



Key Features and Benefits:

Long Range

The WiN5200 has multiple built-in receivers to improve range and NLOS performance. The system has ability to leverage sub-channelization technology to balance links with high power base stations.

Investment Protection

The WiN5200 is built from the ground up by RuggedCom with complete supply chain control and backed by the industry's leading five year warranty.

Robust Design

The RuggedMAX™ WiN5200 series of subscriber units are designed for mission critical applications in harsh environments with very high Mean Time Before Failure.

Quality of Service

RuggedMAX gives the user the ability to separate traffic types over the air, and guarantee latency, minimum bandwidth and jitter according to application needs.

Power Supply options

When combined with RuggedCom's RuggedPower injector series (RP1XX), the WiN5200 offers the industry's leading power supply options with 12, 24, 48, and 88–300 VDC or 85–264 VAC available for a variety of industrial applications

Flexibility

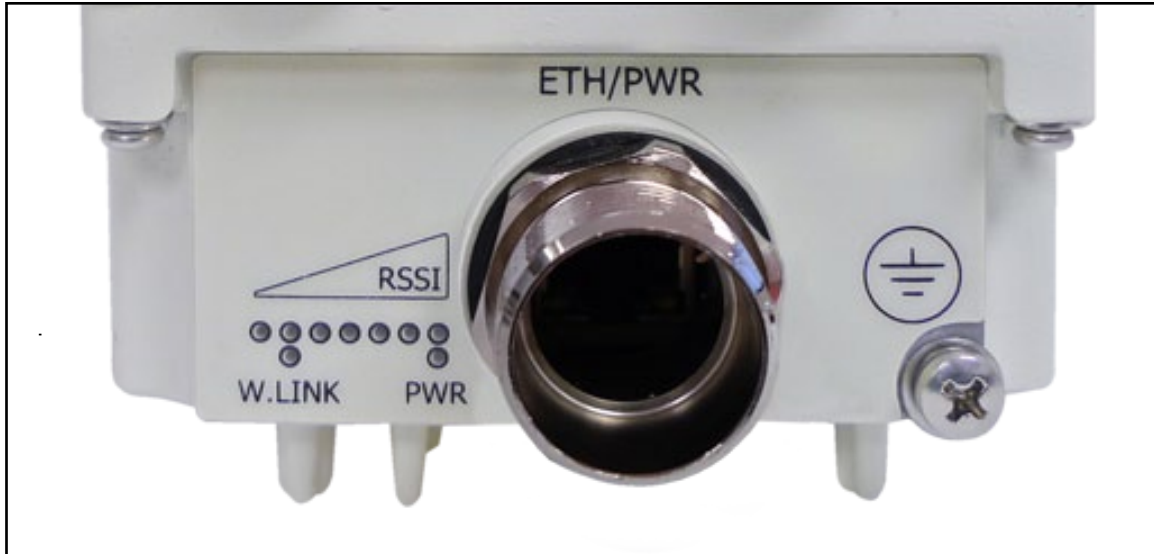
The WiN5200 supports both IP convergence sublayer for wireless internet service providers or Ethernet Convergence Sublayer, ideal for mission critical private networks.

The WiN5200 is a member of the RuggedMAX™ family, a line of mobile WiMAX broadband wireless access systems based on the 802.16e mobile WiMAX standard. WiN5200 is a high-performance outdoor unit that provides complete 802.16e mobile WiMAX broadband wireless access functionality to a range of hardened networking devices by standard Ethernet cable.

The self-learning subscriber unit automatically detects the base station on the best signal available allowing for plug and play installation and maintenance free operation. The automatic switching and monitoring features guarantee on-going operation in changing conditions which results in low maintenance and considerable savings in OPEX.

The WiN5200 is compliant to the IEEE 802.16e standards to effectively meet the unique requirements of the wireless Metropolitan Area Network (MAN) environment and to deliver broadband access services to a wide range of customers. Specifically designed for point-to-multipoint broadband wireless access applications, the WiN5200 provides efficient use of the wireless spectrum, supporting a range of user environments.





Power/Data Interface

The Ethernet CPE is using the following connectors:

- An RJ-45 connector for the Ethernet traffic and power
- Ground connection

The Ethernet and Power connector pin out is detailed in the following table:

Pin	Description
1	Ethernet RX_POSITIVE Signal
2	Ethernet RX_NEGATIVE Signal
3	Ethernet TX_POSITIVE Signal
4	Power 48V_POSITIVE_IN
5	Power 48V_POSITIVE_IN
6	Ethernet TX_NEGATIVE Signal
7	Power 48V_NEGATIVE_IN
8	Power 48V_NEGATIVE_IN

