

# FH Smart Firmware and Servo Code Upgrade

**IMPORTANT INFORMATION:** This document contains important details regarding operation of your marking head. SYNRAD highly recommends that customers upgrade as significant improvements have been made to the reliability and performance of the FH Smart marking head.

## Version 1.0.4971 firmware features

Our current production firmware version, v1.0.4971, for FH Series Smart marking heads is now available as a free download for customers.

### v1.0.4971 Features:

- ❑ Fast Acting Safety Interlock (FASI) logic on IN3 has been changed from active low to active high. This is to make the head compatible with the Tracker and Index FH heads and to make the system safer. (In earlier versions disconnection of the IN3 signal would allow laser output.) **Integrators that use FASI and have used earlier code versions will need to change the IN3 connection logic.** As an added safety feature, FASI enabled is now the default. If you do not use this feature you will need to turn FASI off from the **Setup Options\Misc** menu.
- ❑ File compression – Files in the file-store can be stored in a compressed format. A version of the gzip algorithm has been used. This vastly increases the amount of data that can be stored in the 500kB file-store. There is a small overhead in compression and de-compression but this is unlikely to affect many users. File compression in the file-store is enabled by setting the Compress Files flag in the Setup Options\Misc menu; the default is disabled.
- ❑ When used with SmartTerm.exe version 1.7 or higher, files can be compressed before transmission. This greatly improves the download speed. Set the Compress Files Before Sending flag in the SmartTerm.exe system menu to enable this feature.
- ❑ A new I/O feature has been added to the Setup Options\Misc menu. The FaultIO string can be programmed to set the head output pattern when a serious head fault is detected. The format is the same as for I/O programmed in a mark file, e.g. “1—0” will set OUT4, clear OUT7 and leave OUT5/OUT6 unchanged.
- ❑ In the Setup Options\Date& Time menu the custom date functionality has been changed. Date codes used in a mark file generated with WinMark Pro build later than 4528 will be added automatically to the configuration file. New date codes can be added with no known limitation to the number of codes. Date codes can now be deleted.
- ❑ The file-store is now more rugged and does not suffer from corruption. In earlier versions corruption of the file-store could cause the head to lock up.
- ❑ WinMark Pro automation functions are fully supported apart from DoBeep and CallDLLFunc.
- ❑ QR 2D barcodes are now supported.
- ❑ Ellipses are now drawn instead of circles as in WinMark Pro builds 4724 and later.

## Version 1.0.4971 Upgrade Procedure

The following numbered steps and illustrations will guide you through the process required to upgrade FH Series Smart marking heads to version 1.0.4971 firmware.

**Note:** Please read this procedure in its entirety before proceeding with the upgrade.

### Step 1 – Download the firmware upgrade

- 1 Download the firmware upgrade file, *Smart49712.exe* or *Smart4971.zip* from the WinMark Pro CD-ROM (version 4.6.0.4927) or the WinMark Pro web site at [www.winmark.com](http://www.winmark.com).
- 2 Copy the self-extracting (.exe) or zip (.zip) file to your hard drive.
- 3 Extract or Unzip the archive files to a folder of your choice.

### Step 2 – Perform the firmware upgrade

- 1 With your Smart marking head and computer powered-up, open the new version of *SmartTerm.exe*.
- 2 Right-click the title bar and click *About SmartFH...* and verify that the version is 1.7.1.4971. Click OK.
- 3 Right-click the title bar and click *Update Code...*
- 4 When the *Operating System Download* dialog appears, navigate to the folder containing the Smart firmware updates and click on the .io file.
- 5 Do not operate the head or cycle power until the "Re-Program complete Please restart the system" message appears.
- 6 Cycle power off, wait a few seconds, and then reapply power. This causes the head to restart using the new firmware code.
- 7 The SmartTerm dialog box should indicate that the firmware version is 1.0.4971.

## Version 4 Servo Upgrade Procedure

The following numbered steps and illustrations will guide you through the process required to upgrade FH Series Smart marking heads to servo version 4.0.

**Note:** Please read this procedure in its entirety before proceeding with the upgrade.

**Note:** You must complete the firmware upgrade to v1.0.4971 before upgrading the servo code.

### Step 1 – Perform the servo firmware upgrade

- 1 Right-click the title bar and click *Update Servo...*
- 2 When the *Operating System Download* dialog appears, navigate to the folder containing the Smart firmware updates and click on the .ldr file.
- 3 Do not operate the head or cycle power until the "Re-Program complete" message appears.
- 4 Cycle power off, wait a few seconds, and then reapply power. This causes the head to restart using the new servo code.

This completes the FH Series Smart head firmware installation. If you have any questions about the firmware or servo upgrade procedure, please contact SYNRAD's Technical Resources Department at 1.425.349.3500 or email us at [custservice@synrad.com](mailto:custservice@synrad.com).