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input/output tests at Bham

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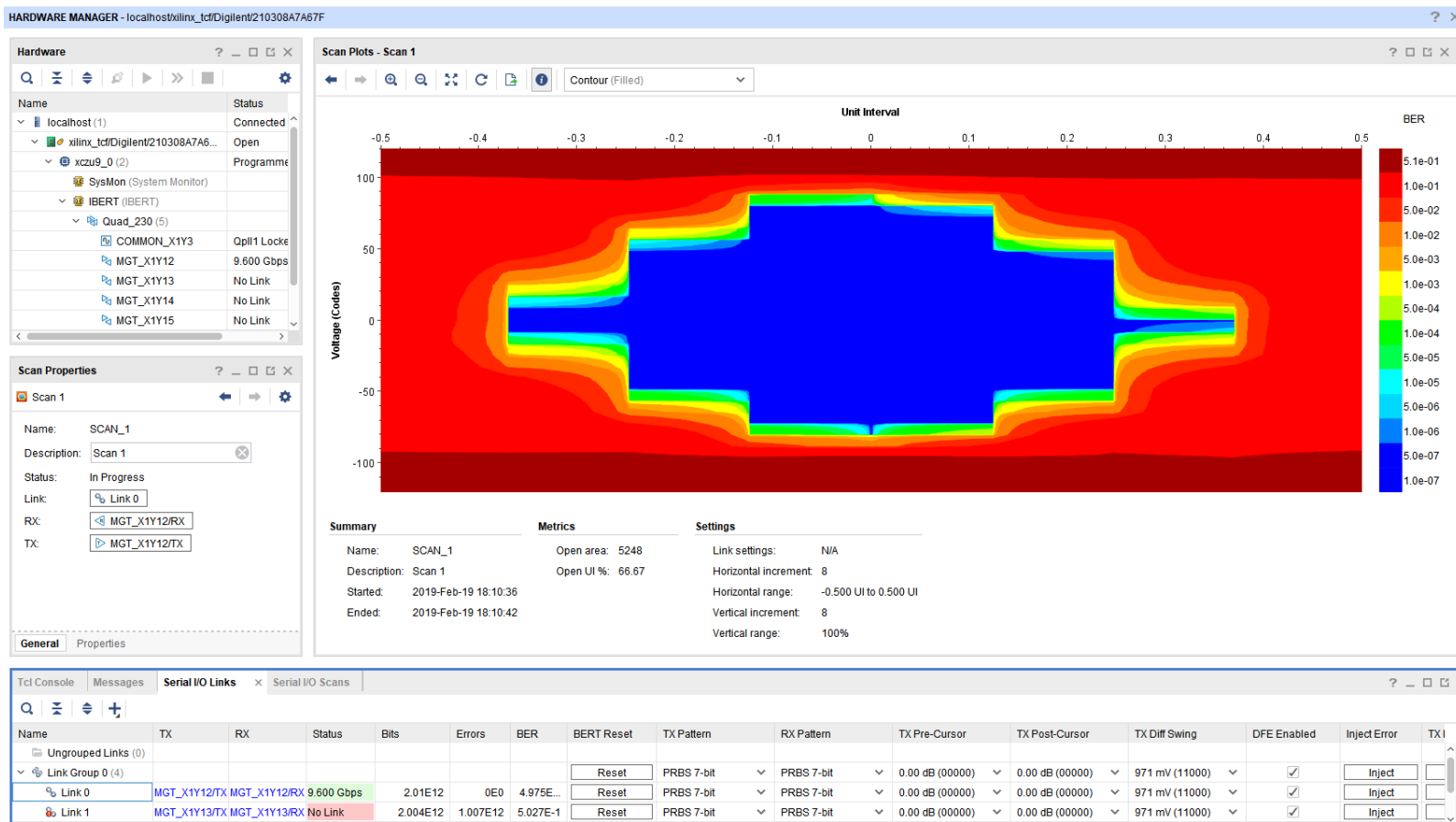
ZCU102 setup



- ❑ ZCU102 delivered to Bham (thanks to Dave)
- ❑ Board successfully connected to Vivado via JTAG
- ❑ Clock programmed through micro USB serial link
- ❑ An external loop was made with an optical fibre using SFP module
- ❑ A bitfile with IBERT (4 MGTs) was generated and programmed into the FPGA
- ❑ Communication tests were performed



