

## T(P)WMR-5004

**EN50155 Multifunction VPN Router w/1x WiFi 11ac + 1 LTE 4G + 2 serial ports + 4 Gigabit X-coded (PoE) Switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway, Storage\*\* ; WV input**

- Built-in 4 Gigabit X-coded (PoE) Ethernet managed switch +2 WAN/LAN ports
- Support LTE Cat 6 (APAC & EUNA models) or Cat 12/9/13 (WW model)
- WIFI radio for 802.11ac/a/b/g/n with 5GHz or 2.4GHz;
- Support WIFI 802.11e traffic prioritization and WMM
- MIMO technology 3T3R up to 6 antenna; Detachable antenna connectors with 6 SMA/QMA\*\* type incl. 3 WIFI + 3 LTE
- Advanced wireless security WEP64/128bits/ WPA/ WPA-PSK (TKIP,AES)/ WPA2/ WPA2-PSK (TKIP,AES)
- VPN router for Multi-site VPN, OpenVPN, L2TP over IPsec, IPsec, L2 over GRE , IPGRE
- Support Client-base roaming
- Supports AP/ Bridge/Client/MESH modes
- Support 802.11s Wireless Mesh Network
- Load Balancing built-in 5 mechanism
- Optional EMMC Flash storage on-board\*\*
- Support NAT and Firewall
- Support Modbus gateway on serial ports
- Support 2 RS422/RS485 ports with 2.5KV isolation or 2x RS232 ports
- Optional 2 GT smart bypass protection
- Galvanic isolation on WV model from 16.8V~137.5V input
- PoE model: PoE budget 60W
- Environmental monitoring for router inside info with voltage, current, temperature and total PoE load; WIFI & LTE graphic signal strength
- Editable login page of captive portal for hot-spot application
- USB port to backup, restore the configuration file and upgrade firmware; Dual image firmware
- Optional eSIM chip enables router with versatile data plans\*\*
- EN50155/61373/45545 verification for railway application



### OVERVIEW

Lantech T(P)WMR-5004 series is a next generation EN50155 multi-function VPN router w/ 1 x 802.11ac Wi-Fi + 1 x LTE modem +4 Gigabit X-coded (PoE) Ethernet switch + 2 WAN/LAN ports + 2 serial ports that supports advanced function of VPN, Load-Balancing, EMMC Flash Storage\*\*, Protocol gateway(Modbus\*), Storage\*\*, Wi-Fi roaming and LTE dual SIM fail-over for industrial applications. The dual core CPU with 1.6GHz + 256M flash enables the router to multi-task smoothly.

#### LTE design 4G/3G w/2SIMs for redundancy

With one mobile LTE module (1L model), 2 SIM card slots,

T(P)WMR-5004 provides redundant link between two service providers.

Both GPS and Russian GLONASS systems are supported.

#### IEEE 802.11ac one band radio up to 1.3GMbps bandwidth

With IEEE 802.11ac capability, T(P)WMR-5004 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.

#### MIMO technology with 3T3R and standard SMA / optional

**QMA type connectors**

Lantech T(P)WMR-5004 series adapts MIMO technology with smart antenna transmission and reception for 3T3R. With six external detachable antenna SMA/QMA\*\* connectors and optional antennas, T(P)WMR-5004 can have better Wi-Fi & LTE/GPS coverage.

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

T(P)WMR-5004 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)**

T(P)WMR-5004 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.

**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.

**Wireless WMM QoS**

T(P)WMR-5004 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 threats. Lantech T(P)WMR-5004 support up to 16 SSIDs, each SSID has its independent security and encryption.

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

T(P)WMR-5004 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	Evenly distribute the traffic over all

Round-Robin	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 2 port serial connection for RS232; 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.

**Support various VPN applications and firewall**

Besides traditional VPN peer to peer tunneling, T(P)WMR-5004 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 T(P)WMR-5004 will immediately send email and trap. The event log can be sent via syslog, emails or trigger the alarm relay.

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 input voltage from 16.8~137.5VDC (WV model); PoE model built-in 4 port PoE at/af switch with 60W budget**

The T(P)WMR-5004 is able to work from 16.8~137.5V (WV with isolation) and PoE model built-in 4 port PoE at/af with PoE budget 60W that is particular good for vehicle, rail train, depot etc. application

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

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

**Built-in Managed Switch Function**

Managed switch function is built-in and provides various L2+ functions for network access deployment. It delivers ports and PoE management, VLAN, QoS, multicast, redundant ring, and security functions.

