

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
Issued Date	Jun. 16, 2021
Report No.	2150946R-E3032110108
Report Version	V1.0



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

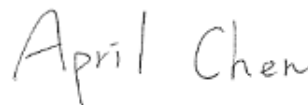
Issued Date: Jun. 16, 2021

Report No.: 2150946R-E3032110108



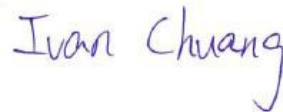
Product Name	WCDMA/LTE Mobile Phone
Applicant	FIH CO., LTD.
Address	No.4, Minsheng St., Tu-Cheng Dist., New Taipei City 23679, Taiwan
Manufacturer	FIH CO., LTD.
Model No.	EA211101
FCC ID.	RYQEA211101
EUT Rated Voltage	DC 5V, 550mA
EUT Test Voltage	AC 120V / 60Hz
Trade Name	FIH
Applicable Standard	FCC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

Documented By :



(Senior Adm. Specialist / April Chen)

Tested By :



(Senior Engineer / Ivan Chuang)

Approved By :



(Senior Engineer / Jack Hsu)

TABLE OF CONTENTS

Description	Page
1. GENERAL INFORMATION	5
1.1. EUT Description.....	5
1.2. Tested System Details.....	7
1.3. Configuration of Tested System	7
1.4. EUT Exercise Software	7
1.5. Test Facility	8
1.6. List of Test Equipment.....	9
1.7. Uncertainty	10
2. CONDUCTED EMISSION	11
2.1. Test Setup	11
2.2. Limits.....	11
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. Limit	15
3.3. Test Procedure	15
3.4. Test Result of Peak Power Output	16
4. RADIATED EMISSION	18
4.1. Test Setup	18
4.2. Limits.....	19
4.3. Test Procedure	20
4.4. Test Result of Radiated Emission	21
5. RF ANTENNA CONDUCTED TEST	35
5.1. Test Setup	35
5.2. Limits.....	35
5.3. Test Procedure	35
5.4. Test Result of RF Antenna Conducted Test	36
6. BAND EDGE	38
6.1. Test Setup	38
6.2. Limit	39
6.3. Test Procedure	39
6.4. Test Result of Band Edge	40
7. CHANNEL NUMBER.....	52
7.1. Test Setup	52
7.2. Limit	52
7.3. Test Procedure	52
7.4. Test Result of Channel Number.....	53
8. CHANNEL SEPARATION.....	55
8.1. Test Setup	55
8.2. Limit	55
8.3. Test Procedure	55
8.4. Test Result of Channel Separation.....	56
9. DWELL TIME	60
9.1. Test Setup	60
9.2. Limit	60
9.3. Test Procedure	60
9.4. Test Result of Dwell Time	61
10. OCCUPIED BANDWIDTH	65
10.1. Test Setup	65
10.2. Limits.....	65
10.3. Test Procedure	65
10.4. Test Result of Occupied Bandwidth	66
11. DUTY CYCLE	70
11.1. Test Setup	70
11.2. Test Result of Duty Cycle.....	71
12. EMI REDUCTION METHOD DURING COMPLIANCE TESTING	73
Attachment 1: EUT Test Photographs	
Attachment 2: EUT Detailed Photographs	

Revision History

Report No.	Version	Description	Issued Date
2150946R-E3032110108	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	2402 – 2480MHz
Channel Number	79
Type of Modulation	FHSS: GFSK(1Mbps) / π / 4DQPSK(2Mbps) / 8DPSK(3Mbps)
Antenna Type	PIFA Antenna
Channel Control	Auto
Antenna Gain	Refer to the table “Antenna List”
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 conforms to FCC 15.203.

Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 00:	2402 MHz	Channel 20:	2422 MHz	Channel 40:	2442 MHz	Channel 60:	2462 MHz
Channel 01:	2403 MHz	Channel 21:	2423 MHz	Channel 41:	2443 MHz	Channel 61:	2463 MHz
Channel 02:	2404 MHz	Channel 22:	2424 MHz	Channel 42:	2444 MHz	Channel 62:	2464 MHz
Channel 03:	2405 MHz	Channel 23:	2425 MHz	Channel 43:	2445 MHz	Channel 63:	2465 MHz
Channel 04:	2406 MHz	Channel 24:	2426 MHz	Channel 44:	2446 MHz	Channel 64:	2466 MHz
Channel 05:	2407 MHz	Channel 25:	2427 MHz	Channel 45:	2447 MHz	Channel 65:	2467 MHz
Channel 06:	2408 MHz	Channel 26:	2428 MHz	Channel 46:	2448 MHz	Channel 66:	2468 MHz
Channel 07:	2409 MHz	Channel 27:	2429 MHz	Channel 47:	2449 MHz	Channel 67:	2469 MHz
Channel 08:	2410 MHz	Channel 28:	2430 MHz	Channel 48:	2450 MHz	Channel 68:	2470 MHz
Channel 09:	2411 MHz	Channel 29:	2431 MHz	Channel 49:	2451 MHz	Channel 69:	2471 MHz
Channel 10:	2412 MHz	Channel 30:	2432 MHz	Channel 50:	2452 MHz	Channel 70:	2472 MHz
Channel 11:	2413 MHz	Channel 31:	2433 MHz	Channel 51:	2453 MHz	Channel 71:	2473 MHz
Channel 12:	2414 MHz	Channel 32:	2434 MHz	Channel 52:	2454 MHz	Channel 72:	2474 MHz
Channel 13:	2415 MHz	Channel 33:	2435 MHz	Channel 53:	2455 MHz	Channel 73:	2475 MHz
Channel 14:	2416 MHz	Channel 34:	2436 MHz	Channel 54:	2456 MHz	Channel 74:	2476 MHz
Channel 15:	2417 MHz	Channel 35:	2437 MHz	Channel 55:	2457 MHz	Channel 75:	2477 MHz
Channel 16:	2418 MHz	Channel 36:	2438 MHz	Channel 56:	2458 MHz	Channel 76:	2478 MHz
Channel 17:	2419 MHz	Channel 37:	2439 MHz	Channel 57:	2459 MHz	Channel 77:	2479 MHz
Channel 18:	2420 MHz	Channel 38:	2440 MHz	Channel 58:	2460 MHz	Channel 78:	2480 MHz
Channel 19:	2421 MHz	Channel 39:	2441 MHz	Channel 59:	2461 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 Bluetooth V2.1+EDR.
2. These tests were conducted on a sample for the purpose of demonstrating compliance of transmitter with Part 15 Subpart C Paragraph 15.247 for spread spectrum devices.
3. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
4. The test mode is based on the Bluetooth technology, while testing 1Mbps, 2Mbps and 3Mbps, the worst case is 1Mbps and 3Mbps, and only worse case data is recorded in this report.

