FCC Test Report

Product Name	WCDMA/LTE Mobile Phone
Model No	EA211101
FCC ID.	RYQEA211101

Applicant	FIH CO., LTD.
Address	No.4, Minsheng St., Tu-Cheng Dist., New Taipei City 23679, Taiwan

Date of Receipt	May. 28, 2021
Issue Date	Jun. 16, 2021
Report No.	2150946R-E3032110113
Report Version	V1.0

Testing Laboratory
3023

The test results relate only to the samples tested.
The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
This report must not be used to claim product endorsement by TAF or any agency of the government.
The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.
Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test Report

Issue Date: Jun. 16, 2021
Report No.: 2150946R-E3032110113

Product Name	WCDMA/LTE Mobile Phone
Applicant	FIH CO., LTD.
Address	No.4, Minsheng St., Tu-Cheng Dist., New Taipei City 23679, Taiwan
Manufacturer	FIH CO., LTD.
Model No.	EA211101
FCC ID.	RYQEA211101
EUT Rated Voltage	DC 5V, 550mA
EUT Test Voltage	AC 120V / 60Hz
Trade Name	FIH
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C ANSI C63.4: 2014, ANSI C63.10: 2013
Test Result	Complied

Documented By : April Chen

(Senior Adm. Specialist / April Chen)

Tested By : Ivan Chuang

(Senior Engineer / Ivan Chuang)

Approved By : Jack Hsu

(Senior Engineer / Jack Hsu)

TABLE OF CONTENTS

	Description	Page
1.	**GENERAL INFORMATION**	**6**
1.1.	EUT Description	6
1.2.	Tested System Details	8
1.3.	Configuration of Tested System	8
1.4.	EUT Exercise Software	8
1.5.	Test Facility	9
1.6.	List of Test Item and Equipment	10
1.7.	Uncertainty	11
2.	**Conducted Emission**	**12**
2.1.	Test Setup	12
2.2.	Limits	12
2.3.	Test Procedure	12
2.4.	Test Result of Conducted Emission	13
3.	**Peak Power Output**	**15**
3.1.	Test Setup	15
3.2.	Limits	15
3.3.	Test Procedure	15
3.4.	Test Result of Peak Power Output	16
4.	**Radiated Emission**	**19**
4.1.	Test Setup	19
4.2.	Limits	20
4.3.	Test Procedure	21
4.4.	Test Result of Radiated Emission	23
5.	**RF antenna conducted test**	**43**
5.1.	Test Setup	43
5.2.	Limits	43
5.3.	Test Procedure	43
5.4.	Test Result of RF antenna conducted test	44
6.	**Band Edge**	**47**
6.1.	Test Setup	47
6.2.	Limits	48
6.3.	Test Procedure	48
6.4.	Test Result of Band Edge	50
7.	**6dB Bandwidth**	**74**
7.1.	Test Setup	74
7.2.	Limits	74
7.3.	Test Procedure	74
7.4.	Test Result of 6dB Bandwidth	75
8.	**Power Density**	**81**
8.1.	Test Setup	81

8.2. Limits 81
8.3. Test Procedure 81
8.4. Test Result of Power Density 82

9. Duty Cycle 88

9.1. Test Setup 88
9.2. Test Procedure 88
9.3. Test Result of Duty Cycle....89

10. EMI Reduction Method During Compliance Testing 91

Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

Revision History

Report No.	Version	Description	Issued Date
2150946R-E3032110113	V1.0	Initial issue of report.	2021-06-16

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	WCDMA/LTE Mobile Phone
Trade Name	FIH
Model No.	EA211101
FCC ID.	RYQEA211101
Frequency Range	2412-2462MHz for 802.11b/g/n-20BW
Number of Channels	802.11b/g/n-20MHz: 11
Data Speed	802.11b: 1-11Mbps, 802.11g: 6-54Mbps, 802.11n: up to 72.2Mbps
Channel separation	802.11b/g/n: 5 MHz
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK) 802.11g/n:OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type	PIFA Antenna
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
Power Adapter	MFR: Baijunda, M/N: XT-252A-5055 Input: AC 100-240V, 50-60Hz 0.15A Output: DC 5V, 550mA 2.75W Cable Out: Non-shielded, 1m

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	SPEED	S0AF2ACC0A6	PIFA Antenna	1.83dBi for 2.4GHz

Note: The antenna of EUT is conforming to FCC 15.203.

802.11b/g/n-20MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz		

Note:

1. The EUT is an WCDMA/LTE Mobile Phone with built-in WLAN (802.11b/g/n) with Bluetooth V4.0、V2.1+EDR transceiver, this report for 2.4GHz WLAN.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11b is 1Mbps、802.11g is 6Mbps、802.11n(20M-BW) is 7.2Mbps)
4. These tests are conducted on a sample for the purpose of demonstrating compliance of transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.

Test Mode:	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit (802.11n-20MBW 7.2Mbps)

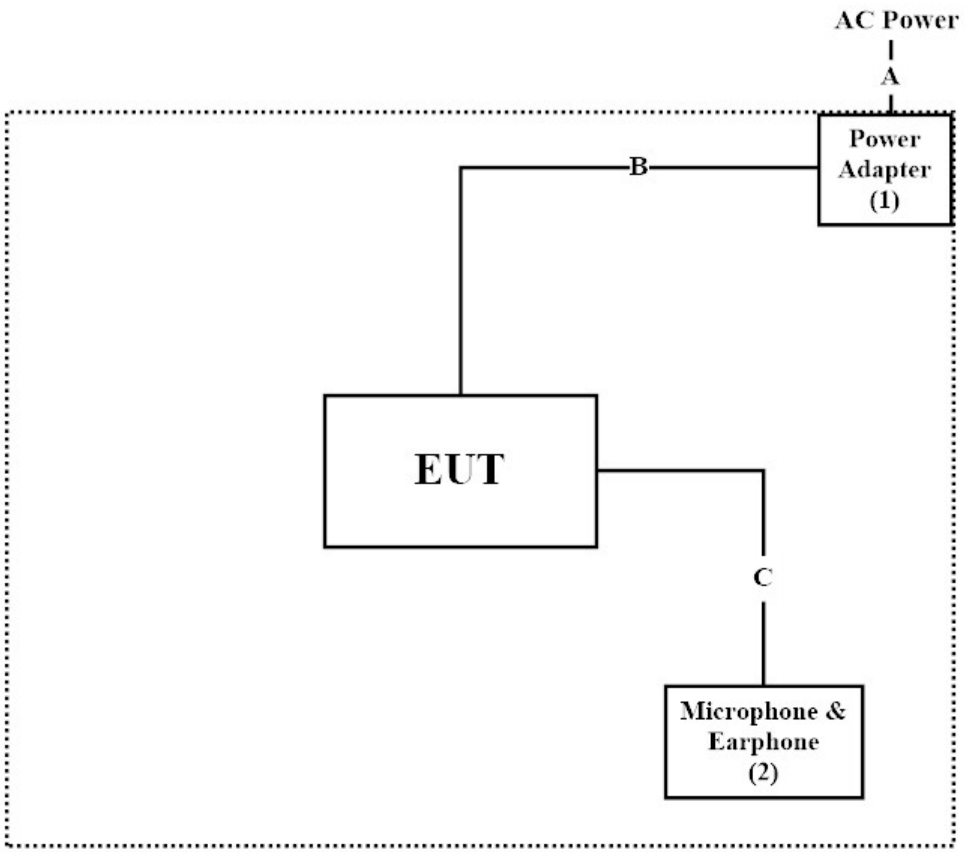
1.2. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Power Adapter	Baijunda	XT-252A-5055	N/A	N/A
2	Microphone & Earphone	Verbatim	C09024VB	N/A	N/A

Signal Cable Type		Signal cable Description
A	Power Cable	Non-shielded, 1.8m
B	Power Cable	Non-shielded, 1m
C	Audio Cable	Non-shielded, 1.2m

1.3. Configuration of Tested System



1.4. EUT Exercise Software

1. Setup the EUT as shown in Section 1.4.
2. Execute software “QCARCT v3.0.303.0” on the EUT.
3. Configure the test mode, the test channel, and the data rate.
4. Press “OK” to start the continuous Transmit.
5. Verify that the EUT works properly.

1.5. Test Facility

Ambient conditions in the laboratory:

Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	10~40 °C	23.2°C
	Humidity (%RH)	10~90 %	60.3%
Radiated Emission	Temperature (°C)	10~40 °C	25°C
	Humidity (%RH)	10~90 %	62%
Conductive	Temperature (°C)	10~40 °C	22°C
	Humidity (%RH)	10~90 %	55%

USA : FCC Registration Number: TW1014

Canada : IC Registration Number: 26930

Site Description : Accredited by TAF
Accredited Number: 3023

Test Laboratory : DEKRA Testing and Certification Co., Ltd
Address : No. 26, Huaya 1st Rd., Guishan Dist., Taoyuan City
Phone number : 886-2-2602-7968
Fax number : 866-2-2602-3286
Email address : info.tw@dekra.com
Website : http://www.dekra.com.tw

1.6. List of Test Item and Equipment

For Conduction measurements /SH1

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	EMI Test Receiver	R&S	ESR7	101601	2021.01.04	2022.01.03
X	Two-Line V-Network	R&S	ENV216	101306	2021.04.08	2022.04.07
X	Two-Line V-Network	R&S	ENV216	101307	2020.04.17	2021.04.16
X	Coaxial Cable	DEKRA	RG400_BNC	RF001	2021.05.24	2022.05.23

Note:
1. All equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version : DEKRA Testing System V2.0.

For Conducted measurements /SH2

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	Spectrum Analyzer	R&S	FSV30	103466	2020.12.28	2021.12.27
X	Peak Power Analyzer	KEYSIGHT	8990B	MY51000410	2020.07.01	2021.06.30
X	Wideband Power Sensor	KEYSIGHT	N1923A	MY56080003	2020.07.01	2021.06.30
X	Wideband Power Sensor	KEYSIGHT	N1923A	MY56080004	2020.07.01	2021.06.30

Note:
1. All equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version : DEKRA Conduction Test System V9.0.5.

For Radiated measurements /ACB1

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	Loop Antenna	AMETEK	HLA6121	56736	2021.04.14	2022.04.13
X	Bi-Log Antenna	SCHWARZBECK	VULB9168	9168-678	2020.09.04	2021.09.03
X	Horn Antenna	ETS-Lindgren	3117	00201259	2020.10.23	2021.10.22
X	Horn Antenna	Com-Power	AH-840	101087	2020.06.08	2021.06.07
X	Pre-Amplifier	EMCI	EMC001330	980302	2020.07.08	2021.07.07
X	Pre-Amplifier	EMCI	EMC051835SE	980312	2020.06.10	2021.06.09
X	Pre-Amplifier	EMCI	EMC05820SE	980310	2020.06.24	2021.06.23
X	Pre-Amplifier	EMCI	EMC184045SE	980314	2020.06.10	2021.06.09
X	Filter	MICRO TRONICS	BRM50702	G251	2020.09.17	2021.09.16
	Filter	MICRO TRONICS	BRM50716	G188	2020.09.17	2021.09.16
X	EMI Test Receiver	R&S	ESR	102793	2020.12.17	2021.12.16
X	Spectrum Analyzer	R&S	FSV3044	101113	2021.02.03	2022.02.02
X	Coaxial Cable	SUHNER	SUCOFLEX 106	RF002	2021.03.03	2022.03.02
X	Mircoflex Cable	HUBER SUHNER	SUCOFLEX 102	MY3381/2	2020.06.10	2021.06.09

Note:
1. All equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version : DEKRA Testing System V2.0.

1.7. Uncertainty

Uncertainties have been calculated according to the DEKRA internal document, and is described in each test chapter of this report.

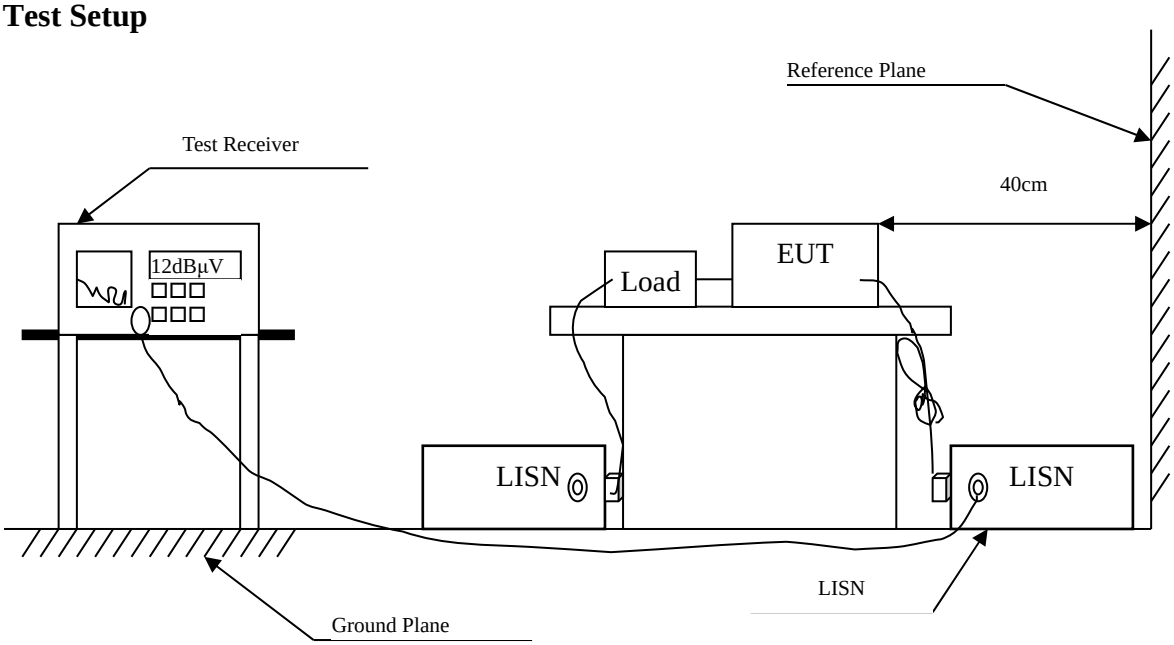
The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test item	**Uncertainty**	
Conducted Emission	±3.42 dB	
Peak Power Output	±0.91 dB	
Radiated Emission	Under 1GHz ±4.06 dB	Above 1GHz ±3.73 dB
RF Antenna Conducted Test	±2.53 dB	
Band Edge	Under 1GHz ±4.06 dB	Above 1GHz ±3.73 dB
6dB Bandwidth	±682.83 Hz	
Power Density	±2.53 dB	
Duty Cycle	±2.31 ms	

2. Conducted Emission

2.1. Test Setup



2.2. Limits

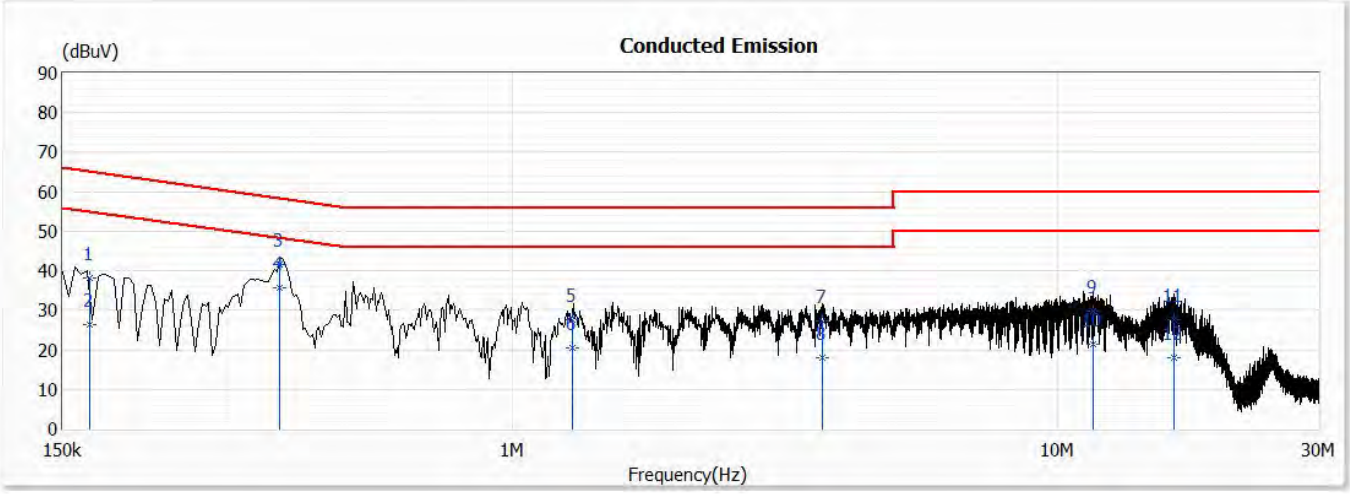
FCC Part 15 Subpart C Paragraph 15.207 (dBµV) Limit		
Frequency MHz	Limits	
	QP	AVG
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

2.3. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)
Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.
Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.4. Test Result of Conducted Emission

Product : WCDMA/LTE Mobile Phone
Test Item : Conducted Emission Test
Power Line : L1
Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2437MHz)
Test Date : 2021/06/08

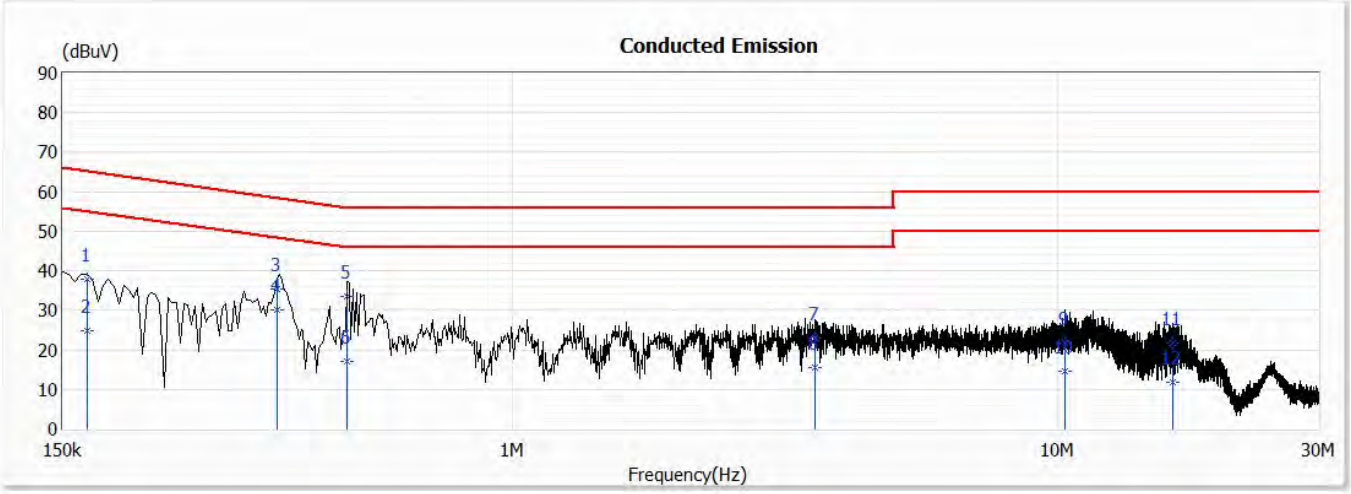


No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.168	38.21	65.07	-26.86	28.55	9.66	QP
2	0.168	26.37	55.07	-28.70	16.71	9.66	AV
3	0.374	41.44	58.42	-16.98	31.78	9.66	QP
*4	0.374	35.59	48.42	-12.83	25.93	9.66	AV
5	1.290	27.76	56.00	-28.24	18.06	9.70	QP
6	1.290	20.37	46.00	-25.63	10.67	9.70	AV
7	3.695	27.45	56.00	-28.55	17.69	9.76	QP
8	3.695	18.08	46.00	-27.92	8.32	9.76	AV
9	11.616	29.91	60.00	-30.09	20.00	9.91	QP
10	11.616	21.46	50.00	-28.54	11.55	9.91	AV
11	16.333	27.54	60.00	-32.46	17.59	9.95	QP
12	16.333	18.13	50.00	-31.87	8.18	9.95	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * " means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Conducted Emission Test
Power Line	:	N
Test Mode	:	Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2437MHz)
Test Date	:	2021/06/08



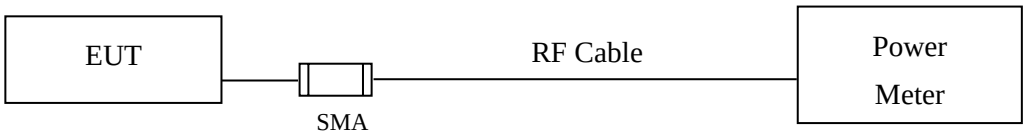
No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.166	37.74	65.14	-27.40	28.07	9.67	QP
2	0.166	24.81	55.14	-30.33	15.14	9.67	AV
3	0.371	35.51	58.48	-22.97	25.84	9.67	QP
*4	0.371	30.02	48.48	-18.46	20.35	9.67	AV
5	0.498	33.39	56.03	-22.64	23.72	9.67	QP
6	0.498	17.07	46.03	-28.96	7.40	9.67	AV
7	3.591	23.08	56.00	-32.92	13.31	9.77	QP
8	3.591	15.55	46.00	-30.45	5.78	9.77	AV
9	10.309	21.75	60.00	-38.25	11.84	9.91	QP
10	10.309	14.54	50.00	-35.46	4.63	9.91	AV
11	16.252	21.80	60.00	-38.20	11.79	10.01	QP
12	16.252	11.75	50.00	-38.25	1.74	10.01	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * " means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3. Peak Power Output

3.1. Test Setup



3.2. Limits

The maximum peak power shall be less 1 Watt.

3.3. Test Procedure

The EUT was tested according to C63.10:2013 for compliance to FCC 47CFR 15.247 requirements. The maximum peak conducted output power using C63.10:2013 Section 11.9.1.3 PKPM1 Peak power meter method. The maximum average conducted output power using C63.10:2013 Section 11.9.2.3 Measurement using a power meter (PM). (Measurement using a gated RF average-reading power meter).

3.4. Test Result of Peak Power Output

Product : WCDMA/LTE Mobile Phone
Test Item : Peak Power Output Data
Test Mode : Mode 1: Transmit (802.11b 1Mbps)
Test Date : 2021/06/08

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11	1		
		Measurement Level (dBm)						
01	2412	16.38	--	--	--	18.91	<30dBm	Pass
06	2437	16.42	16.35	16.31	16.27	19.03	<30dBm	Pass
11	2462	16.05	--	--	--	18.92	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

Product : WCDMA/LTE Mobile Phone
Test Item : Peak Power Output Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps)
Test Date : 2021/06/08

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
01	2412	14.59	--	--	--	--	--	--	--	22.52	<30dBm	Pass
06	2437	14.62	14.58	14.54	14.5	14.45	14.4	14.36	14.32	22.72	<30dBm	Pass
11	2462	14.53	--	--	--	--	--	--	--	22.43	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

Product : WCDMA/LTE Mobile Phone
Test Item : Peak Power Output Data
Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps)
Test Date : 2021/06/08

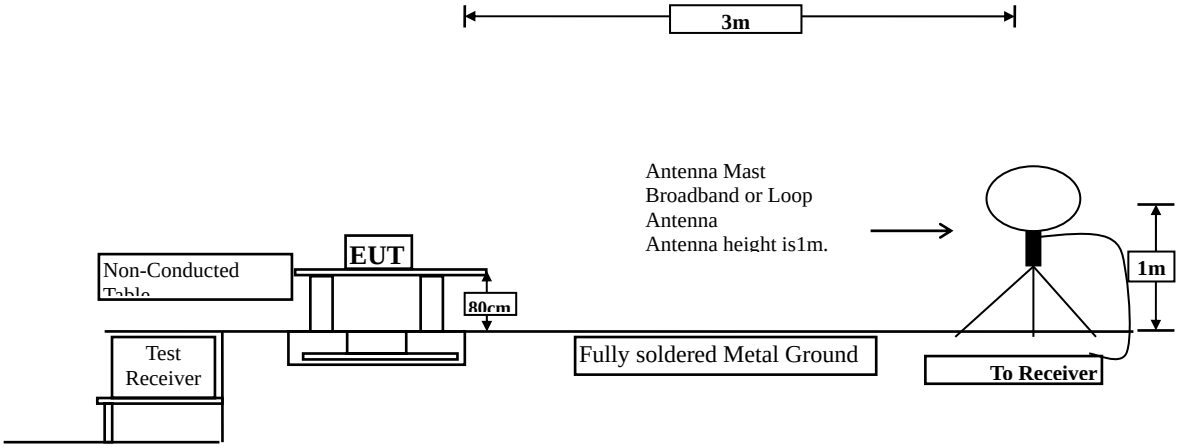
Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		HT8	HT9	HT10	HT11	HT12	HT13	HT14	HT15	HT0		
		Measurement Level (dBm)										
01	2412	12.83	--	--	--	--	--	--	--	21.51	<30dBm	Pass
06	2437	12.64	12.6	12.56	12.51	12.47	12.42	12.38	12.34	21.48	<30dBm	Pass
11	2462	12.66	--	--	--	--	--	--	--	21.49	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

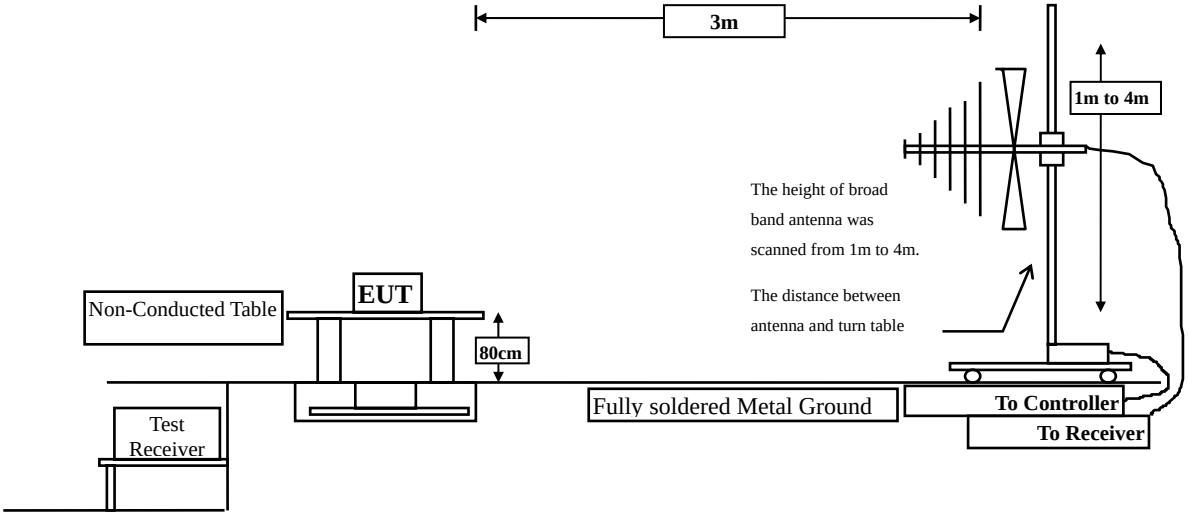
4. Radiated Emission

4.1. Test Setup

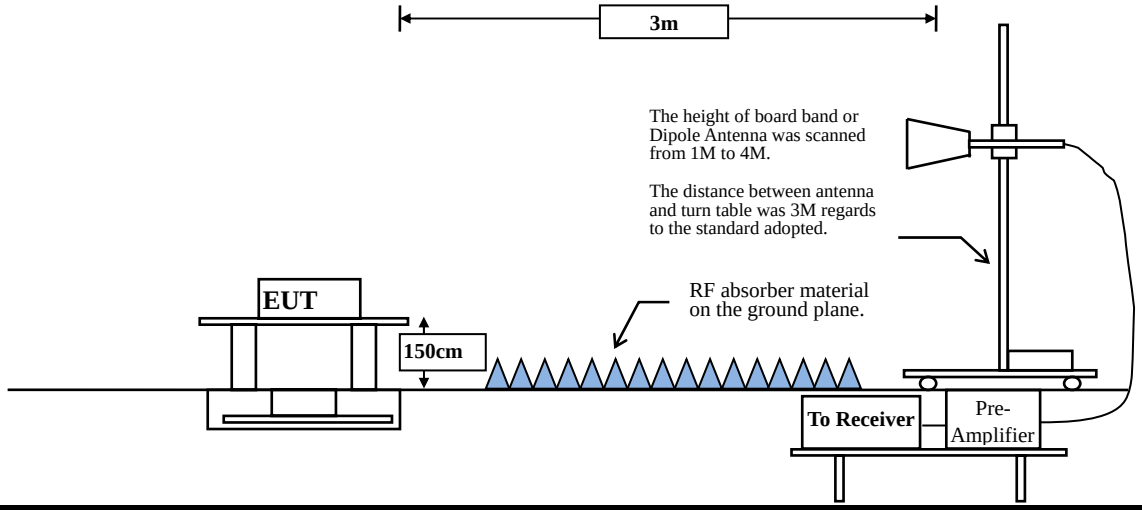
Radiated Emission Under 30MHz



Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.2. Limits

➢ **General Radiated Emission Limits**

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remarks:
1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

4.3. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to C63.10:2013 Section 11.12.1 for compliance to FCC 47CFR 15.247 requirements.

