



System Components Guide

2011 Version 1.0

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GNT GPS Position Solver is used to generate mm level accuracy, GPS position solutions for locations instrumented with **GNT GPS Stations**.



Field version (top) and desktop version (bottom)

Actual model may differ from the one illustrated

Features:

- Preloaded and preconfigured mmVu[®] software
- Low power consumption
- Additional external drive for data backup
- Field or desktop version

Options:

- Remote upgrades (requires internet connection)
- Dual redundancy, online data backup
- UPS
- LCD Monitor Interface

Other Necessary Components:

- Communications connection (LAN or WLAN)
- Power source
- Weather protection



The Field Version of the GNT GPS Position Solver is typically used when power consumption is a concern.

CPU	Intel Atom Z550 2GHz / Z530
Memory	1GB / 2GB DDR2-533 on-board
Storage	Internal 60 GB SSD, external USB HDD
Networking	2x 1000 BaseT Ethernet (based on Realtek RTL8111) 802.11g WLAN (based on RaLink RT3090)
USB	4 USB 2.0 High Speed ports
Serial	RS232 full UART
Operating System	Windows 7 Professional
Case	100% aluminum, die cast body
Dimensions	101 x 115 x 27 mm (4" x 4.5" x 1.05")
Weight	370 grams / 13 ounces – including hard disk
Operating Temperature	-20 – 70 deg C
Power	12V single supply 8-15V tolerant
Power Consumption	6W at low CPU load 8W at full CPU load 1W at standby



The Desktop Version of the GNT GPS Position Solver is typically used when maximum computational power is required.

CPU	Intel Core i5-650 (3.20GHz)
Memory	2GBx2 PC3-10600 DDR3 UDIMM on-board
Storage	Internal 500GB 7200rpm SATA, external USB HDD
Networking	2x 1000 BaseT Ethernet (separate, long range WiFi USB device used)
USB	6 USB 2.0 High Speed ports
Serial	Option
Operating System	Windows 7 Professional
Case	Small form factor (10 L), Chassis Intrusion Switch
Dimensions	101 x 115 x 27 mm (4" x 4.5" x 1.05")
Weight	3 kg (7 lbs)
Operating Temperature	0 – 40 deg C
Power	120 VAC, Energy Star 5.0 Rating
Power Consumption	55W at full CPU load



GNT GPS Stations are used to monitor points of interest and serve as reference stations.



GPS antenna (top) and receiver (bottom)

Actual model may differ from the one illustrated

Features:

- Survey grade, GPS receiver with 1 Hz data rate rate (up to 100 Hz)
- Survey grade GPS Antenna with 3 m cable
- Lightning Arrestor
- Antenna mounting bracket (mounting rod separate)

Options:

- Onboard data storage
- Antenna mounting pole
- Extended length antenna cable

Other Necessary Components:

- Communications connection (LAN or WLAN)
- Power source
- Weather protection
- Antenna mounting hardware

Javad Delta G2T receiver with TriAnt Antenna specifications and recommended configuration.

Storage	64 MB
Signal tracking	GPS L1/L2
Communications	RS232 @115,200 bps (up to 460, 800 bps possible)
Dimensions	109 x 35 x 169 mm (4.29 x 1.38 x 6.65 inches)
Casing	Aluminum
Weight	1 kg (2 lbs)
Operating Temperature	-40 to 80 deg C
Power Consumption	2.7 W, +4.5 to +35 VDC



GNT's [Wifi] option is used to bridge data communications from a GPS Station to a local wireless network.



Serial-to-WiFi device, directional antenna, antenna mounting pole, low-loss antenna cable and lightning arrester.

Actual models may differ from the ones illustrated

Features:

- High gain 12 dB directional antenna
- IEEE 802.11a/b/g network compatible
- Secure data access with WEP, WPA, WPA2
- Lightning protection
- Adjustable antenna mounting pole
- Low-loss LMR-400 antenna cable
- Built-in WLAN site survey tool
- Up to 921.6 Kbps baudrate for RS232-232 transmissions
- TCP, UDP compatible

Other Necessary Components:

- Power source
- Weather protection

[Wifi] specifications

WLAN interface	802.11a/b/g
WLAN Tx Power	802.11a: 14 dBm (typical) 802.11b: 17 dBm (typical) 802.11g: 15 dBm (typical)
WLAN Transmission Distance	Up to 1500 m (in open areas)
WLAN Antenna Connector	N-Type Female
Dimensions	224 x 147.7 x 64.5 mm (8.82 x 5.82 x 2.54 in)
Casing	Metal, IP68 Protection
Weight	0.5 kg (1 lbs)
Operating Temperature	-40 to 75 deg C
Power Consumption	560 mA @ 12 V, 12 to 48 VDC



GNT's AP Stations are used to establish a local WiFi network Access Point for streaming data wirelessly between **GPS Stations** and the **GPS Position Solver**.



