FCC Part 15 Subpart B&C §15.247

Test Report

Equipment Under Test	**Car Audio**
Model Name	**DGU-4H46-C300EA**
Variant Model Name	**DGU-4H46-X150EA**
FCC ID	**2AE77DGU4H46C300EA**
Applicant	**DIGEN**
Manufacturer	**DIGEN**
Date of Test(s)	**2018. 07. 09 ~ 2018. 07. 16**
Date of Issue	**2018. 07. 18**

In the configuration tested, the EUT complied with the standards specified above.

Issue to	Issue by
DIGEN 89, Seongseo4chacheomdan-ro, Dalseo-gu, Daegu, 704-801, Korea Tel.: +82-70-4850-3311 Fax: +82-2-532-8811	**MOVON Corporation** 498-2,Geumeo-ro, Pogok-eup, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea, 449-812 Tel.: +82-31-338-8837 Fax: +82-31-338-8847

Revision history

Revision	Date of issue	Description	Revised by
--	July 18, 2018	Initial	--

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1. Attestation of test results

1.1. Details of applicant& Manufacturer

Applicant	:	DIGEN
Address	:	89, Seongseo4chacheomdan-ro, Dalseo-gu, Daegu, 704-801, Korea
Contact Person	:	Jun Kim
Telephone	:	+82-70-4850-3311
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1.2. Summary of test results

The EUT has been tested according to the following specifications;

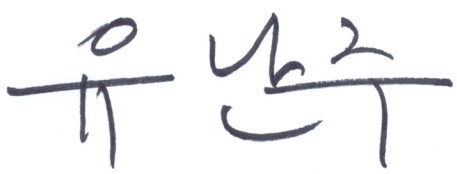
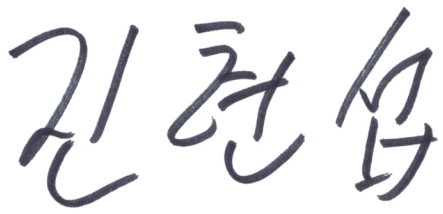
Section in FCC part 15	Description	Result
§15.205(a) §15.209 §15.247(d)	Transmitter radiated spurious emissions, Conducted spurious emission	C
§15.109(a)	Receiver radiated spurious emission	C
§15.247(a)(1)	20 dB bandwidth	C
§15.247(b)(1)	Maximum peak output power	C
§15.247(a)(1)	Frequency separation	C
§15.247(a)(1)(iii)	Number of hopping frequency	C
§15.247(a)(1)(iii)	Time of occupancy(Dwell time)	C
§15.247(i) §1.1307(b)(1)	RF exposure evaluation	C

The sample was tested according to the following specification:
FCC Parts 15.247; ANSI C63.4:2014, ANSI C63.10:2013
FCC Public Notice DA 00-705
TEST SITE REGISTRATION NUMBER: ***FCC(KR0151)***

※ Abbreviation

C Complied
N/A Not applicable
F Fail

Approval Signatories

Test and Report Completed by :	Report Approval by :
	
Nanju Yoo Test Engineer MOVON CORPORATION	Issac Jin Technical Manager MOVON CORPORATION

2. EUT Description

Kind of product	Car Audio
Model Name	DGU-4H46-C300EA
Variant Model Name	DGU-4H46-X150EA
FCC ID	2AE77DGU4H46C300EA
Serial Number	N/A
Power supply	DC 12 V
Frequency range	2 402 ㎒ ~ 2 480 ㎒
Modulation technique	GFSK, Pi/4DQPSK, 8DPSK
Number of channels	79
Antenna gain	0.5dBi
TEST SITE REGISTRATION NUMBER	FCC(KR0151)

2.1. Declarations by the manufacturer
None

2.2. Details of modification
None

3. Frequency Hopping System Requirements

3.1. Standard Applicable

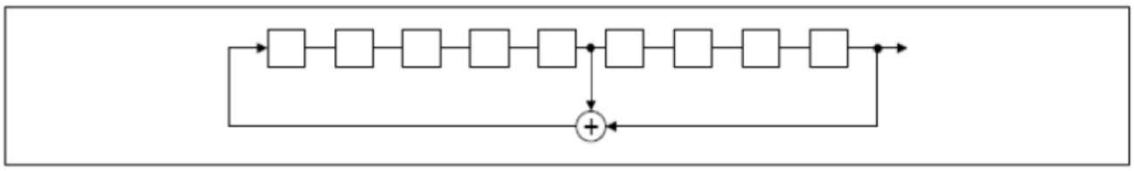
According to FCC Part 15.247(a)(1), The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

(g) Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. However, the system, consisting of both the transmitter and the receiver, must be designed to comply with all of the regulations in this section should the transmitter be presented with a continuous data (or information) stream. In addition, a system employing short transmission bursts must comply with the definition of a frequency hopping system and must distribute its transmissions over the minimum number of hopping channels specified in this section.

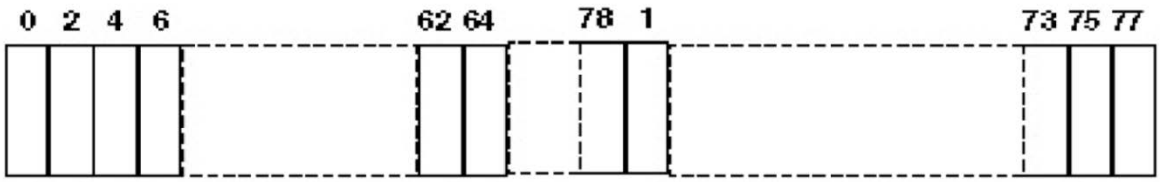
(h) The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hop sets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

3.2. EUT Pseudorandom Frequency Hopping Sequence

The pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage, and the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONEs; i.e. the shift register is initialized with nine ones. Number of shift register stages: 9 Length of pseudo-random sequence: 29-1 = 511 bits Longest sequence of zeros: 8 (non-inverted signal)



Linear Feedback Shift Register for Generation of the PRBS sequence



Each frequency used equally on the average by each transmitter. The system receiver have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

3.3. Frequency Hopping System

This transmitter device is frequency hopping device, and complies with FCC part 15.247 rule. This device uses Bluetooth radio which operates in 2400-2483.5 MHz band. Bluetooth uses a radio technology called frequency-hopping spread spectrum, which chops up the data being sent and transmits chunks of it on up to 79 bands (1 MHz each; centred from 2402 to 2480 MHz) in the range 2,400-2,483.5 MHz. The transmitter switches hop frequencies 1,600 times per second to assure a high degree of data security. All Bluetooth devices participating in a given piconet are synchronized to the frequency-hopping channel for the piconet. The frequency hopping sequence is determined by the master's device address and the phase of the hopping sequence (the frequency to hop at a specific time) is determined by the master's internal clock. Therefore, all slaves in a piconet must know the master's device address and must synchronize their clocks with the master's clock.

