



# GDP-32<sup>II</sup> Geophysical Receiver

## *Multi-Function Receiver*

The GDP-32<sup>II</sup> is Zonge International's fourth generation multi-channel receiver for acquisition of controlled- and natural-source geoelectric and EM data.

### ENHANCEMENTS

- 133 MHz 586 processor
- Expanded keyboard
- ½-VGA graphics display
- Ethernet port

### UNIQUE CAPABILITIES

- Remote control operation
- Broadband time-series recording
- High-speed data transfer

### FEATURES

- 1 to 16 channels, user expandable
- 133 MHz 586 CPU
- Alphanumeric keypad
- Real-time data and statistics display
- Easy to use menu-driven software
- Resistivity, Time/Frequency Domain IP, CR, CSAMT, Harmonic analysis CSAMT (HACSAMT), AMT, MT, TEM & NanoTEM®
- Screen graphics: plots of time-domain decay, resistivity and phase, complex plane plots, etc., on a 480x320 ½-VGA, sunlight readable LCD
- Internal humidity and temperature sensors
- Time schedule program for remote operation with the XMT-32S transmitter controller
- Use as a data logger for analog data, borehole data, etc.
- Full compatibility with GDP-16 and GDP-32 series receivers.
- 0.015625 Hz to 8 KHz frequency range standard, 0.0007 Hz minimum for MT
- One 16-bit A/D per channel for maximum speed and phase accuracy.
- 512 Mb flash RAM (up to 4 Gb) for program and data storage, sufficient to hold many days worth of data.
- 128 Mb dRAM (up to 256 Mb) for program execution.
- Optional 40 Gb hard disk for time series data storage.
- Anti-alias, powerline notch, and telluric filtering
- Automatic SP buckout, gain setting, and calibration
- Rugged, portable, and environmentally sealed
- Modular design for upgrades and board replacement
- Complete support: field peripherals, service network, software, and training



# SPECIFICATIONS FOR THE GDP-32<sup>II</sup> MULTI-FUNCTION RECEIVER

## General

Broadband, multichannel, multifunction digital receiver.

Frequency range: 1/64Hz - 8KHz (0.0007Hz - 8KHz for MT)

Number of channels: Large case, 1 to 16 (user expandable)

Small case, 1 to 6 (user expandable).

Standard Survey capabilities: Resistivity, Frequency- and Time-Domain IP, Complex Resistivity, CSAMT (scalar, vector, tensor), Harmonic Analysis (CSAMT, Frequency-Domain EM, Transient Electromagnetics, NanoTEM<sup>®</sup>, MMR, Magnetic IP, Magnetotellurics, Downhole Logging.

Software language: C++ and assembly.

Size: Large case 43x41x23cm (17x16x9")

Small case 43x31x23cm (17x12x9")

Weight: (including batteries and meter/connection panel):

Small case 13.7 kg (29 lb)

Large case:

8 channel, 10 amp-hr batteries, 16.6 kg (36.5 lb)

8 channel, 20 amp-hr batteries, 20.5 kg (45 lb)

16 channel, disk, 10 amp-hr batteries, 19.1 kg (42 lb)

Enclosure: Heavy-duty, environmentally sealed aluminum

Power: 12V rechargeable batteries (removable pack)

Over 10 hours nominal operation at 20°C (8 channels and 20 amp-hr batteries). External battery input for extended operation in cold climates, or for more than 8 channels.

Temperature range: -40° to +45°C (-40° to +115°F)

Humidity range: 5% to 100%

Internal temperature and humidity sensors

Time base: Oven-controlled crystal oscillator; aging rate <5x10<sup>-10</sup> per 24 hours (GPS disciplining optional)

## Displays & Controls

High-contrast sunlight readable ½-VGA (480x320) DFT-technology LCD graphics display, with continuous view-angle adjustment (optional heater for use down to -40°C).

Sealed 80-key keyboard

Analog signal meters and analog outputs

Power On-Off

## Standard Analog

Input impedance: 10 M $\Omega$  at DC

Dynamic range: 190 db

Minimum detectable signal: 0.03  $\mu$ V

Maximum input voltage:  $\pm$ 32V

SP offset adjustment:  $\pm$ 2.25V in 69 $\mu$ V steps (automatic)

Automatic gain ranging in binary steps from 1/8 to 65,536

Common-mode rejection at 1000 Hz: >80 db

Phase accuracy:  $\pm$ 0.1 milliradians (0.006 degree)

Adjacent channel isolation at 100 Hz: >90 db

Filter Section: Four-pole Bessel anti-alias filter (software-controlled) Quadruple-notch digital telluric filter (50/150/250/450 Hz, 50/150/60/180 Hz, 60/180/300/540 Hz, specified by user)

Analog to Digital Converter (Standard Channel)

Resolution: 16 bits  $\pm$  ½ LSB

Conversion time: 17  $\mu$ sec

Continuous self calibration

One A/D per channel for maximum speed and phase accuracy

## NanoTEM<sup>®</sup> Analog

Input impedance: 20 K $\Omega$  at DC

Dynamic range: 120 db

Minimum detectable signal: 4  $\mu$ V

Automatic gain ranging in binary steps from 10 to 160

Analog to Digital Converter: 14 bits  $\pm$  ½ LSB, 16 bits optional

Conversion time: 1.2  $\mu$ sec

One A/D per channel for maximum data acquisition speed

## Digital Section

Microprocessor: 133 MHz 586

Memory: 128 Mb dRAM (up to 256 Mb)

Mass Storage (program & data storage):

512 Mb flash RAM (up to 4 Gb).

Hard disk drives with capacities to 40 Gb optional

Serial ports: 2 RS-232C ports (16650) standard

Network Adapter: Ethernet adapter standard (100 Base-T)

Mouse, CRT (VGA), and standard keyboard ports

Optimized operating system

## Additional Options

Number of channels: (maximum of 3 NanoTEM<sup>®</sup> channels)

Large case: 1-16, Small case: 1-6

External battery and LCD heater for -40°C operation

## Other Acquisition Software

**External RPIP/TDIP/CR Control:** Remote control through serial port on GDP-32<sup>II</sup> for electrical resistance tomography (ERT).

**Streaming RPIP/TDIP:** Continuous acquisition of TDIP or RPIP data (time domain or resistivity/phase IP) using a towed electrode array.

**Borehole TEM:** Remote control through GDP-32<sup>II</sup> serial port for efficient logging of borehole TEM and MMR data. Compatible with Crone and Geonics 3-component probes.

**Extended Broadband Time Series Data Recording:** Continuous recording of up to 5 standard analog channels sampling at 32 K samples/sec (bandwidth 8 KHz with 2x oversampling) with no loss of data. The recording time is limited only by the size of the hard disk drive. Developed for recording broadband magnetotelluric measurements.

**Equal-Interval Mode TEM (TEME):** Uniform sampling and storage of TEM transients as time series. Used for LOTEM data acquisition and any application that requires uniformly sampled TEM transients.

*Specifications subject to change without notice*

© Copyright 2001, Zonge International, Inc.

## Zonge Offices:

Arizona, Alaska, Nevada, Colorado and Minnesota

### Headquarters:

3322 E. Ft. Lowell Road, Tucson, AZ 85716, USA (800) 523-9913

Tel: (520) 327-5501

Email: [zonge@zonge.com](mailto:zonge@zonge.com)

Fax: (520) 325-1588

Web: <http://www.zonge.com>