Editable login page of captive portal

**Editable login page of captive portal**

The TMR-5006 supports editable captive portal function that allows administrator to force end-users redirect to authentication page.

**Dual image firmware**

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

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

The built-in USB ports can upload/download/upgrade the

firmware through USB dongle for router replacement.

**Editable login page of captive portal**

The T(P)WMR-5004 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 T(P)WMR-5004series is verified with EN50155, EN61373, 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 LTE and E-marking\*\* certificate, the T(P)WMR-5004 is best for outdoor community, vehicle, power substation, process control automation etc. For more usage flexibilities, T(P)WMR-5004 supports operating temperature from -40°C to 65°C.

**FEATURES & BENEFITS**

- High Speed Air Connectivity: WLAN interface support 1.3GMbps
- Built-in 4 Gigabit X-coded (PoE) Ethernet managed switch + 2 WAN/LAN ports
- Dual DC input from 16.8V~137.5VDC input
- PoE model: 60W PoE budget
- EMMC-FLASH storage\*\*8/16/32G
- eSIM\*\* to allow data-plan globally
- Dual band 2.4G and 5GHz with 802.11ac/a/b/g/n
- Support AP/Bridge/Client/MESH mode
- Support Client-base roaming
- Support 802.11s Wireless Mesh Network
- Support 2.4Ghz operating within the following frequency bands:
  - 2.412~2.472 GHz
- Support 5Ghz operating within the following frequency bands:
  - 5.180~5.825GHz
- MIMO smart antenna technology with 3T3R
- 6 STANDARD SMA / OPTIONAL QMA type connectors for Wi-Fi & LTE, GPS
- Output power : <24dBm
- Transmit power adjustment
- VAP (virtual access point) support up to 16 SSIDs
- Operation modes : AP/ Bridge / Client / MESH
- Traffic control for each SSID
- Band preference for same SSID services on dual band
- Highly Security Capability: WEP64/128bits/ WPA/ WPA-PSK (TKIP,AES)/ WPA2/ WPA2-PSK (TKIP,AES)
- HTTP/HTTPS/Telnet/SSH & Administration access
- Support IPv6 & IPv4 protocol
- Radius Authentication, EAP-TLS, EAP-TTLS, PEAP; SSID broadcast disable supported
- Multiple channel bandwidths of 20MHz and 40MHz for 2.4G.

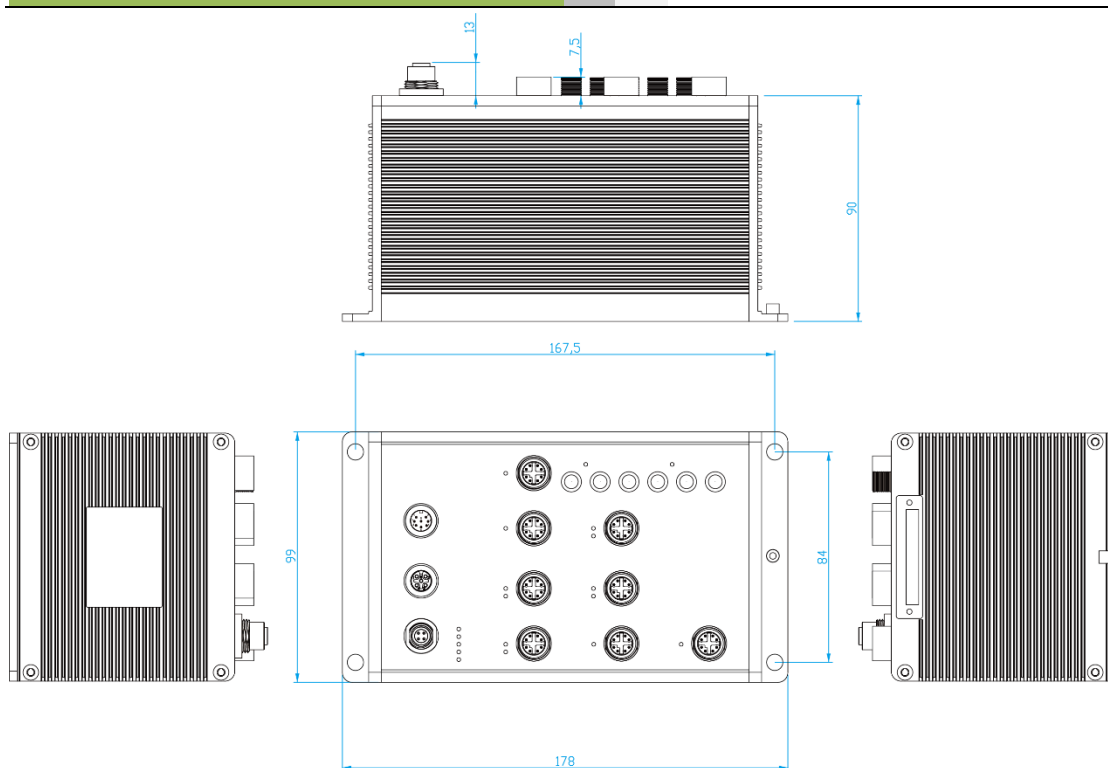
- Multiple channel bandwidths of 20MHz, 40MHz and 80MHz for 5G only.
- Wi-Fi Multimedia (WMM) and 802.11e traffic prioritization
- Support Multi-Site VPN for Mesh tunneling as well as Open VPN, L2TP over IPsec, IPsec, L2 over GRE , IPGRE and NAT for secured network connection
- Support Routing Protocol: Static route / RIPv2 / OSPF / BGP / EIGRP
- The built-in Layer-4 firewall includes DDoS, IP address filter / Mac address filter / TCP/UDP port number
- NAT/DMZ/Port Forwarding
- Support SNMP v1/v2c/v3
- One LTE 4G/3G w/ 2 SIM card design(1L model) for mobile redundancy
- GPS/ GLONASS (built-in LTE module) connection
- Load Balancing supports 5 mechanism between multiple WANs

