

CBSD Test Report

Report No.: RFBBQZ-WTW-P24030292-5

FCC ID: PY324100618

Test Model: MR7400

Received Date: 2024/3/18

Test Date: 2024/5/30 ~ 2024/6/4

Issued Date: 2024/7/1

Applicant and Manufacturer: NETGEAR, INC.

Address: 350 East Plumeria Drive San Jose CA 95134

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lin Kou Laboratories

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City
33383, Taiwan

**FCC Registration/
Designation Number:** 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
RFBBQZ-WTW-P24030292-5	Original release	2024/7/1

1 Certificate of Conformity

Product: Nighthawk 5G Mobile Router

Brand: NETGEAR

Test Model: MR7400

Sample Status: Engineering sample

Applicant and Manufacturer: NETGEAR, INC.

Test Date: 2024/5/30 ~ 2024/6/4

Standards: FCC Part 96.47

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : Pettie Chen , **Date:** 2024/7/1
Pettie Chen / Senior Specialist

Approved by : Jeremy Lin , **Date:** 2024/7/1
Jeremy Lin / Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 96.47			
FCC Clause	Test Item	Result	Remarks
96.47(a)(1)	End User Device additional requirements	Pass	Meet the requirement

2.1 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Nighthawk 5G Mobile Router
Brand	NETGEAR
Test Model	MR7400
Status of EUT	Engineering sample
Accessory Device	3.85Vdc from battery 5Vdc or 9Vdc or 12Vdc from adapter
Data Cable Supplied	Refer to Note as below

Note:

1. The EUT uses following accessories.

7. The EOT uses following accessories:

AC Adapter 1			
Brand	Model	Part Number	Specification
NETGEAR	2AFH0183AA	332-11642-01	AC Input : 100-240Vac, 50/60Hz, 0.5A DC Output : 5.0V, 3.0A, 15.0W 9.0V, 2.0A, 18.0W 12.0V, 1.5A, 18.0W DC Output Cable : N/A Plug : US Manufacturer : CWT
AC Adapter 2			
Brand	Model	Part Number	Specification
NETGEAR	AD2122F20	332-11106-03	AC Input : 100-240V, 50/60Hz, 0.5A DC Output : 5V, 2.0A 9V, 1.8A DC Output Cable : N/A Plug : US Manufacturer : PIE
Battery			
Brand	Model	Part Number	Specification
NETGEAR	W-20b	308-10100-01	Power Rating : 3.85Vdc, 19.96Wh
USB Cable 1			
Brand		Model	Specification
HORTON		D0017100R37HR	Signal Line : 1m
USB Cable 2			
Brand		Model	Specification
LUXSHARE PRECISION INDUSTRY		LZZUC052-CS-H	Signal Line : 1m

4 Measurement

4.1 End User Device additional requirements

FCC Part 96.47

- (a) End User Devices may operate only if they can positively receive and decode an authorization signal transmitted by a CBSD, including the frequencies and power limits for their operation.
- (1) An End User Device must discontinue operations, change frequencies, or change its operational power level within 10 seconds of receiving instructions from its associated CBSD.

4.2 Test Procedure

Following test procedure can be done by WINNF-TS-0122 CBRS CBSD Test Specification, use the certified CBSD(FCC ID: P27-SCE5164-B48) as CBSD device to show compliance with FCC Part 96.47 requirements for End User Device(EUD):

Test #1:

- a) Setup WINNF.PT.C.HBT.1 with 3620 ~ 3630 MHz and MaxEIRP at 10 dBm/MHz.
- b) Enable CBSD service from EPC management.
- c) **Check** EUD Tx Frequency and connection successful.
- d) Disable AP service from EPC management.
- e) **Check** if EUT stop transmission within 10s.

Test #2:

- a) Setup WINNF.PT.C.HBT.1 with 3595 ~ 3605 MHz and MaxEIRP at 2.82 dBm/MHz.
- b) Enable CBSD service from EPC management.
- c) **Check** EUD Tx Frequency and connection successful.
- d) Change power to -2.42 dBm/MHz.
- e) **Check** EUD Tx output power.
- f) Disable AP service from EPC management.
- g) **Check** if EUT stop transmission within 10s.

