EMC Test Antennas

202603



Lorentz EM Technology Co., Ltd

Company profile

Lorentz EM Technology Co., Ltd. (hereinafter referred to as the "Lorentz") was established in 2022, specializing in EMC test antennas with a frequency range covering 10 kHz to 40 GHz.

Our core team has rich experience in antenna design and production to meet the different customization needs of customers.

To date, Lorentz has provided high-quality products and services to leading institutions such as:
China Aerospace Science and Industry Corporation (CASIC)
China Aerospace Science and Technology Corporation (CASC)
National Institute of Metrology of China (NIM)
China Electronics Technology Group Corporation (CETC)

Product Overview

Transmitting Antennas for Radiated Susceptibility Testing

Frequency range	Model & Features	Pictures
10 kHz ~ 100 MHz	**LRET-10K30M-1** 10 kHz ~ 30 MHz, 2000 W, 7/16 Female	 Polarization-H
	LRET-10K30M-F1 10 kHz ~ 30 MHz, 3000 W, 7/16 Female	 Polarization-V
	LRET-10K100M-1 10 kHz ~ 100 MHz, 3000 W, 7/16 Female	 Polarization-V  Polarization-H  Polarization-V
	LRET-10K100M-2 10 kHz ~ 100 MHz, 3500 W, 7/16 Female	 Polarization-V  Polarization-H  Polarization-V
	LRET-10K100M-S1 10 kHz ~ 100 MHz, 3000 W, 7/16 Female	 Polarization-V  Polarization-H

Product Overview

Transmitting Antennas for Radiated Susceptibility Testing

Frequency range	Model & Features	Pictures
80 MHz ~ 1 GHz	**LRET-80M1G-1** 80 MHz ~ 1 GHz, 2000 W, 7/16 Female	
1 ~ 40 GHz	**LRET-1G6G-1** 1 ~ 6 GHz, 300 W, N Female	
	LRET-6G18G-1 6 ~ 18 GHz, 200 W, N Female	
	LRET-18G26G-1 18 ~ 26.5 GHz, 400 W, WR-42	
	LRET-26G40G-1 26.5 ~ 40 GHz, 400 W, WR-28	

Product Overview

Receiving Antennas for Radiated Emissions Testing

Frequency range	Model & Features		
200 MHz ~ 20 GHz			
	200 MHz ~ 2 GHz N Female Gain ≥ 5 dBi	1 ~ 18 GHz N Female Gain ≥ 5.5 dBi	18 ~ 40 GHz 2.92mm Female Gain ≥ 11 dBi

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E-field Generators

Electromagnetic compatibility testing can evaluate whether equipment can operate safely in complex electromagnetic environments and whether it affects the normal operation of other devices. Electromagnetic compatibility testing is necessary for both civilian and military equipment.

The electric field generator, as a transmitting antenna, is a typical and core equipment used for testing the sensitivity of electric field radiation in electromagnetic compatibility testing. Our series of products can be applied to the testing requirements of standards such as GJB 151, GJB 8848, GJB 7504, GJB 1389, and MIL-STD-461, and our company owns all the property rights of these products. [1]

1. Patents：ZL 2021 1 0340959.X, ZL 2021 1 0921717.X, …

10 kHz ~ 100 MHz E-field Generator Specifications

model	LRET-10K100M-1	LRET-10K100M-2	LRET-10K100M-S1
Frequency range	10 kHz ~ 100 MHz	10 kHz ~ 100 MHz	10 kHz ~ 100 MHz
Max. power input	3000 W	3500 W	3000 W
impedance	50 Ω	50 Ω	50 Ω
Rf interface	7/16 Female	7/16 Female	7/16 Female
VSWR	≤ 2.0	≤ 2.0	≤ 2.0
Cooling method	Natural cooling	Active cooling	Natural cooling
Polariztion	Vertical only, with LRET-10K100M-1_P01 vertical and horizontal switchable, with LRET-10K100M-1_P02	Vertical only, with LRET-10K100M-2_P01 Vertical and horizontal switchable, with LRET-10K100M-2_P02	Vertical and Horizontal switchable
Dimensions (minimum)	**With LRET-10K100M-1_P01** (2662x1234x1942) mm **With LRET-10K100M-1_P02** a. Polariztion vertical: (2653x1608x1958) mm b. Polariztion horizontal: (2061x1608x2816) mm	**With LRET-10K100M-2_P01** (2662x1234x1942) mm **With LRET-10K100M-2_P02** a. Polariztion vertical: (2653x1608x1958) mm b. Polariztion horizontal: (2061x1608x2816) mm	a. Polarization vertical： (1500x908x1820) mm b. Polariztion horizontal: (1268x908x1911) mm

