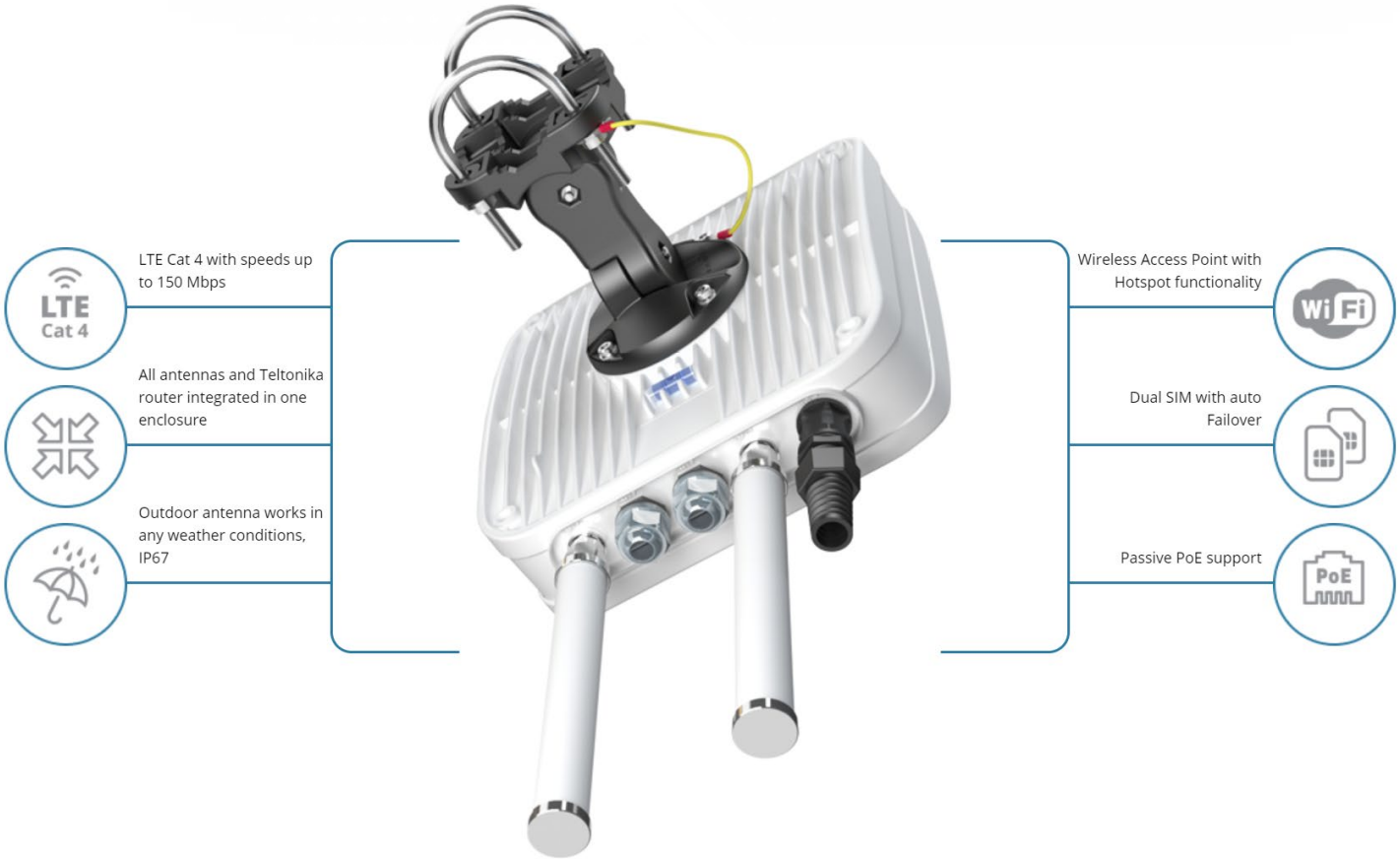
QuRouter 950M

QuRouter 950M is a professional industrial LTE Cat 4 & Wi-Fi router for IoT applications. Integrated with high power directional LTE antenna and Wi-Fi omnidirectional antennas. This rugged device delivers high performance cellular communication in harsh environments and a wide operating temperature range. The router is equipped with 4G connectivity redundancy through dual SIM failover.