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.

- Built-in 2 x serial ports(RS232/RS422/RS485)

- Serial port with 2.5KV isolation on RS422/RS485
- Supports 2DI / 2DO(Digital Input / Output)
- Built-in Modbus gateway converting Modbus RTU/ASCII to Modbus/TCP for serial ports
- Event alerting by Syslog, SNMP Trap, Email, Relay ; Permanent local log rotation / Maxi 1K records
- Remote Web control to get status or re-boot by Web
- Support SNTP to synchronize system clock
- Support LLDP discovery protocol
- Support DHCP Server and Client
- Graphic LTE & WIFI signal strength
- Built-in environmental monitoring for system input voltage, current and ambient temperature; Able to set alert when abnormal
- Firmware upgradeable through TFTP/HTTP
- Configuration backup and restoration
  - Supports text configuration file for system quick installation
  - USB port to upload/download firmware by USB dongle
- Dual image firmware
- IP 65/54 housing for water proof environment
- Support editable captive portal login page
- Wall-mount installation
- Visible LED to show the power & port link and activity
- EN45545-2 Fire & Smoke, EN50155 and EN61373 shock/vibration verification
- Operation temperature -40~65C

**DIMENSIONS (unit=mm)**



**SPECIFICATION**

WLAN Interface		
Radio Frequency Type	DSSS, OFDM	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
Wireless Standard	IEEE 802.11ac/n/a 5GHz IEEE 802.11b/g/n 2.4GHz	<b>IEEE 802.11b/g/n(2.4Gbps)</b> <b>Output Power Tx +/- 2dB(per chain)</b> 18dBm @ 1~11Mbps 18dBm @ 6~54Mbps 20/20dBm @ MCS0~MCS7 (HT20/40) <b>Receiver Sensitivity Rx +/- 2dB</b> ≤ -95dBm @ 1~11Mbps ≤ -92dBm @ 6~18Mbps ≤ -88dBm @ 24Mbps ≤ -85dBm @ 36Mbps ≤ -81dBm @ 48Mbps ≤ -80dBm @ 54Mbps ≤ -94dBm @ MCS0 (HT20/40) ≤ -76dBm @ MCS7 (HT20/40)
Wireless bandwidth	5GHz: Up to 1300Mbps 2.4GHz: Up to 450Mbps	<b>IEEE 802.11a/n/ac(5Gbp)</b> <b>Output Power Tx +/- 2dB(per chain)</b> 20dBm @ 6~24Mbps
Modulation	<b>802.11b: DSSS</b> <b>802.11a/g:</b> OFDM (BPSK, QPSK, 16-QAM, 64-QAM) <b>802.11n:</b> OFDM (BPSK, QPSK, 16-QAM, 64-QAM) <b>802.11ac:</b> 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	

