

Prüfbericht-Nr.: Test report no.:	CN24104U 001	Auftrags-Nr.: Order no.:	168472504	Seite 1 von 25 Page 1 of 25
Kunden-Referenz-Nr.: Client reference no.:	N/A	Auftragsdatum: Order date:	2024-03-05	
Auftraggeber: Client:	ECARX (Hubei) Tech Co., Ltd B1336, Taizi Lake Industry Park, No 18 ShenLong AVE, WH, China			
Prüfgegenstand: Test item:	LOTUS-Lambda-DHU			
Bezeichnung / Typ-Nr.: Identification / Type no.:	ECMC3			
Auftrags-Inhalt: Order content:	Test Report			
Prüfgrundlage: Test specification:	CFR47 FCC Part 15: Subpart C Section 15.247 RSS-247 Issue 3 August 2023 RSS-Gen Issue 5 February 2021			
Wareneingangsdatum: Date of sample receipt:	2024-02-29	Please refer to Photo Document		
Prüfmuster-Nr.: Test sample no.:	A003664372-003~004 A003664372-007			
Prüfzeitraum: Testing period:	2024-03-08 - 2024-03-21			
Ort der Prüfung: Place of testing:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von: tested by:	 Hardy Suo		genehmigt von: authorized by:	 Lin Lin
Datum: Date:	2024-03-29		Ausstellungsdatum: Issue date:	2024-03-29
Stellung / Position:	Sachverständige(r)/Expert		Stellung / Position:	Sachverständige(r)/Expert
Sonstiges / Other:	FCC ID: 2BD49-ECMC3 IC: 31788-ECMC3, HVIN: ECMC3 This report is for Bluetooth dual mode. Applicant & Manufacturer: ECARX (Hubei) Tech Co., Ltd., B1336, Taizi Lake Industry Park, No 18 ShenLong AVE, WH, China			
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:	Prüfmuster vollständig und unbeschädigt Test item complete and undamaged			
* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
* Legend:	P(ass) = passed a.m. test specification(s)	F(ail) = failed a.m. test specification(s)	N/A = not applicable	N/T = not tested
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Anmerkungen
Remarks

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4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. <i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i>

Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER

RESULT: Pass

5.1.3 CONDUCTED POWER SPECTRAL DENSITY

RESULT: Pass

5.1.4 6dB BANDWIDTH

RESULT: Pass

5.1.5 99% BANDWIDTH

RESULT: Pass

5.1.6 20dB BANDWIDTH

RESULT: Pass

5.1.7 CARRIER FREQUENCY SEPARATION

RESULT: Pass

5.1.8 NUMBER OF HOPPING FREQUENCY

RESULT: Pass

5.1.9 TIME OF OCCUPANCY

RESULT: Pass

5.1.10 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHz BANDWIDTH

RESULT: Pass

5.1.11 RADIATED SPURIOUS EMISSION

RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Results of Bluetooth BR & EDR mode

Appendix B: Test Results of Bluetooth LE

Appendix C: Photographs of the Test Set-up

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. China.

FCC Registration No.: 694916

ISED wireless device testing laboratory: 25069

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing (TS8997)					
Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. until
Signal Analyzer	R&S	FSV 40	101441	2023-07-26	2024-07-25
OSP	R&S	OSP 150	101017	2023-11-14	2024-11-13
Control PC	DELL	OptiPlex 7050	FTJZ9P2	N/A	N/A
Test Software	R&S	WMS32 (V11.00.00)	N/A	N/A	N/A
Power Meter	R&S	NRP2	107105	2023-11-14	2024-11-13
Wideband Power Sensor	R&S	NRP-Z81	105677	2023-07-26	2024-07-25
Shielding Room 8#	Albatross	SR8	APC17151-SR8	2021-06-22	2024-06-22
Unwanted Emission Testing (TS9975)					
Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. until
EMI Test Receiver	R&S	ESR 7	102021	2023-07-26	2024-07-25
Signal Analyzer	R&S	FSV 40	101439	2023-07-26	2024-07-25
System Controller Interface	R&S	SCI-100	S10010038	N/A	N/A
Filterbank	R&S	Wlan	100759	2023-07-26	2024-07-25
OSP	R&S	OSP 120	102040	N/A	N/A
Pre-amplifier	R&S	SCU08F1	08320031	2023-07-26	2024-07-25
Amplifier	R&S	SCU-18F	180070	2023-07-26	2024-07-25
Amplifier	R&S	SCU40A	100475	2023-07-26	2024-07-25
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	2022-08-07	2024-08-06
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	2022-08-07	2024-08-06
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	2022-08-28	2024-08-27
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2022-08-07	2024-08-06

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Test software	R&S	EMC32 (V10.60.10)	N/A	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	2021-06-22	2024-06-22

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Table 2: Measurement Uncertainty

Parameter	Uncertainty (k=2)
RF output power, conducted	± 0.99 dB
Occupied Channel Bandwidth	± 2.08 %
RF power density, conducted	± 0.99 dB
Unwanted Emissions, conducted	± 0.89 dB
All emissions, radiated	±4.17 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B & C of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. China. is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a LOTUS-Lambda-DHU intended to be assembled into automotive environment, which supports Bluetooth (dual mode), 2.4G Wi-Fi and 5.2G/5.8G Wi-Fi technologies.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 3: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment:	LOTUS-Lambda-DHU
Type Designation:	ECMC3
FCC ID:	2BD49-ECMC3
IC:	31788-ECMC3
HVIN:	ECMC3
Operating Voltage:	DC 12V
Testing Voltage:	DC 12V
Operating Temperature Range:	-40 °C ~ 85 °C
Operating Frequency Mode:	Bluetooth: Classic BR, EDR + BLE (1Mbps only) 2.4G Wi-Fi: 802.11 b/g/n20/n40/ax20/ax40 5.2G/5.8G Wi-Fi: 802.11 a/n20/n40/ac20/ac40/ac80/ax20/ax40/ax80
Technical Specification of Bluetooth (dual mode)	
Operating Frequency:	2402 MHz to 2480 MHz
Type of Modulation:	GFSK, $\pi/4$ -DQPSK, 8DPSK
Channel Number:	BR & EDR mode:79 channels, Low Energy mode:40 channels
Channel Separation:	BR & EDR mode:1MHz, Low Energy mode:2MHz
Data Rate:	BR & EDR mode:(1Mbps, 2Mbps, 3Mbps) Low Energy mode: (1Mbps)
Antenna Type:	Integral Antenna
Antenna Gain:	3.50 dBi (Provided by the Client)
Technical Specification of 2.4GHz Wi-Fi	
Operating Frequency:	2412 - 2462MHz for 802.11b/g/n20/ax20 2422 - 2452MHz for 802.11n40/ax40
Type of Modulation:	DSSS(DBPSK/DQPSK/CCK) OFDM(BPSK/QPSK/16QAM/64QAM/256QAM)
Data Rate:	1/2/5.5/11 Mbps for 802.11b 6/9/12/18/24/36/48/54 Mbps for 802.11g MCS0 ~ MCS7 for 802.11n MCS0~MCS9 for 802.11ac MCS0~MCS11 for 802.11ax
Channel Number:	11 channels for 802.11b/g/n20/ax20 7 channels for 802.11n40/ax40
Channel Separation:	5 MHz

Antenna Type:	Integral Antenna
Antenna Number:	1Tx1Rx for SISO mode, 2Tx2Rx for MIMO mode
Antenna Gain:	3.05 dBi for ANT1, 4.44 dBi for ANT2 (Provided by the Client)
Technical Specification of 5.2GHz Wi-Fi	
Operating Frequency:	5180 - 5240MHz
Type of Modulation:	OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
Data Rate:	6/9/12/18/24/36/48/54 Mbps for 802.11a MCS0~MCS7 for 802.11n MCS0~MCS9 for 802.11ac MCS0~MCS11 for 802.11ax
Channel Number:	7 channels for 802.11 a/n20/n40/ac20/ac40/ac80/ax20/ax40/ax80
Channel Separation:	20MHz, 40MHz, 80MHz
Antenna Type:	Integral Antenna
Antenna Number:	1Tx1Rx for SISO mode, 2Tx2Rx for MIMO mode
Antenna Gain:	4.06 dBi for ANT1, 3.75 dBi for ANT2 (Provided by the Client)
Technical Specification of 5.8GHz Wi-Fi	
Operating Frequency:	5745 - 5825MHz
Type of Modulation:	OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
Data Rate:	6/9/12/18/24/36/48/54 Mbps for 802.11a MCS0~MCS7 for 802.11n MCS0~MCS9 for 802.11ac MCS0~MCS11 for 802.11ax
Channel Number:	8 channels for 802.11 a/n20/n40/ac20/ac40/ac80/ax20/ax40/ax80
Channel Separation:	20MHz, 40MHz, 80MHz
Antenna Type:	Integral Antenna
Antenna Number:	1Tx1Rx for SISO mode, 2Tx2Rx for MIMO mode
Antenna Gain:	3.98 dBi for ANT1, 3.82 dBi for ANT2 (Provided by the Client)

Table 4: RF Channel and Frequency of Bluetooth BR/EDR

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402.00	20	2422.00	40	2442.00	60	2462.00
1	2403.00	21	2423.00	41	2443.00	61	2463.00
2	2404.00	22	2424.00	42	2444.00	62	2464.00
3	2405.00	23	2425.00	43	2445.00	63	2465.00
4	2406.00	24	2426.00	44	2446.00	64	2466.00
5	2407.00	25	2427.00	45	2447.00	65	2467.00
6	2408.00	26	2428.00	46	2448.00	66	2468.00
7	2409.00	27	2429.00	47	2449.00	67	2469.00
8	2410.00	28	2430.00	48	2450.00	68	2470.00
9	2411.00	29	2431.00	49	2451.00	69	2471.00
10	2412.00	30	2432.00	50	2452.00	70	2472.00
11	2413.00	31	2433.00	51	2453.00	71	2473.00
12	2414.00	32	2434.00	52	2454.00	72	2474.00
13	2415.00	33	2435.00	53	2455.00	73	2475.00

14	2416.00	34	2436.00	54	2456.00	74	2476.00
15	2417.00	35	2437.00	55	2457.00	75	2477.00
16	2418.00	36	2438.00	56	2458.00	76	2478.00
17	2419.00	37	2439.00	57	2459.00	77	2479.00
18	2420.00	38	2440.00	58	2460.00	78	2480.00
19	2421.00	39	2441.00	59	2461.00		

Test frequencies are lowest channel: 2402 MHz, middle channel: 2441 MHz and highest channel: 2480 MHz for Bluetooth BR/EDR

Table 5: RF Channel and Frequency of Bluetooth LE

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

Test frequencies are lowest channel: 2402 MHz, middle channel: 2440 MHz and highest channel: 2480 MHz for Bluetooth LE

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Bluetooth transmitting mode (BR & EDR mode)
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- B. On, Bluetooth transmitting mode (BLE)
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- C. On, Transmitting on Hopping channel
- D. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- | | |
|------------------------------|-------------------------|
| - Application Form | - User Manual |
| - ID Label and Location Info | - Operation Description |

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.1, all tests were performed on model ECMC3 in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 6: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N	Rating
Laptop	Lenovo	T480	PF-16A6N8	N/A
DC power Supply	Topward	3303D	809332	0-30 Volts, 0-3 Amps

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

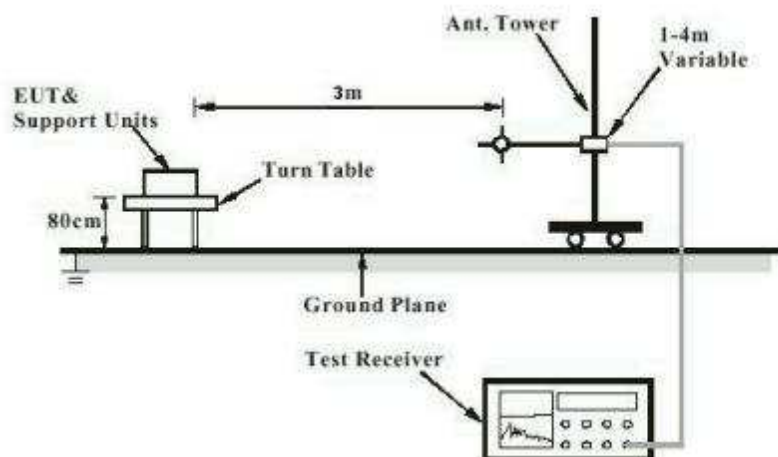


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

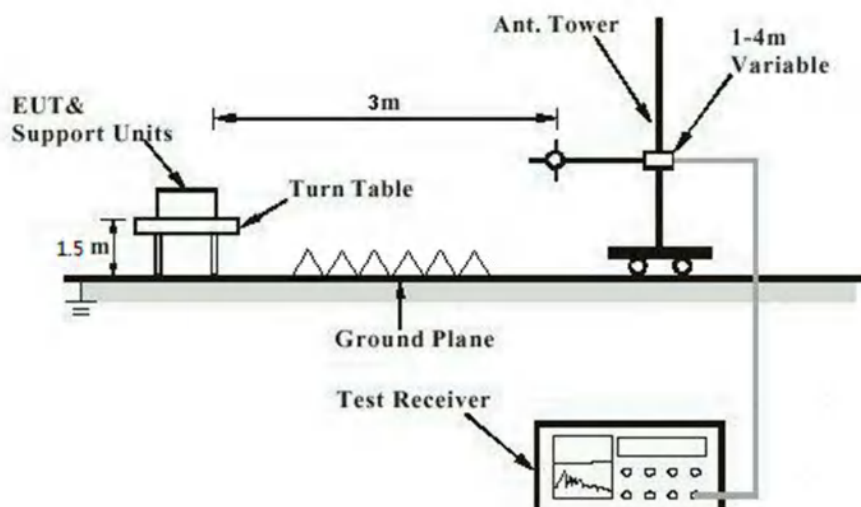
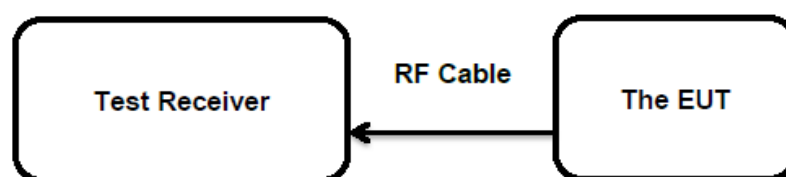


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:

Pass

Test Specification

Test standard : FCC Part 15.247(b)(4) and Part 15.203
RSS-Gen Clause 6.8

According to the manufacturer declared, the EUT has an Integral Antenna, the directional gain of antenna is 3.50dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement.

Therefore, the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

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5.1.2 Maximum Peak Conducted Output Power

RESULT:

Pass

Test Specification

Test standard : FCC Part 15.247(b)(1)&(3)
RSS-247 Clause 5.4(b)&(d)
Basic standard : ANSI C63.10: 2013
Limits : FHSS < 0.125 Watts, DSSS < 1.0 Watts
Kind of test site : Shielded Room

Test Setup

Date of testing : 2024-03-08 to 2024-03-14
Input voltage : DC 12V
Operation mode : A, B
Test channel : Low / Middle / High
Ambient temperature : 22.7 °C
Relative humidity : 46 %
Atmospheric pressure : 101 kPa

Table 7: Test Result of Maximum Peak Conducted Output Power, BR & EDR

Test Mode	Test Channel (MHz)	Measured Peak Power		Limit (W)
		(dBm)	(W)	
GFSK (BR)	2402.0	2.23	0.0017	< 0.125
	2441.0	3.42	0.0022	
	2480.0	2.18	0.0017	
Maximum Measured Value		3.42	0.0022	
Test Mode	Test Channel (MHz)	Measured Peak Power		Limit (W)
		(dBm)	(W)	
8DPSK (EDR)	2402.0	2.02	0.0016	< 0.125
	2441.0	3.23	0.0021	
	2480.0	2.08	0.0016	
Maximum Measured Value		3.23	0.0021	
Max. e.i.r.p.=3.42dBm+3.50dBi=6.92dBm, which is less than 36dBm=4W.				

Table 8: Test Result of Maximum Peak Conducted Output Power, Bluetooth LE

Test Mode	Test Channel (MHz)	Measured Peak Power		Limit (W)
		(dBm)	(W)	
Bluetooth LE (1 Mbps)	2402	2.41	0.0017	< 1.0
	2440	3.34	0.0022	
	2480	2.25	0.0017	
Max. Measured Value		3.34	0.0022	
Max. e.i.r.p.=3.34dBm+3.50dBi=6.84dBm, which is less than 36dBm=4W.				

Note:

- 1) The cable loss is taken into account in results.
- 2) Antenna gain(G) of Bluetooth: 3.50 dBi
e.i.r.p.=P_(Peak power)+ G, which is far below the 4 W

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5.1.3 Conducted Power Spectral Density

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(e) RSS-247 Clause 5.2(b)
Basic standard	: ANSI C63.10: 2013
Limits	: < 8 dBm / 3kHz
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2024-03-08 to 2024-03-11
Input voltage	: DC 12V
Operation mode	: B
Test channel	: Low / Middle / High
Ambient temperature	: 22.7 °C
Relative humidity	: 46 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix B.

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5.1.4 6dB Bandwidth

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(a)(2) RSS-247 Clause 5.2(a)
Basic standard	: ANSI C63.10: 2013
Limits	: > 500 KHz
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2024-03-14
Input voltage	: DC 12V
Operation mode	: B
Test channel	: Low / Middle / High
Ambient temperature	: 22.7 °C
Relative humidity	: 46 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix B.

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5.1.5 99% Bandwidth

RESULT:**Pass****Test Specification**

Test standard	:	FCC Part 15.247(a) RSS-Gen Clause 6.7
Basic standard	:	ANSI C63.10: 2013
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-03-14
Input voltage	:	DC 12V
Operation mode	:	A, B
Test channel	:	Low / Middle / High
Ambient temperature	:	22.7 °C
Relative humidity	:	46 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A & B.

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5.1.6 20dB Bandwidth

RESULT:**Pass****Test Specification**

Test standard : FCC Part 15.247(a)(1)
RSS-247 Clause 5.1(a)

Basic standard : ANSI C63.10: 2013

Kind of test site : Shielded Room

Test Setup

Date of testing : 2024-03-08 to 2024-03-14

Input voltage : DC 12V

Operation mode : A

Test channel : Low / Middle / High

Ambient temperature : 22.7 °C

Relative humidity : 46 %

Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A.

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5.1.7 Carrier Frequency Separation

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(a)(1) RSS-247 Clause 5.1(b)
Basic standard	: ANSI C63.10: 2013
Limits	: $\geq 25\text{kHz}$ or $2/3$ of 20dB bandwidth, whichever is greater
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2024-03-08 to 2024-03-14
Input voltage	: DC 12V
Operation mode	: C
Test channel	: Low / Middle / High
Ambient temperature	: 22.7 °C
Relative humidity	: 46 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A.

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5.1.8 Number of Hopping Frequency

RESULT:**Pass****Test Specification**

Test standard	: FCC part 15.247(a)(1)(iii) RSS-247 Clause 5.1(d)
Basic standard	: ANSI C63.10: 2013
Limits	: ≥ 15 non-overlapping channels
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2024-03-08 to 2024-03-14
Input voltage	: DC 12V
Operation mode	: C
Ambient temperature	: 22.7 °C
Relative humidity	: 46 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A.

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5.1.9 Time of Occupancy

RESULT:**Pass****Test Specification**

Test standard	: FCC part 15.247(a)(1)(iii) RSS-247 Clause 5.1(d)
Basic standard	: ANSI C63.10: 2013
Limits	: < 0.4s
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2024-03-08 to 2024-03-14
Input voltage	: DC 12V
Operation mode	: C
Test channel	: Low / Middle / High
Ambient temperature	: 22.7 °C
Relative humidity	: 46 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A.

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5.1.10 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

RESULT:

Pass

Test Specification

Test standard	: FCC Part 15.247(d) RSS-247 Clause 5.5
Basic standard	: ANSI C63.10: 2013
Limits	: 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2024-03-08 to 2024-03-11
Input voltage	: DC 12V
Operation mode	: A, B
Test channel	: Low / Middle / High
Ambient temperature	: 22.7 °C
Relative humidity	: 46 %
Atmospheric pressure	: 101 kPa

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

For the measurement records, refer to the appendix A & B.

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5.1.11 Radiated Spurious Emission

RESULT:

Pass

Test Specification

Test standard	: FCC Part 15.247(d) & FCC Part 15.205 RSS-247 Clause 3.3
Basic standard	: ANSI C63.10: 2013
Limits	: Refer to 15.209(a) of FCC part 15.247(d) RSS-Gen Section 8.9 & 8.10
Kind of test site	: 3m Semi-anechoic Chamber

Test Setup

Date of testing	: 2024-03-18 to 2024-03-21
Input voltage	: DC 12V
Operation mode	: A, B
Test channel	: Low / Middle / High
Ambient temperature	: Refer to test result
Relative humidity	: Refer to test result
Atmospheric pressure	: 101 kPa

Remark:

Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix A & B.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix C.

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Appendix A: Test Results of Bluetooth BR & EDR mode

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Appendix A.1: Test Results of 99% Bandwidth

BR mode (DH5)

Occupied Channel Bandwidth 99% (2402 MHz; 10.000 dBm; 1 MHz; Test Mode)

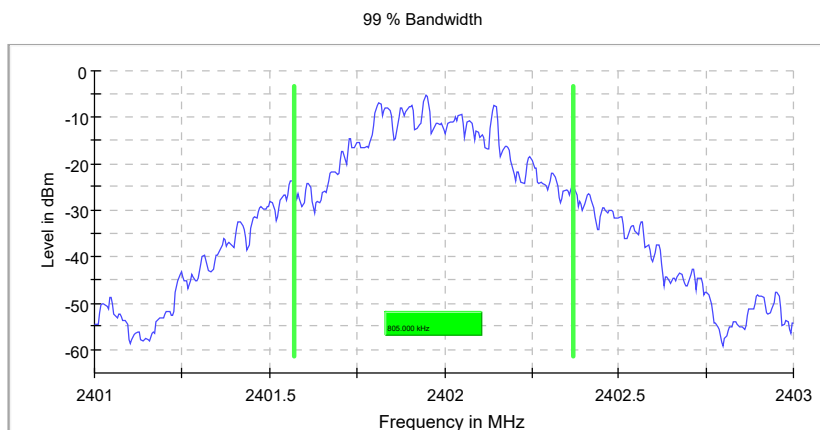
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	0.805000	---	---	2401.567500	2402.372500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2402.000000	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.07 dB	0.30 dB

Occupied Channel Bandwidth 99% (2441 MHz; 10.000 dBm; 1 MHz; Test Mode)

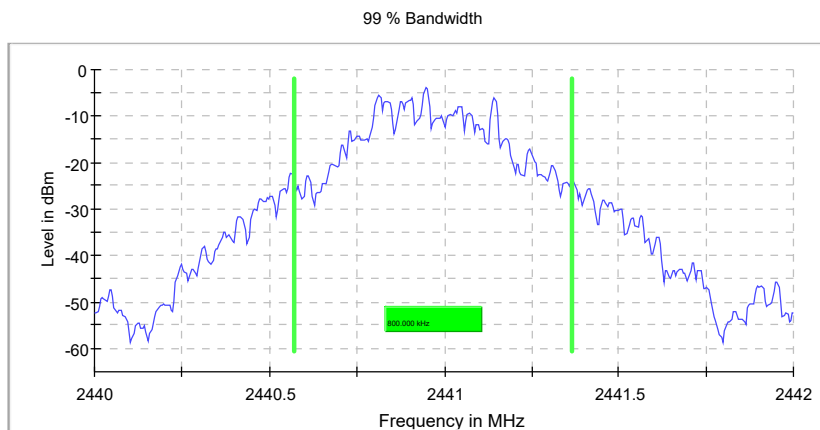
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	0.800000	---	---	2440.567500	2441.367500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2441.000000	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
SweepTime	189.648 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.03 dB	0.30 dB

Occupied Channel Bandwidth 99% (2480 MHz; 10.000 dBm; 1 MHz; Test Mode)

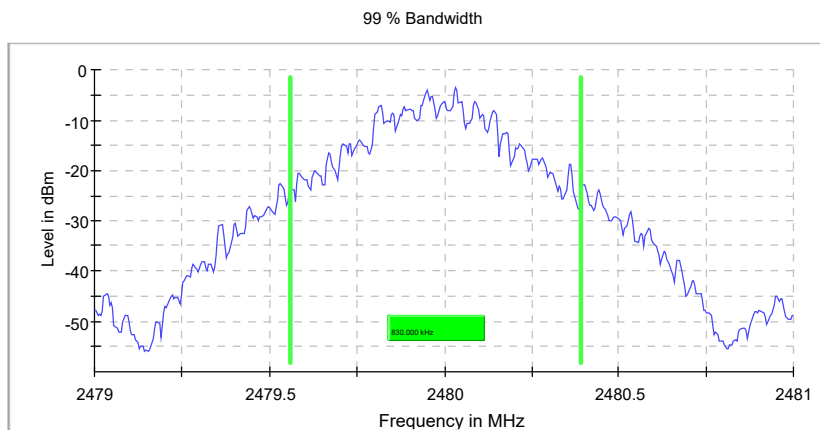
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	0.830000	---	---	2479.562500	2480.392500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2480.000000	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
SweepTime	189.648 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.08 dB	0.30 dB

EDR mode (3-DH5)

Occupied Channel Bandwidth 99% (2402 MHz; 10.000 dBm; 1 MHz; Test Mode)

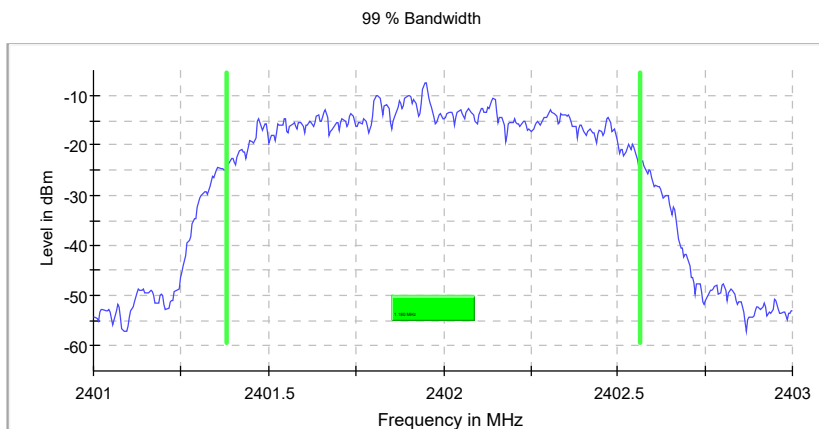
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.180000	---	---	2401.382500	2402.562500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2402.000000	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	5 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.08 dB	0.30 dB

Occupied Channel Bandwidth 99% (2441 MHz; 10.000 dBm; 1 MHz; Test Mode)

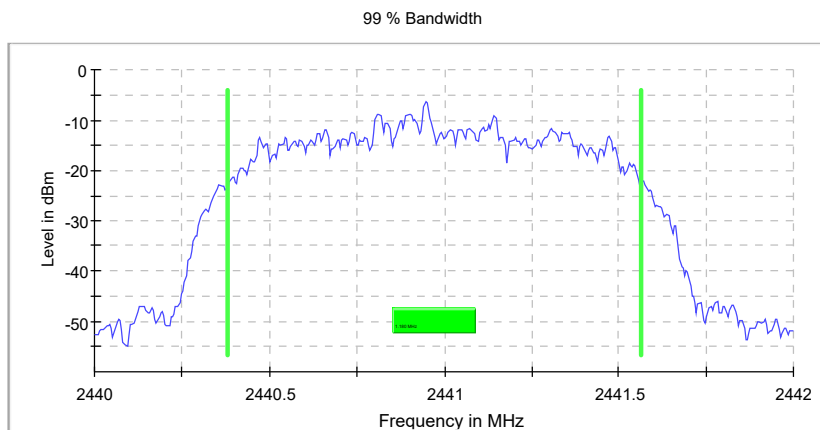
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	1.180000	---	---	2440.382500	2441.562500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2441.000000	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
SweepTime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	6 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.06 dB	0.30 dB

Occupied Channel Bandwidth 99% (2480 MHz; 10.000 dBm; 1 MHz; Test Mode)

