

# AvL TECHNOLOGIES

## Model 1612 1.6m “Global” Ku-Band Standard SNG Motorized Vehicle-Mount Antenna

- Unique Features**
- 1.6m Carbon Fiber Single Piece Reflector
  - Zero Backlash Az/EI AvL Cable Drive Positioner, DC motors
  - AvL AAQ Controller (Jog, upgradeable to DVB Auto-Acquire)
  - Enhanced Tx X-Pol Isolation (-35 dB in 1dB off-axis cone)

- Optics**
- Offset, Prime Focus, 0.8 f/D

- Standard Feed**
- 2-Port LP Ku Mode-Matched (Enhanced X-Pol Isolation)

*NOTE: see Model 1600 for “standard” X-Pol isolation configs.*

*NOTE: see Model 1610 for multi-band configs.*



Model 1612 (shown with opt. cowling)

- Polarization Adjustment**
- Motorized Worm Gear Drive w/ DC motor

- Standard Colorization**
- White (optional colors available)

### Mechanical

Az/EI Drive	Motorized Zero Backlash AvL Cable Drive		
Polarization Drive System	Motorized Worm Gear Drive		
Reflector Construction	Single Piece Engineered Carbon Fiber		
Axis Travel			
Azimuth	400° (±200°)		
Elevation	0° to 90° of Reflector Boresight (may be limited by BUC integration and/or cowling)*		
Polarization	190° (±95°) for 2-port Precision Feeds		
Axis Speeds – Typ. (w/ AAQ)	Az	EI	Pol
Slewing (deg/sec)	2	2	2
Peaking (deg/sec)	0.2	0.2	0.2
Az/EI Motors	24 VDC Variable Speed, Constant Torque		
RF/IF Interfaces			
Rx RF (Ku)	WR75 cover flange at feed OMT for direct LNB/LNA (CFE) mounting		
Tx RF (Ku)	WR75 cover flange at fixed end of std. twist-flex waveguide (end of boom)		
HPA/BUC Mounting	Feed Boom Mtg. (50 lbs. Max)**		
Rx Coax (IF)	Type F male (std.) at end of 25-ft. (8m) RG59 pigtail <i>NOTE: Tx IF coax supplied by others.</i>		
Electrical Interface	25 ft. (8m) or 30 ft. (9m) Cable with Connectors for Controller		
Manual/Emergency Drive	Universal hand crank for Az, EI and Pol axes		
Time to Acquisition	5 to 8 minutes, typical		
Weight (approximate)	230 lbs. (105 kg); depends on options selected		
Dimensions – Stowed (std. AAQ)	90 L x 62 W x 18.3 H inches (229 L x 157.5 W x 46.5 H cm)		

### Environmental

Wind – Survival	Deployed: 80 mph (129 kph); Stowed: 100 mph (161 kph)	
Wind - Operational	45 gusting to 60 mph (72 gusting to 97 kph)	
Pointing Loss in Wind (mid-band Rx)***	30 gusting to 45 mph (48 gusting to 72 kph)	
	0.3 dB typical, 1 dB maximum	
Temperature:		
Operational	-22° to 131° F (-30° to 55° C)	
Survival	-40° to 140° F (-40° to 60° C)	

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### RF/Electrical

Feed Type ►	Std. Mode-Match Ku-Band	
RF Parameter ▼	Receive	Transmit
Frequency Range (GHz)	10.95 - 12.75	13.75 - 14.50
Polarization Configuration	Linear Orthogonal Standard	
Gain (mid-band, 2-Port)	43.7	46.0 typ. (45.5 min.)
G/T (midband, clear horizon)	23.5 dB/° K (with 50°K LNB)	n/a
Beam width (Degrees) -3 dB	1.1	0.95
-10 dB	2.0	1.70
First Side lobe Level (typical) (dB)	-24	-30
Antenna Noise Temperature	45° K @ 30° EI	
Radiation Pattern Compliance	>3 dB better than FCC §25.209, ITU-R S.580.6	
Power Handling Capability	n/a	1000 watts @ Tx port
VSWR	1.30:1	1.30:1
Cross-Polarization Isolation (dB)		
On Axis (minimum)	35	35
Off Axis (with 1 dB BW)	25	35
Feed Port Isolation – Tx to Rx (dB)	35	80 (includes filter)

