FCC PART 15C
TEST REPORT

BLUETOOTH LOW ENERGY (BLE) PART

No. I17Z60076-SRD13

for

HMD Global

Smart Phone

Model Name: TA-1021

FCC ID: 2AJOTTA-1021

with

Hardware Version: 3

Software Version: 000C_1_130

Issued Date: 2017-4-17

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

Test Laboratory:

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I17Z60076-SRD13	Rev.0	1st edition	2017-4-17

CONTENTS

1. Test Laboratory

1.1. Testing Location

Conducted testing Location: CTTL(huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China100191

Radiated testing Location: CTTL((BDA)

Address: No. 18 Jia Kangding Street, BDA District, Beijing, P. R. China 100191

1.2. Testing Environment

Normal Temperature: 15-35℃

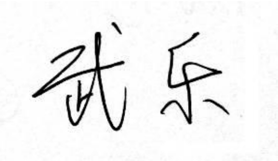
Relative Humidity: 20-75%

1.3. Project data

Testing Start Date: 2017-2-23

Testing End Date: 2017-4-14

1.4. Signature



Wu Le

(Prepared this test report)

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(Reviewed this test report)

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(Approved this test report)

2. Client Information

2.1. Applicant Information

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2.2. Manufacturer Information

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Fax:	/

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	Smart Phone
Model Name	TA-1021
FCC ID	2AJOTTA-1021
Frequency Band	ISM 2400MHz~2483.5MHz
Type of Modulation(LE mode)	GFSK (Bluetooth Low Energy)
Number of Channels(LE mode)	40
Power Supply	3.84V DC by Battery

3.2. Internal Identification of EUT

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	/	3	000C_1_130
EUT2	/	3	000C_1_130

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE

AE ID*	Description	SN
AE1	Battery	INBUILT
AE2	Battery	INBUILT
AE3	Travel charger	/
AE4	Travel charger	/
AE5	USB cable	/
AE6	Headset	/

AE1

Model	HE316
Manufacturer	SCUD(FUJIAN) ELECTRONICS CO LTD
Capacitance	3000mAh
Nominal voltage	3.82V

AE2

Model	HE317
Manufacturer	SCUD(FUJIAN) ELECTRONICS CO LTD
Capacitance	3000mAh
Nominal voltage	3.84V

AE3/AE4

Model	FC0102
Manufacturer	Salcomp
Length of cable	/

AE5

Model	CUBB01M-FA010-DH
Manufacturer	FOXCONN
Length of cable	99cm

AE6

Model	5CAB5422B-N01-DG
Manufacturer	FOXCONN
Length of cable	/

*AE ID: is used to identify the test sample in the lab internally.

3.4. Normal Accessory setting

Fully charged battery is used during the test.

3.5. General Description

The Equipment Under Test (EUT) is a model of Smart Phone with integrated antenna. It consists of normal options: lithium battery, charger. Manual and specifications of the EUT were provided to fulfil the test. Samples undergoing test were selected by the Client.

4. Reference Documents

4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part15	FCC CFR 47, Part 15, Subpart C: 15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; 15.247 Operation within the bands 902–928MHz, 2400–2483.5 MHz, and 5725–5850 MHz.	2015
ANSI C63.10	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices	June,2013

5. Test Results

5.1. Summary of Test Results

Abbreviations used in this clause:

P Pass, The EUT complies with the essential requirements in the standard.

F Fail, The EUT does not comply with the essential requirements in the standard

NA Not Applicable, The test was not applicable

NP Not Performed, The test was not performed by CTTL

SUMMARY OF MEASUREMENT RESULTS	Sub-clause	Verdict
6dB Bandwidth	15.247 (a)(2)	P
Peak Output Power - Conducted	15.247 (b)(1)	P
Maximum Power Spectral Density Level	15.247(e)	P
Conducted Emission	15.247 (d)	P
Radiated Emission	15.247, 15.205, 15.209	P
Frequency Band Edges	15.247 (d)	P
AC Powerline Conducted Emission	15.107, 15.207	P

The measurement is made according to ANSI C63.10.

Please refer to **ANNEX A** for detail.

5.2. Statements

CTTL has evaluated the test cases requested by the applicant /manufacturer as listed in section 5.1 of this report for the EUT specified in section 3 according to the standards or reference documents listed in section 4.2

This model is a variant product which model name is TA-1025; all the test result has been derived from test report of TA-1025.

6. Test Facilities Utilized

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Vector Signal Analyzer	FSQ26	200136	Rohde & Schwarz	1 year	2017-10-25
2	LISN	ENV216	101200	Rohde & Schwarz	1 year	2017-07-10
3	Test Receiver	ESCI	100344	Rohde & Schwarz	1 year	2018-03-01
4	Shielding Room	S81	/	ETS-Lindgren	/	/

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Test Receiver	ESU26	100376	Rohde & Schwarz	1 year	2017-11-30
2	BiLog Antenna	VULB9163	514	Schwarzbeck	3 years	2017-11-24
3	Dual-Ridge Waveguide Horn Antenna	3117	00139065	ETS-Lindgren	3 years	2017-09-21
4	Dual-Ridge Waveguide Horn Antenna	3116	2663	ETS-Lindgren	3 years	2017-06-17
5	Vector Signal Analyzer	FSV	101047	Rohde & Schwarz	1 year	2017-06-28

7. Measurement Uncertainty

7.1. Peak Output Power - Conducted

Measurement Uncertainty:

Measurement Uncertainty (k=2)	0.66dB

7.2. Frequency Band Edges

Measurement Uncertainty:

Measurement Uncertainty (k=2)	0.66dB

7.3. Conducted Emission

Measurement Uncertainty:

Frequency Range	Uncertainty (k=2)
30 MHz ~ 8 GHz	1.22dB
8 GHz ~ 12.75 GHz	1.51dB
12.7GHz ~ 26 GHz	1.51dB

7.4. Radiated Emission

Measurement Uncertainty:

Frequency Range	Uncertainty (k=2)
＜ 1 GHz	4.86dB
＞ 1 GHz	5.26dB

7.5. 6dB Bandwidth

Measurement Uncertainty:

Measurement Uncertainty (k=2)	61.936Hz

7.6. Maximum Power Spectral Density Level

Measurement Uncertainty:

Measurement Uncertainty (k=2)	0.66dB

7.7. AC Powerline Conducted Emission

Measurement Uncertainty:

Measurement Uncertainty (k=2)	3.38dB

ANNEX A: Detailed Test Results

A.1. Measurement Method

A.1.1. Conducted Measurements

The measurement is made according to ANSI C63.10.

1). Connect the EUT to the test system correctly.

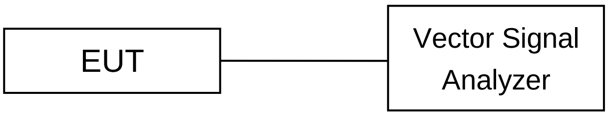
2). Set the EUT to the required work mode (Transmitter, receiver or transmitter & receiver).

3). Set the EUT to the required channel.

4). Set the EUT hopping mode (hopping or hopping off).

5). Set the spectrum analyzer to start measurement.

6). Record the values. Vector Signal Analyzer



A.1.2. Radiated Emission Measurements

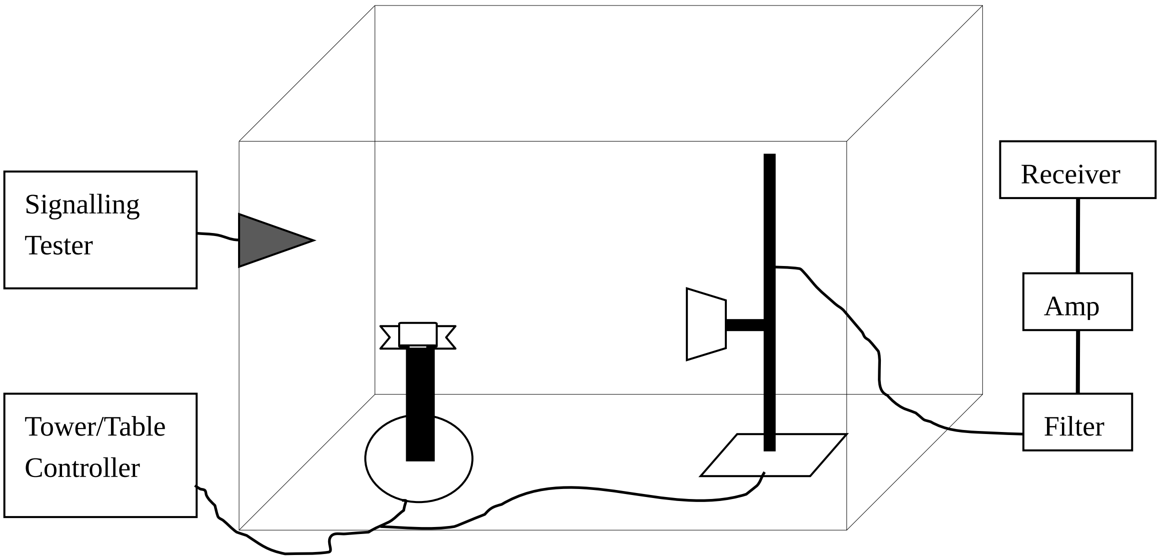
The measurement is made according to ANSI C63.10.

The radiated emission test is performed in semi-anechoic chamber. The distance from the EUT to the reference point of measurement antenna is 3m. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept. During the test, the turntable is rotated 360° and the measurement antenna is moved from 1m to 4m to get the maximization result.

In the case of radiated emission, the used settings are as follows,

Sweep frequency from 30 MHz to 1GHz, RBW = 100 kHz, VBW = 300 kHz;

Sweep frequency from 1 GHz to 26GHz, RBW = 1MHz, VBW = 1MHz;



A.2. Peak Output Power - Conducted

Method of Measurement: See ANSI C63.10-clause 11.9.1.1

a) Set the RBW = 1 MHz.

b) Set VBW = 3 MHz.

c) Set span = 3 MHz.

d) Sweep time = auto couple.

e) Detector = peak.

f) Trace mode = max hold.

g) Allow trace to fully stabilize.

h) Use peak marker function to determine the peak amplitude level.

Measurement Limit：

Standard	Limit (dBm)
FCC Part 15.247(b)(1)	< 30

Measurement Results:

For GFSK

Channel No.	Frequency (MHz)	Peak Conducted Output Power (dBm)	Conclusion
0	2402	1.45	P
19	2440	2.92	P
39	2480	1.70	P

Conclusion: PASS

A.3. Frequency Band Edges - Conducted

Method of Measurement: See ANSI C63.10-clause 6.10.4

Connect the spectrum analyzer to the EUT using an appropriate RF cable connected to the EUT output. Configure the spectrum analyzer settings as described below.

a) Set Span = 8MHz
b) Sweep Time: coupled
c) Set the RBW= 100 kHz
c) Set the VBW= 300 kHz
d) Detector: Peak
e) Trace: Max hold

Observe the stored trace and measure the amplitude delta between the peak of the fundamental and the peak of the band-edge emission. This is not an absolute field strength measurement; it is only a relative measurement to determine the amount by which the emission drops at the band edge relative to the highest fundamental emission level.

Measurement Limit:

Standard	Limit (dBc)
FCC 47 CFR Part 15.247 (d)	< -20

Measurement Result:

For GFSK

Channel No.	Frequency (MHz)	Hopping	Band Edge Power (dBc)		Conclusion
0	2402	Hopping OFF	Fig.1	-55.81	P
39	2480	Hopping OFF	Fig.2	-59.81	P