Test Mode	Mode 1: Transmit - 1Mbps
	Mode 2: Transmit - 3Mbps

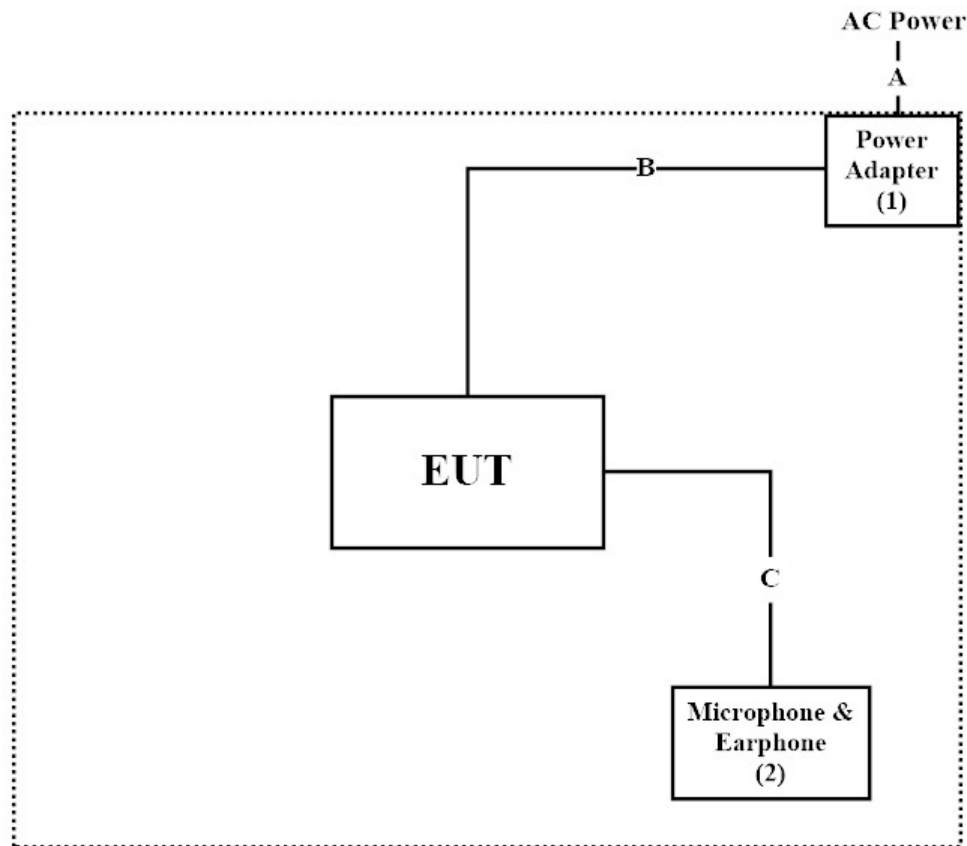
1.2. Tested System Details

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
2	Microphone & Earphone	Verbatim	C09024VB	N/A

Signal Cable Type	Signal cable Description
A	Power Cable
B	Power Cable
C	Audio Cable

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 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.

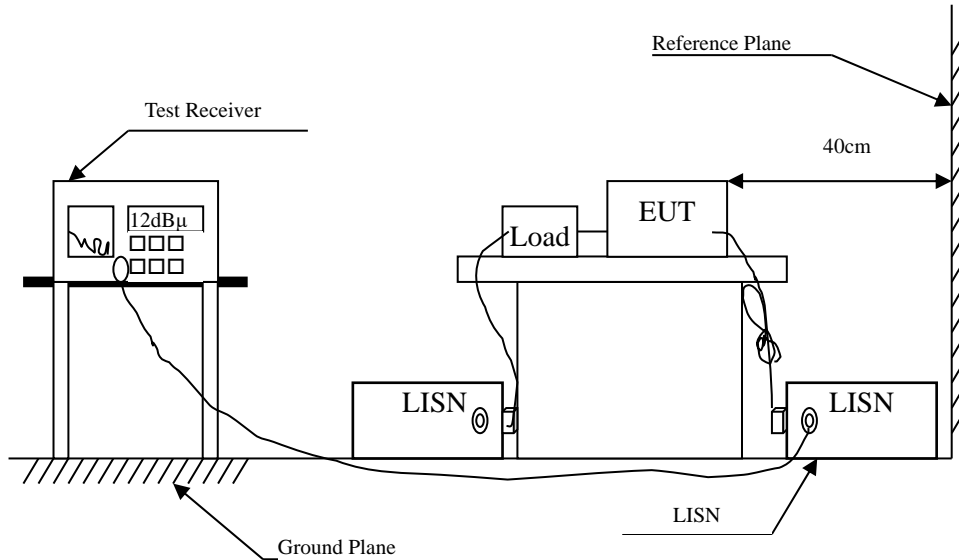
The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

