# TWMR-5002

## EN50155 Multifunction VPN Router w/1 WiFi 11ac + 1 LTE 4G + 2 serial ports + 2 Gigabit X-coded Ethernet for Load Balancing, VPN, Protocol Gateway, Storage**; WV input; IP65/54



## OVERVIEW

Lantech TWMR-5002 series is a next generation EN50155 multi-function VPN router w/1x 802.11ac WiFi + 1x LTE modem + 2x Gigabit Ethernet+ 2 serial ports that supports advanced function of VPN, Load-Balancing, EMMC Flash Storage**, Protocol gateway(Modbus), Storage**, WiFi roaming and LTE dual SIM fail-over for on-board / onboard-to-ground applications. The dual core CPU with 1.6GHz + 256M flash enables the router to multi-task smoothly.

***LTE modem 4G/3G with dual SIM fail-over***

Built-in one LTE modem with 2 SIM card slots, TWMR-5002 can allow failover between two operators for resilient connection. Both GPS and Russian GLONASS systems are supported (may vary in models)

***IEEE 802.11ac radio up to 1.3GMbps bandwidth***

With IEEE 802.11ac capability, TWMR-5002 can operate either 5GHz or 2.4GHz bands, offering the maximum speed of 1.3GMbps bandwidth. It is also compatible with 802.11g/n that can work with 2.4GHz for longer range transmission.

The WiFi 11ac supports AP/Bridge/AP Client modes can be diverse for most of wireless application. Working with load-Balancing "Priority" mode, the AP client can enable router to transmit on WiFi with first priority.

***Optional EMMC Flash storage****

The optional EMMC flash storage on the router can offer 8G/16G/32G capacity.

***Optional eSIM****

By replacing physical SIM, optional eSIM chip will allow users to purchase data plans at low prices from local carriers in the world.

***MIMO technology with 3T3R and SMA/QMA** type connectors***

Lantech TWMR-5002 series adapts MIMO technology with Smart antenna transmission and reception for 3T3R.With six external detachable antenna connectors (SMA/QMA**) and optional antennas, TWMR-5002 can have better Wi-Fi & LTE/GPS coverage.

***Support AP/Bridge/Client mode, Mesh roaming***

TWMR-5002 supports AP/Bridge/Client mode for different applications.

It also supports client-base roaming to swap between the APs in a network.

***Built-in Wireless Mesh network（WMN）***

TWMR-5002 supports Mesh network composed of different nodes. The set of SSIDs allow the wireless client to roam freely without the need for complicated account management. With Mesh protocol, it can provide a reliable, scalable, stable and seamless network topology.

***Wireless WMM QoS***

TWMR-5002 supports 802.11e standard which defines a set of Quality of Service for wireless LAN applications as well as WMM (WiFi multimedia)

***Advanced security & 16 SSIDs***

The security support standards including 64/128bits WEP, WPA/WPA2 PSK (TKIP, AES), 802.1x ensures the best security and active defense against security treads. Lantech TWMR-5002 support up to 16 SSIDs, each SSID has its independent security and encryption.

***Load Balancing with 5 mechanism for multi-WANs***

TWMR-5002 supports Load Balancing for LTE / WAN connections. There are five schemes for Load Balancing function:

| Pack | Algorithm | Description |
|---|---|---|
| Basic | Fixed | All traffic will be distributed to a single WAN. |
| | Failover | Routes connections through preferred WAN link while others stand-by. Sequentially activating another link if the preferred link fails. |
| | Priority | Select the active WAN according to priority. |
| | Weighted Round-Robin | Evenly distribute the traffic over all working WAN links in circular order according to the specified weights. |
| | Custom Route | Routing through the selected WAN for each specific traffic, ex: TCP/UDP port number and IP address. |

***2 port serial connection, Modbus gateway***

It builds in 2 port serial connection for RS232 or RS422, RS485 in which RS422/RS485 has 2.5KV isolation protection.

The built-in Modbus gateway can convert Modbus RTU/ASCII to Modbus TCP for device control.