Access point, omni-directional antenna, antenna mounting pole, low-loss antenna cable, lightning arrester and power cable

Actual model may differ from the ones illustrated

Features:

- IEEE 802.11a/b/g network compliant access point
- High gain 12 dB omni directional antenna
- PWR, FAULT, STATE, WLAN and LAN LED indicators
- Secure data access with WEP, WPA, WPA2
- Lightning protection
- Adjustable antenna mounting pole
- Low-loss LMR-400 antenna cable
- Supports long distance communications

[AP] specifications

WLAN interface	802.11a/b/g
Regulatory Approvals	<ul style="list-style-type: none">• Safety: EN60950-1, UL60950-1• EMC: EN301 489-1/-17, FCC Part 15, EN55022/55024, IEC61000-6-2/-4• Environmental: EN50155 (Environmental), EN50121-1/-4 (Environmental), Directive 72/245/EEC (for e/E-mark)• Hazardous Location: UL/cUL Class I, Div. 2; ATEX Class I, Zone 2• Radio: EN300 328, EN301 893, ARIB STD-33/T66/T71 (Japan)
WLAN Transmission Distance	Up to 10000 m (in open areas)
WLAN Antenna Connector	Reverse SMA
Dimensions	100 x 111 x 26 mm (3.94 x 4.37 x 1.02 in) with ears, without antenna
Casing	Aluminium
Weight	1.5 kg (3 lbs.)
Operating Temperature	-40 to 75 deg C
Power Consumption	300 mA @ 24 V, 12 to 48 VDC



GNT's [DC] power supply option is used when AC power is available at the project site.



Power Supply

Actual model may differ from the ones illustrated

Features:

- Wide temperature range (-20 to 70 C)
- Short circuit / Overload / Over voltage protection
- LED indicator for power on
- DIN rail mountable
- Cooling by free air convection
- No load power consumption < 0.75W

GNT's [Enclosure] option is used to protect equipment from the weather.



Power Supply

Actual model may differ from the ones illustrated

Features:

- NEMA 4 rated weatherproof enclosure
- Customizable sizes
- Lockable
- Breather kit
- Mounting kit



GNT's [Solar] power supply option is used when AC power is not available at the sensor location.



Actual model may differ from the ones illustrated

Features:

- Customized solar solutions to suit solar exposure of geographic location

GNT's [UPS] options are used to provide power backup for critical monitoring applications.



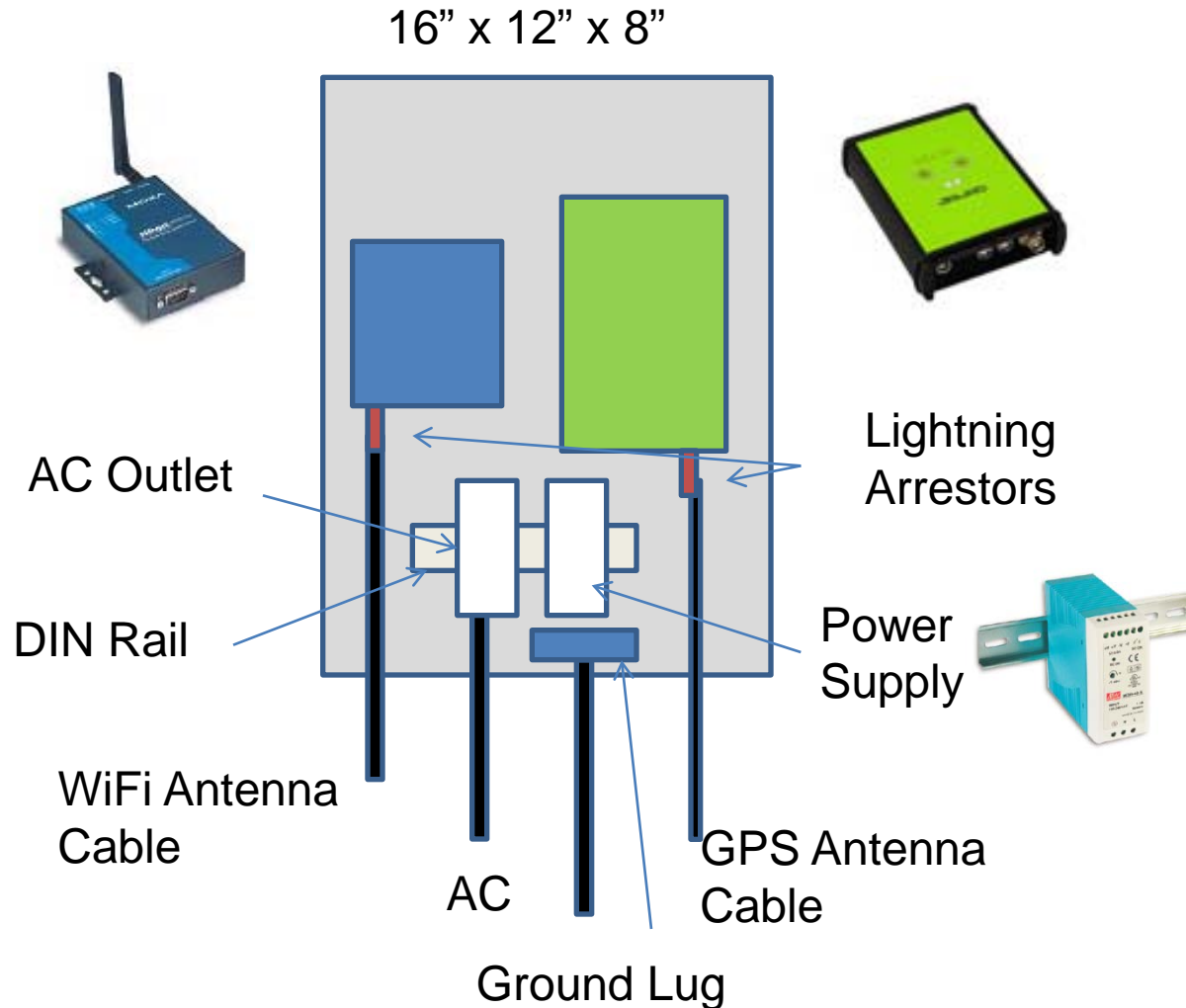
Indoor use UPS, and outdoor use
UPS configuration