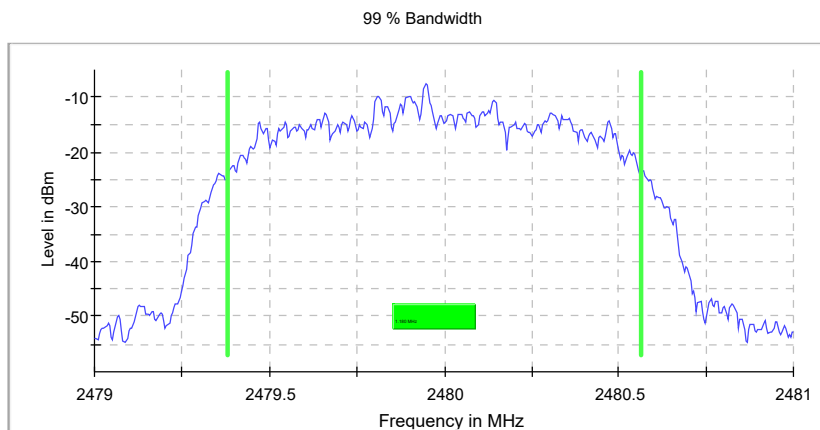
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.180000	---	---	2479.382500	2480.562500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2480.000000	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
SweepTime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	6 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.07 dB	0.30 dB

Appendix A.2: Test Results of 20dB Bandwidth

BR mode (DH5)

Emission Bandwidth 20 dB (2402 MHz; 10.000 dBm; 1 MHz; Test Mode)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

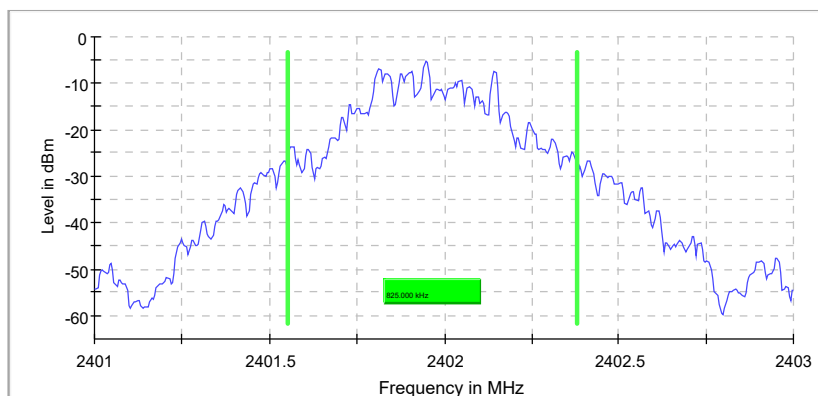
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	0.825000	---	---	2401.552500	2402.377500

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-5.2	PASS

20 dB Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	6 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.05 dB	0.50 dB

Emission Bandwidth 20 dB (2441 MHz; 10.000 dBm; 1 MHz; Test Mode)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

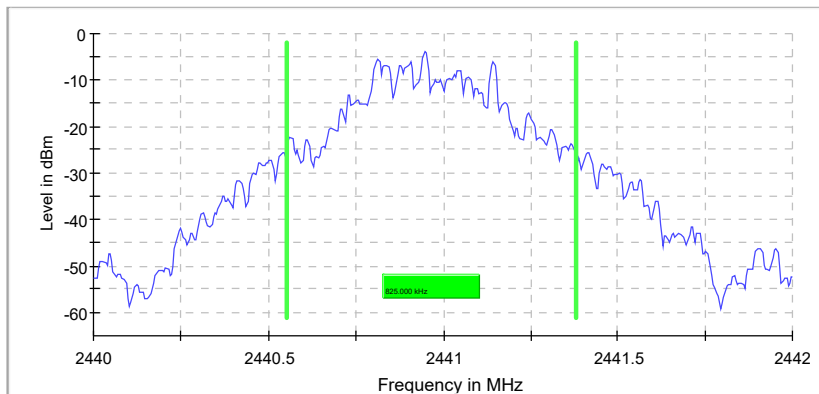
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	0.825000	---	---	2440.552500	2441.377500

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.000000	-4.0	PASS

20 dB Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
SweepTime	189.648 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.02 dB	0.50 dB

Emission Bandwidth 20 dB (2480 MHz; 10.000 dBm; 1 MHz; Test Mode)

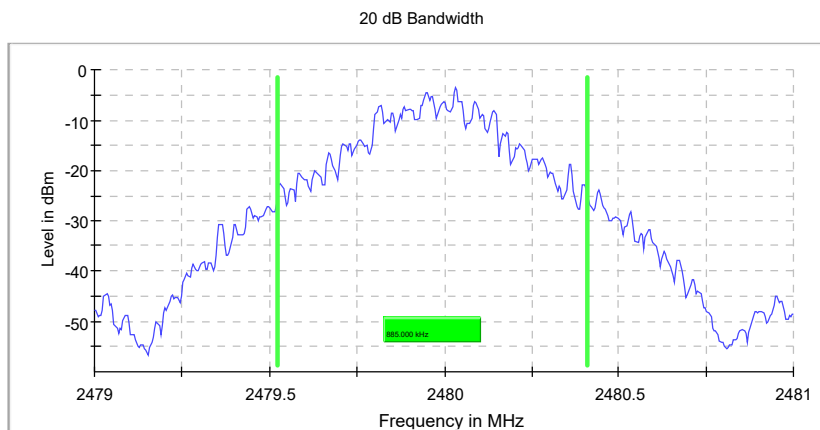
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	0.885000	---	---	2479.522500	2480.407500

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-3.6	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
SweepTime	189.648 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	8 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.11 dB	0.50 dB

EDR mode (3-DH5)

Emission Bandwidth 20 dB (2402 MHz; 10.000 dBm; 1 MHz; Test Mode)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

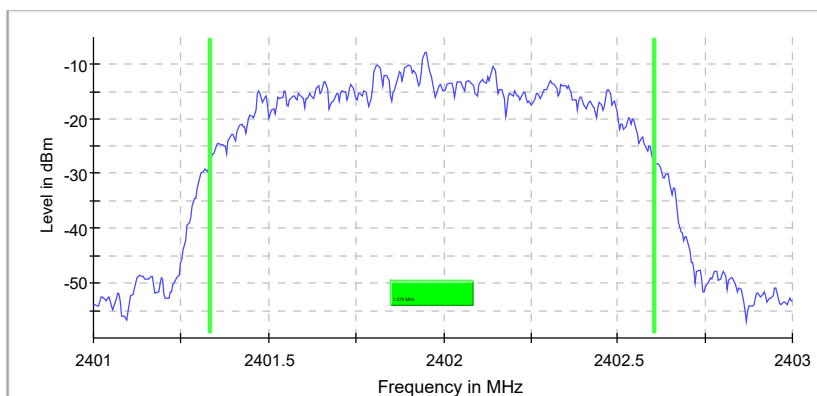
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.270000	---	---	2401.332500	2402.602500

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-7.6	PASS

20 dB Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.07 dB	0.50 dB

Emission Bandwidth 20 dB (2441 MHz; 10.000 dBm; 1 MHz; Test Mode)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

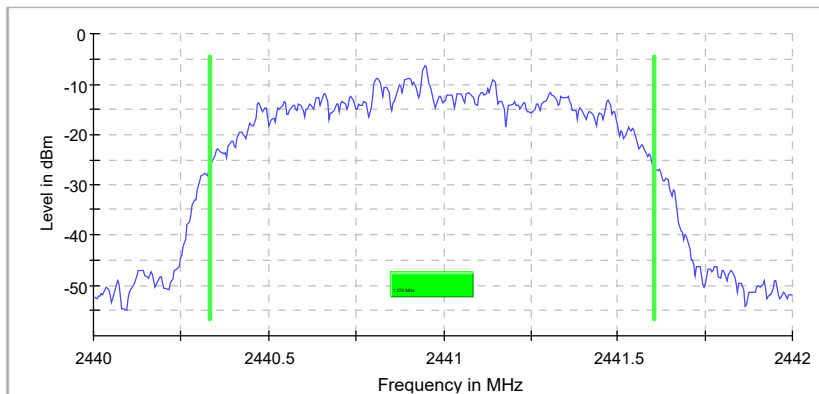
20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	1.270000	---	---	2440.332500	2441.602500

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.000000	-6.3	PASS

20 dB Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
SweepTime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	8 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.09 dB	0.50 dB

Emission Bandwidth 20 dB (2480 MHz; 10.000 dBm; 1 MHz; Test Mode)

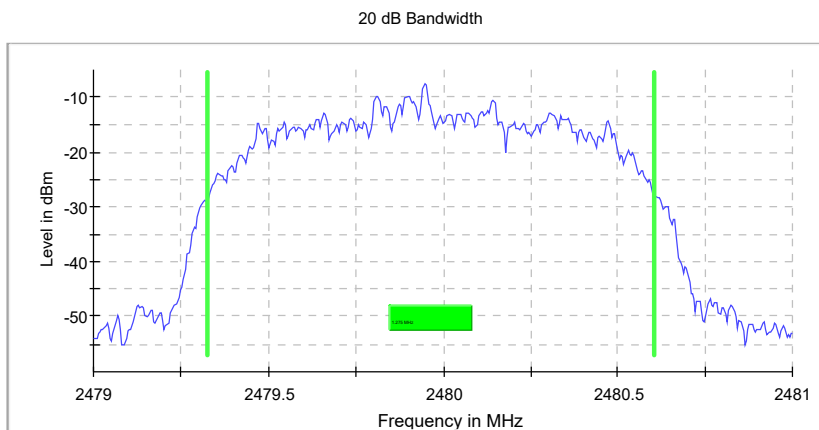
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.275000	---	---	2479.327500	2480.602500

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-7.5	PASS

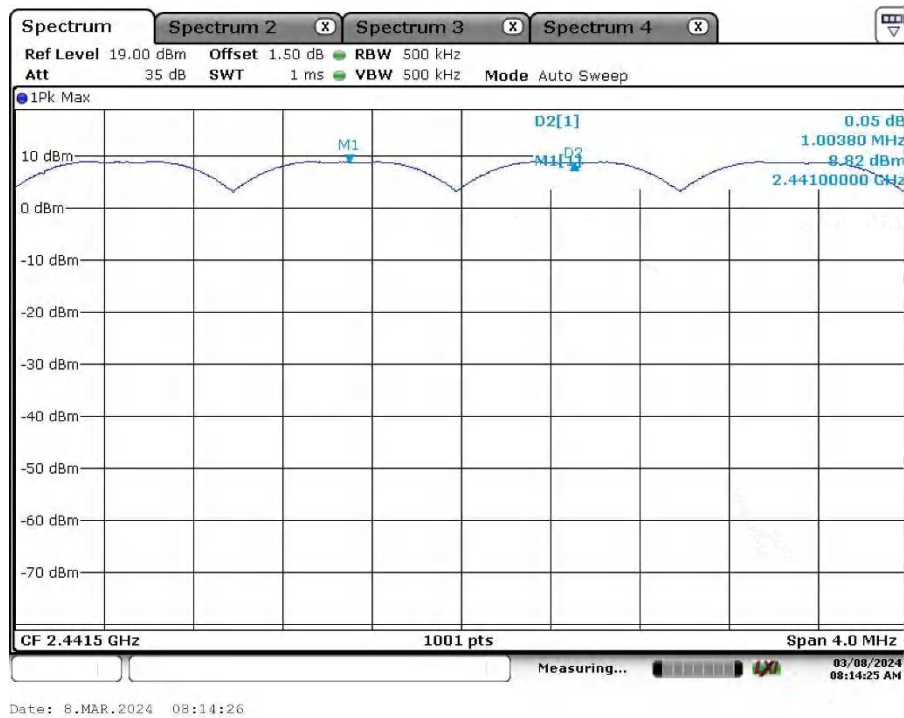
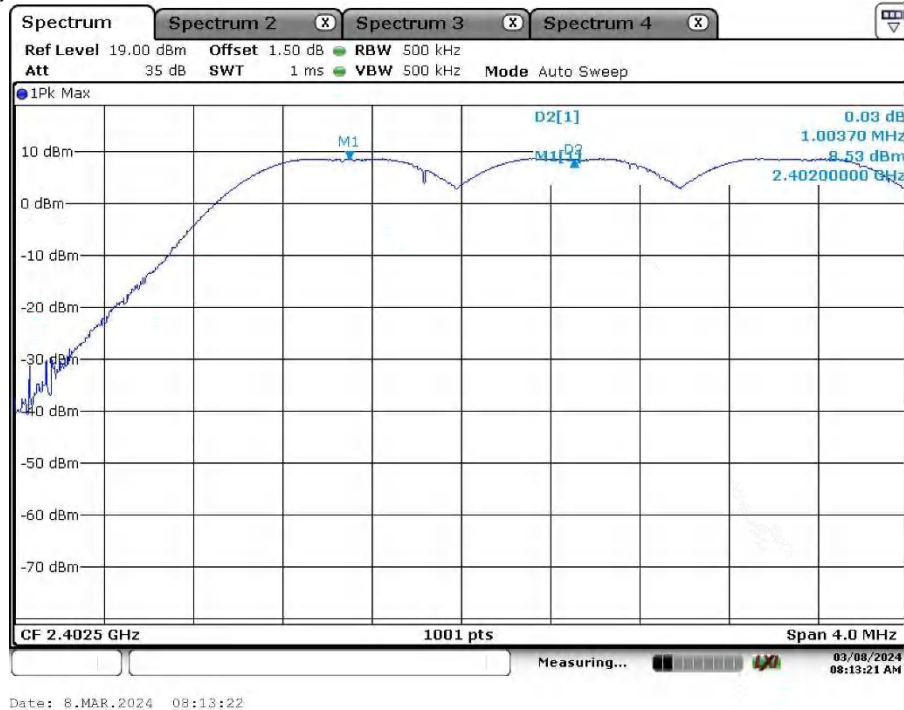


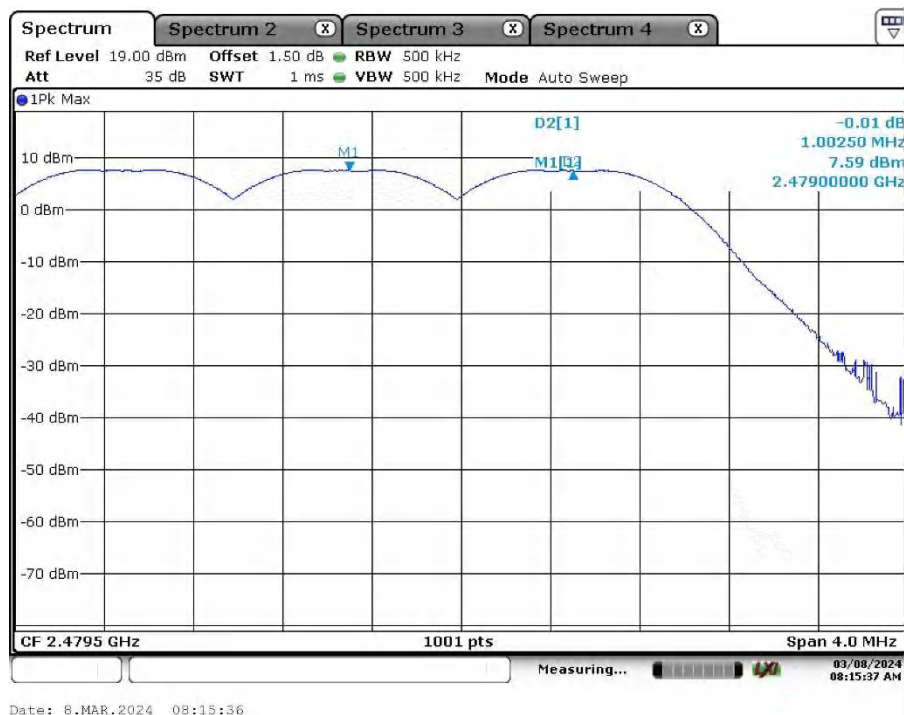
Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
SweepTime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.08 dB	0.50 dB

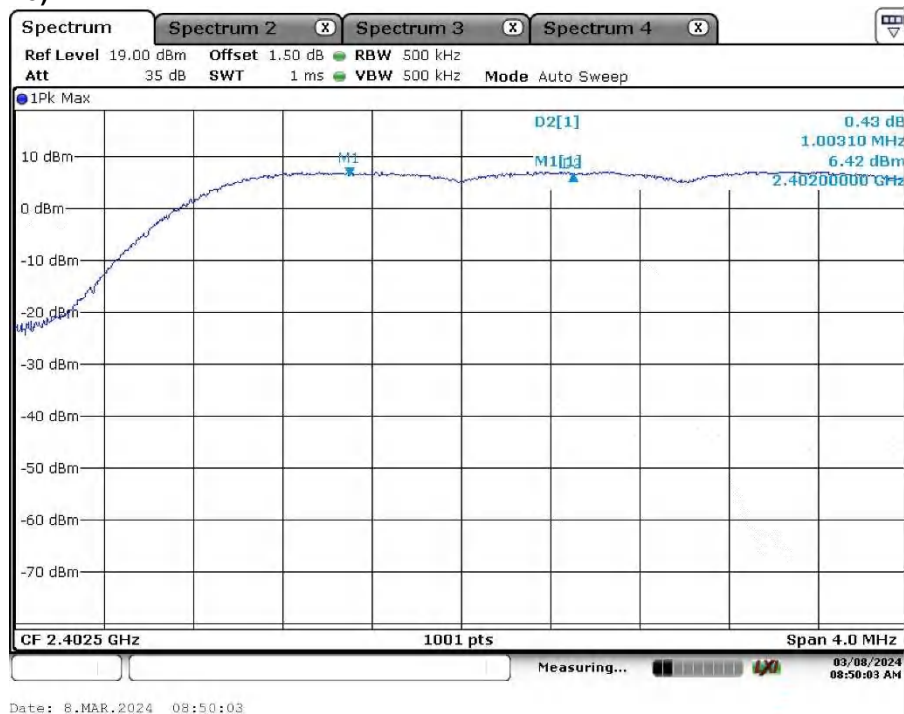
Appendix A.3: Test Results of Carrier Frequency Separation

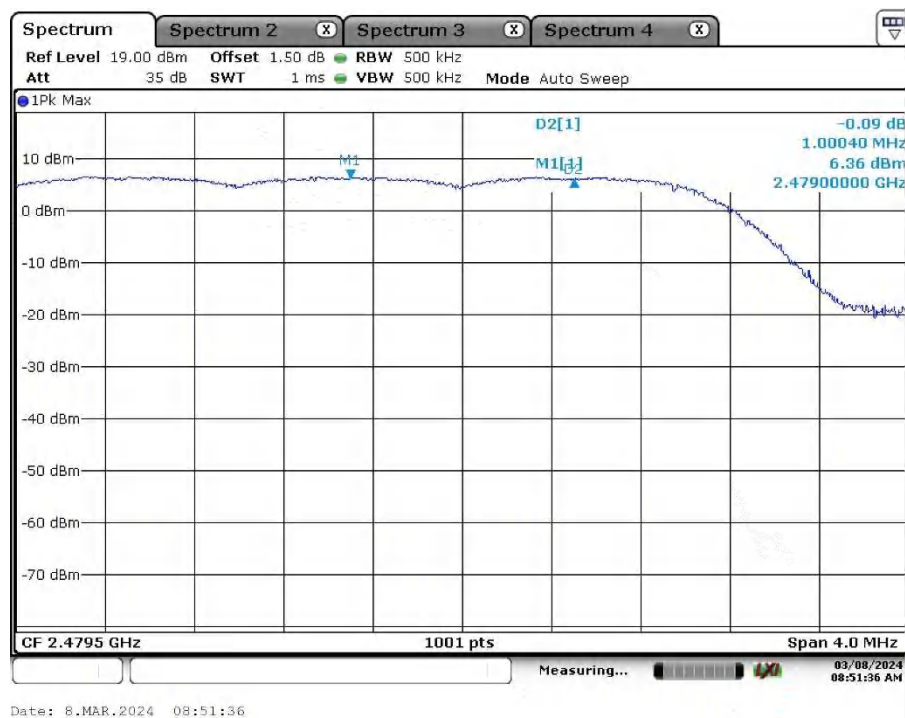
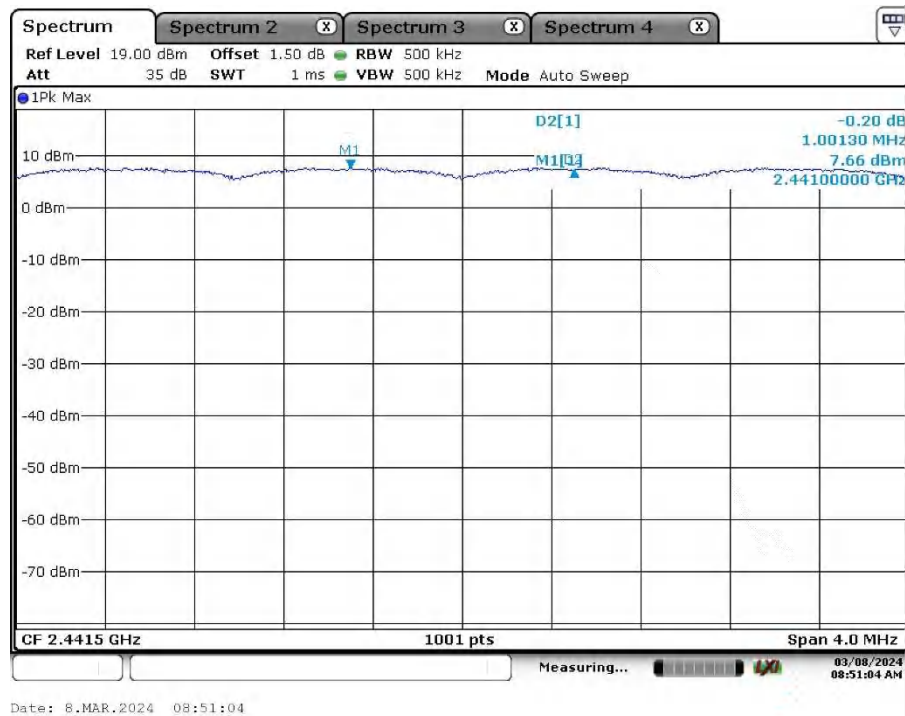
BR mode (DH5)





EDR mode (3-DH5)





Appendix A.4: Test Results of Number of Hopping Frequency

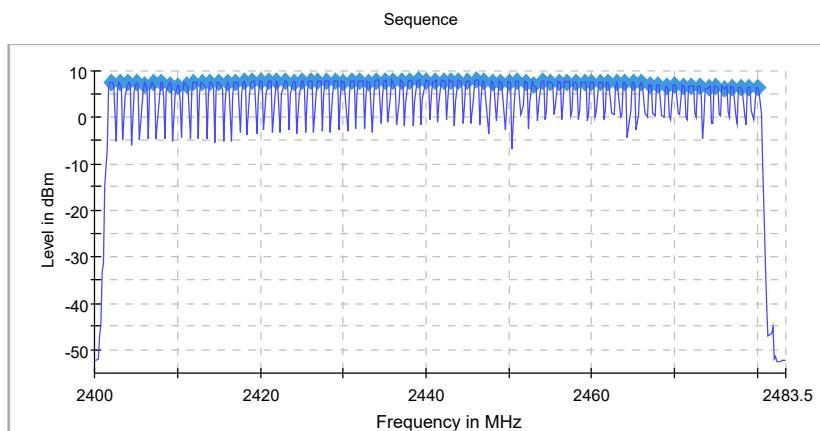
BR mode (DH5)

Hopping Frequencies (frequency independent; 10.000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a),(g), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

Channels

Channels	Limit Min	Limit Max	Result
79	15	---	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	200.000 kHz	<= 299.000 kHz
VBW	200.000 kHz	>= 200.000 kHz
SweepPoints	418	~ 418
Sweptime	1.060 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	74 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

EDR mode (3-DH5)

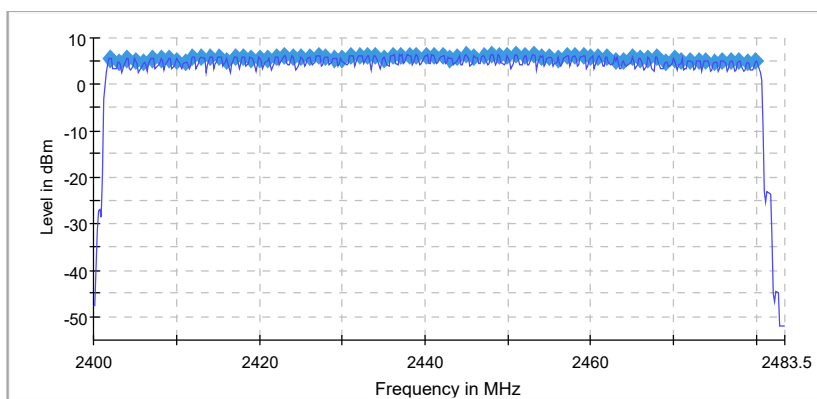
Hopping Frequencies (frequency independent; 10.000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a),(g), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

Channels

Channels	Limit Min	Limit Max	Result
79	15	---	PASS

Sequence



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	200.000 kHz	<= 299.000 kHz
VBW	200.000 kHz	>= 200.000 kHz
SweepPoints	418	~ 418
SweepTime	1.060 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	128 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.10 dB	0.50 dB

Appendix A.5: Test Results of Time of Occupancy

BR mode (DH5)

Time of Channel Occupancy (2441 MHz; 10.000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	319	109.500	-10.0

Periode

Min (ms)	Max (ms)	Mean (ms)
2.500	196.240	98.835

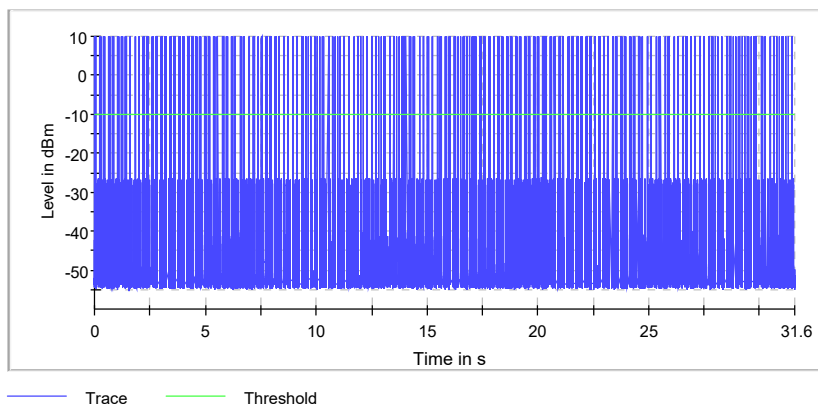
Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
0.34	0.35	400.000	0.000	0.342

DwellTime

Min (ms)	Max (ms)	Mean (ms)
0.34	0.35	0.342

Time of Channel Occupancy



Time of Channel Occupancy(2) (2441 MHz; 10.000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	319	67.380	-10.0

Periode

Min (ms)	Max (ms)	Mean (ms)
6.250	196.250	98.693

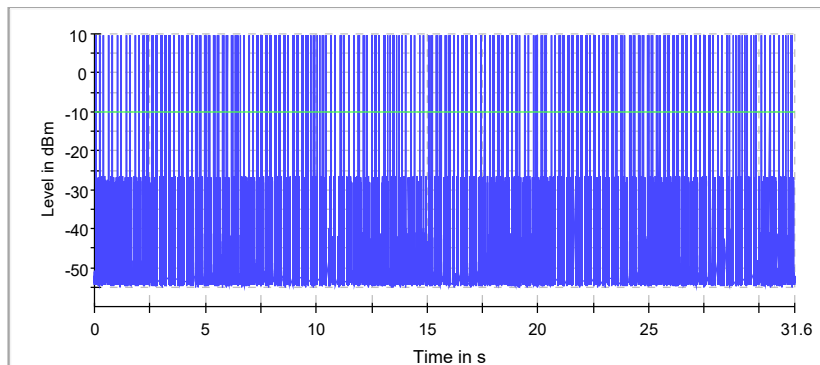
Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
0.21	0.22	400.000	0.000	0.211

DwellTime

Min (ms)	Max (ms)	Mean (ms)
0.21	0.22	0.211

Time of Channel Occupancy(2)



— Trace — Threshold

Time of Channel Occupancy(3) (2441 MHz; 10.000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	107	314.330	-10.0

