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Technologies

CONNECTED BUS

Wavecom Road-Ready Routers

WaveOnRoad Series - 4G and 5G Variants

Technical Specifications

Main features

Centralized Management	WaveOS operating system reporting to the Wavecom IoT Manager – a centralized Web-based platform set up to manage Wavecom routers and connected devices
Modular architecture	Combine any type of wireless modules in one equipment – an onboard router / server with a x86 architecture (AMD CPU @ 1GHz) with at least 2GB RAM and 16 GB SSD storage by default
Multiple WAN	Intelligent algorithm for load-balancing of multiple cellular WANs
GNSS	Embedded GPS (for management, tracking, and IoT)
Storage	Up to 256GB, solid state drive
Expansion	USB3.0 host interface RS-232/485 serial interface Analog/digital IOs

Management aspects

Local	Serial RS232 (DB9), SSH and WEB GUI (HTTP/HTTPS)
Remote	SSH and WEB GUI (HTTP and HTTPS), Management HTTP API, SNMP (v1, v2c, v3), centralized management platform (Wavecom IoT Manager)
Other	Linux based hardware monitor status - Temperature, CPU, RAM, network and cellular interface statistics, Geolocation, gateway operational status

Functional extensions

Optional features	Virtualization tools Integration with people counter solution, Origin-Destination Matrix ITxPT standards compliance Integration with Checkpoint nano agent

Networking

Wireless Security	64-bit and 128-bit WEP encryption, WPA/WPA2 Personal and Enterprise (TKIP, AES and IEEE 802.1x/RADIUS based authentication)
Gateway features	IPv4/IPv6, TCP/UDP, ARP, ICMP, DDNS, DHCP Server/Client/Relay, DNS Server/Client/Relay, NTP, MQTT
Routing and Switching	Static and Dynamic (BGP, OSPF v2, RIP v1/v2) Spanning Tree Protocol (STP)
VPN	GRE, IPSec, OpenVPN, PPTP/L2TP
Firewall	NAT, Port Forwarding, Traffic Rules, MAC filtering
VLAN	Management VLAN Access and Trunk modes, including support on radio interfaces in any operation mode.
Other	Cellular load balancing aggregation mechanism

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Typical configurations for transportation

WLAN radios (Wi-Fi)	Two independent radios are normally proposed (both in Access Point Mode)
WWAN modems (4G / 5G)	Two modems are normally used (two data SIM cards / Telcos)

WLAN (Wi-Fi) radio specifications

MIMO	2x2
Modulation	OFDM with BPSK, QPSK, DBPSK, DQPSK, 16-QAM, 64-QAM, 256-QAM
Frequency	2412 – 2472 MHz / 5180 – 5825 MHz
Channel Size	20, 40, 80, 160 MHz
Data Rate	IEEE 802.11a up to 54Mbps IEEE 802.11b up to 11Mbps IEEE 802.11g up to 54Mbps IEEE 802.11n up to 300 Mbps @ 40 MHz IEEE 802.11ac up to 867 Mbps @ 80 MHz IEEE 802.11ac Wave 2 up to 1733Mbps @ 160 MHz
Transmission Power	20 dBm @ 2.4 GHz 19 dBm @ 5 GHz (per chain)
Sensitivity @ 20MHz	-96 dBm @ 2.4 GHz -91 dBm @ 5 GHz
Other	Dynamic Frequency Selection (DFS) Automatic Transmit Power Control (ATPC)

WWAN 4G modem specifications

MIMO	2x2
Bands	LTE FDD: B1/B3/B5/B7/B8/B20/B28/B32 LTE TDD: B38/B40/B41 WCDMA: B1/B3/B5/B8
Data Rates	LTE (Cat. 6): 50 / 300 Mbps (Up/Downlink) DC-HSPA+: 6 / 43 Mbps (Up/Downlink) WCDMA: 384 / 384 Kbps (Up/Downlink)

