

### 3dSub Bottom Profiler

Merk	:	GeoAcoustics GeoPulse Pinger
Kelengkapan	:	<ul style="list-style-type: none"> <li>- Transmitter 5430A</li> <li>- Receiver 5210A</li> <li>- 6 Transducer T135 (bisa menggunakan 2x2 array)</li> <li>- Octopus cable transducers</li> <li>- Kabel ekstensi 30 dan 50 m</li> <li>- ADC NI USB-6212 BNC</li> <li>- Software akuisisi Hypack SBP</li> </ul>
Fungsi	:	Survei seismik dangkal di perairan

### Spesifikasi

#### Transmitter 5430A

Input Power	:	115/230 VAC $\pm$ 10%, 47 – 63 Hz, 220 W maximum
Output Power	:	10 KW with 0.75% duty cycle, continuously adjustable
Auxiliary Power	:	IEC Connector, unfused, 6A maximum
Frequency	:	2 – 12 kHz continuously adjustable Short circuit proof. Impedance matched
Pulse Cycles	:	1, 2, 4, 8, 16 or 32 Cycles of the frequency selected. The transmitted output pulse will be phase coherent within 22.5°
Key		
External trigger	:	2 – 12 V Pulse, either + or – leading edge triggered. Max width 50 ms to eliminate double triggering. Transformer isolated
Internal trigger	:	Set by internal potentiometer, 1 – 10 pps, uncalibrated

Output	:	To receiver : Transformer isolated To third party acquisition system : Frequency response flat
Processor	:	Between approximately 1 kHz and 20 kHz
Modes of operation	:	A : Flat gain -0 dB gain B : Short range TVG -20 dB (10:1) of attenuation during transmit pulse and a -20 dB to 0 dB ramp within 15 ms after end of transmit signal
Environmental	:	Operational : -5 to 50°C Storage : -15 to 85°C
Dimension	:	45.7 cm (L) x 43 cm (W) x 13 cm (H)
Weight	:	18 Kg

### Receiver 5210A

Amplifier	:	Differential common mode rejection : 100 dB at 60 Hz. Sensitivity 30 $\mu$ V RMS in, produces 1V RMS out at 90 dB total gain with TVG
Signal to noise	:	20 dB at 100 dB gain 1 kHz center frequency and 1 kHz bandwidth
Coarse gain	:	40 dB maximum
Fine gain	:	0 – 30 dB in 3 dB increments
Filter	:	Low pass and high pass, active type, maximally flat, 24 dB/octave minimum roll-off, 0 gain, 0.002 kHz to 15 kHz adjustable in $\frac{1}{2}$ octave increments
Safety	:	Knobs interlock to prevent overlap
TVG	:	Dynamic range : 30 dB
Rate	:	Approximately flat to 30 dB in 14 ms
Manual delay	:	Vernier adjust from 1 to 14 ms with multiplier of x 1, x 10, x 100 and internal select of x 1000
AGC	:	Attack adjustable from 330 $\mu$ s to 330 ms

Decay	:	Attack adjustable from 330 $\mu$ s to 330 ms
Range	:	20 dB
Power	:	115/230 VAC $\pm$ 10% (internal switch selectable), 47 to 63 Hz, 45 W maximum
Environmental	:	Operational : -5 to 50°C Storage : -15 to 85°C
Dimensions	:	45.7 cm (L) x 43 cm (W) x 17.8 cm (H)
Weight	:	12 kg

### Transducer T135

Resonant Frequency (nominal)	:	3.5 kHz / 7.0 kHz
Useful operating band	:	3.5 kHz to 8 kHz
Nominal impedance	:	160 $\Omega$
Beam pattern	:	Conical
Receive sensitivity	:	-168 dB re 1 V/ $\mu$ Pa
Transmit sensitivity	:	146 dB re 1 $\mu$ Pa/V @ 1m
Transmit voltage (max)	:	750 Vrms
Transmit voltage / Duty cycle (max)	:	750 Vrms at 1% 400 Vrms at 10% 100 Vrms at 100%
Beam width (4 transducers)	:	55° at 3.5 kHz 40° at 5.0 kHz 30° at 7.0 kHz