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
Channel Number	N/A	
Channel Separation	± 682.83 Hz	
Dwell Time	± 2.31 ms	
Occupied Bandwidth	± 682.83 Hz	
Duty Cycle	± 2.31 ms	

2. Conducted Emission

2.1. Test Setup



2.2. Limits

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

Remarks: In the above table, the tighter limit applies at the band edges.

2.3. Test Procedure

The EUT and Peripherals 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 refer to the block diagram of the test setup and photographs.)

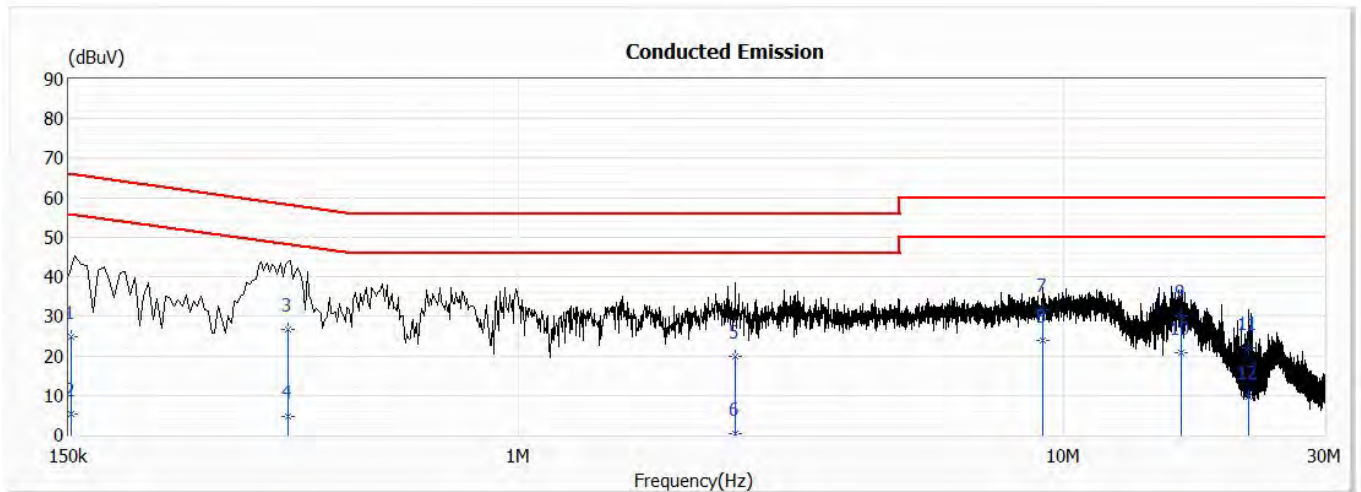
Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

The EUT setup and the test procedure are according to ANSI C63.4, 2014 to comply with the requirements of FCC 47CFR Subpart C.

2.4. Test Result of Conducted Emission

Product : WCDMA/LTE Mobile Phone
 Test Item : Conducted Emission Test
 Power Line : L 1
 Test Mode : Mode 2: Transmit - 3Mbps (2441MHz)
 Test Date : 2021/06/08

