# TWMR-5006

EN50155 Multifunction VPN Router w/1x WiFi 11ac + 1 LTE 4G + 2 serial ports + 6 Gigabit X-coded Ethernet Switch w/Load Balancing\*\*, TWCC\*\*, VPN, Protocol Gateway, Storage\*\*; WV

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- Built-in 6 Gigabit X-coded Ethernet managed switch
- 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
- Fast roaming \*\*, 802.11r work with Lantech controller
- Supports AP/ BRIDGE/Client modes
- Advanced wireless security WEP64/128bits/ WPA/ WPA-PSK (TKIP\*,AES)/ WPA2/ WPA2-PSK (TKIP\*,AES)
  - Optional TWCC\*\* (Train Wireless Carriage Coupling)for auto wireless coupling
- VPN router for Multi-site VPN, OpenVPN, L2TP, IPsec, PPTP\*\*, L2 over GRE
- Load Balancing\*\* support 8 mechanism
- Optional EMMC Flash storage on-board\*\*
- Support NAT and Firewall
- Support Modbus gateway on serial ports
- Support 2 RS422/485 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
- Environmental monitoring for router inside info with voltage, current, temperature; WIFI & LTE graphic signal strength & TX/RX rate display
- Editable login page of captive portal for hot-spot application
- USB port to backup, restore the configuration file and upgrade firmware\*; Dual image firmware\*
- EN50155/61373/45545 verification for railway application



# **OVERVIEW**

Lantech TWMR-5006 series is a next generation EN50155 multi-function VPN router w/ 1 x 802.3ac Wi-Fi + 1 x LTE modem +6 Gigabit X-coded Ethernet switch + 2 serial ports that supports advanced function of VPN, Load-

balancing\*\*(Premium pack), EMMC Flash Storage\*\*,TWCC\*\*, 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.

# Optional TWCC\*\* (Train Wireless Carriage Coupling) for auto coupling

TWMR-5006 supports optional TWCC\*\* (Train Wireless Carriage Coupling) that enables auto wireless coupling to reconnect APs.

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

With one mobile LTE module (1L model), 2 SIM card slots, TWMR-5006 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, TWMR-5006 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.

#### Optional EMMC Flash storage\*\*

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

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# MIMO technology with 3T3R and standard SMA / optional QMA type connectors

Lantech TWMR-5006 series adapts MIMO technology with smart antenna transmission and reception for 3T3R. With six external detachable antenna SMA/QMA\*\* connectors and optional antennas, TWMR-5006 can have better Wi-Fi & LTE/GPS coverage.

### Optional 802.11r fast roaming\*\*

TWMR-5006 support fast roaming\*\* in coordination with Lantech Wireless Controller to allow encryption keys to be stored on all of the APs in a network. Client mode supports PMK\*\* Caching and pre-authentication.

## Wireless WMM QoS

TWMR-5006 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-5006 support up to 16 SSIDs, each SSID has its independent security and encryption.

# Load Balancing\*\* with 8 mechanism for multi-WANs (premium license)

TWMR-5006 supports Load Balancing\*\* for LTE/WAN connections. There are eight schemes for Load Balancing\*\* function:

Pack	Algorithm	Description
Standard	Fixed	Manually route by traffic type through fixed WAN link.
Basic Package	Failover	Routes connections through preferred WAN link while others stand-by. Sequentially activate another link if preferred link fail occurs. Once failover will not failback until link loss.
	Priority	Routes connections through preferred WAN link as primary while others follow by. Ex. Wi-Fi client>LTE>others
	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.
Full Package incl. basic backage)	Sticky Session*	Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link , that is suitable for security services like online payment etc.
	Smallest Load*	Routes connections through the WAN link with highest free bandwidth ratio. The ratio = 1 - (traffic load / the capability of a WAN link). The traffic load could be defined by downstream, upstream or total traffic
	Fastest*	Routes connections through the WAN link with lowest latency time.

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## 2 port serial connection, Modbus gateway

It builds in 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.

### VPN and firewall

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Besides traditional VPN peer to peer tunneling, TWMR-5006 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, Open VPN, L2TP, IPsec L2 over GRE, NAT, and PPTP\*\* for various VPN applications.

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

#### Optional 2 GT smart bypass protection

The optional bypass relay is set to bypass the router to the next one when power is off in order to protect the network from crashing. Lantech bypass caters to remain in bypass mode until the router is completely booting up when power is back to avoid another network lost. Also it will be activated when detecting the router is hanged or link down.

## DIDO for alarm & email\*\* notice; Event log; Remote Web/SMS\*\* control

2 sets of DIDO function can support additional high/low physical contact for designate applications besides Port /

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Power events, for example, DIDO function can trigger alarm if the router was moved or stolen. In case of events, the TWMR-5006 will immediately send email\*\* and trap.

The event log can be sent via syslog, email\*\*s or trigger the alarm relay.

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

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

The TWMR-5006 is able to work from dual 16.8V  $\sim$ 137.5V DC isolated input (WV model) that is particular good for vehicle, rail train, depot etc applications.

Environmental monitoring for inside router info& alerting; Graphic WIFI & LTE signal strength and TX/RX rate display The built-in environmental monitoring can detect router ambient temperature, voltage, current where can send the syslog, email\*\* and SMS\*\* alert when abnormal.

The graphic WIFI & LTE signal strength and TX/RX rate display shows connection status at a glance

## 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.

#### Dual image firmware\*

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

#### Editable login page of captive portal

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

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

The built-in USB port can upload/download configuration and upgrade the firmware\* through USB dongle for router replacement

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

The TWMR-5006 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 Wi-Fi and LTE and E-marking\*\* certificate, the TWMR-5006 is best for outdoor community, vehicle, power substation, process control automation etc. For more usage flexibilities, TWMR-5006 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 1.3GMbps
- Built-in 6 Gigabit X-coded Ethernet ports
- Dual DC input from 16.8V~137.5VDC isolated power input (WV model)
- Optional 2 GT smart bypass relay protection when detecting power lost as well as CPU hang-up or link down. Deferring bypass time until router is completely boot-up.
- EMMC-FLASH storage\*\*8/16/32G
- Optional TWCC\*\* (Train Wireless Carriage Coupling) for auto wireless coupling
- 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:

5.180~5.825 GHz

- MIMO smart antenna technology with 3T3R
- 6 STANDARD SMA / OPTIONAL QMA type connectors for Wi-Fi & LTE, GPS
- Output power : <24dBM</p>
- Transmit power adjustment

- VAP (virtual access point) support up to 16 SSIDs
- Operation modes : AP/ BRIDGE / Client
- Traffic control for each SSID\*\*
- Band preference for same SSID services on dual band\*\*
- Rate selection to disable low data rate access\*\*
- 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-MD5, 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, IPsec L2 over GRE, and PPTP\*\* fro secured network connection
- The built-in Layer-4 firewall includes DoS\*\*, IP address filter / Mac address filter\* / TCP/UDP port number-
- Support SNMP\*v1/v2c/v3



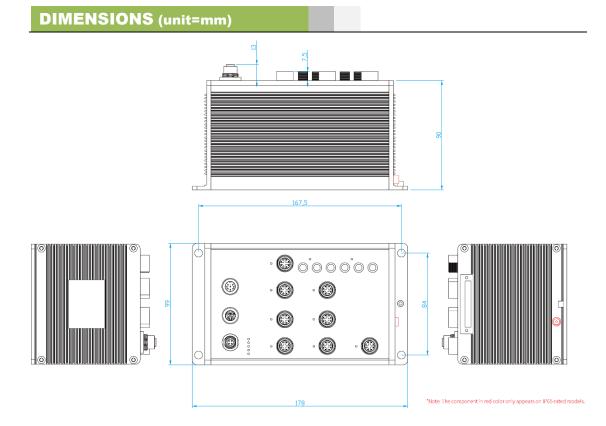
- Support NAT/DMZ
- One LTE 4G/3G w/ 2 SIM card design(1L model) for mobile redundancy
- GPS/ GLONASS (built-in LTE module) connection
- 802.11r Fast roaming\*\* (Optional ) between APs by Wireless Controller
- Load Balancing\*\* supports 8 mechanism between multiple WANs

Pack	Algorithm	Description
Standard	Fixed	Manually route by traffic type through fixed WAN link.
Basic Package	Failover	Routes connections through preferred WAN link while others stand-by. Sequentially activate another link if preferred link fail occurs. Once failover will not failback until link loss.
	Priority	Routes connections through preferred WAN link as primary while others follow by. Ex. Wi-Fi client>LTE>others
	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.
Full Package (incl. basic package)	Sticky Session*	Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link , that is suitable for security services like online payment etc.
	Smallest Load*	Routes connections through the WAN link with highest free bandwidth ratio. The ratio = 1 - (traffic load / the capability of a WAN link). The traffic load could be defined

	by downstream, upstream or total traffic		
Fastest*	Routes connections through the WAN link with lowest latency time.		

