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.

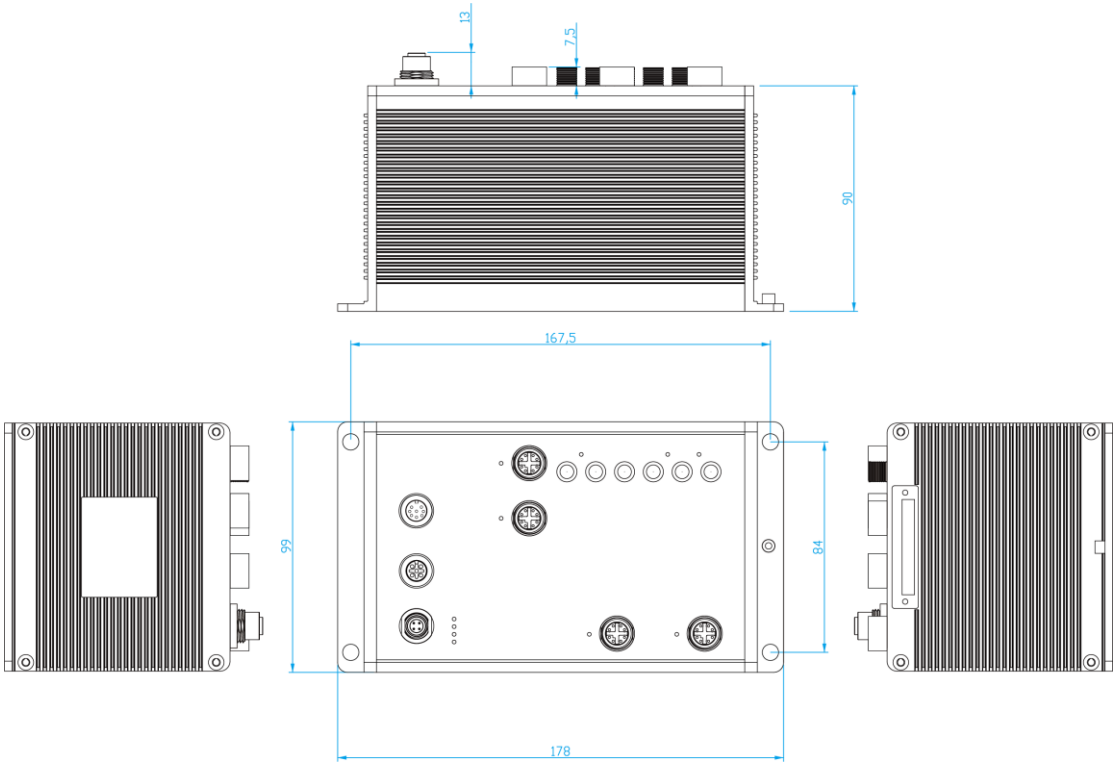
Editable login page of captive portal

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 IEEE 802.11b/g/n 2.4GHz
Wireless bandwidth	5GHz: Up to 1300Mbps 2.4GHz: Up to 450Mbps
Modulation	**802.11b: DSSS** **802.11a/g:** OFDM (BPSK, QPSK, 16-QAM, 64-QAM) **802.11n:** OFDM (BPSK, QPSK, 16-QAM, 64-QAM) **802.11ac:** OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM)
Operating Frequency	IEEE 802.11 a/b/g/n ISM Band, 2.412GHz~2.472GHz, 5150MHz~5850MHz
Transmission Rate	IEEE802.11ac: up to 1300Mbps IEEE802.11b: 1 / 2 / 5.5 / 11 Mbps IEEE802.11a/g: 6 / 9 / 12 / 18 / 24 / 36 / 48 / 54 Mbps IEEE802.11n: up to 450Mbps
IEEE 802.11b/g/n(2.4Gbps)	**Output Power Tx +/- 2dB(per chain)** 18dBm @ 1~11Mbps 18dBm @ 6~54Mbps 20/20dBm @ MCS0~MCS7 (HT20/40) **Receiver Sensitivity Rx +/- 2dB** ≦-95dBm @ 1~11Mbps ≦-92dBm @ 6~18Mbps ≦-88dBm @ 24Mbps ≦-85dBm @ 36Mbps ≦-81dBm @ 48Mbps ≦-80dBm @ 54Mbps ≦-94dBm @ MCS0 (HT20/40) ≦-76dBm @ MCS7 (HT20/40)
IEEE 802.11a/n/ac(5Gbps)	**Output Power Tx +/- 2dB(per chain)** 20dBm @ 6~24Mbps 16dBm @ 36~54Mbps 19/18dBm @ MCS0 (HT20/40) 16/16dBm @ MCS7 (HT20/40) 19/18/18dBm @ MCS0 (VHT20/40/80) 13/13/13dBm @ MCS8 (VHT20/40/80) 13/13dBm @ MCS9 (VHT40/80) **Receiver Sensitivity Rx +/- 2dB** ≦-92dBm @ 6~18Mbps ≦-86dBm @ 24Mbps ≦-84dBm @ 36Mbps ≦-81dBm @ 48Mbps ≦-80dBm @ 54Mbps ≦-93dBm @ MCS0 (HT20/40) ≦-71dBm/≦-80dBm @ MCS7 (HT20/40) ≦-90dBm @ MCS0 (VHT20/40/80) ≦-69dBm @ MCS8 (VHT20/40/80) ≦-66dBm @ MCS9 (VHT40/80)
Encryption Security	WEP : (64-bit ,128-bit key supported) WPA /WPA2 : IEEE802.11i(WEP and AES encryption) WPA-PSK (256-bit key pre-shared key supported) 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)** **LTE =** B1, B2※, B3, B4※, B5※, B7, B8, B12※, B13※, B20, B25※, B26※, B29※, B30※, B41※ (TDD) **DC-HSPA+/ HSPA+/ HSPA/ UMTS =** B1, B2※, B3※, B4※, B5※, B8
Data Rates – LTE	**Europe & North America (EUNA model)** Downlink (Cat 6): FDD: 300 Mbps TDD: 222 Mbps Uplink (Cat 6): FDD: 50 Mbps 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 Port link up / link down 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 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) USB/Console connector: 1 x M12 8-pole A-coded DIDO : 1 x 5-pole terminal block Power Input connector : 1 x M12 4-pole A-coded Serial connector : 2 x M12 8-pole X-coded SIM card slots : 2 SMA/QMA** connector for LTE: 2 (female) SMA/QMA** connector for GPS: 1 (female) 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 RS232 8KV contact and 15KV air ESD DIDO 2.5KV isolation Input power 1.5KVA isolation
DI/DO	2 Digital Input (DI) : Level 0: -30~2V / Level 1: 10~30V Max. input current:8mA 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	-40°C ~ 85°C (-40°F ~ 185°F)
Temperature	
Operating Temperature	-40°C ~ 65°C (-40°F ~ 149°F)
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, EN 301 489-17, EN 301 489-19, EN 301 489-52, EN 300 440, EN 301 893, EN 300 328, EN 301 908-1※, EN 303 413, 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

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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