LRET-10K100M-1



With LRET-10K100M-1_P02
Polariztion vertical



With LRET-10K100M-1_P02
Polariztion horizontal



With LRET-10K100M-1_P01
Polariztion vertical

LRET-10K100M-2



With LRET-10K100M-2_P02
Polariztion vertical



With LRET-10K100M-2_P02
Polariztion horizontal



With LRET-10K100M-2_P01
Polariztion vertical

LRET-10K100M-S1



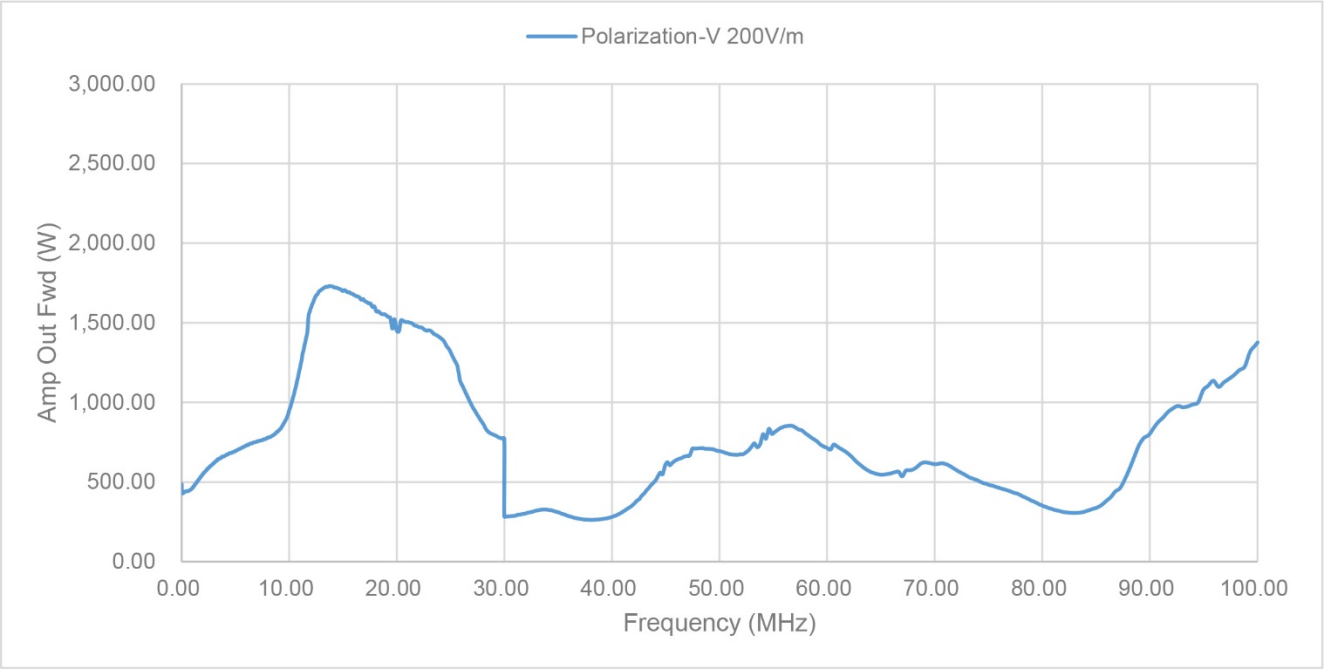
Polariztion vertical



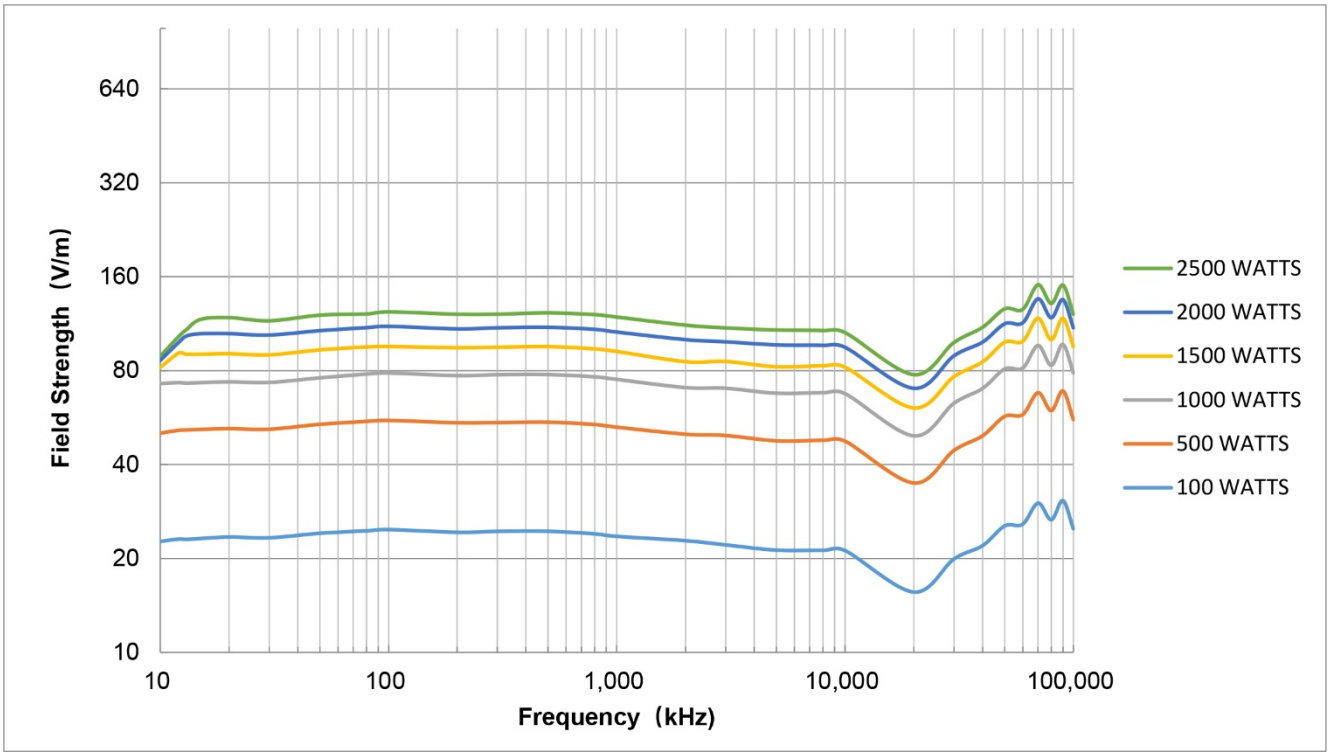
Polariztion horizontal

LRET-10K100M-1, LRET-10K100M-2 and LRET-10K100M-S1 comparison at the same scale

10 kHz ~ 100 MHz E-field Generator Typical Product Test Data



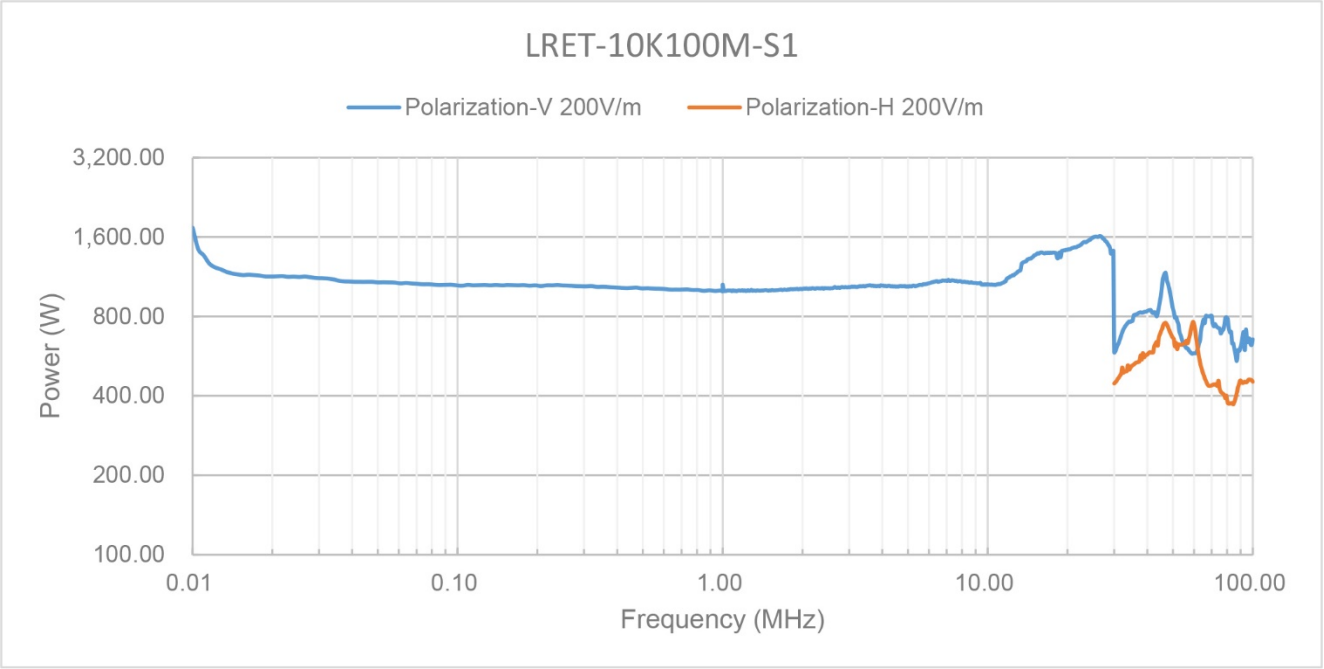
LRET-10K100M-1 Power Curve at Field Strength of 200 V/m (Testing distance: 0.5m) [2]



