

Secured and Rugged LTE PoE Router for IIOT

WR314GPS series Industrial Cellular PoE Routing Switch

Innovative intelligent LTE router WR314GPS designed for IIOT provides ultra-resilient network by simultaneous high-speed LTE routing and 2-port fiber uplink. Dual SIM standby allows to select the best performing cellular network, whilst reliable high-throughput Ethernet operation is ensured by 4-port full Gigabit switching. Moreover, the router offers 2-port PoE/PoE+ functionality for enabling on-site PD. Integrated firewall ensures safe data transmission. Compact size and ruggedized design allow convenient deployment in existing infrastructure under the harshest conditions.



* Reference photo



Features & Benefits

High Throughput Network Performance

- LTE Cat.4, 2x2 MIMO, **150M downlink and 50M uplink**
- 4G/3G/2G full cellular network compatibility
- LTE-E:
FDD B1/3/5/7/8/20 (2100/1800/850/2600/900/800MHz)
TDD B38/40/41 (2600/2300/2500MHz)
- LTE-U:
FDD B2/B4/B12 (1900/1700/700MHz)
- 2-port **Gigabit PoE** plus 2-port **Gigabit SFP**, high flexibility for selecting cable types and distances

ITU-T G.8032 v1/v2 ERPS Ring Redundancy

- An ITU standard Ring redundancy Protocol
- Provide sub-50ms protection and recovery switching for Ethernet traffic
- Interoperate with 3rd party industrial switch and still remain fast recovery time
- Interoperate with commercial switch instead of STP/RSTP
- Efficient network interconnection and topology with ERPS Chain, multiple chains

Management Features

- Various configuration paths, including WebGUI, CLI and SNMP
- OPCuA supported by request
- LLDP topology control
- **VLAN, IGMP snooping, QoS**, traffic shaping, rate control
- Software utility interface for LAN devices management
- Remote configuration software utility for distributed management

Enhanced Cyber Security for Critical Application

- Firewall for traffic classification
- DMZ, port forwarding, NAT for LAN protection
- OpenVPN, IPsec for secure connection
- Port Security
- HTTPs/SSH secure login

Extreme PoE Capability

- Provides 2-port IEEE 802.3af/at compliance PoE, up to **30W** per port
- Up to 60W PoE power budget
- Complete PoE management including per-port **Power Budget Control**, **PoE Scheduling** and **PoE Status**

Rugged Design for Wayside Surveillance, ITS Application

- Up to 150Mbps LTE network bandwidth with NEMA-TS2 compliance for ITS application
- Effective heat dissipation design for operating in **-40~75°C** environments
- Railway EMC: **EN50121-4** compliance
- CE Marking
- IEC61000-6-2/IEC61000-6-4 heavy industrial EMC
- Emission: FCC part 15 B Class A