***VPN and firewall***

Besides traditional VPN peer to peer tunneling, TWMR-5002 support latest Multi-Site VPN function that is an efficient way for Mesh tunneling. The registration is under cloud service and encrypted by SSH makes the connection easy and safe.

It supports Multi-Site VPN, OpenVPN, L2TP over IPsec, IPsec, L2 over GRE, IPGRE, and NAT for various VPN applications.

The built-in Layer-4 firewall includes DDoS, IP address filter / Mac address filter / TCP / UDP port number.

***Support Routing Protocol: Static route / RIPv2 / OSPF / BGP / EIGRP***

Lantech router series supports two routing methods: static routing and dynamic routing. Dynamic routing makes use of RIPv2, OSPF, EIGRP and BGP. The user can either choose one routing method to establish the routing table.

***DIDO for alarm & email notice; Event log; Remote Web control***

2 sets of DIDO function can support additional high/low physical contact for designate applications besides Port / Power events, for example, DIDO function can trigger alarm if the router was moved or stolen. In case of events, the TWMR-5002 will immediately send email and trap.

When the router is at remote area with limited access, Web control can help to get router status or remotely reboot by Web

***Wide range dual input voltage from 16.8-137.5V (WV model)***

The TWMR-5002 is able to work from dual 16.8V ~137.5V DC input (WV model) that is particular good for vehicle, rail train, depot etc applications.

***Environmental monitoring for inside router info& alerting; LTE/WIFI signal strength***

The built-in environmental monitoring can detect router overall temperature, voltage, current where can send the syslog and email when abnormal.

The graphic LTE/WIFI signal strength shows connection status at a glance.

***USB port for back up, restore configuration and upgrade firmware; Dual image*** *firmware*

The built-in USB port can upload/download the configuration through USB dongle for router replacement

***Dual image*** *firmware*

It supports dual-image firmware to choose which one to start.

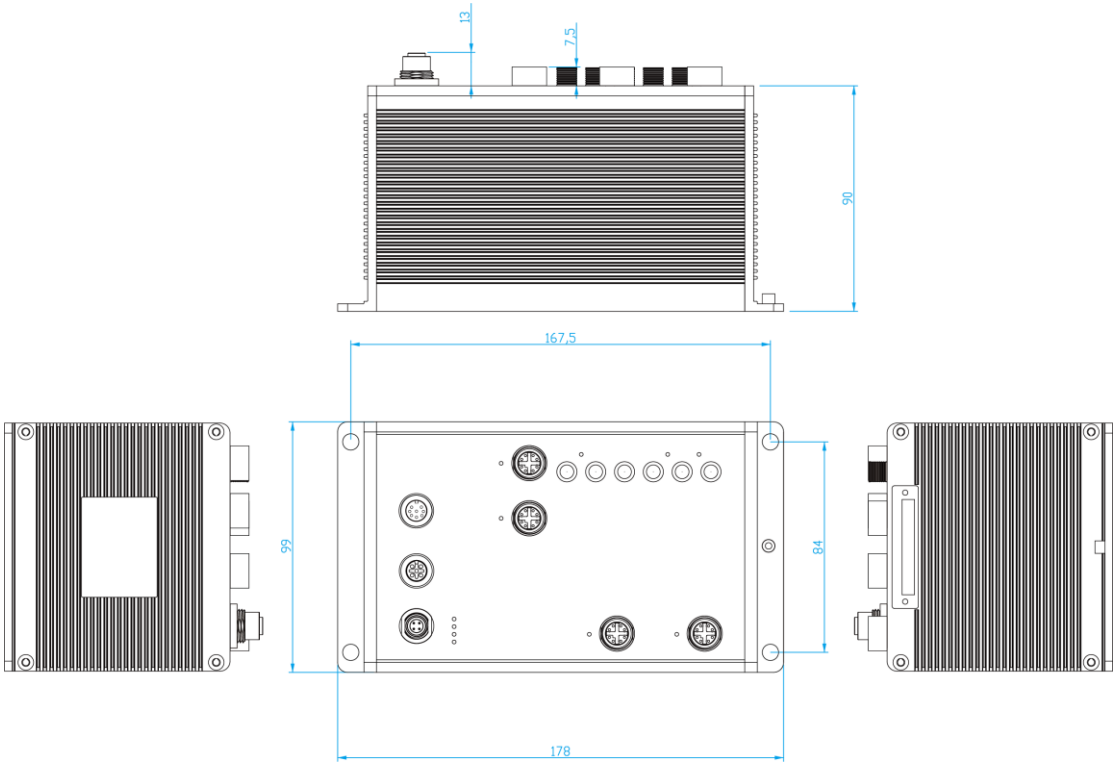
***Editable login page of captive portal***

