

TEST REPORT

FCC BT Test for LGSWCAX71

Certification

APPLICANT

LG Electronics Inc.

REPORT NO.

HCT-RF-2609-FC001

DATE OF ISSUE

September 04, 2026

Tested by

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(signature)

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Accredited by KOLAS, Republic of KOREA

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Applicant**LG Electronics Inc.**

222, LG-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do 17709, Republic of Korea

**Product Name
Model Name**RF Module
LGSWCAX71**FCC ID**

2B03LLGSWCAX71

Date of Test

July 07, 2026 ~ September 04, 2026

Test Results

PASS

FCC Classification

FCC Part 15 Spread Spectrum Transmitter(DSS)

Test Standard Used

FCC Rule Part(s): Part 15 subpart C 15.247

Location of Test

☒ Permanent Testing Lab ☐ On Site Testing Lab
(Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea)

Brand

LG

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	September 04, 2026	Initial Release

Notice

Content
Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules under normal use and maintenance. The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated. The test results have only been applied with the test methods required by the standard(s). The laboratory is not accredited for the test results marked *. Information provided by the applicant is marked **. Test results provided by external providers are marked ***. When confirmation of authenticity of this test report is required, please contact www.hct.co.kr This test report provides test result(s) under the scope accredited by the Korea Laboratory Accreditation Scheme (KOLAS), which signed the ILAC-MRA. (KOLAS (KS Q ISO/IEC 17025) Accreditation No. KT197)

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1. GENERAL INFORMATION

EUT DESCRIPTION

Model	LGSWCAX71
Additional Model	-
EUT Type	RF Module
Power Supply	DC 3.30 V
Frequency Range	2 402 MHz - 2 480 MHz
Max. RF Output Power	11.967 dBm (15.73 mW)
BT Operating Mode	Normal, EDR, AFH
Modulation Type	GFSK(Normal), $\pi/4$ DQPSK and 8DPSK(EDR)
Modulation Technique	FHSS
Number of Channels	79 Channels, Minimum 20 Channels(AFH)
Antenna Information	Please refer to the Antenna Specification document.
Serial number	Conducted : 8C2AC169F094 Radiated : 8C2AC169EEF6

ANTENNA CONFIGURATIONS

1. Below Tables are the possible configurations.

Configurations	SISO		Dual BT
	Ant1	Ant2	Ant1 & Ant2
Bluetooth	O	X	X

Note:

- 1) O = Support, X = Not Support
- 2) SISO = Single Input Single Output

2. This device supports simultaneous transmission operation, which allows for two channels to operate independent of one another in the 2.4 GHz and 5 GHz or 6GHz Bands simultaneously on each antenna.

Simultaneous transmission Scenario	2.4 GHz WiFi Ant.1	2.4 GHz WiFi Ant.2	5 GHz WiFi Ant.1	5 GHz WiFi Ant.2	6 GHz WiFi Ant.1	6 GHz WiFi Ant.2	Bluetooth	Test Case
Bluetooth + 2.4 GHz WiFi MIMO	on	on	-	-	-	-	on	Scenario 1
Bluetooth + 5 GHz WiFi MIMO	-	-	on	on	-	-	on	Scenario 2
Bluetooth + 6 GHz WiFi MIMO	-	-	-	-	on	on	on	-
2.4 GHz WiFi SISO + 5 GHz WiFi SISO	-	on	on	-	-	-	-	-
2.4 GHz WiFi SISO + 6 GHz WiFi SISO	-	on	-	-	on	-	-	-
Bluetooth + 2.4 GHz WiFi SISO + 5 GHz WiFi SISO	-	on	on	-	-	-	on	Scenario 3
Bluetooth + 2.4 GHz WiFi SISO + 6 GHz WiFi SISO	-	on	-	-	on	-	on	-

2. Requirements for Bluetooth transmitter(15.247)

This Bluetooth module has been tested by a Bluetooth Qualification Lab, and we confirm the following:

- 1) This system is hopping pseudo-randomly.
- 2) Each frequency is used equally on the average by each transmitter.
- 3) The receiver input bandwidths that match the hopping channel bandwidths of their corresponding transmitters
- 4) The receiver shifts frequencies in synchronization with the transmitted signals.
 - 15.247(g): The system, consisting of both the transmitter and the receiver, must be designed to comply with all of the regulations in this Section 15.247 should the transmitter be presented with a continuous data (or information) stream.
 - 15.247(h): 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. TEST METHODOLOGY

Unlicensed Wireless Devices were tested using the following measurement procedure.

[1] KDB 558074 D01 15.247 Meas Guidance v05v02

[2] ANSI C63.10-2020 + Cor. 1-2023

Note : Here in after, ANSI C63.10-2020 + Cor. 1-2023 will be referred to as ANSI C63.10-2020

EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

EUT EXERCISE

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.2 of ANSI C63.10-2020. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

According to the requirements in Section 6.3 ~ Section 6.6 of ANSI C63.10-2020,

The EUT is placed on a turn table, which is 0.8 m above ground plane below 1 GHz. Above 1 GHz with 1.5 m using absorbers between the EUT and receive antenna. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes. To record the final measurements, the analyzer detector function was set to CISPR quasi-peak mode and the bandwidth of the spectrum analyzer was set to 120 kHz for frequencies below 1 GHz or 1 MHz for frequencies above 1 GHz. For average measurements above 1 GHz, the analyzer was set to peak detector and add the DCCF calculations.

DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

4. INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment's, which is traceable to recognized national standards.

Especially, all antenna for measurement is calibrated in accordance with the requirements of ANSI C63.5- 2017.

5. FACILITIES AND ACCREDITATIONS

FACILITIES

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA. This test facility has completed the evaluation in compliance with the standards and evaluation period required for chamber validity verification. ANSI C63.4-2014 + C63.4a-2017 and ANSI C63.25.1-2018

Detailed description of test facility was submitted to the Commission and accepted dated February 26, 2026 (Registration Number: KR0032).

EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to ANSI/USEMCSC C63.2-2023, "American National Standard for

Specifications of Electromagnetic Interference and Field Strength Measuring Instrumentation in the Frequency Range 9 kHz to 40 GHz".

6. ANTENNA REQUIREMENTS

According to FCC 47 CFR §15.203:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section."

7. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2020.

All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95 % level of confidence.

The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty ($\pm$ kHz)
X dB, 99% Bandwidth	95 (Confidence level about 95 %, $k=2$)
Carrier Frequency Separation Number of Hopping Frequencies Time of Occupancy	104 (Confidence level about 95 %, $k=2$)

Parameter	Expanded Uncertainty ($\pm$ dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.16 (Confidence level about 95 %, $k=2$)
Conducted Output Power(Signal Analyzer)	0.73 (Confidence level about 95 %, $k=2$)
Band Edge (Out of Band Emissions)	1.11 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.54 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.74 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.80 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.86 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (Above 40 GHz)	5.44 (Confidence level about 95 %, $k=2$)

8. DESCRIPTION OF TESTS

Test Item	Test Procedure
20 dB Bandwidth	- ANSI C63.10-2020 - Section 6.9.2
Occupied Bandwidth	- ANSI C63.10-2020 - Section 6.9.3
Conducted Maximum Peak Output Power	- ANSI C63.10-2020 - Section 7.8.5
Carrier Frequency Separation	- ANSI C63.10-2020 - Section 7.8.2
Number of Hopping Frequencies	- ANSI C63.10-2020 - Section 7.8.3
Time of Occupancy	- ANSI C63.10-2020 - Section 7.8.4
Conducted Spurious Emissions & Conducted Band Edge	- ANSI C63.10-2020 - Section 7.8.7
Radiated Test	- ANSI C63.10-2020 - Section 6.4 (Below 30 MHz) - ANSI C63.10-2020 - Section 6.5 (30 MHz to 1000 MHz) - ANSI C63.10-2020 - Section 6.6 & 7.8.8 (1 GHz to 40 GHz) - ANSI C63.10-2020 - Section 6.10 & 7.8.8 (Restricted-Band band-edge)
AC Power line Conducted Emissions	- ANSI C63.10-2020 - Section 6.2

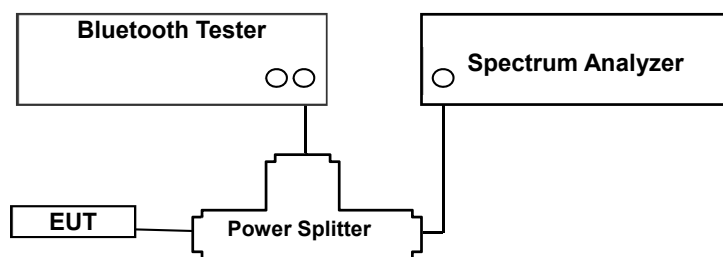
8.1. Conducted Maximum Peak Output Power

Limit

The maximum peak output power of the intentional radiator shall not exceed the following:

1. For frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725–5850 MHz band: 1 W. For all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 W.
2. The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi.

Test Configuration



Test Procedure

The EUT was tested with hopping disabled.

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to

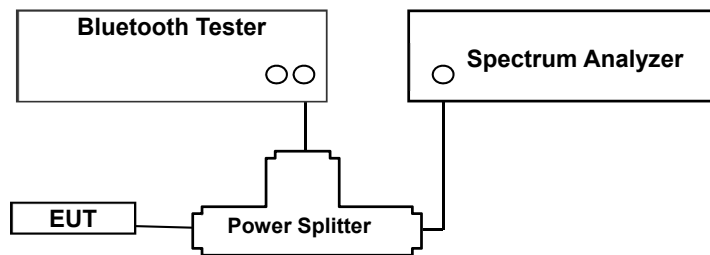
- 1) Span: approximately 5 times the 20 dB bandwidth, centered on a hopping channel
- 2) RBW > the 20 dB bandwidth of the emission being measured
- 3) VBW $\geq$ RBW
- 4) Sweep = No faster than coupled (auto) time
- 5) Detector = Peak
- 6) Trace = Max hold
- 7) Allow trace to stabilize.
- 8) Use the marker-to-peak function to set the marker to the peak of the emission.

8.2. Conducted Band Edge(Out of Band Emissions)

Limit

According to §15.247(d), in any 100 kHz 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 dB below that in the 100 kHz 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.

Test Configuration



Test Procedure

The EUT was tested with hopping enabled and hopping disabled.

