MICROSIS®

NDT multichannel data acquisition systems

MICROSIS® is a flexible arbitrary function generator and high-speed data acquisition system developed for geophysical and NDT applications where high speed and data quality are critical. MICROSIS® provides an output power sufficient for operation of a variety of seismic sources and allows data acquisition from an array of receivers.
Its main features include :

- High speed acquisition of 10 MHz/channel
- Intuitive touch screen interface
- Internal or external trigger
- Wave function generator
- Up to 12 receiver channels

MICROSIS® evolved from the idea of using low intensity, high frequency seismic vibrations for shallow geophysical applications requiring a high spatial resolution.

MICROSIS® is essentially a portable, flexible and rugged NDT instrument designed to provide laboratory-quality results in the field. It achieves this using high speed multichannel acquisition and high resolution data processing in the time domain.

MICROSIS® employs the latest hardware and software technology, and has a modular design providing high performance and adaptability for new applications.

Typical uses :

Ultrasonic Tomography
Micro-seismic
Electro-seismic
Electromagnetic

The most cost effective systems born from 30 years of geophysical and NDT experience

MICROSIS® characteristics

High-speed data acquisition system

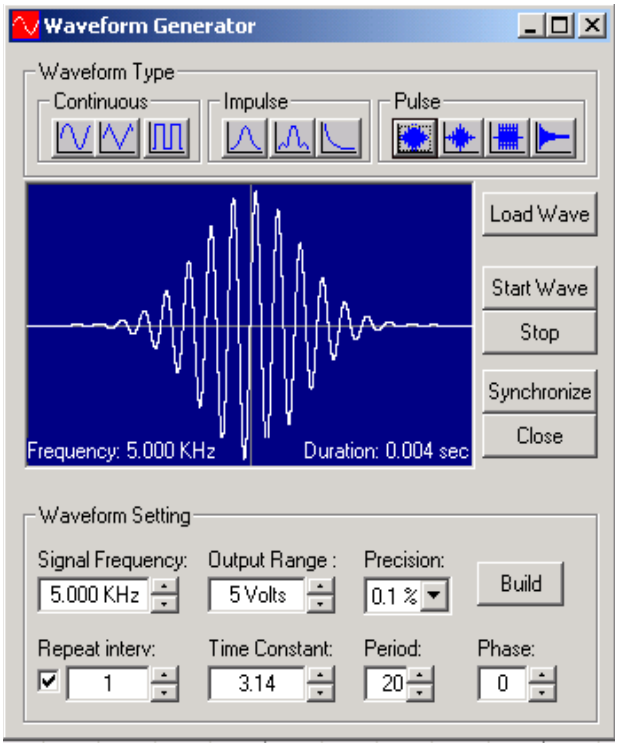
provides A/D simultaneous conversion in eight channels, digital I/O, counter/timer, custom I/O ports, high-speed background A/D, strip charts and disk logging.

Arbitrary function generator

implemented with an independent D/A converter and updated under software control analog output provides generation of fourteen standard wave shapes commonly used in acoustics and geophysics.

On board powerful computer

based on Pentium III CPU and LCD touch screen is able to provide all the functions of a portable work-station.