Note: Test #1 and #2 to show compliance with the hadshake testing under Part 96.

4.3 Test Environment

Test Condition

Test Item	Environmental Conditions	Input Power	Tested By
End User Device additional requirements	25deg. C, 70%RH	120Vac, 60Hz	Matthew Yang

4.4 Test Equipment

For LTE Band 48 Test

Description & Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
CBSD Sercomm	P208-TP (FCCID: P27P208)	1801BVV000034	NA	NA
Laptop DELL	Inspiron 15 3000	D67MYN2	NA	NA
Spectrum Analyzer KEYSIGHT	MXA	E2-010824	Dec. 22, 2023	Dec. 21, 2024
2WAY DIV WOKEN	0.5-8GHz 2Way SMA	DCMACMW1E4	Jan. 09, 2024	Jan. 08, 2025

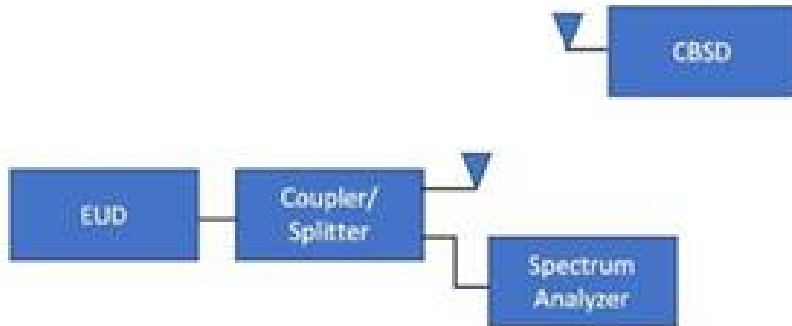
- NOTE:
1. The test was performed in WM OVEN 1 Test Room
 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. Tested Date: May 30, 2024

For 5GNR n48 Test

Description & Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
CBSD Sercomm	SCE5164 (FCCID: P27-SCE5164-B48)	2208DR6000016	NA	NA
Laptop DELL	Inspiron 15 3000	D67MYN2	NA	NA
Spectrum Analyzer KEYSIGHT	FSV	E2-010642	May 29, 2024	May 28, 2025
2WAY DIV WOKEN	0.5-8GHz 2Way SMA	DCMACMW1E4	Jan. 09, 2024	Jan. 08, 2025

- NOTE:
1. The test was performed in WM OVEN 1 Test Room
 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. Tested Date: Jun. 04, 2024

4.5 Test Setup



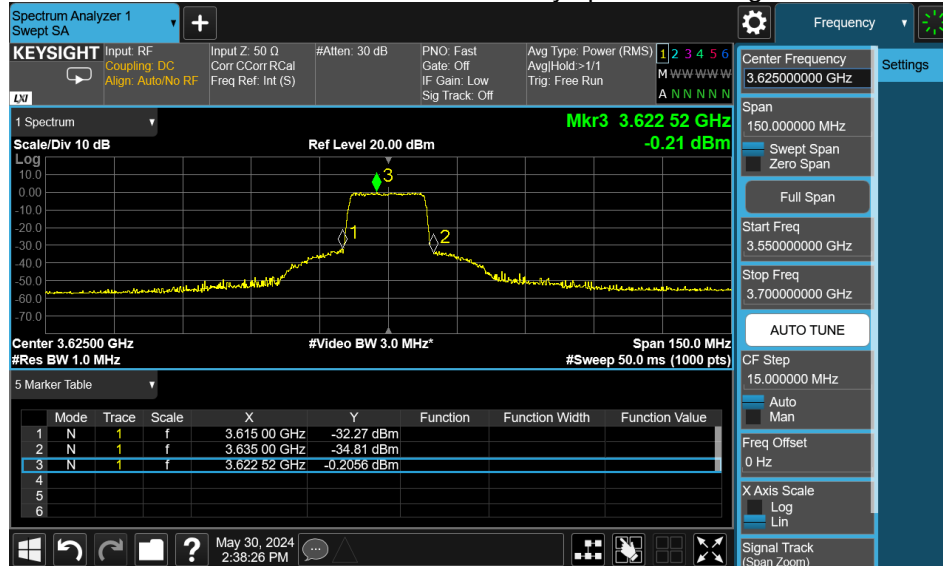
NOTE: The CBSD device is certified CBSD(For LTE Band 48: FCC ID: P27P208, For 5GNR n48: FCC ID: P27-SCE5164-B48). Where the CBSD device connection with EUD is by radiated method. The EUD device connection with Spectrum Analyzer is by conducted method.

