

# Node YOUNG

To provide better solution for larger scale & higher receiver density requirements in seismic exploration, and reduce cost in seismic projects, ZF has developed YOUNG wireless node system.



-  Integrated 5Hz Geophone
-  Switchable Internal and External Geophone
-  Capable Work with Cable System
-  32Bit AD Low Noise High Gain
-  Real-Time QC Theft Guard

-  Drone, Vehicle and Human Patrol
-  Shockproof Waterproof Small Size
-  40 Day Continuous Recording
-  Rich Software Support

## Physical Specs

<b>Size</b>	148mm*103mm*142mm (without spike)
<b>Operating life@25°C</b>	40 days@1ms continuous 80 days segmented (12 hours ON/12 hours SLEEP)
<b>Weight</b>	865 g(including internal battery and spike)
<b>Waterproof</b>	1 meter water depth, sealed for 48 hours
<b>Operating temperature</b>	-40°C to +70°C
<b>Charging time</b>	<2 h

## Sensor Specs

<b>Distortion</b>	≤0.1%
<b>Natural frequency</b>	5 Hz ± 7.5%
<b>Coil resistance</b>	1850 Ω
<b>Open circuit damping</b>	0.6 ± 5%
<b>Damping with resistor</b>	0.7 ± 5%
<b>Open circuit intrinsic voltage sensitivity</b>	80 V/m/s ± 5%

## Channel Performance

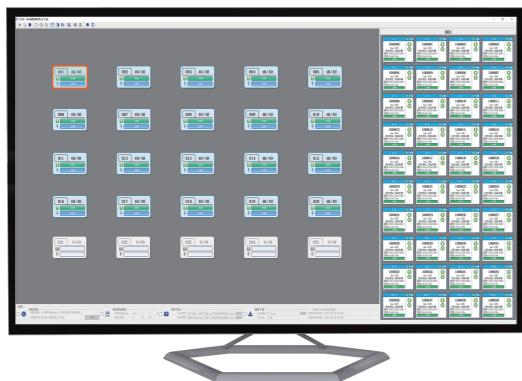
<b>Anti-alias filter</b>	206.5 Hz@2ms (82.6% of Nyquist) selectable-linear phase or minimum phase
<b>Equivalent input noise</b>	0.14 μV@2ms@Gain 18 dB (Typical)
<b>Daily inspection settings</b>	1 time/day, 2 times/day, daily inspection time ≤10s
<b>ADC resolution</b>	32 bits
<b>Sample intervals</b>	0.25, 0.5, 1, 2, 4 ms
<b>Preamplifier gain</b>	0 dB, 12 dB, 24 dB
<b>DC blocking filter</b>	0.1 Hz to 10 Hz
<b>GPS time standard</b>	1 ppm
<b>Timing accuracy</b>	±10 us, GPS disciplined
<b>Maximum input signal</b>	±2.5 V peak@Gain 0 dB
<b>Instantaneous dynamic range</b>	>125 dB@2ms@Gain 0 dB
<b>Total harmonic distortion</b>	<0.0002%@Gain 0 dB
<b>Common mode rejection</b>	>100 dB
<b>Gain accuracy</b>	<0.5%
<b>System dynamic range</b>	186 dB
<b>Frequency response</b>	0~1652 Hz@0.25ms sample temperature measurement and detection accuracy 0.5°C
<b>Detection range</b>	-40°C to 125°C
<b>Tilt comparison measurement accuracy</b>	<1°
<b>Download speed</b>	25 MB/s
<b>Acquisition mode</b>	Continuous acquisition/timed acquisition

## Quality Control Ability

<b>Drone line check</b>	500 m
<b>Car line check</b>	150 m
<b>Manual line check</b>	100 m
<b>Lost search</b>	Support
<b>Real-time QC</b>	Support

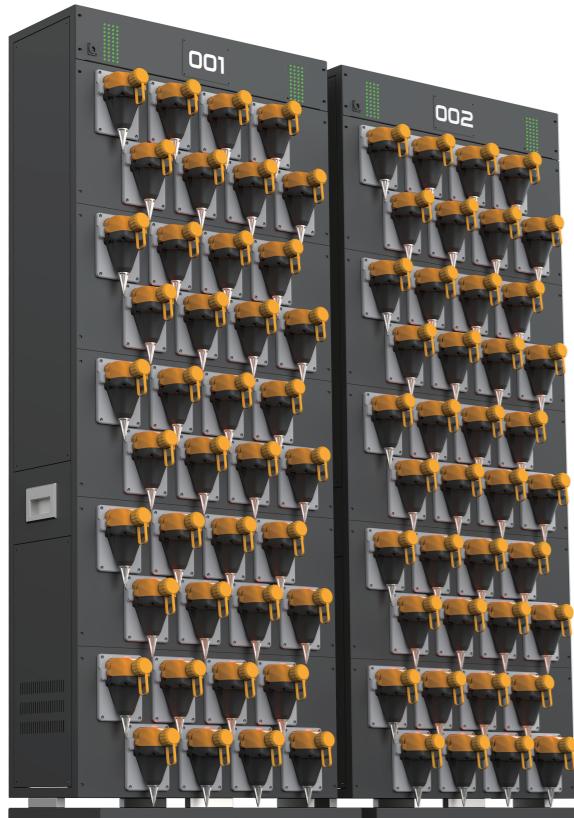
## Software

- Real-time quality control, massive Young node data download, configuration and management software



## Portable Rack

- Same function as 40 slots Type
- For less channels working



## Data Harvesting Rack

- Program the node, download & offload the seismic data
- 40 slots, download speed 10000 Mb/s
- Monitor function to view the status charging Function with 2 hours max

## Communication Server and Radio

The network RTK server provides a high precision range positioning service for the centimeter level, providing high precision location information services to the shock source vehicle, handbook and other measurement equipment within 100 square kilometers.



## Drone QC Unit



## Smart Backpack



## Field Deployment Tool



- High flexibility, can be combined with manual/vehicle-assisted control means
- High ease of use, visual mission design
- High productivity, more than 50 km/h
- High degree of freedom, flight altitude 300-500(m)
- High recovery rate, up to 99% or more
- No pile number test
- Centimeter-level positioning
- Automatic coordinate return
- High-precision TB capture
- 72 hours long battery life
- One-click wire release and patrol

The Field Deployment Tool is a hand-held RFID-equipped computer. It is used for scanning the serial numbers of the YOUNG after deployment, in order to log the GPS location (and line and station) where each YOUNG was deployed.