OUTDOOR

Use LTE router wherever you want

ANTENNA

Maximize your signal with QuWireless antennas

SOLUTION

It is all-in-one, you are good to go

MOBILE

Mobile module	4G (LTE) – Cat 4 up to 150 Mbps, 3G – Up to 42 Mbps, 2G – Up to 236.8 kbps
Supported frequency bands	**4G (LTE-FDD):** B1 (2100 MHz), B3 (1800 MHz), B7 (2600 MHz), B8 (900 MHz), B20 (800 MHz), B28A (700 MHz) **3G:** B1 (2100 MHz), B8 (900 MHz) **2G**: B3 (1800 MHz), B8 (900 MHz) • **Other supported bands on demand** – please ask us
SIM switch	2 SIM cards, auto-switch cases: weak signal, data limit, SMS limit, roaming, no network, network denied, data connection fail, SIM idle protection
Bridge mode	Direct connection (bridge) between mobile ISP and device on LAN
Status	Signal strength, SINR, RSRP, RSRQ, Bytes sent/received
SMS	SMS status, SMS configuration, send/read SMS via HTTP POST/GET, Email to SMS, SMS to Email, SMS to HTTP, SMS to SMS, SMS auto reply, scheduled SMS, SMPP
Black/White list	Operator black/white list
Multiple PDN (optional)	Possibility to use different PDNs for multiple network access and services
Band management	Band lock, Used band status display

WIRELESS

Wireless mode	IEEE 802.11b/g/n, Access Point (AP), Station (STA)
WiFi	WPA2-Enterprise (with external/internal Radius server), WPA2-PSK, WPA-PSK, WEP, MAC Filter
WiFi security	WPA2-Enterprise - PEAP, TLS, TTLS, AES-CCMP, TKIP, Auto Cipher modes, Client separation
SSID	SSID stealth mode and access control based on MAC address
WiFi users	Up to 100 simultaneous connections
Wireless Hotspot	Captive portal (Hotspot), internal/external Radius server, built in customizable landing page

ETHERNET

WAN	1 x WAN port (can be configured to LAN) 10/100 Mbps, comply IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX
LAN	3 x LAN ports, 10/100 Mbps, comply IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX

NETWORK

Routing	Static routing, Dynamic routing (Optional - BGP, OSPF v2, RIP v1/v2)
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, FTP, SMTP, SSL v3, TLS, ARP, VRRP, PPP, PPPoE, UPnP, SSH, DHCP, Telnet, SMNP, MQTT, Wake On Lan (WOL)
VoIP passthrough support	H.323 and SIP-alg protocol NAT helpers, allowing proper routing of VoIP packets
Connection monitoring	Ping Reboot, Wget reboot, Periodic Reboot, LCP and ICMP for link inspection
Firewall	Port forward, traffic rules, custom rules
DHCP	Static and dynamic IP allocation, DHCP Relay
QoS	Traffic priority queuing by source/destination, service, protocol or port, WMM, 802.11e
DDNS	Supported >25 service providers, others can be configured manually
Network backup	VRRP, Mobile and Wired WAN options, each of which can be used as an automatic Failover
Load balancing	Balance Internet traffic over multiple WAN connections
NetSnapper (optional)	Mobile connection management, data compression VPN client (not available in standard FW)
SSHFS (optional)	Possibility to mount remote file system via SSH protocol (not available in standard FW)

SECURITY

Authetication	Pre-shared key, digital certificates, X.509 certificates
Firewall	Pre-configured firewall rules can be enabled via web-ui, unlimited firewall configuration via CLI; DMZ; NAT; NAT-T
Attack prevention	DDOS prevention (SYN flood protection, SSH attack prevention, HTTP/HTTPS attack prevention), port scan prevention (SYN-FIN, SYN-RST, X-mas, NULL flags, FIN scan attacks)

WiFi security	WPA2-Enterprise – PEAP, EAP-TLS, TLS, TTLS. AES-CCMP, TKIP, Auto Cipher modes, Client separation
VLAN	Port based and tag based VLAN separation
Mobile quota control	Set up custom data limits for the SIM card
WEB filter	Blacklist for blocking out unwanted websites, Whitelist for specifying allowed sites only
Access control	Flexible access control of TCP, UDP, ICMP packets, MAC address filter

