

Jabra Mizar Antenna report

Part No. 27-02197

Revision: 1
Author: Haller Liu
Date: 2025-07-25

Revision History:

Revision	Date	Change by	Description
1	2025.07.16	Haller Liu	First Revision
2	2025.07.25	Haller Liu	Update Physical Specification
3	2025.07.28	Haller Liu	Update Antenna Part number

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1 Introduction

This document describes the radiation performance measurements made on a Jabra Mizar. The measurement results provided in this report are: the total radiated power at three frequencies and the antenna radiation patterns at three frequencies in free space.

The measurements have been performed by:

Haller Liu

RF Engineer

GN Audio A/S

2 Specification

2.1 Electrical Properties

Frequency Range: 2.402GHz ~2.480GHz
Impedance: 50 Ω nominal
Radiation: omni-directional

2.2 Physical Properties

Type : PIFA Antenna
Operating temp : -30 ~ +60 $^{\circ}\text{C}$

PN	Model Name	Specification	Manufacturer
27-02197	27-02197	PIFA	AKM Meadville Electronics

3 Anechoic Chamber



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4 Results

4.1 Conducted power

Results:

a conducted output power of **14.5** dBm on each channel (Classic Basic rate with power setting value = 61).

4.2 Total radiated power

Channel	0	39	78
Frequency [MHz]	2402	2441	2480
Peak Equivalent isotropic radiated power (EIRP)	15.95dBm	15.26 dBm	14.69 dBm
Total radiated power	11.31 dBm	11.02 dBm	10.38 dBm
Antenna Efficiency	-3.19 dB	-4.48 dB	-4.12dB

4.3 Antenna patterns

2.402 GHz**CTIA TRP Report (RP_Bluetooth_ch0_tot)****Common Information**

Test Description: GN OTA Test Report
 Operating Conditions:
 Operator Name:
 Comment:

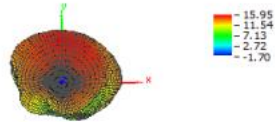
Test Information

Test Method: Radiated Power Mobile Phone
 Test Condition: FS: Free Space
 EUT Identification: Device Name: Bluetooth DU, BT address: 6CFBED8913AC
 Radio Link: Bluetooth; Channel 0 (2402.000 MHz)
 Test Time: Start: 7/14/2025 12:09:06 PM; Stop: 7/14/2025 12:27:31 PM
 CMU200 Connectors: In: RF2 (45.0 dB), Out: RF2 (45.0 dB)
 Cal Data Hor: 18.71 dB (X-OTA_OTA_RadPwr_2205-2695MHz-Horizontal-Att)
 Cal Data Ver: 19.74 dB (X-OTA_OTA_RadPwr_2205-2695MHz-Vertical-Att)

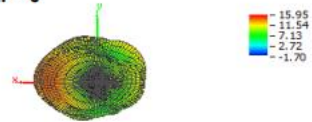
OTA Evaluation Results

Total Radiated Power	11.31 dBm
Peak EIRP	15.95 dBm
Directivity	4.64 dBi
Peak Gain	15.95 dBi
NHPRP 45 _i ¢	9.52 dBm
NHPRP 45 _i ¢ / TRP	-1.79 dB
NHPRP 45 _i ¢ / TRP	66.28 %
NHPRP 30 _i ¢	8.05 dBm
NHPRP 30 _i ¢ / TRP	-3.26 dB
NHPRP 30 _i ¢ / TRP	47.23 %
NHPRP 22.5 _i ¢	6.98 dBm
NHPRP 22.5 _i ¢ / TRP	-4.33 dB
NHPRP 22.5 _i ¢ / TRP	36.93 %
UHRP	9.03 dBm
UHRP / TRP	-2.28 dB
UHRP / TRP	59.21 %
LHRP	7.41 dBm
LHRP / TRP	-3.89 dB
LHRP / TRP	40.79 %
PGRP (0-120 _i ¢)	10.42 dBm
PGRP / TRP	-0.88 dB
PGRP / TRP	81.57 %
Front/Back Ratio	6.75
PhiBW	214.9 deg
PhiBW Up	102.6 deg
PhiBW Down	112.3 deg
ThetaBW	101.1 deg
ThetaBW Up	48.3 deg
ThetaBW Down	52.9 deg
Boresight Phi	90 deg
Boresight Theta	30 deg
Maximum Power	15.95 dBm
Minimum Power	-1.70 dBm
Average Power	12.32 dBm
Max/Min Ratio	17.65 dB
Max/Avg Ratio	3.63 dB
Min/Avg Ratio	-14.01 dB
Worst Single Value	-20.58 dBm

