

Testing of 8 production cards

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Status of testing at SINP

- 8 μ HTR cards v1.3 assembled in India.
 - **used machine assembly now.**
- Testing of cards is ongoing at SINP.
 - Firmware used for Front FPGA = 00.0b.20
 - Firmware used for Back FPGA = 00.0d.40
- Following tests are performed :
 - I2C communication(with small issue initially with 2 cards) working fine.
 - For PPODs
 - **IBER Test @ 4.8 Gbps and 6.4 Gbps using μ TCA crate.**
 - Worked fine in 7 cards
 - Random behaviour in 1 card : Ibert console not coming
 - **Front Link works upto 6.4 Gbps**

Resistance Problem

- 2 cards were not showing correct I2C information for 1V PM.
- Card 106 – Resistance near C402 was dry soldered (33 Kohm)
- Card 104 – Resistance near C503 was dry soldered (33 Kohm)
- These resistors were connected with 1V PM.
- After doing the soldering properly, I2c communication was working fine.
- Next Steps :
 - SFPs and front-back link testing.



I2C communication

pm_1VA -- 00:1e:c0:80:e4:38 (S/N = 1015)
Id-Version = 1 Mezz Type = 1 / 1 (PM1.0)
Tested 7-2-2014 at 'SINP-INDIA' by 'Raman' using release 1.0.2

pm_1VB -- 00:1e:c0:81:6f:af (S/N = 1006)
Id-Version = 1 Mezz Type = 1 / 1 (PM1.0)
Tested 15-1-2014 at 'SINP-INDIA' by 'Debarati' using release 1.0.2

pm_3_3V -- 00:1e:c0:80:fa:7e (S/N = 1006)
Id-Version = 1 Mezz Type = 1 / 3 (PM3.3)
Tested 3-2-2014 at 'SINP-INDIA' by 'Debarati' using release 1.0.2

apm_1_8V -- 00:04:a3:a5:f8:7a (S/N = 1009)
Id-Version = 1 Mezz Type = 2 / 1 (APM1.8)
Tested 28-1-2014 at 'SINP-INDIA' by 'Bhawna' using release 1.0.2

Layer 1 : asked for 8 , found 8

apm_2_5V -- 00:1e:c0:81:01:c3 (S/N = 1003)
Id-Version = 1 Mezz Type = 2 / 1 (APM1.8)
Tested 3-2-2014 at 'SINP-INDIA' by 'Debarati' using release 1.0.2

cpld_mezz -- 00:04:a3:8f:15:46 (S/N = 65535)
Invalid ID block observed

IBER Test 6.4 Gbps :: PPODs

ChipScope Pro Analyzer [ibert_all]

File View JTAG Chain Device IBERT_V6GTX Window Help

JTAG Scan Rate: 5 s S! ↔

Project: ibert

JTAG Chain

- DEV:0 MyD
- System
- UNIT:1
- IBERT

Signals: DEV:

IBERT Console - DEV:0 MyDevice0 (XC6VLX240T) UNIT:1_0 MyIBERT V6 GTX1_0 (IBERT V6 GTX)

MGT/IBERT Settings DRP Settings Port Settings Sweep Test Settings

GTX_X0Y12	GTX_X0Y13	GTX_X0Y14	GTX_X0Y15	GTX_X0Y16	GTX_X0Y17	GTX_X0Y18	GTX_X0Y19	GTX_X0Y20	GTX_X0Y21	GTX_X0Y22	GTX_X0Y23
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
-76	0.598 UI	-76	0.598 UI	-76	0.598 UI	-76	0.598 UI	-76	0.598 UI	-76	0.598 UI
PRBS 7-bit	PRBS 7-bit	PRBS 7-bit	PRBS 7-bit	PRBS 7-bit	PRBS 7-bit	PRBS 7-bit	PRBS 7-bit	PRBS 7-bit	PRBS 7-bit	PRBS 7-bit	PRBS 7-bit
PRBS 7-bit	PRBS 7-bit	PRBS 7-bit	PRBS 7-bit	PRBS 7-bit	PRBS 7-bit	PRBS 7-bit	PRBS 7-bit	PRBS 7-bit	PRBS 7-bit	PRBS 7-bit	PRBS 7-bit
9.508E-013	9.516E-013	9.524E-013	9.532E-013	9.540E-013	9.548E-013	9.556E-013	9.564E-013	9.572E-013	9.580E-013	9.588E-013	9.597E-013
1.052E012	1.051E012	1.050E012	1.049E012	1.048E012	1.047E012	1.046E012	1.045E012	1.044E012	1.043E012	1.042E012	1.042E012
0.000E000	0.000E000	0.000E000	0.000E000	0.000E000	0.000E000	0.000E000	0.000E000	0.000E000	0.000E000	0.000E000	0.000E000
Reset	Reset	Reset	Reset	Reset	Reset	Reset	Reset	Reset	Reset	Reset	Reset
320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05
320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05
320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05
320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05
320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05
320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05	320.05