Periode

Min (ms)	Max (ms)	Mean (ms)
41.250	1323.730	288.214

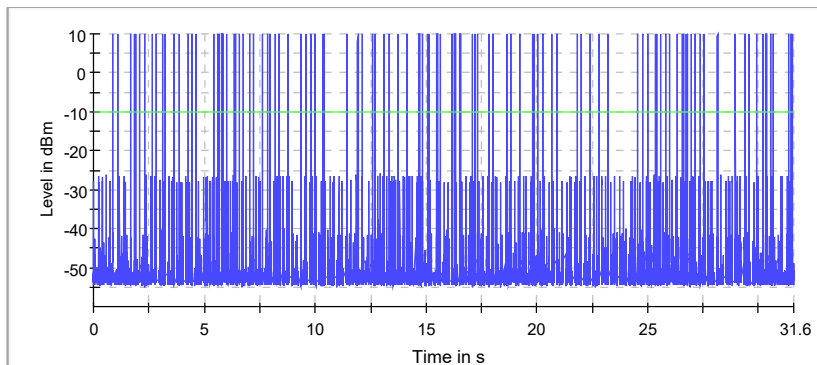
Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
2.910	2.920	400.000	0.000	2.910

DwellTime

Min (ms)	Max (ms)	Mean (ms)
2.910	2.920	2.910

Time of Channel Occupancy(3)



— Trace — Threshold

EDR mode (3-DH5)

Time of Channel Occupancy (2441 MHz; 10.000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	103	301.900	-10.0

Periode

Min (ms)	Max (ms)	Mean (ms)
41.250	1548.720	299.554

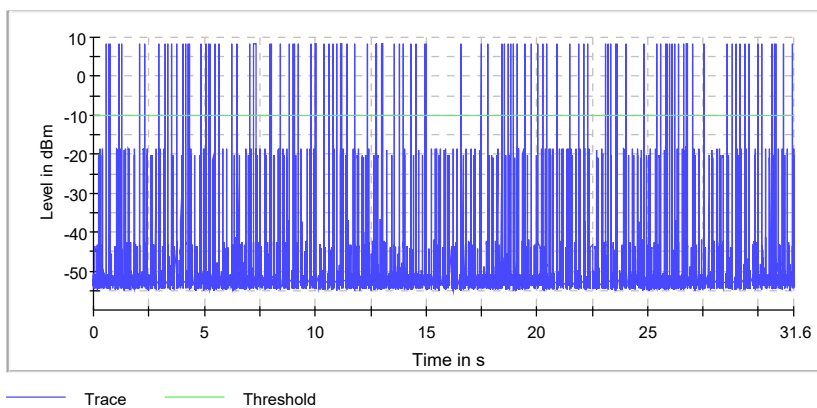
Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
2.900	2.910	400.000	0.000	2.903

DwellTime

Min (ms)	Max (ms)	Mean (ms)
2.900	2.910	2.903

Time of Channel Occupancy



Time of Channel Occupancy(2) (2441 MHz; 10.000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	119	348.420	-10.0

Periode

Min (ms)	Max (ms)	Mean (ms)
44.990	1046.230	262.972

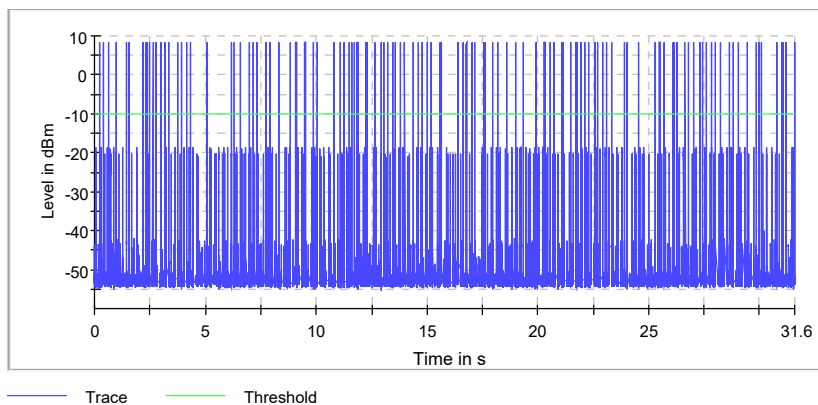
Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
2.900	2.910	400.000	0.000	2.904

DwellTime

Min (ms)	Max (ms)	Mean (ms)
2.900	2.910	2.904

Time of Channel Occupancy(2)



Time of Channel Occupancy(3) (2441 MHz; 10.000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	83	243.870	-10.0

Periode

Min (ms)	Max (ms)	Mean (ms)
41.250	2231.210	372.524

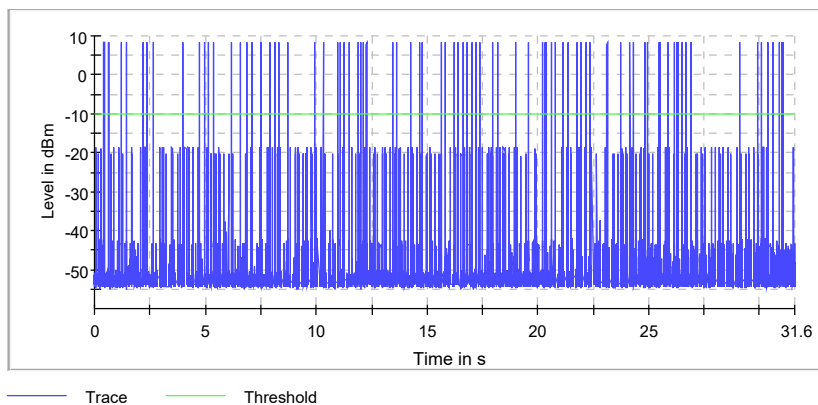
Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
2.900	2.910	400.000	0.000	2.903

DwellTime

Min (ms)	Max (ms)	Mean (ms)
2.900	2.910	2.903

Time of Channel Occupancy(3)

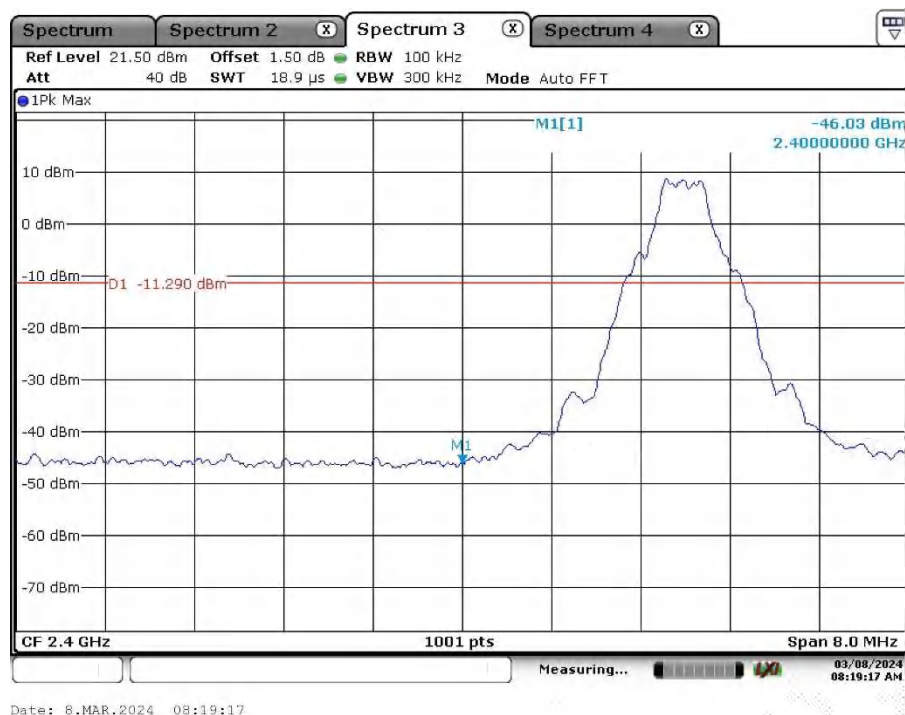


Appendix A.6: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

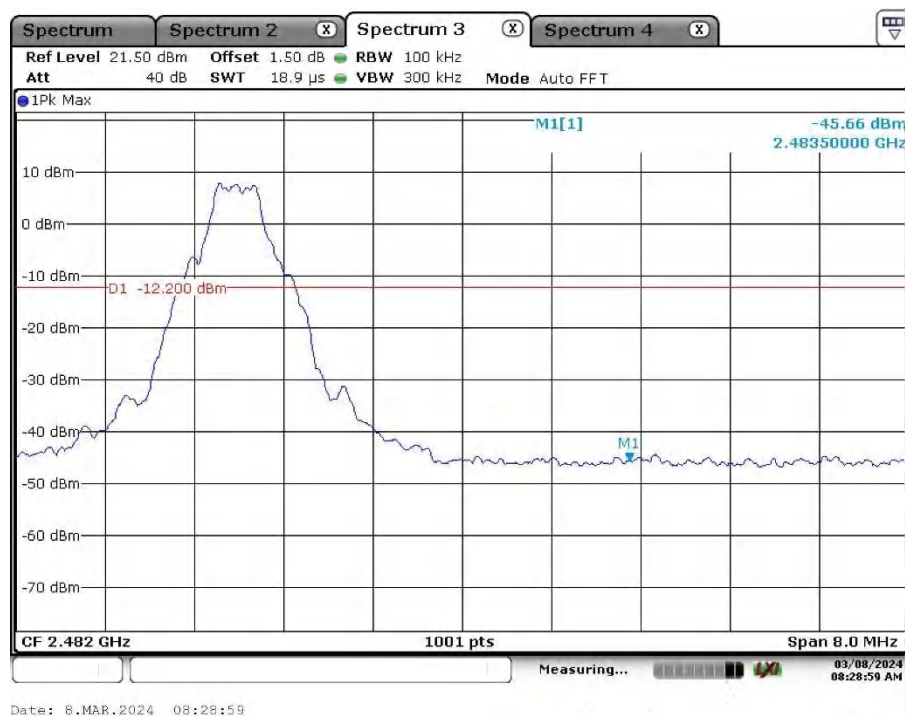
BR mode (DH5)

Fixed mode, Band Edge

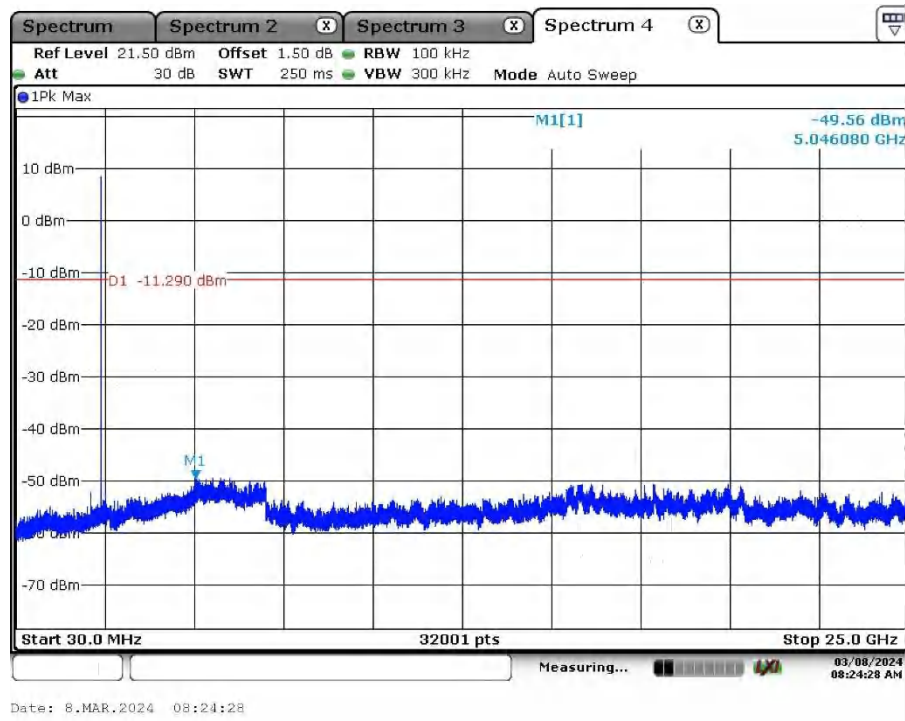
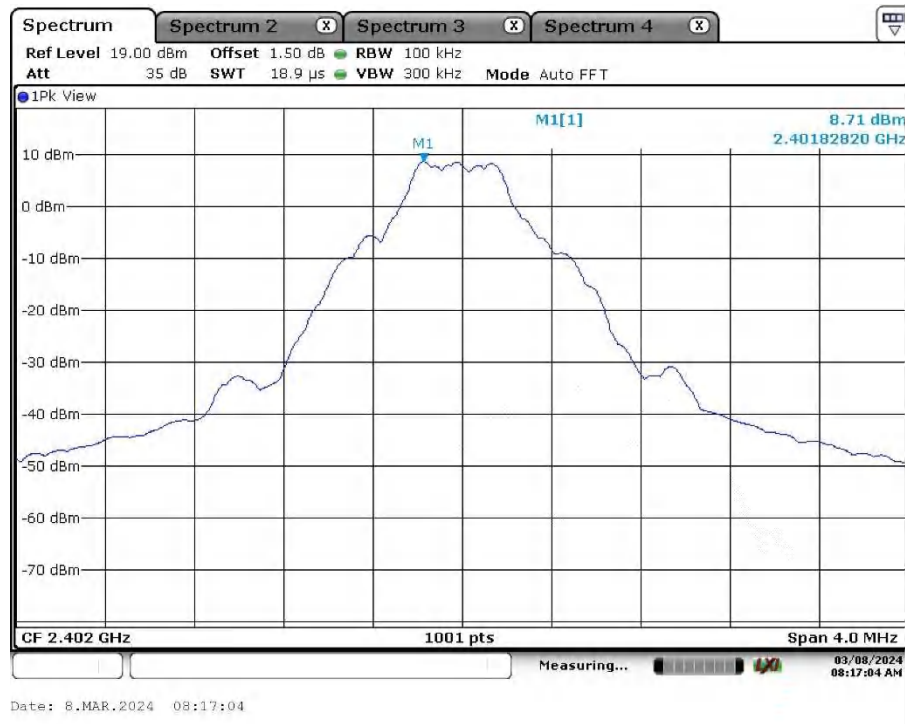
Low Channel



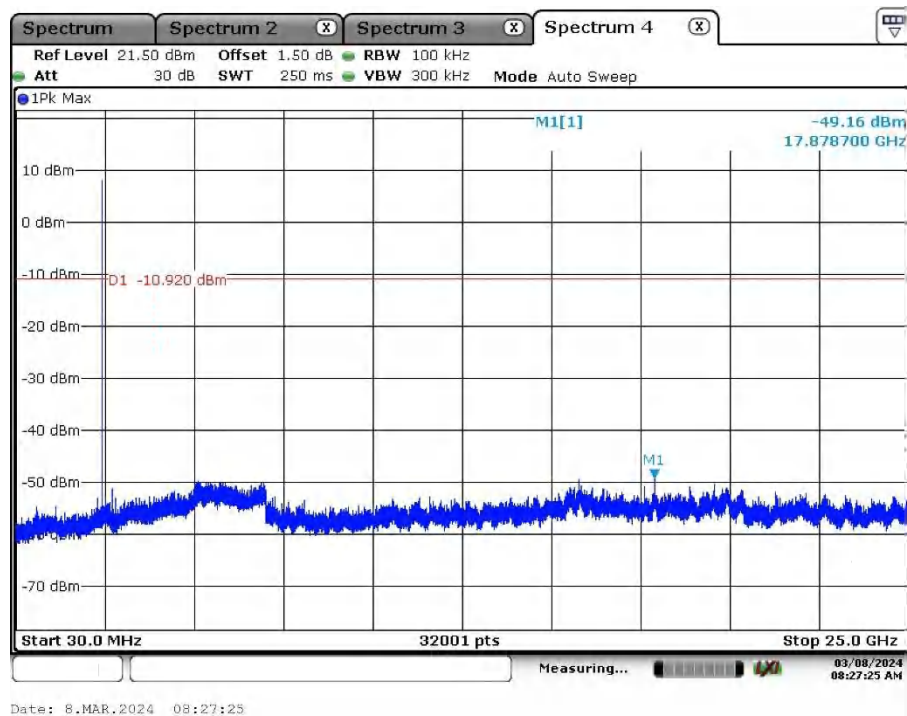
High Channel



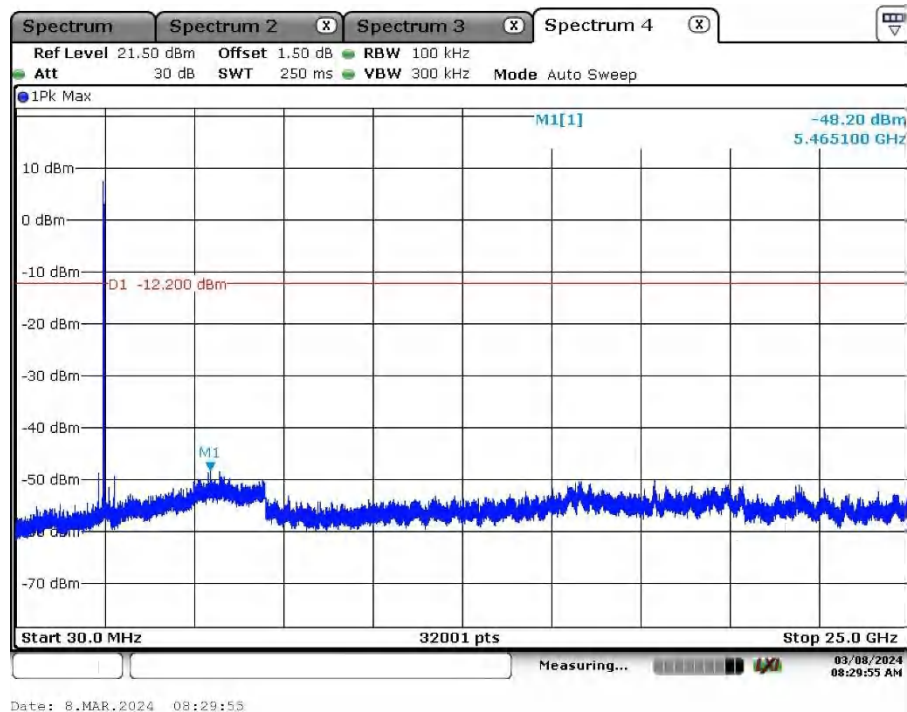
Fixed mode, Conducted Spurious Emission
Low Channel



Middle Channel

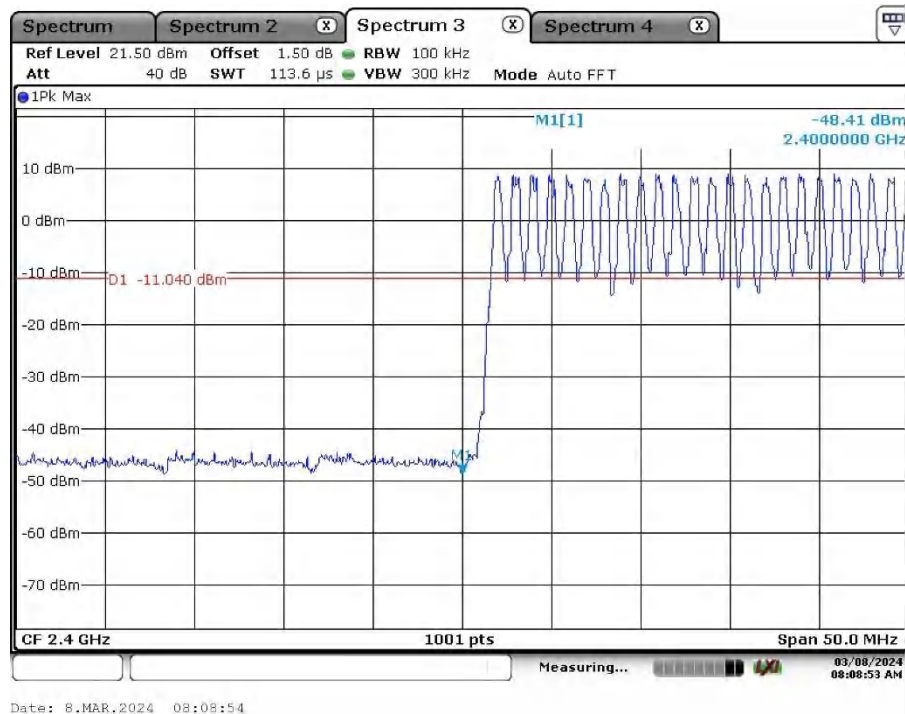


High Channel

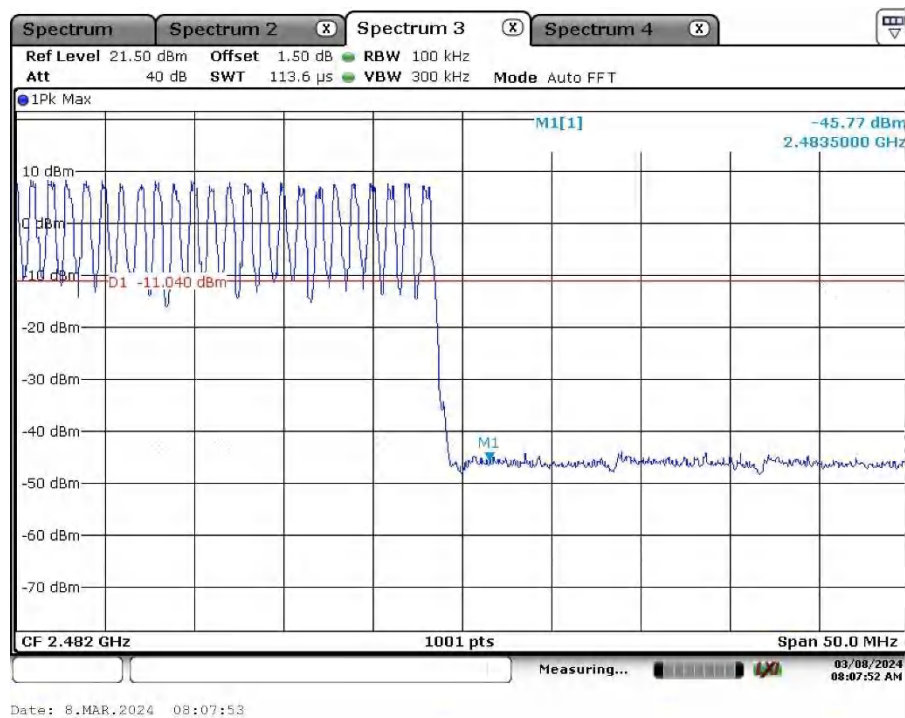


Hopping Mode, Band Edge

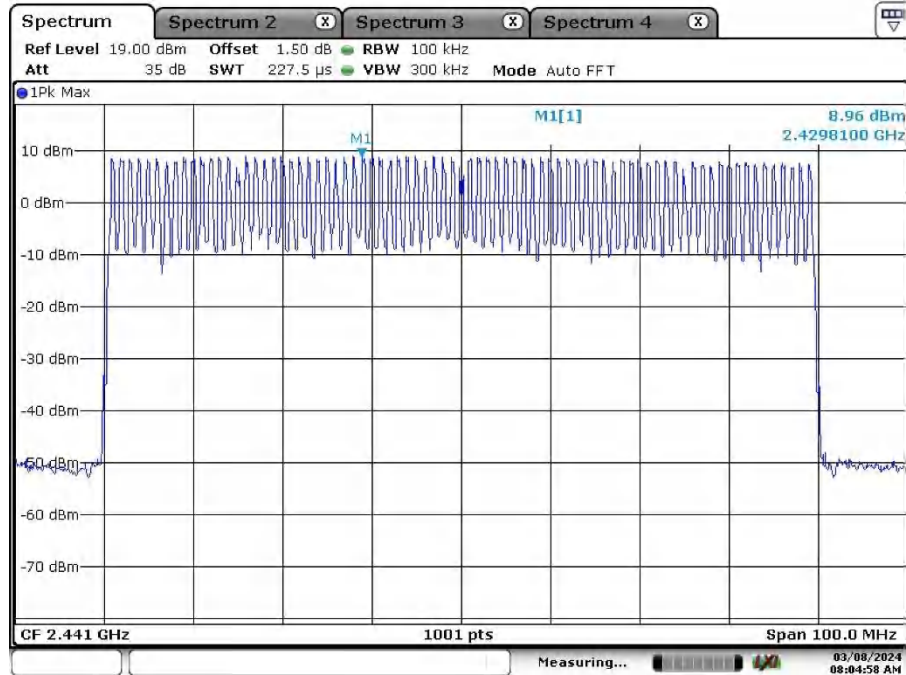
Low Channel



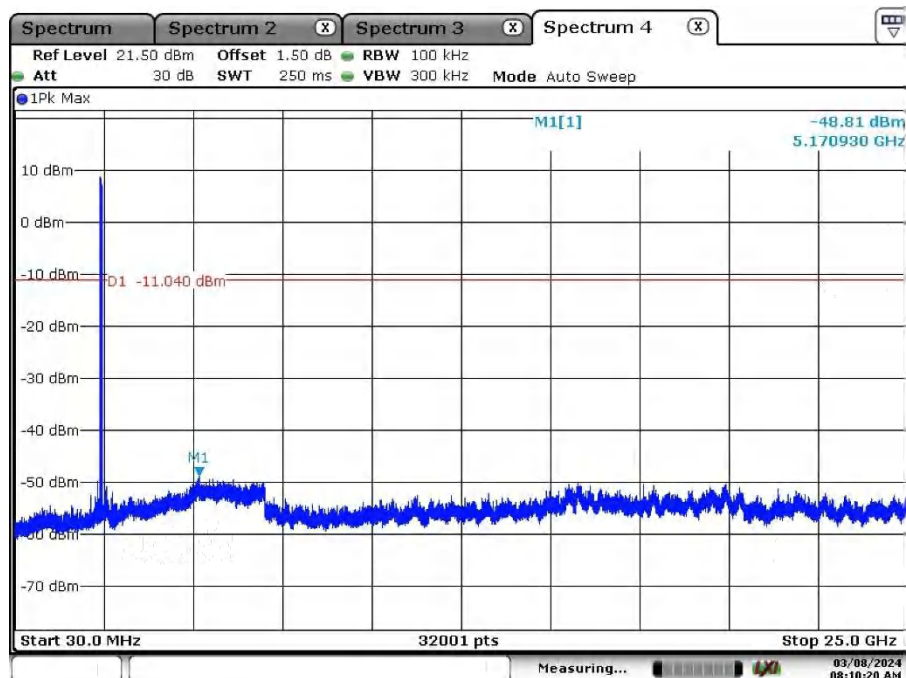
High Channel



Hopping Mode, Conducted Spurious Emission



Date: 8.MAR.2024 08:04:58

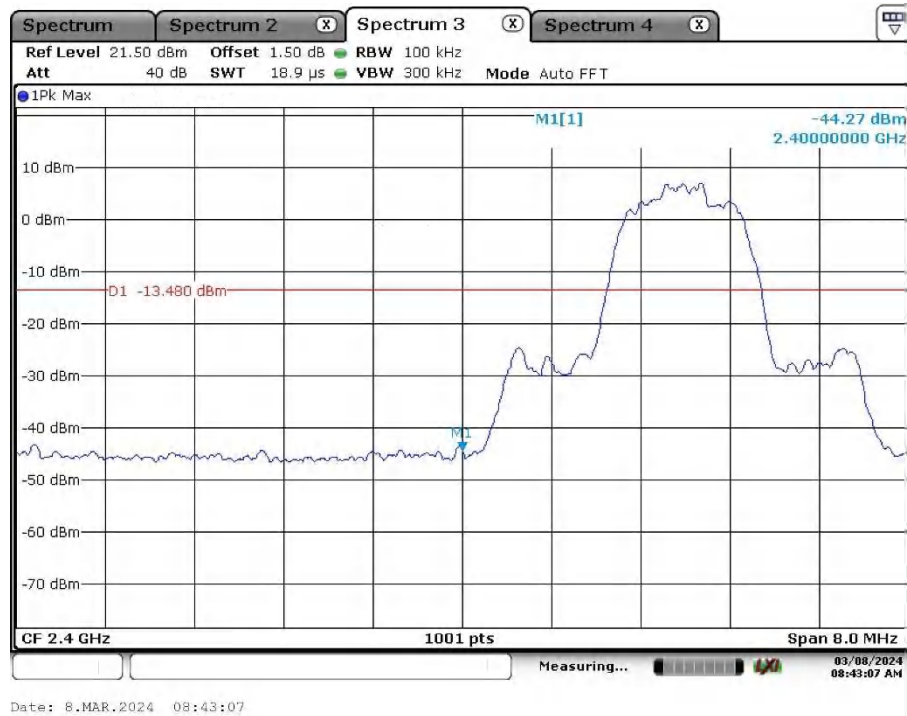


Date: 8.MAR.2024 08:10:21

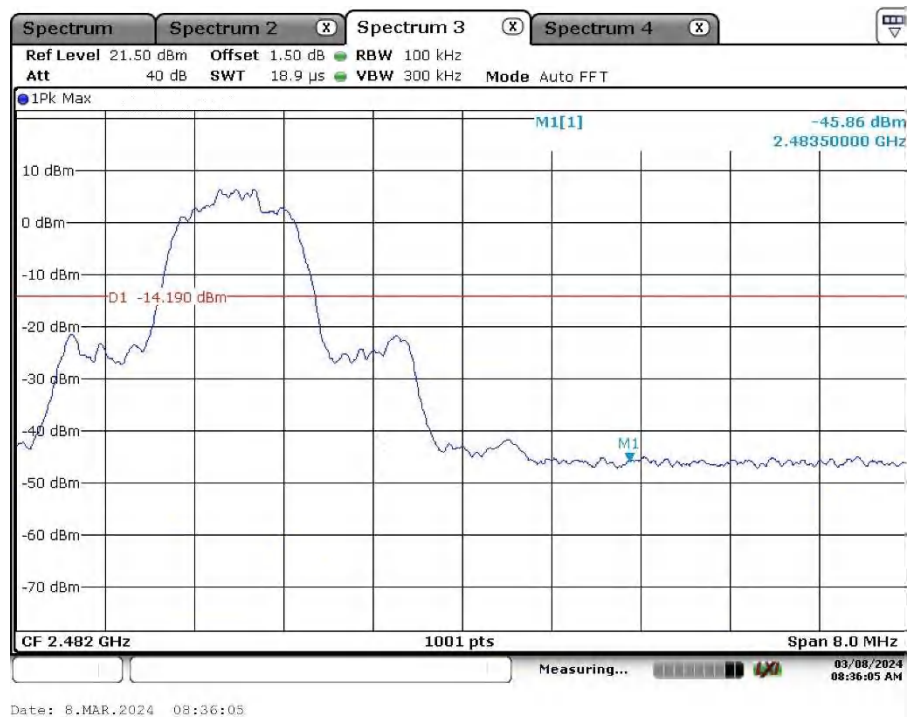
EDR mode (3-DH5)