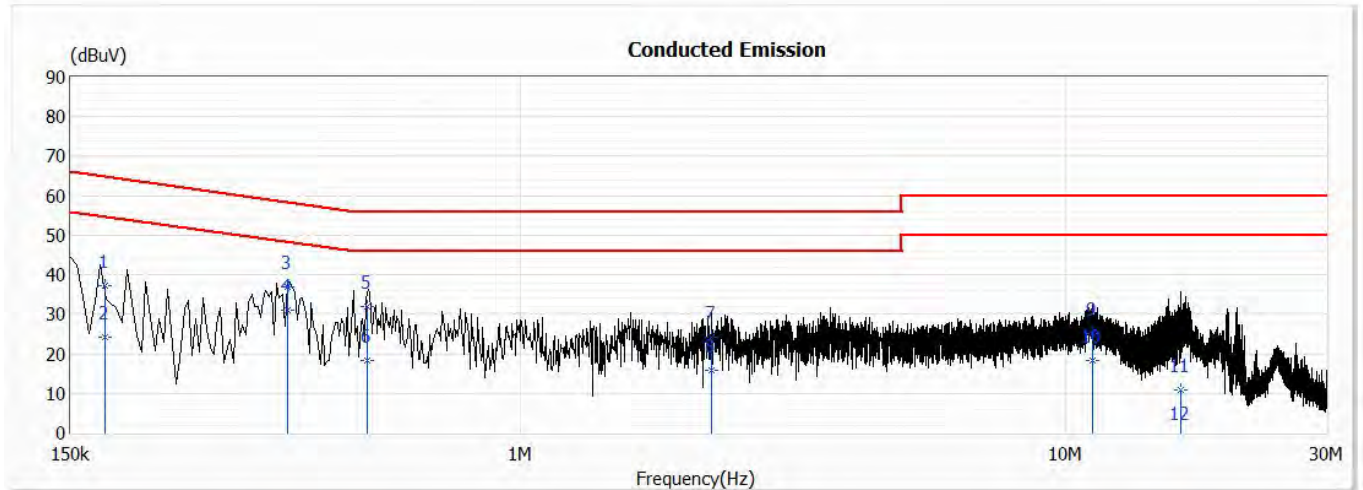


No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.151	24.83	65.92	-41.09	15.17	9.66	QP
2	0.151	5.33	55.92	-50.59	-4.33	9.66	AV
3	0.378	26.59	58.32	-31.73	16.93	9.66	QP
4	0.378	4.75	48.32	-43.57	-4.91	9.66	AV
5	2.493	19.73	56.00	-36.27	10.00	9.73	QP
6	2.493	0.27	46.00	-45.73	-9.46	9.73	AV
7	9.151	31.59	60.00	-28.41	21.72	9.87	QP
*8	9.151	23.81	50.00	-26.19	13.94	9.87	AV
9	16.392	30.15	60.00	-29.85	20.20	9.95	QP
10	16.392	20.80	50.00	-29.20	10.85	9.95	AV
11	21.811	22.11	60.00	-37.89	12.14	9.97	QP
12	21.811	9.50	50.00	-40.50	-0.47	9.97	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 2: Transmit - 3Mbps (2441MHz)
 Test Date : 2021/06/08



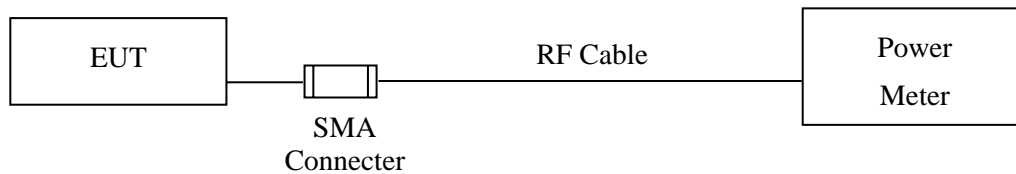
No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.173	37.19	64.80	-27.61	27.52	9.67	QP
2	0.173	24.19	54.80	-30.61	14.52	9.67	AV
3	0.374	37.02	58.41	-21.39	27.35	9.67	QP
*4	0.374	30.91	48.41	-17.50	21.24	9.67	AV
5	0.525	31.86	56.00	-24.14	22.19	9.67	QP
6	0.525	18.30	46.00	-27.70	8.63	9.67	AV
7	2.239	24.18	56.00	-31.82	14.45	9.73	QP
8	2.239	15.69	46.00	-30.31	5.96	9.73	AV
9	11.159	25.02	60.00	-34.98	15.09	9.93	QP
10	11.159	18.22	50.00	-31.78	8.29	9.93	AV
11	16.212	10.76	60.00	-49.24	0.75	10.01	QP
12	16.212	-1.10	50.00	-51.10	-11.11	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. Limit

The maximum peak power shall be less 1Watt.

3.3. Test Procedure

Tested according to FHSS test procedure of KDB 558074 section 9 (b for compliance to FCC 47CFR 15.247 requirements.

3.4. Test Result of Peak Power Output

Product : WCDMA/LTE Mobile Phone
Test Item : Peak Power Output
Test Mode : Mode 1: Transmit - 1Mbps
Test Date : 2021/06/08

Channel No.	Frequency (MHz)	Measurement (dBm)	Required Limit	Result
Channel 00	2402.00	8.06	1 Watt= 30 dBm	Pass
Channel 39	2441.00	8.29	1 Watt= 30 dBm	Pass
Channel 78	2480.00	6.65	1 Watt= 30 dBm	Pass

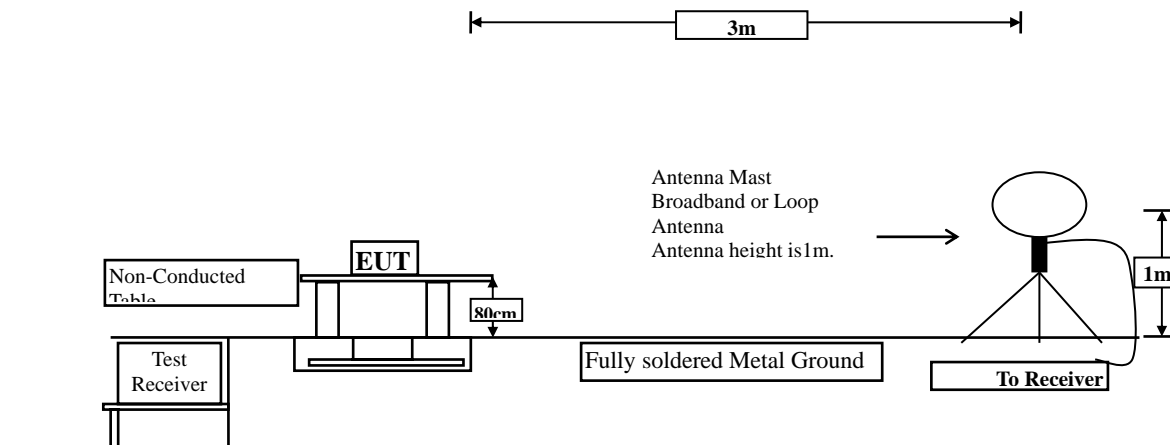
Product : WCDMA/LTE Mobile Phone
Test Item : Peak Power Output
Test Mode : Mode 2: Transmit - 3Mbps
Test Date : 2021/06/08

