

# AVL TECHNOLOGIES

Model 1660 / 1220 PIB F/A

## Auto Acquire Quad-Band Motorized FlyAway Antenna

Reflector Type	1.6M 4 Segment Carbon Fiber
Optics	Offset, Prime Focus, 0.8 F/D
Interchangeable Feeds	C LP or CP, X CP, Ku LP, Ka CP
Positioner	Case-based Pack-in-the-Box
Az/EI Drive System	Patented Roto-Lok® Positioner
Mount Geometry	Elevation over Azimuth
Polarization Adjustment	Motorized Rotation of Linear Feeds



### Mechanical/Environmental

Travel	- Azimuth	±200°
	- Elevation (Operational)	0°-90° with ±200° Az Travel
	- Polarization (LP Feeds)	±95° Adjustable within <1°
Speed	- Slewing/Deploying	2°/second Az; 1°/second EI
	- Peaking	0.2°/second
	- Tracking	0.1°/second
Emergency Drive		Hand Crank on Az, EI; Hand Knob on Pol
Configuration – Rugged Cases, 1 each	Positioner, Outriggers/Boom, Reflector:	
	-1220 Motorized Positioner	26" x 24" x 30" 150 lbs
	-Outriggers/Feed Boom	71" x 18" x 17" 105 lbs. (includes Ku or Ka feed)
	-Reflector Panels	39" x 39" x 24" 120 lbs.
	-C/X/Ka Feeds (up to 3/case)	43" x 27" 20" 70 lbs. typical
Interfaces		
	-HPA Mounting	Feed boom or behind reflector (additional CFE case or optional case required)
	-RF	Coax (2) at base, Flex Waveguide from feed with groove
	-Electrical	25 ft. Cable with Connectors for Controller
Set-up Time		Less than 30 minutes
Wind	- Operational	30 mph gusting to 45 mph
	- Survival	Anchoring required when gusts exceed 40 mph 80 mph (With anchoring in zenith stowed position)
Pointing Loss	- Ku-band Rx	0.4 dB typical, 0.7 dB max in operational wind
	- Ka-band Rx	1.0 dB typical, 1.7 dB max in operational wind
Temperature	- Operational	+14° to 125°F (-10° to 52°C)
	- Survival	-40° to 140°F (-40° to 60°C)

### Controllers

Auto-Acquisition	One-button deploy with auto acquisition, peaking, and cross-pol adjustment using GPS, compass, and level-sensor inputs; certified for auto-commission on certain satellite systems
Tracking	Inclined orbit step-tracking with CFE or optional beacon receiver
Operator Interface	Front panel or Hand Held Remote or Remote PC options
Positioning Accuracy	± 0.2°
Input Power	Single phase 110/240 60/50 Hz 10 A peak, 2 A continuous

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## Model 1660 / 2020 PIB F/A Quad-Band Motorized FlyAway Antenna

<b><u>C-Band*</u></b>	<b><u>Receive</u></b>	<b><u>Transmit</u></b>
Frequency	3.625-4.20 Ghz	5.85 -6.425 Ghz
Polarization	Linear or circular options	
Gain (Midband)	34.2 dBi	38.1 dBi
Antenna Noise Temperature @ 20° EI	48° K	
G/T with 20°K LNB, Midband	15.8 dB/° K	
Radiation Pattern Compliance	29-25 log $\Theta$ dBi , 3.5° > $\Theta$ < 36°	
Circular Axial Ratio (within Pointing Cone)	2.3 dB	1.3 dB
Linear Cross Pol Isolation (in Ptg. Cone)	>30 dB	>30 dB
Power Handling Capability		1000 watts per port

\*Requires special approval by satellite operator

<b><u>X-Band</u></b>	<b><u>Receive</u></b>	<b><u>Transmit</u></b>
Frequency	7.25 7.75 Ghz	7.9 - 8.4 Ghz
Polarization	Circular RHCP or LHCP	
Gain (Midband)	39.7 dBi	40.5 dBi
Antenna Noise Temperature @ 20° EI	45° K	
G/T with 55°K LNB, Midband	19.7 dB/° K	
Radiation Pattern Compliance	MIL – STD – 188-164A	
Axial Ratio within Tracking Cone	1.21 dB	2.0 dB
Power Handling Capability		1000 watts per port

<b><u>Ku-Band</u></b>	<b><u>Receive</u></b>	<b><u>Transmit</u></b>
Frequency	10.95-12.75 Ghz	13.75-14.5 Ghz
Polarization	Orthogonal Linear, Optional Co-pol Linear	
Gain (Midband)	43.7 dBi	45.3 dBi
Antenna Noise Temperature @ 20°	54° K	
G/T with 50°K LNB, Midband	23.5 dB/° K	
Radiation Pattern Compliance	IESS-601 Std. G and FCC 47CFR25.209	
Cross Pol Isolation - on-axis	35 dB	35 dB
- within pointing cone	28 dB standard	30 dB standard
- within pointing cone	25 dB MM option	35 dB MM option
Power Handling Capability		500 watts per port

<b><u>Ka-Band</u></b>	<b><u>Receive</u></b>	<b><u>Transmit</u></b>
Frequency	17.7 - 20.2 Ghz	27.5 -30.0 Ghz
Frequency (Military)	20.2 - 21.2 Ghz	30.0 -31.0 Ghz
Polarization	Circular RHCP and LHCP	
Gain (Midband Military)	50.6 dBi	53.8 dBi
Antenna Noise Temperature @ 20°	107° K	
G/T with 100°K LNB, 20.7 GHz	25.3 dB/° K	
Radiation Pattern Compliance	FCC and MIL – STD-188-164A	
Axial Ratio (within pointing cone)	1.5 dB	1.0 dB
Power Handling Capability		250 watts per port

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