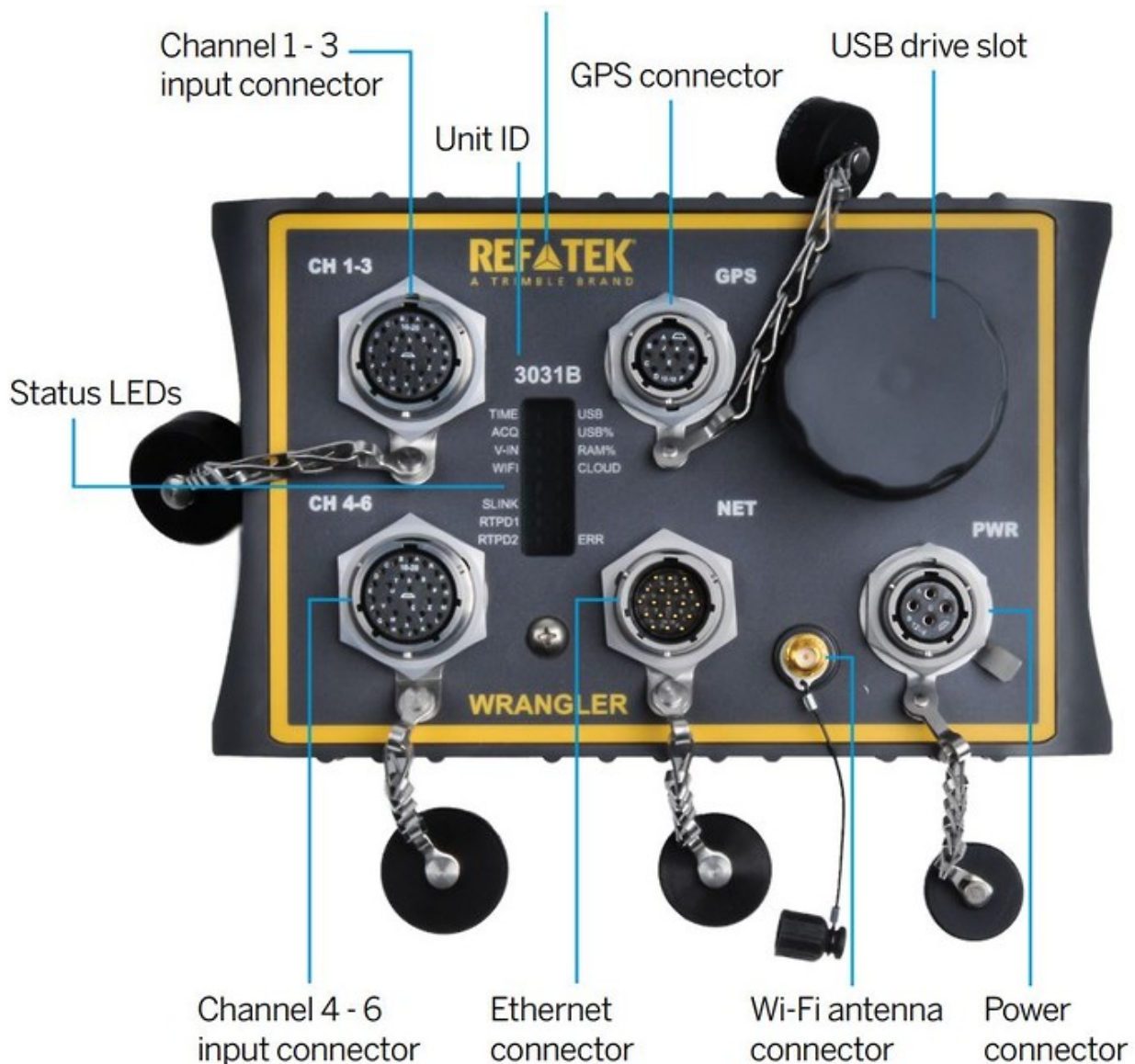


## Wrangler Data Sheet

The Wrangler is the latest high dynamic range broadband seismograph for permanent or temporary strong motion measurements. Consisting of the latest low noise A/D technology the Wrangler offers 32-bit performance and a dynamic range greater than 142dB. With a modern web browser user interface, accessed through the inbuilt wireless modem, simply connect to the unit and view the configuration and status of the unit through any web browser, and always know your data is securely backed up on the non-volatile flash memory.

