PW8484-100

X-Band RHCP High-Gain Isoflux Antenna

Features

- ✓ Designed for lunar applications
- ✓ Isoflux pattern with optimized low-elevation gain
- ✓ Wide operating temperature range
- ✓ Designed to NASA GEVS (GSFC-STD-7000)
- ✓ TRL 8

Benefits

- ✓ Commercial off-the-shelf (COTS)
- ✓ Acceptance Tests available
- ✓ Compatible Test Hat available
- ✓ Qualified for space applications
- ✓ Consultation services available (link budget, architecture and system design)

Product Overview

PW8484-100 is a high-performance wideband antenna engineered for lunar missions. Its isoflux radiation pattern is optimized for Moon-to-Earth communications, providing enhanced low-elevation gain where it matters most.

Designed for long-duration missions, this antenna is built to withstand the harsh conditions of the lunar environment, addressing challenges such as Corona, Multipaction, and MMOD.

The X-band antenna is lightweight, easy to integrate, and optionally available with Test Hats to simplify testing and system integration.

Related Products

Part Number	Description
PW8484-300	X-Band RHCP High-Gain Isoflux Test Hat
PW8282-102	X-Band RHCP TX 2x2 Antenna
PW8282-100	X-Band RHCP TX Omni Antenna
PW2022-103	S-Band RHCP Isoflux Antenna

Electrical Specifications

Parameter / Condition	Min	Typ	Max	Unit
Operating Frequency	8025		8500	MHz
Polarization		RHCP		
Axial Ratio				
8025-8400 MHz	1	2.5	4	dB
8400-8500 MHz	4	5	6.5	dB
VSWR			2:1	
Gain				
8025-8400 MHz	2.5	4	5	dBic
8400-8500 MHz	4	4.5	5.5	dBic
Pattern Coverage		Isoflux		
Half Power Beam Width	20	25	30	deg
Power Handling	20			W

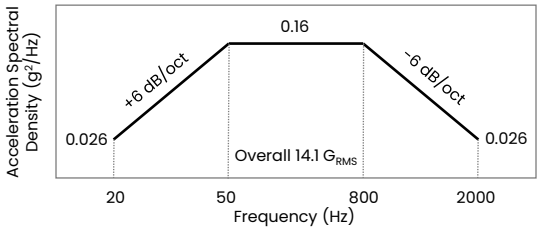
Mechanical Specifications

Parameter / Condition	Value	Unit	Limits
Connector	SMA Female		
Mass	140	g	Max
Compatible Test Hat	PW8484-300		

Environmental Specifications

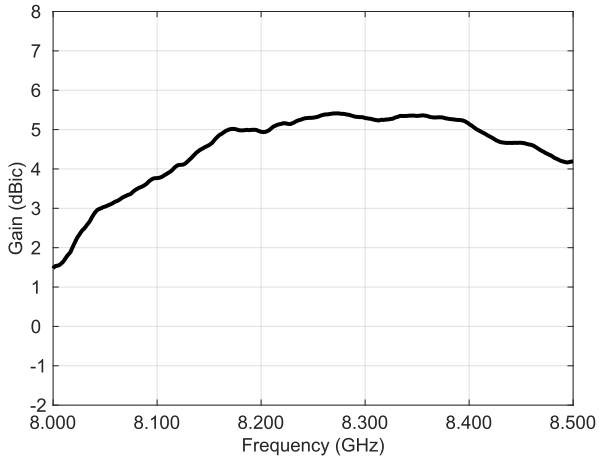
Parameter / Condition	Min	Typ	Max	Unit
Operating Temperature	-70		100	°C
Multipactor Margin (Note 1)	10			dB
Vibration	14.1			G_{RMS}

Random Vibration Test Levels
(GSFC-STD-7000)

