PALS® | Communications & Technology

PFMA-620

Robust Three Axis Antenna Mount

PFMA-620

The PALS PFMA-620 is a servo-controlled, self-pointing antenna system designed for TT&C (Telemetry, Tracking & Command), transmit/receive (TX/RX), and receive-only (RX) applications. It operates across C, X, Ku, and Ka bands, with customizable frequency options available. The system is constructed with precision-formed panels and a machined hub assembly for high gain and controlled radiation patterns.

The antenna offers flexible pointing with either 400-degree or full 360-degree continuous azimuth rotation, plus 85 degrees of elevation, supporting horizon-to-horizon satellite tracking. It is suitable for TV Distribution (DTH) , TV Redistribution, TV Contribution (including SNG), data networks, emergency communications, and mobile deployments. This makes it an ideal solution for both fixed and on-the-move connectivity needs.

Operation is handled by the PALS Antenna Controller for reliable satellite acquisition and control, ensuring quick setup and stable performance in the field. A full range of accessories is available, including a servo control system, power modules, De-Ice control system, BUCs, LNBs, modems, spectrum analyzers, and installation kits for turnkey solutions.

Key Features

- Available in C, X, KU, DBS and KA Bands
- Servo Motor System (AZ, EL, POL Axes)
- Entirely zero-backlash motion control system
- Structure types: A+E type, A+E-T type, X-Y type
- IP65 weatherproof outdoor housing Motor Driver Unit (MDU)
- Multiple tracking modes: Step, Memory, and Program Tracking
- 1+1 or 2+1 Redundancy of full transmit chain(s)
- Optional Uplink Power Control System for
- Optional Beacon Tracking
- Optional De-Ice
- Optional PALS NMS System
- Inclined Orbit Tracking
- Optional hand-held control unit
- Optional Program Tracking (TLE)
- Optional Waveguide switching for LNB/LNA
- Optional Equipment Shelter

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GENERAL SPECIFICATIONS

Reflector Diameter	6.2m, Ring Focus
Antenna Package	5 packages, 3590kg

RF CHARACTERISTIC

		Low Ku-Band	Ku-Band	Ka-Band
Frequency (GHz)	Tx	10.7 ~ 11.7GHz	13.75 ~ 14.5GHz	17.7 ~ 21.2GHz
	Rx	3.7 ~ 4.2GHz	10.7 ~ 12.75GHz	27.5 ~ 31GHz
Antenna Gain, dBi	Tx	55.0@ 11.2GHz	55.96@12.5GHz	59.62@19.05GHz
	Rx	56.30@13.0GHz	56.95@14.0GHz	63.27@29.0GHz
Axial Ratio (2 Port) (2 Port Feed)	Tx/Rx	/	/	≤1.5 dB
	Rx/Rx	/	/	≤1 dB
Cross Pol (On Axis)		≥30dB	≥30dB	/
Polarization		Linear	Linear	Circular
Antenna Noise Temperature				
10° Elevation		62.5 K	62.5 K	126 K
20° Elevation		51.3 K	51.3 K	87.5 K
40° Elevation		44.5 K	44.5 K	61.8 K
VSWR	Tx	1.3:1	1.3:1	1.35:1
	Rx	1.3:1	1.3:1	1.35:1
Rx to Tx Isolation		85dB	85dB	85dB
Feed Insertion Loss	Tx	≤0.3dB	≤0.3dB	≤0.5dB
	Rx	≤0.4dB	≤0.4dB	≤0.6dB
Power Capability	Tx	2kw	2kw	2kw
Antenna Pattern Compliancy		ITU-R S.580-6 & ITU-R S465-6		
Feed Interface	Tx/Rx	WR-75	WR-75	WR42/WR28

MECHANICAL SPECIFICATIONS

	Azimuth	Elevation	Polarization
Antenna Travel Range	±70°Pedestal/ 5°~355°continuous	5°~90°	±90°
Antenna Structure	LMC/FMC		
Surface accuracy(R.M.S)	≤0.5mm; ≤0.3mm(Ka)		

ENVIRONMENTAL SPECIFICATIONS

Working Wind Speed	72 km/h
Survival Wind Speed	216 km/h
Humidity	%100
Ice Load	Icing 13mm: normal work / Icing 25mm, no damage
Temperature	-30~50°C
Seismic Capacity	Horizontal: 0.3G / Vertical: 0.1G

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