
***spark live**

- innovation for live events
 - research, development, production and performance
-

**SPARK D-FUSER » Controller Test**

Version 2.0 of test procedure

**1 Test Materials**

Test PC

- Login "sparkdfuser"

Controller PSU

Programming cable

- USB to right-angle mini USB lead

RS232 cable

- USB to RS232 dongle

- Null Modem cable

Ethernet cable

DMX Cable

- USB to DMX dongle

- DMX XLR to DMX RJ45 cable
-

2.0 Pre-Assembly: PCB Check

Ensure PCB has been prepared: the MBED pins are trimmed and taped by FFC so foil cable can enter connector.

2.1 Pre-Assembly: Top Plate Check

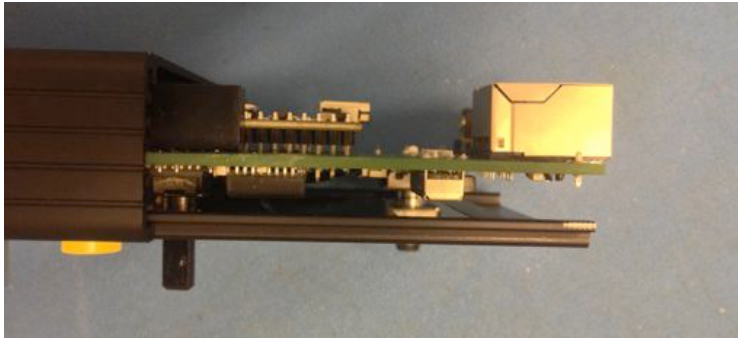
Ensure display has been married to the enclosure top plate.

2.2 Pre-Assembly: Connect FFC

Connect the display's foil cable to the FFC on the board and inspect to ensure it is correctly mated.

***spark live**

- innovation for live events
 - research, development, production and performance
-



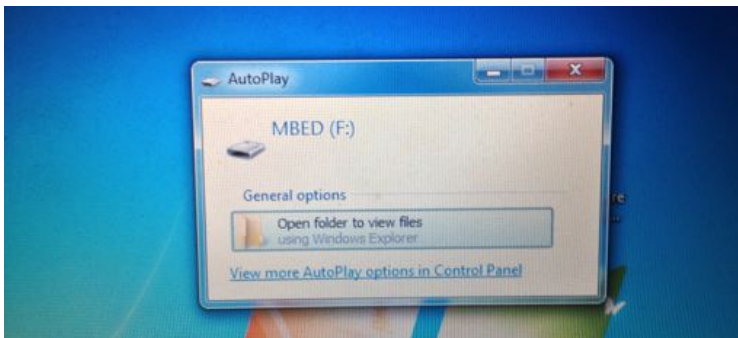
2.3 Pre-Assembly: Enclosure

With top plate aligned onto board, slide these into the slots on the enclosure. Stop with the board about half way in so you can still access the internal miniUSB socket.



3 Load test firmware

Connect miniUSB to internal socket. The blue LED on the 'MBED' daughterboard should light, and stay lit. Note the LED will flicker when communicating with the PC.

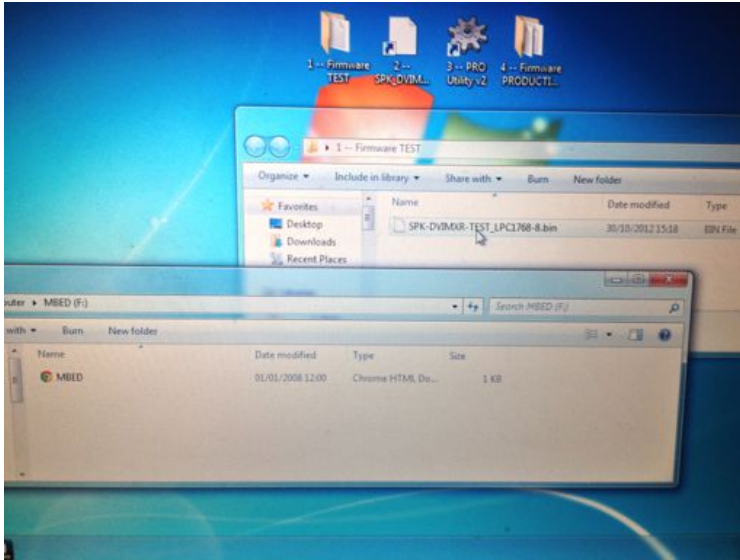


3.1 Load test firmware

On the Test PC, a drive called 'MBED' should mount. Open this as a folder.

