

# TWAP-5002

**EN50155 Multifunction VPN Router w/up to 2 WiFi 11ac+ 2 serial ports\*\*+ 2 Gigabit X-coded Ethernet (incl.1 PD) for Load Balancing, VPN, Storage\*\*; WV input; IP65/54/67**

- Built-in up to 2x Wi-Fi11ac/a/b/g/n module + 2xGigabit X-coded ports (incl. 1PD)
- Optional 2 serial ports\*\* with 2.5K isolation (RS422/RS485) or w/o isolation (RS232)\*\*
- Wi-Fi radio for 802.11ac/a/b/g/n with 5GHz or 2.4GHz; MIMO 3T3R
- Support Client-base roaming
- Supports AP/ Bridge/Client/MESH modes
- Support 802.11s Wireless Mesh Network
- VPN router for Multi-site VPN, OpenVPN, L2TP over IPsec, IPsec, L2 over GRE , IPGRE
- Load Balancing built-in 5 mechanism for Wi-Fi client/WAN arrangement
- Support NAT and Firewall
- Optional EMMC Flash storage on-board\*\*
- Optional support Modbus gateway on serial ports\*\*
- Galvanic isolation on WV model from 16.8V~137.5V input
- Built-in environmental monitoring for router inside info with voltage, current, temperature; Wi-Fi graphic signal strength
- Editable login page of captive portal for hot-spot application
- USB port for backup, restore the configuration file and upgrade firmware; Dual image firmware
- IP 65 /54/ 67 Aluminum housing for best heat dissipation and preventing moist ingress
- EN50155/61373/45545 verification for railway application



IP67 without serial ports



IP65/54 with serial ports



## OVERVIEW

Lantech TWAP-5002 series is a next generation EN50155 multi-function VPN router w/2x 802.11ac Wi-Fi + 2x Gigabit Ethernet (incl.1 PD)+ 2 serial ports\*\* that support advanced VPN function, Load-Balancing, EMMC Flash Storage\*\*,Protocol gateway, Storage\*\*, Wi-Fi roaming, for on-board / onboard-to-ground applications. The dual core CPU with 1.6GHz + 256M flash enables the router to multi-task smoothly.

### IEEE 802.11ac radio up to 2.6Gbps bandwidth

With IEEE 802.11ac capability, TWAP-5002 can operate either 5GHz or 2.4GHz bands, offering the maximum speed of 2.6Gbpsbandwidth (1.3Gbps per 802.11ac module). It is also compatible with 802.11b/g/n that can work with 2.4GHz for

longer range transmission.

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

### Optional EMMC Flash storage\*\*

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

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

TWAP-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 (WMM)**

TWAP-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.

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

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

**Wireless WMM QoS**

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

**Advanced security&16 SSIDs**

The security support standards including64/128bits WEP, WPA/WPA2 PSK(TKIP,AES), 802.1x ensures the best security and active defense against security treads. Lantech TWAP-5002 support up to 16 SSIDs, each SSID has its independent security and encryption.

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

TWAP-5002 supports Load Balancing for 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.

**Optional 2 ports serial connection, Modbus gateway**

Optional 2 ports 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.

**VPN and firewall**

Besides traditional VPN peer to peer tunneling, TWAP-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 TWAP-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 TWAP-5002is 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; WIFI signal strength**

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

The graphic Wi-Fi 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 and upgrade firmware through USB dongle for router replacement.

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

**Editable login page of captive portal**

The TWAP-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 TWAP-5002 series is verified with EN50155, 61373, 45545 standard with IP65/54/67 housing. It passed serious tests under extensive Industrial EMI and environmental vibration and

shocks standards. With CE & FCC radio certification for Wi-Fi and E-marking\*\* certificate, the TWAP-5002 is best for outdoor community, vehicle, power substation, process control automation etc. For more usage flexibilities, TWAP-5002 supports operating temperature from -20°C to 70°C or -40°C to 70°C(-E) .

