Size: 0.20m

PAIR-20

Compact & Integrated Design

The PALS PAIR-20 is the smallest PAIR family antenna, delivering robust Ka-band connectivity for aircraft and UAVs. It integrates a high-efficiency parabolic feed, low-noise amplifier, servo control, GPS/BD positioning, and intelligent tracking into a single compact unit.

Rapid Acquisition & Precision Tracking

Cold-start satellite acquisition takes under 80 seconds; hot-start or manual input under 60 seconds. The two-axis stability and three-axis tracking system maintains errors below 0.5dB (RMS). Advanced algorithms ensure link stability during aggressive maneuvers, with signal recovery under 3 seconds for brief blockages and under 5 seconds for interruptions up to 20 minutes.

Mission-Critical Reliability

Built for operational resilience, the PAIR-20 enables straightforward fault diagnosis and rapid field maintenance. Ideal for military operations, emergency command, and communication networks requiring unwavering connectivity.

Key Features

- Available in Ka Band HTS
- Designed for aircraft, ships, go-fast boats, and military vehicles
- Fast initial satellite pointing time
- High tracking accuracy
- Exceptional tracking stability
- Rapid blockage recovery time
- Fast satellite switching time: < 8 seconds
- Easy maintenance
- Dynamic pointing and dynamic satellite switching
- 2-Axes stability, 3-Axes tracking

PALS® | Communications & Technology

Ka Band Antenna

TECHNICAL SPECIFICATIONS / PAIR-20

Scan the QR code for more information.

GENERAL SPECIFICATIONS	PAIR-20
Reflector Diameter	0.2m
Reflector Material	Carbon-fiber
Antenna Form	Circle against symmetrical reflector and cap feed
Stabilization Platform	2-Axes for stability, 3-Axes for tracking
Positioning Mode	GPS and BD
Power Supply	DC18-36V
Power Consumption	≤60W (Ku 8W BUC) ≤90W (Ka 10W BUC)
Positioning Mode	GPS and BD
Interface	1 Rx,1 Tx and 1 M&C

RF CHARACTERISTIC	PAIR-20
Frequency (GHz) Tx	29.0-30.0
Frequency (GHz) Rx	18.7- 20.2
Antenna Gain (±0.2 dBi) Tx	33.7+20lg(f/29.4)
Antenna Gain (±0.2 dBi) Rx	30.3+20lg(f/19.6)
Polarization Form	LHCP/RHCP
G/T(dB/K)	6.7
EIRP (dBw)	42.7 (10W BUC)
Axial ratio (dB)	1.5
Tx-Rx Isolation(dB)	85
Rx-Tx Isolation(dB)	40
Antenna Pattern Compliancy	ITU-R S.580-6 and ITU-R S.465-6

MECHANICAL SPECIFICATIONS	Azimuth	Elevation	Polarization
Antenna Motion Range	360°continuous	-5°-105°	± 90°(Ka)
Antenna Revolution	100°/s	100°/s	
Antenna Acceleration	200°/s²	200°/s²	
Pointing Accuracy	≤0.2° (R.M.S)		
Initial Acquisition time	≤ 2min		
Sheltering Recovery Time	≤5s (Cover for20min)		
Weight	≤5.5Kg (including antenna system, 10W Ka band Transceiver)		
Antenna Profile Dimension	≤p249*H288mm (D*H)		

ENVIRONMENTAL SPECIFICATIONS	PAIR-20
Temperature Range Operational	-40°C + 55°C
Temperature Range Survival	-55°C + 70°C
Protection Grade	IP65

Specifications are subject to change.