QuRouter X11S

QuRouter X11S is a perfect outdoor LTE Cat 6 router with embedded concurrent dual band AC Wi-Fi Access Point/Hotspot for mobile and fixed installations. Equipped with Dual-SIM, Bluetooth LE and GPS/GNSS. RUTX11. Integrated with omnidirectional antennas to all wireless interfaces. This device is perfect for advanced Industrial and Enterprise applications. Quad Core ARM Cortex A7 717 MHz CPU and 256 MBytes DDR3 RAM assures smooth VPN data acquisition.

LTE Cat 6 with speeds up to 300 Mbps

Bluetooth LE for short range communication

Dual SIM with auto Failover

Wave-2 802.11ac concurrent Dual Band WiFi
2.4+5GHz

GPS/GNSS positioning with geofencing functionality
GPS

Outdoor antenna works in any weather conditions, IP67

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 6 up to 300 Mbps, 3G – Up to 42 Mbps
Supported frequency bands	**4G (LTE-FDD)**: B1 (2100 MHz), B3 (1800 MHz), B5 (850 MHz), B7 (2600 MHz), B8 (900 MHz), B20 (800 MHz), B28 (700 MHz), B32* (1500 MHz) **4G (LTE-TDD)**: B38 (2600 MHz), B40 (2300 MHz), B41 (2500 MHz) **2xCA**: B1+B1/B5/B8/B20/B28 B3+B3/B5/B7/B8/B20/B28 B7+B5/B7/B8/B20/B28 B20+B32* B38+B38 B40+B40 B41+B41 **3G**: B1 (2100 MHz), B3 (1800 MHz), B5 (850 MHz), B8 (900 MHz) * LTE-FDD B32 supports Rx only and in 2xCA they are only used for secondary component carrier. • **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 (planned)
APN	Auto APN
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 (planned), SMPP (planned)
Black/White list	Operator black/white list
Multiple PDN (planed)	Possibility to use different PDNs for multiple network access and services
Band management	Band lock, Used band status display

ETHERNET

WAN	1x WAN port (can be configured as LAN) 10/100/1000 Mbps, compliance with IEEE 802.3, IEEE 802.3u, 802.3az standards, supports auto MDI/MDIX crossover
LAN	3x LAN ports, 10/100/1000 Mbps, compliance with IEEE 802.3, IEEE 802.3u, 802.3az standards, supports auto MDI/MDIX crossover

NETWORK

Routing	Static routing, Dynamic routing (BGP, OSPF v2, RIP v1/v2, EIGRP, NHRP)
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, HTTPS, FTP, SMTP, SSL v3, TLS, ARP, VRRP, PPP, PPPoE, UPNP, SSH, DHCP, Telnet client, SNMP, 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 forwards, traffic rules, custom rules
DHCP	Static and dynamic IP allocation, DHCP Relay, Relayd
QoS (planned)	Traffic priority queuing by source/destination, service, protocol or port
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
Hospot	Internal/external Radius server, captive portal, built in customizable landing page
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 WebUI, 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)
VLAN	Port based and tag based VLAN separation
Mobile quota control	Custom data limits for both SIM cards
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

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, with 5 encryption methods for IPsec (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
DMVPN	Method of building scalable IPsec VPNs
SSTP	SSTP client instance support

MODBUS

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)

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, EMAIL to SMS (planned), SMS to Email, SMS to HTTP, SMS to SMS, scheduled SMS (planned), SMS autoreply, SMPP (planned)

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

SYSTEM CHARACTERISTICS

CPU	Quad-core ARM Cortex A7, 717 MHz
RAM	256 MB, DDR3
FLASH memory	256 MB SPI Flash

FIRMWARE / CONFIGURATION

WEB UI	Update FW from file, check FW on server, configuration profiles, configuration backup
FOTA	Update FW/configuration from server
RMS	Update FW/configuration for multiple devices at once
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

LOCATION TRACKING

GNSS	GPS, GLONASS, BeiDou, Galileo and QZSS
Coordinates	GNSS coordinates via WebUI, SMS, TAVL, RMS
NMEA	NMEA 0183
Server software	Supported server software: TAVL, RMS
Mobile Network Geolocation	Get approximate device location on RMS based on mobile cell tower position (without using GPS)
Geofencing	Configurable multiple geofence zones