Measuring the frequency range below 1GHz, the EUT is placed on a turn table which is 0.8 meter above ground,when measuring the frequency range above 1GHz, the EUT is placed on a turn table which is 1.5 meter above ground.

The turn table is rotated 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The measurement frequency range form 9kHz - 10th Harmonic of fundamental was investigated.

RBW and VBW Parameter setting:

According to C63.10 Section 11.12.2.4 Peak measurement procedure.

RBW = as specified in Table 1.

VBW ≥ 3 x RBW.

Table 1 —RBW as a function of frequency

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

According to C63.10 Section 11.12.2.5 Average measurement procedure.

RBW = 1MHz.

VBW = 10Hz, when duty cycle ≥ 98 %

VBW ≥ 1/T, when duty cycle < 98 %

(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

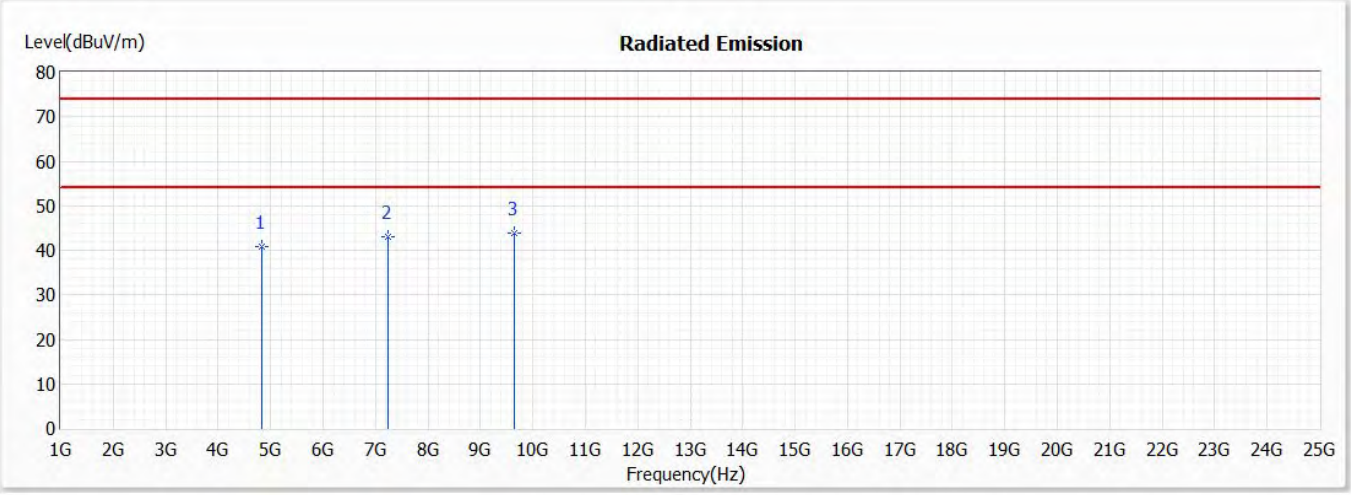
2.4GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11b	97.69	8.2300	122	200
802.11g	86.22	1.3450	743	1000
802.11n20	85.76	1.2650	791	1000

Note: Duty Cycle Refer to Section 9

4.4. Test Result of Radiated Emission

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
Test Date	:	2021/06/03

Horizontal



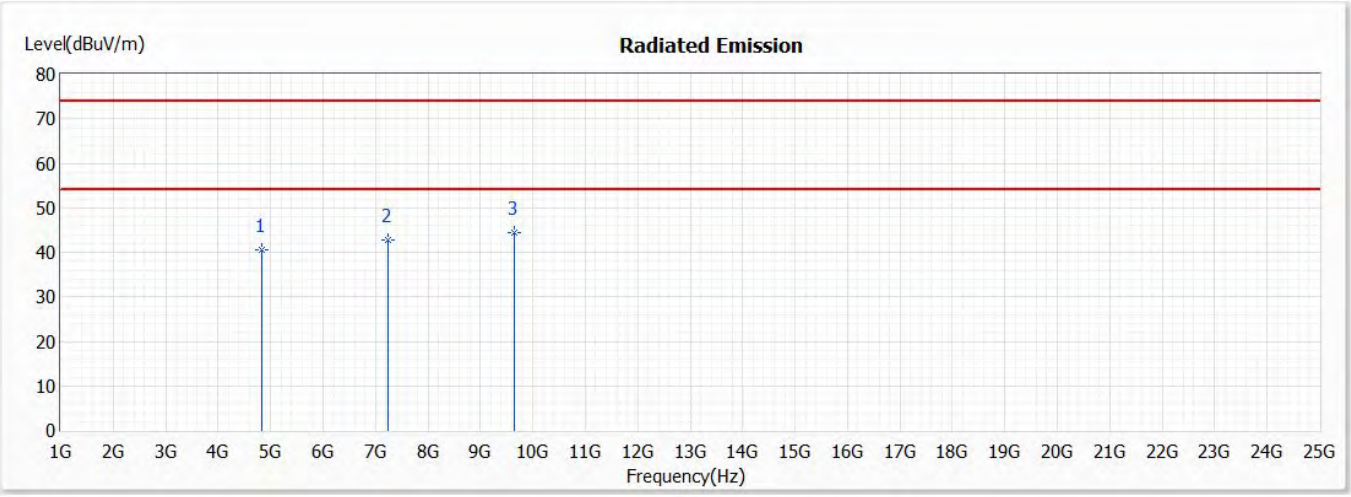
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	4824.000	40.75	74.00	-33.25	40.17	0.58	PK
2	7236.000	43.14	74.00	-30.86	38.40	4.74	PK
* 3	9648.000	43.93	74.00	-30.07	37.00	6.93	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
Test Date	:	2021/06/03

Vertical



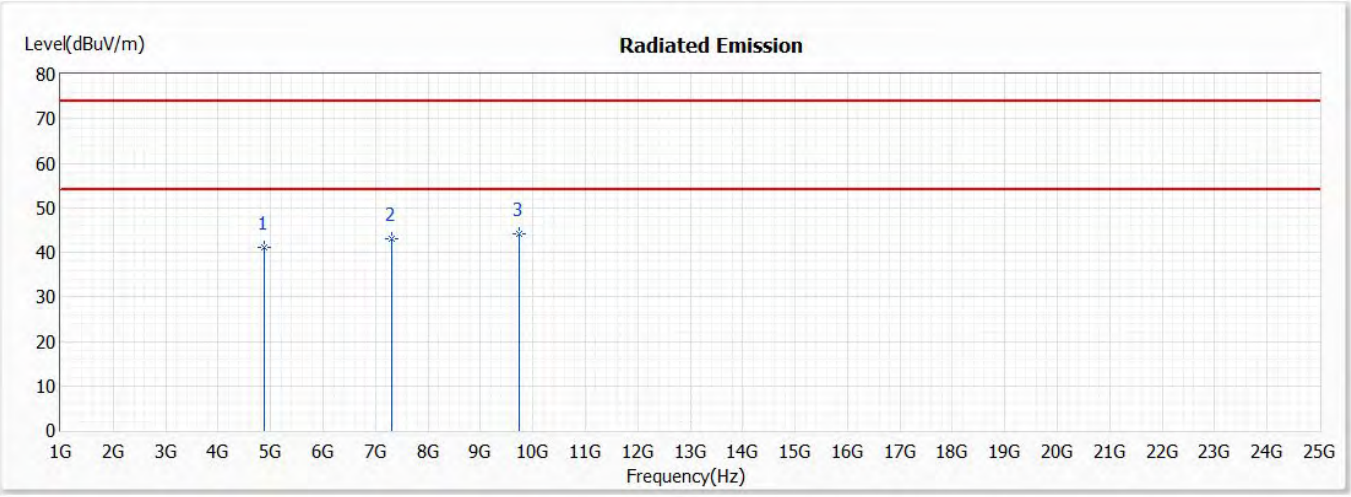
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	4824.000	40.47	74.00	-33.53	39.89	0.58	PK
2	7236.000	42.74	74.00	-31.26	38.00	4.74	PK
* 3	9648.000	44.43	74.00	-29.57	37.50	6.93	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)
Test Date	:	2021/06/03

Horizontal



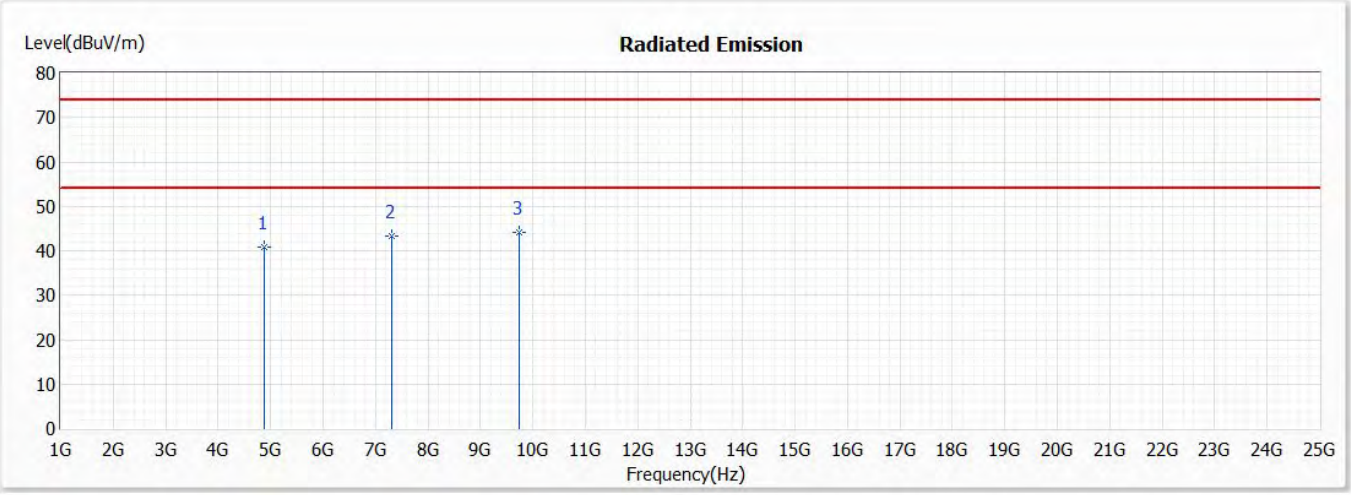
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	4874.000	41.06	74.00	-32.94	40.44	0.62	PK
2	7311.000	43.11	74.00	-30.89	38.28	4.83	PK
* 3	9748.000	44.14	74.00	-29.86	36.95	7.19	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)
Test Date	:	2021/06/03

Vertical



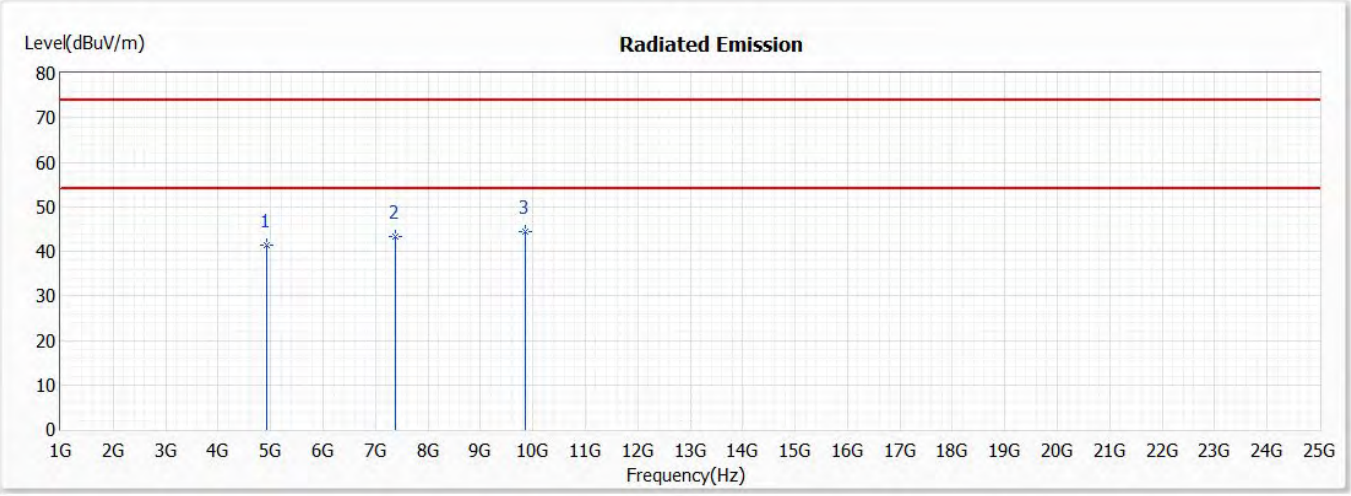
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	4874.000	40.96	74.00	-33.04	40.34	0.62	PK
2	7311.000	43.18	74.00	-30.82	38.35	4.83	PK
* 3	9748.000	44.07	74.00	-29.93	36.88	7.19	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2462 MHz)
Test Date	:	2021/06/03

Horizontal



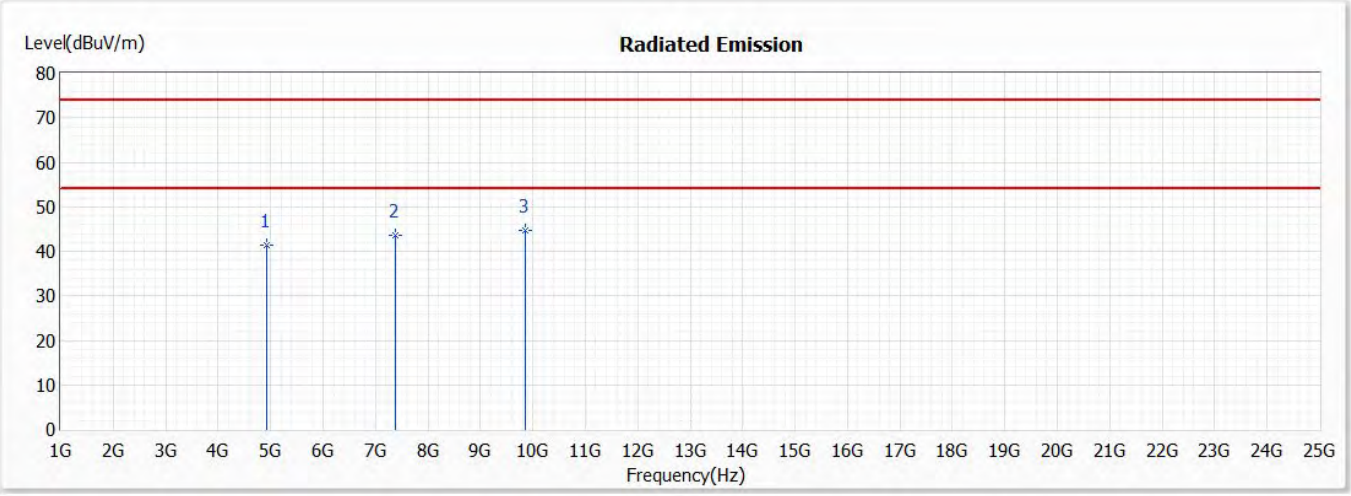
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	4924.000	41.34	74.00	-32.66	40.73	0.61	PK
2	7386.000	43.37	74.00	-30.63	38.53	4.84	PK
* 3	9848.000	44.42	74.00	-29.58	37.20	7.22	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2462 MHz)
Test Date	:	2021/06/03

Vertical



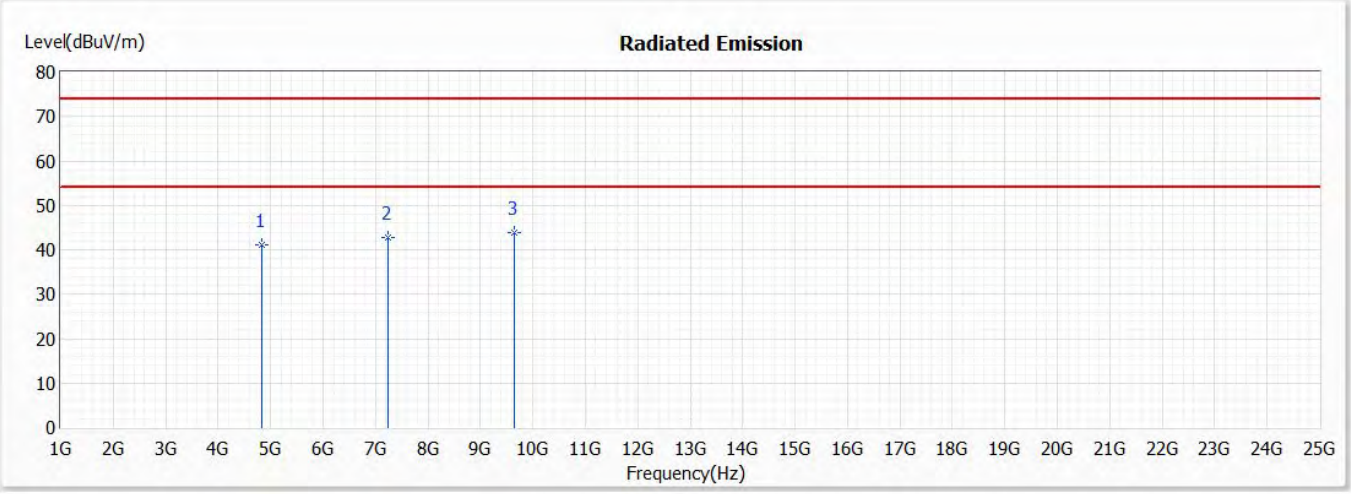
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	4924.000	41.42	74.00	-32.58	40.81	0.61	PK
2	7386.000	43.55	74.00	-30.45	38.71	4.84	PK
* 3	9848.000	44.61	74.00	-29.39	37.39	7.22	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
Test Date	:	2021/06/03

Horizontal



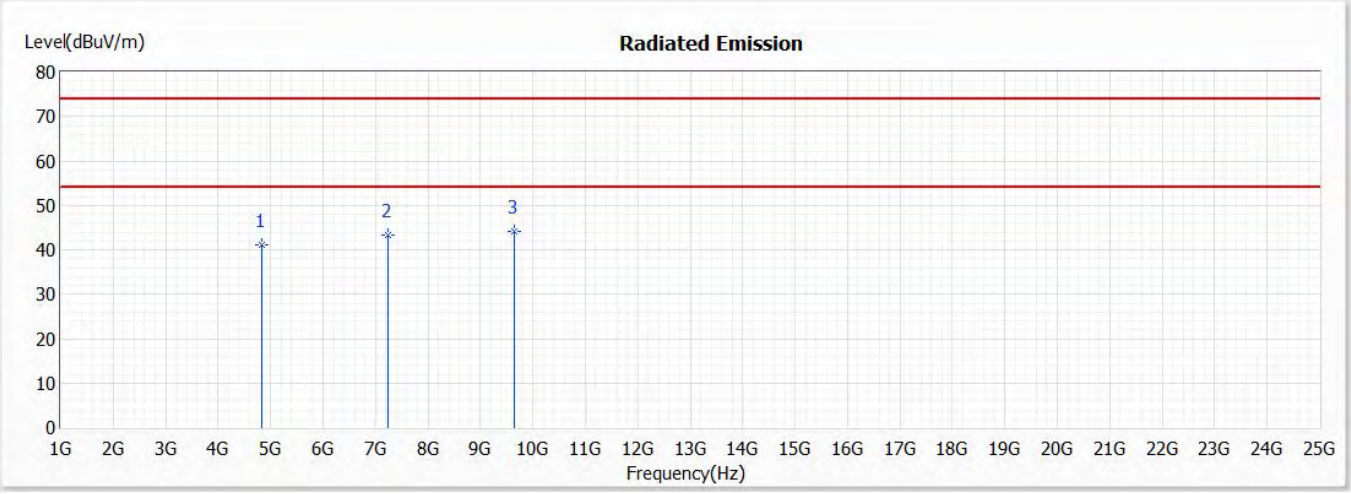
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	4824.000	40.97	74.00	-33.03	40.39	0.58	PK
2	7236.000	42.87	74.00	-31.13	38.13	4.74	PK
* 3	9648.000	43.96	74.00	-30.04	37.03	6.93	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
Test Date	:	2021/06/03

Vertical



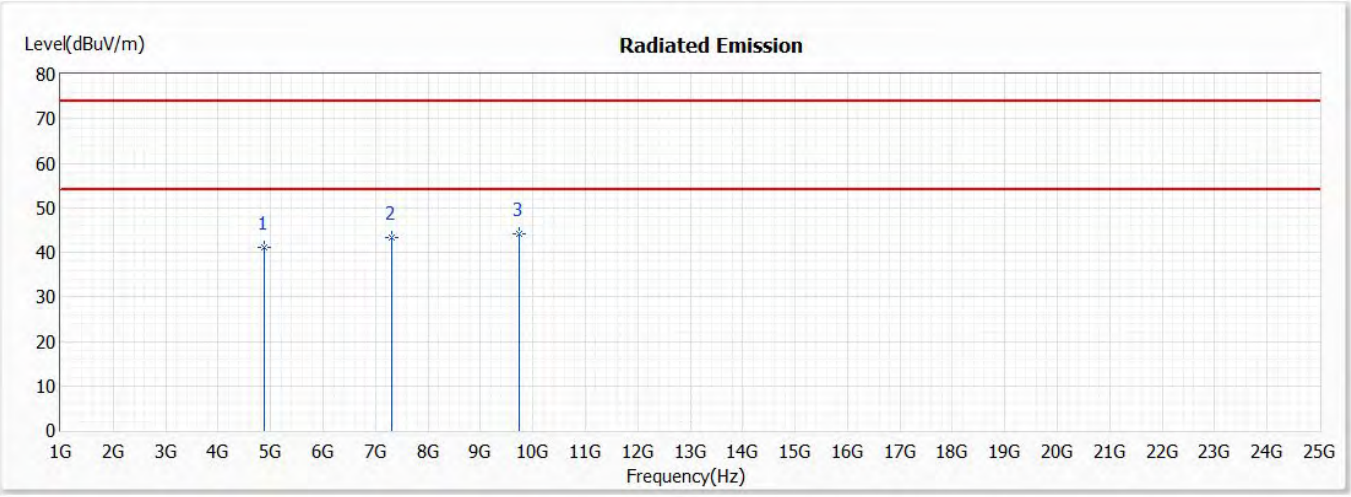
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	4824.000	41.15	74.00	-32.85	40.57	0.58	PK
2	7236.000	43.21	74.00	-30.79	38.47	4.74	PK
* 3	9648.000	44.03	74.00	-29.97	37.10	6.93	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)
Test Date	:	2021/06/03

