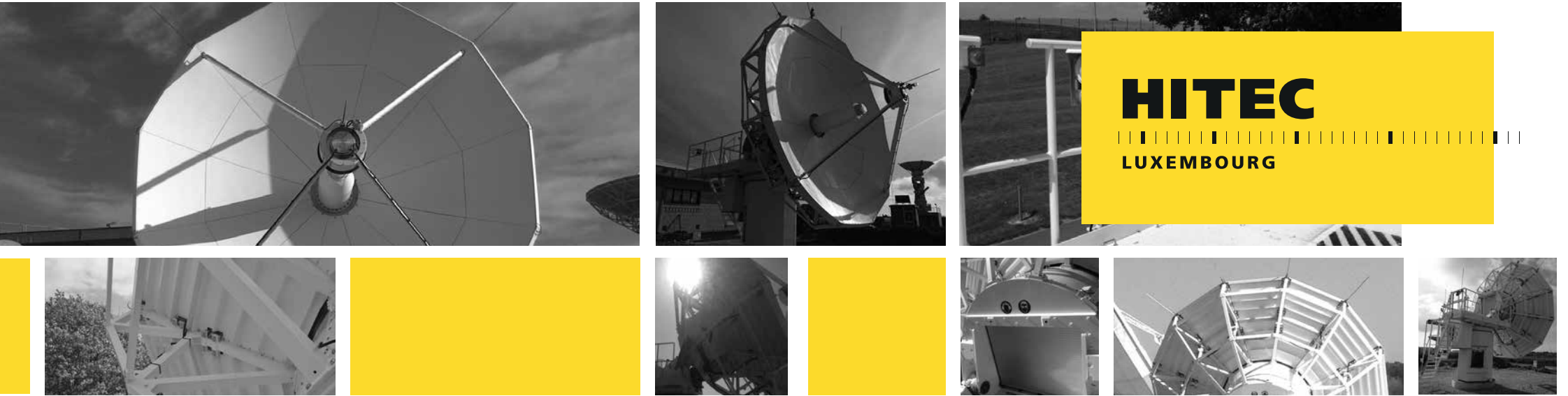


HITEC-LM-06

6 M LIMITED-MOTION SATELLITE GROUND ANTENNA SYSTEM



The LM-060 antenna system is a low maintenance and future proof antenna system designed for robust, reliable and high-performance operation for geostationary applications. The LM-060 can accommodate different feed systems and can operate at different frequencies, depending on the application.

The reflector, 6.8m in diameter in a dual shaped Cassegrain configuration for high efficiency, is constructed of precision bonded aluminum panels. The backup structure consists of aluminum framework trusses, reinforced by a structural plenum. This configuration ensures optimum rigidity and surface accuracy under self-weight and environmental effects and can accommodate the optional de-icing system.

The antenna hub has generous interior dimensions (W x H x D: 1.7m x 1.5m x 1.1m) and allows placing up to 30 units of 19" racks and installing all converters and high-power amplifiers right next to the feed. Easy access to the equipment is ensured by a large opening covered by roller shutters.

The LM-060 is equipped with the HITEC Luxembourg Antenna Control Unit HACU-1000, providing program track functionality as a baseline. Depending on customer requirements and the installed RF equipment, a step-track or monopulse capable version of the HITEC Luxembourg ACU can be installed. All satellite ground antenna systems, designed and produced by HITEC Luxembourg are ITAR-free and delivered as turn-key solutions.

KEY FEATURES

High accuracy under adverse environmental conditions for high performance operation

Large working platform and stairs combined with supersized center-hub for housing RF equipment and improved accessibility

Standalone system with all antenna components (e.g. power electronics) integrated in its structure

Equipped with an Antenna Front Panel, which allows global health and status monitoring, as well as commanding of the auxiliary functions (e.g. HVAC, de-icing) through a single interface

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RF PERFORMANCE (OTHER FREQUENCY BANDS AND FEED CONFIGURATIONS ON REQUEST)