### ADC NI USB-6212

Analog Input	:	
Number of Channels	:	8 differential or 16 single ended
ADC Resolution	:	16 bits
Sample rate	:	Single channel maximum 400 kS/s

		Multichannel maximum (aggregate) 400 kS/s Minimum 0 S/s
Timing resolution	:	50 ns
Timing accuracy	:	50 ppm of sample rate
Input coupling	:	DC
Input range	:	$\pm 0.2$ V, $\pm 1$ V, $\pm 5$ V, $\pm 10$ V
Maximum working voltage for analog inputs (signal+ common mode)	:	$\pm 10.4$ V of AI GND
CMRR (DC to 60 Hz)	:	100 dB
Input Impedance	:	Device On AI+to AI GND >10G $\Omega$ in parallel with 100 pF AI-to AI GND >10G $\Omega$ in parallel with 100 pF Device Off AI+to AI GND 1200 $\Omega$ AI-to AI GND 1200 $\Omega$
Input bias current	:	$\pm 100$ pA
Small signal bandwidth (-3 dB)	:	1.5 MHz
Input FIFO size	:	4095 samples
Data transfers	:	USB signal stream, programmed I/O
Analog Output		
Number of channels	:	2
DAC resolution	:	16 bits
DNL	:	$\pm 1$ LSB
Monotonicity	:	16 bit guaranteed
Maximum update rate	:	1 channel 250 kS/s 2 channel 250 kS/s per channel
Timing accuracy	:	50 ppm of sample rate
Timing resolution	:	50 ns

Output range	:	$\pm 10$ V
Output coupling	:	DC
Output impedance	:	0.2 $\Omega$
Output current drive	:	$\pm 2$ mA
Overdrive protection	:	$\pm 30$ V
Overdrive current	:	2.4 mA
Power-on state	:	$\pm 20$ mV
Power-on glitch	:	$\pm 1$ V for 200 ms
Output FIFO size	:	8191 samples shared among channels used
Data transfers	:	USB Signal Stream, programmed I/O
AO waveform modes	:	Non-periodic waveform, periodic waveform regeneration mode from onboard FIFO, periodic waveform regeneration from host buffer including dynamic update
Settling time, full-scale step, 15 ppm (1 LSB)	:	32 $\mu$ s
Slew rate	:	5 V/ $\mu$ s
Glitch energy	:	Magnitude      100 mV Duration          2.6 $\mu$ s
Digital I/O		
BNC Mass Termination	:	24 total, 8 (P0.<0..7>), 16 (PFI<0..7>/P1.<0..7>, PFI<8..15>/P2.<0..7>)
Ground reference	:	D GND
Pull-down resistor	:	50 k $\Omega$ typical, 20 k $\Omega$ minimum
Input voltage protection	:	$\pm 20$ V on up to 8 pins
Frequency Generator		
Number of channels	:	1
Base clocks	:	10 MHz, 100 kHz
Divisors	:	16
Base clock accuracy	:	50 ppm

Output	:	Any output PFI terminal
External Digital Triggers		
Source	:	PFI<0...15>
Polarity	:	Software-selectable for most signal
Analog input function	:	Start trigger, reference trigger, pause trigger, sample clock, convert clock, sample clock timebase
Analog output function	:	Start trigger, pause trigger, sample clock, sample clock timebase
Counter/Timer function	:	Gate, Source, HW_Arm, Aux, A, B, Z, Up_Down
Bus Interface		
USB	:	USB 2.0 Hi-Speed or full-speed
USB Signal Stream	:	4, can be used for analog input, analog output, counter/timer 0, counter/timer 1
Current limits		
+5 V terminal as output		
voltage	:	4.6 V to 5.2 V
Current (internally limited)	:	50 mA maximum, shared with digital outputs
+5 V terminal as input		
Voltage	:	4.75 V to 5.35 V
Current	:	350 mA maximum, self-resetting fuse
Protection	:	±10 V
Maximum current	:	Do not exceed 16 mA per DIO pin
Power Requirements		
Input voltage on USB Port	:	4.5 V to 5.25 V in configured state
Maximum inrush current	:	500 mA
No load typical current	:	320 mA at 4.5 V
Maximum load	:	Typical current 400 mA at 4.5 V Suspend current 260 µA typical
Physical Characteristic		
Dimension	:	23.5 x 11.2 x 6.4 cm

