PALS
Communications & Technology

PMAR-60 Ku PRO
Connect on Board!

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-60 Ku PRO

Maritime VSAT antenna with 60 cm dish size and 3-axis motion system for Ku-band services. Like all VSAT systems within the PMAR-Series, the PMAR-60 Ku PRO is specifically designed to meet even the hardest requirements in harsh seas. With its automated polarization tracking, the PMAR-60 Ku PRO guarantees excellent network availability even under the most challenging conditions.

The PMAR-60 Ku PRO combines the advantage of contained weight and dimensions with an astonishing tracking speed and all the reliability of the Ku-Band, to give to its users the best internet experience possible.

Key Features

➤ 3-axis motion system + auto skew

➤ Range movement from -15° to +120°

➤ Tracking speed up to 50°/s

➤ LTE Plug & Go SIM cards

➤ LEO, MEO, GEO tracking supported

➤ Easy to install and refit

➤ Contained dimensions and weight

➤ Electronically switchable in x-pol and co-pol operation

➤ Compatible with most modems VoIP optional

TECHNICAL SPECIFICATION

Feed Subsystem	
Reflector diameter	60 cm (23.62")
Minimum E.I.R.P.	46 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	4 W / 8 W / 16 W
RX antenna gain	36.3 dBi @ 12.5 GHz
TX antenna gain	37.0 dBi @ 14.25 GHz
RX / TX polarization	Linear, X-pol
G/T	>15 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

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	• Roll ±40° @ 6 sec • Pitch ±30° @ 6 sec • Yaw ±15° @ 6 sec
Ship motion (for stabilization accuracy tests)	• Roll ±30° @ 10-12 sec • Pitch ±20° @ 8-10 sec • Yaw ±8° @ 15 sec
Motion system	3-axis plus 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	• Operational: < 150 km/h • Survival: < 200 km/h
Compass safe distance	≥ 2.00 m (according to IEC 60945)
Compliance	• CE (Maritime), ETSI • Complies with the specifications of EC directive 2014/53/EU Radio & Tele-communications 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)	73 cm x 81 cm (28.74" x 31.88")
Weight (incl. radome)	46 kg (101.41 lbs)

Antenna Control Unit	
Dimensions (WxHxD)	48.2 cm x 4.4 cm x 38 cm (19" 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	• 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	
Modem type	• iDirect iNFINITI, 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

Cables and Connectors	
ACU to Antenna	• 2x Double shielded coax cable (ECOFLEX 10) with N-plugs
ACU to Modem	• 2x Double shielded coax cable (RG6) with F and TNC-plugs • 1x Ethernet with RJ45 plugs

Radome and ACU Dimensions

812 mm (31.9")
Ø734 mm (28.7")

Ø 350 mm (13.78")
Ø 480 mm (18.9")
247.5 mm (97.44")
R 110 mm (4.33")
122 mm (4.8")
247.5 mm (97.44")
Drill hole: Ø 12 mm (0.47")

465 mm (18.3")
44 mm (1.7")

380 mm (14.9")
482 mm (18.9")