MODBUS TCP SLAVE

ID range	1-255

MODBUS TCP MASTER

Supported functions	01, 02, 03, 04, 05, 06, 15, 16
Supported data formats	8 bit: INT, UINT; 16 bit: INT, UINT (MSB or LSB first); 32 bit float (Big endian, Big endian with byte-swapped, Little endian, Little endian with byte-swapped)

VPN

OpenVPN	Multiple clients and a server can run simultaneously, 12 encryption methods
OpenVPN Encryption	DES-CBC, RC2-CBC, DES-EDE-CBC, DES-EDE3-CBC, DESX-CBC, BF-CBC, RC2-40-CBC, CAST5-CBC, RC2-64-CBC, AES-128-CBC, AES-192-CBC, AES-256-CBC
IPsec	IKEv1, IKEv2, supports up to 4 x VPN IPsec tunnels (instances), with 5 encryption methods (DES, 3DES, AES128, AES192, AES256)
GRE	GRE tunnel
PPTP, L2TP	Client/Server instances can run simultaneously
Stunnel	Proxy designed to add TLS encryption functionality to existing clients and servers without any changes in the program's code
SSTP	SSTP client instance support

MONITORING & MANAGEMENT

WEB UI	HTTP/HTTPS, status, configuration, FW update, CLI, troubleshoot, event log, system log, kernel log
FOTA	Firmware update from server, automatic notification
SSH	SSH (v1, v2)
SMS	SMS status, SMS configuration, send/read SMS via HTTP POST/GET

TR-069 (optional)	OpenACS, EasyCwmp, ACSLite, tGem, LibreACS, GenieACS, FreeACS, LibCWMP, Friendly tech, AVSystem
SNMP	SNMP (v1, v2, v3), SNMP trap
JSON-RPC	Management API over HTTP/HTTPS
MQTT	MQTT Broker, MQTT publisher
MODBUS	MODBUS TCP status/control
RMS	Teltonika Remote Management System (RMS)

SYSTEM CHARACTERISTICS

CPU	Atheros Wasp, MIPS 74Kc, 550 MHz
RAM	128 MB, DDR2
FLASH memory	16 MB SPI Flash

FIRMWARE / CONFIGURATION

WEB UI	Update FW from file, check FW on server, configuration profiles, configuration backup, restore point
FOTA	Update FW/configuration from server
RMS	Update FW/configuration for multiple devices
Keep settings	Update FW without losing current configuration

FIRMWARE CUSTOMIZATION

Operating system	RutOS (OpenWrt based Linux OS)
Supported languages	Busybox shell, Lua, C, C++
Development tools	SDK package with build environment provided

INPUT/OUTPUT

Input	1x Digital Input
Output	1x Digital Output
Events	SMS, Email, RMS

POWER

Connector	4 pin industrial DC power socket (inside QuRouter enclosure, no access from outside of the product, to get access please install additional QuPS4)
Input voltage range	9 – 30 VDC (4 pin industrial socket), reverse polarity protection; surge protection >31 VDC 10us max
PoE (passive)	Passive PoE over spare pairs. Possibility to power up through LAN port, not compatible with IEEE802.3af and 802.3at standards
Power consumption	< 2 W idle, < 7 W Max
PSU included	24V 0.8A Passive PoE with EU or UK or US power cord (QuPSU P248)

PHYSICAL INTERFACES (PORTS, LEDS, BUTTONS, SIM)

Ethernet	4 x RJ45 ports, 10/100 Mbps (1x RJ45 with Passive PoE outside enclosure, 3x RJ45 inside enclosure - access from outside of QuRouter is possible after install additional QuRJ45)
I/O's	2 Inputs/Outputs pin on 4 pin power connector (available from HW revision 1600) (access to INPUT/OUTPUT connector after open enclosure of QuRouter or install QuGland / QuPS4 which is not included in set)
Status LEDs	Not visible from outside of enclosure, 1 x bi-color connection status LED, 5 x connection strength LEDs, 4 x LAN status LEDs, 1 x Power LED
SIM	2 x SIM slots (Mini SIM - 2FF), 1.8 V/3 V, external SIM holders
Power	Passive PoE power support and 4 pin DC connector inside enclosure (to get access please install additional QuPS4)
Input/Output	2 programmable Inputs/Outputs
Reset	Factory reset button (no access from outside of enclosure, to get access please install additional QuRST)

