Instructions for installing New Firmware cards to SmarT-Trigger4

Upon receipt of your new PCB containing the latest Firmware Rev 4:00 upgrade please follow the four simple steps outlined in this document to ensure correct replacement of the PCB hardware.

STEP ONE

Remove all leads from the interface unit , take the unit to a workbench
and remove the top cover 12 small screws.

Looking from the front of the Box, firstly remove the four 20 Way IDC connectors that run along the rear edge of the PCB , These are numbered PL101 PL201 PL301 PL401 for the four channels, there are in plain order , and are not easy to mix up on replacement to the new board. It is best to hang these ribbons out of the box, over the rear panel edge , and out of the way of this simple operation.

There are four ribbon cables coming from the front panel mounted LED Panel and the next operation is to remove the four LED connectors, again looking from the front of the box the two topmost connectors from the LED PCB on the front panel go to Ch1 (PL103) and Ch3 (PL303) on the main PCB, looking from left to right , and the bottom two connectors on the LED PCB got to Ch2 (PL203 and Ch4 (PL403) on the main PCB , again looking from the front of the box and left to right .
Remove these four 10 way IDC connectors that connect the LEDS to the main PCB.

There remains the Serial and input trigger connector PL701 , also an 10 way IDC connector. It is best to move this ribbon out of the way for now.

Lastly remove the screws from the two way Terminal block connecting the 12V DC this is located at the front right corner of the PCB and is GREEN in colour , remember the wire orientation RED is on the bottom or to outer edge of the terminal and GEEEN is on top or to the Inner connection.

Having removed a total of 4x 20Way IDC and 5 x 10 way IDC connectors and a pair of Terminal Strip DC power connections, the Board is now ready for removal.

STEP TWO

Locate and remove three screws holding the card in place one is located in the centre rear of the card between PL201 and PL301 at the rear edge of the card and the other two are towards the front edge left and right corners and should be easily spotted .

Remove these screws and take out the old card, be careful of the underside of the card as there are several delicate small wire "mods" on the rear side of the 1st revision "A" PCB's , place the old card in the bubble wrap container in which the new card was received.

NB: These Rev "A" cards will need to be returned to Rovtec Systems.

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STEP THREE

Ensure the three studs are tight before inserting the new PCB , take a screw driver and using a small pliers ensure the three screws and studs are tight, lift up the box to get to the underside in order to tighten these three screws.

Insert the new card take care to get all the Ribbon cables over the card , move all the 10Ways IDC Ribbons out of the way while you insert and line up the new card over the securing holes. Note there is a slightly different component layout on the New revision "B" PCB but the locating holes should line up perfectly.

STEP FOUR

The Connectors are reconnected taking care to get the LED connectors in the right place, the rear panel connectors are not a problem left to right Ch1 to Ch4 as can be seen in the image below .

Firstly connect the Serial and Trigger connector (PL501) before the LED connectors

Next the four led connectors, Looking down on the LED panel from the front there are two sets of ribbon cables , two on the left two on the right , Ch1 LED connector comes from the Top left side cable on the LED Front Panel PCB and connected to PL103 and Ch2 comes from the bottom left side cable on the LED PCB and connects to PL 203 on the main PCB.

Led for Ch3 comes from Top Right cable and plugs into PL303 and Ch4 from Bottom Right cable and plugs into PL403 all these leads previously described plug in to Ch1 at PL103 on the far left hand connector at the front edge of the Card and CH4 goes into PL403 the far right hand most 10 way connector on the Main PCB.

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TESTING OPERATION OF NEW FIRMWARE REV4:00

Now before you put on the lid and connect up the Serial lead simply switch on and you should see the following sequence on the Led Lights. As seen below
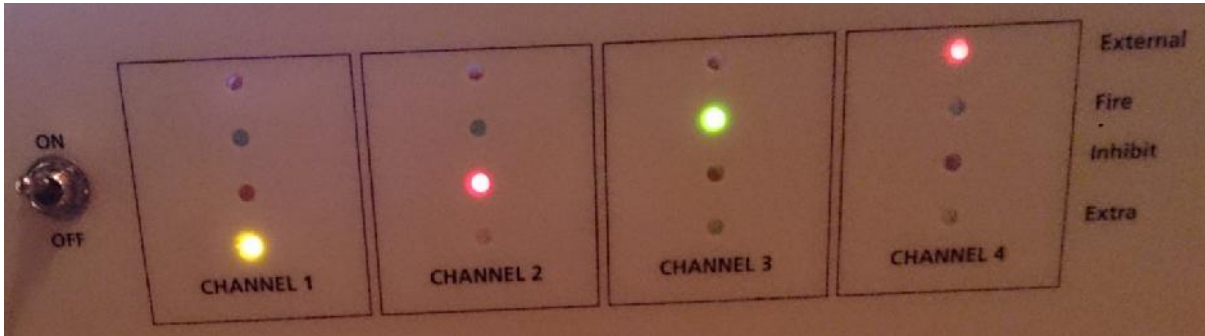

 Channel 1 Extra Led only   Channel 2 Inhibit Led Only Ch3 Fire Led Only and Ch4 External Led only

Sequence 1
This in effect is the card displaying its address at boot up , this the first sequence after the short period the processors wait to see if the Boot loader is communicating with the interface box.
If any slave does not display the correct sequence then it must be considered as not booting correctly and the unit should be once more powered down and then powered up again.

