

# FASER PRE-SHOWER

V1.3 => V1.4 GUI & Firmware Interface changes

## 1 Direct Parameters

The screenshot shows two panels. The left panel, titled 'Status', has a 'Get' button and a list of status indicators: BOARD\_ID (value 0), APP\_VER, VALID\_WORD, TLB\_Detected, Module\_Clock\_Locked, and Internal\_Clock. The right panel, titled 'Direct Parameters', has a 'Set' button and a list of parameters: APP\_FPGA\_RESET, PLL\_Scan, PLL\_Apply, Autotrig\_(no\_L1A), MOD0\_EN, MOD1\_EN, MOD2\_EN, MOD3\_EN, MOD4\_EN, MOD5\_EN, L1A\_CNTR\_RESET, and Force\_Internal\_CLK. The PLL\_Scan and PLL\_Apply checkboxes are highlighted with a red box.

- 1- **PLL\_Auto\_Set** bit (bit[1]) becomes **PLL\_Scan** to start a scan of the connected modules ASICs phases (Module must be configured in oscillator mode before to start the scan)
- 2- **PLL\_Apply** is a new bit (bit[12]) to apply the phase configuration:
  - a. If PLL\_Scan bit is set at the same time than PLL\_Apply bit, the scan will be done and finally the PLL will be set with the result of the scan (same behaviour than previous single bit PLL\_Auto\_Set)
  - b. If only PLL\_Apply bit is set, the PLL will be set with the phase values configured in the new TAB **Phase.PhaseSet** (see below §4)

- ⇒ **DAQ I/F must add the new PLL\_Apply bit (mapping for other bits remains the same)**
- ⇒ **Need to update GUI scripts for PLL\_Scan, and add new PLL\_Apply bit**

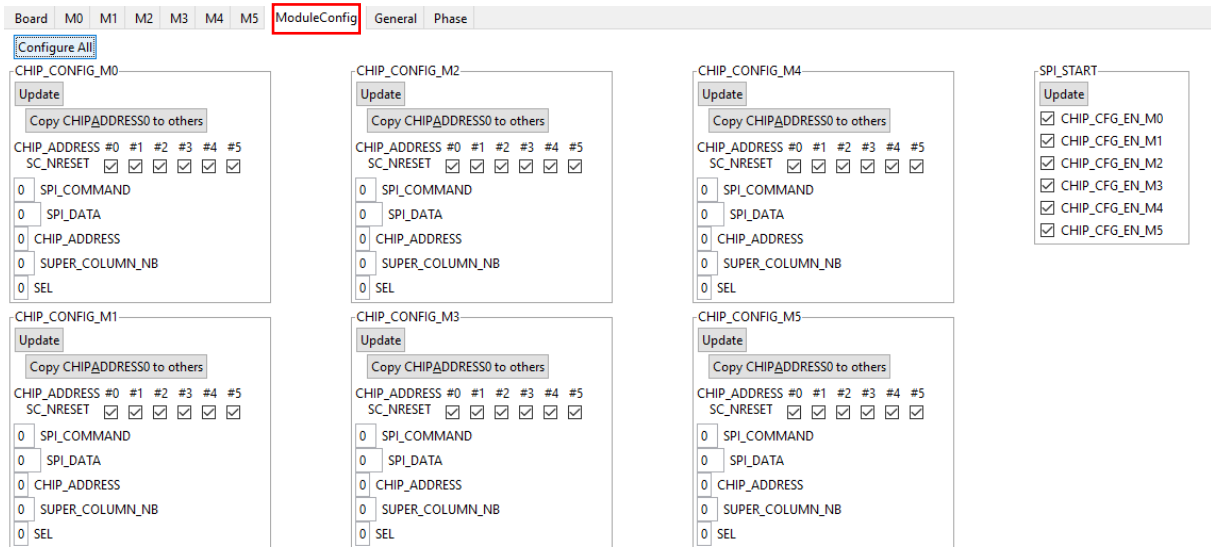
## 2 Tab Renaming

- 1- **TEST\_OUT** becomes **ModuleConfig** for CHIP\_CONFIG\_M0..M5 and SPI\_START
- 2- **TEST\_OUT** becomes **General** for RO\_PARAM

⇒ **Need to update GUI scripts:**

- *TEST\_OUT.CHIP\_CONFIG\_M0 => ModuleConfig.CHIP\_CONFIG\_M0*
- *TEST\_OUT.RO\_PARAM => General.RO\_PARAM*

⇒ **No changes in DAQ I/F for variable addressing (just renaming)**



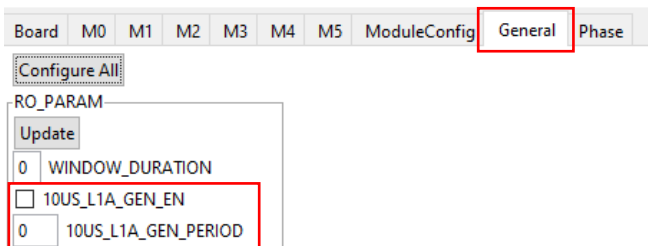
## 3 New RO\_PARAM

New readout parameters for internal 10us generator:

- 10US\_L1A\_GEN\_EN: enable internal L1A generator, bit[15]
- 10US\_L1A\_GEN\_PERIOD: set period for L1A generator (10-bits coding, 10µs step, 0:10µs, max=1023:10.24ms, period = (value+1)\*10µs), bit[14..5]

In order to enable the generator, the direct parameter 'Autotrig\_(no\_L1A)' (bit[2]) must be enabled as well as the '10US\_L1A\_GEN\_EN' above.

NB: WINDOW\_DURATION remains the same (bit[4..0])



**WARNING:** WINDOW\_DURATION, 10US\_L1A\_GEN\_EN and 10US\_L1A\_GEN\_PERIOD must **NEVER** be changed during run.

