

# MTU

## Satellite-Synchronized Data Acquisition Units

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

<b>MTU-5A(P)</b>	Magnetotellurics and Audio-frequency Magnetotellurics 10kHz to DC
<b>Channels</b>	2E + 3H



# MTU-5A(P) Geophysical Instrument

**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.

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.

For monitoring systems, special firmware is installed for file transfer through the parallel port to an auxiliary PC for internet connectivity.

## 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>Channels</b>	2E + 3H
<b>Frequency range</b>	10kHz to DC
<b>Dynamic range</b>	130dB; gain settings variable by factors of 4
<b>Input impedance</b>	>1MΩ
<b>Filtering</b>	Powerline notch filter >40dB plus selectable low pass, high pass, band pass
<b>Data storage</b>	Industrial-grade removable flash memory, 1Gb or 2Gb (upgradeable)
<b>Setup</b>	Program file on flash memory or USB or parallel connection to Windows PC
<b>ADC</b>	One per channel, 24 bits. Samples/second: 24 000
<b>Timing accuracy</b>	Better than ±100 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>	230mm x 225mm x 110mm 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>	12V DC from any suitable source
<b>Power consumption</b>	Approx. 9–12 W depending on the state of operation, plus sensor load
<b>Environmental</b>	Operating: –20°C to +50°C; passive operation causes no environmental damage



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