The TWMR-5002 supports editable captive portal function that allows administrator to force end-users redirect to authentication page.

***Ruggedized EN50155 design and FCC/CE, E-marking** certificate***

The TWMR-5002 series is verified with EN50155, IEC61373, EN45545 standard with IP65/54 housing. It passed tests under extensive Industrial EMI and environmental vibration and shocks standards. With CE & FCC radio certification for WiFi and LTE and E-marking** certificate, the TWMR-5002 is best for outdoor community, vehicle, power substation, process control automation etc. For more usage flexibilities, TWMR-5002 supports operating temperature from -40°C to 65°C.

## DIMENSIONS (unit=mm)



# SPECIFICATION

## WLAN Interface

| | |
|---|---|
| Radio Frequency Type | DSSS, OFDM |
| Wireless Standard | IEEE 802.11ac/n/a 5GHz<br>IEEE 802.11b/g/n 2.4GHz |
| Wireless bandwidth | 5GHz: Up to 1300Mbps<br>2.4GHz: Up to 450Mbps |
| Modulation | **802.11b: DSSS**<br>**802.11a/g:**<br>OFDM (BPSK, QPSK, 16-QAM, 64-QAM)<br>**802.11n:**<br>OFDM (BPSK, QPSK, 16-QAM, 64-QAM)<br>**802.11ac:**<br>OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM) |
| Operating Frequency | IEEE 802.11 a/b/g/n ISM Band,<br>2.412GHz~2.472GHz, 5150MHz~5850MHz |
| Transmission Rate | IEEE802.11ac: up to 1300Mbps<br>IEEE802.11b: 1 / 2 / 5.5 / 11 Mbps<br>IEEE802.11a/g: 6 / 9 / 12 / 18 / 24 / 36 / 48 / 54 Mbps<br>IEEE802.11n: up to 450Mbps |
| IEEE 802.11b/g/n(2.4Gbps) | **Output Power Tx +/- 2dB(per chain)**<br>18dBm @ 1~11Mbps<br>18dBm @ 6~54Mbps<br>20/20dBm @ MCS0~MCS7 (HT20/40)<br>**Receiver Sensitivity Rx +/- 2dB**<br>≦-95dBm @ 1~11Mbps<br>≦-92dBm @ 6~18Mbps<br>≦-88dBm @ 24Mbps<br>≦-85dBm @ 36Mbps<br>≦-81dBm @ 48Mbps<br>≦-80dBm @ 54Mbps<br>≦-94dBm @ MCS0 (HT20/40)<br>≦-76dBm @ MCS7 (HT20/40) |
| IEEE 802.11a/n/ac(5Gbps) | **Output Power Tx +/- 2dB(per chain)**<br>20dBm @ 6~24Mbps<br>16dBm @ 36~54Mbps<br>19/18dBm @ MCS0 (HT20/40)<br>16/16dBm @ MCS7 (HT20/40)<br>19/18/18dBm @ MCS0 (VHT20/40/80)<br>13/13/13dBm @ MCS8 (VHT20/40/80)<br>13/13dBm @ MCS9 (VHT40/80)<br>**Receiver Sensitivity Rx +/- 2dB**<br>≦-92dBm @ 6~18Mbps<br>≦-86dBm @ 24Mbps<br>≦-84dBm @ 36Mbps<br>≦-81dBm @ 48Mbps<br>≦-80dBm @ 54Mbps<br>≦-93dBm @ MCS0 (HT20/40)<br>≦-71dBm/≦-80dBm @ MCS7 (HT20/40)<br>≦-90dBm @ MCS0 (VHT20/40/80)<br>≦-69dBm @ MCS8 (VHT20/40/80)<br>≦-66dBm @ MCS9 (VHT40/80) |
| Encryption Security | WEP : (64-bit ,128-bit key supported)<br>WPA /WPA2 : IEEE802.11i(WEP and AES encryption)<br>WPA-PSK (256-bit key pre-shared key supported)<br>EAP-TLS,EAP-TTLS, and PEAP |
| Wireless Security | SSID broadcast disable |