### Controller

Standard/Basic Controller ►	RC3050 - Three-axis Jog Only
Size	2RU Chassis (19"W x 3.5"H x 17"D, 15 lbs.) w/ Front Panel Display & Push-Buttons; 25-ft. cable
Input Power	115/230 VAC switchable; 1 ph, 50/60 Hz, 6/3A peak (750W max.), 1A continuous typ.
Options	<ul style="list-style-type: none"> <li>• Auto-Stow Upgrade</li> <li>• Add Hand-Held Interface Panel w/ 25-ft. Cable</li> </ul>
Optional Controller ►	RC3000A – Auto-Point, Factory-Upgradeable to Auto-Acquire
Size	2RU Chassis (19"W x 3.5"H x 17"D, 18-20 lbs.) w/ Front Panel Display & Keypad
Input Power	115/230 VAC switchable; 1 ph, 50/60 Hz, 6/3A peak (850W max.), 1A continuous typ.
Options	<ul style="list-style-type: none"> <li>• Auto-Acquire via DVB Signal (incl. optional GPS, Compass &amp; Embedded DVB Receiver)</li> <li>• Auto-Acquire via External Modem (call for list of available modem interfaces)</li> <li>• Optional Serial (RS-232 or RS-422) or Ethernet Control Interface</li> <li>• Inclined Orbit Tracking (Open-Loop via TLE or Memory; Closed-Loop via Tracking Receiver)</li> </ul>
Optional Controller ►	AvL AAQ – Jog Only, Factory- or Field-Upgradeable to Auto-Acquire
Size	<ul style="list-style-type: none"> <li>• Embedded Controller (7.5" x 8.5"D x 1.75"H; ~2 lbs.); 25-ft. Remote Cable</li> <li>• P/S: 1RU Chassis (19"W x 1.75"H x 9"D, ~8 lbs.) w/ Front Panel Display &amp; Keypad</li> </ul>
Input Power	115/230 VAC switchable; 1 ph, 50/60 Hz, 6/3A peak
Options	<ul style="list-style-type: none"> <li>• Auto-Acquire via DVB Signal (incl. GPS, Compass &amp; Embedded, Enhanced DVB Receiver)</li> <li>• Auto-Acquire via External Modem (call for list of available modem interfaces)</li> <li>• Inclined Orbit Tracking (Open-Loop via TLE; Closed-Loop via Tracking Receiver)</li> <li>• Hand-Held Controller; various Factory or Field Software Upgrades</li> </ul>

### Other Available Options, Upgrades & Services

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| <ul style="list-style-type: none"> <li>• Optional waveguide rotary joint with flex on pol axis for Ku-band</li> <li>• Optional H/V switch (Ku Wideband feeds only)</li> <li>• Optional wave guide cross axis kits</li> <li>• Optional Dual/Redundant HPA high power integration</li> <li>• Optional Mounting pallet (adds 2.0" (5 cm) to stow height – can include optional I/O panel)</li> <li>• Optional BUC/HPA (CFE) mounting on feed boom (NOTE: minimum elevation may be restricted by these options)</li> </ul> | <ul style="list-style-type: none"> <li>• Optional “saddlebag” HPA (CFE) mounting on Az base plate</li> <li>• Upgrade to custom RF/IF I/O cabling configurations available</li> <li>• Optional Tx coax cable available</li> <li>• Custom colorization (contact factory for available colors)</li> <li>• Add custom logo on reflector face (per AvL Logo Policy)</li> <li>• Optional aerodynamic cowling</li> <li>• Spare parts kit</li> </ul> |
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\* Standard factory elevation “electrical” limits are set at 5° and 65° to conform with CE safety requirements.

\*\* Confirm with outdoor HPA/BUC dimensional suitability with AvL Engineering; AvL offers design and mounting services for many commercially available BUCs and HPAs, including switches, loads and associated waveguide.

\*\*\* Assumes stable platform/vehicle.