



Jabra Granite Antenna report

Revision: 2
Author: Luisa Gong
Date: 2024-08-01

Revision History:

Revision	Date	Change by	Description
1	2024.07.05	Luisa Gong	First Revision
2.	2024.08.01	Luisa Gong	Default power GC modify, and antenna information enrich

Table of Contents

1	Introduction	3
2	Specification	4
2.1	Electrical Properties	4
2.2	Physical Properties	4
3	Anechoic Chamber	5
4	Results	6
4.1	Conducted power	6
4.2	Total radiated power	6
4.3	Antenna patterns	6
5	Conclusion	13

This document is the property of GN Audio A/S and is to be treated as confidential by the party to whom it has been submitted by GN Audio A/S and is not to be disclosed to any third party without the specific prior written permission of GN Audio A/S.
© 2016 GN Audio A/S. All rights reserved.

1 Introduction

This document describes the radiation performance measurements made on a Jabra Granite. 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:

Luisa Gong

RF Engineer

GN Audio A/S

2 Specification

2.1 Electrical Properties

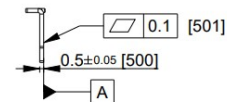
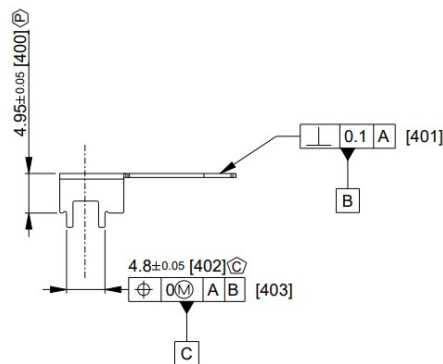
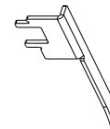
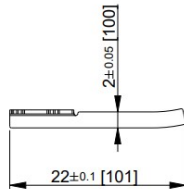
Frequency Range: 2.402GHz ~2.480GHz
 Impedance: 50 Ω nominal
 Radiation: omni-directional

2.2 Physical Properties

PN	Model Name	Specification	Manufacturer
50-10327-C	50-10327	PIFA	C&I Technology

Type: PIFA antenna

Operating temp: -30 ~ +60 °C



This document is the property of GN Audio A/S and is to be treated as confidential by the party to whom it has been submitted by GN Audio A/S and is not to be disclosed to any third party without the specific prior written permission of GN Audio A/S.
 © 2016 GN Audio A/S. All rights reserved.

3 Anechoic Chamber



This document is the property of GN Audio A/S and is to be treated as confidential by the party to whom it has been submitted by GN Audio A/S and is not to be disclosed to any third party without the specific prior written permission of GN Audio A/S.
© 2016 GN Audio A/S. All rights reserved.

4 Results

4.1 Conducted power

Results:

Conducted output power is taken from the average value of 2 samples on each channel.

Channel	0	39	78
Frequency[MHz]	2402	2441	2480
Conducted output power	9.72 dBm	9.56 dBm	9.41 dBm

4.2 Total radiated power

Channel	0	39	78
Frequency[MHz]	2402	2441	2480
Peak Equivalent isotropic radiated power (EIRP)	11.58 dBm	11.3 dBm	11.45 dBm
Total radiated power	8.11 dBm	7.62 dBm	7.28 dBm

4.3 Antenna patterns

2.402 GHz

CTIA TRP Report (RP_Bluetooth)

Common Information

Test Description:	GN OTA Test Report
Operating Conditions:	Granite_AP2.1_FS_TRP
Operator Name:	Luisa
Comment:	

Test Information

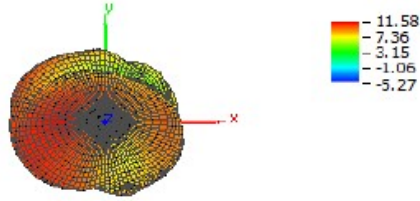
Test Method:	Radiated Power Mobile Phone
Test Condition:	FS: Free Space
EUT Identification:	Device Name: Bluetooth DU, BT a
Radio Link:	Bluetooth; Channel 0 (2402.000 M
Test Time:	Start: 8/1/2024 10:00:40 AM; Stop
CMU200 Connectors:	In: RF2 (45.0 dB), Out: RF2 (45.0
Cal Data Hor:	18.71 dB (X-OTA_OTA_RadPwr_
Cal Data Ver:	19.74 dB (X-OTA_OTA_RadPwr_

