. click **Next**.



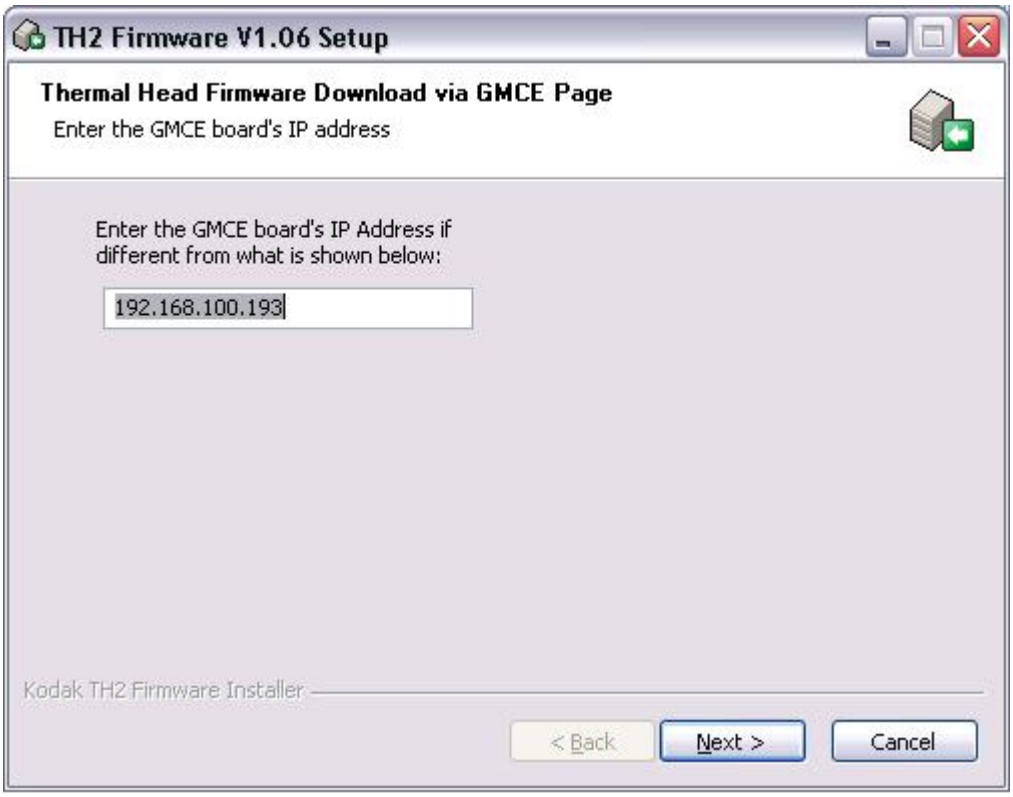
4. Select all components and click **Next**. The available components are:
   - Firmware Binaries: the head firmware.
   - Win32 Binaries: tools that the installer needs to program the head.
   - Documentation: Release Notes (PDF).



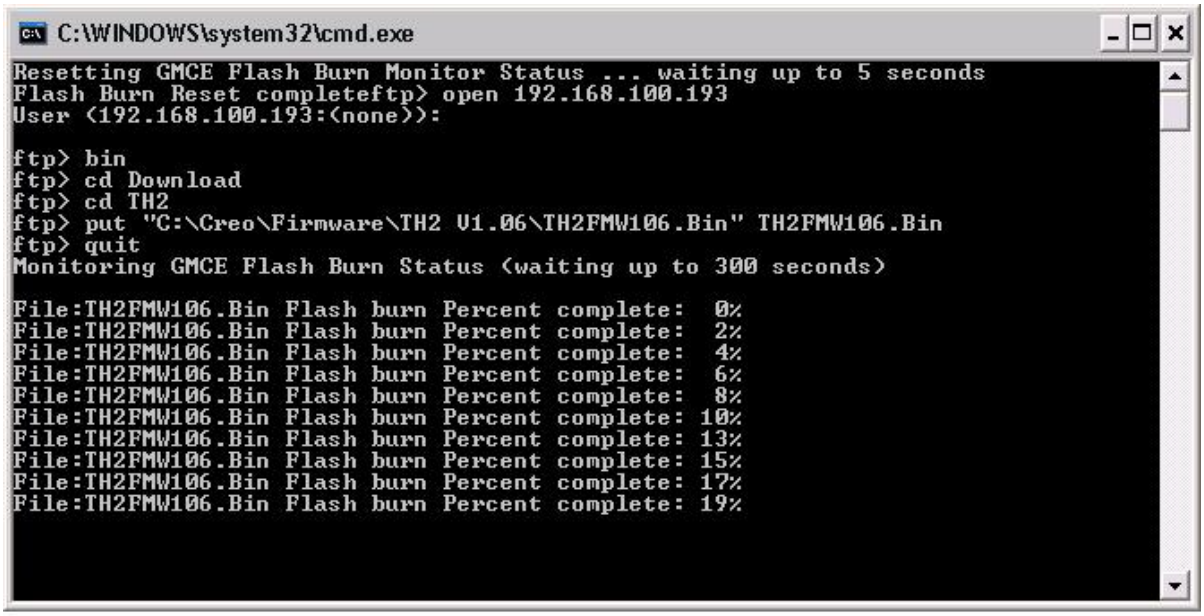
5. Choose the Install Location Destination Folder. The default destination folder is **C:\Creo\Firmware**. Click **Install**.



