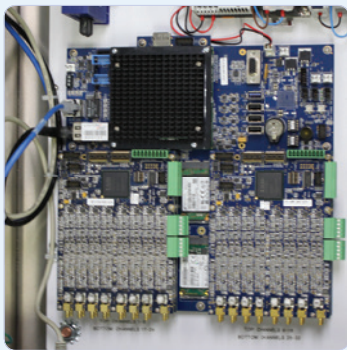# Sensor Highway III

DESCRIPTION

The Sensor Highway III (SH-III) system has been developed for continuous outdoor, Acoustic Emission (AE), Structural Health Monitoring (SHM) and Sensor Fusion applications.

The SH-III has been designed for monitoring applications in outdoor environments, without the use of costly heaters, air conditioners or fans. 32 channels of AE are built within its small, weatherproof outdoor enclosure, with sealed inputs, protected from the environment including heat, cold, rain, hail, snow, and lightning. 8 AE channels per module, with a maximum of 4-modules provide 32 channels of full AE signal processing including waveform processing and the full data set of AE time based, hit based, and frequency based feature extraction and digital signal processing.

FEATURES

- Direct On-Board Terminal Block connections and DIN rail mounts for other external sensor inputs

- Parametric Input Connections for other analog sensors

- Solid State Weather Station option with over 20 weather parameters to AEwin

- Multiple units can be connected and synched to system clocks for large, location groups.

- Various communication interfaces available for digital parametrics

- Various options for data/network communications including Ethernet, Wireless, & Cellular Modem

- Uses AEwin software for remote data collection, alarm detection and email alarm notification

- Optional Battery backup. Keeps system running during short power loss

- Remote Boot, built-in. Provides remote access to reset or reboot

OPERATING SPECIFICATIONS

Dynamic
Enclosure Size:.. 20" x 16" x 7"
Weight: .... < 30 lbs. with enclosure for 17-32 ch
Operating Temp:.......................... -22˚-149˚F (-30˚ to + 70˚C)
Storage Temp:............................ -40˚-167˚F (-40˚ to + 85˚C)

Power Requirements
Power Requirements:......................85-260 VAC or 9-28 VDC, surge protected
Power Consumption:............. 12W system + 0.25W/channel

Analog Channels
of AE Channels:...............................8 per module, up to 4 modules or 32 channels
Bandwidth:.. 1 kHz – 400 kHz
ADC:... 18 bit, 2 MSPS
Sensor Power:....................................... 5V phantom power

Digital
Waveform Buffer: .... 2k FIFO & 8k Circular Buffer
DSP: .... 4 million gate FPGA
Digital I/O: .... 8 inputs & 8 outputs

Communication
Network:... 1 Gigabit Ethernet
USB:...3 USB 2.0, 1 USB 3.0
Serial:... One RS-232, One RS-485

Parametrics
Single ended inputs:........................... 100kSPS, 0-10V input, qty: 8/module, max. 16
Tachometer input:...... 2 Digital Tach inputs with time marks

Com Express CPU
Processor:..................1.6 GHz Atom N2600, Hyperthreading
Memory:...4 Gbyte DDR3
Storage: ....Internal 60 GB SSD, Internal 256 GB SSD

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