

Mechanical characteristics

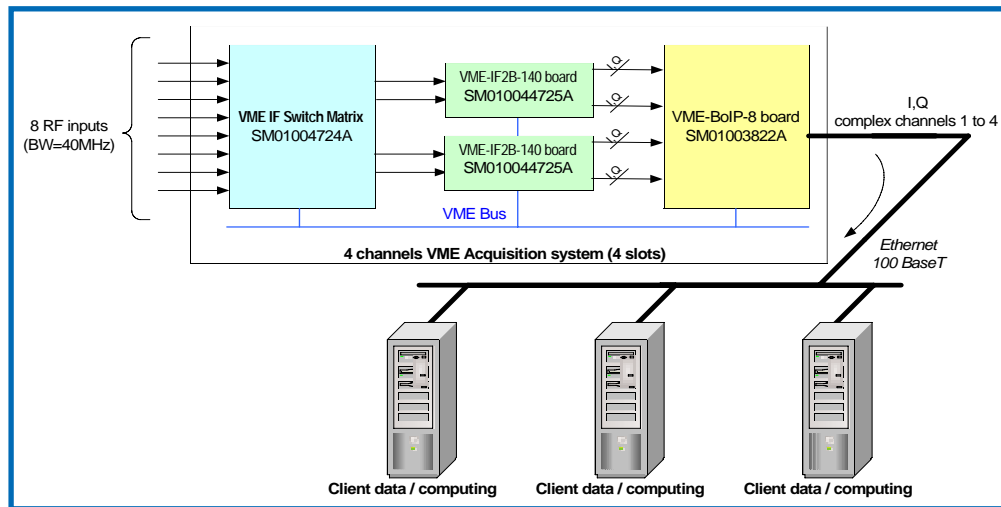
- ◆ Dimensions 9"2 x 6"3 x 3/4"
(233 x 160 x 19 mm)
double Europe 6U, 1 slot

Interfaces

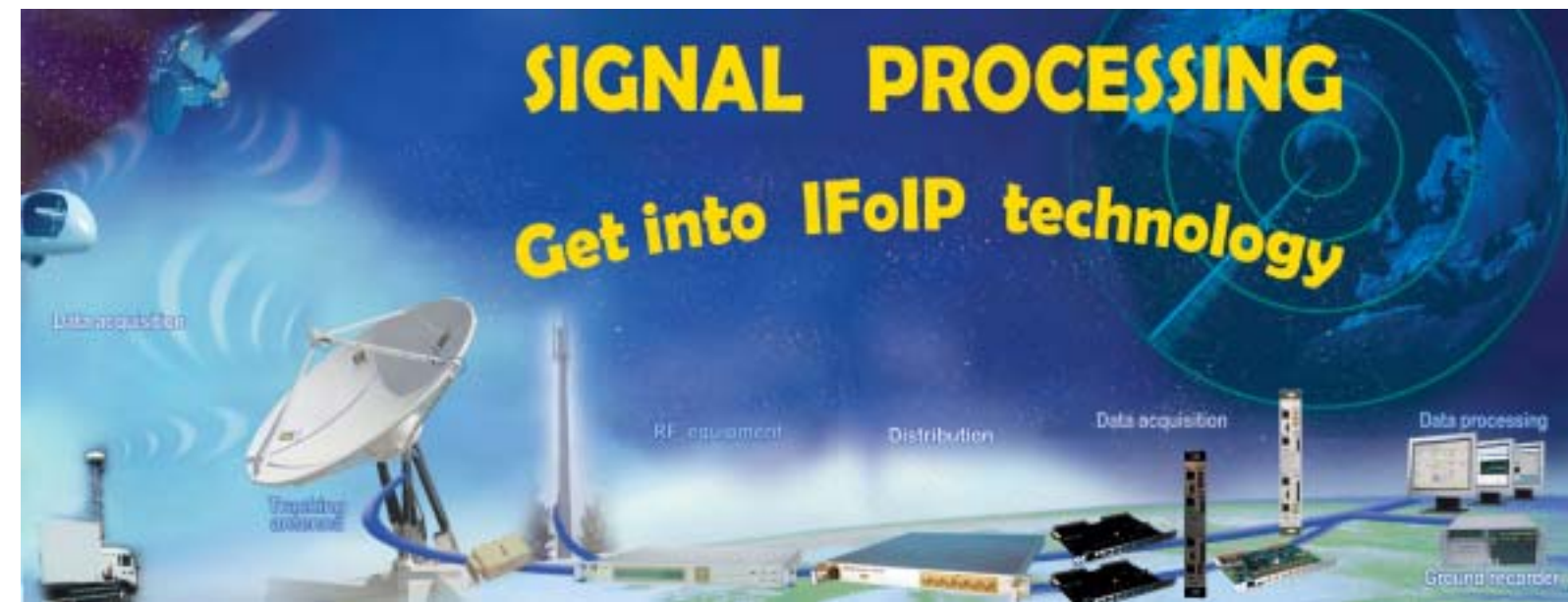
- ◆ RF inputs 10 SMA female
(8 for signals,
10 MHz, TOP 1PPS)
- ◆ Outputs 1 SMA female
- ◆ RS422 or RS485,
synchronous serial link Connector 12 pins male
- ◆ Connectors VME P1-P2
- ◆ Ethernet RJ45

