TÜVRheinland®
Precisely Right.

RF Exposure Report

EUT Name: GR79BR
Model No.: GR79BR

Prepared for:

Perigee LLC
10440 Little Patuxent Pkwy
Columbia, MD 21044 USA

Prepared by:

TUV Rheinland of North America, Inc.
5015 Brandin Ct. Fremont CA 94538 USA
Tel: (929) 249-9123
Fax: (925) 249-9124
http://www.tuv.com/

Report/Issue Date: August 23, 2019
Report Number: 31962831.001
Job Number: 234108031

TABLE OF CONTENTS

1 PRODUCT SPECIFICATIONS 4

1.1 PRODUCT DESCRIPTION 4
1.2 PRODUCT SPECIFICATIONS 4
1.3 AIR INTERFACES 4
1.4 TEST SEPARATION DISTANCE 4

2 STAND-ALONE SAR EVALUATION EXCLUSION 4

2.1 PURPOSE 4
2.2 SAR EXCLUSION LIMITS AND CALCULATION 5
2.3 ASSESSMENT CALCULATION 5
2.4 CONCLUSION 5

3 DUTY CYCLE MEASUREMENT 6

Statement of Compliance

Manufacturer:	Perigee LLC 10440 Little Patuxent Pkwy Columbia, MD 21044 USA
Name of Equipment:	GR79BR
Model No.	GR79BR
Application of Regulations:	CFR 47 Part 2.1093

Guidance Documents:

FCC Part 2.1091

Test Methods:

FCC Part 1.1310, KDB 447498 D01

The electromagnetic compatibility test and documented data described in this report has been performed and recorded by TUV Rheinland, in accordance with the standards and procedures listed herein. As the responsible authorized agent of the EMC laboratory, I hereby declare that the equipment described above has been shown to be compliant with the EMC requirements of the stated regulations and standards based on these results. If any special accessories and/or modifications were required for compliance, they are listed in this report.

This report must not be used to claim product endorsement by A2LA or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written authorization of TUV Rheinland of North America.

James Borrott	August 23, 2019		August 23, 2019
Test Engineer	Date	Laboratory Signatory	Date

Test Cert. # 3331.02

1 Product Specifications

1.1 *Product Description*

1.2 *Product Specifications*

EUT Specifications	
Exposure Type	☒ General Population / Uncontrolled ☐ Occupational / Controlled
Multiple Antenna Feeds:	☐ Yes and how many ☒ No
Note:	

1.3 *Air Interfaces*

Air Interface	Supported Capabilities	Modulation	Maximum Duty Cycle	Band	Frequency Range (MHz)	Maximum Output Power Including Tolerance (dBm)
Bluetooth	• BR • EDR	• GFSK, pi/4 DQPSK, 8DPSK	86%	N/A	2400 – 2483.5	9.69
Bluetooth	• Low Energy	• GFSK	86%	N/A	2400 – 2483.5	9.87

1.4 *Test Separation Distance*

The minimum RF exposure distance between the device antenna and the user is less than 5mm apart. The value of 5mm is therefore used as required by KDB 447498. Device is worn on the head, directly in contact with the user, therefore the distance between user and antenna is identical to the distance between the external of the device and the antenna.

2 Stand-Alone SAR Evaluation Exclusion

2.1 *Purpose*

This report will demonstrate the compliance of RF exposure to the human body of the GR79BR according to FCC rule part 2.1091. All transmitters, regardless if it is categorically excluded, are assessed to ensure the product can operate in manners that meet or exceed the minimum test separation distance as required by KDB 447498.

2.2 *SAR Exclusion Limits and Calculation*

For 100 MHz to 6 GHz and *test separation distances* ≤ 50 mm, the 1-g and 10-g *SAR test exclusion thresholds* are determined by the following:

[(*max. power of channel, including tune-up tolerance, mW*) / (*min. test separation distance, mm*)] · [√f(GHz)] ≤ 3.0 for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR,

Where,

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum *test separation distance* is ≤ 50 mm, and for transmission frequencies between 100 MHz and 6 GHz. When the minimum *test separation distance* is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

2.3 *Assessment Calculation*

The maximum output power and antenna gain is declared by the manufacturer and used in this assessment. The minimum RF exposure distance during normal operation is 5mm .

Stand Alone Analysis

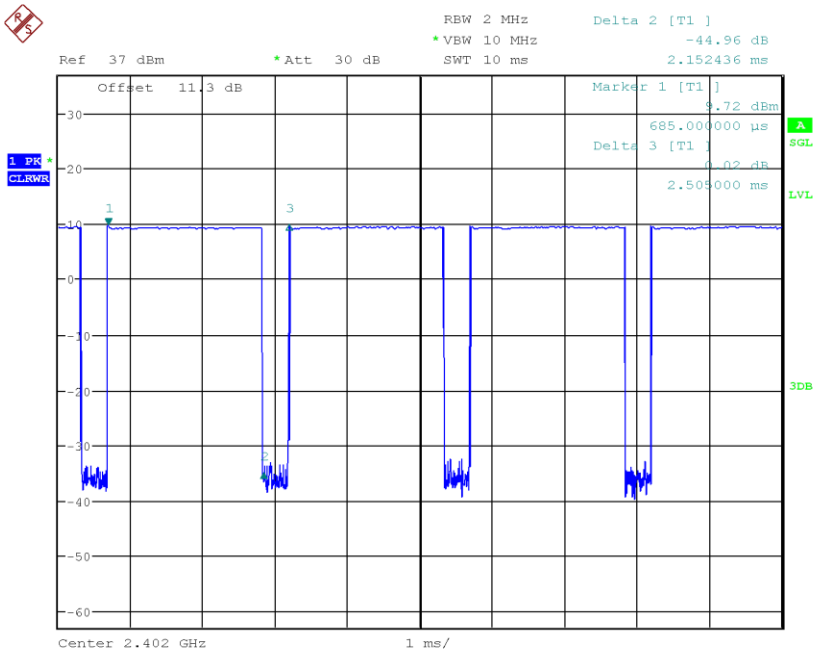
Frequency Band	Frequency of Max Power (GHz)	Max Conducted Power (dBm)	Duty Cycle	Time Avg Power (dBm)	Conducted Power (mW)	Test Separation Distance (mm)	1-g ≤ 3.0	Result
2.4 GHz BT BR/EDR	2.441	9.69	86%	9.03	8.00	5	2.50	Pass
2.4 GHz BLE	2.48	9.87	86%	9.21	8.34	5	2.63	Pass

2.4 *Conclusion*

The EUT was found to be compliant to the requirements of FCC part 1.1310 and part 2.1091 with a separation distance of 5mm.

TUV Rheinland of North America
1279 Quarry Lane. Pleasanton, CA 94566
Tel: (925) 249-9123, Fax: (925) 249-9124

3 Duty Cycle Measurement



Date: 18.JUN.2019 09:30:24

Device Duty Cycle

DC=[Time on/(Time On +Time Off)] *100

DC= [2.152436ms / (2.152436ms + 0.352564ms)] *100

DC = [2.152436 / 2.505] *100

DC = 85.93 = ~ 86%

END OF REPORT