**FEATURES & BENEFITS**

- High Speed Air Connectivity: WLAN interface support up to 2.6Gbps link speed (2AC)
- Built-in two Gigabit ports X-coded incl. 1 PD; 1LAN+1WAN or 2LAN
- Dual band 2.4G and 5GHz with 802.11ac/a/b/g/n
- Support 2.4Ghz operating within the following frequency bands:
  - 2.412~2.472 GHz
  - Support 5Ghz operating within the following frequency bands:
    - 5.180GHz~5.825GHz
- MIMO Smart antenna technology with 3T3R with 6 SMA/QMA\*\* type connectors for Wi-Fi
- EMMC-FLASH storage\*\*8/16/32G
- 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.
- Support AP/Bridge/Client/MESH mode
- Support Client-base roaming
- Support 802.11s Wireless Mesh Network
- Multiple channel bandwidths of 20MHz, 40MHz and 80MHz for 5G only.
- Wi-Fi Multimedia (WMM) and 802.11e traffic prioritization
- Load Balancing supports 5 mechanism between multiple WANs

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.

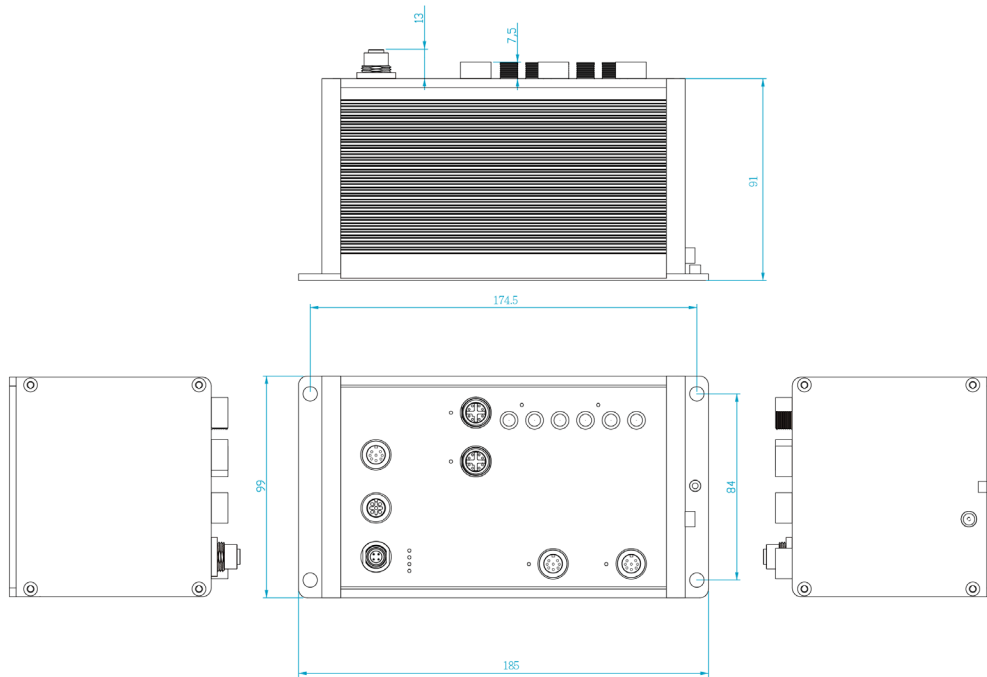
- Optional 2 x serial ports\*\*(RS232/RS422/RS485)
- Optional Serial port with 2.5KV isolation on RS422/RS485
- Supports 2DI / 2DO(Digital Input / Output)
- Support Multi-Site VPN for Mesh tunneling as well as Open VPN, L2TP over IPsec, IPsec, L2 over GRE , IPGRE and NAT for secured network connection
- 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
- Optional Built-in Modbus gateway converting Modbus RTU/ASCII to Modbus/TCP
- 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
- Built-in RTC to keep track of time always
- Support SNTP to synchronize system clock
- Support LLDP discovery protocol
- Support DHCP Server and Client
- Built-in environmental monitoring for system input voltage, current and ambient temperature; Able to set alert when abnormal
- Graphic LTE/ Wi-Fi signal strength
- Firmware upgradeable through TFTP/HTTP
- Configuration backup and restoration
  - Supports editable configuration file for system quick installation
  - USB port to upload/download firmware by USB dongle
- Dual image firmware
- Support editable captive portal login page
- IP 65/54/67 housing for water proof environment
- Wall-mount installation
- EN45545-2 Fire & Smoke, EN50155 and EN61373 shock/vibration verification

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.