*spark live

- innovation for live events
 - research, development, production and performance
-



3.2 Load test firmware

Open the folder called '1 – Firmware TEST', its the first icon in the row of four in the centre of the desktop. Copy the file within...

"SPK-DVIMXR-TEST-xxxx.bin"

... to the MBED folder.



4 Power cycle

- Disconnect miniUSB
- Connect DC-In to rear panel

The controller should have powered-on and be displaying a self-test menu.

Rotating the knob to the right of the screen will change option, clicking the knob in will start that test. Once test is complete, click again to return to this menu (or progress to next test for 'All Tests' option).

***spark live**

- innovation for live events
 - research, development, production and performance
-



5. Test Mixing Controls

Select 'Controls'. To pass check the following actions against displayed values.

Crossfader:

- The slide potentiometer at bottom
- 1.0 on left, 0.0 on right. ± 0.05

Fade to black

- The rotary potentiometer in middle
- 1.0 twisted to left, 0 to right. ± 0.05

Tap Left and Right

- The yellow push-buttons
- 1 untouched, 0 pressed

Menu Position

- The rotary encoder to right of screen
- Number increases by one for one clockwise click, decreases by one for one counter-clockwise click

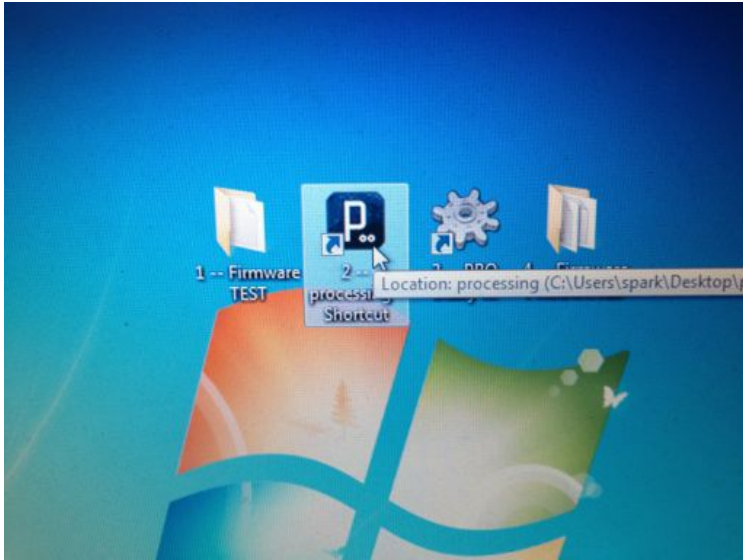
6. Test Display

Select 'All Pixels'. To pass,

- every pixel on the screen should light.
 - the lit rectangle should be centred in the enclosure and not askew.
-

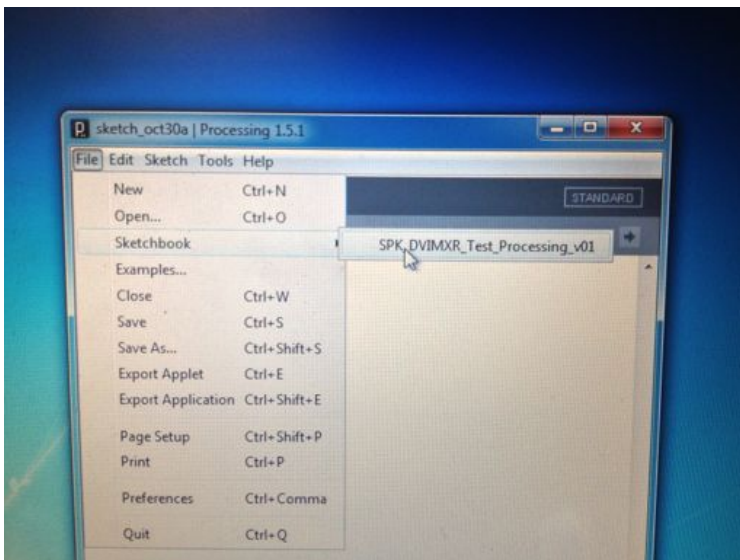
***spark live**

- innovation for live events
 - research, development, production and performance
-



7.0 Prep RS232 Comms

On the Test PC, double click the second icon.



