

FAST TRANSIENT BUFFER BOARD

400 Msamples/second, 8 channels, 8 Gbyte

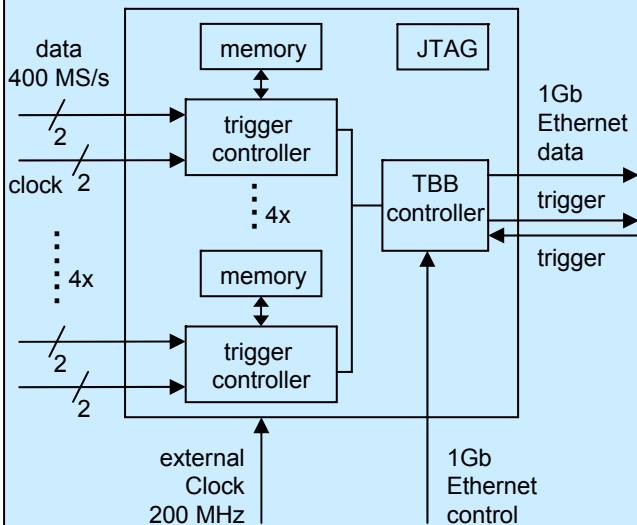
Functionality

- High speed digital data capture
- Flexible data rates: 8 channels of 16 bit at 400 Msamples/s up to 2048 channels at 1.56 Msamples/s
- Flexible online event detection in firmware
- Both external triggering and smart online data dependent triggering
- Flexible online (firmware) processing possibilities
- Ethernet connection for offline processing of 8 Gbyte stored data (upgradable to 64 Gbyte)
- Possibility to allocate all memory to < 8 channels

Application areas

- Transient event detection in radio astronomy
- Event detection in particle physics
- Coherent capture of high-speed events from multiple sensors / arrays
- Semi-online phased array signal processing applications
- Transmitter direction finding for communications

Block Diagram



Board specifications

Input:

- Number of physical data input channels: 8
- Number of clock inputs: 8
- Connectors: ERNI ERmetZD
- Differential inputs, LVDS, 100 ohm
- Data resolution: 16 bit
- Datarate and clockrate: 400 Msamples/second
- Trigger input: SMA, 3.3 V, LVCMOS

Output

- Data output: 1000BASE-T Ethernet
- Ethernet connectors: RJ45 CAT5e
- Trigger output: SMA, 3.3 V, LVCMOS

On-board

- On-board memory: 8 GByte (DDR2)
- Memory upgradable to 64 GByte
- Embedded processing: Xilinx Virtex 4 (5x)
- Triggering: both external and programmable data-dependent triggering

Board control:

- Board control via 1000BASE-T Ethernet
- External clock: 200 MHz, 15 dBm, 3.3 V, 50
- External clock connector: SMA
- Delay: minimum 1 MB, maximum: memory depth
- Linux driver available

Environmental

- Power supply: DC 48 V
- Power consumption: 80 W
- Dimensions: 280 x 366 mm

Fast Transient Buffer Board (TBB)