Conclusion: PASS

Test graphs as below

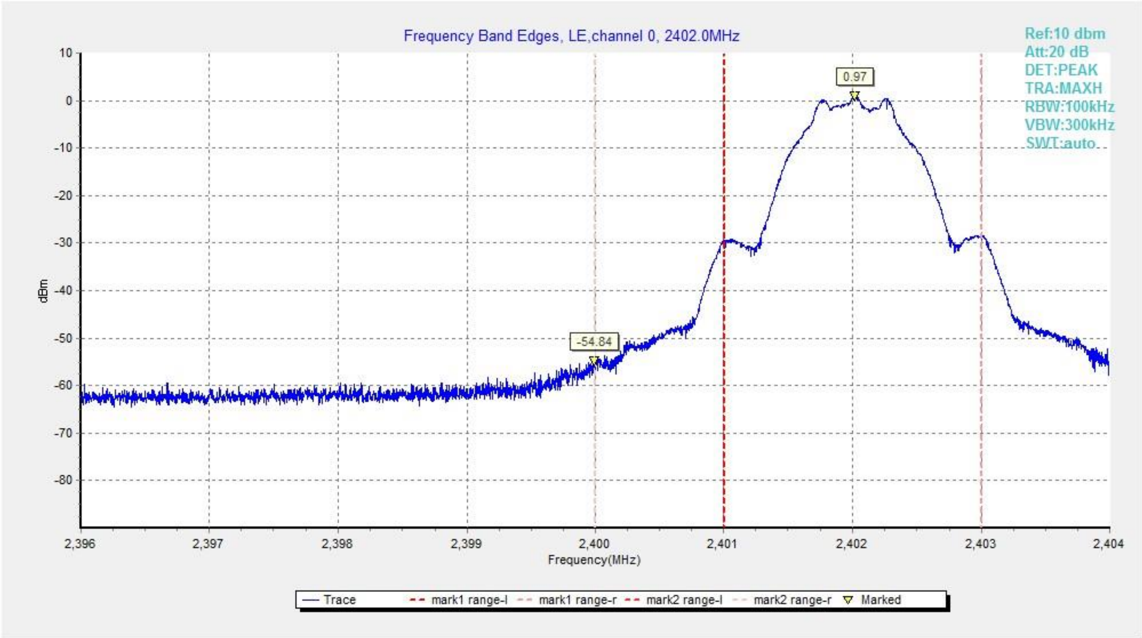


Fig.1. Frequency Band Edges: GFSK, 2402 MHz, Hopping Off

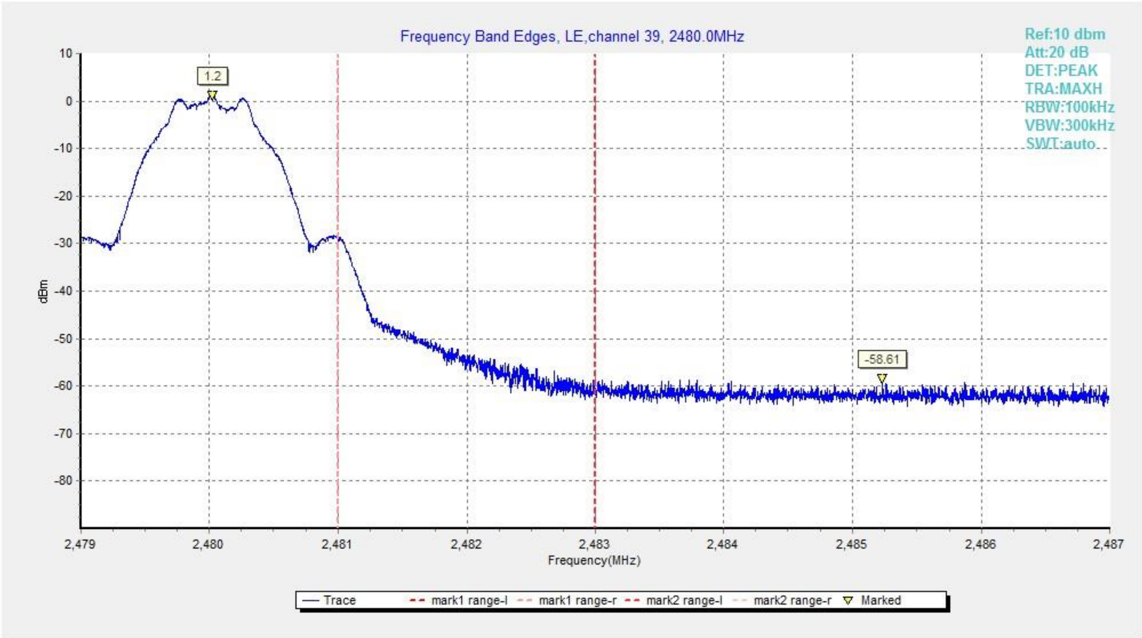


Fig.2. Frequency Band Edges: GFSK, 2480 MHz, Hopping Off

A.4. Transmitter Spurious Emission - Conducted

Method of Measurement: See ANSI C63.10-clause 11.11.2 and clause 11.11.3

Measurement Procedure – Reference Level

1. Set the RBW = 100 kHz.
2. Set the VBW = 300 kHz.
3. Set the span to ⩾1.5 times the DTS bandwidth.
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum PSD level. Next, determine the power in 100 kHz band segments outside of the authorized frequency band using the following measurement:

Measurement Procedure - Unwanted Emissions

1. Set RBW = 100 kHz.
2. Set VBW = 300 kHz.
3. Set span to encompass the spectrum to be examined.
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.
7. Allow the trace to stabilize (this may take some time, depending on the extent of the span).

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified above.

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247 (d)	20dB below peak output power in 100 kHz bandwidth

Measurement Results:

For GFSK

Channel No.	Frequency (MHz)	Frequency Range	Test Results	Conclusion
0	2402	Center Frequency	Fig.3	P
		30 MHz ~ 1 GHz	Fig.4	P
		1 GHz ~ 3 GHz	Fig.5	P
		3 GHz ~ 10 GHz	Fig.6	P
		10GHz ~ 26 GHz	Fig.7	P
19	2440	Center Frequency	Fig.8	P
		30 MHz ~ 1 GHz	Fig.9	P
		1 GHz ~ 3 GHz	Fig.10	P
		3 GHz ~ 10 GHz	Fig.11	P
		10GHz ~ 26 GHz	Fig.12	P
39	2480	Center Frequency	Fig.13	P
		30 MHz ~ 1 GHz	Fig.14	P
		1 GHz ~ 3GHz	Fig.15	P
		3 GHz ~ 10 GHz	Fig.16	P
		10 GHz ~ 26 GHz	Fig.17	P