## Cellular Interface

| | |
|---|---|
| Antenna Connector | Detachable antenna connectors x 3; SMA/QMA** type female connector (Main, Aux, GPS) |
| Location Solutions | GPS, Glonass |
| Band Options | **Europe & North America (EUNA model)**<br>**LTE =** B1, B2※, B3, B4※, B5※, B7, B8, B12※, B13※, B20, B25※, B26※, B29※, B30※, B41※ (TDD)<br>**DC-HSPA+/ HSPA+/ HSPA/ UMTS =** B1, B2※, B3※, B4※, B5※, B8 |
| Data Rates – LTE | **Europe & North America (EUNA model)**<br>Downlink (Cat 6):<br>FDD: 300 Mbps<br>TDD: 222 Mbps<br>Uplink (Cat 6):<br>FDD: 50 Mbps<br>TDD: 26 Mbps |

## Software

| | |
|---|---|
| IPv6/4 | Present |
| Operating Mode | AP/Bridge/Client/MESH modes |
| Login Security | Supports IEEE802.1x Authentication/RADIUS |
| Access Security | HTTP/HTTPS/Telnet/SSH & Administration; SNMP v1/v2/v3 access for authentication via MD5/SHA(v3) and Encryption via DES/AES(v3) |
| Protocol | PPPoE Client, DHCP server/client, Adjustable MTU, Port forwarding (NAPT), DMZ; NAT, SNTP, Firewall(Firewall(DDoS; IP address filter / Mac address filter / TCP/UDP port number), VRRP, DDNS |
| Routing | Static route / RIPv2 / OSPF / BGP / EIGRP |
| Management | SNMP v1,v2c,v3/ Web/Telnet/CLI |
| Load Balancing | 5 schemes for multiple WAN |
| **Basic** | |
| Fixed | All traffic will be distributed to a single WAN. |
| Failover | Routes connections through preferred WAN link while others stand-by. Sequentially activating another link if the preferred link fails. |
| Priority | Select the active WAN according to priority. |
| Weighted Round-Robin | Evenly distribute the traffic over all working WAN links in circular order according to the specified weights |
| Custom Route | Routing through the selected WAN for each specific traffic ex: TCP/UDP port number and IP address. |
| Roaming | Client-base roaming |
| MESH | Support 802.11s Wireless Mesh Network |
| WMM | Wifi multimedia and 802.11e traffic prioritization |
| Security | WEP64/128bits/ WPA/ WPA-PSK (TKIP,AES)/ WPA2/ WPA2-PSK (TKIP,AES)/SSH/SSL/HTTPS |
| Authentication | Radius Authentication, EAP-TLS, EAP-TTLS, PEAP; SSID broadcast disable supported |
| SSID | 16 sets |
| Timer | Built-in Real Time Clock to keep track of time always(RTC) |
| Discovery | IEEE 802.1ab Link Layer Discovery Protocol (LLDP) |
| SNMP trap | Device cold / warm start<br>Port link up / link down<br>DI / DO high / low |
| Environmental Monitoring | System status for input voltage, current , ambient temperature to be shown in GUI and sent alerting if any abnormal status |
| Graphic signal display | Graphic LTE & Wifi signal strength |
| Remote Web control | To reboot or get status of router by Web |
| Captive portal | Editable captive portal login page |
| Maintenance | Firmware upgradeable through TFTP/HTTP |
| Configuration backup & restore | Supports text configuration file for quick system installation<br>USB port to upload/download configuration by USB dongle |

