

AvL TECHNOLOGIES

Model 1810 Premium SNG/Military 1.8m Motorized Transportable Quad-Band Vehicle-Mount Antenna

- Unique Features**
- 1.8m AvL Carbon Fiber Single Piece Reflector
 - Zero Backlash AvL Cable Drive
 - Compact/Rugged Pol Gear Drive
 - Optional Rotary Joint on Pol Axis with opt. Flex W/G to BUC
 - “One-Button” Auto-Acquisition
- Standard Rx/Tx Feed**
- 2-Port Ku-Band Precision (standard Cross-Pol comp.)
- Optional Rx/Tx Feeds**
- 2-Port Ku-Band Mode-Match (enhanced Cross-Pol comp.)
 - Optional 3- or 4-Port Ku-Band
 - Optional 2-Port C-Band
 - Optional 2- or 4-Port Ka-Band
 - Optional 2-Port X-Band
- Polarization Adjustment**
- Motorized Worm Drive
- Standard Colorization**
- AvL White (optional colors available)



Mechanical

Az/EI Drive	Motorized Zero Backlash AvL Cable Drive (Patent Pending)
Polarization Drive System	Motorized Worm Drive
Reflector Construction	1.8m Single Piece AvL Carbon Fiber
Axis Travel	
Azimuth	Standard: 400°; Optional dual waveguide through pedestal: 270°
Elevation	0-90° antenna boresight
Mechanical	Standard limits at 5° to 65° (CE Approval) or 5° to 90°
Electrical	±95° for 2-port and 3-port Ku-Band Feeds; ±50° (100° Effective) for Dual Ku-Band, 4-port
Polarization	
Az/EI Speed	
Slewing/Deploying (typical)	2°/second
Peaking (typical)	0.1°/second
Motors	24 VDC Variable Speed, Constant Torque
RF Interface	
BUC Mounting	Feed boom (100 lbs.; Max BUC envelope: 30 L x 22 W x 9 H inches (76 L x 56 W x 23 H cm)), rear of reflector or inside truck
Axis Transition	Twist-Flex or Rotary Joints
Waveguide	WR75 Cover Flange at Interface Point
Coax	RG59 run from feed to base plus 25 ft. (8m)
Electrical Interface	25 ft. (8 m) Cable with Connectors for Controller
Manual/Emergency Drive	Handcrank on Az, EI and Pol axes, leads from 12VDC Pol Motor
Weight	295 lbs. (134 kg)
Stowed Dimensions	100 L x 71.4 W x 18.2 H inches (254 L x 181 W x 46.2 H cm); H with opt. controller: 19.3 in (49cm)
Time to Acquisition	Less than 15 minutes, 8 minutes typical
Mounting	Optional pallet for vehicle roof mounting

Environmental

Wind – Survival	Deployed: 80 mph (128 kph); Stowed: 125 mph (201 kph)
Wind - Operational	30 mph (48 kph), gusts to 45 mph (72 kph)
Pointing Loss in Wind (Ku RX):	
20 mph (32 kph)	0.1 dB typical
30 mph gusting to 45 mph	
(48 kph gusting to 72 kph)	0.5 dB typical
Temperature:	
Operational	-22° to 125° F (-30° to 52° C)
Survival	-40° to 140° F (-40° to 60° C)

