|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2v0 | RUv2.1 | Date | 2019-06 - | Send to |  |
| Ser.Nr. |  | Tester |  | Comment |  |
|  | | | | | |
|  | | | | | |
|  | | | | | |

## 0) Visual inspection

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## 1a) Impedance measurements (Fluke111 or Fluke29):

Place Jumper J33, J30&J31 1-2

Set S9 switch2 to + (S9= 0+000000)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Location | Typ/avg | Min | R (Ω) | max | Done with PT (=Probe Tester) |
| Power in | J0 |  | 70 |  | 160 |  |
| VCCint | Y10 |  | 5 |  | 11 |
| VMGT | Y11 |  | 68 |  | 115 |
| 1V2 | Y12 |  | 220 |  | 270 |
| 1V5 | Y13 |  | 35 |  | 92 |
| 1V8 | Y14 |  | 150 |  | 190 |
| 2V5 | Y15 |  | 170 |  | 220 |
| 3V3 | Y16 |  | 204 |  | 240 |
| FX3\_1V2 | J25-2 |  | 725 |  | 796 |
| FX3\_1V8 | J26-2 |  | 660 |  | 710 |
| FX3\_3V3 | J27-2 |  | 670 |  | 725 |

## 1b) Power up:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vin(V) | 0…4 | | 5 (5,5) | | | | | | | | +jumper | 12V | PT |
| Iin(mA) | <10 |  |  | | | | mA | 850 |  | 1150 |  |  |  |
|  |  |  | V | Min | mV | max | mV | Min |  | Max |  |  |
| VCCint | 0 |  | Y10 | 0,964 |  | 0,975 | Y20 | 65 |  | 110 |  |  |
| VMGT | 0 |  | Y11 | 1,005 |  | 1,015 | Y21 | 8 |  | 16 |  |  |
| 1V2 | 0 |  | Y12 | 1,20 |  | 1,22 | Y22 | 1 |  | 9 |  |  |
| 1V5 | 0 |  | Y13 | 1,52 |  | 1,54 | Y23 | 150 |  | 355 |  |  |
| 1V8 | 0 |  | Y14 | 1,8 |  | 1,82 | Y24 | 40 |  | 51 |  |  |
| 2V5 | 0 |  | Y15 | 2,49 |  | 2,52 | Y25 | 50 |  | 80 |  |  |
| 3V3 | 0 | \_ | Y16 | 3,31 | \_\_\_ | 3,35 | Y26 | 60 | \_\_\_ | 73 |  |  |

## 1c) Program PA3 & FX3

|  |  |  |
| --- | --- | --- |
|  | Comment | PT |
| PA3 programmed |  |  |
| FX3 programmed | USB control center:  upload “slfifo\_uart\_i2c\_SN0\_20160712.img” to I2C |  |

## 2) Configure FPGA (Xilinx-US) + loopbacktest

Install/screw power mezzanine

Install/screw VTRx (J3), VTTx (J4) and VTRx SM (J5) module

Place 5 jumpers: J25&J26&J27 1-2, J28 on 1-2, J29 on 2-3

Dipswitch S10 to “+-0+-0+0”

Dipswitch S11 all to OFF (not ON)

Place FAN

Connect Power cable J0

Connect USB cable J6

Connect fibers CRU->VTRx0-Rx, VTTxUp->VTRx2, VTTxDown->CRU

Place all loopback cables, connect RUv0/CRU with PC and RU

Xilinx cable J8: Vivado2018(TestSystem)->hw. manager->Upload INIT LED (D2):\_\_\_->\_\_\_ , DONE LED (D3) \_\_\_-> \_\_\_

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Function | Result “US & PA3” | | | |
| Check 6 LEDs blinking differently |  | | | |
| Run testAll.py & long GBT loopback |  | | | |
| Change fibers  Remove Xilinx (& PA3) JTAG cable  Run testSCA.py (read-adc-gpio-i2c-jtag) |  | | | |
| Run testGBT.py (GBTx0 lopback) |  | | | |
| Dipswitch S11-1 to ‘ON’, the rest to ‘OFF’  Run testBUTTON.py |  | | | |
| Check LEDs with pushbuttons |  |  |  |  |

## 3) Connect USB->I2C->GBTx downloadcable

Connect Cern USB-I2C dongle to J12

(Keep) connect the VTRx with the CRU with fiber

./fuseGBTx.sh

|  |  |  |
| --- | --- | --- |
| 3a | Are 3 GBTx visible |  |
| 3b | Fusing GBTx0 succeeded |  |

## 4) read Flash memory ID and badblocks, and selectmap register

Reconfigure PA3: Connect FlashPro4 cable to J11; FlashPro->run

|  |  |
| --- | --- |
| ./initPA3I2c.sh  ./testPA3I2C.py |  |
| ./testSelectMap.py ( ID=13919093)  Press S4 |  |
| Connect CAN cable to J9  set dipswitch CAN address to 0xFF   * (i.e. S11 switch 3 to 10 to ‘1’)   ./initCAN.sh (only needed the first time)  ./testCAN.py |  |
| ./testFlashReadback.py |  |
| ./read\_bad\_blocks.py (22 min) |  |

## 5) Final comments

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