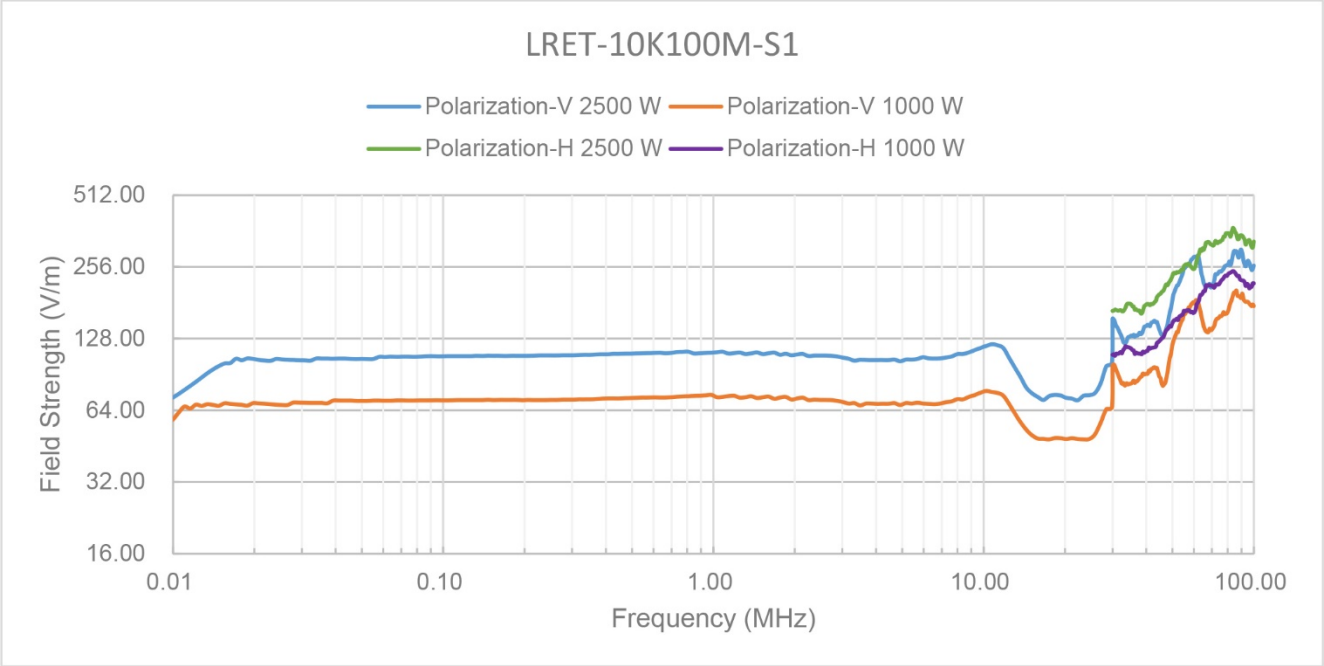
LRET-10K100M-1 Field Strength Curve (Testing distance: 1m) [2]

2. Test results may vary across different anechoic chamber environments.

10 kHz ~ 100 MHz E-field Generator Typical Product Test Data



LRET-10K100M-S1 Power Curve at Field Strength of 200 V/m (Testing distance: 0.5m) [2]



LRET-10K100M-S1 Field Strength Curve (Testing distance: 1m) [2]

2. Test results may vary across different anechoic chamber environments.

10 kHz ~ 30 MHz E-filed Generator Specifications

Model	LRET-10K30M-1	LRET-10K30M-F1	
Frequency range	10 kHz ~ 30 MHz	10 kHz ~ 30 MHz	
Max. power input	2000 W	3000 W	
Impedance	50 Ω	50 Ω	
RF interface	7/16 Female	7/16 Female	
VSWR	≤ 3.0	≤ 3.0	
Field strength	See field strength curve	See field strength curve	
Cooling method	Natural cooling	Active cooling	
Dimensions[3]	(1886×66×712) mm	(1886×201×712) mm	

