

ECON

Vibration Testing, Measurement and Calibration



Econ Technologies
www.econ-group.com

CATALOG

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Dynamic Signal Analyzer

ECON MI-7series Dynamic Signal Analyzer is an all-in-one solution dedicated for laboratory to field application of DAQ and recording, measurement and analysis. MI-7 series is working independent of PC with multiple kinds of measurement and analysis software modules for vibration and noise, model test, order tracking and MVHM, acoustic analysis, shock and impulses. Also MI-7 series could work as an independent data recorder with software of post analysis.



Besides, the MI-7108 model is handheld and considerably designed for field use with touch screen, instant analysis result and built-in battery.

Features

- ✓ 24-bit Σ - Δ ADC, 32-bit floating DSP
- ✓ Real-time DAQ, analysis and report
- ✓ high precision with low noise
- ✓ Sampling rate up to 204.8kHz in each channel
- ✓ All in one solution for multiple tasks
- ✓ Independent working from PC
- ✓ With waveform generator output
- ✓ Multiple and dedicated software modules
- ✓ Optional built-in battery available



Ordering Information

Hardware Model	MI-7004	MI-7008	MI-7016	MI-7108
Input Channels	4	8	16	8
TACHO Input	1	3	3	1
Output Channels	1	2	4	2
Resolution	24-bit Σ - Δ ADC			
Computation	32-bit floating DSP			
Dynamic Range	120dB			
Sensor Compatible	Voltage (AC/DC single end, difference), IEPE (built-in constant power supply), TEDS, TACHO			
Frequency Accuracy	0.00001			
Amplitude Accuracy	0.2% FS (1V input, <10 kHz)			
Touch Screen Operation				✓
Rechargeable battery		✓	✓	✓
Software Module	MI-7004	MI-7008	MI-7016	MI-7108
Data Recorder, Playback Analysis	✓	✓	✓	✓
FFT based general purpose analysis	✓	✓	✓	✓
Waveform Generator	✓	✓	✓	✓
Vibration and Noise Analysis	✓	✓	✓	✓
Acoustics Analysis	✓	✓	✓	
Order Tracking and MVHM	✓	✓	✓	✓
Modal Analysis	✓	✓	✓	✓
Shock and impulses	✓	✓	✓	
Shaker Performance Verification		✓	✓	

High Channel Account Measurement

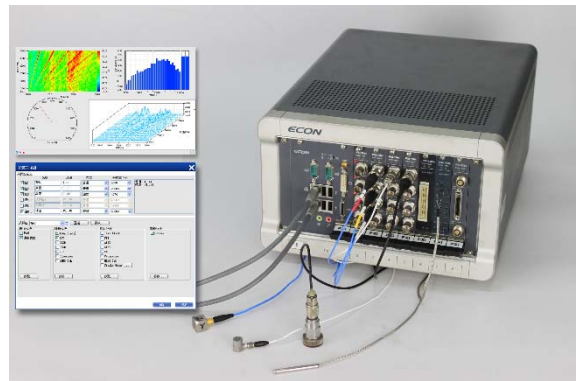
ECON MI-8 series is a typical high channel account measurement and analysis system, which is often used for vibration measurement and analysis, Machine Vibration Health Monitoring (MVHM), structural test, where a large number of input channels is requested. Sometime the input number will be requests as decades, hundreds or more, and the precision of synchronization is concerned.



It is designed based on PXI bus and self-contained controller, supporting independent running without PC. Its inputs and outputs are modular and expandable with high synchronization precision assured by PXI bus. MI-8 series support multiple software modules in synchronized data acquisition and measurement.

Features

- ✓ PXI based structure
- ✓ Self-contained controller with Real-time QNX O/S
- ✓ Expandable and modularized input and output modules
- ✓ High synchronization precision in all modules
- ✓ Chainable to higher channel account up to 1,024 inputs
- ✓ Supporting 1 to 16 waveform generators
- ✓ 1000Mbps adaptive LAN connectivity
- ✓ On board 24-bit ADC/DAC and 32-bit DSP for all modules
- ✓ Sampling rate up to 204.8kHz in each channel
- ✓ Versatile for high channel account DAQ, measurement, structural modal analysis and HUMS.



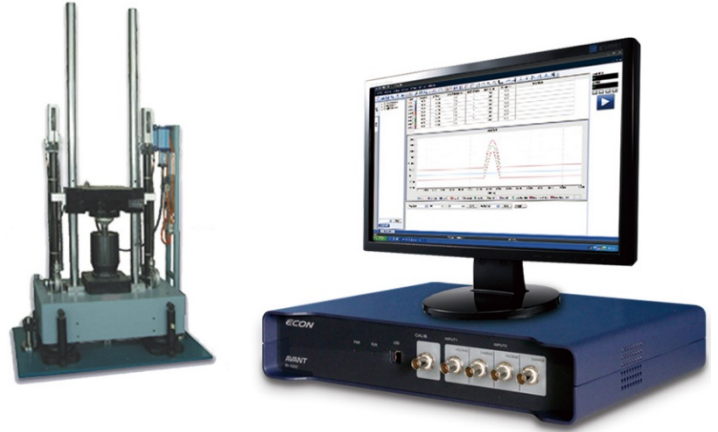
Ordering Information

Hardware	MI-8008	MI-8018
Slots	8	18
Input Channels	Up to 24	Up to 64
Output Channels (waveform generators)	1-16	
Digital I/O	1 DB-37 Connector, Available and Optional	
Sensor Compatible	Voltage (AC/DC single end, difference), IEPE (built-in constant power supply), TEDS, TACHO	
PC Connectivity	1000Mbps adaptive LAN	
Software	MI-8008	MI-8018
Data Recorder, Playback Analysis	✓	✓
FFT based general purpose analysis	✓	✓
Waveform Generator	✓	✓
Vibration and Noise Analysis	✓	✓
Order Tracking and MVHM	✓	✓
Modal Analysis	✓	✓
Shock and impulses	✓	✓

Shock Measurement Analyzer

ECON MI-5 series shock measurement analyzer is a powerful and tailored instrument for transient data capture and analysis in shock, drop and impact events. The impulse data could be generated by shock, drop or impact machine, also could be from unknown events. MI-5 series can meet rigorous criterions related to these events.