Adaptive Frequency Hopping (AFH) was introduced in the Bluetooth specification to provide an effective way for a Bluetooth radio to counteract normal interference. AFH identifies "bad" channels, where either other wireless devices are interfering with the Bluetooth signal or the Bluetooth signal is interfering with another device. The AFH-enabled Bluetooth device will then communicate with other devices within its piconet to share details of any identified bad channels. The devices will then switch to alternative available "good" channels, away from the areas of interference, thus having no impact on the bandwidth used.

*Example for a Bluetooth device using channel numbers would be :
Ch 44, 35, 78, 03, 15, 21, 76, 40, 56, 13, 02, 19, 67, 39, 78, 20, 21, 64, 75 etc.

Measurement equipment

Equipment	Manufacturer	Model	Serial number	Calibration Interval	Calibration due.
Test Receiver	R&S	ESVS30	829673/015	1 year	2018-12-07
Signal Generator	R&S	SMB100A	102188	1 year	2018-12-08
Spectrum Analyzer	R&S	FSV-40	100832	1 year	2019-05-28
Power Meter	Agilent	E4416A	GB41290645	1 year	2019-05-29
Power Sensor	Agilent	9327A	US40441490	1 year	2019-05-29
Power Module	R&S	OSP120	100905	1 year	2018-12-08
Horn Antenna	R&S	HF906	100236	2 year	2019-04-25
Horn Antenna	AH Systems	SAS-572	269	2 year	2019-08-01
Horn Antenna	AH Systems	SAS-573	164	2 year	2020-04-26
Bi-Log Ant.	S/B	VULB 9161SE	9161-4159	2 year	2020-06-11
Power Amplifier	MITEQ	AM-1431	1497315	1 year	2019-05-29
Power Amplifier	MITEQ	AFS43-01002600	2018519	1 year	2018-11-03
Controller	INNCO	CO2000	co200/064/6961003/L	N/A	N/A
Antenna Master	INNCO	MA4000	MA4000/038/6961003/L	N/A	N/A
Loop Antenna	ETS LINDGREN	6502	00118166	2 year	2018-10-31
TWO LINE-V-NETWORK	R&S	ESH3-Z5	100296	1 year	2018-12-07
Low Noise Amplifier	TESTEK	TK-PA18H	170013-L	1 year	2019-05-28
Power Divider	HP	11636B	12481	1 year	2019-05-31
WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW500	154160	1 year	2019-05-29

※Remark;

Support equipment

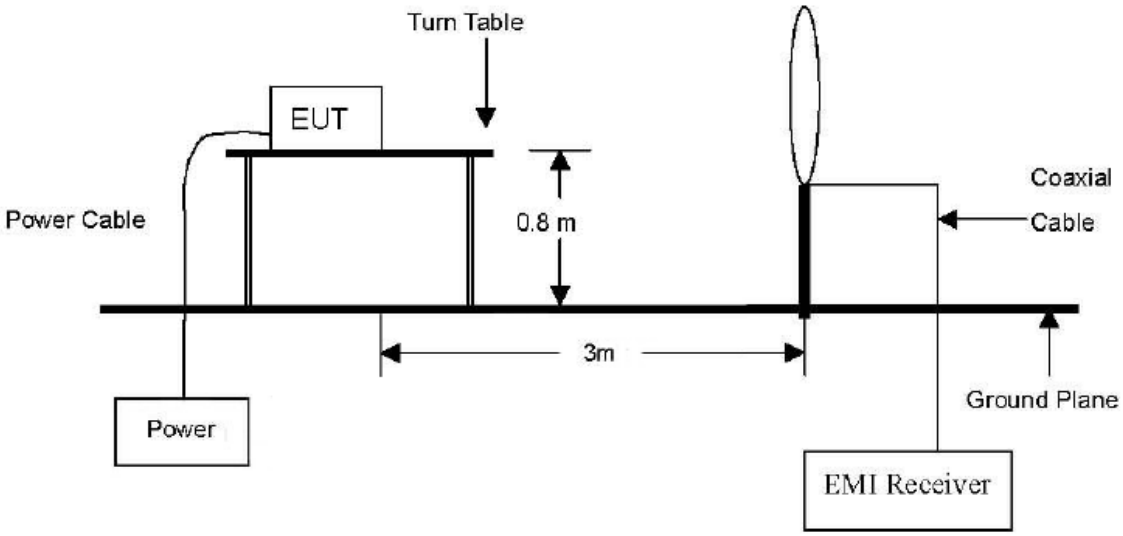
Description	Manufacturer	Model	Serial number
-	-	-	-

