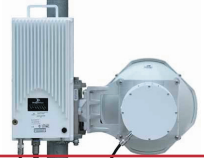

AIRPAIR™

North America

Mechanical

Radio (without antenna)	12 cm x 19 cm (diameter); 3.2 kg 4.7 in x 7.5 in (diameter); 7 lbs
Modem (ODU) - Post/Mast Mount	40 cm x 19.6 cm x 8.1 cm; 5.4 kg 15.7 in x 7.7 in x 3.2 in; 12 lbs
Modem (IDU) - Rack Mountable	4.3 cm x 25.4 cm x 42.5 cm; 4.1 Kg 1.7 in x 10 in x 16.7 in; 9 lbs
Antenna Wind Loading	110 kph (70 mph) Operational 200 kph (125 mph) Survival
Antenna Mount Adjustment	+/- 45° Az; +/- 22° El

Payloads

Capacity	Variable from 10 to 200 Mbps full duplex CIR (1522 Byte Packet); 250 Mbps (64 Byte Packet)
Max Capacity (1522 Byte Packet)	(14 MHz) 50 Mbps (28 MHz-27.5 MHz) 120 Mbps (40 MHz) 170 Mbps (50/55/56 MHz) 200 Mbps
Interface	1000/100/10 BaseT
Latency 100 BT	< 400µs, Typical < 200µs FastE
Latency GigE	< 200µs, Typical 120µs GigE
Packet Size	64 to 1600 Bytes, up 9600 (GigE Mode)
Flow Control	Yes (GigE mode only)
802.1p	Yes – 8 levels served by 4 queues
802.1q	Yes
Modulation Shifting	Current to Lowest – 5 sec

Power

Input	-36 VDC to -60 VDC
Optional Adapter	110/240 VAC
Consumption	50 Watts (per link end) 70 Watts High Power (per link end)

System Gain

AirPair 50	Up to 98 dB
AirPair 50 High Power	Up to 108 dB
AirPair 100	Up to 90 dB
AirPair 100 High Power	Up to 100 dB
AirPair 200	Up to 82 dB
AirPair 200 High Power	Up to 92 dB

Connections ODU

Power	-48V, Cable Supplied
Payload (+ Inband NMS)	MIL Circular (outdoor) RJ45 (indoor)
Craft Terminal	RS 232
IF Cable	N-Type Connector
NMS (when out-of-band)	MIL Circular (outdoor) RJ45 (indoor)

Connections IDU

Power	Dual 48V
Payload (+ Inband NMS)	RJ45 (1000/100 BaseT) or MM Fiber
Craft Terminal	RS 232
IF Cable	N-Type Connector
NMS (when out-of-band)	RJ45 (10 BaseT)

Network Management (NMS)

Alarm Management	SNMP Traps, Enterprise MIB
NMS Compatibility	OpenView, or any SNMP based network manager
Security	3 Level Authentication
EMS	Web Based Management System, SSL HTTP

Environmental

ODU Operating Temperature (Modem + Radio)	
Standard Power (18-26 GHz)	-40°C to + 50°C (-40°F to +122° F)
High Power+ Std Pwr (13, 15 GHz)	-40°C to + 45°C (-40°F to +113° F)
Standard Power + Solar Shield	-40°C to + 60°C (-40°F to +140° F)
IDU Operating Temperature (Modem Only)	0°C to + 40°C (0°F to +104° F)
Humidity	100 % Condensing
Altitude	4500 m (14,760 ft)

Standards

System	FCC Part 101, FCC Part 15, EN 302 217
EMC	EN 301 489, EN 300 385
Safety	CSA 22.2/ANSI 60950,

Specifications subject to change without notice.
* Note: High Stability Tower/Mount Required