Actual model may differ from the
ones illustrated

Features:

- Customizable uninterruptible power supply solutions for indoor and outdoor site locations

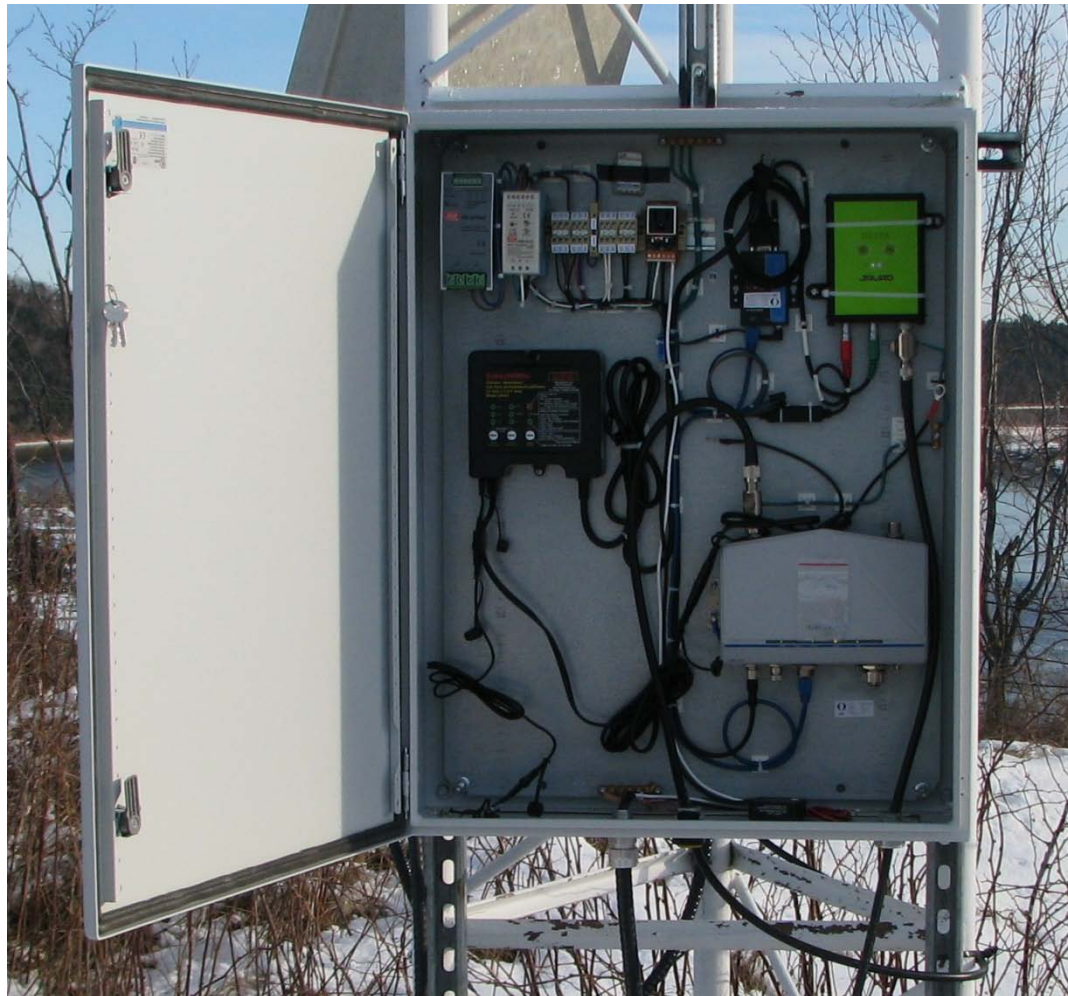
Example GPS Station + WiFi + AC:



Example GPS Station + WiFi + AC:



Example GPS Station + AP + UPS (outdoor Version, Batteries not shown):



Example Solar Components for a 0.785 A system

- KD135GX-LFBS 135W 12V Module, Blue Cells
- UNI-SP/01XH SIDE-OF-POLE W/27.5" SUPPORT
- Solklamp Grounding bolt 6-8 AWG Solid
- Key for MC Solarline 2 Locking Connector
- 30' MC2 Connector Extension #10 AWG
- 1/2" Strain Relief with 2 Round Holes
- 1/2" Strain Relief with 1 Round Hole
- Steel Locknut for 1/2" Strain Reliefs
- MNPV3 Combiner Box
- 15 Amp Din Rail Mount Breaker
- LA302 DC LIGHTNING ARRESTOR
- SUNSAVER SS20L 20A,12V Charge Controller
- BabyBox 4 Slot AC or DC Breaker Panel
- 30 Amp Din Rail Breaker
- 8A31 AGM 105 Ah (20 Hr) AGM Battery
- BATTERY INTERCONNECT CABLE2/0 8" BLK AND RED
- E2-250 2 Battery Enclosure, Screw Cover
- Mounting Brackets (2 to 8" Pole)

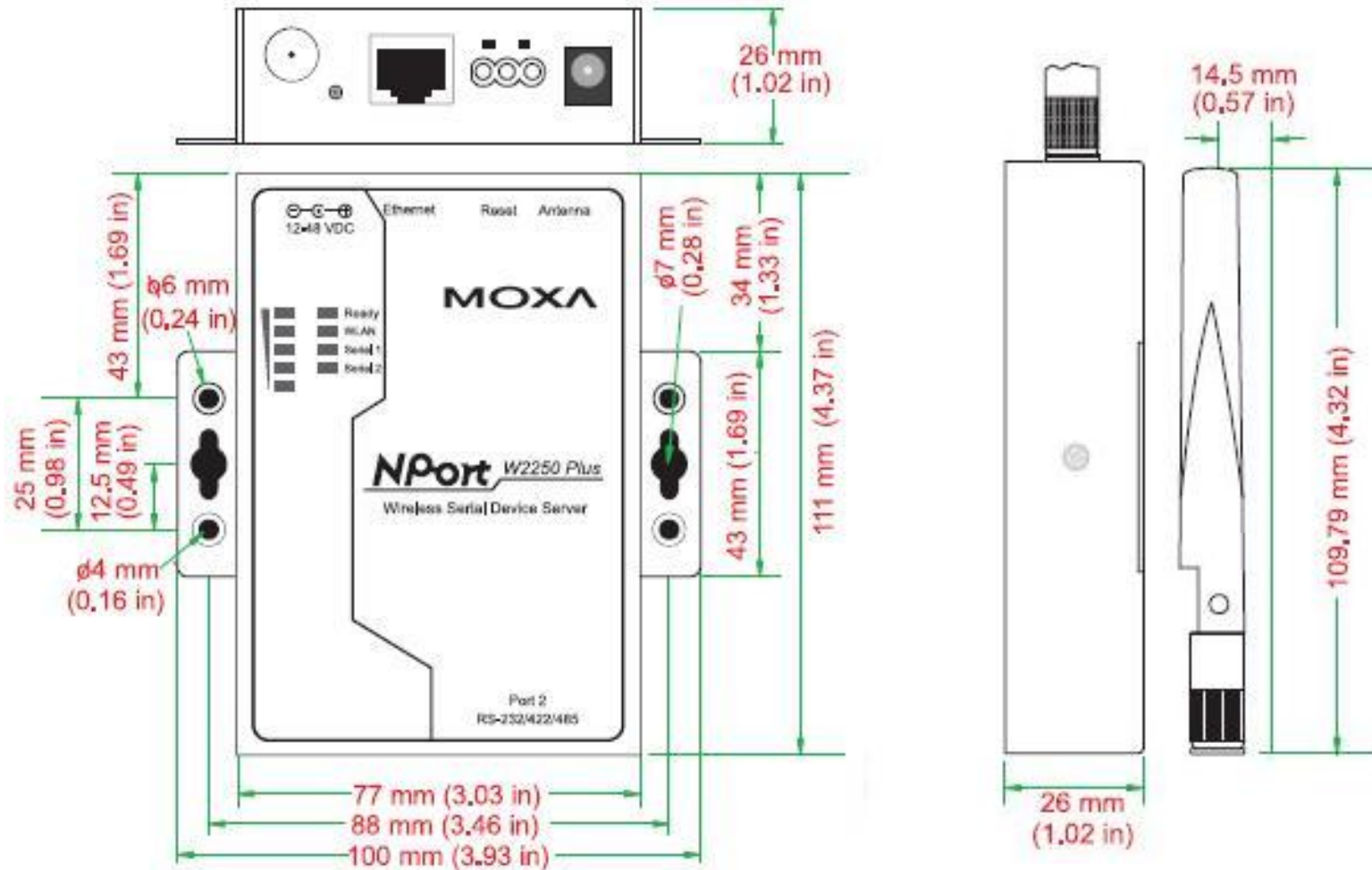
Dimensions



NPortW2150



Dimensions

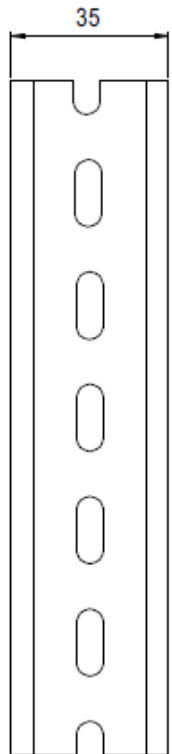


MDR40-24

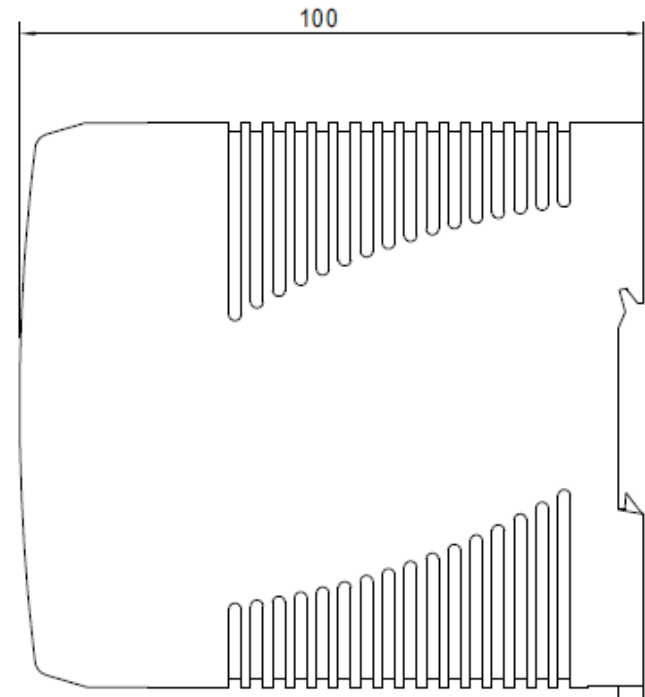
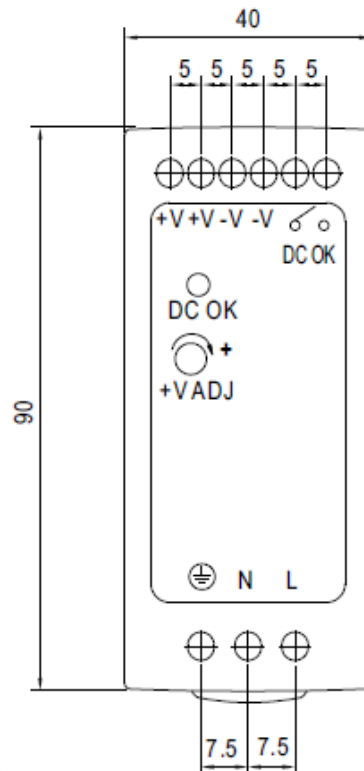