4. Transmitter radiated spurious emissions and conducted spurious emissions

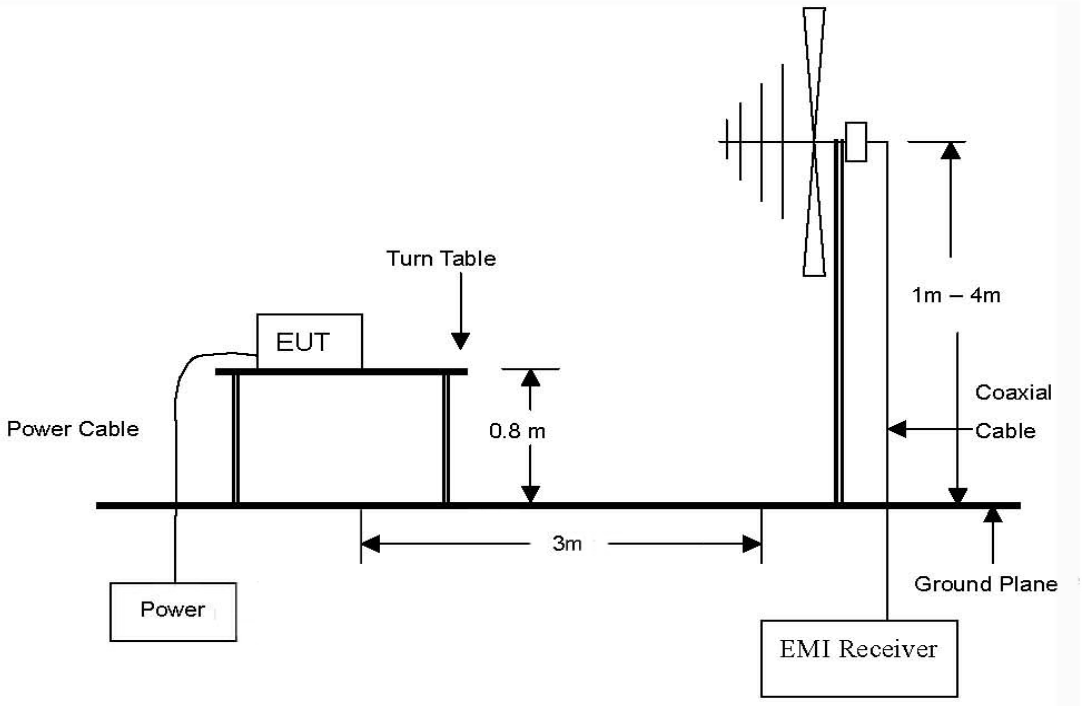
4.1. Test setup

4.1.1. Transmitter radiated spurious emissions

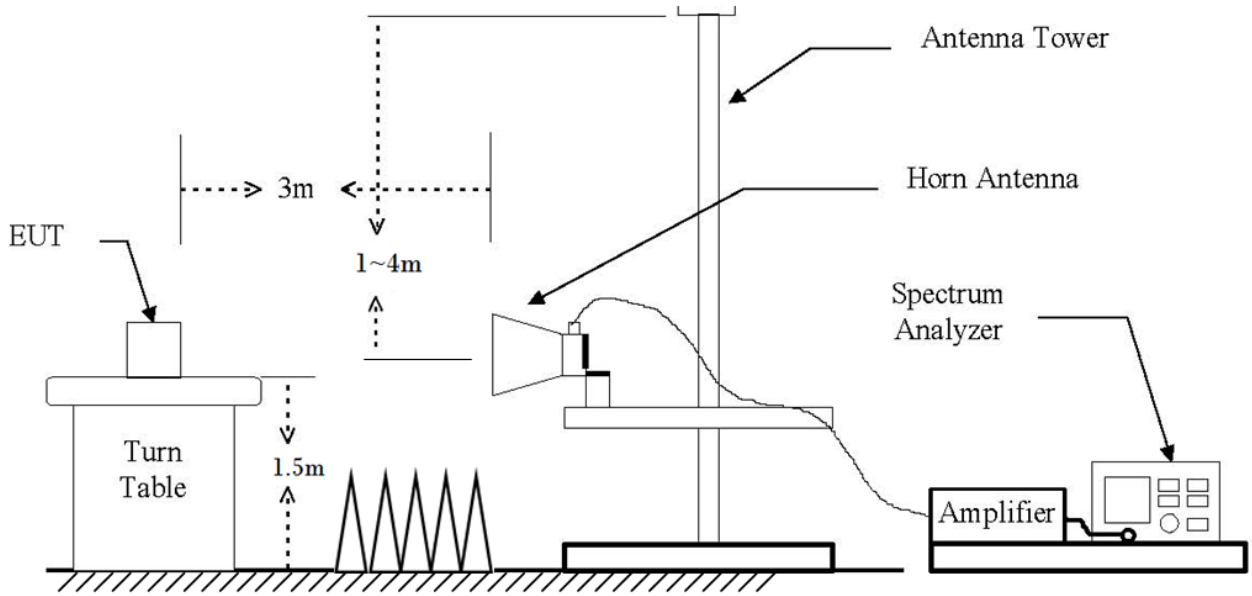
The diagram below shows the test setup that is utilized to make the measurements for emission from 9kHz to 30MHz Emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 30 ㎒ to 1 ㎓ emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission Above 1 ㎓ emissions.



4.2. Limit

According to §15.247(d), in any 100 ㎑ bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 ㏈ below that in the 100 ㎑ bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement , provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval , as permitted under paragraph(b)(3) of this section , the attenuation required under this paragraph shall be 30 ㏈ instead of 20 ㏈. Attenuation below the general limits specified in section §15.209(a) is not required. In addition, radiated emission which in the restricted band, as define in section §15.205(a), must also comply the radiated emission limits specified in section §15.209(a) (see section §15.205(c))

According to § 15.109(a), for an intentional radiator devices, the general required of field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values：

Frequency (㎒)	Distance (Meters)	Radiated at 3M (㏈㎶/m)	Radiated (㎶/m)
0.009–0.490	300	See the remark	2400/F(㎑)
0.490–1.705	30		24000/F(㎑)
1.705–30.0	30		30
30 - 88	3	40.0	100
88 – 216	3	43.5	150
216 – 960	3	46.0	200
Above 960	3	54.0	500

*Remark

1. Emission level in ㏈uV/m=20 log (uV/m)
2. Measurement was performed at an antenna to the closed point of EUT distance of meters.

4.3. Test procedures

Radiated emissions from the EUT were measured according to the dictates of ANSI C63.4:2014
In case of the air temperature of the test site is out of the range is 10 to 40°C before the testing proceeds the warm-up time of EUT maintain adequately

4.3.1. Test procedures for radiated spurious emissions

1. The EUT is placed on a turntable, which is 0.8 m (Below 1 ㎓.)**/** 1.5 m (Above 1 ㎓) above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3 m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.

※ Remark;

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 10 ㎑ for Peak detection (PK) at frequency below 30 ㎒
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 ㎑ for Peak detection (PK) or Quasi-peak detection (QP) at frequency below 1 ㎓.
3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 ㎒ for Peak detection and frequency above 1 ㎓.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1 ㎒z and the video bandwidth is 10 ㎐ for Average detection (AV) at frequency above 1 ㎓.

4.3.2. Test procedures for conducted spurious emissions

1. The transmitter output was connected to the spectrum analyzer through an attenuator.
2. The bandwidth of the fundamental frequency was measured with the spectrum analyzer using RBW=100 ㎑,VBW=100 ㎑.

4.4. Test result

Ambient temperature: 24℃
Relative humidity: 46% R.H.

4.4.1. Spurious radiated emission

The frequency spectrum from 9㎑ to 30㎒ was investigated. Emission levels are not reported muchlower than the limits by over 20 ㏈. All reading values are peak values.
To get a maximum emission levels from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes.

Operation mode : BDR
A. Low channel (2 402 ㎒)

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (㏈㎶)	Detector mode	Pol.	Ant. factor (㏈/m)	C.L (㏈)	Actual (㏈㎶/m)	Limit (㏈㎶/m)	Margin (㏈)
No other emissions were detected at a level greater than 20dB below limit.								

B. Middle channel (2 441 ㎒)

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (㏈㎶)	Detector mode	Pol.	Ant. factor (㏈/m)	C.L (㏈)	Actual (㏈㎶/m)	Limit (㏈㎶/m)	Margin (㏈)
No other emissions were detected at a level greater than 20dB below limit.								

C. High channel (2 480 ㎒)

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (㏈㎶)	Detector mode	Pol.	Ant. factor (㏈/m)	C.L (㏈)	Actual (㏈㎶/m)	Limit (㏈㎶/m)	Margin (㏈)
No other emissions were detected at a level greater than 20dB below limit.								

※ Remark
1. Actual = Reading + Ant. factor + CL (Cable loss)
2. Limit line = specific Limits (dBuV) + Distance extrapolation factor
3. 15.31 Measurement standards.
The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this part.

Operation mode : EDR

A. Low channel (2 402 ㎒)

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	Ant. factor (dB/m)	C.L (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
No other emissions were detected at a level greater than 20dB below limit.								

