

Ka band Full Dimensional Electronic Steering Phased array Terminal Datasheet



Starwin Penguin Ka-band Full Dimension ESA Terminal Description

Starwin Penguin Ka-band Full Dimension ESA Terminal is designed with high performance multi-function chipset, addressing the need of high-speed tracking, high integration, high reliability, lower profile, delivering fully smart and economical VSAT terminal solution.



Starwin Penguin Ka-band Full Dimension ESA Terminal integrates the electronic steering phased array antenna, control unit, up&down converter and satellite router into one unit under one radome and the wireless access function is also included, which makes the terminal easy to deploy. The electronic steering beam enables high speed satellite tracking. No moving mechanical parts design ensures the high reliability of the terminal. These special features enable Ka-Band ESA terminal to deliver the innovative universal broadband solutions for COTM (Communication On The Move) and COTP (Communication On The Pause), making satellite communication simple & easy.

Features

- * High speed tracking: Fully electronically steering satellite beam
- * High integration: All in one, phased array, ACU, satellite Modem, Up&Down Converter are all integrated in one outdoor unit
- * High reliability: Solid State circuit, no moving mechanical parts inside
- * Simple Setting up: No need satellite technician for installation, cabling, connection and commission etc.
- * Easy Operation: Access satellite broadband in wireless way by smartphone or laptop.
- * Scalable Option: Can be scalable per request
- * Wide application: Work for mobile broadband connectivity under Geo, Meo and Leo.
 - Land (Fixed Platform-COTP)
 - Mobile (Vehicle&Train -COTM)
 - Maritime (Shipping Vessels-COTM)
 - Aero (Airplane and UAV-COTM)
- * Cost Effectiveness: Fully R&D and production by Starwin come down production cost

Ka Band Full Dimensional Electronic Steering Phased Array Terminal Specifications

Overall Specifications	
Model No.	ESA42084MAC
Antenna Type	Electronic Steering Phased Array
RF Performance	
Frequency Range	TX 27.5~31.0 GHz, RX 17.7~21.2 GHz
EIRP	≥ 42 dBW @ Normal (Normal direction = Elevation 90°) ≥ 41 dBW @ 30° (30° off axial angle = Elevation 60°) ≥ 37.5 dBW @ 60° (60° off axial angle = Elevation 30°)
G/T	≥ 8.4 dB/K @ Normal (Normal direction = Elevation 90°) ≥ 7.4 dB/K @ 30° (30° off axial angle = Elevation 60°) ≥ 3.9 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	≤ 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	≤ 3 ms (any position)
Dynamic Capture Time of First Boot	≤ 120 s
Static Capture Time of First Boot	≤ 30 s
Recapture Time After Loss	< 15 sec (Duration of occlusion ≤ 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	≤ -60 dBc/Hz (@100Hz), ≤ -70 dBc/Hz (@1kHz) ≤ -80 dBc/Hz (@10kHz), ≤ -90 dBc/Hz (@100kHz) ≤ -120 dBc/Hz (@1MHz)
Modem	
Internal /External Modem	Customizable
Mechanical	
Dimensions	$\leq 550 \times 420 \times 70$ mm
Weight	≤ 12 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 ≤ 160 W; Peak ≤ 230
Interfaces	
IF TX/IF RX	SMA
Network Interface	Waterproof Quick Plug
Power Interface	Waterproof Quick Plug