



The EA21650 is Easat's Tactical Deployable Air Surveillance Antenna. The antenna system is self-contained and capable of being transported by ship, airplane, helicopter or towed to site. The design provides for rapid deployment in less than 60 minutes from arrival at the operating location.

The antenna is a dual frequency band, carbon fibre composite based reflector which operates at S-band (2.7-2.9 GHz) and L-band (1.0-1.1 GHz). Three states of polarization (linear, horizontal, left-hand circular and right-hand circular) are provided for S-band beam by use of polarisation-switching capability.

At L-band, the antenna operates in IFF/MSSR by use of three beams: sum, difference and omni. The L-band beacon feed is contained within a common feed/polarizer housing.

A side lobe suppression antenna is provided to illuminate the sidelobe suppression beam.

These features combine to provide leading-edge RF performance from the antenna system.

Electrical Specification – S-band		
Beam Characteristics	Low Beam	High Beam
Frequency range	'S' band - 2.7 GHz – 2.9 GHz	
Gain (incl. Microwave loss)	33.8 dBi at rotating joint	31.0 dBi at rotating joint
VSWR	1.5: 1	1.5:1
Axial Ratio	≤ -19dB averaged over the frequency band	
Azimuth Beamwidth	1.35-1.5°	1.35-1.5°
Azimuth Sidelobes (w.r.t. peak of low beam)	≤ -25.0 dB Max (from 0° to ± 10°) ≤ -32.0 dB Max (from ± 5° to ± 30°) ≤ -35.0 dB Max (from ± 30° to ± 180°)	
Elevation Beamwidth (-3dB)	4.5° nominal	6.0° nominal
Signal Outputs (both beams)	Target - Co-polar signal : Weather - Cross polar signal	

Electrical Specification – L-band	
Frequency Range	1030MHz ± 5MHz and 1090MHz ± 5MHz
Channels	Sum, Delta and Omni
Sum Beam Gain	≥ 23.5 dBi at rotating joint
SUM Beam Azimuth Beamwidth	< 4.5°
SUM Beam Azimuth Sidelobes	≤ -22 dB
Difference Null depth (1090MHz only)	≤ -24 dB w.r.t. lower of the two peaks
Difference Null alignment (1090MHz only)	± 0.2° w.r.t peak of sum beam
Omni Coverage	95% coverage of all Sum channel sidelobes by a margin of 6dB

General & Mechanical	
Type	Shaped Reflector
Aperture Size	5.4 m x 2.6 m
Max weight palletised version (incl. turning gear)	< 6000lbs
Overall Height	8.95m (fully deployed)
Max Swept radius	4.1 m
Rotation rate	Up to 15 r.p.m (nominal)
Design Life	20 years

Environmental	
Operational Wind Speed	70 knots
Humidity	100%
Operational temp.	-40°C to +70°C
Protection	Suitable for salt laden coastal environment.

Options at Extra Cost
Dual redundant motors; choice of encoders; choice of polarisations. Various rotation speeds, various environmental specifications. 20ft bespoke ISO transportation pallet with mechanical lifting mechanism to transport and deploy.

Specifications are subject to change as part of Easat's ongoing improvement policy. Customers are advised to confirm specifications prior to contract.