B. Middle channel (2 441 ㎒)

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	Ant. factor (dB/m)	C.L (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
No other emissions were detected at a level greater than 20dB below limit.								

C. High channel (2 480 ㎒)

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	Ant. factor (dB/m)	C.L (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
No other emissions were detected at a level greater than 20dB below limit.								

※ Remark

1. Actual = Reading + Ant. factor + CL (Cable loss)
2. Limit line = specific Limits (dBuV) + Distance extrapolation factor
3. 15.31 Measurement standards.

The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this part.

4.4.2. Spurious radiated emission

The frequency spectrum from 30 ㎒ to 1 000 ㎒ was investigated. Emission levels are not reported muchlower than the limits by over 20 ㏈. All reading values are peak values.
To get a maximum emission levels from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes.

Operation mode: BDR

A. Low channel (2 402 ㎒)

Radiated emissions			Ant.	Correction factors	Total	Limit	
Frequency (㎒)	Reading (㏈㎶)	Detector mode	Pol.	Ant. factor + C.L - AMP (㏈)	Actual (㏈㎶/m)	Limit (㏈㎶/m)	Margin (㏈)
119.99	33.5	Peak	V	-13.5	20.0	43.5	23.5
216.02	37.5	Peak	H	-12.5	25.0	46.0	21.0
460.46	44.6	Peak	V	-6.1	38.5	46.0	7.5
690.75	34.4	Peak	H	-1.0	33.4	46.0	12.6

B. Middle channel (2 441 ㎒)

Radiated emissions			Ant.	Correction factors	Total	Limit	
Frequency (㎒)	Reading (㏈㎶)	Detector mode	Pol.	Ant. factor + C.L - AMP (㏈)	Actual (㏈㎶/m)	Limit (㏈㎶/m)	Margin (㏈)
118.95	32.7	Peak	V	-13.5	19.2	43.5	24.3
216.08	36.5	Peak	H	-12.5	24.0	46.0	22.0
461.13	43.5	Peak	V	-6.1	37.4	46.0	8.6
692.65	33.9	Peak	H	-1.0	32.9	46.0	13.1

※ Remark
1. Actual = Reading + Ant. factor + CL(Cable loss)
2. 15.31 Measurement standards.
The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this part.

C. High channel (2 480 ㎒)

Radiated emissions			Ant.	Correction factors	Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	Ant. factor + C.L - AMP (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
118.98	33.1	Peak	V	-13.5	19.6	43.5	23.9
215.87	36.7	Peak	H	-12.5	24.2	46.0	21.8
461.14	44.3	Peak	V	-6.1	38.2	46.0	7.8
689.96	33.6	Peak	H	-1.0	32.6	46.0	13.4

Operation mode: EDR

A. Low channel (2 402 ㎒)

Radiated emissions			Ant.	Correction factors	Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	Ant. factor + C.L - AMP (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
215.98	37.4	Peak	H	-12.5	24.9	43.5	18.6
263.99	36.4	Peak	H	-12.1	24.3	46.0	21.7
460.46	47.1	Peak	V	-6.1	41.0	46.0	5.0
696.04	34.0	Peak	H	-0.8	33.2	46.0	12.8

B. Middle channel (2 441 ㎒)

Radiated emissions			Ant.	Correction factors	Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	Ant. factor + C.L - AMP (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
214.65	38.1	Peak	H	-12.5	25.6	43.5	17.9
264.06	35.9	Peak	H	-12.1	23.8	46.0	22.2
463.23	46.5	Peak	V	-6.1	40.4	46.0	5.6
695.87	34.5	Peak	H	-0.8	33.7	46.0	12.3

C. High channel (2 480 ㎒)

Radiated emissions			Ant.	Correction factors	Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	Ant. factor + C.L - AMP (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
216.14	36.5	Peak	H	-12.5	24.0	43.5	19.5
264.52	35.3	Peak	H	-12.1	23.2	46.0	22.8
461.13	46.4	Peak	V	-6.1	40.3	46.0	5.7
697.25	33.2	Peak	H	-0.8	32.4	46.0	13.6

※ Remark

1. Actual = Reading + Ant. factor + CL (Cable loss)
2. 15.31 Measurement standards.

The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this part.

4.4.3. Spurious radiated emission

The frequency spectrum above 1 000 ㎒was investigated. Emission levels are not reported much lower than the limits by over 20 ㏈.
To get a maximum emission levels from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes.

Operation mode: BDR

A. Low channel (2 402 ㎒)

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (㏈㎶)	Detector mode	Pol.	Ant. factor (㏈/m)	Amp+CL (㏈)	Actual (㏈㎶/m)	Limit (㏈㎶/m)	Margin (㏈)
No other emissions were detected at a level greater than 20dB below limit.								

B. Middle channel (2 441 ㎒)

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (㏈㎶)	Detector mode	Pol.	Ant. factor (㏈/m)	Amp+CL (㏈)	Actual (㏈㎶/m)	Limit (㏈㎶/m)	Margin (㏈)
No other emissions were detected at a level greater than 20dB below limit.								

C. High channel (2 480 ㎒)

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (㏈㎶)	Detector mode	Pol.	Ant. factor (㏈/m)	Amp+CL (㏈)	Actual (㏈㎶/m)	Limit (㏈㎶/m)	Margin (㏈)
No other emissions were detected at a level greater than 20dB below limit.								

※ Remark

1. Measuring frequencies from 1 ㎓ to the 10th harmonic of highest fundamental Frequency.
2. Radiated emissions measured in frequency above 1 000 ㎒ were made with an instrument usingpeak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Actual = Reading + Ant. factor- Amp + CL (Cable loss)
5. 15.31 Measurement standards

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THE AMPLITUDE OF SPURIOUS EMISSIONS FROM INTENTIONAL RADIATORS AND EMISSIONS FROM UNINTENTIONAL RADIATORS WHICH ARE ATTENUATED MORE THAN 20 DB BELOW THE PERMISSIBLE VALUE NEED NOT BE REPORTED UNLESS SPECIFICALLY REQUIRED ELSEWHERE IN THIS PART.

Operation mode: EDR

A. Low channel (2 402 ㎒)

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	Ant. factor (dB/m)	Amp+CL (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
No other emissions were detected at a level greater than 20dB below limit.								

B. Middle channel (2 441 ㎒)

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	Ant. factor (dB/m)	Amp+CL (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
No other emissions were detected at a level greater than 20dB below limit.								

C. High channel (2 480 ㎒)

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	Ant. factor (dB/m)	Amp+CL (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
No other emissions were detected at a level greater than 20dB below limit.								

※ Remark

1. Measuring frequencies from 1 ㎓ to the 10th harmonic of highest fundamental Frequency.
2. Radiated emissions measured in frequency above 1 000 ㎒ were made with an instrument usingpeak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Actual = Reading + Ant. factor- Amp + CL (Cable loss)
5. 15.31 Measurement standards.