Weight	:	950 g
IO Connectors	:	19 BNCs and 26 screw terminals
USB Connector	:	Series B
Screw terminal wiring	:	16 to 28 AWG
Torque for screw terminal	:	0.22 – 0.25 N m
Enviromental		
Operating temperature	:	0 to 45°C
Storage temperature	:	-20 to 70°C
Humidity	:	10 to 90% RH, noncondensing
Maximum altitude	:	2,000 m
Pollution degree	:	2

## GeoAcoustics GeoPulse

### Transmitter 5430A



### Receiver 5210A



## Transducer T135



## Konfigurasi 2x1

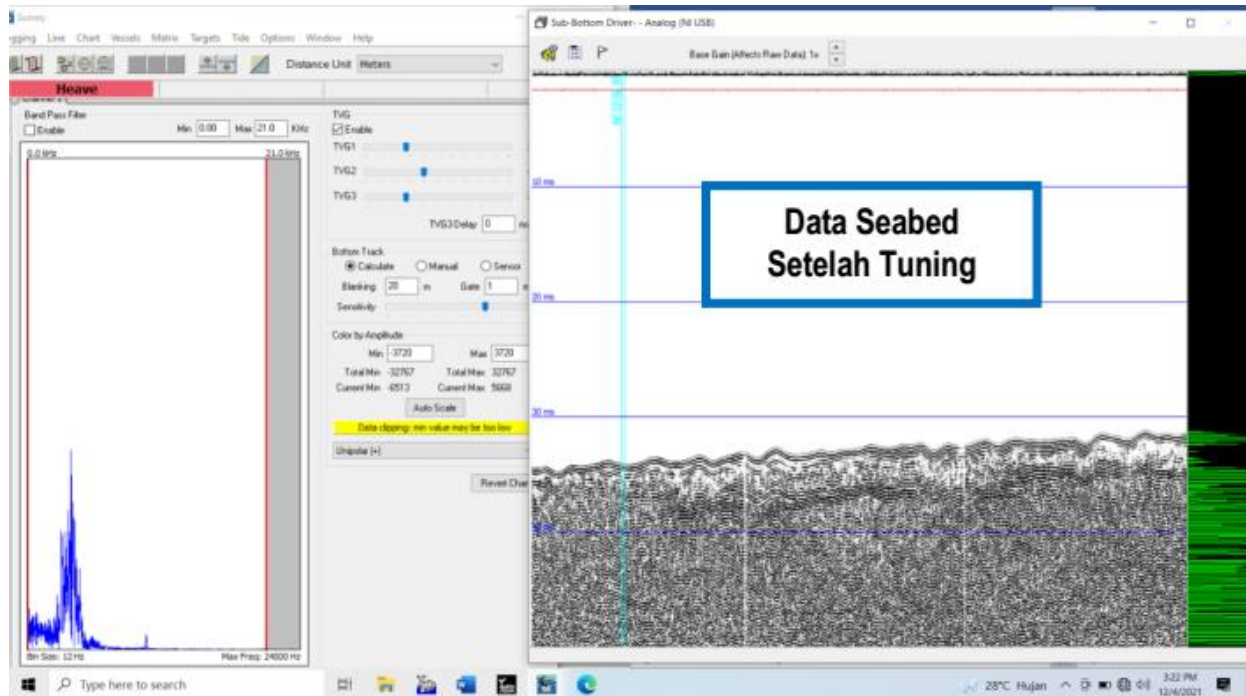


## Konfigurasi 2x2





## Sistem akuisisi



## Octopus Cable Transducer



Kabel Ekstensi 30 m dan 50 m