Case No.962A Unit:mm

■ Mechanical Specification



Install DIN rail TS35/7.5 or TS35/15



DR-UPS40

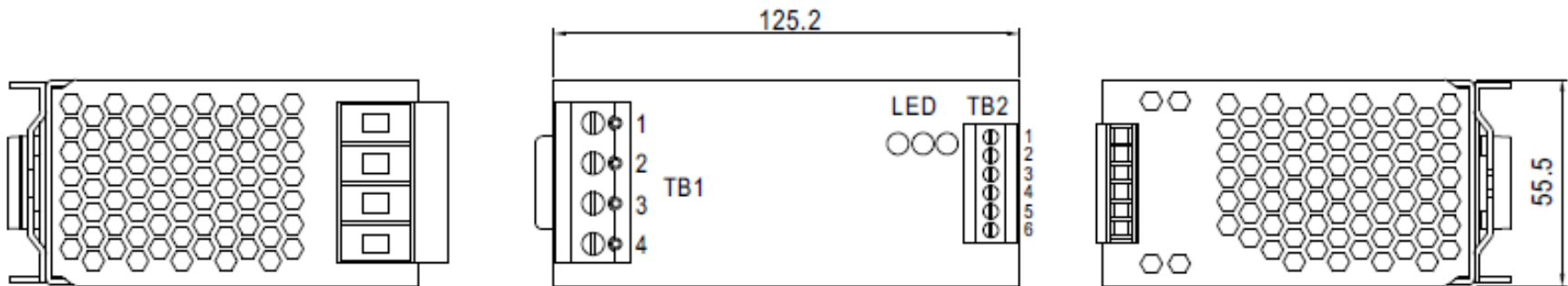
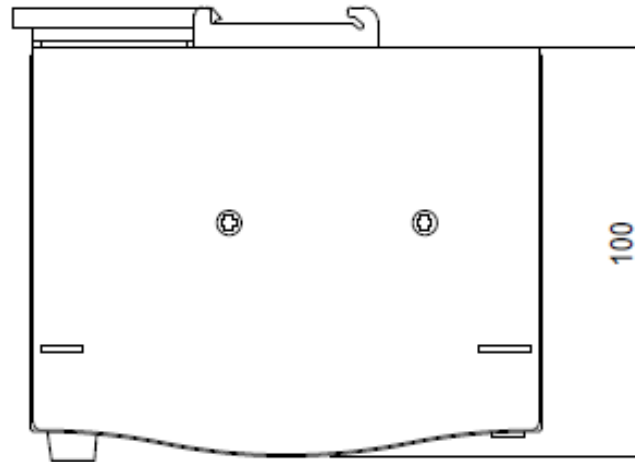


Case No.923D

Unit:mm

■ Mechanical Specification

ADMISSIBLE DIN-RAIL:TS35/7.5 OR TS35/15



Universal AGM 12V 100Ah battery

PHYSICAL SPECIFICATIONS

Length (in.):	12.94" (329 mm)
Width (in.):	9.88" (171 mm)
Height (in.):	6.75" (151 mm)
Weight (lb.):	69 lbs



Universal AGM 12V 18Ah battery

PHYSICAL SPECIFICATIONS

Length (in.):	7.13 (181.1 mm)
Width (in.):	3.00 (76.2 mm)
Height (in.):	6.57 (166.9 mm)
Weight (lb.):	13.10