USB

Data rate	USB 2.0
Applications	Samba share, custom scripts (planned)
External devices	Possibility to connect external HDD, flash drive, additional modem, printer (planned)
Storage formats	FAT, FAT32, NTFS

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 – 50 VDC, reverse polarity protection, voltage surge/transient protection
PoE (passive)	Passive PoE. Possibility to power up through LAN port, not compatible with IEEE 802.3af and 802.3at standards
Power consumption	11 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	4x RJ45 ports, 10/100/1000 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	1 Digital Input, 1 Digital Output on 4 pin power connector (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, 3x connection status LEDs, 5x connection strength LEDs, 8x LAN status LEDs, 3x WAN status LEDs, 1x Power LED
SIM	2x 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)
USB	USB A port for external devices (access to USB connector after open enclosure of QuRouter or install QuGland which is not included in set)
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 SPECIFICATION

FREQUENCY	2.40-2.50 GHz
	4.70 - 6.00 GHz
GAIN	6 dBi
	7 dBi
VSWR	<1.70, max <2.00
	<1.70, max <2.00
BEAMWIDTH	360°/25° +/- 5°
	360°/25° +/- 5°
POLARIZATION	Vertical
IMPEDANCE	50 Ω

MECHANICAL SPECIFICATION

MATERIALS	ABS, aluminum, PTFE
INGRESS PROTECTION	IP67
DIMENSIONS	160 x 160 x 240 mm
	6.3 x 6.3 x 9.45 inch
WEIGHT	1.5 kg
	3.31 lbs
OPERATING TEMPERATURE	From -40°C to 75°C
	From -40°F to 167°F

LTE VSWR
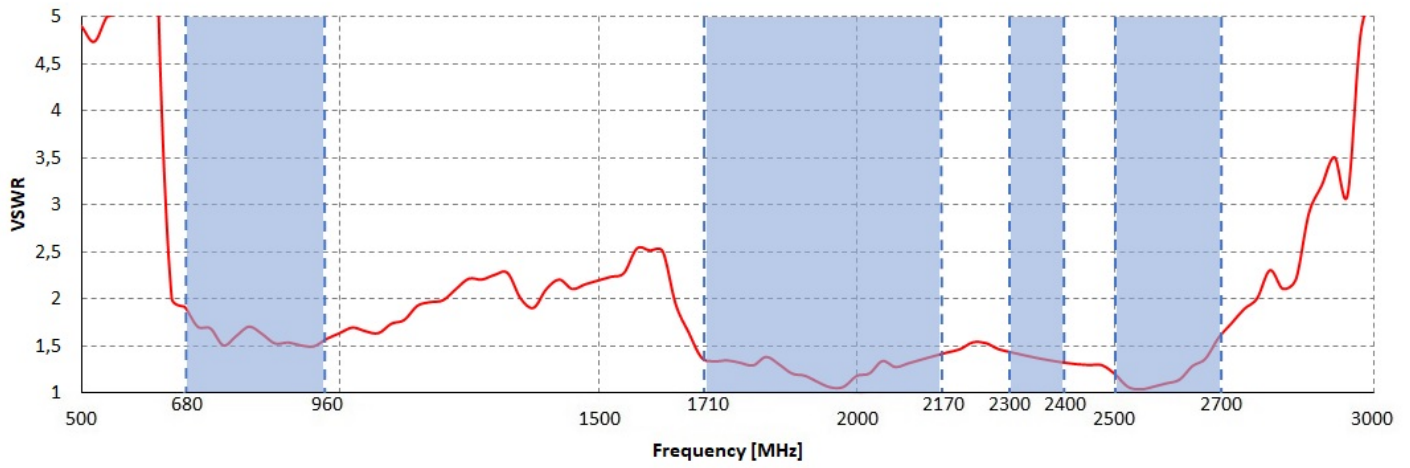
WI-FI VSWR
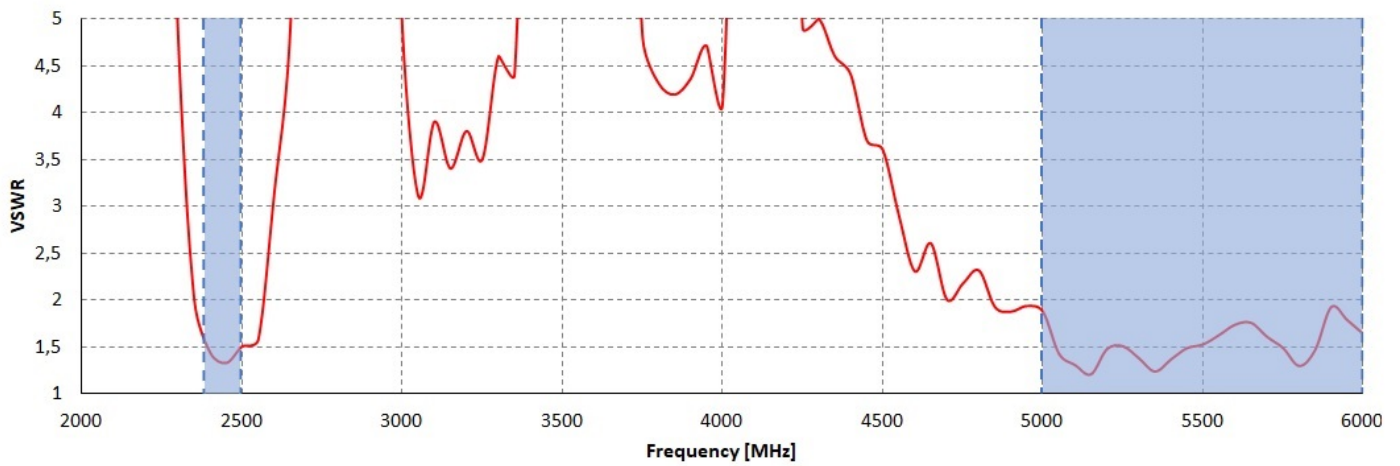
WI-FI PLOTS