7.1 Prep RS232 Comms

In the 'Processing' application that opens, select the following from the menu:

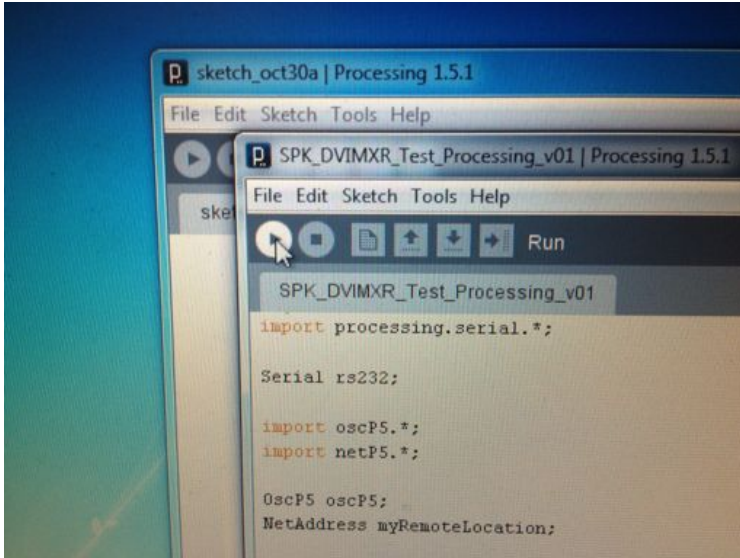
File >

Sketchbook >

SPK_DVIMXR_Test_Processing_v01

***spark live**

- innovation for live events
 - research, development, production and performance
-



7.2 Prep RS232 Comms

In the window that opens, titled "SPK_DVIMXR...", click on the play button.



7.3 Prep RS232 Comms

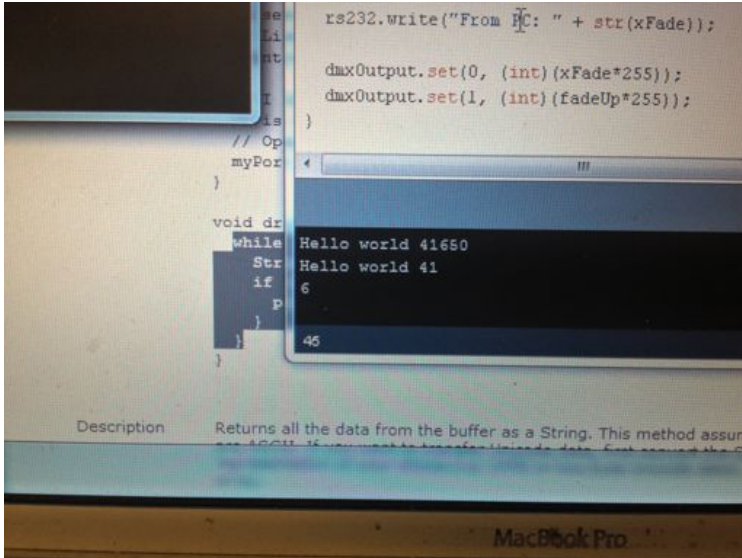
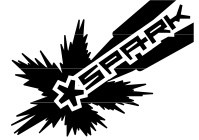
Connect RS232 cable to controller.

Select the RS232 test.

Under 'TX:' you should see a 'Hello World' line with a rapidly increasing number.

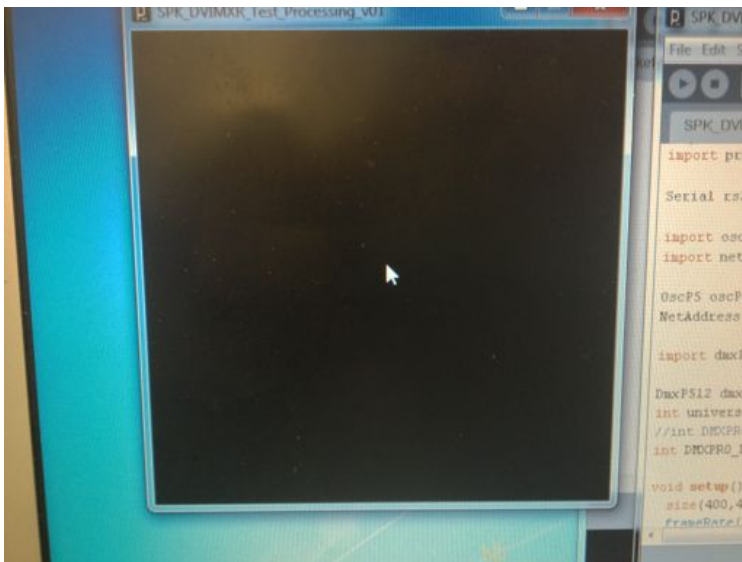
***spark live**

- innovation for live events
 - research, development, production and performance
-