## Physical Ports & System

| | |
|---|---|
| Connectors | 10/100/1000T: 2x ports M12 8-pole X-coded with Auto MDI/MDI-X function (1LAN+1WAN or 2LAN)<br>USB/Console connector: 1 x M12 8-pole A-coded<br>DIDO : 1 x 5-pole terminal block<br>Power Input connector : 1 x M12 4-pole A-coded<br>Serial connector : 2 x M12 8-pole X-coded<br>SIM card slots : 2<br>SMA/QMA** connector for LTE: 2 (female)<br>SMA/QMA** connector for GPS: 1 (female)<br>RP-SMA/QMA** connector for Wi-Fi: 3 (female) |
| Serial Baud Rate | 1000Kbps high data rate,250kbps normal for RS232 ; 20Mbps high data rate,250kbps normal for RS422/RS485 |
| Serial Data Bits | 5, 6, 7, 8 |
| Serial Parity | odd, even, none, mark, space |
| Serial Stop Bits | 1, 1.5, 2 |
| RS-232 | TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND |
| RS-422 | Tx+,Tx-, Rx+, Rx-,GND |

| | |
|---|---|
| RS-485 (2-wire) | Data+, Data-,GND |
| Isolation protection | RS422/RS485 2.5KV isolation; 8KV contact & 15KV air<br>RS232 8KV contact and 15KV air ESD<br>DIDO 2.5KV isolation<br>Input power 1.5KVA isolation |
| DI/DO | 2 Digital Input (DI) :<br>Level 0: -30~2V / Level 1: 10~30V<br>Max. input current:8mA<br>2 Digital Output(DO): Open collector to 80 VDC, 50mA |
| EMMC Storage** | 8/16/32 GB |

## LED Indicators

| | |
|---|---|
| Power & system indicator | Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red) , System Ready(Green), Serial1/2(Green) |
| 10/100/1000Base-T(X) port indicator | Link/Activity (Green), Speed (Yellow) |
| SIM | Green for Link/Act |
| GPS | Green for Link/Act |
| WLAN LEDs | WLAN 1 ,Link /ACT : Green |
| Fault | Red: Ethernet link down or power down |

## Fault contact

| | |
|---|---|
| Relay | Relay output to carry capacity of 1A at 24VDC |

## Power

| | |
|---|---|
| Input power | Dual DC input, 16.8VDC~137.5VDC for (WV model) |
| Power consumption (Typ.) | 18 Watts |

## Physical Characteristic

| | |
|---|---|
| Enclosure | IP 65/54 aluminum case |
| Dimension | 178 (W) x 99 (D) x 103 (H) mm |
| Weight | 1000g |

## Environmental

| | |
|---|---|
| Storage Temperature | -40ºC ~ 85ºC (-40ºF ~ 185ºF) |
| Operating Temperature | -40ºC ~ 65ºC (-40ºF ~ 149ºF) |
| Operating Humidity | 5% to 95% Non-condensing |

## Regulatory approvals

| | |
|---|---|
| EMC | FCC Part 15 Class A, EN55032 , EN55024 |
| EMS | EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-6-2 |
| Radio Frequency | EN 301 489-1,<br>EN 301 489-17,<br>EN 301 489-19,<br>EN 301 489-52,<br>EN 300 440,<br>EN 301 893,<br>EN 300 328,<br>EN 301 908-1※,<br>EN 303 413,<br>EN 62311 |
| Safety | EN60950 (LVD), AS60950 (LVD) |
| Stability Testing | EN61373 (Shock & Vibration) |
| Verifications & report | EN50155, EN50121-3-2, EN50121-4 verification EN45545-2 R13/R22/R23/R24/R25 (EN ISO 4589-2, EN ISO 5659-2, NF X70-100-1 & 2) Fire & Smoke verification |
| MTBF | 565,049 Hrs (IEC62380 standards) |
| Warranty | 5 years |

