

AvL TECHNOLOGIES

Model 2400 C-Band/Ku-Band SNG 2.4m Motorized Transportable Vehicle-Mount Antenna

- Unique Features**
- 2.4m AvL Single Piece Carbon Fiber Reflector
 - Optional three-piece carbon fiber reflector with manually folding hinged wings or motorized folding hinged wings
 - Zero Backlash AvL Cable Drive
 - Compact/Rugged Pol Gear Drive
 - "One-Button" Auto-Acquisition
- Optics**
- Offset, Prime Focus, 0.8 f/D
- Standard Rx/Tx Feed**
- Either 2-Port Ku-Band Precision (LP) (standard Cross-Pol comp.) or
- Optional Feeds**
- 2-Port C-Band (CP or LP), Standard Band or INSAT Band
 - 4-Port Ku-Band Precision (LP) (standard Cross-Pol comp.)
 - 2-, 3- or 4-Port Ku-Band Wideband (LP)
 - 3-, 4-Port C-Band (CP or LP)
 - 2-Port Extended C-Band (LP)
- Polarization Adjustment**
- Motorized Worm Gear Drive
- Standard Colorization**
- AvL White or Metallic Gray (optional colors available)



Mechanical

Az/EI Drive	Motorized Zero Backlash AvL Cable Drive (Patent Pending)	
Polarization Drive System	Motorized Worm Gear Drive	
Reflector Construction	2.4m Single Piece AvL Carbon Fiber; Optional three-piece carbon fiber reflector with manually folding hinged wings or motorized folding hinged wings	
Axis Travel		
Azimuth	±200° Standard; 270° with dual waveguide to vehicle, options include dual Ku, single C + single Ku. Special dual waveguide ±200° available (rotary joints protrude into vehicle further than standard)	
Elevation	Mechanical	0°-90° of reflector bore sight
	Electrical	5° to 90° Standard limits or 5° to 65° (CE Approval)
Polarization	±95° for 2-port and 3-port Feeds; ±50° for 2-port Wideband and 4-port Feeds	
Az/EI Speed		
Slewing/Deploying (typical)	1°/second Az, 1°/second EI	
Peaking (typical)	0.2°/second	
Motors	24 VDC Variable Speed, Constant Torque	
RF Interface		
HPA Mounting	Feed Boom, Rear of Reflector or Inside Truck	
Axis Transition	Twist-flex or optional rotary joints for Ku-Band; Pol rotary joint standard for C-Band	
Waveguide	Cover Flange at Interface Point	
Coax	RG59 run from feed to base plus 25 ft. (8m); Option for 50 ohm LMR-240	
Electrical Interface	25 ft. (8m) Cable with Connectors for Controller	
Manual/Emergency Drive	Hand crank on Az, EI and Pol axes	
Time to Acquisition	Less than 15 minutes, 8 minutes typical	
Weight (approximate)	550 lbs. (250 kg) with Ku Feed and AAQ Controller	
Stowed Dimensions	123.5 L x 96.0 W x 24.2 H in (314 L x 244 W x 62 H cm) (may vary with CFE or 3-,4-port C-band)	

Environmental

Wind – Survival	Deployed: 70 mph (113 kph); Stowed: 100 mph (161 kph)	
Wind – Operational	45 mph (72 kph), gusts to 60 mph (97 kph)	
Pointing Loss in Wind*	<u>C-Band Rx</u>	<u>Ku-Band Rx</u>
30 mph gusting to 45 mph (48 kph gusting to 72 kph)	0.2 dB Typical	0.6 dB Typical
Temperature:		
Operational	-22° to 125° F (-30° to 52° C)	
Survival	-40° to 140° F (-40° to 60° C)	
Shock and Vibration	Designed for transport via rough Roads, Rail, Sea and Air	
Corrosion Protection	For all regions from coastal to industrial, some periodic maintenance required for appearance	
Humidity, Rain, Blowing Sand	Sealed to withstand 0-100% with condensation, >4 inches/hour (102 mm/hr.), blowing to 40mph	

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RF/Electrical

Feed Type ▶	With. 2-Port C-Band				With. 2-Port Precision Ku-Band	
RF Parameter ▼	Receive		Transmit		Receive	Transmit
	Standard	INSAT	Standard	INSAT		
Frequency Range (GHz)	3.625 - 4.2	4.50 – 4.80	5.850 - 6.425	6.725 – 7.025	10.95 - 12.75	13.75 - 14.50
Polarization Configuration	Linear or Circular Options	Linear	Linear or Circular Options	Linear	Linear Orthogonal Standard, Optional Co-Pol	
Gain (midband) (dBi)	38.0	39.2	41.8	42.6	47.0	48.8
Beam width						
-3 dB (Degrees)	2.2	1.9	1.4	1.3	0.7	0.6
-10 dB (Degrees)	4.0	3.4	2.6	2.3	1.3	1.1
Radiation Pattern Compliance	FCC §25.209, ITU-R S.580.6, IESS 207	ITU-R S.580.6	FCC §25.209, ITU-R S.580.6, IESS 207	ITU-R S.580.6	FCC §25.209, ITU-R S.580.6, IESS 208	
Antenna Noise Temperature @ 20° El	49°K	48°K	-	-	61° K	-
G/T, Midband (dB/K)	19.5 dB/K w/ 20°K LNB	-	-	-	26.5 dB/K w/ 50°K LNB	
VSWR	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1
Power Handling Capability	-	-	1000 watts per Port	-	-	1000 watts per Port
Circular Axial Ratio (within pointing cone) (dB)	2.3	-	1.3	-	-	-
Cross-Polarization Isolation (dB)						
On-Axis	35	35	35	35	35	35
Off Axis (within 1 dB BW)	30	30	30	30	28	30
Feed Port Isolation – Tx to Rx (dB)	65 dB	35 dB	105 dB	70 dB	35 dB	80 dB

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 and satellite peaking with 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
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

- Optional feeds: 4-port Ku-band Precision (LP), 2-, 3- or 4-port Ku-band Wideband (LP), 2-Port C-Band (CP or LP), 3-, 4-port C-band (CP & LP)
- Add co-polarization kit (for 2-port wideband Ku feeds only) – configures Rx and Tx to same polarity
- Optional waveguide rotary joint with flex on pol axis for Ku-Band
- Optional H/V switch (Ku Wideband)
- Optional wave guide cross axis kits
- Optional Dual/Redundant HPA high power integration
- 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
- Optional coax cables 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
- Beacon receiver – inclined orbit tracking – resolvers/upgrade
- 3-piece reflector for 72 inch Stow Width (motorization optional)

* Assumes stable platform