Horizontal



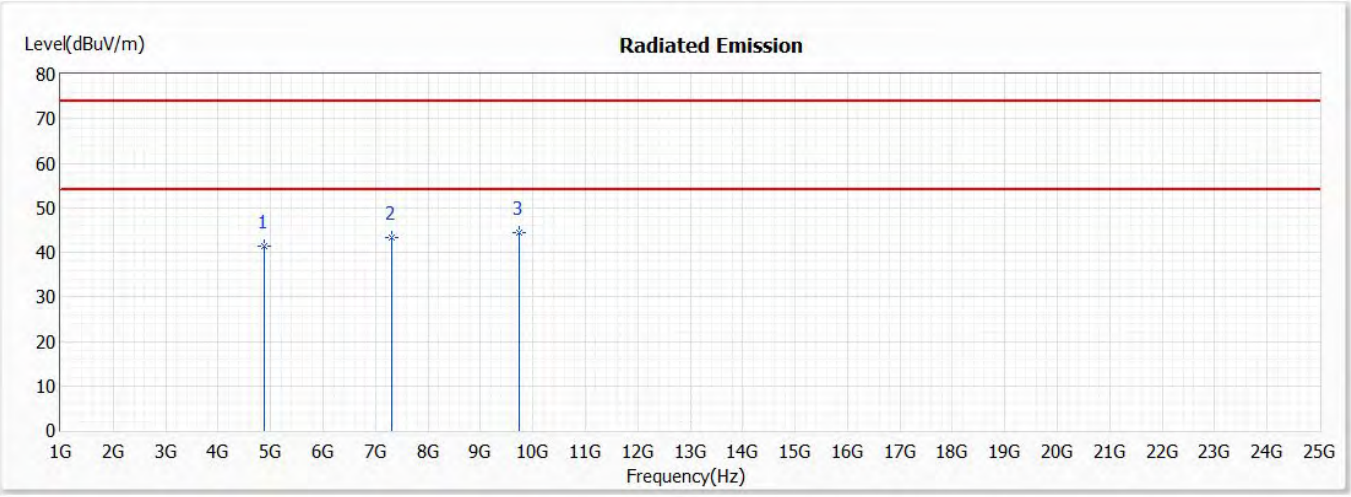
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	4874.000	41.21	74.00	-32.79	40.59	0.62	PK
2	7311.000	43.21	74.00	-30.79	38.38	4.83	PK
* 3	9748.000	44.19	74.00	-29.81	37.00	7.19	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)
Test Date	:	2021/06/03

Vertical



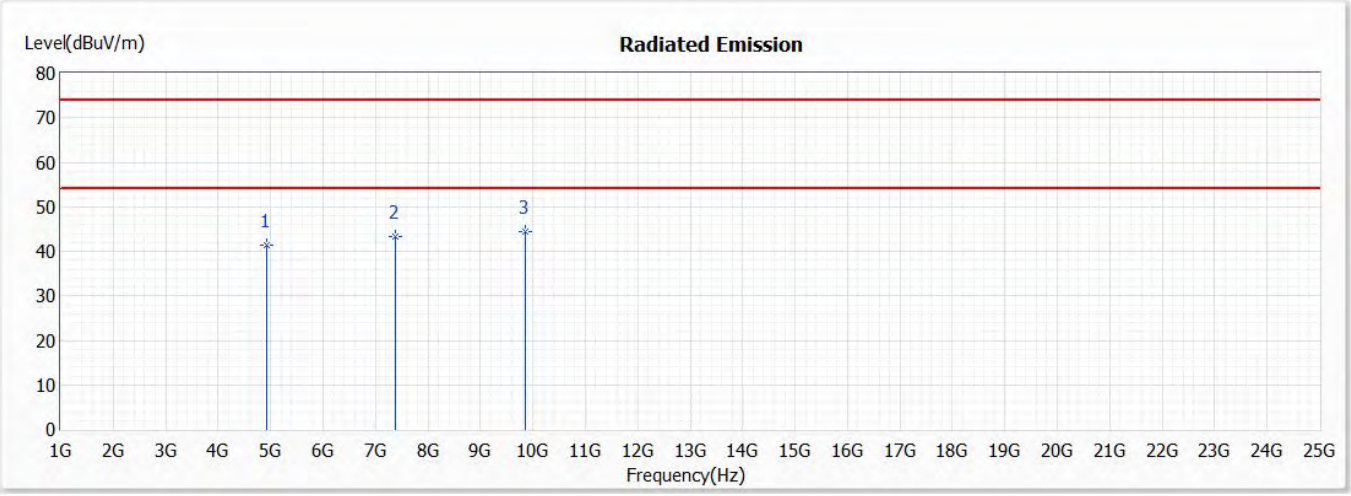
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	4874.000	41.51	74.00	-32.49	40.89	0.62	PK
2	7311.000	43.43	74.00	-30.57	38.60	4.83	PK
* 3	9748.000	44.28	74.00	-29.72	37.09	7.19	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2462 MHz)
Test Date	:	2021/06/03

Horizontal



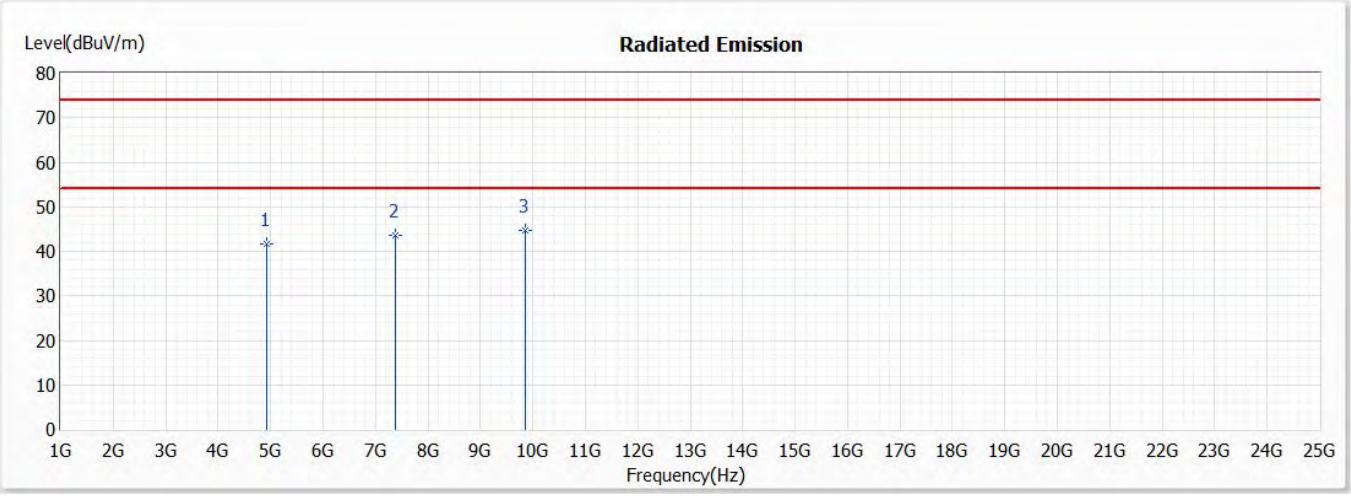
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	4924.000	41.45	74.00	-32.55	40.84	0.61	PK
2	7386.000	43.26	74.00	-30.74	38.42	4.84	PK
* 3	9848.000	44.33	74.00	-29.67	37.11	7.22	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2462 MHz)
Test Date	:	2021/06/03

Vertical



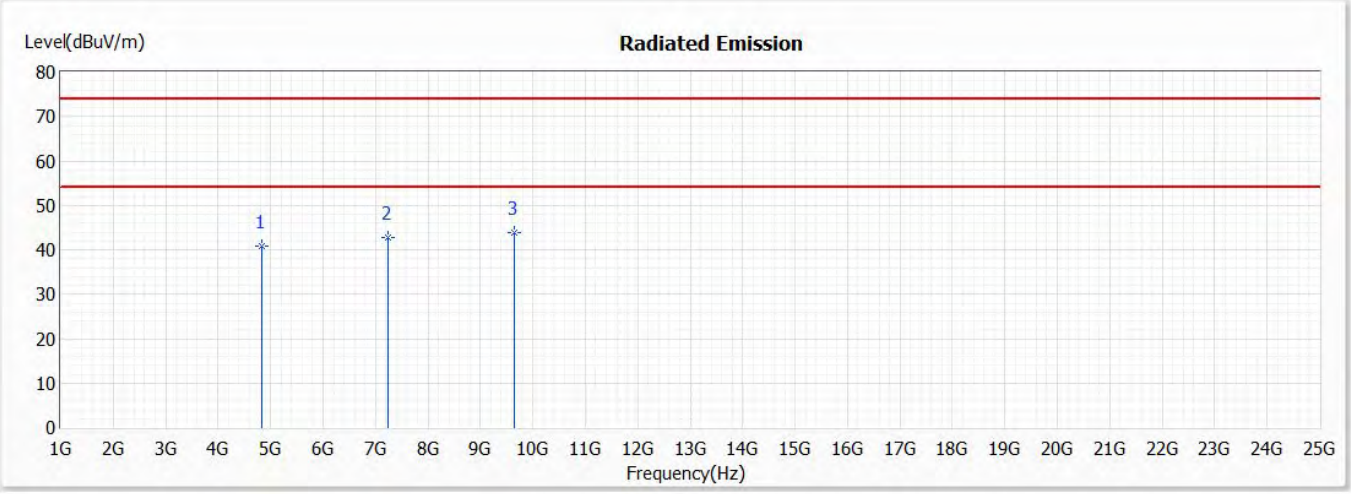
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	4924.000	41.58	74.00	-32.42	40.97	0.61	PK
2	7386.000	43.57	74.00	-30.43	38.73	4.84	PK
* 3	9848.000	44.62	74.00	-29.38	37.40	7.22	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 3: Transmit (802.11n-20MBW 7.2Mbps)(2412MHz)
Test Date	:	2021/06/03

Horizontal



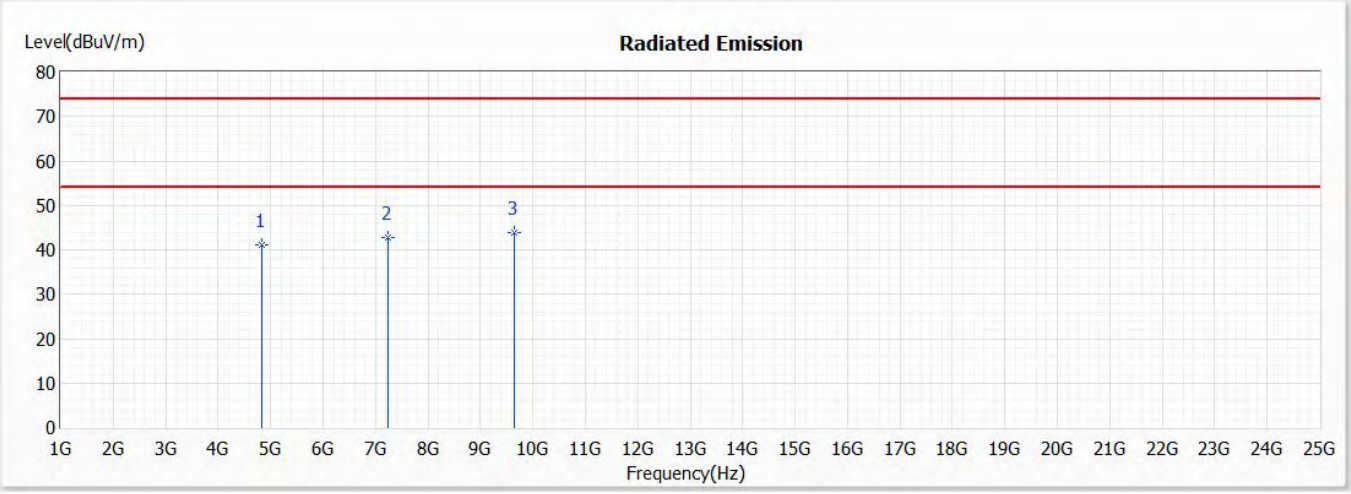
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	4824.000	40.84	74.00	-33.16	40.26	0.58	PK
2	7236.000	42.76	74.00	-31.24	38.02	4.74	PK
* 3	9648.000	43.89	74.00	-30.11	36.96	6.93	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 3: Transmit (802.11n-20MBW 7.2Mbps)(2412MHz)
Test Date	:	2021/06/03

Vertical



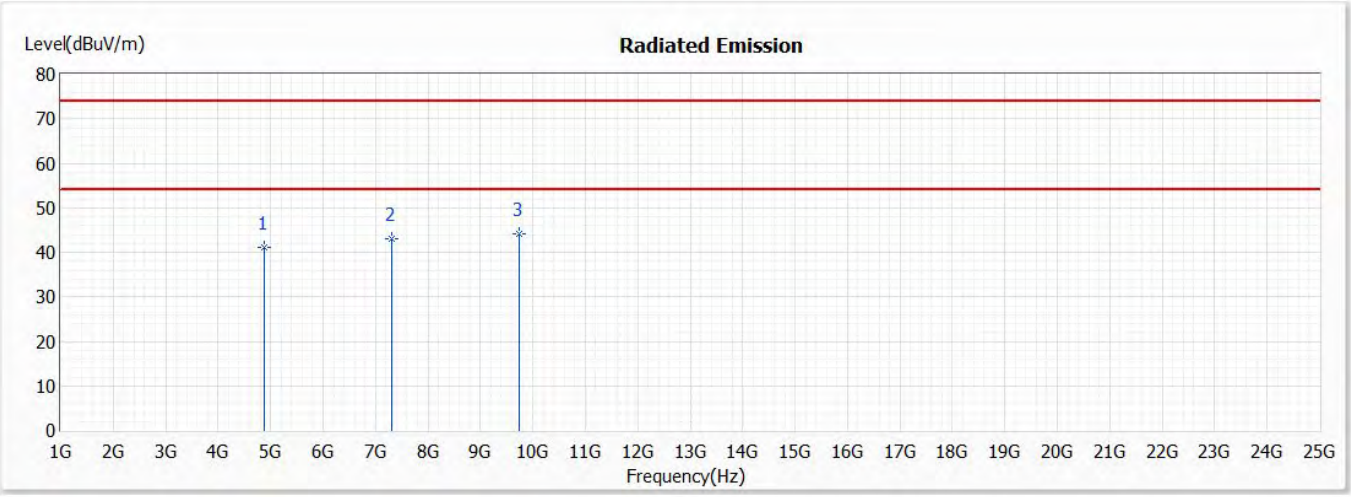
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	4824.000	40.97	74.00	-33.03	40.39	0.58	PK
2	7236.000	42.88	74.00	-31.12	38.14	4.74	PK
* 3	9648.000	43.92	74.00	-30.08	36.99	6.93	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2437 MHz)
Test Date	:	2021/06/03

Horizontal



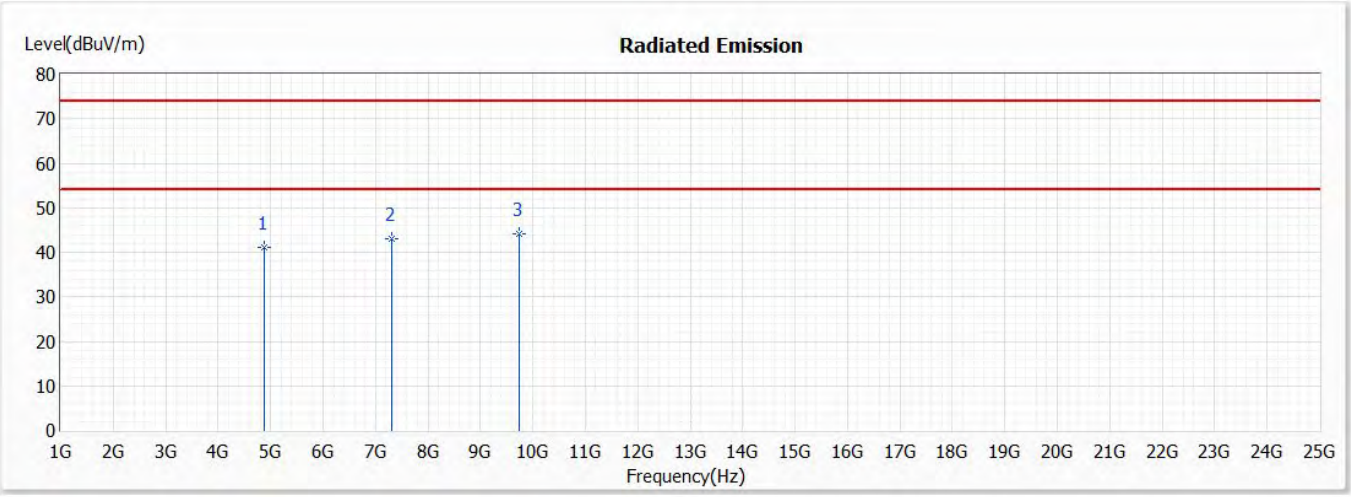
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	4874.000	41.03	74.00	-32.97	40.41	0.62	PK
2	7311.000	43.01	74.00	-30.99	38.18	4.83	PK
* 3	9748.000	44.11	74.00	-29.89	36.92	7.19	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2437 MHz)
Test Date	:	2021/06/03

Vertical



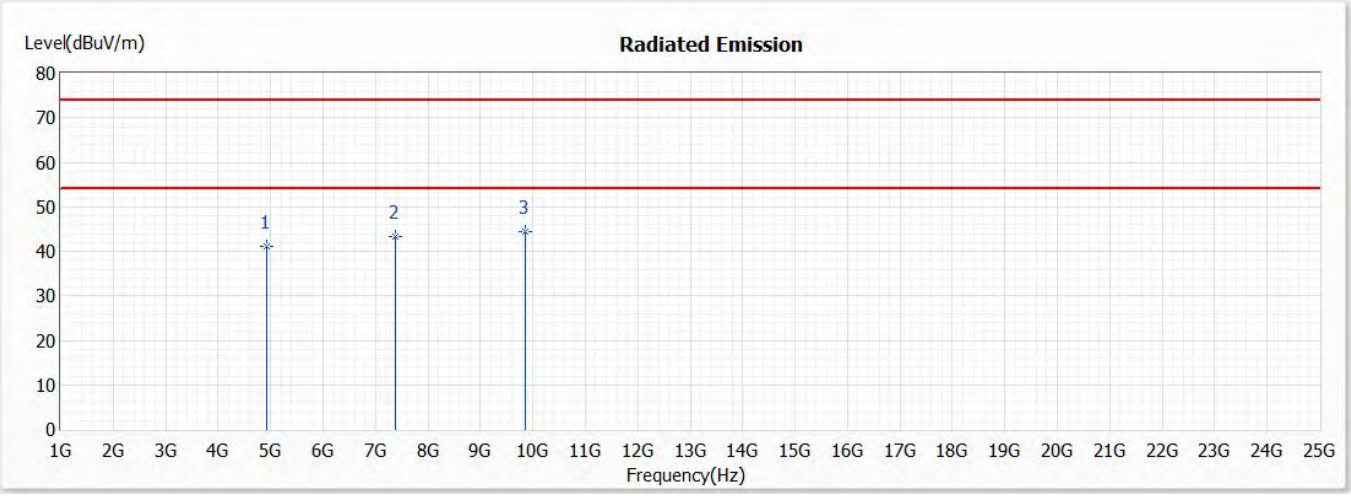
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	4874.000	41.19	74.00	-32.81	40.57	0.62	PK
2	7311.000	43.15	74.00	-30.85	38.32	4.83	PK
* 3	9748.000	44.18	74.00	-29.82	36.99	7.19	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WCDMA/LTE Mobile Phone
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2462 MHz)
Test Date : 2021/06/03

Horizontal



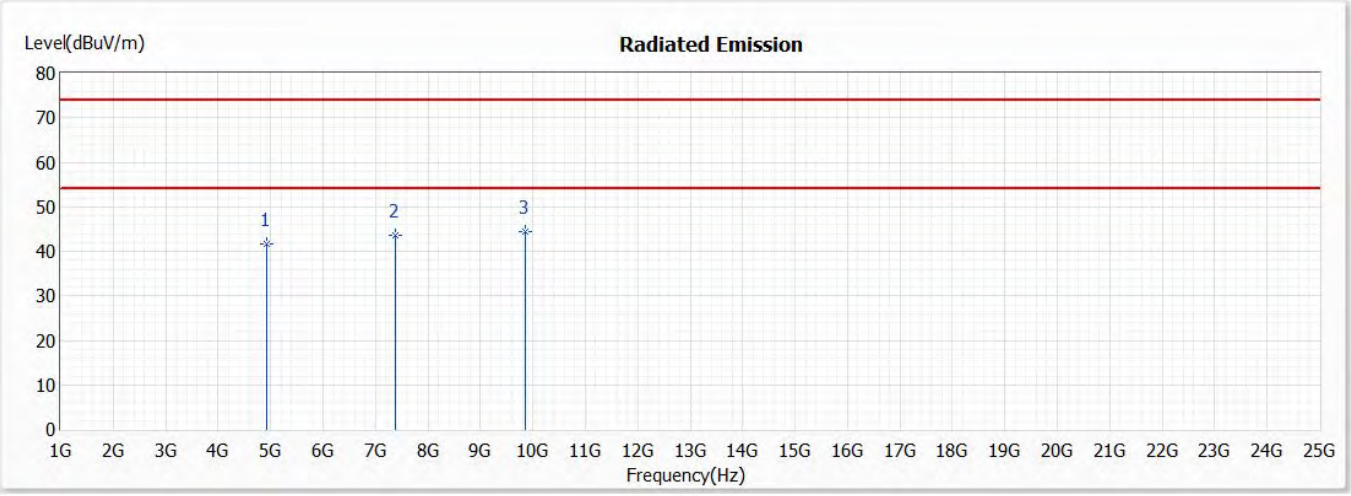
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	4924.000	41.21	74.00	-32.79	40.60	0.61	PK
2	7386.000	43.24	74.00	-30.76	38.40	4.84	PK
* 3	9848.000	44.34	74.00	-29.66	37.12	7.22	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WCDMA/LTE Mobile Phone
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2462 MHz)
Test Date : 2021/06/03

Vertical



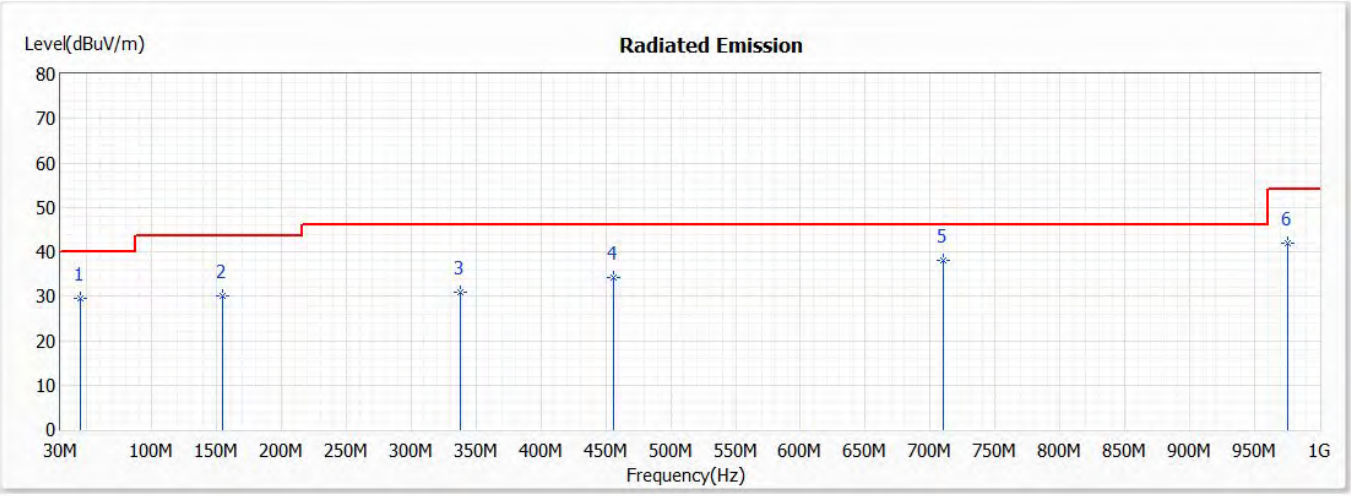
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	4924.000	41.57	74.00	-32.43	40.96	0.61	PK
2	7386.000	43.53	74.00	-30.47	38.69	4.84	PK
* 3	9848.000	44.45	74.00	-29.55	37.23	7.22	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	General Radiated Emission Data
Test Mode	:	Mode 3: Transmit (802.11n-20MBW 7.2Mbps)(2437 MHz)
Test Date	:	2021/06/04

Horizontal



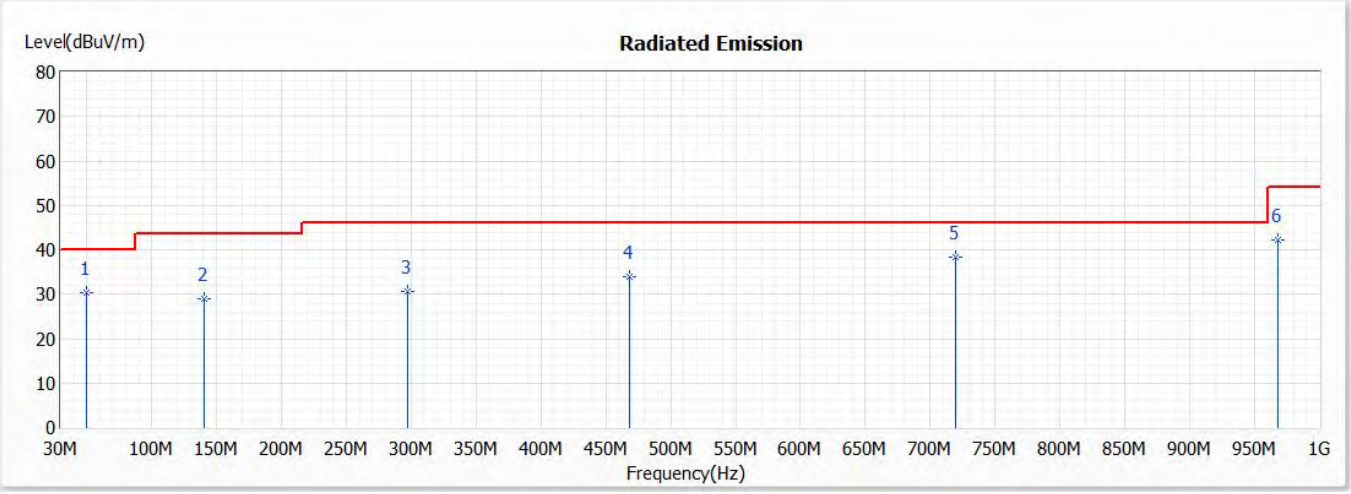
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	45.520	29.55	40.00	-10.45	39.99	-10.44	QP
2	155.130	29.99	43.50	-13.51	40.41	-10.42	QP
3	337.490	30.81	46.00	-15.19	39.51	-8.70	QP
4	455.830	34.22	46.00	-11.78	40.13	-5.91	QP
* 5	709.970	38.02	46.00	-7.98	39.34	-1.32	QP
6	975.750	41.87	54.00	-12.13	39.84	2.03	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	General Radiated Emission Data
Test Mode	:	Mode 3: Transmit (802.11n-20MBW 7.2Mbps)(2437 MHz)
Test Date	:	2021/06/04

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	49.400	30.40	40.00	-9.60	40.78	-10.38	QP
2	140.580	29.03	43.50	-14.47	39.84	-10.81	QP
3	297.720	30.60	46.00	-15.40	40.39	-9.79	QP
4	468.440	34.03	46.00	-11.97	39.74	-5.71	QP
* 5	719.670	38.41	46.00	-7.59	39.66	-1.25	QP
6	967.990	42.27	54.00	-11.73	40.17	2.10	QP

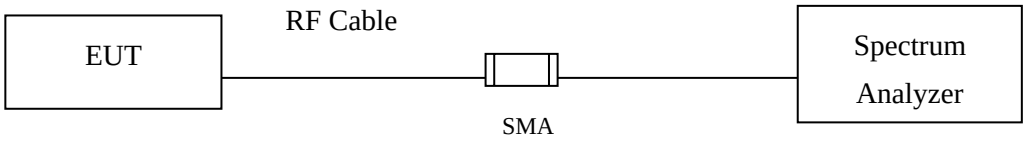
Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

5. RF antenna conducted test

5.1. Test Setup

RF antenna Conducted Measurement:



5.2. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.3. Test Procedure

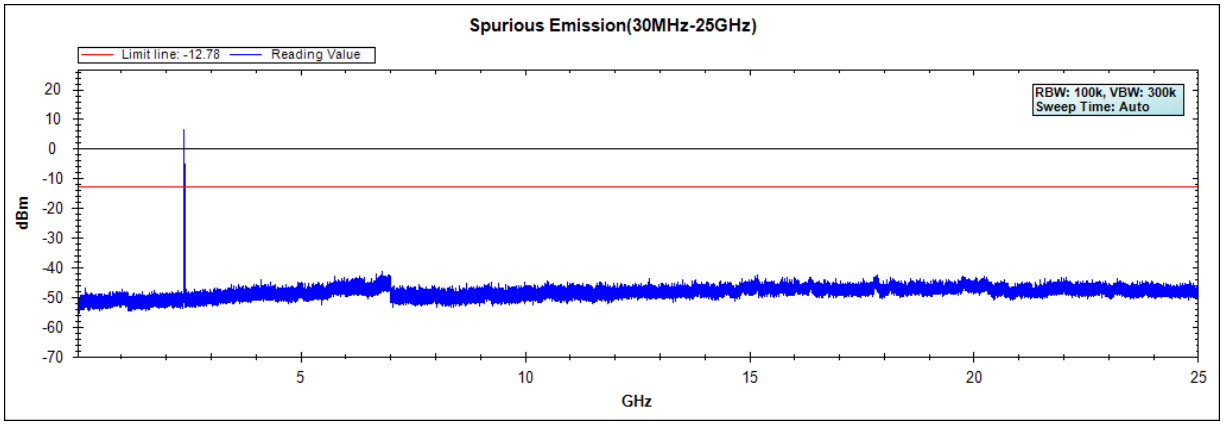
The EUT was tested according to C63.10:2013 Section 11.11 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW> RBW, scan up through 10th harmonic.