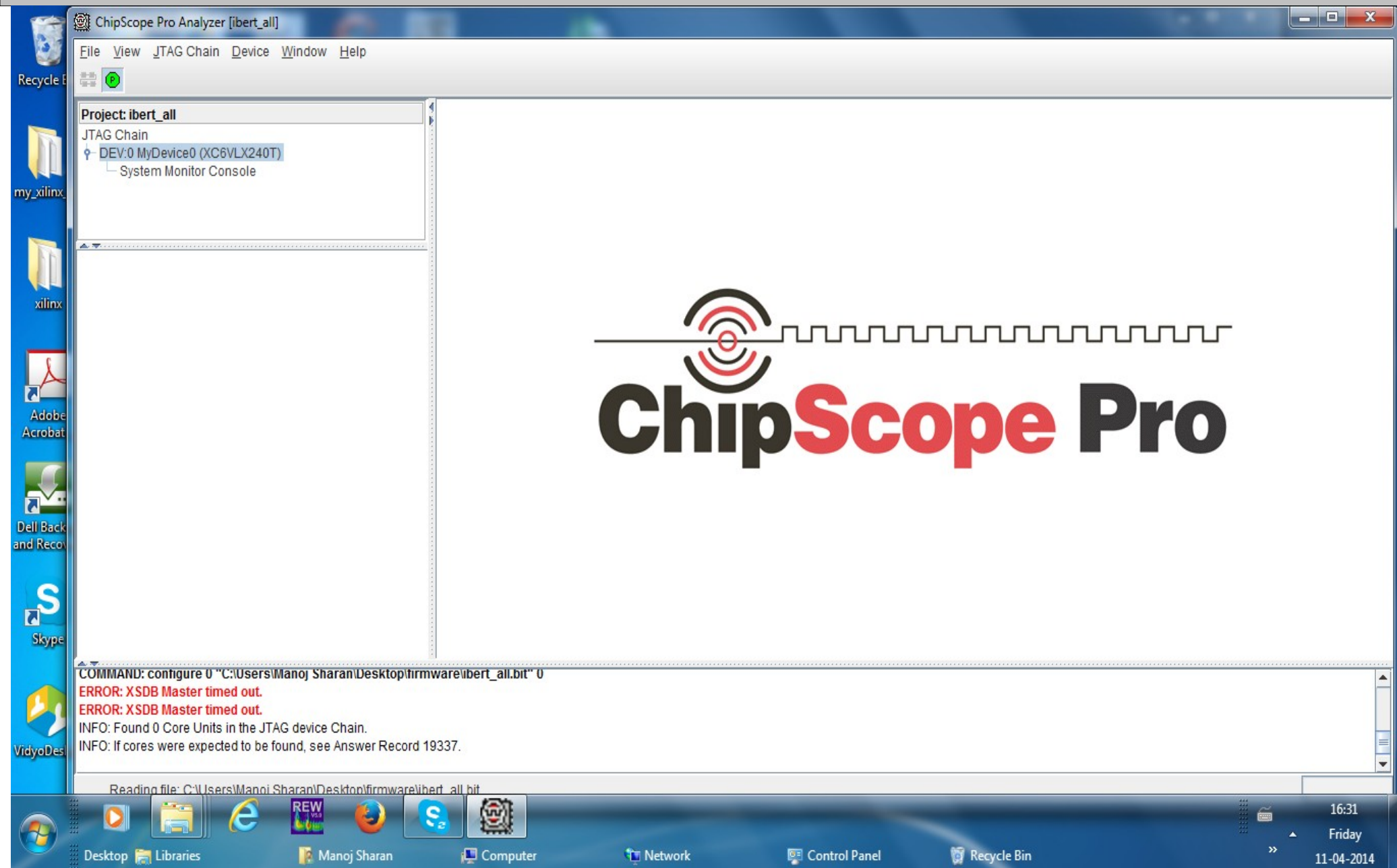
INFO: Cable: Platform Cable USB II, Port: USB21, Speed: 3 MHz

INFO: Found 0 Core Units in the JTAG device Chain.

Desktop Libraries Manoj Sharan Computer Network Control Panel Recycle Bin

14:40 Thursday 10-04-2014

IBER Test 4.8 Gbps :: Error for 1 card



Summary

- 8 μ HTR cards v1.3 assembled in India.
- Preliminary testing at SINP shows good results.
- I2C communication passed for all mezzanines.
- IBER Test using crate worked for 7 production cards.
- IBER Test randomly working with 1 card (104)

Comments & Suggestions

Backup

I2C communication

```
back FPGA (sysmon) -- 0.98 V  2.53 V  47.0 degC
front FPGA (sysmon) -- 0.99 V  2.52 V  46.8 degC
pm_1VA      -- 1.01 V          40.9 degC
pm_1VB      -- 1.01 V          38.9 degC
pm_3_3V     -- 3.35 V          37.6 degC
apm_1_8V    -- 1.62 V          45.8 degC
Layer 1 : asked for 8 , found 8
apm_2_5V    -- 2.53 V          53.0 degC
ppod_rx0    -- 2.51 V  3.27 V  28.6 degC
Layer 1 : asked for 8 , found e8
ppod_rx1    -- 2.51 V  3.28 V  26.5 degC
ppod_tx     -- 2.43 V  3.23 V  39.2 degC
```