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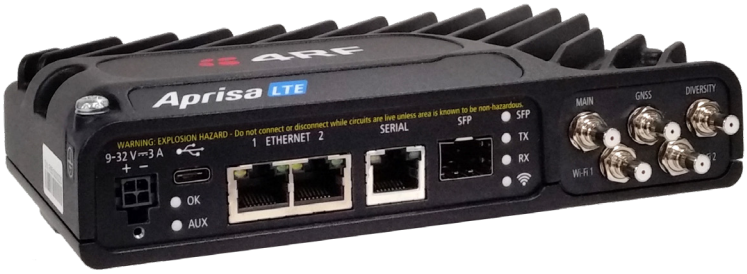
Datasheet

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.

- **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.

Connected

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

Aprisa LTE

PulseSupply pulsesupply.com

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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, DMVPN, and OpenVPN (Note 5)
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, US B8, B9, B12, B13, B14, B17, B18, B19, B20, B21, B25, B26, B28, B29, B30, B32, B34, B38, B39, B40, B41, B42, B43, B46, B48, B66, and B71
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 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
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	< 0.04 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	SNMPv2c / v3, and TRAP security support for integration with external network management systems
ORCHESTRATION	NETCONF (RFC 6241) (Note 5)
COMPLIANCE	
LTE	PTCRB, CBRS End Device, AT&T, Verizon Wireless, UScellular with others pending
ANTERIX	Anterix approved Network Assigned Duplex 47 CFR Part 27 Band 8 LTE operation
CBRS / OnGo	FCC Part 96 for 3.5 GHz CBRS spectrum
Wi-Fi	47 CFR Parts 15C and 15E
EMC	47 CFR Part 15B
SAFETY	UL 60950-1, 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, EN 301 489

Notes:
1. This datasheet as of August 2021 is subject to change
2. Band availability model dependent
3. Uplink / downlink UE Category model dependent
4. DC bias present on this connector for active GPS antenna operation
5. Please consult 4RF for availability

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