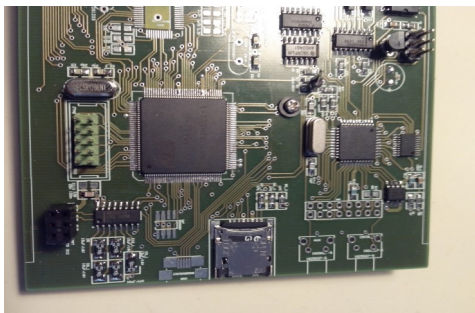




*The SRI32H with the S400 fracturing sensor*

LandTech introduces its new ultra high resolution digitizer/recorder unit which has been designed with the cooperation of GEObit. The technology is based on the SRI32 digitizer/recorder, initially designed for micro-cracking monitoring from the surface. Since Landtech is focusing in both PST and Fracturing Monitoring applications, the instrument has been re-designed, in order to comply with all the requirements and be able to operate with multiple ways. Special characteristics such as ultra high resolution, miniature size, ultra low power consumption (the unit can operate for one week with a small 12V/9Ah battery) combine to make the instrument the most competitive in today's market. Our latest innovation in technology keeps LandTech several steps ahead today's competition. Benefits of the new instrument are:

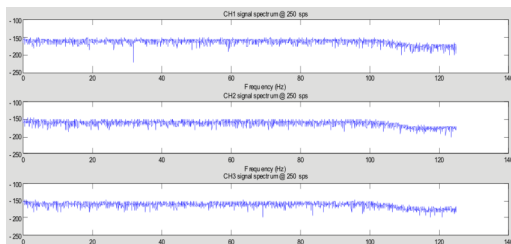
- Ultra high resolution digitizer, with effective resolution greater than 138dB@250sps and 129dB@1000sps. Up to 32 bit performance at lower sampling rates.
- Fully differential variable gain analog front end which allows the connection from any simple geophone sensor up to any broad band sensor. Four control lines are provided for the seismometer's control signals as well as for analog low resolution analog lines for the seismometer state of health monitoring.
- Force balance sensor electronics for bandwidth and sensitivity extension of a 4.5Hz geophone sensor. Using this technique, provides our C100 sensor (made by ION-SM6 geophones) with a wide bandwidth range from 0.2Hz to 98Hz and ultra high sensitivity 2000V/m/sec. In parallel, the Sensor body dimensions are miniature, only 50mm diameter and 180mm length. This type of sensor has been widely used in our PST projects for years, giving excellent performance.
- Selectable Sampling rate steps of 50, 100, 200, 250, 400, 500, 1000 samples per second increases flexibility.
- Ability for connection of a second 3 channels digitizer, providing a compact 6-channels digitizer/recorder.
- Internal Timing unit, GPS synchronized, using Digital PLL (DPLL) - TCXO - RTC unit with ultra low drift, less than 17.3usec between one hour GPS cycles. 96% of operation time, the GPS is switched off.
- Miniature LCD that informs the user about instrument's operation, with alternative messages.
- Very powerful ARM type processor, running custom embedded DOS/LINUX compatible OS. Data are stored into a removable microSD Card up to 64GBytes. Semi-compressed CORE32 format, allowing data storage for months.
- Ultra low total power consumption, 0.7W, and miniature size 168 X 106 X 68 mm, easily be hidden underground.
- Ethernet port and communication plug-in (Seiscomp/SEEDLINK compatible) for real time telemetry applications .



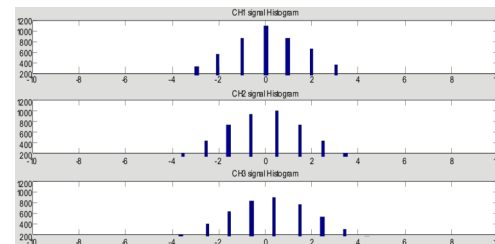
*The ARM processor and the microSD card*



*The SRI32H recorder with the C100 passive sensor*



*32bit digitizer noise spectrum @ 250sps*



*32bit digitizer signal histogram*

## ***SRI32H specifications***

<b>GENERAL</b>	
Number of channels	3/6
A/D converter	Fourth Generation, Delta-Sigma, 32bits resolution
THD	-125dB
Input resistance	500kOhms differential
Sampling Rate	50 - 1000 samples per second, in steps
Power	9-18Vdc , 0.7W
RMS noise	138dB @ 250sps 129db@1000sps
Input Range	+/-2.5V, +/-5V, +/-7.5V, +/-10V fully differential
<b>ADC</b>	
Modulator	4th order Delta-Sigma Modulator
Filter	Programmable SINC, FIR, IIR filtering, auto-calibration function
Filter Response	Selectable Minimum or Linear Phase Filter
<b>Sensor Electronics</b>	
Type	Force – Balance applied on 4.5Hz geophone
Bandwidth	0.2Hz – 98Hz
Sensitivity	2000V/m/sec
Sensor dimensions	50mm dia X 180mm length
Cable length	20meters, up to 100 meters
<b>DATA RECORDING</b>	
Media	Dual Removable microSD flash card.
Data file type	CORE32 format, embedded FAT32 file system
Information file	System log file
Recording mode	Continuous, in ten minutes data files
<b>DATA PROCESSING</b>	
Real Time Signal Processing	Real time event detection, P, S wave arrival time detection
<b>TIME BASE</b>	
Type	12 channels GPS receiver/DPLL
Accuracy	Time: +/-1usec to UTC time pulse, +/-5 meters to position
Timing Sources	Ultra low drift DPLL unit using TCVCXO, RTC.
<b>COMMUNICATION</b>	
Telemetry	Serial port, Ethernet port
Connectivity	Seiscomp/ SEEDlink plugin, RS232 port
<b>SEISMOMETER CONTROL &amp; SOH</b>	
Commands	Four TTL commands remotely controlled
SOH	Four low resolution, +/-10V inputs
<b>PHYSICAL</b>	
Size	168mm x106mmx68mm mm
Weight	1.2kgr
<b>ENVIRONMENT</b>	
Temperature range	-20 to +70 °C
Humidity	100%, IP67 enclosure



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