



STANDARD
MIL-STD
810F

STANDARD
MIL-STD
464

STANDARD
ITU-R-S
728-1

Size:

0.50m

PAIR-50

Precision Motion & Tracking

The PAIR-50 airborne antenna system integrates a 0.5m reflector with an advanced 3-axes stabilization mechanism and a 4-axes tracking configuration. Engineered specifically for high-mobility flight profiles, this precise architecture delivers exceptional pointing accuracy and seamless link persistence.

Modular & Band-Swappable

Sharing a proven legacy on SOTM antenna systems the PAIR Series features a modular architecture with a common gimbal specifically for airborne applications. Certified RF payloads can be switched between bands in just five minutes, offering unparalleled operational flexibility for diverse missions.

Mission-Critical Operations

The PAIR-50 is specifically engineered for extended-duration aerial intelligence, surveillance, and reconnaissance (ISR) missions. It enables essential beyond-line-of-sight (BLOS) satellite communication, combining high-bandwidth stabilization with an integrated tracking receiver for reliable performance in the most demanding airborne environments.

Key Features

- Supports Ku and Ka-Band
- Design for Aircraft, Ships, Fast boats and military vehicles
- Fast initial pointing time to satellite
- High tracking accuracy
- Perfect tracking stability
- Rapid blockage recovery time
- Fast satellite switching time < 8s
- Dynamic Pointing and Dynamic Switching Satellite
- 4-Axes tracking system (3-Axes version available)
- Ku and Ka SATCOM operations including Military and Commercial-Ka



GENERAL SPECIFICATIONS

Reflector Diameter	0.50m
Pointing Satellite Mode	Auto
Power Supply	Nominal 100W @ 28VDC

RF CHARACTERISTIC

Frequency (GHz) Tx	13.75~14.50	29.50~31.00
Frequency (GHz) Rx	10.70~12.75	19.70~21.20
Antenna Gain (±0.2 dBi)Tx	35.60 @ 14.25 GHz	41.90@ 29.00 GHz
Antenna Gain (±0.2 dBi)Rx	34.00 @ 11.70 GHz	38.40 @ 19.00 GHz
Polarization	2 Port Linear	Circular
VSWR Tx	1.50:1	1.50:1
VSWR Rx	1.40:1	1.40:1
G/T (dB/K)	12.5	15.8
Antenna Pattern Compliance	Compliant with ITU-R S.580-6 and ITU-R S.465-6	

MECHANICAL SPECIFICATIONS

Antenna Motion Range	360° continuous	-10° ~ 100°	± 110°	± 30°
Antenna Speed Range	100°/s	100°/s		
Antenna Acceleration	200°/s ²	200°/s ²		
Signal Tracking Accuracy	<0.2° (R.M.S)			
Blockage recovery time	≤5s (blockage 20min)			

ENVIRONMENTAL SPECIFICATIONS

Temperature Range Operational	-40~+60°C
Temperature Range Survival	-50~ +70°C
Humidity	98%
Protection Grade	IP 55
Environmental Compliance	RTCA DO-160G/MIL-STD

Specifications are subject to change.

