

# ELSAT 2100

Low-Profile, High-Throughput  
Military Tri-Band SOTM Antenna





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## Low-Profile, High-Throughput Military Tri-Band SOTM Antenna

The ELSAT-2100 is an advanced tri-band highly ruggedized military SATCOM on-the-move (SOTM) antenna for land platforms. The low-profile antenna delivers high performance in Ka, Ku and X bands, offering continuously connected voice, video and data communications while the platform is in motion. Supporting high downlink rates of over 10Mbps and uplink rates of over 5Mbps, the ELSAT-2100 is ideal for mobile and maneuvering ground military forces. The antenna is based on Elbit System's unique planar array – passive waveguide design, which offers best-in-class RF performance for every given size. The ELSAT-2100 is designed to be fully integrated with all types of broadband satellite communication systems.

The next generation SOTM antenna builds on Elbit Systems' extensive experience in delivering world-class, field-proven military communications solutions for air, sea and ground operations. The antenna can be easily mounted on a wide range of on-the-move (OTM) platforms including wheeled and tracked vehicles, airborne and maritime vessels, and was designed to enable decision-makers, commanders and field units on ground, air and sea to maximize C4 effectiveness and situational awareness in real-time and under the most demanding combat conditions.

### **Tri-band antenna with simple panel interchangeability**

Conversion between X, Ka and Ku bands can be easily achieved in the battlefield through interchangeable RF panel sub-assemblies

within the antenna. As planar panel antennas have no feed, the replacement process is simple and can be accomplished in a very short time after radome removal, with no special tools and minimal training. The antenna panels are replaced simply by fastening built-in knobs and connectors.

### **Low profile and ruggedized according to military standards**

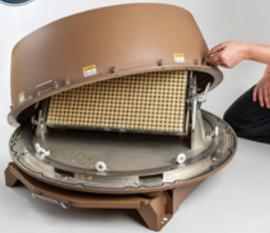
The ELSAT 2100 tri-band antenna automatically acquires and maintains uninterrupted broadband communications through the designated satellite in difficult terrain and in challenging weather conditions. Fully compliant with MIL-STD-810, MIL-STD-461 and MIL-STD-1275, the low-profile antenna provides for reduced vulnerability from enemy or obstacle damage, increased maneuverability in harsh terrain, and low wind resistance.

### **High level of flexibility and suitable for a range of modems**

The field-proven ELSAT 2100 80 cm-diameter antenna is fully optimized for operational efficiency in military applications. The antenna maintains accurate satellite pointing, acquisition and re-acquisition due to the effective use of advanced quad-tracking mechanisms with control of the azimuth, elevation and polarization angles. The ELSAT antennas are compatible with multiple modems, providing a high level of design flexibility to support an uninterrupted flow of accurate communication data in real-time.

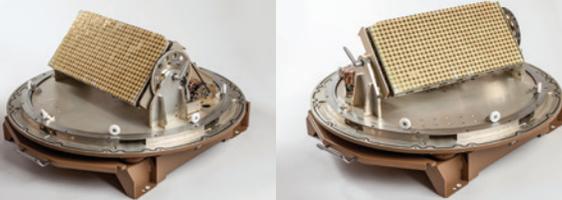
## Easily replaceable panel assembly kit - X, Ku and Ka bands

1



Release the Radome by unfastening the screws

2



Manipulate the side levers in order to replace the panel assembly kit to the desired frequency band

3



Secure the Radome back to its place

### Key Features

- Low-profile antenna
  - Reduced vulnerability
  - Unhindered maneuverability
  - Low wind resistance
- On-demand uninterrupted SOTM connectivity over vast terrain types
- Best RF performance for given panel size
- Simple field interchange between X, Ku and Ka bands
- Highly-ruggedized and reliable MIL specification antennas
- Suitable for all manned and unmanned ground vehicles, airborne and maritime vessels
- User-friendly and lightweight
- Fast and easy handling and installation

### Operational Benefits

- OTM broadband SATCOM transmit and receive capabilities
- Multi-band X, Ka and Ku support with interchangeable antenna panels
- Best-in-class planar array passive waveguide technology
- Modem independent
- Always on - no user intervention required
- Support for high downlink (OB) and uplink (IB) rates
- Superior SOTM quad tracking and relocking mechanism: GPS, RSSI, Gyro, Satellite Beacon signal receiver
- Rapid satellite acquisition and reacquisition after blockage
- Elevation from -5 to +100 degrees
- MIL-STD 810, 461
- Vehicle-powered 12/24 VDC MIL-STD 1275

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### Applications



### Technical Specifications

#### Physical Characteristics

Diameter	85cm
Fixed Frequency	32cm
Weight	38Kg
Operating temperature	-20° Celsius to +50° Celsius (-40° to 71° optional)
Input voltage	12/24 VDC MIL-STD 1275
Power consumption (typical) / Max. power	40W / 100W
Standards	MIL-STD-810 (incl.. 40G shocks for tracked vehicle), MIL-STD-461, MIL-STD-1275, FCC, ITU

#### General

Triple tracking system	Based on GPS, RSSI, Tilt Sensors & Gyros, Satellite Beacon Receiver
Frequency range	X, Ka and Military Ka, Ku and extended Ku Band
Azimuth velocity	60 Deg/Sec
Azimuth/Elevation acceleration	300/250 Deg/Sec <sup>2</sup>

	X-Band	Ku-Band	Ka-Band
Frequency Rx	7.25 ~ 7.75 GHz	10.7 ~ 12.75 GHz	19.2 ~ 21.2 GHz
Frequency Tx	7.9 ~ 8.4 GHz	13.75 ~ 14.5 GHz	29 ~ 31 GHz
Gain Rx	28.3 dBi @ 7.25 GHz	33.1 dBi @ 12.5 GHz	37 dBi @ 20.2GHz
Gain Tx	29 dBi @ 7.9 GHz	33.3 dBi @ 14.25 GHz	39.5 dBi @ 30GHz
G/T	7dB/k	11.5 dB/K	13.5 dB/K
Azimuth range	360° continuous	360° continuous	360° continuous
Elevation range	-5° - 100°	-5° - 100°	-5° - 100°



**Elbit Systems C4I and Cyber Ltd.**  
2 H'amachshev St., Netanya 42507, Israel  
E-mail: [landc4i@elbitsystems.com](mailto:landc4i@elbitsystems.com) [www.elbitsystems.com/landc4i](http://www.elbitsystems.com/landc4i)

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