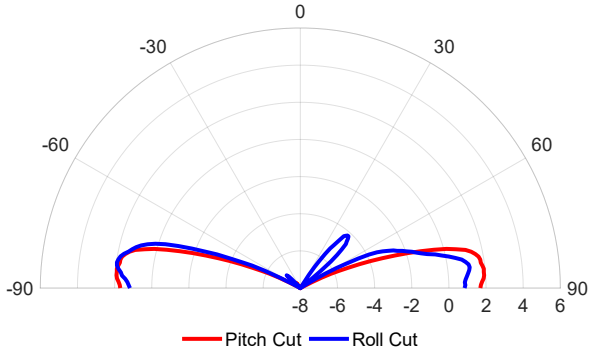


Note 1: Verified by simulation for 20W TX power

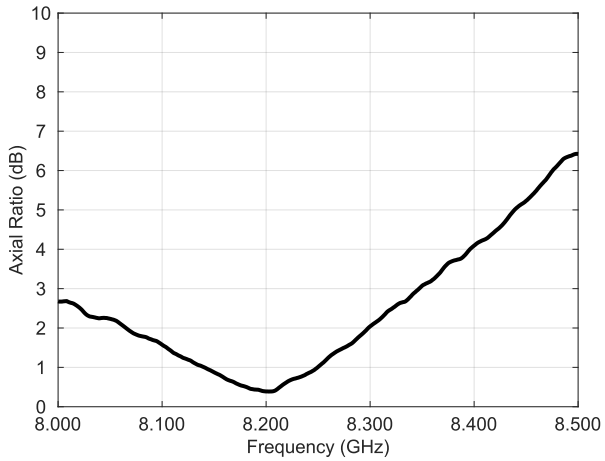
Gain at 15° elevation



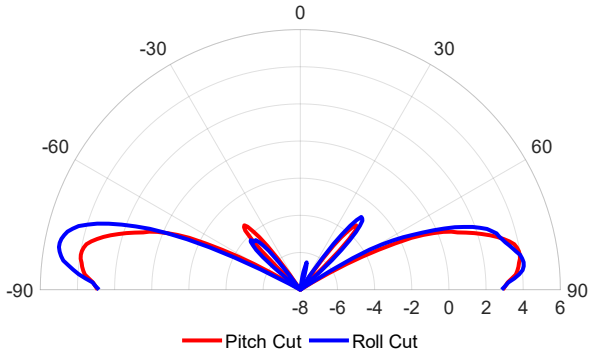
Gain, 8.025 GHz



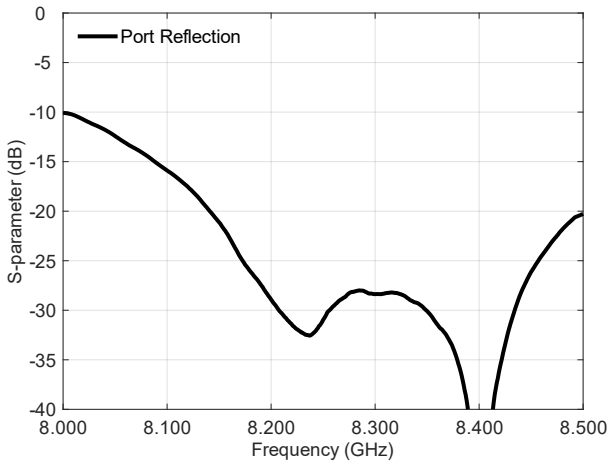
Axial Ratio at 15° elevation