4.6 Test Result

LTE Band 48

Step Test #1-(c)

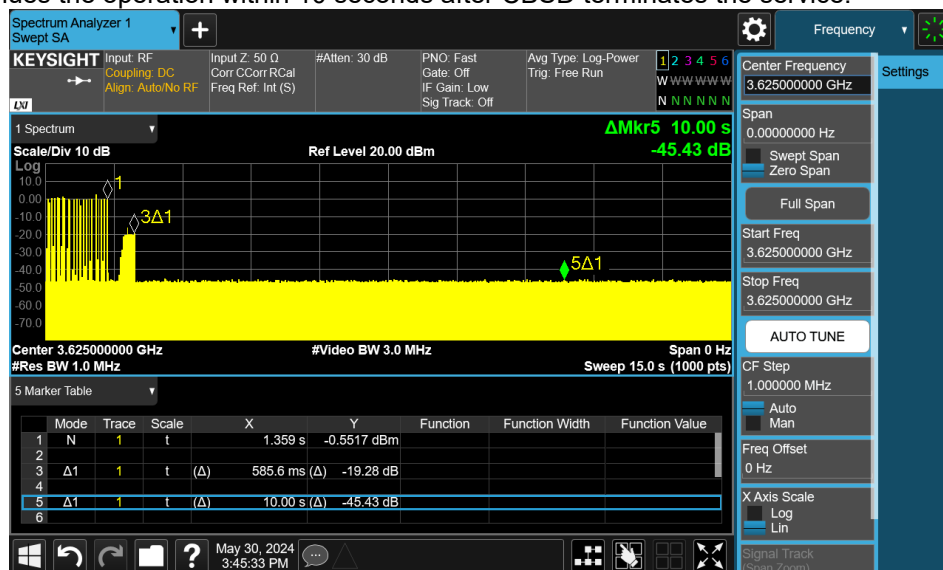
EUD follow instruction from associate CBSD and successfully operate at assigned 3615-3635MHz channel.



Plot 5-1 EUD frequency of operations

Step Test #1(e)

EUD discontinues the operation within 10 seconds after CBSD terminates the service:



Plot 5-2 EUD discontinues operations within 10s

Note :

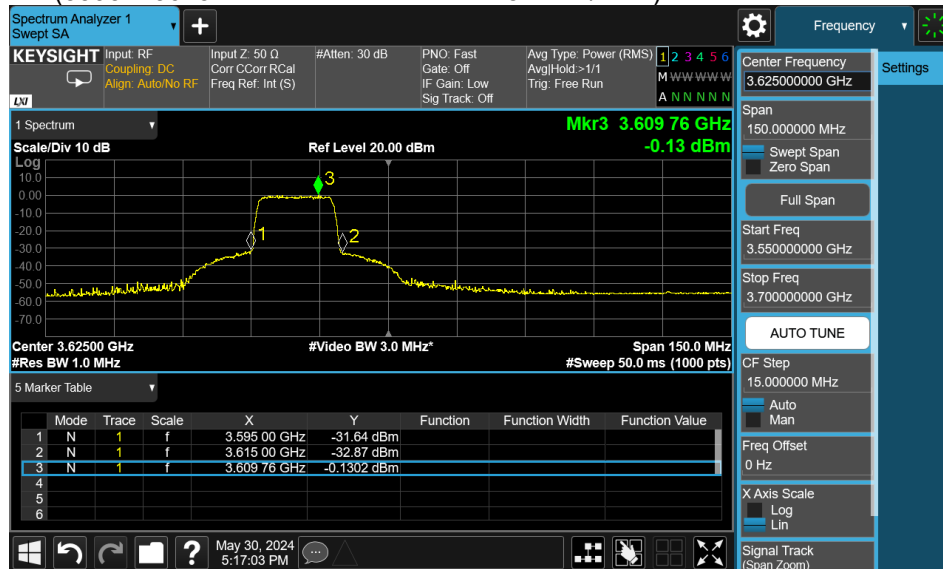
Marker 1: CBSD sends instructions to discontinues operations.