LTE ANTENNA SPECIFICATION

FREQUENCY	0.694-0.96 GHz 1.7 - 2.2 GHz 2.2 - 2.7 GHz
Supported LTE bands	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 25, 26, 27, 28, 29, 30, 33, 34, 35, 36, 37, 38, 39, 40, 41, 44, 53, 65, 66, 67, 68, 69, 70, 71, 85
GAIN	0.694 - 0.96 GHz : 2 dBi 1.7 - 2.2 GHz : 2 dBi 2.2 - 2.7 GHz : 4 dBi
VSWR	<1.60, max <2.00
BEAMWIDTH	360°/35° ±5°
POLARIZATION	Vertical
IMPEDANCE	50 Ω

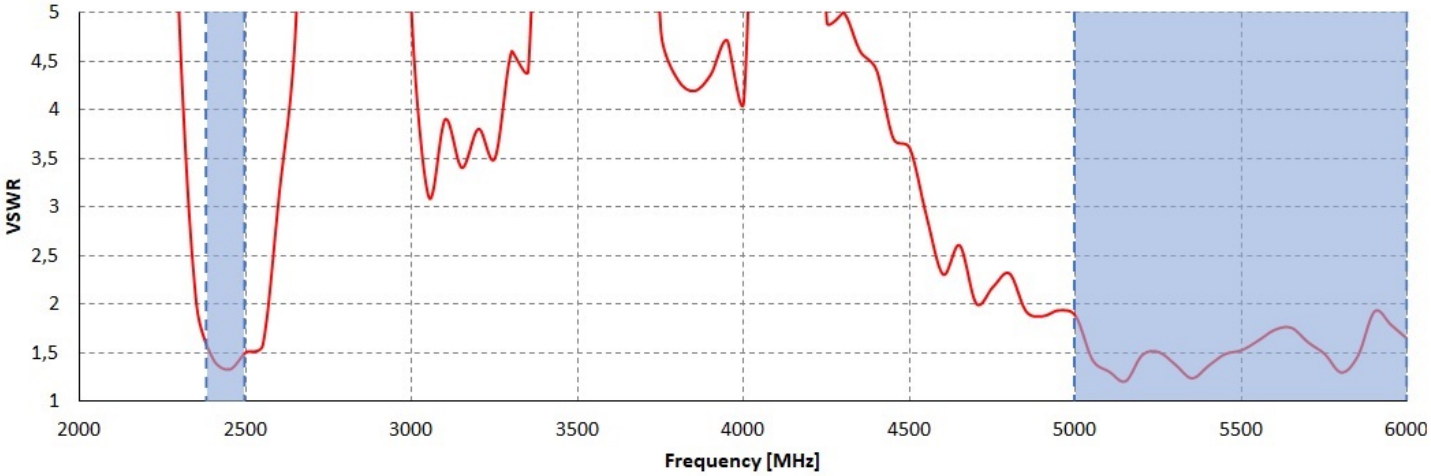
WI-FI ANTENNA SPECIFICATION

FREQUENCY	2.40 - 2.50 GHz
GAIN	6 dBi
VSWR	<1.70, max <2.00
BEAMWIDTH	360°/25° ±5°
POLARIZATION	Vertical
IMPEDANCE	50 Ω

