



RCE GBT Readout for Demonstrator Status

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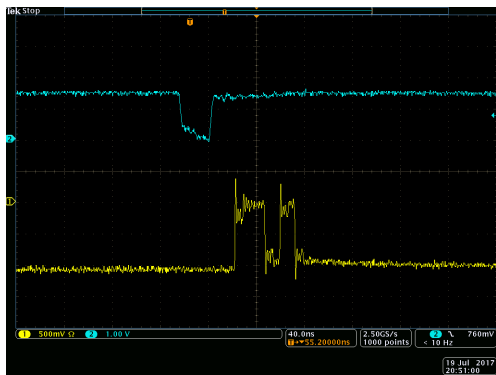


Bundesministerium
für Bildung
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- COB now connected to fibers and network to lab next door
- Installed new DPM & DTM firmware from Martin
 - Have to determine what is different
 - Link to VLDB still not completely stable
- Connected VLDB and FE-I4 module
- Digital/analog scans work, other scans very unstable





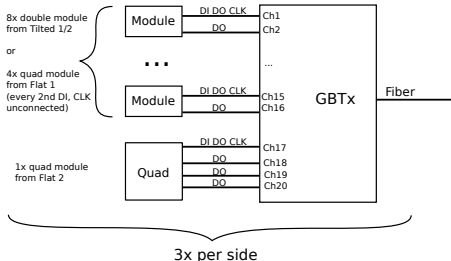
- Probe RXDATAVALID and Dout on VLDB
- RXDATAVALID occasionally (few Hz) goes low for one clock cycle
- Dout has random bits (should be low when idle)
- Independent of transceivers and fibers
- Could be caused by clock jitter

Demonstrator GBTx Channel Mapping

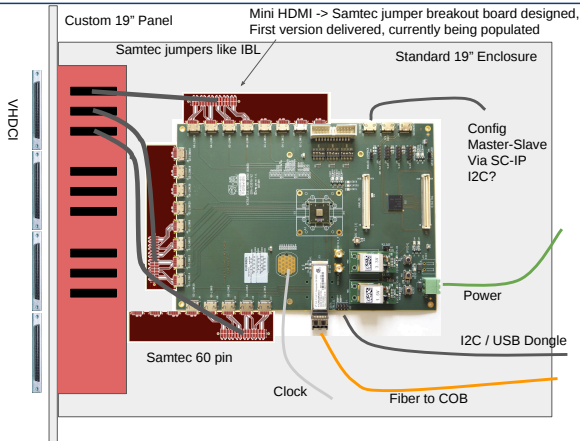


- 60 FEs per side & 20 channels per GBTx → 3 GBTx per side
- 16 channels from Tilted 1/2 and Flat 1 go directly to one GBTx
- 12 channels from Flat 2 are split to 3x4 to get 16+4 per GBTx
- Symmetric VHDCI pinout makes routing to Tilted 1/2 and Flat 1 (nearly) identical

Connector	#Mods	DO (pairs)	CLK+CM D (pairs)
Tilted 1	8 (DC)	16	16
Tilted 2	8 (DC)	16	16
Flat 1	4	16	8
Flat 2	3	12	6

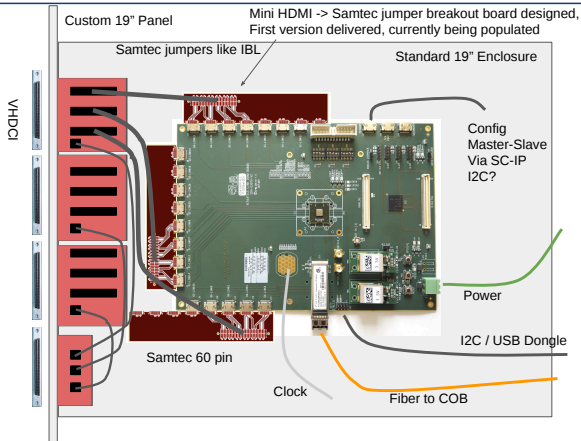


VLDB Readout Tray Idea



- All VHDCI connectors on one board
- Less cabling
- More constrains on VHDCI placement and cables to VLDBs

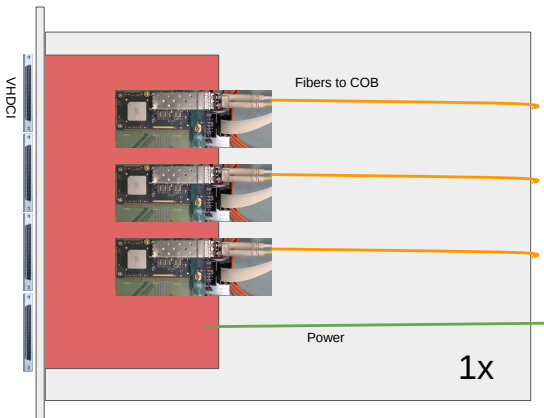
VLDB Readout Tray Idea



- Separate board for each VHDCI connector/each VLDB
- Needs additional board for 4th VHDCI + more cables
- Mainly constrained by cables to 4th VHDCI

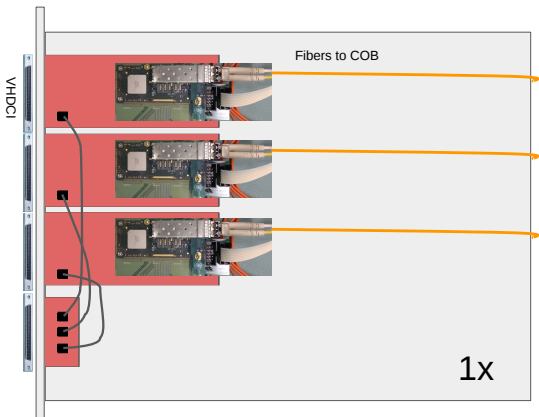
Arranging VLDBs in rack:

- Two VLDBs next to each other: difficult due to adapter boards and fiber on the sides
- Stacking VLDBs: needs a few cm vertical space for Samtec cables, more for SMA or bullseye
- At least 3U in height for stack
- VLDBs behind each other: increases cable length, depends on depth of rack



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- All VHDCI connectors and mezzanines on one board
- Very compact
- Probably a one-off



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- Separate board for each VHDCI and mezzanine
- Modular
- Additional board for 4th VHDCI



Thank you for your attention.