- Built-in 2 x serial ports(RS232/RS422/485)
- Serial port with 2.5KV isolation on RS422/485
- Supports 2DI/ 2DO(Digital Input / Output)
- Built-in Modbus gateway converting Modbus RTU/ASCII to Modbus/TCP for serial ports
- Event alerting by Syslog, Email\*\*, SMS\*\* text, Relay ; Permanent local log rotation / Maxi 1K records
- Remote Web/SMS\*\* control to get status or re-boot by Web or SMS\*
- Support SNTP to synchronize system clock
- Support LLDP discovery protocol
- Support DHCP Server and Client
- Graphic LTE & WIFI signal strength & TX/RX rate display
- Built-in environmental monitoring for system input voltage, current and ambient temperature; Able to set alert when abnormal
- Firmware upgradeable through TFTP/FTP/HTTP
- Configuration backup and restoration
  - Supports text configuration file for system quick installation
  - USB port to upload/download configuration by USB dongle
- Dual image firmware\*
- IP 65/54 housing for water proof environment
- Wall-mount installation
- Support editable captive portal login page
- Visible LED to show the power & port link and activity
- EN45545-2 Fire & Smoke, EN50155 and EN61373 shock/vibration verification
- Operation temperature -20~70C or -40~70C (-E)





SPECIF	ICATION		
WLAN Interf	ace	802.11a/n/ac(5Gbp	20dBm @ 6~24Mbps
Operating Mode Radio Frequency Type Wireless Standard	AP/BRIDGE/Client modes DSSS, OFDM IEEE 802.11ac/n/a 5GHz IEEE 802.11b/g/n 2.4GHz	s)	16dBm @ 36~54Mbps 19/18dBm @ MCS0 (HT20/40) 16/16dBm @ MCS7 (HT20/40) 19/18/18dBm @ MCS0 (VHT20/40/80) 13/13dBm @ MCS8 (VHT20/40/80) 13/13dBm @ MCS9 (VHT40/80)
Wireless bandwidth Modulation	5GHz: Up to 1300Mbps 2.4GHz: Up to 450Mbps 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)		Receiver Sensitivity Rx +/- 2dB         ≤ -92dBm @ 6~18Mbps         ≤ -86dBm @ 24Mbps         ≤ -84dBm @ 36Mbps         ≤ -81dBm @ 48Mbps         ≤ -80dBm @ 54Mbps         ≤ -93dBm @ MCS0 (HT20/40)         ≤ -71dBm/≤-80dBm @ MCS7 (HT20/40)
Operating Frequency Transmission Rate	IEEE 802.11 a/b/g/n ISM Band, 2.412GHz-2.472GHz, 5150MHz-5850MHz 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	Encryption Security	<ul> <li>≦-90dBm @ MCS0 (VHT20/40/80)</li> <li>≦-69dBm @ MCS8 (VHT20/40/80)</li> <li>≦-66dBm @ MCS9 (VHT40/80)</li> <li>WEP : (64-bit ,128-bit key supported)</li> <li>WPA /WPA2 : IEEE802.11i(WEP and AES encryption)</li> <li>WPA-PSK (256-bit key pre-shared key supported)</li> </ul>
IEEE 802.11b/g/n(2.4Gbp s)	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         ≤ -88dBm @ 36Mbps         ≤ -81dBm @ 48Mbps         ≤ -80dBm @ 54Mbps         ≤ -80dBm @ 54Mbps         ≤ -9dBm @ MCS0 (HT20/40)         ≤ -64dBm @ MCS7 (HT20/40)	Wireless Security Cellular Inte Location Solutions Band Options	OKC** and 802.11r** EAP,MD5,EAP,TLS,EAP,TTLS,EAP MsCHAPv3 and PEAP ** SSID broadcast disable <b>fface</b> GPS, Glonass (EU/Americas) GPS, Glonass, Beidou, Galileo (APAC model only) <b>APAC &amp; Australia (APAC model)</b> LTE: 2100/1800/850/2600/900/850/850/1500/700/2600/19 00/2300/2500 MHz (B1/B3/B5/B7/B8/B18/B19/B21/B28/B38/B39/B40/B4 1)
IEEE	Output Power Tx +/- 2dB(per chain)		EUNA & USA model

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# EN50155 Multifunction Router + Managed Switch