Conclusion: PASS

Test graphs as below

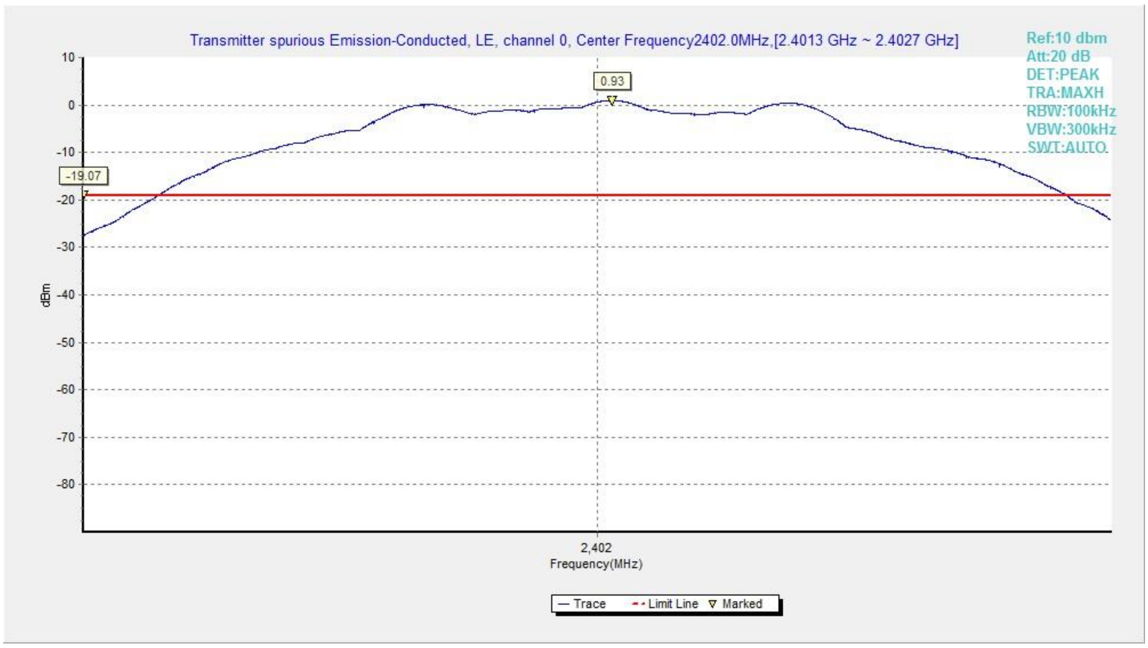


Fig.3. Transmitter Spurious Emission - Conducted: GFSK,2402MHz

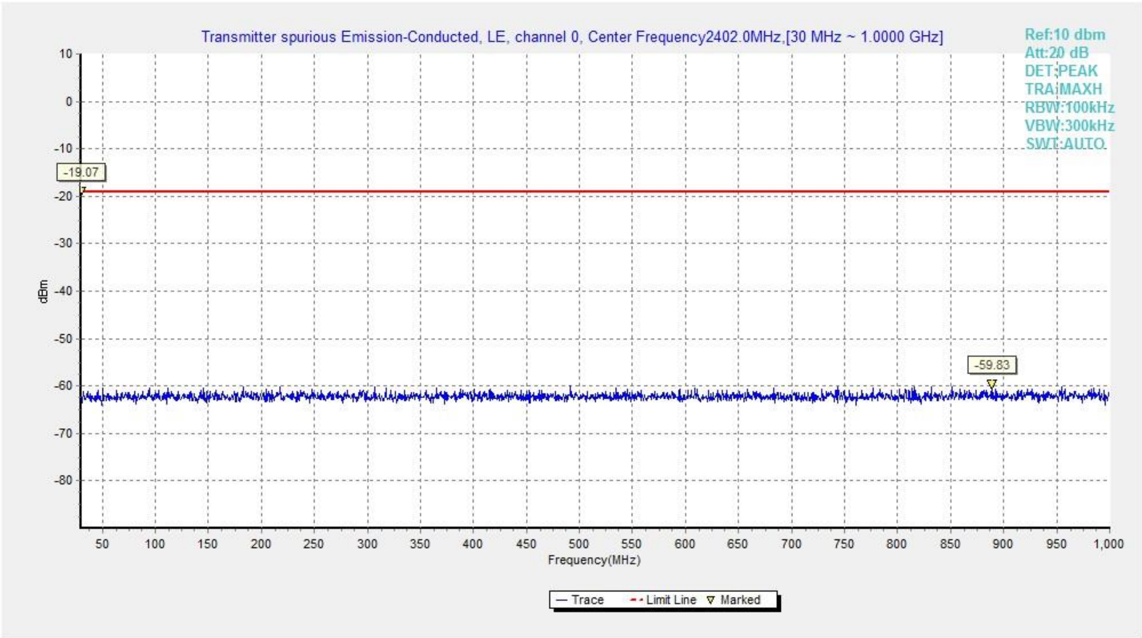


Fig.4. Transmitter Spurious Emission - Conducted: GFSK, 2402 MHz, 30MHz - 1GHz

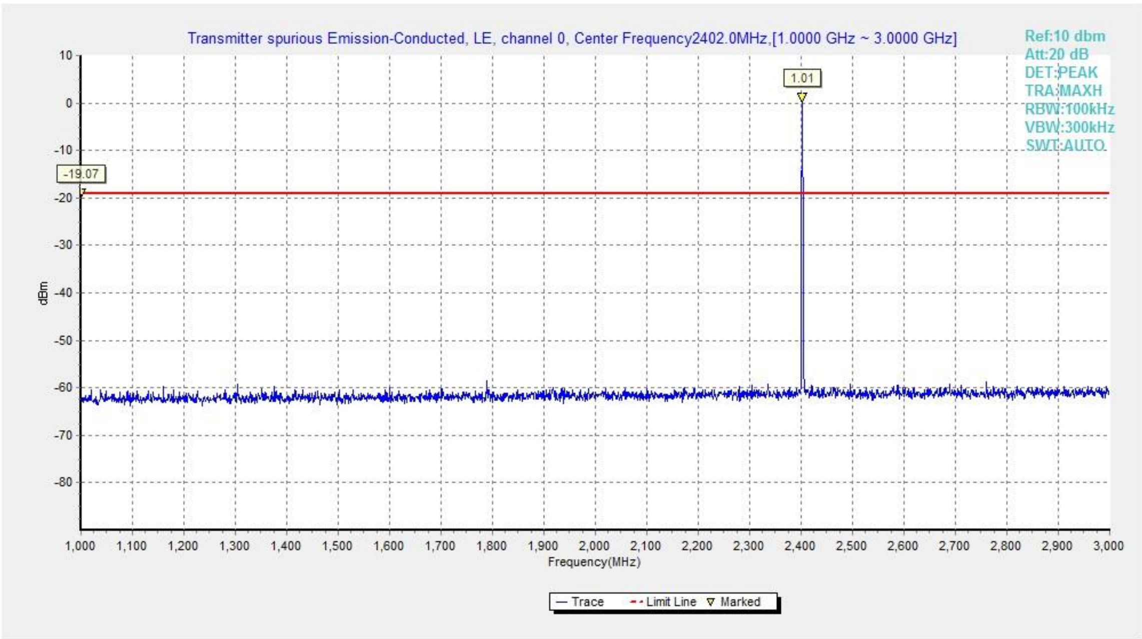


Fig.5. Transmitter Spurious Emission - Conducted: GFSK, 2402 MHz,1GHz - 3GHz

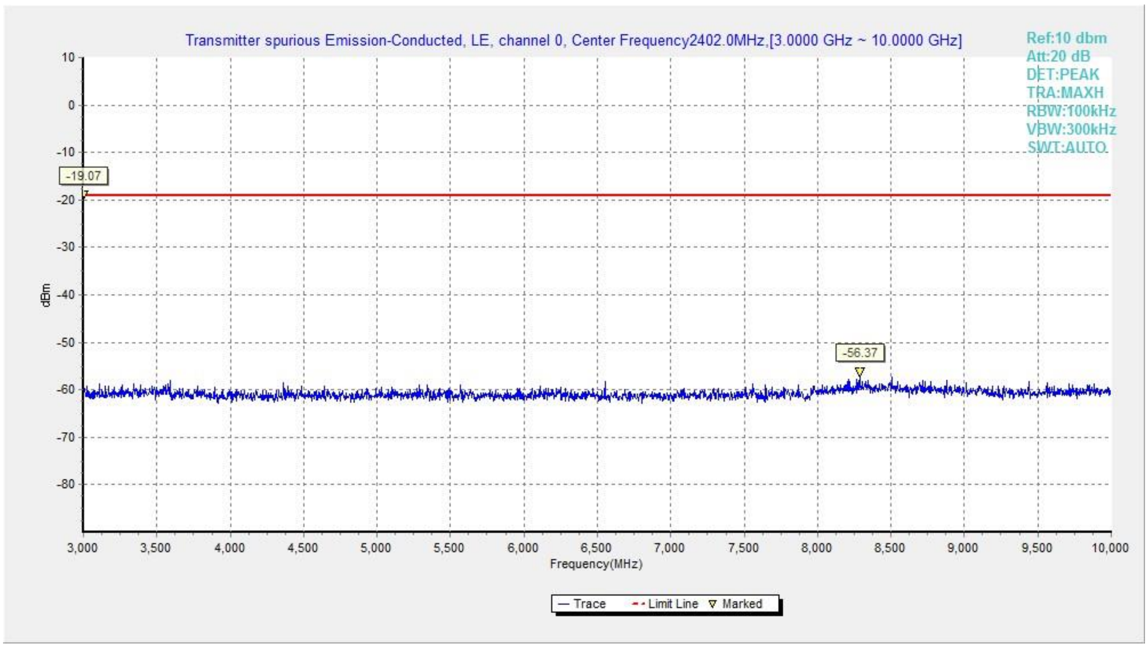


Fig.6. Transmitter Spurious Emission - Conducted: GFSK, 2402 MHz,3GHz - 10GHz

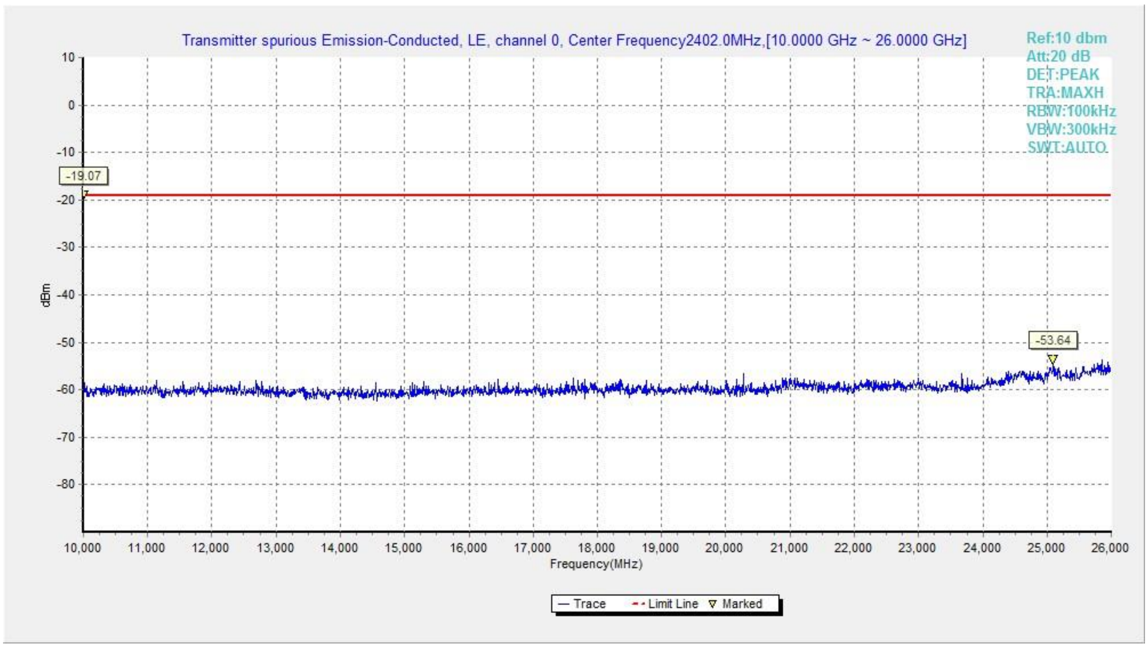


Fig.7. Transmitter Spurious Emission - Conducted: GFSK, 2402 MHz,10GHz - 26GHz

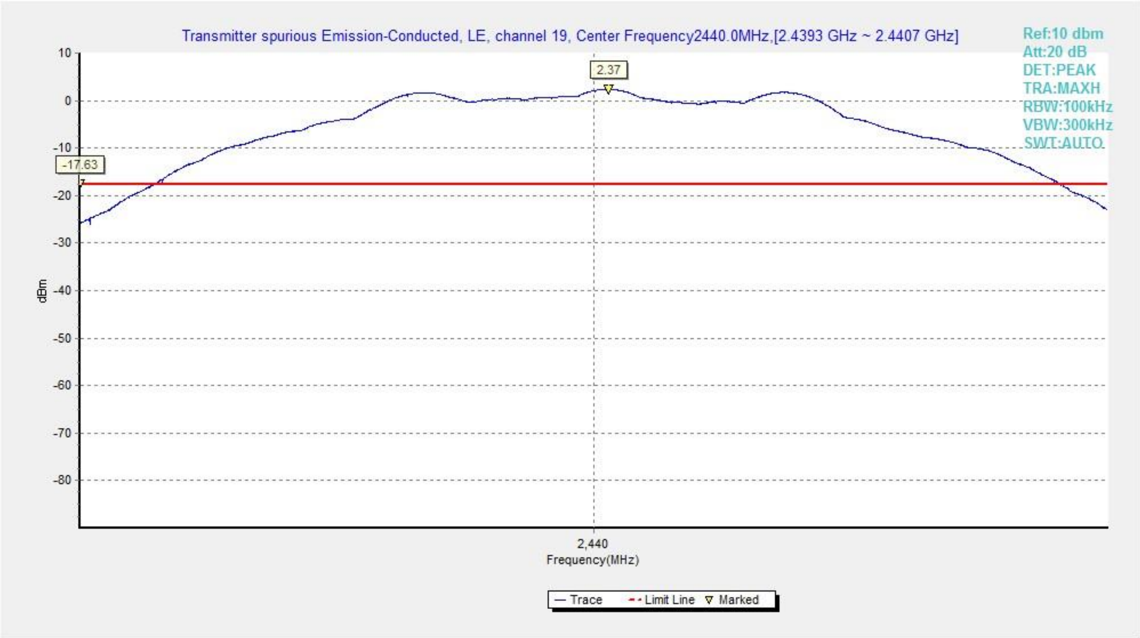


Fig.8. Transmitter Spurious Emission - Conducted: GFSK, 2440MHz

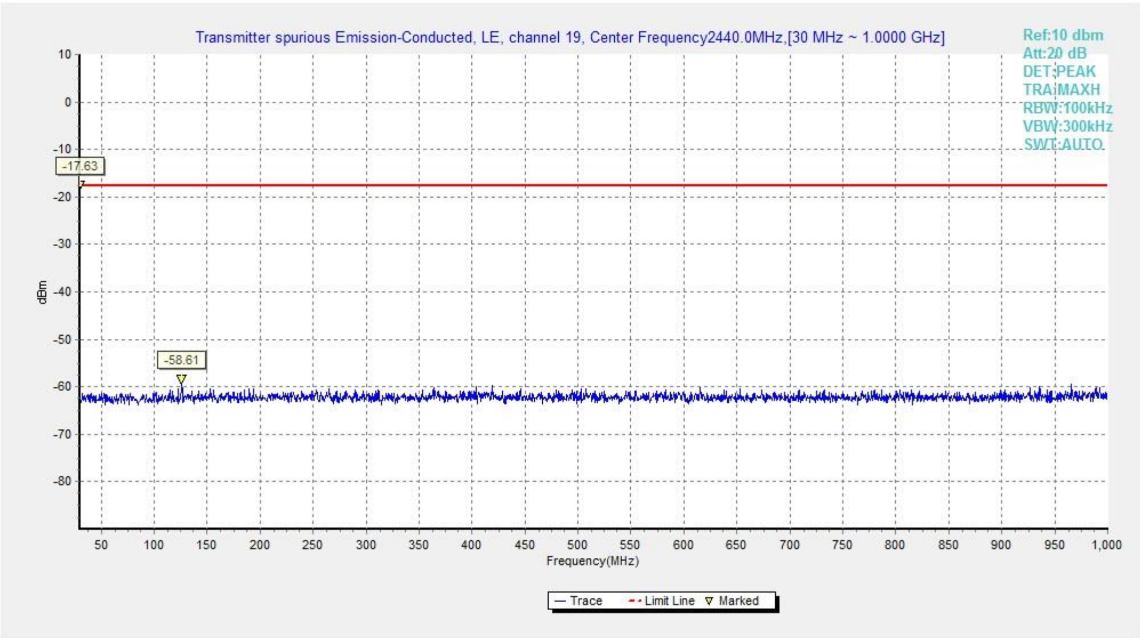


Fig.9. Transmitter Spurious Emission - Conducted: GFSK, 2440 MHz, 30MHz - 1GHz

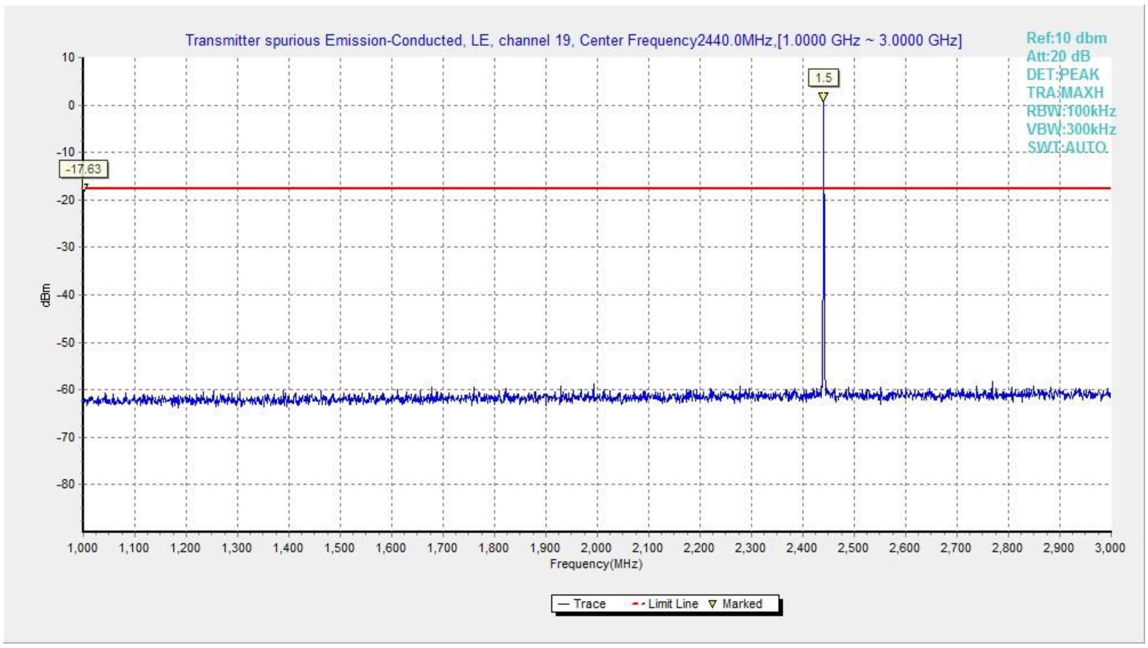


Fig.10. Transmitter Spurious Emission - Conducted: GFSK, 2440 MHz, 1GHz – 3GHz

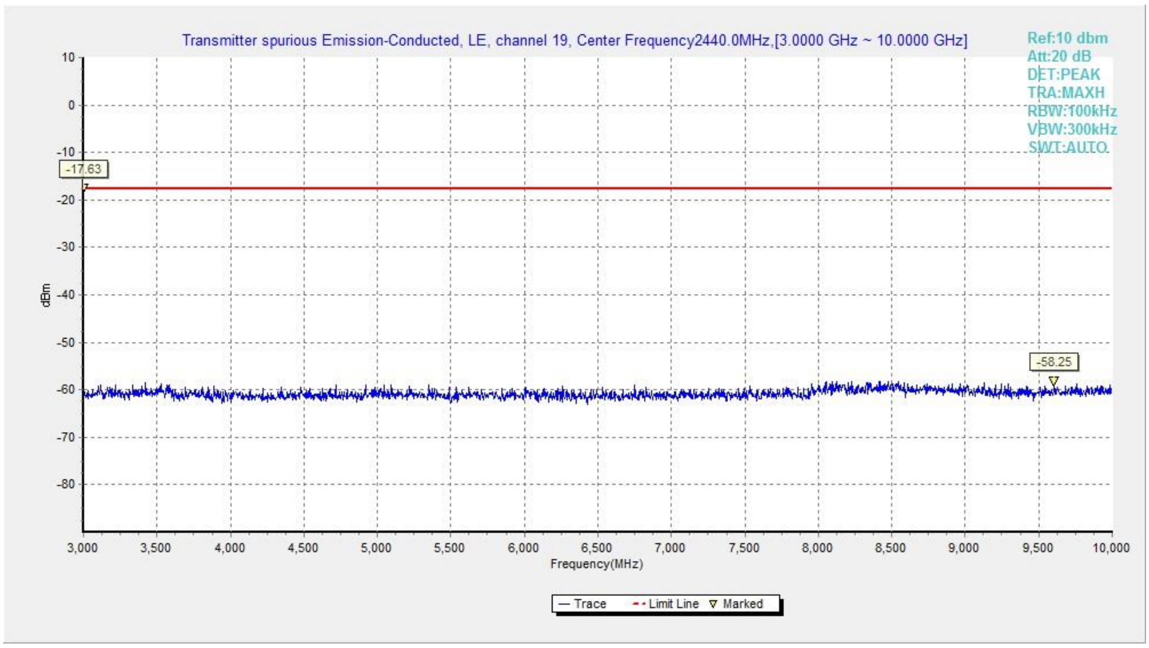


Fig.11. Transmitter Spurious Emission - Conducted: GFSK, 2440 MHz, 3GHz – 10GHz

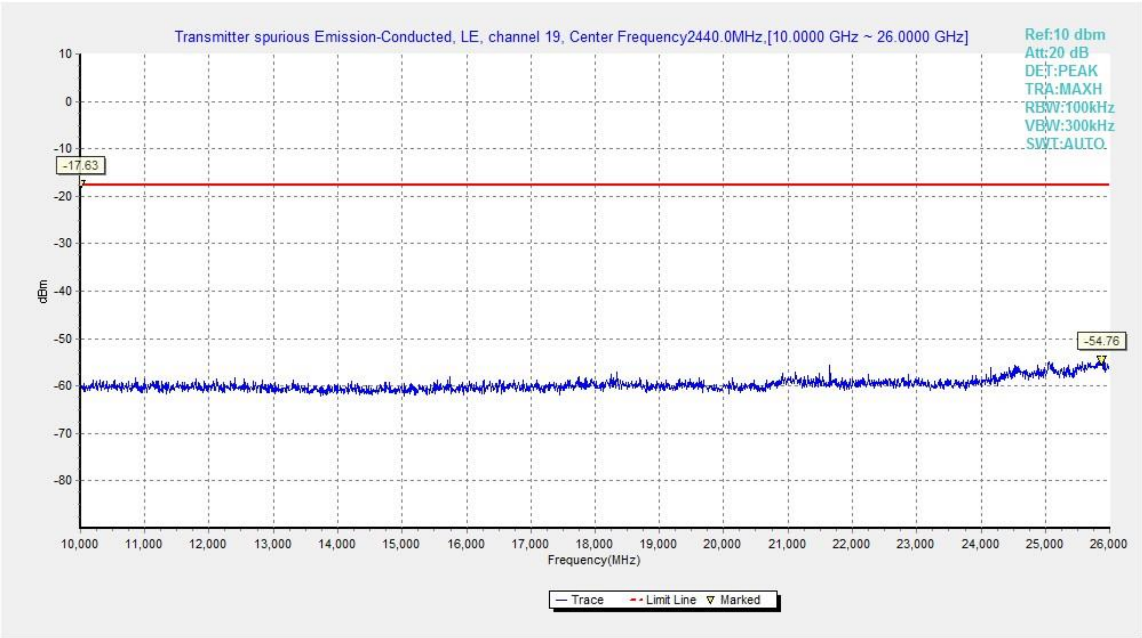


Fig.12. Transmitter Spurious Emission - Conducted: GFSK, 2440 MHz, 10GHz – 26GHz

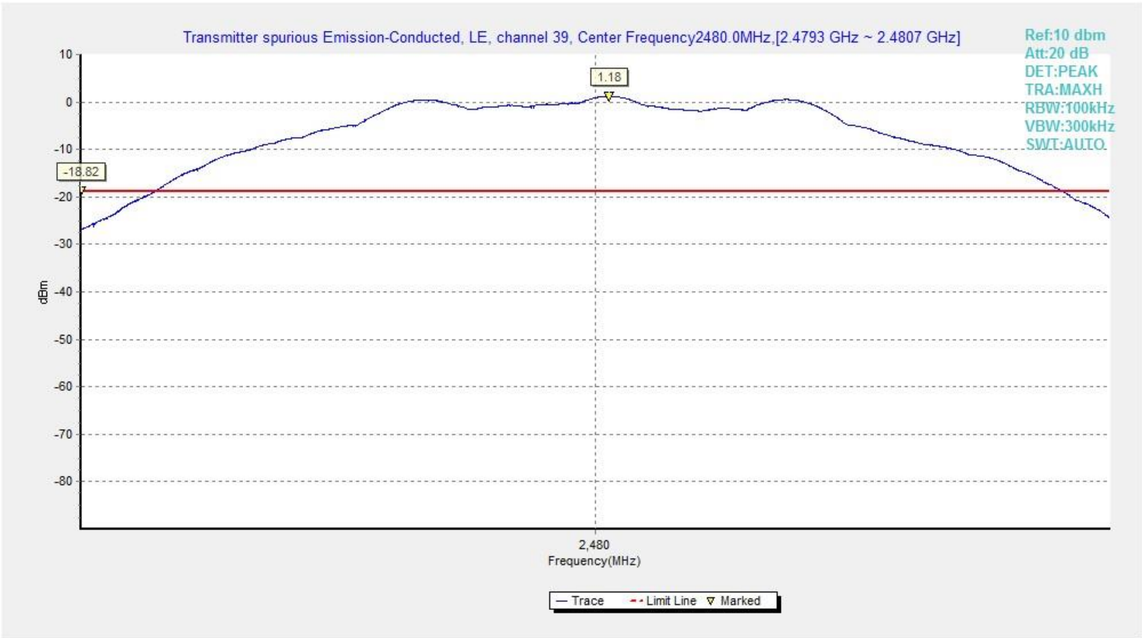


Fig.13. Transmitter Spurious Emission - Conducted: GFSK, 2480 MHz

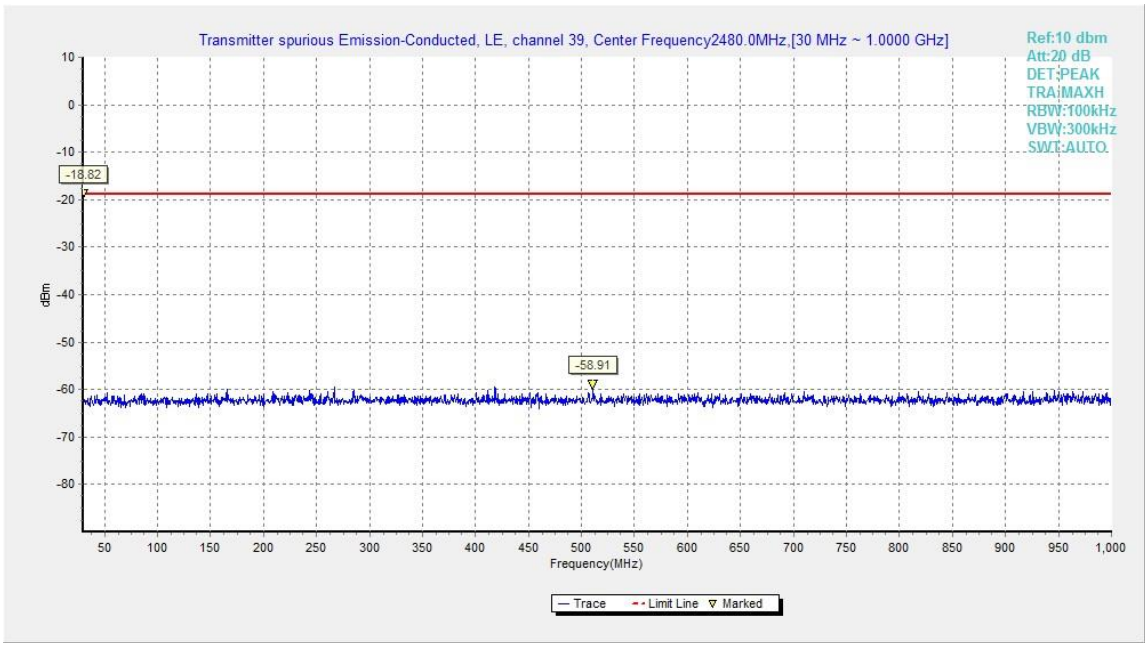


Fig.14. Transmitter Spurious Emission - Conducted: GFSK, 2480 MHz, 30MHz - 1GHz

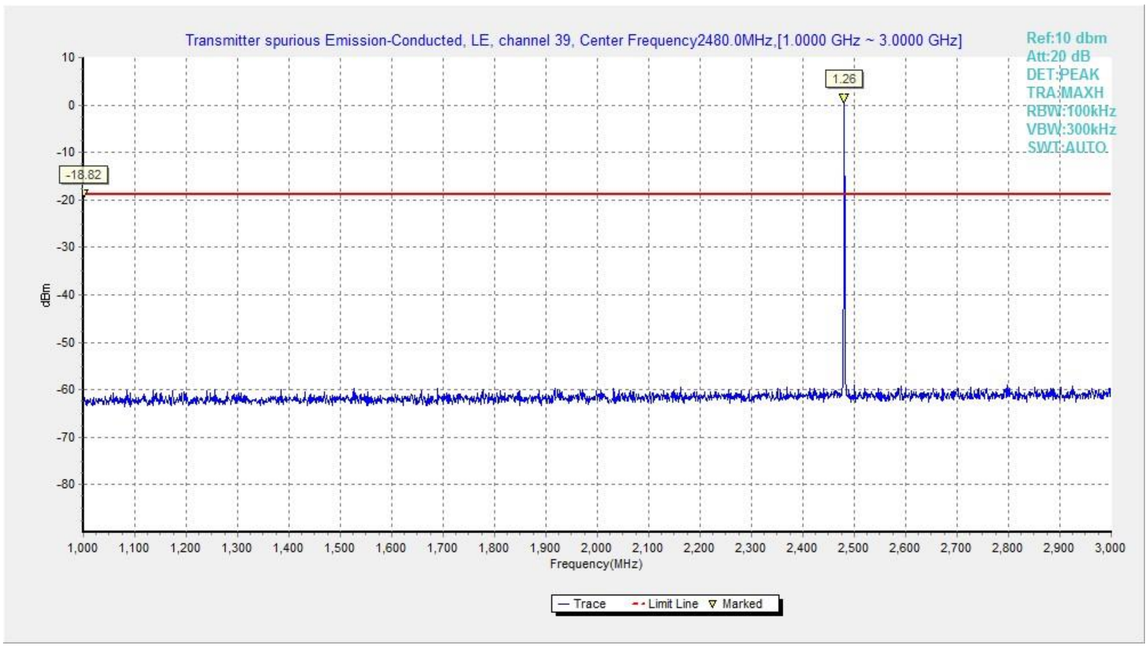


Fig.15. Transmitter Spurious Emission - Conducted: GFSK, 2480 MHz, 1GHz - 3GHz

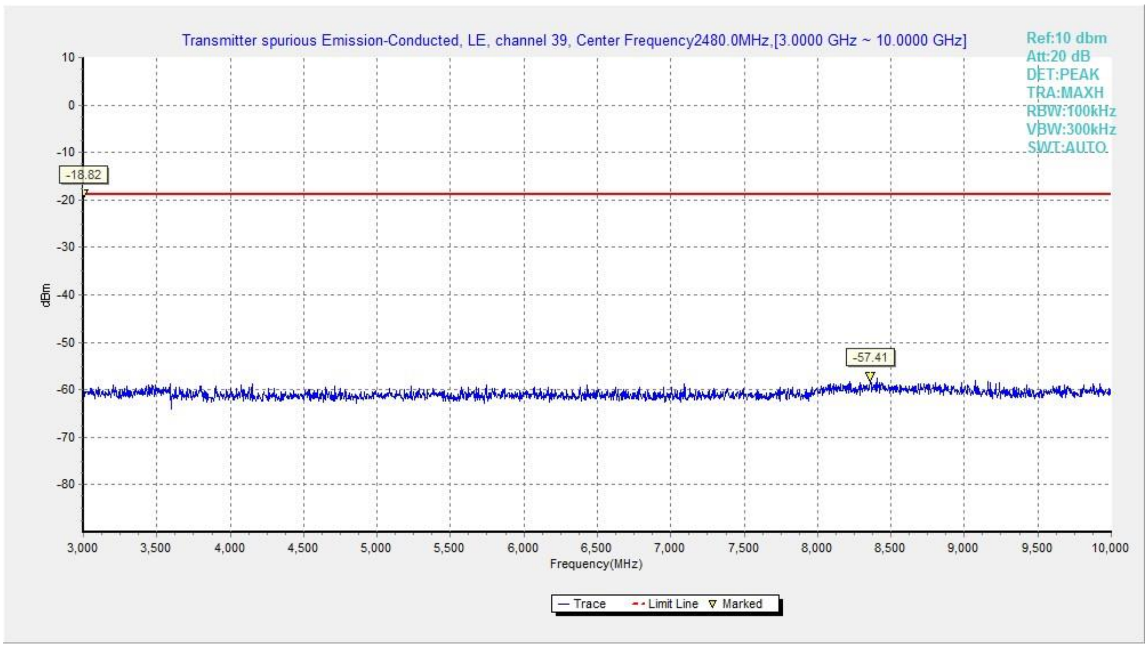