Fixed mode, Band Edge

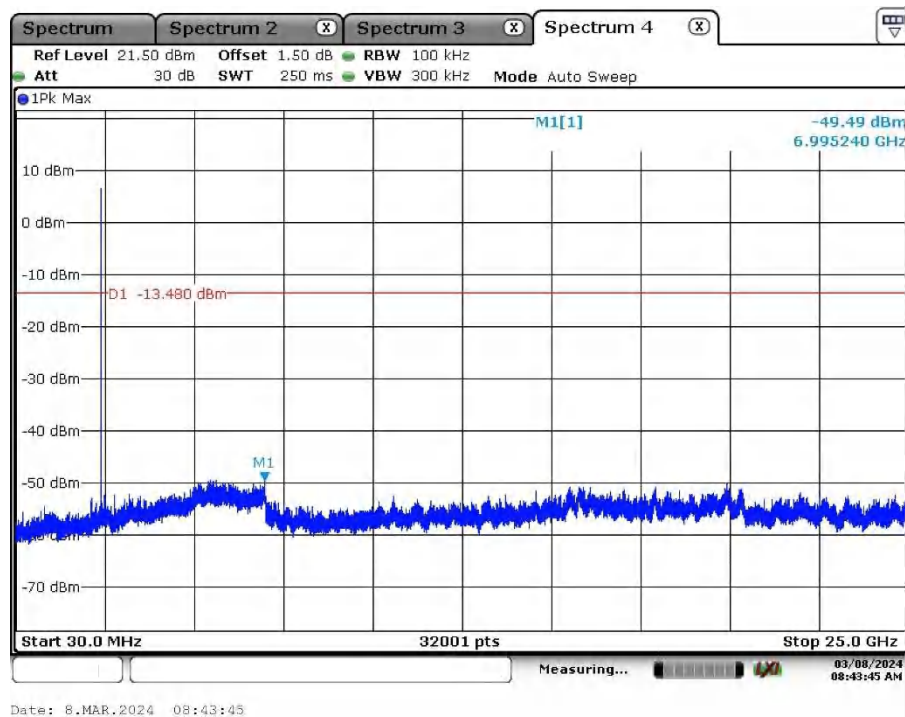
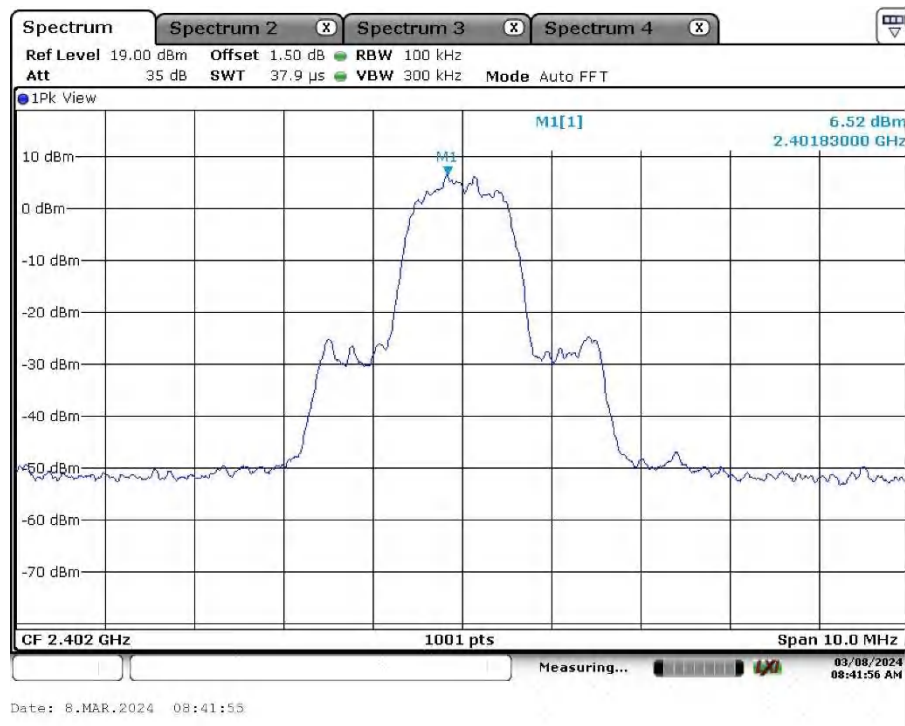
Low Channel



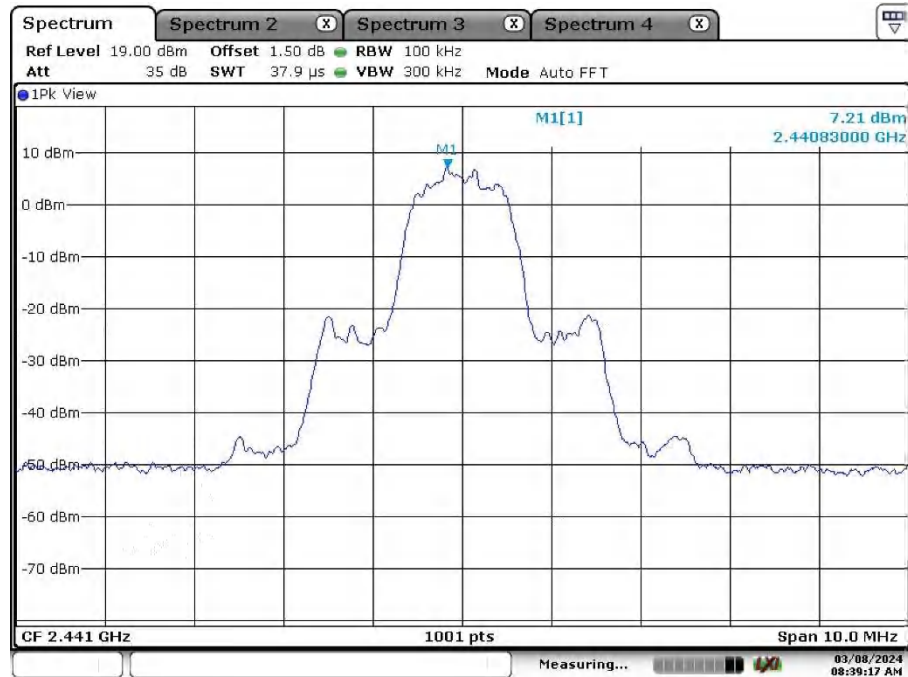
High Channel



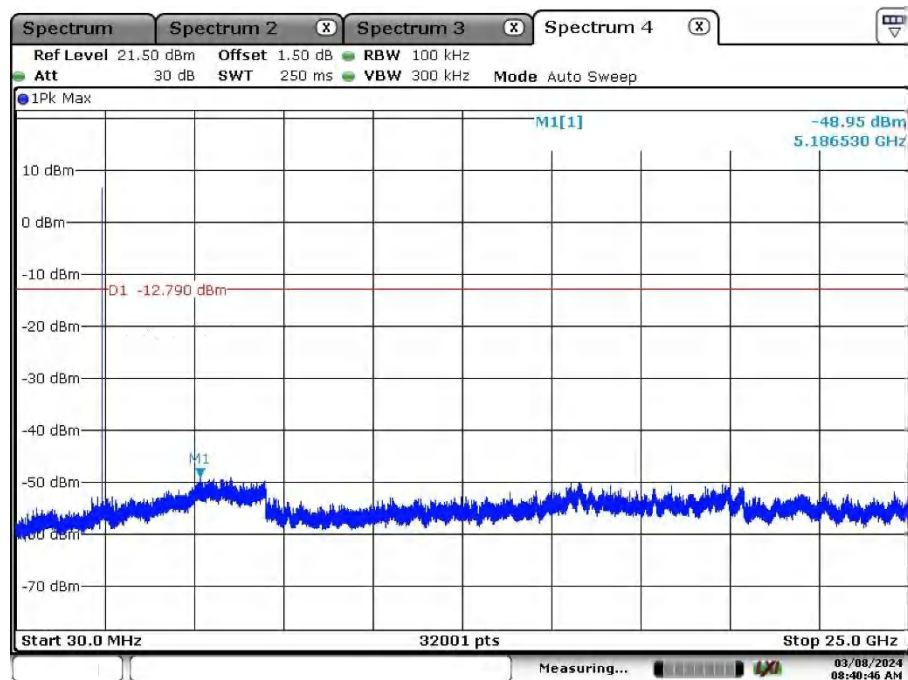
Fixed mode, Conducted Spurious Emission
Low Channel



Middle Channel

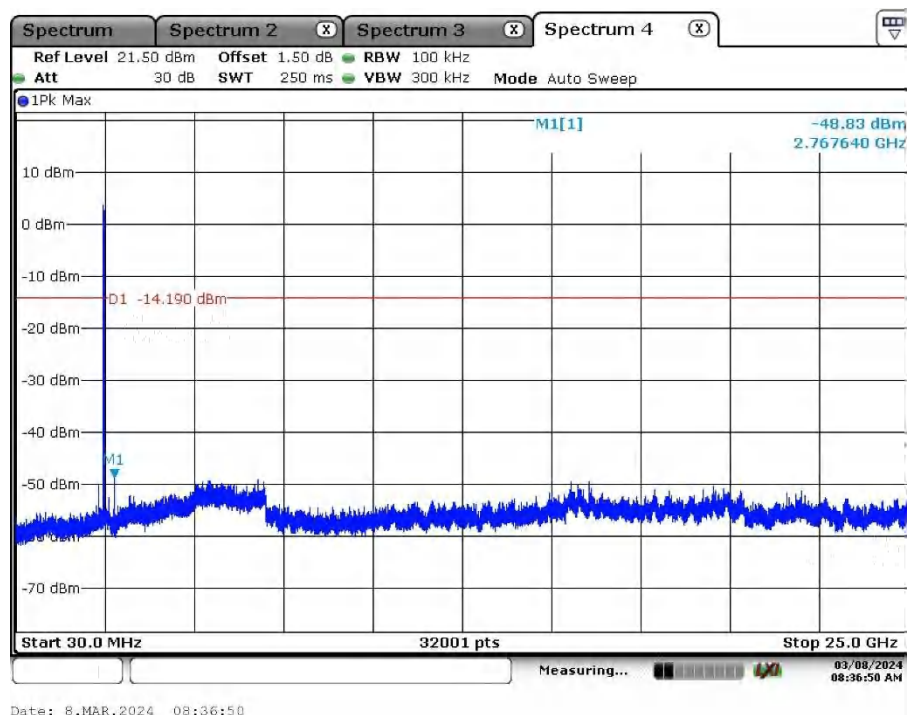
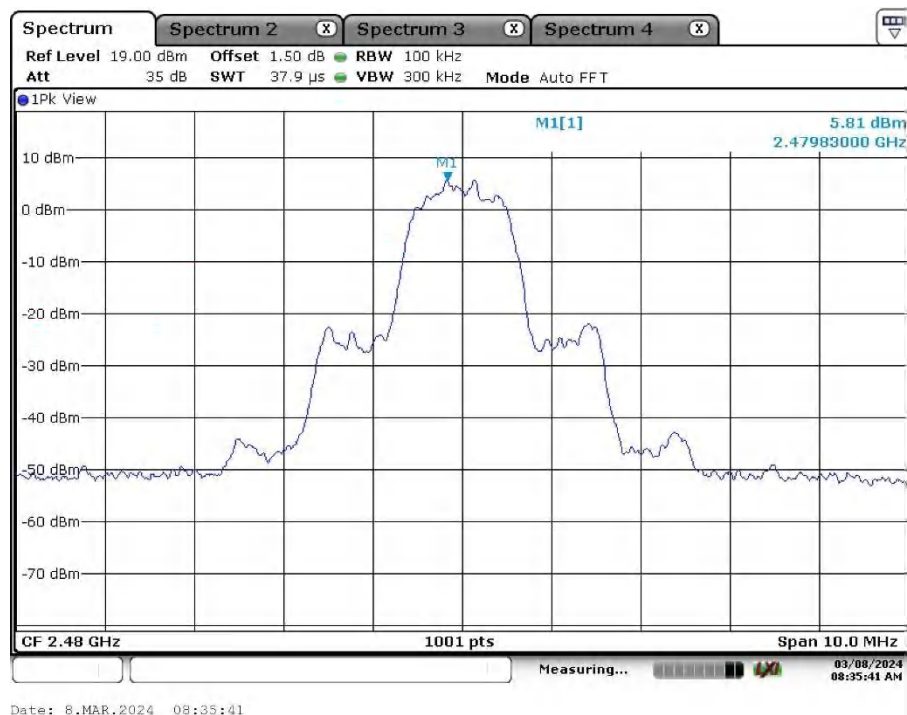


Date: 8.MAR.2024 08:39:16



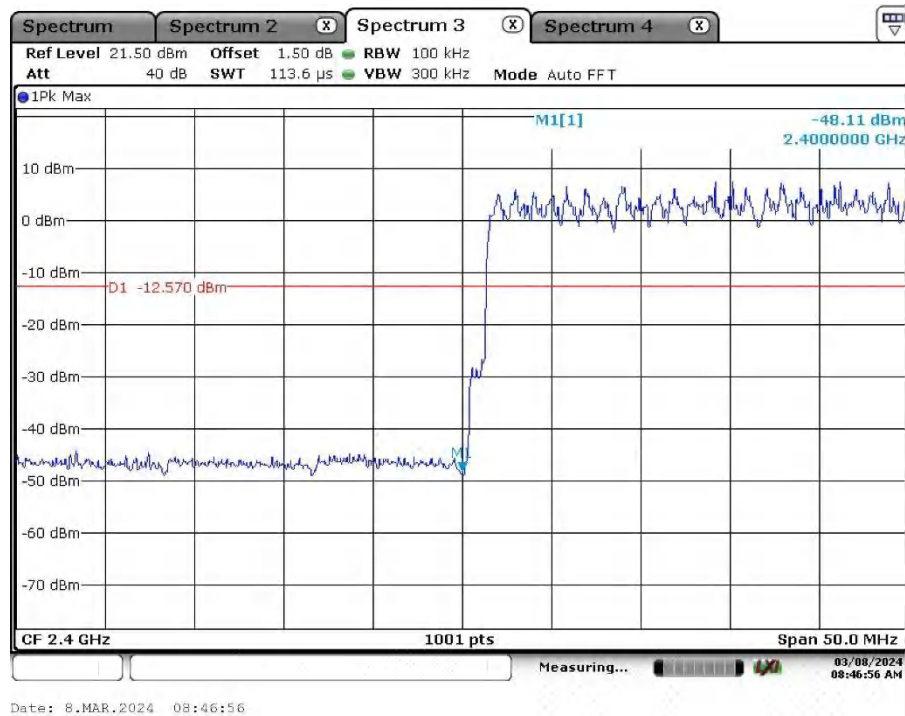
Date: 8.MAR.2024 08:40:45

High Channel

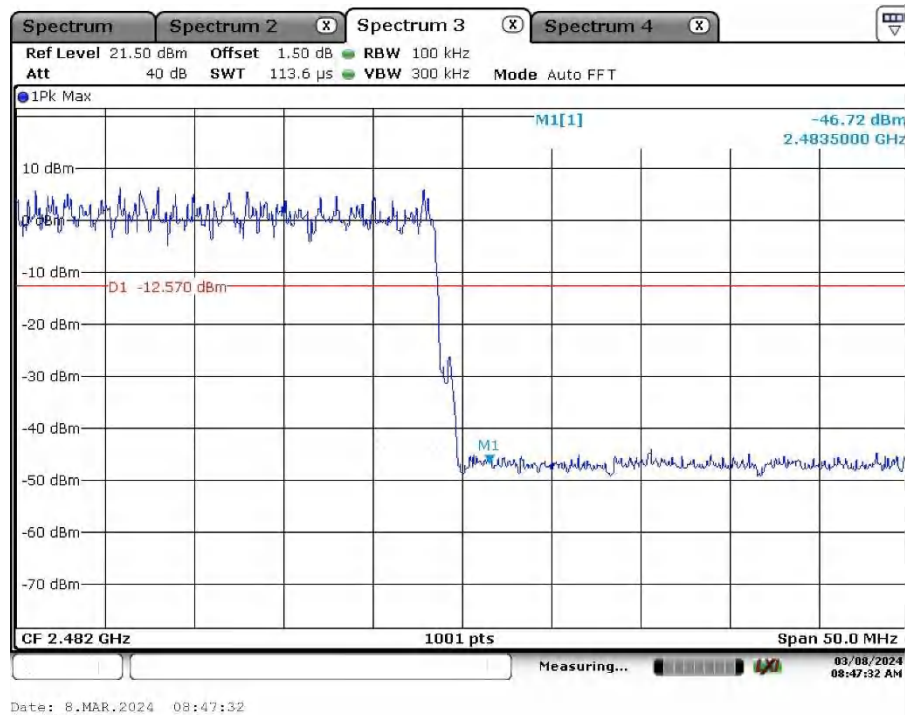


Hopping Mode, Band Edge

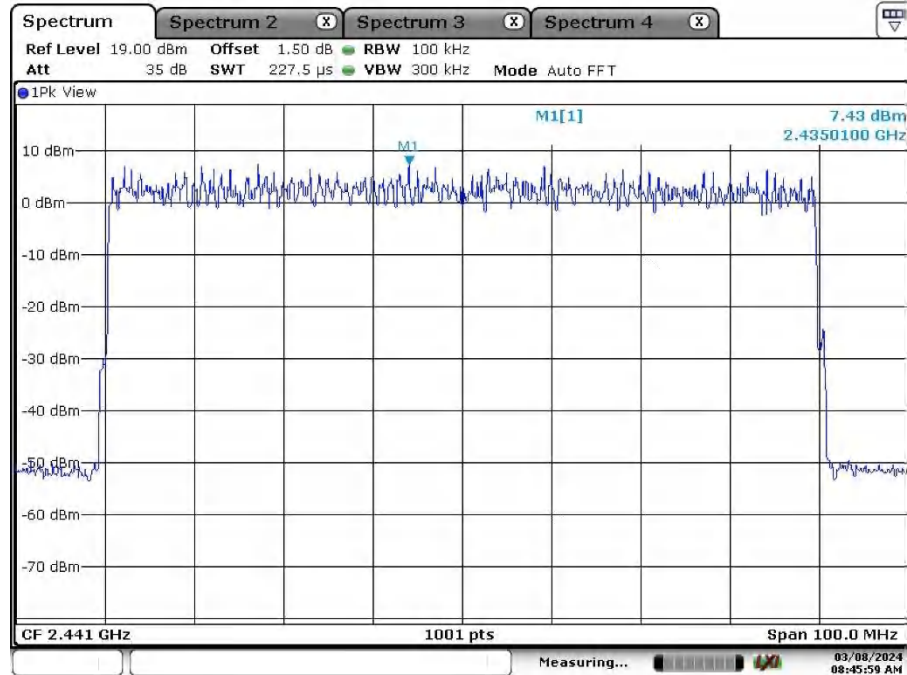
Low Channel



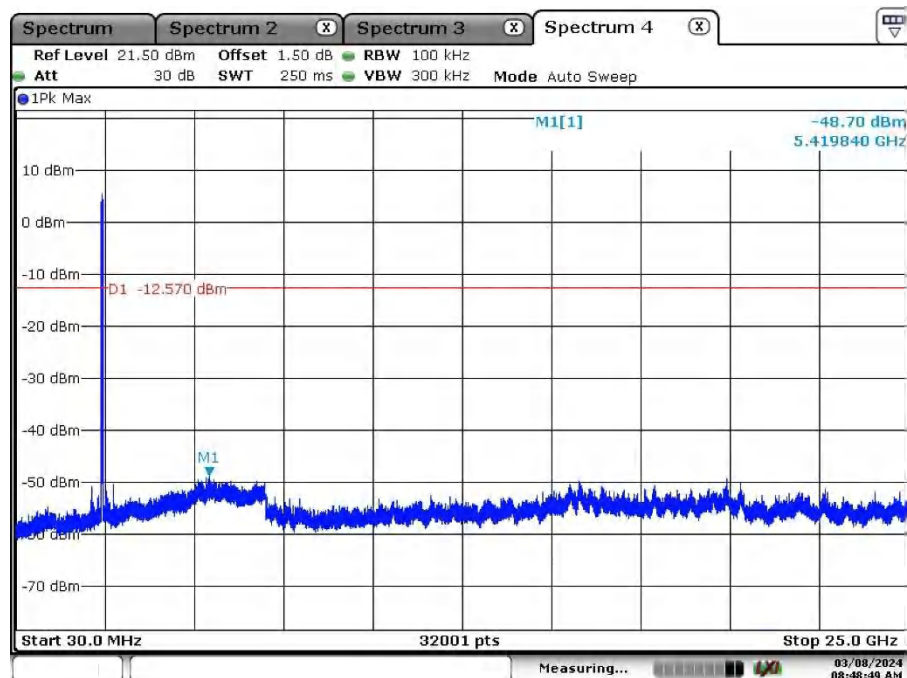
High Channel



Hopping Mode, Conducted Spurious Emission



Date: 8.MAR.2024 08:45:59



Date: 8.MAR.2024 08:48:49

Appendix A.7: Test Results of Radiated Spurious Emissions

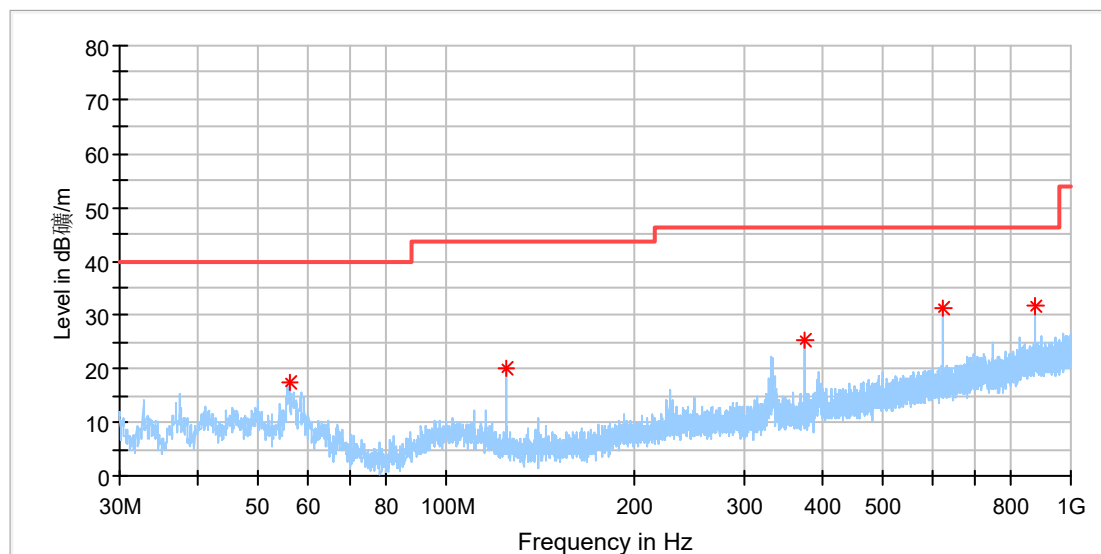
Note:

- 1) This testing was carried out on different modulations, but only the worst case was presented in this report.
- 2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz - 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

30MHz - 1GHz

EUT Information

EUT Name:	LOTUS-Lambda-DHU
Model:	ECMC3
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168472504/A003664372-004
Test Voltage:	DC 12V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

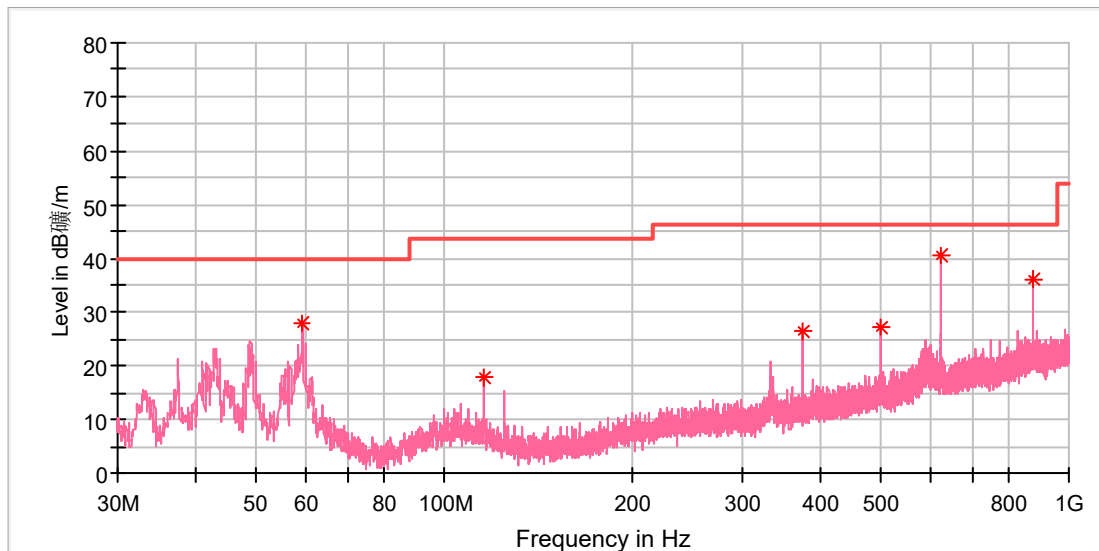
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
56.040769	17.63	40.00	22.37	100.0	H	0.0	-18.8
124.985385	20.26	43.50	23.24	100.0	H	173.0	-21.6
375.021539	25.41	46.00	20.59	100.0	H	279.0	-14.7
625.020385	31.37	46.00	14.63	100.0	H	50.0	-9.8
875.019231	31.45	46.00	14.55	100.0	H	339.0	-5.6

Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BR_DH5_Low channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
59.361154	27.95	40.00	12.05	100.0	V	178.0	-19.2
115.621154	17.72	43.50	25.78	100.0	V	71.0	-20.2
375.021539	26.43	46.00	19.57	100.0	V	212.0	-14.7
500.002308	27.01	46.00	18.99	100.0	V	170.0	-12.2
625.020385	40.55	46.00	5.45	100.0	V	354.0	-9.8
875.019231	36.22	46.00	9.78	100.0	V	87.0	-5.6

Final Result

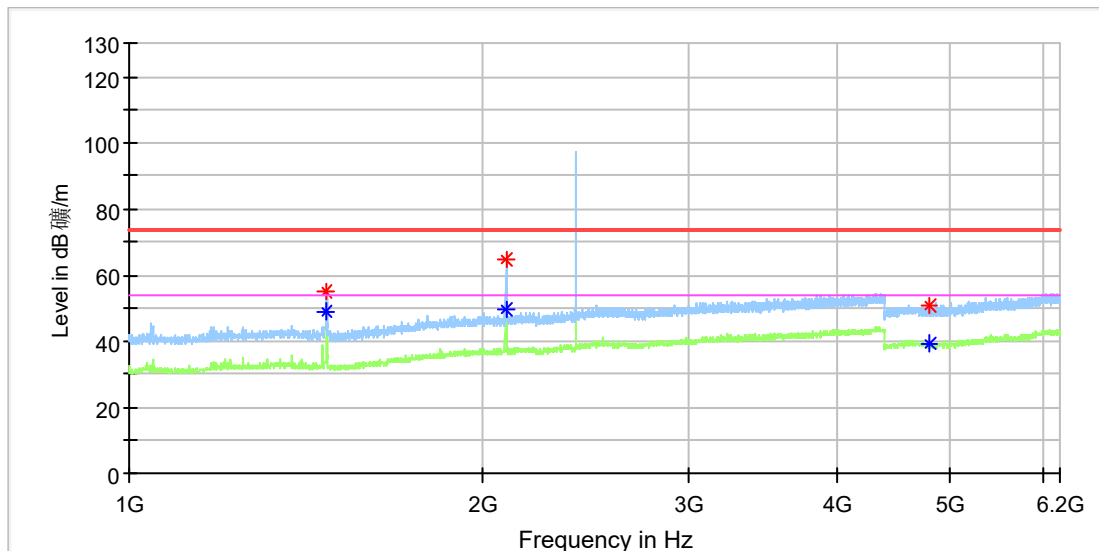
Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

1GHz - 18GHz

Note: The highest waveform in the figure is Bluetooth Fundamental.

