

AirPair™ 100

High Capacity Wireless Ethernet Bridge

AirPair 100 provides best-in-class, high capacity wireless Ethernet connections for synchronous and IP-based applications. AirPair 100 delivers a 100BaseTx user network interface to provide committed full duplex data rates of 100 Mbps over distances of up to 35 Km (21 miles).

The AirPair 100 accommodates a variety of international licensed and unlicensed frequency plans including the new 24 GHz unlicensed spectrum. The 24 GHz AirPair 100 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 100 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 100 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 35 Km (21 miles) with licensed bands and up to 8 Km (5 miles) with unlicensed spectrum.
- Rack-Mountable Indoor (IDU) or all-outdoor (ODU) options.



AirPair 100 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.

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Technical Specifications																																																																																																																																																					
Mechanical					Connections ODU																																																																																																																																																
Radio (without antenna)	12 cm x 17.1 cm (diameter) 4.75 in x 6.75 in (diameter)				Power	-48V, Cable Supplied																																																																																																																																															
Modem (ODU)	40 cm x 19.6 cm x 8.1 cm 15.7 in x 7.7 in x 3.2 in				Payload	MIL Circular (outdoor) RJ45 (indoor)																																																																																																																																															
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				Craft Terminal	RS 232																																																																																																																																															
Radio Weight	3.2 Kg (7 lbs)				IF Cable	N-Type Connector																																																																																																																																															
Modem Weight (ODU)	5.4 Kg (12 lbs)				Connections IDU																																																																																																																																																
Modem Weight (IDU)	4.1 Kg (9 lbs)				Power	Dual 48V																																																																																																																																															
Mounting	Mast or Rack				Payload	RJ45 (100BaseT)																																																																																																																																															
Antennas					Craft Terminal	RS 232																																																																																																																																															
Type	Parabolic Reflector				IF Cable	N-Type Connector																																																																																																																																															
Size	30 - 180 cm (12 - 72") diameter				NMS	RJ45 (10BaseT)																																																																																																																																															
Polarization (licensed)	Horizontal or Vertical				Network Management																																																																																																																																																
Polarization (unlicensed)	T/R Cross Polarized				Alarm Management	SNMP Agent, SNMP Traps, Enterprise MIB, Settable																																																																																																																																															
Wind Loading					History	Alarm Window in EMS History file - with polling																																																																																																																																															
Operational	110 Km/h (70 mph)				NMS Compatibility	OpenView, or any SNMP based NMS																																																																																																																																															
Survival	200 Km/h (125 mph)				Security	3 Level Authentication																																																																																																																																															
Mount Adjustment					S/W Update	Remote update to flash Supplied, PC Application																																																																																																																																															
Azimuth	+/- 45°				EMS	Connect locally or through network																																																																																																																																															
Elevation	+/- 22°				Standards																																																																																																																																																
Payloads					System	FCC Part 101, FCC Part 15, ETSI EN 301-785 v1.1 Class 4, EN 300-431, EN 300-197, EN 300-440-1 v1.3.1																																																																																																																																															
