

Model 870 85cm Motorized FlyAway Antenna

- Unique Features**
- Designed for high duty cycle LEO/MEO satellite tracking
 - Make-before-Break Handover on two antenna systems
 - 30-minute set-up/<1 hour satellite acquisition
- Standard Rx/Tx Feed** 2-Port Ka-Band Commercial (CP or LP)
- Optional Rx/Tx Feeds**
- 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
 - 2-Port Ku-Band Precision (LP)
 - 2-Port Ku-Band Mode-Match (LP) (enhanced Cross-Pol comp.)
- Other Options**
- Single or Dual antenna systems available
 - Vehicle or Trailer or Pole Mount options available
 - BUC/LNB integration
- Standard Colorization** White, OD Green, or Desert Tan (optional colors available)
- Antenna Size Options** 1 Meter Class: 0.85cm, 1.0m and 1.2m
- Operates With** O3b Networks, virtually all Geo Satcom systems



Mechanical

Az/EI Drive	Motorized Dual Slew Drive Positioner
Polarization Drive System	Motorized rotation of feed
Reflector Construction	Segmented carbon fiber
Axis Travel	
Azimuth	360 degree continuous
Elevation (reflector bore sight)	0-90 degrees
Polarization	+/- 90 degrees
Az/EI Speed	
Slewing/Deploying Tracking	4 degrees/second
Motors	24VDC variable speed, constant torque
Standard Integration Interfaces	
Tx Input	Waveguide flange (cover) @ Feed; 50 ohm connector @ Lower I/O panel
Rx Input	Waveguide flange (cover) @ Feed; 50 ohm connector @ Lower I/O panel
BUC (& other CFE) Mounting	Directly to feed or on the feed boom
Electrical Interface	Optional - one 30-ft. cable with connector from base connector panel to power supply
Manual/Emergency Drive	Manual adjustment for each axis available
Size & Weight	Packed in 2 cases each < 174 lbs. / < 79 kg. (Two-man lift)

Environmental

Wind – Survival	Deployed: 60 mph (97 kph) (ballasted); Stowed: 90 mph (145 kph)	
Wind – Operational	45 mph (72 kph) gusting to 60 mph (97 kph)	
Pointing Loss in Wind (RX):	Ku 45 mph gusting to 60 mph	Ka 30 mph gusting to 45 mph
Typical	0.1 dB	0.2 dB
Max	0.3 dB	0.5 dB
Temperature:		
Operational	-22°F to 125°F (-30°C to 52°C)	
Survival	-40°F to 140°F (-40°C to 60°C)	

AvL TECHNOLOGIES

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RF/Electrical

Feed Type ►	Std. 2-Port Ka-Band Commercial		Opt. 2-Port Ka-Band Military		Opt. 2-Port X-Band (Military/WGS)		Opt. 2-Port Precision Ku-Band	
	Receive	Transmit	Receive	Transmit	Receive	Transmit	Receive	Transmit
RF Parameter ▼								
Frequency Range (GHz)	17.85 – 19.27**	27.65 – 29.07**	20.2 - 21.2	30.0 - 31.0	7.25 - 7.75	7.90 - 8.40	10.95 - 12.75	13.75 -14.50
Polarization Configuration	RHCP or LHCP Co-Pol		Circular (opt. linear feed available)		RHCP or LHCP Co-Pol		Linear orthogonal standard, optional co-pol	
Gain (mid-band)	42.3 dBi	45.8 dBi	43.2 dBi	46.5 dBi	34.5 dBi***	35.2dBi***	38.5 dBi	40.0 dBi
-3dB Beam width (mid-band)	1.3°	0.9°	1.2°	0.8°	3.3°	3.0°	2.1°	1.7°
Radiation Pattern Compliance	FCC 25.209, ITU-R S.580-6		FCC 25.209, MIL-STD-188-164A		MIL-STD-188-164A		FCC 25.209*, ITU-R S.580-6	
EIRP, 29 GHz, with 5w BUC	-	53.0	-	-	-	-	-	-
with 10w BUC	-	56.0	-	-	-	-	-	-
with 20w BUC	-	58.2	-	-	-	-	-	-
G/T with LNB, midband, clear horizon	19.3 dB/° K (100° LNB)	-	20.0 dB/° K (100° LNB)	-	14.1 dB/° K (55° LNB)	-	18.1 dB/° K (50° LNB)	-
Antenna Noise Temp. (mid-band, 20° EI)	109° K	-	109° K	-	49° K	-	55° K	-
Maximum Feed Transmit (Tx) Power	-	250 watts	-	250 watts	-	1000 watts	-	500 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)	1.8 dB	1.8 dB	1.5 dB	1.0 dB	1.21 dB	2 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	85 dB	35 dB	80 dB (incl. filter)	100 (incl. opt. filter)	100 (incl. opt. filter)	35 dB	80 dB (incl. 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

- Vehicle/Trailer Mount, Pole Mount, & Fly & Drive options available
- Upgrade from 2-Port Ka-Band Commercial (CP or LP): a) 2-Port Ka-Band MIL (CP or LP) (WGS); b) 2-Port Ka-Band Wideband (CP) (WGS and Commercial); c) 2-Port X-Band MIL (CP) (WGS) – Opt. Rx/Tx Reject Filter Kit ; d) 2-Port Ku-Band Mode-Match (LP) (enhanced Cross-Pol comp.); e) 2-Port Ku-Band Precision (LP)
- Add co-polarization Kit (for 2-port Ku feeds only) - configures Rx and Tx to same polarization sense
- Add BUC/HPA mounting (NOTE: minimum elevation may be restricted by these options)) (may require additional 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)
- Spare parts kit
- Tie down kits: Simple stakes or earth anchors, refillable sandbags

* Outside main beam

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

*** Excluding optional filters