EUT Information

EUT Name:	LOTUS-Lambda-DHU
Model:	ECMC3
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168472504/A003664372-004
Test Voltage:	DC 12V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

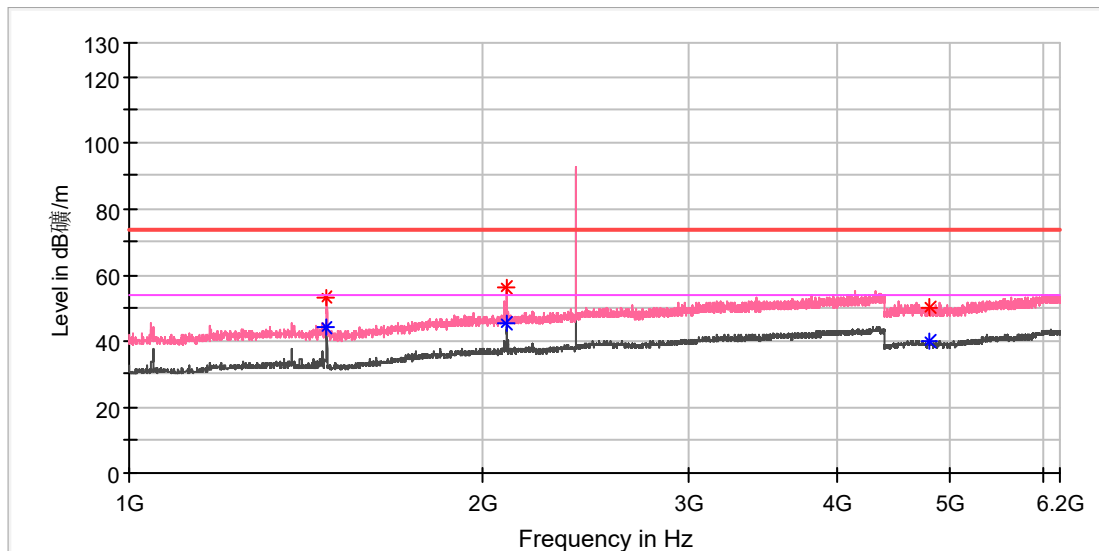
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1471.000000	54.88	---	74.00	19.12	150.0	H	78.0	1.3
1471.000000	---	48.73	54.00	5.27	150.0	H	78.0	1.3
2092.000000	64.51	---	74.00	9.49	150.0	H	330.0	6.0
2092.500000	---	49.51	54.00	4.49	150.0	H	330.0	6.0
4801.000000	---	39.47	54.00	14.53	150.0	H	181.0	11.8
4808.000000	50.63	---	74.00	23.37	150.0	H	155.0	11.8

Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BR_DH5_Low channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

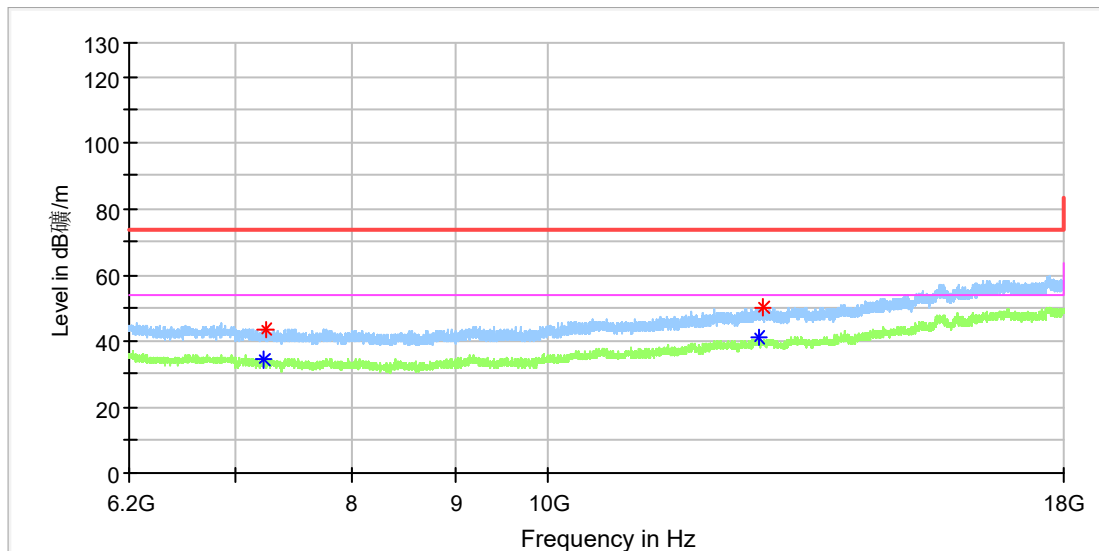
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1472.500000	---	43.92	54.00	10.08	150.0	V	159.0	1.3
1473.000000	53.51	---	74.00	20.49	150.0	V	159.0	1.3
2091.000000	---	45.18	54.00	8.82	150.0	V	84.0	6.0
2091.000000	56.14	---	74.00	17.86	150.0	V	84.0	6.0
4804.500000	50.22	---	74.00	23.78	150.0	V	27.0	11.8
4809.000000	---	39.61	54.00	14.39	150.0	V	45.0	11.8

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BR_DH5_Low channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

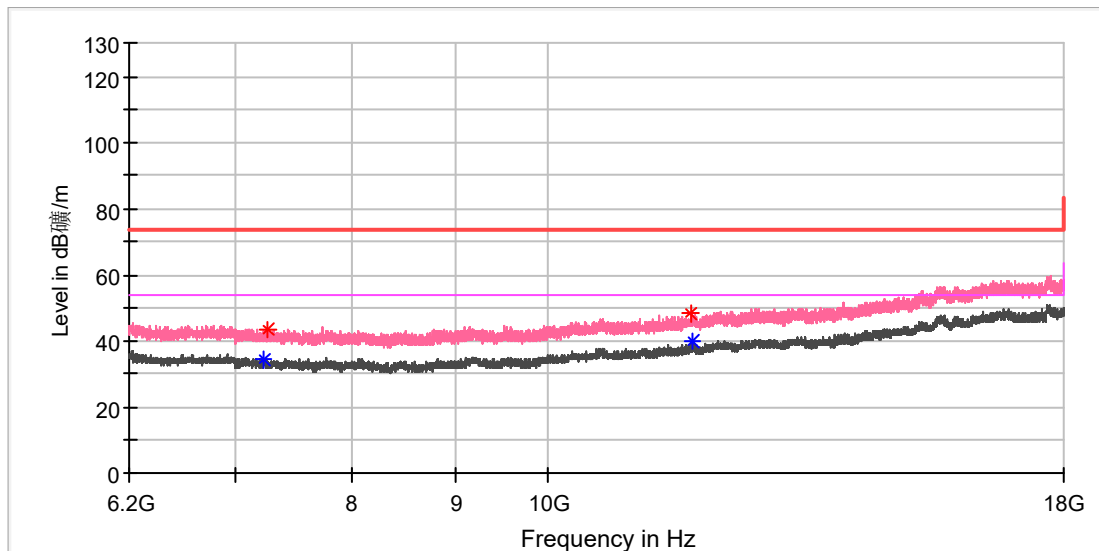
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7224.633333	---	34.39	54.00	19.61	150.0	H	0.0	8.7
7235.941667	43.74	---	74.00	30.26	150.0	H	179.0	8.6
12702.783333	---	41.41	54.00	12.59	150.0	H	333.0	15.1
12766.700000	50.31	---	74.00	23.69	150.0	H	50.0	15.2

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BR_DH5_Low channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

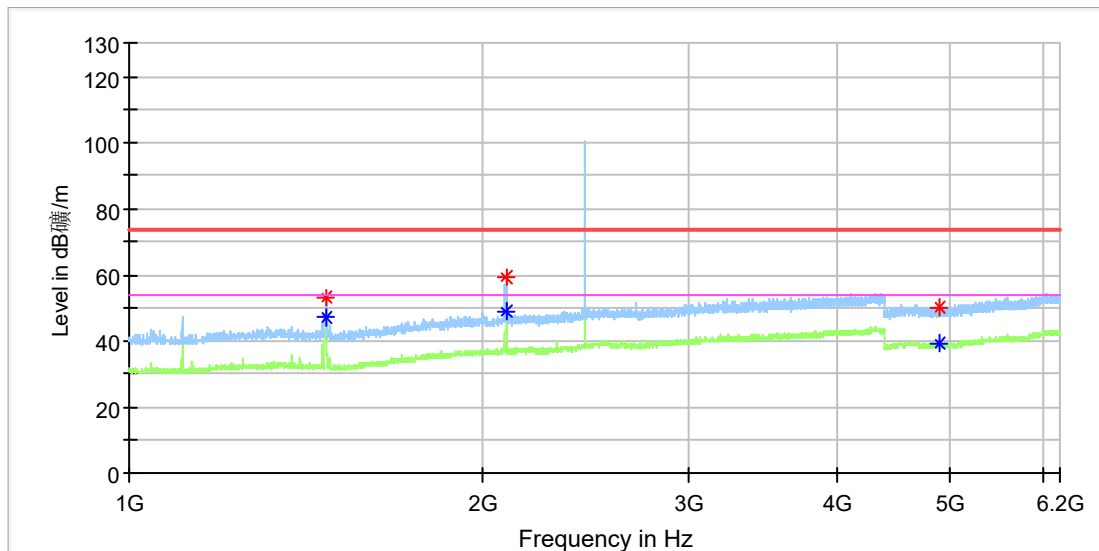
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7224.141667	---	34.35	54.00	19.65	150.0	V	96.0	8.7
7252.658333	43.38	---	74.00	30.62	150.0	V	204.0	8.5
11765.175000	48.21	---	74.00	25.79	150.0	V	96.0	13.4
11782.875000	---	39.97	54.00	14.03	150.0	V	278.0	13.4

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BR_DH5_Mid channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

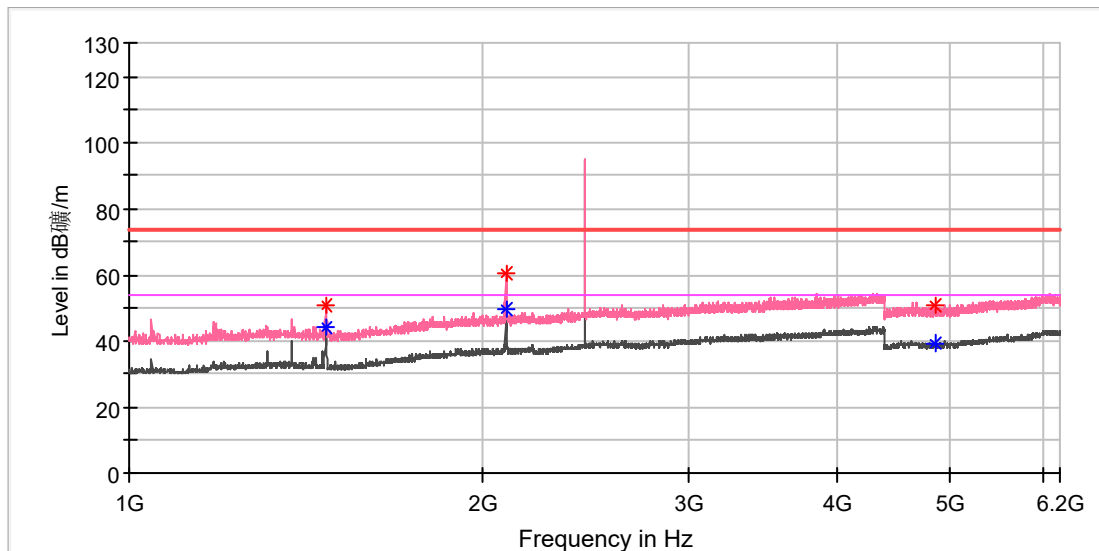
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1470.500000	---	47.26	54.00	6.74	150.0	H	265.0	1.3
1471.000000	52.95	---	74.00	21.05	150.0	H	265.0	1.3
2092.500000	---	48.69	54.00	5.31	150.0	H	322.0	6.0
2092.500000	59.10	---	74.00	14.90	150.0	H	322.0	6.0
4895.500000	50.23	---	74.00	23.77	150.0	H	220.0	11.8
4900.000000	---	39.19	54.00	14.81	150.0	H	127.0	11.8

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BR_DH5_Mid channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

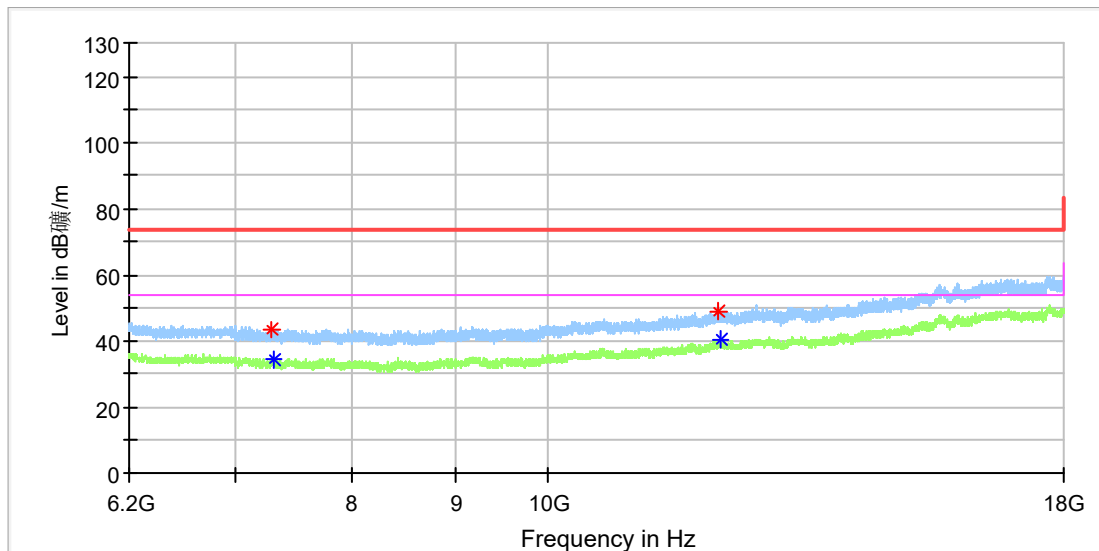
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1470.500000	---	44.31	54.00	9.69	150.0	V	216.0	1.3
1470.500000	50.64	---	74.00	23.36	150.0	V	216.0	1.3
2090.500000	60.68	---	74.00	13.32	150.0	V	62.0	6.0
2094.500000	---	49.88	54.00	4.12	150.0	V	62.0	6.0
4849.500000	---	39.51	54.00	14.49	150.0	V	203.0	11.8
4850.500000	50.74	---	74.00	23.26	150.0	V	314.0	11.8

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BR_DH5_Mid channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

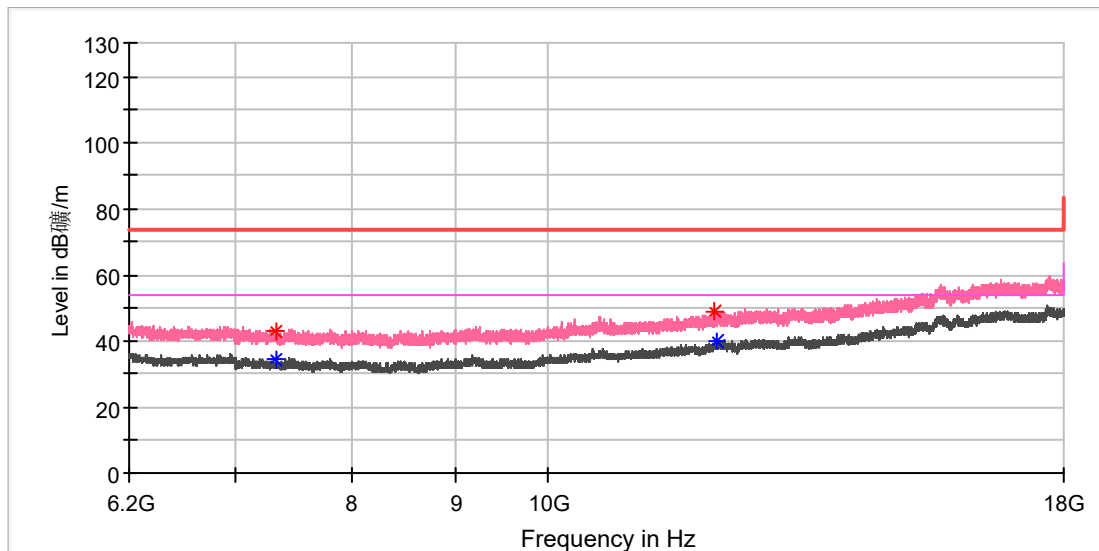
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7292.975000	43.63	---	74.00	30.37	150.0	H	104.0	8.3
7315.591667	---	34.39	54.00	19.61	150.0	H	175.0	8.2
12151.133333	49.14	---	74.00	24.86	150.0	H	38.0	14.4
12172.766667	---	40.44	54.00	13.56	150.0	H	18.0	14.5

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BR_DH5_Mid channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

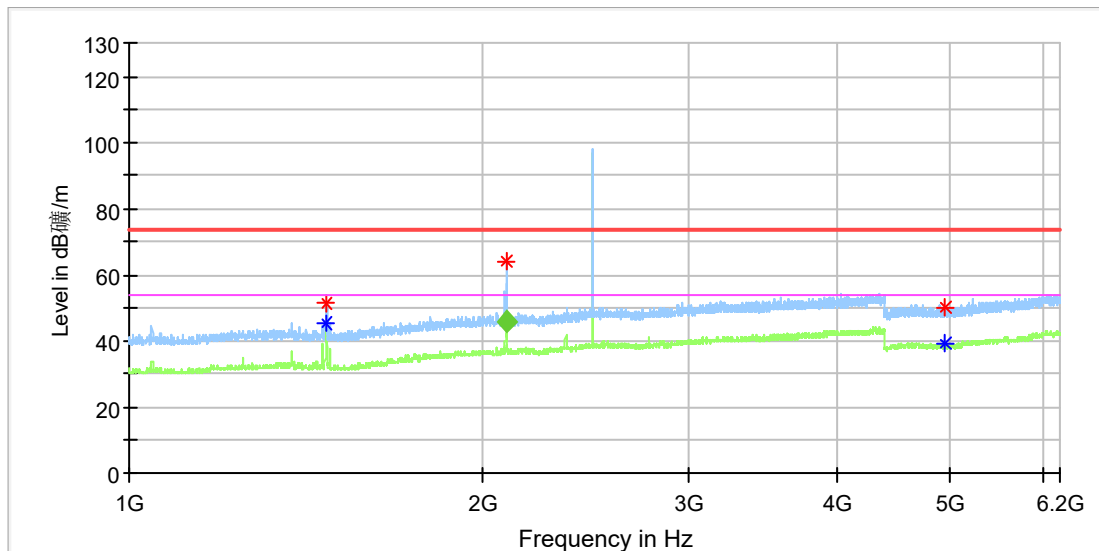
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7319.525000	---	34.60	54.00	19.40	150.0	V	254.0	8.2
7332.800000	43.07	---	74.00	30.93	150.0	V	350.0	8.1
12094.100000	48.79	---	74.00	25.21	150.0	V	31.0	14.1
12104.425000	---	40.01	54.00	13.99	150.0	V	58.0	14.2

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BR_DH5_High channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

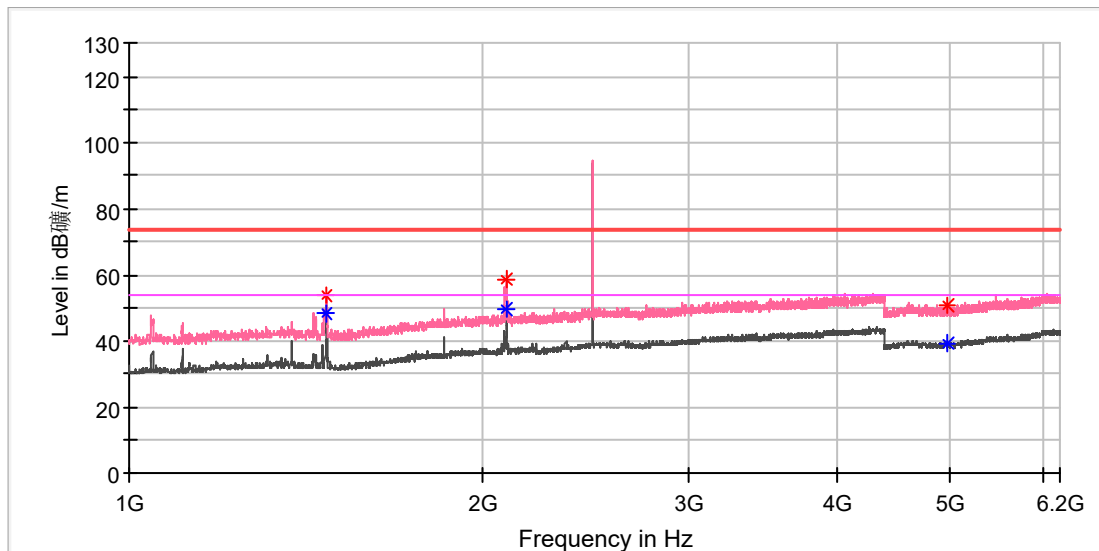
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1470.500000	51.19	---	74.00	22.81	150.0	H	355.0	1.3
1471.000000	---	45.42	54.00	8.58	150.0	H	355.0	1.3
2092.000000	63.85	---	74.00	10.15	150.0	H	349.0	6.0
4948.000000	---	39.11	54.00	14.89	150.0	H	189.0	11.8
4953.500000	50.19	---	74.00	23.81	150.0	H	208.0	11.8

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2092.883824	46.23	54.00	7.77	145.0	H	344.0	6.0

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BR_DH5_High channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

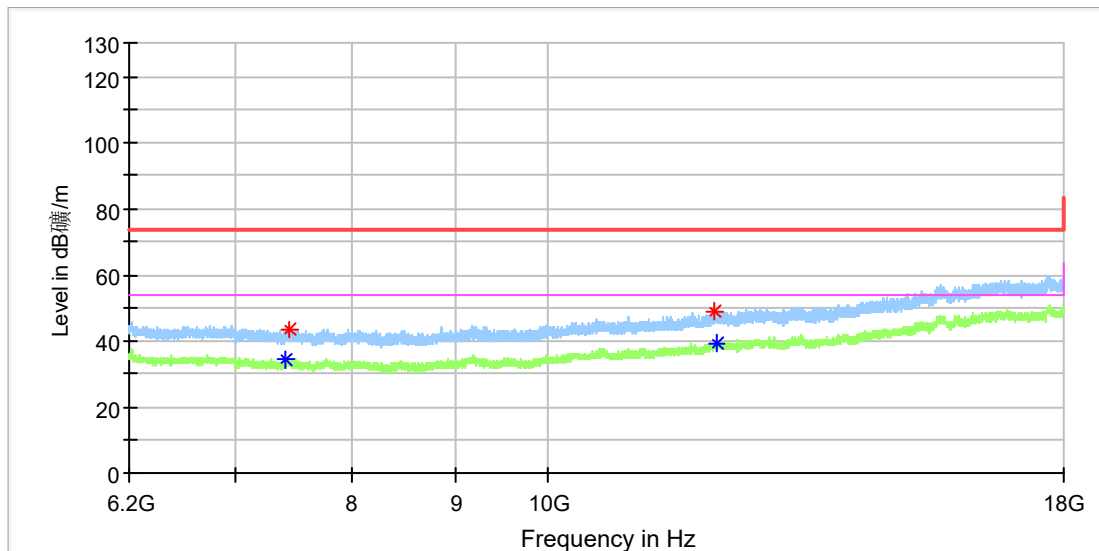
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1472.000000	53.95	---	74.00	20.05	150.0	V	126.0	1.3
1472.000000	---	48.43	54.00	5.57	150.0	V	126.0	1.3
2091.500000	---	49.83	54.00	4.17	150.0	V	60.0	6.0
2091.500000	58.94	---	74.00	15.06	150.0	V	60.0	6.0
4967.500000	---	39.47	54.00	14.53	150.0	V	101.0	11.8
4972.000000	50.58	---	74.00	23.42	150.0	V	258.0	11.8

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BR_DH5_High channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

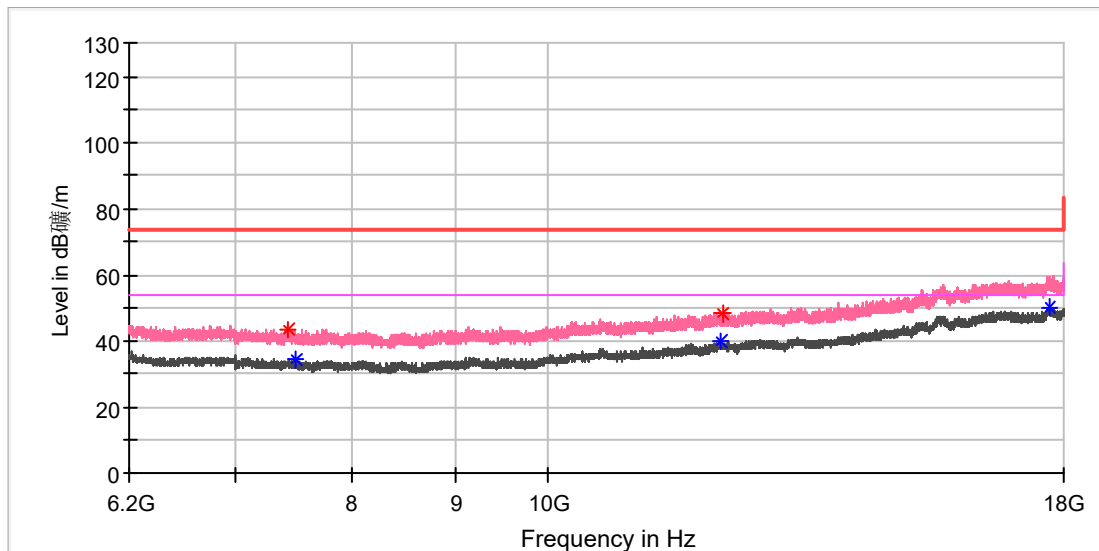
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7418.350000	---	34.67	54.00	19.33	150.0	H	339.0	8.3
7439.000000	43.38	---	74.00	30.62	150.0	H	309.0	8.4
12100.491667	48.87	---	74.00	25.13	150.0	H	129.0	14.2
12115.241667	---	39.54	54.00	14.46	150.0	H	70.0	14.2

Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BR_DH5_High channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7429.166667	43.55	---	74.00	30.45	150.0	V	0.0	8.4
7489.150000	---	34.44	54.00	19.56	150.0	V	263.0	8.7
12159.983333	---	40.04	54.00	13.96	150.0	V	215.0	14.5
12202.758333	48.34	---	74.00	25.66	150.0	V	34.0	14.7
17725.158333	---	50.20	54.00	3.80	150.0	V	263.0	22.9

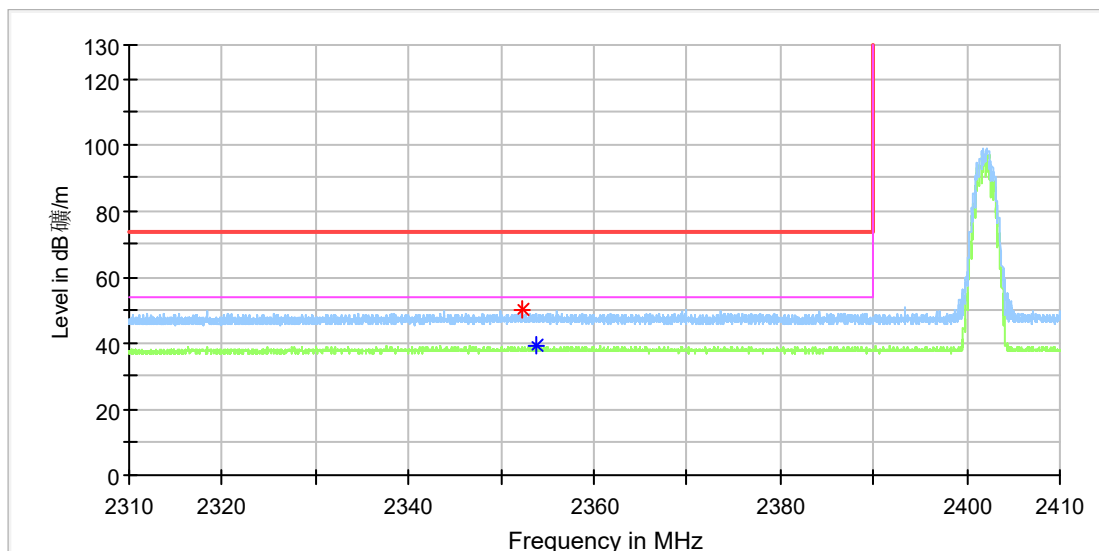
Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

Appendix A.8: Test Results of Radiated Emissions in Restricted Bands

EUT Information

EUT Name:	LOTUS-Lambda-DHU
Model:	ECMC3
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168472504/A003664372-004
Test Voltage:	DC 12V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

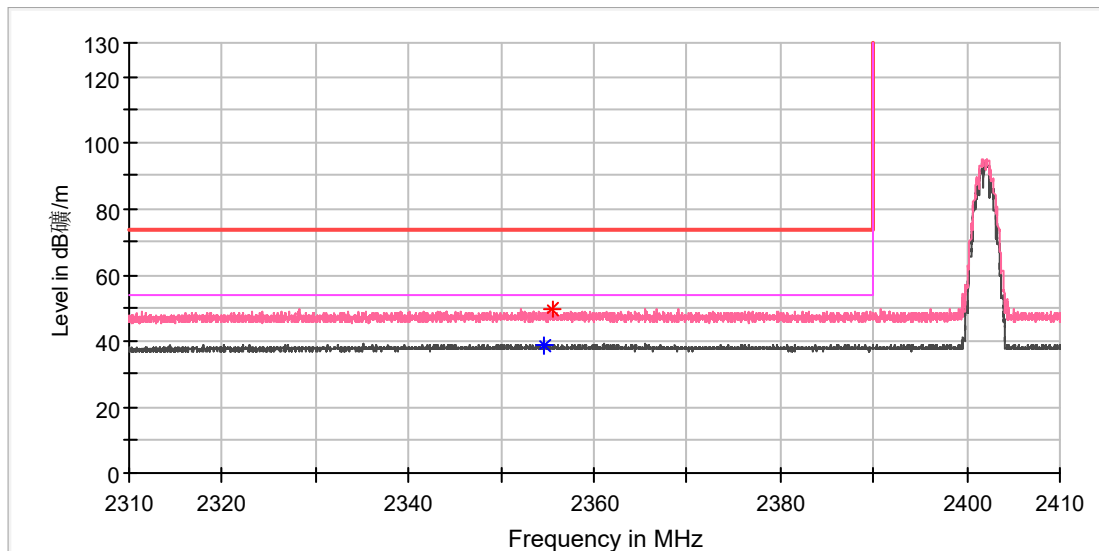
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2352.235294	50.27	---	74.00	23.73	150.0	H	292.0	6.9
2353.720588	---	39.19	54.00	14.81	150.0	H	0.0	6.9

Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BR_DH5_Low channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

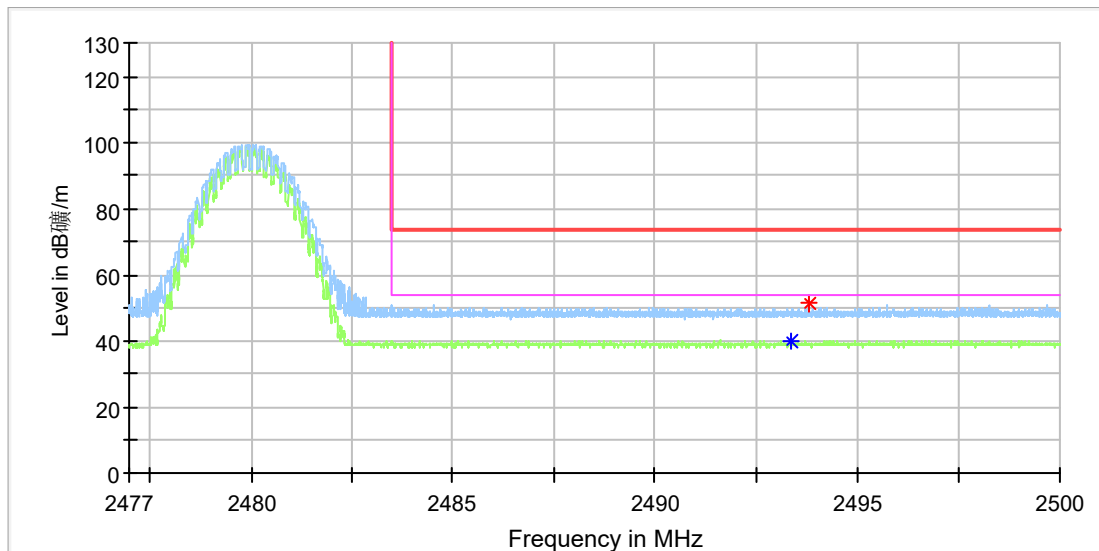
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2354.544118	---	38.88	54.00	15.12	150.0	V	249.0	6.9
2355.426471	49.72	---	74.00	24.28	150.0	V	228.0	6.9

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BR_DH5_High channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

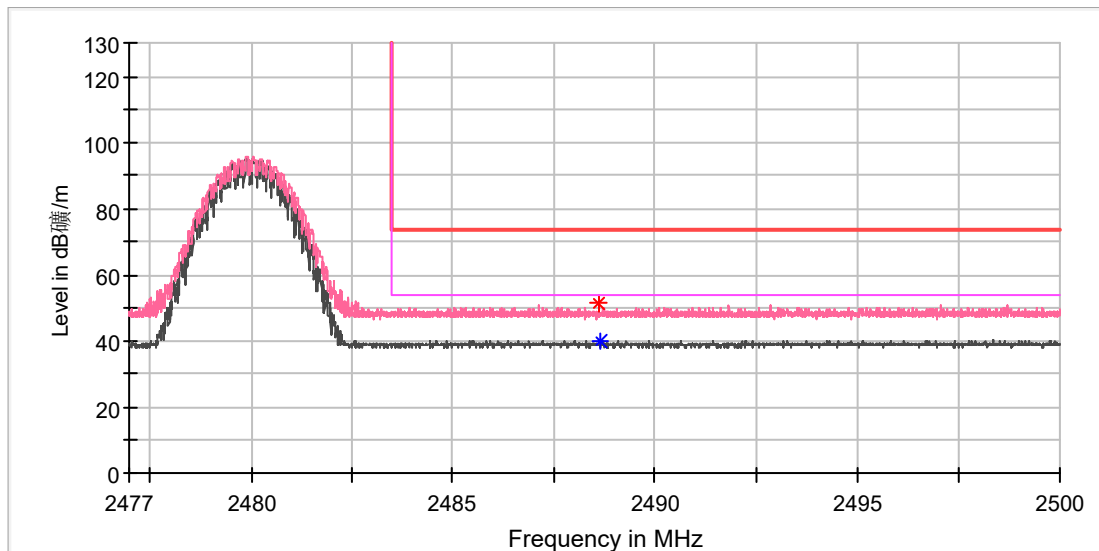
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2493.338235	---	39.67	54.00	14.33	150.0	H	272.0	7.4
2493.792647	51.30	---	74.00	22.70	150.0	H	194.0	7.4

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BR_DH5_High channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2488.617647	51.65	---	74.00	22.35	150.0	V	85.0	7.4
2488.626471	---	39.73	54.00	14.27	150.0	V	52.0	7.4

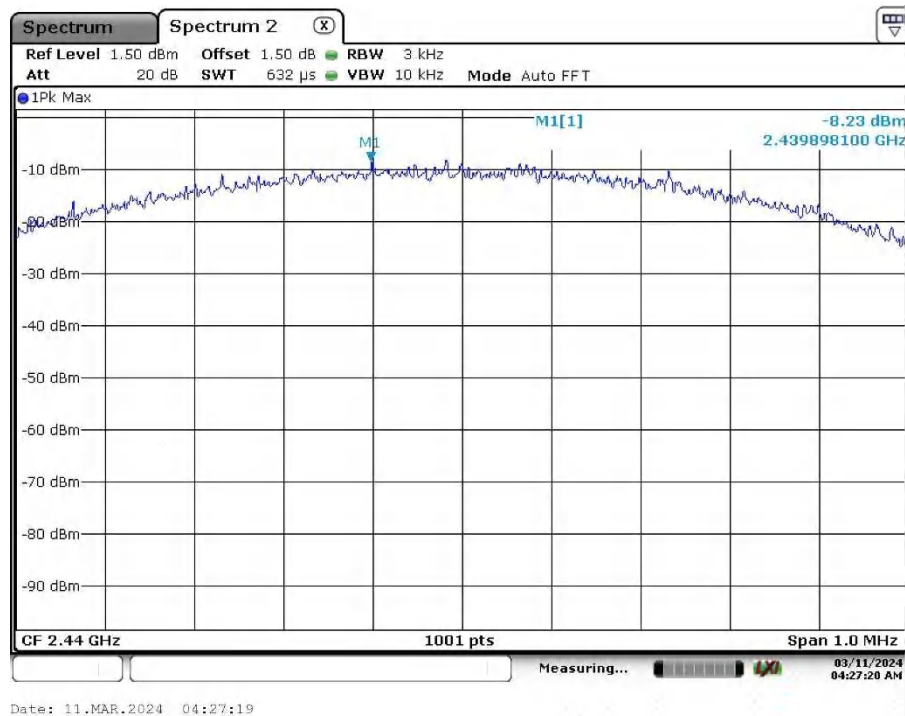
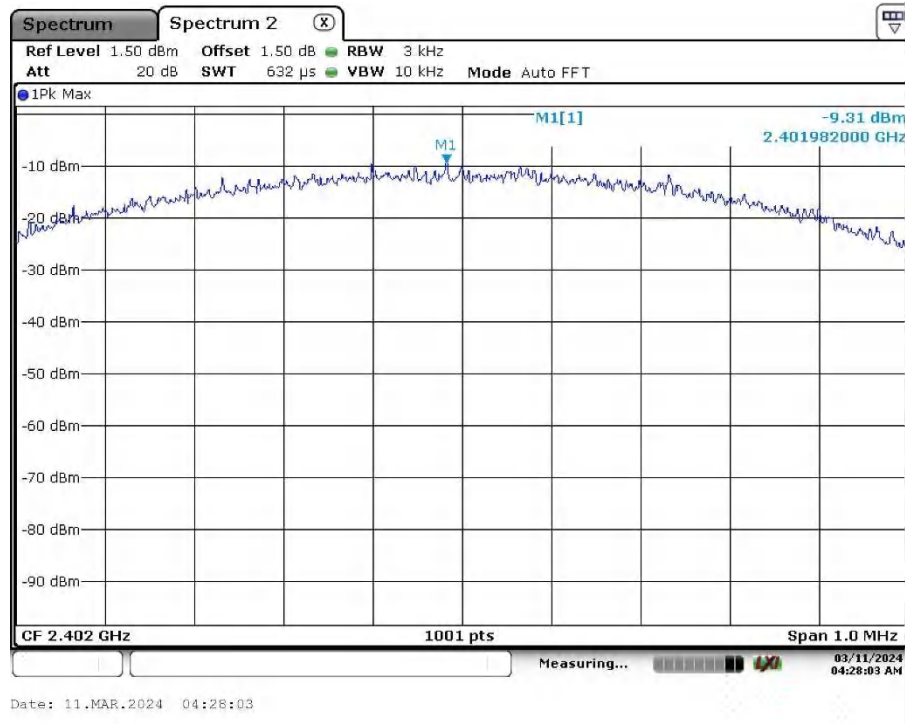
Final Result

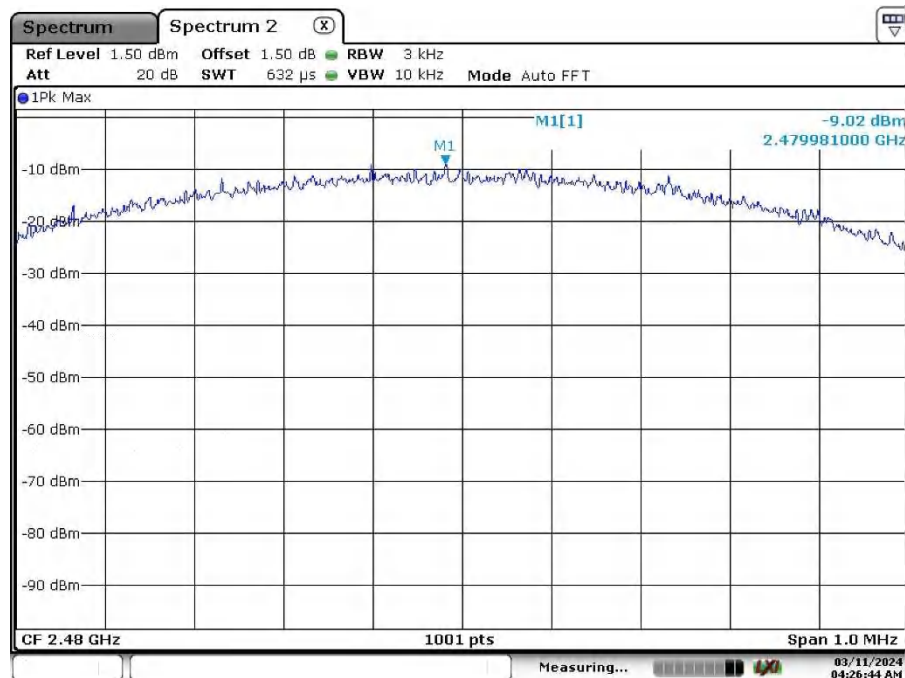
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

Appendix B: Test Results of Bluetooth LE

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Appendix B.1: Test Results of Conducted Power Spectral Density





Date: 11.MAR.2024 04:26:43

Appendix B.2: Test Results of 6dB Bandwidth

Minimum Emission Bandwidth 6 dB (2402 MHz; 20.000 dBm; 1 MHz)

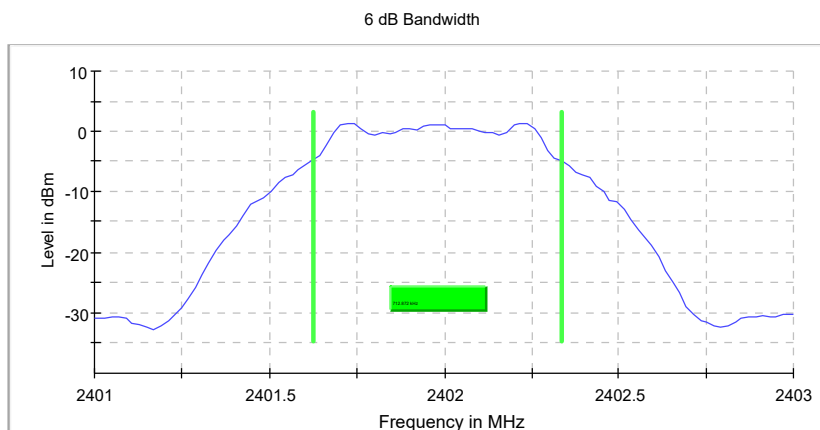
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	0.712872	0.500000	---	2401.623762	2402.336634

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	1.4	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 40
Sweptime	18.938 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	10 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.03 dB	0.50 dB

Minimum Emission Bandwidth 6 dB (2440 MHz; 20.000 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

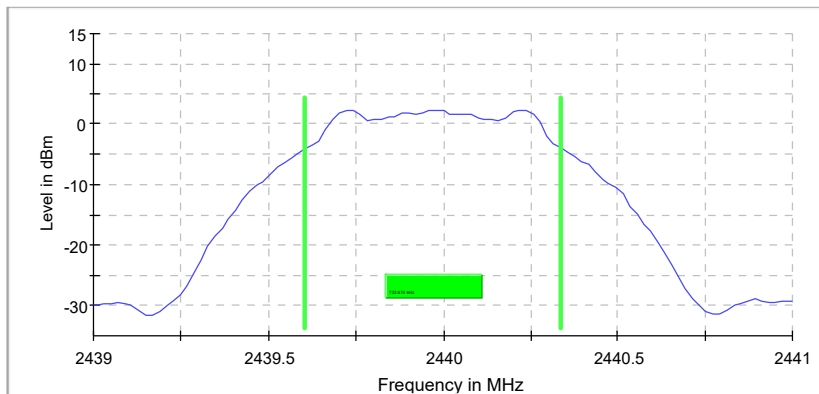
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2440.000000	0.732674	0.500000	---	2439.603960	2440.336634

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2440.000000	2.4	PASS

6 dB Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.43900 GHz	2.43900 GHz
Stop Frequency	2.44100 GHz	2.44100 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 40
Sweeptime	18.938 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	15 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.08 dB	0.50 dB

Minimum Emission Bandwidth 6 dB (2480 MHz; 20.000 dBm; 1 MHz)

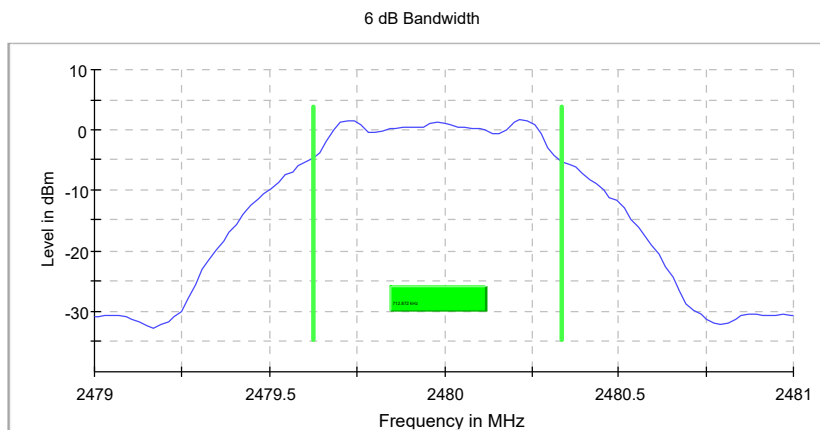
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	0.712872	0.500000	---	2479.623762	2480.336634

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	1.7	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 40
Sweeptime	18.938 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	12 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.36 dB	0.50 dB

Appendix B.3: Test Results of 99% Bandwidth

Occupied Channel Bandwidth 99% (2402 MHz; 20.000 dBm; 1 MHz)

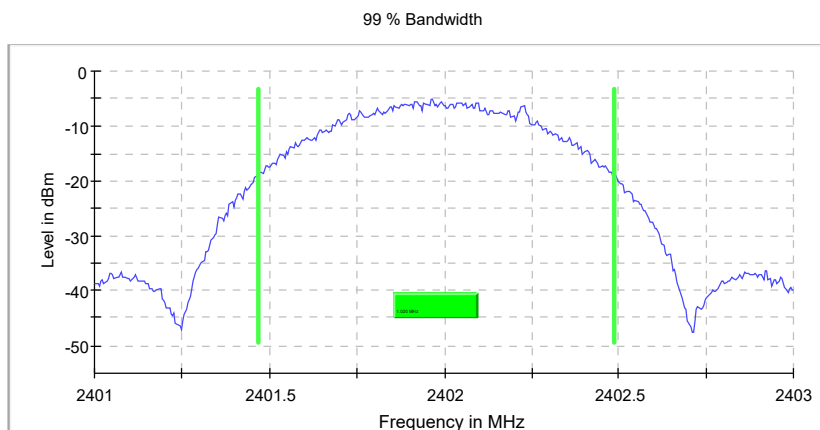
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.020000	---	---	2401.467500	2402.487500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2402.000000	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweptime	189.648 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	51 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.30 dB

Occupied Channel Bandwidth 99% (2440 MHz; 20.000 dBm; 1 MHz)

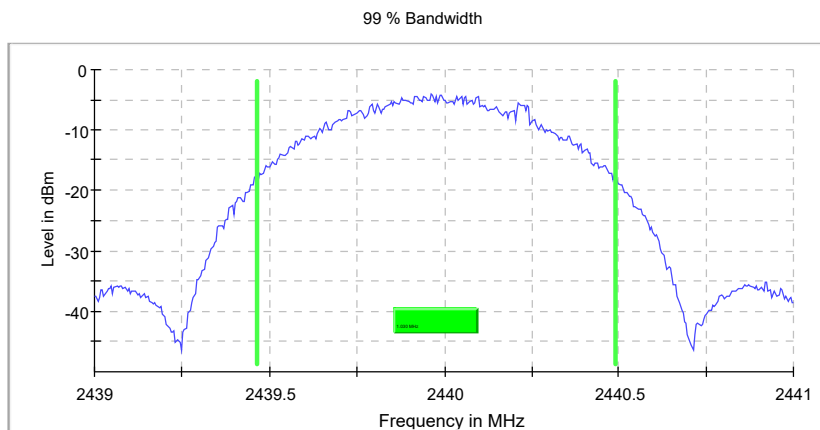
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2440.000000	1.030000	---	---	2439.462500	2440.492500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2440.000000	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.43900 GHz	2.43900 GHz
Stop Frequency	2.44100 GHz	2.44100 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	33 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.18 dB	0.30 dB

Occupied Channel Bandwidth 99% (2480 MHz; 20.000 dBm; 1 MHz)

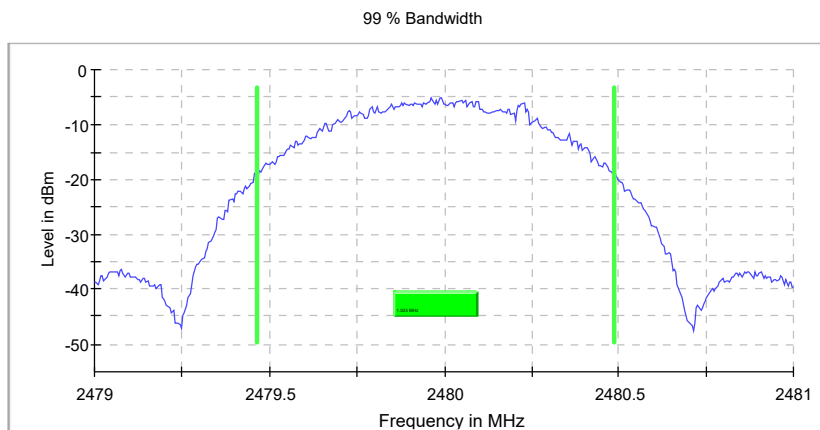
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.025000	---	---	2479.462500	2480.487500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2480.000000	PASS



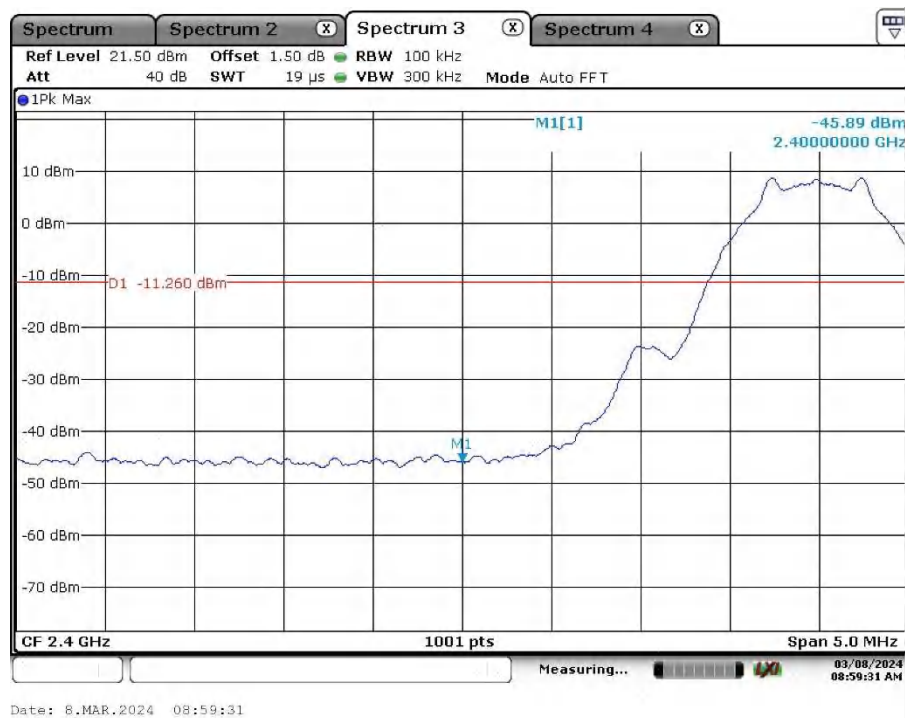
Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	36 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.04 dB	0.30 dB

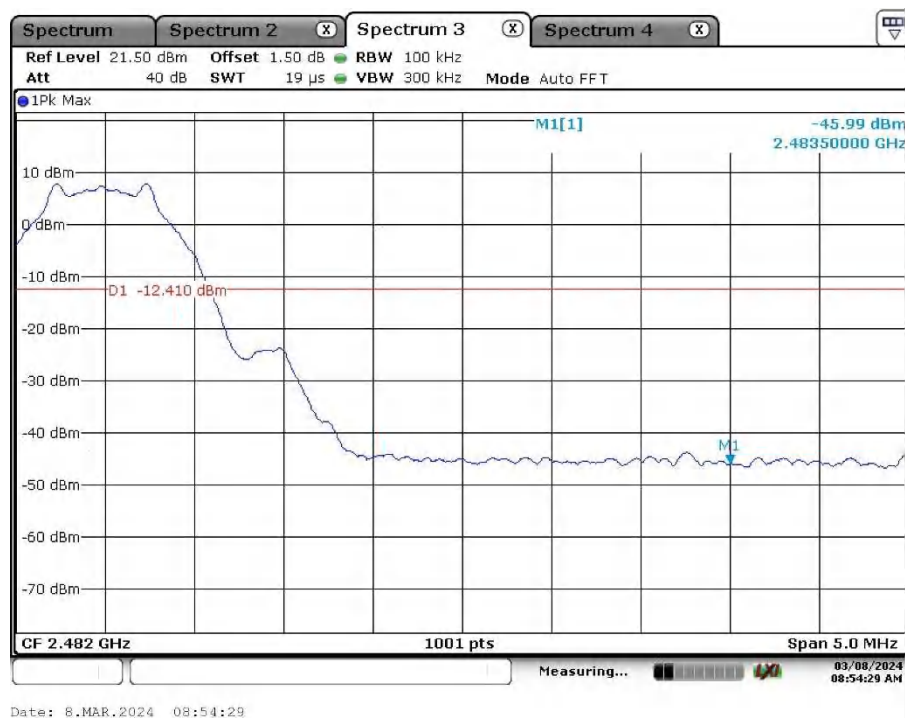
Appendix B.4: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

