

Aprisa LTE

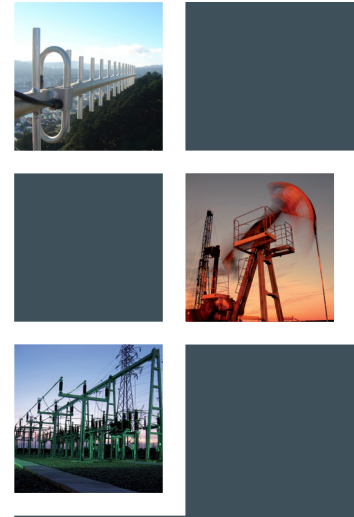
SMART, SECURE LTE CELLULAR ROUTER



Smart, secure, industry-leading performance 3GPP LTE communications for critical infrastructure monitoring and control for the electricity, water, oil and gas industries. Hardened LTE for both mission and business critical applications with enhanced broadband data rates and reduced latency.

- **Secure:** with its vetted defense in depth approach, including AES encryption, strict authentication, L2 / L3 filtering, GRE, IPsec, and DMVPN support, the Aprisa LTE protects against vulnerabilities and malicious attacks.
- **Interfaces:** the Aprisa LTE supports serial and Ethernet with SFP support for additional electrical and optical connections in a single, compact form factor.
- **Adaptable:** the Aprisa LTE integrates into a wide range of industrial and utility applications with redundant carrier connections for public and private networks. New Aprisa Power Control (APC) feature delivers ultra-low power sleep mode for solar applications.
- **Advanced mobility and Wi-Fi:** supports advanced remote visibility in vehicle networks with GNSS location / navigation service and 2x2 MIMO Wi-Fi AP/client mode for workforce mobility communication.
- **Advanced L2 / L3 capabilities:** selectable L2 or L3 modes with VLAN, QoS, NAT, IPv4, and IPv6 transition support to maximize performance and prioritize mission critical traffic while meeting tough security and IP network policy imperatives.
- **Reliable and robust:** the Aprisa LTE requires no manual component tuning and maintains its performance over a wide temperature range using full specification industrially rated components and shared Aprisa family heritage.
- **Easily managed:** an easy to use GUI supports local element management via HTTPS or via CLI with remote element management over the air via SNMP and NETCONF support to allow network-wide monitoring, control, and orchestration via a variety of supported third party network management systems.
- **Failover:** single radio, dual SIM with switch over, and interface failover to provide alternate path routing on WAN or FAN failure.

Connect with 4RF. Please contact 4RF to hear more about Aprisa LTE and 5G connectivity with a full range of accessories including antennas, engineering advice, and ongoing support.



Connected

- Cat-6, Cat-7 / 13, and Cat-12 options for 50 / 150 Mbps uplink and 300 / 600 Mbps downlink with high performance dual core CPU
- Dual SIM LTE for active / standby and roaming LTE connectivity
- Optional IEEE 802.11ac client and AP mode with 2x2 MIMO for workforce mobility
- SFP slot for optional optical fibre / additional electrical Ethernet port
- Multi-standard serial RS-232 / RS-422 / RS-485
- Compliant to Directive 2014/53/EU (RED)

Flexible

- Global Navigation Satellite System (GNSS) GPS, GLONASS, BeiDou, Galileo, and optional QZSS real time location tracking
- Full routing and firewall between all ports including Wi-Fi

Secure

- IPSEC / VPN
- Protected key storage option
- MEMS accelerometer motion sensing anti-tamper option

Robust

- SGS certified Class 1, Division 2 for operation in hazardous areas
- IEC 62368-1 safety standard
- IEEE 1613 and IEC 61850-3 utility substation hardening
- Ruggedized protection for operation in vehicles and other high temperature / vibration environments
- Industrial -30 to +70 °C operating temperature range ^(Note 6)

Applications

- Electricity grid: distribution automation, control and protection
- Smart grid: DA, DFA, cap bank control
- Smart cities: traffic control, video surveillance
- Oil & gas: production metering, lift pump automation
- AMI / AMR: high density data concentrator backhaul
- Renewables: DER, solar and wind farms, hydro automation
- Water and wastewater: flow, level, pump, and valve automation
- Public safety, utility, mining: fleet management, vehicle tracking, workforce mobility

