

# T(P)MR-5004

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



## OVERVIEW

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

### Optional EMMC Flash storage\*\*

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

### Dual concurrent LTE design 4G/3G for load-balancing

With dual LTE module design (2L model), 4 SIM card slots, T(P)MR-5004 can allow auto-swap, failover & fallback between multiple service providers for real non-stop connection. With concurrent LTE modules, it can also allocate bandwidth by " Load Balancing with 8 schemes between multiple WANs.

Both GPS and Russian GLONASS systems are supported.

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

T(P)MR-5004 supports Load Balancing for LTE/WAN connections. There are five schemes with 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.
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#### **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)MR-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)MR-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); Built-in 4 port switch (PoE model including 4 PoE with 60W budget)**

The T(P)MR-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; 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.

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

The built-in USB ports can upload/download the configurations through USB dongle for router replacement.

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

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

The T(P)MR-5004 supports editable captive portal function that allows administrator to force end-users redirect to authentication page.

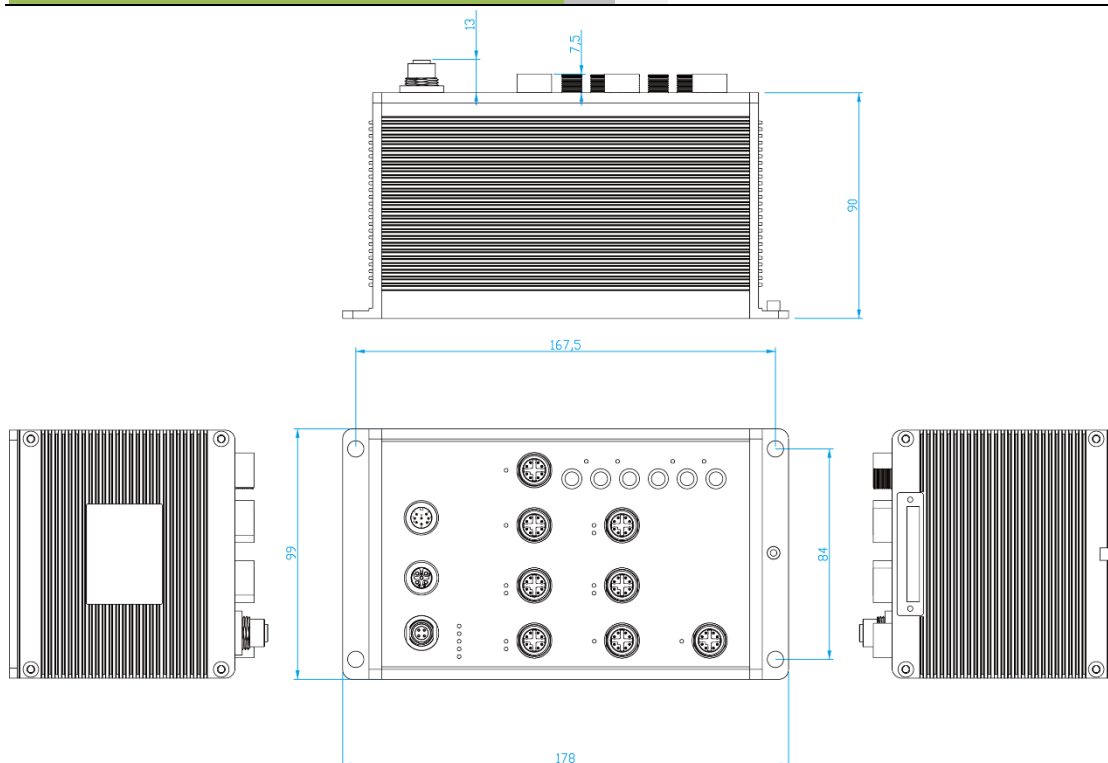
#### **Optional eSIM\*\***

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

#### **Ruggedized EN50155 design and FCC/CE & E-marking\* certificate**

The T(P)MR-5004 series 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)MR-5004 is best for outdoor community, vehicle, power substation, process control automation etc. For more usage flexibilities, T(P)MR-5004 supports operating temperature from -40°C to 65°C.

**DIMENSIONS (unit=mm)**



**SPECIFICATION**

<b>Cellular Interface</b>		
Location Solutions	GPS, Glonass	
Band Options	<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	
Data Rates – LTE	<b>Europe &amp; North America (EUNA model)</b> Downlink (Cat 6): FDD: 300 Mbps TDD: 222 Mbps Uplink (Cat 6): FDD: 50 Mbps TDD: 26 Mbps	
<b>Software</b>		
IPv6/4	Present	
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	
<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.
		Authentication
		Radius Authentication, EAP-TLS, EAP-TTLS, PEAP
		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
		Signal display
		LTE signal strength & TX / RX rate display
		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 configurations and upgrade firmware by USB dongle Dual image firmware
		<b>Physical Ports &amp; System</b>