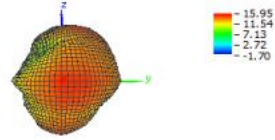
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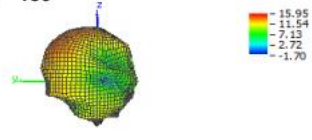
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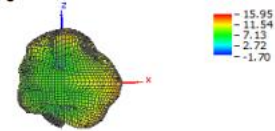
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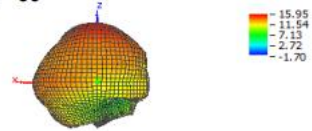
Theta = 90, Phi = 180



Theta = 90, Phi = 270



Theta = 90, Phi = 90



2.441GHZ**CTIA TRP Report (RP_Bluetooth_ch39_tot)****Common Information**

Test Description: GN OTA Test Report
 Operating Conditions:
 Operator Name:
 Comment:

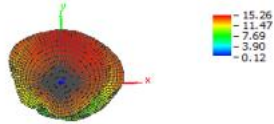
Test Information

Test Method: Radiated Power Mobile Phone
 Test Condition: FS: Free Space
 EUT Identification: Device Name: Bluetooth DU, BT address: 6CFBED8913AC
 Radio Link: Bluetooth; Channel 39 (2441.000 MHz)
 Test Time: Start: 7/14/2025 12:09:06 PM; Stop: 7/14/2025 12:27:31 PM
 CMU200 Connectors: In: RF2 (45.0 dB), Out: RF2 (45.0 dB)
 Cal Data Hor: 18.60 dB (X-OTA_OTA_RadPwr_2205-2695MHz-Horizontal-Att)
 Cal Data Ver: 19.59 dB (X-OTA_OTA_RadPwr_2205-2695MHz-Vertical-Att)

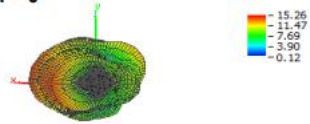
OTA Evaluation Results

Total Radiated Power	11.02 dBm
Peak EIRP	15.26 dBm
Directivity	4.24 dBi
Peak Gain	15.26 dBi
NHPRP 45j ā	9.24 dBm
NHPRP 45j ā / TRP	-1.78 dB
NHPRP 45j ā / TRP	66.42 %
NHPRP 30j ā	7.79 dBm
NHPRP 30j ā / TRP	-3.24 dB
NHPRP 30j ā / TRP	47.47 %
NHPRP 22.5j ā	6.71 dBm
NHPRP 22.5j ā / TRP	-4.31 dB
NHPRP 22.5j ā / TRP	37.10 %
UHRP	8.77 dBm
UHRP / TRP	-2.25 dB
UHRP / TRP	59.61 %
LHRP	7.08 dBm
LHRP / TRP	-3.94 dB
LHRP / TRP	40.39 %
PGRP (0-120j ā)	10.15 dBm
PGRP / TRP	-0.87 dB
PGRP / TRP	81.86 %
Front/Back Ratio	5.95
PhiBW	283.7 deg
PhiBW Up	90.9 deg
PhiBW Down	192.7 deg
ThetaBW	109.5 deg
ThetaBW Up	46.9 deg
ThetaBW Down	62.6 deg
Boresight Phi	90 deg
Boresight Theta	30 deg
Maximum Power	15.26 dBm
Minimum Power	0.12 dBm
Average Power	11.98 dBm
Max/Min Ratio	15.14 dB
Max/Avg Ratio	3.28 dB
Min/Avg Ratio	-11.86 dB
Worst Single Value	-14.70 dBm

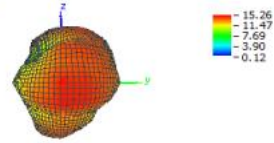
Theta = 0, Phi = 0



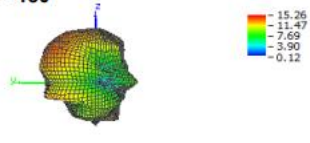
Theta = 180, Phi = 0



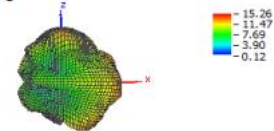
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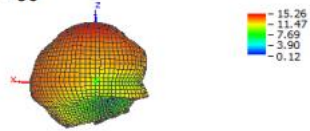
Theta = 90, Phi = 180