MI-5 series is available for two different models: MI-51 and MI-52. MI-52 is used for common application with 2 acquisition channels and MI-51 is used for high-g level shock events measuring and analysis. MI-5 series provide four software modules based on different test standards: Shock Measuring and Analysis, SRS, Pulse Analysis and Damage Boundary test.



Features

- ✓ Compatible with ISO, IEC, ISTA, MIL-STD and User defined criterion
- ✓ Max. sampling rate up to 1MHz in each channel
- ✓ Acceleration range up to 100,000gn
- ✓ Independent working from PC
- ✓ Multiple and dedicated software modules
- ✓ All in one solution for shock data capture and measurement

Ordering Information

Hardware Model	MI-5202	MI-5204	MI-5104
Input Channels	2	8	16
Output Channels	1	1	1
ADC Resolution	24-bit	24-bit	16-bit
Computation	32-bit floating DSP		
Dynamic Range	120 dB		
Sensor Compatible	Voltage, IEPE, Charge, TEDS	Voltage, IEPE, TEDS	Voltage, IEPE, TEDS
Max. Sampling Rate	192 kHz	204.8 kHz	1 MHz
Acceleration Range	10,000g	10,000g	100,000g
Software Module	MI-5202	MI-5204	MI-5104
Shock Measuring and Analysis	√	√	√
Pulse Analysis	√	√	√
Shock Response Spectrum	√	√	√
Damage Boundary Analysis	√	√	√

Conditioning Amplifier

Condition amplifier, also called charge amplifier, is working as an important device in measurement application, especially needed by PE sensors with charge signal output.

ECON MI-2004 is a powerful and precise amplifier for charge conversion to voltage, helping to improve the performance and reliability of measurement systems by quality signal conditioning. It integrates filtering, integral and differential analysis functions. Customer can monitor the setting parameters, running status thru front screen, or thru software installed on PC via RS232 connectivity. And MI-2004 can be combined together for higher channel account use, say 8, 16, 32, 64 or more.



Features

- ✓ High precision circuits with digital control
- ✓ Multi-stage low-pass, high-pass filter
- ✓ 4 conditioning channels per chassis and support higher channel account synchronization
- ✓ Digital parameter setting, intuitive and easy to operate
- ✓ Support Charge, IEPE, and TEDS sensors with 4-20 mA constant power supply
- ✓ Support PC software operation
- ✓ Compact and solid design with built-in battery

Ordering Information

Hardware Model	MI-2004-1	MI-2004-2	MI-2004-4
Input Channels	1	2	4
Parameter Setup	By metal dome with display screen, or software on PC		
Expandability	Multiple of 4		
Applications	Charge Sensor Amplifying, IEPE constant power supply, high and low pass filtering, integral and double integral function		
Sensors Compatible	Charge, IEPE, and TEDS sensors		
Max. Charge Input	10 ⁶ pC		
Gain	10uV/Unit, 31.6uV/Unit, 100uV/Unit, 316uV/Unit, 1mV/Unit ... 3.16V/Unit, 10V/Unit (Unit = pC , -40dB to 80dB, in 10dB steps, set 1mV/Unit as 0dB)		
Max. Voltage Input	± 10V (peak)		
Gain	100uV/Unit, 316uV/Unit, 1mV/Unit... 316mV/Unit, 1V/Unit (Unit: pC, -20dB to 60dB in 10dB steps, set 1mV/Unit as 0dB)		
Frequency Range	Acceleration: 0.1 Hz to 100 kHz Velocity: 1 Hz to 10 kHz Displacement: 1 Hz to 1 kHz		
Filter	High-pass Filter (-3dB): 0.1Hz, 1Hz, 3Hz and 10Hz Low-pass Filter (-3dB): 100Hz, 1 kHz, 3 kHz, 10 kHz, 30 kHz and 100 kHz		

About Us

ECON is a world-wide one station manufacturer and supplier for equipment and solution of vibration testing, measurement and calibration.

Founded in 2002, ECON have been dedicated in developing better quality and higher cost-efficiency equipment and solutions to help customers to meet market crucial demand on their products quality and reliability. More than 20 years experiences and innovative ambition support us to fulfill this vision into reality.

Today ECON is well-known and taking leading role in China to produce and supply Electro-dynamic Shaker, Servo-hydraulic Shaker, Vibration Controller, Measurement Instrument and Transducer Calibration system.



- Headquarter
- R&D Center
- Sales and Market Center
- CNAS and CMA qualified Testing lab
- 5,000 sqm Facility



- Factory
- Product Center
- Logistics Center
- 20,000 sqm Facility

Qualification & Certification

China Certificate of High & New Technological Enterprise

ISO 9001:2015 Qualified

Testing lab qualified by CNAS (China National Accreditation Service for Conformity Assessment) and CMA (China Inspection Body and Laboratory Mandatory Approval)

CE Compliance with all main products

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