LTE:         VECA423858 VFW				
Bit Bit State		LTE:	Security	WEP64/128bits/ WPA/ WPA-PSK (TKIP*,AES)/
distance     Automication     Factor     F				
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Durb Retury - IT         PACE 4. sustralis (APAC model) Downlak (Cat 6): FDD: 30 Modes TDD: 20 M			SNMP trap	Device cold / warm start
Data Rates – ITE         APACE A sustain (APAC model) Downlink (CRI 6): FDD: 20 Meys Uptim. (CRI 6): FDD: 20 Meys Uptim. (CRI 6): FDD: 20 Meys Uptim. (CRI 6): FDD: 20 Meys TDD: 26 M		26/B28/B29/B30/B32/B41/B42/B43/B46/B48/B66)		
Doeslink, (Call 6); PDD: 300 Moge TDD: 222 Moge Uptin (Call 6); PDD: 200 Moge TDD: 22 Moge TDD: 200 Moge TDD:	Data Rates - ITE	APAC & Australia (APAC model)	Environmontol	0
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Tob. 22 Mps         Graphic agent         To record or get attus of router by Vde/SMS**           America & EREA (EUNA model)         Downlink (Cat B):         To record or get attus of router by Vde/SMS**         Editable captive portal light captive sportal light capticapticaptive sportal light capticaptive sportal light ca		FDD: 300 Mbps	Monitoring	
FDD: 50 Mbps         Percent State		•	Graphic signal	-
TD: 28 Mbjs         Protocol or gla status of Moutor of Moutor of Gla status of Moutor of Gla status of Moutor of Gla				
Anarogeneral Potocol         Estable capies portal login page Manitesance         Estable capies portal login page Manitesance           Dimension (Capies) PDD: 250 Mbps TDD: 25 Mbps TDD: 25 Mbps TDD: 26 Mbps TD				To reboot or get status of router by Web/SMS**
Annotas & La Schultz (1997)           Management         Firmware upgradeable function, TFP #TP/HTTP           Continue (1997)         Firmware upgradeable function, TFP #TP/HTTP           Uppink (Car B): FDD: 26 Mbps         Firmware upgradeable function, TFP #TP/HTTP           WorkWide (WW model) Downlink: Cart 12: 60 Mbps         Processor           Software         Internation           Protect         Present         Internation           Connectors         Internation         Internation           Weights Control         Present         Internation           Internation         Serial Bauk Rain         Internation           Protecol         Present         Internation         Serial Bauk Rain         Internation           Protecol         Professor         Internation         Serial Data Bab         Serial Data Bab         Serial Data Bab           Protocol         Professor         Internation         Serial Data Bab         Serial Data Bab         Serial Canadian           Pr				Editable captive portal login page
Protection         Supports in Ext configuration file for quick system installation           Upports (Config)         Supports in Ext configuration file for quick system installation           PDD: 50 Mops TDD: 25 Mops TDD: 26 Mops TDD: 26 Mops TDD: 26 Mops TDD: 26 Mops Catl 3: 450 Mops Uplink: Catl 3				
TDD: 22 Mbps         Dadup & restore           Uplink (Cnd 6); FDD: 50 Mbps         Protection (Cnd 6); FDD: 50 Mbps         Protection (Cnd 6); FDD: 50 Mbps           WorldWide (WW model) Downlink: Cnt 13: 00 Mbps         Protection (Cnd 6); FDD: 50 Mbps         Protection (Cnd 6); FDD: 50 Mbps           Software         Connectors         101/03/00/07.66 ports MIZ 8-pole A-coded DDD: 11 x MIZ 8-pole A-coded SMAQMA* connector 12 BP SMAQMA* connector 12 BP SMAQMA* connector of VFF: 3 (male)           Sector Protection Filter (Cnd 6); FDD: 50 Mbps         Protection Filter (Cnd 6); FDD: 50 Mbps           Protection Filter (Cnd 6); FDD: 50 Mbps         Protection Filter (Cnd 6); FDD: 50 Mbps           Sector Back Rest Filter (Cnd 7); FILTer (FirthFilter (Cnd 7);		. ,		
Proc. So Napo         Dongle         Dongle         Dongle           Dongle         Dongle         Dongle         Dongle           WorkWike (WW model)         Downlink:         Connectors         Proceeding (Not Proceeding)           Carl 12: 600 Mops         Carl 12: 600 Mops         Carl 12: 600 Mops         Connectors         Mice Mice Mice Mice Mice Mice Mice Mice			backup & restore	
Process         Dual image immunates           Weighted Roud- Rangement         Dual image immunates           Weighted Roud- Rais are out tool tool tool tool tool tool tool				
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WorkWide (WW mode) Downink: Cart 12: 600 Mbps Cart 21: 600 Mb		UU: 26 Mbps	Physical Po	-
Downlink: Cat 12: 400 Mpps Cat 2: 400 M		WorldWide (WW model)		
Cat 2: 460 Mbps Uplini: Cat 13: 150 Mbps       DOD       112 M12 4 public Acaded         Software       Present       DOD       112 M12 4 public Acaded         IPv04       Present       Serial Sametry       Simports IEEEB02.1x* Autentication/RADUS VocC*       Simports IEEEB02.1x* Autentication/RADUS Optional Train Wrieless Carriage Coupling for Auto wrieless Caupling       Simports IEEEB02.1x* Autentication/RADUS VocC*       Simports IEEEB02.1x* Autentication/RADUS VocC*         Access Security       HTTMHTPS Teleford/SEA & Administration; SMMP*V1/20/3 and Encryption Valoe Size Size(x) Protocol       Prevent First Camedrash & Administration; SMMP*V1/20/3 and Encryption Valoe Size(x) Size(x) and Encryption Valoe Size(x) Security Size(x) All Size(x) Size(x) All Size(x) All Size(x) Size(x) All Size(x) Si			Connectors	
Upin: Cat 13: 150 Mbps           Software         Dobs         1.11 M12 4-pole A-coded Serial connector 1: M12 4-pole A-coded Serial connector 2: 289           Software         Supports IEEE802.1x* Authentication/RADIUS Supports IEEE802.1x* Authentication/RADIUS Supports IEEE802.1x* Authentication/RADIUS TWCC***********************************				
Catil: 150 Mbps         Serial Contracts: 2 DBB           Field:         Present           Login Security         Supports IEEE02.11** Authentication/RADIUS           TWCC**         Optional Train Wireless Carriage Coupling for Auto wireless Coupling           Access Security         HTTPHTPTSTeinet/SST & Administration; SMMPV1/V2/V3 access for authentication via SMMPV1/V2/V3 access for authentication via Serial Barly           Protocol         PPPoF Cleint,DHOP server(cleint,Adjustable MTU, Prot forwarding (NAPT), DNZV XAT, SNTR**, DDNS**           Balachardy**         Serial Bauel Bals         5.6.7.8           Serial Bale         5.8.7.8           SMMPV1/V2/V3 access for authentication via address filter / Mac address filter / Ma		•		
Software         Section         <		•		
IPrediat         Present         SMACDAM* connector for UFF: 3 (female)           Login Security         Supports IEEE002 1x* Authentication/RDMUS         Serial Baud Rate         1000Ctype shipt data rate.250kbps normal for RS222 ; 20kbps high data rate.250kbps normal for RS222 / 20kbps high data rate.250kbps normal for RS22 / 20kbps high data	Software			
Login Security         Supports IEEE802.1x** Authentication/RADIUS         SMAMA** connector for W-Fit: 3 (maile)           TWCC**         Optional Train Wireless Carrage Coupling for Auto wreless Coupling         1000Kps high data rate.250kbps normal for R5422/485           Access Security         HTTP/HTTP/Teffenet/SSH & Administration; SMM**/Vi/X/32 access for authentication via M5/SH4(x3) and Encryption via DES/AES(x3)         Serial Baul Rate         1000Kps high data rate.250kbps normal for R5422/485           Protocol         PPPoE (Cinn, DHC? Berver/client, Adjustantianton; SMM**/Vi/X/32 access for address filter / TCP/UDP pot number ).VRRP**, DDNS*         Serial Baul Rate         Serial Step Bit         5, 6, 7, 8           Management Load Balancing**         SMM**Vi/X/32 access for address filter / TCP/UDP pot number ).VRRP**, DDNS*         R5423(28) CWIe)         Data: AND           Fixed         Bit Address for multiple WAN inck if prefered WAN link, while others stand-by. Sequentially activate other link if oreafrow occurs.         DND         2 biginal Caput(DD): Open collector to 40 VDC, 200M.           Priority         Routes connections fthrough prefered WAN link, while others stand-by. Sequentially activate other link if oreafrow occurs.         DND         2 biginal Caput(DD): Open collector to 40 VDC, 200M.           Custom Route         Eventy distribute the traffic over all working WAN links in circular order according to the specified weights         Green for Link/Act         Fault           Full Package incl. basic package**         Sinder gas out		Present		
TWCC**         Optional Train Wireless Carriage Coupling for Auto wreless Coupling         Serial Baud Rate         1000(Rps high data rate.250(kbps normal for R5232 ; 20Mps high data				
