

Aprisa LTE

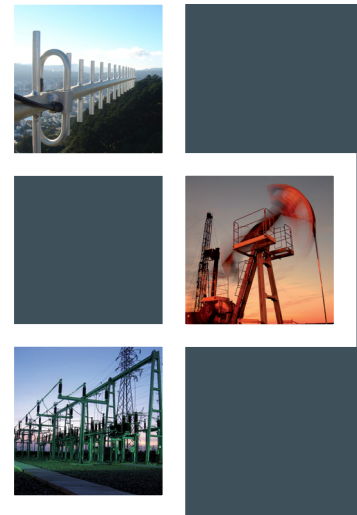
LTE MODEM SMART, SECURE LTE MODEM ROUTER



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, GRE VPN, 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. 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.

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.



Connected

- Cat-6 300 Mbps and optional Cat-12 600 Mbps maximum with high performance dual core CPU
- Support for Band 8, Band 14 FirstNet, and CBRS
- 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

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
- AT&T Dynamic Traffic Management (DTM)
- Verizon Private Network Traffic Management (PNTM)

Secure

- IPSEC / VPN / OpenVPN
- 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

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	Serial and Ethernet (router or bridge mode) LTE, Wi-Fi, Serial, Ethernet
PROTOCOLS	
ETHERNET	IEEE 802.3, 802.1d/q/p Ethernet 10/100/1000BASE-T and 100/1000Base-X
SERIAL	RS-232 / RS-422 / RS-485
VPN	IPsec, GRE and OpenVPN
LTE	
LTE	LTE Cat-6 (300 / 50 Mbps) / Cat-12 (600 / 150 Mbps)
USA LTE band OPTIONS support ^(Note 2)	B1, B2, B3, B4, B5, B7, B8, B9, B12, B13, B14, B26, B29, B30, B41, B43, B48, and B66
RoW LTE BAND OPTIONS SUPPORT ^(Note 3)	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, eSIM
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	
FREQUENCY RANGE	2.4 to 2.495 GHz, 5.15 to 5.825 GHz
CHANNEL	20 / 40 / 80 MHz
PERFORMANCE	IEEE 802.11ac Wave 2 (2x2) MU-MIMO, up to 866.7 Mbps
SECURITY	WPA / WPA2 Personal / Enterprise, WEP / TKIP, AES-CCMP, 802.1x
MODES	Access Point, Client and Access Point / Client
SECURITY	
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-19/DH-20/DH-21
IKE	IKEv1 and IKEv2
KEY WRAP	AES Key Wrap Algorithm to RFC 3394
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	2 ports RJ45 IEEE 802.3, 802.1d/q/p
SERIAL	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	< 0.1 W
IDLE POWER	< 3.5 W
PEAK POWER	< 8.0 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 (-30 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 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
Wi-Fi	FCC Part 15.407, 15.247 and FCC Part 2.1091 (MPE)
EMC	FCC CFR47 Part 15, EN 301 489-1
SAFETY	Class 1 division 2, Groups ABCD for hazardous locations
ENVIRONMENTAL	Substation hardened to IEEE 1613 class 2 and IEC 61850-3 ETSI EN 300 019-2-4
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 datasheet as of January 2020 is subject to change
2. USA: availability of bands B9, B14, B42, B43, B46, B48, and B66 is a factory option
3. Rest of World: availability of bands may depend on carrier approval, please contact 4RF
4. 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.

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