Seismic Acquisition Stream

Buried Array

OYO GSR System

GSR Box

Ground motion → Geophone string [millivolts] → A/D → IFP → millivolts out

0db – 36 db
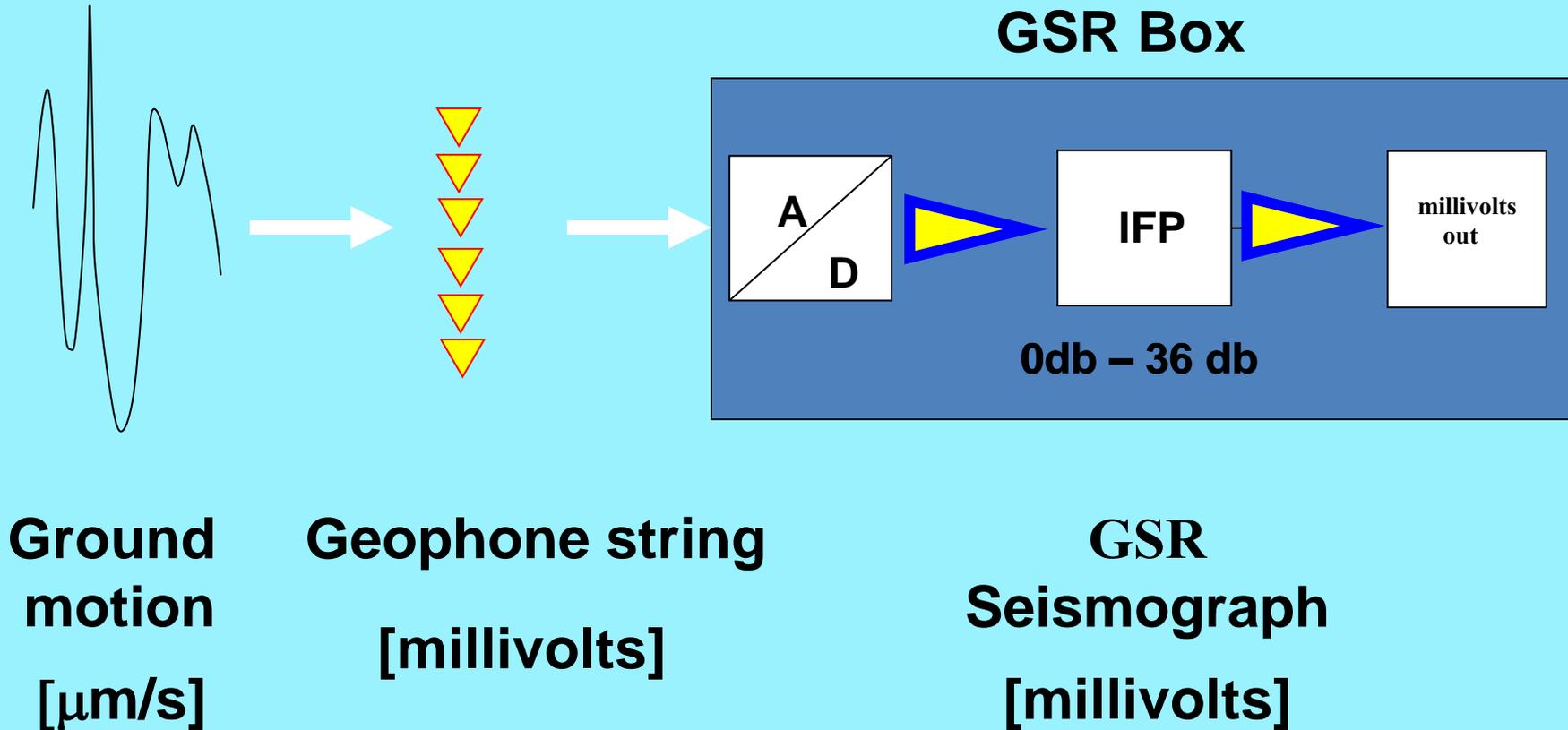
Ground motion

[μm/s]

