

MTU

SATELLITE SYNCHRONIZED DATA ACQUISITION UNIT FOR V5 SYSTEM 2000

MTU-2E/A • MTU-3H • MTU-5/A • MTU-5D • MTU-CL • MTU-LR • MTU-CR • MTU-LT



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General Information

The MTU is a lightweight, 24-bit, stand-alone unit with low power consumption, designed for geophysical field data acquisition in harsh conditions. Distributed stand-alone units are combined into systems with an unlimited number of channels. (Cable /FO links are optional.) Systems are used for oil/gas, geothermal, groundwater, metals and diamond exploration; oil / geothermal reservoir mapping and monitoring; earthquake prediction research; and other deep geological structure studies. All units are synchronized to better than ± 500 nanoseconds by time signals from GPS satellites. The onboard precision time base preserves synchronization even in the event of GPS dropout. The units can be deployed in any suitable configuration and at any spacing from tens of meters (fine detail) to tens of kilometers (wide reconnaissance), either along profiles (2-D) or grids (3-D), or repeated measurements (4-D).

Applications

MT	Standard MT frequency range from 380Hz to 2,000 Sec using MTU-5 (5-component measurement), MTU-2E (2 telluric component measurement) and/or MTU-3H (3 magnetic component measurement). All distributed MTU units including remote site are GPS synchronized.
AMT	Frequency range of 10,000Hz to 1Hz using MTU-5A and/or MTU-2A
LRMT	Specialized MT for long period as low as approx. 30,000 Sec. using MTU-LR unit
LOTEM	LOTEM time-series data acquisition with GPS synchronized high power transmitter using MTU-LT
SIP	Spectral IP (or Complex Resistivity) measurement with GPS synchronized transmitter using MTU-CR
CSAMT	CSAMT measurement with GPS synchronized transmitter using MTU-CR
CLOCK	Provides GPS-synchronized driving signal to control transmitter and/or other type of receiver for precisely synchronized operation using MTU-CL

Specifications

FUNCTIONAL

MECHANICAL

Number of Channels	: 1 to 5	Dimensions	: 230 mm x 225 mm x 110 mm.
Input range	: 25mV , ... , 1200mV (Standard unit) ± 10V (MTU-CR, MTU-2EA, MTU-5A) with practical dynamic range of 130dB	Weight	: Approx. 4 kg
Input Impedance	: > 1 Megohm	Case	: Diecast aluminum, environmentally sealed.
Frequency range	: 1/1800 Hz to 1K Hz (MT) 1Hz to 10 kHz (AMT , CSAMT options) 1/16Hz to 256 Hz (CR , SIP) 0.25ms to 16 sec windows (LowTEM options) 30,000 sec to 10 sec (long-period MT)	Input Power	: Any suitable 12V battery Solar Power Option
Powerline Filtering	: digital notch at all odd/even harmonics better than 40 dB	Controls	: On/Off switch
Other Filtering	: low pass, high pass, bandpass, etc	Indicators	: high visibility LED to signal operating status (GPS lock, acquisition status, etc.)
Timing accuracy	: better than ± 500 nanoseconds, locked to UTC (very high stability oven controlled oscillator synchronized to GPS)	Connectors	: external battery; GPS antenna; magnetic sensor input; parallel I/O port; ground; electric field (binding posts)
Calibration	: automatic self calibration for box and external sensors	Power Consumption	: approx. 9 watts (6 Watts MTU-LR)
Data Storage	: standard 32Mb, 96Mb SOLID STATE (larger capacity on request)	ENVIRONMENTAL	
ADC	: 24 bits , 4096 samples /sec max : or 96,000 samples /sec max	Temperature	: operating range - 20°C to +50°C
Data Transfer / Set Up:	to PC via fast parallel port on site or in base camp. : or removable memory option : or via ordinary telephone line (MTU-5D)	Shock and Vibration	: suitable for transport in bush vehicles

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