OTA Evaluation Results

Total Radiated Power	8.11 dBm
Peak EIRP	11.58 dBm
Directivity	3.47 dBi
Peak Gain	11.58 dBi
NHPRP 45j ã	6.49 dBm
NHPRP 45j ã / TRP	-1.62 dB
NHPRP 45j ã / TRP	68.93 %
NHPRP 30j ã	4.86 dBm
NHPRP 30j ã / TRP	-3.24 dB
NHPRP 30j ã / TRP	47.39 %
NHPRP 22.5j ã	3.63 dBm
NHPRP 22.5j ã / TRP	-4.47 dB
NHPRP 22.5j ã / TRP	35.70 %
UHRP	5.35 dBm
UHRP / TRP	-2.76 dB
UHRP / TRP	52.94 %
LHRP	4.83 dBm
LHRP / TRP	-3.27 dB

This document is the property of GN Audio A/S and is to be treated as confidential by the party to whom it has been submitted by GN Audio A/S and is not to be disclosed to any third party without the specific prior written permission of GN Audio A/S.
© 2016 GN Audio A/S. All rights reserved.

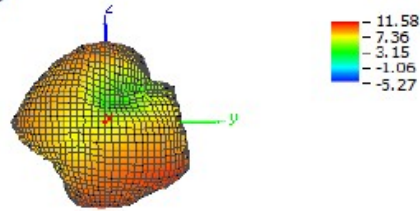
Theta = 0, Phi = 0



Theta = 180, Phi = 0

x

Theta = 90, Phi = 0



Theta = 90, Phi = 180

y

This document is the property of GN Audio A/S and is to be treated as confidential by the party to whom it has been submitted by GN Audio A/S and is not to be disclosed to any third party without the specific prior written permission of GN Audio A/S.
© 2016 GN Audio A/S. All rights reserved.

2.441GHZ

CTIA TRP Report (RP_Bluetooth

Common Information

Test Description:	GN OTA Test Report
Operating Conditions:	Granite_AP2.1_FS_TRP
Operator Name:	Luisa
Comment:	

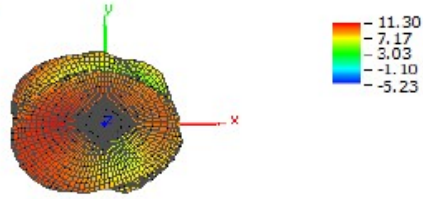
Test Information

Test Method:	Radiated Power Mobile Phone
Test Condition:	FS: Free Space
EUT Identification:	Device Name: Bluetooth DU, BT addn
Radio Link:	Bluetooth; Channel 39 (2441.000 MHz;
Test Time:	Start: 8/1/2024 10:00:40 AM; Stop: 8/
CMU200 Connectors:	In: RF2 (45.0 dB), Out: RF2 (45.0 dB)
Cal Data Hor:	18.60 dB (X-OTA_OTA_RadPwr_220)
Cal Data Ver:	19.59 dB (X-OTA_OTA_RadPwr_220)

OTA Evaluation Results

Total Radiated Power	7.62 dBm
Peak EIRP	11.30 dBm
Directivity	3.68 dBi
Peak Gain	11.30 dBi
NHPRP 45j ã	5.99 dBm
NHPRP 45j ã / TRP	-1.62 dB
NHPRP 45j ã / TRP	68.83 %
NHPRP 30j ã	4.34 dBm
NHPRP 30j ã / TRP	-3.27 dB
NHPRP 30j ã / TRP	47.06 %
NHPRP 22.5j ã	3.09 dBm
NHPRP 22.5j ã / TRP	-4.52 dB
NHPRP 22.5j ã / TRP	35.28 %
UHRP	4.85 dBm
UHRP / TRP	-2.76 dB
UHRP / TRP	52.93 %
LHRP	4.34 dBm
LHRP / TRP	-3.27 dB