8 Test RS232 Comms TX

On the Test PC, verify this message is being received. It should be displayed as a rapidly updating stream of text in the console log area at the bottom of the window that you opened and clicked its play button.



9.0 Test RS232 Comms RX

On the Test PC, a separate window filled with black should have opened when you hit the play button. Clicking in this window will send a message from the PC to the unit.

***spark live**

- innovation for live events
 - research, development, production and performance
-



9.1 Test RS232 Comms RX

On the unit, verify the following message has now appeared under the 'RX:' line:
"From PC: xxxxx", where xxxxx is a number.



10.0 Prep OSC

This tests the ethernet connection. As the RJ45 socket acts as either Ethernet socket or DMX socket, you may need to toggle the slide switch which controls which circuit is connected to the socket. If so, you will see the message shown. When the slide switch is in the Ethernet position (or if it was already), the firmware will proceed directly to the test.

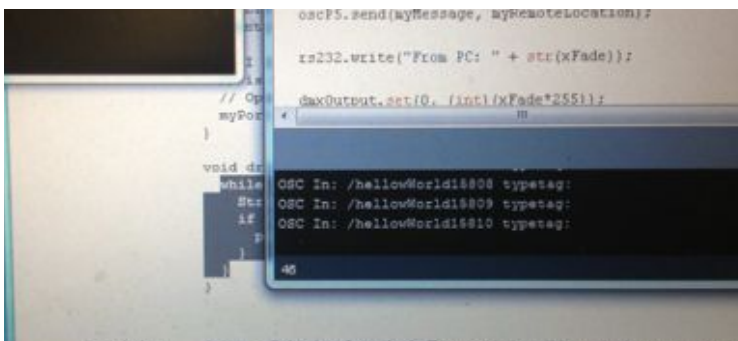
***spark live**

- innovation for live events
- research, development, production and performance



10.1 Prep OSC

Connect the ethernet cable. This is the GREY cable with yellow plug. Ensure you are not connecting the DMX cable that comes from the black 'Enttec' box.



11.1 Test OSC Comms

As per the RS232 TX test, verify on the Test PC that the following message is being received:

“OSC In: /hellowWorldxxxx typetag:”.

This should be as per the TX message on the unit's screen.

***spark live**

- innovation for live events
 - research, development, production and performance
-



11.2 Test OSC Comms

As per RS232 RX test, click in the black window on the Test PC and verify that the message

"OSC: /DVIMXR/XFADE 0.00"

is now shown on the unit.



12 Prep DMX

This tests the DMX connection on the RJ45 socket. Coming from the OSC/Ethernet test, you will see the message shown. When the slide switch is in the DMX position (or if it was already), the firmware will proceed directly to the test.

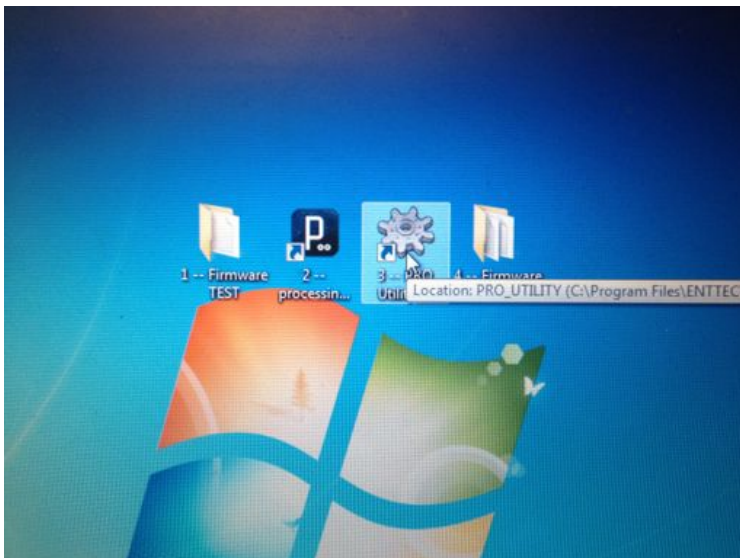
***spark live**

- innovation for live events
 - research, development, production and performance
-



12.1 Prep DMX

Disconnect ethernet cable and connect the DMX cable. This is the YELLOW cable with clear plug that comes from the black 'Enttec' box.