Connectors	10/100/1000T: 6x ports M12 8pole X-coded incl. 2 WAN/LAN ports (PoE model incl. 4 PoE ports) 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	<b>Power</b>	Input power	Dual DC input, 16.8VDC~137.5VDC for (WV model)
	<b>2L model</b> SMA/QMA** connector for LTE: 4 (female) SMA/QMA** connector for GPS: 2 (female)		PoE budget (PoE model)	60W
Serial Baud Rate	1000Kbps high data rate,250kbps normal for RS232 ; 20Mbps high data rate,250kbps normal for RS422/RS485	<b>Physical Characteristic</b>	Power consumption (Typ.)	20W Watts
	<b>1L model</b> SMA/QMA** connector for LTE: 2 (female) SMA/QMA** connector for GPS: 1 (female)		Enclosure	IP 65/54 aluminum case
Serial Data Bits	5, 6, 7, 8	Dimension	178 (W) x 99 (D) x 103 (H) mm	
Serial Parity	odd, even, none, mark, space	Weight	1450g	
Serial Stop Bits	1, 1.5, 2	<b>Environmental</b>		
RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND	Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)	
RS-422	Tx+,Tx-, Rx+, Rx-,GND	Operating Temperature	-40°C ~ 65°C (-40°F ~ 149°F)	
RS-485 (2-wire)	Data+, Data-,GND	Operating Humidity	5% to 95% Non-condensing	
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	<b>Regulatory approvals</b>		
DI/DO	2 Digital Input (DI) : Level 0: -30~2V / Level 1: 10~30V Max. input current:8mA	EMC	FCC Part 15 Class A, EN55032 , EN55024	
	2 Digital Output(DO): Open collector to 80 VDC, 50mA	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	
EMMC Storage**	8/16/32 GB	Radio Frequency	EN 301 489-1, EN 301 489-17, EN 301 489-19, EN 301 489-52, EN 301 908-1※, EN 303 413, EN 62311	
<b>LED Indicators</b>		Safety	EN60950 (LVD), AS60950 (LVD)	
Power & System indicator	Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red) , Ring Master(Green), System Ready(Green), Serial1/Serial2(Green) ,	Stability Testing	EN61373 (Shock & Vibration)	
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	MTBF	NA	
GPS	Green for Link/Act	Warranty	5 years	
Fault	Red: Ethernet link down or power down	*Future Release **Optional		
<b>Fault contact</b>		※ 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;		
Relay	Relay output to carry capacity of 1A at 24VDC			

## 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.

- **TPMR-5004-1L-2S-WV-65-EUNA.....P/N: 8644-021**  
EN50155 Multifunction VPN Router + 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; IP65; -40~65C
- **TPMR-5004-1L-2SA-WV-65-EUNA.....P/N: 8644-0211**  
EN50155 Multifunction VPN Router + 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
- **TPMR-5004-1L-2SB-WV-65-EUNA.....P/N: 8644-0212**  
EN50155 Multifunction VPN Router + 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
- **TPMR-5004-1L-2S-WV-54-EUNA.....P/N: 8644-041**  
EN50155 Multifunction VPN Router + 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
- **TPMR-5004-1L-2SA-WV-54-EUNA.....P/N: 8644-0411**  
EN50155 Multifunction VPN Router + 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
- **PMR-5004-1L-2SB-WV-54-EUNA.....P/N: 8644-0412**  
EN50155 Multifunction VPN Router + 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
- **TPMR-5004-2L-2S-WV-65-EUNA.....P/N: 8644-024**  
EN50155 Multifunction VPN Router + 2 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; IP65; -40~65C
- **TPMR-5004-2L-2SA-WV-65-EUNA.....P/N: 8644-0241**  
EN50155 Multifunction VPN Router + 2 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
- **TPMR-5004-2L-2SB-WV-65-EUNA.....P/N: 8644-0242**  
EN50155 Multifunction VPN Router + 2 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
- **TPMR-5004-2L-2S-WV-54-EUNA.....P/N: 8644-044**  
EN50155 Multifunction VPN Router + 2 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
- **TPMR-5004-2L-2SA-WV-54-EUNA.....P/N: 8644-0441**  
EN50155 Multifunction VPN Router + 2 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
- **TPMR-5004-2L-2SB-WV-54-EUNA.....P/N: 8644-0442**  
EN50155 Multifunction VPN Router + 2 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
- **TMR-5004-1L-2S-WV-65-EUNA..... P/N: 8641-001**  
EN50155 Multifunction VPN Router + 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; IP65; -40~65C
- **TMR-5004-1L-2SA-WV-65-EUNA..... P/N: 8641-0011**  
EN50155 Multifunction VPN Router + 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
- **TMR-5004-1L-2SB-WV-65-EUNA..... P/N: 8641-0012**  
EN50155 Multifunction VPN Router + 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
- **TMR-5004-1L-2S-WV-54-EUNA..... P/N: 8641-004**  
EN50155 Multifunction VPN Router + 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
- **TMR-5004-1L-2SA-WV-54-EUNA..... P/N: 8641-0041**  
EN50155 Multifunction VPN Router + 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
- **TMR-5004-1L-2SB-WV-54-EUNA..... P/N: 8641-0042**  
EN50155 Multifunction VPN Router + 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
- **TMR-5004-2L-2S-WV-65-EUNA..... P/N: 8641-007**  
EN50155 Multifunction VPN Router + 2 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; IP65; -40~65C
- **TMR-5004-2L-2SA-WV-65-EUNA..... P/N: 8641-0071**  
EN50155 Multifunction VPN Router + 2 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
- **TMR-5004-2L-2SB-WV-65-EUNA..... P/N: 8641-0072**  
EN50155 Multifunction VPN Router + 2 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
- **TMR-5004-2L-2S-WV-54-EUNA..... P/N: 8641-010**  
EN50155 Multifunction VPN Router + 2 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
- **TMR-5004-2L-2SA-WV-54-EUNA..... P/N: 8641-0101**  
EN50155 Multifunction VPN Router + 2 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
- **TMR-5004-2L-2SB-WV-54-EUNA..... P/N: 8641-0102**  
EN50155 Multifunction VPN Router + 2 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

**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

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



### Antenna Base

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



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