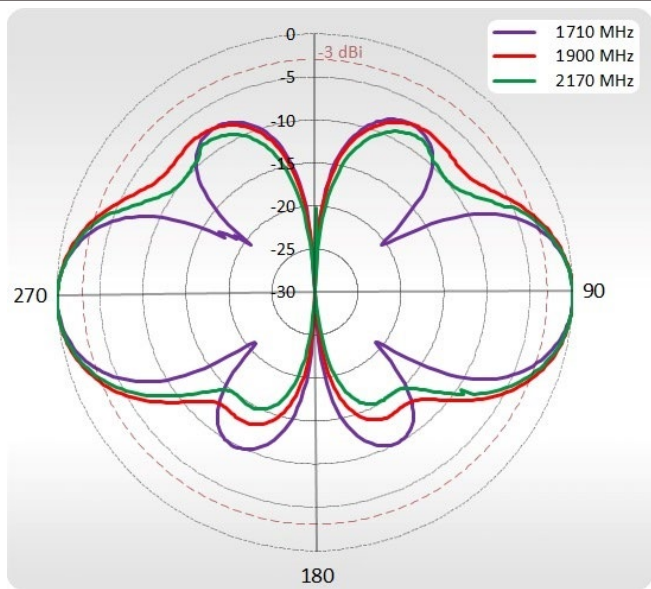### WI-FI Azimuth
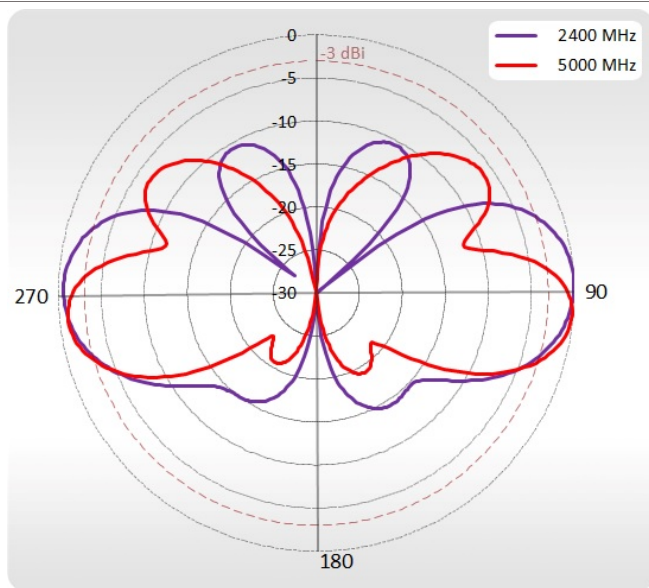
WI-FI Elevation