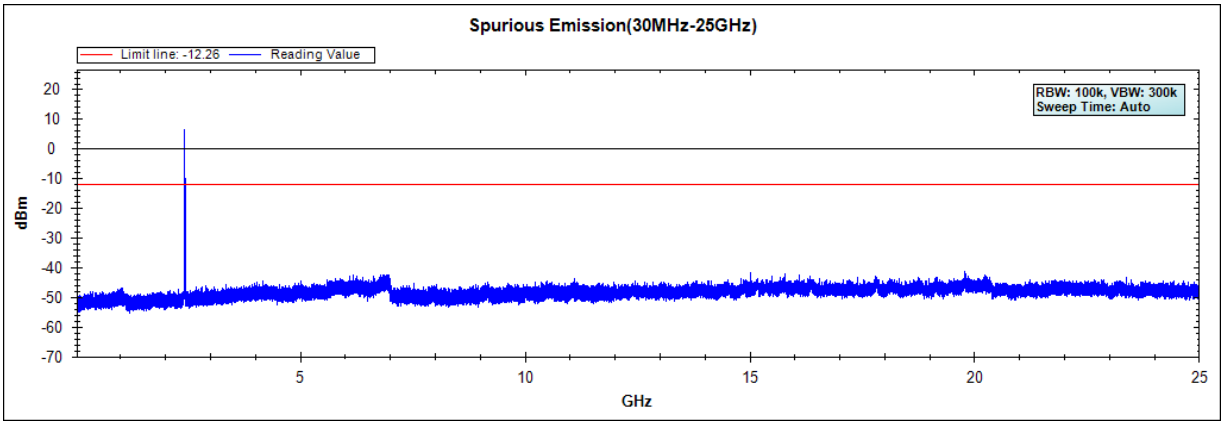
5.4. Test Result of RF antenna conducted test

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	RF antenna conducted test
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps)
Test Date	:	2021/06/08

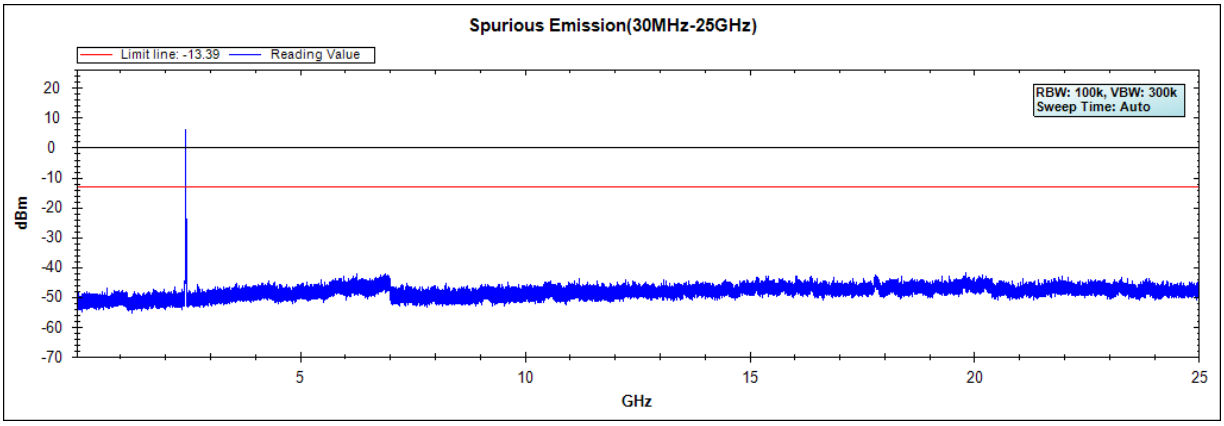
Channel 01 (2412MHz)



Channel 06 (2437MHz)



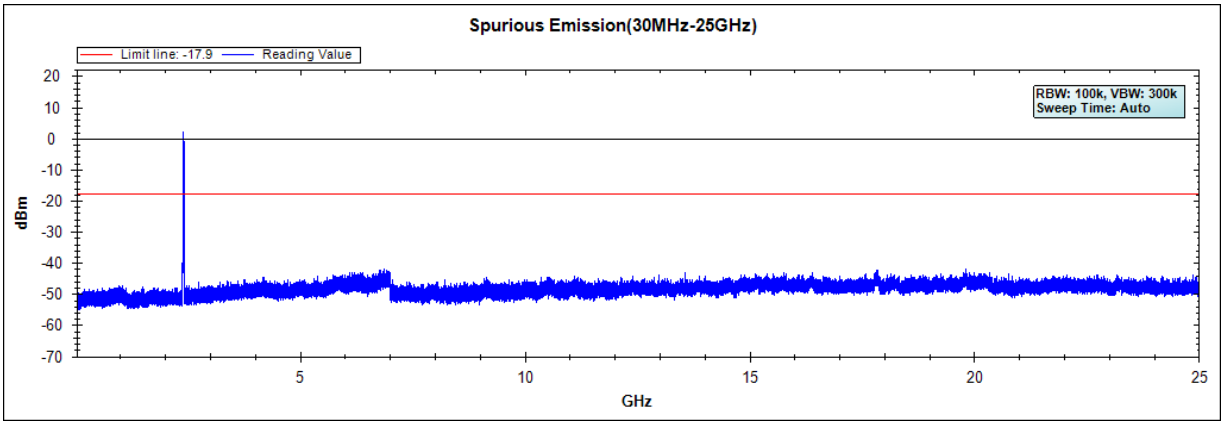
Channel 11 (2462MHz)



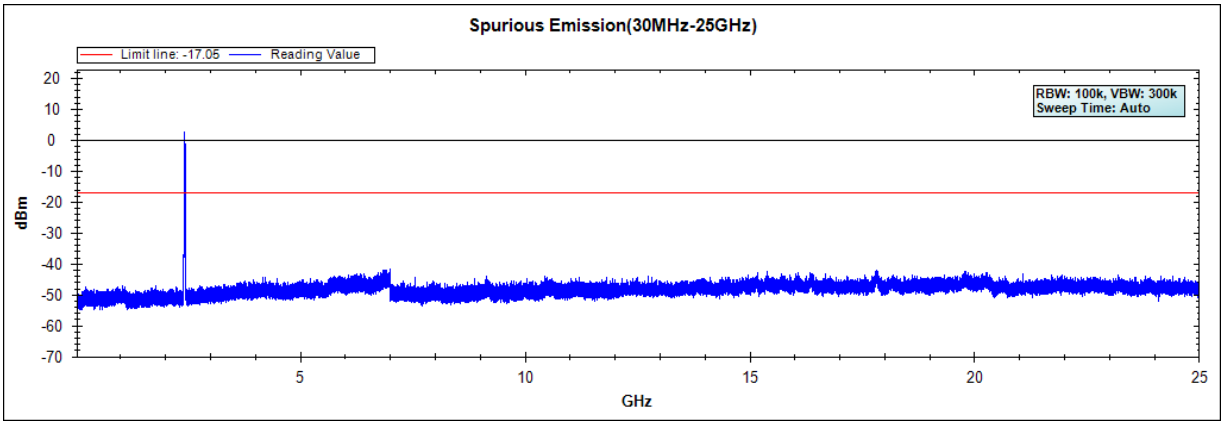
Note: The above test pattern is synthesized by multiple of the frequency range.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	RF Antenna Conducted Spurious
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps)
Test Date	:	2021/06/08

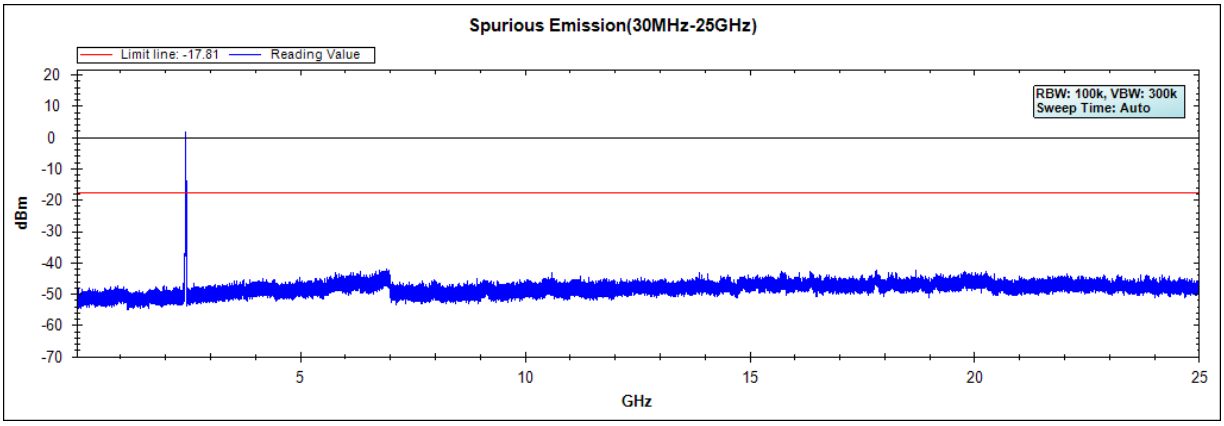
Channel 01 (2412MHz)



Channel 06 (2437MHz)



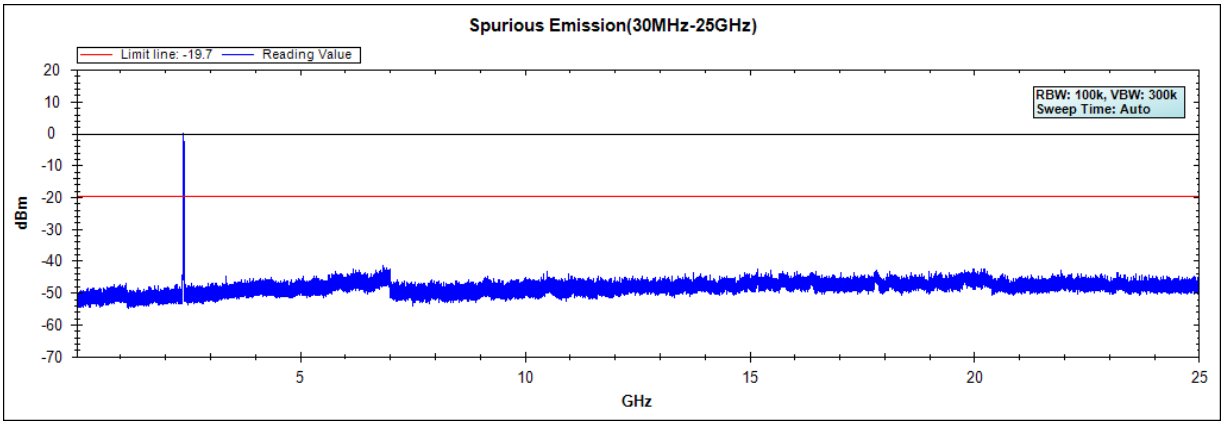
Channel 11 (2462MHz)



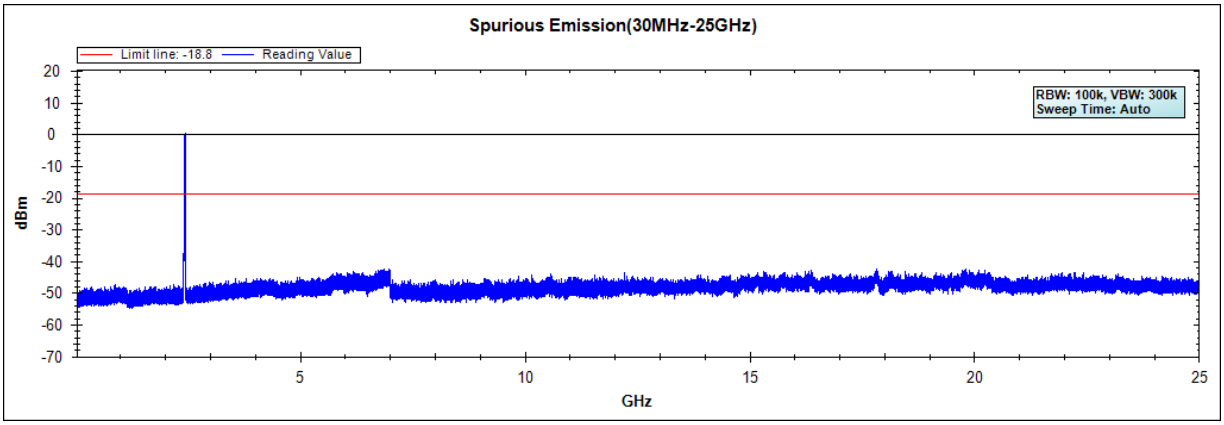
Note: The above test pattern is synthesized by multiple of the frequency range.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	RF Antenna Conducted Spurious
Test Mode	:	Mode 3: Transmit (802.11n-20MBW 7.2Mbps)
Test Date	:	2021/06/08

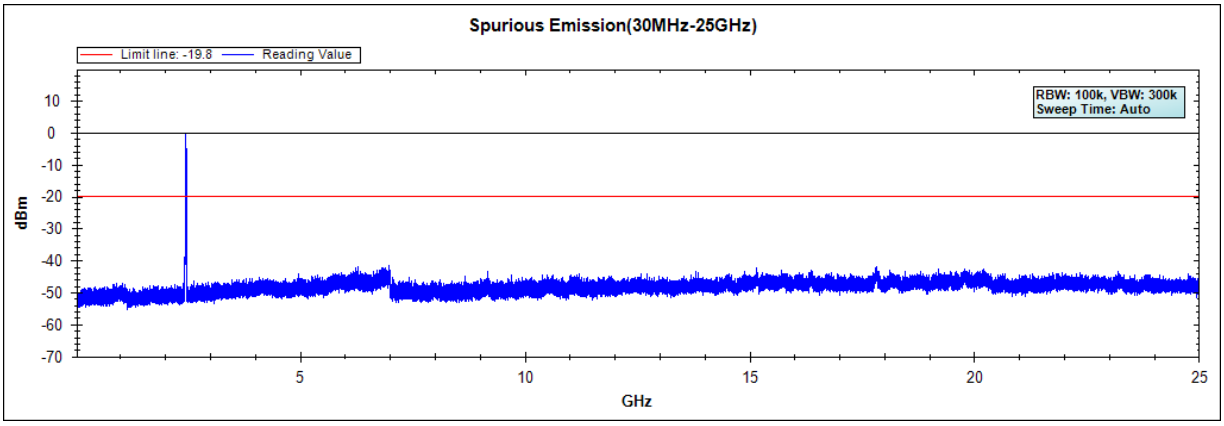
Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)

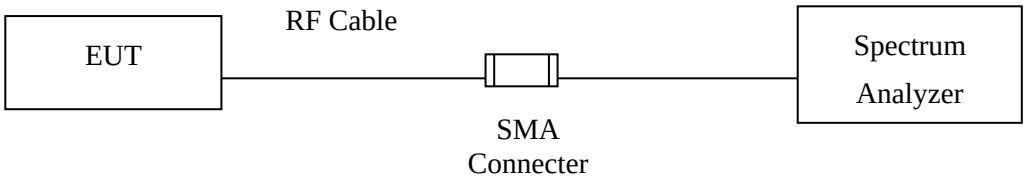


Note: The above test pattern is synthesized by multiple of the frequency range.

6. Band Edge

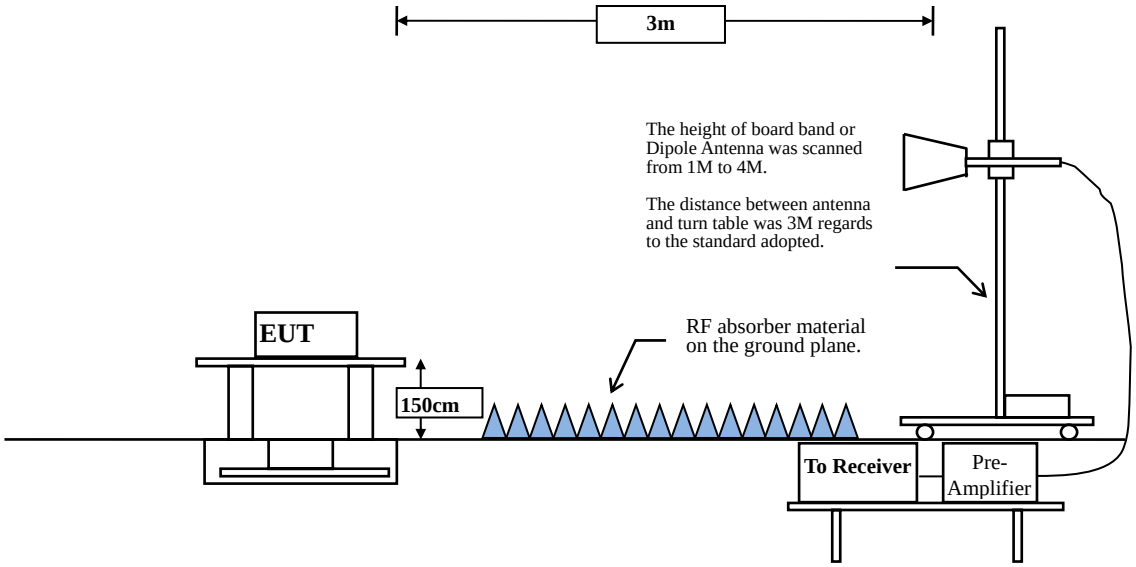
6.1. Test Setup

RF Conducted Measurement



RF Radiated Measurement:

Above 1GHz



6.2. Limits

According to FCC Section 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 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, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

6.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to C63.10:2013 Section 11.12.1 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.

RBW and VBW Parameter setting:

According to C63.10 Section 11.12.2.4 Peak measurement procedure.

RBW = as specified in Table 1.

VBW ≥ 3 x RBW.

Table 1 —RBW as a function of frequency

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

According to C63.10 Section 11.12.2.5 Average measurement procedure.

RBW = 1MHz.

VBW = 10Hz, when duty cycle ≥ 98 %

VBW ≥ 1/T, when duty cycle < 98 %

(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

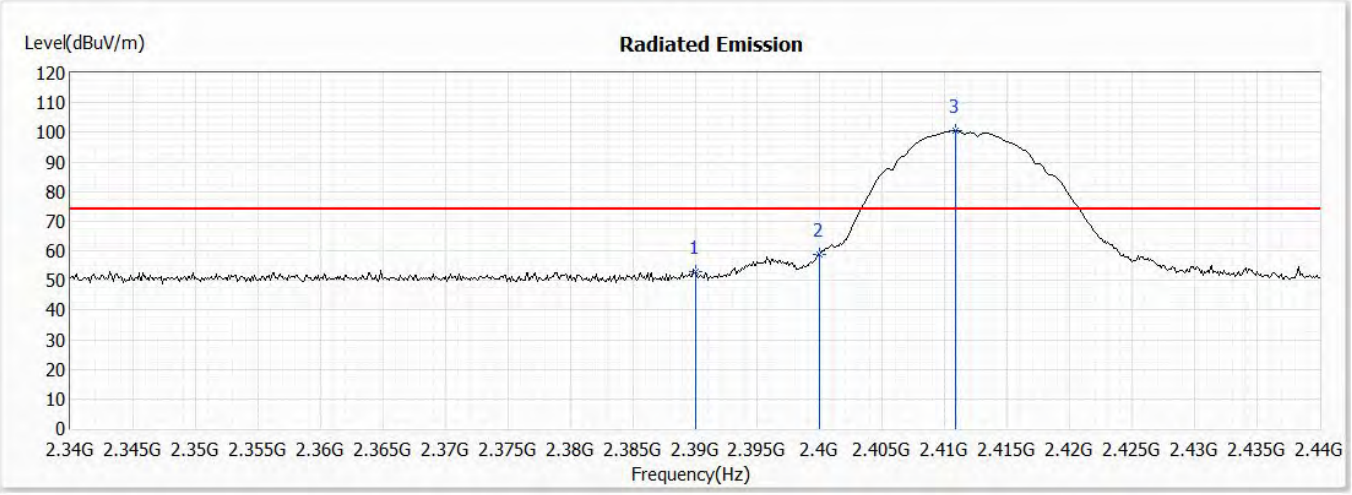
2.4GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11b	97.69	8.2300	122	200
802.11g	86.22	1.3450	743	1000
802.11n20	85.76	1.2650	791	1000

Note: Duty Cycle Refer to Section 9

6.4. Test Result of Band Edge

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
Test Date	:	2021/06/03

Horizontal



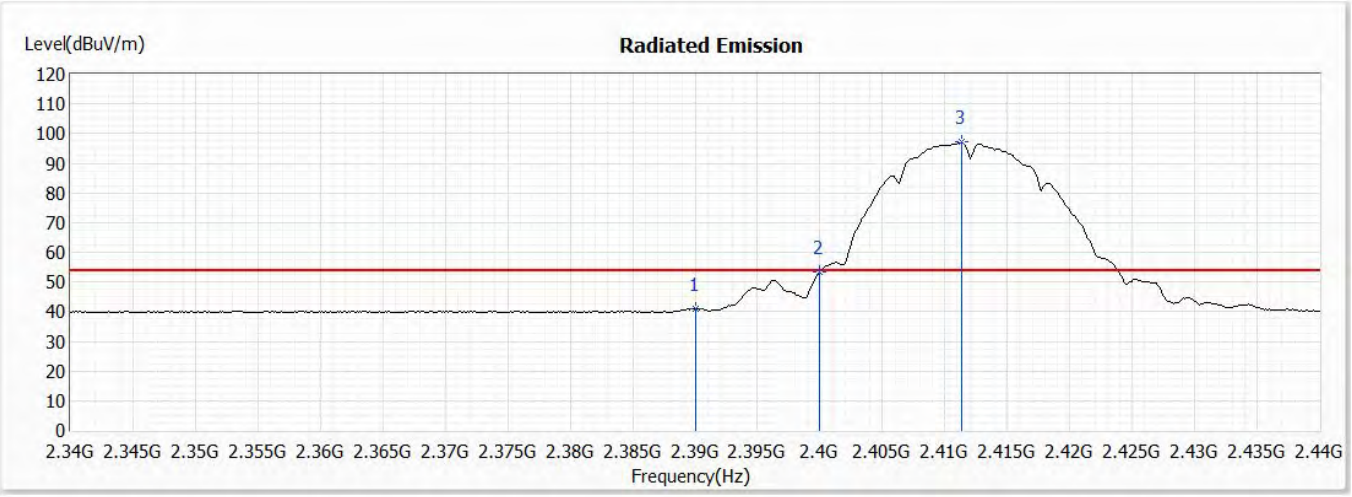
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2390.000	53.15	74.00	-20.85	39.99	13.16	PK
2	2400.000	58.93	74.00	-15.07	45.75	13.18	PK
3	2410.900	100.47	74.00	26.47	87.30	13.17	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
Test Date	:	2021/06/03