SYSTEM SPECIFICATION

GENERAL		
NETWORK INTEGRATION	LTE, Wi-Fi, Serial, Ethernet, bridge and router on a per port basis	
PROTOCOLS		
ETHERNET	IEEE 802.3, 802.1d/q/p, VLAN, STP, ARP Ethernet 10/100/1000BASE-T and 100/1000Base-X	
SERIAL	RS-232 / RS-422 / RS-485, and Terminal Server support	
VPN	IPsec, GRE, mGRE, and DMVPN	
ROUTING	BGP / MP-BGP, OSPF, EIGRP, NHRP, VRF, RIPv1/v2, IPv4 / IPv6, static, and IP-SLA	
IPv4 / IPv6 SERVICES	VLAN L3 interface, DHCP server / client, DNS, DDNS, and NAT	
QoS	Hierarchical QoS, cellular TFT / QCI, classification (L2-L4), ingress policing with two rate three colour marking, shaping, priority assignment, strict priority, fair queue, and prioritised schedulers	
LTE		
LTE ^(Note 3)	Downlink LTE Cat-6 (300 / 50 Mbps) / Cat-12 (600 / 150 Mbps) Uplink LTE Cat-6 / 7 / 12 / 13	
LTE BAND OPTIONS SUPPORT ^(Note 2)	B1, B2, B3, B4, B5, B7, B8, B9, B12, B13, B14, B18, B19, B20, B21, B25, B26, B28, B29, B30, B32, B38, B39, B40, B41, B42, B43, B46, B48, and B66	
SIM	Dual Micro SIM	
GNSS		
POSITIONING and TIMING	GPS, GLONASS, Beidou, Galileo, and QZSS (option)	
MAX CHANNELS	30 (16 GPS, 14 GLONASS) simultaneous tracking	
PROTOCOL	NMEA 0183 V3.0	
Wi-Fi		
STANDARDS (2.4 / 5 GHz)	IEEE 802.11 a/b/g/n 2x2 MIMO / IEEE 802.11 n/ac 2x2 MIMO	
FREQUENCY RANGE	2.4 to 2.495 GHz, 5.15 to 5.825 GHz	
CHANNEL (2.4 / 5 GHz)	2.4 GHz (20 / 40 MHz) / 5 GHz (20 / 40 / 80 MHz)	
PERFORMANCE	Up to 866.7 Mbps	
SECURITY	WPA / WPA2 / WPA3 Personal / Enterprise, WEP / TKIP, AES-CCMP, 802.1x	
MODES	Access Point, Client and Access Point / Client	
SECURITY		
FIREWALL	Stateful firewall, zone-based policy, VRF-aware, dynamic, and static	
SYMMETRIC ENCRYPTION	3DES AES 128, 192, or 256 CBC / CTR / CCM8-CCM16 / GCM8-GCM16	
AUTHENTICATION	MD5 / SHA-1 / SHA-256 / SHA-384 / SHA-512	
DH GROUP	DH-1 / DH-2 / DH-5 / DH-14 / DH-15 / DH-16 / DH-19 / DH-20 / DH-21	
IKE	IKEv1 and IKEv2 (authentication via PSK or certificate) PFS option	
FIPS	FIPS 197 (AES) and FIPS 140-2: Security Requirements	
HARDENING	NIST SCAP, IDS, processes monitoring	
TAMPER	MEMS high-performance 3-axis accelerometer	
INTERFACES		
ETHERNET PORTS	2 ports RJ45 IEEE 802.3, 802.1d/q/p	
SERIAL PORTS	1 port RJ45 RS-232 / RS-422 / RS-485, 300 – 230,400 bit/s	
SFP	1 port Small Form-factor Pluggable (SFP) supporting both optical and copper SFP modules	
MANAGEMENT	1 port USB-C rotationally-symmetric	
ANTENNAS	Cellular Main and Cellular Diversity QMA 50 ohm female GNSS QMA 50 ohm female ^(Note 4) Wi-Fi Ant 1 (main), Ant 2 (diversity) QMA 50 ohm female	
I/O PINS	1 input pin and 1 output pin (on power supply connector)	
LEDs	Status: OK, AUX Diagnostics: SFP, TX, RX and Wi-Fi Ethernet / Serial Ports: Active and Link	
POWER		
INPUT VOLTAGE	9 to 32 VDC negative earth	
SLEEP POWER	< 0.04 W	
IDLE POWER	< 3.5 W	
PEAK POWER	< 15.0 W	
MECHANICAL		
DIMENSIONS (not including connectors)	177 mm (W) x 110 mm (D) x 41.5 mm (H) 6.97" (W) x 4.33" (D) x 1.63" (H)	
WEIGHT	740 g (1.67 lbs)	
MOUNTING	Wall, Rack or DIN rail	
ENVIRONMENTAL		
OPERATING TEMPERATURE	-30 to +70 °C (-22 to +158 °F)	
STORAGE TEMPERATURE	-40 to +85 °C (-40 to +185 °F)	
HUMIDITY	Maximum 95 % non-condensing	
MANAGEMENT & DIAGNOSTICS		
LOCAL MANAGEMENT	SSH and HTTP/S web servers with full control / diagnostics Software upgrade via HTTPS / SFTP from PC or management system	
NETWORK MANAGEMENT	SNMPv3 and TRAP security support for integration with external network management systems	
ORCHESTRATION	NETCONF (RFC 6241) ^(Note 5)	
COMPLIANCE		
LTE	EU ETSI Australia New Zealand	CE Mark EN 301 908-1 EN 301 908-13 Regulatory Compliance Mark R-NZ
Wi-Fi		2.4 GHz EN 300 328 5 GHz EN 301 893
EMC		EN 301 489-1 and 52
SAFETY		EN / UL / IEC 62368-1, CB Certified, Class 1 division 2, Groups ABCD for hazardous locations
ENVIRONMENTAL		Substation hardened to IEEE 1613 class 2 and IEC 61850-3 ETSI EN 300 019-2-3 Ingress Protection IP41
VEHICLE		ISO 7637-2, ISO 16750-2 (12V Code D 24V Code E) Shock & Vibration: SAE J1455 EMC: EN 301 489

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USB-C is a trademark of the USB Implementers Forum

Notes:

1. This datasheet is subject to change
2. Band availability model dependent
3. Uplink / downlink UE Category model dependent
4. DC bias present on this connector (switchable) for active GPS antenna operation
5. Please consult 4RF for availability
6. 1,000 hours of continuous operation at this temperature independently tested by Bureau Veritas



ABOUT 4RF

Operating in more than 150 countries, 4RF provides radio communications equipment for critical infrastructure applications. Customers include utilities, oil and gas companies, transport companies, telecommunications operators, international aid organisations, public safety, military and security organisations. 4RF point-to-point and point-to-multipoint products are optimized for performance in harsh climates and difficult terrain, supporting IP, legacy analogue, serial data applications.

Made in USA from local and imported parts.

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