*Future Release

**Optional

※Standard test of the following bands are not listed in EN 301 908-1 report:
(EUNA not listed bands) LTE = B2, B4, B5, B12, B13, B25, B26, B29, B30, B41
WCDMA = B2, B3, B4, B5;

## RF Performance Table

| | Data Rate | TX Power (per chain) | TX Power (3 chains) | Tolerance | RX Specifications Sensitivity | Tolerance |
|---|---|---|---|---|---|---|
| 2.4GHz 802.11b | 1Mbps | 20dBm | 25dBm | ±2dB | -95dBm | ±2dB |
| | 2Mbps | 20dBm | 25dBm | ±2dB | -94dBm | ±2dB |
| | 5.5Mbps | 20dBm | 25dBm | ±2dB | -92dBm | ±2dB |
| | 11Mbps | 20dBm | 25dBm | ±2dB | -90dBm | ±2dB |
| 2.4GHz 802.11g | 6Mbps | 21dBm | 26dBm | ±2dB | -94dBm | ±2dB |
| | 9Mbps | 21dBm | 26dBm | ±2dB | -93dBm | ±2dB |
| | 12Mbps | 21dBm | 26dBm | ±2dB | -92dBm | ±2dB |
| | 18Mbps | 21dBm | 26dBm | ±2dB | -90dBm | ±2dB |
| | 24Mbps | 21dBm | 26dBm | ±2dB | -88dBm | ±2dB |
| | 36Mbps | 20dBm | 25dBm | ±2dB | -85dBm | ±2dB |
| | 48Mbps | 19dBm | 24dBm | ±2dB | -81dBm | ±2dB |
| | 54Mbps | 18dBm | 23dBm | ±2dB | -80dBm | ±2dB |
| 2.4GHz 802.11n HT20 | MCS 0 | 21dBm | 26dBm | ±2dB | -94dBm | ±2dB |
| | MCS 1 | 21dBm | 26dBm | ±2dB | -91dBm | ±2dB |
| | MCS 2 | 21dBm | 26dBm | ±2dB | -89dBm | ±2dB |
| | MCS 3 | 20dBm | 25dBm | ±2dB | -84dBm | ±2dB |
| | MCS 4 | 20dBm | 25dBm | ±2dB | -83dBm | ±2dB |
| | MCS 5 | 20dBm | 25dBm | ±2dB | -78dBm | ±2dB |
| | MCS 6 | 18dBm | 23dBm | ±2dB | -78dBm | ±2dB |
| | MCS 7 | 16dBm | 21dBm | ±2dB | -76dBm | ±2dB |
| 2.4GHz 802.11n HT40 | MCS 0 | 20dBm | 25dBm | ±2dB | -92dBm | ±2dB |
| | MCS 1 | 20dBm | 25dBm | ±2dB | -89dBm | ±2dB |
| | MCS 2 | 20dBm | 25dBm | ±2dB | -87dBm | ±2dB |
| | MCS 3 | 19dBm | 24dBm | ±2dB | -82dBm | ±2dB |
| | MCS 4 | 19dBm | 24dBm | ±2dB | -80dBm | ±2dB |
| | MCS 5 | 19dBm | 24dBm | ±2dB | -78dBm | ±2dB |
| | MCS 6 | 18dBm | 23dBm | ±2dB | -77dBm | ±2dB |
| | MCS 7 | 16dBm | 21dBm | ±2dB | -73dBm | ±2dB |

