AVCOMM®

AP316
Datasheet

Aiming to create better and safer working environments and life experiences through the products we deliver.

Wireless Backup for ERPS v2 Network by exclusive LTE PoE Router

AP316

Industrial Cellular PoE Routing Switch

The LTE PoE router AP316 provides ultra-resilient network by latest G.8032 ERPS v2 ring technology with 6 Giga ports, 2-port 100/1000M fiber ports, and simultaneously supports high-speed LTE routing. The LTE can backup network in case of ring failure and works as a redundant gateway. Dual SIM standby enables auto switch to secondary cellular network if primary network disconnects. Moreover, the router offers 4 Gigabit PoE/PoE+ ports for feeding IP cam or wireless AP. Integrated firewall ensures safe data transmission. Compact size and ruggedized design bring reliable deployment under the harshest conditions.

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; TDD B38/40/41
- LTE-CN: FDD B1/3/5/8; TDD B38/39/40/41 LTE-U: FDD B2/B4/B12
- 4-port Gigabit PoE+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 STP/RSTP
- Efficient network interconnection and topology with ERPS Chain, multiple chains

Management Features

- Various configuration paths, including WebGUI, CLI and SNMP
- LLDP topology control
- Support VLAN, IGMP snooping, QoS, rate control, port mirror
- Network management system for individual node monitoring
- Remote configuration software utility for distributed management

Cloud Management Service

- Support Amazon AWS & Microsoft Azure cloud service
- Support proprietary ATMS cloud service
- Interactive monitoring dashboard and map shows the status, signal strength, location etc.

Enhanced Cyber Security and Redundancy

- Firewall for traffic classification
- OpenVPN (server/client) for secure remote connection
- Support L2TP with PPP, PAP, CHAP(LCP, IPCP)
- Support port security
- HTTPs/SSH secure login
- TACACS+ multi-user authentication for privileged user management

Extreme PoE Capability

- Provides 4-port IEEE 802.3af/at compliance PoE, up to 30W per port
- Up to 120W PoE power budget
- Complete PoE management including per-port Power Budget Control, PoE Scheduling and PoE Status

Rugged Design for Wayside Surveillance, ITS Application

- NEMA TS2 compliance for ITS application
- Effective heat dissipation design for operating in **-40~75ºC** environments
- Railway EMC: **EN50121-4** compliance
- CE Marking
- IEC61000-6-2/IEC61000-6-4 heavy industrial EMC
- Emission: FCC part 15 B Class A

🛒 Ordering Information

Model Name	Description
AP316-WLAN-SFP	Industrial Wireless Ring Network IIoT Routing POE Gateway,802.11 b/g/n WLAN Cat. 4. 2x2 MIMO,4G/3G/2G, 4-Port Gigabit POE Plus 2-Port Gigabit SFP,ITU standard ring redundancy protocol, under 50ms protection and recovery switch, dual power 46 to 57VDC, -40°C to 75°C, IP30
AP316-LTE-SFP	Industrial Wireless Ring Network IIoT Routing POE Gateway,LTE CAT.4, 2x2 MIMO,4G/3G/2G, 4-Port Gigabit POE Plus 2-Port Gigabit SFP,ITU Standard Ring Redundancy Protocol, Protection and Recovery Switching below 50ms, Dual Power 46 to 57VDC, To 40 ° C to 75 ° C, IP30

AP316

Technology	
Standard	3GPP Release 11 Long Term Evolution (LTE), fallback 3GPP Release 7,8,9 for HSPA/UMTS
	IEEE 802.3 10Base-T Ethernet
	IEEE 802.3u 100Base-TX Fast Ethernet
	IEEE 802.3u 100Base-FX Fast Ethernet Fiber
	IEEE 802.3x Flow Control and back-pressure
	IEEE 802.3ab 1000Base-T Gigabit Ethernet copper
	IEEE 802.3z Gigabit Ethernet Fiber
	IEEE 802.3af/at Power-over-Ethernet
	IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
	IEEE 802.1p Class of Service (CoS)
	IEEE 802.1Q VLAN
	ITU-T G.8032 Ethernet ring protection switching (ERPS)
	IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP)
Interface	
Ethernet Port	4 x 100/1000MBase-T RJ45, Auto Negotiation 2 x 100/1000MBase SFP
System LED	2 x Power: Green On 1x SYS: Ready: (Green On), Firmware Updating: (Green Blinking) 1 x DO: Red On 2x Fiber: Link (Green On), Activity (Green Blinking) 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 1 x Radio Ra: Radio status, 4G connection: Green On, 2/3G connection: Green blinking, Disconnected: Off 4 x PoE status: Green On
Ethernet Port LED	Link (Green On), Activity (Green Blinking)
Reset	System Reset(2~6 Seconds) / Default Settings Reset(over 7 Seconds)
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 0.5A/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	FDD LTE: B2/B4/B12 (1900/1700/700MHz) WCDMA: B2/B4/B5 (1900/1700/850MHz)