THE AMPLITUDE OF SPURIOUS EMISSIONS FROM INTENTIONAL RADIATORS AND EMISSIONS FROM UNINTENTIONAL RADIATORS WHICH ARE ATTENUATED MORE THAN 20 DB BELOW THE PERMISSIBLE VALUE NEED NOT BE REPORTED UNLESS SPECIFICALLY REQUIRED ELSEWHERE IN THIS PART.

4.4.4. Band Edge

Operation mode: BDR

A. 2 310 - 2 390 ㎒ measurement (2 402MHz)

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	Ant. factor (dB/m)	Amp+CL (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
2 396.98	58.64	Peak	H	28.09	47.36	39.37	74.00	34.63
2 397.46	46.05	Average	H	28.09	47.36	26.78	54.00	27.22
2 395.16	54.36	Peak	V	28.09	47.36	35.09	74.00	38.91
2 395.43	41.05	Average	V	28.09	47.36	21.78	54.00	32.22

B. 2 483.5 – 2 500 ㎒ measurement (2 480MHz)

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	Ant. factor (dB/m)	Amp+CL (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
2 483.54	58.13	Peak	H	28.09	47.36	38.86	74.00	35.14
2 484.13	46.35	Average	H	28.09	47.36	27.08	54.00	26.92
2 483.52	55.39	Peak	V	28.09	47.36	36.12	74.00	37.88
2 485.13	42.34	Average	V	28.09	47.36	23.07	54.00	30.93

Operation mode: EDR

A. 2 310 - 2 390 ㎒ measurement (2 402MHz)

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	Ant. factor (dB/m)	Amp+CL (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
2 368.13	58.13	Peak	H	28.09	47.36	38.86	74.00	35.14
2 398.52	49.36	Average	H	28.09	47.36	30.09	54.00	23.91
2 379.39	56.85	Peak	V	28.09	47.36	37.58	74.00	36.42
2 398.36	48.29	Average	V	28.09	47.36	29.02	54.00	24.98

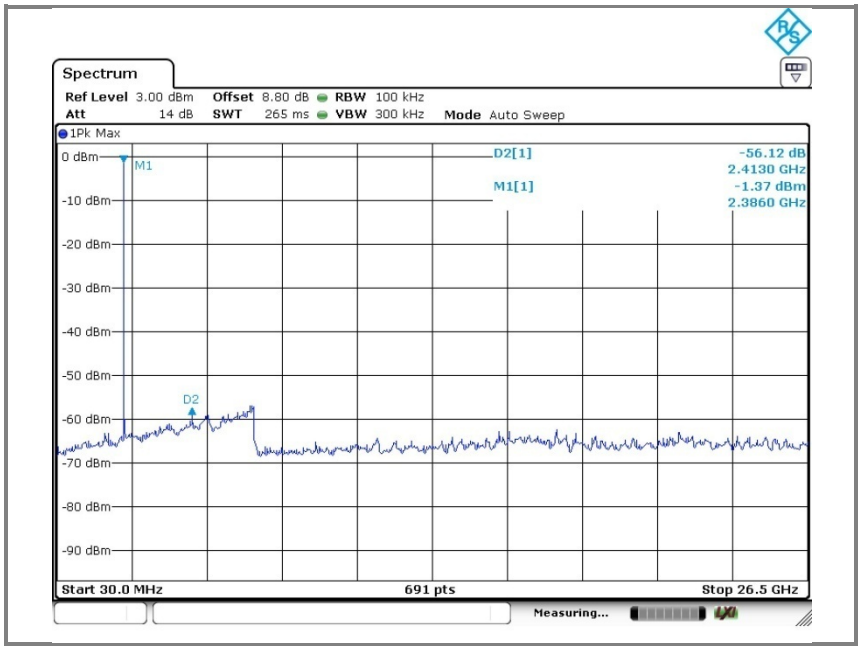
B. 2 483.5 – 2 500 ㎒ measurement (2 480MHz)

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	Ant. factor (dB/m)	Amp+CL (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
2 484.13	57.35	Peak	H	28.09	47.36	38.08	74.00	35.92
2 483.52	49.22	Average	H	28.09	47.36	29.95	54.00	24.05
2 485.36	56.85	Peak	V	28.09	47.36	37.58	74.00	36.42
2 483.74	47.13	Average	V	28.09	47.36	27.86	54.00	26.14