Sequence 2
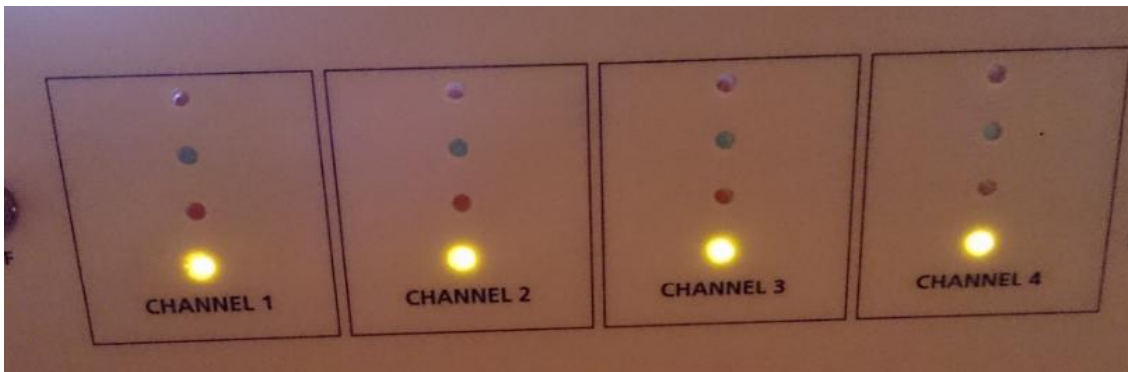
Sequence 1 is very quickly followed by the waiting for set up sequence of Leds where the Extra leds (bottom most led) flashes on and off at about one second interval, This should continue for a few seconds and provided there is no SmarT-Trigger control software running on the PC and connected to the box, the interface unit should boot up to a previously saved setting and the lights will one after another show a running channel , all systems are deployed to the field with a 500mSec fire rate applied to all channels with no inhibit applied to any channel.

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**TESTING OPERATION OF NEW FIRMWARE REV4:00**

Sequence 3
If the interface unit has no stored setting then the LEDS will continue to flash as per sequence 2
At a rate of about one second all EXTRA Leds on off , and will continue to operate like that until the
PC is connected and supplies a PC stored setup to the interface unit.
However when there is a setting stored inside the box ,
 (Default all channels set to 500mS fire No inhibit)
the front panel will after four or five seconds switch to Sequence 3 as shown below all channels
firing at 500mS fire rate. They should after a short time of being set up all fire in sequence.
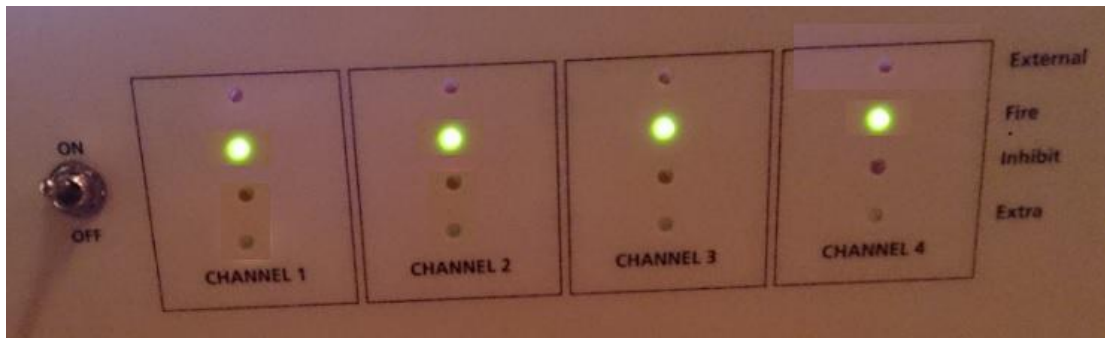
And so about four seconds after switch on with no PC connected the SmarT-Trigger4 revision 4
firmware will run a previously saved setting, the new firmware together with the PC software
version 4 for windows 7 allows users to set their own preferred boot up settings.

Replace cover and the operation is complete, from now on further firmware upgrades can be
downloaded from the downloads page (Along with the BOOTLOADER Package) of the
Rovtec Systems Web site .   http:://www.rovtec-systems.com

D Hayes Rovtec Systems Feb 2014