

AvL TECHNOLOGIES

Model 0814 85cm Manual or Motorized FlyAway Antenna

- Unique Features**
- Manual Az/EI operation standard – coarse & fine
 - Manual Pol rotation
 - 5-minute set-up
 - Airline carry-on IATA compliant two case pack up
- Standard Rx/Tx Feed** 2-Port Ku-Band Precision (LP) (standard Cross-Pol comp.)
- Optional Rx/Tx Feeds**
- 2-Port Ku-Band Mode-Match (LP) (enhanced Cross-Pol comp.)
 - 2-Port Ka-Band Commercial (CP or LP)**
 - 2-Port Ka-Band MIL (CP or LP) (WGS)
 - 2-Port Ka-Band Wideband (CP) (WGS and Commercial)
 - 2-Port X-Band MIL (CP) (WGS) – Opt. Rx/Tx Reject Filter Kit
- Other Options**
- Computer-assisted manual pointing
 - Optional motorization
 - AvL AAQ Controller for auto-acquire (with motorized option)
 - BUC/LNB integration



Standard Colorization White reflector; black positioner, boom, feed and tripod

Mechanical

Az/EI Drive	Manually-driven fine and coarse adjustment (visual scales standard)
Polarization Drive System	Manual rotation of feed (visual scales standard)
Reflector Construction	Segmented carbon fiber
Axis Travel	
Azimuth	360 degree continuous
Elevation (reflector boresight)	0-90 degrees
Polarization	+/- 90 degrees
Az/EI Speed (Motorized Option)	
Slewing/Deploying (typical)	2.0 degrees/second
Peaking	0.2 degrees/second
Motors	Optional
Standard Integration Interfaces	
Tx Input @ Feed	Waveguide flange (cover)
Rx Input @ Feed	Waveguide flange (cover)
BUC (& other CFE) Mounting	Contact Sales
Controller Interface	Optional - one 30-ft. cable with connector from base connector panel to controller
Manual/Emergency Drive	Three-lobe knob for manual adjustment standard
Size & Weight	Packed in two airline carry-on compliant backpacks (each < 35 lb. and 45" girth)

Environmental

Wind – Survival	Deployed: 60 mph (97 kph) (ballasted); Stowed: 90 mph (145 kph)	
Wind – Operational	30 mph (48 kph) gusting to 45 mph (72 kph)	
Pointing Loss in Wind (RX):	Ku 30 mph gusting to 45 mph	Ka 25 mph gusting to 40 mph
Typical	0.6 dB	1.0 dB Typical
Max	1.0 dB	1.5 dB Max
Temperature:	<i>Non-motorized</i>	<i>With optional controls and/or motors</i>
Operational	-40°F to 140°F (-40°C to 60°C)	-22°F to 125°F (-30°C to 52°C)
Survival	-50°F to 180°F (-46°C to 82°C)	-40°F to 140°F (-40°C to 60°C)

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RF/Electrical

Feed Type ►	Std. 2-Port Precision Ku-Band		Opt. 2-Port X-Band (Military/WGS)		Opt. 2-Port Ka-Band Military		Opt. 2-Port Ka-Band Commercial**	
	Receive	Transmit	Receive	Transmit	Receive	Transmit	Receive	Transmit
RF Parameter ▼								
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	17.7 - 20.2**	27.5 - 30.0**
Polarization Configuration	Linear orthogonal standard, optional co-pol		RHCP or LHCP configurable		Circular (opt. linear feed available)		Circular (opt. linear feed available)**	
Gain (mid-band)	38.5 dBi	40.0 dBi	34.5 dBi***	35.2 dBi***	43.3 dBi	46.7 dBi	42.5 dBi	45.9 dBi
-3dB Beamwidth (mid-band)	2.1°	1.7°	3.3°	3.0°	1.2°	0.8°	1.3°	0.9°
Radiation Pattern Compliance	FCC 25.209*, ITU-R S.580-6		MIL-STD-188-164A		FCC 25.209, MIL-STD-188-164A		FCC 25.209, ITU-R S.580-6	
G/T with LNB, midband, clear horizon	18.1 dB/° K (50° LNB)		14.1 dB/° K (55° LNB)		20.0 dB/° K (100° LNB)		19.3 dB/° K (100° LNB)	
Antenna Noise Temp. (mid-band, 20° El)	55° K		49° K		109° K		111° K	
Maximum Feed Transmit (Tx) Power		500 watts		1000 watts		250 watts		250 watts
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
Axial Ratio (Ka and X only, within pointing cone)			1.21 dB	2 dB	1.5 dB	1.0 dB	1.5 dB	1.0 dB
Cross-Polarization Isolation (Ku only)								
On Axis (minimum)	35 dB	35 dB						
Within Pointing Cone, std. Precision feed	26 dB	27 dB						
Within Pointing Cone, opt. MM feed	25 dB	35 dB						
Feed Port Isolation (Tx to Rx)	35 dB	80 dB (incl. filter)	100 (incl. opt. filter)	100 (incl. opt. filter)	35 dB	80 dB (incl. filter)	35 dB	80 dB (incl. filter)

Optional Controller

Controller Type ►	Optional AvL AAQ – Motorized or Computer-Assisted Pointing (CAP)
Feature ▼	Enhanced Auto-Acquire with Std. Ethernet IP Interface
Integration	Embedded w/ Ethernet IP interface (P/S optional) (optional rack- or shelf-mount P/S available)
User Interface	Intelligent/simple GUI for on-board or remote CFE laptop
Input Power	28V DC (at antenna positioner); optional 115/230 VAC rack-mount power supply; 250W
Software Upgrades/Options (Motorized)	Inclined orbit tracking (using step-track, memory track, or TLE track); automatic band sensing

Available Options/Upgrades/Services

- Upgrade from 2-Port Precision Ku Feed to: a) 2-Port Enhanced Cross-Pol (Mode-Matched) Ku; b) 2-Port X MIL; c) 2-Port Ka MIL; d) 2-Port Ka Comm.
- Add co-polarization Kit (for 2-port Ku feeds only) - configures Rx and Tx to same polarization sense) (may require second case)
- Add BUC/HPA mounting (NOTE: minimum elevation may be restricted by these options)) (may require second case)
- 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)
- Upgrade from standard manual pointing to AvL AAQ Enhanced Auto-Acquire (see Controller section, above, for some of these options) (may require second case)
- Add power supply for AAQ Controller upgrade (requires second case)
- Spare parts kit

* Outside main beam

** Contact Sales for commercial Ka-band frequency range options and circular or linear polarization options.

*** Excluding optional filters