Horizontal



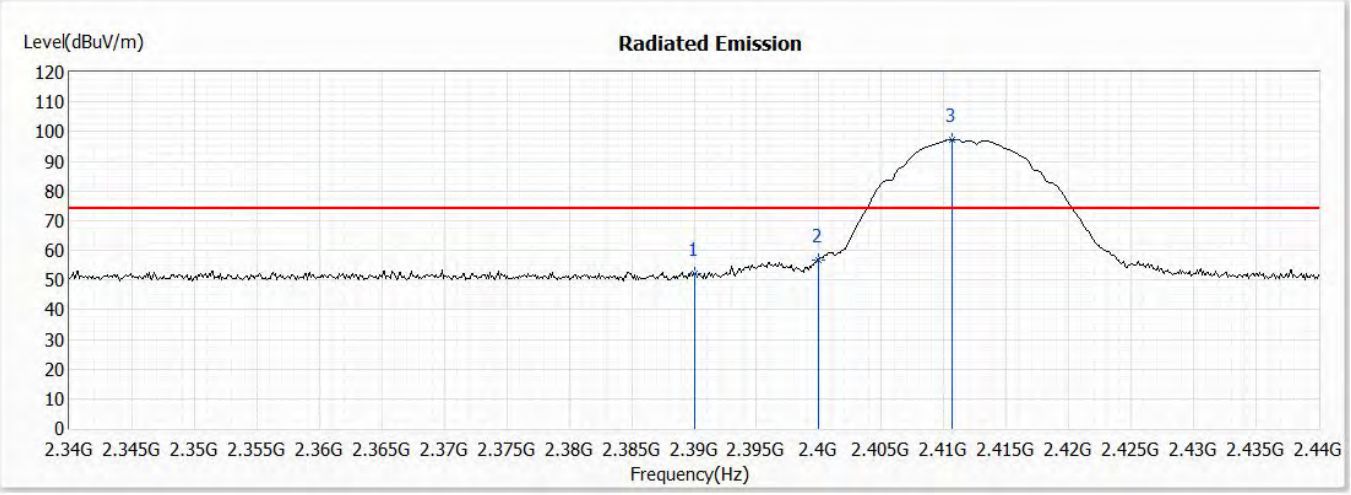
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2390.000	40.89	54.00	-13.11	27.73	13.16	AV
2	2400.000	53.28	54.00	-0.72	40.10	13.18	AV
3	2411.300	97.05	54.00	43.05	83.88	13.17	AV

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
Test Date	:	2021/06/03

Vertical



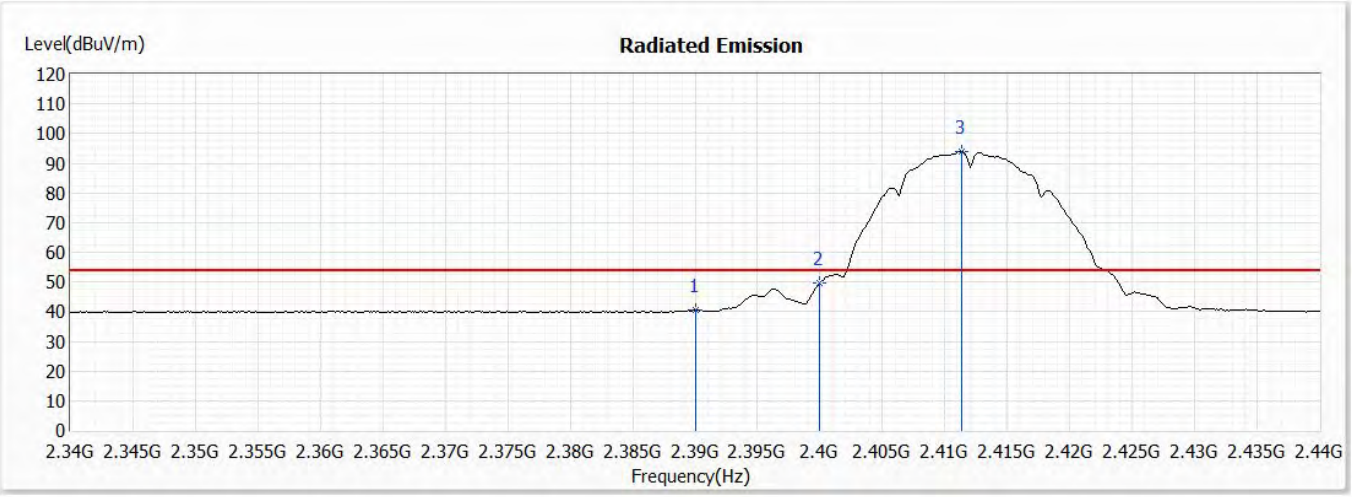
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2390.000	52.01	74.00	-21.99	38.85	13.16	PK
2	2400.000	56.53	74.00	-17.47	43.35	13.18	PK
3	2410.700	97.36	74.00	23.36	84.19	13.17	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
Test Date	:	2021/06/03

Vertical



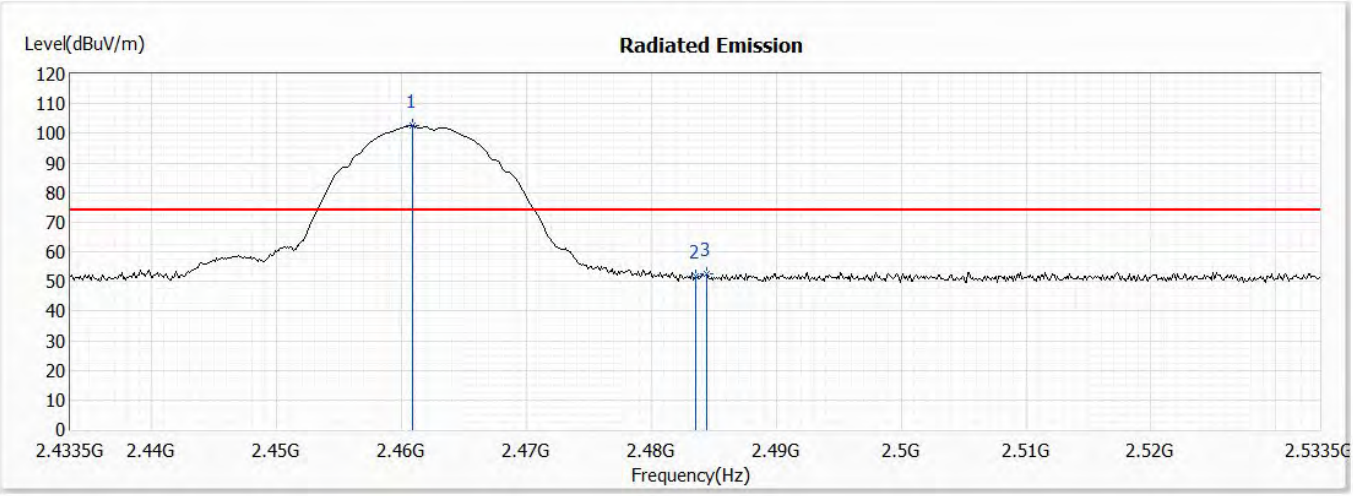
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2390.000	40.42	54.00	-13.58	27.26	13.16	AV
2	2400.000	49.56	54.00	-4.44	36.38	13.18	AV
3	2411.300	93.95	54.00	39.95	80.78	13.17	AV

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
Test Date	:	2021/06/03

Horizontal



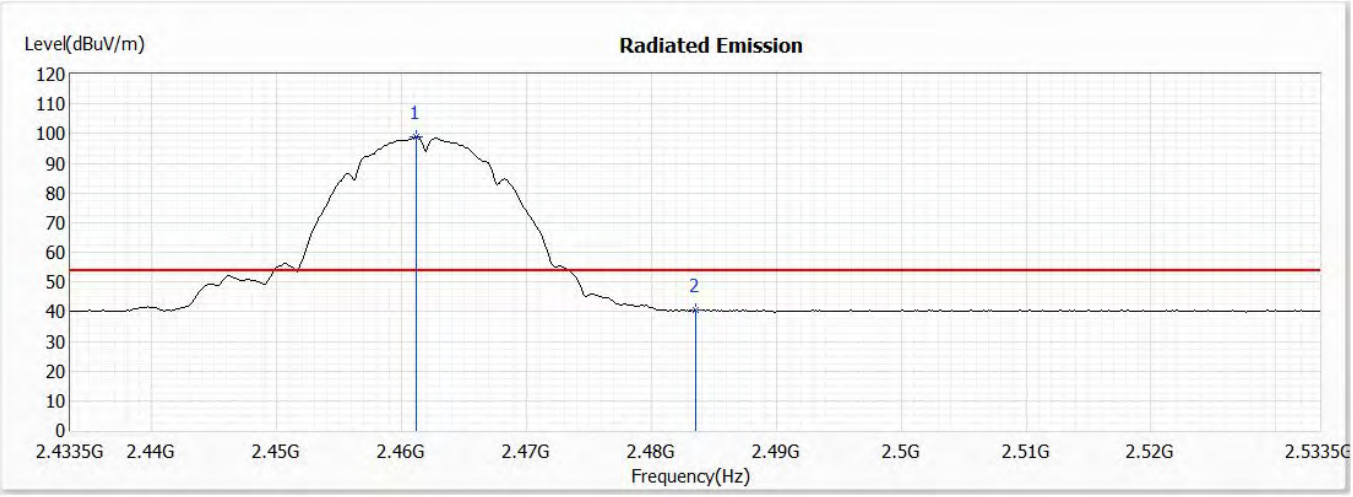
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2460.900	102.48	74.00	28.48	89.32	13.16	PK
2	2483.500	51.65	74.00	-22.35	38.46	13.19	PK
3	2484.400	52.70	74.00	-21.30	39.51	13.19	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
Test Date	:	2021/06/03

Horizontal



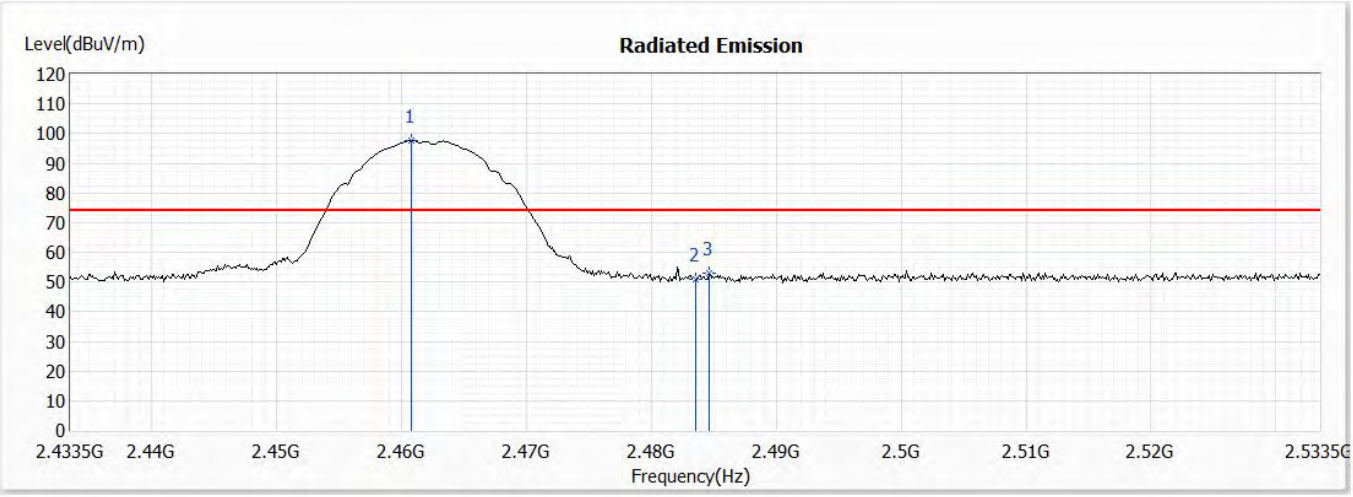
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2461.200	98.97	54.00	44.97	85.81	13.16	AV
2	2483.500	40.47	54.00	-13.53	27.28	13.19	AV

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
Test Date	:	2021/06/03

Vertical



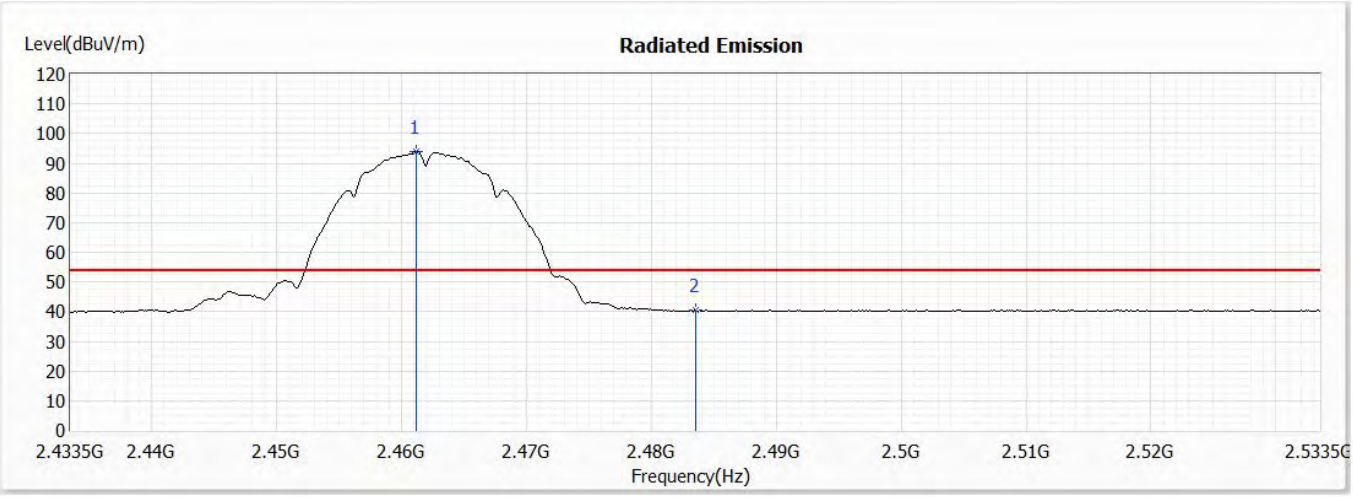
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2460.800	97.62	74.00	23.62	84.46	13.16	PK
2	2483.500	50.77	74.00	-23.23	37.58	13.19	PK
3	2484.600	53.16	74.00	-20.84	39.97	13.19	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
Test Date	:	2021/06/03

Vertical



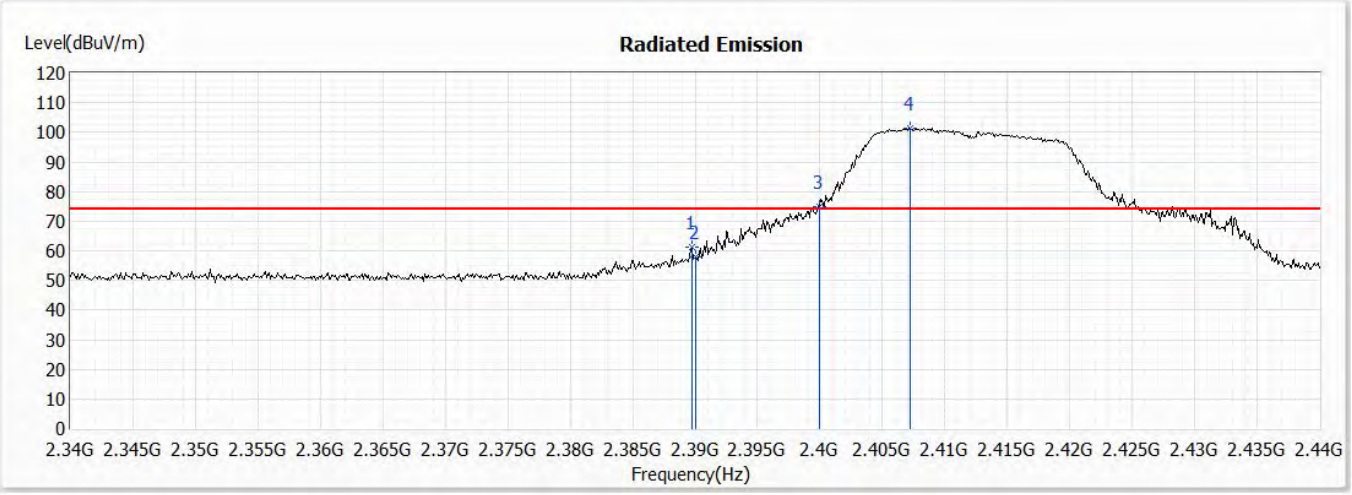
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2461.200	94.07	54.00	40.07	80.91	13.16	AV
2	2483.500	40.37	54.00	-13.63	27.18	13.19	AV

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
Test Date	:	2021/06/03

Horizontal



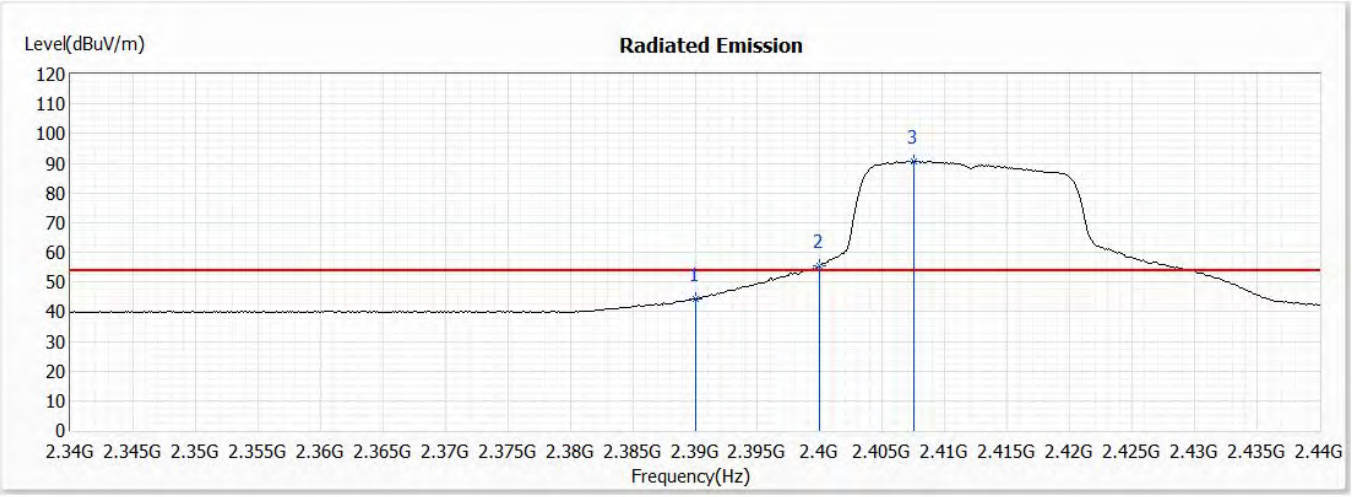
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2389.800	61.09	74.00	-12.91	47.93	13.16	PK
2	2390.000	57.82	74.00	-16.18	44.66	13.16	PK
3	2400.000	74.73	74.00	0.73	61.55	13.18	PK
4	2407.200	101.38	74.00	27.38	88.20	13.18	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
Test Date	:	2021/06/03

Horizontal



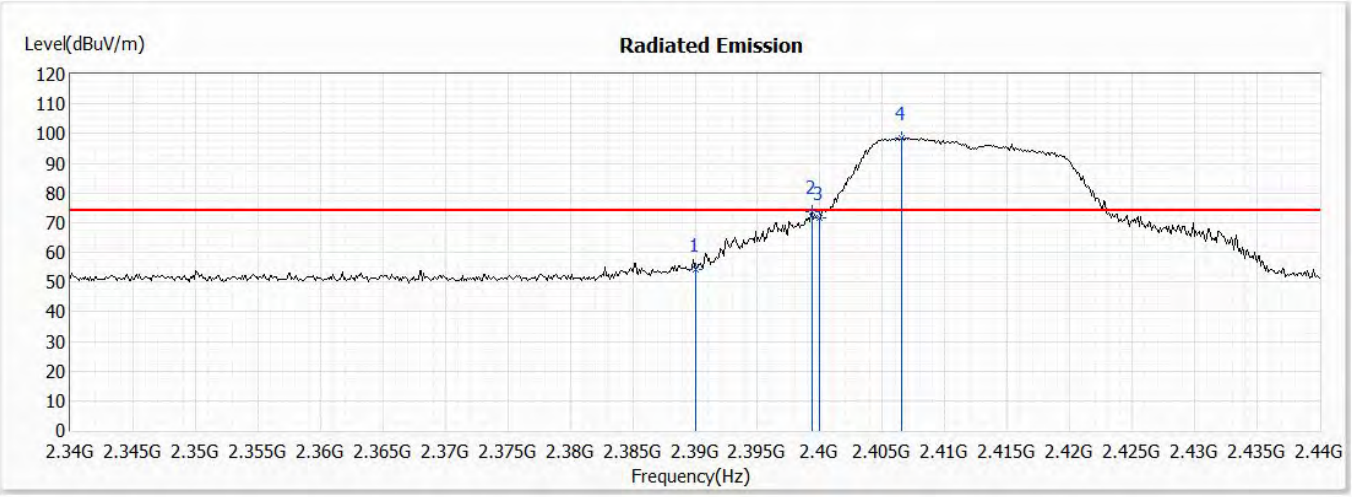
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2390.000	44.45	54.00	-9.55	31.29	13.16	AV
2	2400.000	55.55	54.00	1.55	42.37	13.18	AV
3	2407.500	90.74	54.00	36.74	77.56	13.18	AV

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
Test Date	:	2021/06/03

Vertical



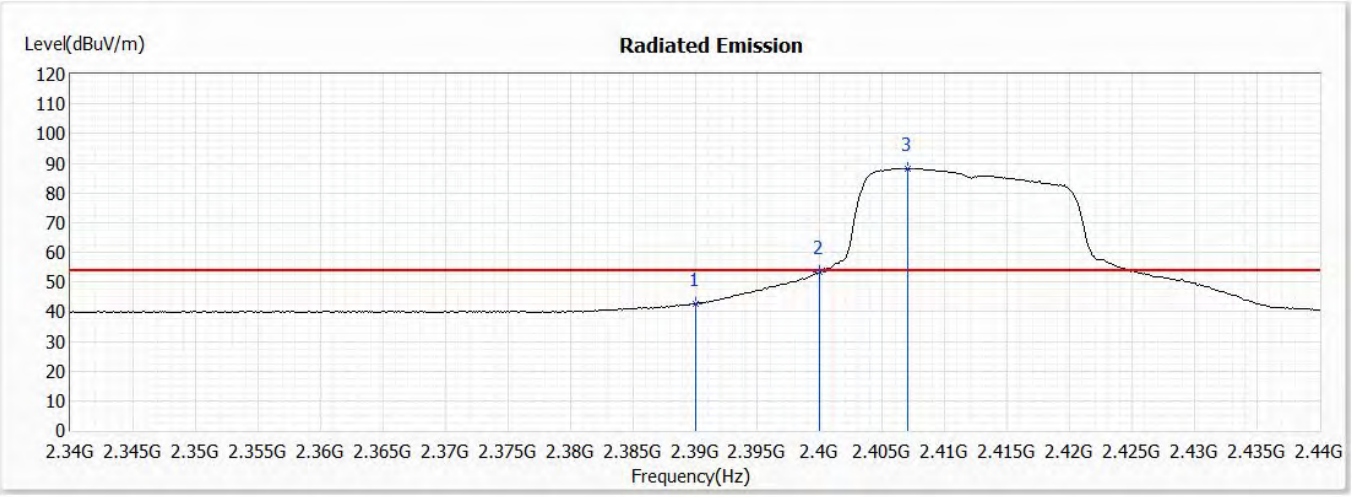
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2390.000	54.28	74.00	-19.72	41.12	13.16	PK
2	2399.400	73.49	74.00	-0.51	60.31	13.18	PK
3	2400.000	71.69	74.00	-2.31	58.51	13.18	PK
4	2406.500	98.49	74.00	24.49	85.31	13.18	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
Test Date	:	2021/06/03

Vertical



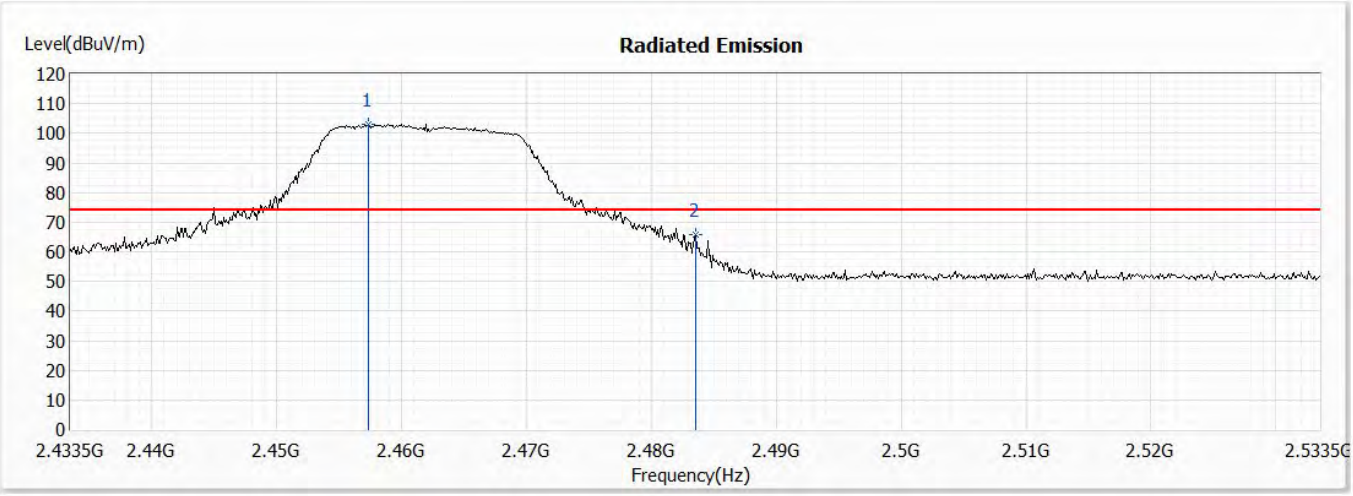
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2390.000	42.55	54.00	-11.45	29.39	13.16	AV
2	2400.000	53.43	54.00	-0.57	40.25	13.18	AV
3	2407.000	88.25	54.00	34.25	75.07	13.18	AV