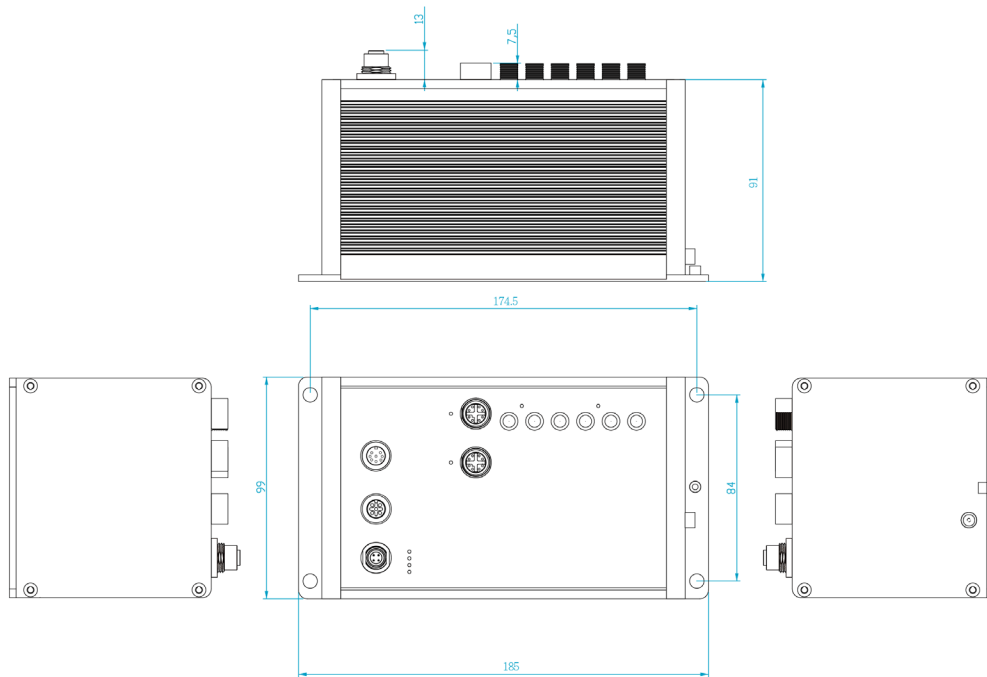
- Operation temperature -20~70C or -40~70C(-E)

