Model 1888
1.8m Vehicle Mount Motorized Antenna

ANTENNA FEATURES

- 1.8m AvL single-piece carbon fiber reflector
- Zero-backlash AvL cable drive and polarization worm gear drive
- Optional rotary joint on polarization axis with optional flexible waveguide to BUC
- Motorized worm gear drive polarization
- One-button auto-acquisition
- Offset, prime focus 0.8/fD
- Standard Two-Port Ku-Band Precision Feed - standard cross-polarization composition
- Optional two- and four-port configurations for C-Band, X-Band, Ku-Band, and Ka-Band

MECHANICAL SPECIFICATIONS

Azimuth/Elevation Drives		Motorized zero-backlash AvL cable drive
Polarization Drive System		Motorized worm gear drive
Reflector Construction		1.8m single-piece AvL carbon fiber
Axis Travel	**Azimuth**	Standard 400°; optional dual waveguide through pedestal, 270°
	Elevation	0° to 90° of reflector boresight
	Electrical	Standard limits or 5° to 65° (CE approval) or 0° to 90°
	Polarization	±95° for two-port and three-port feeds; ±50° for two-port wideband and four-port feeds, three-port or four-port C-Band
Axis Speed	**Slewing/Deploying**	2°/second
	Peaking	0.1°/second
Motors		24 VDC variable speed, constant torque
RF Interface	**BUC/HPA Mounting**	Feed boom (100 lbs. (45 kg)); maximum BUC envelope: 30 L x 22 W x 9 H in. (76 L x 56 W x 23 H cm) or inside
	Waveguide	WR75 cover flange at interface point
	Coax	RG59 run from feed to base plus 25 ft. (8m)
Electrical Interface		25 ft. (8m) cable with connectors for controller
Manual/Emergency Drive		Hand crank on azimuth, elevation, and polarization axes, leads from 12 VDC polarization motor
Weight (approximate)		295 lbs. (134 kg)
Stowed Dimensions		100 L x 71.4 W x 18.2 H in. (254 L x 181 W x 46.2 H cm); height with optional controller: 19.3 in. (49 cm)
Mounting		Optional pallet for vehicle roof mounting

ENVIRONMENTAL SPECIFICATIONS

Wind – Survival	Deployed	80 mph (128 km/h)
	Stowed	125 mph (201 km/h)
Wind – Operational		45 mph (72 km/h), gusts to 60 mph (97 km/h)
Pointing Loss in Wind (RX)	10 mph (16 km/h)	< 0.8 all bands
	30 mph gusting to 45 mph (48 km/h to 72 km/h)	< 2.0 dB all bands
	45 mph gusting to 60 mph (72 km/h to 97 km/h)	< 2.0 dB C-Band, X-Band, and Ku-Band
Temperature	Operational	-22° to 125° F (-30° to 52° C)
	Survival	-40° to 140° F (-40° to 60° C)
Shock and Vibration	Designed for transport via rough roads, rail, sea and air	
Corrosion Protection	For all regions from coastal to industrial, some periodic maintenance required for appearance	
Humidity, Rain, Blowing Sand	Sealed to withstand 0-100% with condensation, >4 inches/hour (102 mm/hour), blowing to 40 mph (64 km/h)	

RF PARAMETERS: C-BAND (TWO-PORT)

		Receive	Transmit
Frequency Range (GHz)		3.625 – 4.2	5.85 – 6.425
Polarization Configuration		LP or CP	
Gain (dBi)	Two-Port	35.5	39.1
	Four-Port	--	--
Beamwidth (Degrees)	-3 dB	3.0	2.0
	-10 dB	5.1	3.3
Radiation Pattern Compliance		ITU-R S.580.6, IESS 207	
Antenna Noise Temperature (Midband, 20° Elevation)	Two-Port	58° K	--
Power Handling Capability		--	1000W
Feed Port Isolation (Tx to Rx, dB)		35	105
G/T, Midband, Clear Horizon		17.0 dB/°K with 20°K LNB	
VSWR		1.30:1	1.30:1
Axial Ratio (CP Only, Within Pointing Cone)		2.8	1.3

Specifications subject to change without notice.
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RF PARAMETERS: X-BAND (TWO-PORT, MIL/WGS)