Fig.16. Transmitter Spurious Emission - Conducted: GFSK, 2480 MHz, 3GHz - 10GHz

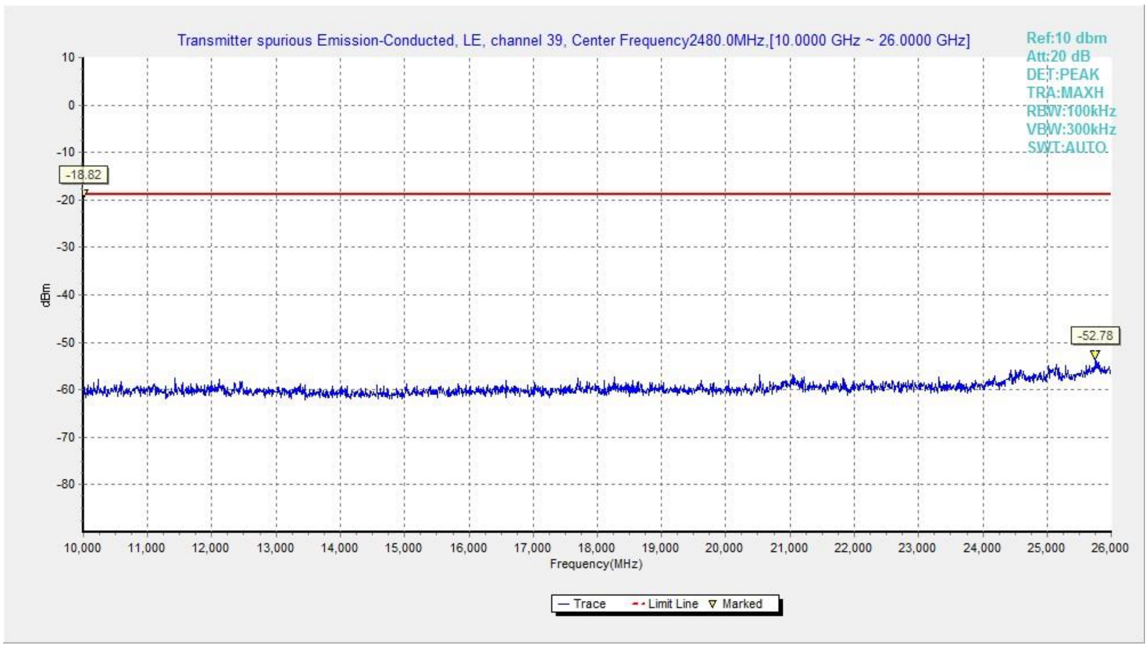


Fig.17. Transmitter Spurious Emission - Conducted: GFSK, 2480 MHz, 10GHz - 26GHz

A.5. Transmitter Spurious Emission - Radiated

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247, 15.205, 15.209	20dB below peak output power

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

The measurement is made according to ANSI C63.10

Limit in restricted band:

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Test Condition

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	100KHz/300KHz	5
1000-4000	1MHz/1MHz	15
4000-18000	1MHz/1MHz	40
18000-26500	1MHz/1MHz	20

Measurement Results:

A "reference path loss" is established and the A_{Rpl} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable los.

The measurement results are obtained as described below:

Result=P_{Mea}+A_{Rpl}

For GFSK

Frequency	Frequency Range	Test Results	Conclusion
2402 MHz	1 GHz ~ 3 GHz	Fig.18	P
	3 GHz ~ 18 GHz	Fig.19	P
2441 MHz	30 MHz ~ 1 GHz	Fig.20	P
	1 GHz ~ 3 GHz	Fig.21	P
	3 GHz ~ 18 GHz	Fig.22	P
2480 MHz	1 GHz ~ 3 GHz	Fig.23	P

	3 GHz ~ 18 GHz	Fig.24	P
Power	2.38GHz~2.4GHz---L	Fig.25	P
Power	2.45GHz~2.5GHz---H	Fig.26	P
For all channels	18 GHz ~ 26.5 GHz	Fig.27	P

GFSK 2402MHz–Average

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2383.800	46.2	2.9	32.0	11.3	54.0	7.8	H
2389.100	46.2	2.9	32.0	11.3	54.0	7.8	H
4804.000	28.1	-32.9	34.5	26.4	54.0	25.9	H
7206.000	30.5	-31.6	36.1	26.0	54.0	23.5	H
9608.000	33.1	-30.0	37.0	26.2	54.0	20.9	H
12010.000	35.7	-29.8	39.3	26.2	54.0	18.3	H

GFSK 2440MHz–Average