General	11 GHz (30 MHz)	11 GHz (40 MHz)	15 GHz	15 GHz	18 GHz	23 GHz	24 GHz UL	24 GHz UL	24 GHz DEMS
Standards	FCC/IC	FCC/IC	IC	Mexico	FCC/IC	FCC/IC	FCC	IC	FCC/IC
Frequency Range (GHz)	10.700-10.970	10.710-10.955	14.500 – 14.780	14.501 – 14.585	17.78-18.14	21.8-22.4	24.05-24.25	24.05-24.25	24.25-24.45
	11.200-11.460	11.200-11.445	14.975 – 15.225	15.229-15.313	19.34-19.68	23.0-23.6			25.05-25.25
T/R Spacing (MHz)	500 & 490	490	475	728	1560	1200	X Polarized	X Polarized	800
Channel Bandwidth (MHz)	30	40	40	28	40/50	50	50	50	20/40
Max Duplex Capacity (Mbps)	120	170	170	120	170/200	200	200	200	67/170
Modulation									
10 – 50 Mbps	N/A	N/A	QPSK	16 QAM	QPSK	QPSK	QPSK	QPSK	QPSK
50-100 Mbps	32 QAM	N/A	16 QAM	32 QAM	16 QAM	16 QAM	16 QAM	16 QAM	32/16 QAM
100-200 Mbps	64 QAM	32/64QAM	64 QAM	64 QAM	64 QAM	64 QAM	64 QAM	64 QAM	64 QAM
Radio	**11 GHz (30 MHz)**	**11 GHz (40 MHz)**	**15 GHz**	**15 GHz**	**18 GHz**	**23 GHz**	**24 GHz UL**		**24 GHz DEMS**
RF Power									
10-50 Mbps	N/A	N/A	27	23	17	17	+5/0	0	17
(Optional High Power)	N/A	N/A	N/A	N/A	27	27	N/A	N/A	N/A
50-100 Mbps	22.5	N/A	23	21	13	13	+3/-2	0	11/13
(Optional High Power)	N/A	N/A	N/A	N/A	23	23	N/A	N/A	N/A
100-200 Mbps	23.5	22 / 22.5	20	22	10/12	12	+2/-3	0	10
(Optional High Power)	N/A	N/A	N/A	N/A	20/22	22	N/A	N/A	N/A
Threshold @ 10-6 BER									
10 – 50 Mbps	N/A	N/A	-82	-79	-81	-81	-78	-78	-81
50-100 Mbps	-75	N/A	-75	-74	-77	-77	-74	-74	-73-/-77
100-200 Mbps	-71	-73 / -69	-70	-70	-69/-68	-68	-65	-65	-69
Antenna Gain(dBi) / Beamwidth (°)	**11 GHz (30 MHz)**	**11 GHz (40 MHz)**	**15 GHz**	**15 GHz**	**18 GHz**	**23 GHz**	**24 GHz UL**	**24 GHz UL**	**24 GHz DEMS**
30 cm / 12" Antenna	N/A	N/A	N/A	N/A	N/A	35.1 / 2.7	35.3 /2.6	35.3 /2.6	35.7 /2.6
60 cm / 24" Antenna	N/A	N/A	36.5 / 2.4	36.5 / 2.4	38.6 / 2.0	40.2/ 1.7	40.7 / 1.4	40.7 / 1.4	41.1 / 1.4
91 cm / 36" Antenna	N/A	N/A	40.0 / 1.6	40.0 / 1.6	42 / 1.3	43.7 / 1.1	N/A	44.2/1.0	44.6 / 1.0
121 cm / 48" Antenna	39.4/1.7	39.4/1.7	42.5 / 1.2	42.5 / 1.2	44.5 / 1.2	46.2 / 0.8	N/A	46.5/0.7	46.5/0.7
182 cm / 72" Antenna*	42.5/1.0	42.5/1.0	45.7 / 0.8	45.7 / 0.8	48 / 0.7	N/A	N/A	N/A	N/A

APX-104E/108E

T1/E1 over Ethernet (TDMoE) Extender

General

Receiver Range	0 to 36 dB loss
Clock Mode	Configurable as Loopback, internal, external, adaptive, differential
Loopback	Supports per channel local analog remote digital dual loopback modes
Encoding/Decoding	B8ZS, AMI or HDB3
Line Buildout	0-133 ft, 133-266 ft, 266-399 ft, 399-533 ft, 533-655 ft
TDM Latency	< 2 mSec Egress, < 200 µs Ingress
Delay Tolerance	+/- 2 Frames @ 100 mbps
Buffer Size	User Programmable (2-30 msec)
Timing Performance	H.823 compliant stratum 3 performance option for 50 ppB frequency stability

Mechanical

Dimensions	28 cm x 21 cm x 4 cm 11 in x 8.3 in x 1.5 in
Weight	680 g (1.5 lbs)

Alarms

Line Code Violation
LOS (Loss of Signal)
AIS (Alarm Indication Signal)
LoF (Loss of Frame)
ES (Error Seconds)
SES (Severely ES)
UAS (Unavailable Seconds)
RAI (Remote Alarm Indication)

Management/System

Type	Command Line Interface, Web GUI, SNMP 1/2/3 (CLI) – In-band Management
Interfaces	RS 232 Craft Port, In-Band 100 BaseT port
Loopback	T1/E1 Port Loopback
Statistics	T1/E1 Stats and logging
System	Software upgrade through Craft Port
Management	RJ-45 Console Port

Connections

Primary Power	100-240 VAC
TDM	4 x T1/E1 Ports or 8 x T1/E1 ports
Ethernet (In/Out)	APX-108E 2 x 100 BaseT Wirespeed full duplex (IEEE 802.3 compliant) APX-104E- 6X 100 BaseT
Timing	External Clock

Environmental

Operating Temp	0°C to +50°C (32°F to +122°F)
Humidity	95 % Non Condensing
Altitude	4500 m (14,760 ft)

Standards

CORE GR54, ATT Pub 62411, ANSI T1.408, TRY-TSY000499,
ITU G.703. G.755. G.736, G.823, DSX-1, IEEE 802.3, DIX,
FCC Part 15 Class A, ETSI EN301489, CSA 22.2 No 60950, UL60950

DragonWave

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