MECHANICAL SPECIFICATION

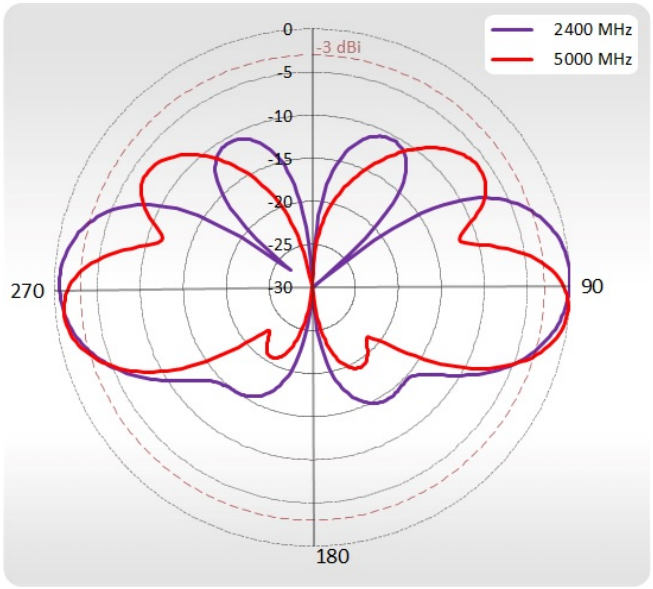
MATERIALS	ABS, aluminum, Fiberglass, galvanized steel
INGRESS PROTECTION	IP67
DIMENSIONS	272 x 276 x 96 mm 10.71 x 10.87 x 3.78 inch
WEIGHT	1.88 kg 4.15 lbs
OPERATING TEMPERATURE	From -40°C to 75°C From -40°F to 167°F