Marker 3: EUD discontinues operation.

Marker 5: 10 seconds elapsed time from CBSD sending instructions to EUD.

Test #2(c)

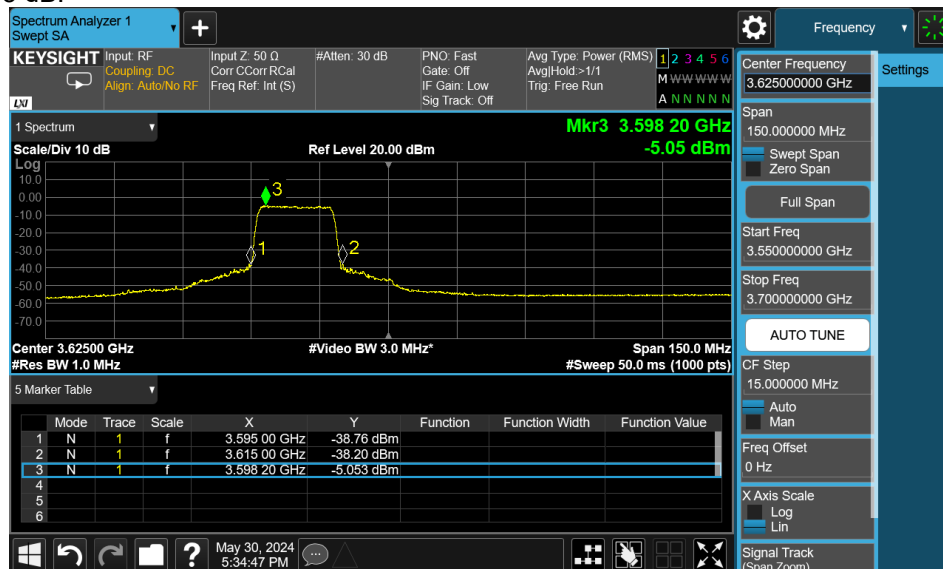
following plots demonstrate that EUD response to the associated CBSD instruction and operate at a new assigned channel (3595 ~ 3615 MHz and MaxEIRP at 2.82dBm/MHz)



Plot 5-3 EUD frequency of operations

Test #2(e)

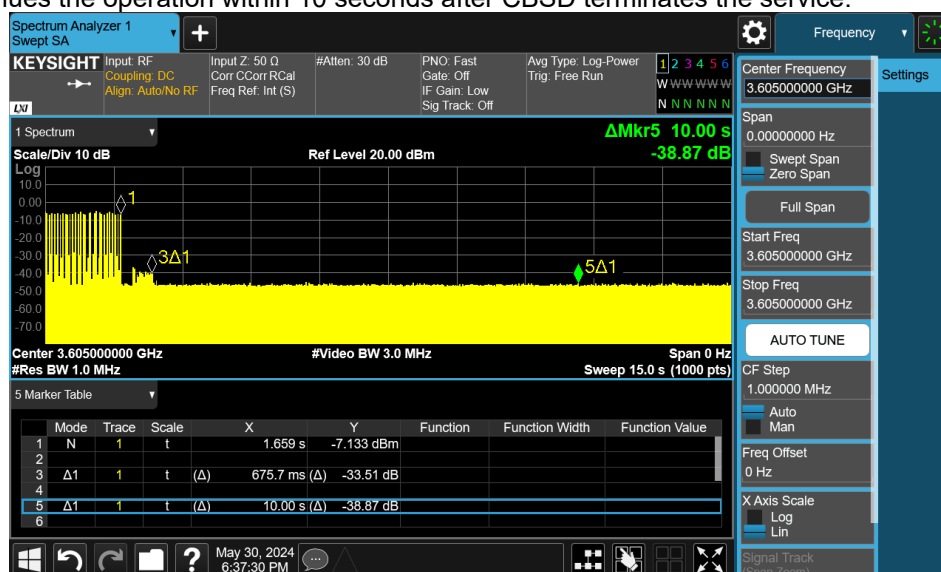
following plot demonstrates that EUD response to the associated CBSD power reduce instruction and reduce the power for 5 dB.



