

Aprisa LTE

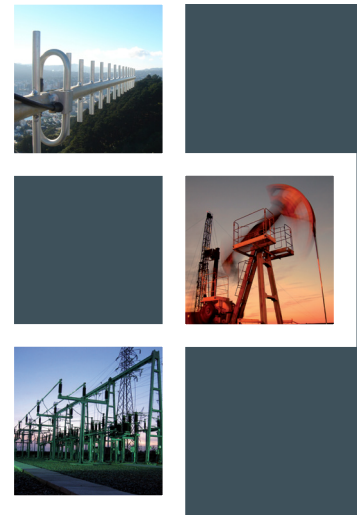
LTE MODEM SMART, SECURE LTE MODEM ROUTER



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.

- **LTE wireless data services:** the Aprisa LTE provides broadband enhanced LTE data rates and latency.
- **Secure:** with its defense in depth approach, including AES encryption, authentication, L2/L3 filtering, IPSec, and OpenVPN® 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.
- **Advanced mobility and WiFi:** supports advanced remote visibility in vehicle networks with GNSS location / navigation service and 2x2 MIMO WiFi AP/client mode for workforce mobility robust communication.
- **Advanced L2 / L3 capabilities:** selectable L2, L3, or L4 modes with VLAN, QoS, NAT, IPv6, 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.

This device has not been authorized as required by the rules of the Federal Communications Commission.
This device is not, and may not be, offered for sale or lease, or sold or leased, until authorization is obtained.



The Aprisa LTE™ in brief

- IEEE 802.3, RS-232 / RS-485 and SFP port options
- IPv4 and IPv6 with transition support features
- Dual SIM LTE for active / standby and roaming LTE connectivity
- Global Navigation Satellite System (GNSS) complies with GPS, GLONASS, BeiDou, and Galileo navigation systems for real time location tracking
- Optional standard IEEE 802.11 b/g/n/ac AP, client and AP / client mode with 2x2 MIMO for workforce mobility
- RFC 6333/7335 Dual-Stack Lite
- Layer 2 bridge (VLAN aware), layer 3 router, and advanced gateway router combination L2/ L3 modes
- L2 VLAN tagging and Q-in-Q
- L3 multi-VRF
- Flexible QoS priority enforcement – by port or traffic type, VLAN, PCP/DSCP, rule including MAC/ DMAC, IP address and IP protocol, and EtherType
- Traffic shaping ingress / egress support AutoQoS and Modular QoS CLI (MQC)
- L2 / L3 / L4 filtering
- DHCP, NAT, NTP / SNTP / PTP client
- AT&T Dynamic Traffic Management (DTM)
- Verizon Private Network Traffic Management (PNTM)
- Class 1, Division 2 for hazardous protection
- Ruggedized LTE/3G router for vehicle shock & vibration and harsh industrial environments
- IEEE 1613 and IEC 61850-3 substation hardening
- -30 to +70 °C operational temperature without fans
- 177 mm (W) x 110 mm (D) x 41.5 mm (H)
- FCC compliant

Aprisa LTE™ applications

- Electricity grid: distribution automation control, protection, and communications
- Smart grid, DA, DFA, DER, cap bank control
- Oil & Gas: production metering, lift pump automation
- AMI / AMR: high density data concentrator backhaul
- Renewables: wind farm, tidal, hydro automation
- Water and wastewater: flow, level, pump, and valve automation
- Smart Cities: traffic control, video surveillance
- Mobility & Transportation: Fleet management, vehicle tracking, workforce mobility comms

SYSTEM SPECIFICATION

GENERAL	
NETWORK INTEGRATION	Serial and Ethernet (router or bridge mode) LTE, WiFi, Serial, Ethernet
PROTOCOLS	
ETHERNET	IEEE 802.3, 802.1d/q/p Ethernet 10/100/1000BASE-T and 100/1000Base-X
SERIAL	RS-232 / RS-485
WiFi	IEEE 802.11 b/g/n/ac
VPN	IPsec, GRE and OpenVPN
LTE MODEM	
LTE	LTE Cat-6 / Cat-12
WCDMA / HSPA+ BAND OPTIONS	B1, B2, B3, B4, B5, B6, B8, B9, and B19
LTE BAND OPTIONS SUPPORT	B1, B2, B3, B4, B5, B7, B8, B9, B12, B13, B14*, B26, B29, B30, B41, and B66 CBRS*, B43 and B48 ^(Note 2) 5 GHz B46
SIM	Dual Micro SIM 15 mm x 12 mm x 0.76 mm
GNSS POSITIONING AND TIMING	GPS, GLONASS, Beidou, and Galileo
SECURITY	
SYMMETRIC ENCRYPTION	AES 256, 192 or 128 bit shared secret key AES Key Wrap Algorithm RFC 3394 140-2: Security Requirements
HARDENING	NIST SCAP, IDS, processes monitoring
TAMPER	MEMS high-performance 3-axis accelerometer

INTERFACES	
ETHERNET	2 ports RJ45 IEEE 802.3, 802.1d/q/p
SERIAL	1 port RJ45 RS-232 / RS-485, 300 – 230,400 bit/s
SFP	1 port Small Form-factor Pluggable (SFP) Optional SFP modules of 1000BASE-X optical and SGMII
MANAGEMENT	1 port USB-C rotationally-symmetric
ANTENNAS	Cellular Main and Cellular Diversity QMA 50 ohm female GNSS QMA 50 ohm female ^(Note 3) WiFi Main (1) and Diversity (2) QMA 50 ohm female
LEDs	Status: OK, STATUS Diagnostics: SFP, TX, RX and Wi-Fi
POWER	
INPUT VOLTAGE	9 to 32 VDC negative earth
IDLE POWER	< 2.2 W
PEAK POWER	< 8.0 W
MECHANICAL	
DIMENSIONS	177 mm (W) x 110 mm (D) x 41.5 mm (H)
WEIGHT	800 g
MOUNTING	Wall, Rack or DIN rail
ENVIRONMENTAL	
OPERATING TEMPERATURE	-30 to +70 °C
HUMIDITY	Maximum 95 % non-condensing
MANAGEMENT & DIAGNOSTICS	
LOCAL MANAGEMENT	SSH and HTTPS web servers with full control / diagnostics SuperVisor Extension mode (exm) support Software upgrade from PC or via management system
NETWORK MANAGEMENT	SNMPv2 and SNMPv3 security support for integration with external network management systems
ORCHESTRATION	NETCONF (RFC 6241)
COMPLIANCE	
FCC ID	This product contains a radio module certified to N7NEM75L and N7NEM75S FCC 47 CFR Part 22, 24, 27
CELLULAR / LTE	PTCRB and GCF-CC
WiFi	FCC Part 15.407, 15.247 and FCC Part 2.1091 (MPE)
EMC	FCC CFR47 Part 15
SAFETY	Class 1 division 2 for hazardous locations
ENVIRONMENTAL	Substation hardened to IEEE 1613 class 2 and IEC 61850-3 ETSI EN 300 019-2-4
VEHICLE	ISO 7637-2, ISO 16750-2 (12V Code D 24V Code E) Shock & Vibration: SAE J1455, EN 301 489

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Notes:

1. This is a Product Preview Specification as of April 2019 and is subject to change
2. Band 14 and CBRS B43/48 are mutually exclusive
3. QMA is designed by the Quick Lock Formula Alliance and features positive retention and superior RF performance without requiring torque setting

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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