AvL TECHNOLOGIES

Model 2510HW Premium SNG/Military 2.5m Auto-Acquisition Quad-Band Vehicle-Mount Antenna

Unique Features	• 2.5m AvL Carbon Fiber Single Piece Reflector • Optional three-piece carbon fiber reflector • Zero Backlash AvL Cable Drive • Compact/Rugged Pol Gear Drive • Rotary Joint on Pol Axis with opt. Flex W/G to BUC • "One-Button" Auto-Acquisition
Optics	• Offset, Prime Focus 0.8/fD
Standard Rx/Tx Feed	• 2-Port Ku-Band Precision (Standard Cross-Pol comp.)
Optional Interchangeable Rx/Tx Feeds	• Optional 2-Port Ku-Band Mode-Match (enhanced off-axis Cross-pol) • Optional 4-Port Ku-Band Precision or Mode-Match • Optional 2- or 4-Port Ka-Band, LP or CP • Optional 2-Port, 3-Port or 4-Port C-Band, LP or CP • Optional 2-Port Extended C-Band (LP) • Optional 2-Port X-Band • Optional 2-Port C-Band Troposcatter Feed
Polarization Adjustment	• Motorized Worm Drive
Standard Colorization	• AvL White (optional colors available)

Mechanical

Az/El Drive		Motorized Zero Backlash AvL Cable Drive (Patent Pending)
Polarization Drive System		Motorized Worm Gear Drive
Reflector Construction		2.5m 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, 3-Port or 4-Port C-Band
Az/El Speed		
Slewing/Deploying (typical)		1°/second Az, 1°/second El
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, El and Pol axes
Time to Acquisition		Less than 15 minutes, 8 minutes typical
Weight (approximate)		780 ± 10 lb (354.5 ± 4.5kg) with Ku Feed and AAQ Controller, less CFE amplifiers
Stowed Dimensions		131.3 L x 98.4 W x 24.4 H in (334 L x 250 W x 62 H cm) (may vary with CFE or 3-,4-port C-band)

Environmental

Wind – Survival	Deployed: 80 mph (128 kph); Stowed: 125 mph (201 kph)
Wind - Operational	49 mph (22 m/s, gusts to 67 mph (30 m/s)
Tracking Loss in Wind (RX):	(assumes 600 in-lb/deg platform compliance minimum)
10 mph (16 kph)	< 0.8 dB All Bands
30 mph gusting to 45 mph (13 m/s gusting to 20 m/s)	< 2.0 dB Ka-Band
45 mph gusting to 60 mph (13 m/s gusting to 20 m/s)	< 2.0 dB Ku-Band
49 mph steady state (22 m/s)	< 2.0 dB All Bands
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 40 mph

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RF/Electrical

Feed Type ►	Std. 2-Port Mode-Matched Ku-Band		Opt. 2-Port X-Band (Military)		Opt. 2-Port Ka-Band		Opt. 2-Port C-Band	
RF Parameter ▼	**Receive**	**Transmit**	**Receive**	**Transmit**	**Receive**	**Transmit**	**Receive**	**Transmit**
Frequency Range (GHz)	10.95 - 12.75	13.75 - 14.50	7.25 - 7.75	7.90 - 8.40	20.2 - 21.2	30.0 - 31.0	3.625 - 4.2	5.850 - 6.425
Polarization Configuration	Linear Orthogonal Standard, Optional Co-Pol		Circular Pol		Circular Pol		Linear or Circular Options	
Gain (mid-band) (dBi) 2-Port	48.0	49.9	44.1 (excl. opt. filter)	44.8 (excl. opt. filter)	52.8	55.9	38.4	42.3
Gain (min @ F_{low}) (dBi) 2-Port	47.2	49.7	43.8 (excl. opt. filter)	44.5 (excl. opt. filter)	52.7	55.7	37.7	41.9
Beam width (Degrees) -3dB	0.7	0.6	1.2	1.1	0.4	0.3	2.2	1.4
-10dB	1.3	1.1	2.1	1.9	0.8	0.5	4.0	2.6
Radiation Pattern Compliance	FCC §25.209, ITU-R S.580.6, IESS 208		MIL-STD-188-164A		MIL-STD-188-164A		FCC §25.209, ITU-R S.580.6, IESS 207	
Antenna Noise Temperature @ 20° El)	50° K	-	59° K	-	104° K	-	49° K	-
G/T, midband, clear horizon	27.5 dB/°K w/ 50°K LNB	-	23.4 dB/°K w/ 55°K LNB	-	29.7 dB/°K w/ 100°K LNB	-	20.0 dB/°K w/ 55°K LNB	-
VSWR	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1
Power Handling Capability	-	1K watts per Port	-	1K watts per Port	-	250 watts per Port	-	1K watts per Port
Circular Axial Ratio (within pointing cone) (dB)	-	-	1.2	1.5	1.5	1.0	2.3	1.3
Cross-Polarization Isolation (Ku only)								
On Axis (minimum)	35	35	-	-	-	-	35	35
Off-Axis (within pointing cone)	28 (standard) 25 (opt Mode-match	30 (standard) 35 (opt Mode-match	-	-	-	-	30	30
Feed Port Isolation - Tx to Rx (dB)	45 dB	85 dB	115 dB (incl. opt. filter)	115 dB (incl. opt. filter)	85 dB	85 dB (incl. opt. filter)	65 dB	105 dB
Satellite System Compliance	FCC, Intelsat							

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

- Optional feeds: 2-Port Ku-Band Mode-Match (enhanced off-axis Cross-pol), 4-Port Ku-Band Precision or Mode-Match, 2- or 4-Port Ka-Band, LP or CP, 2-Port, 3-Port or 4-Port C-Band, LP or CP, 2-Port Extended C-Band (LP), 2-Port X-Band, 2-Port C-Band Troposcatter Feed
- Ku-band H/V switch
- Add BUC/HPA Mounting (NOTE: minimum elevation may be restricted by these options)
- Upgrade to Custom RF/IF I/O cabling configurations
- Custom Colorization (contact factory for available colors)
- Optional three-piece carbon fiber reflector with removable wings, manually folding hinged wings, or motorized folding hinged wings
- Add Custom Logo on Reflector Face (1- or 2-Color; per AvL Logo Policy)
- Spare Parts Kit

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