W2Z SEISMOGRAPH
WIRELESS WITH GEOPHONES

Technical Data of W2Z Wireless SEIS

Structure	2.4 GHz multichannel seismic system
Working Range	500m in open field *(for version W2Z 0.1 next version 1000 mt)*
Channels number for MOM unit	256
Resolution in Acquisition	24 bit
AD Converter	Successive Approximations with down-sampling and averages
Sampling Frequency (Fs)	250Hz, 500Hz, 1000Hz, 2000Hz, 4000Hz, 8000Hz, 16000Hz
Sampling Time	4 ms 2 ms 1ms 0,5ms 0,25ms 0,125ms 0,062ms
Number of samples in trigger mode	256, 512, 1024, 4096, 8192
Trigger	A dedicated radio unit works for triggering; it works in opening or closing contact.
Power	Each unit is equipped with a Li-Ion battery. MOM unit is powered by USB and battery.
Autonomy	Some days of normal operations in seismic campaign
Recharging	Common wall adaptor with USB port. At least 8 hours for completely discharged battery
Battery Control	Charge state visible on software. Hardware equipped to prevent battery damage.
Bandwidth	Up to 800Hz, 2 poles low pass filter
Input impedance	47 k ohm
Nyquist frequency	8000Hz at every Fs
Signal/RSM noise ratio	>124dB at Fs=1000Hz, geophonic input shorted
Software	Application for Windows XP, 7, 8 and 10 allows easy setting of all acquisition parameters and produces a seg2 file for further analysis
Geophones	Each Unit (corresponding to a channel) can be connected to any Hz sensors

WIRELESS MEMS 3C

Structure	GHz multichannel Seismic System antenna made in Italy by R&D DOLANG
MEMS technology Patent by DOLANG Waterproof Wireless triggering system	Accelerometer MEMS ADXL354B, supports the ±2 g and ±4 g ranges, software selectable. It is a triaxial type sensor. Its bandwidth ranges from 0Hz to 1500Hz. Option "self Test". Temperature range: -40° --> +125°
Working Range	500m in open field, in optical sight. The operator at the MOM station must see all the W2Z units CH. He can not operate in areas where units are not visible from the operator
Max number of channels	256
Resolution in Acquisition	24 bit
AD Converter	Successive Approximations with down-sampling and averages
Sampling rate (Fs)	250Hz, 500Hz, 1000Hz, 2000Hz, 4000Hz, 8000Hz, 16000Hz
Number of samples in trigger mode	128, 256, 512, 1024, 4096, 8192
Trigger	A dedicated radio unit works for triggering; it works in opening or closing contact. Able to work with Vibroseis INOVA or other

Power	Each unit is equipped with a Li-Ion battery. MOM unit is powered by USB and battery.
Autonomy	Some days of normal operations in seismic campaign, in case of default we provide with external Power Bank *as with phone tech...*
Recharging	Common wall adaptor with USB port. At least 8 hours for completely discharged battery. We provide multi-charger device
Battery Control	Charge state visible on panel acquisition software. Hardware equipped to prevent battery damage.
Bandwidth	Up to 800Hz, 2 poles low pass filter
Input impedance	1500 ohm
Nyquist frequency	8000Hz at every Fs
Signal/RSM noise ratio measured	>124dB at Fs=1000Hz, geophone input shorted
Software	Application for Windows XP, 7, 8 and 10 allows easy setting of all acquisition parameters and produces a sìSeg2 file for further analysis
Geophones	Each Unit W2Z (corresponding to one channel when use with normal geophones) can be connected to a geophone with desired specifications,
Accelerometers (option)	If MEMS Accelerometers are used, 3 axes (X, Y, Z) are available.
Dimension W2Z	120 x 105 x 62 millimeter
Weight	About 470 gr. including antenna and battery Spike for MEMS 70 gr. Spike + Geophone 250 gr. Therefore: *24 ch full equiped seismograph* **MEMS** *Kg.12,96 plus bag with trigger cable and MOM* **Geophones** *Kg.17,28 plus bag with trigger cable and MOM*

a real Revolution for all

3 Dimensional recording system is based on MEMS technology.

It's bandwidth begins from almost 0 Hz, in contrast of geophones, where it begins at 20, 30 ....Hz.

AD resolution will be 24 bit, sampling frequency will range from 500Hz to 16KHz if related to only one of the 3 axes.

If all axes are sampled at the same time, sampling rate will be reduced of approx 1/3.

In terms of sampling time, its range is in the first case from 2 msec to 0.0625msec, or from 6 msec to 0.19 msec in the second case.
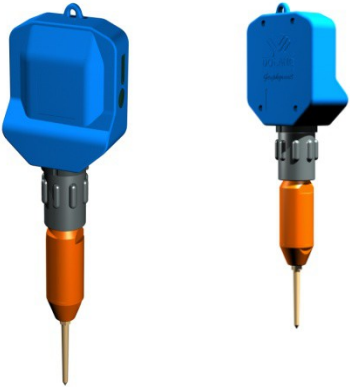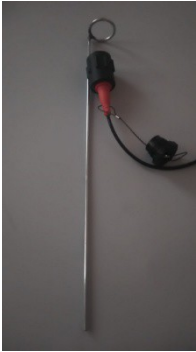
Record length (samples number) will be 16384 as maximum for 1 axes, or 1/3 for each of axes when all together sampled.

