



Antenna TEST REPORT

Customer:	JSE s. r. o., Průmyslová 190, 537 01 Chrudim, Czech Republic
Tested by:	Ing. Václav Kabourek, Ph. D. CTU in Prague, FEE Department of Electromagnetic Field Technická 2, 166 27 Prague, Czech Republic
Tested Item:	PCB patch antenna array, HW-108-066-REV03
Frequency Range:	61 GHz – 64 GHz
Measured quantities:	Antenna gain, radiation patterns in H, E planes
Measurement type:	Antenna gain and radiation pattern verification
Date:	January 29, 2024

České vysoké učení technické v Praze
FAKULTA ELEKTROTECHNICKÁ
Katedra elektromagnetického pole
K 2117
166 27 Praha 6
IČ: 68407700 DIČ: CZ68407700



Antenna Description

Manufacturer: JSE s. r. o., Průmyslová 190, 537 01 Chrudim, Czech Republic
Antenna Type: PCB patch antenna array with linear polarization
Model Name: HW-108-066-REV03
Operating Freq.: 61 - 64 GHz
Impedance: 50 Ohms

Tested sample antenna under test (AUT) is equipped with 1.85 mm end-launch connector. PCB is without components.

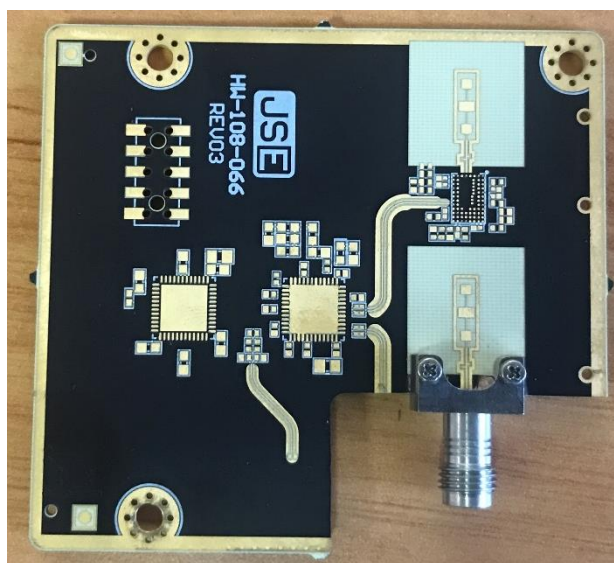


Fig. 1 Measured antenna array sample.

Measurement Description

Instruments: R&S Vector Network Analyzer ZVA67
NSI Far-Field measurement system

Accessories: Precision coaxial cable assembly, 1.85 mm connectors
Low-Noise amplifier SAGE (Eravant) SBL-5037033550-VFVF-S1
Broadband horn antenna DRH1067 – test antenna, (www.rfspin.com)
Double Ridged Horn Antenna DRH67, reference calibrated antenna (www.rfspin.com)

Frequency range: 52 GHz – 68 GHz, frequency step 25 MHz (801 points)

Meas. distance: 3 m

Measurements: Gain – obtained by “gain transfer” method, DRH67-210514 has been used as reference antenna with known gain
Radiation patterns – measured in two Far-Field planes of AUT: E and H; azimuthal span: $\pm 100^\circ$, step 1°
Measured characteristics are requested primarily at three frequency points: 61.1 GHz, 62.475 GHz, 63.850 GHz

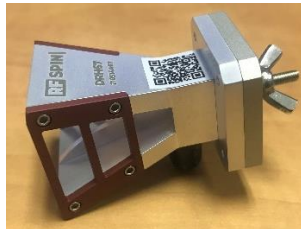


Fig. 2 Reference antenna, DRH67-210514.



Fig. 3 Test horn antenna DRH1067 with connected amplifier.