**DIMENSIONS (unit=mm)**

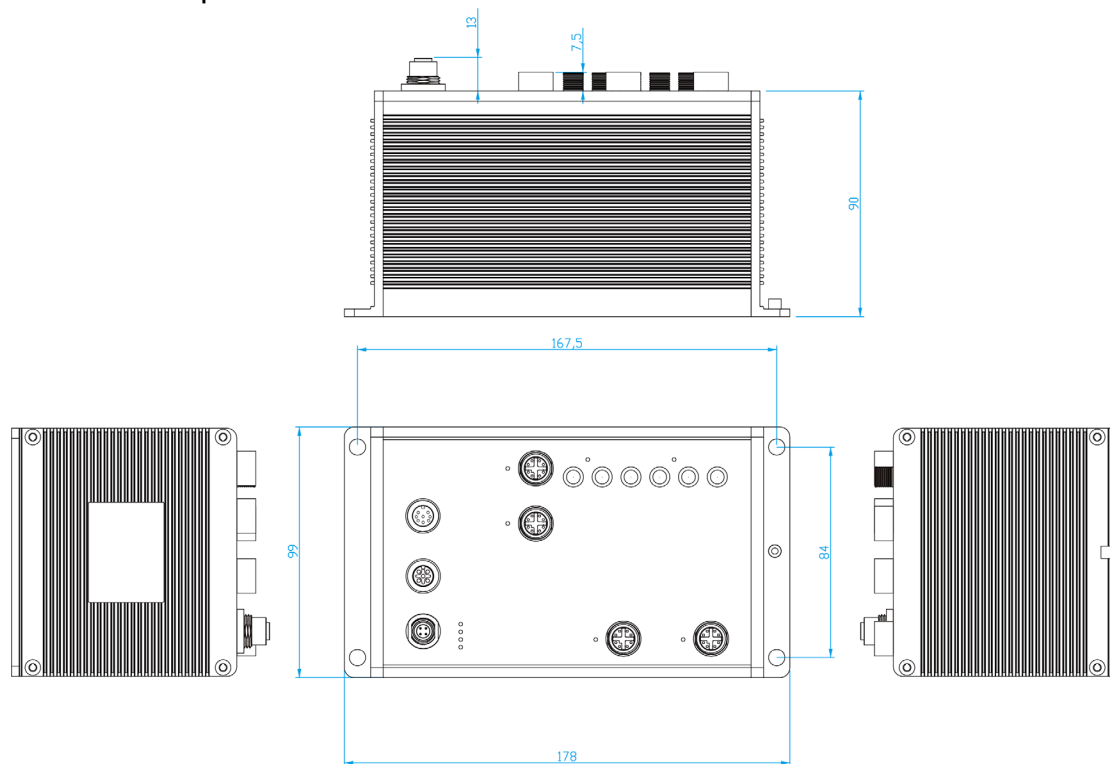
**IP67 with serial ports**



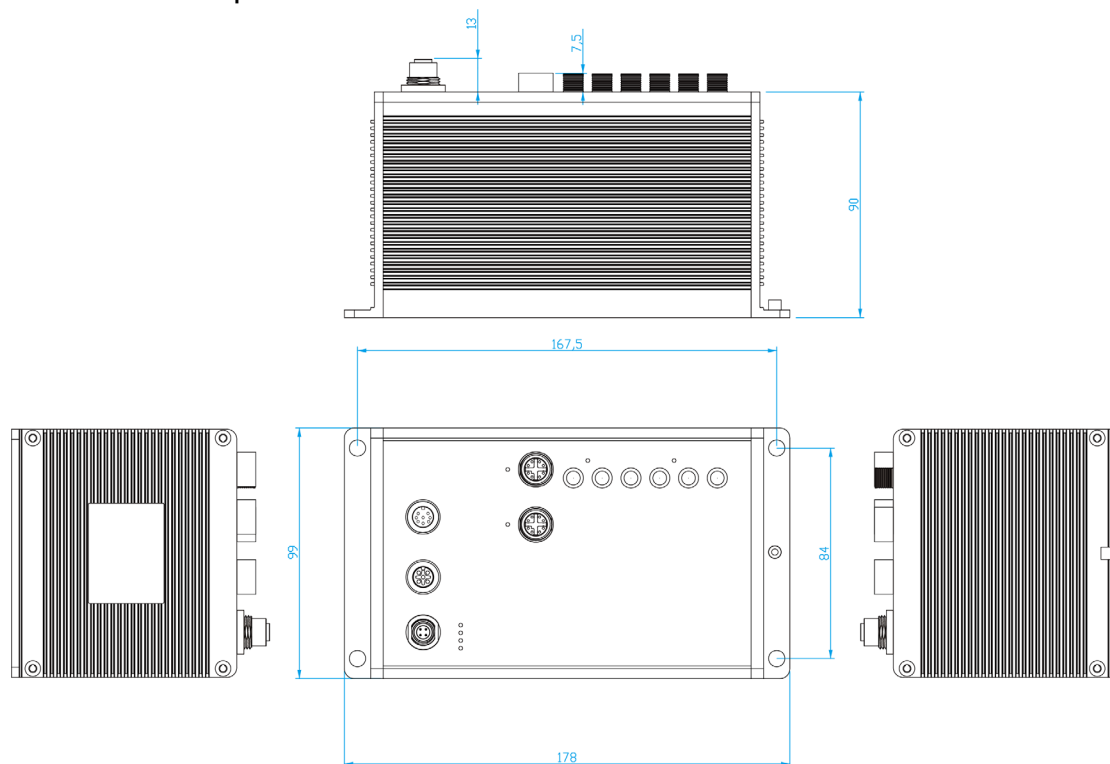
**IP67 without serial ports**



IP65/54 with serial ports



IP65/54 without serial ports



**SPECIFICATION**

WLAN Interface		Basic	
Radio Frequency Type	DSSS, OFDM	Fixed	All traffic will be distributed to a single WAN.
Wireless Standard	IEEE 802.11ac/n/a 5GHz IEEE 802.11b/g/n 2.4GHz	Failover	Routes connections through preferred WAN link while others stand-by. Sequentially activating another link if the preferred link fails.
Wireless bandwidth	5GHz: Up to 1300Mbps 2.4GHz: Up to 450Mbps	Priority	Select the active WAN according to priority.
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)	Weighted Round-Robin	Evenly distribute the traffic over all working WAN links in circular order according to the specified weights
Operating Frequency	IEEE 802.11 a/b/g/n ISM Band, 2.412GHz~2.472GHz, 5150MHz~5850MHz	Custom Route	Routing through the selected WAN for each specific traffic ex: TCP/UDP port number and IP address.
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	Roaming	Client-base roaming
IEEE 802.11b/g/n(2.4Gbps)	<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)	MESH	Support 802.11s Wireless Mesh Network
	<b>Output Power Tx +/- 2dB(per chain)</b> 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) <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)	WMM	Wi-Fi multimedia and 802.11e traffic prioritization
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, PEAP	Security	WEP64/128bits/ WPA/ WPA-PSK (TKIP,AES)/ WPA2/ WPA2-PSK (TKIP,AES)/SSH/SSL/HTTPS
Wireless Security	SSID broadcast disable	Authentication	Radius Authentication, EAP-TLS, EAP-TTLS, PEAP; SSID broadcast disable supported
<b>Software</b>		SSID	16 sets
IPv6/4	Present	Timer	Built-in Real Time Clock to keep track of time always(RTC)
Operating Mode	AP/Bridge/Client/MESH modes	Discovery	IEEE 802.1ab Link Layer Discovery Protocol (LLDP)
Login Security	Supports IEEE802.1x Authentication/RADIUS	SNMP trap	Device cold / warm start Port link up / link down DI / DO high / low
Access Security	HTTP/HTTPS/Telnet/SSH & Administration; SNMP v1/v2/v3 access for authentication via MD5/SHA(v3) and Encryption via DES/AES(v3)	Environmental Monitoring	System status for input voltage, current , ambient temperature to be shown in GUI and sent alerting if any abnormal status
Protocol	PPPoEClient, 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	Graphic signal display	Graphic Wi-Fi signal strength
Routing	Static route / RIPv2 / OSPF / BGP / EIGRP	Remote Web control	To reboot or get status of router by Web
Management	SNMP v1,v2c,v3/ Web/Telnet/CLI	Captive portal	Editable captive portal login page
Load Balancing	5 schemes for multiple WAN	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
		<b>Physical Ports &amp; System</b>	
