AirPair™ 50

High Capacity Wireless Ethernet Bridge

AirPair 50 provides best-in-class, high capacity wireless Ethernet connections for synchronous and IP-based applications. AirPair 50 delivers a 100BaseTx user network interface to provide committed full duplex data rates of 50 Mbps over distances of up to 50 Km (31 miles).

The AirPair 50 accommodates a variety of international licensed and unlicensed frequency plans including the new 24 GHz unlicensed spectrum. The 24 GHz AirPair 50 system provides near interference-free operation and was designed to overcome the uncertainty of service that may be found in some 2.4 GHz ISM and 5.8 GHz U-NII bands, while offering the benefits of license-exempt rapid deployment.

AirPair 50 supports traditional TDM services through optional APX modules. The APX provides service adaptation of T1/E1 traffic to be transported seamlessly over AirPair's native Ethernet platform, enabling Service Providers a seamless migration to native IP networks, while still supporting legacy TDM services.

Key Features

- Wire-speed 50 Mbps full duplex performance.
- Transparent TCP/IP link extension with native Ethernet.
- Virtually zero delay for multimedia applications.
- 99.999% availability through mesh and ring support.
- Rapid installation and commissioning using PDA and PC-based tools.
- In-band or out-of-band remote SNMP management.
- Up to 4 x T1/E1 wayside channel options.
- T1/E1 support through service adaptation to native Ethernet.
- Licensed frequency bands from 18 to 26 GHz.
- License-exempt ETSI & FCC 24 GHz frequency band (6 channels available).
- Supports link distances up to 50 Km (31 miles) with licensed bands and up to 10 Km (6 miles) with unlicensed spectrum.
- Rack-Mountable Indoor (IDU) or all-outdoor (ODU) options.

AirPair 50 provides carrier class performance through support of point-to-point, hub, ring and mesh configurations, enabling network availability of 99.999% as well as extremely low latency.

The compact AirPair system is designed for all-outdoor or split indoor/outdoor mounting and is very simple to install and commission. Plug and play implementation combined with a PDA configuration tool enables rapid deployment with minimal training.

Sagaxis Inc.
155 Champagne Drive, Suite 7, Toronto, Ontario, Canada M3J 2C6
Tel: + 1 (416) 385-1390 Fax: + 1 (416) 385-1610
info@sagaxis.com **www.sagaxis.com**

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Technical Specifications

Mechanical

Radio (without antenna)	12 cm x 17.1 cm (diameter) 4.75 in x 6.75 in (diameter)
Modem (ODU)	40 cm x 19.6 cm x 8.1 cm 15.7 in x 7.7 in x 3.2 in
Modem (IDU – rack mountable)	4.3 cm x 15.4 cm x 42.5 cm 1.7 in x 6 in x 16.7 in
Radio Weight	3.2 Kg (7 lbs)
Modem Weight (ODU)	5.4 Kg (12 lbs)
Modem Weight (IDU)	4.1 Kg (9 lbs)
Mounting	Mast or Rack

Antennas

Type	Parabolic Reflector
Size	30 - 180 cm (12 - 72") diameter
Polarization (licensed)	Horizontal or Vertical
Polarization (unlicensed)	T/R Cross Polarized
Wind Loading	
Operational	110 Km/h (70 mph)
Survival	200 Km/h (125 mph)
Mount Adjustment	
Azimuth	+/- 45°
Elevation	+/- 22°

Payloads

Capacity	50 Mbps
Interface	Fast Ethernet
T1/E1 (optional)	4 x T1/E1 ports (with APX-104)
Latency	< 400 µs (typical < 200 µs)

Power

Input	-36 VDC to -60 VDC
Optional Adapter	110/240 VAC
Consumption	50 Watts (per link end)

RF System

Dispersive Fade Margin	> 43 dB
Frequency Stability	< 10 PPM

Connections ODU

Power	-48V, Cable Supplied
Payload	MIL Circular (outdoor) RJ45 (indoor)
Craft Terminal	RS 232
IF Cable	N-Type Connector

Connections IDU

Power	Dual 48V
Payload	RJ45 (100BaseT)
Craft Terminal	RS 232
IF Cable	N-Type Connector
NMS	RJ45 (10BaseT)

Network Management

Alarm Management	SNMP Agent, SNMP Traps, Enterprise MIB, Settable
History	Alarm Window in EMS History file - with polling
NMS Compatibility	OpenView, or any SNMP based NMS
Security	3 Level Authentication
S/W Update	Remote update to flash
EMS	Supplied, PC Application Connect locally or through network

Standards

System	FCC Part 101, FCC Part 15 ETSI EN 300-431, EN 300-198 Class 4 EN 300 440-1v1.3.1
EMC	EN 301 489, EN 300 385
Safety	IEC 950, FEC 60950, CSA 22.2

Indicators

LEDs (ODU)	Power, Link, Traffic, Duplex, RF On, ModSync, Fault
LEDs (IDU)	Power, Link, Activity, Duplex, RF On, ModSync, Fault, Fan Alarm

Environmental

Operating Temperature	-40°C to + 50°C (-40°F to +122° F)
Humidity	100 % Condensing
Altitude	4500 m (14,760 ft)

	18 GHz	18 GHz	23 GHz	23 GHz	24 GHz	24 GHz	24 GHz	26 GHz	28 GHz
Regional Compliance	FCC/IC	ETSI	FCC/IC	ETSI	FCC/IC	ETSI	FCC/IC	ETSI	FCC/IC
Frequency Range	17.7-19.7	17.7-19.7	21.2-23.6	22.0-23.6	24.05-24.25	24.05-24.25	24.25-25.25	24.5- 26.5	25.35-28.35
T/R Separation (MHz)	1560	1010	1200	1008	X Polarized	X Polarized	800	1008	450
Channel Bandwidth (MHz)	40	27.5	50	28	40	40	40	28 / 56	50
RF Power (dBm Max)	17	13	17	13	+5/0/-3	-19/-24/-27	17	13 / 17	17
Threshold @ 10^{-6} BER	-81	-77	-81	-77	-78	-77	-81	-77 / -81	-81
Modulation	QPSK	16 QAM	QPSK	16 QAM	QPSK	QPSK	QPSK	16QAM/QPSK	QPSK
Antenna Gain (dBi) / Beamwidth (°)									
12" (30 cm) Antenna	N/A	N/A	35.1 / 2.7	35.1 / 2.7	35.3 / 2.6	35.3 / 2.6	35.7 / 2.6	35.7 / 2.6	36.1 / 2.2
24" (60 cm) Antenna	38.6 / 2.0	38.6 / 2.0	40.2 / 1.7	40.2 / 1.7	40.7 / 1.4	40.7 / 1.4	41.1 / 1.4	41.1 / 1.4	42.5 / 1.3
36" (90 cm) Antenna	42 / 1.3	42 / 1.3	43.7 / 1.1	43.7 / 1.1	44.2 / 1.0	44.2 / 1.0	44.6 / 1.0	44.6 / 1.0	N/A
48" (120 cm) Antenna	44.5 / 1.2	44.5 / 1.2	46.2 / 0.8	46.2 / 0.8	N/A	N/A	N/A	N/A	N/A
72" (180 cm) Antenna	48 / 0.7	48 / 0.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Specifications subject to change without notice.

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