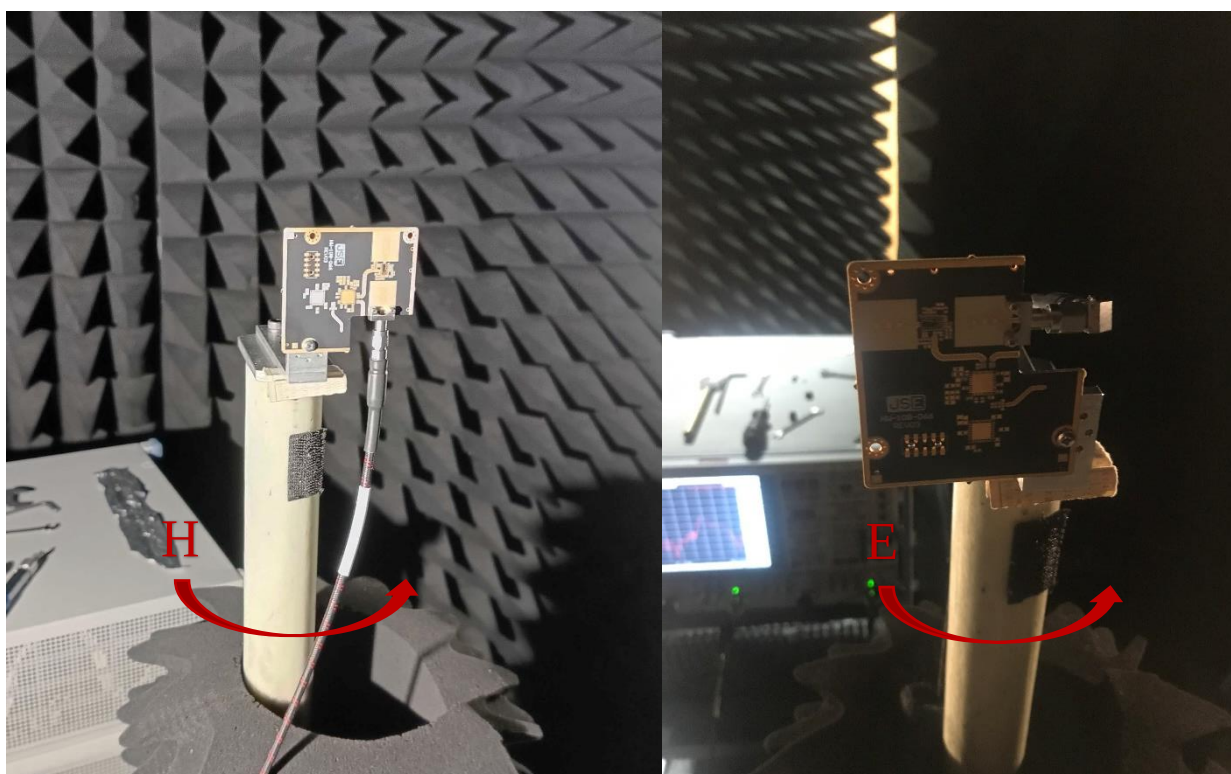


Fig. 4 H and E cuts of AUT.