		Receive	Transmit
Frequency Range (GHz)		7.25 – 7.75	7.9 – 8.4
Polarization Configuration		RHCP or LHCP	
Gain (dBi)	Two-Port	41.1 (without filter)	41.9 (without filter)
	Four-Port	--	--
Beamwidth (Degrees)	-3 dB	1.6	1.5
	-10 dB	2.8	2.6
Radiation Pattern Compliance		MIL-STD-188-164C	
Antenna Noise Temperature (Midband, 20° Elevation)	Two-Port	52°K	--
Power Handling Capability		--	1000W
Feed Port Isolation (Tx to Rx, dB)		115 dB (including optional filter)	115 dB (including optional filter)
G/T, Midband, Clear Horizon		--	--
VSWR		1.30:1	1.30:1
Axial Ratio (CP Only, Within Pointing Cone)		1.2	2.0

RF PARAMETERS: KU-BAND (TWO-PORT, MM)

		Receive	Transmit
Frequency Range (GHz)		10.95 – 12.75	13.75 – 14.5
Polarization Configuration		Standard linear orthogonal, optional co-polarization	
Gain (dBi)	Two-Port	45.1	46.6
	Four-Port	44.8	46.5
Beamwidth (Degrees)	-3 dB	1.0	0.8
	-10 dB	1.8	1.5
Radiation Pattern Compliance		FCC §25.209, ITU-R S.580.6	
Antenna Noise Temperature (Midband, 20° Elevation)	Two-Port	58°K	--
Power Handling Capability		--	1000W
Feed Port Isolation (Tx to Rx, dB)		35	80
G/T, Midband, Clear Horizon		24.7 dB/°K with 50°K LNB	--
VSWR		1.30:1	1.30:1
Axial Ratio (CP Only, Within Pointing Cone)		--	--

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RF PARAMETERS: KA-BAND (TWO-PORT)

		Receive	Transmit
Frequency Range (GHz)		20.2 – 21.2	30.0 – 31.0
Polarization Configuration		CP	
Gain (dBi)	Two-Port	50.0	53.0
	Four-Port	--	--
Beamwidth (Degrees)	-3 dB	0.6	0.4
	-10 dB	1.0	0.7
Radiation Pattern Compliance		MIL-STD-188-164C	
Antenna Noise Temperature (Midband, 20° Elevation)	Two-Port	104°K	--
Power Handling Capability		--	250W
Feed Port Isolation (Tx to Rx, dB)		85	85 (including optional filter)
G/T, Midband, Clear Horizon		26.5 dB/°K with 100° LNB	--
VSWR		1.30:1	1.30:1
Axial Ratio (CP Only, Within Pointing Cone)		1.5	1.0

CONTROLLER – AAQ1500

Features	AvL one-button auto-acquisition of selected satellites, including peaking and optimization of cross-polarization. Internal movement detector and automatic stow. Optional handheld control and separate power supply. Certified for auto-commissioning on most satellite services.
Software / GUI	Embedded Antenna Control Unit (ACU) with separate 1RU Controller Interface Panel (CIP) power supply with LCD and keypad. 250W and 500W (1.6m and larger) versions available.
Input Power	120/240 VAC 60/50 Hz, 6/3 A maximum. Power consumption is dependent on antenna size. During acquisition, 300W is typical; ~50W idle.
Software	AAQRemote / AAQ WebUI

OPTIONS – UPGRADES AND SERVICES

- Optional feeds:
  - Two-Port Ku-Band Mode-Match (enhanced off-axis cross-polarization)
  - Four-Port Ku-Band Precision or Mode-Match
  - Two- or Four-Port Ka-Band Wideband LP or CP
  - Two-, Three-, or Four-Port C-Band LP or CP
  - Two-Port Extended C-Band LP
- Ku-Band H/V switch
- Add BUC/HPA mounting (note that minimum elevation may be restricted by these options)
- Upgrade to custom RF/IF I/O cabling configurations
- Custom colorization (contact AvL for available colors)
- Optional three-piece carbon fiber reflector with removable wings, manual or motorized folding hinged wings
- Add custom logo on reflector face (one- or two-color, as per AvL Logo Policy)
- Spare parts kit

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