



ACS-MST-85XK Antenna System

Powered by AVL Technologies



Close-up view of Elevation Control with Azimuth Ring Below



MST-85XK set up with 20 watt BUC

The ACS MST-85XK compact man-pack system is a *Tri-Band* Satcoms terminal that stows in a back pack and weighs less than 35 lbs, including BUC and Modem. The system will provide up to 3 Mbps uplink bandwidth capability. It is available in X, Ku and Ka-Bands.

The ACS MST-85XK does not block the RF beam with the feed horn system, thus providing a much tighter transmit pattern which results in lower Adjacent Sidelobe Interference (ASI) and increased power density capabilities, when compared to prime focus, center fed antenna systems.

ACS MST-85XK comes complete with heavy-duty tripod mount capable of setup for up to 15° inclines. Base plate tray provides for custom modem, power supply and high power BUC option if required. The unit can be packaged with the ACS-e850MPR (iDirect) rugged TDMA modem or any SCPC or DVB-RCS/S2 modem from ACS. The antenna system may be equipped to support SCPC, MCPC, Mesh and Star networks.

Key Features

Reflector:	85 cm 3-piece Carbon Fiber (CF)
Optics:	Offset, Prime Focus, 0.6 f/D
Positioner Type:	Ultra Lightweight Manual with Tripod
Drive System:	Unique boom center mounted positioner balanced loading for ease of pointing with minimal overhung load. Includes fine adjust in AZ & EL
Mount Geometry:	Elevation over Azimuth
Polarization:	Rotation of Ku Feed
Modem:	iDirect 850MPR
	DVB-S2/ACM or TDMA modem
	Outbound information rate 11.8 Mbps max / Inbound information rate 150 Mbps max.
	8PSK, QPSK, 8PSK, Turbo FEC
	Compliant with military security requirements feature embedded AES encryption & TRANSEC with advanced FIPS 140-2 certification, X-509 digital certificate encryption & automatic over-the-air key exchange

Mechanical

Travel	
Azimuth	
Coarse	360° Continuous
Fine	± 10°
Elevation	
Coarse	0° to 90° +
Fine	0° to 90°
Polarization (Ku)	± 95°
Anticipated Terminal weight (Reflector/Positioner/Tripod/BUC/LNB):	
Total X Antenna:	< 50 lbs.
Total Ku Antenna:	< 40 lbs.
Total Ka Antenna:	< 35 lbs.
Physical Stowed Dimensions:	28"L x 11" W x 8"HT (stowed configuration)
Set-up Time	Less than 5 minutes
RF Interface	
BUC Mounting	Feed Boom, Rear of Reflector, or Remote
Coax	Two connectors at Amplifiers
Electrical Interface	85 - 265 VAC (- 36 VDC optional)



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Environmental

Wind	
Operational	
Without anchoring	20 mph
With anchoring	30 mph gusting to 45 mph
Survival (anchored)	80 mph in zenith (90° elevation) position
Pointing Loss in Wind	
X-band Receive, Operational winds	0.1 dB typical, 0.3 dB max
Ku-band Receive, Operational winds	0.3 dB typical, 0.7 dB max
Ka-band Receive, Operational winds	0.8 dB typical, 2.0 dB max
Temperature	
Operational	-22° to 125°F (-30° to 52°C)
Survival	-40° to 140°F (-40° to 60°C)

Electrical RF

X-Band	Receive	Transmit
• Polarization	RHCP or LHCP	LHCP or RHCP
• Frequency Range (GHz)	7.25 - 7.75	7.90 - 8.40
• Gain (Midband) (dBi)	34.5	35.2
• VSWR	1.30:1	1.30:1
• Beamwidth (-3 dB)	3.3°	3.0°
• Radiation Pattern Compliance (beyond mainbeam)	MIL-STD-188-164A	MIL-STD-188-164A
• Ant Noise Temperature @ 20° EI, midband	49° K	
• G/T with 55° LNB, midband, clear horizon	14.1 dB/° K	
• Axial Ratio (CP only, within pointing cone)	1.2 dB	2 dB
• Feed Port Isolation – TX to RX (dB)	110 (includes optional filter)	100 (includes optional filter)
• Power Handling Capability		1000 watts per port
Ku-Band	Receive	Transmit
• Polarization	Linear orthogonal standard	
• Frequency Range (GHz)	10.95 - 12.75	13.75-14.50
• Gain (Midband) (dBi)	38.6	40.1
• VSWR	1.30:1	1.30:1
• Beamwidth (-3 dB)	2.1°	1.7°
• Radiation Pattern Compliance (Outside mainbeam)	FCC 25.209, ITU-R S.580-6, IESS 208	FCC 25.209, ITU-R S.580-6, IESS 208
• Ant Noise Temperature @ 20° EI, midband	54° K	
• G/T with 50° LNB, midband, clear horizon	18.4 dB/° K	
• Cross Pol Isolation, on-axis	35 dB	35 dB
• Cross Pol Isolation, off-axis within pointing cone	25 dB Standard 28 dB MM feed	30 dB standard, 35 dB optional MM feed
• Feed Port Isolation – TX to RX (dB)	35	80 (includes filter)
• Power Handling Capability		500 watts per port
Ka-Band	Receive	Transmit
• Polarization	CP – manually/field configurable for RHCP Tx & LHCP Rx or reverse	
• Frequency Range (GHz)	20.2 - 21.2 (mil)	30.0 - 31.0 (mil)
• Gain (Midband military) (dBi)	43.3	46.7
• VSWR	1.30:1	1.30:1
• Beamwidth (-3 dB)	1.2°	0.8°
• Radiation Pattern Compliance	FCC 25.209, MIL-STD-188-164A	FCC 25.209, MIL-STD-188-164A
• Ant Noise Temperature @ 20° EI, midband	109° K	
• G/T with 100° LNB, midband, clear horizon	20.0 dB/° K	
• Axial Ratio (CP only, within pointing cone)	1.5 dB	1.0 dB
• Feed Port Isolation – TX to RX (dB)	30	80 (includes filter)
• Power Handling Capability		250 watts

Options

BUC/LNB mounting	Wind Anchoring Options: ground stakes, sand bags
Waveguide interconnect options	Computer Assisted Pointing (CAP)
Beacon receiver	

* All specifications subject to change without notice.