Plot 5-4 EUD changed output power

Step Test #2(g)

EUD discontinues the operation within 10 seconds after CBSD terminates the service:



Plot 5-5 EUD discontinues operations within 10s.

Note :

Marker 1: CBSD sends instructions to discontinues operations.

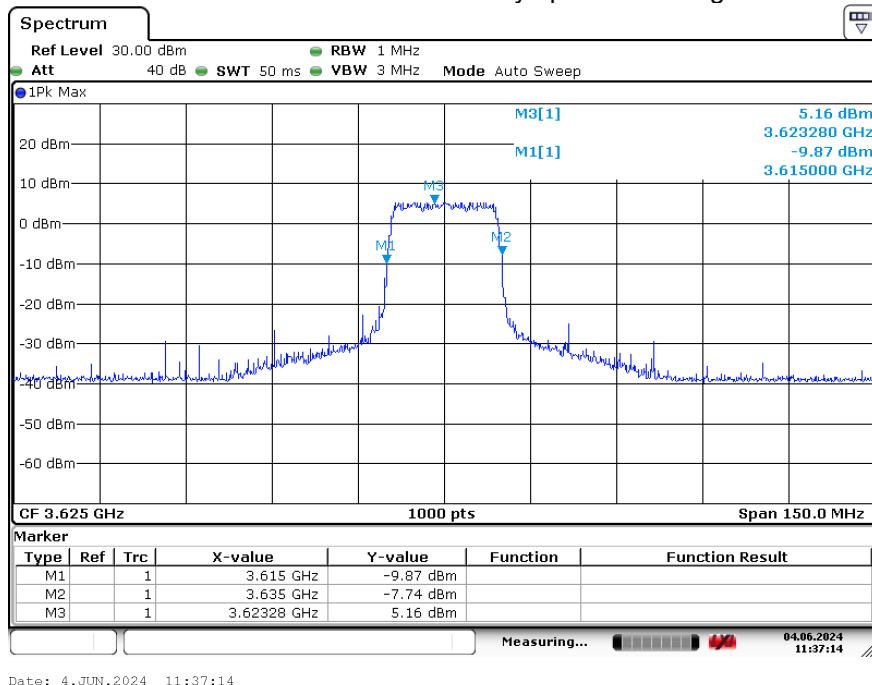
Marker 3: EUD discontinues operation.

Marker 5: 10 seconds elapsed time from CBSD sending instructions to EUD.

5GNR n48

Step Test #1-(c)

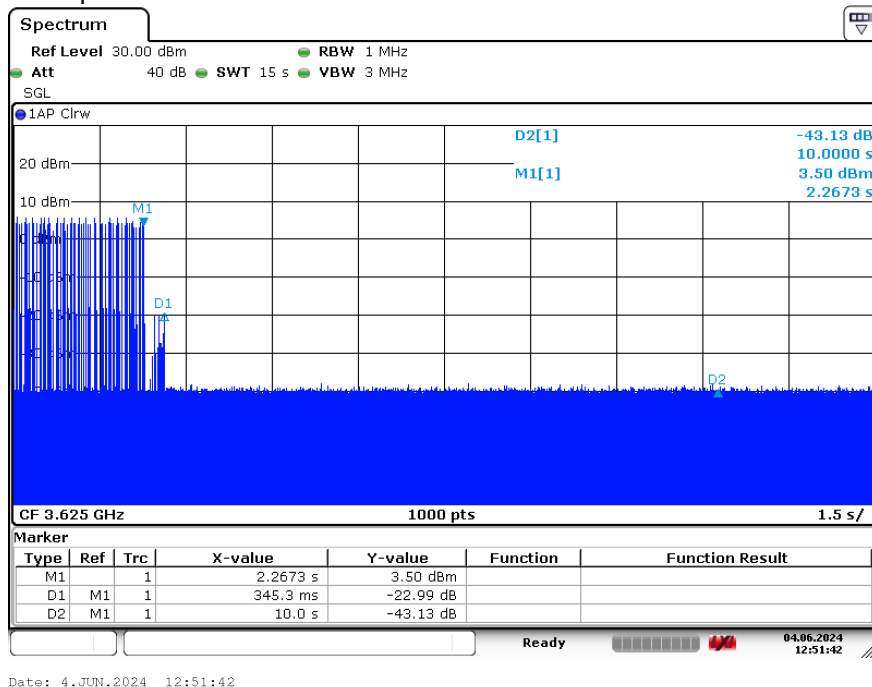
EUD follow instruction from associate CBSD and successfully operate at assigned 3615-3635MHz channel.



