

ZEN High-Resolution Geophysical Receiver

New 32-bit ADC

The Zonge Electromagnetic Network (ZEN)[™] receiver is a high-resolution, multi-channel receiver for acquisition of controlled- and natural-source geoelectric and EM data.

- 32-bit analog system
- ARM processor
- Native GPS synchronization
- Wireless and USB data transfer

UNIQUE CAPABILITIES

- Distributed acquisition
- Broadband time-series recording



FEATURES

- 1 to 6 channels, user expandable
- 60 MHz ARM CPU
- Resistivity, Time/Frequency Domain IP, CR, CSAMT, Harmonic Analysis CSAMT (HACSAMT), AMT, MT
- Time schedule program for remote operation with the XMT-32G transmitter controller
- Embedded GPS time synchronization with transmitter
- Use as a data logger for analog data, borehole data, etc.
- 0.015625 Hz to 1 KHz frequency range standard, 0.0001 Hz minimum for MT
- One 32-bit A/D per channel for maximum speed and phase accuracy
- 4 GB data per channel storage for program and data storage, sufficient to hold many days' data.
- Auto gain setting and internal calibration
- Rugged, portable, and environmentally sealed
- Modular design for upgrades and board replacement
- Complete support, field peripherals, service network, software, and training

Specifications for ZEN™ High-Resolution Receiver

General

Broadband, multi-channel, multi-function digital receiver
Frequency range: 1/64Hz - 1KHz (0.0001Hz - 1KHz for MT)
Number of channels:
Large case 1 to 6 (user expandable)
Small case 1 to 2 (user expandable)
Standard Survey capabilities: Resistivity, Frequency- and Time-Domain IP, Complex Resistivity, CSAMT (scalar, vector, tensor), Harmonic Analysis (CSAMT, Frequency-Domain EM, MMR, Magnetic IP, Magnetotellurics, Downhole Logging).
Software language: C++
Size: Large case 20x 15.5x 13cm (9x7x6")
Small case 20x 11 x 13cm (9x6x6")
Weight: (including batteries and meter/connection panel):
Large case, 6 channel:
2.8 Kg (6.4 Kg with battery for 20 hrs. recording)
Small case, 2 channel:
2.2 Kg (6.4 Kg with battery for 20 hrs. recording)

Enclosure: Heavy-duty, environmentally sealed aluminum
Power: 7-36V rechargeable batteries (external pack)
Over 20 hours nominal operation at 20°C
(6 channels, 24 amp-hr batteries).
Temperature range: -40° to +50°C (-40° to +122°F)
Humidity range: 5% to 100%
Internal temperature sensors
Time base: GPS Synchronization

Displays & Controls

Power On-Off
Color coded LEDs
Wireless or USB Control from external computer

Standard Analog

Input impedance: >10 M Ω at DC
Board dynamic range: 180 db
Minimum detectable signal: 20 μ V
Maximum input voltage: \pm 2.5V
Automatic gain ranging in binary steps from 1 to 64
Common-mode rejection at 1000 Hz: >100 db
Phase accuracy: \pm 0.1 milliradians (0.006 degree)
Adjacent channel isolation at 100 Hz: >90 db
Analog to digital converter (standard channel)
Resolution: 32 bits
Conversion time: 0.25 msec
One A/D per channel for maximum speed and phase accuracy
Analog connection via Pomona or 16 Pin waterproof Mil-Spec connector

Digital Section

Microprocessor: 60 MHz ARM processor per channel
Mass Storage: 4 GB per channel
Data storage device with capacities to 16 GB/channel optional
Serial ports: USB connection to each channel
Distributed Control: Long range mesh network
(Unlicensed 2.4 GHz)

Acquisition Software

MT, CR, RDIP graphical interfaces for Windows based computers
External Control: Serial String based interface enables easy custom development
Real-time programmable through download of BASIC scripts



Specifications subject to change without notice
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