		Connectors	10/100/1000T: 2x ports M12 8-pole X-coded with Auto MDI/MDI-X function (one port PD; 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 Optional Serial connector : 2 x M12 8-pole A-coded RP-SMA/QMA** connector for Wi-Fi 2AC: 6 (female) RP-SMA/QMA** connector for Wi-Fi 1AC: 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
		SerialStop 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
		<b>LED Indicators</b>	
		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)
		WLAN LEDs	WLAN 1/2, Link /ACT : Green
		Fault	Red: Ethernet link down or power down
		<b>Fault contact</b>	

Relay	Relay output to carry capacity of 1A at 24VDC	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 62311
<b>Power</b>		Safety	EN60950 (LVD), AS60950 (LVD)
Input power	Dual DC input, 16.8VDC~137.5VDC for (WV model)	Stability Testing	EN61373 (Shock & Vibration)
Power consumption (Typ.)	18 Watts	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
<b>Physical Characteristic</b>		MTBF	565,049Hrs (IEC62380 standards)
Enclosure	IP 65/54/67 aluminum case	Warranty	5 years
Dimension	178 (W) x 99 (D) x 103 (H) mm (IP65/54 model) 185 (W) x 99 (D) x 103 (H) mm (IP67 model)		
Weight	1000g		
<b>Environmental</b>			
Storage Temperature	-40°C~ 85°C (-40°F~ 185°F)		
Operating Temperature	-20°C~70°C (-4°F ~158°F) -40°C~70°C (-40°F ~158°F) –E Model		
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), EN61000-4-8, EN61000-6-2		

\*Future Release  
\*\*Optional

**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 QMA connector models are with -Q model name; -40~70C operational models are with -E model name.

- **TWAP-5002-1AC-WV-54.....P/N:8630-021**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 2 Gigabit X-coded Ethernet Switch + with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP54 housing; -20~70C
- **TWAP-5002-1AC-2S-WV-54.....P/N:8632-0212**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 2 serial RS232 ports + 2 Gigabit X-coded Ethernet Switch + with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP54 housing; -20~70C
- **TWAP-5002-1AC-2SA-WV-54.....P/N:8632-0213**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 2 serial RS422 ports + 2 Gigabit X-coded Ethernet Switch + with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP54 housing; -20~70C
- **TWAP-5002-1AC-2SB-WV-54.....P/N:8632-0214**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 2 serial RS485 ports + 2 Gigabit X-coded Ethernet Switch + with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP54 housing; -20~70C
- **TWAP-5002-2AC-WV-54.....P/N:8632-0215**  
EN50155 Multifunction VPN Router w/2x Wi-Fi 11ac + 2 Gigabit X-coded Ethernet Switch with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP54 housing; -20~70C
- **TWAP-5002-2AC-2S-WV-54.....P/N:8632-0216**  
EN50155 Multifunction VPN Router w/2x Wi-Fi 11ac + 2 serial RS232 ports + 2 Gigabit X-coded Ethernet Switch with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP54 housing; -20~70C