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RF/Electrical

Feed Type ►	Std. Precision Ku-Band		Opt. C-Band <i>Note: not recommended for 2° spaced satellite auto-acquisition</i>		Opt. Ka-Band		Opt. X-Band	
RF Parameter ▼	Receive	Transmit	Receive	Transmit	Receive	Transmit	Receive	Transmit
Frequency Range (GHz)	10.95 - 12.75	13.75 - 14.50	3.625 - 4.2	5.850 - 6.425	Mil: 20.2 - 21.2 Comm: 17.7 - 20.2	Mil: 30.0 - 31.0 Comm: 27.5 - 30.0	7.25 - 7.75	7.90 - 8.40
Polarization Configuration	Linear Orthogonal Standard, Optional Co-Pol		Linear Standard, Optional Circular		CP or LP		RHCP or LHCP	LHCP or RHCP
Gain (mid-band) 2-Port Feed	45.0 dBi	46.7 dBi	35.5 dBi	39.5 dBi	50.0 dBi	53.0 dBi	41.1 dBi	41.9 dBi
4-Port Feed	44.8 dBi	46.5 dBi						
Beamwidth -3dB (Degrees)	1.0	0.8	3.0	2.0	0.6	0.4	1.6	1.5
-10 dB (Degrees)	1.8	1.5	5.1	3.3	1.0	0.7	2.8	2.6
Radiation Pattern Compliance	FCC §25.209, ITU-R S.580.6		IESS, ITU		FCC §25.209, MIL-STD-188-164A		MIL-STD-188-164A	
First Sidelobe Level (typical) (dB)	-23	-25	-16	-16				
Antenna Noise Temperature (midband)	48° K @ 10° EI		45° K @ 10° EI		108° K @ 20° EI		51° K @ 20° EI	
G/T, midband, clear horizon	24.7 dB/K w/ 50°K LNB		17.0 dB/K w/ 20°K LNB		26.8 dB/K w/ 100°K LNB		20.9 dB/K w/ 55°K LNB	
Axial Ratio (CP only, within pointing cone) (dB)			2.8	1.3	1.5	1.0	1.21	2
Cross-Polarization Isolation (dB)								
On-Axis	35	35	35	35	35	35		
Off-Axis (within pointing cone)	28 Std. Precision 25 Mode-Match	30 Std. Precision 35 Mode-Match	30	30	30	30		
VSWR	1.30:1	1.30:1	1.30:1	1.30:1				
Power Handling Capability		1KW at Tx Port		1KW per Port		250 watts per Port		1KW per Port
Feed Port Isolation - Tx to Rx (dB)	85 dB		70 dB		80 dB	80 dB (incl. opt. filter)	115 dB (incl. opt. filter)	115 dB (incl. opt. filter)
Satellite System Compliance	FCC, PanAmSat		Compatible for 2° Satellite Spacing					

Controller

Standard Controller ►	Three-Axis Jog Control & Display with Auto-Stow
Optional Upgrades	
Semi-automatic Operation	Drive to calculated position based on operator entered vehicle location, heading, plus satellite (longitude or listed)
Automatic Operation	Drive to calculated position based on auto GPS and Flux-Gate Compass data & satellite peaking w/ LNB signal
Auto-acquisition	One-button acquisition of selected satellite including peaking and optimization of cross-pol (certified for auto-commissioning on most satellite services)
Size	Two Rack Units for Semi-automatic & Automatic Controllers
Input Power	110/240 VAC, 1 phase, 50/60 Hz, 10/5 A peak, 1 A continuous
Optional Controller ►	AvL AAQ
Features	AvL one button auto-acquisition of selected satellites, including peaking and optimization of cross pol. Internal movement detector and automatic stow. Includes a hand-held control and separate power supply. Certified for auto-commissioning on most satellite services.
Size	Embedded ACU with separate 1 RU power supply
Input Power	100 - 240 VAC 50/60 Hz 4 A peak, 300 W power supply

Available Options, Upgrades & Services

- Upgrade Feed to 2-Port Ku-Band Mode-Match (enhanced Cross-Pol comp.), 3- or 4-Port Ku-Band, 2-Port C-Band, 2- or 4-Port Ka-Band, or 2-Port X-Band
- Optional H/V switch (Ku Wideband)
- Optional Rotary Joint on Pol Axis with opt. Flex W/G to BUC
- Mounting Pallet (adds 4.5" (11.4 cm) to stow height)
- Add BUC/HPA Mounting (NOTE: minimum elevation may be restricted by these options)
- Upgrade to Custom RF/IF I/O cabling configurations available
- Custom Colorization (contact factory for available colors)
- Add Custom Logo on Reflector Face (1- or 2-Color; per AvL Logo Policy)
- Spare Parts Kit