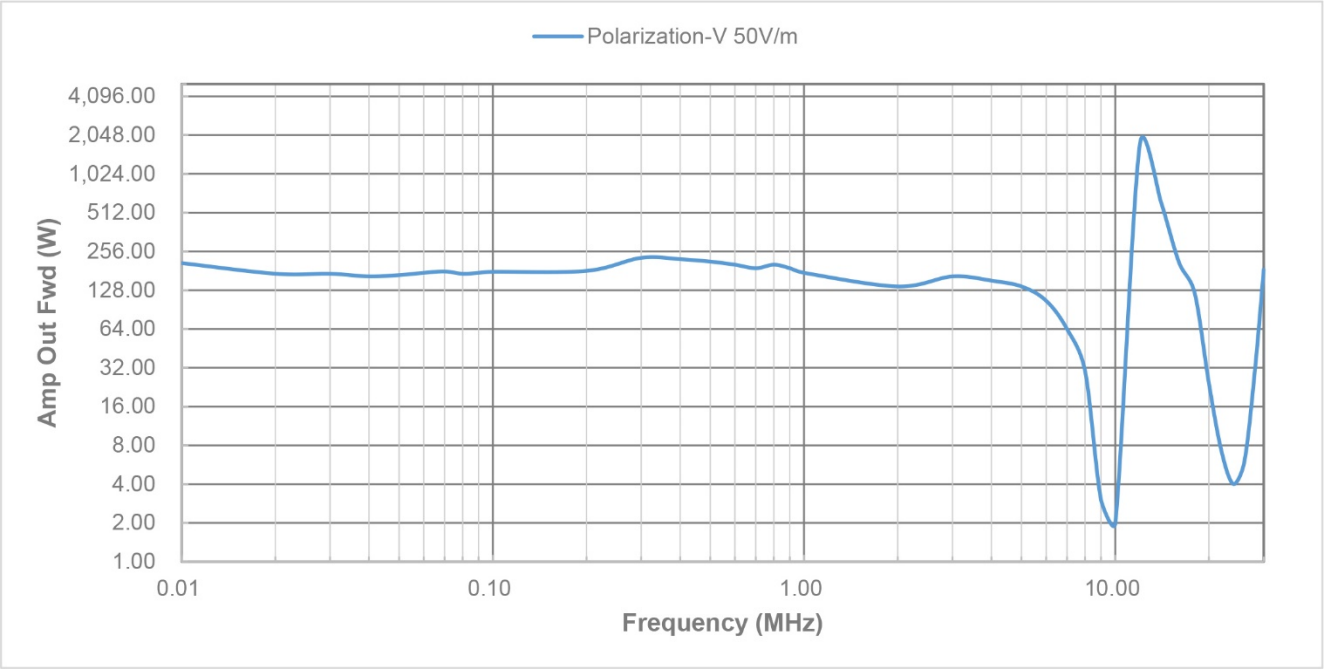
3. Dimensions exclude bracket.



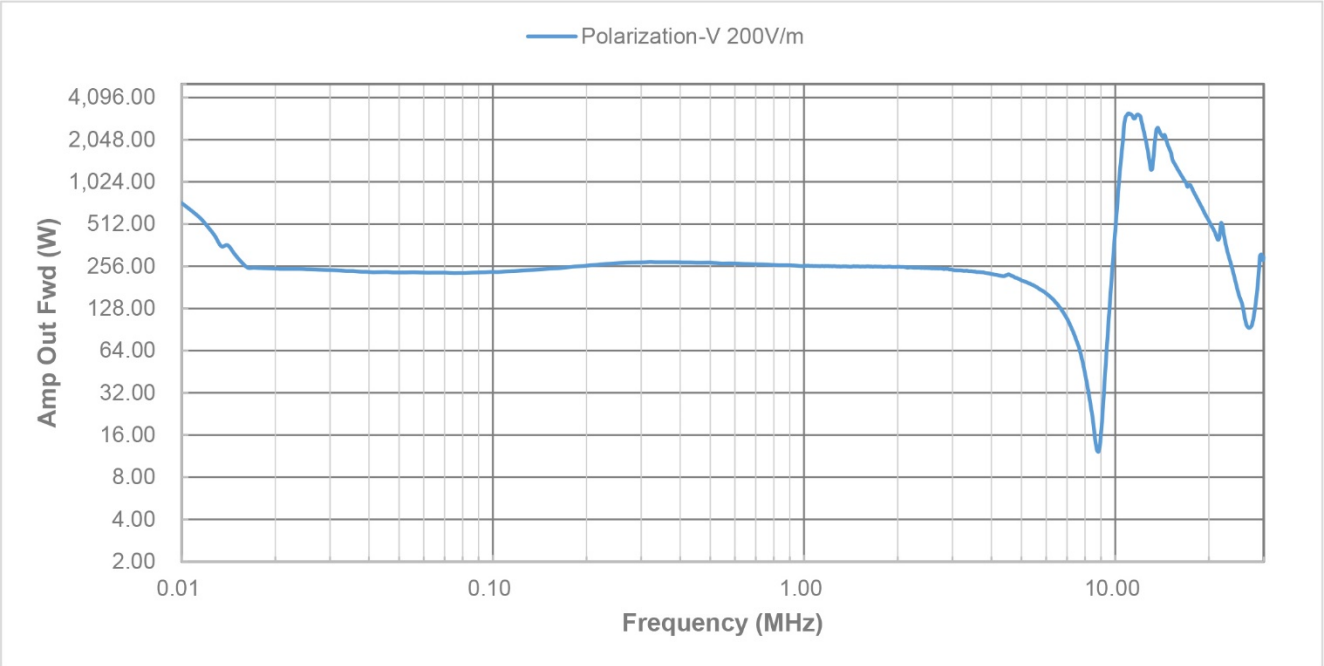
physical diagram

LRET-10K30M-1 with universal wheel bracket LRET-EFG-C01

10 kHz ~ 30 MHz E-field Generator Typical Product Test Data



LRET-10K30M-1 Power Curve at Field Strength of 50 V/m (Testing distance: 1m) [2]



LRET-10K30M-F1 Power Curve at Field Strength of 200 V/m (Testing distance: 0.5m) [2]

2. Test results may vary across different anechoic chamber environments.

Log-Periodic Antenna

Model	LRET-80M1G-1		
Freq. range	80 MHz ~ 1 GHz		
Max. power input	2000 W		
Impedance	50 Ω		
RF interface	7/16-K (7/16 Female)		
VSWR	≤ 2.5		
Dimensions[3]	(1663×1972×115) mm		
Bracket	optional		

