

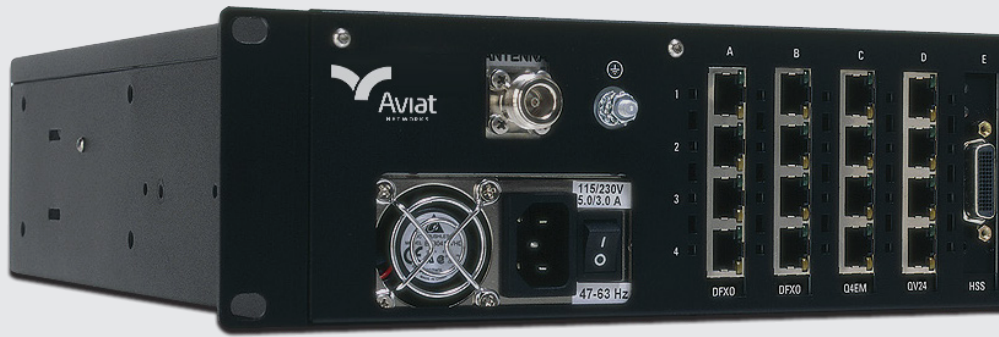


# Aprisa XE

POINT-TO-POINT DIGITAL MICROWAVE LINKS

900 / 2000 MHz licensed bands

DATASHEET [NTIA]



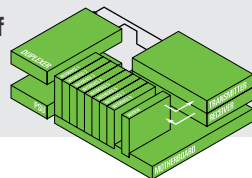
Aprisa XE: maximizing spectrum use and making challenging long distance links possible.

- **Efficient future-proof single-box architecture:** the Aprisa XE built-in multiplexer and cross-connect eliminates external equipment with customer-configurable interface slots integrating IP, TDM voice and flexible data traffic. Configuration, performance monitoring and diagnostics are easy with the Aviat's 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 1912 kbit/s in a 500 kHz channel.
- **Long range:** a single Aprisa XE can link distances in excess of 80 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.
- **Common platform:** the Aprisa XE is built on a common hardware platform with a single band dependent field replaceable RF module determining the operating frequency range. Both frequency ranges have NTIA Stage 4 spectrum support.
- **Reliable:** the Aprisa XE has an actual MTBF over 95 years based on actual field data. It can be relied upon to perform in the harshest and most remote environments.

## In Brief

- Federal 900 MHz band
- Federal 2000 MHz band
- NTIA Certificates of Support
- Meets Red Book requirements
- Built-in cross-connect and multiplexer
- Up to 1912 kbit/s capacity
- 100 kHz, 200 kHz and 500 kHz channel sizes
- QPSK to 64 QAM modulation
- Range of 80+ miles
- Industry-leading reliability
- Web server and SNMP management
- All voice, data and IP applications

**Future-proof single-box architecture**



## Specifications

RF	Band	Tuning Range	Synthesizer Step
Frequencies	900 MHz	928 – 960 MHz	12.5 kHz
	2000 MHz	1900 – 2300 MHz	62.5 kHz
Modulation Types	Software configurable: QPSK / 16 / 32 / 64 QAM		
Frequency Stability	Short term $\pm 1$ ppm (environmental effects and power supply variations) Long term $\pm 2$ ppm (aging of crystal oscillators $\approx$ over 5 years)		
Antenna Connection	N-type female 50 ohm		

Transmitter Power Output	
QPSK	+20 dBm to +34 dBm
16 QAM	+17 dBm to +31 dBm
32 QAM	+16 dBm to +30 dBm
64 QAM	+15 dBm to +29 dBm

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
G2	1.0 MHz	$\geq 9$ MHz	928 – 960 MHz
I0	14 MHz	$\geq 91$ MHz	1900 – 2300 MHz
I1	7.0 MHz	$\geq 50$ MHz	1900 – 2300 MHz
I2	3.5 MHz	$\geq 45$ MHz	1900 – 2300 MHz

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

# Aprisa XE

## POINT-TO-POINT DIGITAL MICROWAVE LINKS

DATASHEET [NTIA] 900 / 2000 MHZ LICENSED BANDS



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 / 4
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

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

Compliance	
Radio	900 MHz      100 kHz and 200 kHz      SPS-16814/1 2000 MHz      500 kHz      SPS-18208/2
EMI / EMC	FCC CFR 47 Part 15, EN 301 489-1, EN 301 489-4
Safety	EN/UL/IEC 62368-1, CB Certified, NRTL listed CSA 253147 applicable for AC, 48 VDC and 24 VDC product variants
Environmental	ETS 300 019-2-3 Class 3.2

# Aprisa XE

## POINT-TO-POINT DIGITAL MICROWAVE LINKS

DATASHEET [NTIA] 900 / 2000 MHZ LICENSED BANDS



## System Performance

100 kHz Channel	QPSK	16 QAM	32 QAM	64 QAM
Capacity <sup>[1]</sup> 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 <sup>[2]</sup>	-106 dBm	-100 dBm	-97 dBm	-94 dBm
System Gain <sup>[2]</sup>	135 dB	129 dB	126 dB	123 dB

200 kHz Channel	QPSK	16 QAM	32 QAM	64 QAM
Capacity <sup>[1]</sup> 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 <sup>[2]</sup>	-102 dBm	-96 dBm	-93 dBm	-90 dBm
System Gain <sup>[2]</sup>	131 dB	125 dB	122 dB	119 dB

500 kHz Channel	QPSK	16 QAM	32 QAM	64 QAM
Capacity <sup>[1]</sup> gross (TS + wayside)	632 ( 9 TS + 56 ) kbit/s	1272 ( 19 TS + 56 ) kbit/s	1592 ( 1 T1 + 8 ) kbit/s	1912 ( 1 T1 + 328 ) kbit/s
Receiver Sensitivity <sup>[2]</sup>	-99 dBm	-93 dBm	-90 dBm	-87 dBm
System Gain <sup>[2]</sup>	133 dB	124 dB	120 dB	146 dB

### 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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