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
Test Date	:	2021/06/03

Horizontal



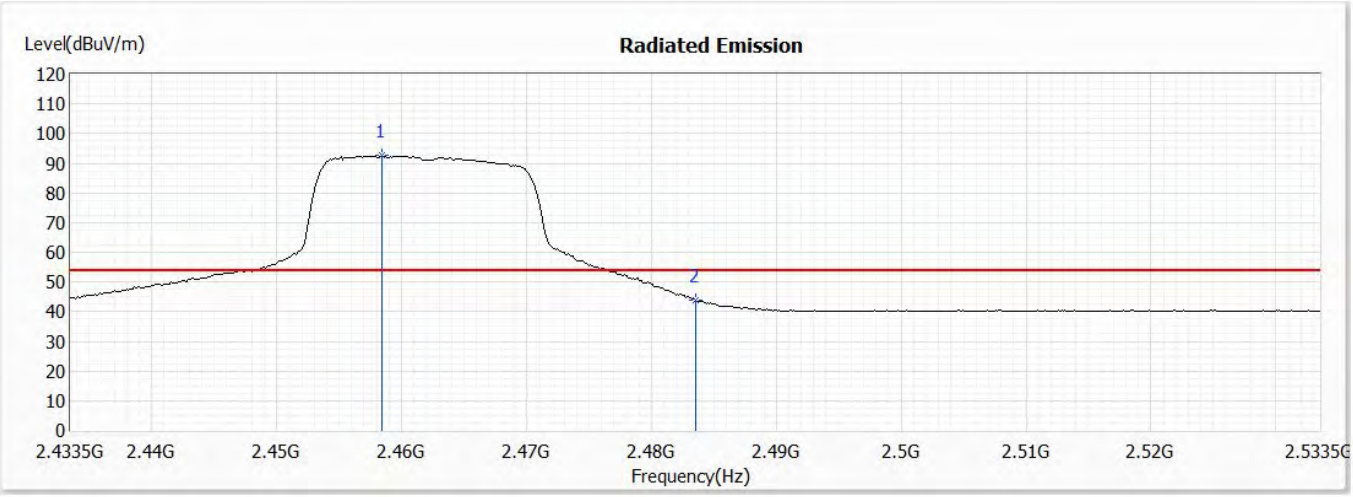
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2457.300	103.02	74.00	29.02	89.87	13.15	PK
2	2483.500	65.67	74.00	-8.33	52.48	13.19	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
Test Date	:	2021/06/03

Horizontal



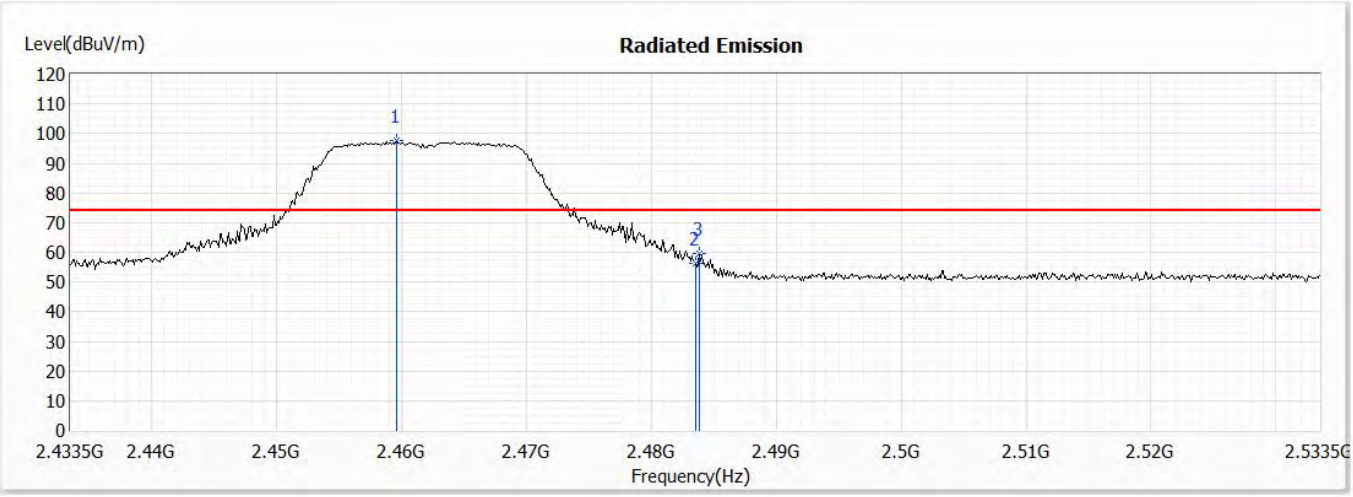
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2458.400	92.49	54.00	38.49	79.34	13.15	AV
2	2483.500	43.88	54.00	-10.12	30.69	13.19	AV

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
Test Date	:	2021/06/03

Vertical



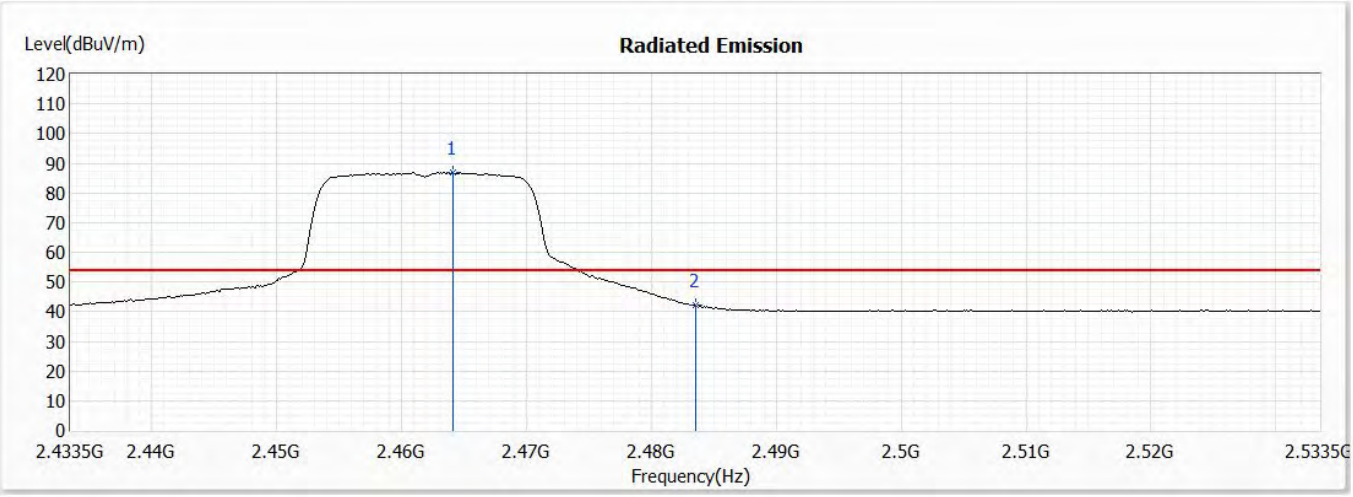
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2459.600	97.49	74.00	23.49	84.33	13.16	PK
2	2483.500	56.38	74.00	-17.62	43.19	13.19	PK
3	2483.800	59.57	74.00	-14.43	46.38	13.19	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
Test Date	:	2021/06/03

Vertical



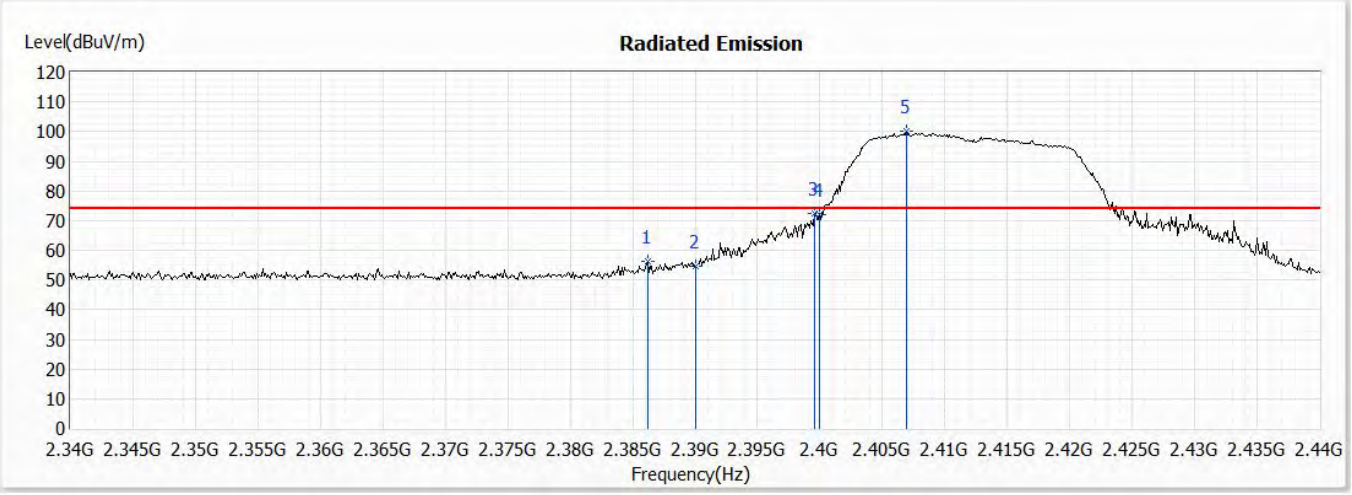
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2464.100	86.82	54.00	32.82	73.66	13.16	AV
2	2483.500	42.09	54.00	-11.91	28.90	13.19	AV

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2412MHz)
Test Date	:	2021/06/03

Horizontal



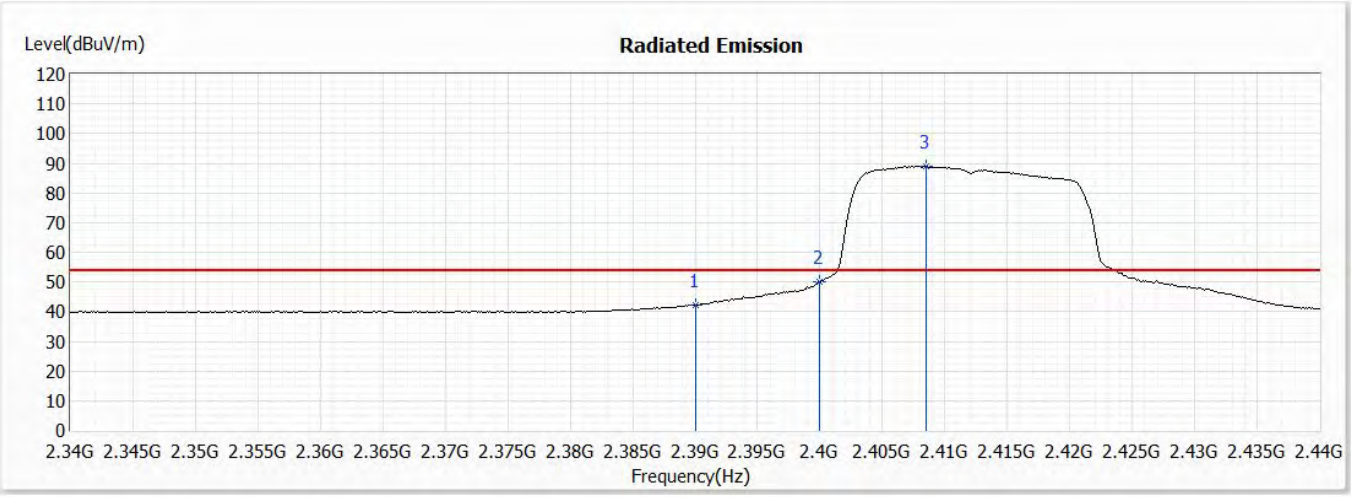
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2386.200	56.12	74.00	-17.88	42.96	13.16	PK
2	2390.000	54.62	74.00	-19.38	41.46	13.16	PK
3	2399.600	72.60	74.00	-1.40	59.42	13.18	PK
4	2400.000	71.85	74.00	-2.15	58.67	13.18	PK
5	2406.900	99.96	74.00	25.96	86.78	13.18	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2412MHz)
Test Date	:	2021/06/03

Horizontal



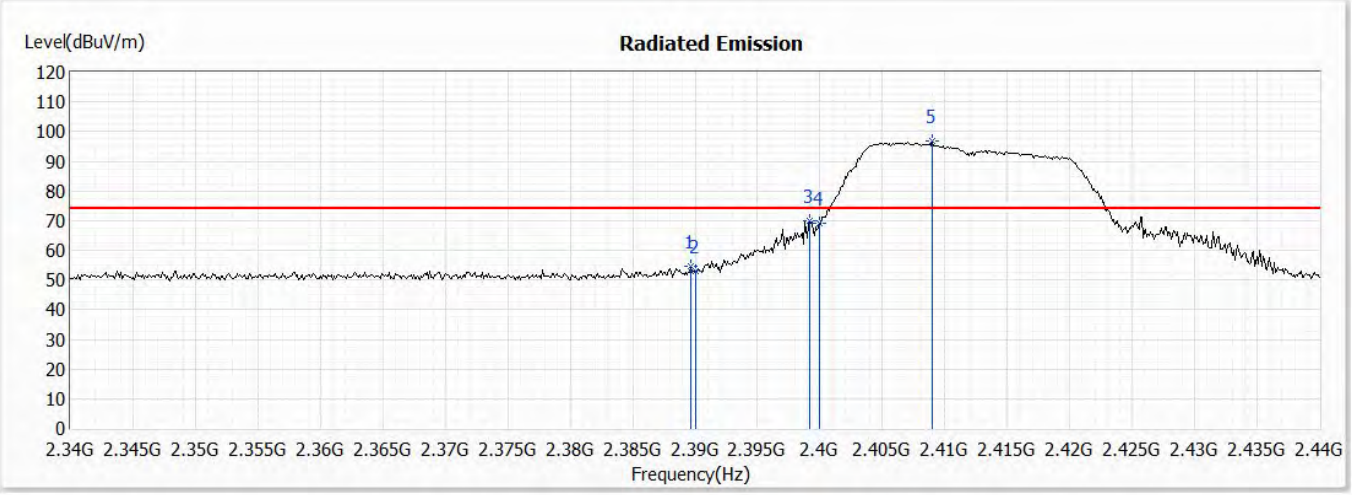
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2390.000	42.13	54.00	-11.87	28.97	13.16	AV
2	2400.000	50.14	54.00	-3.86	36.96	13.18	AV
3	2408.500	89.04	54.00	35.04	75.87	13.17	AV

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2412MHz)
Test Date	:	2021/06/03

Vertical



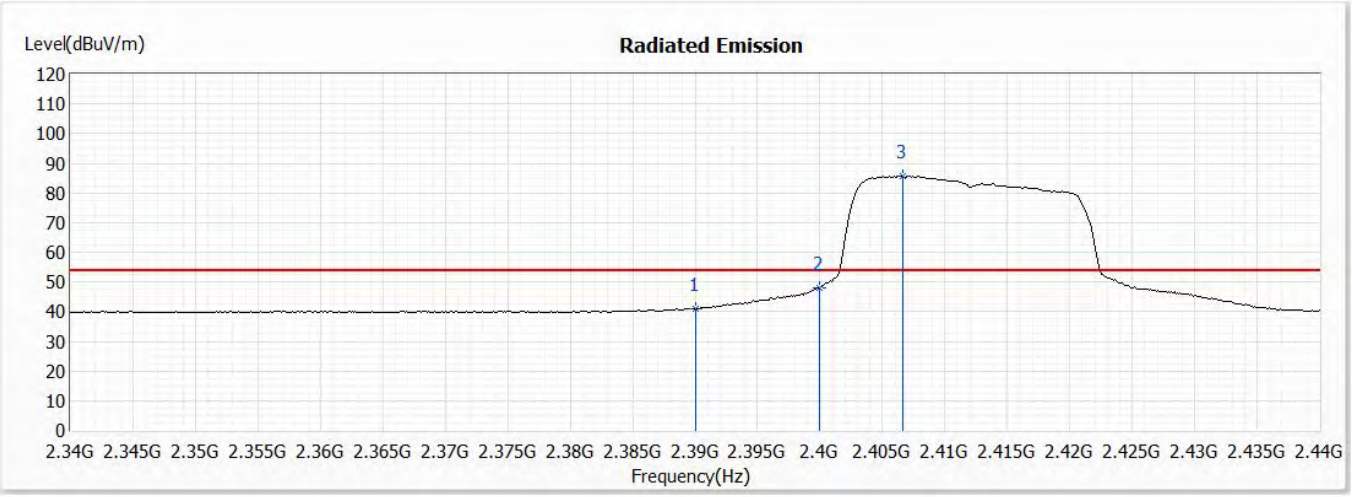
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2389.700	54.46	74.00	-19.54	41.30	13.16	PK
2	2390.000	53.13	74.00	-20.87	39.97	13.16	PK
3	2399.200	69.84	74.00	-4.16	56.66	13.18	PK
4	2400.000	69.04	74.00	-4.96	55.86	13.18	PK
5	2409.000	96.70	74.00	22.70	83.53	13.17	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2412MHz)
Test Date	:	2021/06/03

Vertical



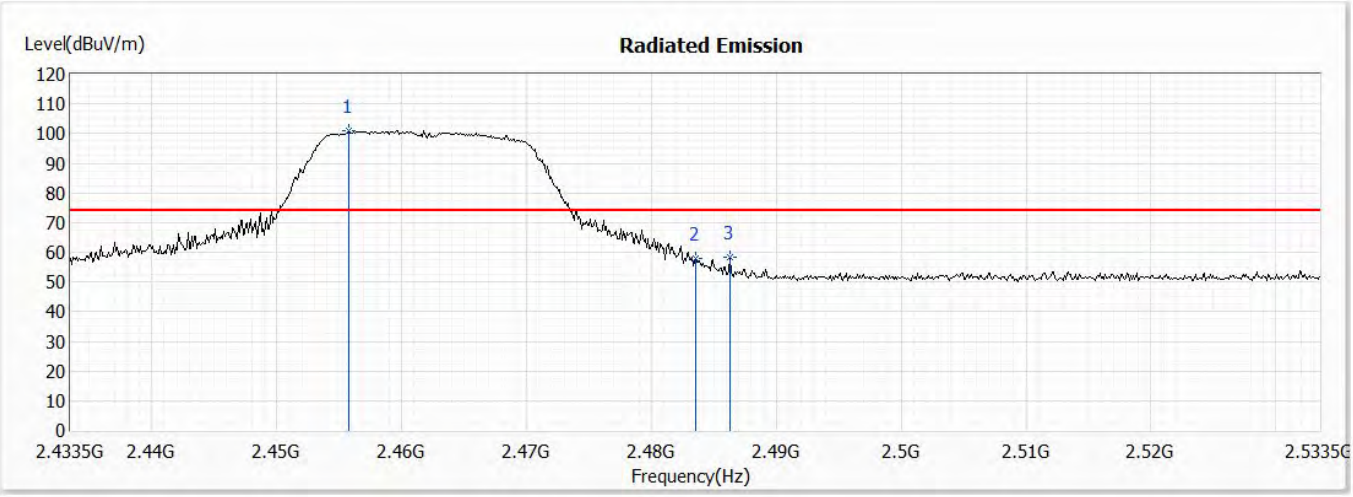
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2390.000	40.93	54.00	-13.07	27.77	13.16	AV
2	2400.000	48.20	54.00	-5.80	35.02	13.18	AV
3	2406.600	85.60	54.00	31.60	72.42	13.18	AV

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2462MHz)
Test Date	:	2021/06/03

Horizontal



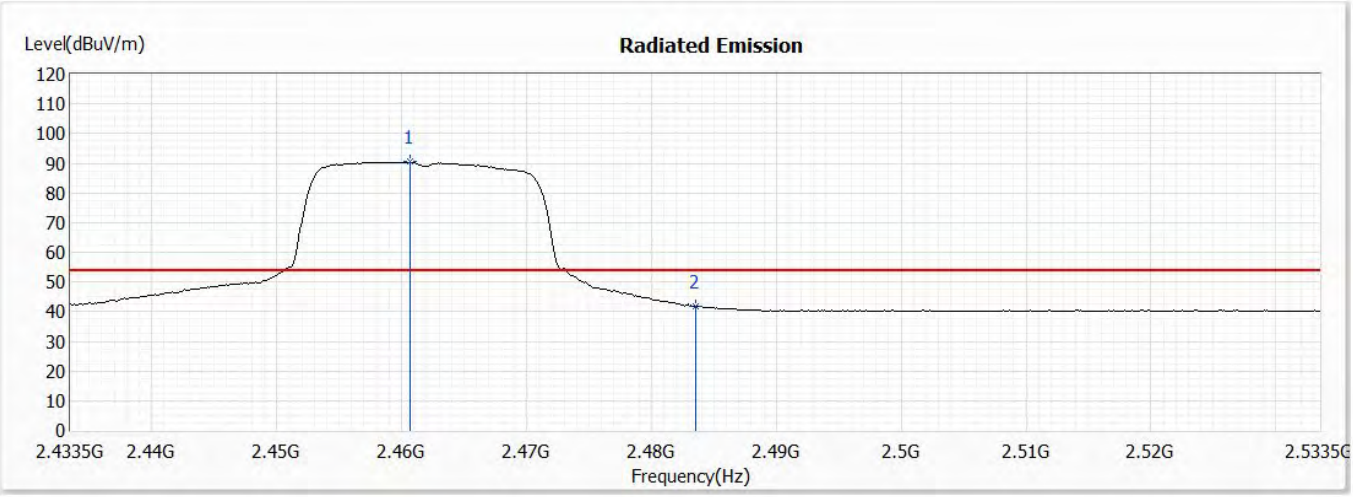
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2455.800	101.17	74.00	27.17	88.02	13.15	PK
2	2483.500	58.03	74.00	-15.97	44.84	13.19	PK
3	2486.300	58.17	74.00	-15.83	44.98	13.19	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2462MHz)
Test Date	:	2021/06/03

Horizontal



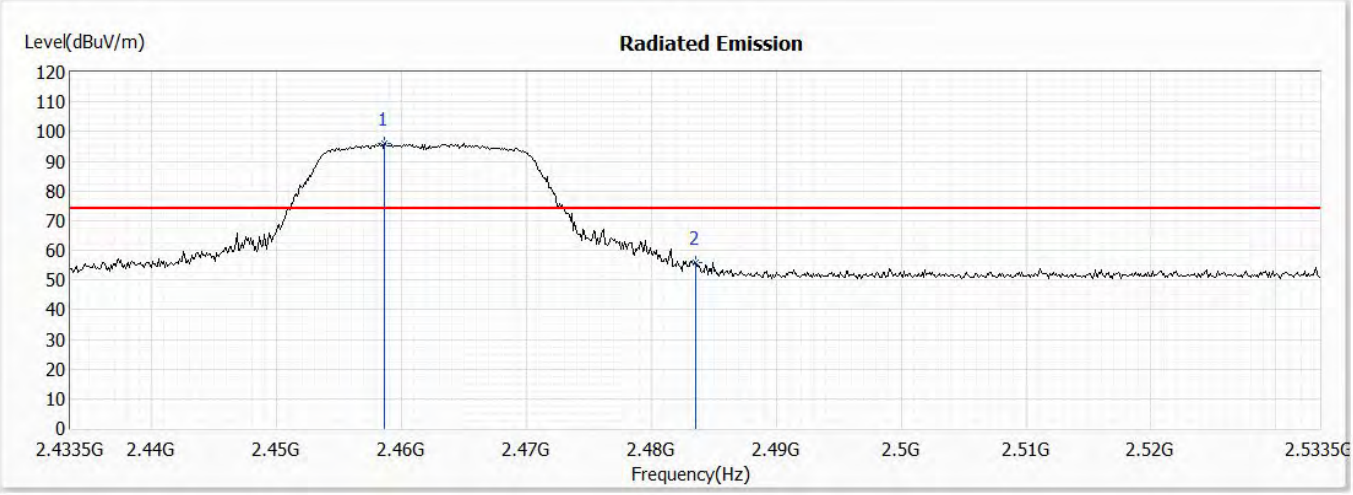
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2460.700	90.48	54.00	36.48	77.32	13.16	AV
2	2483.500	41.71	54.00	-12.29	28.52	13.19	AV

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2462MHz)
Test Date	:	2021/06/03

Vertical



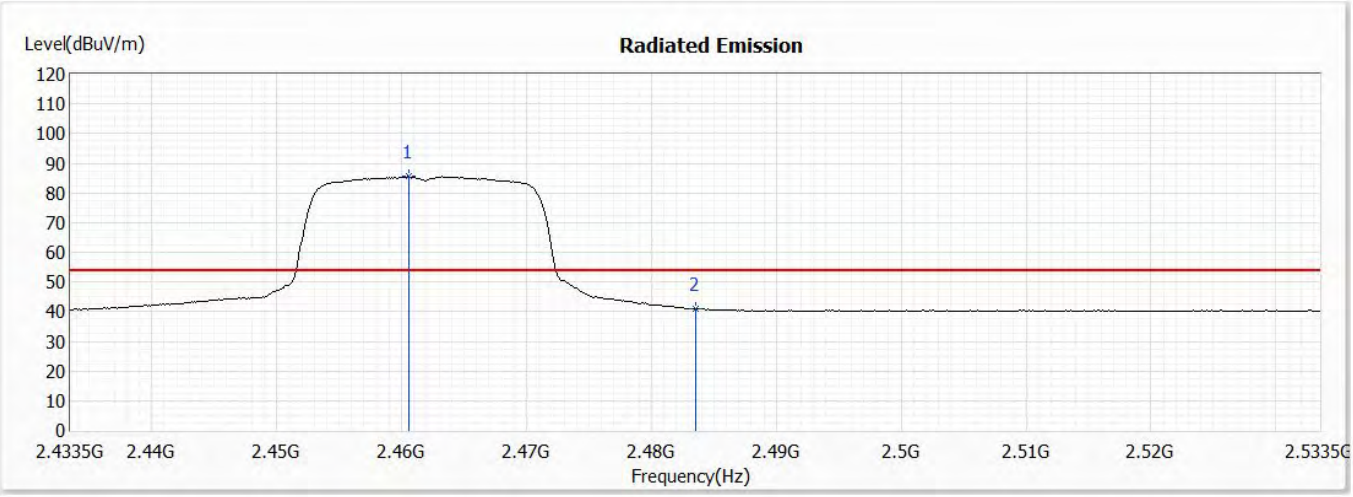
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2458.600	95.90	74.00	21.90	82.75	13.15	PK
2	2483.500	55.92	74.00	-18.08	42.73	13.19	PK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	WCDMA/LTE Mobile Phone
Test Item	:	Band Edge Data
Test Mode	:	Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2462MHz)
Test Date	:	2021/06/03

Vertical



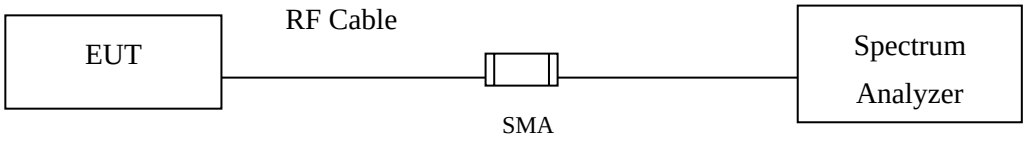
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	2460.600	85.62	54.00	31.62	72.46	13.16	AV
2	2483.500	41.03	54.00	-12.97	27.84	13.19	AV

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

7. 6dB Bandwidth

7.1. Test Setup



7.2. Limits

The minimum bandwidth shall be at least 500 kHz.