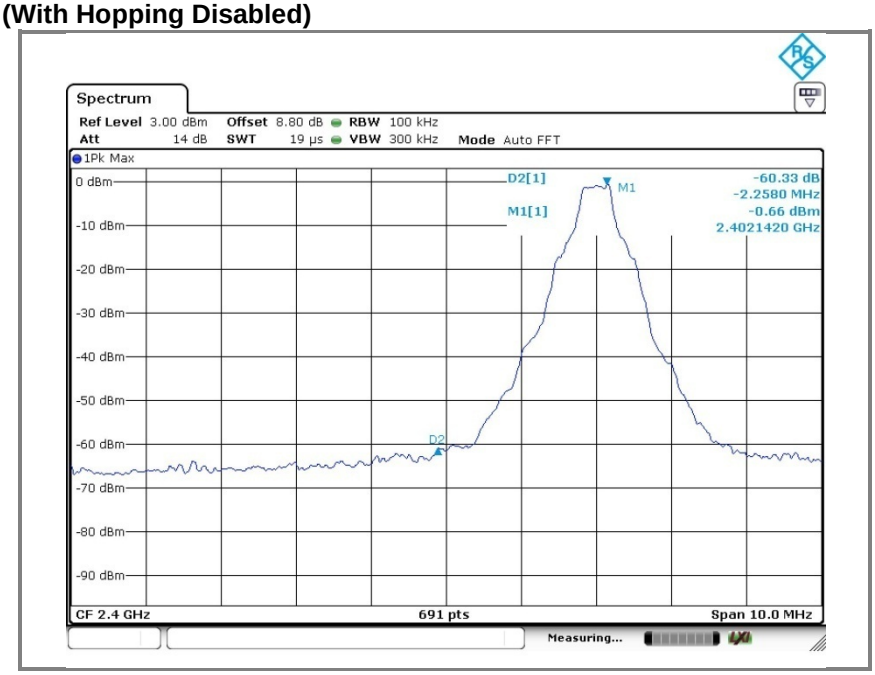
Operation mode: BDR

A. Low channel(2 402 ㎒)

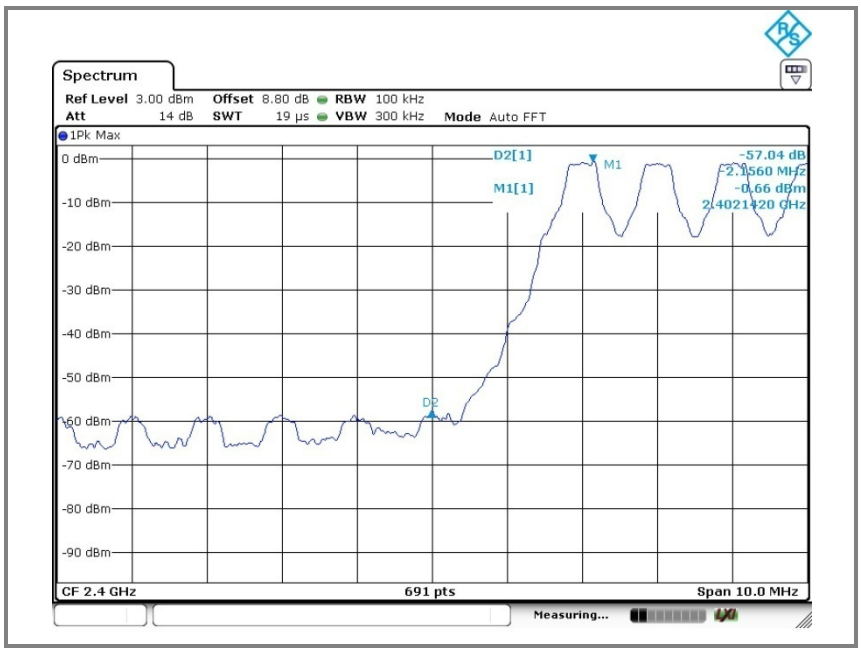
Unwanted Emission data



Band-edge data (With Hopping Disabled)

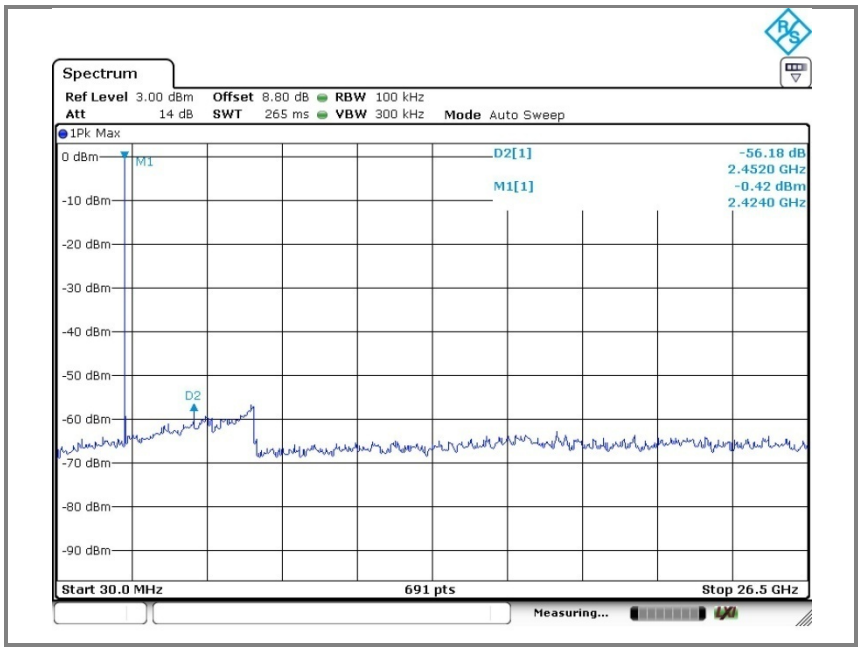


Band-edge data (With Hopping Enabled)



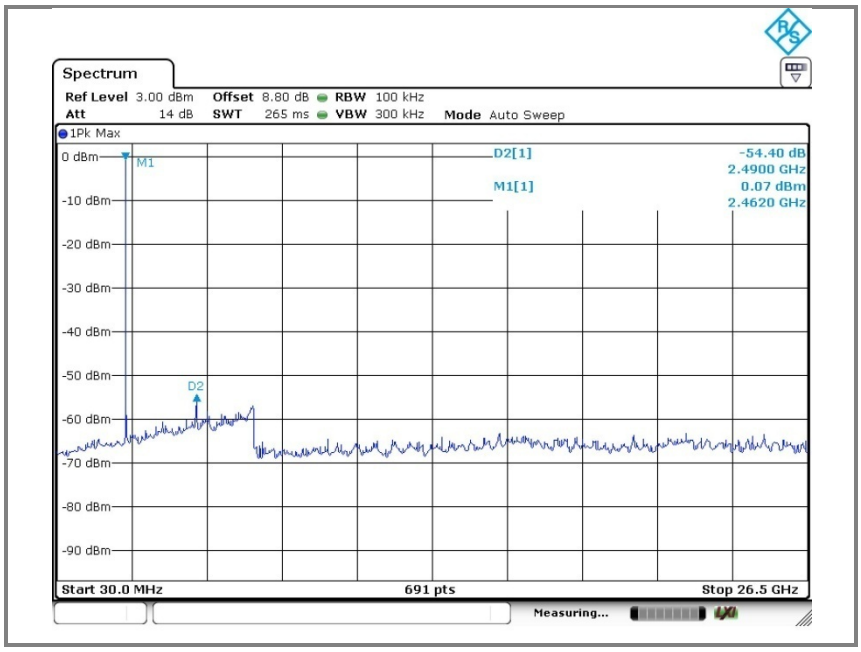
B. Middle channel(2 441 ㎒)