Software

- ◆ C source drivers yes
- ◆ OS QNX Momentics 6.3



4 narrow band channels



VME-BoIP-8

VME Baseband over IP board
8 channels



IN-SNEC

Applications

- Satellite communications
- Base band stations
- Modems
- Acquisitions one shot, multi trigger, continuous

Main features

- VME-BoIP-8 board is a high resolution acquisition board that features 8 analog channels can be used to digitize 8 real input signals or 4 complex input signals.
- Signals are digitized in base band up to a sampling frequency of 1 MHz. They are processed (filtering / decimation), then gathered in pairs and finally transmitted to various clients on an Ethernet 100BaseT link with TCP/IP protocol.
- VME-BoIP-8 board features a FPGA that generates the sampling frequency, receives the digitized flow and realizes pre-processing such as filtering, datation and formatting the pairs of samples.
- VME-BoIP-8 is a 6U VME board that fits in a single slot.

Ordering information

- Model references SM01003822A



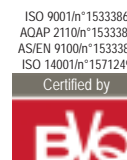
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Technical characteristics

Analog inputs

- ◆ Analog input quantity 8
- ◆ BW Signal 500 kHz
± 1.25 Vcc or ± 2.5 Vcc
- ◆ 10 MHz Time base (sinus) 0 dBm ± 3 dB
- ◆ Top 1PPS TTL (synchronization pulse)
internal / external

Analog to Digital Conversion

- ◆ Resolution 16 bits
- ◆ Sampling frequency 1 MHz to 100 Hz
- ◆ Synchronization External per TOP 1PPS
- ◆ ENOB* 14.6 bits
- ◆ SNR* 90 dB
- ◆ SINAD* 89.7 dB

* (input frequency 120 kHz
and sampling frequency 1 MHz)

Pre-processing (FPGA)

