

AvL TECHNOLOGIES

Model 1600 1.6m 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)

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

- Standard Feed**
- 2-Port LP Ku-Band Precision

- Optional Factory Feeds**
- 4-Port LP Ku-Band Precision
 - 2-, 3- and 4-Port LP Ku-Band "Wideband"

NOTE: see Model 1612 for enhanced Cross-Pol isolation.

NOTE: see Model 1610 for field-swappable (multi-band) configurations.

- 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		
	100° (±50°) for 4-port Precision as well as 2-, 3- and 4-port "Wideband" 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)	<ul style="list-style-type: none"> • 2-port: WR75 cover flange at feed OMT for direct LNB/LNA (CFE) mounting • 3- & 4-port: dual (H/V) WR75 cover flanges at fixed end of std. twist-flex w/g's (end of boom) 		
Tx RF (Ku)	<ul style="list-style-type: none"> • 2-port & 3-port: WR75 cover flange at fixed end of std. twist-flex waveguide (end of boom) • 4-port: dual (H/V) WR75 cover flanges at fixed end of std. twist-flex waveguides (end of boom) 		
HPA/BUC Mounting	<ul style="list-style-type: none"> • Feed Boom Mtg. (50 lbs. Max)** • Opt. "Saddlebag" (requires Opt. Extended Az Baseplate); 		
Rx Coax (IF)	<ul style="list-style-type: none"> • 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. Precision Ku-Band		Opt. Wideband Ku-Band	
RF Parameter ▼	Receive	Transmit	Receive	Transmit
Frequency Range (GHz)	10.95 - 12.75	13.75 - 14.50	10.95 - 12.75	13.75 - 14.50
Polarization Configuration	Linear Orthogonal Standard		Linear Orthogonal Standard	
Gain (mid-band)	2-Port	43.7	43.7	45.3
	3-Port (2x Rx; 1x Tx)	n/a	43.3	45.3
	4-Port (2x Rx; 2x Tx)	43.3	43.3	44.9
G/T (midband, clear horizon)	23.5 dB/° K (with 50°K LNB)	n/a	23.5 dB/° K (with 50°K LNB)	n/a
Beam width (Degrees)	-3 dB	1.1	1.1	0.95
	-10 dB	2.0	2.0	1.70
First Sidelobe Level (typical) (dB)		-24	-24	-30
Antenna Noise Temperature	45° K @ 30° EI		45° K @ 30° EI	
Radiation Pattern Compliance	>3 dB better than FCC §25.209, ITU-R S.580.6		>3 dB better than FCC §25.209, ITU-R S.580.6	
Power Handling Capability	n/a	1000 watts @ Tx port	n/a	1000 watts @ Tx port
VSWR	1.30:1	1.30:1	1.30:1	1.30:1
Cross-Polarization Isolation (dB)				
On Axis (minimum)	35	35	35	35
Off Axis (with 1 dB BW)	28	30	28	30
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"> Auto-Stow Upgrade Add Hand-Held Interface Panel w/ 25-ft. Cable
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"> Auto-Acquire via DVB Signal (incl. optional GPS, Compass & Embedded DVB Receiver) Auto-Acquire via External Modem (call for list of available modem interfaces) Optional Serial (RS-232 or RS-422) or Ethernet Control Interface Inclined Orbit Tracking (Open-Loop via TLE or Memory; Closed-Loop via Tracking Receiver)
Optional Controller ►	AvL AAQ – Jog Only, Factory- or Field-Upgradeable to Auto-Acquire
Size	<ul style="list-style-type: none"> Embedded Controller (7.5" x 8.5"D x 1.75"H; ~2 lbs.); 25-ft. Remote Cable P/S: 1RU Chassis (19"W x 1.75"H x 9"D, ~8 lbs.) w/ Front Panel Display & Keypad
Input Power	115/230 VAC switchable; 1 ph, 50/60 Hz, 6/3A peak
Options	<ul style="list-style-type: none"> Auto-Acquire via DVB Signal (incl. GPS, Compass & Embedded, Enhanced DVB Receiver) Auto-Acquire via External Modem (call for list of available modem interfaces) Inclined Orbit Tracking (Open-Loop via TLE; Closed-Loop via Tracking Receiver) Hand-Held Controller; various Factory or Field Software Upgrades

Other Available Options, Upgrades & Services

- Optional feeds: 4-port Ku-band Precision (LP), 2-, 3- or 4-port Ku-band Wideband (LP)
- Add co-polarization kit (for 2-port Ku feeds only)
- Optional waveguide rotary joint with flex on pol axis for Ku-band
- Optional H/V switch (Ku Wideband feeds only)
- Optional wave guide cross axis kits
- Optional Dual/Redundant HPA high power integration
- Optional Mounting pallet (adds 2.0" (5 cm) to stow height – can include optional I/O panel)
- Optional BUC/HPA (CFE) mounting on feed boom (NOTE: minimum elevation may be restricted by these options)
- Optional "saddlebag" HPA (CFE) mounting on Az base plate
- Upgrade to custom RF/IF I/O cabling configurations available
- Optional Tx coax cable available
- Custom colorization (contact factory for available colors)
- Add custom logo on reflector face (per AvL Logo Policy)
- Optional aerodynamic cowling
- Spare parts kit

* 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.

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