Unwanted Emission data

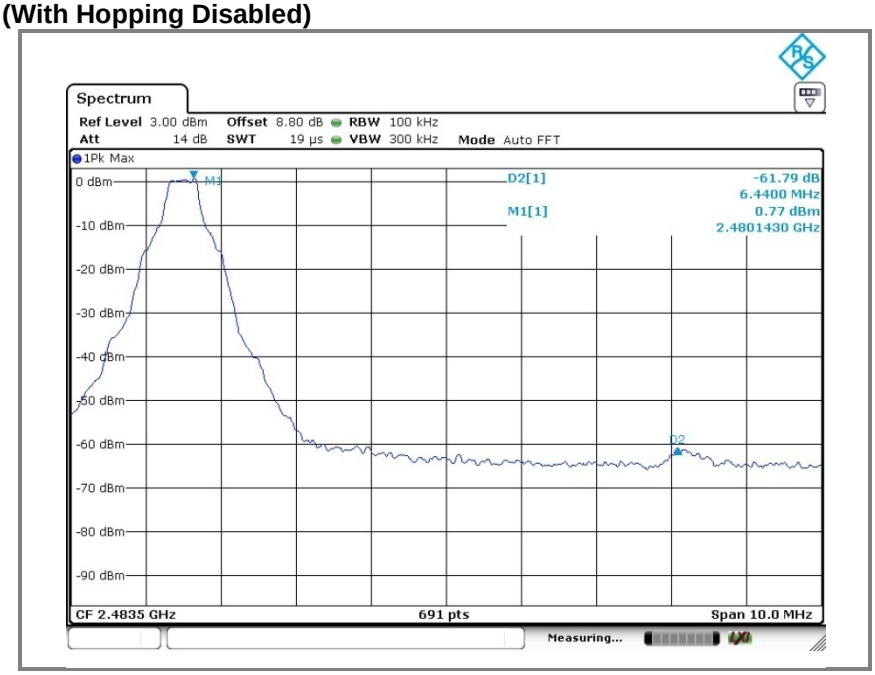


C. High channel(2 480 ㎒)

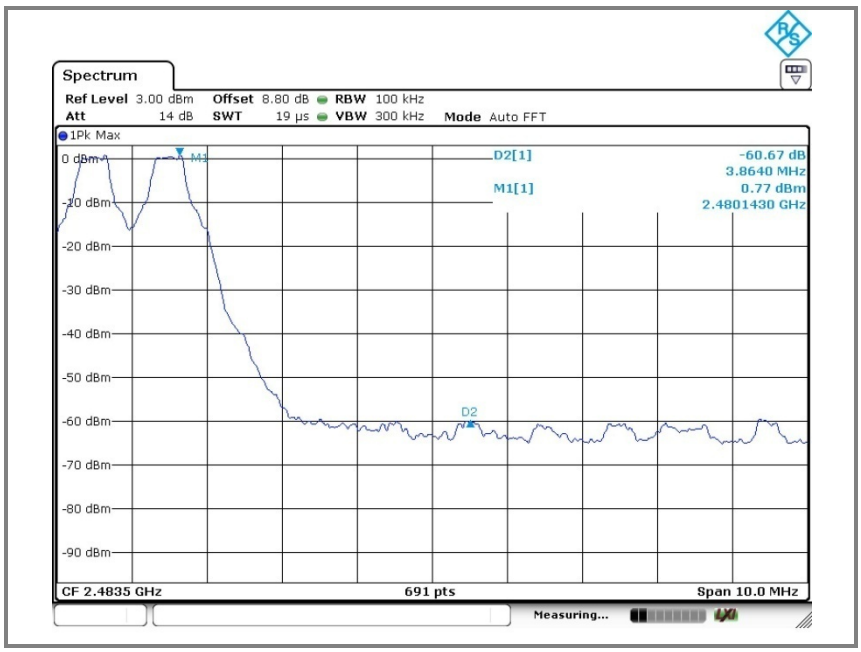
Unwanted Emission data



Band-edge data (With Hopping Disabled)



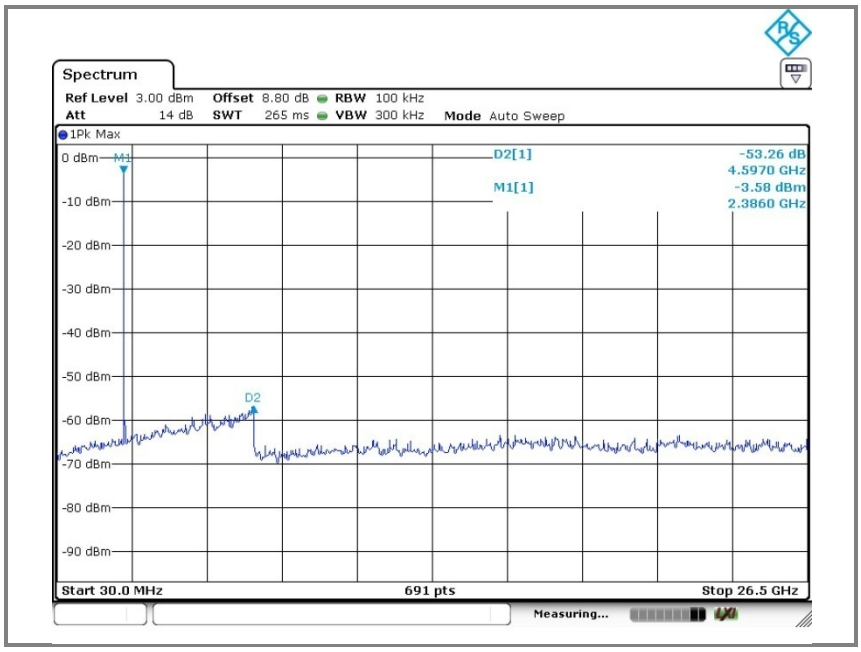
Unwanted Emission data (With Hopping Enabled)