For longer period operations the Wrangler can be configured with Seedlink server enabling data to be analysed seamlessly. Alternatively, when real-time information is key, data can be sent via RTPD offering low latency telemetry for earthquake early warning.



Wrangler connectors, image courtesy of RefTek, a Trimble Brand

The simple LED status indicator lights, provide operators clear indication of the instrument status and the rugged

compact IP68 housing the confidence the system can cope with the all environments.

## Product Dimensions

Physical	Dimensions (L x W x H)	Weight
(instrument only)	213 x 132 x 88	1.36

## Technical Specifications

<b>Status LEDs:</b>	16 status LEDs including Input Power, GNSS/Time, USB, Acquisition and Link status
<b>Controls:</b>	Magnetic on/off switch
<b>A/D:</b>	32-bit SAR A/D converters
<b>Dynamic Range:</b>	>142 dB @ 100 sps
<b>Channels:</b>	3 or 6
<b>Gain Selection:</b>	x1 and x64
<b>Input Full Scale:</b>	40 Vpp @ x1 gain
<b>Input Impedance:</b>	26 Kohms, 0.002 uFd, differential @ x1 2 Mohms, 0.002 uFd, differential @ x64
<b>Common Mode Rejection:</b>	>90 dB
<b>Sample Rates:</b>	4000, 1000, 500, 250, 200, 125, 100, 50, 40, 20, 10, 5, 1, 0.1 sps
<b>Multiple Sample Rates:</b>	Supported for rates in the group 1000
<b>Sampling:</b>	Simultaneous on all channels
<b>FIR Filter:</b>	140 dB down in the stopband
<b>Type:</b>	GNSS Receiver with Internal Disciplined Oscillator
<b>Accuracy with GNSS:</b>	±10 ?sec after validated 3-D Fix and Locked
<b>Free-Running Accuracy:</b>	0.1 ppm over the temp. range of 0 °C to 70 °C 0.2 ppm from -30 °C to 0 °C
<b>Alternate Time Sources:</b>	PTP or NTP
<b>Power:</b>	Average Power (6 channels, with communication, GNSS duty cycle) 2.3 Watts
<b>Format:</b>	Miniseed, MRF
<b>Communication:</b>	- Ethernet - Wifi - WebUI

<b>Transmission:</b>	SeedLink Server, RTP
<b>Memory:</b>	Internal Capacity: 8Gb External Capacity: up to 32Gb
<b>Auxiliary channels:</b>	16-bit A/D Converter, $\pm 10$ V Single-ended or Differential input. sample rate 10,2 or 0.1sps
<b>Cal Signal:</b>	16-bit DAC
<b>Cal Waveforms:</b>	Pre-defined waveforms including Sine, Step, Noise, Swept Sine signals, along with playback of user uploaded .wav files
<b>Cal Signal Recording:</b>	Additional 32-bit ADC dedicated to recording the calibration output signal
<b>Control Signals:</b>	6 per channel connector: Including Lock, Unlock, Center, Calibration Enable, Damping, UVW
<b>Automatic Mass Recentering:</b>	User settable thresholds, interval and retries
<b>Sensor ID:</b>	Interfaces with REF TEK sensors
<b>Watertight Integrity:</b>	IP68
<b>Humidity:</b>	0 to 100%
<b>Shock:</b>	Survives a 1 meter drop on any axis
<b>Transportation:</b>	Survives MIL-STD-810G transportation test
<b>Operating Temp:</b>	-30 °C to 70 °C
<b>Storage Temp:</b>	-40 °C to 80 °C
<b>Compliance:</b>	CE, FCC, RoHS