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to

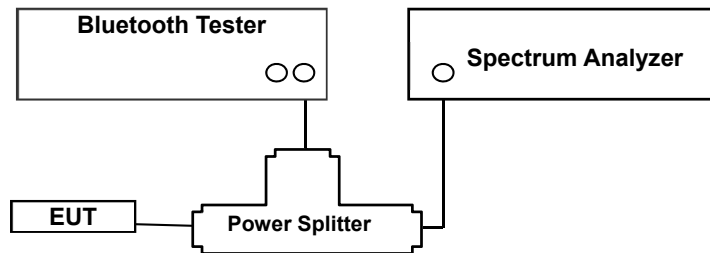
- 1) Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products which fall outside of the authorized band of operation
- 2) Reference level: As required to keep the signal from exceeding the maximum instrument input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (OBW/RBW)]$ below the reference level.
- 3) Attenuation: Auto (at least 10 dB preferred).
- 4) Sweep time: No faster than coupled (auto) time.
- 5) RBW: 100 kHz
- 6) VBW: 300 kHz
- 7) Detector: Peak
- 8) Trace: Max hold

8.3. Frequency Separation & 20 dB Bandwidth & 99% Occupied Bandwidth

Limit

According to §15.247(a)(1), Frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.

Test Configuration



Test Procedure(Frequency Separation)

The EUT was tested with hopping enabled.

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to

- 1) Span: Wide enough to capture the peaks of two adjacent channels
 - 2) RBW: Start with the RBW set to approximately 30 % of the channel spacing; adjust as necessary to best identify the center of each individual channel.
 - 3) VBW $\geq$ RBW
 - 4) Sweep: No faster than coupled (auto) time
 - 5) Detector: Peak
 - 6) Trace: Max hold
 - 7) All the trace to stabilize
 - 8) Use the marker-delta function to determine the separation between the peaks of the adjacent channels.
- Compliance of an EUT with the appropriate regulatory limit shall be determined. A plot of the data shall be included in the test report.

Test Procedure (20 dB Bandwidth)

The EUT was tested with hopping disabled.

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to

- 1) Span: Set between two times and five times the OBW
- 2) RBW: 1 % to 5 % of the OBW.
- 3) VBW $\geq 3 \times$ RBW
- 4) Sweep: Auto
- 5) Detector: Peak
- 6) Trace: Max hold
- 7) All the trace to stabilize
- 8) We tested 20 dB bandwidth using the automatic bandwidth measurement capability of a spectrum analyzer.
X dB is set to 20 dB.

Test Procedure (99% Occupied Bandwidth)

The EUT was tested with hopping disabled.

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to

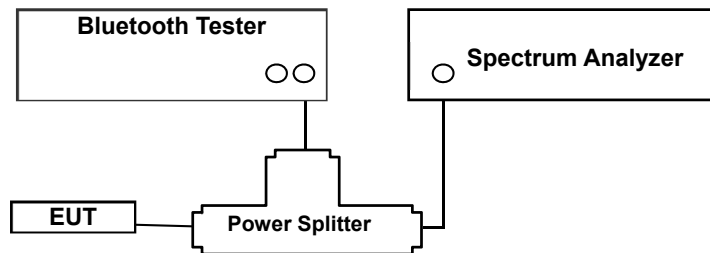
- 1) Span: Set between 1.5 times and 5.0 times the OBW
- 2) RBW: 1 % to 5 % of the OBW.
- 3) VBW $\geq 3 \times$ RBW
- 4) Sweep: Auto
- 5) Detector: Peak
- 6) Trace: Max hold
- 7) All the trace to stabilize
- 8) Use the 99% power bandwidth function of the instrument

8.4. Number of Hopping Frequencies

Limit

According to §15.247(a)(1)(iii), Frequency hopping systems operating in the 2400 MHz ~ 2483.5 MHz bands shall use at least 15 hopping channels.

Test Configuration



Test Procedure

The EUT was tested with hopping enabled.

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to

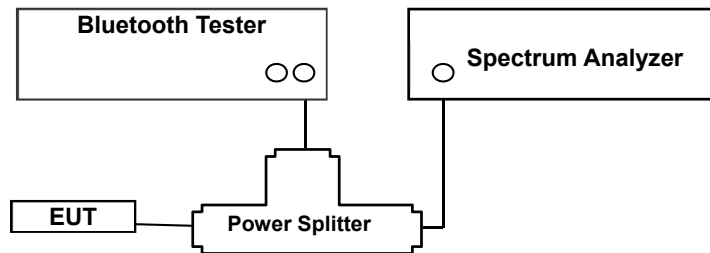
- 1) Span: The frequency band of operation
- 2) RBW: To identify clearly the individual channels, set the RBW to less than 30 % of the channel spacing or the 20 dB bandwidth, whichever is smaller.
- 3) VBW $\geq$ RBW
- 4) Sweep: No faster than coupled (auto) time
- 5) Detector: Peak
- 6) Trace: Max hold
- 7) Allow the trace to stabilize.

8.5. Time of Occupancy

Limit

According to §15.247(a)(1)(iii), Frequency hopping systems operating in the 2400 MHz ~ 2483.5 MHz bands, the average time of occupancy on any channels shall not greater than 0.4 s within a period 0.4 s multiplied by the number of hopping channels employed.

Test Configuration



Test Procedure

The EUT was tested with hopping enabled.

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to

- 1) Span: Zero span, centered on a hopping channel
 - 2) RBW shall be $\leq$ channel spacing and where possible RBW should be set $\gg 1 / T$, where T is the expected transmission time per hop.
 - 3) Sweep time: Set so that the start of the first transmission and end of the last transmission for the hop are clearly captured. (To be slightly longer than the hopping period per channel)
 - 4) The video trigger is set with trigger delay, and the trigger level is adjusted as needed to clearly capture the start of transmission and reduce false triggers caused by adjacent channels.
 - 5) Detector: Peak
 - 6) Trace: Clear-write, single sweep.
 - 7) Place markers at the start of the first transmission on the channel and at the end of the last transmission.
- The dwell time per hop is the time between these two markers.

Sample Calculation

The following calculation process is not relevant to our measurement results. It is just an example.

(1) Non-AFH Mode

- DH 5 (GFSK) : $2.890 \times (1600/6)/79 \times 31.6 = 308.27 \text{ (ms)}$
- 2-DH 5 ($\pi/4$ DQPSK) : $2.890 \times (1600/6)/79 \times 31.6 = 308.27 \text{ (ms)}$
- 3-DH 5 (8DPSK) : $2.890 \times (1600/6)/79 \times 31.6 = 308.27 \text{ (ms)}$

(2) AFH Mode

- DH 5 (GFSK) : $2.890 \times (800/6)/20 \times 8.0 = 154.13 \text{ (ms)}$
- 2-DH 5 ($\pi/4$ DQPSK) : $2.890 \times (800/6)/20 \times 8.0 = 154.13 \text{ (ms)}$
- 3-DH 5 (8DPSK) : $2.890 \times (800/6)/20 \times 8.0 = 154.13 \text{ (ms)}$

Note :

DH5 Packet needs 5 time slots for transmitting and 1 time slot for receiving. In the worst case, the system performs 1600/6 hops per second with 79 channels. Consequently, each channel is used 3.3755 times per second, resulting in 106.667 occurrences over 31.6 seconds.

Each tx-time per appearance of DH5 is 2.890 ms.

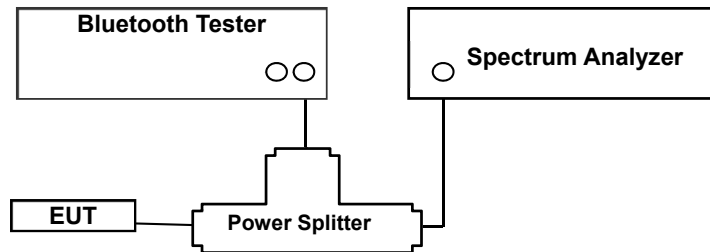
Dwell time = Tx-time x 106.667 = 308.27 (ms)

8.6. Conducted Spurious Emissions

Limit

Conducted > 20 dBc

Test Configuration



Test Procedure

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The EUT was tested with hopping disabled.

The transmitter output is connected to the spectrum analyzer.

The Spectrum Analyzer is set to

- 1) Span: 30 MHz to 10 times the operating frequency in GHz.
- 2) RBW: 100 kHz
- 3) VBW: 300 kHz
- 4) Sweep time : Coupled
- 5) Detector: Peak

Measurements are made over the 30 MHz to 25 GHz range with the transmitter set to the lowest, middle, and highest channels.

Factors for frequency

Freq(MHz)	Factor(dB)
30	16.12
100	16.20
200	16.31
300	16.41
400	16.44
500	16.47
600	16.47
700	16.51
800	16.53
900	16.58
1 000	16.64
2 000	16.79
2 400	17.18
2 500	17.18
3 000	17.21
4 000	17.29
5 000	17.45
5 150	17.56
5 850	17.56
6 000	17.67
7 000	17.67
8 000	17.92
9 000	18.14
10 000	18.42
11 000	18.62
12 000	18.63
13 000	18.68
14 000	18.79
15 000	18.89
16 000	19.06
17 000	19.12
18 000	19.40
19 000	19.38
20 000	19.59
21 000	19.86
22 000	20.00
23 000	20.40
24 000	20.37
25 000	20.46
26 000	20.49

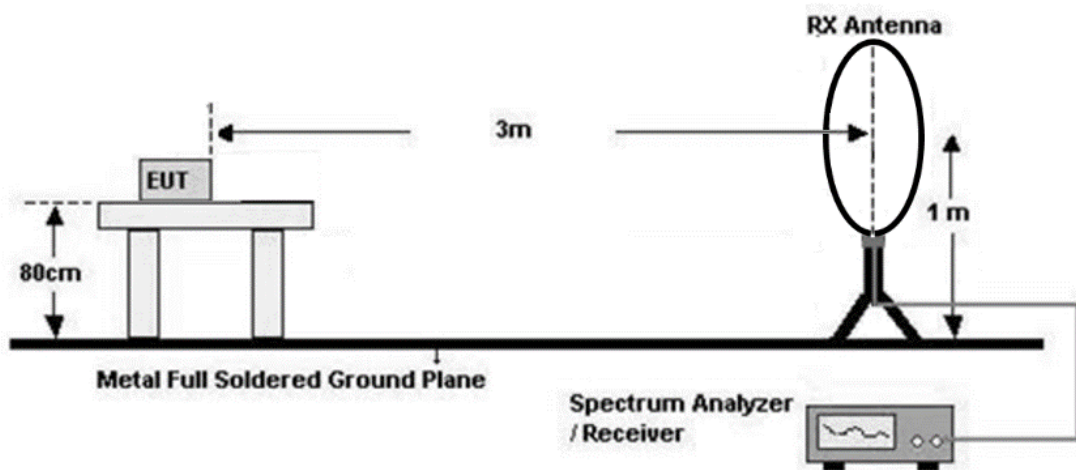
Note : 1. 2400 ~ 2500 MHz is fundamental frequency range.