Technology	
Standard	3GPP Release 11 Long Term Evolution (LTE), fallback 3GPP Release 7,8,9 for HSPA/UMTS
	IEEE 802.3u 100Base-TX Fast Ethernet
	IEEE 802.3ab 1000Base-T Gigabit Ethernet copper
	IEEE 802.3z Gigabit Ethernet Fiber
	IEEE 802.11a/b/g/n/ac for Wireless LAN
	IEEE 802.11i for Wireless Security
	IEEE 802.3af/at Power-over-Ethernet
	IEEE 802.1Q for VLAN
	IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP)
	ITU-T G.8032 Ethernet ring protection switching(ERPS)
Interface	
Ethernet Port	2 x 100/1000MBase-T RJ45, Auto Negotiation 2 x 100/1000MBase SFP, Auto Negotiation/DDM
System LED	2 x Power: Green On 1 x SYS: Green ON while startup ready. Green blinking while starting 1 x DO: Red On 2 x SFP: Link (Green On), Activity (Green Blinking) 2 x Radio (Ra, Rb): Radio Status 2 x PoE: Green On 1 x Ring: Off: Ring disabled, Green On: Ring normal (Not RPL Owner), Green Blinking: Ring normal (RPL Owner), Amber On: Ring abnormal, Amber Blinking: Ring port fail
Ethernet Port LED	Link (Green On), Activity (Green Blinking)
Reset	System Reset(2~6 Seconds) / Default Settings Reset(over 7 Seconds)
SMA Socket	2 x RP-SMA Female
SIM Socket	2 x NANO Type with Tray Holder
USB	1 x USB for Configuration/Firmware Update
Power Input, Digital Output	6-Pin Removable Terminal Block Connector 4 Pin for Redundant Power 2 Pin for DO (Relay Alarm) DO: Dry Relay Output with 1A/24V DC
Cellular Properties	
Standard	GSM/GPRS/EDGE 3GPP Release 6 UMTS/HSPA 3GPP Release 8 LTE 3GPP Release 11
Data Rate	GPRS: DL: max. 85.6 kbps, UL: max. 85.6 kbps EDGE: DL: max. 236.8 kbps, UL: max. 236.8 kbps HSPA: DL: max. 42 Mbps, UL: max. 5.76 Mbps LTE-FDD Cat.4: DL: max. 150 Mbps, UL: max. 50 Mbps, 2x2 DL MIMO LTE-TDD Cat.4: DL: max. 130 Mbps, UL: max. 35 Mbps, 2x2 DL MIMO
Band Information: LTE-E	LTE: FDD B1/B3/B5/B7/B8/B20 (2100/1800/850/2600/900/800MHz) LTE: TDD B38/B40/B41 (2600/2300/2500MHz) WCDMA: FDD B1/B5/B8 (2100/850/900MHz) GSM: B3/B8 (1800/900MHz)
Band Information: LTE-U	LTE: FDD B2/B4/B12 (1900/1700/700MHz) WCDMA: B2/B4/B5 (1900/1700/850MHz)

WLAN	
Radio Type	Dual Band Selectable 5G 802.11ac/a/n or 2.4G 802.11b/g/n Default mode: 802.11ac/n/a Auto
802.11ac/n/a	Modulation: OFDM (BPSK, QPSK, DBPSK, DQPSK, 16 QAM, 64 QAM, 256QAM) Operating Frequency: 5.180G~5.825GHz Max. MIMO: 2T2R RF Output Power (1TX): 802.11a: 6~24Mbps: 20dBm 54Mbps: 15dBm 802.11an/ac HT20 MCS0: 19dBm MCS8: 13dBm 802.11an/ac HT40 MCS0: 18dBm MCS9: 13dBm 802.11an/ac HT80 MCS0: 18dBm MCS9: 13dBm RF Sensitivity (1RX) 802.11a: 6Mbps: -94dBm 54Mbps: -80dBm 802.11an/ac HT20 MCS0: -93dBm MCS8: -71dBm 802.11an/ac HT40 MCS0: -90dBm MCS9: -66dBm 802.11an/ac HT80 MCS0: -88dBm MCS9: -65dBm Check detail TX/RX information in User Manual
802.11n/g	Modulation: OFDM (BPSK, QPSK, 16 QAM, 64 QAM) Operating Frequency: 2.412~2.472GHz Max. MIMO: 2T2R RF Output Power (1TX): 802.11b: 1Mbps: 20dBm 11Mbps: 20dBm 802.11g 6~24Mbps: 21dBm 54Mbps: 18dBm 802.11n HT20 MCS0: 21dBm MCS7: 16dBm 802.11n HT40 MCS0: 20dBm MCS7: 16dBm RF Sensitivity (1RX) 802.11: 1Mbps: -95dBm 11Mbps: -90dBm 802.11g 6Mbps: -94dBm 54Mbps: -80dBm 802.11n HT20 MCS0: -93dBm MCS7: -76dBm 802.11n HT40 MCS0: -92dBm MCS7: -73dBm Check detail TX/RX information in User Manual
Power Requirement	
Input Voltage	48VDC(46~57VDC, 50~57VDC for IEEE802.3at)
Reverse Polarity Protect	Yes
PoE	
Power forwarding mode	Alternative A
PoE Power Budget	System: Max. 60W @75°C Per Port: Max. 30W
PoE Standard	IEEE 802.3af/at
Management	System/Port Power Budget Control, PD Alive Check, PoE Scheduling, PoE Status