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2340.500	46.5	2.8	31.5	12.2	54.0	7.5	H
2542.800	46.8	3.0	33.0	10.8	54.0	7.2	H
4882.000	28.5	-32.7	34.5	26.7	54.0	25.5	H
7323.000	30.4	-31.9	36.1	26.3	54.0	23.6	H
9764.000	32.9	-30.6	37.2	26.3	54.0	21.1	H
12205.000	35.5	-29.4	39.2	25.8	54.0	18.5	H

GFSK 2480MHz–Average

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2483.500	47.1	2.9	32.8	11.4	54.0	6.9	H
2485.200	46.9	2.9	32.7	11.3	54.0	7.1	H
4960.000	27.6	-33.4	34.5	26.4	54.0	26.4	H
7440.000	30.2	-31.8	36.0	26.0	54.0	23.8	H
9920.000	34.0	-29.9	37.4	26.5	54.0	20.0	H
12400.000	35.0	-29.5	39.1	25.4	54.0	19.0	H

GFSK 2402MHz–Peak

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2385.054	59.8	2.9	32.0	24.9	74.0	14.2	H
2387.532	59.6	2.9	32.0	24.8	74.0	14.4	H
17809.500	53.3	-23.0	41.0	35.4	74.0	20.7	V
17813.250	53.2	-23.0	40.9	35.3	74.0	20.8	V

17805.750	52.8	-23.1	41.0	34.9	74.0	21.2	H
17814.000	52.7	-23.1	40.9	34.8	74.0	21.3	H

GFSK 2440MHz–Peak

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2323.400	48.6	-27.7	31.2	45.2	74.0	25.4	H
2548.800	51.6	-26.8	33.1	45.3	74.0	22.4	V
17797.500	53.2	-23.2	41.0	35.4	74.0	20.8	H
17817.750	52.9	-23.1	40.9	35.1	74.0	21.1	H
17807.250	52.7	-23.0	41.0	34.8	74.0	21.3	V
17810.250	52.5	-23.0	41.0	34.6	74.0	21.5	V

GFSK 2480MHz–Peak

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2491.940	60.5	2.9	32.5	25.0	74.0	13.5	H
2494.780	60.1	2.9	32.4	24.7	74.0	13.9	V
17809.500	53.1	-23.0	41.0	35.2	74.0	20.9	H
17800.500	52.6	-23.1	41.0	34.8	74.0	21.4	H
17816.250	52.4	-23.1	40.9	34.5	74.0	21.6	H
17814.750	52.3	-23.1	40.9	34.4	74.0	21.7	V

Conclusion: PASS

Test graphs as below:

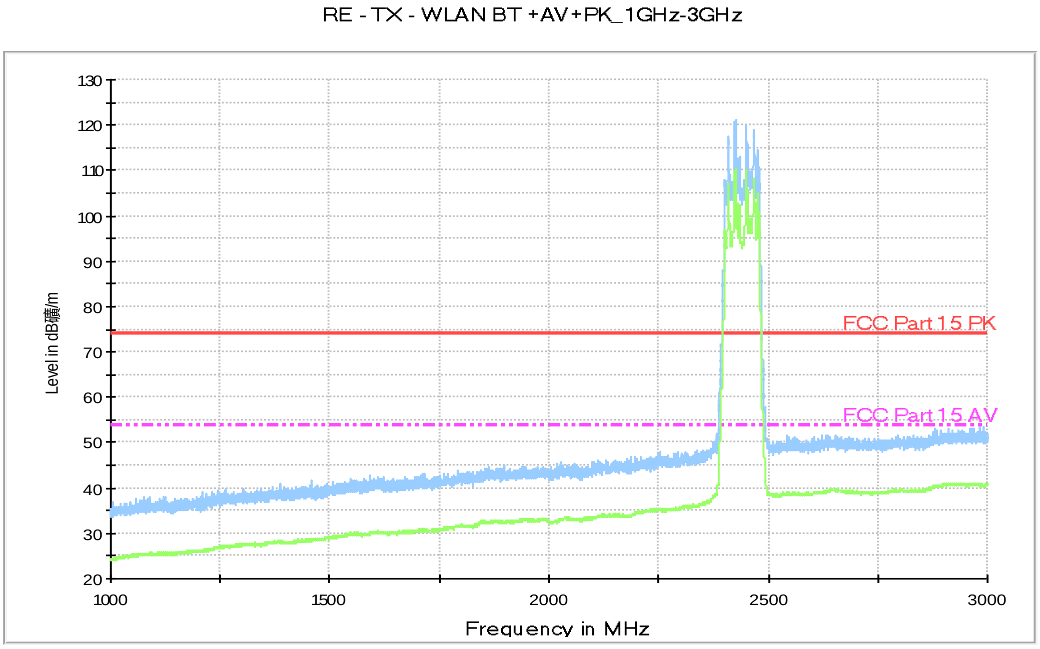


Fig.18. Transmitter Spurious Emission - Radiated: GFSK, 2402MHz, 1 GHz - 3GHz

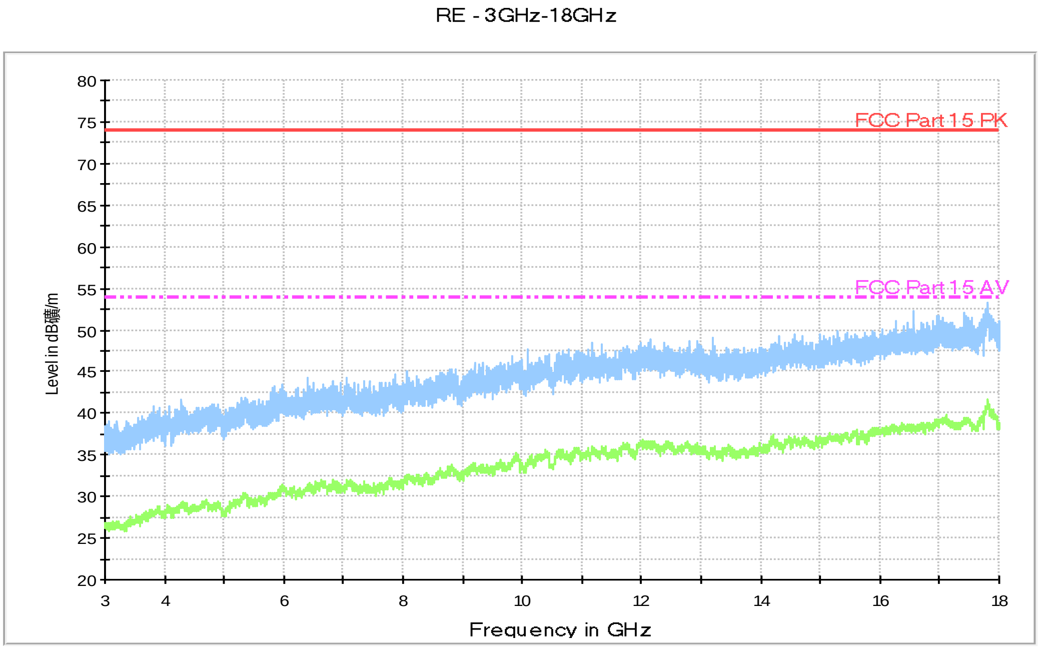


Fig.19. Transmitter Spurious Emission - Radiated: GFSK, 2402MHz, 3 GHz - 18 GHz

RE 30MHz-1GHz

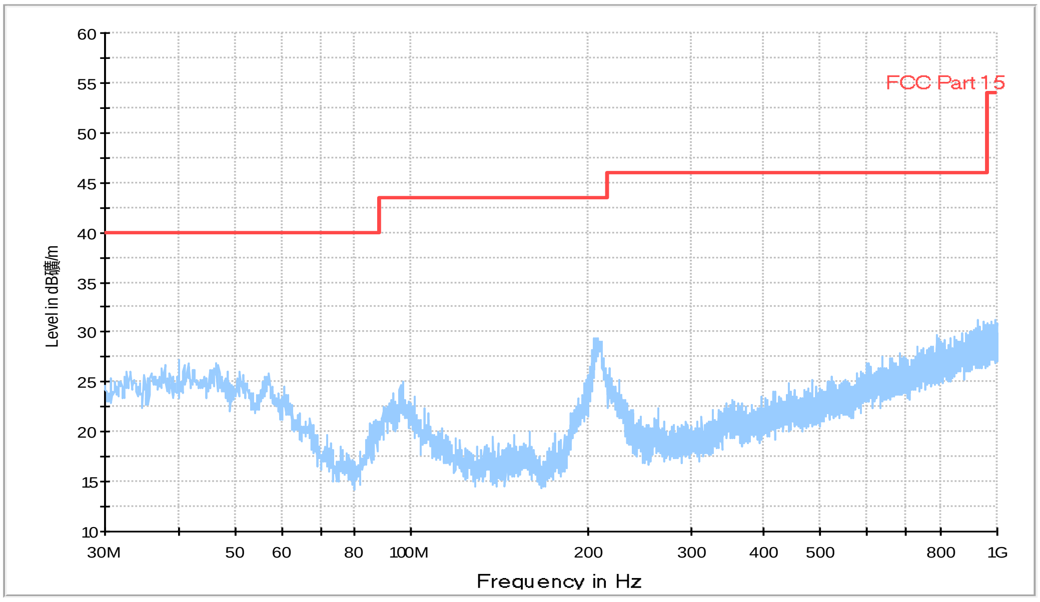


Fig.20. Transmitter Spurious Emission - Radiated: GFSK, 2440MHz, 30 MHz - 1 GHz

RE - TX - WLAN BT +AV+PK_1GHz-3GHz

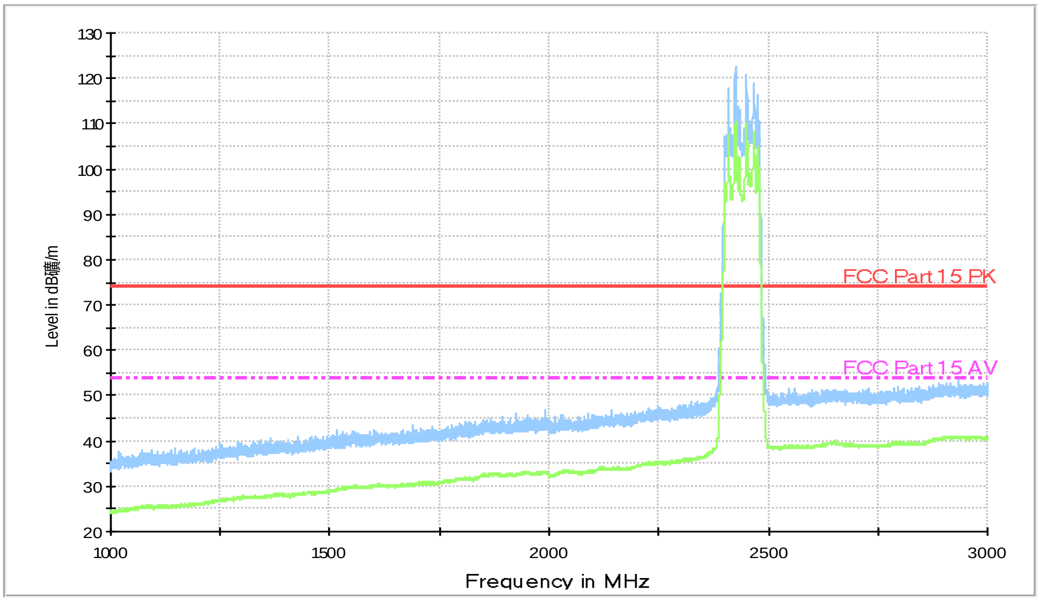


Fig.21. Transmitter Spurious Emission - Radiated: GFSK, 2440MHz, 1 GHz - 3 GHz

RE - 3GHz-18GHz

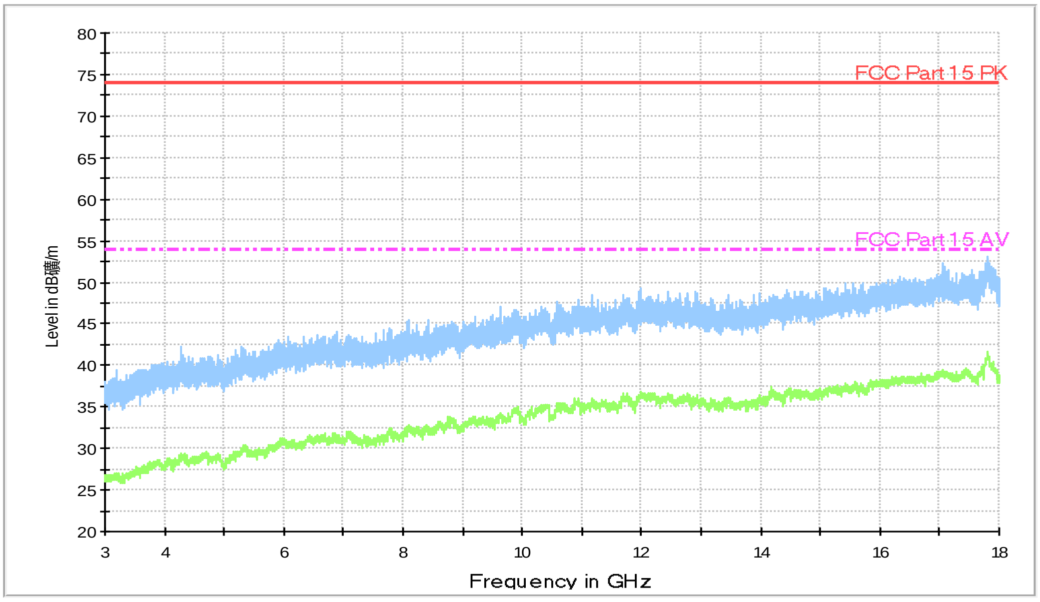


Fig.22. Transmitter Spurious Emission - Radiated: GFSK, 2440MHz, 3 GHz - 18 GHz

RE - TX - WLAN BT +AV+PK_1GHz-3GHz

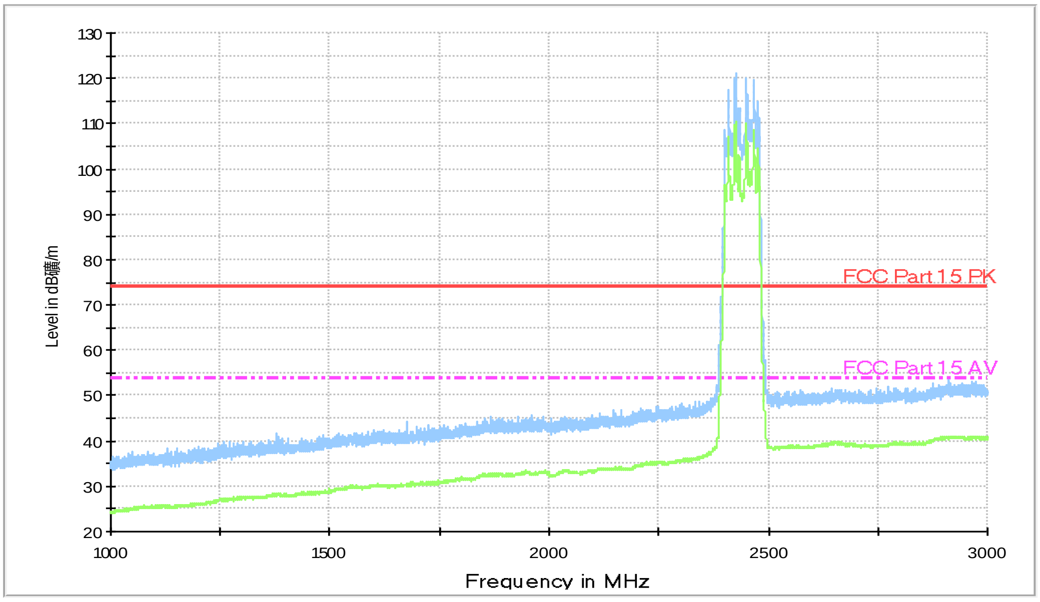


Fig.23. Transmitter Spurious Emission - Radiated: GFSK, 2480MHz, 1 GHz - 3 GHz

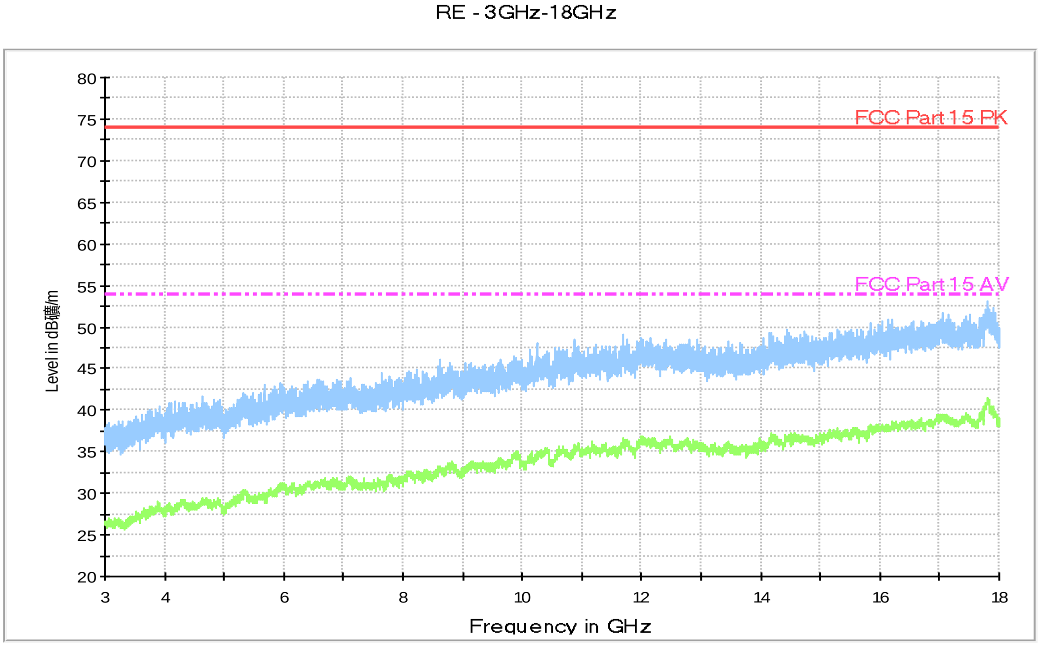


Fig.24. Transmitter Spurious Emission - Radiated: GFSK, 2480MHz, 3 GHz - 18 GHz

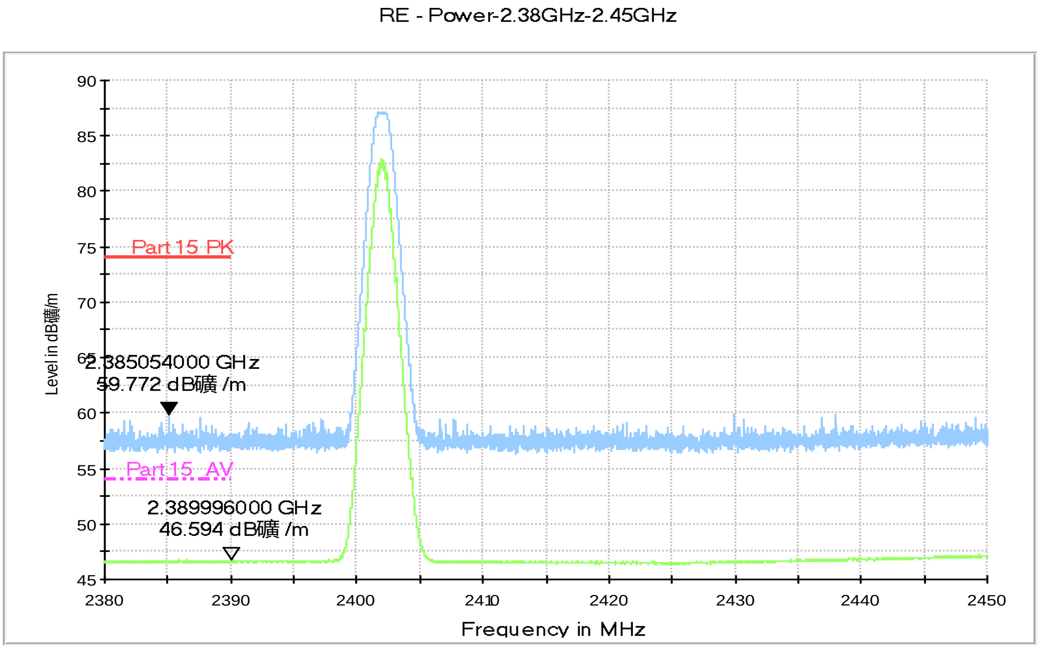


Fig.25. Transmitter Spurious Emission - Radiated (Power): GFSK low channel

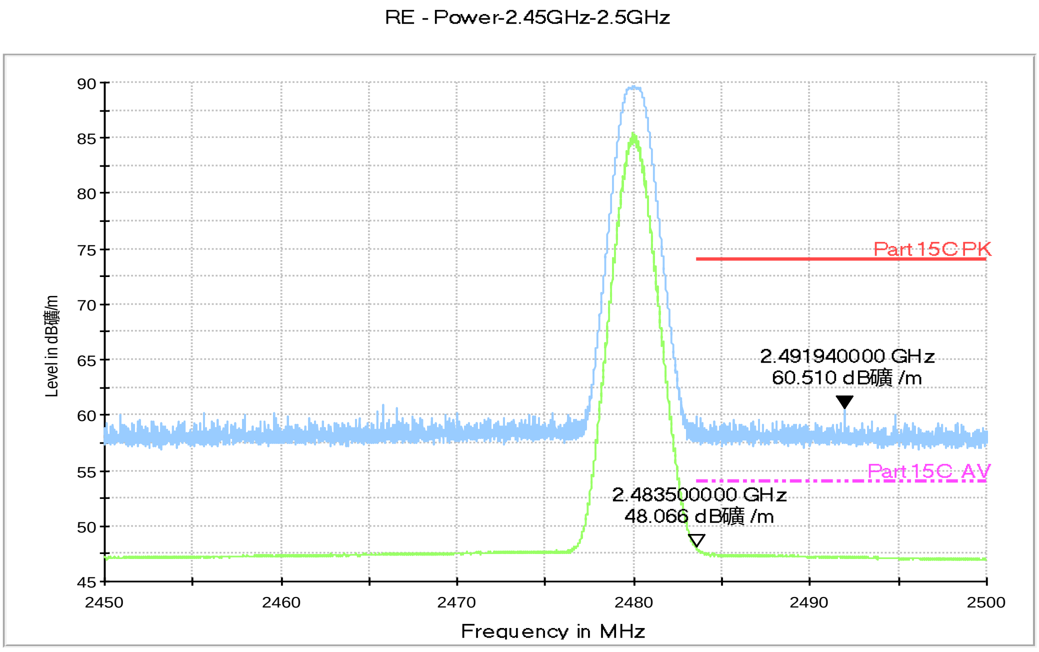


Fig.26. Transmitter Spurious Emission - Radiated (Power): GFSK high channel

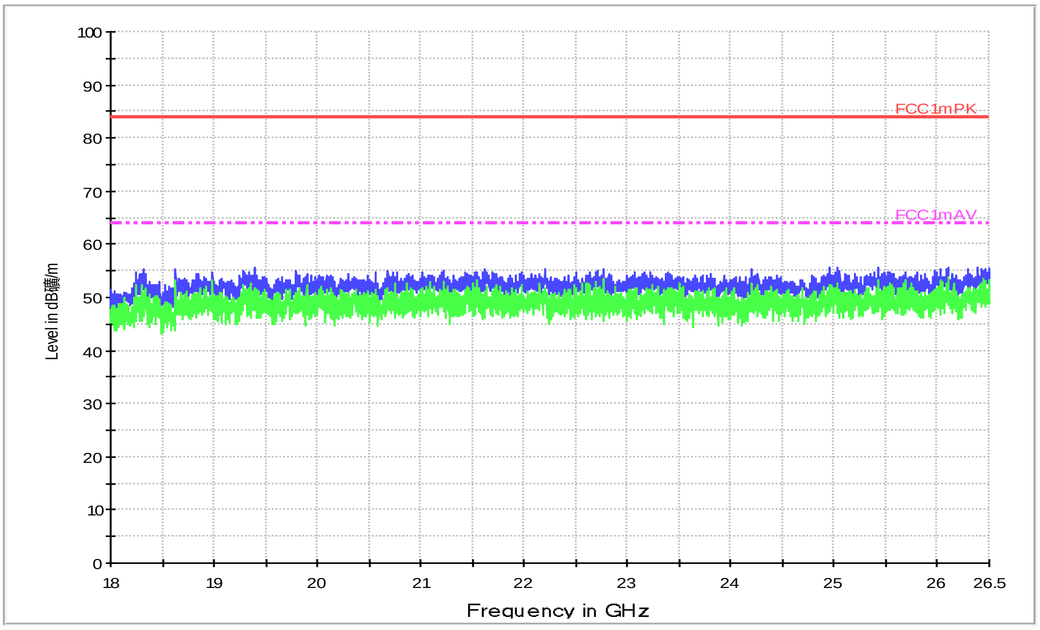


Fig.27. Transmitter Spurious Emission - Radiated: GFSK, 18 GHz - 26 GHz

A.6. 6dB Bandwidth

Method of Measurement:

The measurement is made according to ANSI C63.10 clause 11.8.1

1.Set RBW = 100 kHz.

2. Set the video bandwidth (VBW) = 300 kHz.

3. Detector = Peak.

4. Trace mode = max hold.

5. Sweep = auto couple.

6. Allow the trace to stabilize.

7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247(a)(2)	>= 500KHz

Measurement Results:

For GFSK

Channel No.	Frequency (MHz)	6dB Bandwidth (kHz)		Conclusion
0	2402	Fig.28	672.00	P
19	2440	Fig.29	665.50	P
39	2480	Fig.30	668.50	P

Conclusion: PASS

Test graphs as below:

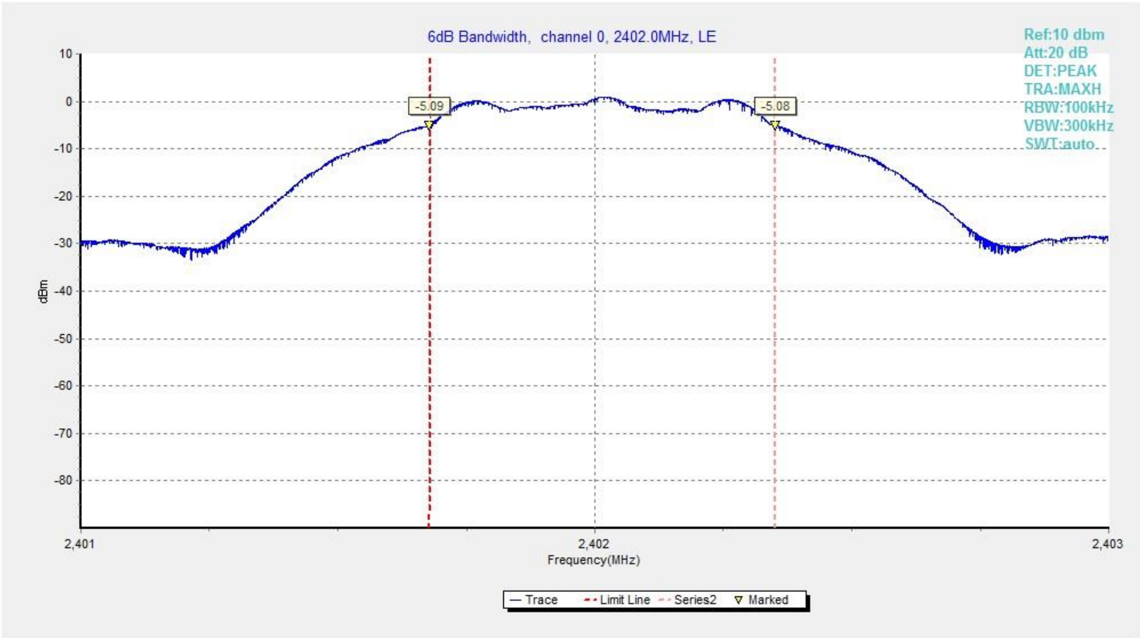


Fig.28. 6dB Bandwidth: GFSK, 2402 MHz

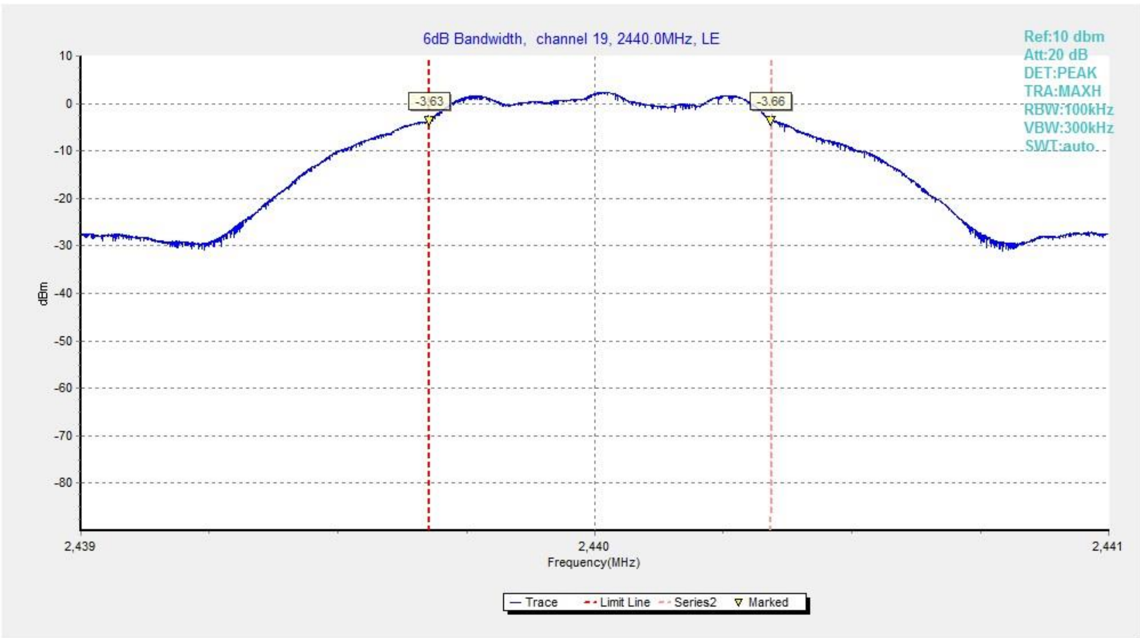


Fig.29. 6dB Bandwidth: GFSK, 2440 MHz

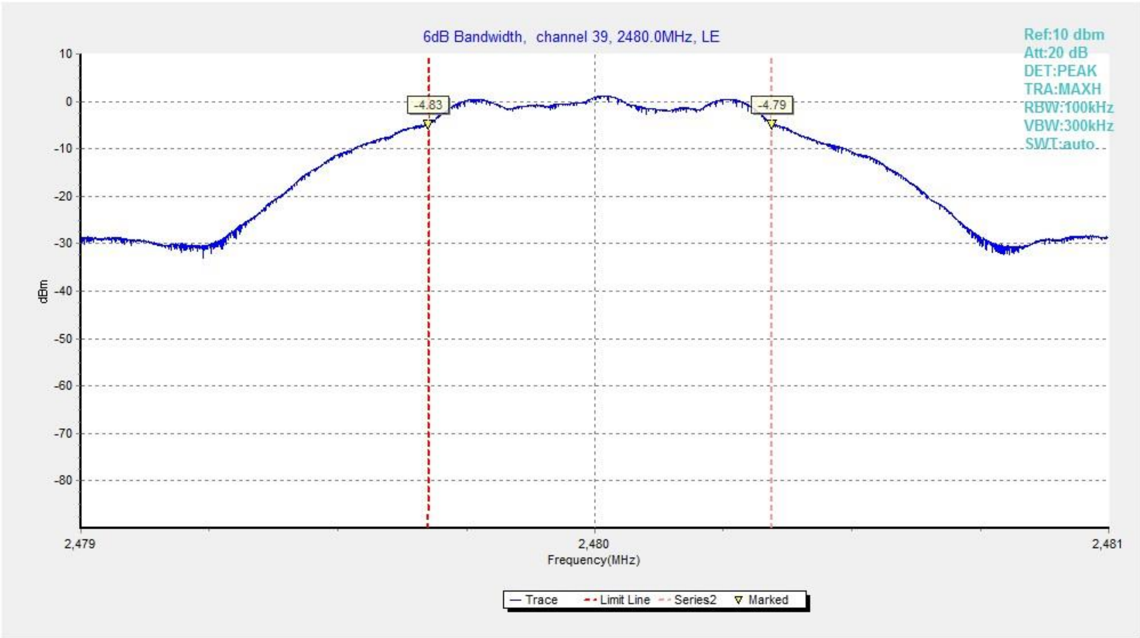


Fig.30. 6dB Bandwidth: GFSK, 2480 MHz

A.7. Maximum Power Spectral Density Level

Method of Measurement:

The measurement is made according to ANSI C63.10 clause 11.10.2

1. Set the RBW = 3 kHz.
2. Set the VBW = 10 kHz.
3. Set the span to 2 times the DTS bandwidth.
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level within the RBW.

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247(e)	<=8.0dBm/3kHz

Measurement Results:

For GFSK

Channel No.	**Frequency (MHz)**	**Maximum Power Spectral Density Level(dBm/3kHz)**		**Conclusion**
0	2402	Fig.31	-14.13	P
19	2440	Fig.32	-12.62	P
39	2480	Fig.33	-13.84	P

Test graphs as below:

