

**SIM LTE AVAILABLE**

High speed internet via 3G / 4G network.



Remote Management Access



Web Interface



SIM LTE



Automatic Satellite Acquisition



Diversity Kit Compatibility



Solid Hardware



PMAR-90 Ku PRO

Maritime VSAT antenna with 90 cm dish size and 3-axis motion system for Ku-Band services. The DSI9 Ku PRO employs state-of-the-art technology and is our most sought VSAT antenna in Ku-band. With the latest generation of tracking technology, the DSI9 Ku PRO represents the perfect solution for all requirements of reliable and fast internet on any type of maritime vessel. PALS designs and builds VSAT antennas to work even in the harshest weather conditions at sea. Only top-quality materials are used and manufacturing is done in-house, observing tight quality control regulations and safety norms. The result is a robust and rugged stabilized antenna system with high tracking accuracy. In short, the perfect solution for those who venture into the open seas without wanting to give up a stable and fast internet connection. The PMAR-90 Ku PRO reaches excellent tracking performance under the hardest maritime motion profile "Class A", defined by Global VSAT Forum and Fraunhofer Institute.

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Key Features

- ▶ 3-axis motion system + auto skew
- ▶ Range movement from -15° to $+120^{\circ}$
- ▶ Tracking speed up to $50^{\circ}/s$
- ▶ LTE Plug & Go SIM cards
- ▶ LEO, MEO, GEO tracking supported
- ▶ Easy to install
- ▶ 90 cm dish for high-quality signal reception and transmission
- ▶ Electronically switchable in x-pol and co-pol operation
- ▶ Compatible with most modems
- ▶ Ku-Band / Ka-Band convertible
- ▶ VoIP optional

TECHNICAL SPECIFICATION

Feed Subsystem	
Reflector diameter	90 cm (35.43")
Minimum E.I.R.P.	43 dBW
LNB	Universal (LOF 9.75/10.6 GHz, PLL stabilized, internal ref.)
BUC	Super extended Ku (LOF 12.80 GHz, PLL stabilized, external ref.)
Available BUC power	8 W / 16 W / 25 W
RX antenna gain	39.5 dBi @ 12.5 GHz
TX antenna gain	40.3 dBi @ 14.25 GHz
RX / TX polarization	Linear, Co-pol and X-pol
G/T	>18.2 dB/K (clear sky, 30° elevation)
Position acquisition	Internal GNSS (GPS / Glonass / Galileo / Beidou / QZSS)
Tracking receiver	Internal, 950 - 2150 MHz; BW 0.5 - 50 MHz
Frequency Band	
RX frequency	10.7 - 12.75 GHz
TX frequency	13.75 - 14.5 GHz
Convertible	From Ku- to Ka-Band via separate kit
Drive Subsystem	
Tracking technology	Twin RF tracking receiver + 6D inertial + GNSS (NMEA input optional)
Maximum tracking speed	50°/s (each axis)
Azimuth range	Unlimited
Elevation range	-15° to +120°
Skew range	-120° to +120°
Cross level range	-45° to +45°
Maximum ship motion	<ul style="list-style-type: none"> Roll ±35° @ 6 sec Pitch ±25° @ 6 sec Yaw ±15° @ 6 sec
Ship motion (for stabilization accuracy tests)	<ul style="list-style-type: none"> Roll ±30° @ 10-12 sec Pitch ±20° @ 8-10 sec Yaw ±8° @ 15 sec
Motion system	3-axis + auto skew
Miscellaneous	
Lock on time	Typ. 20 sec (Time to online depends on modem)
Satellite acquisition	Completely automated by DVB-S2-Receiver and/or modem confirmation (according to ETSI 302 340)
EPAK® Diversity-Kit compatible	✓
Modem approval	Standard type approval; CE & EPAK type approval
Operating temperature	-30°C to 55°C
Storage temperature	-30°C to 85°C
Humidity	According to IEC 60945, 100% condensing
Vibration	According to IEC 60945; MIL-STD-167-1
Shock	According to IEC 60721-4-6; MIL-STD-810F
Rain	IP56
Wind	<ul style="list-style-type: none"> Operational: < 150 km/h Survival: < 200 km/h
Compass safe distance	≥ 2.00 m (according to IEC 60945)
Compliance	<ul style="list-style-type: none"> CE (Maritime), ETSI Complies with the specifications of EC directive 2014/53/EU Radio & Telecommunications Terminal Equipment (R&TTE); compliance with EC directive 2014/35/EU, EMC directive 2014/30/EU and IEC 301-427
Power Specifications	
Power supply antenna (ODU)	48 V DC (supplied by ACU)
Antenna input voltage TX (BUC)	24, 48 V DC / 250 VA (supplied by ACU)
Power consumption (ODU excl. BUC)	Up to 150 VA (supplied by ACU)
Dimensions and Weight	
Radome (D x H)	111 cm x 114 cm (43.7" x 44.9")
Weight (incl. radome)	75 kg (165.35 lbs)

Antenna Control Unit	
Dimensions (WxHxD)	48.2 cm x 4.4 cm x 38 cm (18.9" x 1.7" x 14.9") (19" Rack 1HU size)
Weight	5.1 kg (11.24 lbs)
Gyro interface	NMEA0183 / NMEA2000 (via RS422 or RS485 or RS232) / SIMRAD RGC11
Input voltage, frequency	90~264 V AC, 47~63 Hz
Interfaces	<ul style="list-style-type: none"> 1x RS232/RS422 (RJ45) 4x Ethernet + 1x open BMIP (RJ45) 2x USB 1x GPIO
Local user interface	256x64px OLED-Display, 3 Status-LEDs, 6 Push-Buttons
Modem interface	Ethernet port + GPIO
Modem protocols	openAMIP / SNMP / Telnet / open BMIP
Remote access	TCP / IP
Position acquisition	Supplied by ODU
Operating temperature	-20°C to 55°C
Storage temperature	-40°C to 85°C
Humidity	According to IEC 60945
IP class	IP 30
Compass safe distance	0.5 m according to IEC 60945
Supported modems	
	<ul style="list-style-type: none"> iDirect iFINITI, Evolution, Velocity Hughes HX200 ViaSat SBT-M Comtech CDM-250/840 Gilat Skyedge II C4 Paradise PD25L, Datacom Q-Flex Advantech VR700, VR7400 STM Satlink 1910 Romantis / Eastar UHP 1000 / UHP 2000 others on request
Modem type	
Cables and Connectors	
ACU to Antenna	<ul style="list-style-type: none"> 2x Double shielded coax cable (ECOFLEX 10) with N-plugs
ACU to Modem	<ul style="list-style-type: none"> 2x Double shielded coax cable (RG6) with F and TNC-plugs 1x Ethernet with RJ45 plugs

Radome and ACU Dimensions