Plot 5-1 EUD frequency of operations

Step Test #1(e)

EUD discontinues the operation within 10 seconds after CBSD terminates the service:



Plot 5-2 EUD discontinues operations within 10s

Note :

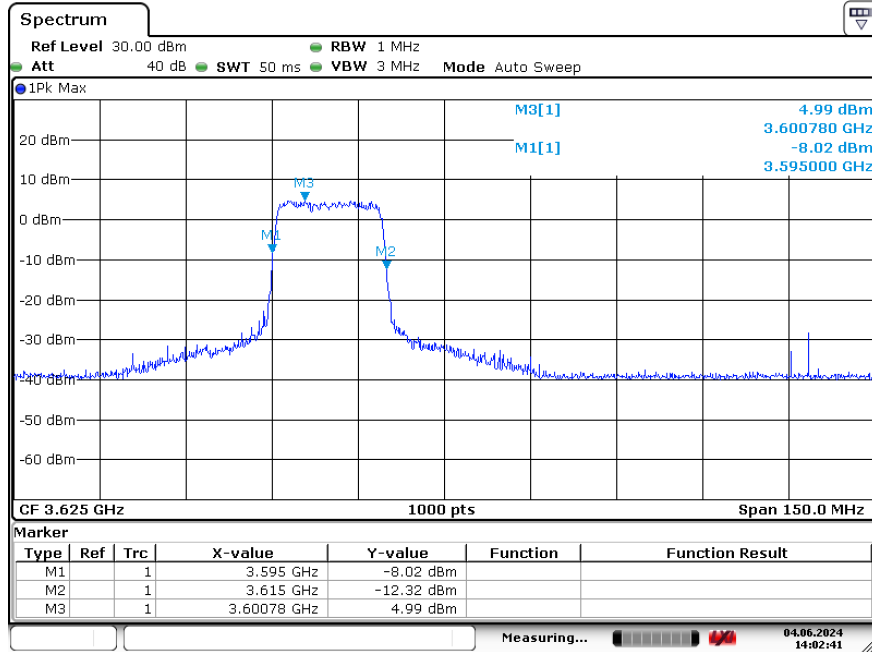
Marker 1: CBSD sends instructions to discontinues operations.

D1: EUD discontinues operation.

D2: 10 seconds elapsed time from CBSD sending instructions to EUD.

Test #2(c)

following plots demonstrate that EUD response to the associated CBSD instruction and operate at a new assigned channel (3595 ~ 3615 MHz and MaxEIRP at 2.82dBm/MHz)