WWAN 5G modem specifications

MIMO	4x4
Bands	5G Sub-6G (SA): n1/n3/n5/n7/n8/n12/n20/n28/n38/n40/n41/n48/n71/n77/n78/n79 5G Sub-6G (NSA): n1/n3/n7/n20/n28/n41/n77/n78/n79 LTE FDD: B1/B3/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B26/B28/B29/B71 LTE TDD: B34/B38/B39/B40/B41/B42/B43/B48 WCDMA: B1/B3/B5/B8
Data Rates	5G Sub-6G: 0.5 / 2.4 Gbps (Up/Downlink) LTE: 0.2 / 1 Gbps (Up/Downlink) HSPA+: 6 / 42 Mbps (Up/Downlink)

WaveOnRoad Series - 4G and 5G Variants

Physical specifications

Dimensions	178mm x 82mm x 174mm (common 4G and 5G variants)
Weight	1.6 Kg (approx.)
Enclosure	Aluminum, fanless design, no moving parts
Connectors	Up to 9 RP/SMA-Female connectors Up to 3 10/100/1000Base-T interfaces 1 DB9 for RS232 management interface 12-pin connector for 1 RS232/RS485 interface and 2 analog and 4 digital IOs Lockable DC Plug Dual USB3.0 ports
Installation	DIN-rail mounting Wall mounting

Environmental specifications

Operating temperature	-30°C to 70°C
Storage temperature	-40°C to 85°C
Humidity (non-condensing)	10% to 95%
MTBF	> 250.000 h

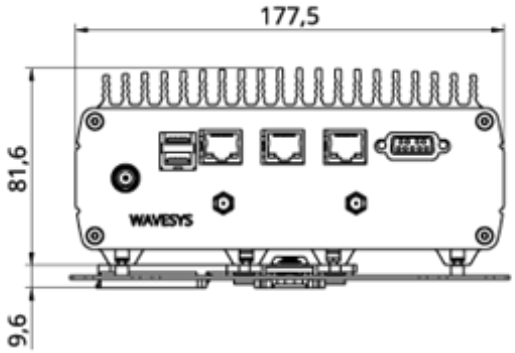
Power Consumption

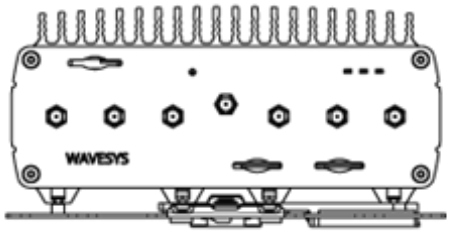
Input voltage	9 - 36 VDC

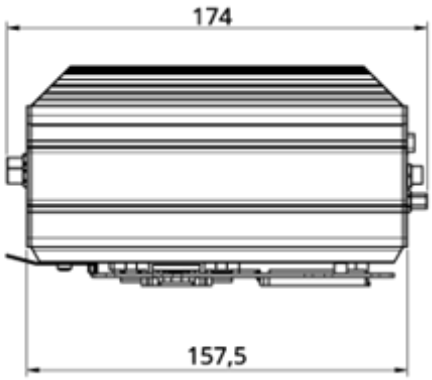
Safety Standards

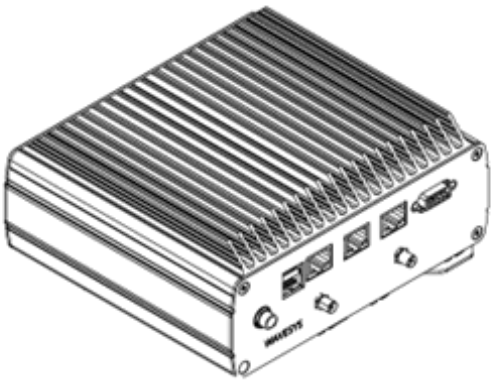
Radio	EN 300 328, EN 301 893
EMC	EN 301 489-1/17
Safety	EN 60950-1

(measurements in mm, 4G variant used as reference)









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About Us

Wavecom has been in the field for 20 years with a solid know-how and expertise in wireless and IP-based systems and applications.

We understand about the integrators' challenges and our goal is to equip them with the indispensable technology, insights, advice and tools to help them to achieve their most pressing objectives.

With our capacity for innovation and knowledge of integrator's activity, we can improve people's quality of life through the products we manufacture.

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