



Aprisa XE

POINT-TO-POINT DIGITAL MICROWAVE LINKS

FCC 900 MHz licensed band

DATASHEET [FCC]



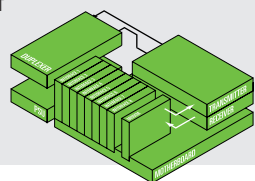
Aprisa XE: maximizing spectrum use and making challenging long distance links possible.

- **Efficient future-proof single-box architecture:** the Aprisa XE's built-in multiplexer and cross-connect eliminate external equipment and minimize the over-the-air requirements, with customer-configurable interface slots integrating all IP, voice and data traffic. Configuration, performance monitoring and diagnostics are easy with the Aviat embedded web-based element management system, SuperVisor.
- **High capacity:** class-leading spectral efficiency and up to 64 QAM modulation make the maximum use of the available spectrum, with industry leading capacity of up to 952 kbit/s in a 200 kHz channel.
- **Long range:** a single 900 MHz Aprisa XE can link distances in excess of 120 miles, overcoming the problems of water, environmental conditions and topographical obstacles.
- **Carrier-class performance:** Aprisa XE links are engineered to achieve 'five 9s' availability, benefiting from state of the art forward error correction and inherent low latencies, for unrivaled quality of service.
- **Cost effective:** the Aprisa XE has a low total cost of ownership, providing a rapid return on investment by minimizing both capital and operational expenditure.
- **Redundancy option:** Monitored Hot Standby for protection in mission-critical applications.
- **Reliable:** the Aprisa XE has an actual MTBF of 95.72 years. It can be relied upon to perform in the harshest and most remote environments.

In Brief

- Licensed 900 MHz frequency band
- Built-in cross-connect and multiplexer
- Up to 952 kbit/s capacity
- 50 kHz, 100 kHz and 200 kHz channel sizes
- QPSK to 64 QAM modulation
- Range of 120+ miles
- Industry-leading reliability
- Web server and SNMP management
- All voice, data and IP applications
- MHSB protection option

Future-proof single-box architecture



Specifications

RF	Band	Tuning Range	Synthesizer Step
Frequencies	900 MHz	928 – 960 MHz	12.5 kHz
	Upper Block A 700 MHz	757–758 & 787–788 MHz	12.5 kHz
Modulation Types	Software configurable: QPSK / 16 / 32 / 64 QAM		
Frequency Stability	Short term ± 1 ppm (environmental effects and power supply variations) Long term ± 2 ppm (aging of crystal oscillators \approx over 5 years)		
Antenna Connection	N-type female 50 ohm		

Transmitter	
Power Output	+15 dBm to +29 dBm in 1 dB steps

Receiver			
Maximum Input Level	-20 dBm		
Dynamic Range	58 to 87 dB at 10^{-6} BER		
C/I Radio	Co-Channel	QPSK	better than 16 dB
		16 QAM	better than 20 dB
		32 QAM	better than 23 dB
		64 QAM	better than 27 dB
		First adjacent channel	better than -5 dB
	Second adjacent channel	better than -30 dB	

Duplexer (bandpass)	Passband	TX / RX Split	Tuning Range
	1.0 MHz	≥ 9 MHz	928 – 960 MHz
	0.5 MHz	≥ 5.5 MHz	928 – 960 MHz
	0.5 MHz	≥ 3.6 MHz	928 – 960 MHz

Power Supply	
Input Range	115 / 230 VAC, 50 / 60 Hz ± 12 VDC (10.5 – 18 VDC), ± 24 VDC (20.5 – 30 VDC), ± 48 VDC (40 – 60 VDC)
Power Consumption	53 – 180 W input power (dependent on interface cards fitted and transmitter output power level)

Interfaces	
Ethernet Ports	Integrated 4-port 10 / 100Base-T switch with port-based rate limiting, VLAN tagging and QoS Support
E1 / T1	Quad 120 ohm G.703 / G.704
Data	Quad V.24 asynchronous, synchronous and over sampling mode Single synchronous X.21 / V.35 / RS-449 / RS-530
Analogue	Dual 2-wire FXS / FXO (POTS); Quad 4-wire E&M

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Auxiliary Interfaces	
Alarms	4 external alarm outputs, 2 external alarm inputs
Configuration	Embedded web server with SNMP
Management	Ethernet interface for SuperVisor and SNMP, V.24 setup port
RSSI	Front panel test point

Environmental	
Operating	+14° F to +122° F [-10° C to +50° C]
Storage	-4° F to +158° F [-20° C to +70° C]
Humidity	Maximum 95 % non-condensing

Mechanical	
Rack Mount	19" 2U high (internal duplexer)
Weight	23 lbs (10 kg) typical

Protected Options	
MHSB	≤ 4 dB splitter / cable loss, ≤1 dB TX relay / cable loss (system gain reduced by a maximum of 5 dB)

Compliance	
Radio	FCC CFR 47 Part 101
EMI / EMC	FCC CFR 47 Part 15, EN 301 489-1, EN 301 489-5
Safety	EN/UL/IEC 62368-1, CB Certified, NRTL listed CSA 253147 applicable for 48 VDC and 24 VDC product variants
Environmental	ETS 300 019-2-3 Class 3.2

System Performance

50 kHz Channel	QPSK	16 QAM	32 QAM	64 QAM
Capacity ^[1] gross (TS + wayside)	72 (1 TS + 8) kbit/s	152 (2 TS + 24) kbit/s	192 (3 TS + 0) kbit/s	232 (3 TS + 40) kbit/s
Receiver Sensitivity ^[2]	-109 dBm	-103 dBm	-100 dBm	-97 dBm
System Gain ^[2]	138 dB	132 dB	129 dB	126 dB

100 kHz Channel	QPSK	16 QAM	32 QAM	64 QAM
Capacity ^[1] gross (TS + wayside)	136 (2 TS + 8) kbit/s	280 (4 TS + 24) kbit/s	352 (5 TS + 32) kbit/s	424 (6 TS + 40) kbit/s
Receiver Sensitivity ^[2]	-106 dBm	-100 dBm	-97 dBm	-94 dBm
System Gain ^[2]	135 dB	129 dB	126 dB	123 dB

200 kHz Channel	QPSK	16 QAM	32 QAM	64 QAM
Capacity ^[1] gross (TS + wayside)	312 (4 TS + 56) kbit/s	632 (9 TS + 56) kbit/s	792 (12 TS + 24) kbit/s	952 (14 TS + 56) kbit/s
Receiver Sensitivity ^[2]	-102 dBm	-96 dBm	-93 dBm	-90 dBm
System Gain ^[2]	131 dB	125 dB	122 dB	119 dB

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NOTES

[1] T1 capacities are specified as unframed. The management Ethernet capacity must be subtracted from the gross capacity (default 64 kbit/s).

[2] Performance specified at the antenna port for 10^{-6} BER. Figures for 10^{-3} BER are typically 1 dB better.

Disclaimer

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