Model 2488
2.4m Vehicle Mount Motorized Antenna

ANTENNA FEATURES

- 2.4m AvL carbon fiber reflector
- Zero-backlash AvL cable drive
- Compact/rugged polarization gear drive
- Rotary joint on polarization axis with optional flexible waveguide to BUC
- One-button auto-acquisition
- Offset, prime focus 0.8/fD
- Standard Two-Port Ku-Band Precision Feed (standard cross-polarization composition)

MECHANICAL SPECIFICATIONS

Az/El Drives		Motorized zero-backlash AvL cable drive
Polarization Drive System		Motorized worm gear drive
Reflector Construction		2.4m single-piece AvL carbon fiber; optional three-piece carbon fiber reflector with manual or motorized folding hinged wings
Axis Travel	**Azimuth**	± 200° standard; 270° with dual waveguide to vehicle; options include dual Ku-Band, single C-Band
	Elevation	0° to 90° of reflector boresight
	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
	Electrical	5° to 90° standard limits or 5° to 65° (CE approval)
Axis Speed	**Slewing/Deploying**	1°/second azimuth, 1°/second elevation
	Peaking	0.2°/second
Motors		24 VDC variable speed, constant torque
RF Interface	**BUC/HPA Mounting**	Feed boom, rear of reflector, or inside truck
	Waveguide	Cover flange at interface point
	Coax	RG59 run from feed to base, plus 25 ft. (8 m); option for 50 ohm LMR-240
Electrical Interface		24 ft. (8 m) cable with connectors for controller
Manual/Emergency Drive		Hand crank on azimuth, elevation, and polarization axes
Weight (approximate)		550 lbs. (250 kg) with Ku-Band Feed and AAQ1500 Controller
Stowed Dimensions		123.5 L x 96.0 W x 24.2 H in (314 L x 244 W x 62 H cm) (may vary with CFE or Three- or Four-Port C-Band)
Time to Acquisition		Less than 15 minutes; eight minutes typical

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 dB (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, 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, greater than four inches an hour (102 mm/hour), blowing to 40 mph (64 km/h)	

Specifications subject to change without notice.
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RF PARAMETERS: C-BAND (TWO-PORT)

		Receive	Transmit
Frequency Range (GHz)		3.625 – 4.2	5.85 – 6.425
Polarization Configuration		Linear or Circular	
Gain (dBi)	Two-Port	38.0	41.8
Beamwidth (Degrees)	-3 dB	2.2	1.4
	-10 dB	4.0	2.6
Radiation Pattern Compliance		FCC §25.209, ITU-R S.580.6, IESS 207	
Antenna Noise Temperature (Midband, 20° El)	Two-Port	49° K	49° K
Power Handling Capability		--	1000W per port
Feed Port Isolation (Tx to Rx, dB)		65	105
G/T, Midband, Clear Horizon		19.5 dB /°K with 20°K LNB	--
VSWR		1.30:1	1.30:1
Circular Axial Ratio (Within Pointing Cone)		2.3	1.3

RF PARAMETERS: X-BAND (TWO-PORT, MIL/WGS)

		Receive	Transmit
Frequency Range (GHz)		7.25 – 7.75	7.9 – 8.4
Polarization Configuration		Circular	
Gain (dBi)	Two-Port	43.3	44.1
Beamwidth (Degrees)	-3 dB	1.2	1.1
	-10 dB	2.1	1.9
Radiation Pattern Compliance		MIL-STD-188-164C	
Antenna Noise Temperature (Midband, 20° El)	Two-Port	59° K	--
Power Handling Capability		--	250W per port
Feed Port Isolation (Tx to Rx, dB)		115 (including optional filter)	115 (including optional filter)
G/T, Midband, Clear Horizon		--	--
VSWR		1.30:1	1.30:1
Circular Axial Ratio (Within Pointing Cone)		1.2	1.5

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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	47.0	48.8
Beamwidth (Degrees)	-3 dB	0.7	0.6
	-10 dB	1.3	1.1
Radiation Pattern Compliance		FCC §25.209, ITU-R S.580.6, IESS 208	
Antenna Noise Temperature (Midband, 20° El)	Two-Port	61°K	--
Power Handling Capability		--	1000W per port
Feed Port Isolation (Tx to Rx, dB)		35	80
G/T, Midband, Clear Horizon		26.5 dB/°K with 50°K LNB	--
VSWR		1.30:1	
Circular Axial Ratio (Within Pointing Cone)		--	--
Satellite System Compliance		FCC, Intelsat	--

RF PARAMETERS: KA-BAND (TWO-PORT)

		Receive	Transmit
Frequency Range (GHz)		20.2 – 21.2	30.0 – 31.0
Polarization Configuration		Circular	
Gain (dBi)	Two-Port	52.1	55.0
Beamwidth (Degrees)	-3 dB	0.4	0.3
	-10 dB	0.8	0.5
Radiation Pattern Compliance		MIL-STD-188-164C	
Antenna Noise Temperature (Midband, 20° El)	Two-Port	104° K	--
Power Handling Capability		--	1000 W per port
Feed Port Isolation (Tx to Rx, dB)		85	85 (including optional filter)
G/T, Midband, Clear Horizon		28.5 dB /° K with 100° K LNB	--
VSWR		1.30:1	1.30:1
Circular Axial Ratio (Within Pointing Cone)		1.5	1.0

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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	AAQRemote / AAQ WebUI
CIP Input Power	115 VAC, 1 phase, 50/60 Hz, 15 A Max. Power consumption is antenna size dependent: During acquisition 150 W or 300 W is typical, ~ 50 W Idle.
Size	Embedded outdoor controller with either AC input or 1RU DC power supply options. Other options include Ethernet remote interface, inclined orbit step tracking, TLE tracking, differential GPS compass, remote GUI, and waveguide switch control.

OPTIONS – UPGRADES AND SERVICES

- Various standard and customized integrated BUC and LNB configurations
- Waveguide interconnect options
- Wind anchoring options: ground stakes or sandbags
- Customized I/O cable interface panels
- Grounding options (lightning conductor)
- Customer equipment mounting
- Anchoring kit options
- AvL receiver activation, inclined orbit tracking, and resolvers/upgrade
- Spare parts kit
- Custom logo on reflector face (one- or two-color, as per AvL Logo Policy)

Contact sales@avltech.com for upgrades and services.