WI-FI VSWR

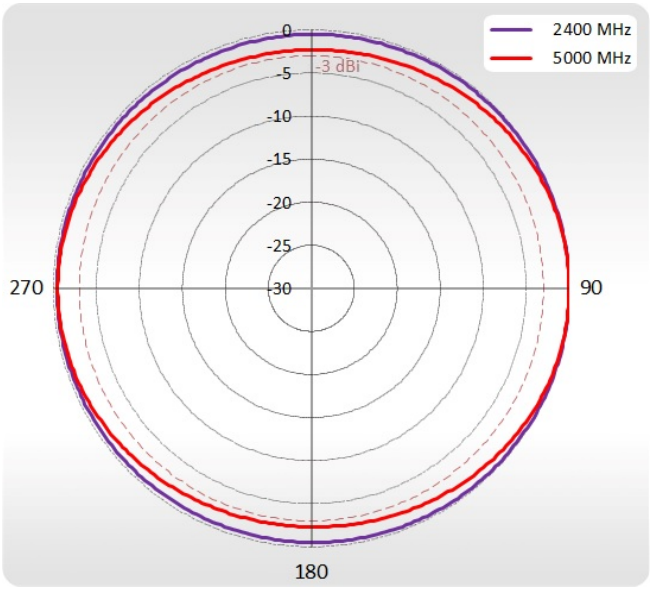


WI-FI PLOTS

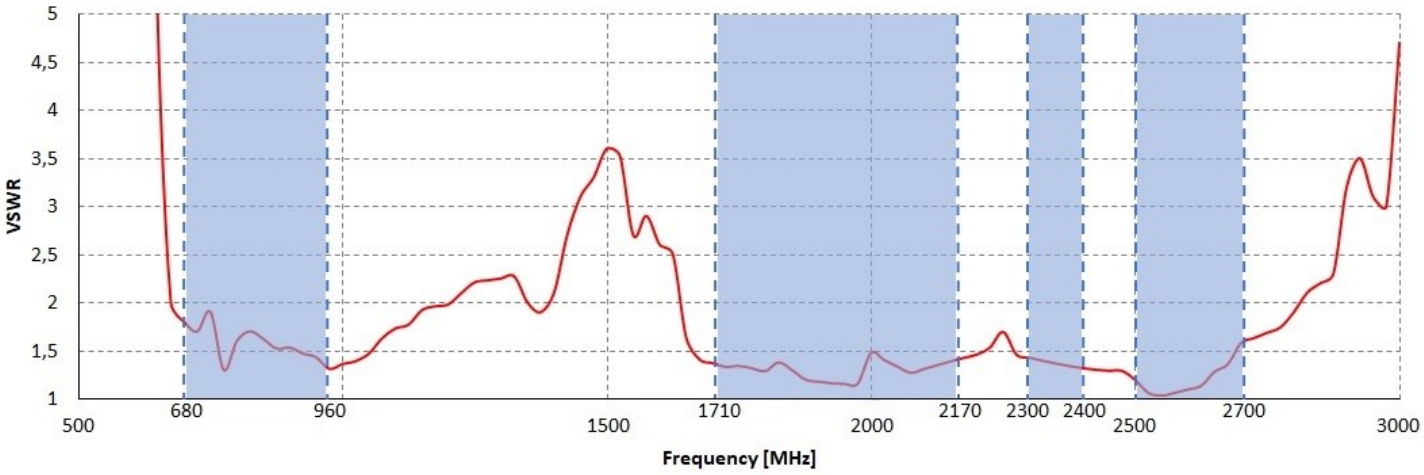
WI-FI Azimuth



WI-FI Elevation

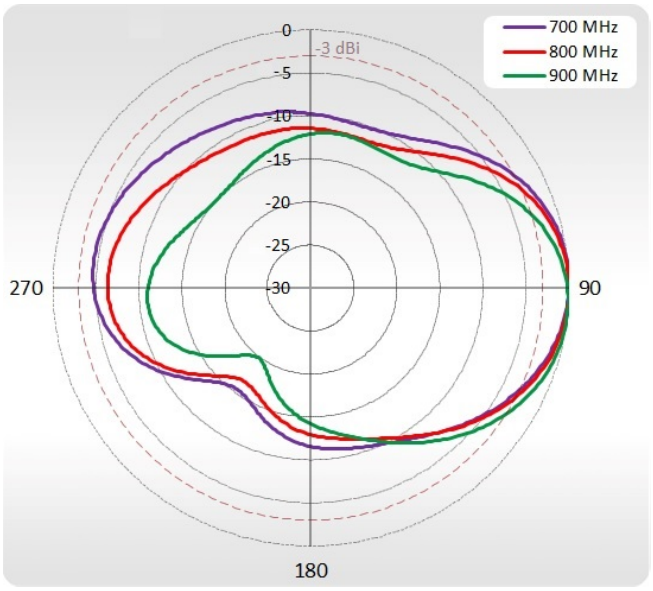


LTE VSWR

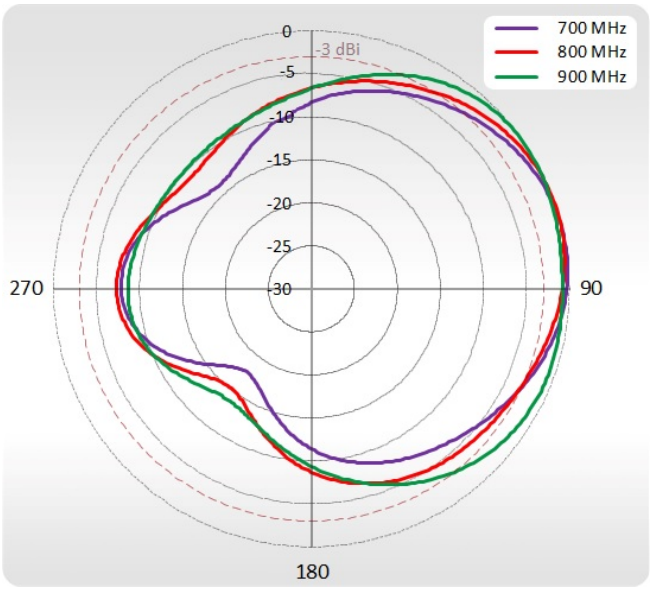


