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WIFI™ ENABLED SMART INTEGRATING SOUND-LEVEL  
METER/DATALOGGER  
PNSRTW Mk.3

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# PLACID PNSRTW Mk.3

WiFi™ ENABLED SMART INTEGRATING SOUND-LEVEL METER/DATALOGGER



## SPECIFICATION

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PNSRTW Mk.3 is the third generation of PLACID Instrument's WiFi™ enabled smart integrating sound-level meters/dataloggers. It includes a digital MEMS microphone, an accurate date/time clock, a non-volatile 128 Mb recording memory and wireless connectivity.

Running on battery, it can record sound pressure levels and report them through WiFi™ for a week. Connected to an external USB charger it can record and report for months. Its very small size allows it to be attached to or embedded within the monitored equipment.



## FEATURES

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- Type I precision
- A, C and Z weighting curves.
- Integrating Sound-Level Meter, records L-max, L-min and Leq levels.
- Log interval adjustable from 125 ms (8 points per second) up to hours.
- Individual Manufacturer's Certificate of Calibration from Convergence Instrument provided with every instrument purchased.
- WiFi™ connectivity to report measured levels remotely and automatically at preset intervals.
- Email alerts for sound detected over specified threshold, as well as low-battery.
- Digital very sensitive MEMS microphone (30 dBA typical noise floor)
- Completely sealed weatherproof enclosure designed for outdoors applications. Now includes an ePTFE membrane that seals the microphone against dust and water.
- All-digital design.
- Ultra-stable sensitivity (field recalibration is easily done, but seldom required)
- Very low sensitivity variation due to temperature changes
- Very low sensitivity to vibrations
- Software function calculates global Leq and/or dose, according to ISO and OSHA methods.
- Adjustable response time.
- Preprogrammed recording start date/time.
- Integrated oscilloscope function that can show the acoustic signal in real time.
- Integrated spectral analyzer function that can show the spectrum (or 3rd-octave bands) in real time.
- Can be used as a high-quality USB digital microphone
- Allows the observation of recorded levels while the recording is ongoing.
- Works standalone, or USB connected.
- Long life internal rechargeable battery that recharges from USB and most USB chargers.
- Can be field-calibrated.
- Observes and records 100% of the acoustic signal (no missed samples).
- Editable individual custom ID for easier instrument management.
- All settings are stored in non-volatile memory. So the instrument will regain full functionality and WiFi connection from hard-reset or battery loss.
- Compatible with Convergence Instrument's Cloud service.

## APPLICATIONS

- Sound level and acoustic dose measurement and recording.
- Monitoring of safe working conditions.
- 24/7 noise monitoring on construction sites.
- Email Alerts when the noise is too loud.
- Activity detection and logging.
- Long-term measurement and recording of acoustic levels for environmental impact studies.
- Specially designed for long-term outdoors applications.





## DATASHEET PLACID PNSRTW Mk.3



Bandwidth	20 Hz to 20 kHz
Microphone Sensor	Digital MEMS
Precision Class	Type I
Saturation Level (typical @ 1 kHz)	<ul style="list-style-type: none"><li>• 120 dB-A</li><li>• 120 dB-C</li><li>• 120 dB-Z</li></ul>
Temperature Error	Better than 0.6 dB (-20 degC < T < 60 degC)
Sensitivity to Vibrations	60 dB <sub>SPL</sub> /g (20 dB lower than typical measurement microphone)
Weighting Curve	<ul style="list-style-type: none"><li>• dB-A</li><li>• dB-C</li><li>• dB-Z</li></ul>
Noise-Floor (Typical)	<ul style="list-style-type: none"><li>• 30 dB-A</li><li>• 46 dB-C</li><li>• 52 dB-Z</li></ul>
Recording Resolution	0.1 dB
Duty Rate of Signal Capture	100% - No Missed Samples
Min Log Interval	125 ms (8 points of Lmin, Lmax and LEQ per second)
Real-Time Spectral Display	2048-point Power Spectrum – dB or Lin Scale.
Calibration	Field-calibrated using a 94 dB 1/2" calibrator
Connectivity	<ul style="list-style-type: none"><li>• USB</li><li>• WiFi</li></ul>
Radio Standard	IEEE 802.11 b/g/n
Radio Certification	<ul style="list-style-type: none"><li>• FCC</li><li>• IC</li><li>• Japan</li><li>• Korea</li><li>• CE</li></ul>