Band Edge

Low Channel:

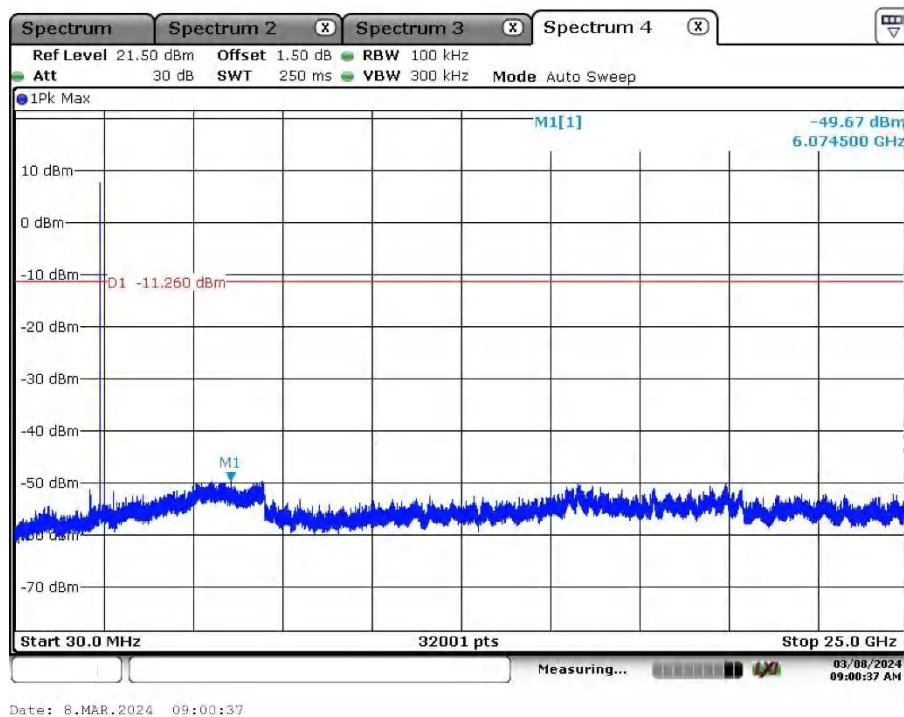
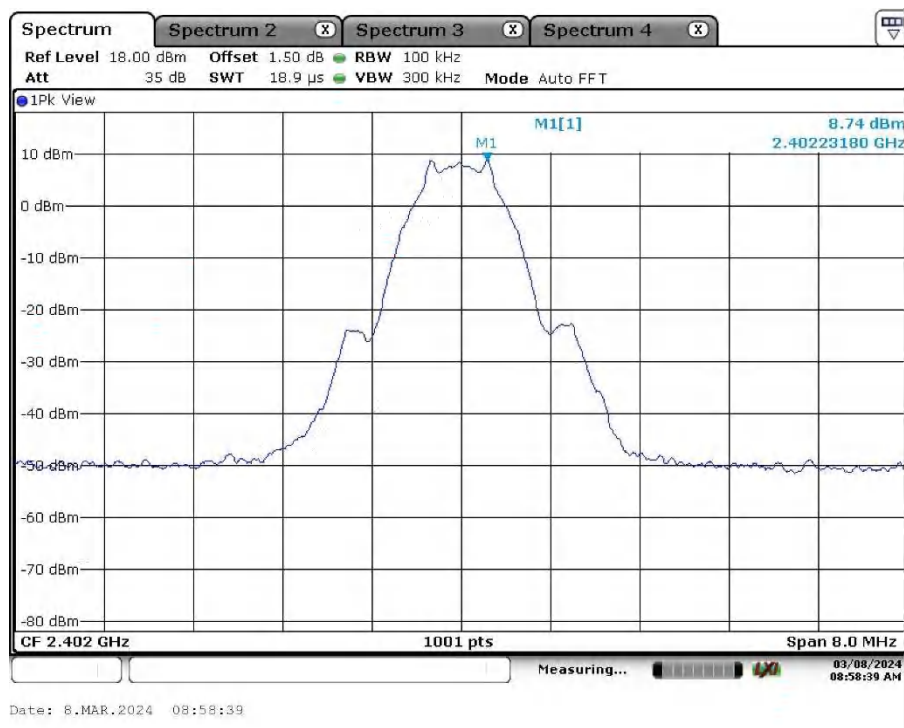


High Channel:

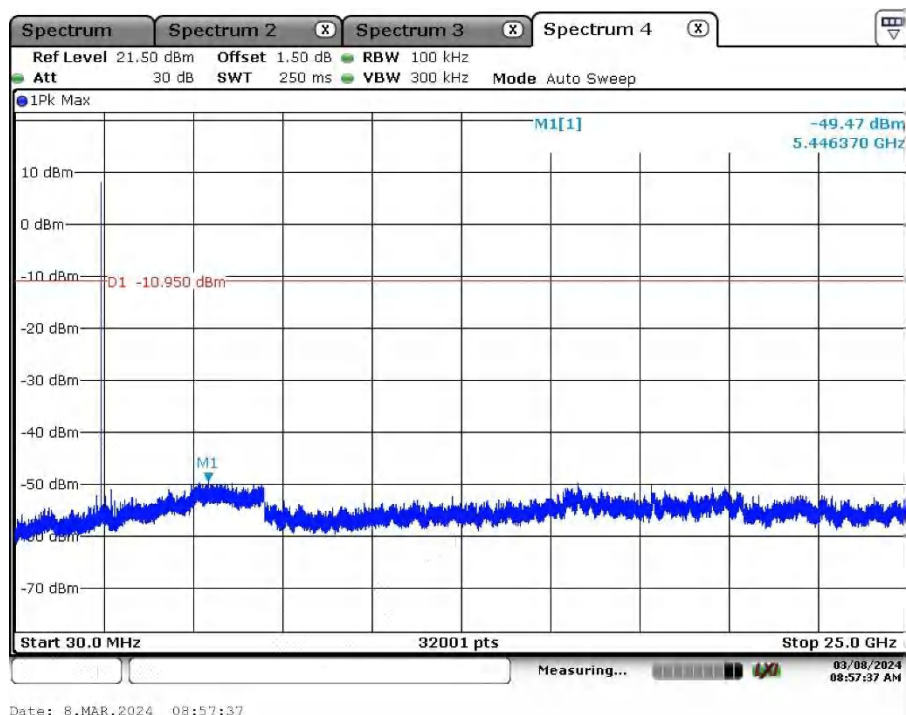
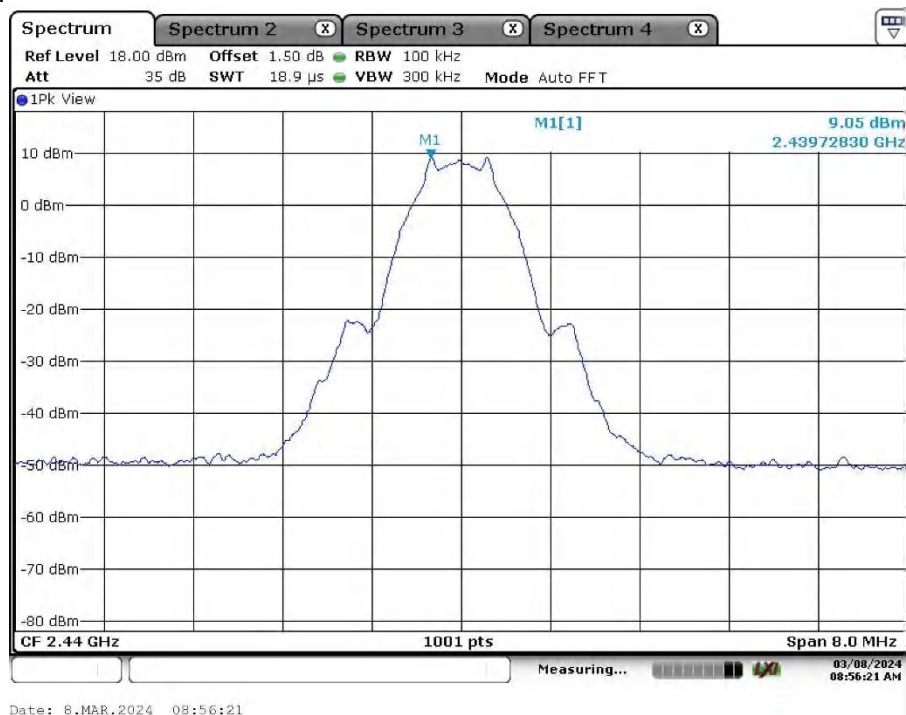


Conducted Spurious Emission

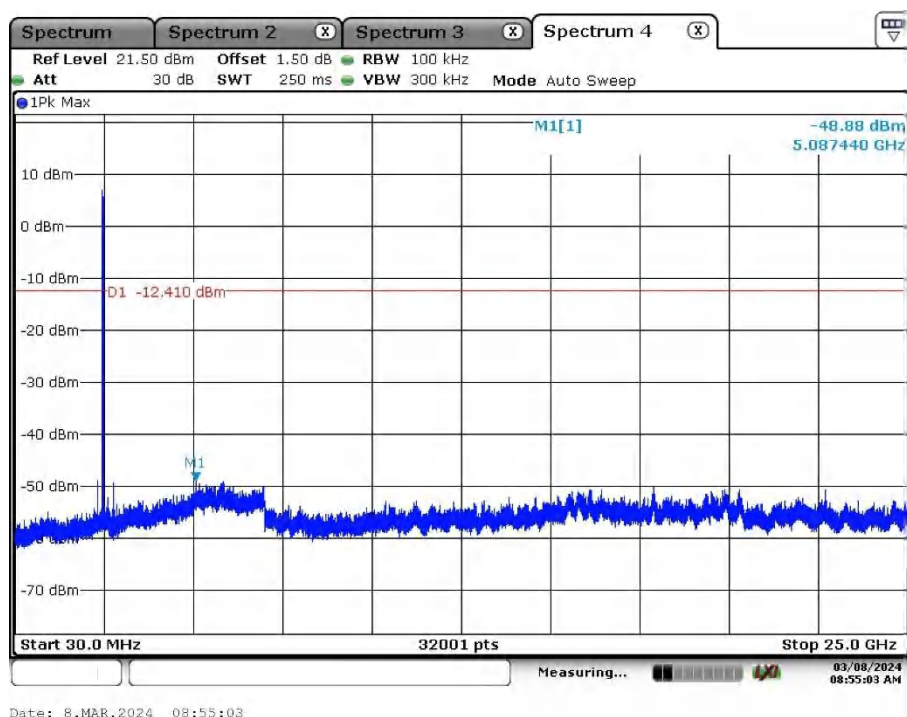
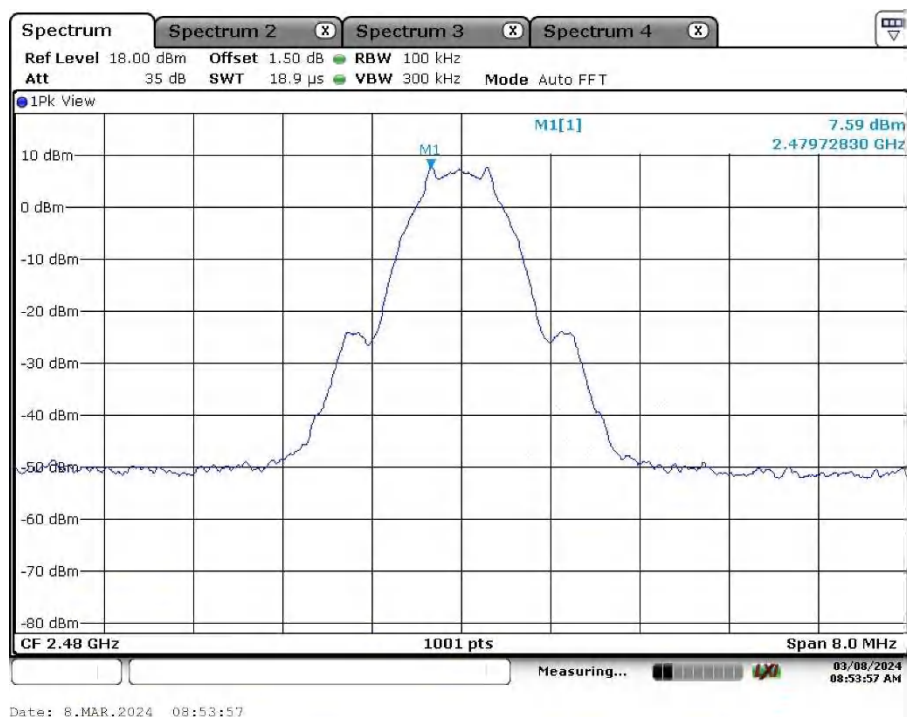
Low Channel:



Middle Channel:



High Channel:



Appendix B.5: Test Results of Radiated Spurious Emissions

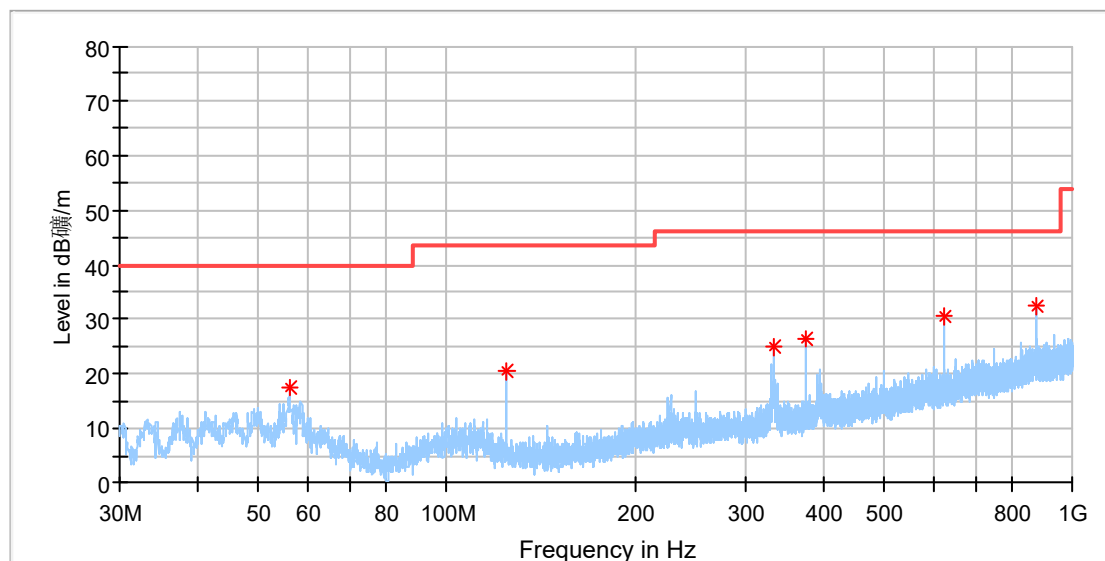
Note:

- 1) This testing was carried out on different modulations, but only the worst case was presented in this report.
- 2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz - 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

30MHz - 1GHz

EUT Information

EUT Name:	LOTUS-Lambda-DHU
Model:	ECMC3
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168472504/A003664372-004
Test Voltage:	DC 12V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

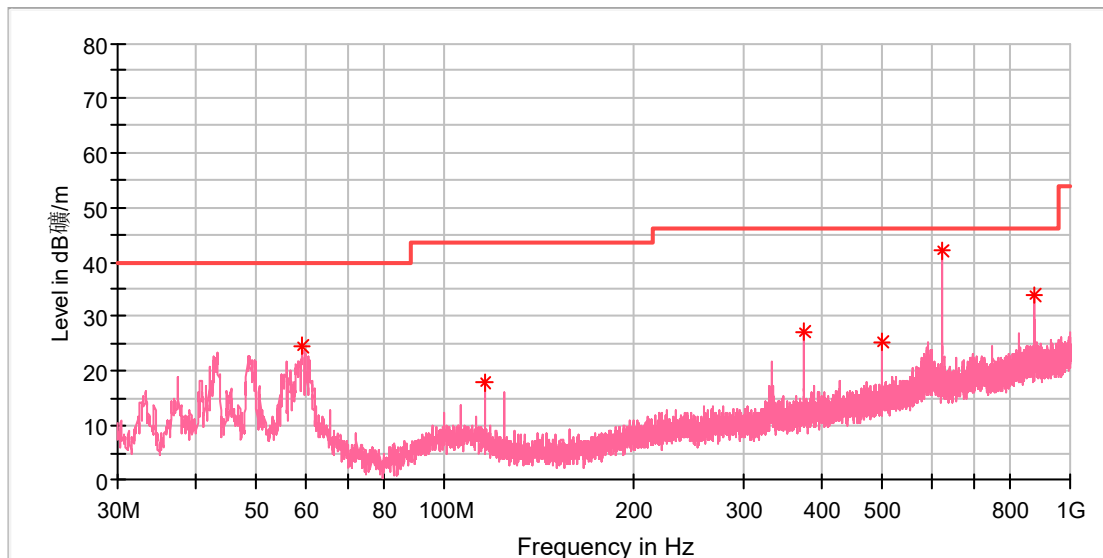
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
56.227308	17.61	40.00	22.39	100.0	H	267.0	-18.9
124.985385	20.48	43.50	23.02	100.0	H	168.0	-21.6
333.759231	24.79	46.00	21.21	100.0	H	152.0	-15.6
375.021539	26.27	46.00	19.73	100.0	H	0.0	-14.7
625.020385	30.66	46.00	15.34	100.0	H	293.0	-9.8
875.019231	32.29	46.00	13.71	100.0	H	209.0	-5.6

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BLE 1M_Low channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
59.100000	24.63	40.00	15.37	100.0	V	191.0	-19.2
115.621154	17.68	43.50	25.82	100.0	V	68.0	-20.2
375.021539	27.25	46.00	18.75	100.0	V	0.0	-14.7
500.002308	25.36	46.00	20.64	100.0	V	232.0	-12.2
625.020385	41.92	46.00	4.08	100.0	V	355.0	-9.8
875.019231	33.96	46.00	12.04	100.0	V	271.0	-5.6

Final Result

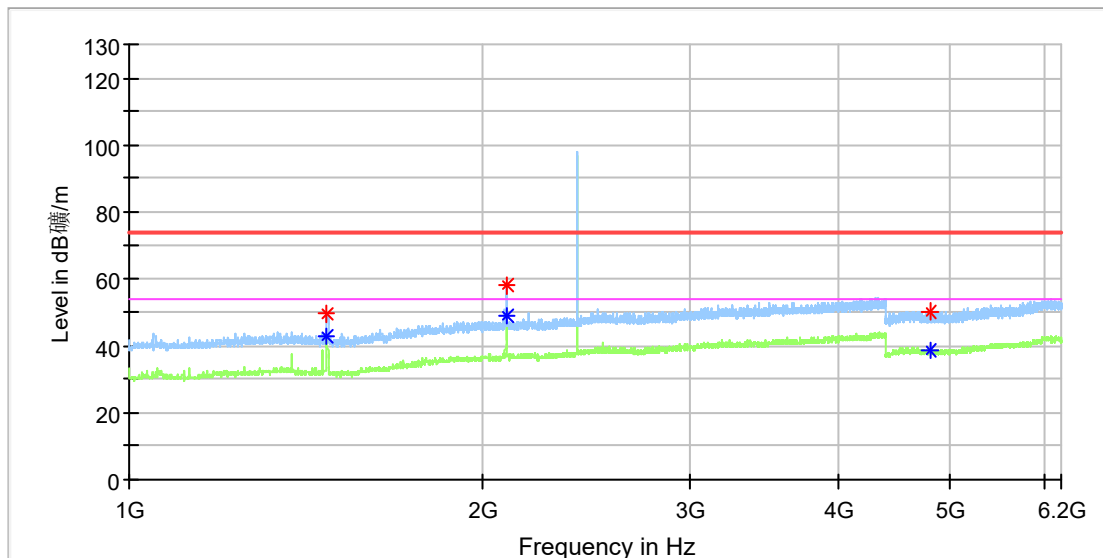
Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

1GHz - 18GHz

Note: The highest waveform in the figure is Bluetooth Fundamental.

EUT Information

EUT Name:	LOTUS-Lambda-DHU
Model:	ECMC3
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168472504/A003664372-004
Test Voltage:	DC 12V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

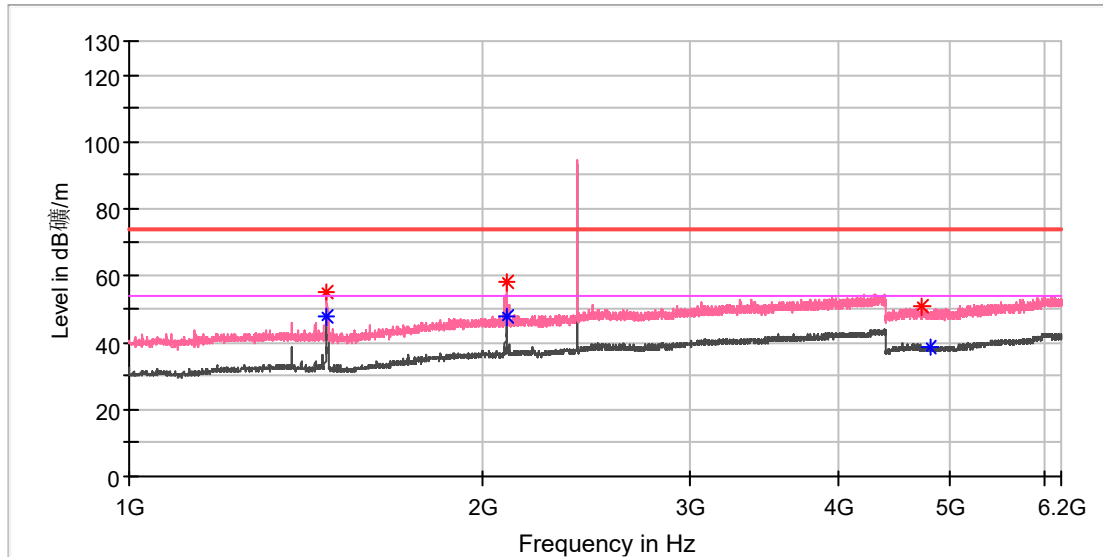
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1470.500000	---	42.82	54.00	11.18	150.0	H	302.0	1.3
1473.000000	49.79	---	74.00	24.21	150.0	H	10.0	1.3
2091.500000	---	48.85	54.00	5.15	150.0	H	332.0	6.0
2093.500000	57.83	---	74.00	16.17	150.0	H	332.0	6.0
4795.500000	50.40	---	74.00	23.61	150.0	H	54.0	11.8
4811.000000	---	38.86	54.00	15.14	150.0	H	206.0	11.8

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BLE 1M_Low channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

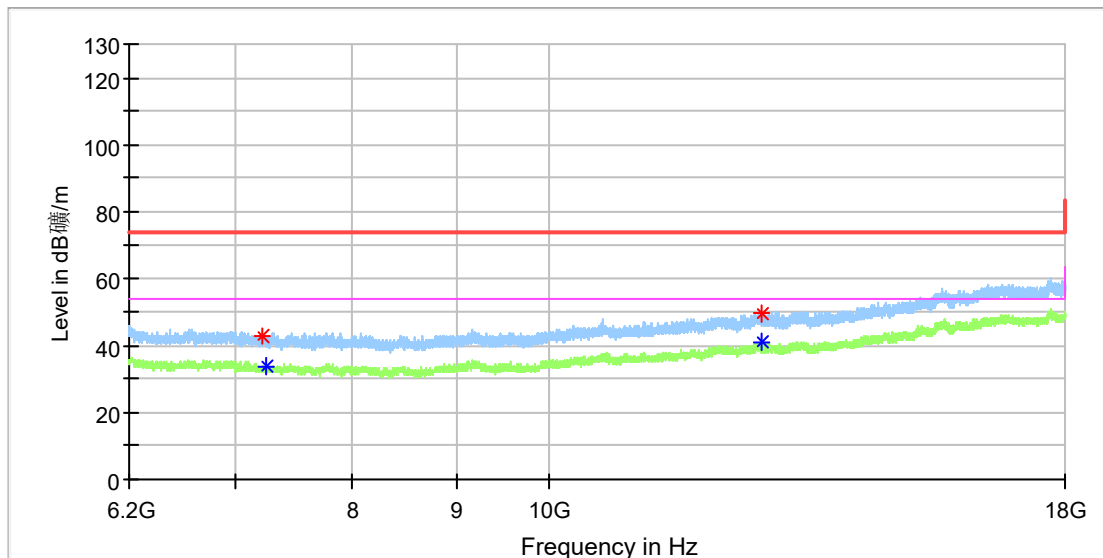
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1471.000000	54.96	---	74.00	19.04	150.0	V	324.0	1.3
1471.500000	---	47.89	54.00	6.11	150.0	V	324.0	1.3
2094.000000	57.76	---	74.00	16.24	150.0	V	344.0	6.0
2094.000000	---	47.71	54.00	6.29	150.0	V	344.0	6.0
4722.000000	51.02	---	74.00	22.98	150.0	V	125.0	11.9
4807.000000	---	38.92	54.00	15.08	150.0	V	85.0	11.8

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BLE 1M_Low channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

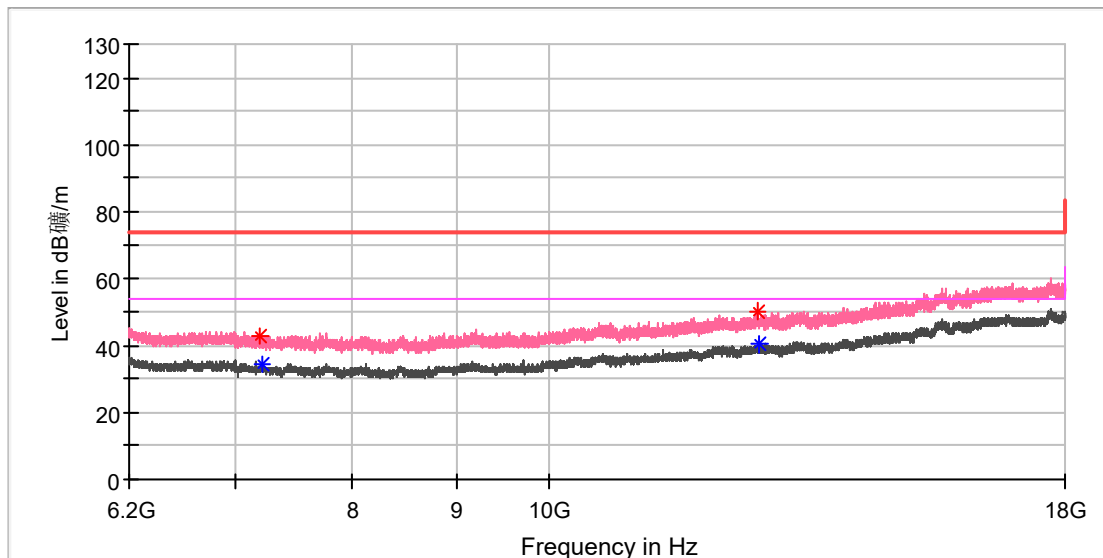
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7203.000000	43.21	---	74.00	30.79	150.0	H	260.0	8.8
7237.416667	---	33.91	54.00	20.09	150.0	H	99.0	8.6
12736.708333	49.31	---	74.00	24.69	150.0	H	2.0	15.2
12744.575000	---	40.84	54.00	13.16	150.0	H	127.0	15.2

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BLE 1M_Low channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