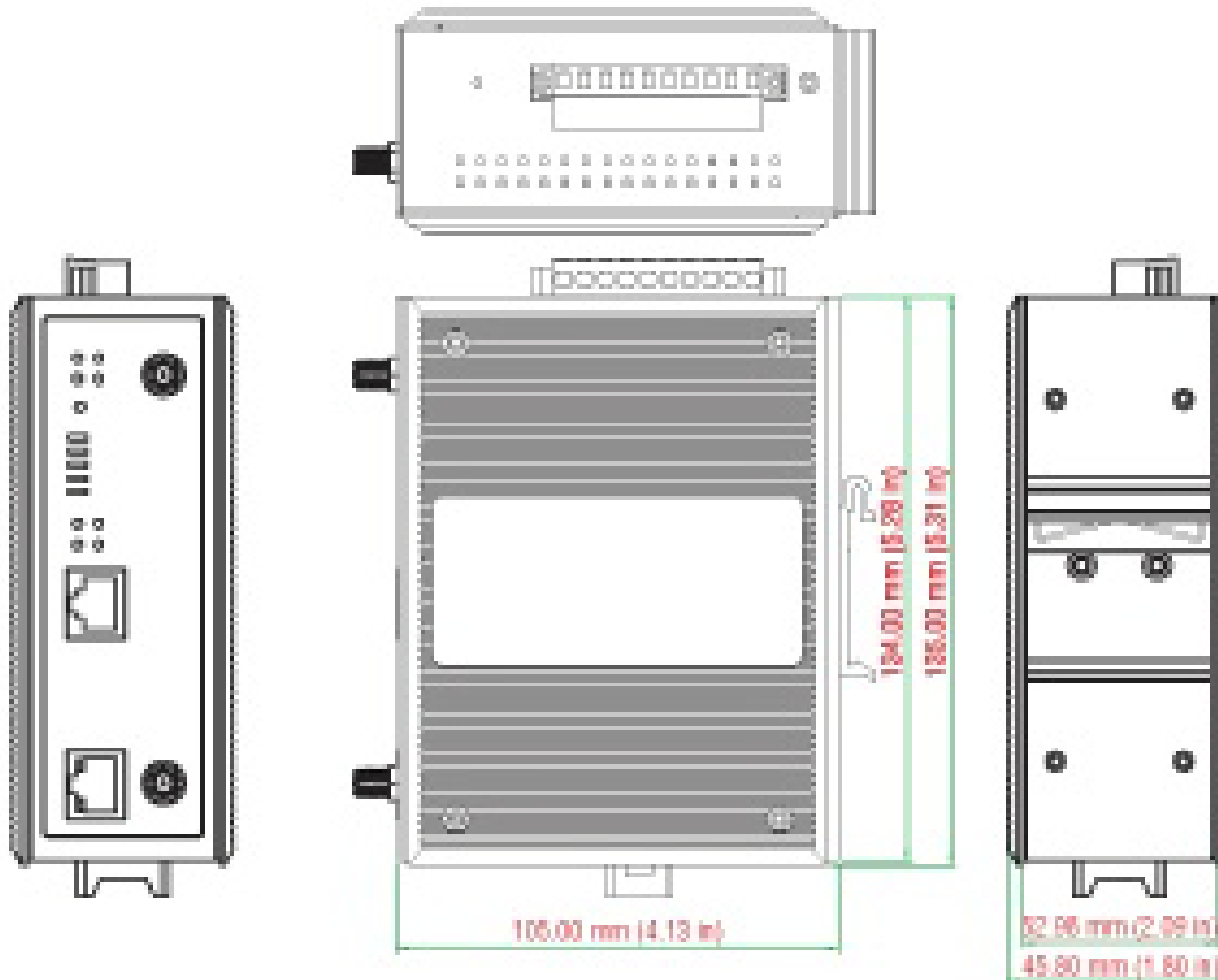
Battery Float Charger



5-1/2" L x 5 1/2" W x 2-1/4" H / 3 lbs.
140 mm x 140 mm x 63.5 mm

AWK-3121

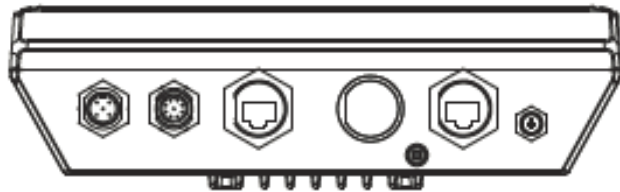
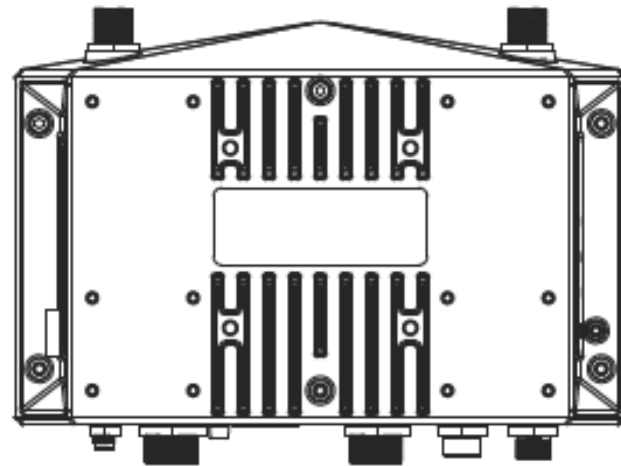
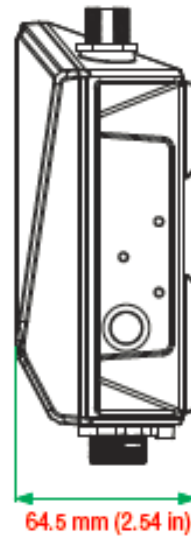
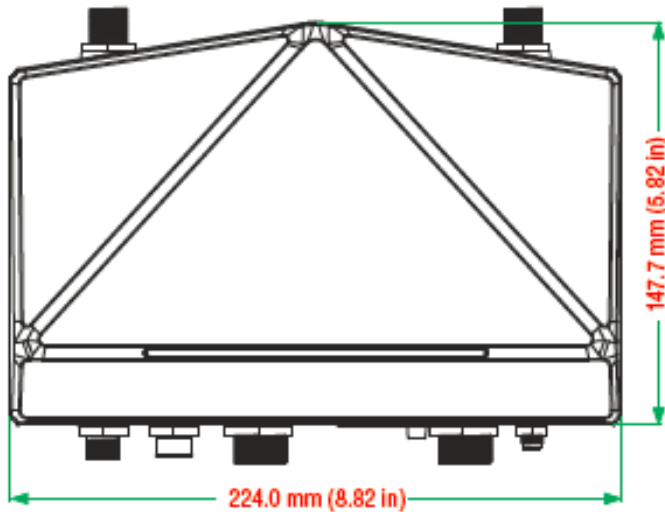
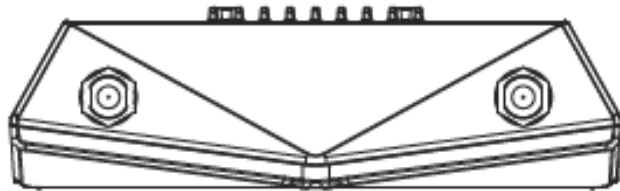
(single RF)