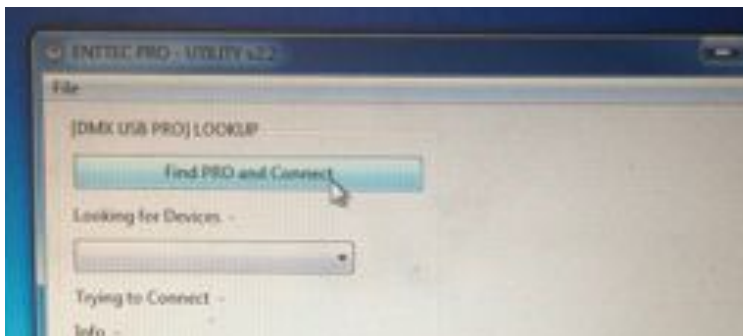


12.2 Prep DMX

On the Test PC, close the 'Processing' application used for RS232 and OSC tests. Double click on the third icon to open '3 – PRO UTILITY'.

*spark live

- innovation for live events
- research, development, production and performance



12.3 Prep DMX

In the 'ENTTEC PRO UTILITY' that opens, click the 'Find PRO and Connect' button. After a short working period, it should display 'Total Devices(D2XX) - 1 Found'



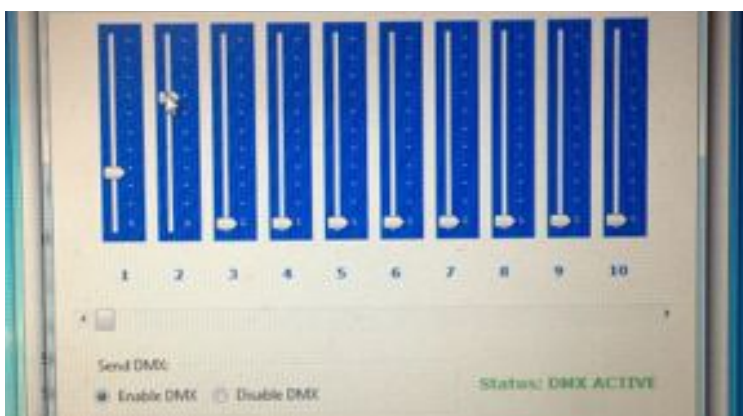
12.4 Prep DMX

Click 'DMX SEND TEST' button.



12.5 Prep DMX

Select the 'Enable DMX' Radio Button.

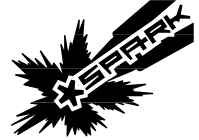


13 Test DMX In

Move sliders labelled 1 and 2.

***spark live**

- innovation for live events
- research, development, production and performance



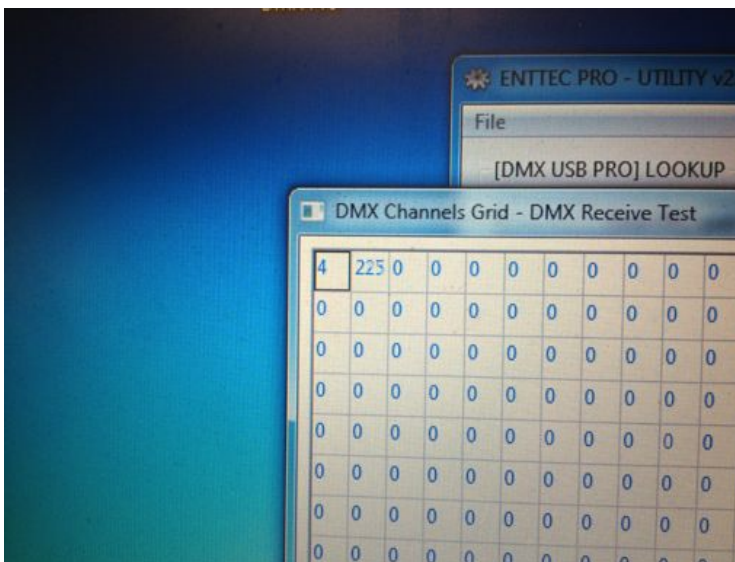
13.1 Test DMX in

Verify the numbers displayed on the unit correspond to the movement of the software sliders.