8.7. Radiated Test Limit

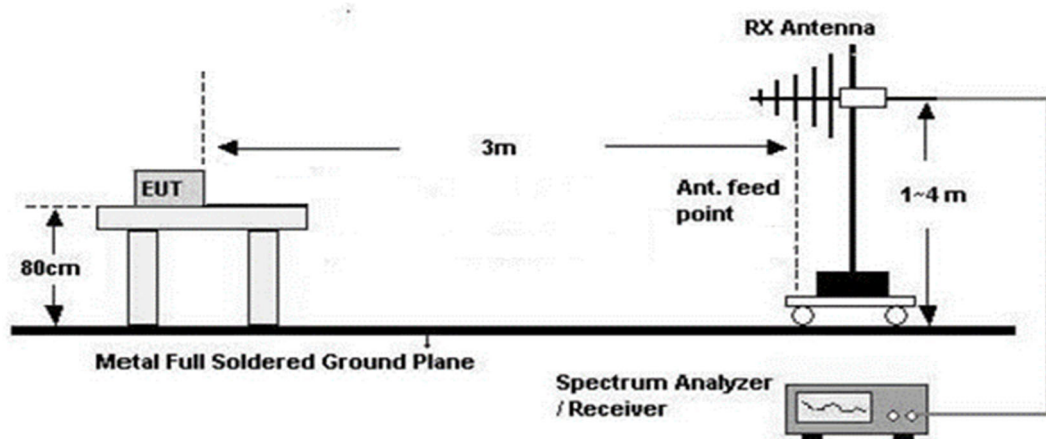
Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
0.009 – 0.490	$2400/F(\text{kHz})$	300
0.490 – 1.705	$24000/F(\text{kHz})$	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

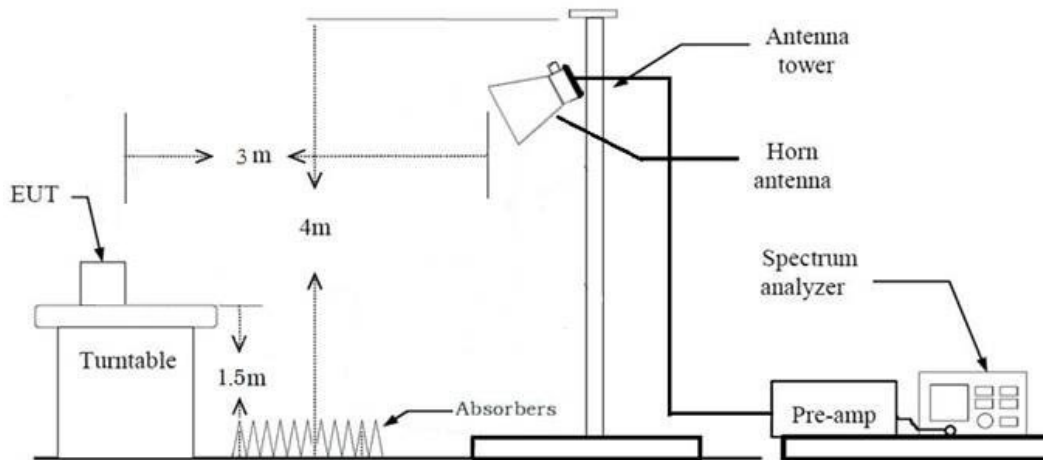
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



Test Procedure of Radiated spurious emissions(Below30 MHz)

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The loop antenna was placed at a location 3m from the EUT
3. The EUT is placed on a turntable, which is 0.8m above ground plane.
4. We have done x, y, z planes in EUT and horizontal and vertical polarization and Parallel to the ground plane in detecting antenna.
5. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
6. Distance Correction Factor(0.009 MHz – 0.490 MHz) = $40\log(3\text{ m}/300\text{ m}) = -80\text{ dB}$
Measurement Distance : 3 m
7. Distance Correction Factor(0.490 MHz – 30 MHz) = $40\log(3\text{ m}/30\text{ m}) = -40\text{ dB}$
Measurement Distance : 3 m
8. Spectrum Analyzer Setting
 - Frequency Range = 9 kHz ~ 30 MHz
 - Detector = Peak
 - Trace = Max hold
 - RBW = 9 kHz
 - VBW $\geq 3 \times$ RBW
9. Total = Measured Value + Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F)
10. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

KDB 414788 OFS and Chamber Correlation Justification

Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

OFS and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

Test Procedure of Radiated spurious emissions(Below 1 GHz)

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The EUT is placed on a turntable, which is 0.8m above ground plane.
3. The Hybrid antenna was placed at a location 3m from the EUT, which is varied from 1m to 4m to find out the highest emissions.
4. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
5. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
6. Spectrum Analyzer Setting
 - (1) Measurement Type(Peak):
 - Measured Frequency Range : 30 MHz – 1 GHz
 - Detector = Peak
 - Trace = Max hold
 - RBW = 100 kHz
 - VBW $\geq 3 \times$ RBW
 - (2) Measurement Type(Quasi-peak):
 - Measured Frequency Range : 30 MHz – 1 GHz
 - Detector = Quasi-Peak
 - RBW = 120 kHz
- ※In general, (1) is used mainly
7. Total = Measured Value + Antenna Factor(A.F) + Cable Loss(C.L)
8. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

Test Procedure of Radiated spurious emissions (Above 1 GHz)

1. Radiated test is performed with hopping disabled.
2. The EUT is placed on a turntable, which is 1.5 m above ground plane.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
4. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
5. EUT is set 3 m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
6. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
7. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
8. Spectrum Analyzer Setting
 - (1) Measurement Type(Peak):
 - Measured Frequency Range : 1 GHz – 25 GHz
 - Detector = Peak
 - Trace = Max hold

- RBW = 1 MHz
- VBW $\geq 3 \times$ RBW

(2) Measurement Type(Average):

- Average value of pulsed emissions
- From the peak value of the emission : The measured peak value in dBuV/m is corrected by $20\log(\text{maximum dwell time in } 100 \text{ ms} / 100)$.

- ◆ DH5 = $20\log(\text{Maximum dwell time} / 100\text{ms}) \text{ dB} = -24.731 \text{ dB}$
- ◆ 2-DH5, 3-DH5 = $20\log(\text{Maximum dwell time} / 100\text{ms}) \text{ dB} = -18.711 \text{ dB}$

9. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

10. Distance extrapolation factor = $20\log(\text{test distance} / \text{specific distance}) \text{ (dB)}$

11. Total(Measurement Type : Peak)

= Measured Value(Peak) + Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F) – Amp Gain(A.G)

Total(Measurement Type : Average)

= Measured Value(Peak) + Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F) - Amp Gain(A.G) + D.C.C.F(AFH)

12. Duty Cycle Correction Factor (79 channel hopping)

a. Time to cycle through all channels= $\Delta t = \tau [\text{ms}] \times 79 \text{ channels} = 229.100 \text{ ms}$, where τ = pulse width

b. $100 \text{ ms} / \Delta t [\text{ms}] = H \rightarrow$ Round up to next highest integer, $H' = 1$

c. Worst Case Dwell Time = $\tau [\text{ms}] \times H' = 2.9 \text{ ms}$

d. Channel separation correction = 1 (DH5, 2-DH5, 3-DH5)

e. Overlapping channel correction

(1) DH5 : = 0

(2) 2-DH5, 3-DH5 = 1

f. Maximum dwell time

(1) DH5 = $2.9\text{ms} \times (1 + 0) = 2.9 \text{ ms}$

(2) 2-DH5, 3-DH5 = $2.9\text{ms} \times (1 + 1) = 5.8 \text{ ms}$

g. Duty Cycle Correction

(1) DH5 = $20\log(\text{Maximum dwell time} / 100\text{ms}) \text{ dB} = -30.752 \text{ dB}$

(2) 2-DH5, 3-DH5 = $20\log(\text{Maximum dwell time} / 100\text{ms}) \text{ dB} = -24.731 \text{ dB}$

13. Duty Cycle Correction Factor(AFH mode – minimum channel number case - 20 channels)

a. Time to cycle through all channels= $\Delta t = \tau [\text{ms}] \times 20 \text{ channels} = 58.00 \text{ ms}$, where τ = pulse width

b. $100 \text{ ms} / \Delta t [\text{ms}] = H \rightarrow$ Round up to next highest integer, $H' = 2$

c. Worst Case Dwell Time = $\tau [\text{ms}] \times H' = 5.8 \text{ ms}$

d. Channel separation correction = 1 (DH5, 2DH5, 3DH5)

e. Overlapping channel correction

(1) DH5 : = 0

(2) 2DH5, 3DH5 = 1

f. Maximum dwell time

(1) DH5 = $5.8 \text{ ms} \times (1 + 0) = 5.8 \text{ ms}$

(2) 2-DH5, 3-DH5 = $5.8 \text{ ms} \times (1 + 1) = 11.6 \text{ ms}$

g. Duty Cycle Correction

(1) $DH5 = 20\log(\text{Maximum dwell time} / 100\text{ms}) \text{ dB} = -24.731 \text{ dB}$ (2) $2-DH5, 3-DH5 = 20\log(\text{Maximum dwell time} / 100\text{ms}) \text{ dB} = -18.711 \text{ dB}$ **Test Procedure of Radiated Restricted Band Edge**