Access Security       HTTP/HTTPS/Teinet/SSH & Administration;       R8422/485         Access Security       HTTP/HTTPS/Teinet/SSH & Administration;       R8422/485         MMDS/HA(2) and Encryption via DES/RES(V)       Sarial Data IS       5, 6, 7, 8         Protocol       PPPOE Client, DHCP server/client, Adjustable MTU, Prot forwarding (NAPT), DM2; NAT, STP, Firewall(Firewall(CoS**; IP address fitter / Mac address fitter / TCP/LDP port number ), VRRP*, DDNS*       Sarial Stop Dits       1, 1, 5, 2         Management       SMMPV-v1/2/20 with Web/Teinet/CLI address fitter / TCP/LDP port number ), VRRP*, DDNS*       R5-422       Tx1, Rx4, Rxx, GND         Management       SMMPV-v1/2/20 with Web/Teinet/CLI address fitter / TCP/LDP port number ), VRRP*, DDNS*       R5-422       Tx1, Rx4, Rxx, GND         Management       SMMPV-v1/2/20 with Web/Teinet/CLI address fitter / TCP/LDP port number ), VRRP*, DNDS*       R5-422       Tx1, Rx4, Rxx, GND         Management       SMMPV-v1/2/20 with Web/Teinet/CLI address fitter / TCP/LDP port number ), VRRP*, Management       DVDO       R5-422         Failover       Routes connections through preferred WAN link, while others stand-by. Sequentially adrivate other links if orcerInd verally adrivate other links in circular order according to the specific runk for overflow accurs.       DVDO       2 Digital Input (D): Low of Careen, Field (Green), System Ready(Green), Setail Seating Careen for Link/Adt       EMMC Storage**         Pull Package incl. basic package**       Brinding al connect			Serial Baud Rate	
Address Studinly       In Therrin Tool Inductor Stark Administration, SMMP+1/22V3 access for authentication via MDS/SHA(v3) and Encryption via DES/AES(v3)       Serial Data Bits       5, 6, 7, 8         Protocol       PPPot forwarding (NAPT), DMZ; NAT, SNTP, Firewall(Firewall(CoS*); Pi address filter / Mac address filter / TCP/UDP por number ),VRRP*, DDNS*       Serial Stop Data Bits       5, 6, 7, 8         Management       SNMP*1/,v2c,v3/Web/Teinet/CLI       Serial Stop Data Bits       5, 6, 7, 8         Management       SNMP*1/,v2c,v3/Web/Teinet/CLI       Rs-4422       Tx+Tx, Fx, Fx, Sx, SND         Basis C Package*       Manauly route by traffic type through fixed WAN link.       Pitod       Di/DO       Solipial Input (D): :         Failover       Routes connections through preferred WAN link.       Pointly       Routes connections through preferred WAN link.         Weighted Round-       Evenly distribute the traffic over all working WAN links with event inks in circular order according to the specified registra       Power 4 System       Power 1 (Green), P-Fail (Perely WAN link with hype tried to the same WAN link with hype tried to the same WAN link with hype tried acounted ins in the assistion are nuted to the same WAN link with hype tried acount in the assistion are nuted to the same WAN link with hype trie bandwidh rato.       Power 1 (Green), Power 2 (Green), P-Fail (Perely WAN link with hype tried acounted ins in the assistion are nuted to the same WAN link with hype tried acounted ins in the assistion are nuted to the same WAN link with hype tried acounted ins in tragio 1 - (Tarific load / the capabibit) of a WA				
MD5SHA(x)3) and Encryption via DES/AES(x)3     Serial Party     odd, even, none, mark, space       Protocol     PPPoE Client, DHCP server/client, Adjustable MTU, Protorwarding (NAPT), DMZ; NAT, STP, Firewall(Firewall(CoS <sup>T*</sup> ; IP address filter / Nac address filter / TCP/UDP port number ), VRP**, DDNS*     Sarial Stop Bits     1, 1.5, 2       Management Load Balancing**     SNMP*v1, v2c, v3/ Web/Teinet/CLI Basic Package**     Sarial Stop Bits     1, 1.5, 2       Management Load Balancing*     SNMP*v1, v2c, v3/ Web/Teinet/CLI Basic Package**     RS-432 (2WL)     TAF, NR, Rx, RAV, RDD       Fixed     Manually route by traffic type through fixed WAN link, while others stand-by. Sequentially activate another link if prefered link failure occurs.     DVDO     2 Digital Party       Priority     Routes connections through prefered WAN link, while others stand-by. Sequentially activate other links in circular order according to the specified raffic cox TCP/UDP port number and IP address.     DVDO     2 Digital Output(D): Costom Route     EMAC Storage**       Weighted Round- exitable Round- basic package**     EMAC Storage**     Brief/32 GB       Weighted Round- basic in circular order according to the specified raffic cox TCP/UDP port number and IP address.     D/10/00/1000Base TCX) port indicator       Full Package incl. basic package**     Binding al connections in the specified raffic cox TCP/UDP port number and IP address.     Fault Contact Relay     Relay output to carry capacity of 1A at 24VDC       Power & suitable for security services like online payment tock hybest free bandwidth ratio.	Access Security		Serial Data Rite	
Protocol       PPPoE Client,DHCP server/client, Adjustable MTU, Port forwarding (NAPT), DMZ; NAT, SNTP, Firewell (Firewell(DEX); Pl address filter / Mac address filter / TCP/UDP port number )/VRP*, DDNS*       Setal Stop Bits       1.1.5, 2         Management Load Balancing**       TXD, RXD, RTS, CTS, DTR, DSR, DCD, GND         Strade Structure       RS-428 (2-wire)       Datas, Data, GND         Structure       Structure       RS-428 (2-wire)       Datas, Data, GND         Fixed       Management Load Balancing**       Structure       RS-428 (2-wire)       DIO 324 (Statiation, 8KV contact & 15KV air RS-428 5 2:KV isolation         Fixed       Manually route by traffic type through fixed WAN link.       Input power 1.5KVA isolation       Input power 1.5KVA isolation         Fixed       Routes connections through preferred WAN link.       DIOO       2 Digital Input (D) : Level 0: 30-2V / Level 1: 10-30V         Max. input current:BmA       Z Digital Output(IDO): Open collector to 40 VDC, 200mA       200mA         Priority       Routes connections through preferred WAN link.       Priority (Green), Power 1 (Green), Power 2 (Green), P-Fail (Red), Rig Master(Green).         Weighted Round- inks in circular order according to the specific traffic ex TCP/UDP port number and IP address.       Power 1 (Green), Speed (Yellow)         Full Package incl. basic package**       SIMA Green to Link/Act GPS Green for Link/Act GPS Green for Link/Act Power       Power consaurption (Typ)				
Firewall (Firewall (DS*** IP address filter / Mac address filter / TCP/UDP port number ),VRRP**, DDNS*       Re-422       Tx+,Tx-, Rx+, Rx-,GND         Management Load Balancing**       SNMP*1,V2cy3/ Web/Telnet/CLI Load Balancing**       Datat, Datas, OBN         Some Some Sor multiple WAN       Rescare Some Sor multiple WAN       Rescare Some Sor multiple WAN         Fixed       Manually route by traffic type through fixed WAN link.       Input power 1.5KVA isolation         Basic Package**       Routes connections through preferred WAN link, while others stand-by. Sequentially activate another link if preferred link failure occurs.       DI/DO       2 Digital Input (D): Level 0: -30-2V Level 1: 10-30V Max. input current:8mA 2 Digital Output(DO): Open collector to 40 VDC, 200mA         Weighted Round- links in dircular order according to the specified weights       Evenly distribute the traffic over all working WAN links in dircular order according to the specified weights       Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red), Ring Master(Green), Serial 1/Serial/Green)         Custom Route       Routing through the selected WAN lore each specified weights       Silding all connections in an application session to particular WAN link to ensure all connections in the session are notued to the same WAN link, that is suitable for security services like online payment etc.       Sild         Sticky Session*       Binding all connections through the ecapability of a WAN link).       The traffic load /the capability of a WAN link).         Fastest*       Routes connections through the WAN link with highest	Protocol			
address filter / TCP/UDP port number ),VRRP**, DDNS*       RS-428 (2-wire)       Data-, Data-, Data-, CARD.         Management Load Balancing**       SNMP*1,V2c,V3/ Web/Teinet/CLI 8 schemes for multiple WAN       RS-422/485 2.5KV isolation; RKV contact & 15KV air ESD DIDO 3KV isolation Input power 1.5KVA isolation         Fixed       Manually route by traffic type through fixed WAN link. while others stand-by. Sequentially activate another link if preferred link failure occurs.       DIDO       2 Digital Input (DI): Level 0: -30-2V / Level 1: 10-30V Max. input correntsMA 2 Digital Output(DO): Open collector to 40 VDC, 200mA         Priority       Routes connections through preferred WAN link while others stand-by. Sequentially activate other links if overflow occurs.       EMMC Storage**       Br/I6/32 GB         Weighted Round- Routing through the selected WAN for each specifier weights       Evenly distribute the traffic over all working WAN links in circular order according to the specified weights       Di/010/1000Base- T(X) port indicator       Per unit. Power 1 (Green), Power 2 (Green), P.Fail (Red), Ring Master(Green), System Ready(Green), Serial/Serial2(Green)         Sticky Session*       Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link, that is suitable for security services like online payment etc.       Power         Sticky Session*       Binding all connections through the exame WAN link, with highest free bandwidth ratio. The ratio = 1 - (ratific load / the capability of a WAN) link), The traffic toal could be defined by downstream, upstream or total traffic       Powe		Port forwarding (NAPT), DMZ; NAT, SNTP,		TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