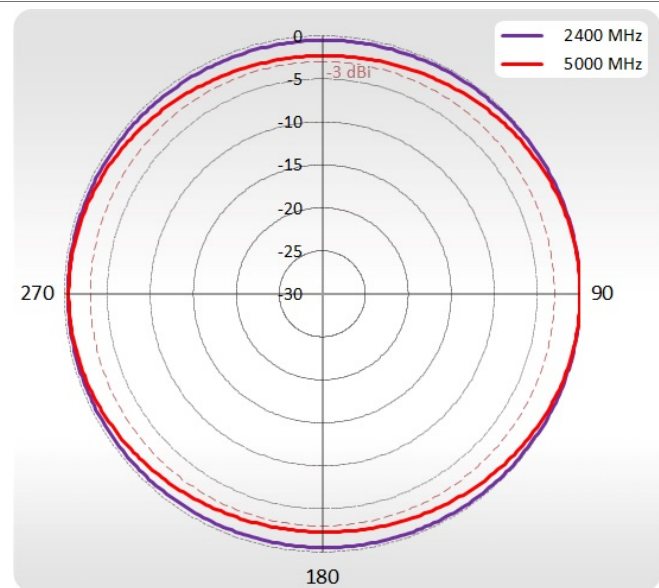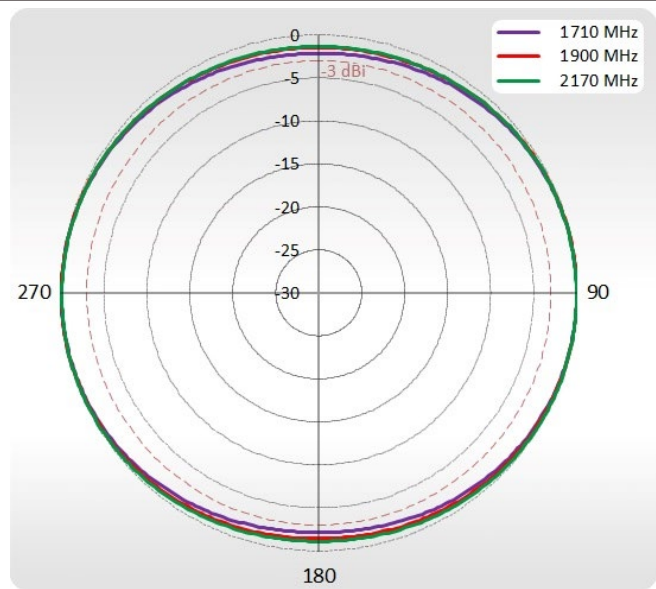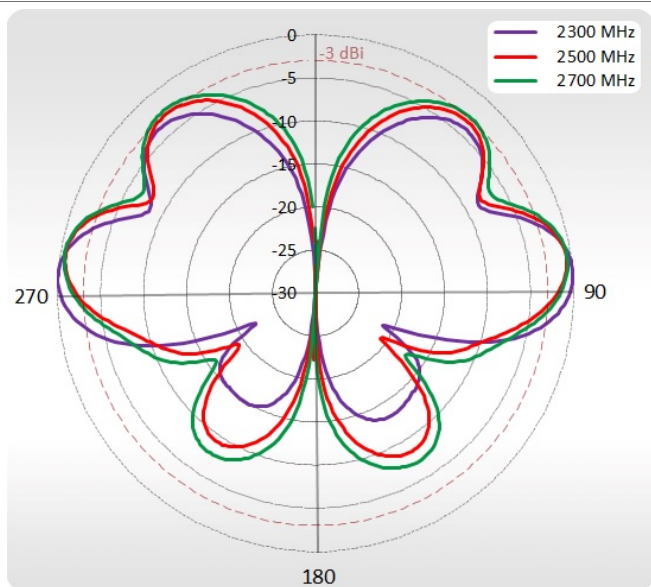
LTE PLOTS

