Secure, narrow channel, point-to-point Ethernet radio
ETSI licensed bands

Aprisa FE: Smart, cost effective, narrow channel, point-to-point Ethernet radio for low capacity linking and backhaul of DMR and industrial monitoring and control

New technologies, such as digital land mobile radio, need IP connectivity while cyber security concerns are driving the need for protected operation as standard even in low end applications. Aprisa FE introduces cost effective, secure IP over Ethernet linking, while utilising the industry proven VHF and UHF licensed bands – the mainstay for lower capacity linking and backhaul for public safety, transport and utility industries globally.

- **High capacity**: delivering an industry leading combination of capacity and distance the Aprisa FE provides data rates of up to 216 kbit/s in 50 kHz licensed channels.
- **Advanced IP connectivity**: selectable L2 Bridge or L3 Router modes, with VLAN, QoS and filtering attributes to support narrow bandwidth channels and mission critical traffic while meeting increasing security and IP network policy requirements.
- **Secure**: with its defence in depth approach, including AES encryption, authentication, L2 / L3 address filtering and L4 port application filtering and user access control, the Aprisa FE protects against vulnerabilities and malicious attacks.
- **Link efficiency**: adaptive modulation and forward error correction maintains the integrity of the wireless connection to ensure maximum capacity delivered continuously under varying atmospheric conditions.
- **Reliable and robust**: incorporating 4RF standard distance engineering RF design techniques, Aprisa FE maintains its high power output and performance over a wide temperature range without de-rating, delivering robust performance and long term reliability.
- **Easily managed**: an easy to use GUI supports full management of both local and remote terminals via HTTPS, and SNMP support allows network-wide monitoring and control via a third party network management system.

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### SYSTEM SPECIFICATION

**GENERAL**
- NETWORK TOPOLOGY: Point-to-point
- NETWORK INTEGRATION: Ethernet

**ETHERNET**
- 10 – 30 VDC (13.8 V nominal)
- ≥ 5.0 MHz
- ≥ 9.0 MHz

**WIRELESS**
- IEEE 802.3, 802.1Q, 802.1p
- Proprietary

**RADIO**
- FREQUENCY RANGE: 450 MHz
- 450 – 520 MHz
- 6.25 kHz

**TRANSMITTER**
- AVERAGE POWER OUTPUT: 0.01 – 3.2 W (+10 to +35 dBm, in 1 dB steps)
- ADJACENT CHANNEL POWER: < –60 dBc
- SPURIOUS EMISSIONS: < –35 dBm

**RECEIVER**
- SENSITIVITY (BER < 10^-6): max coded 64 QAM –101 dBm, –97 dBm, –94 dBm

**MODEM**
- GROSS DATA RATE: 64 QAM 60 kbits 120 kbits 216 kbits
- FORWARD ERROR CORRECTION: Concatenated Reed Solomon plus variable coding rate convolutional code

**DUPLexER**
- MOUNTING: Internal / External (+1U)
- PASS BAND: 0.5 MHz
- ≥ 4.6 MHz
- 135 MHz
- CHANNEL SIZE: 12.5 kHz, 25 kHz and 50 kHz software selectable

**POWER**
- INPUT VOLTAGE: 10 – 30 VDC (13.8 V nominal)
- RECEIVE: STANDARD – 7 W
- POWER OPTIMIZED – 3 W in active receive state

**ENVIRONMENTAL**
- TEMPERATURE: –40 to +60 ˚C (–40 to +140 ˚F)
- HUMIDITY: Maximum 95 % non-condensing

**COMPLIANCE**
- RF: EN 302 561, EN 300 113, EN 302 217
- EMC: EN 301 489-5
- SAFETY: EN 60950

**SECURITY**
- DATA ENCRYPTION: AES, 256, 192 or 128 bit
- DATA AUTHENTICATION: CCM

**PRODUCT OPTIONS**
- POWER OPTIMIZED: Providing optimized power and sleep mode
- PROTECTED STATION: Providing hot-swappable / hot-standby redundant hardware switching

### ABOUT 4RF

Operating in more than 140 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 and PDH applications.

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Version 1.2.0

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**NOTES**
1. The Peak Envelope Power (PEP) at maximum set power level is +39 dBm.
2. The receiver figures are shown in typical fixed interference dBm values and dB values [in brackets] relative to the sensitivity.
3. The Aprisa FE has been successfully evaluated against the requirements of IEEE 1613 for class 1 performance criteria.
4. Please consult 4RF for availability.

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