7.3. Test Procedure

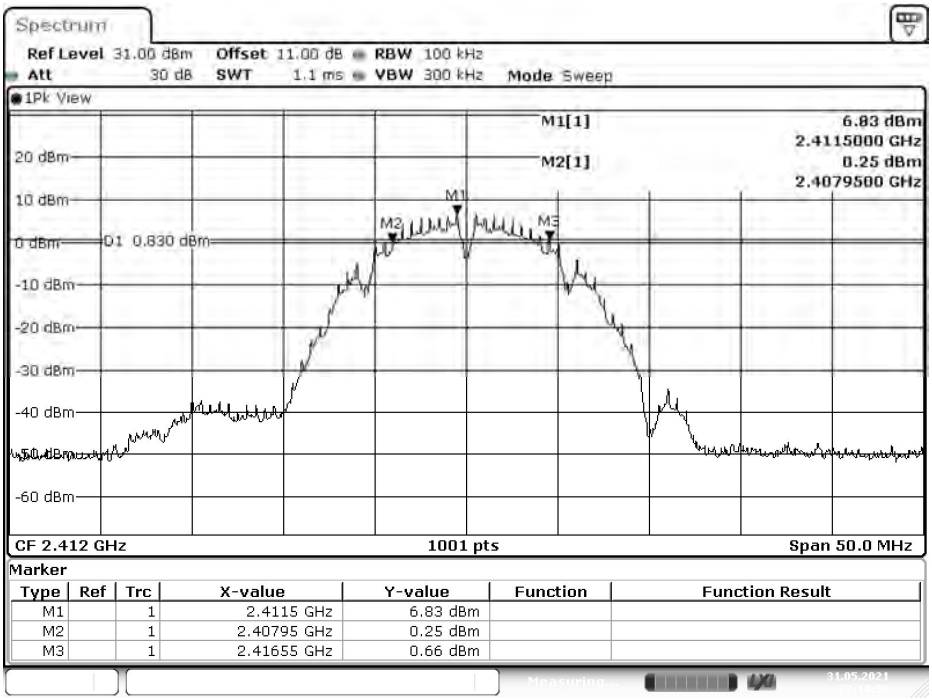
The EUT was setup according to ANSI C63.4, 2014; tested according to ANSI C63.10 Section 11.8 for compliance to FCC 47CFR 15.247 requirements.

7.4. Test Result of 6dB Bandwidth

Product : WCDMA/LTE Mobile Phone
Test Item : 6dB Bandwidth Data
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

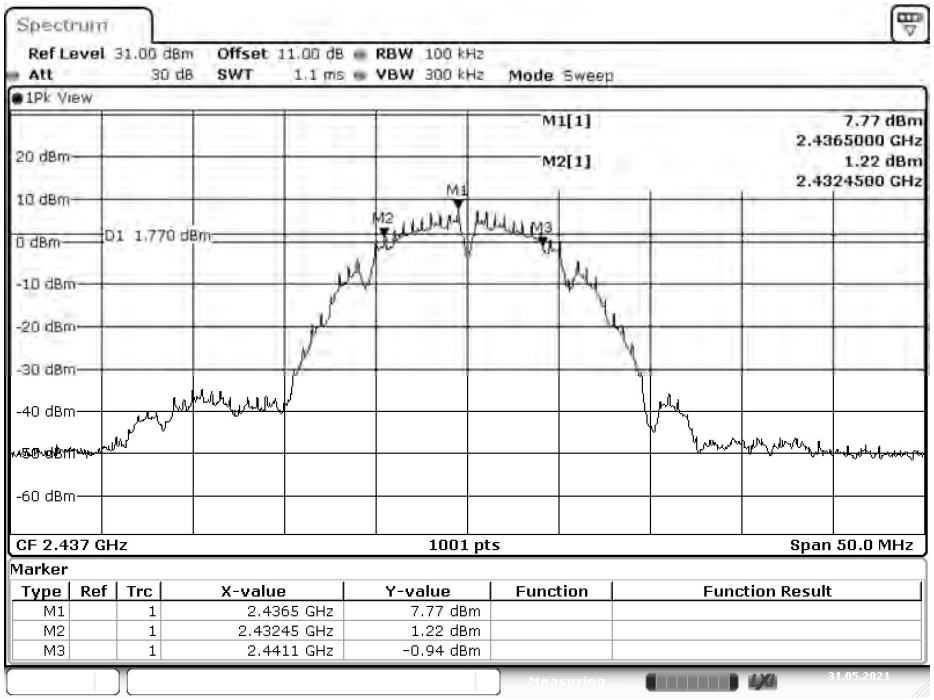
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	8600	>500	Pass
06	2437	8650	>500	Pass
11	2462	8150	>500	Pass

Figure Channel 01:



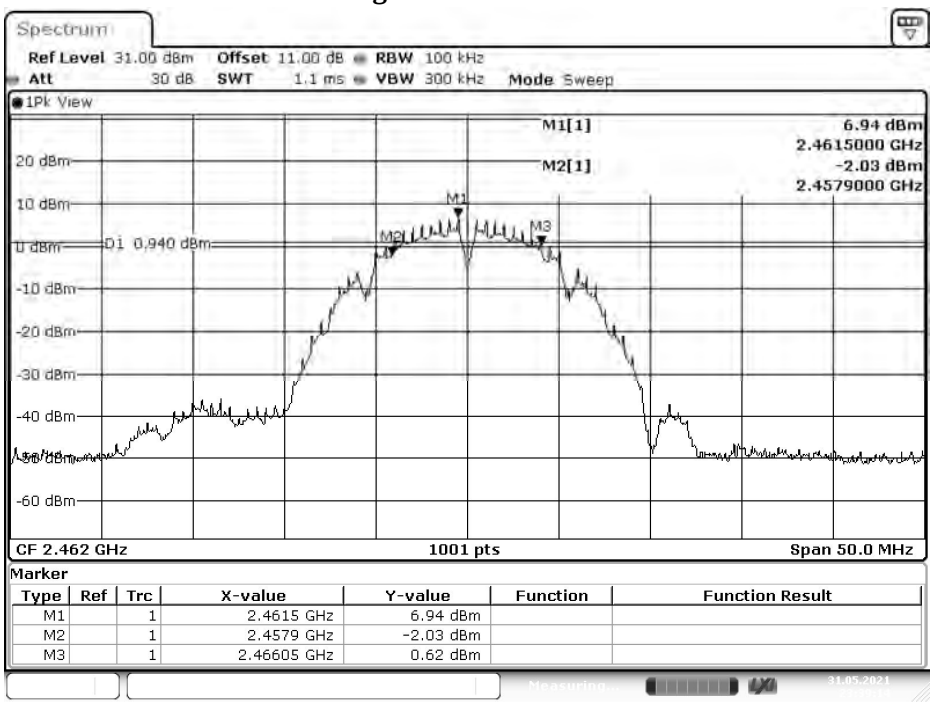
Date: 31.MAY.2021 23:14:50

Figure Channel 06:



Date: 31.MAY.2021 23:17:49

Figure Channel 11:

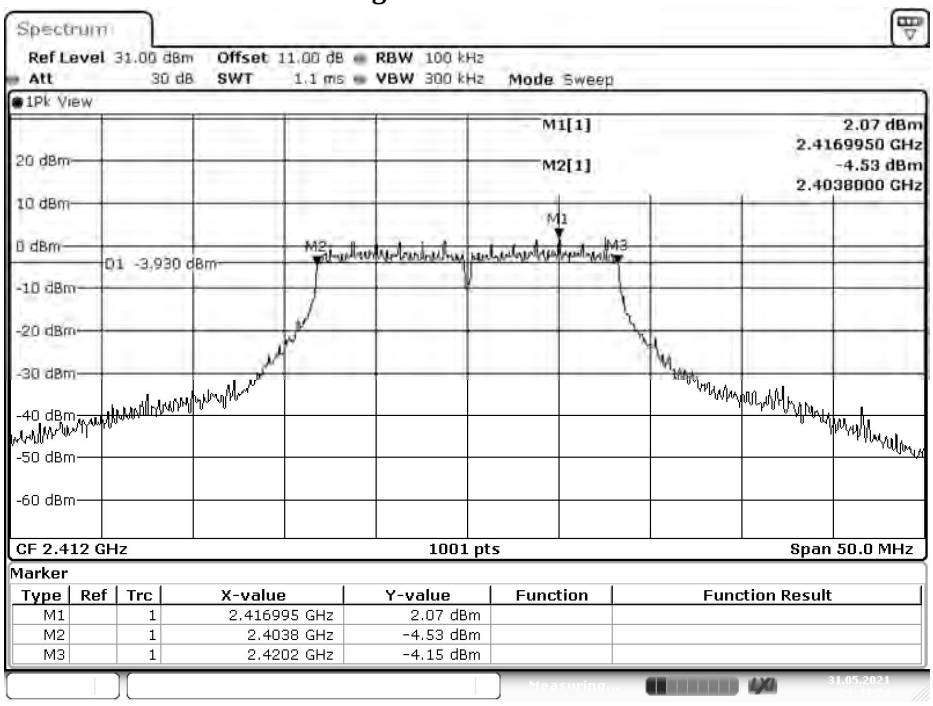


Date: 31.MAY.2021 23:39:15

Product : WCDMA/LTE Mobile Phone
Test Item : 6dB Bandwidth Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

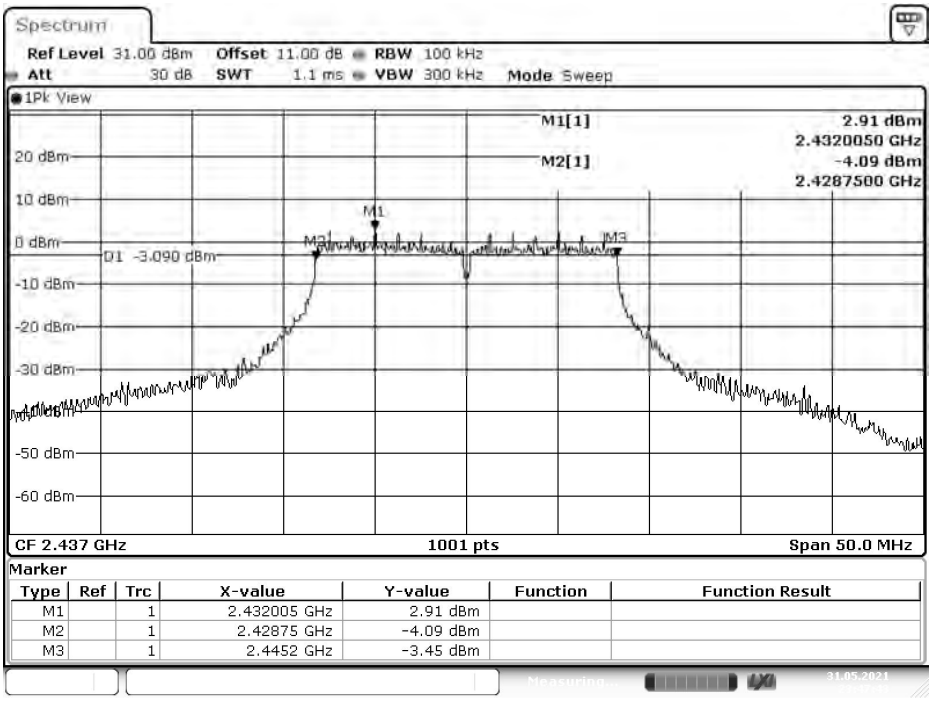
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	16400	>500	Pass
06	2437	16450	>500	Pass
11	2462	16450	>500	Pass

Figure Channel 01:



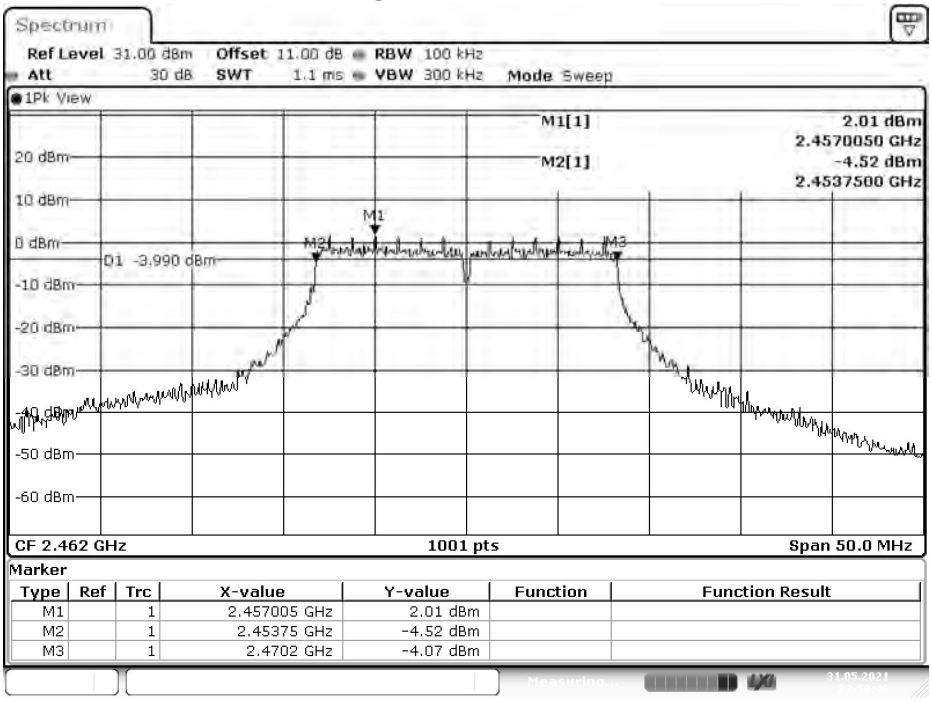
Date: 31.MAY.2021 23:44:24

Figure Channel 06:



Date: 31.MAY.2021 23:47:43

Figure Channel 11:

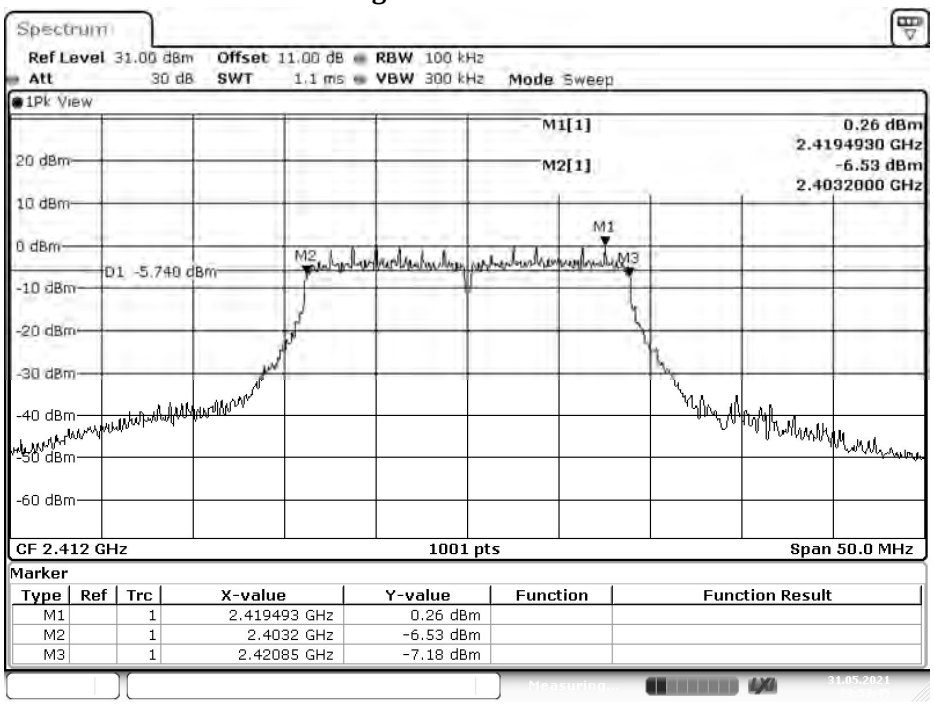


Date: 31.MAY.2021 23:50:46

Product : WCDMA/LTE Mobile Phone
Test Item : 6dB Bandwidth Data
Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps)

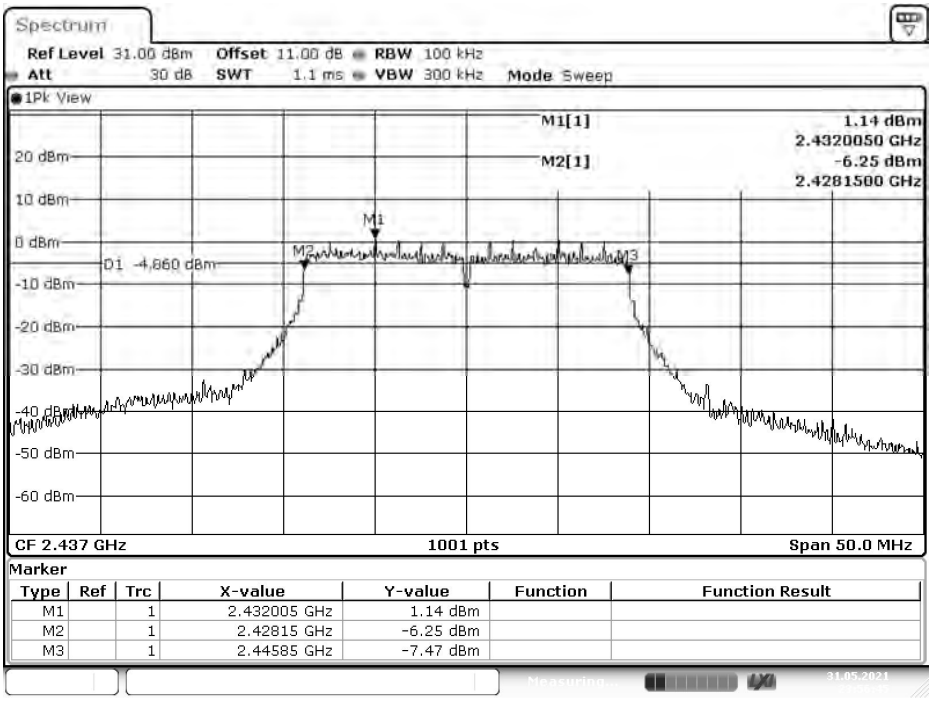
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	17650	>500	Pass
06	2437	17700	>500	Pass
11	2462	17700	>500	Pass

Figure Channel 01:



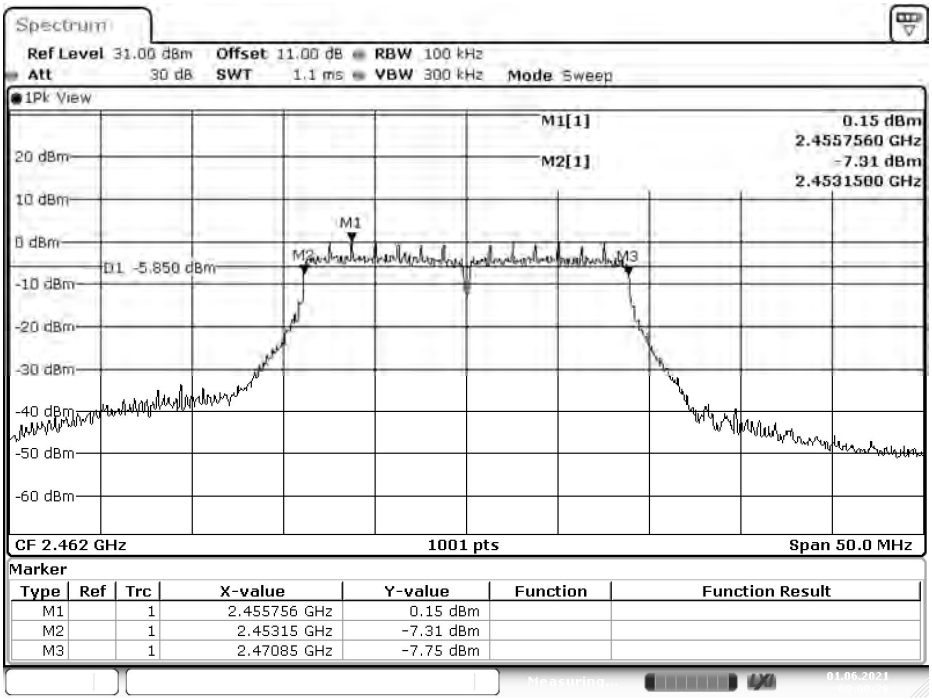
Date: 31.MAY.2021 23:53:45

Figure Channel 06:



Date: 31.MAY.2021 23:56:46

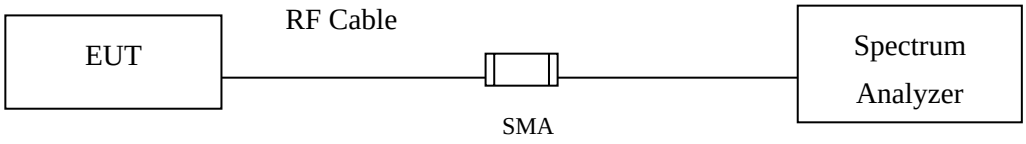
Figure Channel 11:



Date: 1.JUN.2021 00:00:29

8. Power Density

8.1. Test Setup



8.2. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

8.3. Test Procedure

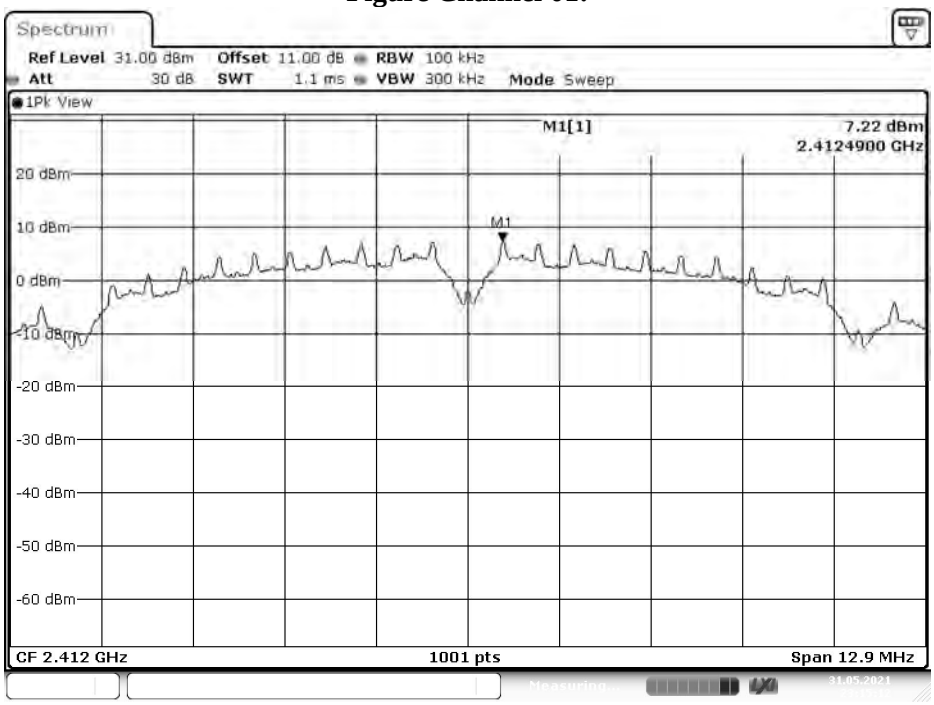
The EUT was setup according to ANSI C63.10, 2013; tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements.
The maximum power spectral density using C63.10 Section 11.10.2 Method PKPSD (peak PSD)

8.4. Test Result of Power Density

Product : WCDMA/LTE Mobile Phone
Test Item : Power Density Data
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