| | Data Rate | TX Power (per chain) | TX Power (3 chains) | Tolerance | RX Specifications Sensitivity | Tolerance |
|---|---|---|---|---|---|---|
| 5GHz 802.11a | 6Mbps | 20dBm | 25dBm | ±2dB | -94dBm | ±2dB |
| | 9Mbps | 20dBm | 25dBm | ±2dB | -94dBm | ±2dB |
| | 12Mbps | 20dBm | 25dBm | ±2dB | -92dBm | ±2dB |
| | 18Mbps | 20dBm | 25dBm | ±2dB | -90dBm | ±2dB |
| | 24Mbps | 20dBm | 25dBm | ±2dB | -86dBm | ±2dB |
| | 36Mbps | 18dBm | 23dBm | ±2dB | -84dBm | ±2dB |
| | 48Mbps | 16dBm | 21dBm | ±2dB | -81dBm | ±2dB |
| | 54Mbps | 15dBm | 20dBm | ±2dB | -80dBm | ±2dB |
| 5GHz 802.11n/ac VHT20 | MCS 0 | 19dBm | 24dBm | ±2dB | -93dBm | ±2dB |
| | MCS 1 | 19dBm | 24dBm | ±2dB | -90dBm | ±2dB |
| | MCS 2 | 19dBm | 24dBm | ±2dB | -87dBm | ±2dB |
| | MCS 3 | 18dBm | 23dBm | ±2dB | -83dBm | ±2dB |
| | MCS 4 | 18dBm | 23dBm | ±2dB | -80dBm | ±2dB |
| | MCS 5 | 17dBm | 22dBm | ±2dB | -77dBm | ±2dB |
| | MCS 6 | 16dBm | 21dBm | ±2dB | -74dBm | ±2dB |
| | MCS 7 | 14dBm | 19dBm | ±2dB | -73dBm | ±2dB |
| | MCS 8 | 13dBm | 18dBm | ±2dB | -71dBm | ±2dB |
| 5GHz 802.11n/ac VHT40 | MCS 0 | 18dBm | 23dBm | ±2dB | -90dBm | ±2dB |
| | MCS 1 | 18dBm | 23dBm | ±2dB | -88dBm | ±2dB |
| | MCS 2 | 18dBm | 23dBm | ±2dB | -85dBm | ±2dB |
| | MCS 3 | 17dBm | 22dBm | ±2dB | -82dBm | ±2dB |
| | MCS 4 | 17dBm | 22dBm | ±2dB | -80dBm | ±2dB |
| | MCS 5 | 16dBm | 21dBm | ±2dB | -75dBm | ±2dB |
| | MCS 6 | 15dBm | 20dBm | ±2dB | -73dBm | ±2dB |
| | MCS 7 | 14dBm | 19dBm | ±2dB | -73dBm | ±2dB |
| | MCS 8 | 13dBm | 18dBm | ±2dB | -70dBm | ±2dB |
| | MCS 9 | 13dBm | 18dBm | ±2dB | -68dBm | ±2dB |
| 5GHz 802.11ac VHT80 | MCS 0 | 18dBm | 23dBm | ±2dB | -89dBm | ±2dB |
| | MCS 1 | 18dBm | 23dBm | ±2dB | -87dBm | ±2dB |
| | MCS 2 | 18dBm | 23dBm | ±2dB | -85dBm | ±2dB |
| | MCS 3 | 17dBm | 22dBm | ±2dB | -83dBm | ±2dB |
| | MCS 4 | 17dBm | 22dBm | ±2dB | -80dBm | ±2dB |
| | MCS 5 | 16dBm | 21dBm | ±2dB | -78dBm | ±2dB |
| | MCS 6 | 15dBm | 20dBm | ±2dB | -75dBm | ±2dB |
| | MCS 7 | 14dBm | 19dBm | ±2dB | -72dBm | ±2dB |
| | MCS 8 | 13dBm | 18dBm | ±2dB | -70dBm | ±2dB |
| | MCS 9 | 13dBm | 18dBm | ±2dB | -68dBm | ±2dB |

## ORDERING INFORMATION

All QMA connector models are with –Q model name.

