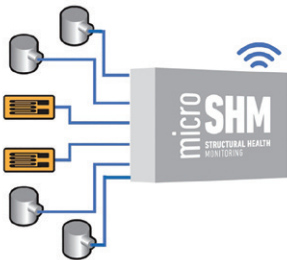


Micro-SHM

Structural Health Monitoring System



Shown with 4 AE channels and 2 strain gages and Wi-Fi (optional)

OVERVIEW

The Micro-SHM is a standalone acoustic emission (AE) system designed to provide a cost-effective, reliable, indoor & outdoor solution for structural health monitoring (SHM) and process monitoring. It is ideal for isolated objects, such as bridge components, pressure vessels, pipelines, slow-speed bearings, and machine monitoring. The remote system is a powerful monitoring tool, with data management and smart analysis capabilities, complete with multiple AE and parametric data recording.

The Micro-SHM uses system-on-a-chip technology (SoC), and either Power over Ethernet (PoE) or wireless configurations. SoC allows for less power, lower cost, and higher reliability than the multichip systems that it replaces. Since PoE allows the Micro-SHM to use a single Ethernet cable for power, communication, and time synchronization, the system reduces cabling and installation time and optimizes communications. Wi-Fi or cellular options are available for wireless remote monitoring.

VERSATILITY

The Micro-SHM is an adaptable system, with configuration options designed to meet specific customer needs. The two basic configurations are:

- 1) PoE configuration with 4 channel AE and 2-channel parametrics that can be set up for either voltage or strain gauge input. A Cat 6 cable (up to 100 meters) can be used to connect the Micro-SHM to a computer to conduct the monitoring, with data and power traveling through the same cable.
- 2) Wireless configuration with the same AE and parametric configuration as the standalone PoE model, but can interface with a computer through a Wi-Fi or cellular connection.

To request further information and technical details of the Micro-SHM or any of MISTRAS' other Acoustic Emission systems, call 609-716-4000 or visit www.mistrasgroup.com.

AE SPECIFICATIONS:

Number of AE Channels: 4
 Frequency Bandwidth: 5 kHz – 1 MHz
 Analog Filter: 2 high pass and 2 low pass / channel
 Digital Filter: 500 FIR filters
 Sample Rate: 10 MSamples/second
 A/D Resolution: 18 bits
 Hit Waveform: 1K – 15K Samples/hit
 Auto Sensor Testing: Yes
 Internal AE connector Type: SMB Male

AE FEATURES:

Time of Arrival; Amplitude; Energy; Rise Time; Duration; Counts; ASL; RMS; Absolute Energy; Threshold; Counts to Peak; Average, Reverberation, Initiation, and Peak Frequency; Signal Strength; Frequency Centroid; Partial Power 1 – 4; Normalized Amplitude (NormA).

DATA STREAMING:

Number of Parametric Channels: 2
 Parametric Bandwidth: 0 – 100 Hz
 Parametric Sample Rate: 10 KSamples/second
 Parametric A/D Resolution: 16 bits
 Parametric Type: Voltage and strain gauge
 Voltage Input Range: 0 – 4 V
 Voltage Amplifier: x1
 Strain Gauge Bridge Conditioner: ¼ Bridge
 Strain Gauge Amplifier: x100, x400, x500
 Internal Parametric Connector: Terminal block

PHYSICAL SPECIFICATIONS:

Box IP Rating: IP 66
 Box Dimensions: ~8x5x2.5 in. (~200x125x62 mm)
 SSD Memory: 32 GB
 Phantom Power Voltage: 5 volts
 Operating Temperature: -40° F to 140° F
 Power Requirements: 6W
 1-hour Backup Battery: Optional (2 W)
 LED Alerts (Normal/Warning/Alarm): Standard
 Digital I/O (2 in and 3 out): Optional
 Control Computer: Windows 7, 8, or 10-compatible
 Supported Sensor & Preamplifier: .. 5V integral preamplifier
 sensor or general sensor
 with 5V low power preamplifier

KEY CONFIGURATION PART NUMBERS

	Part Number	Description
Network Options		
Ethernet/Wi-Fi	1286-5015-524	802.11 A/B/G/N, RJ45 Gigabit
Power Options (1 required)		
PoE Power (Indoor)	1286-5065	24-57V PoE
AC Power (Outdoor)	1286-5055	110/220VAC
DC Power (Outdoor)	1286-5075	9-36VDC
Other Options		
Cellular Modem	1286-5085	4G LTE
I/O Cable	1286-4017	Digital I/O