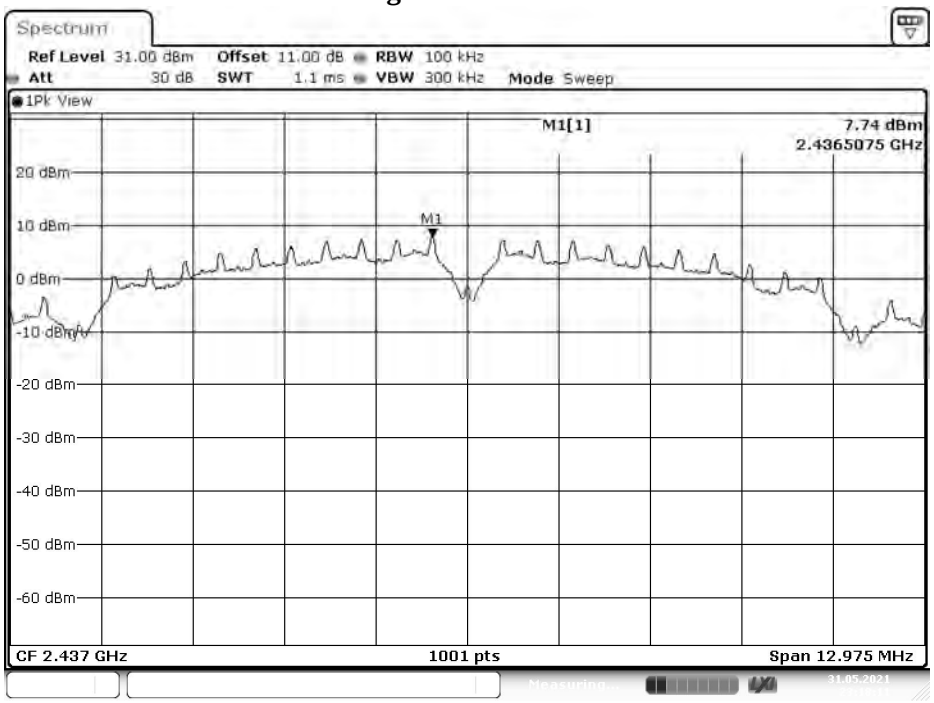
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	7.220	≦8dBm	Pass
06	2437	7.740	≦8dBm	Pass
11	2462	6.610	≦8dBm	Pass

Figure Channel 01:



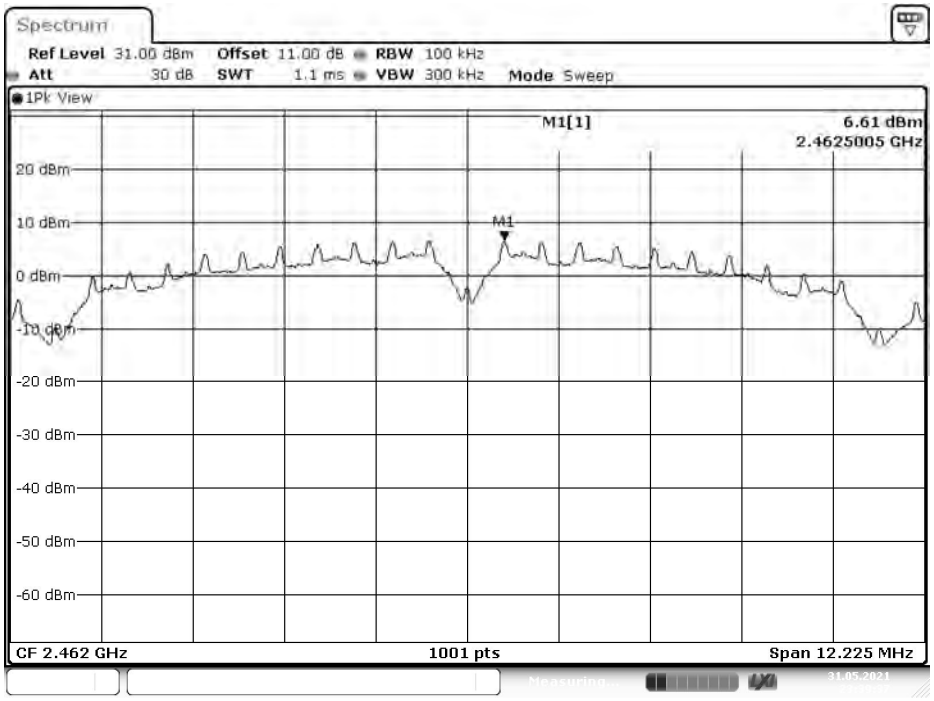
Date: 31.MAY.2021 23:15:13

Figure Channel 06:



Date: 31.MAY.2021 23:18:12

Figure Channel 11:

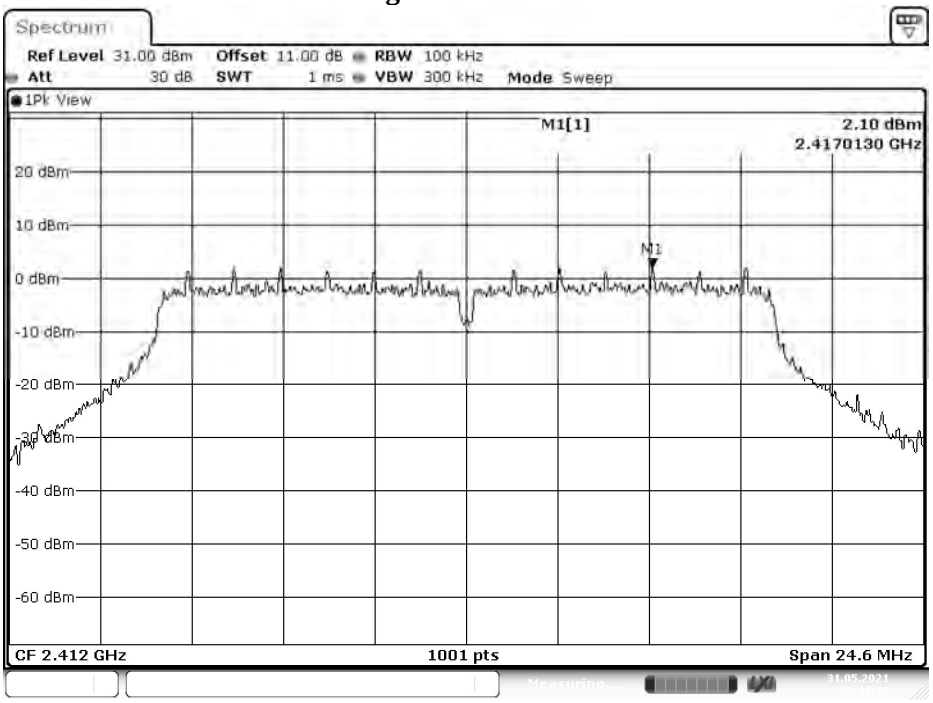


Date: 31.MAY.2021 23:39:37

Product : WCDMA/LTE Mobile Phone
Test Item : Power Density Data
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

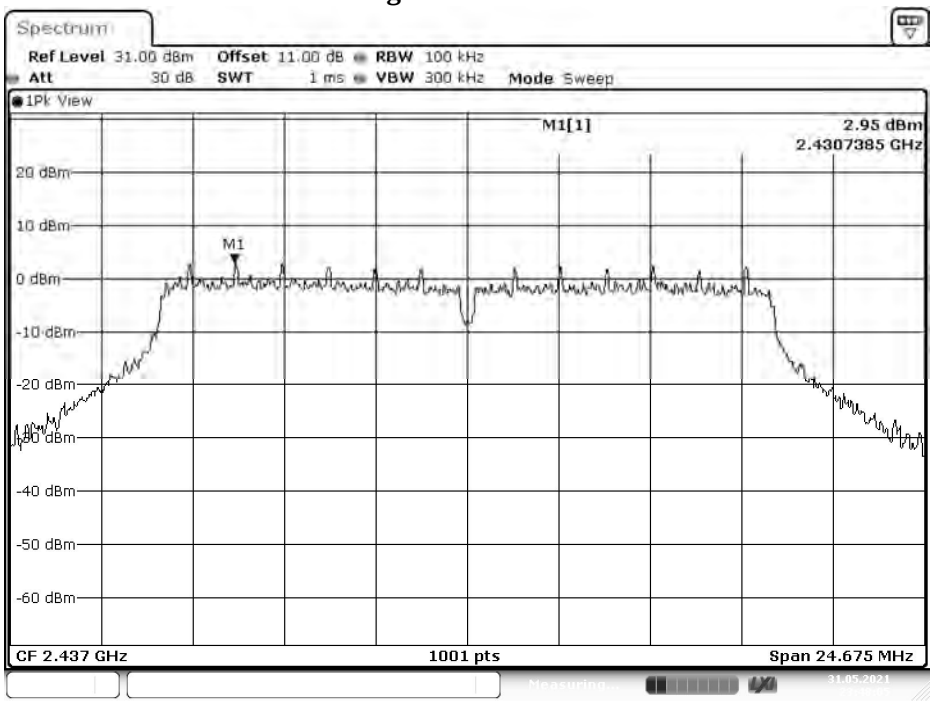
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	2.100	≦8dBm	Pass
06	2437	2.950	≦8dBm	Pass
11	2462	2.190	≦8dBm	Pass

Figure Channel 01:



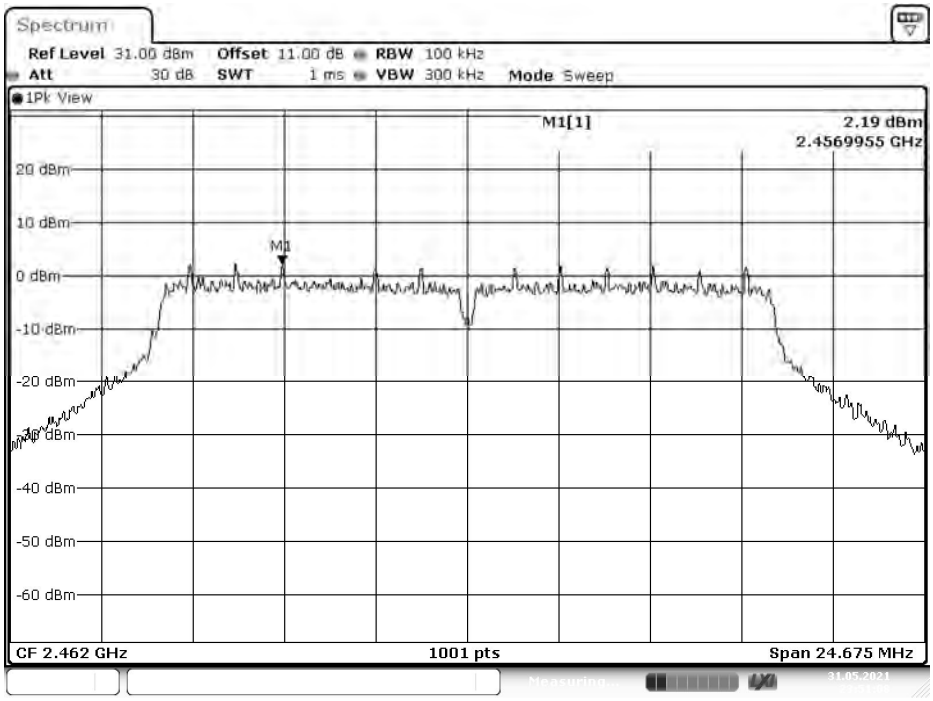
Date: 31.MAY.2021 23:44:47

Figure Channel 06:



Date: 31.MAY.2021 23:48:06

Figure Channel 11:



Date: 31.MAY.2021 23:51:08

Product : WCDMA/LTE Mobile Phone
Test Item : Power Density Data
Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	0.300	≦8dBm	Pass
06	2437	1.200	≦8dBm	Pass
11	2462	0.200	≦8dBm	Pass

Figure Channel 01:

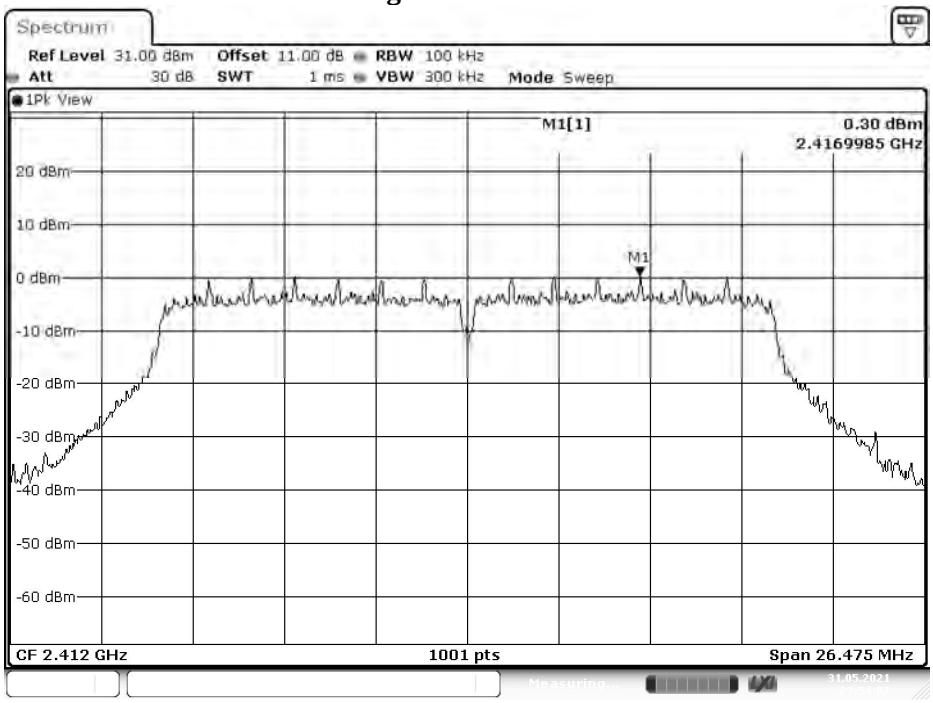
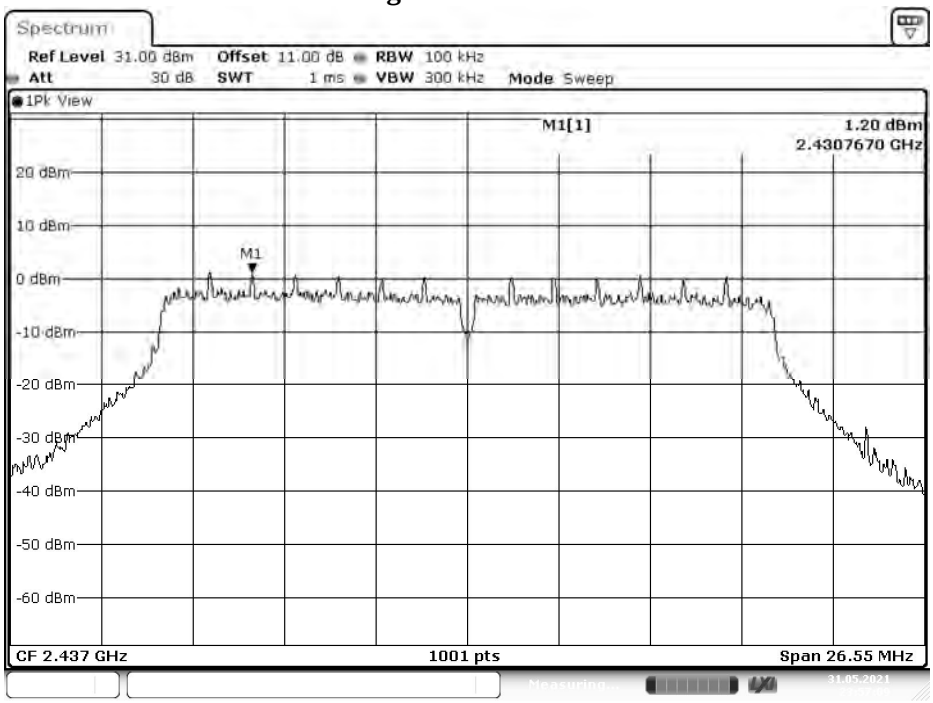
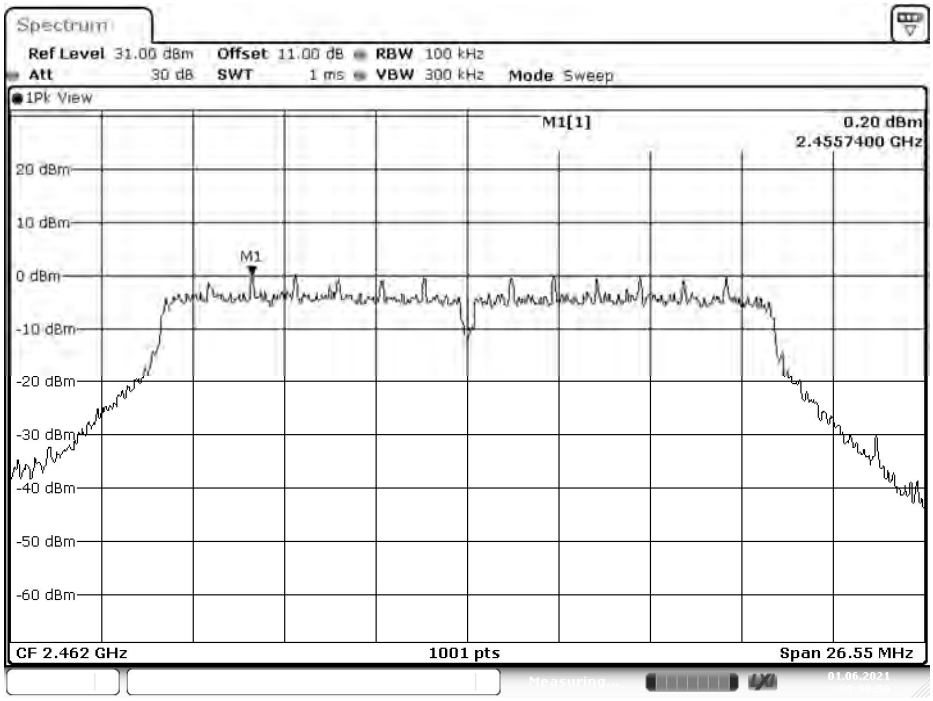


Figure Channel 06:



Date: 31.MAY.2021 23:57:09

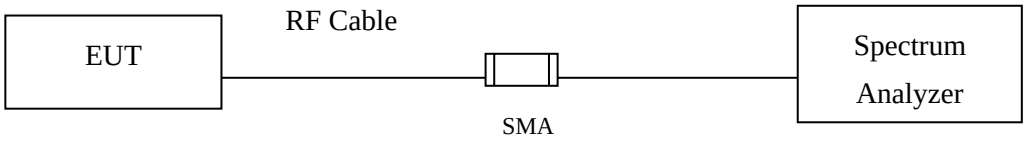
Figure Channel 11:



Date: 1.JUN.2021 00:00:50

9. Duty Cycle

9.1. Test Setup



9.2. Test Procedure

The EUT was setup according to ANSI C63.10 2013; tested according to ANSI C63.10 2013 for compliance to FCC 47CFR 15.247 requirements.

9.3. Test Result of Duty Cycle

Product : WCDMA/LTE Mobile Phone
Test Item : Duty Cycle
Test Mode : Transmit

Duty Cycle Formula:

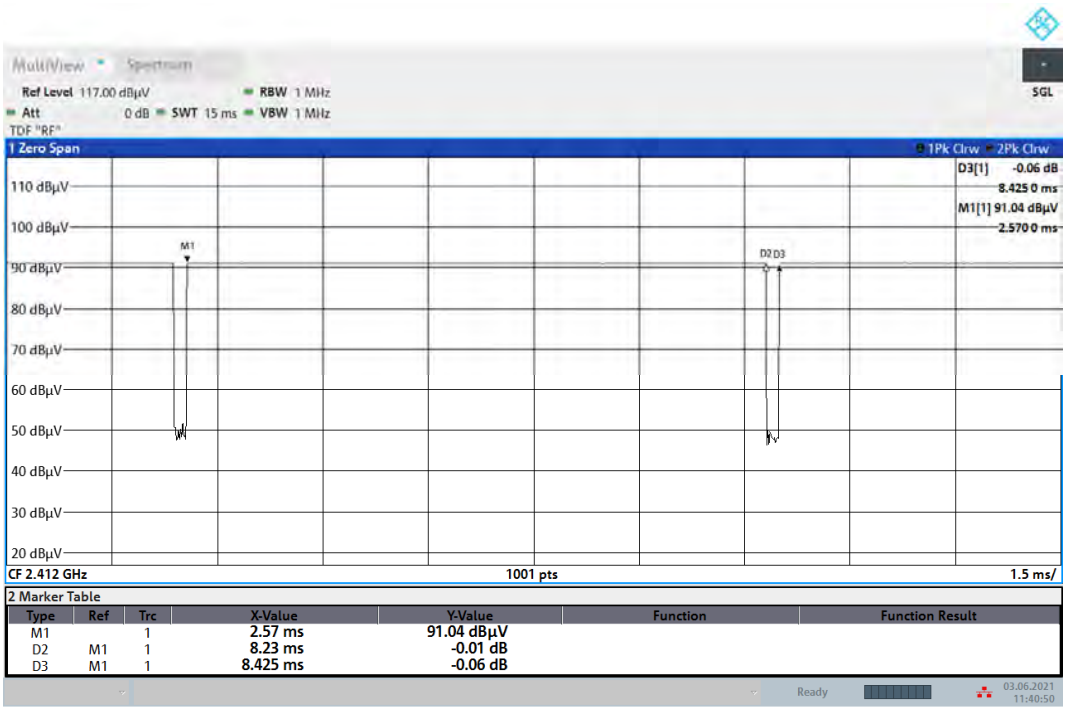
Duty Cycle = Ton / (Ton + Toff)

Duty Factor = 10 Log (1/Duty Cycle)

Results:

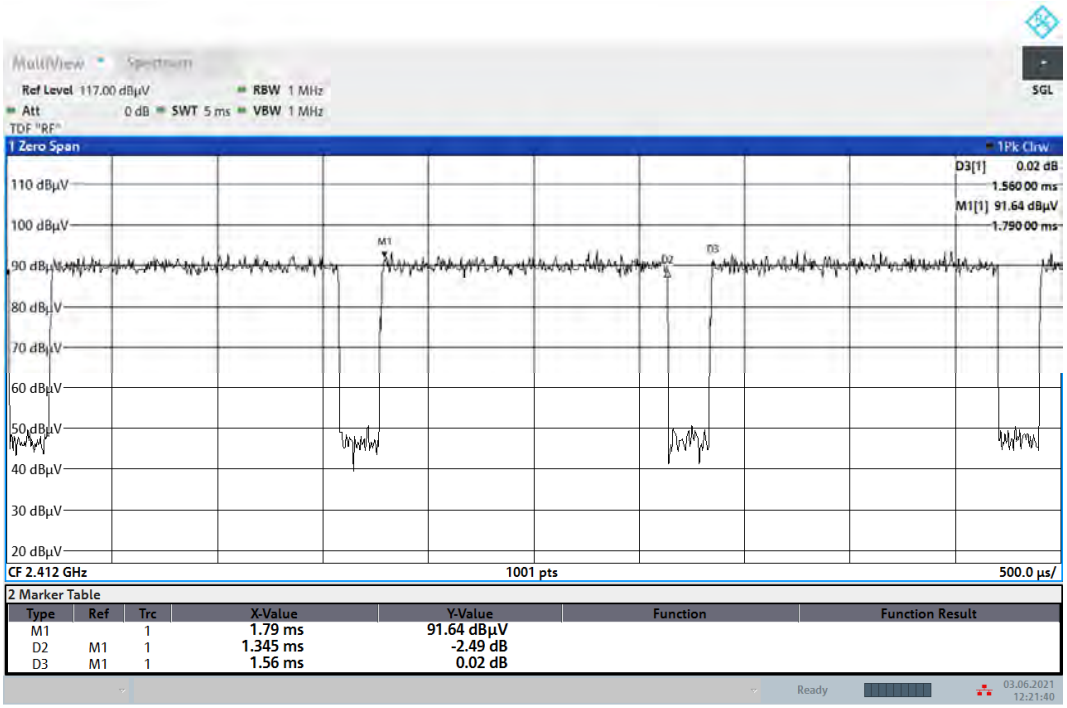
2.4GHz band	Ton (ms)	Ton + Toff (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11 b	8.2300	8.4250	97.69	0.10
802.11 g	1.3450	1.5600	86.22	0.64
802.11 n20	1.2650	1.4750	85.76	0.67

802.11b



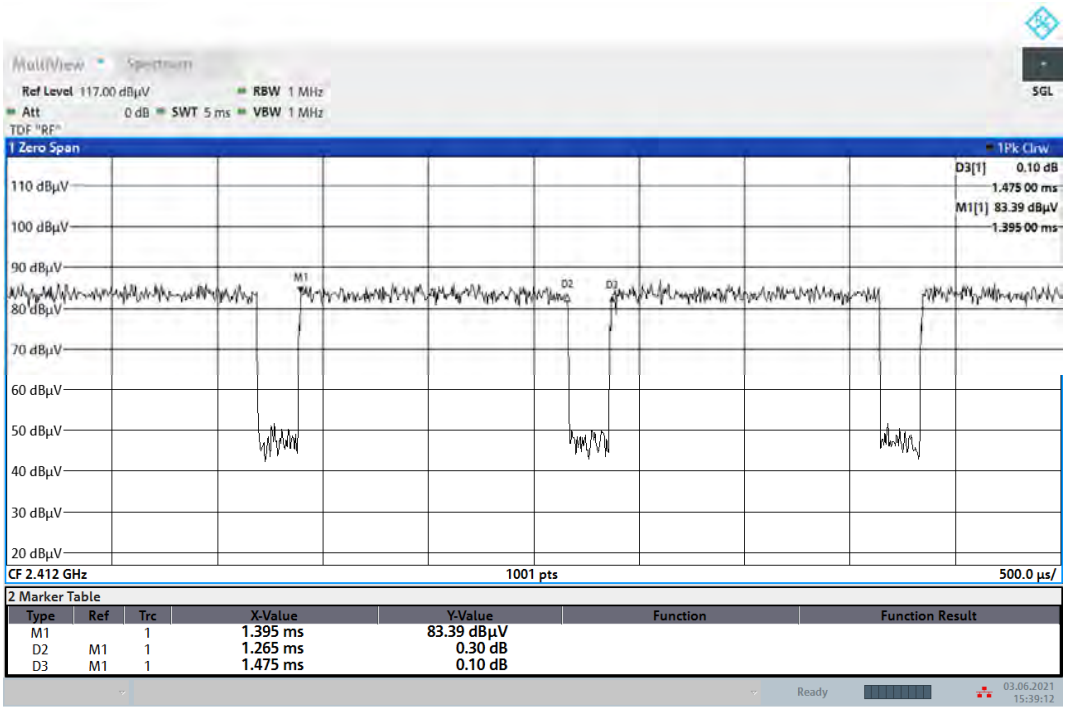
11:40:50 03.06.2021

802.11g



12:21:40 03.06.2021

802.11n20



15:39:12 03.06.2021

10. EMI Reduction Method During Compliance Testing

No modification was made during testing.