1. Radiated test is performed with hopping disabled.
2. The EUT is placed on a turntable, which is 1.5 m above ground plane.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
4. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
5. EUT is set 3 m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
6. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. Spectrum Analyzer Setting
 - (1) Measurement Type(Peak):
 - Detector = Peak
 - Trace = Max hold
 - RBW = 1 MHz
 - VBW $\geq 3 \times$ RBW
 - (2) Measurement Type(Average):
 - Average value of pulsed emissions
 - From the peak value of the emission: The measured peak value in dBuV/m is corrected by $20\log(\text{maximum dwell time in } 100 \text{ ms} / 100)$.
 - ◆ $DH5 = 20\log(\text{Maximum dwell time} / 100\text{ms}) \text{ dB} = -24.731 \text{ dB}$
 - ◆ $2-DH5, 3-DH5 = 20\log(\text{Maximum dwell time} / 100\text{ms}) \text{ dB} = -18.711 \text{ dB}$
8. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
9. Distance extrapolation factor = $20\log(\text{test distance} / \text{specific distance}) \text{ (dB)}$
10. Total(Measurement Type : Peak) = Measured Value(Peak)
Total(Measurement Type : Average) = Measured Value(Peak) + D.C.C.F(AFH)
 - We apply to the offset in range 1 GHz - 18 GHz
 - The offset = Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F)
11. Duty Cycle Correction Factor (79 channel hopping)
 - a. Time to cycle through all channels= $\Delta t = \tau [\text{ms}] \times 79 \text{ channels} = 229.100 \text{ ms}$, where τ = pulse width
 - b. $100 \text{ ms} / \Delta t [\text{ms}] = H \rightarrow$ Round up to next highest integer, $H' = 1$
 - c. Worst Case Dwell Time = $\tau [\text{ms}] \times H' = 2.9 \text{ ms}$
 - d. Channel separation correction = 1 (DH5, 2DH5, 3DH5)
 - e. Overlapping channel correction
 - (1) $DH5 : = 0$
 - (2) $2-DH5, 3-DH5 = 1$

f. Maximum dwell time

$$(1) \text{ DH5} = 2.9\text{ms} \times (1 + 0) = 2.9 \text{ ms}$$

$$(2) 2\text{-DH5}, 3\text{-DH5} = 2.9\text{ms} \times (1 + 1) = 5.8 \text{ ms}$$

g. Duty Cycle Correction

$$(1) \text{ DH5} = 20\log (\text{Maximum dwell time} / 100\text{ms}) \text{ dB} = -30.752 \text{ dB}$$

$$(2) 2\text{-DH5}, 3\text{-DH5} = 20\log (\text{Maximum dwell time} / 100\text{ms}) \text{ dB} = -24.731 \text{ dB}$$

12. Duty Cycle Correction Factor (AFH mode – minimum channel number case - 20 channels)

a. Time to cycle through all channels = $\Delta t = \tau [\text{ms}] \times 20 \text{ channels} = 58.00 \text{ ms}$, where τ = pulse width

b. $100 \text{ ms} / \Delta t [\text{ms}] = H \rightarrow$ Round up to next highest integer, $H' = 2$

c. Worst Case Dwell Time = $\tau [\text{ms}] \times H' = 5.8 \text{ ms}$

d. Channel separation correction = 1 (DH5, 2DH5, 3DH5)

e. Overlapping channel correction

$$(1) \text{ DH5} : = 0$$

$$(2) 2\text{-DH5}, 3\text{-DH5} = 1$$

f. Maximum dwell time

$$(1) \text{ DH5} = 5.8 \text{ ms} \times (1 + 0) = 5.8 \text{ ms}$$

$$(2) 2\text{-DH5}, 3\text{-DH5} = 5.8 \text{ ms} \times (1 + 1) = 11.6 \text{ ms}$$

g. Duty Cycle Correction

$$(1) \text{ DH5} = 20\log (\text{Maximum dwell time} / 100\text{ms}) \text{ dB} = -24.731 \text{ dB}$$

$$(2) 2\text{-DH5}, 3\text{-DH5} = 20\log (\text{Maximum dwell time} / 100\text{ms}) \text{ dB} = -18.711 \text{ dB}$$

8.8. AC Power line Conducted Emissions

Limit

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN).

Frequency Range (MHz)	Limits (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56 ^(a)	56 to 46 ^(a)
0.50 to 5	56	46
5 to 30	60	50

^(a)Decreases with the logarithm of the frequency.

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Configuration

See test photographs attached in Annex A for the actual connections between EUT and support equipment.

Test Procedure

1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors : Quasi Peak and Average Detector.
5. The EUT is the device operating below 30MHz.
 - For unterminated the Antenna, the AC line conducted tests are performed with the antenna connected
 - For terminated the Antenna, the AC line conducted tests are performed with a dummy load connected to the EUT antenna output terminal.

Sample Calculation

Quasi-peak(Final Result) = Measured Value + Correction Factor

8.9. Worst case configuration and mode

Conducted test

1. The EUT was configured with data rate of highest power.
 - GFSK : DH5
 - $\pi/4$ DQPSK : 2-DH5
 - 8DPSK : 3-DH5
2. AFH & Non-AFH were tested and the worst case results are reported.
(Worst case : Non-AFH)

Radiated test

1. All modes of operation were investigated and the worst case configuration results are reported.
 - Mode : Stand alone
2. EUT Axis
 - Radiated Spurious Emissions : Z
 - Radiated Restricted Band Edge : Z
3. All data rate of operation were investigated and the test results are worst case in highest data rate of each mode.
 - GFSK : DH5
 - $\pi/4$ DQPSK : 2-DH5
 - 8DPSK : 3-DH5
4. All position of loop antenna were investigated and the test result is a no critical peak found at all positions.
 - Position : Horizontal, Vertical, Parallel to the ground plane
5. Radiated Spurious Emission
 - All mode of operation were investigated and the worst case results are reported.
 - GFSK : DH5
 - $\pi/4$ DQPSK : 2-DH5
 - 8DPSK : 3-DH5

AC Power line Conducted Emissions

1. All modes of operation were investigated and the worst case configuration results are reported.
 - Mode : Stand alone + Notebook Computer
 - Worstcase : Stand alone + Notebook Computer

Radiated test(Simultaneous transmission Scenario)

1. Please refer to the [DTS], [BT LE], [UNII], [UNII ax] Test Report.

9. SUMMARY OF TEST RESULTS

Test Item	FCC Part Section(s)	Test Limit	Test Condition	Test Result
20 dB Bandwidth	§15.247(a)(1)	N/A	Conducted	PASS
Occupied Bandwidth	N/A	N/A		PASS
Conducted Maximum Peak Output Power	§15.247(b)(1)	<0.125 W		PASS
Carrier Frequency Separation	§15.247(a)(1)	>25 kHz or >2/3 of the 20 dB BW		PASS
Number of Hopping Frequencies	§15.247(a)(1)(iii)	≥ 15		PASS
Time of Occupancy	§15.247(a)(1)(iii)	<400 ms		PASS
Conducted Spurious Emissions	§15.247(d)	> 20 dB for all out-of band emissions		PASS
Conducted Band Edge (Out of Band Emissions)	§15.247(d)	> 20 dB for all out-of band emissions		PASS
AC Power line Conducted Emissions	§15.207(a)	cf. Section 8.8		PASS
Radiated Spurious Emissions	§15.247(d), 15.205, 15.209	cf. Section 8.7	Radiated	PASS
Radiated Restricted Band Edge	§15.247(d), 15.205, 15.209	cf. Section 8.7		PASS

Note:

1. The decision rule applies 'simple acceptance'

10. TEST RESULT

10.1 PEAK POWER

Mode	Channel	Frequency [MHz]	Peak Power		Limit [mW]
			[dBm]	[mW]	
GFSK	0	2402	9.091	8.11	125
	39	2441	9.298	8.51	
	78	2480	8.909	7.78	
$\pi/4$ DQPSK	0	2402	11.438	13.93	
	39	2441	11.391	13.78	
	78	2480	11.241	13.31	
8DPSK	0	2402	11.967	15.73	
	39	2441	11.819	15.20	
	78	2480	11.840	15.28	

TEST PLOTS(Peak Power)

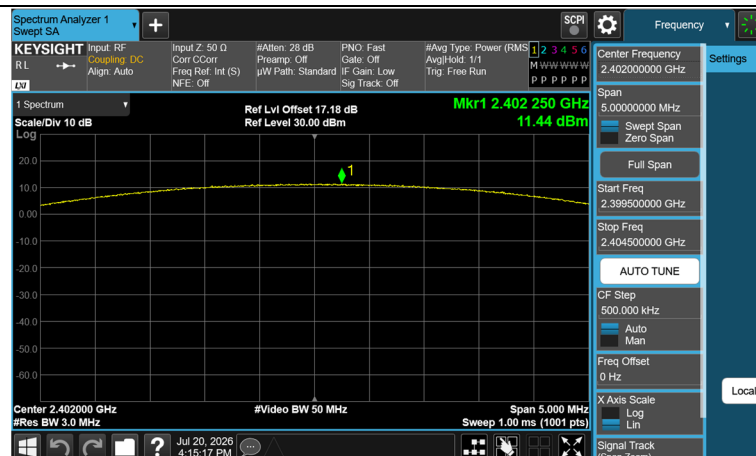
Note :

In order to simplify the report, attached plots were only the worst case channel.

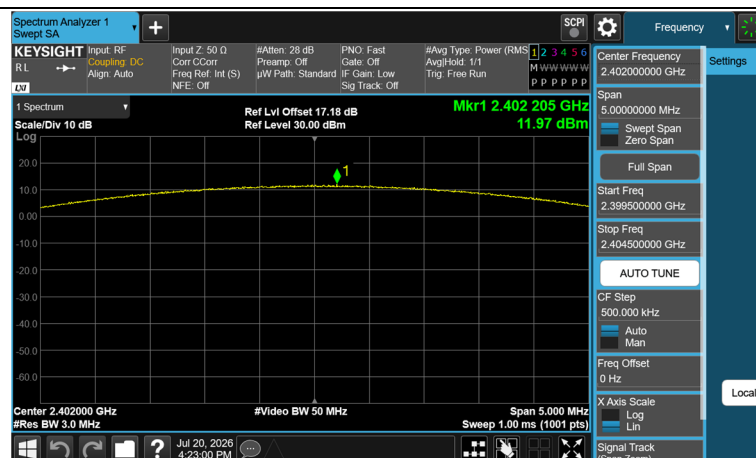
GFSK : Peak Power (Ch. 39)



π /4DQPSK : Peak Power (Ch. 0)



8DPSK : Peak Power (Ch. 0)



10.2 BAND EDGES

Without hopping

Mode	Channel	Frequency [MHz]	Position	Band Edge [dB]	Limit [dBc]
GFSK	0	2402	Lower	54.205	20
	78	2480	Upper	53.238	
$\pi/4$ DQPSK	0	2402	Lower	53.878	
	78	2480	Upper	52.915	
8DPSK	0	2402	Lower	53.027	
	78	2480	Upper	53.145	