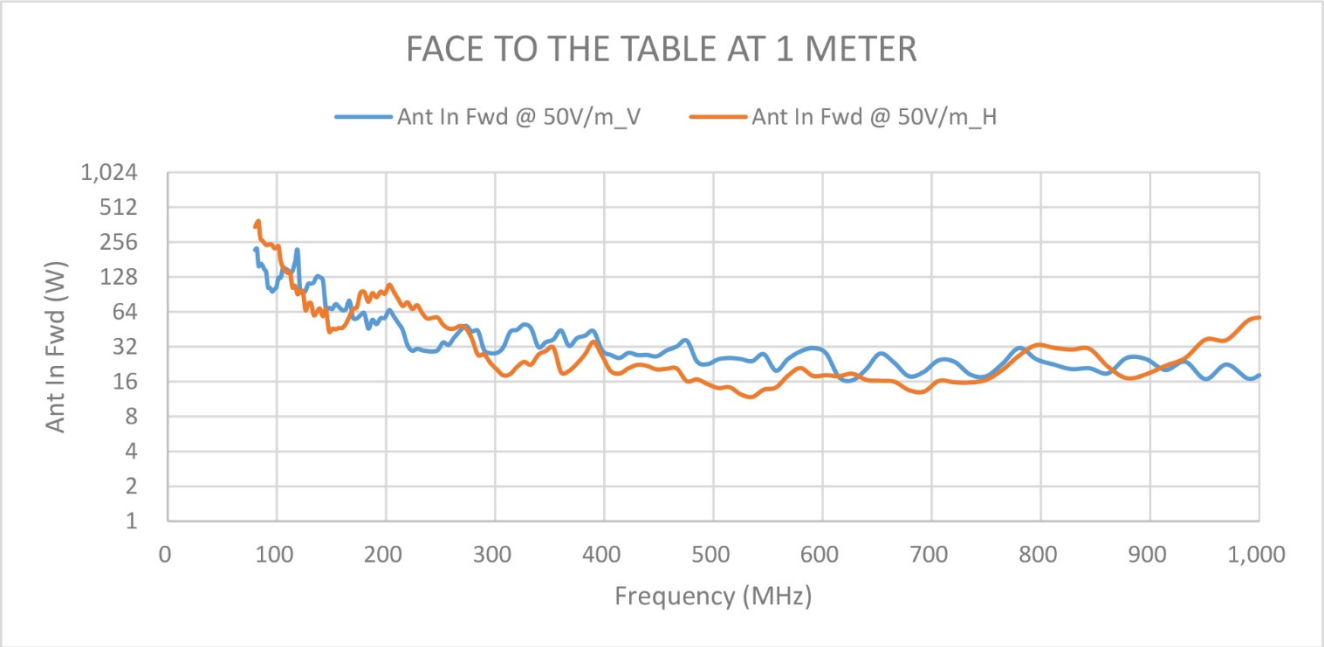
3. Dimensions exclude bracket.



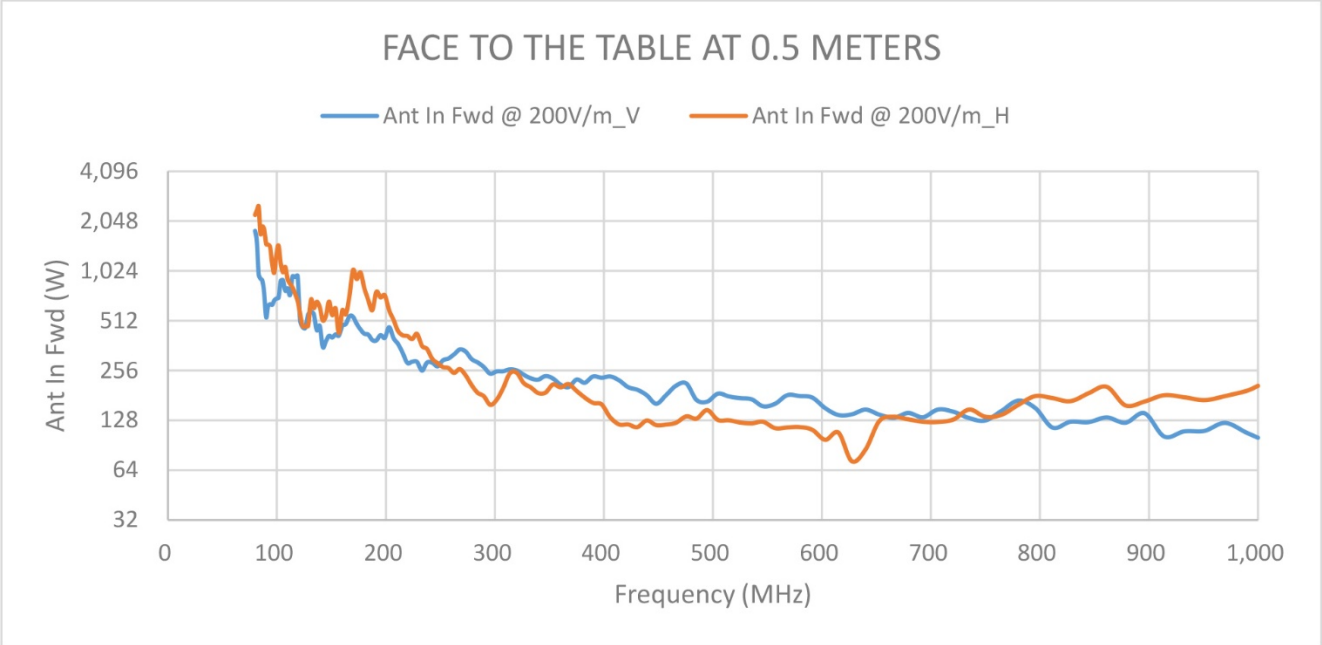
Physical diagram

LRET-80M1G-1 with universal wheel bracket LR-LPAB-C01

Typical Product Test Data



The power curve of LRET-80M1G-1 at field strength 50V/m (Testing distance: 1.0m) [2]



The power curve of LRET-80M1G-1 at field strength 200 V/m (Testing distance: 0.5m) [2]

2. Test results may vary across different anechoic chamber environments.

Horn Antennas

Model	LRET-1G6G-1	LRET-6G18G-1	LRET-18G26G-1	LRET-26G40G-1
Freq. range	1.0 ~ 6.0 GHz	6.0 ~ 18.0 GHz	18.0 ~ 26.5 GHz	26.5 ~ 40.0 GHz
Impedance	50 Ω	50 Ω	50 Ω	50 Ω
VSWR	≤ 2.5	≤ 2.5	≤ 1.25	≤ 1.25
Gain	≥ 10 dBi	≥ 18 dBi	≥ 20 dBi	≥ 20 dBi
3 dB beamwidth (E-Plane)	9.6 ~ 51.7 °	7 ~ 19 °	9 ~ 13 °	8.7 ~ 12.6 °
3 dB beamwidth (H-Plane)	7 ~ 46.1 °	10 ~ 20 °	10 ~ 14 °	10.3 ~ 14.7 °
Max. power input	300 W	200 W	400 W	400 W
RF interface	N Female	N Female	WR-42	WR-28
Bracket	optional	optional	optional	optional