Capacity	100 Mbps				EMC	EN 301 489, EN 300 385																																																																																																																																															
Interface	Fast Ethernet				Safety	IEC 950, FEC 60950, CSA 22.2																																																																																																																																															
T1/E1 (optional)	4 x T1/E1 ports (with APX-104)				Indicators																																																																																																																																																
Latency	< 400 µs (typical < 200 µs)				LEDs (ODU)	Power, Link, Traffic, Duplex, RF On, ModSync, Fault																																																																																																																																															
Power					LEDs (IDU)	Power, Link, Activity, Duplex, RF On, ModSync, Fault, Fan Alarm																																																																																																																																															
Input	-36 VDC to -60 VDC				Environmental																																																																																																																																																
Optional Adapter	110/240 VAC				Operating Temperature	-40°C to + 50°C (-40°F to +122° F)																																																																																																																																															
Consumption	50 Watts (per link end)				Humidity	100 % Condensing																																																																																																																																															
RF System					Altitude	4500 m (14,760 ft)																																																																																																																																															
Dispersive Fade Margin	> 43 dB																																																																																																																																																				
Frequency Stability	< 10 PPM																																																																																																																																																				
<table border="1"> <thead> <tr> <th></th> <th>18 GHz</th> <th>18 GHz</th> <th>23 GHz</th> <th>23 GHz</th> <th>24 GHz</th> <th>24 GHz</th> <th>24 GHz</th> <th>26 GHz</th> <th>28 GHz</th> </tr> </thead> <tbody> <tr> <td>Regional Compliance</td> <td>FCC/IC</td> <td>ETSI</td> <td>FCC/IC</td> <td>ETSI</td> <td>FCC/IC</td> <td>ETSI</td> <td>FCC/IC</td> <td>ETSI</td> <td>FCC/IC</td> </tr> <tr> <td>Frequency Range</td> <td>17.7-19.7</td> <td>17.7-19.7</td> <td>21.2-23.6</td> <td>22.0-23.6</td> <td>24.05-24.25</td> <td>24.05-24.25</td> <td>24.25-25.25</td> <td>24.5- 26.5</td> <td>25.35-28.35</td> </tr> <tr> <td>T/R Separation (MHz)</td> <td>1560</td> <td>1010</td> <td>1200</td> <td>1008</td> <td>X Polarized</td> <td>X Polarized</td> <td>800</td> <td>1008</td> <td>450</td> </tr> <tr> <td>Channel Bandwidth (MHz)</td> <td>40</td> <td>27.5</td> <td>50</td> <td>28 / 56</td> <td>40</td> <td>40</td> <td>14 / 20 / 40</td> <td>28 / 56</td> <td>50</td> </tr> <tr> <td>RF Power (dBm Max)</td> <td>13</td> <td>11</td> <td>13</td> <td>11 / 13</td> <td>+3 / -2 / -5</td> <td>-21/-26/-29</td> <td>11 / 11 /13</td> <td>13</td> <td>13</td> </tr> <tr> <td>Threshold @ 10⁻⁶ BER</td> <td>-77</td> <td>-73</td> <td>-77</td> <td>-73 / -77</td> <td>-74</td> <td>-77</td> <td>-73/-73/-77</td> <td>-73 / -77</td> <td>-77</td> </tr> <tr> <td>Modulation</td> <td>16 QAM</td> <td>32 QAM</td> <td>16 QAM</td> <td>32/16QAM</td> <td>16 QAM</td> <td>16 QAM</td> <td>32/32/16QAM</td> <td>32/16 QAM</td> <td>16 QAM</td> </tr> <tr> <td colspan="10">Antenna Gain (dBi) / Beamwidth (°)</td> </tr> <tr> <td>12" (30 cm) Antenna</td> <td>N/A</td> <td>N/A</td> <td>35.1 / 2.7</td> <td>35.1 / 2.7</td> <td>35.3 / 2.6</td> <td>35.3 / 2.6</td> <td>35.7 / 2.6</td> <td>35.7 / 2.6</td> <td>36.1 / 2.2</td> </tr> <tr> <td>24" (60 cm) Antenna</td> <td>38.6 / 2.0</td> <td>38.6 / 2.0</td> <td>40.2 / 1.7</td> <td>40.2 / 1.7</td> <td>40.7 / 1.4</td> <td>40.7 / 1.4</td> <td>41.1 / 1.4</td> <td>41.1 / 1.4</td> <td>42.5 / 1.3</td> </tr> <tr> <td>36" (90 cm) Antenna</td> <td>42 / 1.3</td> <td>42 / 1.3</td> <td>43.7 / 1.1</td> <td>43.7 / 1.1</td> <td>44.2 / 1.0</td> <td>44.2 / 1.0</td> <td>44.6 / 1.0</td> <td>44.6 / 1.0</td> <td>N/A</td> </tr> <tr> <td>48" (120 cm) Antenna</td> <td>44.5 / 1.2</td> <td>44.5 / 1.2</td> <td>46.2 / 0.8</td> <td>46.2 / 0.8</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>72" (180 cm) Antenna</td> <td>48 / 0.7</td> <td>48 / 0.7</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> </tbody> </table>											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 / 56	40	40	14 / 20 / 40	28 / 56	50	RF Power (dBm Max)	13	11	13	11 / 13	+3 / -2 / -5	-21/-26/-29	11 / 11 /13	13	13	Threshold @ 10 ⁻⁶ BER	-77	-73	-77	-73 / -77	-74	-77	-73/-73/-77	-73 / -77	-77	Modulation	16 QAM	32 QAM	16 QAM	32/16QAM	16 QAM	16 QAM	32/32/16QAM	32/16 QAM	16 QAM	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
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Specifications subject to change without notice.

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