

# AvL TECHNOLOGIES

## Model 1660

### Quad-Band Motorized FlyAway Antenna System



Reflector Type	1.6M segmented carbon fiber
Optics	Offset, Prime Focus, .8 F/D
Interchangeable Feeds	CLP, CCP, XCP, Ku LP, Ka CP or LP
Positioner	Case-based Jack-in-the-Box
Az/EI Drive System	Patented Roto-Lok® Positioner
Mount Geometry	Elevation over Azimuth
Polarization Adjustment	Motorized Rotation of Linear Feeds
Military Standard	MIL-STD-188-164a Type E-V

#### **Mechanical**

Travel - Azimuth	400°	
- Elevation: Operational	0-90° of boresight with 400° Az Travel	
	-5-90° of boresight with +/-15° Az Travel	
- Polarization	±95° of Linear Feeds, Adjustable within <1°	
Speed - Slewing	2°/second	
- Peaking	0.2°/second	
- Tracking	0.1°/second	
Electrical Interface	10 to 200 ft. Cables	
Emergency Drive	Handcrank on Az, EI; 12V leads on pol	
Wind - Operational-mph		
Without anchoring	35 mph	
With anchoring	45 mph	
- Survival	80 mph in stow position	
Temperature - Operational	+15° to 125°F	
- Survival	-40°F to 140°F	
Configuration - Rugged Hardigg Shipping Cases		
C, X, Ku Motorized Positioner	24" x 25" x 24"	145 lbs.
C, X, Ku Ka Motorized Positioner	27" x 29" x 30"	170 lbs.
Outriggers/Feed Boom	20" x 59" x 12"	105 lbs.
Reflector Panels	36" x 34" x 12"	135 lbs.
Feeds (C,X and Ka)	20" x 59" x 12" or 30" x 30" x 16"	95 lbs
RF Interface		
HPA Mounting	Separate case or rear of reflector	
Set-up Time	Less than 30 minutes	

#### **Controllers**

Auto-Acquisition	One-button deploy with full-automatic satellite acquisition, peaking, and cross-pol adjustment using GPS, compass, and level-sensor inputs; certified for auto-commissioning on certain satellite systems.
Tracking	Step-tracking with CFE beacon receiver to reduce gain loss to 0.8dB without wind and 2.0dB with operational winds
Operator Interface	Front panel keyboard with 4-line display or remote PC
Auto Positioning Accuracy	≤±0.2°
Input Power	90-256V AC power supply, 10A peak, 2A continuous

## Model 1660 Quad-Band FlyAway

### **C-Band**

Frequency	<b><u>Receive</u></b> 3.40-4.20 Ghz	<b><u>Transmit</u></b> 5.85 -6.65 Ghz
Polarization	Linear or circular, convertible to either RHCP or LHCP	
Gain (Midband)	34.0 dBi	38.0 dBi
Antenna Noise Temperature @ 30° G/T with 20°K LNB	50°K 15.5 dB/° K	
Radiation Pattern Compliance		29-25 log $\Theta$ dBi, $3.5^\circ > \Theta < 36^\circ$
Axial Ratio within Tracking Cone		1.3 dB
Linear Cross-Polarization with Tracking Cone		>30 dB
Power Handling Capability		1000 watts per port

\*Requires special approval by satellite operator

### **X-Band**

Frequency	<b><u>Receive</u></b> 7.250-7.750 Ghz	<b><u>Transmit</u></b> 7.900-8.400 Ghz
Polarization	Convertible to RH circular or LH circular	
Gain (Midband)	39.7 dBi	40.5 dBi
Antenna Noise Temperature @ 30° Minimum G/T with 45° K LNA	45°K 20.2 dB/° K	
Radiation Pattern Compliance	MIL-STD-188-164A	
Axial Ratio within Tracking Cone	<1.2 dB	<1.2 dB
Power Handling Capability		1000 watts per port

### **Ku-Band**

Frequency	<b><u>Receive</u></b> 10.95-12.75 Ghz	<b><u>Transmit</u></b> 13.75-14.5 Ghz
Polarization	Orthogonal Linear, Optional Co-pol Linear	
Gain (Midband)	43.7 dBi	45.0 dBi
Antenna Noise Temperature @ 30° G/T with 50°K LNB	50°K 23.7 dB/° K	
Radiation Pattern Compliance	IESS-601 and FCC 47CFR25.209	
Linear Cross-Pol Isolation	>35 dB within cone of tracking error	
Power Handling Capability		500 watts per port

### **Ka-Band**

Frequency (Commercial)	<b><u>Receive</u></b> 17.7-20.2 Ghz	<b><u>Transmit</u></b> 27.5-30.0 Ghz
Frequency (Military)	20.2-21.2 Ghz	30.0-31.0 Ghz
Polarization	Linear or Circular	
Gain (20 & 30 Ghz)	47.5 dBi	51.0 dBi
Antenna Noise Temperature @ 30° G/T with 100° LNB	50°K 25.9 dB/° K	
Radiation Pattern Compliance	FCC and MIL-STD-188-164A	
Axial Ratio	<1.5 dB	<1.0 dB
Power Handling Capability		250 watts per port