

# AvL TECHNOLOGIES

## Model 824i Fully-Integrated Auto-Acquisition Network Terminal 85cm 6-Piece CF Reflector, Removable Boom, Band-Configurable Rugged 2-Case, ATA-Checkable Pack-Up

- Unique Std. Features**
  - 85cm segmented AvL engineered composite reflector (*Ka-ready*)
  - 2-Port Ku-Band **Precision** (*std. Cross-Pol performance – see opt. feeds*)
  - Weather-resistant base electronics compartment (*for compact/embedded 48VDC-to-24VDC power-distribution controller, ACU and approved modem module*)
  - High performance, Ka-ready elevation-over-azimuth Cable Drive Positioner
  - Compact, user friendly I/O connector & status indicator panel
  - 5-minute one person set-up; 5-minute one-button Auto-acquisition
  - Compact / Rugged 2-case 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 bulkhead panel for remote cables & power
  - Modem mounting in base electronics compartment (supports most compact modem card designs)
  - CFE LNB mounting on feed
  - CFE BUC mounting
- Standard Colorization**
  - Standard gray with black hardware (*optional colors can be quoted upon request*)



### Mechanical

Az/EI Drive	Motorized actuator over cable drive system
Polarization Drive System	Motorized worm gear
Reflector Construction	85cm multi piece AvL engineered 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
Standard Integration Interfaces	
Tx Input @ Feed	Ku: WR 75 cover flange at feed Tx Port; Type F coax from BUC to base 50
Rx Input (AvL-supplied coax)	Ohm coax Standard
BUC (& other CFE) Mounting	Custom integrations available
Controller Interface	One 25-ft. (7.6m) Ethernet cable to integrated controller
Manual/Emergency Drive	Manual hand cranks for azimuth, elevation, and polarization axes
Size/Weight – Std. 2-Case Pack-Up	
Std. Case 1: Positioner	26.0" x 19.8" x 18.9" (62.5 x 50 x 36.6 cm), weighs approx. 70 lbs. (32 kg)
Std. Case 2: Reflector and OEE	29.6" x 15.5" x 9.4" (75.2 x 39.4 x 23.8 cm), weighs approx. 70 lbs. (32 kg)

### Environmental

Wind – Survival	Anchored: deployed: 60 mph (97 kph)
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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## Model 824i 85cm Multi-Band Auto-Acquire

### 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 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	Integrated Outdoor Unit base (ODU) houses DC Power Supply and optional equipment such as modem, WIFI, Fiber Optic Interface
External AC Power Supply	IP 65/67 rated 90-305VAC input to 48VDC / 600 watt output antenna ODU accepts 48VDC input from this power supply.

### 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 CFERF
- Wireless connectivity upgrade
- Fiber-optic connectivity upgrade
- AAQ handheld controller upgrade
- Non-standard (AvL-approved) modem module integration in base electronics compartment
- Non-standard (AvL-approved) BUC mounting/integration
- Sand-bag kit
- Colorization upgrade
- Custom logo on Reflector face (1- or 2-color; per AvL Logo Policy)
- Spare parts kit

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