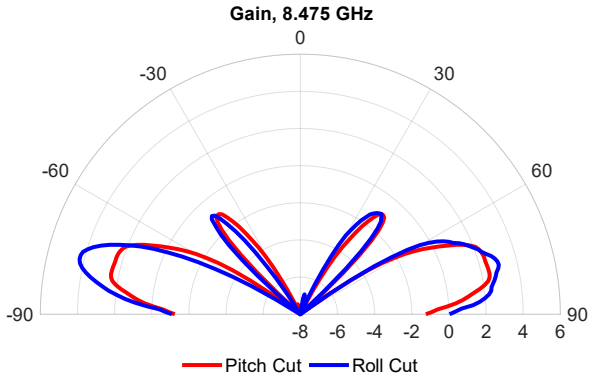
Gain, 8.25 GHz



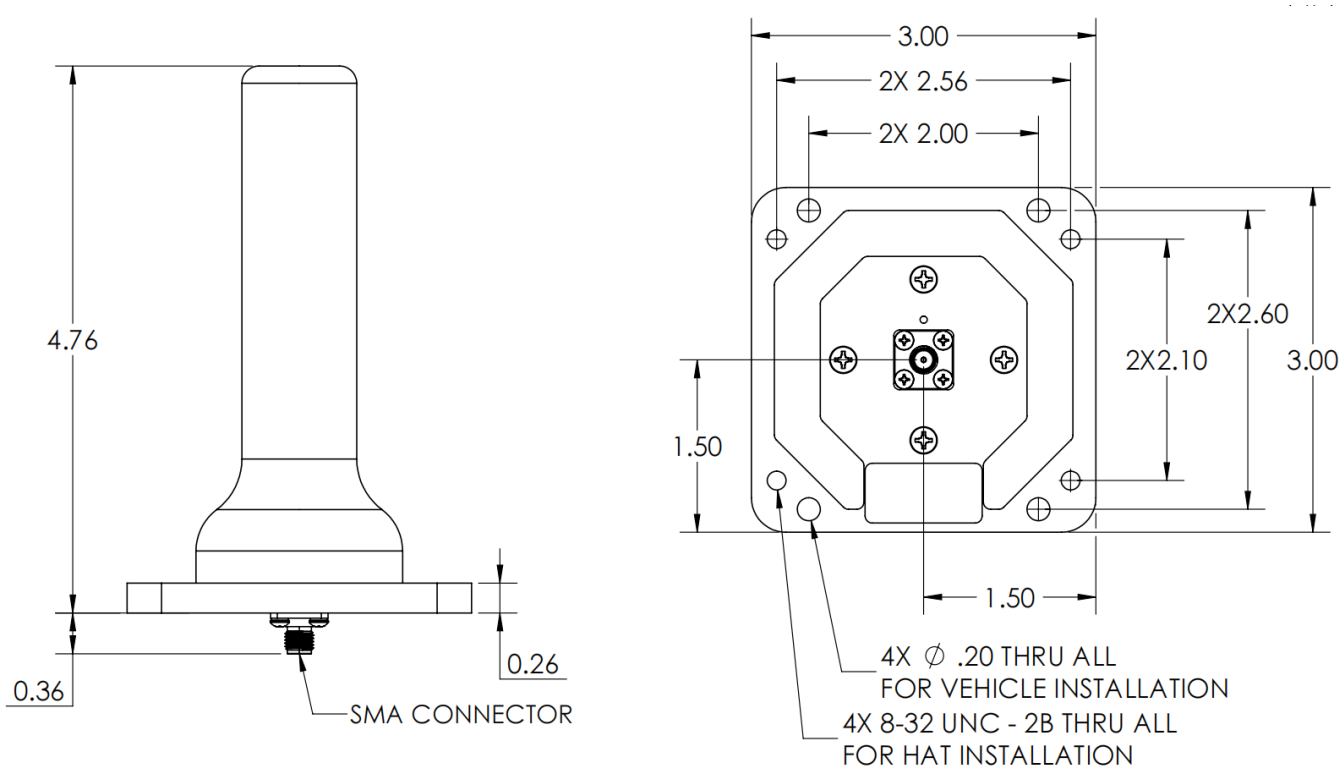
S-parameters



Gain, 8.475 GHz



Mechanical Outline



Dimensions shown in inches.
Tolerances - Two Place Decimal: ±0.010, Three Place Decimal: ±0.005

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