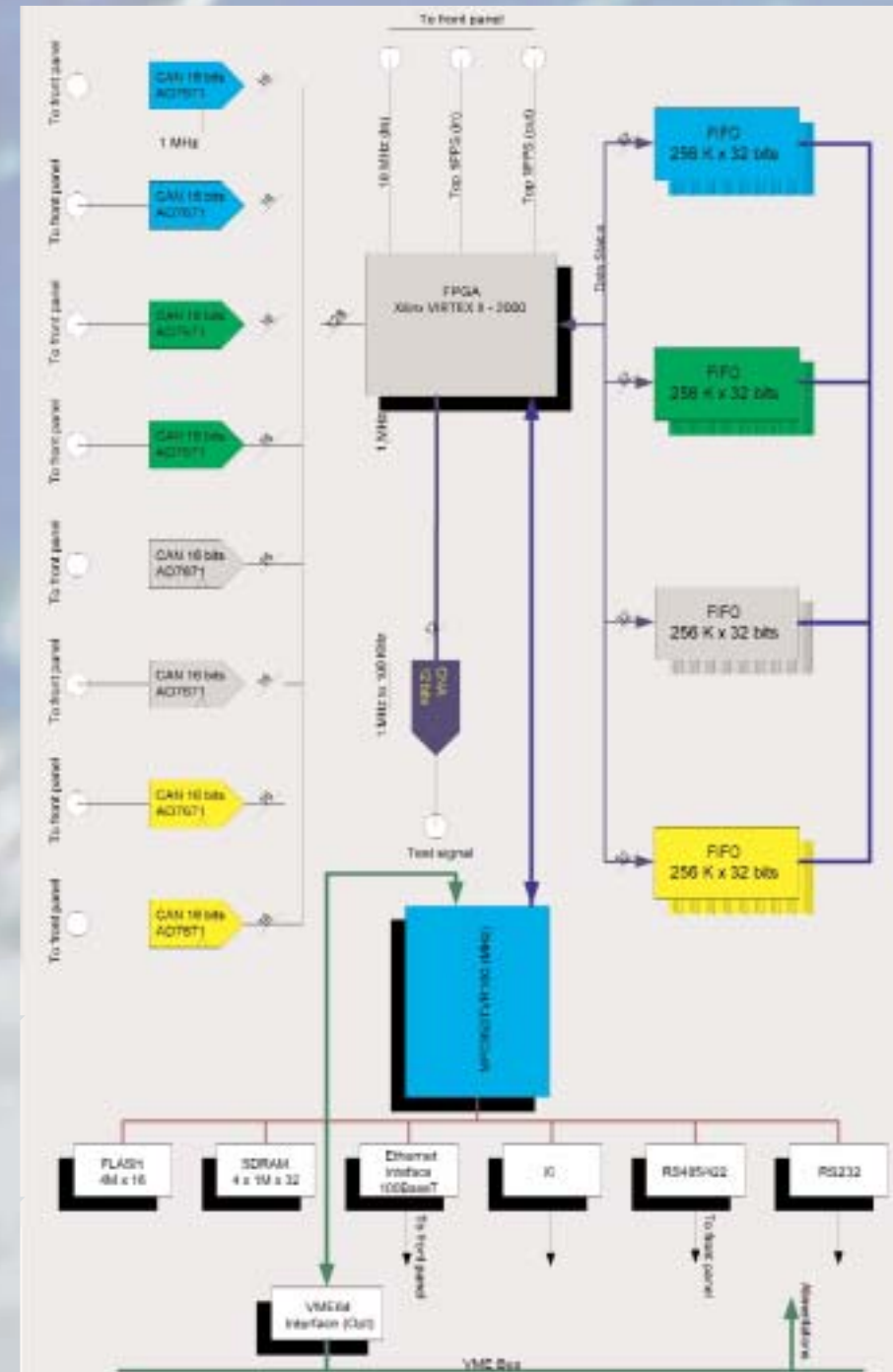
- ◆ FPGA quantity 1
- ◆ FPGA Type XILINX Virtex-2 2M gates
- ◆ Datation Yes
- ◆ Format date GPS
(week, seconds per week,
100 nanoseconds tick number per second)
- ◆ Date accuracy < 100 ns / Top 1PPS external
- ◆ Decimation Yes (ratio 1 to 50)
- ◆ Filtering, FFT Option

Transfer modes

- ◆ Block Yes, transfer of N sampling combination
of signals 1 & 2, 3 & 4, 5 & 6, 7 & 8.
- ◆ Protocole TCP/IP
- ◆ Port quantity 4 for data transfer ;
1 for remote and control

Digital interfaces

- ◆ RS422 or Rs485
- ◆ RS232
- ◆ I/O LV TTL
- ◆ Ethernet 100 Base T



Description

Input stage and analog to digital conversion

Each of the 8 inputs is analog conditioned and can be amplified by 2 in order to take advantage of the ADC resolution (+/- 2,5 V). The ADC conversions of the 8 signals are synchronous and triggered by a 1PPS TOP signal. This trigger can be delivered by a clock driven by a GPS time and UTC. This opens the possibility of synchronizing different boards on a same time base and on the same event.

The sampling frequency is generated from the 10 MHz provided to the card, and can be selected from 1 MHz down to 100 Hz

Pre-processing in FPGA

The onboard FPGA can decimate the digitized signals, pack them into 32 bits words (pairs of two 16 bits samples). The FPGA sends the samples in blocks with the datation of the last sample in a 256K x 32 bits FIFO.

The FPGA XILINX Virtex-2 2 M gates could be used for the optional pre-processing.

Processor

The card features a MPC852TVR100 PowerPC processor running at 100 MHz with a processing power of 132 MIPS (Dhrystone 2.1).

It features different communication links such as one RS232, one RS485 or RS422 (selection by jumpers), one LV TTL I/O port (3,3V) and one Ethernet 100BaseT interface.

The software delivered with the board is designed with the OS QNX momentics 6.3. It treats the 8 data flows from ADC to TCP/IP and realizes control and command.

User interface

Easy use thanks to the complete delivery of C source code drivers.