53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)

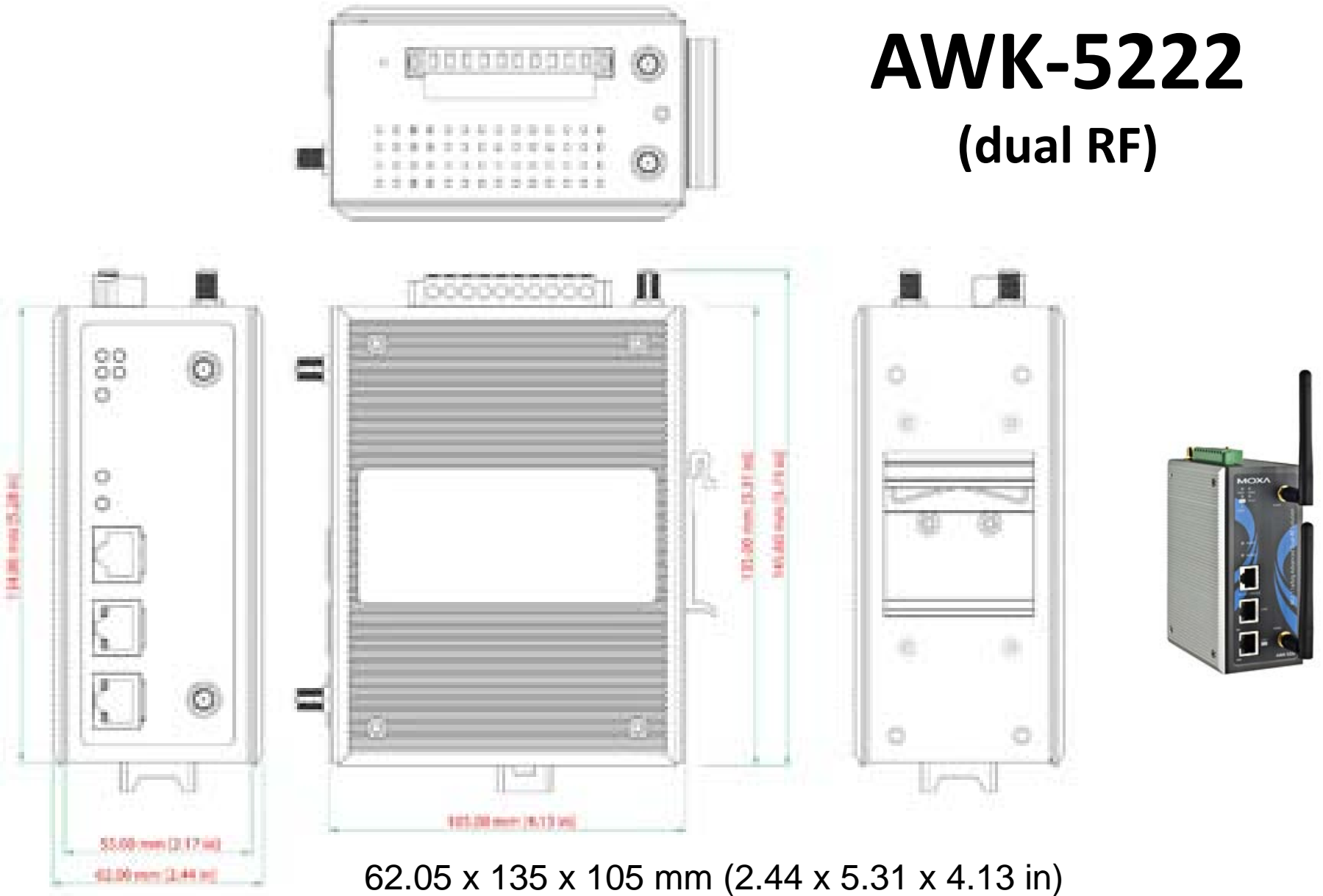


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AWK-5222

(dual RF)



62.05 x 135 x 105 mm (2.44 x 5.31 x 4.13 in)