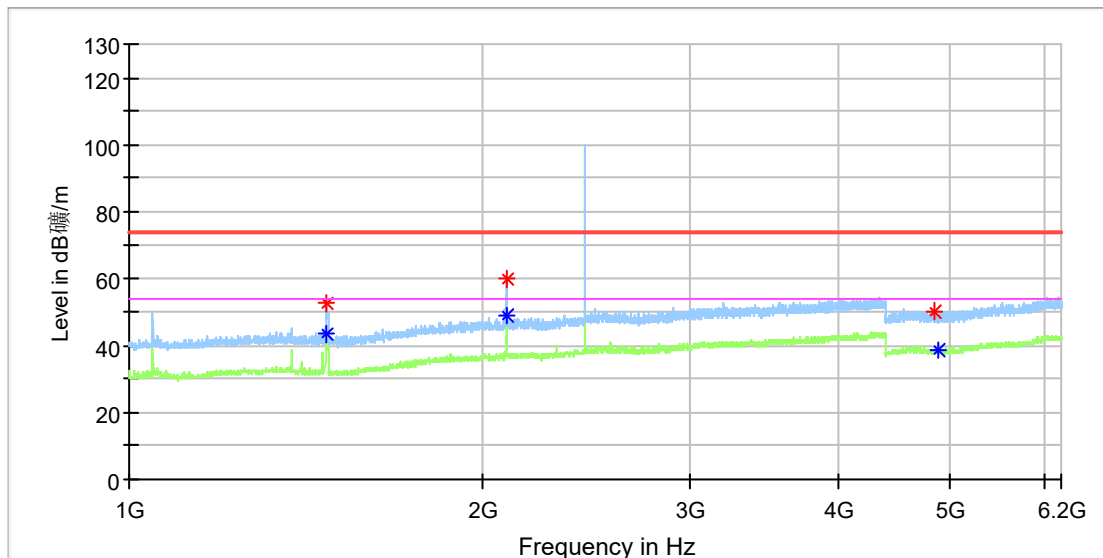
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7194.641667	42.81	---	74.00	31.19	150.0	V	212.0	8.8
7212.833333	---	34.60	54.00	19.40	150.0	V	118.0	8.7
12684.591667	50.31	---	74.00	23.69	150.0	V	0.0	15.1
12713.600000	---	40.62	54.00	13.38	150.0	V	58.0	15.1

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BLE 1M_Mid channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

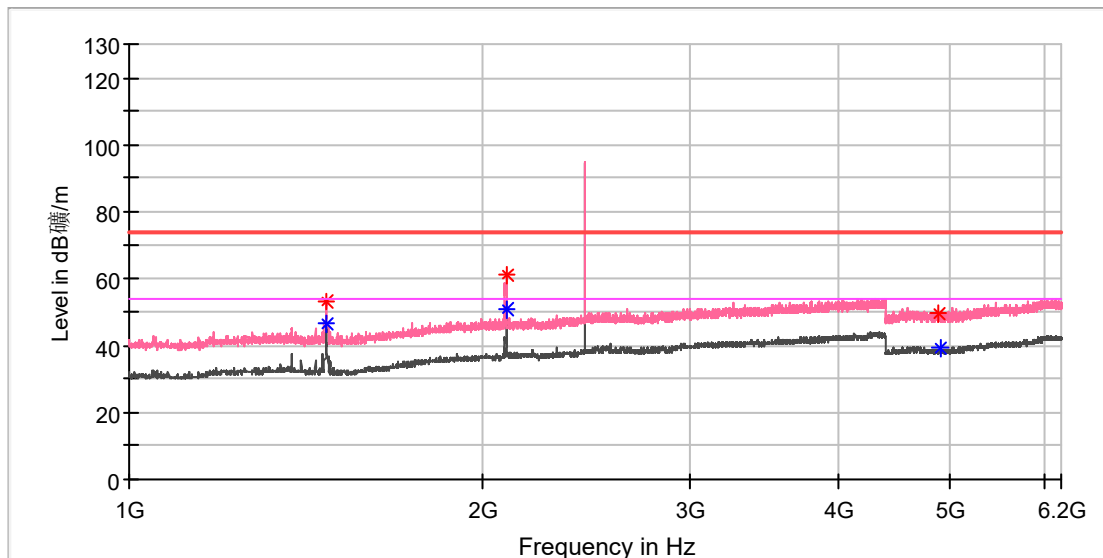
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1470.000000	52.38	---	74.00	21.62	150.0	H	13.0	1.3
1470.000000	---	43.59	54.00	10.41	150.0	H	13.0	1.3
2093.000000	59.67	---	74.00	14.33	150.0	H	339.0	6.0
2093.000000	---	48.95	54.00	5.05	150.0	H	339.0	6.0
4836.500000	50.35	---	74.00	23.65	150.0	H	119.0	11.8
4870.000000	---	38.85	54.00	15.15	150.0	H	209.0	11.8

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BLE 1M_Mid channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

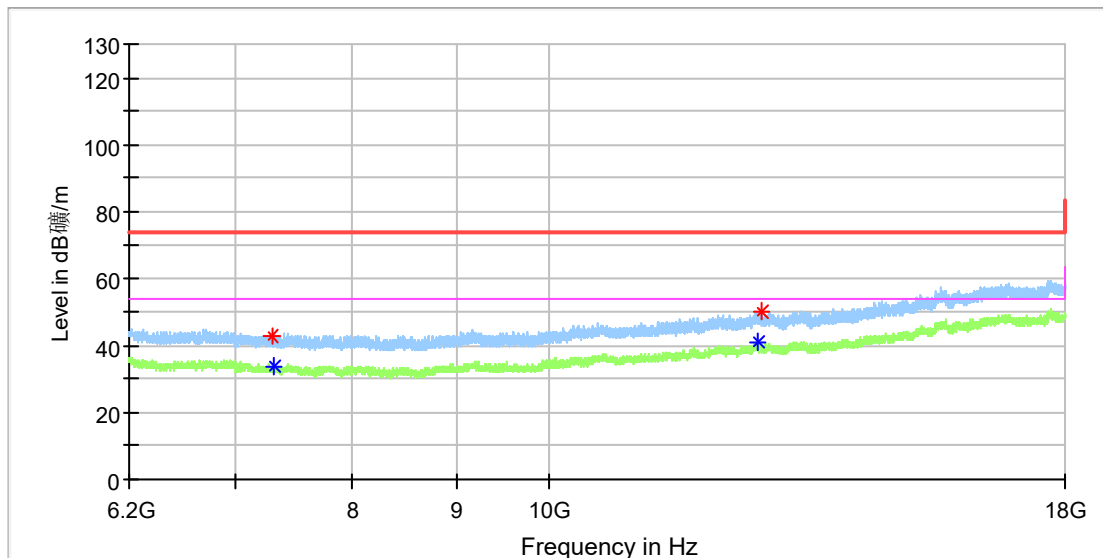
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1470.500000	---	46.74	54.00	7.26	150.0	V	142.0	1.3
1471.000000	53.14	---	74.00	20.86	150.0	V	142.0	1.3
2093.000000	---	50.81	54.00	3.19	150.0	V	260.0	6.0
2093.500000	60.88	---	74.00	13.12	150.0	V	260.0	6.0
4870.500000	49.54	---	74.00	24.46	150.0	V	310.0	11.8
4900.000000	---	39.12	54.00	14.88	150.0	V	235.0	11.8

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BLE 1M_Mid channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

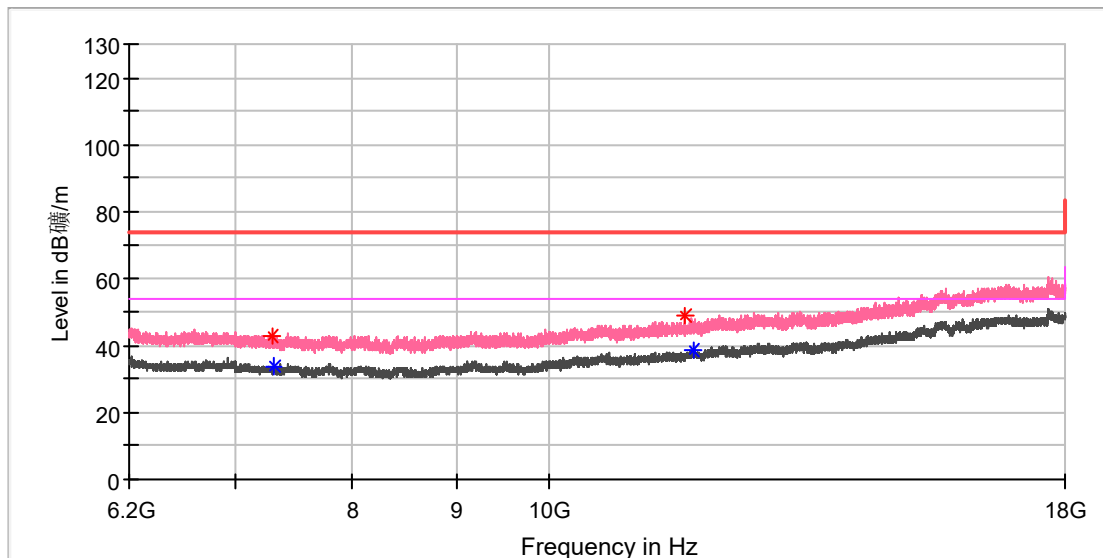
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7299.858333	42.97	---	74.00	31.03	150.0	H	86.0	8.3
7314.116667	---	33.93	54.00	20.07	150.0	H	232.0	8.2
12688.033333	---	41.09	54.00	12.91	150.0	H	207.0	15.1
12732.775000	49.92	---	74.00	24.08	150.0	H	232.0	15.2

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BLE 1M_Mid channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

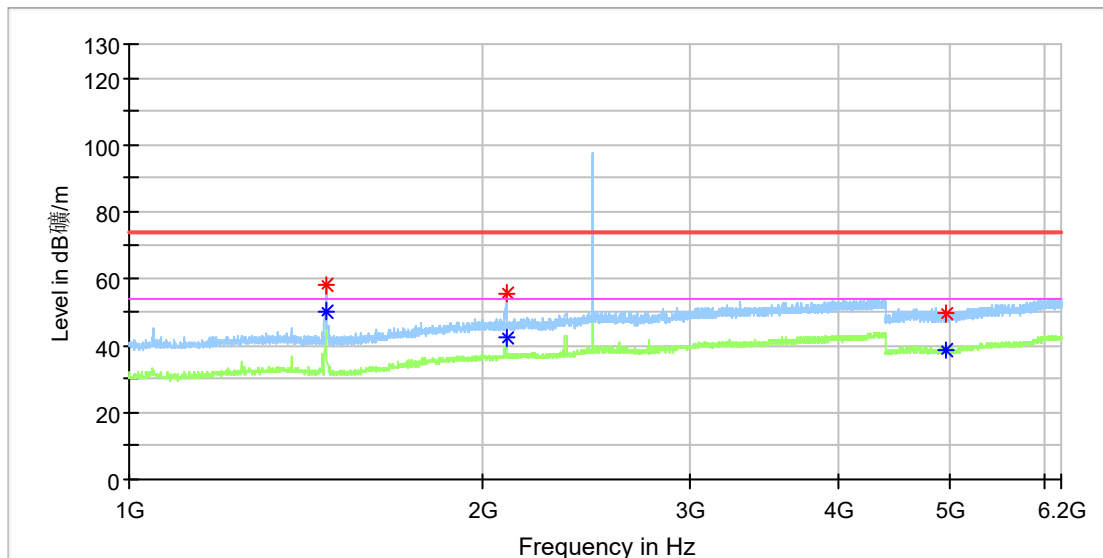
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7290.516667	43.00	---	74.00	31.00	150.0	V	260.0	8.3
7304.775000	---	33.77	54.00	20.23	150.0	V	90.0	8.3
11675.200000	48.98	---	74.00	25.02	150.0	V	20.0	13.3
11803.033333	---	38.73	54.00	15.27	150.0	V	7.0	13.4

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BLE 1M_High channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

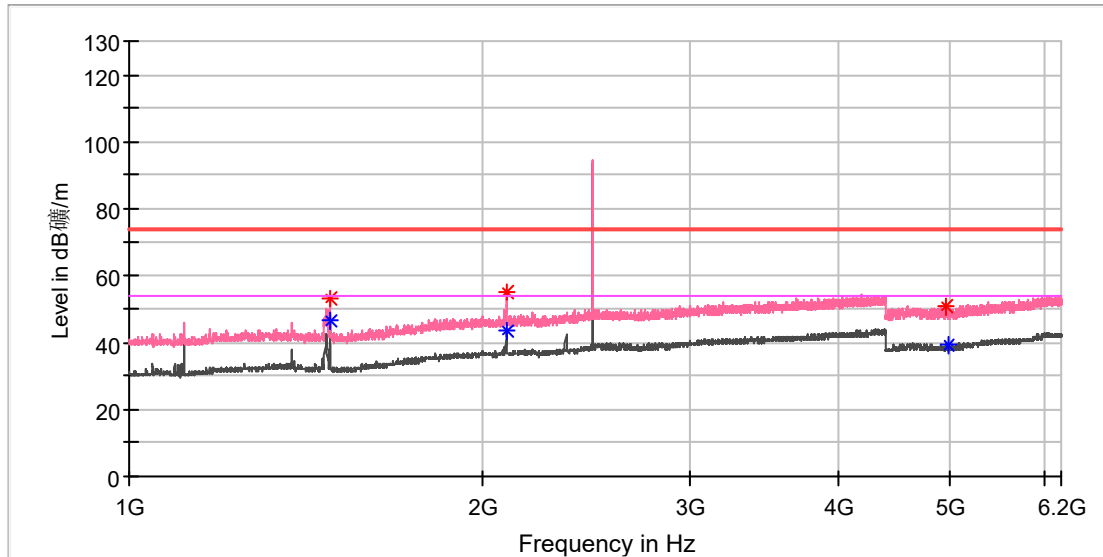
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1469.500000	---	50.03	54.00	3.97	150.0	H	316.0	1.3
1470.000000	58.20	---	74.00	15.80	150.0	H	316.0	1.3
2091.000000	55.57	---	74.00	18.43	150.0	H	20.0	6.0
2092.500000	---	42.45	54.00	11.55	150.0	H	28.0	6.0
4953.000000	49.88	---	74.00	24.12	150.0	H	277.0	11.8
4957.500000	---	38.91	54.00	15.09	150.0	H	352.0	11.8

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BLE 1M_High channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

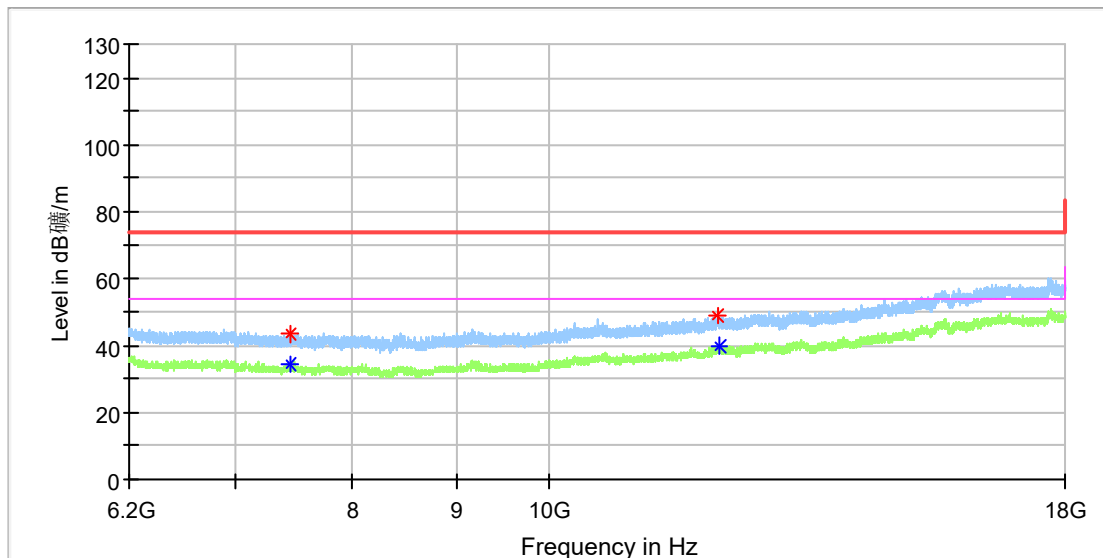
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1480.000000	---	46.46	54.00	7.54	150.0	V	14.0	1.3
1480.500000	53.06	---	74.00	20.94	150.0	V	14.0	1.3
2092.000000	55.27	---	74.00	18.73	150.0	V	135.0	6.0
2092.000000	---	43.67	54.00	10.33	150.0	V	135.0	6.0
4951.500000	50.49	---	74.00	23.51	150.0	V	95.0	11.8
4966.000000	---	39.27	54.00	14.73	150.0	V	321.0	11.8

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BLE 1M_High channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

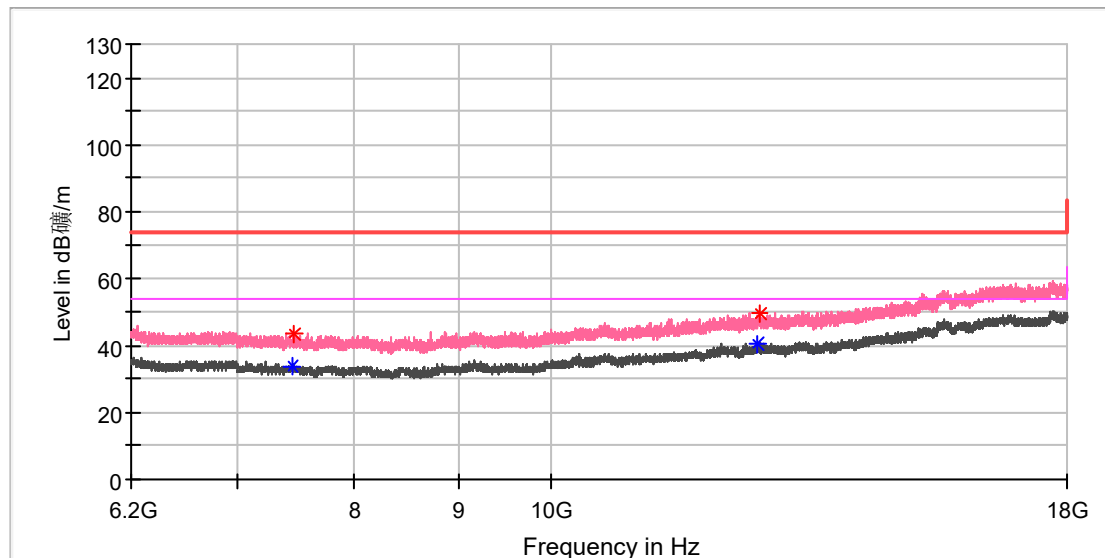
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7437.525000	43.50	---	74.00	30.50	150.0	H	191.0	8.4
7440.475000	---	34.51	54.00	19.49	150.0	H	46.0	8.4
12127.041667	48.85	---	74.00	25.15	150.0	H	100.0	14.3
12147.200000	---	39.84	54.00	14.16	150.0	H	113.0	14.4

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BLE 1M_High channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7446.866667	---	34.11	54.00	19.89	150.0	V	194.0	8.5
7457.683333	43.47	---	74.00	30.53	150.0	V	217.0	8.5
12659.025000	---	40.74	54.00	13.26	150.0	V	278.0	15.0
12687.050000	49.68	---	74.00	24.32	150.0	V	72.0	15.1

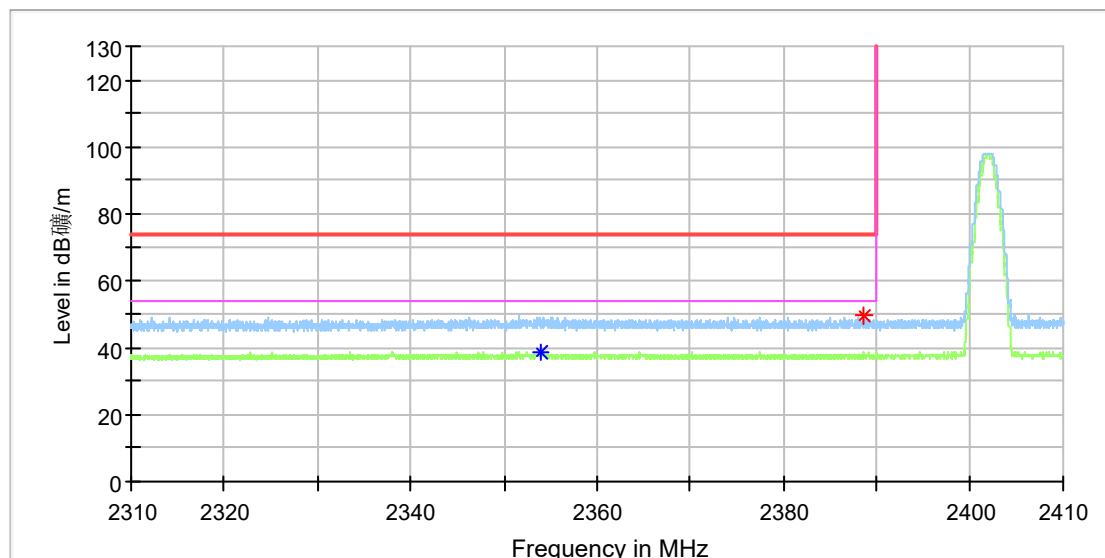
Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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Appendix B.6: Test Results of Radiated Emissions in Restricted Bands

EUT Information

EUT Name:	LOTUS-Lambda-DHU
Model:	ECMC3
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168472504/A003664372-004
Test Voltage:	DC 12V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

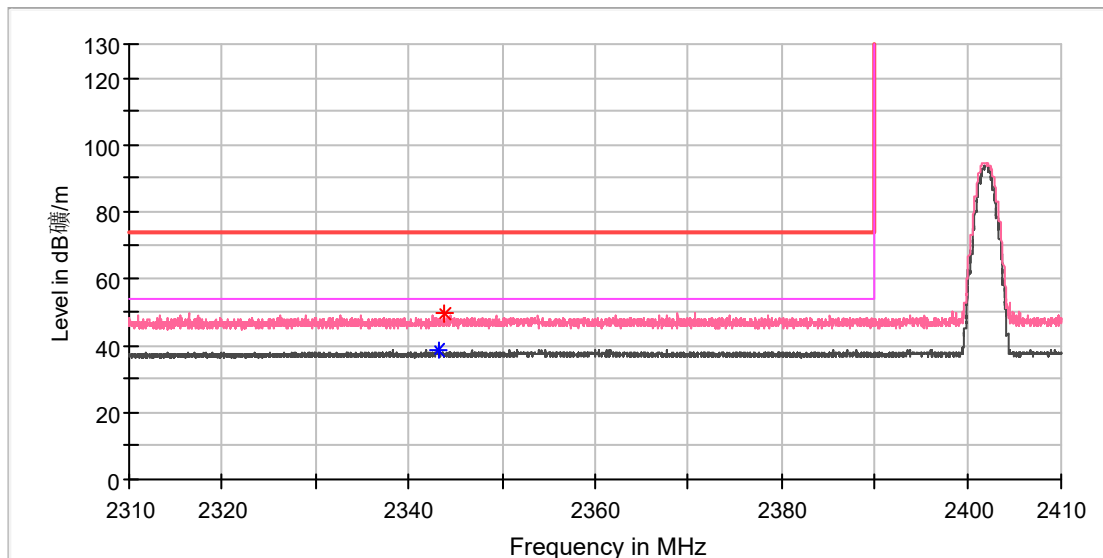
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2353.955882	---	38.98	54.00	15.02	150.0	H	229.0	6.9
2388.705882	49.54	---	74.00	24.46	150.0	H	101.0	7.0

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name:	LOTUS-Lambda-DHU
Model:	ECMC3
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168472504/A003664372-004
Test Voltage:	DC 12V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

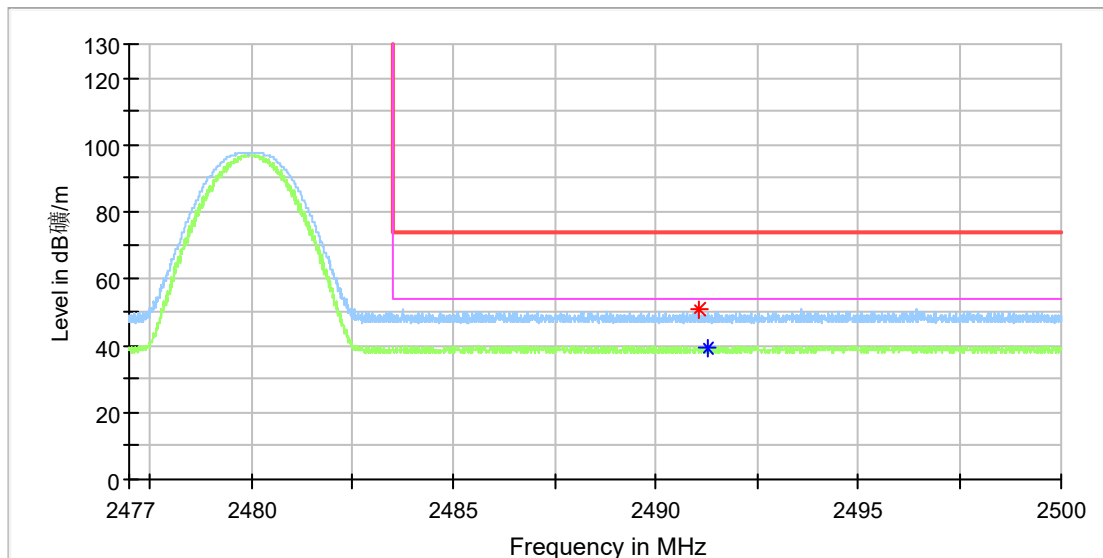
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2343.102941	---	38.74	54.00	15.26	150.0	V	34.0	6.8
2343.911765	49.61	---	74.00	24.39	150.0	V	132.0	6.9

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BLE 1M_High channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

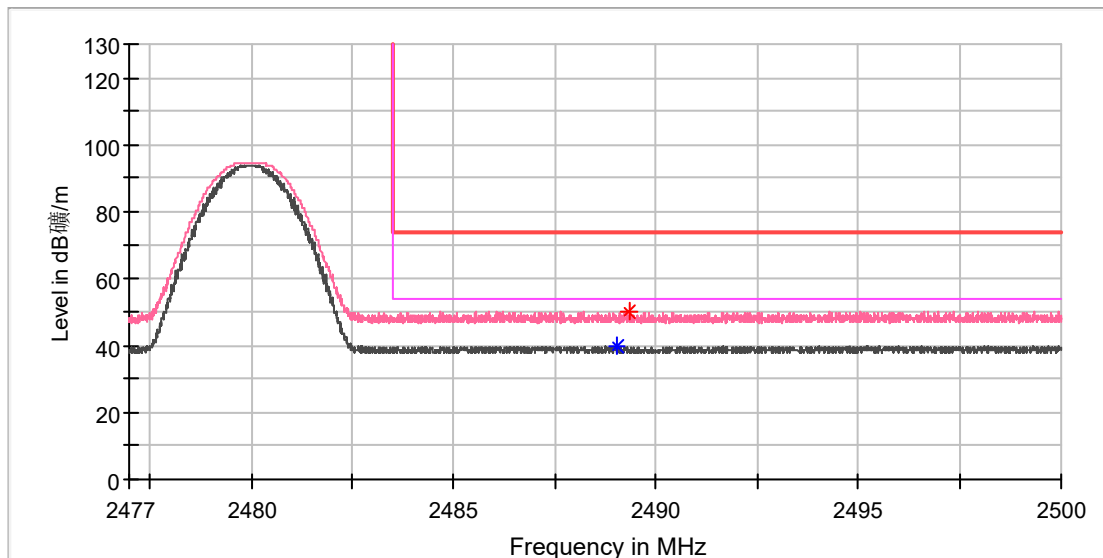
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2491.066177	51.02	---	74.00	22.98	150.0	H	350.0	7.4
2491.291177	---	39.42	54.00	14.58	150.0	H	185.0	7.4

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: LOTUS-Lambda-DHU
Model: ECMC3
Test Mode: BLE 1M_High channel
Order No/Sample No: 168472504/A003664372-004
Test Voltage: DC 12V From DC Source
Remark: Temp 23 Humi:56%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2489.063235	---	39.79	54.00	14.21	150.0	V	0.0	7.4
2489.354412	50.45	---	74.00	23.55	150.0	V	214.0	7.4

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---