	X-BAND		KU-BAND		KU-BAND (DBS)		KA-BAND		KA-BAND (EXT.)		K-BAND	
	Rx	Tx	Rx	Tx	Rx	Tx	Rx	Tx	Rx	Tx	Rx	Tx
Frequency	7.25-7.75 GHz	7.9-8.4 GHz	10.7-12.75 GHz	13.75-14.5 GHz	10.7-12.5 GHz	17.3-18.4 GHz	20.2-21.2 GHz	30.0-31.0 GHz	17.7-21.2 GHz	27.0-30.0 GHz	25.5-27.0 GHz	n/a
Polarization	Dual circular		Dual linear		Dual linear		Dual circular		Dual circular		Dual circular	
Antenna Gain	52.2 dBi @ 7.5 GHz	53.24dBi @ 8.15 GHz	56.5 dBi @ 11.725 GHz	58.4 dBi @ 14.125 GHz	56.4 dBi @ 11.6 GHz	60.3 dBi @ 17.85 GHz	60.9 dBi @ 20.7 GHz	64.5 dBi @ 30.5 GHz	60.6 dBi @ 19.45 GHz	64.1 dBi @ 28.5 GHz	63.1 dBi @ 26.25 GHz	n/a
VSWR	1.3		1.3		1.3		1.3		1.3		1.3	
3dB beamwidth	0.42 deg @ 7.5 GHz		0.27 deg @ 11.725 GHz		0.274deg @ 11.6 GHz		0.15 deg @ 20.7 GHz		0.16 deg @ 19.45 GHz		0.12 deg @ 26.25 GHz	
Typical G/T @ 5° El.	<i>(with 52 K LNA)</i> 31.5 dB/K @ 7.5 GHz		<i>(with 75 K LNA)</i> 34.5 dB/K @ 11.725 GHz		<i>(with 75 K LNA)</i> 34.4 dB/K @ 11.6 GHz		<i>(with 120 K LNA)</i> 36.5 dB/K @ 20.7 GHz		<i>(with 120 K LNA)</i> 36.0 dB/K @ 20.7 GHz		<i>(with 150 K LNA)</i> 38.5 dB/K @ 26.25 GHz	
@ 10° El.	31.9 dB/K @ 7.5 GHz		34.9 dB/K @ 11.725 GHz		34.8 dB/K @ 11.6 GHz		37.1 dB/K @ 20.7 GHz		36.7 dB/K @ 20.7 GHz		39.1 dB/K @ 26.25 GHz	
@ 30° El.	32.8 dB/K @ 7.5 GHz		35.3 dB/K @ 11.725 GHz		35.2 dB/K @ 11.6 GHz		37.8 dB/K @ 20.7 GHz		37.4 dB/K @ 20.7 GHz		39.6 dB/K @ 26.25 GHz	
Port-to-Port Isolation (dB)												
Rx/Tx (in Tx)	120 dB		80 dB		80 dB		120 dB		120 dB		n/a	
Tx/Rx (in Rx)	150 dB		80 dB		80 dB		120 dB		120 dB		n/a	
Tx/Tx	-		40 dB		40 dB		17 dB		17 dB		n/a	
Rx/Rx	-		-		-		-		-		-	

ELECTRO-MECHANICAL

Configuration	Cassegrain optics	
Reflector diameter	6.8 m	
Radiation pattern	Compliant with ITU-R S.580	
Tracking system	Program track Step-track (optional) Monopulse (optional)	
Hub characterisation	Ca. 1.7m x 1.5m x 1.1m (W x H x D) Closed sealed space - Temperature controlled (optional)	
Axis design	Limited motion elevation over azimuth mount, dual backlash compensated drives on azimuth, high precision roller screw on elevation, controlled polarization axis (if applicable)	
Elevation	Range	-1 to 91 deg
	max. Velocity	0.5 deg/sec
Azimuth	Range	180 deg (continuous)
	max. Velocity	1.0 deg/sec

ENVIRONMENTAL

Wind	Drive limit	130 km/h
	Operational limit	90 km/h (mean) - 110 km/h (peak)
	Survival	200 km/h
Temperature	Operational limit	-20°C to +40°C
	Survival	-35°C to +60°C
Rain (maximum)	> 100 mm/h	
Power supply	3x400 V	
Snow (build up)	1000 kg	
Corrosion	Coastal and polar	

OPTIONS

De-icing	Pedestal heat shield	HPA supports
Hub temperature control	Rain blower	Motion warnings
High / low temperature options	Hub 19" rack	Aircraft warning lights