

## AirPair™ 200

### *High Capacity Wireless Ethernet Bridge*

AirPair 200 offers the highest available bandwidth on the market with 200 Mbps full duplex committed data rates. AirPair 200 provides best-in-class, high capacity wireless connections for synchronous and IP-based applications delivering a 1000/100 BaseT user network interface to provide committed full duplex data rates of 200 Mbps.

The AirPair 200 accommodates a variety of international licensed and frequency plans as well as the new 24 GHz unlicensed spectrum, providing near interference-free operation. The 24 GHz AirPair 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 200 is a native Ethernet system, optimized for IP traffic. The ultra-low latency (< 0.5 ms) characteristics enable delay sensitive applications such as VoIP and Video over IP.

AirPair 200 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**

- GigE/100 auto-sensing metallic interface.
- Wire-speed 200 Mbps full duplex performance CIR (committed information rate).
- 802.3x auto-negotiation.
- Peak rate of 1000 Mbps.
- High performance Ethernet-based architecture.
- Virtually zero delay for multimedia applications (< 0.5 ms).
- 99.999% availability through mesh and ring support.
- Support for < 50 ms mesh/ring protection switching.
- Rapid installation and commissioning using PDA and PC-based tools.
- In-band or out-of-band remote SNMP management, CLI, SSL HTTP, web management.
- T1/E1 support through service adaptation to native Ethernet.
- Licensed frequency bands from 18 to 32 GHz and license-exempt ETSI & FCC 24 GHz band.
- Supports link distances up to 18 Km (11 miles) with licensed bands and up to 4 Km (2.5 miles) with unlicensed spectrum.
- 802.1 and 802.1q support.
- Rack-Mountable Indoor (IDU) or all-outdoor (ODU) options.
- MEF UNI compliant



AirPair 200 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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## AirPair 200 High Capacity Wireless Ethernet Bridge

Technical Specifications																																																																																																																																																															
<b>Mechanical</b>					<b>Connections ODU</b>																																																																																																																																																										
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)				NMS	MIL Circular (outdoor) RJ45 (indoor)																																																																																																																																																									
Modem Weight (IDU)	4.1 Kg (9 lbs)				<b>Connections IDU</b>																																																																																																																																																										
Mounting	Mast or Rack				Power	Dual 48V																																																																																																																																																									
<b>Antennas</b>					Payload	RJ45 (100BaseT)																																																																																																																																																									
Type	Parabolic Reflector				Craft Terminal	RS 232																																																																																																																																																									
Size	30 - 180 cm (12 - 72") diameter				IF Cable	N-Type Connector																																																																																																																																																									
Polarization (licensed)	Horizontal or Vertical				NMS	RJ45 (10BaseT)																																																																																																																																																									
Polarization (unlicensed)	T/R Cross Polarized				<b>Network Management</b>																																																																																																																																																										
Wind Loading					Alarm Management	SNMP Agent, SNMP Traps, Enterprise MIB, Settable																																																																																																																																																									
Operational	110 Km/h (70 mph)				History	Alarm Window in EMS																																																																																																																																																									
Survival	200 Km/h (125 mph)				NMS Compatibility	History file - with polling																																																																																																																																																									
Mount Adjustment					Security	OpenView, or any SNMP based NMS																																																																																																																																																									
Azimuth	+/- 45°				S/W Update	3 Level Authentication																																																																																																																																																									
Elevation	+/- 22°				EMS	Remote update to flash																																																																																																																																																									
<b>Payloads</b>					<b>Standards</b>																																																																																																																																																										
Capacity	200 Mbps				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																																																																																																																																																									
Interface	1000/100/10 BaseT				EMC	EN 301 489, EN 300 385																																																																																																																																																									
T1/E1 (optional)	4 x T1/E1 ports (with APX-104)				Safety	IEC 950, FEC 60950, CSA 22.2																																																																																																																																																									
Latency	< 400 µs (typical < 200 µs)				<b>Indicators</b>																																																																																																																																																										
<b>Power</b>					LEDs (ODU)	Power, Link, Traffic, Interface Type, RF On, ModSync, Fault																																																																																																																																																									
Input	-36 VDC to -60 VDC				LEDs (IDU)	Power, Link, Activity, Interface Type, RF On, ModSync, Fault, Fan Alarm																																																																																																																																																									
Optional Adapter	110/240 VAC				<b>Environmental</b>																																																																																																																																																										
Consumption	50 Watts (per link end)				Operating Temperature	-40°C to + 50°C (-40°F to +122° F)																																																																																																																																																									
<b>RF System</b>					Humidity	100 % Condensing																																																																																																																																																									
Dispersive Fade Margin	> 43 dB				Altitude	4500 m (14,760 ft)																																																																																																																																																									
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 / 55</td> <td>50</td> <td>28 / 56</td> <td>50</td> <td>50</td> <td>20 / 40</td> <td>28 / 56</td> <td>50</td> </tr> <tr> <td>Duplex Capacity (Mbps)</td> <td>160</td> <td>120 / 200</td> <td>200</td> <td>120 / 200</td> <td>200</td> <td>200</td> <td>90 / 160</td> <td>120 / 200</td> <td>200</td> </tr> <tr> <td>RF Power (dBm Max)</td> <td>12</td> <td>10 / 12</td> <td>11</td> <td>10 / 12</td> <td>-2 / -3 / -6</td> <td>-22/-26/-29</td> <td>13 / 13</td> <td>10 / 12</td> <td>11</td> </tr> <tr> <td>Threshold @ 10<sup>-6</sup> BER</td> <td>-70</td> <td>-71 / -69</td> <td>-68</td> <td>-71 / -68</td> <td>-67</td> <td>-68</td> <td>-71 / -69</td> <td>-71 / -68</td> <td>-68</td> </tr> <tr> <td>Modulation</td> <td>64 QAM</td> <td>64 QAM</td> <td>64 QAM</td> <td>64 QAM</td> <td>64 QAM</td> <td>64 QAM</td> <td>64 QAM</td> <td>64 QAM</td> <td>64 QAM</td> </tr> <tr> <td colspan="10"><b>Antenna Gain (dBi) / Beamwidth (°)</b></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 / 55	50	28 / 56	50	50	20 / 40	28 / 56	50	Duplex Capacity (Mbps)	160	120 / 200	200	120 / 200	200	200	90 / 160	120 / 200	200	RF Power (dBm Max)	12	10 / 12	11	10 / 12	-2 / -3 / -6	-22/-26/-29	13 / 13	10 / 12	11	Threshold @ 10 <sup>-6</sup> BER	-70	-71 / -69	-68	-71 / -68	-67	-68	-71 / -69	-71 / -68	-68	Modulation	64 QAM	64 QAM	64 QAM	64 QAM	64 QAM	64 QAM	64 QAM	64 QAM	64 QAM	<b>Antenna Gain (dBi) / Beamwidth (°)</b>										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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