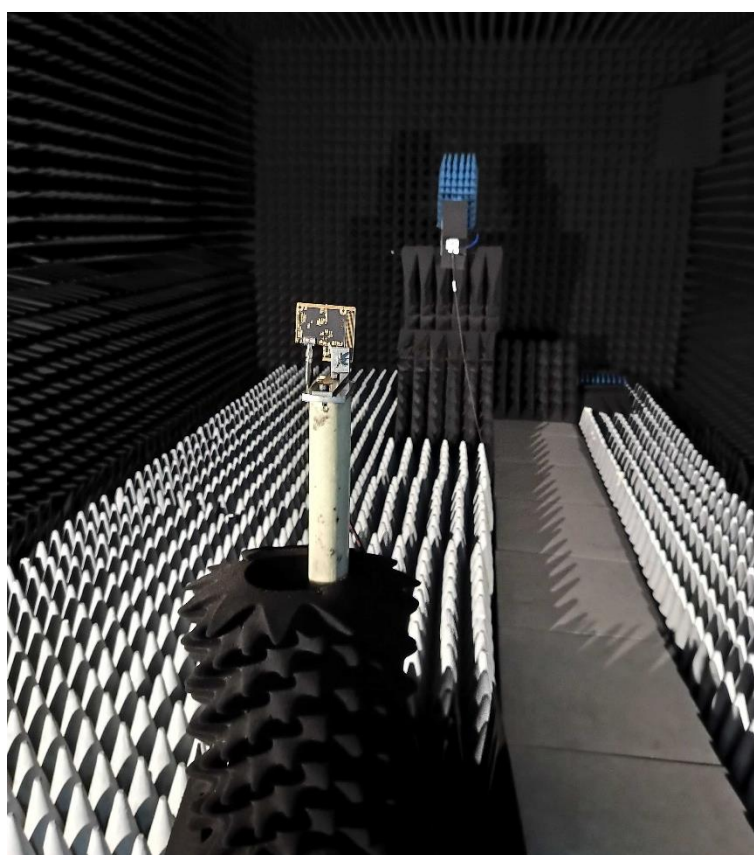


Fig. 5 FF AUT measurement. AUT is attached to fiberglass composite stand.



Results

Antenna Gain

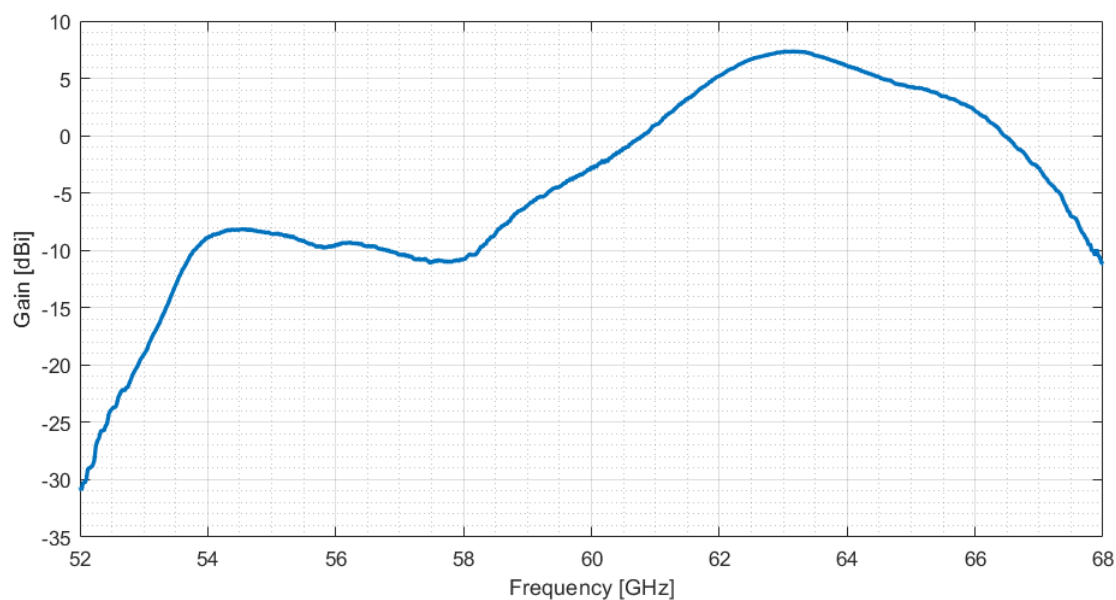


Fig. 6 Gain of AUT at 0° azimuth and elevation.

Frequency (GHz)	61.000	61.100	62.000	62.475	63.000	63.850	64.000	65.000
Gain (dBi)	0.94	1.32	5.21	6.61	7.29	6.37	6.11	4.23