Under development : Continuous acquisition (for 2 hours or more, for passive seismic survey)
Samples number will be extended to 16384

W2Z with Geophones
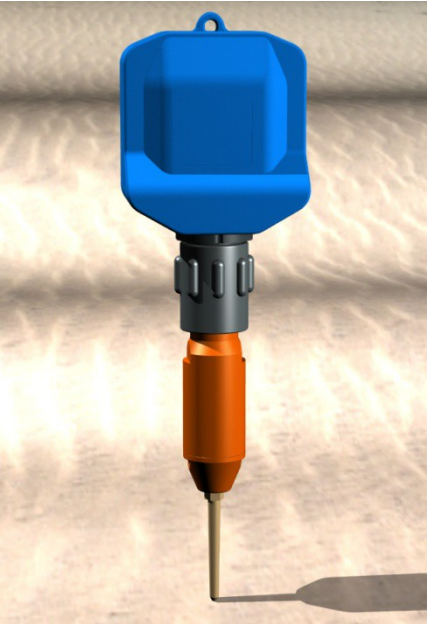
W2Z spike for MEMS>

TELEMETRY JEA247E500

Structure	PC connected by USB/RS485 to sampling units
Max sampling units number	240 – depending on cable length, one or more repeaters are needed, possible upgrade 1000 or more ch
Resolution	24 bit
AD Converter	Sigma Delta
Sampling Frequency (Fs) in trigger mode	1000Hz, 2000Hz, 4000Hz, 8000Hz, 16000Hz, 32000Hz
Number of samples in trigger mode	128, 256, 512, 1024, 4096, 8192, 16384
Sampling Frequency (Fs) in continuous mode	125Hz/250Hz/500Hz (for max 24 ch) cable length can generate limits on above parameters When this "continuous mode" function has come, you cannot upgrade over 24 channels
Sampling duration in continuous mode	Fs = 500Hz about 2h 50m (only for 24 channels) Fs = 250Hz about 5h 40m (only for 24 channels)
Trigger	Each unit can be connected to a trigger wire of desired length, to work in opening or closing contact.
Power	Rechargeable battery unit included in USB/RS485 box – more than 7h autonomy with 24 units in continuous work. First 24 channels system powered by USB PC
Bandwidth	Up to 1 KHz, 2 poles low pass filter, DC component rejection
Input impedence	1500 ohm
Nyquist frequency	16000Hz at every Fs
Signal/RSM noise ratio	>124dB at Fs=1000Hz, input shorted
Connection	Units connected to PC by RS485 serial standard, at 1MHz baudrate
Software	Application for Windows XP, 7,8 and 10 allows easy setting of all acquisition parameters and produces a segy or seg2 file for further analysis
Geophones	Each Unit (corresponding to a channel) can be connected to a geophone with desired specifications

MOM for 240 ch

428XL ST+ Cable 65M With 15 FDU
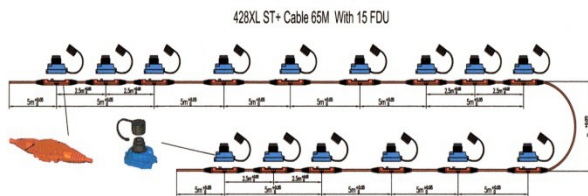
DBS280B Compact 24 channel unit

Resolution	24 bit
Available Channels	24
Number of samples/trace	256,512,1024,2048,4096,8192, 10992
Sampling rate (Hz)	250,500,1000,2000,4000,8000,16000
Averaging	Always sampling at 16 K then averaging for noise reduction
Recording time	Up to 44.7 sec
Time standard accuracy	0,005%
Gain Accuracy	+/- 0,2%
Input Impedance	Matched to sensor
Cross talk	To be measured
Input signal range	+/- 2V
Anti alias filter	800 Hz 12 db/octave
Software filter	30Hz, 60Hz, 200Hz, 400Hz
Dynamic Resolution	124 dB at 1000 Hz
Crossfeed isolation	To be measured
THD noise	< 97 dB
Recording Format	SEG2
Operating temperature	0°- 50
Power Supply	From USB notebook only

JEATROM HVSR

Connection	USB 1.1
Geophones frequency	2 Hz or 4,5 Hz
Number of channels	3 axis (X,Y,Z)
Input impedance	47000 ohm
Signal/Noise	124db at 1KHz
Max analog input	+/- 1 volt
A/D conversion	24bit
Frequency response	Fr geophone ◊ 80Hz
Sampling frequency	250Hz, 500Hz
Oversampling frequency	32KHz
Sampling rates	1/Sampling frequency
Data Storage	Hard disk of PC
Recording capacity	Hard disk limit
Recording format	SAF
Power supply	From Notebook USB
Power autonomy	PC battery
Housing	Aludisc case gray color
Level	ok
Environment operating condition	
Humidity	100%
Impermeability	IP65
Software	ACQ. panel JEATROM
Operating system required	Windows 10, 8, 7, XP

NEW DEAL WITH DOLANG

We have been growing for 30 years always building new technologies