6. Enter the GMCE IP address. The IP address assigned to the GMCE is normally 192.168.100.193. Click **Next**.



The following window will appear as the firmware is being downloaded. The progress will pause around 50%. This is a normal part of the download sequence.



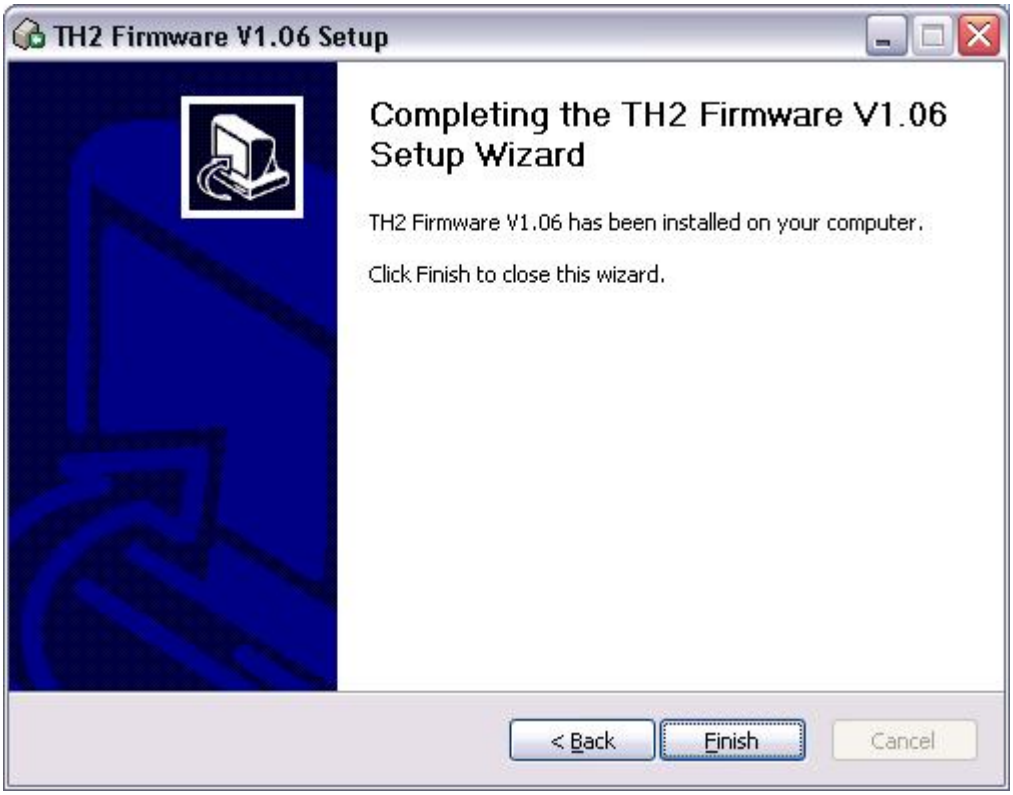
7. When the download is complete the following dialog box displays. Click **OK**.



8. To reset the GMCE, click **Yes**.



9. To complete the download, click **Finish**.



8. DOWNGRADING THE FIRMWARE

CAUTION: *Do not downgrade the exposure head firmware unless a thermal head specialist instructs you to do so. Downgrading will remove support for newer versions of hardware, new functionality, improved algorithms, and the latest problem fixes.*

Head firmware should only be loaded as part of a controlled release package. If you are downgrading, make sure that you install head firmware that is compatible with the controlled release software and firmware installed on your system. Head firmware that is not part of a controlled release can cause compatibility issues and is not supported.

If you still wish to downgrade exposure head firmware, use the following procedure.

8.1 Downgrading to 1.02b or later

1. To download the firmware, in Service Shell, click **Device** and select **FirmwareUpgrade.spt**.
2. Run the script and click **Downgrade Firmware**.
3. If you are downgrading to a version earlier than 1.05d, set the firmware version NVS parameter to the current code. For example, if you downgrade to 1.04d you type:

```
>> redirect enable

TH2 > eng
```

```
TH2 > set sys firmwareversion 1.04
```

4. Save a readable version of the NVS parameters on the exposure head by typing:

```
TH2 > prm dump
```

5. Set the command line back. Type

```
TH2 > redirect pass
```

8.2 Downgrading to 1.01i or earlier

1. Download the firmware as described above.
2. Run **PostDowngradeTo101i.spt** (provided with the release bundle). This script is needed because the stroke offset and stroke width parameters changed locations after 1.01i. The script sets these parameters to the blocker offset and blocker width values.

9. GLOSSARY OF COMMON TERMS

Host	Generic term referring to any output device on which an exposure head is installed.
Exposure Head	Generic term referring to any Kodak exposure head.
Thermal 2, TH2	The thermal 2 exposure head is a thermal exposure head manufactured by Kodak.
High Addressability, HA	The High Addressability exposure head is a thermal exposure head manufactured by Kodak. The electronics of the HA exposure head are identical to the TH2.
Tfx, TFX	The TFX exposure head is a thermal exposure head manufactured by Kodak.
Thermal 1.0 / 1.7x	The thermal 1.0 / 1.7x exposure head is a thermal exposure head manufactured by Kodak.
Monitor Redirection	The thermal 2 exposure head implements its own diagnostic port. Monitor redirection allows you to access the diagnostic port through the host.
NVS	Non-volatile storage. Note that non-volatile storage includes battery-backed up RAM, flash, EEPROM, and so on.
NVS Parameters	NVS parameters allow the exposure head to permanently save calibration and configuration parameters.