DDNS*         R422485 2.5KV isolation; 8KV contact & 15KV air RS232 8KV contact and 15KV air ESD DDO 3KV isolation Input power 1.5KVA isolation           Management Load Balancing**         ShMP*V1,v2c,v3/ Web/Teinet/CLI Bashemes for multiple WAN Manually route by traffic type through fixed WAN link.         DDO 3KV isolation Input power 1.5KVA isolation           Bashemes for multiple WAN Fixed         Manually route by traffic type through fixed WAN link.         DDO 3KV isolation           Bashemes for multiple WAN         Manually route by traffic type through preferred WAN link. while others stand-by. Sequentially activate another link if preferred link failure occurs.         DV/DO         2 Dipital Dup UtpUD): Open collector to 40 VDC, 200mA           Priority         Routes connections through preferred WAN link while others stand-by. Sequentially activate other links if overflow occurs.         EtMMC Storage**         8/16/32 GB           Weighted Round- Kobin         Evenly distribute the traffic over all working WAN links in circular order according to the specified weights         Per unit: Power 1 (Green), Power 2 (Green), P-Fail indcator         Per unit: Power 1 (Green), System Ready(Green), Serial //Serial2(Green)           Full Package incl. basic package**         Sticky Session**         Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link, that is suitable for security services like online payment etc. The trafic load culd be defined by downstream, upstream or total traffic         Physical Characteristic Physical Characteristic Physical Characteristic Physical Character ist				
Management Load Balancing**       SNMP*V1,v2c,v3/ Web/Teinet/CLI 8 schemes for multiple WAN       RS232 8KV contact and 15KV air ESD DID 3KV isolation         Basic Package**       Manually route by traffic type through fixed WAN link, while others stand-by. Sequentially activate another link if preferred Ink failure occurs.       D/DO       2 Digital Input (DI) : Level 0: -30-2V / Level 1: 10-30V Max. input current8mA 2 Digital Output(DO) : Open collector to 40 VDC, 20mA         Priority       Routes connections through preferred WAN link, while others stand-by. Sequentially activate another link if overflow occurs.       EMMC Storage**       8/16/32 GB         Weighted Round- Robin       Evenly distribute the traffic over all working WAN links in circular order according to the specified weights       Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red), Ring Master(Green), System Ready(Green), Serial //Senial2(Green)         Sticky Session*       Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link, that is suitable for security services like online payment etc.         Smallest Load*       Routes connections through the WAN link with highest free bandwidth ratio. The traftic load / Uth capability of a WAN link),       Relay output to carry capacity of 1A at 24VDC         Power / System       Pelose       Pelose         Sticky Session*       Binding all connections through the WAN link with highest free bandwidth ratio. The traftic load / Uth capability of a WAN link),       Power consumption (Typ.)       Dual DC input, isolated 16.8VDC-137.5VDC				
Load Balancing**       8 schemes for multiple WAN       DIDO 3KV isolation         Fixed       Manually route by traffic type through fixed WAN link.       Input power 1.5KVA isolation         Basic Package**       DIDO 3KV isolation       Input power 1.5KVA isolation         Failover       Routes connections through preferred WAN link while others stand-by. Sequentially activate another link if preferred link failure occurs.       DI/DO       EMMC Storage*         Priority       Routes connections through preferred WAN link while others stand-by. Sequentially activate other links if overflow occurs.       Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red), Ring Master/(Green), System Ready(Green), System	Management		Isolation protection	
Hadd       Package**       Di/DO       2 Digital Input (DI) : Level 0: -30-2V / Level 1: 10-30V Max. input current:MA 2 Digital Output(DO): Open collector to 40 VDC, 200mA         Priority       Routes connections through preferred WAN link while others stand-by. Sequentially activate other links if overflow occurs.       EMMC Storage**         Weighted Round- Robin       Evenly distribute the traffic over all working WAN links in circular order according to the specified weights       Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red ), Ring Master(Green), Serial/Serial/Corean). System Ready(Green), Serial/Serial/Corean)         Full Package incl. basic package**       Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link, that is suitable for security services like online payment etc.       Relay       Relay output to carry capacity of 1A at 24VDC Power         Smallest Load*       Routes connections through the WAN link with link). The traffic load could be defined by downstream, upstream or total traffic       The traffic load could be defined by downstream, upstream or total traffic       Power for Staluminum case         Fastest*       Routes connections through the WAN link with lowest latency time.       Power consumption 178 (W) x 99 (D) x 103 (H) mm         Fast Roaming**       802.11r       Work with Lattech controller       Storage       -40°C ~ 85°C (-40°F ~ 185°F)				
Failover       Routes connections through preferred WAN link while others stand-by. Sequentially activate another link if preferred link failure occurs.       Level 0: -30-2V / Level 1: 10-30V Max. input current:BmA 2 bigitel Output(DD): Open collector to 40 VDC, 200mA         Priority       Routes connections through preferred WAN link while others stand-by. Sequentially activate other links if overflow occurs.       EMMC Storage**       8/16/32 GB         Weighted Round- Robin       Evenly distribute the traffic over all working WAN links in circular order according to the specified weights       Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red), Ring Master(Green), System Ready(Green), Serial/Serial2(Green)         Custom Route       Routing through the selected WAN for each specified weights       10/100/1000Base- T(X) port indicator         Sticky Session*       Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link, that is suitable for security services like online payment etc.         Smallest Load*       Routes connections through the WAN link with link), The traffic load / the capability of a WAN link), The traffic load could be defined by downstream, upstream or total traffic       Power consumption (Typ.)       20 Watts (Physical Characteristic Enclosure         Fastest*       Routes connections through the WAN link with lowest latency time.       Protex consumption (Typ.)       20 Watts (Physical Characteristic Enclosure         Fastest*       Routes connections through the WAN link with lowest latency time.       Stroage       <	Fixed	Manually route by traffic type through fixed WAN link.		Input power 1.5KVA isolation
Failover       Routes connections through preferred WAN link while others stand-by. Sequentially activate another link if preferred link failure occurs.       Max. input current:8mA 2 Digital Output(DO): Open collector to 40 VDC, 200mA         Priority       Routes connections through preferred WAN link while others stand-by. Sequentially activate other links if overflow occurs.       EMMC Storage**       8/16/32 GB         Weighted Round- Robin       Evenly distribute the traffic over all working WAN links in circular order according to the specified weights       Power & System indicator       Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red), Ring Master(Green), System Ready(Green), Serial 1/Serial2(Green)         Custom Route       Routing through the selected WAN for each specified traffic ex: TCP/UDP port number and IP address.       10/100/1000Base- T(X) port indicator       Link/Activity (Green), Speed (Yellow) T(X) port indicator         Sticky Session*       Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link , that is suitable for security services like online payment etc.       Smallest Load*       Relay cutput to carry capacity of 1A at 24VDC Power         Smallest Load*       Routes connections through the WAN link with highest free bandwidth ratio. The ratio = 1 - (traffic load / the capability of a WAN link). The tratio = 1 - (traffic load / the capability of a WAN link).       Power consumption (Typ.)       20 Watts         Fastest*       Routes connections through the WAN link with linercy time. East Roaming**       Routes connections through	Basic Package*	*	DI/DO	