Channel No.	Frequency (MHz)	Measurement (dBm)	Required Limit	Result
Channel 00	2402.00	7.05	1 Watt= 30 dBm	Pass
Channel 39	2441.00	7.27	1 Watt= 30 dBm	Pass
Channel 78	2480.00	5.52	1 Watt= 30 dBm	Pass

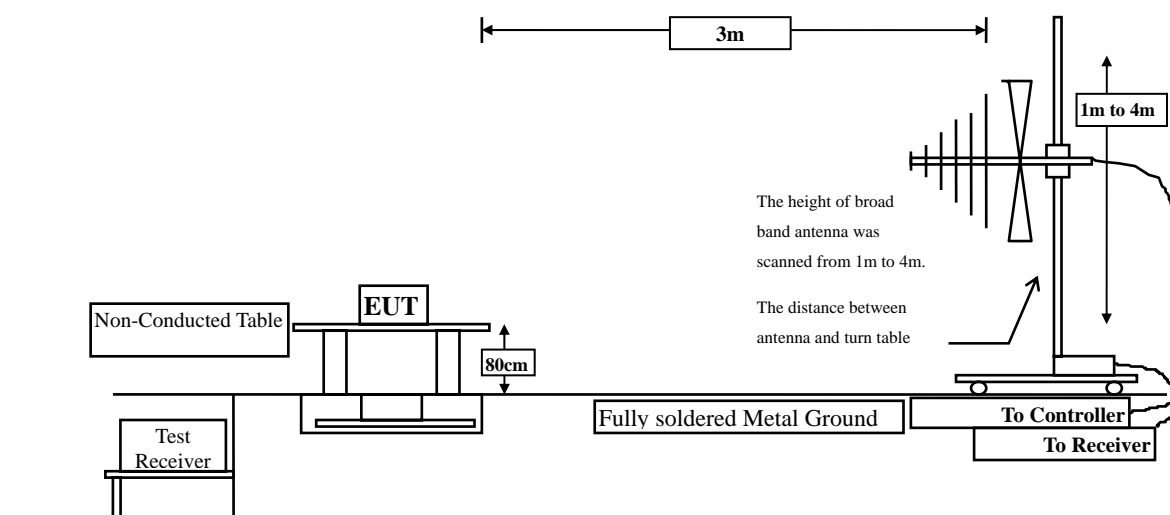
4. Radiated Emission

4.1. Test Setup

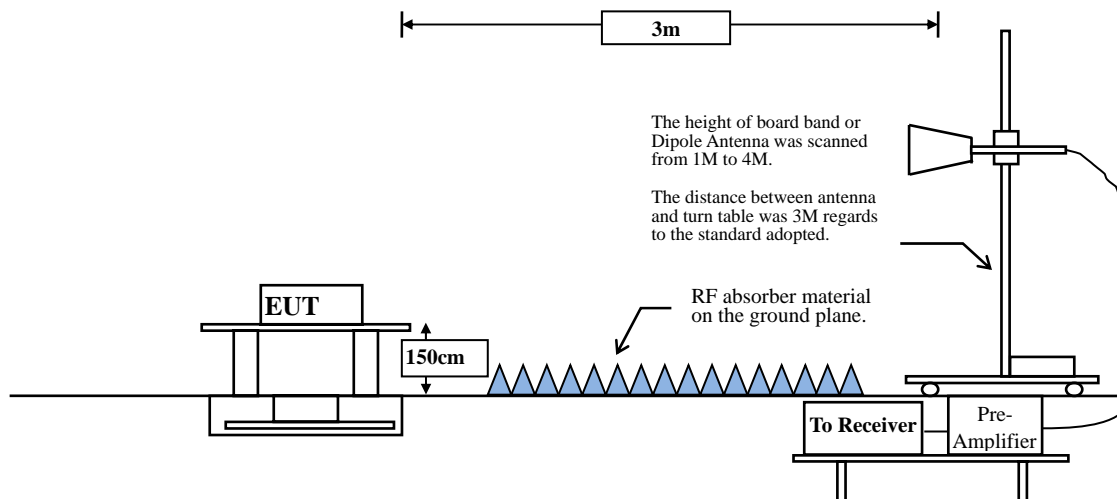
Radiated Emission Under 30MHz



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 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.