LED	Color	Description
WLNK is ON	Green	CPE is connected with and receives services from the base station; network entry is complete.
WLNK is BLINKING	Green	Link between CPE and base station is down.
PWR is ON	Green	CPE power is good
RSSI: one LED is ON (least significant)	Green	5dB <= SNR < 10dB
RSSI: two LEDs are ON	Green	10dB <= SNR < 15dB
RSSI: three LEDs are ON	Green	15dB <= SNR < 20dB
RSSI: four LEDs are ON	Green	20dB <= SNR < 24dB
RSSI: five LEDs are ON	Green	SNR => 24dB and RSSI < -75dBm
RSSI: six LEDs are ON	Green	SNR => 24dB and RSSI => -75dBm
RSSI: seven LEDs are ON	Green	SNR => 24dB and RSSI => -70dBm
RSSI: eight LEDs are ON	Green	-70dbm < RSSI < -61dbm
RSSI: eight LEDs are ON	LEDs 1-7: Green LED 8: Red	-61dbm <= RSSI < -35dbm
RSSI: only the last LED is ON (most significant)	Red	RSSI => -35dBm (saturation)

Table 2.4. CPE LED Indicators

ANTENNA CHARACTERISTICS

Electrical	WiN5214	WiN5235	WiN5218	WiN5225	WiN5249/ WiN5258
Frequency Range	1.35–1.5 GHz	3.3–3.8 GHz	1.800–1.830 GHz	2.3–2.7 GHz	4.9–6.1 GHz
Gain	10 dBi (min)	17.5 dBi (min) @ 3.3–3.4 GHz 18.0 dBi (min) @ 3.4–3.7 GHz 17.5 dBi (min) @ 3.7–3.8 GHz	12 dBi	18 dBi (2.5–2.7 GHz)	21.0 ± 1.0 dBi @ 4.9 - 5.15 GHz 22.5 ± 0.5 dBi @ 5.15 - 6.1 GHz
3 dB Beamwidth	30° (typ)	15° ± 2°	30°	21°	10°
Polarization	Dual slant linear +- 45 deg.				H/V
F/B Ratio	>30 dB	>30 dB	>25dB	>25dB	-30dB (max)
Lightning Protection	DC Grounded				

