

# MTU

## Satellite-Synchronized Data Acquisition Units

- Lightweight, portable, rugged
- No cable links required
- GPS synchronized
- 10 000Hz to 0.00002Hz
- 24-bit digital resolution
- Wide dynamic range
- Operable from  $-20^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$
- Available with 2, 3, or 5 channels per instrument (electric, magnetic, or both)
- Unlimited number of channels per system

<b>MTU</b>	Magnetotellurics 1 kHz to 0.00002Hz (50 000 seconds)
<b>MTU-A</b>	Magnetotellurics and Audio-frequency Magnetotellurics 10kHz to 0.00002Hz (50 000 seconds)



# MTU and MTU-A Geophysical Instruments

## The MTU is the heart

of the V5 System 2000. Introduced in the late 1990s, this patented system has now been used at tens of thousands of survey sites worldwide.

Flexibility of station spacing from kilometres to tens of metres facilitates cost-effective broad reconnaissance or resolution of fine details in a variety of applications.

The MT techniques are excellent supplements to seismic in

hydrocarbon exploration, but can also be used alone if logistics or geology make seismic impractical.

GPS synchronization means that multiple stand-alone units can be deployed simultaneously in almost any terrain, with no need for interconnecting cables. A small number of magnetic channels can be combined with many electric channels to form an economical system of virtually any size. The deployment of synchronized remote reference stations permits

sophisticated noise-reduction methods during processing.

Several channel complements are available—electric (E) only, magnetic (H) only, or 2E + 3H combined. The units can be purchased for MT alone (MTU) or for selectable MT/AMT (MTU-A).

Acquisition setup files are stored on the removable industrial-grade CompactFlash™ card for automatic operation. Data files are stored on the same card for easy transfer to the processing PC.

## Applications

### Exploration—surface to 50 km or more...

- Oil and gas
- Metals and minerals
- Groundwater
- Kimberlites (diamonds)
- Geothermal reservoirs
- Monitoring
- Earthquake research
- Engineering and environmental

## Summary Specifications

<b>Models &amp; channels</b>	E denotes electric channels; H denotes magnetic channels; A denotes AMT capability <b>MTU-2E, MTU-2EA, MTU-3H, MTU-5</b> (2E + 3H channels), <b>MTU-5A</b>
<b>Frequency range</b>	<b>MTU:</b> 1 kHz to 0.00002 Hz (50 000 s) <b>MTU-A:</b> 10 kHz to 0.00002 Hz (50 000 s)
<b>Dynamic range</b>	130 dB; gain settings variable by factors of 4
<b>Input impedance</b>	> 1 MΩ
<b>Filtering</b>	Powerline notch filter > 40 dB plus selectable low pass, high pass, band pass
<b>Data storage</b>	Industrial-grade removable flash memory, 256 MB or 512 MB (upgradeable)
<b>Setup</b>	Program file on flash memory or USB, parallel, or serial connection to Windows PC
<b>ADC</b>	One per channel, 24 bits. Samples/second: <b>MTU:</b> 2400 or 3072 <b>MTU-A:</b> 24 000
<b>Timing accuracy</b>	Better than ±500 nanoseconds; oven-controlled crystal oscillator synchronized to GPS
<b>Controls, Indicators</b>	Power switch; bright LED indicates instrument status via flashing sequence
<b>Weight</b>	Approx. 4 kg
<b>Dimensions</b>	230 mm x 225 mm x 110 mm environmentally sealed diecast aluminum case
<b>Connectors</b>	Multi-pin, military-style connectors for sensor input, GPS, and battery Heavy-duty binding posts for electric field inputs and ground
<b>Input power</b>	12 V DC from any suitable battery
<b>Power consumption</b>	Approx. 9 W
<b>Environmental</b>	Operating: -20°C to +50°C; passive operation causes no environmental damage



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