With hopping

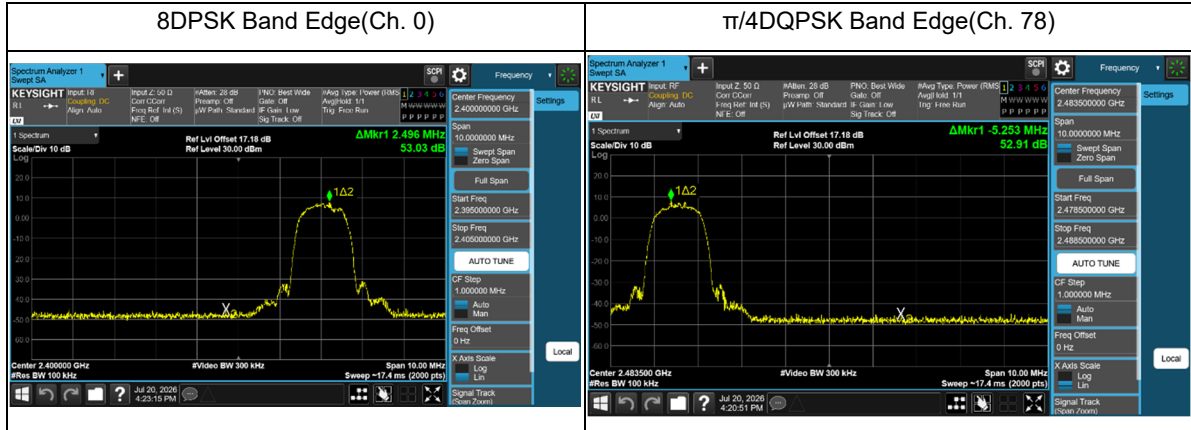
Mode	Channel	Frequency [MHz]	Position	Band Edge [dB]	Limit [dBc]
GFSK	0	2402	Lower	53.319	20
	78	2480	Upper	51.930	
$\pi/4$ DQPSK	0	2402	Lower	52.757	
	78	2480	Upper	52.146	
8DPSK	0	2402	Lower	52.352	
	78	2480	Upper	50.987	

TEST PLOTS(BAND EDGES)

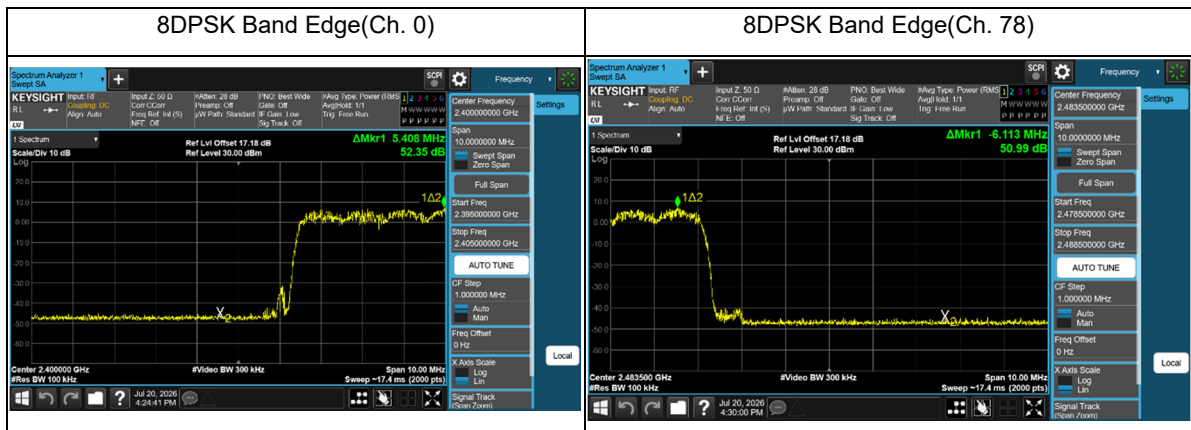
Note :

In order to simplify the report, attached plots were only the worst case mode.

-Without hopping



-With hopping

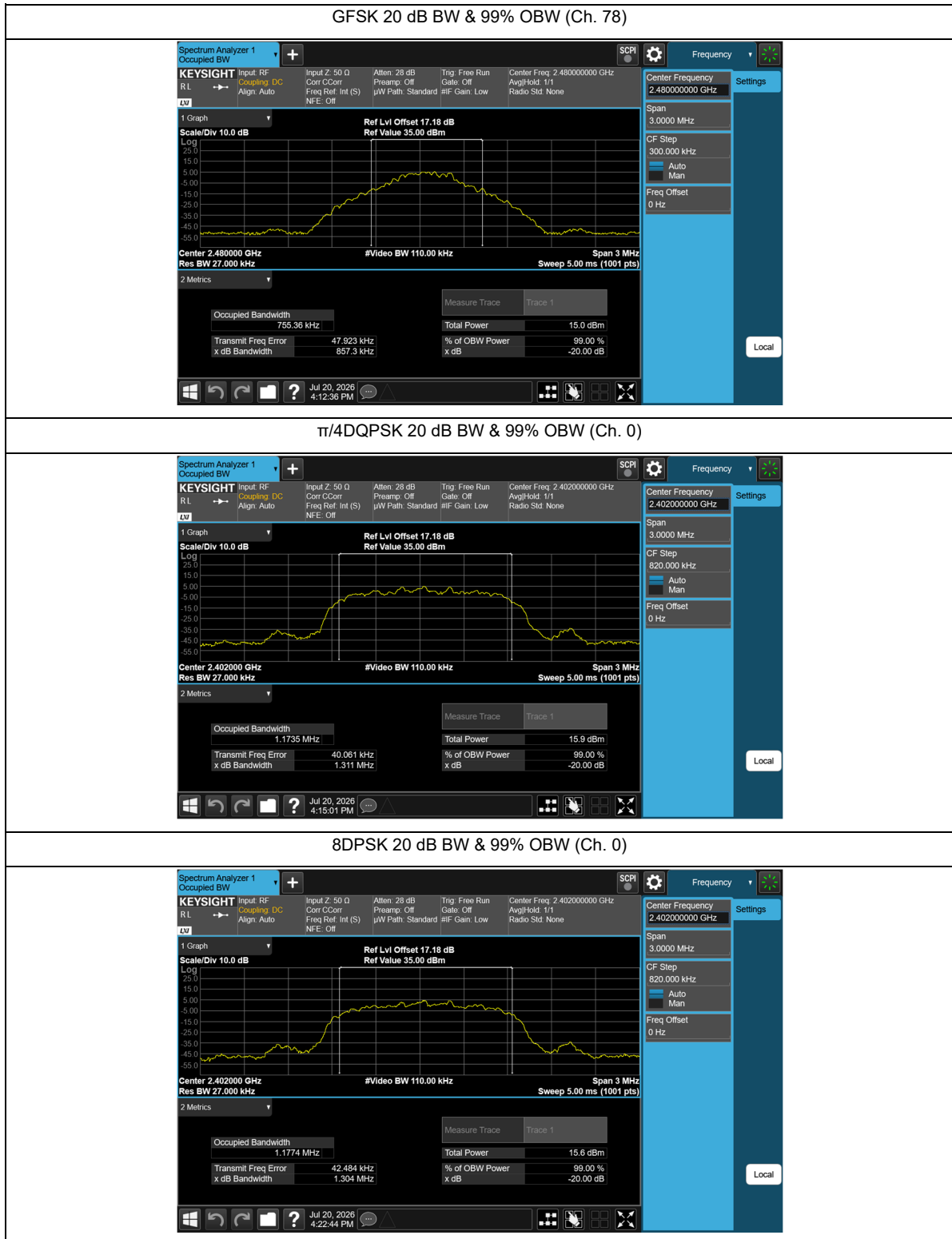


10.3 FREQUENCY SEPARATION / 20dB & 99% OCCUPIED BANDWIDTH

Mode	Channel	Frequency [MHz]	20dB BW [kHz]	99% BW [kHz]	Channel Separation [kHz]	Channel Separation Limit [kHz]
GFSK	0	2402	855.6	757.09	1000.0	570.4
	39	2441	809.8	754.86	1000.0	539.9
	78	2480	857.3	755.36	1000.0	571.5
$\pi/4$ DQPSK	0	2402	1311	1173.5	1000.0	874.3
	39	2441	1294	1172.4	1000.0	862.8
	78	2480	1292	1173.7	1000.0	861.5
8DPSK	0	2402	1304	1177.4	1000.0	869.3
	39	2441	1297	1178.6	1000.0	864.4
	78	2480	1295	1176.5	1000.0	863.2

TEST PLOTS(20 dB Bandwidth & 99% OBW)

Note: In order to simplify the report, attached plots were only the widest 20 dB BW channel.



TEST PLOTS(Channel Separation)



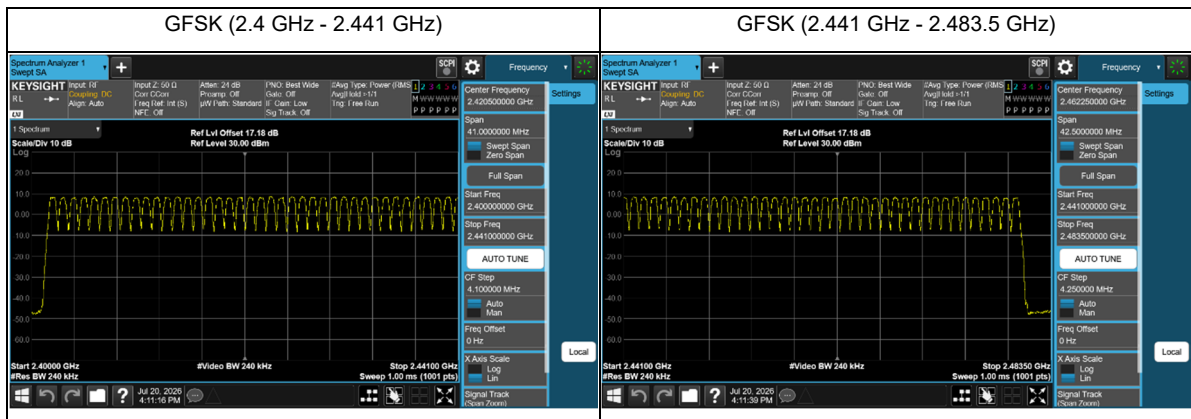
10.4 NUMBER OF HOPPING FREQUENCY

Mode	Number of hopping Frequency	Limit
GFSK	79	> 15
$\pi/4$ DQPSK	79	
8DPSK	79	

Note :

In case of AFH mode, minimum number of hopping channels is 20.