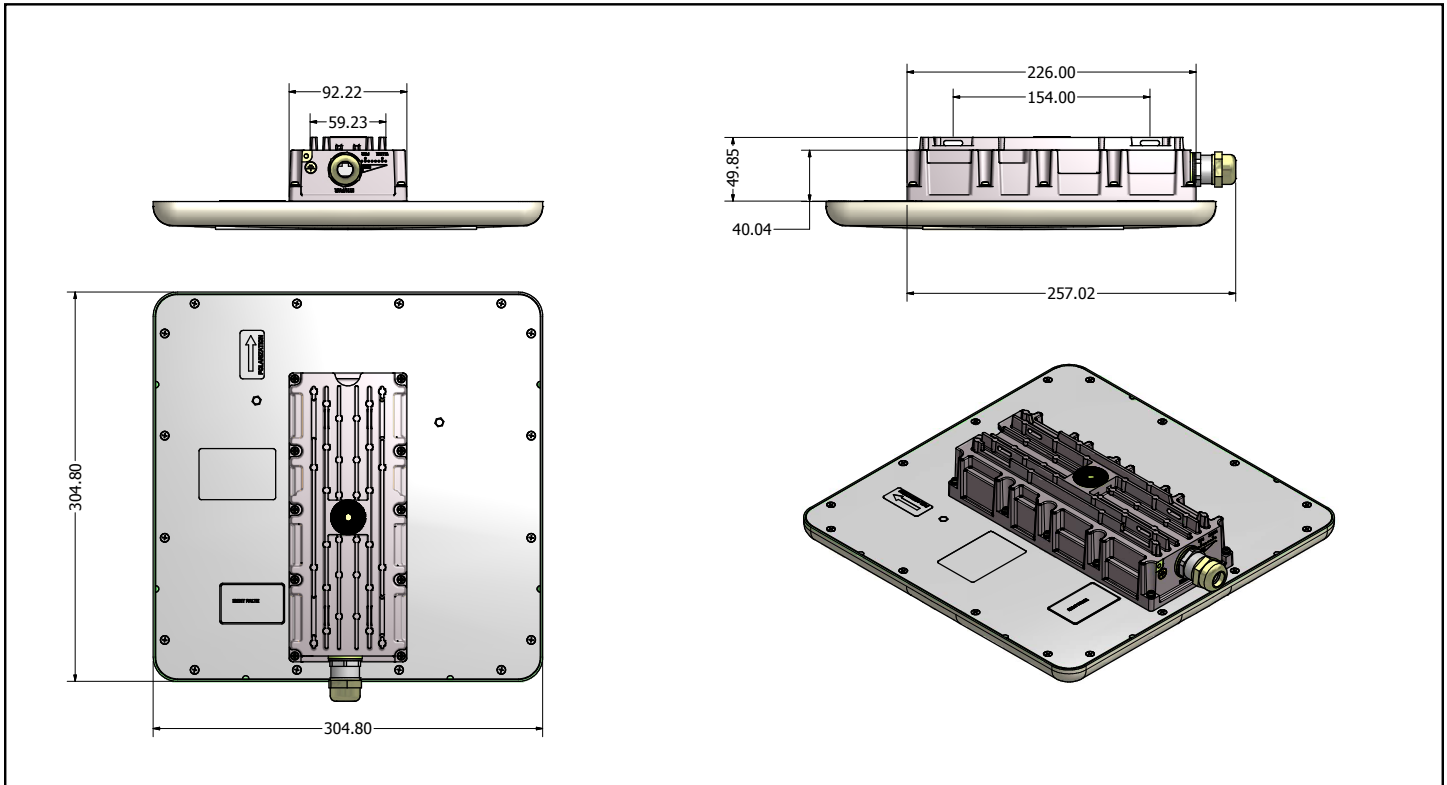
Mechanical

Dimensions (LxWxD)	305x305x25mm	305x305x15mm	305x305x25mm	305x305x25mm	305x305x15mm (max)
Weight	1.2 kg max	1.2 kg max	1.4 kg max	1.2 kg max	1.2 kg max
Radome	Plastic UV Resistant				

Outdoor unit (without antenna)

- Height: 224mm
- Width: 92mm
- Depth: 61mm
- Weight: 1.5Kg

Dimensions



Specifications

Radio and Modem:

Frequency	WiN5214: 1350 MHz to 1525 MHz WiN5218: 1800 MHz to 1830 MHz WiN5223: 2300 MHz to 2400 MHz WiN5225: 2496 MHz to 2690 MHz WiN5235: 3300 MHz to 3600 MHz WiN5237: 3600 MHz to 3800 MHz WiN5249: 4900 MHz to 5000 MHz WiN5258: 5725 MHz to 5850 MHz
Radio Access Method	IEEE802.16-2005 (16e OFDMA)
Operation Mode	TDD
Compatibility	Wave 2 Profile (MIMO)
Channel Bandwidth	3.5 MHz, 5 MHz, 7MHz, 10 MHz
Frequency Resolution	0.25 MHz
Antenna Support	Integrated Dual Slant Antenna
Antenna Diversity Support	STC/MRC/MIMO
Output Power (average)	+27 dBm +/-1dB +24 dBm (4.9-5.0 GHz) +21 dBm +/-1 dB (5.725-5.850 GHz)
TPC	54dB
FFT/Modulation	1024/512 FFT points; QPSK, 16QAM, 64QAM
FEC	Convolutional Turbo Code
Dynamic range	RX: -100dBm:-20 dBm TX: -30dBm: +24 dBm

Data Communication (Through indoor unit):

Ethernet Standard Compliance	IEEE 802.3 CSMA/CD
Ethernet Port	10/100 Mbps, Half/Full Duplex with Auto Negotiation
Traffic Classification:	DSCP/IP TOS field IP Protocol/Next Header field IP masked Source Address IP Destination Address Protocol source port range Protocol destination port range Source MAC address (SA mode) Destination MAC address (SA mode) VLAN ID (SA mode) Ethertype (SA mode)
Max User Throughput	DL: 20Mbps, UL: 15Mbps

Indoor Unit (ETH) Compatibility:

WiN1010	Data Adapter
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RP100

RuggedPower Injector supporting 10–60 or 88–300VDC or 85–264VAC

RP110

Supporting embedded serial protocols

(refer to RP1XX datasheet for more details)

Configuration and Management:

Local Management	<ul style="list-style-type: none"> • Web Browser-HTTPS • SSHv2 • RADIUS based authentication
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Remote Management

SNMPv3 Client	
Authentication	EAP-TTLS, EAP-TLS (4.2.1): Device: X509 digital certificate
Software Upgrade	SFTP

Mechanical, Electrical and Environmental:

Dimensions <small>(w/o the antenna)</small>	224 x 92 x 61 mm
Weight	1.5 kg
Power Source	48VDC from the indoor unit over the indoor-outdoor cable
Power Consumption	8W typical
Operating Temperature	-40°C to +75°C
Operating Humidity	5%-95% non condensing

Standards Compliance:

EMC	FCC part 15, subpart B, class B ETSI EN 301489-1/4
Safety	TUV-UL 60950-1 EN 60950-1 CSA C22
Radio	FCC Part 27 FCC Part 90 FCC Part 15 ETSI EN 302 326-1/2/3 RS197 SRSP 301.7 issue 2
Environmental	ETS 300 019
Hazardous Locations:	Class 1 Div 2 (UL 1604, CSA 22.2 No213- M1987) ATEX Zone 2 (EN60079-0, EN60079-15)
Ingress Protection:	IP67
Corrosion:	MIL-STD-810F 509.4 - salt fog

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