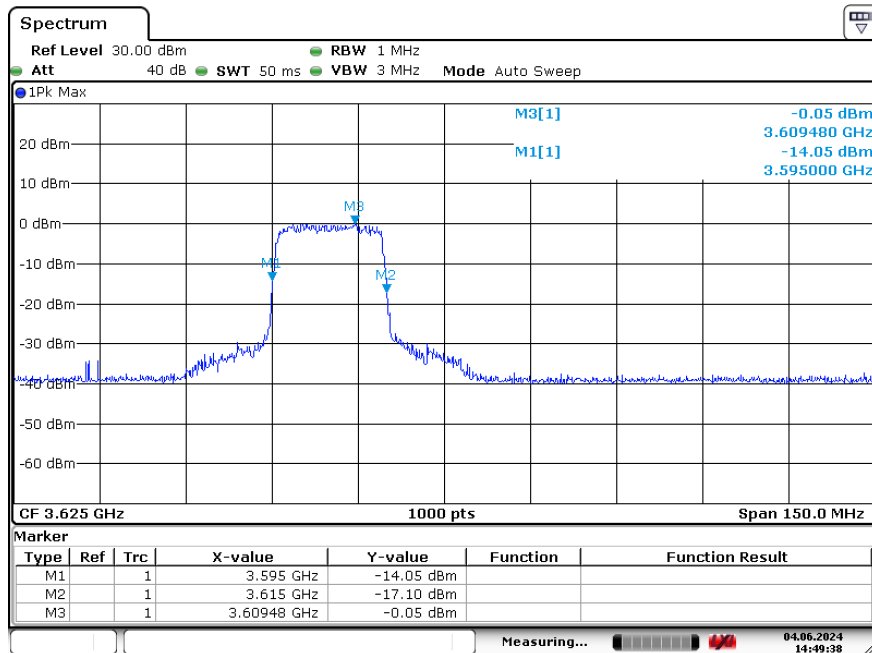


Date: 4.JUN.2024 14:02:41

Plot 5-3 EUD frequency of operations

Test #2(e)

following plot demonstrates that EUD response to the associated CBSD power reduce instruction and reduce the power for 5 dB.

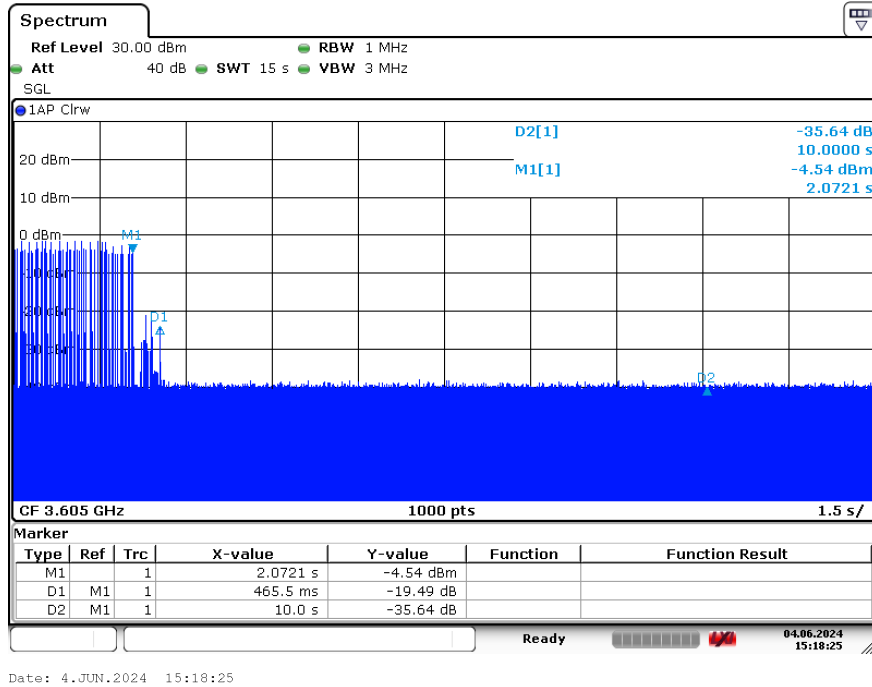


Date: 4.JUN.2024 14:49:38

Plot 5-4 EUD changed output power

Step Test #2(g)

EUD discontinues the operation within 10 seconds after CBSD terminates the service:



Plot 5-5 EUD discontinues operations within 10s.

Note :

Marker 1: CBSD sends instructions to discontinues operations.

D1: EUD discontinues operation.

D2: 10 seconds elapsed time from CBSD sending instructions to EUD.

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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The address and road map of all our labs can be found in our web site also.

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