



# TCM, GIO, CAN & TTCRx

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# TCM

- **Modifications and Improvements**
  - VME display logic have been re-designed.
    - Displays VME data of other modules.
  - Extended memory for CAN.
  - Document produced for up-dating TCM CPLD code.
    - Can be downloaded from the Firmware page of TCM:-  
<http://www.te.rl.ac.uk/esdg/atlas-flt/>
- **Three modules in use, three to be updated and tested**



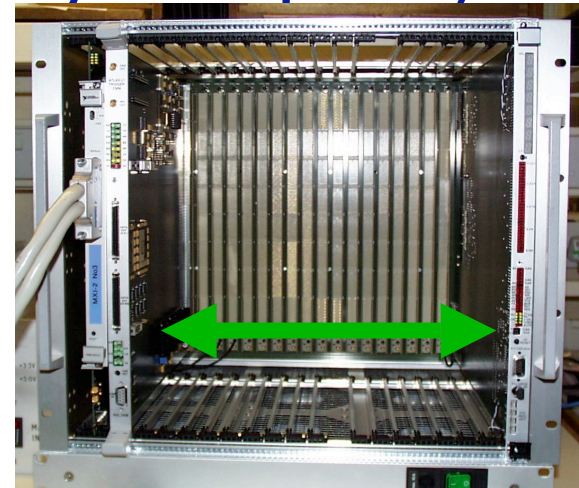
## GIO

- One design for Rx, Tx in LVDS, Bus LVDS, CMOS, etc
- BusLVDS (transceiver) used to test CMM (no differential assembly required, same for Tx and Rx)
- Modifications being made to design.
  - Incorrect CMC connector orientation
  - Other minor improvements
- Into drawing office by the 28/10/02 for layout
- Order four boards ??
  - CMM tests (BusLVDS, BusLVDS-> LVDS to CMOS board)
  - CPM tests (BusLVDS-> LVDS to CMOS board)
  - TTCvi 'sequencer'( ?)



## CAN

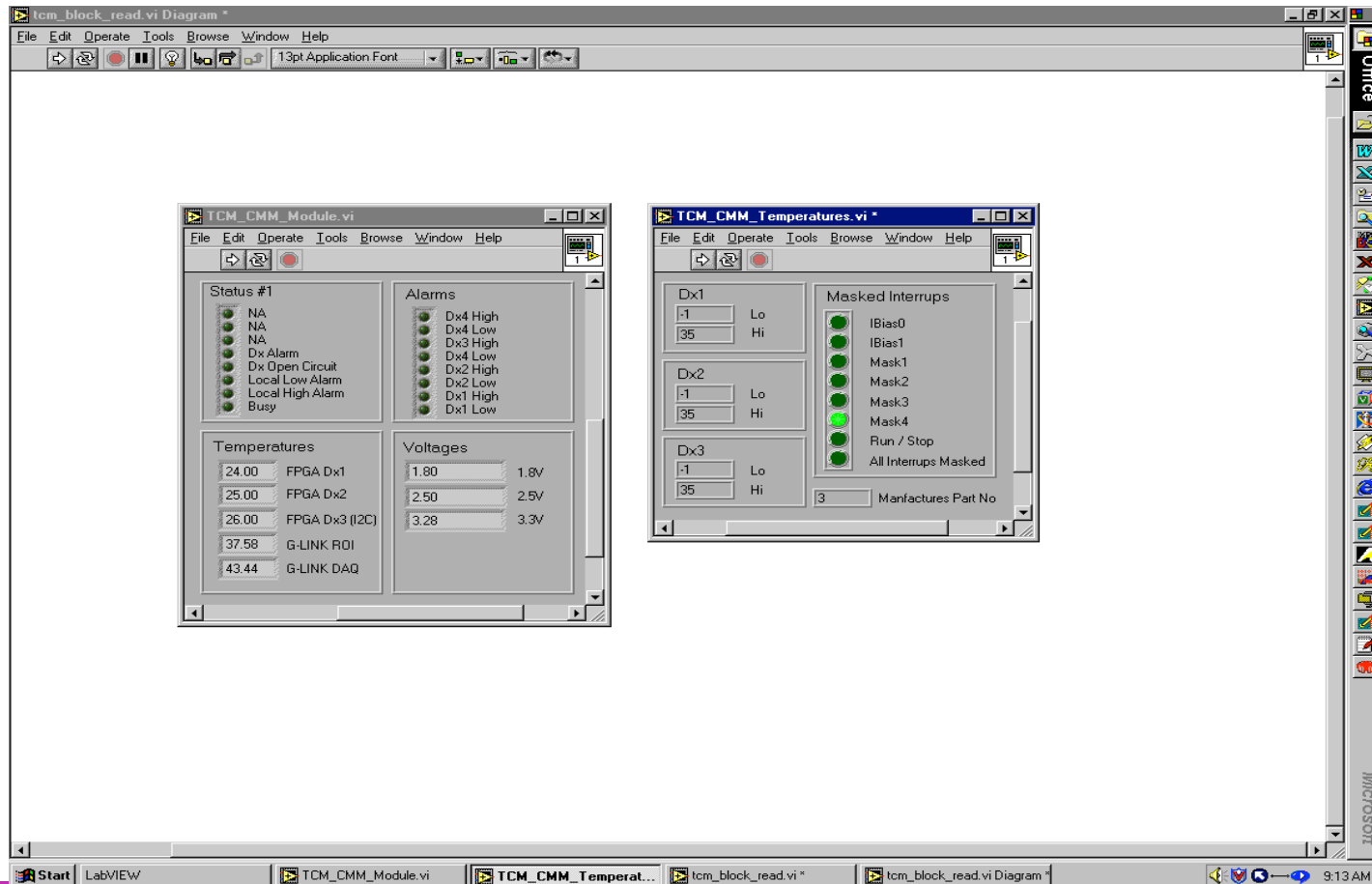
- TCM requests temperature and voltage readings from CMM via the CAN Bus (CAN Remote Request).
- CMM obtains FPGA temperatures via SMBus protocol & voltages using AtoD converters.
- CMM also alerts (CAN Transmit) TCM that over-temperature (FPGA too hot) alarm has been set.
- Software for CPM in development (1/4 way to completion).





# CAN

- Values into TCM via CAN, then read via VME and displayed on PC





## CAN

- **How to demonstrate TCM-DCS in Slice test?**
  - Use commercial PCI CANBus card (CAN OPEN)?
  - Next iteration of TCM to have CERN ELMB module?
    - Interface TCM Dual-port RAM via ELMB's digital I/O
    - Use CAN micro-controller internal RAM and interface to ELBM via serial interface



# TTCRx

- **PROM**
  - Obtained verilog file.
  - Compiled using ModelSim.
  - **Ready for testing.**
  - **Update schematics for new TTCrx chip**



## Summary

- **TCM - Display Problem solved.**
- **GIO - Successfully being used with CMM.**
- **CAN - 'functional'**
- **TTCRx - Ongoing.**





## Things to do

### In priority order:

- Update GIO schematics ready for version II.
- Update TTCRx card schematics for new decoder chip.
- Test TTCRx cards.
- Complete CAN software for CPM.
- Three TCMs to be updated
- TCM-DCS interface?
  
- Manufacture, assemble and test more G-Link Rx, Tx cards for DSS/ROD ???
- Update and re-test all DSS modules