s)	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) <b>Receiver Sensitivity Rx +/- 2dB</b> ≤ -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)	Routing	Static route / RIPv2 / OSPF / BGP / EIGRP	
	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	Management	SNMP v1,v2c,v3/ Web/Telnet/CLI
			Load Balancing	5 schemes for multiple WAN
			<b>Basic</b>	
			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	Wi-Fi multimedia and 802.11e traffic prioritization			
Wireless Security	SSID broadcast disable	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 & Wi-Fi 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			
Cellular Interface	Location Solutions GPS, Glonass (EU/Americas) GPS, Glonass, Beidou, Galileo (APAC model only)  Band Options <b>Asia-Pacific (APAC model)</b> LTE = B1, B3, B5**, B7, B8, B18**, B19**, B21**, B28, B38 (TDD), B39** (TDD), B40 (TDD), B41** (TDD) DC-HSPA+/ HSPA+/ HSPA/ UMTS = B1, B5**, B6**, B8, B9**, B19**  <b>Europe &amp; North America (EUNA model)</b> 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  <b>World Wide (WW model)</b> LTE = B1, B2**, B3, B4**, B5**, B7, B8, B9**, B12**, B13**, B18**, B19**, B20, B26**, B28, B29**, B30**, B32**, B41** (TDD), B42 (TDD), B43 (TDD), B46** (TDD), B48** (TDD), B66** WCDMA = B1, B2**, B3**, B4**, B5**, B6**, B8, B9**, B19**	Environment	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 & Wi-Fi 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 firmware by USB dongle Dual image firmware	
		IPv6/4	Present	
		Login Security	Supports IEEE802.1x Authentication/RADIUS	
Data Rates – LTE	Access Security	Access Security	HTTP/HTTPS/Telnet/SSH & Administration; SNMP v1/v2/v3 access for authentication via MD5/SHA(v3) and Encryption via DES/AES(v3)	
		<b>Physical Ports &amp; System</b>		
		Connectors	10/100/1000T: 6x ports M12 8pole X-coded incl. 2 WAN/LAN ports and 4 PoE ports (PoE model) USB/Console connector: 1 x M12 8-pole A-coded DIDO : 1 x M12 5-pole A-coded Power Input connector : 1 x M12 4-pole A-coded Serial connector : 2 x M12 8-pole X-coded 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	
Software	Protocol	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	
		<b>LED Indicators</b>		
		IPv6/4	Present	
		Operation Mode	AP/Bridge/Client/MESH mode	
		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*	

Power & System indicator	Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red) , Ring Master(Green), System Ready(Green), Serial1/Serial2(Green)	Radio Frequency	EN61000-4-8, EN61000-6-2 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
10/100/1000Base-T(X) port indicator	Link/Activity (Green), Speed (Yellow), PoE (Green, PoE model)	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
SIM	Green for Link/Act	Safety	EN60950 (LVD), AS60950 (LVD)
GPS	Green for Link/Act	Stability Testing	EN61373 (Shock & Vibration)
Fault	Red: Ethernet link down or power down	MTBF	NA
<b>Fault contact</b>		Warranty	5 years
Relay	Relay output to carry capacity of 1A at 24VDC	*Future Release **Optional	
<b>Power</b>		**Standard test of the following bands are not listed in EN 301 908-1 report: (APAC not listed bands) LTE = B5, B18, B19, B21, B39, B41 WCDMA = B5, B6, B9, B19 (EUNA not listed bands) LTE = B2, B4, B5, B12, B13, B25, B26, B29, B30, B41 WCDMA = B2, B3, B4, B5; (WWW not listed bands) LTE = B2, B4, B5, B9, B12, B13, B18, B19, B26, B29, B30, B32, B41, B46, B48, B66 WCDMA = B2, B3, B4, B5, B6, B9, B19	
Input power	Dual DC input, 16.8VDC~137.5VDC for (WV model)		
PoE budget (PoE model)	60W		
Power consumption (Typ.)	20W Watts		
<b>Physical Characteristic</b>			
Enclosure	IP 65/54 aluminum case		
Dimension	178 (W) x 99 (D) x 103 (H) mm		
Weight	1000g		
<b>Environmental</b>			
Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)		
Operating Temperature	-40°C ~ 65°C (-40°F ~ 149°F)		
Operating Humidity	5% to 95% Non-condensing		
<b>Regulatory approvals</b>			
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),		

