GEOSPACE® Technologies

GSX-C

LAND BASED RECORDER

With Cellular Network Access

Cable-free, Radio-free, Autonomous Data Recorder

- Scalability greater than 50,000 channels
- Delivers high-resolution with a 24-bit delta-sigma ADC
- Built-in GPS receiver and disciplined clock
- Accepts standard analog sensor inputs
- Has a built-in full-resolution test generator
- Available as 1 or 3 channel versions (GSX-C, GSX3-C)
- Has an LED Status/Deployment state indicator
- Real-time status update to the Cloud
- Seismic data retrieval on demand via 4G network

GSX-C

Cable-free, Radio-free Autonomous Data Recording

The GSX-C is designed for cable-free/radio-free seismic data recording. The self-contained unit includes 1 or 3 channels of 24-bit digitization, an integrated high sensitivity GPS receiver, built-in test signal generator, up to 32 GB per channel of non-volatile solid-state data storage, and a high-speed data port. The unit is housed in a sealed case, with an input connector and an extended life battery/data port connector.

CELLULAR NETWORK ACCESS

4G cellular network access is available in US and European models. Statuses can be uploaded at user-selectable intervals. Seismic data can be uploaded to the cloud on demand.

Models	North America	Europe
Performance	LTE FDD Cat.4 3GPP release 10 compliant (Category 4; 150 Mbps peak downlink/50 Mbps peak uplink) with 3G Fallback	LTE FDD Cat.4 3GPP release 10 compliant (Category 4; 150 Mbps peak downlink/50 Mbps peak uplink) with 3G/2G Fallback
Frequency Bands (MHz)	4G: B2(1900), B4(AWS1700), B5(850), B12(700a), B13(700c), B14(700 First Net),B66(AWS-3 1700), B71(600) AT&T:B2, B4, B5, B12, B14 Verizon: B4, B13 3G: B2(1900), B4(AWS1700), B5(850)	4G: B1(2100), B3(1800), B7(2600), B8(900), B20(800), B28A(700) 3G: B1(2100), B3(1800), B8(900) 2G: B3(1800), B8(900)

Land Based Recorder

Features and Specifications

- 24-bit digital recorder
- Built-in GPS and disciplined clock
- Built-in full resolution test signal generator
- Solid-state flash memory
- Scalability greater than 50,000 channels
- Greater than 30 days of continuous recording
- Compatible with vibratory, explosive, and impulsive energy sources
- LED Status/Deployment State Indicator
- Accepts standard analog sensor input
- Available as 1 or 3 channel versions
- 24-bit delta-sigma ADC
- 1 Hz to 1600 Hz freq. response
- <20 µsec of UTC (GPS clock)
- Up to 32 GBytes per channel flash memory storage
- External extended life battery
- Operating Temperature: –40° C to +85° C
- Humidity: 0 to 100%
- Selectable Gains:
  - — X1, X2, X4, X8, X16, X32, X64
  - — 0, 6, 12, 18, 24, 30, 36 dB
- Sample Intervals:
  - — .25, .5, 1, 2, 4 milliseconds

Max Input Signal:	1.80 Vrms @ 0 Gain
Total Dynamic Range:	140 dB
System Dynamic Range @ 0dB Gain:	126 dB @ 4 msec SI 124 dB @ 2 msec SI 120 dB @ 1 msec SI 117 dB @ .5 msec SI 106 dB @ .25 msec SI
Equivalent Input Noise @ 2 msec SI:	1.13 µV @ Gain 0 dB 0.58 µV @ Gain 6 dB 0.33 µV @ Gain 12 dB 0.22 µV @ Gain 18 dB 0.19 µV @ Gain 24 dB 0.18 µV @ Gain 30 dB 0.17 µV @ Gain 36 dB
Input Impedance:	20 kΩ/0.06 µf Difference Mode 205 kΩ Common Mode

System Dynamic Range @ 2 msec SI:	124 dB @ Gain 0 dB 123 dB @ Gain 6 dB 122 dB @ Gain 12 dB 120 dB @ Gain 18 dB 115 dB @ Gain 24 dB 110 dB @ Gain 30 dB 105 dB @ Gain 36 dB
Total Harmonic Distortion:	0.0005%
Common Mode Rejection:	0.001%
Gain Accuracy:	1%
Anti-Alias Filter:	Rejection @ Nyquist: 130 dB Frequency @ –3 dB: 0.83 Nyquist Linear or Minimum Phase
GPS Time Standard:	<1 ppm
Weight:	2 lbs.
Max Dimensions:	3.5”W x 3.0”H x 6.67”L

GSX-C
LAND BASED RECORDER

Big Advances in Small Packages

GSX SYSTEM TESTS

The seismic channel performance and sensor tests can be performed by the GSX-C System. The user can choose a partial or complete set of tests that can be run in sequence. The user can also choose to display all of the results or only the failures. In the tests described below, the system software automatically controls the Channel Input Switch Positions and Test Oscillator Settings during the tests. All tests can be run at all sample intervals and preamp gains of the GSX-C.

- Harmonic Distortion
- Impulse Response
- Equivalent Input Noise
- Instantaneous System Dynamic Range
- Gain Accuracy
- Common Mode Rejection
- Geophone Impedance and THD
- Crossfeed (multi-channel)

GSX3-C with a BN18 battery and a GS-ONE LF three component geophone in a Land Case

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