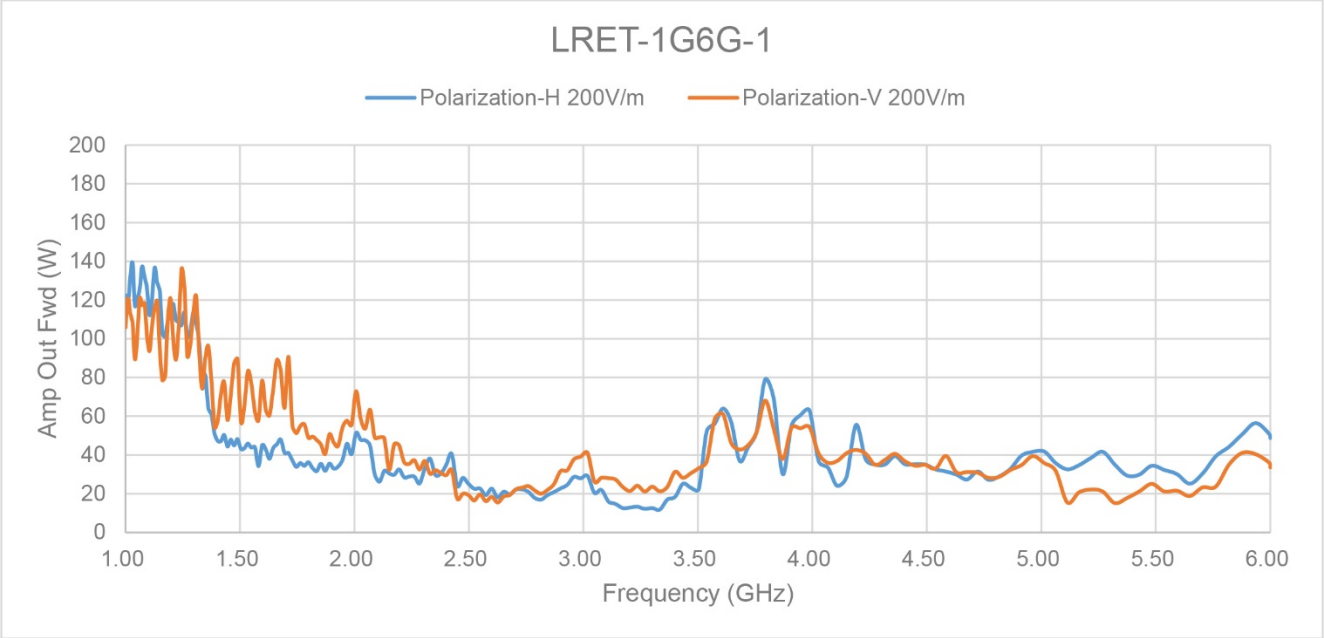


LRET-1G6G -1 LRET-6G18G-1 LRET-18G26G-1 LRET-26G40G-1

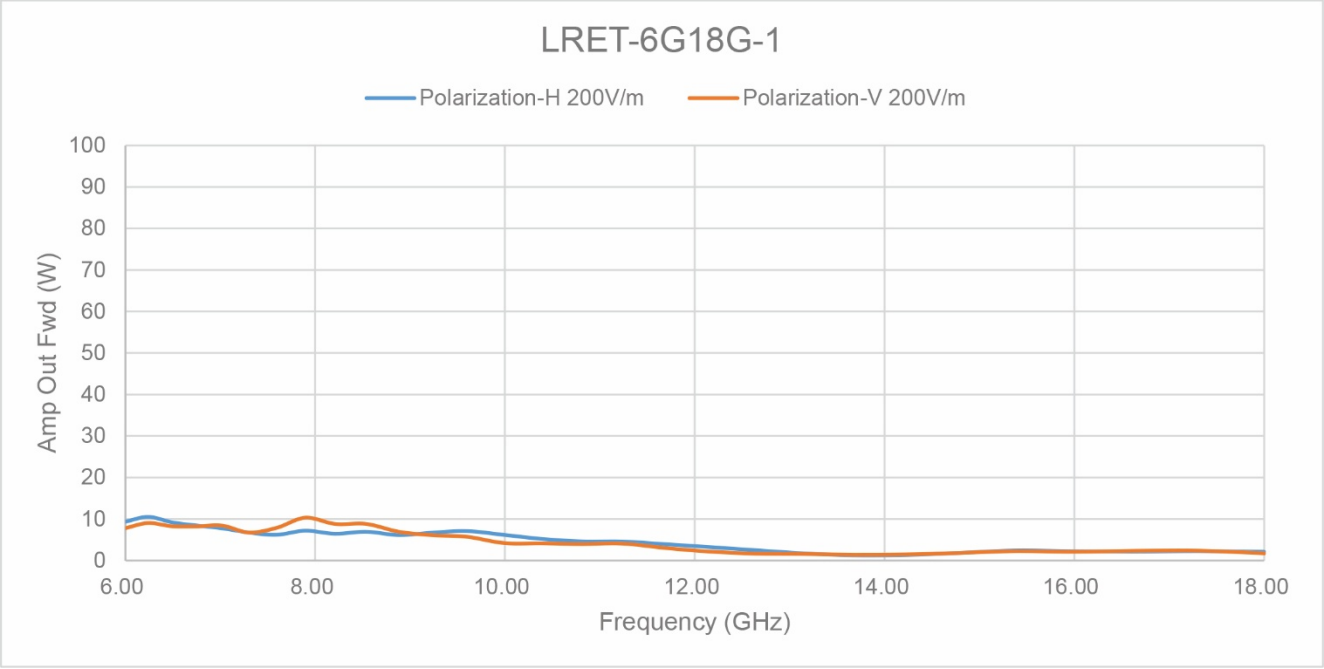
Physical diagram

1 ~ 40 GHz horn antenna, horn antenna with bracket

Typical Product Test Data



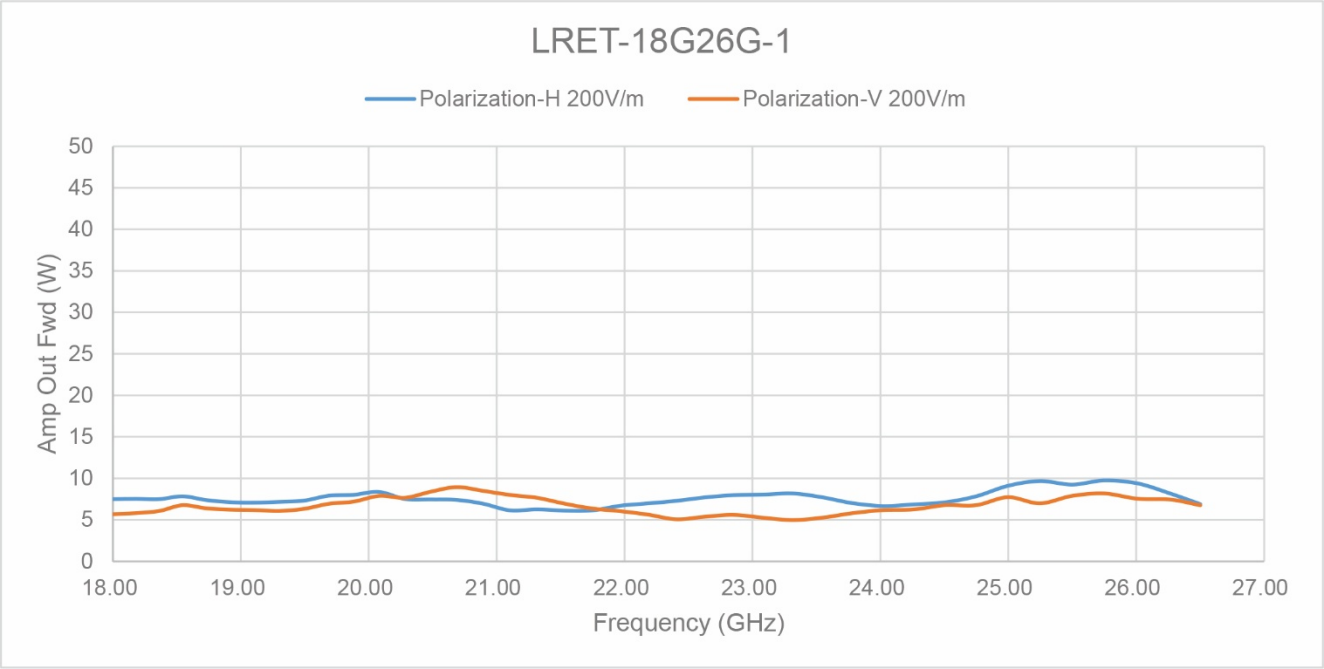
LRET-1G6G-1 Power Curve at Field Strength of 200V/m (testing distance: 1m) [2]



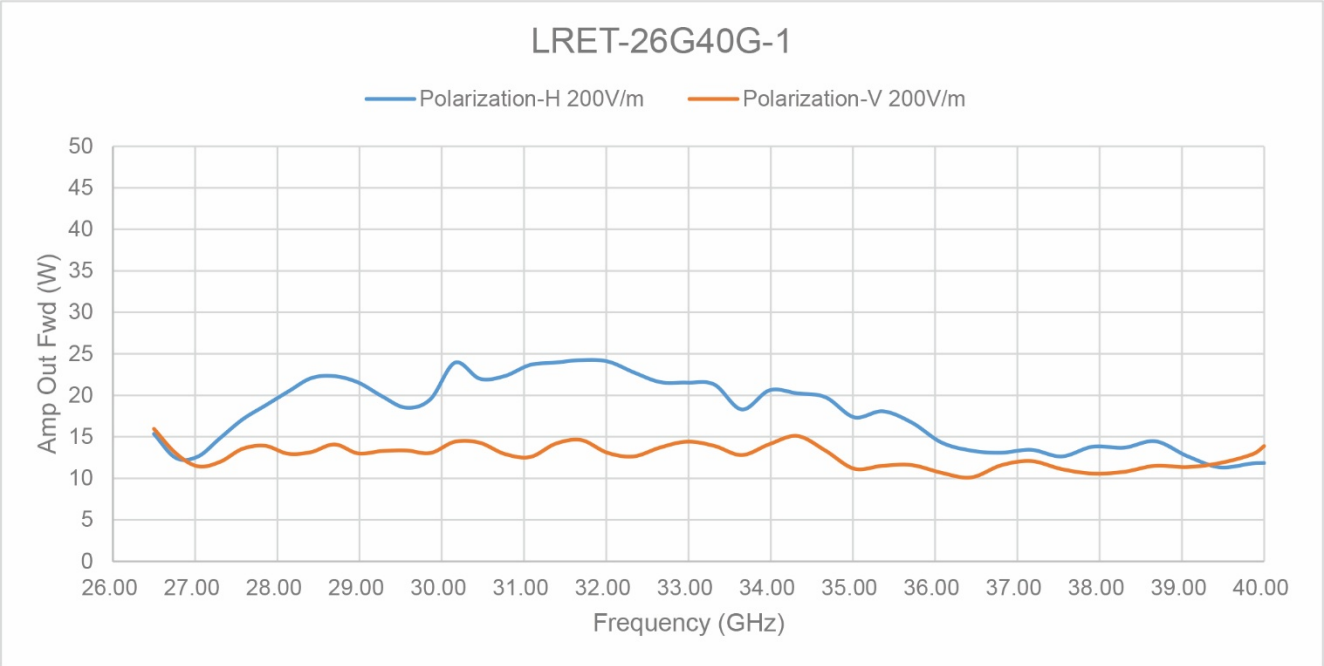
LRET-6G18G-1 Power Curve at Field Strength of 200V/m (testing distance: 1m) [2]

2. Test results may vary across different anechoic chamber environments.

Typical Product Test Data



LRET-18G26G-1 **Power Curve at Field Strength of 200V/m** (testing distance: 1m) [2]



LRET-26G40G-1 **Power Curve at Field Strength of 200V/m** (testing distance: 1m) [2]

2. Test results may vary across different anechoic chamber environments.

Horn Antennas

This series of horn antennas is a high-performance receiving antenna designed specifically to meet the Radiated Emission (RE) testing requirements of Electromagnetic Compatibility (EMC) standards. As a core sensor for Electromagnetic Interference (EMI) diagnosis and compliance assessment, it leverages wide frequency band coverage and reliable performance to ensure the precise and reliable capture of every weak electromagnetic signal emitted by the Equipment Under Test (EUT).