LTE PLOTS

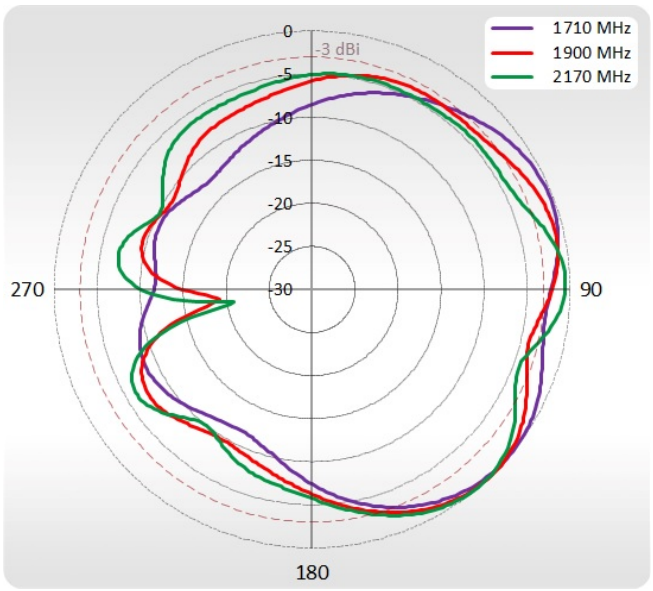
700-900 MHz Azimuth



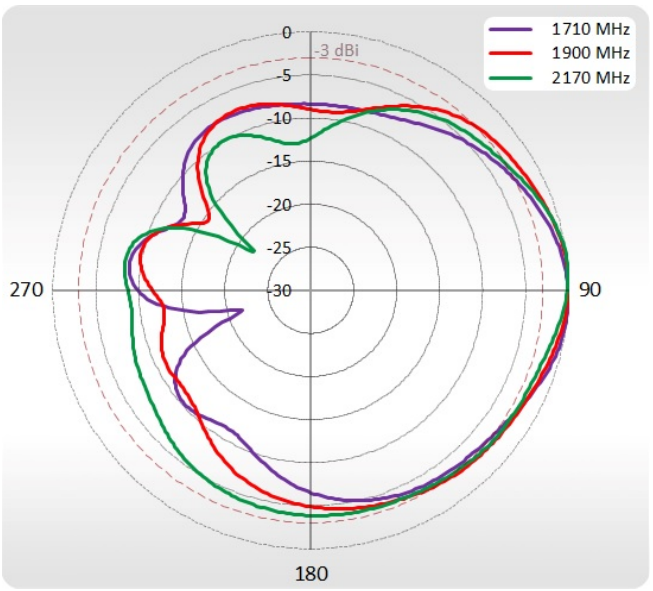
700-900 MHz Elevation



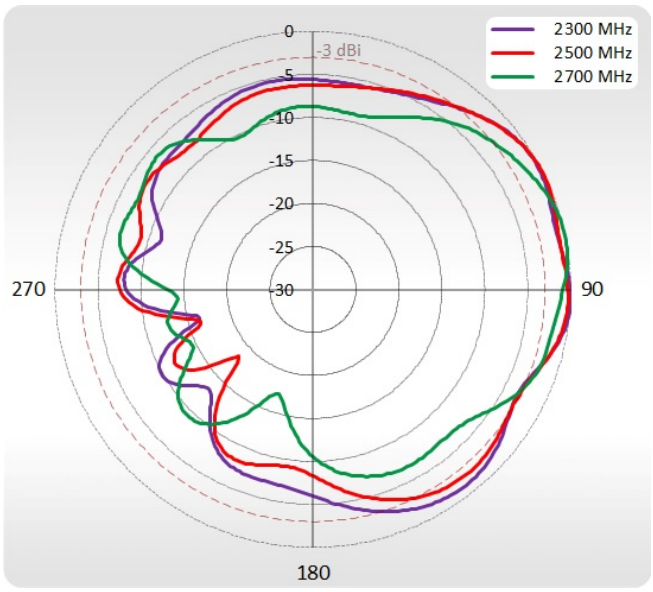
1710-2170 MHz Azimuth



