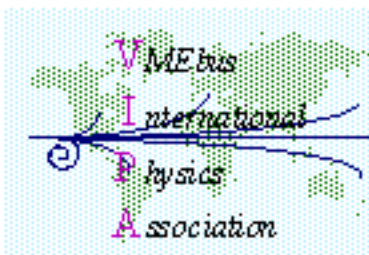


Slave interface components

Jan Buytaert

Commercial VME slave controllers

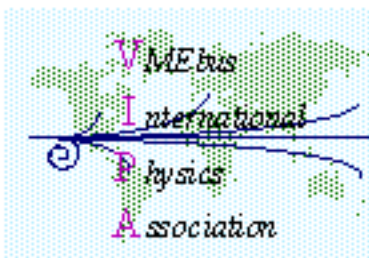


- VME64xP complexity 'requires' COTS interface controllers
 - 2eVME, CR/CSR, 2eSST, live insertion, address relocation, ...
- If not available or too expensive,
 - VHDL template design?
 - FPGA implementation?
- Local intelligence required for configuration?
- PCI dominant local bus. Small applications left out?

Commercial VME slave controllers (2)



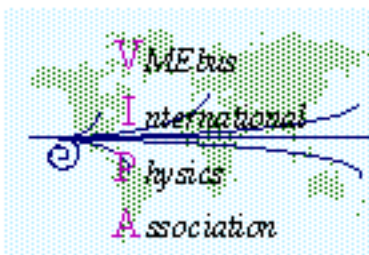
- Cypress
 - CY7C960/CY7C961 Slave Interface Controller (36/71 USD)
 - VME64, CR/CSR, 64/100 TQFP.
 - Configurable with serial PROM or external data path.
 - 961 has Remote Master capabilities.
 - CY7C964 Byte Wide Address and Data Path (18USD)
 - Companion (4) to 960 or 961
 - VIC64 64 bit Slave with 8 bit Address/Data path (?USD)
 - Requires additional 24 bit bi-directional latched transceivers on both address and data lines.
 - VME64 compatible?
 - MBLT D64 capability



Commercial VME slave ASICs (2)

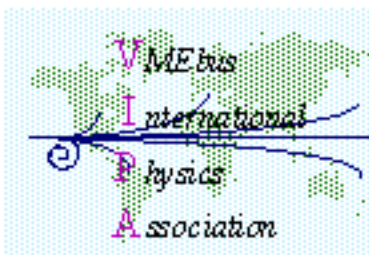
- Tundra Semiconductor (ex Newbridge)
 - SCV64 Master/Slave controller (402 CHF)
 - VME64 compliant, has A64 and D64 capability
 - requires 5 16-bit buffers ('245 type), automatic initialization
 - Universe II Master Interface (432 CHF)
 - PCI-VME bridge, has D64 capability, internal FIFO for write posting
 - 0.050 BGA package only!
 - Trooper II intelligent Slave.
 - requires 5 buffers (F760) for interface. Needs local intelligence for configuration
 - Verilog and Logic Modeling support

ETL Transceivers



- Specified in VITA2
 - “Enhanced transceiver logic”
 - pre-charging of B port to threshold voltage (1.5V) for **live-insertion**
 - **Incident wave switching**
 - higher drive currents (-60,+90 mA)
 - 25 Ohm series damping on B port.
 - Narrower threshold range (1.4V -1.6V). **higher noise margins**
 - Lower skew
 - **Compatible** with TTL driver/receiver on the bus
 - Layout and VME signal assignment In VITA2

ETL transceivers (2)



- Texas Instruments “ABTE” family (SSOP)
 - 74ABTE16245 (8 CHF)
 - Dual 8 bit, tri-state outputs
 - Synchronous (common DIR control)
 - and 74ABTE16246 (11 CHF)
 - 8 bit with tri-state and 3 with open collector (BBSY*,BR,...)
 - asynchronous (DIR control per bit)
- Second source: National Semiconductor?
 - Preliminary spec for VME01 (equivalent to 245)
 - Samples