

AirPair™ Flex

High Capacity Wireless Ethernet Bridge with User Scalable Bandwidth

AirPair Flex is a new class of Broadband Point-to-Point Radio platform that enables users to deliver scalable Ethernet bandwidth from 10 Mbps to 100 Mbps. This is available while providing performance guarantees for throughput and delay. Scalable bandwidth is delivered and managed in 10 Mbps increments via a secure intuitive web-based user interface that can be easily integrated into existing management systems.

The AirPair Flex accommodates a variety of international licensed and unlicensed frequency plans including the new 24 GHz unlicensed spectrum. The 24 GHz AirPair Flex 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 Flex 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

- Scalable bandwidth control sustainable from 10 to 100 Mbps full duplex (10 Mbps increments).
- 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 Flex 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 AirPair Flex can be configured with a choice of antenna sizes to fit the most demanding of environmental conditions. The compact 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 Flex High Capacity Wireless Ethernet Bridge

Technical Specifications																																																																																																																																																					
System					Connections ODU																																																																																																																																																
Network Interface	Fast Ethernet 100 BaseTx				Power	-48V, Cable Supplied																																																																																																																																															
Network Capacity	Variable from 10 to 100 Mbps full duplex, sustained				Payload	MIL Circular (outdoor) RJ45 (indoor)																																																																																																																																															
Latency	< 400 μs (typical < 200 μs)				Craft Terminal	RS 232																																																																																																																																															
Network Protocols	802.3, 802.1p/q				IF Cable	N-Type Connector																																																																																																																																															
T1/E1 (optional)	4 x T1/E1 ports (with APX-104)				Connections IDU																																																																																																																																																
Mechanical					Power	Dual 48V																																																																																																																																															
Radio (without antenna)	12 cm x 17.1 cm (diameter) 4.75 in x 6.75 in (diameter)				Payload	RJ45 (100BaseT)																																																																																																																																															
Modem (ODU)	40 cm x 19.6 cm x 8.1 cm 15.7 in x 7.7 in x 3.2 in				Craft Terminal	RS 232																																																																																																																																															
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				IF Cable	N-Type Connector																																																																																																																																															
Radio Weight	3.2 Kg (7 lbs)				NMS	RJ45 (10BaseT)																																																																																																																																															
Modem Weight (ODU)	5.4 Kg (12 lbs)				RF System																																																																																																																																																
Modem Weight (IDU)	4.1 Kg (9 lbs)				Dispersive Fade Margin	> 43 dB																																																																																																																																															
Mounting	Mast or Rack				Frequency Stability	< 10 PPM																																																																																																																																															
Antennas					Network Management																																																																																																																																																
Type	Parabolic Reflector				Alarm Management	SNMP Agent, SNMP Traps, Enterprise MIB, Settable																																																																																																																																															
Size	30 - 180 cm (12 - 72") diameter				History	Alarm Window in EMS History file - with polling																																																																																																																																															
Polarization (licensed)	Horizontal or Vertical				NMS Compatibility	OpenView, or any SNMP based NMS																																																																																																																																															
Polarization (unlicensed)	T/R Cross Polarized				Security	3 Level Authentication																																																																																																																																															
Wind Loading					S/W Update	Remote update to flash																																																																																																																																															
Operational	110 Km/h (70 mph)				EMS	Supplied, PC Application																																																																																																																																															
Survival	200 Km/h (125 mph)				Network Connectivity	Connect locally or through network																																																																																																																																															
Mount Adjustment					Bandwidth Utilization	In-Band (via LAN) or Out-of-Band Alarms & Threshold monitoring																																																																																																																																															
Azimuth	+/- 45°				Standards																																																																																																																																																
Elevation	+/- 22°				System	FCC Part 101, FCC Part 15, IC RSS-191, IC RSS 210, SRSP317.7, SRSP321.8, ETSI EN 300-198, EN 300-431, EN 300-440-1 v1.3.1, EN 301-785 v1.1 Class 4																																																																																																																																															
Power					EMC	EN 301 489, EN 300 385																																																																																																																																															
Input	-36 VDC to -60 VDC				Safety	IEC 950, FEC 60950, CSA 22.2																																																																																																																																															
Optional Adapter	110/240 VAC				Environmental																																																																																																																																																
Consumption	50 Watts (per link end)				Operating Temperature	-40°C to + 50°C (-40°F to +122° F)																																																																																																																																															
Indicators					Humidity	100 % Condensing																																																																																																																																															
LEDs (ODU)	Power, Link, Traffic, Duplex, RF On, ModSync, Fault				Altitude	4500 m (14,760 ft)																																																																																																																																															
LEDs (IDU)	Power, Link, Activity, Duplex, RF On, ModSync, Fault, Fan Alarm																																																																																																																																																				
<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 @ 10⁻⁵ 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 ⁻⁵ 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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