Theta = 90, Phi = 270



Theta = 90, Phi = 90



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2.480GHZ

CTIA TRP Report (RP_Bluetooth_ch78_tot)

Common Information

Test Description: GN OTA Test Report
 Operating Conditions:
 Operator Name:
 Comment:

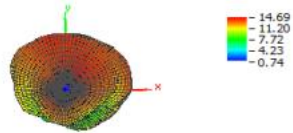
Test Information

Test Method: Radiated Power Mobile Phone
 Test Condition: FS: Free Space
 EUT Identification: Device Name: Bluetooth DU, BT address: 6CFBED8913AC
 Radio Link: Bluetooth; Channel 78 (2480.000 MHz)
 Test Time: Start: 7/14/2025 12:09:06 PM; Stop: 7/14/2025 12:27:31 PM
 CMU200 Connectors: In: RF2 (45.0 dB), Out: RF2 (45.0 dB)
 Cal Data Hor: 18.58 dB (X-OTA_OTA_RadPwr_2205-2695MHz-Horizontal-Att)
 Cal Data Ver: 19.25 dB (X-OTA_OTA_RadPwr_2205-2695MHz-Vertical-Att)

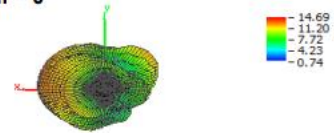
OTA Evaluation Results

Total Radiated Power	10.38 dBm
Peak EIRP	14.69 dBm
Directivity	4.32 dBi
Peak Gain	14.69 dBi
NHPRP 45j ā	8.70 dBm
NHPRP 45j ā / TRP	-1.68 dB
NHPRP 45j ā / TRP	67.99 %
NHPRP 30j ā	7.23 dBm
NHPRP 30j ā / TRP	-3.14 dB
NHPRP 30j ā / TRP	48.49 %
NHPRP 22.5j ā	6.13 dBm
NHPRP 22.5j ā / TRP	-4.25 dB
NHPRP 22.5j ā / TRP	37.61 %
UHRP	8.19 dBm
UHRP / TRP	-2.19 dB
UHRP / TRP	60.40 %
LHRP	6.35 dBm
LHRP / TRP	-4.02 dB
LHRP / TRP	39.60 %
PGRP (0-120j ā)	9.56 dBm
PGRP / TRP	-0.82 dB
PGRP / TRP	82.84 %
Front/Back Ratio	4.04
PhiBW	360.0 deg
PhiBW Up	360.0 deg
PhiBW Down	360.0 deg
ThetaBW	205.1 deg
ThetaBW Up	180.0 deg
ThetaBW Down	25.1 deg
Boresight Phi	0 deg
Boresight Theta	0 deg
Maximum Power	14.69 dBm
Minimum Power	0.74 dBm
Average Power	11.37 dBm
Max/Min Ratio	13.95 dB
Max/Avg Ratio	3.32 dB
Min/Avg Ratio	-10.63 dB
Worst Single Value	-14.43 dBm

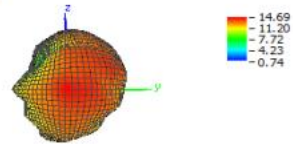
Theta = 0, Phi = 0



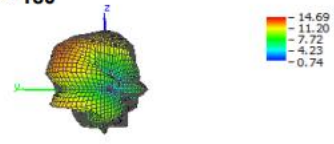
Theta = 180, Phi = 0



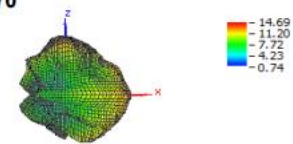
Theta = 90, Phi = 0



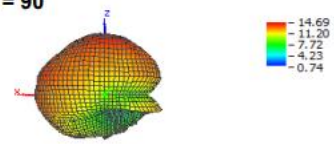
Theta = 90, Phi = 180



Theta = 90, Phi = 270



Theta = 90, Phi = 90



5 Conclusion

The total radiated power from the Jabra Mizar varies from 10.38 dBm to 11.31 dBm in free space depending on the frequency. The conducted power is 14.5 dBm. These figures yield an antenna gain(peak) in the range of 0.19 dBi and 1.45 dBi.

	2402 MHz	2440 MHz	2480 MHz
Conducted power	14.5 dBm	14.5 dBm	14.5 dBm
Peak Equivalent isotropic radiated power (EIRP)	15.95dBm	15.26 dBm	14.69 dBm

	2402 MHz	2440 MHz	2480 MHz
Antenna gain (Peak)	1.45 dBi	0.76 dBi	0.19 dBi