

# AvL TECHNOLOGIES

## Model 830FA 85cm FlyAway Multi-Band Auto-Acquisition

### Motorized Transportable Antenna

*85cm 6-Piece CF Reflector, Removable Boom, Band-Configurable  
ATA-Checkable Pack-Up*

- Unique Std. Features**
- Ka-ready 85cm segmented AvL engineered composite reflector
  - 2-Port Ku-Band **Precision** (std. Cross-Pol performance – see opt. feeds)
  - High performance Ka band elevation-over-azimuth Cable Drive Positioner
  - Compact, user friendly I/O connector panel
  - 5-minute one person set-up; Less than 5-minute one-button Auto-acquisition
  - Compact ATA-checkable pack-up
- Optional Rx/Tx Feeds**
- 2-Port Ka-Band (Commercial, MIL or Wide-Band)
  - 2-Port MIL X-Band (with compact Rx and Tx filters)
- Optional Integration Support**
- Customizable I/O panel for remote cables & power
  - Fast feed change between bands
  - Multiple SSPA options
- Standard Colorization**
- Standard white with black hardware (optional colors can be quoted upon request)



## Mechanical

Az/EI Drive	Motorized cable drive system
Polarization Drive System	Motorized worm gear
Reflector Construction	85cm multi piece AvL carbon fiber composite
Axis Travel	
Azimuth	180° (±90°)
Elevation (reflector boresight)	0°-90° antenna boresight (true elevation readout from calibrated inclinometer)
Polarization	± 95°
Az/EI Speed	
Slewing/Deploying (typical)	2°/second azimuth; 2°/second elevation; 2°/second polarization
Peaking	0.2°/second
Motors	24V DC variable speed, constant torque
Feeds: 2, 3 and 4 Port available	
X	X LH/RH switchable with filters available
Ku	Precision, mode matched, Part 30B Wideband
Ka	Commercial, Mil, Wideband (Comm and MIL), WGS Simultaneous dual polarity for C2 and GBS. LH/RH circular switchable
Controller Interface	Two cables: Ethernet and power to integrated controller
Manual/Emergency Drive	Manual hand cranks for azimuth, elevation, and polarization axes
Size/Weight:	
2-Hard Case Pack-up for antenna.	31.30" x 20.40" x 15.50" (79.5 x 51.8 x 39.4 cm) per case, weighs <88lbs (22.7 kg) each.
Case options available for ancillary equipment and modems	

## Environmental

Wind – Survival	Anchored: deployed: 60 mph (97 kph); reflector in horizontal position
Wind - Operational	30 mph gusting to 45 mph; Anchoring required in wind above 20mph
Pointing Loss in Wind (Ku RX):	
20 mph (32 kph)	0.3 dB typical
30 gusting 45 mph (48/72kph)	0.8 dB typical
Temperature:	
Operational	-22°F to 125°F (-30°C to 52°C)
Survival	-40°F to 140°F (-40°C to 60°C)

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### RF/Electrical

Feed Type ►	2-Port Ka-Band		2-Port Ku-Band		2-Port X-Band	
RF Parameter ▼	Receive	Transmit	Receive	Transmit	Receive	Transmit
Frequency Range (GHz)	Mil: 20.2 - 21.2 Comm: 17.7 - 20.2	Mil: 30.2 - 31.2 Comm: 27.5 - 30.0	10.95 - 12.75	13.75 - 14.50	7.25 - 7.75	7.90 - 8.40
Polarization Configuration	Circular or Linear		Linear – orthogonal (H/V)		Circular – orthogonal (LH/RH)	
Gain (mid-band)	43.3 dBi	46.5 dBi	38.5 dBi	40.0 dBi	34.6 dBi	35.3 dBi
Beam width -3dB Beam width (Degrees)	1.2	0.8	2.1	1.7	3.2	2.9
-10dB Beam width (Degrees)	-	-	3.8	3.2	5.8	5.4
G/T w/ 100° LNB, midband, clear horizon	20.0 dB/K	-	-	-	-	-
Radiation Pattern Compliance	FCC 25.209 & MIL-STD-188-164A		FCC 25.209 and ITU-RS-580-6, Eutelsat		MIL-STD-188-164A	
Antenna Noise Temp. (mid-band, 20° el)	109° K	-	55° K	-	45° K	-
Maximum Feed Transmit (Tx) Power		250 watts per port		FCC: -14 dBw/4 kHz ITU: -0 dBw/4 kHz		FCC: -14 dBw/4 kHz ITU: -0 dBw/4 kHz
VSWR	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1
Axial Ratio	1.5 dB	1.0 dB	-	-	1.21 dB	2.0 dB
Cross-Polarization Isolation (dB)						
On Axis (minimum)	-	-	35	35	-	-
Off Axis (within 1 dB BW)	-	-	28	30	-	-
Feed Port Isolation (Tx to Rx) (dB)	35	85 (incl. filter)	35	80	115 (incl. filter)	115 (incl. filter)

### Controller

Controller ►	AvL AAQ
Features	AvL one button auto-acquisition including peaking and optimization of cross pol. Inclined surface auto-compensation. Built in DVB receiver enables modem agnostic and beacon/no-modem acquisition. Inclined orbit/TEL tracking. Internal movement detector and automatic stow. Certified for auto-commissioning on most networked services.
Size	ACU embedded on antenna. 19 in 1u rack or antenna mounted power supply options.
Input Power	120/240 VAC 60/50 Hz, 6/3 A Max.: During acquisition 100 W, <50 W Idle (antenna only)

### Available Options, Upgrades & Services

- Alternate feeds: MIL Ka-Band, Commercial Ka-Band, Wide-Band Ka-Band, MIL X-Band (w/ filters)
- ATA-checkable third case for up to two alternate Feeds & boom-mounted
- Modem integration – antenna is modem agnostic
- BUC mounting/integration
- High wind kits
- Color options
- Spare parts kit
- Pack Up and Case options