Radiation Patterns, E plane

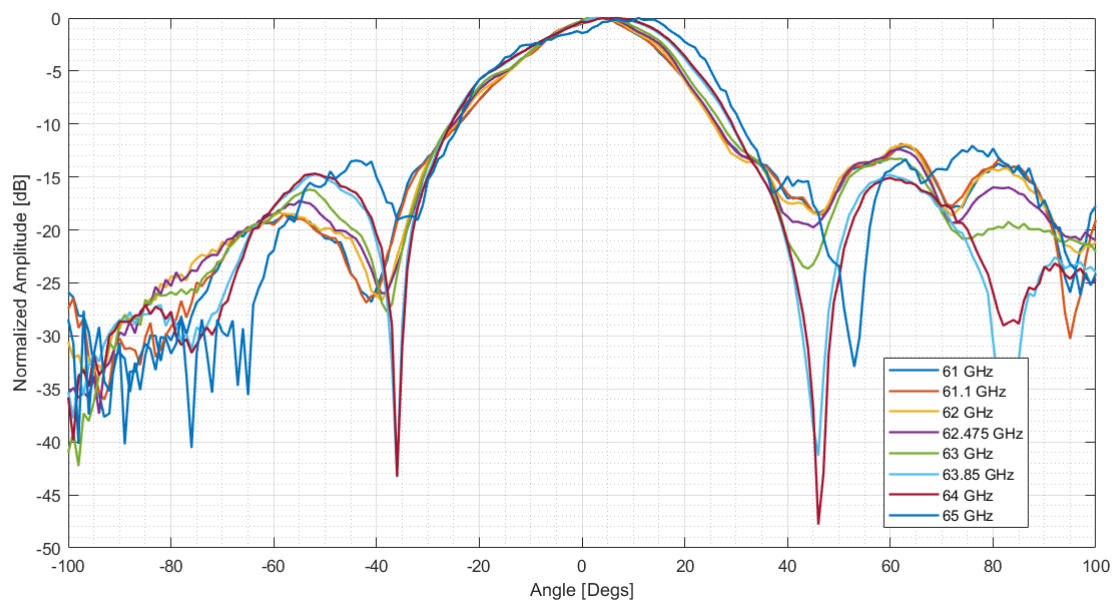


Fig. 7 Radiation patterns, E plane.

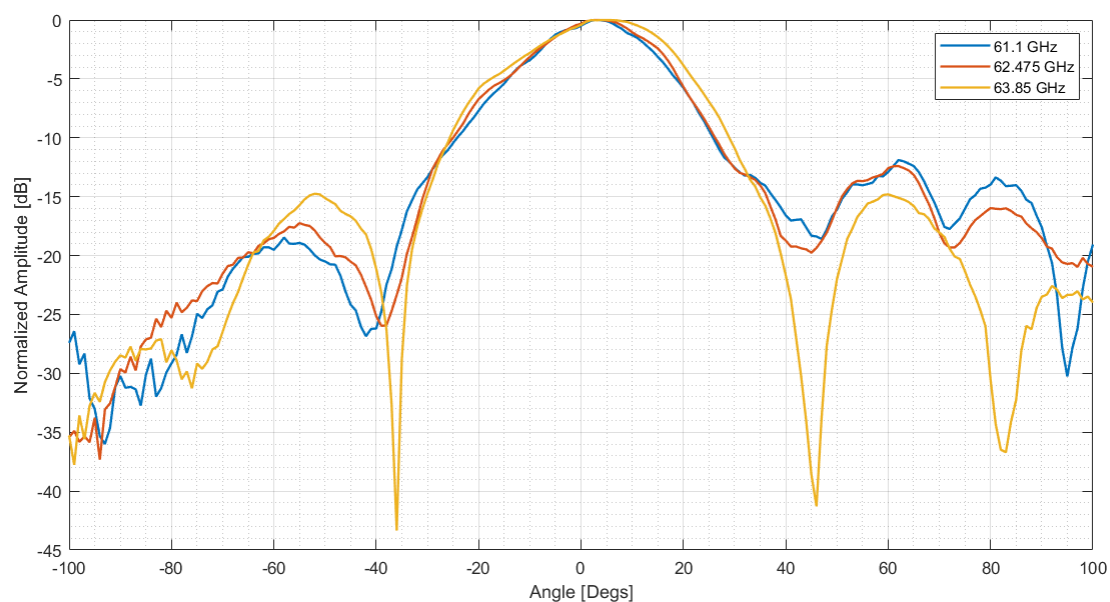


Fig. 8 Radiation patterns, E plane, selected frequencies.



