

THUNDER DOME RF-9860

KA-BAND ANTENNA

Tactical ESA for Multi-Orbit SATCOM

The L3Harris Defense Optimized, Multi-Orbit ESA (also known as “Thunder DOME”) represents a groundbreaking advancement in SATCOM antennas, capable of low (LEO), medium (MEO) and geostationary (GEO) Earth orbit network access.

STANDARD FEATURES	
Equivalent Parabolic Aperture	37cm
Coverage	Az 360o, El 90o to 0o
EIRP	46.0 dBW (over full scan range)
G/T	11.25 dB/K (over full scan range)
Beam Response Time	< 1ms
Polarization	RHCP / LHCP (selectable)
Full Duplex	Simultaneous Tx & Rx
Power	28VDC, avg. 360W; peak @ 800W
Frequency Band	Ka-band, Mil. & Comm.
Frequency Range (Tx)	27.5 – 31.0 GHz
Frequency Range (Rx)	17.7 – 21.2 GHz
TX/RX Instantaneous BW	200 / 500 MHz
EMI	MIL-STD-461
Environmental	MIL-STD-810H
	OpenAMIP / OpenBMIP
Dimensions (D x H)	24.0 in x 10.0 in
CE	ETSI EN 301 489-1/-12, EN IEC 62368-1:2020, EN IEC 63000:2018

The unique hemispherical design of Thunder DOME guarantees uniform RF performance, delivering consistent signal quality across the full scan angle range. This ensures optimal functionality and reliability within the coverage area that cannot be accomplished by traditional flat panels. The DOME has been meticulously engineered to provide robust performance for on-the-move (OTM) and on-the-halt (OTH) communications with GEO and MEO satellite constellations.



KEY BENEFITS

- > Widest scan angle with consistent RF performance across the full range ensures connectivity
- > LEO/MEO/GEO tracking in mil & commercial Ka-bands provides network flexibility & resiliency
- > Fast beam switching for seamless make-before-break on LEO/MEO networks
- > Consistent RF performance across the full scan angle range reduces drops while OTM
- > Small form factor & OpenAMIP/ BMIP standards ease integration
- > No moving parts & 810H ruggedization for improved MTBF
- > Designed for use on: WGS, Inmarsat GX, Viasat HCKA, SES mPower

Furthermore, due to its exceptional performance in conventional orbits, Thunder DOME also provides advanced capabilities for use with LEO satellites. This establishes it as an advantageous choice for applications that demand high-performance antennas in LEO environments. The DOME is designed to meet the rigorous demands of modern warfare, providing unmatched performance and resilient communications for operators in the field.

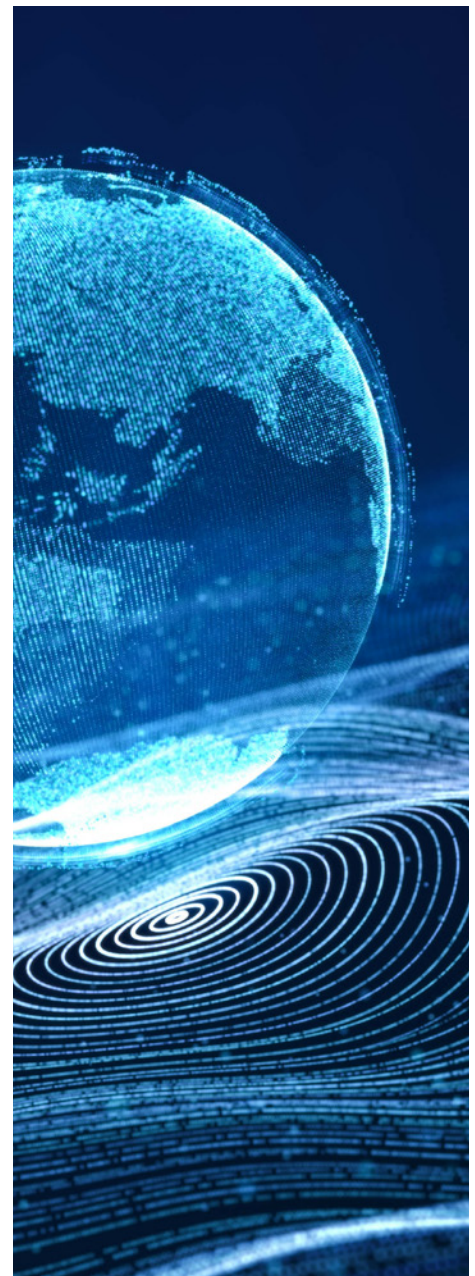
The L3Harris RF-9860 ESA is a state-of-the-art hemispherically shaped SATCOM antenna capable of meeting the most demanding missions.

Filling a critical need in the market, Thunder DOME offers a unique design approach to multi-orbit communications, allowing a single ESA antenna to operate over the full spectrum of available constellation options. This is particularly beneficial for GEO and MEO operations as their orbits are the most challenging to maintain contact with while on the move, due to their lower elevation angles.

Thunder DOME's capabilities include selectable polarization, full duplex operation, and a < 1ms beam response time. In addition, the OpenAMIP and BMIP standards assure interoperability, flexibility and simplified integration.

When paired with the L3Harris Hawkeye® 4 modular ODU you can further benefit from embedded SD-WAN for Auto-PACE planning and easily swappable modem modules.

Thunder DOME integrates thousands of next generation Beam Forming Integrated Circuits (BFICs) in a manner that enhances directional signal control, improves signal quality and increases energy efficiency. The DOME provide enhanced tactical ESA based SATCOM and sets the stage for future OTM and OTH resilient multi-orbit applications in contested operational scenarios.



Thunder DOME RF-9860 Ka-band Antenna

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