

## Ka Band Full Dimensional Electronic Steering Phased Array Terminal Datasheet



### Starwin Shark Ka-band Full Dimension ESA Terminal

Starwin Shark Ka-band Full Dimension ESA Terminal is a high-performance, multi-functional VSAT solution designed to meet the demands of high-speed satellite tracking, seamless integration, and exceptional reliability, all within a compact form factor. This terminal offers a smart and cost-effective solution for satellite communications.



This terminal integrates a fully electronic steering phased array antenna, control unit, up/down converter, and satellite router into a single unit, all housed under one radome. Additionally, it includes wireless access functionality, making deployment easy and efficient. The electronic steering beam ensures high-speed satellite tracking, while the absence of mechanical moving parts guarantees robust reliability.

Starwin Shark Ka-band ESA terminal provides an innovative, universal broadband solution for Communication On The Move (COTM) and Communication On The Pause (COTP), simplifying satellite communication and making it accessible to a wide range of users.

### Features

- High-Speed Tracking: Fully electronic steering of the satellite beam ensures fast and precise tracking.
- High Integration: Combines phased array antenna, ACU, satellite modem, and up/down converter in a single outdoor unit.
- High Reliability: Solid-state circuitry and no moving parts for dependable operation.
- Simple Setup: Installation doesn't require a satellite technician; no complex cabling or commissioning needed.
- Easy Operation: Access satellite broadband wirelessly via smartphone or laptop.
- Scalable Options: Customizable to meet specific needs.
- Wide Application: Ideal for mobile and fixed broadband connectivity in GEO, MEO, and LEO orbits.
  - Land (Fixed Platform - COTP)
  - Mobile (Vehicle & Train - COTM)
  - Maritime (Shipping Vessels - COTM)
  - Aero (Aircraft & UAV - COTM)
- Cost-Effective: Fully designed and manufactured by Starwin for reduced production costs.

## Ka Band Full Dimensional Electronic Steering Phased Array Terminal Specifications

Overall Specifications	
Model No.	ESA54130MAC
Antenna Type	Electronic Steering Phased Array
RF Performance	
Frequency Range	TX 27.5~31.0 GHz, RX 17.7~21.2 GHz
EIRP	$\geq 54$ dBW @ Normal (Normal direction = Elevation 90°) $\geq 53$ dBW @ 30° (30° off axial angle = Elevation 60°) $\geq 49.5$ dBW @ 60° (60° off axial angle = Elevation 30°)
G/T	$\geq 13.0$ dB/K @ Normal (Normal direction = Elevation 90°) $\geq 12.0$ dB/K @ 30° (30° off axial angle = Elevation 60°) $\geq 8.5$ dB/K @ 60° (60° off axial angle = Elevation 30°)
Applicable Satellite Type	for GEO (HTS), MEO and LEO (Optional)
Polarization	LHCP/RHCP Switchable
Axis Ratio	$\leq 3$ dB (Electronically Controlled)
X-Pol Isolation	$> 30$ dB @ Normal
Coverage	0-360° @ azimuth, Off axis Angle 0° to 60°
Integrated Tracking System	
Tracking Accuracy	$\leq 0.2^\circ$
Integrated Tracking Type	DVB-S, DVB-S2, DVB-S2X
Beam Switching Time	$\leq 3$ ms (any position)
Dynamic Capture Time of First Boot	$\leq 120$ s
Static Capture Time of First Boot	$\leq 30$ s
Recapture Time After Loss	$< 15$ sec (Duration of occlusion $\leq 5$ min) $< 25$ sec (Duration of occlusion $> 5$ min)
Scan Mode	Electronic Steering
Integrated Ka Up-Down Converter	
IF Frequency	RX: 950 ~ 1450 MHz, 950 ~ 1950 MHz TX: 950 ~ 1800 MHz, 950 ~ 1950 MHz
IF Input Power (Modem Output)	-35 ~ 0 dBm
LO.	Rx: 16.75/17.25/18.25/19.25 GHz Tx: 26.25/27.40/28.05/29.05 GHz
Phase Noise	$\leq -60$ dBc/Hz (@100Hz), $\leq -70$ dBc/Hz (@1kHz) $\leq -80$ dBc/Hz (@10kHz), $\leq -90$ dBc/Hz (@100kHz) $\leq -120$ dBc/Hz (@1MHz)
Modem	
Internal /External Modem	Customizable
Mechanical	
Dimensions	$\leq 900 \times 650 \times 80$ mm
Weight	$\leq 28$ kg
Environmental	
Operating Temperature	-25°C ~ +55°C (Standard), -40 °C ~ +70 °C (Customizable)
Storage Temperature	-40 °C ~ +85 °C
Humidity	5 ~ 95%
Wind Speed	150 km/h
Ingress Protection	IP67
Power	
DC Power Supply	(With Adapter) AC 100 ~ 240V/50~60Hz (Without Adapter) 28VDC
Power Consumption	Average: $\leq 580$ W; Peak: $\leq 760$ W
Interfaces	
IF TX/IF RX	SMA
Network Interface	Waterproof Quick Plug
Power Interface	Waterproof Quick Plug