AIRPAIR™ FLEX
User Scalable Bandwidth

Air Pair 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 AirPair Flex - 24 GHz product provides near interference free operation. The product was designed to overcome the uncertainty of service with the congested 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 DragonWave's 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.

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 commissioning combined with a PDA configuration tool enables rapid deployment with minimal training.

Key Features

❯ Scalable Bandwidth control sustainable from 10-100 Mbps (10 Mbps increments), full duplex

❯ 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-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 mi) with Licensed bands and 8 km (5 mi) with Unlicensed*

❯ Rack Mountable Indoor (IDU), or all-outdoor (ODU) option

(*based on 99.95% link availability, Rain Region E, Los Angeles)

SYSTEM

Network Interface	Fast Ethernet 100 Base Tx
Network Capacity	Variable from 10 to 100 Mbps full duplex, sustained
Network Configuration	Upspeedable in 10 Mbps increments via secure web based interface. Configured as either symmetrical or asymmetrical service. All rates allow peak operation to 100 Mbps, full duplex
Latency	<400μs, Typical < 200μs
Network Protocols	802.3, 802.1p/q, Designed to meet MEF UNI
T1/E1 (Optional)	4xT1/E1 extension ports with optional APX-104 T1/E1 unit

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 (100 BaseT)
Craft Terminal	RS 232
IF Cable	N-Type Connector
NMS	RJ45 (10 BaseT)

INDICATORS

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

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 (ODU) Weight	5.4 kg (12lbs)
Modem (IDU) Weight	4.1 Kg (9 lbs)
Mounting	Mast or Rack

RF SYSTEM

Dispersive Fade Margin	>43 dB
Frequency Stability	<10 PPM

NETWORK MANAGEMENT (NMS)

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 network manager
Security	3 Level Authentication; Any, NOC, Unique Peer to Peer
S/W Update	Remote update to flash, via management channel
EMS	Supplied, PC Application, connect locally or through network
Network Connectivity	In-Band (via VLAN) or Out-of Band
Bandwidth Utilization	Alarms & Threshold monitoring

ANTENNAS

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

ENVIRONMENTAL

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

STANDARDS

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 301-785v 1.1 Class 4,
EMC	EN 301 489, EN 300 385,
Safety	IEC 950, FEC 60950, CSA 22.2

POWER

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

Bands	Regional Compliance	Frequency Range (GHz)	T/R Separation	Channel Bandwidth (MHZ)	RF Power (dBm Max)	Threshold @10^{-6} BER	Modulation	Antenna Gain (dBi) / Beamwidth (º)				
								30 cm/12" Antenna	60 cm/24" Antenna	91 cm/36" Antenna	121 cm/48" Antenna	182 cm/72" Antenna
18 GHz	FCC/IC	17.7-19.7	1560 MHz	40	13	-77	16 QAM	N/A	38.6 / 2.0	42 / 1.3	44.5 / 1.2	48 / 0.7
18 GHz	ETSI	17.7-19.7	1010 MHz	27.5	11	-73	32 QAM	N/A	38.6 / 2.0	42 / 1.3	44.5 / 1.2	48 / 0.7
23 GHz	FCC/IC	21.2-23.6	1200 MHz	50	13	-77	16 QAM	35.1 / 2.7	40.2/ 1.7	43.7 / 1.1	46.2 / 0.8	N/A
23 GHz	ETSI	22.0-23.6	1008 MHz	28/56	11/13	-73/-77	32/16 QAM	35.1 / 2.7	40.2/ 1.7	43.7 / 1.1	46.2 / 0.8	N/A
24 GHz NA UL	FCC/IC	24.05-24.25	X Polarized	40	+3/-2/-5***	-74	16 QAM	35.3 /2.6	40.7 / 1.4	44.2 / 1.0	N/A	N/A
24 GHz ETSI UL	ETSI	24.05-24.25	X Polarized	40	-21/-26/-29***	-77	16 QAM	35.3 / 2.6	40.7 / 1.4	44.2 / 1.0	N/A	N/A
24 GHz DEMS	FCC/IC	24.25-25.25	800 MHz	14**/20*/40	11/11/13	-73/-73/-77	32/32/16 QAM	35.7 /2.6	41.1 / 1.4	44.6 / 1.0	N/A	N/A
26 GHz	ETSI	24.5-26.5	1008 MHz	28/56	13	-73/-77	32/16 QAM	35.7 / 2.6	41.1 / 1.4	44.6 / 1.0	N/A	N/A
28 GHz	FCC/IC	25.35-28.35	450 MHz	50	13	-77	16 QAM	36.1 / 2.2	42.5 / 1.3	N/A	N/A	N/A

* 65 Mbps Max CIR Full Duplex
** 40 Mbps Max CIR Full Duplex
***For Antenna Sizes of 30 cm (12"), 60 cm (24") and 91 cm (36")

Specifications subject to change without notice

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