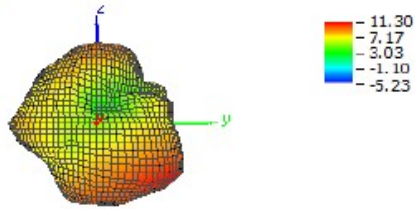
Theta = 0, Phi = 0



Theta = 180, Phi = 0

z

Theta = 90, Phi = 0



Theta = 90, Phi = 180

z

This document is the property of GN Audio A/S and is to be treated as confidential by the party to whom it has been submitted by GN Audio A/S and is not to be disclosed to any third party without the specific prior written permission of GN Audio A/S.
© 2016 GN Audio A/S. All rights reserved.

2.480GHZ

CTIA TRP Report (RP_Bluetoot

Common Information

Test Description:	GN OTA Test Report
Operating Conditions:	Granite_AP2.1_FS_TRP
Operator Name:	Luisa
Comment:	

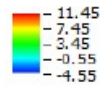
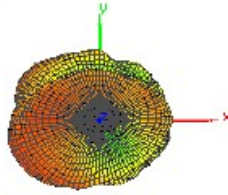
Test Information

Test Method:	Radiated Power Mobile Phone
Test Condition:	FS: Free Space
EUT Identification:	Device Name: Bluetooth DU, BT ad
Radio Link:	Bluetooth; Channel 78 (2480.000 M
Test Time:	Start: 8/1/2024 10:00:40 AM; Stop: 1
CMU200 Connectors:	In: RF2 (45.0 dB), Out: RF2 (45.0 d
Cal Data Hor:	18.58 dB (X-OTA_OTA_RadPwr_22
Cal Data Ver:	19.25 dB (X-OTA_OTA_RadPwr_22

OTA Evaluation Results

Total Radiated Power	7.28 dBm
Peak EIRP	11.45 dBm
Directivity	4.17 dBi
Peak Gain	11.45 dBi
NHPRP 45j ã	5.69 dBm
NHPRP 45j ã / TRP	-1.59 dB
NHPRP 45j ã / TRP	69.33 %
NHPRP 30j ã	3.95 dBm
NHPRP 30j ã / TRP	-3.33 dB
NHPRP 30j ã / TRP	46.46 %
NHPRP 22.5j ã	2.64 dBm
NHPRP 22.5j ã / TRP	-4.65 dB
NHPRP 22.5j ã / TRP	34.30 %
UHRP	4.52 dBm
UHRP / TRP	-2.76 dB
UHRP / TRP	52.95 %
LHRP	4.01 dBm
LHRP / TRP	-3.27 dB

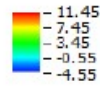
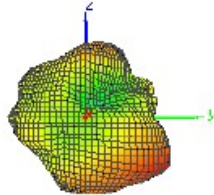
Theta = 0, Phi = 0



Theta = 180, Phi = 0



Theta = 90, Phi = 0



Theta = 90, Phi = 180



This document is the property of GN Audio A/S and is to be treated as confidential by the party to whom it has been submitted by GN Audio A/S and is not to be disclosed to any third party without the specific prior written permission of GN Audio A/S.
© 2016 GN Audio A/S. All rights reserved.

5 Conclusion

The total radiated power from the Jabra Granite varies from 7.28 dBm to 8.11 dBm in free space depending on the frequency. The conducted power is around 9.5 dBm. These figures yield an antenna gain(peak) in the range of 1.74 dBi and 2.04 dBi.

	2402 MHz	2440 MHz	2480 MHz
Conducted power	9.72 dBm	9.56 dBm	9.41 dBm
Peak Equivalent isotropic radiated power (EIRP)	11.58 dBm	11.3 dBm	11.45 dBm

	2402 MHz	2440 MHz	2480 MHz
Antenna gain (Peak)	1.86 dBi	1.74 dBi	2.04 dBi