AP316

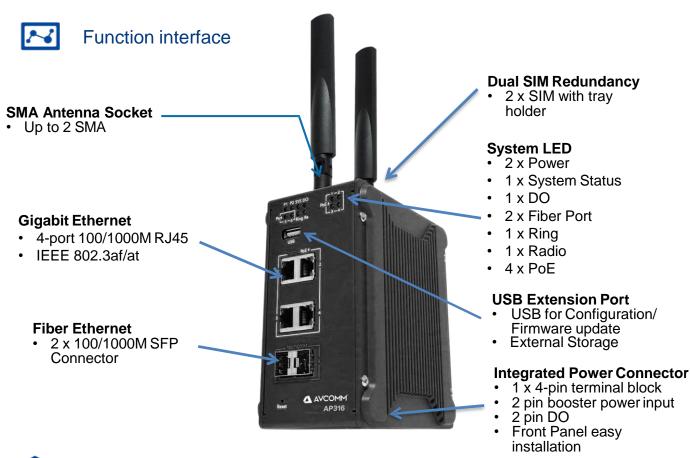| Band Information: LTE-CN	LTE FDD: B1/B3/B5/B8 (2100/1800/850/900MHz) LTE TDD: B38/B39/B40/B41 (2600/1900/2300/2500MHz) TD-SCDMA: B34/B39 (2000/1900MHz) WCDMA: B1/B8 (2100/900MHz) CDMA: BC0 GSM: 900/1800MHz

Antenna	
LTE Antenna (Default)	**Frequency:** 704~960/1710~2690 MHz
	Gain: 2 dBi
	Dimension: 161xΦ13 mm

Power Requirement	
Input Voltage	48VDC(46~57VDC, 50~57VDC suggested for IEEE802.3at)
Reverse Polarity Protect	Yes
Input Current	2.36A@54VDC
Power Consumption	Max 8.64W@54VDC full traffic without PD Loading, suggest to reserve 15% tolerance

PoE	
Power forwarding mode	Alternative A
PoE Power Budget	System: Max. 120W@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
User Management	Radius client, TACACS+, local database
Time Management	SNTP, Cellular Time
IoT	AWS Agent, Azure Agent,ATMS Agent
Network Management	IPv4, DDNS, SNMP v1/v2c/v3/Trap, MIB II, Entity MIB, MIBs, DHCP server/client, TFTP, System Log, ARP response over 802.2 LLC SNAP, Proxy ARP, DNS (client/proxy)
Traffic Management	NAT Routing, NAPT(SNAT/DNAT), Flow Control, VLAN, Class of Service, QoS, Rate Control, IGMP Snooping v2, Port Mirror
Routing	Static Route
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), VRRP
VPN	IPsec, OpenVPN, L2TP
Cellular Configuration	Radio on/off, 4G LTE/3G HSPA Configuration, SIM Security, Connection Status, Cellular to Eth-WAN Redundancy, GPS positioning(by model)
Utility	AIAS, ANMS, Ping, Traceroute

Mechanical	
Installation	DIN Rail
Enclosure Material	Steel Metal with Aluminum
Dimension	78.5 mm x 149 mm x 125 mm(W x H x D) / without DIN Rail Clip
Ingress Protection	IP30
Weight	Around 800g

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, EN61000-4-3 RS, EN61000-4-4 EFT, EN61000-4-5, EN61000-4-6 CS, EN61000-4-8 Magnetic Field
Radio	R&TTE / RED Safety EN60950-1 EN50385/EN62311 MPE assessment EN 55022/55024 EN 301 489-1/52 EN 301 908-1 EN60950-1 FCC Part 15B
Traffic Control	NEMA-TS2 Compliance
Railway	EN50121-4 Compliance

AP316

Function interface

SMA Antenna Socket
• Up to 2 SMA

Gigabit Ethernet
• 4-port 100/1000M RJ45
• IEEE 802.3af/at

Fiber Ethernet
• 2 x 100/1000M SFP Connector

Dual SIM Redundancy
• 2 x SIM with tray holder

System LED
• 2 x Power
• 1 x System Status
• 1 x DO
• 2 x Fiber Port
• 1 x Ring
• 1 x Radio
• 4 x PoE

USB Extension Port
• USB for Configuration/ Firmware update
• External Storage

Integrated Power Connector
• 1 x 4-pin terminal block
• 2 pin booster power input
• 2 pin DO
• Front Panel easy installation

Installation dimensions

Unit: $\frac{\text{inch} \pm 0.040}{\text{[mm]} \pm 1.00}$

3.091 [78.50mm]

4.921 [125.00mm]

5.866 [149.00mm]

2.592 [65.83mm]

2.126 [54.00mm]

1.577 [40.05mm]

1.923 [48.84mm]

0.630 [16.00mm]

1.260 [32.00mm]