14 Test DMX Out

Close the send window and click on the 'DMX RECEIVE TEST' button.



14.1 Test DMX Out

Select the 'DMX Out' test on the unit. In the Test PC, verify the numbers in the top left are not zero. Quit the app when done.

*spark live

- innovation for live events
- research, development, production and performance



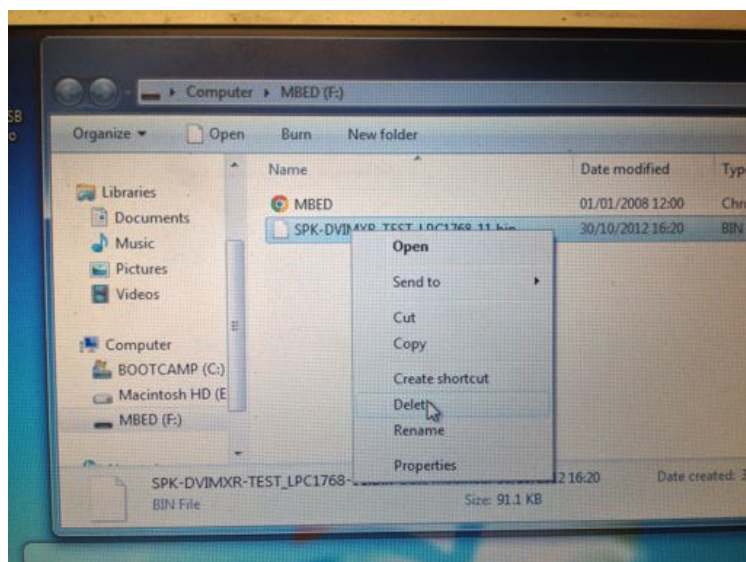
15 Pass!

If all tests have passed, the unit is checked and ready to be loaded with production firmware.



16.1 Load Production Firmware

Connect the miniUSB cable back to the unit. As before, on the Test PC a drive called MBED should mount. Open this as a folder.



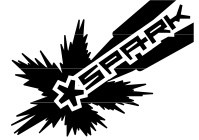
16.2 Load Production Firmware

On the opened MBED drive, delete the TEST firmware.

'SPK-DVIMXR-TEST-xxxx.bin'

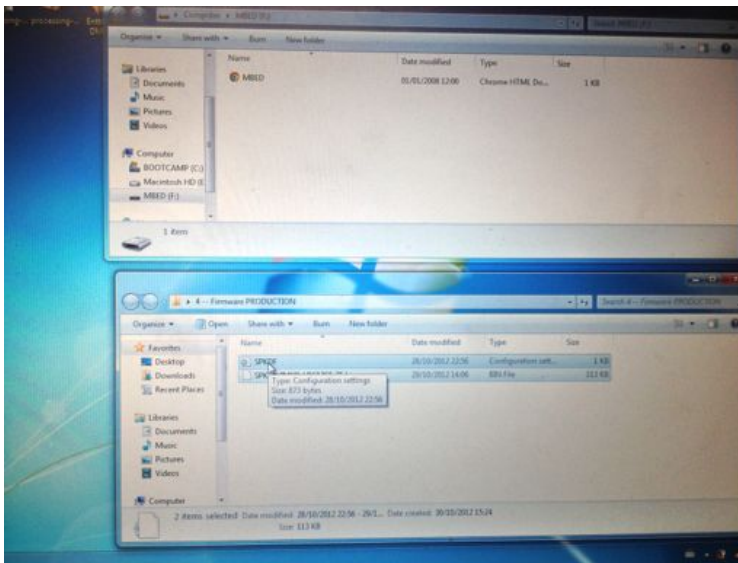
*spark live

- innovation for live events
- research, development, production and performance



16.3 Load Production Firmware

On the Test PC, open the folder called '4 – Firmware PRODUCTION'



16.3 Load Production Firmware

Copy across the contents of '4 – Firmware PRODUCTION' into the MBED folder.



17 Verify Production Firmware Loaded

Disconnect miniUSB and all rear connections.

On reconnecting power, you should see a screen similar to shown. Verify the top two lines:

SPK:D-Fuser

SW xx; ini OK

18 TEST COMPLETE.

Proceed to final assembly.