## DATASHEET PLACID PNSRTW Mk.3



Temperature Range	-20 degC to 60 degC (-4 degF to 140 degF)
Recording Memory	Non-Volatile Flash Memory
Recording Memory Capacity (RT128 Model)	<ul style="list-style-type: none"><li>• 128 Mb</li><li>• Ex: can continuously record Lmax, Lmin and Leq levels at 1s intervals for 32 days, or 10s intervals for 320 days.</li></ul>
Recording/Erasure Cycles	Greater than 100 000
Data Retention	Greater than 20 Years
Dimensions	<ul style="list-style-type: none"><li>• 19 mm x 42 mm x 160 mm</li><li>• (0.75" x 1.65" x 6.25")</li></ul>
Weight	100 g
Construction	Weather-Proof Enclosure
Microphone Dust Protection	Expanded polytetrafluoroethylene (ePTFE) dust and water barrier
Battery Type	Integral Li-Poly - USB-Rechargeable
Recharge Time	2 H 30 (Typical)
Battery Autonomy (Full- Charge)	7 days while recording
Battery Life	> 300 Charge/Discharge Cycles
WiFi Security	<ul style="list-style-type: none"><li>• Open</li><li>• WEP</li><li>• WPA / WPA2</li></ul>
Server Connection	<ul style="list-style-type: none"><li>• IP address/Domain Name</li></ul>
Protocol	TCP/IP – Open protocol

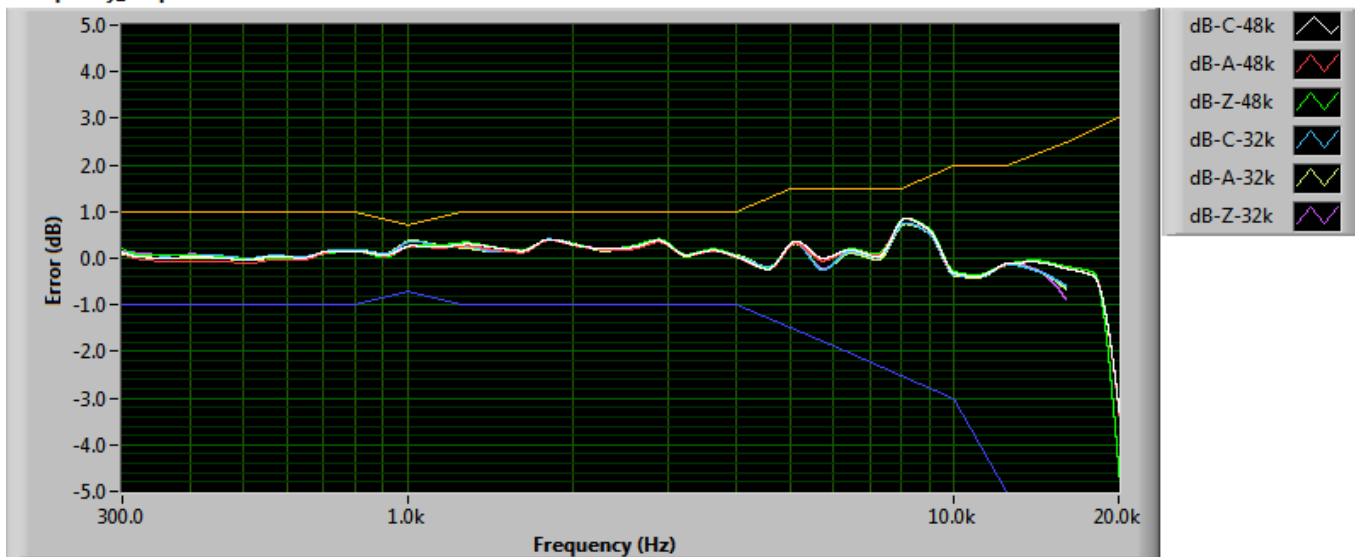
## DATASHEET PLACID PNSRTW Mk.3



### FREQUENCY RESPONSE

Picture below shows the typical spectral error in dB-A, dB-C and dB-Z, at 32 kHz and 48 kHz sampling rate, together with the type I limitlines.

