Using the Digi Connect Manufacturing/Diagnostics Interface

This document describes the use the Manufacturing/Diagnostics interface, available on the Digi Connect –S modules.

Disclaimer:

The Manufacturing/Diagnostics interface that is provided on the Digi Connect products with -S shipping-level part numbers is intended to be used as part of the Digi internal manufacturing/diagnostics process only. Digi International reserves the right to change the functionality of the Manufacturing/Diagnostics interface as necessary and without notice. Digi International can not accept any responsibility with respect to the general operational state of the product or any damage to the product or other components, whether directly or indirectly related to the customer's use of the Digi internal Manufacturing/Diagnostics interface.

The instructions below assume that you have the Connect connected to the Connect development board. This procedure does not utilize the JTAG interface and applies to units with or without a JTAG connector.

This procedure requires the use of a TFTP server. There are several freeware and shareware servers available on the Internet.

1. Connect a terminal to port 0 (P1) of the development board. The serial settings will be 9600, 8 data bits, no flow control, and 1 stop bit.
2. Disconnect power from the development board.
3. Locate the MFG header on your Connect platform.
   a. Connect ME (Wi-ME) w/ development board.
      i. The MFG header is located on the development board, near the rear of the ME (Wi-ME) module and is labeled P5.
         1. The actual pins that you will short together in order to access this interface will depend on the version of the development board you possess.
            a. If the part number of your board is 30006002-01, short together pins 1 and 4.
            b. If the part number of your board is 30006002-02: Short together pins 3 & 4.
   b. Connect EM (Wi-EM) w/ development board.
      i. The MFG header is located on the EM (Wi-EM) module itself, near the reset button. Pin 1 is the pin nearest the reset button.
         1. Short together pins 3 and 4.
   c. Connect SP
      i. The manufacturing header is located on the inside of the SP module, itself. Pin 1 is nearest the DB9 serial connector.
4. While maintaining the short between the pins in the previous step, connect the power (once the Diagnostics Test menu is displayed, the short is no longer necessary).

5. On the terminal should appear a display similar to the one in figure 1, below.

```
------------------------ Diagnostic Tests ------------------------
t) ->TFTP related choices.          h) ->Hardware tests.
m) Quick memory test (seconds).     M) Long memory test  (minutes).
V) Show VPD data.                   1) Erase NVRAM from flash.
2) Erase the BOOTPARM from flash.   3) Erase the OS from flash.
4) Put TFTP'd OS file into flash.   5) Run OS.
------------------------------------------------------------------

Enter choice (ESC to exit-Diagnostic Tests)[thmMV12345] :
```

Figure 1 - Diagnostic Tests Main Menu

6. Press t, for TFTP related options. The menu in Figure 2 will be displayed.

```
------------------------ TFTP Related Options ------------------------
1) Show current TFTP settings.        2) Enter TFTP settings.
3) Get file from TFTP server.
----------------------------------------------------------------------

Enter choice (ESC to exit-TFTP Related Options)[123] :
```

Figure 2 - TFTP Menu Options

7. Press 2 to configure the TFTP session settings (these settings are NOT maintained between hardware resets.

8. As prompted, enter in the name of the file you wish to download, a temporary IP, subnet mask and gateway address for the Connect ME and the IP address of the TFTP server. See example in Figure 3.

```
Enter choice (ESC to exit-TFTP Related Options)[123] :2

Enter TFTP filename []: mybinaryfile

Enter IP address [0.0.0.0]: 192.168.0.199

Enter network mask [0.0.0.0]: 255.255.255.0

Enter network gateway [0.0.0.0]:
Enter network TFTP server [0.0.0.0]: 192.168.0.1


Enter choice (ESC to exit-TFTP Related Options)[123] :
```

Figure 3 - Setting the TFTP Parameters

9. If desired, press **1** to review the settings.

```
Enter choice (ESC to exit-TFTP Related Options)[123] :1

TFTP filename       : mybinaryfile
IP address          : 192.168.0.199
network mask        : 255.255.255.0
network gateway     : 0.0.0.0
network TFTP server : 192.168.0.1

Enter choice (ESC to exit-TFTP Related Options)[123] :_
```

Figure 4 - Review TFTP Settings

10. Press **3** to start downloading the image from the TFTP server. NOTE: If power is lost during this process simple restart this entire process beginning back at step 2.
11. Upon success (see figure 5), press the **ESC** key, which brings you back to the Diagnostic Tests main menu (refer to figure 1).

```
Enter choice (ESC to exit-TFTP Related Options)[123] :3

Working, please wait ...
TFTP() returned Success: 177548 bytes


Enter choice (ESC to exit-TFTP Related Options)[123] :
```

Figure 5 - TFTP Success

12. From the Diagnostic Tests main menu, press the 4 key to write the downloaded binary image to flash.
13. Once the image has been successfully written to flash (see figure below). Press the 5 key, to start the application, or recycle power on the development board to reboot the unit with the newly downloaded firmware (see figure below).

```
Enter choice (ESC to exit-Diagnostic Tests)[thmMV12345] :4

Erasing 16 sectors starting with sector 7 ...
Programming 177550 bytes


Enter choice (ESC to exit-Diagnostic Tests)[thmMV12345] :_
```

Figure 6 - Write to Flash Success

14. Congratulations! You have successfully downloaded and stored a new firmware image to flash