Radiation Patterns, H plane

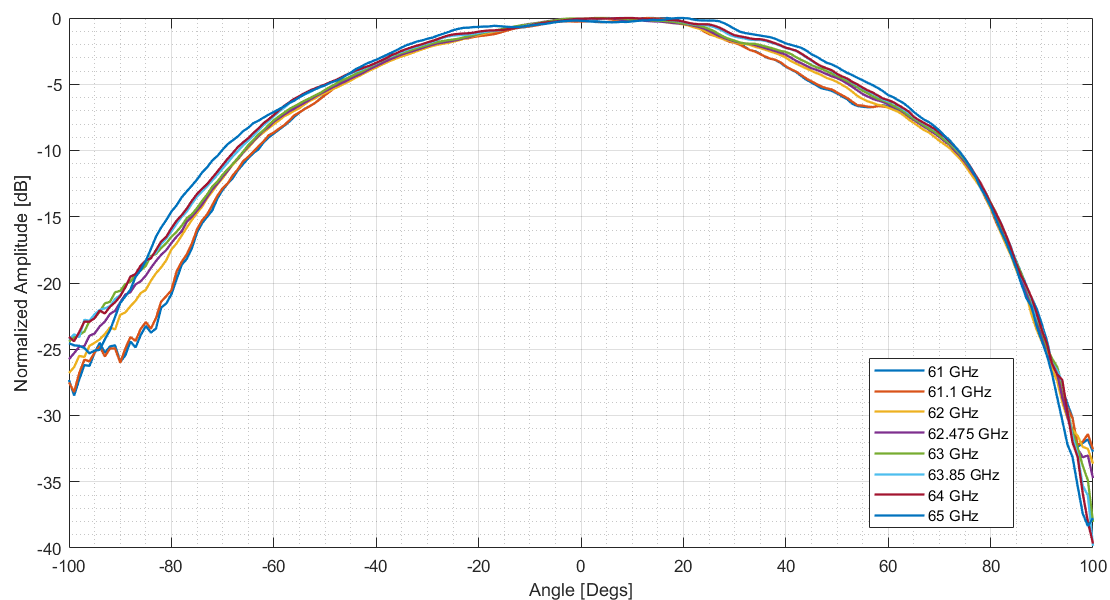


Fig. 9 Radiation patterns, H plane.

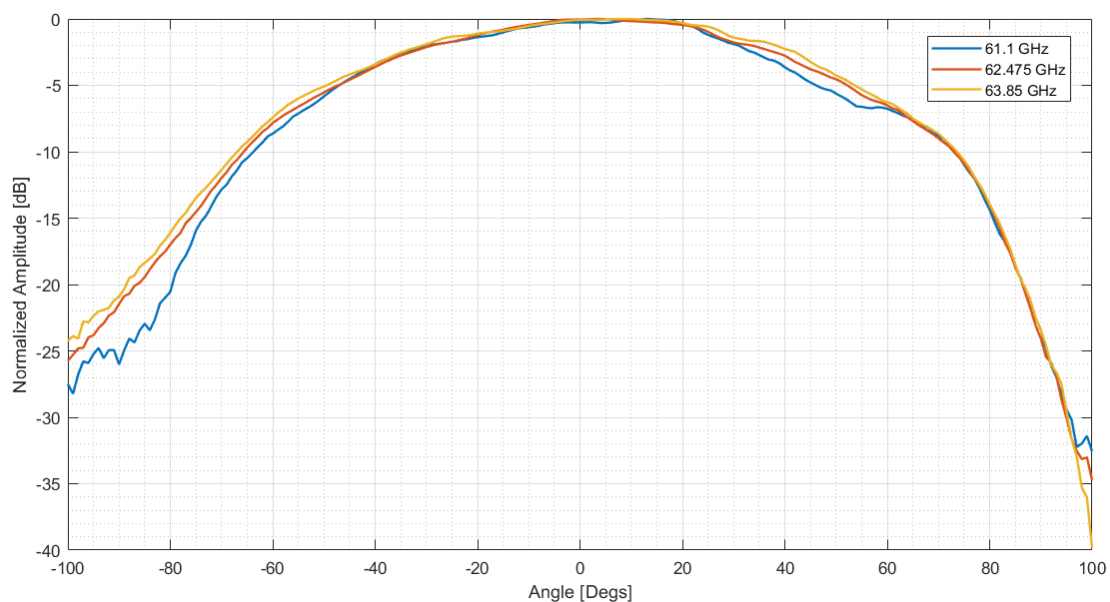


Fig. 10 Radiation patterns, H plane, selected frequencies.