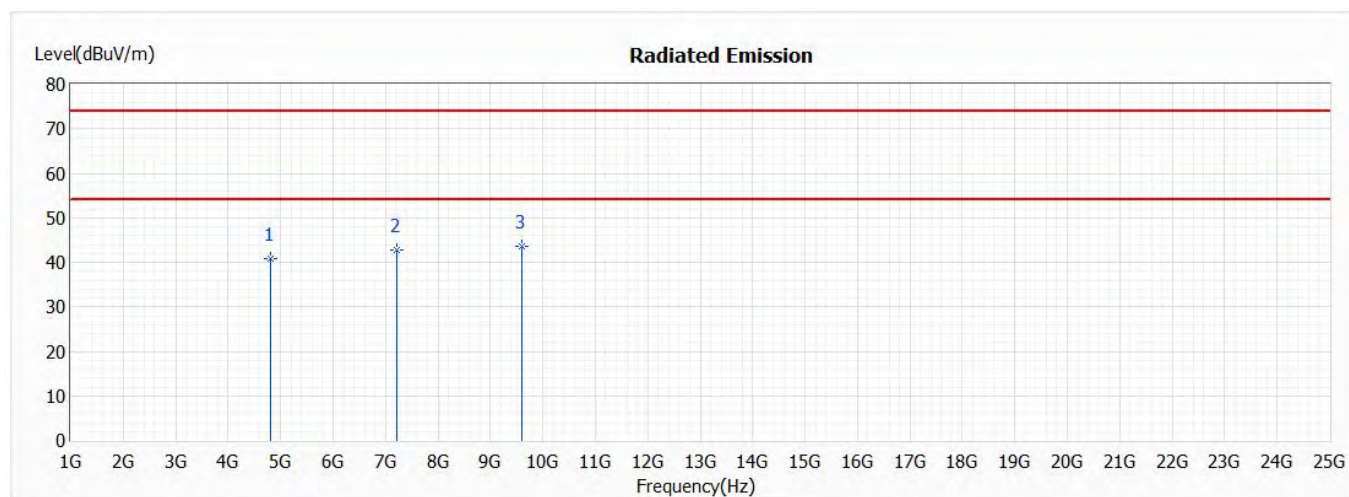
The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the 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 from 9kHz - 10th Harmonic of fundamental was investigated.

4.4. Test Result of Radiated Emission

Product : WCDMA/LTE Mobile Phone
 Test Item : Harmonic Radiated Emission
 Test Mode : Mode 1: Transmit - 1Mbps(2402MHz)
 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	4804.000	40.75	74.00	-33.25	40.26	0.49	PK
2	7206.000	42.68	74.00	-31.32	37.97	4.71	PK
* 3	9608.000	43.69	74.00	-30.31	36.84	6.85	PK

Note:

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

Frequency MHz	Peak Measurement dBμV/m	Duty Cycle Factor dB	Average Measurement dBμV/m	Margin dB	Peak Limit dBμV/m	Average Limit dBμV/m
--	--	--	--	--	74.000	54.000

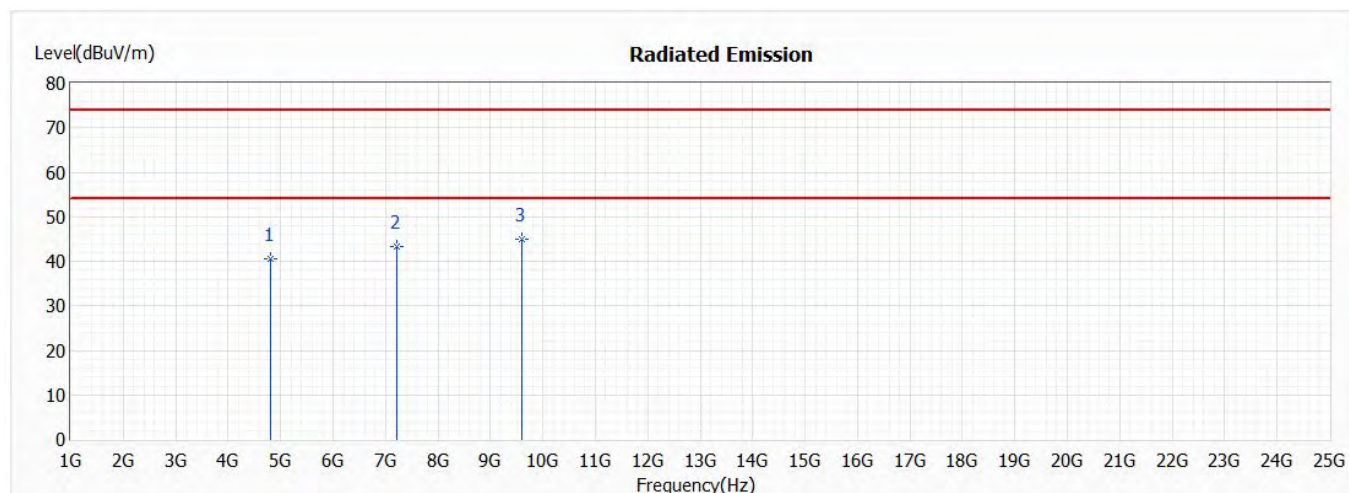
Average Detector:

Note:

1. AVG Measurement=Peak Measurement + Duty Cycle Correct Factor
2. The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Harmonic Radiated Emission
 Test Mode : Mode 1: Transmit - 1Mbps(2402MHz)
 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	4804.000	40.66	74.00	-33.34	40.17	0.49	PK
2	7206.000	43.42	74.00	-30.58	38.71	4.71	PK
* 3	9608.000	44.84	74.00	-29.16	37.99	6.85	PK

Note:

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

Frequency MHz	Peak Measurement dBμV/m	Duty Cycle Factor dB	Average Measurement dBμV/m	Margin dB	Peak Limit dBμV/m	Average Limit dBμV/m
--	--	--	--	--	74.000	54.000