700-900 MHz Azimuth
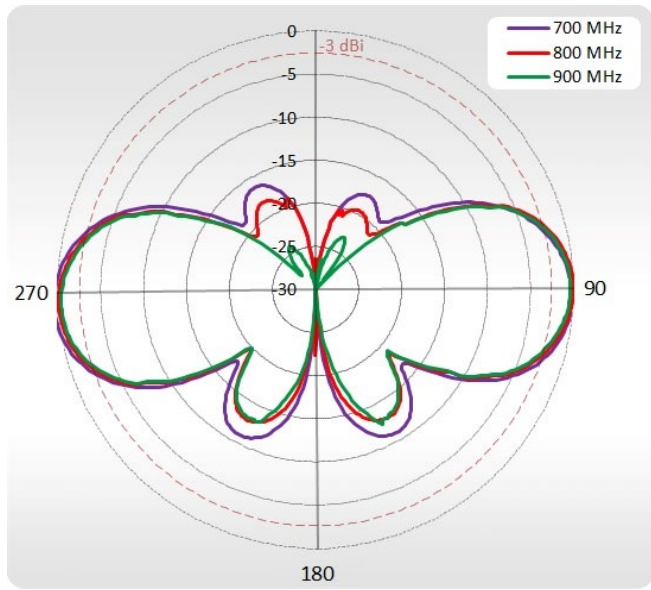
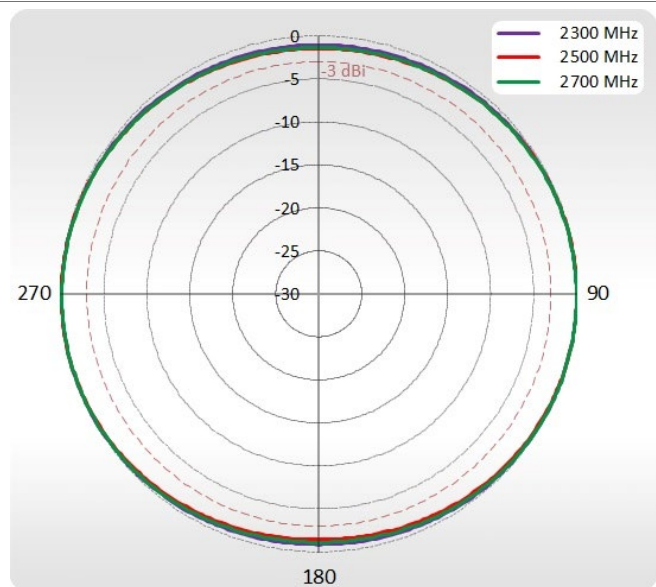### 700-900 MHz Elevation
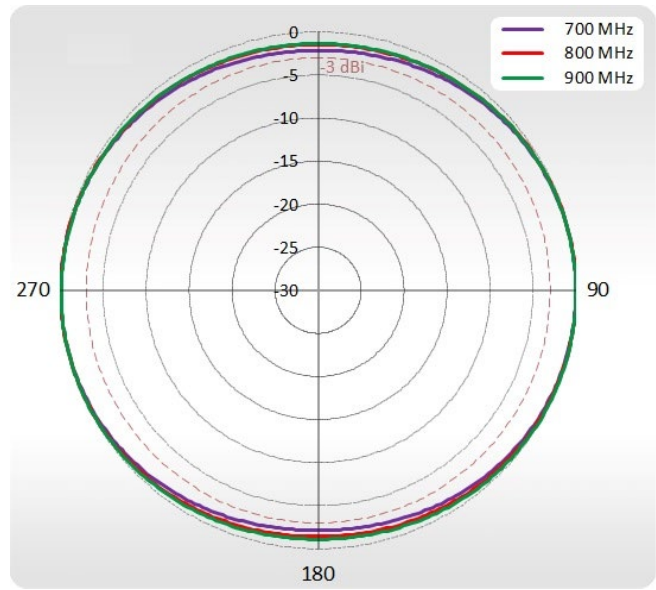
1710-2170 MHz Azimuth

1710-2170 MHz Elevation

2300-2700 MHz Azimuth

2300-2700 MHz Elevation

DIMENSIONS