### 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	-93dBm	±2dB
	18Mbps	21dBm	26dBm	±2dB	-90dBm	±2dB
	24Mbps	21dBm	26dBm	±2dB	-90dBm	±2dB
	36Mbps	20dBm	25dBm	±2dB	-85dBm	±2dB
	48Mbps	19dBm	24dBm	±2dB	-82dBm	±2dB
	54Mbps	18dBm	23dBm	±2dB	-80dBm	±2dB
2.4GHz 802.11n HT20	MCS 0	21dBm	26dBm	±2dB	-94dBm	±2dB
	MCS 1	21dBm	26dBm	±2dB	-92dBm	±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	-80dBm	±2dB
	MCS 6	18dBm	23dBm	±2dB	-79dBm	±2dB
	MCS 7	16dBm	21dBm	±2dB	-77dBm	±2dB
2.4GHz 802.11n HT40	MCS 0	20dBm	25dBm	±2dB	-93dBm	±2dB
	MCS 1	20dBm	25dBm	±2dB	-91dBm	±2dB
	MCS 2	20dBm	25dBm	±2dB	-89dBm	±2dB
	MCS 3	19dBm	24dBm	±2dB	-84dBm	±2dB
	MCS 4	19dBm	24dBm	±2dB	-82dBm	±2dB
	MCS 5	19dBm	24dBm	±2dB	-80dBm	±2dB
	MCS 6	18dBm	23dBm	±2dB	-79dBm	±2dB
	MCS 7	16dBm	21dBm	±2dB	-75dBm	±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	-91dBm	±2dB
	24Mbps	20dBm	25dBm	±2dB	-90dBm	±2dB
	36Mbps	18dBm	23dBm	±2dB	-86dBm	±2dB
	48Mbps	16dBm	21dBm	±2dB	-83dBm	±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 standard models are non-conformal coated, optional conformal coated models are available with -C model name; QMA connector models are with -Q model name.

- **TPWMR-5004-1L-1AC-2S-WV-65-EUNA.....P/N: 8643-021**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial ports + 4 Gigabit X-coded Ethernet PoE switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway; EU and US band; dual 16.8V~137.5VDC; IP65; -40~65C
- **TPWMR-5004-1L-1AC-2S-WV-65-WW.....P/N: 8643-022**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS-232 ports + 4 Gigabit X-coded Ethernet PoE switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway; Worldwide band; dual 16.8V~137.5VDC; IP65; -40~65C
- **TPWMR-5004-1L-1AC-2S-WV-65-APAC.....P/N: 8643-023**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS-232 ports + 4 Gigabit X-coded Ethernet PoE switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway; APAC band; dual 16.8V~137.5VDC; IP65; -40~65C
- **TPWMR-5004-1L-1AC-2SA-WV-65-EUNA.....P/N: 8643-0211**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS422 ports + 4 Gigabit X-coded Ethernet PoE switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway; EU and US band; dual 16.8V~137.5VDC; IP65; -40~65C
- **TPWMR-5004-1L-1AC-2SA-WV-65-WW.....P/N: 8643-0221**

- EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS422 ports + 4 Gigabit X-coded Ethernet PoE switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway; Worldwide band; dual 16.8V~137.5VDC; IP65; -40~65C
- **TPWMR-5004-1L-1AC-2SA-WV-65-APAC.....P/N: 8643-0231**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS422 ports + 4 Gigabit X-coded Ethernet PoE switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway; APAC band; dual 16.8V~137.5VDC; IP65; -40~65C
  - **TPWMR-5004-1L-1AC-2SB-WV-65-EUNA.....P/N: 8643-0212**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS485 ports + 4 Gigabit X-coded Ethernet PoE switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway; EU and US band; dual 16.8V~137.5VDC; IP65; -40~65C
  - **TPWMR-5004-1L-1AC-2SB-WV-65-WW.....P/N: 8643-0222**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS485 ports + 4 Gigabit X-coded Ethernet PoE switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway; Worldwide band; dual 16.8V~137.5VDC; IP65; -40~65C
  - **TPWMR-5004-1L-1AC-2SB-WV-65-APAC.....P/N: 8643-0232**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS485 ports + 4 Gigabit X-coded Ethernet PoE switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway; APAC band; dual 16.8V~137.5VDC; IP65; -40~65C
  - **TPWMR-5004-1L-1AC-2S-WV-54-EUNA.....P/N: 8643-041**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS232 ports + 4 Gigabit X-coded Ethernet PoE switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway; EU and US band; dual 16.8V~137.5VDC; IP54; -40~65C
  - **TPWMR-5004-1L-1AC-2S-WV-54-WW.....P/N: 8643-042**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS232 ports + 4 Gigabit X-coded Ethernet PoE switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway; Worldwide band; dual 16.8V~137.5VDC; IP54; -40~65C
  - **TPWMR-5004-1L-1AC-2S-WV-54-APAC.....P/N: 8643-043**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS232 ports + 4 Gigabit X-coded Ethernet PoE switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway; APAC band; dual 16.8V~137.5VDC; IP54; -40~65C
  - **TPWMR-5004-1L-1AC-2SA-WV-54-EUNA.....P/N: 8643-0411**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS422 ports + 4 Gigabit X-coded Ethernet PoE switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway; EU and US band; dual 16.8V~137.5VDC; IP54; -40~65C
  - **TPWMR-5004-1L-1AC-2SA-WV-54-WW.....P/N: 8643-0421**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors+ 2 serial RS422 ports + 4 Gigabit X-coded Ethernet PoE switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway; Worldwide band; dual 16.8V~137.5VDC; IP54; -40~65C
  - **TPWMR-5004-1L-1AC-2SA-WV-54-APAC.....P/N: 8643-0431**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors+ 2 serial RS422 ports + 4 Gigabit X-coded Ethernet PoE switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway; APAC band; dual 16.8V~137.5VDC; IP54; -40~65C
  - **TPWMR-5004-1L-1AC-2SB-WV-54-EUNA.....P/N: 8643-0412**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS485 ports + 4 Gigabit X-coded Ethernet PoE switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway; EU and US band; dual 16.8V~137.5VDC; IP54; -40~65C
  - **TPWMR-5004-1L-1AC-2SB-WV-54-WW.....P/N: 8643-0422**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors+ 2 serial RS485 ports + 4 Gigabit X-coded Ethernet PoE switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway; Worldwide band; dual 16.8V~137.5VDC; IP54; -40~65C
  - **TPWMR-5004-1L-1AC-2SB-WV-54-APAC.....P/N: 8643-0432**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors+ 2 serial RS485 ports + 4 Gigabit X-coded Ethernet PoE switch + 2 WAN/LAN w/Load Balancing, VPN, Protocol Gateway; APAC band; dual 16.8V~137.5VDC; IP54; -40~65C
  - **TWMR-5004-1L-1AC-2S-WV-65-EUNA.....P/N: 8640-021**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; EU and US band; dual 16.8V~137.5VDC; IP65; -40~65C
  - **TWMR-5004-1L-1AC-2S-WV-65-WW.....P/N: 8640-022**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS-232 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; Worldwide band; dual 16.8V~137.5VDC; IP65; -40~65C
  - **TWMR-5004-1L-1AC-2S-WV-65-APAC.....P/N: 8640-023**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS-232 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; APAC band; dual 16.8V~137.5VDC; IP65; -40~65C
  - **TWMR-5004-1L-1AC-2SA-WV-65-EUNA.....P/N: 8640-0211**



- EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS422 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; EU and US band; dual 16.8V~137.5VDC; IP65; -40~65C
- **TWMR-5004-1L-1AC-2SA-WV-65-WW.....P/N: 8640-0221**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS422 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; Worldwide band; dual 16.8V~137.5VDC; IP65; -40~65C
  - **TWMR-5004-1L-1AC-2SA-WV-65-APAC.....P/N: 8640-0231**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS422 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; APAC band; dual 16.8V~137.5VDC; IP65; -40~65C
  - **TWMR-5004-1L-1AC-2SB-WV-65-EUNA.....P/N: 8640-0212**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS485 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; EU and US band; dual 16.8V~137.5VDC; IP65; -40~65C
  - **TWMR-5004-1L-1AC-2SB-WV-65-WW.....P/N: 8640-0222**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS485 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; Worldwide band; dual 16.8V~137.5VDC; IP65; -40~65C
  - **TWMR-5004-1L-1AC-2SB-WV-65-APAC.....P/N: 8640-0232**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS485 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; APAC band; dual 16.8V~137.5VDC; IP65; -40~65C
  - **WMR-5004-1L-1AC-2S-WV-67-EUNA.....P/N: 8640-051**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; EU and US band; dual 16.8V~137.5VDC; IP67; -40~65C
  - **TWMR-5004-1L-1AC-2S-WV-67-WW.....P/N: 8640-052**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS-232 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; Worldwide band; dual 16.8V~137.5VDC; IP67; -40~65C
  - **TWMR-5004-1L-1AC-2S-WV-67-APAC.....P/N: 8640-053**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS-232 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; APAC band; dual 16.8V~137.5VDC; IP67; -40~65C
  - **TWMR-5004-1L-1AC-2SA-WV-67-EUNA.....P/N: 8640-0511**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS422 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; EU and US band; dual 16.8V~137.5VDC; IP67; -40~65C
  - **TWMR-5004-1L-1AC-2SA-WV-67-WW.....P/N: 8640-0521**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS422 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; Worldwide band; dual 16.8V~137.5VDC; IP67; -40~65C
  - **TWMR-5004-1L-1AC-2SA-WV-67-APAC.....P/N: 8640-0531**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS422 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; APAC band; dual 16.8V~137.5VDC; IP67; -40~65C
  - **TWMR-5004-1L-1AC-2SB-WV-67-EUNA.....P/N: 8640-0512**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS485 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; EU and US band; dual 16.8V~137.5VDC; IP67; -40~65C
  - **TWMR-5004-1L-1AC-2SB-WV-67-WW.....P/N: 8640-0522**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS485 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; Worldwide band; dual 16.8V~137.5VDC; IP67; -40~65C
  - **TWMR-5004-1L-1AC-2SB-WV-67-APAC.....P/N: 8640-0532**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS485 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; APAC band; dual 16.8V~137.5VDC; IP67; -40~65C
  - **TWMR-5004-1L-1AC-2S-WV-54-EUNA.....P/N: 8640-041**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS232 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; EU and US band; dual 16.8V~137.5VDC; IP54; -40~65C
  - **TWMR-5004-1L-1AC-2S-WV-54-WW.....P/N: 8640-042**  
 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS232 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; Worldwide band; dual 16.8V~137.5VDC; IP54; -40~65C
  - **TWMR-5004-1L-1AC-2S-WV-54-APAC.....P/N: 8640-043**

EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS232 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; APAC band; dual 16.8V~137.5VDC; IP54; -40~65C

- **TWMR-5004-1L-1AC-2SA-WV-54-EUNA.....P/N: 8640-0411**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS422 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; EU and US band; dual 16.8V~137.5VDC; IP54; -40~65C
- **TWMR-5004-1L-1AC-2SA-WV-54-WW.....P/N: 8640-0421**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors+ 2 serial RS422 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; Worldwide band; dual 16.8V~137.5VDC; IP54; -40~65C
- **TWMR-5004-1L-1AC-2SA-WV-54-APAC.....P/N: 8640-0431**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors+ 2 serial RS422 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; APAC band; dual 16.8V~137.5VDC; IP54; -40~65C
- **TWMR-5004-1L-1AC-2SB-WV-54-EUNA.....P/N: 8640-0412**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS485 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; EU and US band; dual 16.8V~137.5VDC; IP54; -40~65C
- **TWMR-5004-1L-1AC-2SB-WV-54-WW.....P/N: 8640-0422**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors+ 2 serial RS485 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; Worldwide band; dual 16.8V~137.5VDC; IP54; -40~65C
- **TWMR-5004-1L-1AC-2SB-WV-54-APAC.....P/N: 8640-0432**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors+ 2 serial RS485 ports + 4 Gigabit X-coded Ethernet managed Switch + 2WAN/2LAN with Load Balancing, VPN, Protocol Gateway; APAC band; dual 16.8V~137.5VDC; IP54; -40~65C

**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



- **ANT11000044** 2G/3G/4G dipole antenna, 704-960/1710~2690MHz, 1.6dBi, SMA plug, EU



■ ANT11000045

2G/3G/4G dipole antenna, 698-960/1710~2690MHZ, 3dBi, SMA plug, US



**Wi-Fi Antenna**

■ ANT11000051

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



■ ANT11000055

2.4/5GHz SMA dipole Wi-Fi antenna, 6dBi (2.4GHz), 4dBi (5GHz)



**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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