Model 1230
1.2m Fly-Away Motorized Antenna

ANTENNA FEATURES

- 1.2m six-piece AvL carbon fiber reflector
- Packs in three checkable cases, including one band and Outdoor Unit (ODU)
- 10-minute setup
- One-button auto-acquisition and tracking controller
- Standard Two-Port Ku-Band Precision Linear Polarization (LP) Feed - standard cross-polarization composition
- Optional feeds:
    - Two-Port Ku-Band Mode-Match (LP)
    - Two-Port X-Band Military Circular Polarization (CP) Feed - Wideband Global Satcom (WGS)
    - Two-Port Ka-Band Military CP or LP Feed - WGS and Inmarsat Global Express (GX)
    - Two-Port Ka-Band Wideband CP Feed – military/commercial, 2 GHz-wide transmit/receive
    - Two-Port Ka-Band Commercial CP or LP
- Built-in receiver for beacon and/or carrier acquisition
- OpenAMIP-compliant, OpenBMIP-ready
- Standard colors: white, OD green, desert tan, or grey

MECHANICAL SPECIFICATIONS

Az/El Drives		Motorized AvL zero-backlash cable drive system
Polarization Drive System		Motorized rotation of feed
Reflector Construction		Segmented carbon fiber
Axis Travel	**Azimuth**	±90°
	Elevation	7° to 90°
	Polarization	±90°
Axis Speed	**Slewing/Deploying**	2°/second azimuth, elevation, polarization
	Peaking	0.2°/second
Motors		24 VDC variable speed, constant torque
RF Interface	**BUC/HPA Mounting**	Directly to feed or on feed boom
	Waveguide	Waveguide flange cover at feed, 50-ohm connector at lower I/O panel
Electrical Interface		24 VDC and Ethernet interface with rugged IP67 connectors on antenna
Manual/Emergency Drive		Manual adjustment on each axis
Pack-Up Size and Weight	**Case 1: Positioner**	31.6 x 20.5 x 15.75 inches (81 x 52 x 40 cm); weighs approx. 85 lbs. (39 kg) packed
	Case 2: Reflector	33.7 x 28.5 x 16.4 inches (86 x 72.5 x 41.7 cm); weighs approx. 75 lbs. (34 kg)
	Case 3: Boom / Feed / ODU	47 x 17 x 10.9 inches (119.4 x 43 x 28 cm); weighs approx. 45 lbs. (20.4 kg)

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ENVIRONMENTAL SPECIFICATIONS

Wind – Survival	Deployed	45 mph (72 km/h)	
	Stowed	Anchoring required for winds exceeding 15 mph (24 km/h)	
Wind – Operational		30 mph (72 km/h) gusting to 45 mph (72 km/h); anchoring required for winds exceeding 15 mph (24 km/h)	
Pointing Loss in Wind (RX)	**Band**	Ku-Band	Ka-Band
	20 mph gusting to 35 mph (32 to 56 km/h)	0.8 dB	0.8 dB
	30 mph gusting to 45 mph (48 km/h to 72 km/h)	2.0 dB	2.0 dB
Temperature	Operational	-22°F to 140°F (-30°C to 60°C)	
	Survival	-40°F to 149°F (-40°C to 65°C)	

RF PARAMETERS: TWO-PORT X-BAND

		Receive	Transmit
Frequency Range (GHz)		7.25 – 7.75	7.90 – 8.40
Polarization Configuration		RHCP or LHCP	
Gain (dBi)		37.6	38.3
Beamwidth (Degrees)	-3 dB	2.3	2.1
Radiation Pattern Compliance		MIL-STD-188-164C	
Antenna Noise Temperature (Midband, 20° El)		46° K	--
Power Handling Capability		--	1000W
Feed Port Isolation (Tx to Rx, dB)		100 (including optional filter)	100 (including optional filter)
Axial Ratio		1.21 dB	2 dB
VSWR		1.30:1	1.30:1
G/T with LNB, Midband, Clear Horizon		17.3 dB/°K (55° LNB)	--

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RF PARAMETERS: TWO-PORT KU-BAND PRECISION

		Receive	Transmit
Frequency Range (GHz)		10.95 – 12.75	13.75 – 14.50
Polarization Configuration		Linear orthogonal standard, optional co-polarization	
Gain (dBi)		41.6	43.1
Beamwidth (Degrees)	-3 dB	1.5	1.2
Radiation Pattern Compliance		FCC 25.209, ITU-R S.580-6	
Antenna Noise Temperature (Midband, 20° El)		54° K	--
Power Handling Capability		--	500W
Feed Port Isolation (Tx to Rx, dB)		35	80 (including filter)
Axial Ratio		--	--
VSWR		1.30:1	1.30:1
G/T with LNB, Midband, Clear Horizon		21.3 dB/°K (50° LNB)	--

RF PARAMETERS: KA-BAND WIDEBAND (MIL/COM)

		Receive	Transmit
Frequency Range (GHz)		19.2 – 21.2	29.0 – 31.0
Polarization Configuration		CP or LP	
Gain (dBi)		45.9	49.2
Beamwidth (Degrees)	-3 dB	0.8	0.6
Radiation Pattern Compliance		FCC 25.209, MIL-STD-188-164C	
Antenna Noise Temperature (Midband, 20° El)		106° K	--
Power Handling Capability		--	250W
Feed Port Isolation (Tx to Rx, dB)		85	85 (including filter)
Axial Ratio		1.5	1.0
VSWR		1.30:1	1.30:1
G/T with LNB, Midband, Clear Horizon		23.0 dB/° K (100° LNB)	--

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CONTROLLER – AAQ1500

Features	One-button auto-acquisition of selected satellites, including peaking and optimization of cross-polarization. Ethernet-based with built-in broadband receiver acquires on beacon and/or signals without external beacon receiver. Modem-agnostic. Built-in navigation sensors include inclinometer, compass, and GPS. Web-based GUI resides on controller. OpenAMIP-compliant. OpenBMIP-compliant.
Size	AAQ controller embedded. Power supply: external 24V power supply or optional 1RU chassis.
Input Power	120/240 VAC 60/50 Hz, 6/3 A maximum. Power consumption is dependent on antenna size. During acquisition, 150W is typical; ~50W idle.

OPTIONS – UPGRADES AND SERVICES

- Upgrade from Two-Port Ku-Band Precision Feed to:
  - Two-Port Ku-Band Mode-Matched Enhanced Cross-Polarization Feed
  - Two-Port X-Band Military Feed
  - Two-Port Ka-Band Military Feed
  - Two-Port Ka-Band Commercial and One-Port Ka-Band Wideband (covers commercial and military)
- Add co-polarization kit (for Two-Port Ku-Band Feeds only) – configures receive and transmit to same polarization
- BUC/HPA mounting
- Additional feeds and RF kits packaged separately
- Upgrade to custom RF/IF I/O cabling configurations available
- Upgrade standard one-button auto-acquisition AAQ1500 Controller to AAQ1500 Tracking Controller
- Spare parts kit
- Tie down kits: refillable sandbags, simple stakes, or earth anchors
- Grounding kit

Contact AvL for commercial Ka-Band frequency range options and circular or linear polarization (CP or LP) options.

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