while others stand-by. Sequentially activate another link if preferred link failure occurs.       2 Digital Output(DO): Open collector to 40 VDC, 200mA         Priority       Routes connections through preferred WAN link while others stand-by. Sequentially activate other links if overflow occurs.       EMMC Storage**       8/16/32 GB         Weighted Round- Robin       Evenly distribute the traffic over all working WAN weights       Power & System indicator       Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red), Ring Master(Green), System Ready(Green), Serial/Serial/Green)         Custom Route       Evenly distribute the traffic over all working WAN weights       10/100/1000Base- TC) port indicator       Link/Activity (Green), Speed (Yellow) TC) port indicator         Full Package incl. basic package**       SliM       Green for Link/Act         Sticky Session*       Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link, that is suitable for security services like online payment etc.       Fault contact         Stricky Session*       Binding all connections through the WAN link with highest free bandwidth ratio. The ratio = 1 - (traffic load / the capability of a WAN link).       Power consumption (Weight       20 Watts         Fastest**       Routes connections through the WAN link with links.       Power consumption (TR (W) × 99 (D) × 103 (H) mm         Fastest**       Routes connections through the WAN link with lowest latency time.       Enclosure       IP 65/54 aluminum case	Failover	Routes connections through preferred WAN link		
Ink if preferred link failure occurs.     200mA       Priority     Routes connections through preferred WAN link while others stand-by. Sequentially activate other links if overflow occurs.     EMMC Storage**     8/16/32 GB       Weighted Round- Robin     Evenly distribute the traffic over all working WAN links in circular order according to the specified weights     Power & System Indicator     Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red), Ring Master(Green), System Ready(Green), Serial1/Serial2(Green)       Custom Route     Routing through the selected WAN for each specific traffic ex: TCP/UDP port number and IP address.     SIM     Green for Link/Act       Full Package incl. basic package**     Sind gal connections in an application session to particular WAN link to ensure all connections in th session are routed to the same WAN link, that is suitable for security services like online payment etc.     Relay     Relay output to carry capacity of 1A at 24VDC       Power     Dual DC input, isolated 16.8VDC-137.5VDC for (WV model)     Power onsumption (Typ.)     20 Watts       Smallest Load*     Routes connections through the WAN link with highest free bandwidth ratio. The traffic load / the capability of a WAN ink).     Power consumption (Typ.)     20 Watts       Fastest*     Routes connections through the WAN link with lowest latency time.     In eation 1 (traffic load could be defined by downstream, upstream or total traffic     IP 65/54 aluminum case       Fastest*     Routes connections through the WAN link with lowest latency time.     IP 65/54 aluminum case       Fast Ro		while others stand-by. Sequentially activate another		
Industry       Industry <thindustry< th="">       Industry       <thi< td=""><td></td><td>link if preferred link failure occurs.</td><td></td><td></td></thi<></thindustry<>		link if preferred link failure occurs.		
while others stand-by. Sequentially activate other links if overflow occurs.       LED Indicators         Weighted Round- Robin       Evenly distribute the traffic over all working WAN links in circular order according to the specified weights       Power & System (Red), Ring Master(Green), System Ready(Green), Serial1/Serial2(Green)         Custom Route       Routing through the selected WAN for each specific weights       Inik/Activity (Green), Speed (Yellow)         Full Package incl. basic package**       Sinding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link , that is suitable for security services like online payment etc.       Fault contact Relay       Relay output to carry capacity of 1A at 24VDC         Smallest Load*       Routes connections through the WAN link with highest free bandwith ratio. The traffic load could be defined by downstream, upstream or total traffic       The traffic load / the capability of a WAN link).       Power       Ip Us power       Dual DC input, isolated 16.8VDC-137.5VDC for (WV model)         Fastest*       Routes connections through the WAN link with highest free bandwith ratio. The traffic cload could be defined by downstream, upstream or total traffic       Power consumption 178 (W) × 99 (D) × 103 (H) mm Weight       Physical Characteristic Enclosure         Fast Roaming**       802.11r       work with Lantech controller       Storage       -40°C ~ 85°C (-40°F ~ 185°F)	Priority	Routes connections through preferred WAN link		
links if overflow occurs.       Power & System indicator       Per unit: Power 1 (Green), Power 2 (Green), P-Fail (Red), Ring Master(Green), System Ready(Green), Serial1/Serial2(Green)         Weighted Round- Robin       Evenly distribute the traffic over all working WAN links in circular order according to the specified weights       10/100/1000Base- T(X) port indicator       Link/Activity (Green), System Ready(Green), Serial (Green), System Ready(Green), Serial (Serial2(Green)         Custom Route       Routing through the selected WAN for each specific traffic ex: TCP/UDP port number and IP address.       Sim dicator       Sim dicator         Full Package incl. basic package**       Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link, that is suitable for security services like online payment etc.       Fault contact       Relay output to carry capacity of 1A at 24VDC         Smallest Load*       Routes connections through the WAN link with highest free bandwidth ratio. The ratio = 1 - (traffic load / the capability of a WAN link). Iink).       The traffic load could be defined by downstream, upstream or total traffic       Power consumption (Typ.)       20 Watts         Fastest*       Routes connections through the WAN link with lowest latency time.       IP 65/54 aluminum case       Dimension 178 (W) x 99 (D) x 103 (H) mm         Fast Roaming**       802.11r work with Lantech controller       Storage       -40°C - 85°C (-40°F - 185°F)		while others stand-by. Sequentially activate other	LED Indicato	Drs
Weighted Round- Robin       Evenly distribute the traffic over all working WAN links in circular order according to the specified weights       Modelou       Serial1/Serial2(Green)       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.       10/100/1000Base- T(X) port indicator       Link/Act         Full Package incl. basic package**       Simaling all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link , that is suitable for security services like online payment etc.       Fault contact         Smallest Load*       Routes connections through the WAN link with highest free bandwidth ratio. The ratio = 1 - (traffic load / the capability of a WAN link).       Power consumption (Typ.)       Dual DC input, isolated 16.8VDC-137.5VDC for (WV model)         Fastest*       Routes connections through the WAN link with linke,       Power consumption (Typ.)       20 Watts         Fast Roarning**       Routes connections through the WAN link with lowest latency time.       IP 65/54 aluminum case Dimension       IP 65/54 aluminum case Dimension         Fast Roarning**       802.11r work with Lantech controller       Storage       -40°C ~ 85°C (-40°F ~ 185°F)				
Robin       links in circular order according to the specified weights       10/100/1000Base-T(X) port indicator       Link/Activity (Green), Speed (Yellow)         Custom Route       Routing through the selected WAN for each specific traffic ex: TCP/UDP port number and IP address.       Silk       Green for Link/Act         Full Package incl. basic package**       Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link , that is suitable for security services like online payment etc.       Routes connections through the WAN link with highest free bandwidth ratio. The ratio = 1 - (traffic load could be defined by downstream, upstream or total traffic       Routes connections through the WAN link with lowest latency time.         Fastest*       Routes connections through the WAN link with lowest latency time.       IP 65/54 aluminum case         Fast Roaming**       802.11r work with Lantech controller       Storage       -40°C ~ 85°C (-40°F - 185°F)	Weighted Round-	Evenly distribute the traffic over all working WAN	Indicator	