TEST PLOTS(NUMBER OF HOPPING FREQUENCY)



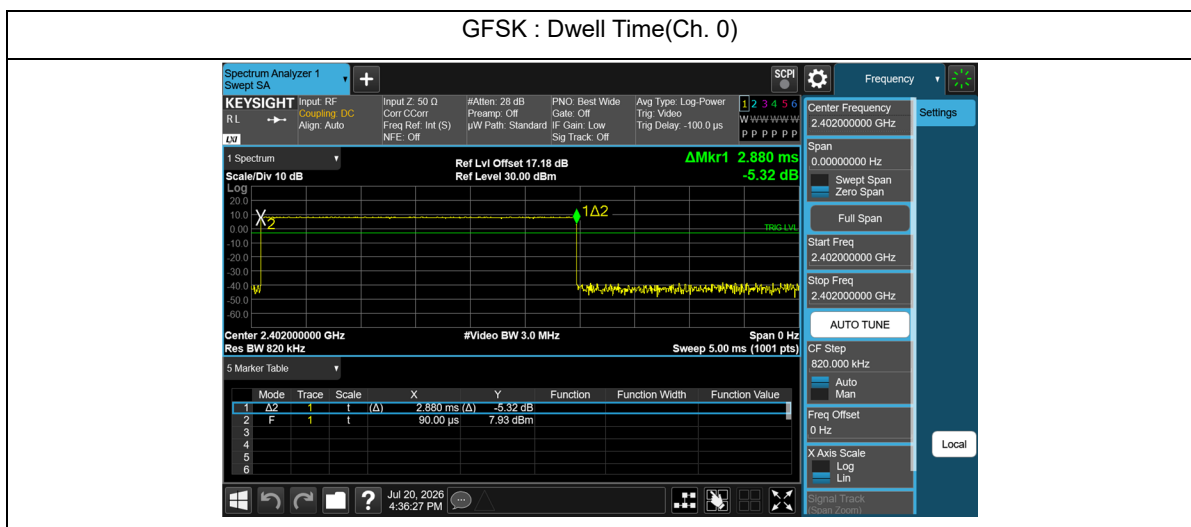
10.5 TIME OF OCCUPANCY (DWELL TIME)

Mode	Channel	Frequency [MHz]	Dwell Time [ms]	Time Occupancy [ms]	Time Occupancy with AFH [ms]	Limit [ms]
GFSK	0	2402	2.880	307.20	153.60	400
	39	2441	2.880	307.20	153.60	
	78	2480	2.880	307.20	153.60	
$\pi/4$ DQPSK	0	2402	2.885	307.73	153.87	
	39	2441	2.885	307.73	153.87	
	78	2480	2.885	307.73	153.87	
8DPSK	0	2402	2.885	307.73	153.87	
	39	2441	2.885	307.73	153.87	
	78	2480	2.885	307.73	153.87	

■ TEST PLOTS(Dwell Time)

Note:

In order to simplify the report, attached plots were only the lowest channel.

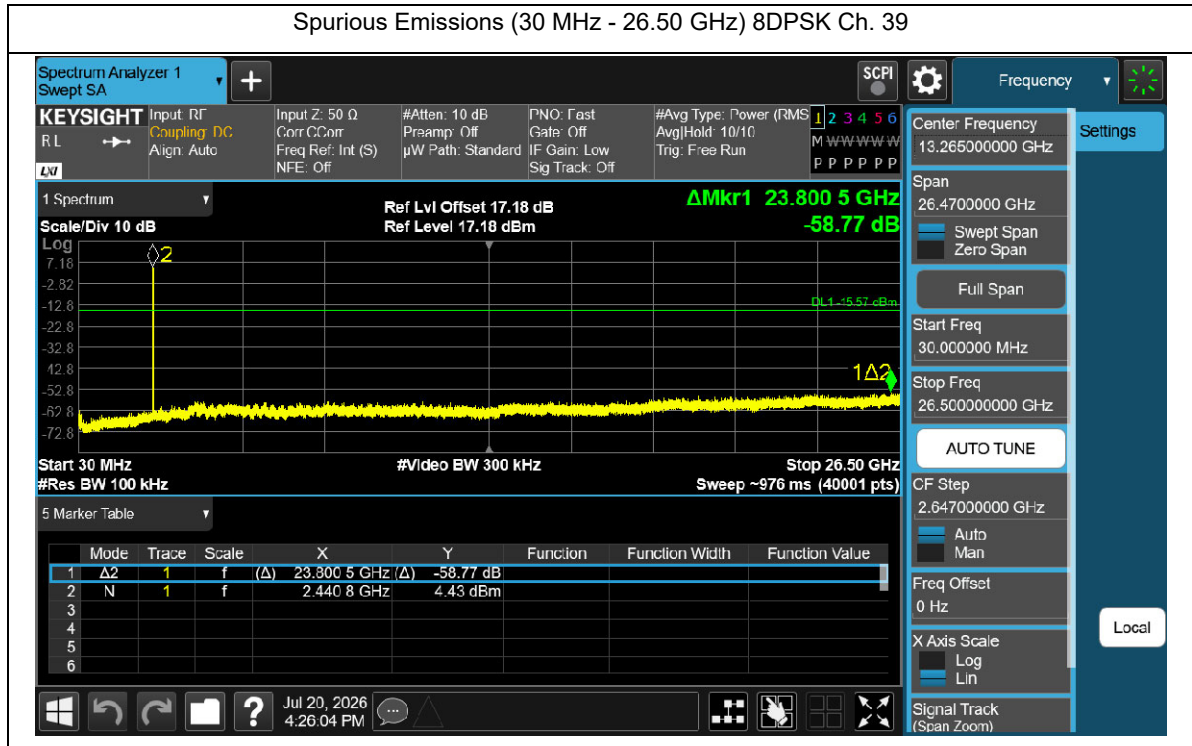


10.6 SPURIOUS EMISSIONS

10.6.1 CONDUCTED SPURIOUS EMISSIONS

In order to simplify the report, attached plots were only the worst case channel and data rate.

TEST PLOTS(CONDUCTED SPURIOUS EMISSIONS)



Note

1. Limit (dBm): -15.57

10.6.2 RADIATED SPURIOUS EMISSIONS

Frequency Range : 9 kHz – 30 MHz

Frequency	Measured Value	A.F+C.L+D.F	POL	Total	Limit	Margin
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]
No Critical peaks found						

Note:

1. The Measured of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
2. Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB)
3. Limit line = specific Limits (dBμV) + Distance extrapolation factor
4. Radiated test is performed with hopping disabled.

Frequency Range : Below 1 GHz

Frequency	Measured Value	A.F+C.L	POL	Total	Limit	Margin
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]
No Critical peaks found						

Note:

1. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode.
2. Radiated test is performed with hopping disabled.

Frequency Range : Above 1 GHz

CH 0		2402	MHz	Mode :		Normal(GFSK)		
Frequency	Measured Value	A.F+C.L-A.G+D.F	ANT. POL	Duty Cycle Correction	Total	Limit	Margin	Measurement Type
[MHz]	[dBμV]	[dB/m]	[H/V]	[dB]	[dBμV/m]	[dBμV/m]	[dB]	
4804	54.33	-10.56	V	0.00	43.77	73.98	30.21	PK
4804	54.33	-10.56	V	-24.73	19.04	53.98	34.94	AV
7206	52.40	-3.91	V	0.00	48.49	73.98	25.49	PK
7206	52.40	-3.91	V	-24.73	23.76	53.98	30.22	AV
4804	54.94	-10.56	H	0.00	44.38	73.98	29.60	PK
4804	54.94	-10.56	H	-24.73	19.65	53.98	34.33	AV
7206	52.42	-3.91	H	0.00	48.51	73.98	25.47	PK
7206	52.42	-3.91	H	-24.73	23.78	53.98	30.20	AV

CH 39		2441	MHz	Mode :		Normal(GFSK)		
Frequency	Measured Value	A.F+C.L-A.G+D.F	ANT. POL	Duty Cycle Correction	Total	Limit	Margin	Measurement Type
[MHz]	[dBμV]	[dB/m]	[H/V]	[dB]	[dBμV/m]	[dBμV/m]	[dB]	
4882	54.27	-10.35	V	0.00	43.92	73.98	30.06	PK
4882	54.27	-10.35	V	-24.73	19.18	53.98	34.80	AV
7323	51.64	-3.70	V	0.00	47.94	73.98	26.04	PK
7323	51.64	-3.70	V	-24.73	23.21	53.98	30.77	AV
4882	54.46	-10.35	H	0.00	44.11	73.98	29.87	PK
4882	54.46	-10.35	H	-24.73	19.37	53.98	34.61	AV
7323	51.80	-3.70	H	0.00	48.10	73.98	25.88	PK
7323	51.80	-3.70	H	-24.73	23.37	53.98	30.61	AV

CH 78		2480	MHz	Mode :		Normal(GFSK)		
Frequency	Measured Value	A.F+C.L-A.G+D.F	ANT. POL	Duty Cycle Correction	Total	Limit	Margin	Measurement Type
[MHz]	[dBμV]	[dB/m]	[H/V]	[dB]	[dBμV/m]	[dBμV/m]	[dB]	
4960	55.42	-10.14	V	0.00	45.28	73.98	28.70	PK
4960	55.42	-10.14	V	-24.73	20.55	53.98	33.43	AV
7440	51.90	-3.55	V	0.00	48.35	73.98	25.63	PK
7440	51.90	-3.55	V	-24.73	23.62	53.98	30.36	AV
4960	55.95	-10.14	H	0.00	45.81	73.98	28.17	PK
4960	55.95	-10.14	H	-24.73	21.08	53.98	32.90	AV
7440	52.18	-3.55	H	0.00	48.63	73.98	25.35	PK
7440	52.18	-3.55	H	-24.73	23.90	53.98	30.08	AV