Software	
Management Interface	CGI WebGUI, Command Line Interface (CLI), Telnet, SNMP
Network Time Management	SNTP, Cellular Time
Network Management	IPv4/IPv6, DDNS, SNMP v1/v2c/v3/Trap, MIBs, RMON, LLDP, DHCP server/client, TFTP, System Log
Traffic Management	NAT Routing, Traffic shaping
Security	Firewall, DMZ, Port Forwarding, HTTPs, SSH, Port Security
Redundancy Protocol	ITU-T G.8032 v1/v2 Ethernet Ring Protection Switching (ERPS) Rapid Spanning Tree Protocol (RSTP)
VPN	IPsec, OpenVPN
Cellular Configuration (Cellular Model)	Radio on/off, 4G LTE/3G HSPA Configuration, SIM Security, Connection Status, Debug Log, Cellular to Eth-WAN Redundant
WLAN Configuration (Wi-Fi Model)	WLAN Basic Settings: Radio on/off, 2.4G 11n/5G 11ac Band and Frequency selection, SSID/Multi-SSID configuration, SSID broadcast, VLAN ID, WLAN to LAN Link fault pass-through, 802.1X

Mechanical	
Installation	DIN Rail
Enclosure Material	Steel Metal with Aluminum
Dimension	54 x 140 x 110 mm(W x H x D) / without DIN Rail Clip
Ingress Protection	IP30
Environmental	
Operating Temperature & Humidity	-40°C~75°C , 5%~95% Non- Condensing
Storage Temperature	-40°C~85°C
MTBF	>200,000 hours
Warranty	5 years

Approval	
Safety	EN60950-1 Compliance
EMC	EN61000-6-2/EN61000-6-4
EMI	CISPR 22, FCC part 15B Class A
EMS	EN61000-4-2 ESD: Air 8kV; Contact 6kV EN61000-4-3 RS: 10V/m (80Mhz~1Ghz), 20V/m (800Mhz~1Ghz), 10V/m (1.4Ghz~2.1Ghz), 5V/m (2.1Ghz~6Ghz) EN61000-4-4 EFT: DC power port: 1kV; Signal port and telecommunication port: 2kV EN61000-4-5 Surge: DC power port: 1kV; Signal port and telecommunication port: 2kV EN61000-4-6 CS: 0.15~80MHz, 10Vrms EN61000-4-8 Magnetic Field: 50Hz, 300A/m
Radio	R&TTE / RED (TBD) Safety EN60950-1 EN50385/EN62311 MPE assessment EN 55022/55024 EN 301 489-1/17/24 EN 301 908-1 EN 300 328 V2.1.1 EN 300 893 V2.1.1 EN60950-1 FCC Part 15B
Traffic Control	NEMA-TS2 Compliance
Railway	EN50121-4 Compliance



Ordering Information

Model Name	Description
WR314GPS-LTE-E	Industrial Cellular PoE Routing Switch, LTE-E
WR314GPS-LTE-U	Industrial Cellular PoE Routing Switch, LTE-U
WR314GPS-WLAN	Industrial Wireless PoE Routing Switch, Wi-Fi
	Package List
	1 x Product Unit (Without SFP transceiver)
	1 x 6-pin Removable Terminal Connector
	2 x Default Antennas
	1 x Attached Din Clip
	1 x Quick Installation Guide



Optional Accessory

Item	
MK-W-3	Wall-mounting kit with 1 plates and 4 screws
SFP-11xx series	100Mbps SFP transceivers
SFP-21xx series	1000Mbps SFP transceivers