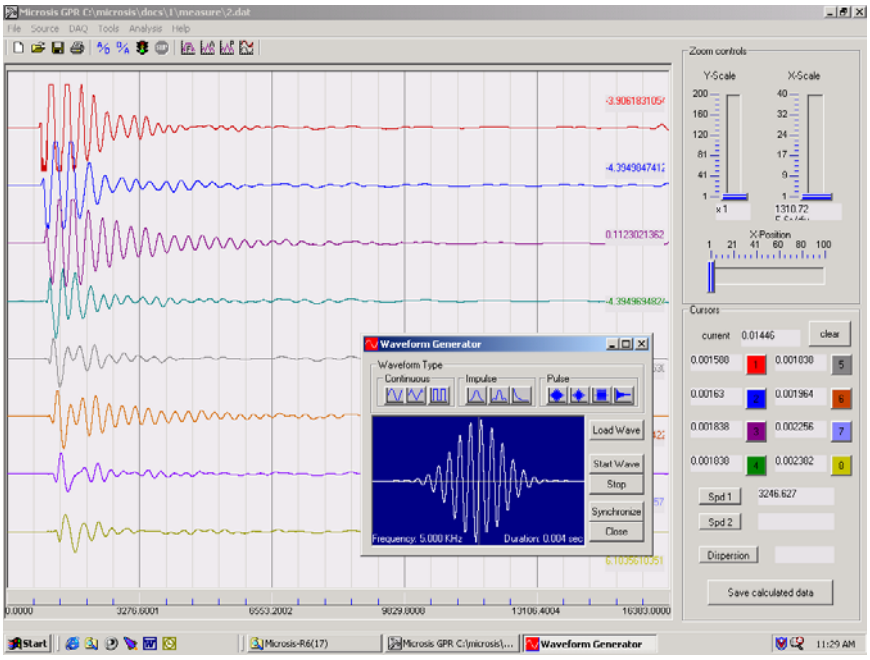


High memory capacity

implemented with SDRAM and HD, provides storage of thousands of measurements.

Rugged and water proofed

case which holds the MICROSIS® system allows it to be used in difficult climatic and weather conditions.



Easy to use software

Microsis-R6 (Version 01) based on Windows makes data acquisition and processing easy by simply using the touch screen. Analysis includes most functions typical for geophysical and non-destructive test applications.

User friendly interface

based on logical operations contains pushbuttons, switches, selectors, entry fields, etc.

MICROSIS® technical specifications

Standard system configuration

Computer

- JUKI-3711P PCISA bus Socket 370 CPU card with 2 MB LCD/CRT VGA and 10/100 MBps Ethernet
- CPU: Intel Pentium III 667 MHz
- System memory: 128 MB SDRAM
- System chipset: VIA VT82C596B/693A
- BIOS: Award PHP Flash BIOS
- HDD: 20 GB 5400 Hitachi DK23BA Series
- FDD: Panasonic JU-226A/JU-227A (optional)
- 12.1” high brightness TFT LCD with touch screen

Data acquisition

- 4, 8 or 12 channels
- 10 MHz per channel (max) sampling rate
- 12bits A/D resolution
- One A/D per channel
- Software searchable input range
- Analog and digital triggering

Electrical output

- Input impedance 50 Ω, 5 kΩ or 10^{12} Ω (selectable)
- Min input signal: ±5 mV (pp)
- Max input signal: ±2.2 V (pp)
- Dynamic range (theoretical): 112 dB
- Frequency range: 1 Hz – 1 MHz
- Cross talk: -80 dB
- Sensor (preamplifier) excitation voltage: 24V
- Provides excitation voltages for use with strain gauges, pressure transducers and accelerometers

Standard power supply

- External 110 V AC or 12 V DC
- Power consumption: 65 W

Function generator

- One software controlled channel
- Fourteen wave shapes (including Sine, Pulse, Square, Sinc, Gaussian, and Exponential Raising Pulse) with 12 bits resolution
- Output range: ±10 V
- Output impedance: 50 Ω
- D/A pacing: software
- Maximal frequency 50 MHz

Options

Micro-seismic NDT-NDE system

- Instrumented impact hammer, vibrator or airborne seismic source
- Airborne or vibrator driving power amplifier of 400 W (external)
- 8 accelerometer receivers (or another type of sensor)

Ultrasonic NDT-NDE system

- Piezoelectric impact transducer
- Power amplifier of 20 W
- 8 piezoelectric receivers

Cross-hole tomography system

- Instrumented impact hammer or sparker
- Sparker power amplifier (external)
- 8 hydrophone string

MICROSIS® list of products

Product	A/D channel number	D/A channel number	Frequency range (kHz)	Resolution (bit)	Power (W)	Consumption (W)
Microsis-6 system	12	1	0.01-1000	12		65
Microsis AG-12 (Data acquisition system and function generator)	12	1	0.01-1000	12		40
Microsis AG-8 (Data acquisition system and function generator)	8	1	0.01-1000	12		33
Microsis AG-4 (Data acquisition system and function generator)	4	1	0.01-1000	12		25
Microsis A-12 (Data acquisition system)	12		0.01-1000	12		32
Microsis A-8 (Data acquisition system)	8		0.01-1000	12		25
Microsis A-4 (Data acquisition system)	4		0.01-1000	12		17
Microsis G-2 (Function generator)		2	0.01-1000	12		30
Microsis G-1 (Function generator)		1	0.01-1000	12		24
Microsis SC (Signal conditioner)	8		0.01-1000			2.5
Microsis PA-2 (Power amplifier)		2	0.01-500		15	17.5
Microsis PA-1 (Power amplifier)		1	0.01-500		15	
Ultrasonic P-wave transducer			50-1000			
Ultrasonic S-wave transducer			50-1000			
Software Microsis R-6						

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