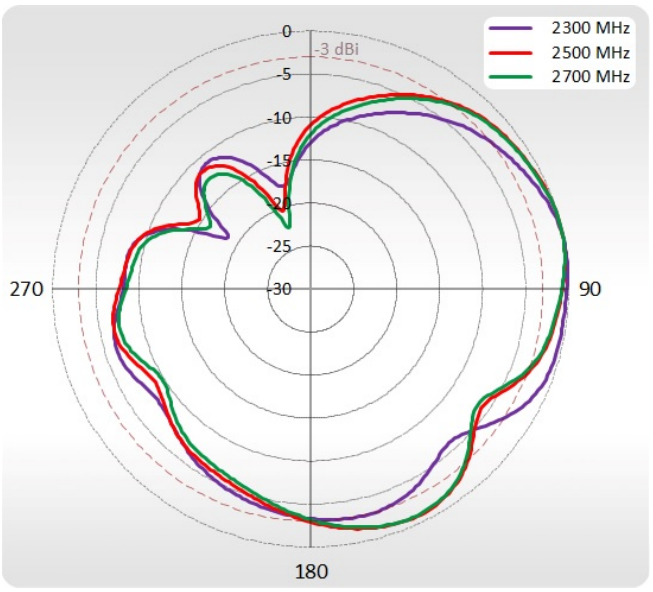
1710-2170 MHz Elevation



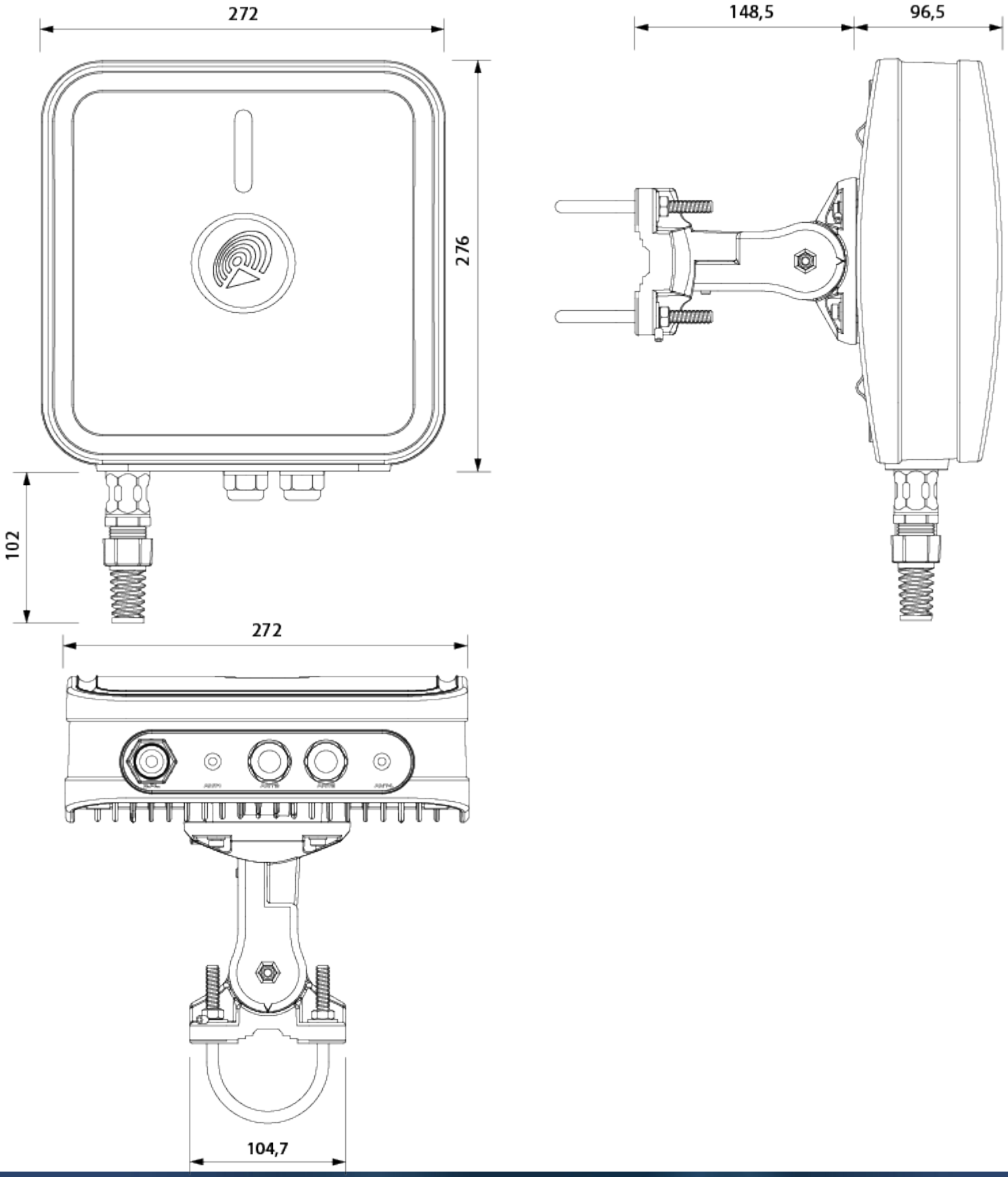
2300-2700 MHz Azimuth



2300-2700 MHz Elevation



DIMENSIONS



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