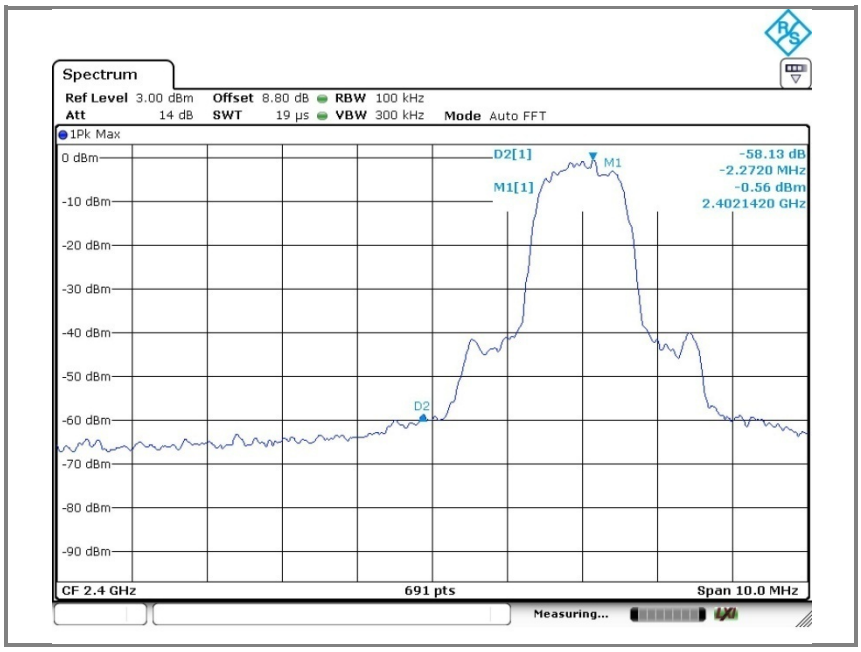
Operation mode:EDR

A. Low channel(2 402 ㎒)

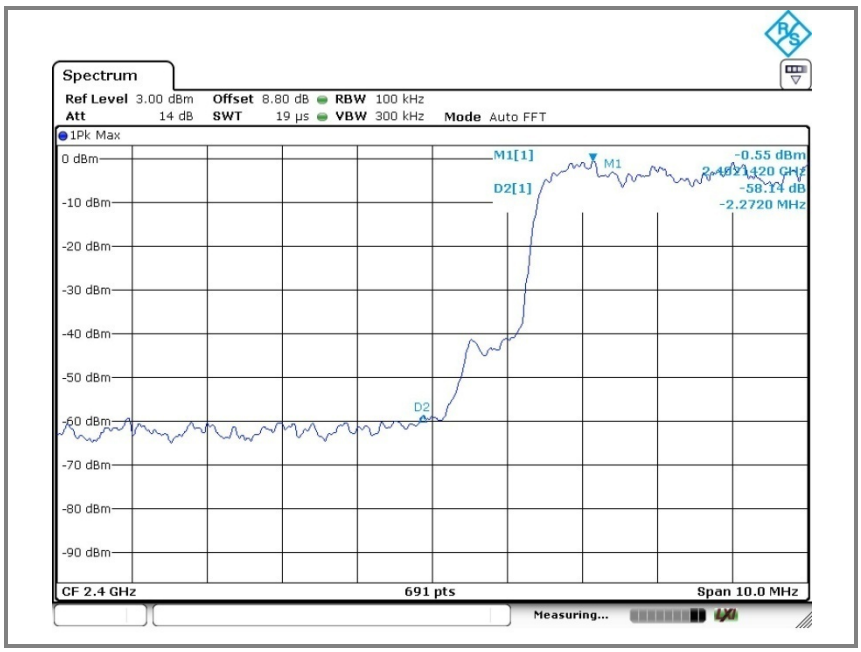
Unwanted Emission data



Band-edge data (With Hopping Disabled)

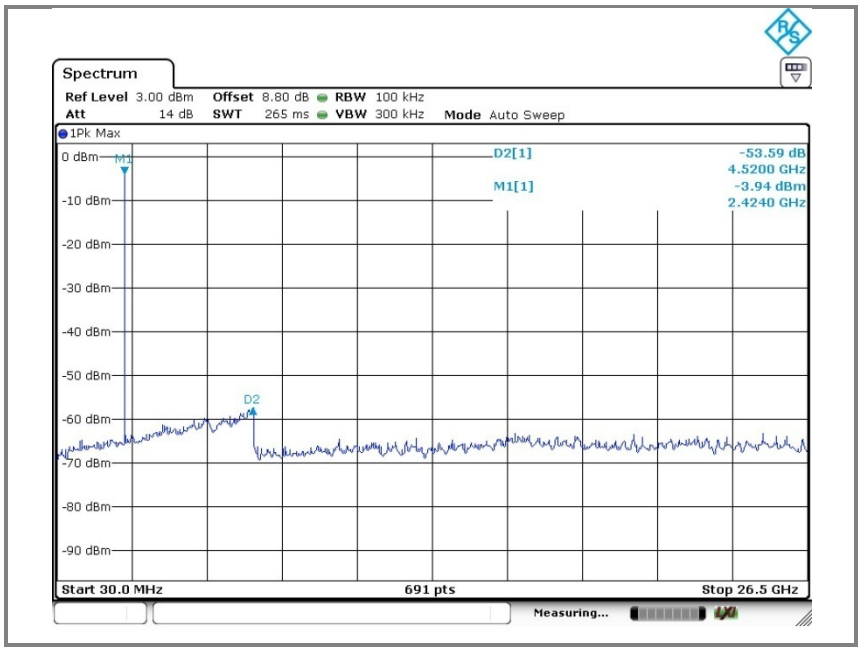


Band-edge data (With Hopping Enabled)



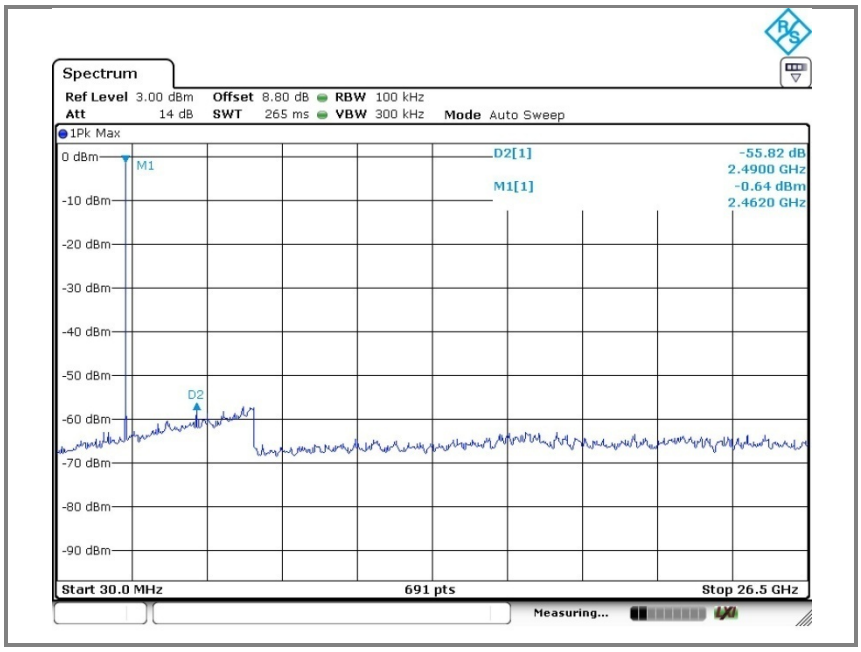
B. Middle channel(2 441 ㎒)

Unwanted Emission data

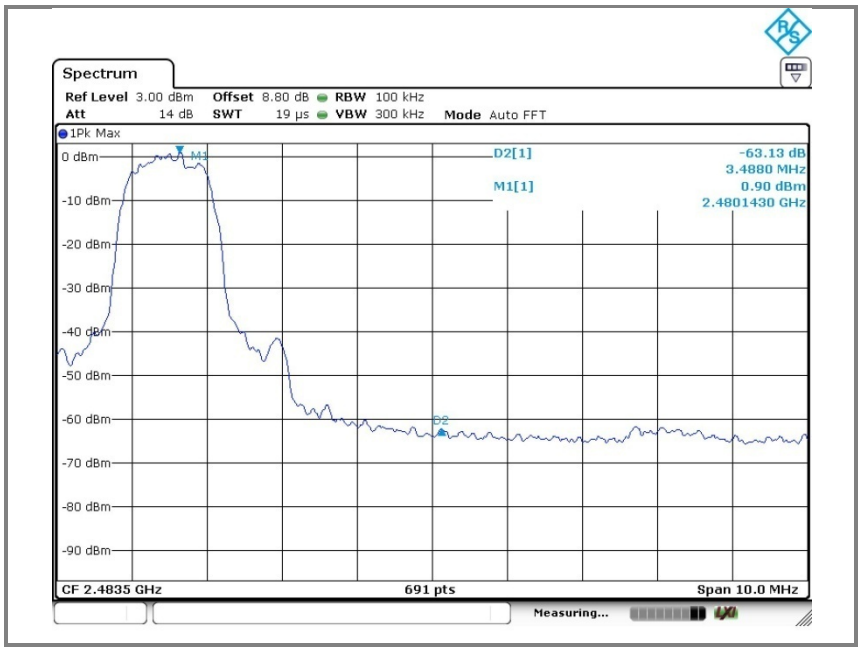


C. High channel(2 480 ㎒)

Unwanted Emission data



Band-edge data



Unwanted Emission data (With Hopping Enabled)