- **TWAP-5002-2AC-2SA-WV-54.....P/N:8632-0217**  
EN50155 Multifunction VPN Router w/2x Wi-Fi 11ac +2 serial RS422 ports + 2 Gigabit X-coded Ethernet Switch + with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP54 housing; -20~70C
- **TWAP-5002-2AC-2SB-WV-54.....P/N:8632-0218**  
EN50155 Multifunction VPN Router w/2x Wi-Fi 11ac +2 serial RS485 ports + 2 Gigabit X-coded Ethernet Switch + with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP54 housing; -20~70C
- **TWAP-5002-1AC-WV-65.....P/N:8632-011**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 2 Gigabit X-coded Ethernet Switch with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP65 housing; -20~70C
- **TWAP-5002-1AC-2S-WV-65.....P/N:8632-0111**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac +2 serial RS232 ports + 2 Gigabit X-coded Ethernet Switch with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP65 housing; -20~70C
- **TWAP-5002-1AC-2SA-WV-65.....P/N:8632-0112**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac +2 serial RS422 ports + 2 Gigabit X-coded Ethernet Switch with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP65 housing; -20~70C
- **TWAP-5002-1AC-2SB-WV-65.....P/N:8632-0113**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac +2 serial RS485 ports + 2 Gigabit X-coded Ethernet Switch with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP65 housing; -20~70C
- **TWAP-5002-2AC-WV-65.....P/N:8632-0114**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 2 Gigabit X-coded Ethernet Switch with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP65 housing; -20~70C
- **TWAP-5002-2AC-2S-WV-65.....P/N:8632-0115**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac +2 serial RS232 ports + 2 Gigabit X-coded Ethernet Switch with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP65 housing; -20~70C
- **TWAP-5002-2AC-2SA-WV-65.....P/N:8632-0116**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac +2 serial RS422 ports + 2 Gigabit X-coded Ethernet Switch + with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP65 housing; -20~70C
- **TWAP-5002-2AC-2SB-WV-65.....P/N:8632-0117**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac +2 serial RS485 ports + 2 Gigabit X-coded Ethernet Switch + with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP65 housing; -20~70C
- **TWAP-5002-1AC-WV-67.....P/N:8632-021**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 2 Gigabit X-coded Ethernet Switch with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP67 housing; -20~70C
- **TWAP-5002-1AC-2S-WV-67.....P/N:8632-0211**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac +2 serial RS232 ports + 2 Gigabit X-coded Ethernet Switch with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP67 housing; -20~70C
- **TWAP-5002-1AC-2SA-WV-67.....P/N:8632-0212**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac +2 serial RS422 ports + 2 Gigabit X-coded Ethernet Switch with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP67 housing; -20~70C
- **TWAP-5002-1AC-2SB-WV-67.....P/N:8632-0213**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac +2 serial RS485 ports + 2 Gigabit X-coded Ethernet Switch with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP67 housing; -20~70C
- **TWAP-5002-2AC-WV-67.....P/N:8632-0214**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 2 Gigabit X-coded Ethernet Switch with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP67 housing; -20~70C
- **TWAP-5002-2AC-2S-WV-67.....P/N:8632-0215**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac +2 serial RS232 ports + 2 Gigabit X-coded Ethernet Switch with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP67 housing; -20~70C
- **TWAP-5002-2AC-2SA-WV-67.....P/N:8632-0216**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac +2 serial RS422 ports + 2 Gigabit X-coded Ethernet Switch + with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP67 housing; -20~70C
- **TWAP-5002-2AC-2SB-WV-67.....P/N:8632-0217**  
EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac +2 serial RS485 ports + 2 Gigabit X-coded Ethernet Switch + with Load Balancing, VPN, Protocol Gateway; dual 16.8V~137.5VDC; IP67 housing; -20~70C
  
- **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

**Wi-Fi Antenna**

- **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



Lantech Communications Global Inc.

[www.lantechcom.tw](http://www.lantechcom.tw)  
[info@lantechcom.tw](mailto:info@lantechcom.tw)

© 2024 Copyright Lantech Communications Global Inc. all rights reserved.  
The revise authority rights of product specifications belong to Lantech Communications Global Inc.  
In a continuing effort to improve and advance technology, product specifications are subject to change without notice.