

AvL TECHNOLOGIES

Model 1410 Premium SNG / Military 1.4m Motorized Transportable Vehicle-Mount Antenna

- Unique Features**
- 1.4m Carbon Fiber Single Piece Reflector
 - Zero Backlash AvL Cable Drive
 - Optional Rotary Joint on Pol Axis with opt. Flex W/G to BUC
 - “One-Button” Auto-Acquisition
- Optics**
- Offset, Prime Focus, 0.8 f/D
- Standard Rx/Tx Feed**
- 2-Port Ku “Precision” (standard Cross-Pol comp.)
- Optional Rx/Tx Feeds**
- 2-Port Ku “Mode-Match” (enhanced Cross-Pol comp.)
 - 4-Port Ku Wideband
 - 2- or 4-Port Ka
 - 2-Port X
- Polarization Adjustment**
- Motorized Worm Gear Drive
- Standard Colorization**
- White (optional colors available)



Mechanical

Az/EI Drive	Motorized AvL Zero Backlash Cable Drive (Patent Pending)
Polarization Drive System	Motorized Worm Gear Drive
Reflector Construction	1.4m Single Piece Carbon Fiber
Axis Travel	
Azimuth	400° (±200°)
Elevation	
Mechanical	0° to 90° of Reflector bore sight
Electrical	Standard Limits at 5° to 65° (CE approval) or 0° to 90°
Polarization	±95° for 2-port and 3-port Feeds; ±50° for 2-port Wideband and 4-port Feeds
Az/EI Speed	
Slewing/Deploying (typical)	2°/second Az; 1°/second EI
Peaking (typical)	0.2°/second
Motors	24 VDC Variable Speed, Constant Torque
RF Interface	
BUC/HPA Mounting	Feed Boom (50 lbs.; Max. BUC envelope: 22 L x 13.75 W x 8.5 H inches (55.9 L x 34.9 W x 21.6 H cm)), Rear of Reflector or Inside Vehicle
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	One 25 ft. (8 m) Cable with Connectors for Controller
Manual/Emergency Drive	Hand crank on Az, EI and Pol axes
Weight (approximate)	115 - 165 lbs. (52 – 75 kg) depending on options selected
Stowed Dimensions	69 L x 48 W x 16.3 H inches (175 L x 122 W x 41 H cm)

Environmental

Wind – Survival	Deployed: 60 mph (97 kph); Stowed: 100 mph (161 kph)
Wind - Operational	30 mph (48 kph), Gusts to 45 mph (72 kph)
Pointing Loss in Wind (Ku RX):	
20 mph (32 kph)	0.2 dB typical
30 mph gusting to 45 mph (48 kph gusting to 72 kph)	0.8 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. 2-Port Ku-Band <i>DBS bands avail. upon request</i>		2-Port Ka		2-Port X	
RF Parameter ▼	Receive	Transmit	Receive	Transmit	Receive	Transmit
Frequency Range (GHz)	10.95 - 12.75	13.75 - 14.50	20.2 - 21.2 (military) or 17.7 - 20.2 (commercial)	30.0 - 31.0 (military) or 27.5 - 30.0 (commercial)	7.25 - 7.75	7.90 - 8.40
Polarization Configuration	Linear Orthogonal Standard, Optional Co-Pol		Circular or Linear		RHCP or LHCP	
Gain (mid-band) (dBi)	43.0	44.5	47.6 Mil	50.8 Mil	39.0	39.7
Beamwidth (-3 dB)	1.3°	1.1°	0.7° Mil	0.5° Mil	2.0°	1.8°
G/T, midband, clear horizon	22.5 dB/° K with 50° LNB		24.4 dB/° K with 100° LNB		18.7 dB/° K with 55° LNB	
Antenna Noise Temperature @ 20° EI, midband	54° K		107° K		46° K	
Radiation Pattern Compliance	FCC 25.209, ITU-R S.580-6, IESS 208		FCC 25.209, MIL-STD-188-164A		MIL-STD-188-164A	
Power Handling Capability	1KW per port		250W per port		1KW	
VSWR	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1
Axial Ratio, CP only, within Pointing Cone (dB)			1.5	1.0	1.21	2.0
Cross-Polarization Isolation (dB)						
On Axis	35	35	35	35		
Within Pointing Cone	28 Std. Precision 25 Mode-Match	30 Std. Precision 35 Mode-Match	30	30		
Feed Port Isolation – Tx to Rx (dB)	35	80 (includes filter)	80	80 (includes filter)	115 (includes optional filter)	115 (includes optional filter)

Controller

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. Optional hand-held control and separate power supply. Certified for auto-commissioning on most satellite services.
Size	Embedded ACU with separate 1 Rack Unit Controller Interface Panel (CIP) power supply with LCD and keypad. 250 W and 500 W (1.6m and larger antennas) versions available.
CIP Input Power	120/240 VAC 60/50 Hz, 6/3 A Max. Power consumption is antenna size dependent: During acquisition 150 W or 300 W is typical, ~ 50 W Idle

Available Options, Upgrades & Services

- Upgrade Feed to 2-Port Ku Mode-Match, 4-Port Ku Wideband, 2- or 4-Port Ka or 2-Port X
- Optional H/V switch (Ku wideband)
- Optional Rotary Joint on Pol Axis with opt. Flex W/G to BUC
- Add Co-polarization Kit (for 2-port Ku feeds only) - configures Rx and Tx to same polarization sense
- Mounting Pallet (adds 2.0" (5 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