ANTH03-002020N-8-111
Freq. range: 200 MHz ~ 2 GHz
VSWR: ≤ 2.5
Gain: ≥ 5 dBi
RF interface: N Female

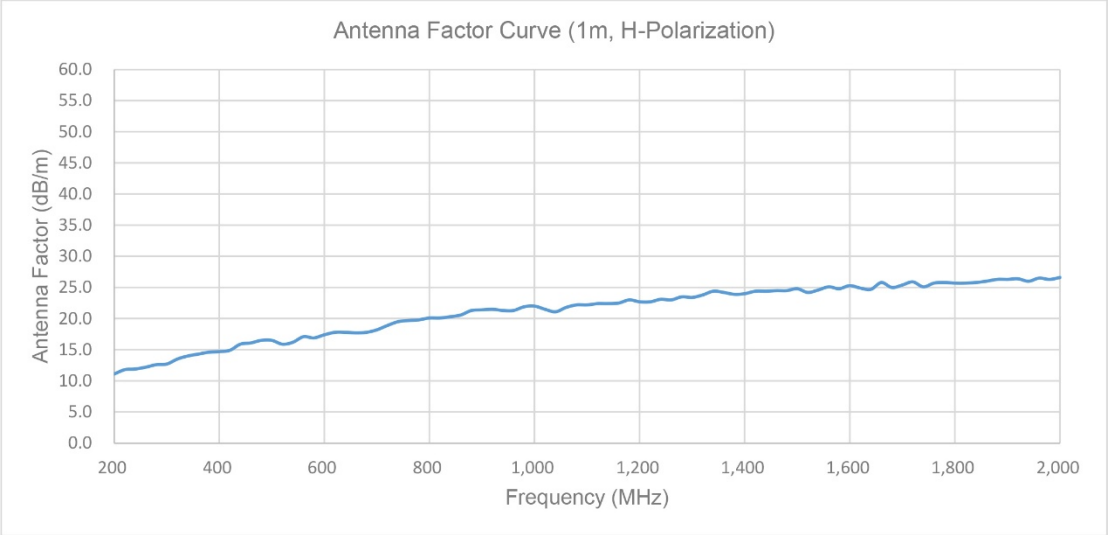


ANTH03-010180N-10-112
Freq. range: 1 ~ 18 GHz
VSWR: ≤ 2.5
Gain: ≥ 5.5 dBi
RF interface: N Female

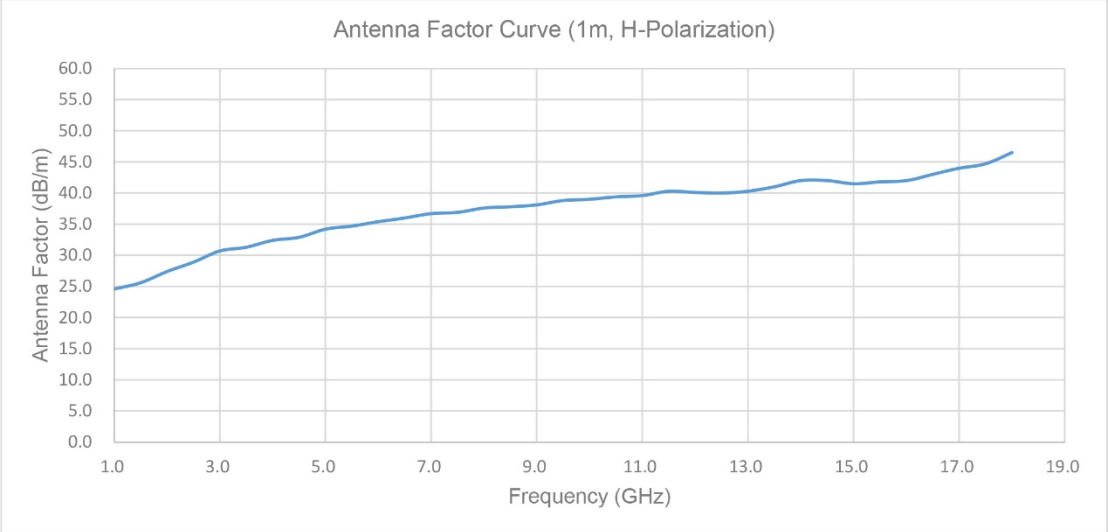


ANTH03-180400K-15-211
Freq. range: 18 ~ 40 GHz
VSWR: ≤ 2.5
Gain: ≥ 11 dBi
RF interface: 2.92mm Female

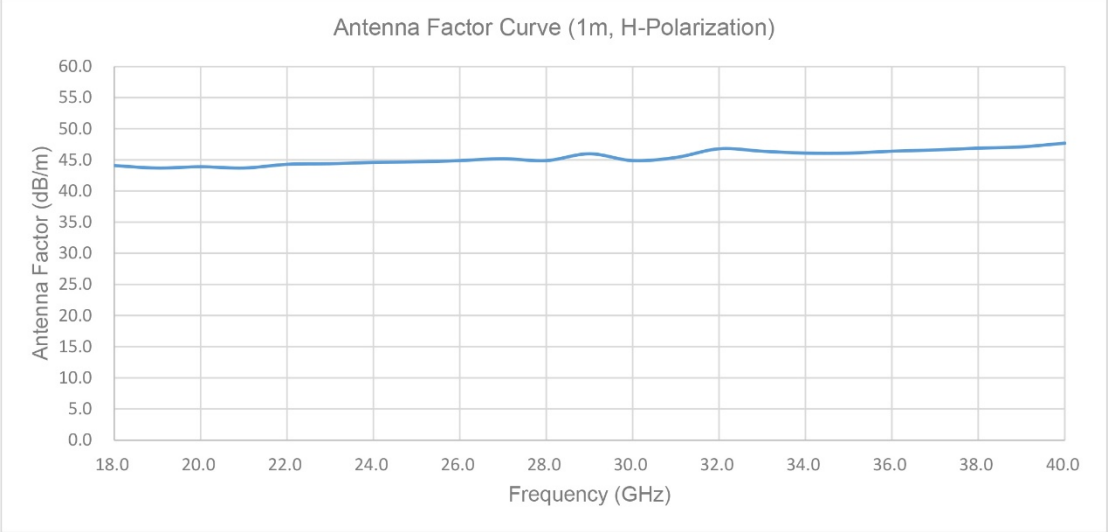
Typical Product Test Data



ANTH03-002020N-8-111 Antenna Factor Curve (1m, horizontal polarization) [2]



ANTH03-010180N-10-112 Antenna Factor Curve (1m, horizontal polarization) [2]



ANTH03-180400K-15-211 Antenna Factor Curve (1m, horizontal polarization) [2]

2. Test results may vary across different anechoic chamber environments.

Representative User Cases

	Beihang University
CEPREI	**China Electronic Product Reliability and Environmental Testing Research Institute (China Ceprei Laboratory)**
CSSC	**China State Shipbuilding Corporation Limited**
CETC	**China Electronics Technology Group Corporation**
AVIC	**Aviation Industry Corporation of China, Ltd.**
CASIC 中国航天	**China Aerospace Science and Industry Corporation Limited**
CASC 中国航天	**China Aerospace Science and Technology Corporation**

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