CH 0		2402	MHz	Mode :		EDR($\pi/4$ DQPSK)		
Frequency	Measured Value	A.F+C.L-A.G+D.F	ANT. POL	Duty Cycle Correction	Total	Limit	Margin	Measurement Type
[MHz]	[dB μ V]	[dB/m]	[H/V]	[dB]	[dB μ V/m]	[dB μ V/m]	[dB]	
4804	53.21	-10.56	V	0.00	42.65	73.98	31.33	PK
4804	53.21	-10.56	V	-18.71	23.94	53.98	30.04	AV
7206	51.67	-3.91	V	0.00	47.76	73.98	26.22	PK
7206	51.67	-3.91	V	-18.71	29.05	53.98	24.93	AV
4804	53.81	-10.56	H	0.00	43.25	73.98	30.73	PK
4804	53.81	-10.56	H	-18.71	24.54	53.98	29.44	AV
7206	51.99	-3.91	H	0.00	48.08	73.98	25.90	PK
7206	51.99	-3.91	H	-18.71	29.37	53.98	24.61	AV

CH 39		2441	MHz	Mode :		EDR($\pi/4$ DQPSK)		
Frequency	Measured Value	A.F+C.L-A.G+D.F	ANT. POL	Duty Cycle Correction	Total	Limit	Margin	Measurement Type
[MHz]	[dB μ V]	[dB/m]	[H/V]	[dB]	[dB μ V/m]	[dB μ V/m]	[dB]	
4882	54.18	-10.35	V	0.00	43.83	73.98	30.15	PK
4882	54.18	-10.35	V	-18.71	25.11	53.98	28.87	AV
7323	51.38	-3.70	V	0.00	47.68	73.98	26.30	PK
7323	51.38	-3.70	V	-18.71	28.97	53.98	25.01	AV
4882	54.25	-10.35	H	0.00	43.90	73.98	30.08	PK
4882	54.25	-10.35	H	-18.71	25.18	53.98	28.80	AV
7323	51.41	-3.70	H	0.00	47.71	73.98	26.27	PK
7323	51.41	-3.70	H	-18.71	29.00	53.98	24.98	AV

CH 78		2480	MHz	Mode :		EDR($\pi/4$ DQPSK)		
Frequency	Measured Value	A.F+C.L-A.G+D.F	ANT. POL	Duty Cycle Correction	Total	Limit	Margin	Measurement Type
[MHz]	[dB μ V]	[dB/m]	[H/V]	[dB]	[dB μ V/m]	[dB μ V/m]	[dB]	
4960	55.19	-10.14	V	0.00	45.05	73.98	28.93	PK
4960	55.19	-10.14	V	-18.71	26.34	53.98	27.64	AV
7440	51.24	-3.55	V	0.00	47.69	73.98	26.29	PK
7440	51.24	-3.55	V	-18.71	28.98	53.98	25.00	AV
4960	55.33	-10.14	H	0.00	45.19	73.98	28.79	PK
4960	55.33	-10.14	H	-18.71	26.48	53.98	27.50	AV
7440	51.60	-3.55	H	0.00	48.05	73.98	25.93	PK
7440	51.60	-3.55	H	-18.71	29.34	53.98	24.64	AV

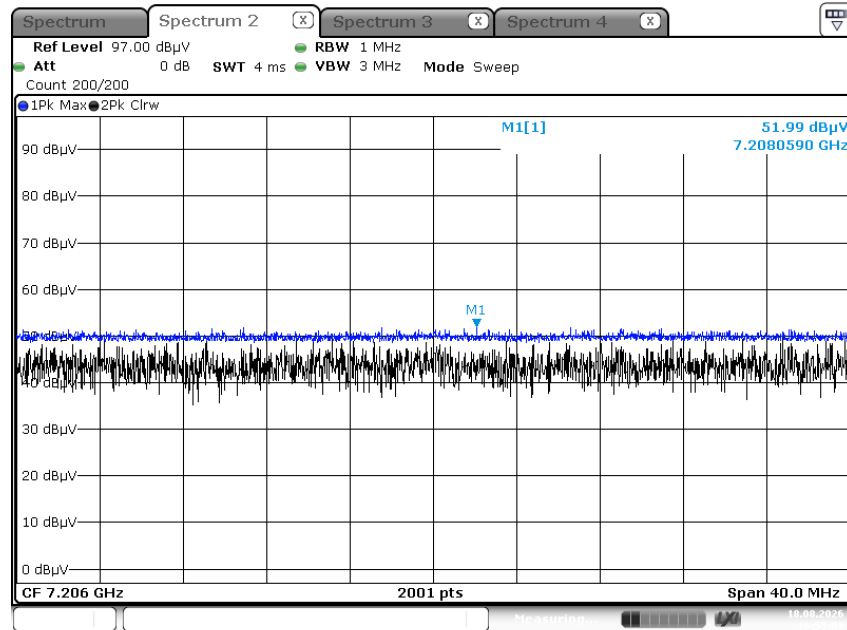
CH 0		2402	MHz	Mode :		EDR(8DPSK)		
Frequency	Measured Value	A.F+C.L-A.G+D.F	ANT. POL	Duty Cycle Correction	Total	Limit	Margin	Measurement Type
[MHz]	[dBμV]	[dB/m]	[H/V]	[dB]	[dBμV/m]	[dBμV/m]	[dB]	
4804	54.19	-10.56	V	0.00	43.63	73.98	30.35	PK
4804	54.19	-10.56	V	-18.71	24.92	53.98	29.06	AV
7206	51.22	-3.91	V	0.00	47.31	73.98	26.67	PK
7206	51.22	-3.91	V	-18.71	28.60	53.98	25.38	AV
4804	54.29	-10.56	H	0.00	43.73	73.98	30.25	PK
4804	54.29	-10.56	H	-18.71	25.02	53.98	28.96	AV
7206	51.77	-3.91	H	0.00	47.86	73.98	26.12	PK
7206	51.77	-3.91	H	-18.71	29.15	53.98	24.83	AV

CH 39		2441	MHz	Mode :		EDR(8DPSK)		
Frequency	Measured Value	A.F+C.L-A.G+D.F	ANT. POL	Duty Cycle Correction	Total	Limit	Margin	Measurement Type
[MHz]	[dBμV]	[dB/m]	[H/V]	[dB]	[dBμV/m]	[dBμV/m]	[dB]	
4882	54.22	-10.35	V	0.00	43.87	73.98	30.11	PK
4882	54.22	-10.35	V	-18.71	25.15	53.98	28.83	AV
7323	51.42	-3.70	V	0.00	47.72	73.98	26.26	PK
7323	51.42	-3.70	V	-18.71	29.01	53.98	24.97	AV
4882	54.43	-10.35	H	0.00	44.08	73.98	29.90	PK
4882	54.43	-10.35	H	-18.71	25.36	53.98	28.62	AV
7323	52.00	-3.70	H	0.00	48.30	73.98	25.68	PK
7323	51.67	-3.70	H	-18.71	29.26	53.98	24.72	AV

CH 78		2480	MHz	Mode :		EDR(8DPSK)		
Frequency	Measured Value	A.F+C.L-A.G+D.F	ANT. POL	Duty Cycle Correction	Total	Limit	Margin	Measurement Type
[MHz]	[dBμV]	[dB/m]	[H/V]	[dB]	[dBμV/m]	[dBμV/m]	[dB]	
4960	55.15	-10.14	V	0.00	45.01	73.98	28.97	PK
4960	55.15	-10.14	V	-18.71	26.30	53.98	27.68	AV
7440	51.50	-3.55	V	0.00	47.95	73.98	26.03	PK
7440	51.50	-3.55	V	-18.71	29.24	53.98	24.74	AV
4960	55.32	-10.14	H	0.00	45.18	73.98	28.80	PK
4960	55.32	-10.14	H	-18.71	26.47	53.98	27.51	AV
7440	51.64	-3.55	H	0.00	48.09	73.98	25.89	PK
7440	51.29	-3.55	H	-18.71	29.03	53.98	24.95	AV

Test Plots

Radiated Spurious Emissions plot – Peak & Average Result ($\pi/4$ DQPSK, Ch. 0 3rd Harmonic, Z-H)



Date: 18.AUG.2026 16:55:10

Note: Plots of worst case are only reported.

10.6.3 RADIATED RESTRICTED BAND EDGES

[GFSK]

Normal(GFSK)	Channel	CH 0, CH 78	Channel Frequency		2402 MHz, 2480 MHz		
Frequency	Measured Value	ANT. POL	Duty Cycle Correction	Total	Limit	Margin	Measurement Type
[MHz]	[dBμV]	[H/V]	[dB]	[dBμV/m]	[dBμV/m]	[dB]	
2310 - 2390	55.48	V	0	55.48	73.98	18.50	PK
2310 - 2390	55.48	V	-24.73	30.75	53.98	23.23	AV
2483.5 - 2500	56.15	V	0	56.15	73.98	17.83	PK
2483.5 - 2500	56.15	V	-24.73	31.42	53.98	22.56	AV

[π/4DQPSK]

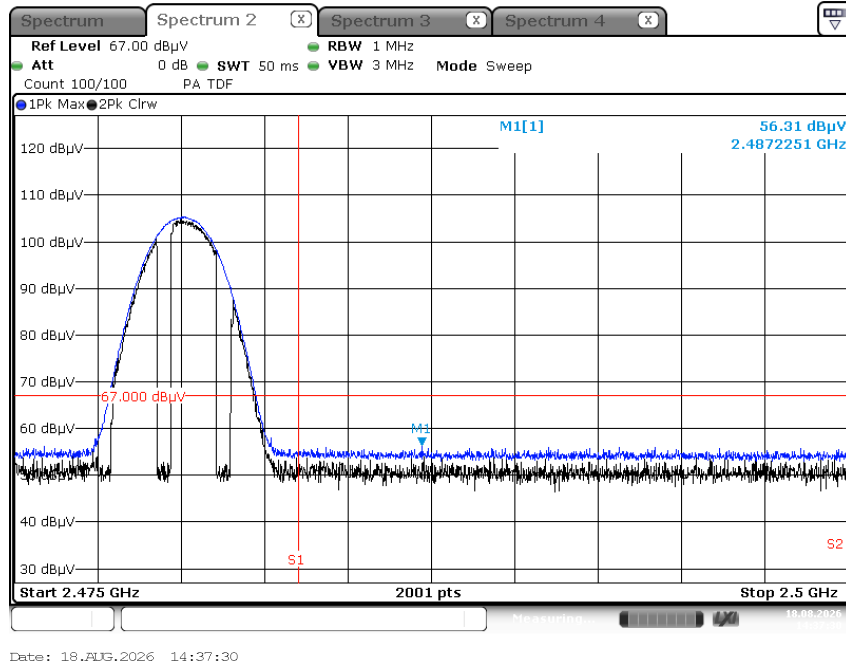
EDR(π/4DQPSK)	Channel	CH 0, CH 78	Channel Frequency		2402 MHz, 2480 MHz		
Frequency	Measured Value	ANT. POL	Duty Cycle Correction	Total	Limit	Margin	Measurement Type
[MHz]	[dBμV]	[H/V]	[dB]	[dBμV/m]	[dBμV/m]	[dB]	
2310 - 2390	55.71	V	0	55.71	73.98	18.27	PK
2310 - 2390	55.71	V	-18.71	37.00	53.98	16.98	AV
2483.5 - 2500	56.02	V	0	56.02	73.98	17.96	PK
2483.5 - 2500	56.02	V	-18.71	37.31	53.98	16.67	AV

[8DPSK]

EDR(8DPSK)	Channel	CH 0, CH 78	Channel Frequency		2402 MHz, 2480 MHz		
Frequency	Measured Value	ANT. POL	Duty Cycle Correction	Total	Limit	Margin	Measurement Type
[MHz]	[dBμV]	[H/V]	[dB]	[dBμV/m]	[dBμV/m]	[dB]	
2310 - 2390	56.02	V	0	56.02	73.98	17.96	PK
2310 - 2390	56.02	V	-18.71	37.31	53.98	16.67	AV
2483.5 - 2500	56.31	V	0	56.31	73.98	17.67	PK
2483.5 - 2500	56.31	V	-18.71	37.60	53.98	16.38	AV

Test Plots

Radiated Restricted Band Edges plot – Average & Peak Result (8DPSK, Ch. 78, Z-V)



Note:

Plots of worst case are only reported.