Geophone string

[millivolts]
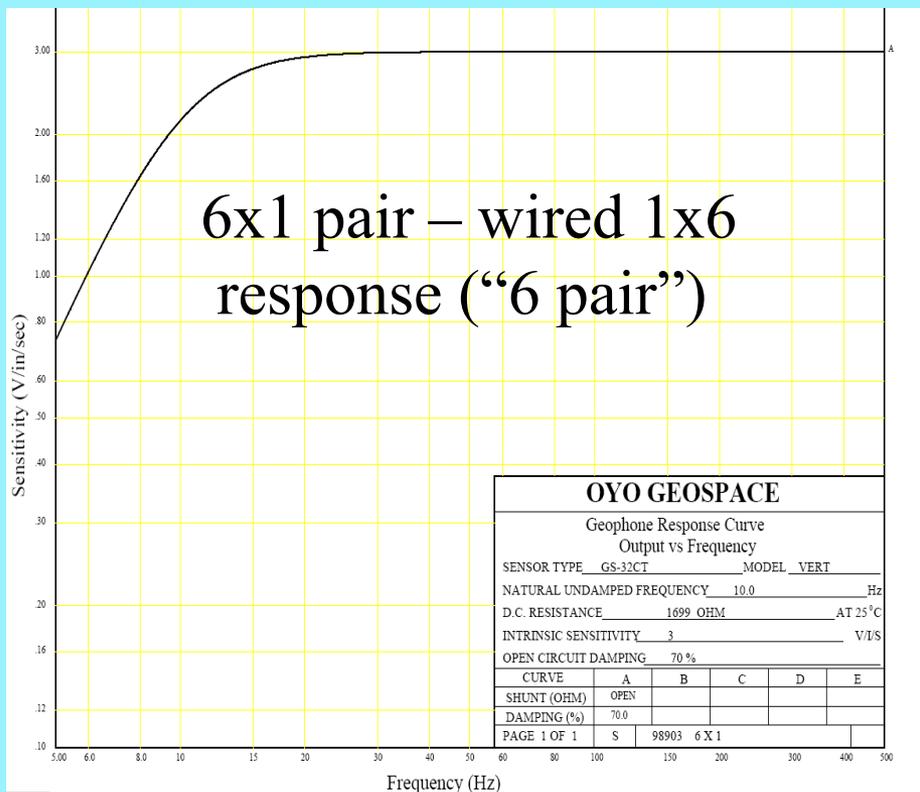
GSR Seismograph

[millivolts]

Conversion Factors

Buried Array

- **36 dB recording gain**
- **System Options: 0,6,12,18,24,30,36dB**

- No multiplication. Data is in millivolts.

Impulse Response Curve - For One (1) geophone

6x1 pair – wired 1x6 response ("6 pair")

OYO GEOSPACE
Geophone Response Curve
Output vs Frequency
SENSOR TYPE __GS-32CT__ MODEL __VERT__
NATURAL UNDAMPED FREQUENCY __10.0__ Hz
D.C. RESISTANCE __1699 OHM__ AT 25°C
INTRINSIC SENSITIVITY __3__ V/I/S
OPEN CIRCUIT DAMPING __70 %__

CURVE	A	B	C	D	E
SHUNT (OHM)	OPEN				
DAMPING (%)	70.0				
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Frequency (Hz)

(1 geophones -> .5*1) (1x1)
Sensitivity =   **.5 V/in/sec**
(3 geophones -> .5*3) (3x2)
Sensitivity =   **1.5 V/in/sec**
(6 geophones -> .5*6) (6x1)
Sensitivity =   **3V/in/sec**

Volts to millivolts and inches to nm:
(1x1)= .00001968 mV/nm/sec
(1x2)= .00003937 mV/nm/sec
(3x2)= .00005905 mV/nm/sec
(6x1)= .0001181   mV/nm/sec

Divide data by the sensitivity: 1/sensitivity

Wired 6x1:
Multiply traces by **8,467** to convert To ground motion in nm/sec

Wired 1x1:
Multiply traces by **50,813** to convert To ground motion in nm/sec

Wired 3x2:
Multiply traces by **16,934** to convert To ground motion in nm/sec