- **TWMR-5002-1L-1AC-2S-WV-65-EUNA…..……..……..P/N: 8630-041**
  EN50155 Multifunction VPN Router w/1 WIFI 11ac + 1 LTE 4G SMA connectors+ 2 serial RS232 ports + 2 Gigabit X-coded Ethernet for load-Balancing, VPN, Protocol Gateway; EU and US band; dual input 16.8V~137.5VDC; -40~65C; IP65 housing
- **TWMR-5002-1L-1AC-2SA-WV-65-EUNA…..……..……..P/N: 8630-0411**
  EN50155 Multifunction VPN Router w/1 WIFI 11ac + 1 LTE 4G SMA connectors+ 2 serial RS422 ports + 2 Gigabit X-coded Ethernet for load-Balancing, VPN, Protocol Gateway; EU and US band; dual input 16.8V~137.5VDC; -40~65C; IP65 housing
- **TWMR-5002-1L-1AC-2SB-WV-65-EUNA…..……..……..P/N: 8630-0412**
  EN50155 Multifunction VPN Router w/1 WIFI 11ac + 1 LTE 4G SMA connectors+ 2 serial RS485 ports + 2 Gigabit X-coded Ethernet for load-Balancing, VPN, Protocol Gateway; EU and US band; dual input 16.8V~137.5VDC; -40~65C; IP65 housing
- **TWMR-5002-1L-1AC-2S-WV-54-EUNA…..……..……..P/N: 8630-024**
  EN50155 Multifunction VPN Router w/1 WIFI 11ac + 1 LTE 4G SMA connectors+ 2 serial RS232 ports + 2 Gigabit X-coded Ethernet for load-Balancing, VPN, Protocol Gateway; EU and US band; dual input 16.8V~137.5VDC; -40~65C; IP54 housing
- **TWMR-5002-1L-1AC-2SA-WV-54-EUNA…..……..……..P/N: 8630-0211**
  EN50155 Multifunction VPN Router w/1 WIFI 11ac + 1 LTE 4G SMA connectors+ 2 serial RS422 ports + 2 Gigabit X-coded Ethernet for load-Balancing, VPN, Protocol Gateway; EU and US band; dual input 16.8V~137.5VDC; -40~65C; IP54 housing

- **TWMR-5002-1L-1AC-2SB-WV-54-EUNA…..……..……...…..…....P/N: 8630-0241**
  EN50155 Multifunction VPN Router w/1 WIFI 11ac + 1 LTE 4G SMA connectors+ 2 serial RS485 ports + 2 Gigabit X-coded Ethernet for load-Balancing, VPN, Protocol Gateway; EU and US band; dual input 16.8V~137.5VDC; -40~65C; IP54 housing
- **TWMR-5002-1L-1AC-2S-WV-54-GN…….……...……..P/N: 8630-04101**
  EN50155 Multifunction VPN Router w/1 WIFI 11ac + 1 LTE 4G SMA connectors+ 2 serial RS232 ports + 2 Gigabit X-coded Ethernet for load-Balancing, VPN, Protocol Gateway; EMEA and APAC band; dual input 16.8V~137.5VDC; -40~65C; IP54 housing

**EMMC Flash Storage**

- **8G……..…..……..…..P/N: 8850-113**
- **16G……..…..……..…..P/N: 8850-114**
- **32G……P/N: 8850-115**

## OPTIONAL ACCESSORIES

### Management System

- **InstaAir……..……..P/N: 9000-121**
  Cloud Based Fleet Management System for Routers

### GPS Antenna

- **ANT12000001** SMA GPS antenna, 28dB, 300m



### Cellular Antenna

- **ANT11000041** 2G/3G/4G dipole antenna, 791-960/1710~2170/2500~2700MHz, 3dBi, SMA plug, EU



- **ANT11000042** 2G/3G/4G dipole antenna, 704-960/1710~2170MHz, 3dBi, SMA plug, US



- **ANT11000046** LTE hinge rotatable antenna, 698-960MHz, 1710-2690MHz, Diameter 10mm, Length 108mm, SMA Connector



### Wi-Fi Antenna

- **ANT11000051** 2.4/5GHz SMA dipole Wi-Fi antenna, 3dBi (2.4GHz), 4dBi (5GHz)



- **ANT11000056** Wi-Fi hinge rotatable antenna, WiFi Dual Bands 2.4/5.8GHz, SMA Connector



## Antenna Base

- **ADA11000052** Magnetic antenna base for Wi-Fi, RP SMA Jack Base, Length : 1M



- **ADA11000053** Magnetic antenna base for 3G/4G, RP SMA Jack Base, Length : 1M



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