

AVL TECHNOLOGIES

MODEL 2460 / 2020 PIB F/A

2.4M Quad-Band Portable Auto-Acquisition Antenna

Reflector	2.4 Meter, 9 piece Carbon Fiber
Optics	Offset, Prime Focus, 0.8 f/D
Interchangeable Feeds	C-LP, C-CP, X-CP, Ku-LP, Ka-CP, Ka-LP
Positioner Type	Case-based Pack-in-the-Box
Drive System	Patented Roto-Lok® Positioner
Mount Geometry	Elevation over Azimuth
Polarization	Rotation of Feed



Mechanical

Travel

Azimuth	± 200°
Elevation	7° to 90° of reflector boresight from calibrated inclinometer
Polarization	± 95°

Speed

Slewing/Deploying	2°/second Az, 1°/second El
Peaking	0.2°/second

Motors

24V DC variable speed, constant torque

Emergency Axes Drives

Handcranks on Az and El; Knob on Pol

Stowed Configuration

Five or six rugged, weather-resistant plastic cases

Positioner

26" x 24" x 30", 170 lbs.

Outriggers/Feed Boom/Ku or Ka feed

71" x 18" x 19", 110 lbs. (includes Ku or Ka feed)

Reflector (2)

38" x 38" x 22", 120 lbs.

Additional Feeds

43" x 28" x 21", 70 lbs. typical, dependent on feed options selected

Set-up Time

Less than 15 minutes

RF Interface

BUC Mounting

Feed boom or behind reflector (additional case required)

Coax

Two connectors at positioner base

Electrical Interface

Connector at positioner base

Environmental

Wind

Operational

Without anchoring

30 mph

With anchoring

30 mph gusting to 45 mph

Survival (anchored)

80 mph in zenith (90° elevation) position

Pointing Loss in Wind

Ku-band Receive, Operational winds

1.3 dB typical, 2.4 dB max

Ka-band Receive, Limited wind*

1.0 dB typical, 2 dB max, 20 mph gusting to 30 mph

Temperature

Operational

-22° to 125° F (-30° to 52° C)

Survival

-40° to 140° F (-40° to 60° C)

Options

BUC/HPA mounting

Stabilization leg options

Waveguide interconnect options

Feed boom options

Controller options- see below

Beacon receiver – inclined orbit tracking – resolvers/upgrade

High wind options – ground stakes

Grounding options (lightning conductor)

*Active wind tracking required for Ka-band for higher winds

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<u>C-Band</u>	<u>Receive</u>	<u>Transmit</u>
Polarization	Standard (LP or CP)	INSAT (LP)
Frequency (GHz) (extended band available on request)	3.625 - 4.20	4.50 - 4.80
Gain (Midband) (dBi)	38.0	39.2
VSWR	1.30:1	1.30:1
Beamwidth (-3 dB)	2.2°	1.9°
Radiation Pattern Compliance (beyond mainbeam)	FCC 25.209, ITU-R S.580-6 IESS 207	ITU-R S.580-6
Ant Noise Temperature @ 20° EI, midband	49° K	48° K
G/T with 20° LNB, midband, clear horizon	19.5 dB/° K	-
Axial Ratio (CP only, within pointing cone)	2.3 dB	1.3 dB
Cross Pol Isolation (on-axis/within pointing cone)	35 dB / 30 dB	35 dB / 30 dB
Feed Port Isolation – TX to RX (dB)	65	35
Power Handling Capability		105 (includes filter) 1000 watts per port

<u>X-Band</u>	<u>Receive</u>	<u>Transmit</u>
Polarization	RHCP or LHCP	LHCP or RHCP
Frequency Range (GHz)	7.25 - 7.75	7.90 - 8.40
Gain (Midband) (dBi)	43.3	44.1
VSWR	1.30:1	1.30:1
Beamwidth (-3 dB)	1.2°	1.1°
Radiation Pattern Compliance (beyond mainbeam)	MIL-STD-188-164A	MIL-STD-188-164A
Ant Noise Temperature @ 20° EI, midband	59° K	
G/T with 55° LNB, midband, clear horizon	22.7 dB/° K	
Axial Ratio (CP only, within pointing cone)	1.21 dB	2 dB
Feed Port Isolation – TX to RX (dB)	115 (includes optional filter)	115 (includes optional filter)
Power Handling Capability		1000 watts per port

<u>Ku-Band</u> (DBS bands available on request)	<u>Receive</u>	<u>Transmit</u>
Polarization	Linear orthogonal standard, optional co-pol	
Frequency Range (GHz)	10.95 - 12.75	13.75-14.50
Gain (Midband) (dBi)	47.0	48.8
VSWR	1.30:1	1.30:1
Beamwidth (-3 dB)	0.7°	0.6°
Radiation Pattern Compliance	FCC 25.209, ITU-R S.580-6, IESS 208	FCC 25.209, ITU-R S.580-6, IESS 208
Ant Noise Temperature @ 20° EI, midband	61° K	
G/T with 50° LNB, midband, clear horizon	26.5 dB/° K	
Cross Pol Isolation, on-axis	35 dB	35 dB
Cross Pol Isolation, within pointing cone	28 dB standard, 25dB optional MM feed	30 dB standard, 35 optional MM feed
Feed Port Isolation – TX to RX (dB)	35	80 (includes filter)
Power Handling Capability		500 watts per port

<u>Ka-Band</u>	<u>Receive</u>	<u>Transmit</u>
Polarization	Circular or Linear	
Frequency Range (GHz)	20.2 - 21.2 (military) or 17.7 - 20.2 (commercial)	30.0 - 31.0 (military) or 27.5 - 30.0 (commercial)
Gain (Midband military) (dBi)	52.1	55.0
VSWR	1.30:1	1.30:1
Beamwidth (-3 dB)	0.4°	0.3°
Radiation Pattern Compliance	FCC 25.209, MIL-STD-188-164A	FCC 25.209, MIL-STD-188-164A
Ant Noise Temperature @ 20° EI, midband	104° K	
G/T with 100° LNB, midband, clear horizon	29.0 dB/° K	
Axial Ratio (CP only, within pointing cone)	1.5 dB	1.0 dB
Feed Port Isolation – TX to RX (dB)	30	80 (includes filter)
Power Handling Capability		250 watts per port

<u>Controller</u>	
	Fully Automatic Satellite Acquisition, Peaking, and Cross-Pol Adjustment with GPS, Compass, Level Inputs and auto compensation with Entry of Desired Satellite. Select 10"x9"x2.5" power supply/hand-held controller or 1 RU P.S. controller or 2 RU controller option. With 2 RU additional options include inclined orbit tracking, resolvers, hand-held remote, remote GUI, waveguide switch control. A 2 RU jog controller is also offered.
Positioning Accuracy ±0.2°	±0.2°
Input Power	95-250VAC auto-ranging or 2 RU option 110/240 VAC, 1 phase, 50/60 Hz, 6/3 A peak, 1 A continuous