weights       T(X) port indicator         Custom Route       Routing through the selected WAN for each specific traffic ex: TCP/UDP port number and IP address.       SIM       Green for Link/Act         Full Package incl. basic package**       Green for Link/Act       Fault       Red: Ethernet link down or power down         Sticky Session*       Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link , that is suitable for security services like online payment etc.       Relay       Relay output to carry capacity of 1A at 24VDC         Smallest Load*       Routes connections through the WAN link with highest free bandwidth ratio. The ratific load could be defined by downstream, upstream or total traffic       Dower consumption (Typ.)       20 Watts         Fastest*       Routes connections through the WAN link with lowest latency time.       IP 65/54 aluminum case       Enclosure       IP 65/54 aluminum case         Fast Roaming**       802.11r work with Lantech controller       Storage       -40°C ~ 85°C (-40°F - 185°F)			10/100/1000Base-	Link/Activity (Green), Speed (Yellow)
Custom Route       Routing through the selected WAN for each specific traffic ex: TCP/UDP port number and IP address.       Sim       Green for Link/Act         Full Package incl. basic package**       Green for Link/Act       Green for Link/Act         Sticky Session*       Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link , that is suitable for security services like online payment etc.       Sile on the same WAN link , that is suitable for security services like online payment etc.         Smallest Load*       Routes connections through the WAN link with highest free bandwidth ratio. The ratific load could be defined by downstream, upstream or total traffic       Power consumption (Typ.)       20 Watts         Fastest*       Routes connections through the WAN link with lowest latency time.       B02.11r work with Lantech controller       IP 65/54 aluminum case       IP 65/54 aluminum case         Fast Roaming**       802.11r work with Lantech controller       Storage       -40°C ~ 85°C (-40°F - 185°F)		• .		
Full Package incl. basic package**         Sticky Session*       Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link , that is suitable for security services like online payment etc.       Fault       Relay       Relay output to carry capacity of 1A at 24VDC         Smallest Load*       Boutes connections through the WAN link with highest free bandwidth ratio. The ratio = 1 - (traffic load could be defined by downstream, upstream or total traffic       Dwer consumption (Typ.)       20 Watts       Power consumption (Typ.)         Fastest*       Routes connections through the WAN link with lowest latency time.       Power with Lantech controller       Power consumption (Typ.)       20 Watts         Fast Roaming**       Bout the controller       Fault contact       Power consumption (Typ.)       Power consumption (Typ.)       Power consumption (Typ.)         Fast Roaming**       Bo2.11r       work with Lantech controller       Storage       -40°C ~ 85°C (-40°F ~ 185°F)	Custom Route	•		
Full Package Incl. basic package**         Sticky Session*       Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link , that is suitable for security services like online payment etc.       Fault contact         Smallest Load*       Routes connections through the WAN link with highest free bandwidth ratio. The ratio = 1 - (traffic load could be defined by downstream, upstream or total traffic       Dower consumption (Typ.)       Dower consumption (Typ.)         Fastest*       Routes connections through the WAN link with lowest latency time.       IP of Sof 4 aluminum case (Marce Linesting Lin		traffic ex: TCP/UDP port number and IP address.		
Subsy 3ession       Binding all connections in an application session to particular WAN link to ensure all connections in the session are routed to the same WAN link , that is suitable for security services like online payment etc.       Relay       Relay output to carry capacity of 1A at 24VDC         Smallest Load*       Routes connections through the WAN link with highest free bandwidth ratio. The ratio = 1 - (traffic load / the capability of a WAN link). The traffic load could be defined by downstream, upstream or total traffic       Power consumption (Typ.)       20 Watts         Fastest*       Routes connections through the WAN link with lowest latency time.       Power consumption (Typ.)       20 Watts         Fast Roaming**       B02.11r work with Lantech controller       Storage       -40°C ~ 85°C (-40°F ~ 185°F)		cl. basic package**		
particular WAN link to ensure all connections in the session are routed to the same WAN link , that is suitable for security services like online payment etc.       Power       Dual DC input, isolated 16.8VDC-137.5VDC for (WV model)         Smallest Load*       Routes connections through the WAN link with highest free bandwidth ratio. The ratio = 1 - (traffic load / the capability of a WAN link). The traffic load could be defined by downstream, upstream or total traffic       Power consumption (Typ.)       20 Watts         Fastest*       Routes connections through the WAN link with lowest latency time. 802.11r work with Lantech controller       IP 65/54 aluminum case UP 65	Sticky Session*	Binding all connections in an application session to		
session are routed to the same WAN link , that is suitable for security services like online payment etc.       Input power       Dual DC input, isolated 16.8VDC-137.5VDC for (WV model)         Smallest Load*       Routes connections through the WAN link with highest free bandwidth ratio. The ratio = 1 - (traffic load / the capability of a WAN link). The traffic load could be defined by downstream, upstream or total traffic       Power consumption (Typ.)       20 Watts         Fastest*       Routes connections through the WAN link with load 200 be defined by downstream, upstream or total traffic       Input power       Dual DC input, isolated 16.8VDC-137.5VDC for (WV model)         Fastest*       Routes connections through the WAN link with lowest latency time.       Input power       Dual DC input, isolated 16.8VDC-137.5VDC for (WV model)         Power consumption (Typ.)       20 Watts       Dimension       178 (W) x 99 (D) x 103 (H) mm         Weight       1000g       Environmental       Environmental         Fast Roaming**       802.11r work with Lantech controller       Storage       -40°C ~ 85°C (-40°F - 185°F)		particular WAN link to ensure all connections in the		
suitable for security services like online payment etc.     model)       Smallest Load*     Routes connections through the WAN link with highest free bandwidth ratio. The ratio = 1 - (traffic load / the capability of a WAN link).     Power consumption (Typ.)     20 Watts       The ratio = 1 - (traffic load / the capability of a WAN link).     Power consumption (Typ.)     20 Watts       The traffic load could be defined by downstream, upstream or total traffic     Enclosure     IP 65/54 aluminum case       Dimension     178 (W) x 99 (D) x 103 (H) mm     Weight     1000g       Fast Roaming**     802.11r work with Lantech controller     Storage     -40°C ~ 85°C (-40°F ~ 185°F)		session are routed to the same WAN link , that is		Dual DC input, isolated 16.8VDC~137.5VDC for (WV
Fastest*     Routes connections through the WAN link with lowest latency time.     Power consumption (Typ.)     20 Watts       Power consumption (Typ.)     20 Watts       Physical Characteristic       Enclosure Dimension     178 (W) x 99 (D) x 103 (H) mm       Weight     1000g       Environmental       Fast Roaming**     802.11r work with Lantech controller		suitable for security services like online payment etc.		
Indigitation for the ball of the capability of a WAN link,       The ratio = 1 - (traffic load / the capability of a WAN link,)       The ratio = 1 - (traffic load / the capability of a WAN link,)         The traffic load could be defined by downstream, upstream or total traffic       IP 65/54 aluminum case         Fastest*       Routes connections through the WAN link with lowest latency time.       Dimension       178 (W) × 99 (D) × 103 (H) mm         Fast Roaming**       802.11r work with Lantech controller       Storage       -40°C ~ 85°C (-40°F ~ 185°F)	Smallest Load*	÷	Power concurrenties	20 Watte
Fast Roaming**     Routes connections through the Capability of a WAN link with Lowest latency time.     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)		•		20 WallS
Fastest*     Routes connections through the WAN link with lowest latency time.     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)				aracteristic
Fast Roaming**     Boults could be could			· · · · · · · · · · · · · · · · · · ·	
Fastest*     Routes connections through the WAN link with lowest latency time.     Weight     1000g       Fast Roaming**     802.11r     work with Lantech controller     Storage     -40°C ~ 85°C (-40°F ~ 185°F)				
Fast Roaming**         B02.11r         work with Lantech controller         Environmental	Fastest*	•		
Fast Roaming**         802.11r         work with Lantech controller         Storage         -40°C ~ 85°C (-40°F ~ 185°F)		-	Environmen	tal
WMM WI-Fi multimedia and 802.11e traffic prioritization Temperature		802.11r work with Lantech controller		-40°C ~ 85°C (-40°F ~ 185°F)
	WMM	WI-FI multimedia and 802.11e traffic prioritization	Temperature	



