AvL TECHNOLOGIES

MODEL 1660 / 2020 PIB F/A

1.6M Quad-Band Portable Auto-Acquisition Antenna

Reflector	1.6 Meter, 4 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

Buy Now!

Mechanical

Travel	
Azimuth	± 200°
Elevation	0° 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	Three rugged, weather-resistant plastic cases, total weight: 450 lbs.
Positioner	26” x 24” x 30”, 170 lbs.
Outriggers/Feed Boom/Ku or Ka feed	71” x 18” x 19”, 105 lbs. (includes Ku or Ka feed)
Reflector	38” x 38” x 22”, 120 lbs.
Additional Feeds	43” x 27” x 20”, 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	0.1 dB typical, 0.5 dB max
Ka-band Receive, Operational winds	0.3 dB typical, 1 dB max
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
- Controller options- see below
- Beacon receiver – inclined orbit tracking – resolvers/upgrade
- High wind options – ground stakes
- Grounding options (lightning conductor)

C-Band	Receive		Transmit	
Polarization	Standard (LP or CP)	INSAT (LP)	Standard (LP or CP)	INSAT (LP)
Frequency (GHz) (extended band available on request)	3.625 - 4.20	4.50 - 4.80	5.85 - 6.425	6.725 - 7.025
Gain (Midband) (dBi)	34.2	36.0	38.1	39.4
VSWR	1.30:1		1.30:1	
Beamwidth (-3 dB)	3.4˚	2.8˚	2.1˚	1.9˚
Radiation Pattern Compliance (beyond mainbeam)	FCC 25.209, ITU-R S.580-6 IESS 207	ITU-R S.580-6	FCC 25.209, ITU-R S.580-6 IESS 207	ITU-R S.580-6
Ant Noise Temperature @ 20° El, midband	49° K	48° K	-	-
G/T with 20˚ LNB, midband, clear horizon	15.8 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	35 dB / 30 dB	35 dB / 30 dB
Feed Port Isolation – TX to RX (dB)	65	35	105 (includes filter)	70
Power Handling Capability			1000 watts per port	1000 w per port

X-Band	Receive	Transmit
Polarization	RHCP or LHCP	LHCP or RHCP
Frequency Range (GHz)	7.25 - 7.75	7.90 - 8.40
Gain (Midband) (dBi)	39.7	40.5
VSWR	1.30:1	1.30:1
Beamwidth (-3 dB)	1.8˚	1.6˚
Radiation Pattern Compliance (beyond mainbeam)	MIL-STD-188-164A	MIL-STD-188-164A
Ant Noise Temperature @ 20° El, midband	45° K	
G/T with 55˚ LNB, midband, clear horizon	19.7 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

Ku-Band (DBS bands available on request)	Receive	Transmit
Polarization	Linear orthogonal standard, optional co-pol	
Frequency Range (GHz)	10.95 - 12.75	13.75-14.50
Gain (Midband) (dBi)	43.7	45.3
VSWR	1.30:1	1.30:1
Beamwidth (-3 dB)	1.1˚	0.9˚
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° El, midband	54° K	
G/T with 50˚ LNB, midband, clear horizon	23.5 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

Ka-Band	Receive	Transmit
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)	48.9	52.3
VSWR	1.30:1	1.30:1
Beamwidth (-3 dB)	0.6˚	0.4˚
Radiation Pattern Compliance	FCC 25.209, MIL-STD-188-164A	FCC 25.209, MIL-STD-188-164A
Ant Noise Temperature @ 20° El, midband	107° K	
G/T with 100˚ LNB, midband, clear horizon	25.3 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

Controller	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.
	±0.2˚
	95-250VAC auto-ranging or 2 RU option 110/240 VAC, 1 phase, 50/60 Hz, 6/3 A peak, 1 A continuous

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