Frequency\_Response Error

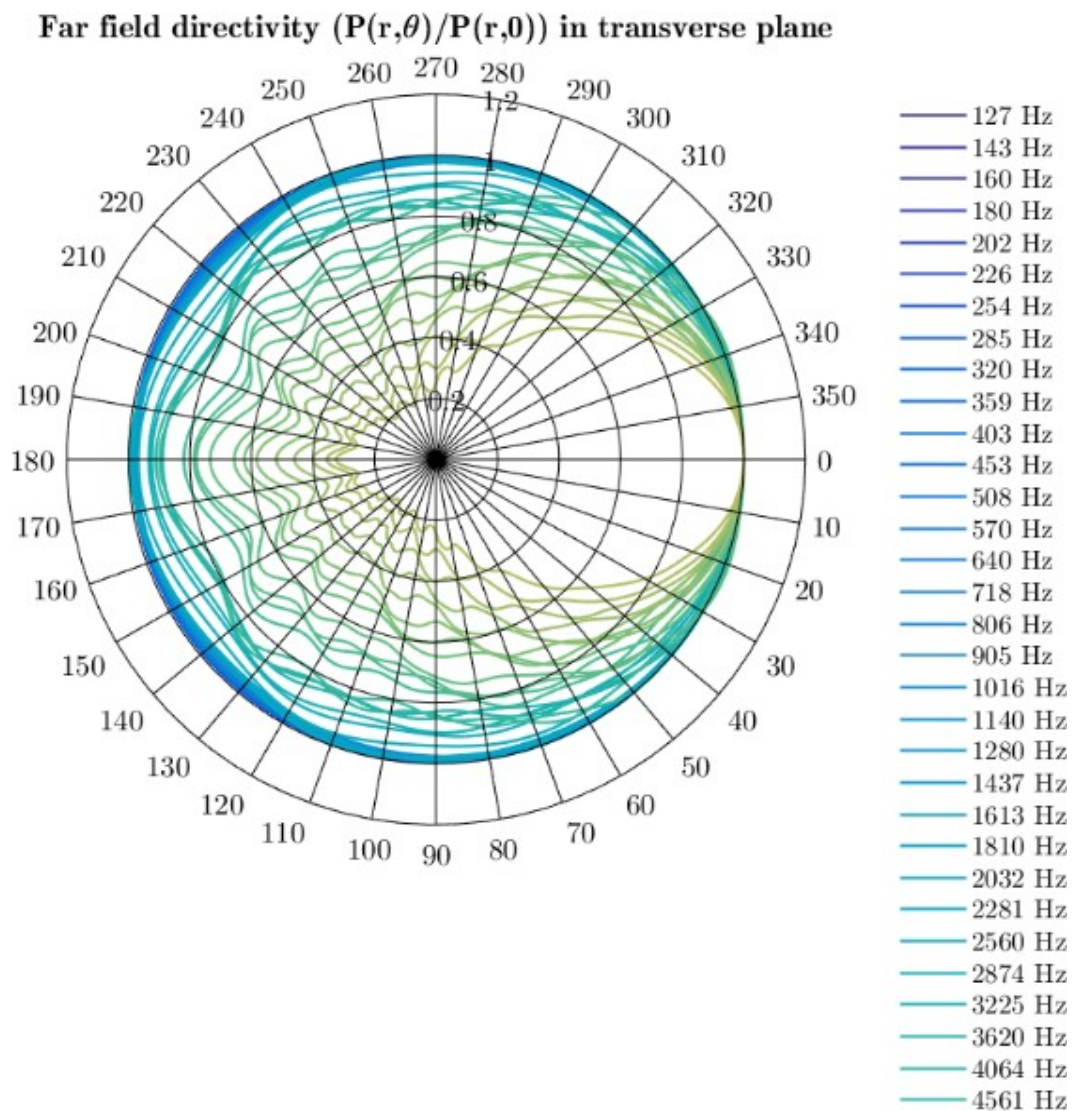


## DATASHEET PLACID PNSRTW Mk.3



### DIRECTIVITY

Picture below shows the directivity of the instrument as a function of frequency





## INSTRUMENT MANAGER APPLICATION SPECIFICATIONS



CATEGORY	SPECIFICATION
Compatibility	Windows 7, Windows 8, Windows10
Supported Instruments	All in Sentry series
Configuration	<ul style="list-style-type: none"><li>• Full Instrument Configuration</li><li>• Save and Recall Configuration Files</li></ul>
Display	<ul style="list-style-type: none"><li>• Real-Time Acoustic Signal</li><li>• Real-Time Sound Level</li></ul>
Record Management	<ul style="list-style-type: none"><li>• Real-Time Spectrum</li><li>• Recorded Sound Levels</li><li>• Global Leq/Dose Calculation (ISO and OSHA methods)</li><li>• Battery Level and Charge</li><li>• All graphs can be viewed in dB or Lin scale</li><li>• Record Manual Start/Stop</li><li>• Record Programmed Start/Stop</li><li>• Recording Memory Download (Even while recording)</li><li>• Recording Memory Clear</li><li>• Auto-Calculation of Memory Depth</li></ul>
Cloud Compatibility	Supported by PLACID Instrument's Cloud Solution
Data Export (all graphs)	Export to Tab-Delimited Format for Use with Spreadsheet Applications



## OTHER APPLICATION



APPLICATION	DESCRIPTION
Noise Sentry RT Community Noise Metrics	Application to calculate various noise metrics, such as CNEL, LDEN, and many others.
NSRT_Recorder	Allows the PNSRTW Mk.3 to be used as a digital high-quality recorder.
Cloud	Web-based cloud solution so that instrument data can be reported and viewed/downloaded from anywhere in the world through Convergence Instruments Cloud service (requires a subscription)
Instrument Listener	Required for WiFi operation when the cloud service is not used. The application must be running on PC to allow instruments to connect and download their data via WiFi.