Operating Temperature Operating Humidity	-40°C ~ 70°C (-40°F ~ 158°F) – E Model           ting Humidity         5% to 95% Non-condensing		
Regulatory a	FCC Part 15 Class A, EN55032, EN55024	report	
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000- 4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS),	MTBF	
	EN61000-4-8, EN61000-6-2	Warranty	
Radio Frequency	EN301 489-1, EN301 489-17, EN301 489-19, EN301 489-52, EN300 440, EN301 893, EN300 328, EN301 908-1, EN303 413, EN62311		
Safety	EN60950 (LVD), AS60950 (LVD)		

ing	EN61373 (Shock & Vibration)
	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
	495,724 Hrs (IEC62830 standards) 5 years

\*Future Release \*\*Optional

# **RF Performance Table**

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

# EN50155 Multifunction Router + Managed Switch



	Data Rate	TX Power (per chain)	TX Power (3 chains)	Tolerance	RX Specifications Sensitivity	Tolerance
	6Mbps	20dBm	25dBm	±2dB	-94dBm	±2dB
	9Mbps	20dBm	25dBm	±2dB	-94dBm	±2dB
	12Mbps	20dBm	25dBm	±2dB	-92dBm	±2dB
5GHz	18Mbps	20dBm	25dBm	±2dB	-91dBm	±2dB
802.11a	24Mbps	20dBm	25dBm	±2dB	-90dBm	±2dB
	36Mbps	18dBm	23dBm	±2dB	-86dBm	±2dB
	48Mbps	16dBm	21dBm	±2dB	-83dBm	±2dB
	54Mbps	15dBm	20dBm	±2dB	-80dBm	±2dB
	MCS 0	19dBm	24dBm	±2dB	-93dBm	±2dB
	MCS 1	19dBm	24dBm	±2dB	-90dBm	±2dB
	MCS 2	19dBm	24dBm	±2dB	-87dBm	±2dB
5GHz	MCS 3	18dBm	23dBm	±2dB	-83dBm	±2dB
802.11n/ac	MCS 4	18dBm	23dBm	±2dB	-80dBm	±2dB
VHT20	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
	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
5GHz	MCS 4	17dBm	22dBm	±2dB	-80dBm	±2dB
802.11n/ac VHT40	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
	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
5GHz 802.11ac	MCS 4	17dBm	22dBm	±2dB	-80dBm	±2dB
VHT80	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 coating, optional conformal coating are with –C model name; Optional bypass models are available with –BT model name; QMA connector models are with –Q model name; -40~70C operational models are with –E model name.

TWMR-5006-1L-1AC-2S-WV-65-EUNA......P/N: 8650-021

EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial ports + 6 Gigabit X-coded Ethernet managed switch for Load Balancing\*\*, TWCC\*\*, VPN, Protocol Gateway; EU and US band; dual isolated 16.8V~137.5VDC; IP65; -20~70C

- TWMR-5006-1L-1AC-2S-WV-65-WW......P/N: 8650-022 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS-232 ports + 6 Gigabit X-coded Ethernet managed switch for Load Balancing\*\*, TWCC\*\*, VPN, Protocol Gateway; Worldwide band; dual isolated 16.8V~137.5VDC; IP65; -20~70C
- TWMR-5006-1L-1AC-2S-WV-65-APAC......P/N: 8650-023 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS-232 ports + 6 Gigabit X-coded Ethernet managed switch for Load Balancing\*\*, TWCC\*\*, VPN, Protocol Gateway; APAC band; dual isolated 16.8V~137.5VDC; IP65; -20~70C
- TWMR-5006-1L-1AC-2SA-WV-65-EUNA......P/N: 8650-0211 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 isolated serial RS422/485 ports + 6 Gigabit X-coded Ethernet managed switch for Load Balancing\*\*, TWCC\*\*, VPN, Protocol Gateway; EU and US band ; dual

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isolated 16.8V~137.5VDC: IP65 - -20~70C TWMR-5006-1L-1AC-2SA-WV-65-WW......P/N: 8650-0221 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 isolated serial RS422/485 ports + 6 Gigabit X-coded Ethernet managed switch for Load Balancing\*\*, TWCC\*\*, VPN, Protocol Gateway; Worldwide band : dual isolated 16.8V~137.5VDC; IP65 ; -20~70C TWMR-5006-1L-1AC-2SA-WV-65-APAC......P/N: 8650-0231 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 isolated serial RS422/485 ports + 6 Gigabit X-coded Ethernet managed switch for Load Balancing\*\*, TWCC\*\*, VPN, Protocol Gateway; APAC band ; dual isolated 16.8V~137.5VDC; IP65 ; -20~70C TWMR-5006-1L-1AC-2S-WV-54-EUNA......P/N: 8650-041 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS232 ports + 6 Gigabit X-coded Ethernet managed switch for Load Balancing\*\*, TWCC\*\*, VPN, Protocol Gateway; EU and US band; dual isolated 16 8V~137 5VDC: IP54: -20~70C TWMR-5006-1L-1AC-2S-WV-54-WW......P/N: 8650-042 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS232 ports + 6 Gigabit X-coded Ethernet managed switch for Load Balancing\*\*, TWCC\*\*, VPN, Protocol Gateway; Worldwide band; dual isolated 16.8V~137.5VDC; IP54; -20~70C TWMR-5006-1L-1AC-2S-WV-54-APAC......P/N: 8650-043 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 serial RS232 ports + 6 Gigabit X-coded Ethernet managed switch for Load Balancing\*\*, TWCC\*\*, VPN, Protocol Gateway; APAC band; dual isolated 16.8V~137.5VDC; IP54; -20~70C TWMR-5006-1L-1AC-2SA-WV-54-EUNA......P/N:8650-0411 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors + 2 isolated serial RS422/485 ports + 6 Gigabit X-coded Ethernet managed switch for Load Balancing\*\*, TWCC\*\*, VPN, Protocol Gateway; EU and US band ; dual isolated 16.8V~137.5VDC; IP54 ; -20~70C TWMR-5006-1L-1AC-2SA-WV-54-WW......P/N:8650-0421 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors+ 2 isolated serial RS422/485 ports + 6 Gigabit X-coded Ethernet managed switch for Load Balancing\*\*, TWCC\*\*, VPN, Protocol Gateway; Worldwide band ; dual isolated 16.8V~137.5VDC: IP54 : -20~70C TWMR-5006-1L-1AC-2SA-WV-54-APAC......P/N: 8650-0431 EN50155 Multifunction VPN Router w/1x Wi-Fi 11ac + 1 LTE 4G SMA connectors+ 2 isolated serial RS422/485 ports + 6 Gigabit X-coded Ethernet managed switch for Load Balancing\*\*, TWCC\*\*, VPN, Protocol Gateway; APAC band ; dual isolated 16.8V~137.5VDC; IP54 ; -20~70C **EMMC Flash Storage** 8G.....P/N: 8850-113 16G.....P/N: 8850-114 32G.....P/N: 8850-115 Software License LOAD BALANCING Basic Package.....P/N: 9000-101 LOAD BALANCING Full Package.....P/N: 9000-102 

# **OPTIONAL ACCESSORIES**

#### LTE Antenna

ANT11000041
ANT11000042

791-960/1710~2170/2500~2700MHZ, SMA plug, EU 704-960/1710~2170MHZ, SMA plug, US

# Wireless Connector Adapter

ADA11000052 RP SM

RP SMA Jack Base, Length : 1M

#### Wireless Antenna

ANT11000051

2.4G&5.8GHz SMA Omni-directional / dipole antenna, 2dBi or 5.8GHz 3dBi

#### Lantech Communications Global Inc.

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