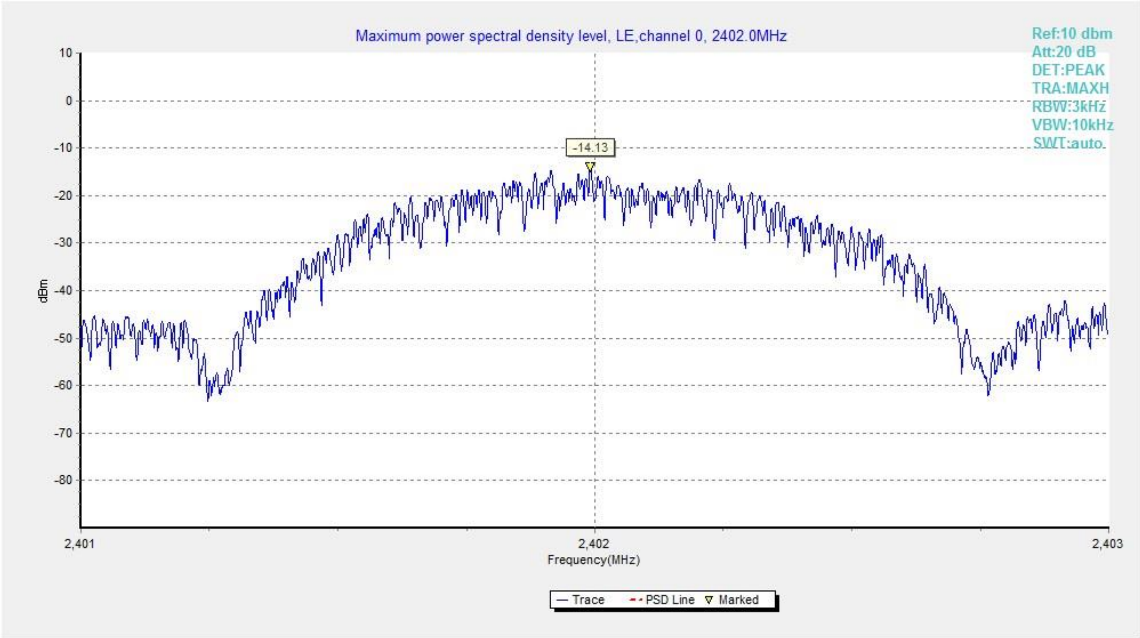


Fig.31. Maximum Power Spectral Density Level Function: GFSK, 2402 MHz

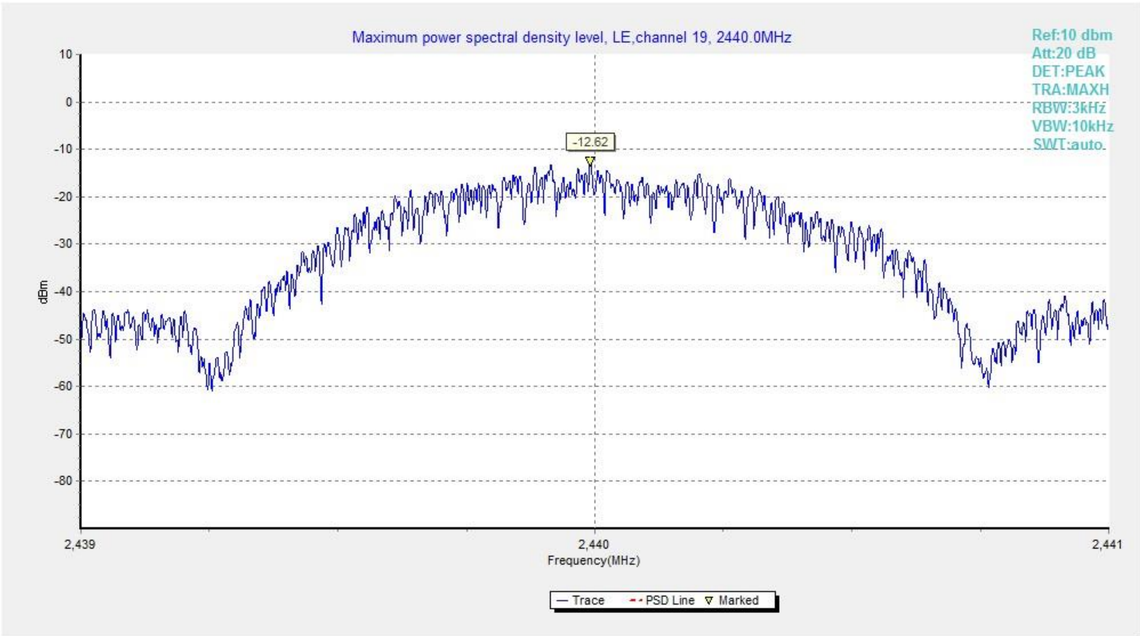


Fig.32. Maximum Power Spectral Density Level Function: GFSK, 2440 MHz

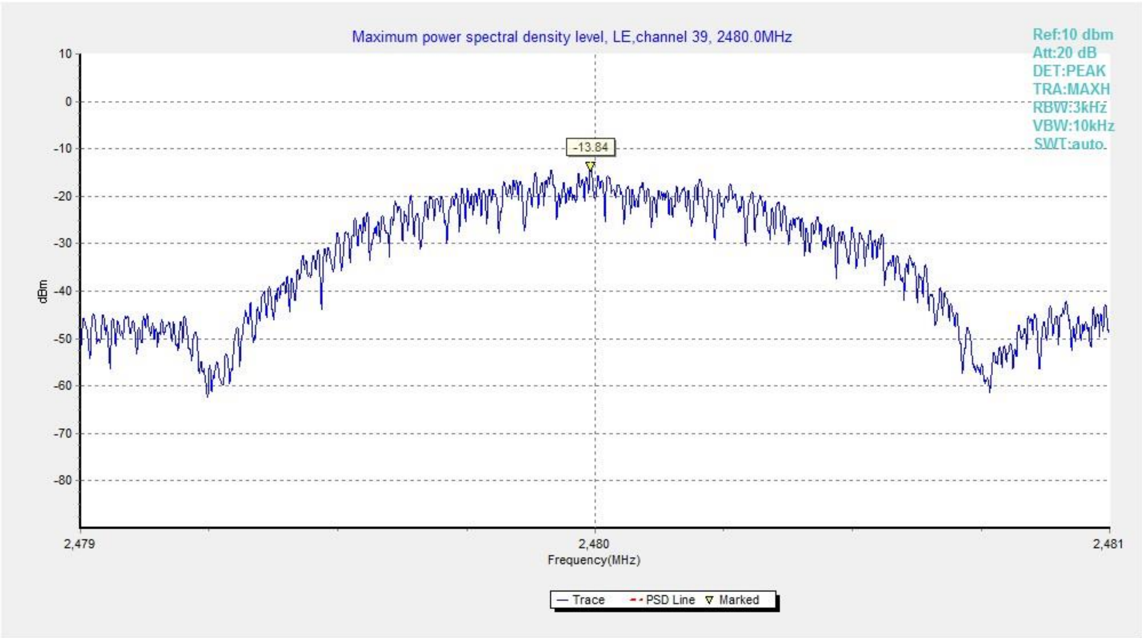


Fig.33. Maximum Power Spectral Density Level Function: GFSK, 2480 MHz

A.8. AC Powerline Conducted Emission

Method of Measurement: See ANSI C63.10-clause 6.2

1. the one EUT cable configuration and arrangement and mode of operation that produced the emission with the highest amplitude relative to the limit is selected for the final measurement, while applying the appropriate modulating signal to the EUT.
2. If the EUT is relocated from an exploratory test site to a final test site, the highest emissions shall be remaximized at the final test location before final ac power-line conducted emission measurements are performed.
3. The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment in the system) is then performed for the full frequency range for which the EUT is being tested for compliance without further variation of the EUT arrangement, cable positions, or EUT mode of operation.
4. If the EUT is comprised of equipment units that have their own separate ac power connections, e.g., floor-standing equipment with independent power cords for each shelf that are able to connect directly to the ac power network, each current-carrying conductor of one unit is measured while the other units are connected to a second (or more) LISN(s). All units shall be separately measured. If a power strip is provided by the manufacturer, to supply all of the units making up the EUT, only the conductors in the power cord of the power strip shall be measured.
5. If the EUT uses a detachable antenna, these measurements shall be made with a suitable dummy load connected to the antenna output terminals; otherwise, the tests shall be made with the antenna connected and, if adjustable, fully extended. When measuring the ac conducted emissions from a device that operates between 150 kHz and 30 MHz a non-detachable antenna may be replaced with a dummy load for the measurements within the fundamental emission band of the transmitter, but only for those measurements.36 Record the six highest EUT emissions relative to the limit of each of the current-carrying conductors of the power cords of the equipment that comprises the EUT over the frequency range specified by the procuring or regulatory agency. Diagram or photograph the test setup that was used. See Clause 8 for full reporting requirements.

Test Condition

Voltage（V）	Frequency（Hz）
120	60

Measurement Result and limit:

Bluetooth (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Conclusion
0.15 to 0.5	66 to 56	P
0.5 to 5	56	
5 to 30	60	
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.		

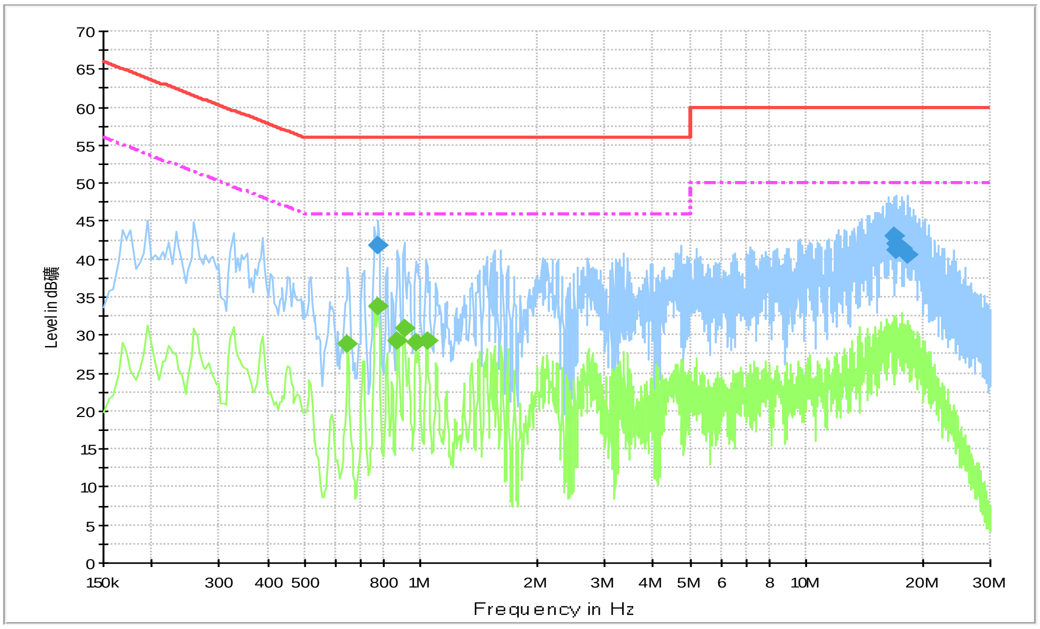
Bluetooth (Average Limit)

Frequency range (MHz)	Average Limit (dBμV)	Conclusion
0.15 to 0.5	56 to 46	P
0.5 to 5	46	
5 to 30	50	
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.		

Conclusion: PASS

Test graphs as below:

Traffic:



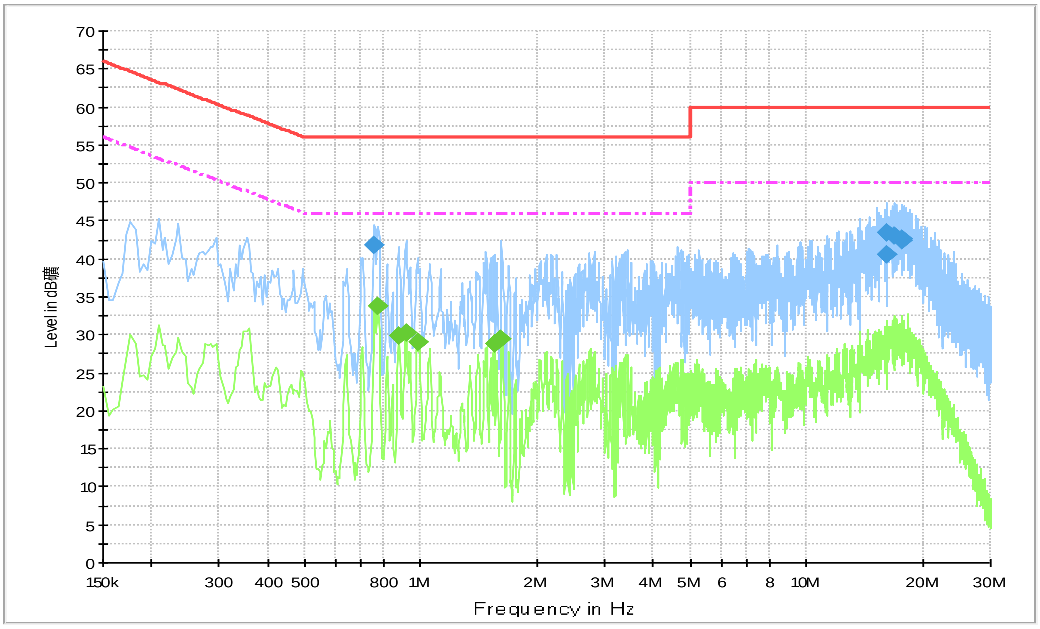
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.775500	41.8	GND	L1	10.7	14.2	56.0
16.971000	43.1	GND	L1	11.2	16.9	60.0
17.025000	41.9	GND	L1	11.2	18.1	60.0
17.088000	41.2	GND	L1	11.2	18.8	60.0
17.673000	41.3	GND	L1	11.2	18.7	60.0
18.321000	40.5	GND	L1	11.2	19.5	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.645000	28.8	GND	L1	10.7	17.2	46.0
0.775500	33.8	GND	L1	10.7	12.2	46.0
0.870000	29.2	GND	L1	10.7	16.8	46.0
0.906000	30.9	GND	L1	10.7	15.1	46.0
0.973500	29.1	GND	L1	10.7	16.9	46.0
1.036500	29.1	GND	L1	10.7	16.9	46.0

Idle:



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.757500	41.9	GND	L1	10.7	14.1	56.0
16.147500	43.4	GND	L1	11.2	16.6	60.0
16.197000	40.5	GND	L1	11.2	19.5	60.0
16.845000	43.0	GND	L1	11.2	17.0	60.0
17.695500	42.5	GND	L1	11.2	17.5	60.0
17.763000	42.5	GND	L1	11.2	17.5	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.775500	33.7	GND	L1	10.7	12.3	46.0
0.874500	29.8	GND	L1	10.7	16.2	46.0
0.915000	30.2	GND	L1	10.7	15.8	46.0
0.982500	29.0	GND	L1	10.7	17.0	46.0
1.549500	28.9	GND	L1	10.7	17.1	46.0
1.617000	29.4	GND	L1	10.7	16.6	46.0

*****END OF REPORT*****