Eye diagram on ZCU102

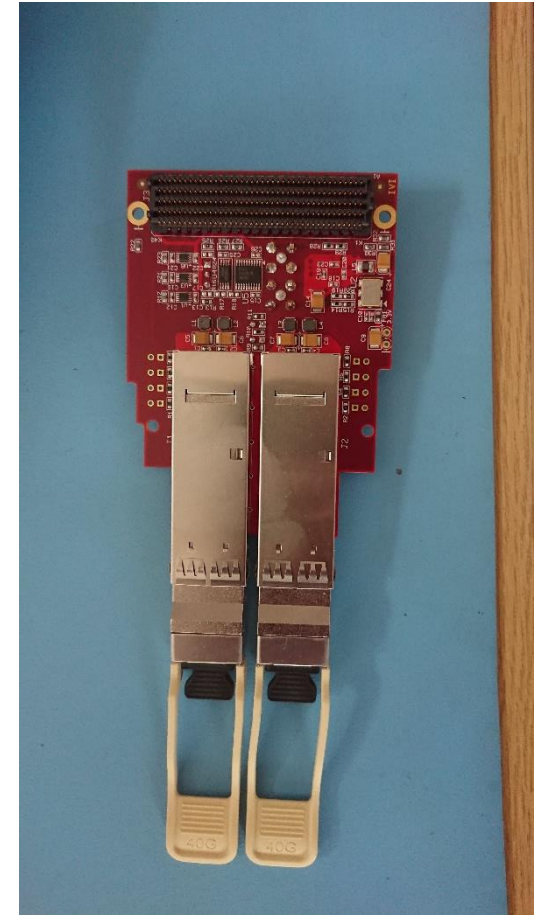
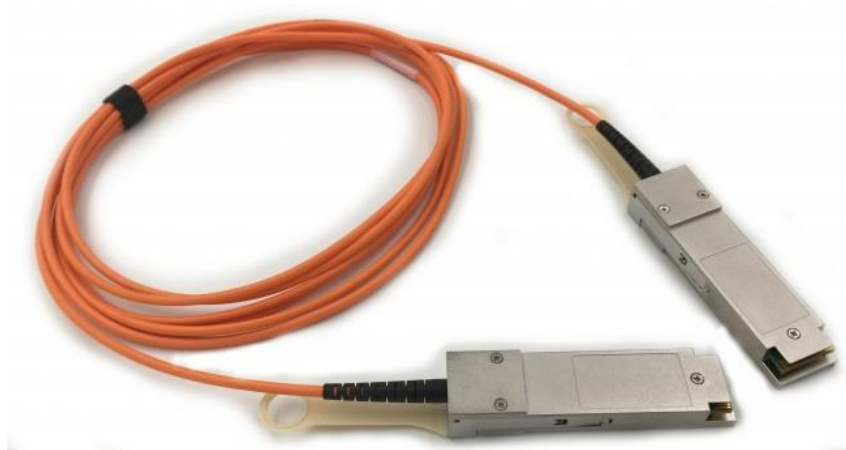


- This is the eye diagram on the IBERT GUI
- Test was done with single SFP fibre connector

Next steps



- Repeat the same exercise using the FMC board with QSFP+ connectors
- We need a short length 4-channel fibre ribbon cable to loop back to and from the QSFP+ connector on the FMC board
 - Each channel has tx and rx, so we will be testing all the 8 channels



Conclusion and future plan



- ❑ The communication between the WIB and the ZCU102 will be done through an FMC card.
 - ❑ We need the details of this card: pinout, signals, clock, etc
- ❑ We used Si5345 IC (the same that is on the FELIX) the on the ZCU102 to program the transceivers
 - ❑ Should we use the on-board clock of the FMC card?
- ❑ On the firmware repository side we are still trying to create the Vivado project and integrate the MGT IP cores created by Richard for the communication tests
 - ❑ Will try last suggestions from Dave for IPBB operation
 - ❑ Once we get there, we will need help/documentation of the existing firmware blocks
- ❑ Our plans for the next future are:
 - ❑ Francesco will work at the data formatting
 - ❑ Richard will handle the MGT communication



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Thanks for your attention

Francesco Gonnella



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