10.7 POWERLINE CONDUCTED EMISSIONS

Conducted Emissions

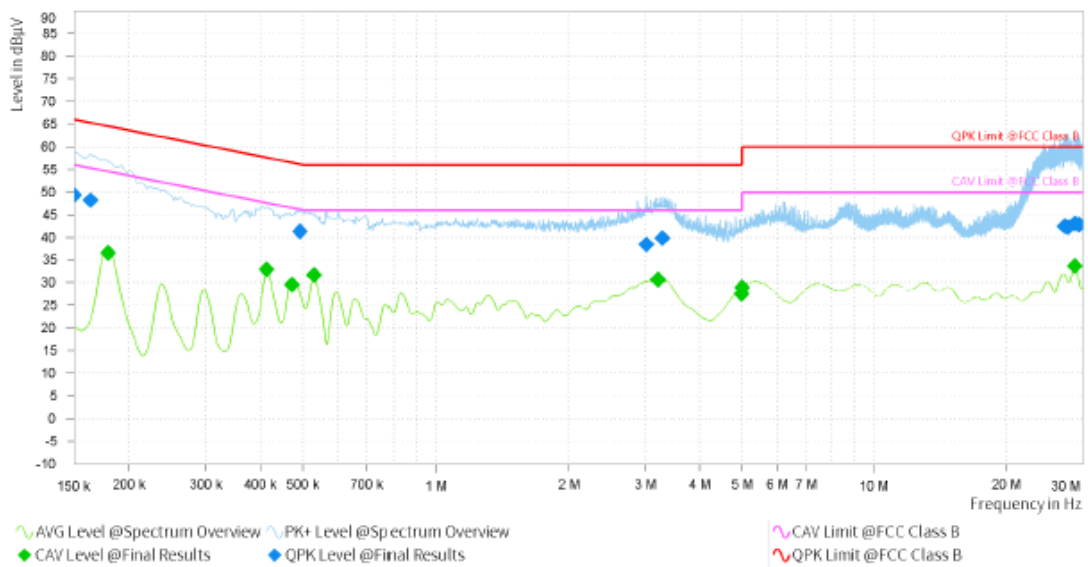
EMI Test Report

Test Information

EUT LGSWCAX71

Operating Condition BT Mode

Comment



EMI Final Results

Frequency [MHz]	QPK Level [dBμV]	QPK Limit [dBμV]	QPK Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]
0.150	49.30	66.00	16.70	9.56	L1	9.000
0.164	48.16	65.28	17.13	9.55	N	9.000
0.492	41.27	56.13	14.86	9.57	N	9.000
3.017	38.47	56.00	17.53	9.63	N	9.000
3.280	39.81	56.00	16.19	9.64	N	9.000
27.247	42.45	60.00	17.55	9.87	L1	9.000
27.782	42.14	60.00	17.86	9.87	L1	9.000
28.797	43.05	60.00	16.95	9.88	L1	9.000
29.366	42.87	60.00	17.13	9.88	L1	9.000
29.474	42.80	60.00	17.20	9.88	L1	9.000

EMI Final Results

Frequency [MHz]	CAV Level [dBμV]	CAV Limit [dBμV]	CAV Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]
0.179	36.56	54.52	17.96	9.56	L1	9.000
0.413	32.93	47.58	14.66	9.56	N	9.000
0.472	29.51	46.48	16.98	9.57	N	9.000
0.530	31.73	46.00	14.27	9.57	N	9.000
3.203	30.62	46.00	15.38	9.63	N	9.000
3.215	30.63	46.00	15.37	9.63	N	9.000
4.981	27.57	46.00	18.43	9.67	L1	9.000
4.999	28.99	46.00	17.01	9.67	N	9.000
28.757	33.66	50.00	16.34	9.88	L1	9.000
28.768	33.67	50.00	16.33	9.88	L1	9.000

11. LIST OF TEST EQUIPMENT

Conducted Test

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
LISN	ENV216	Rohde & Schwarz	102245	07/10/2027	Annual
EMI Test Receiver	EPL1000	Rohde & Schwarz	101127	05/15/2027	Annual
Chamber	SU-642	ESPEC	93022487	06/17/2027	Annual
Signal Analyzer	N9030B	Keysight	MY56320554	01/26/2027	Annual
Open switch and control platform	OSP 150	Rohde & Schwarz	100894	05/06/2027	Annual
Power Meter	N1911A	Agilent	MY45100523	02/13/2027	Annual
Wideband Power Sensor	N1921A	Keysight	MY57820067	01/26/2027	Annual
Directional Coupler	87300B	Agilent	3116A03621	10/14/2026	Annual
Power Splitter	11667B	Hewlett Packard	10545	01/15/2027	Annual
DC Power Supply	E3632A	Agilent	MY50360067	01/27/2027	Annual
Attenuator	10 dB	Sensor View	ATT10FC001	05/14/2027	Annual
Software	ELEKTRA	Rohde & Schwarz	N/A	N/A	N/A
Bluetooth Tester	CBT	Rohde & Schwarz	100752	12/22/2026	Annual
Radio Communication Tester	CMX500	Rohde&Schwarz	100325	09/29/2026	Annual
4 Way Power DIVIDER	4456-4	Narda	01640	04/13/2027	Annual
Step Attenuator	8310-202-F	Aeroflex/Weinschel	1070	03/18/2027	Annual
Automation Software	FCC WLAN Conducted	HCT CO., LTD	-	-	-
Automation Software	FCC Bluetooth Conducted	HCT CO.,LTD	-	-	-

Note:

1. Equipment whose calibration due date was updated during the test period was not used between the previous due date and the update.

All reported measurements were performed using equipment within valid calibration.

2. Especially, all antenna for measurement is calibrated in accordance with the requirements of ANSI C63.5-2017.

Radiated Test

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
Antenna Mast Controller	CO3000	Innco systems GmbH	CO3000/1542/57580623/G	N/A	N/A
Antenna Mast	MA4640-XP-ET	Innco systems GmbH	9320422	03/24/2027	Biennial
Turn Table	DT2000-2t	Innco systems GmbH	5930623	N/A	N/A
Loop Antenna	FMZB 1513	Schwarzbeck Mess-Elektronik OHG	1513-175	06/24/2027	Biennial
Trilog Broadband Antenna	VULB 9168	Schwarzbeck Mess-Elektronik OHG	9168-1135	08/12/2028	Biennial
Horn Antenna	BBHA 9120 D	Schwarzbeck Mess-Elektronik OHG	9120D-1151	07/11/2027	Biennial
Horn Antenna	BBHA 9170	Schwarzbeck Mess-Elektronik OHG	BBHA9170342	09/20/2026	Biennial
Band Reject Filter	WRCJV2400/2483.5-2370/2520-60/12SS	Wainwright Instruments GmbH	2	12/11/2026	Annual
Band Reject Filter	WRCJV12-4900-5100-5900-6100-50SS	Wainwright Instruments GmbH	5	03/19/2027	Annual
Band Reject Filter	WRCJV12-4900-5100-5900-6100-50SS	Wainwright Instruments GmbH	6	03/19/2027	Annual
Band Reject Filter	WRCJV5100/5850-40/50-8EEK	Wainwright Instruments GmbH	1	01/07/2027	Annual
RF Switching System	FBSR-04C (HPF(3~18GHz) + LNA1(1~18GHz))	T&M system	S5L1	02/12/2027	Annual
RF Switching System	FBSR-04C (ATT(10dB) + LNA1(1~18GHz))	T&M system	S5L2	02/12/2027	Annual
RF Switching System	FBSR-04C (ATT(3dB) + LNA1(1~18GHz))	T&M system	S5L3	02/12/2027	Annual
RF Switching System	FBSR-04C (LNA1(1~18GHz))	T&M system	S5L4	02/12/2027	Annual
RF Switching System	FBSR-04C (HPF(7~18GHz) + LNA2(6~18GHz))	T&M system	S5L5	02/12/2027	Annual
RF Switching System	FBSR-04C (Thru(30MHz ~ 18GHz))	T&M system	S5L6	02/12/2027	Annual
Broadband LNA	CBL18265035	CERNEX	22966	10/21/2026	Annual
Broadband LNA	CBL26405040	CERNEX	25956	02/09/2027	Annual
Bluetooth Tester	TC-3000C	TESCOM	3000C000175	03/03/2027	Annual
Signal Analyzer	FSV40	Rohde & Schwarz	101510	09/01/2027	Annual
Attenuator	18B-03	API Technologies	1	04/13/2027	Annual
Automation Software	FCC WLAN Radiated	HCT CO., LTD	-	-	-

Note:

- Equipment whose calibration due date was updated during the test period was not used between the previous due date and the update.
All reported measurements were performed using equipment within valid calibration.
- Especially, all antenna for measurement is calibrated in accordance with the requirements of ANSI C63.5-2017.

12. ANNEX A_TEST SETUP PHOTO

Please refer to test setup photo file no. as follows;

No.	Description
1	HCT-RF-2609-FC001-P