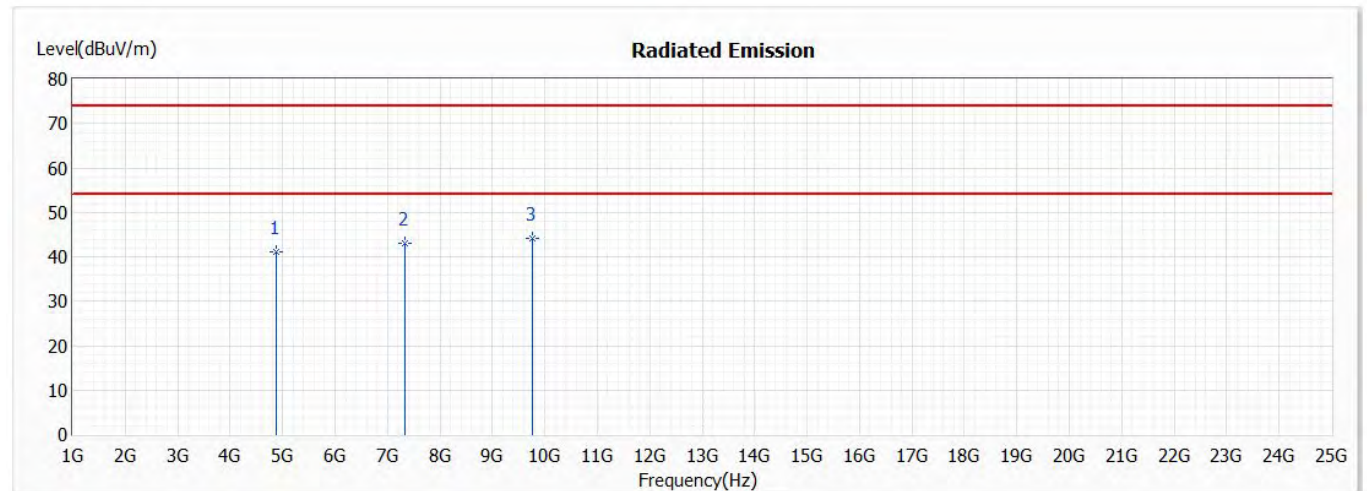
Average Detector:

Note:

- AVG Measurement=Peak Measurement + Duty Cycle Correct Factor
- The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Harmonic Radiated Emission
 Test Mode : Mode 1: Transmit - 1Mbps(2441MHz)
 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	4882.000	41.22	74.00	-32.78	40.62	0.60	PK
2	7323.000	43.09	74.00	-30.91	38.25	4.84	PK
* 3	9764.000	44.02	74.00	-29.98	36.79	7.23	PK

Note:

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

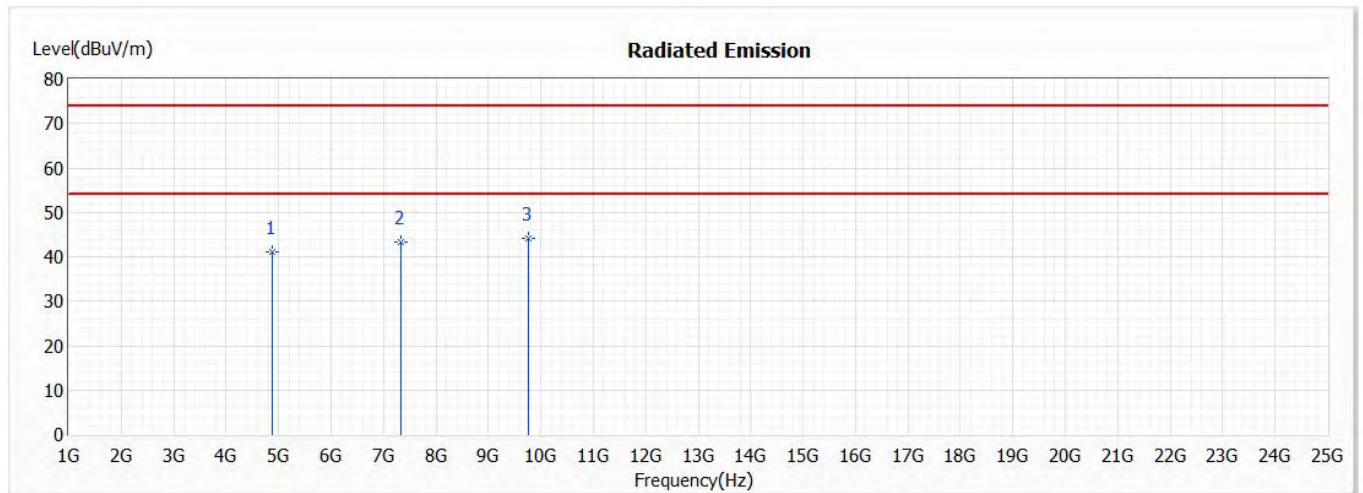
Frequency MHz	Peak Measurement dBμV/m	Duty Cycle Factor dB	Average Measurement dBμV/m	Margin dB	Peak Limit dBμV/m	Average Limit dBμV/m
Average Detector:						
--	--	--	--	--	74.000	54.000

Note:

1. AVG Measurement=Peak Measurement + Duty Cycle Correct Factor
2. The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Harmonic Radiated Emission
 Test Mode : Mode 1: Transmit - 1Mbps(2441MHz)
 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	4882.000	41.21	74.00	-32.79	40.61	0.60	PK
2	7323.000	43.21	74.00	-30.79	38.37	4.84	PK
* 3	9764.000	44.15	74.00	-29.85	36.92	7.23	PK

Note:

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

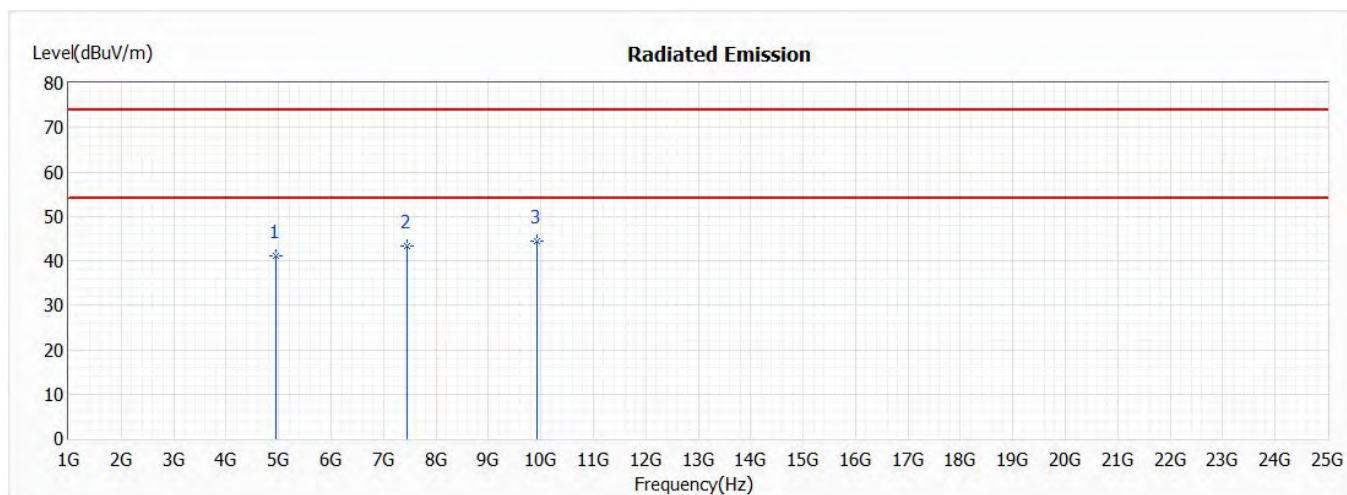
Frequency MHz	Peak Measurement dBμV/m	Duty Cycle Factor dB	Average Measurement dBμV/m	Margin dB	Peak Limit dBμV/m	Average Limit dBμV/m
Average Detector:						
--	--	--	--	--	74.000	54.000

Note:

1. AVG Measurement=Peak Measurement + Duty Cycle Correct Factor
2. The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Harmonic Radiated Emission
 Test Mode : Mode 1: Transmit - 1Mbps(2480MHz)
 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	4960.000	41.23	74.00	-32.77	40.53	0.70	PK
2	7440.000	43.34	74.00	-30.66	38.41	4.93	PK
* 3	9920.000	44.31	74.00	-29.69	36.91	7.40	PK

Note:

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

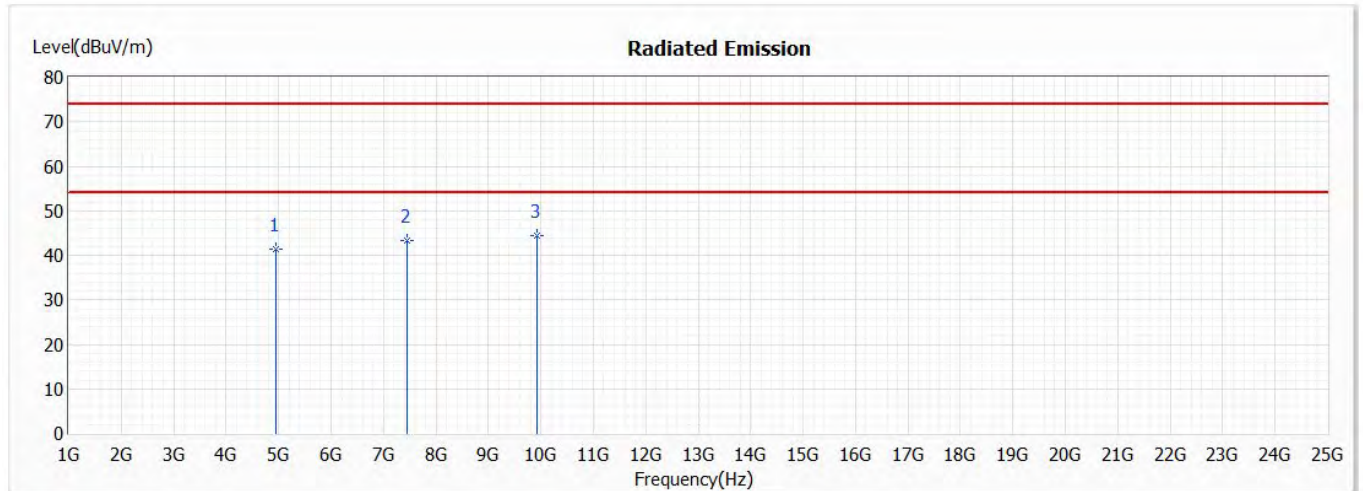
Frequency	Peak Measurement	Duty Cycle Factor	Average Measurement	Margin	Peak Limit	Average Limit
MHz	dBμV/m	dB	dBμV/m	dB	dBμV/m	dBμV/m
Average Detector:						
--	--	--	--	--	74.000	54.000

Note:

1. AVG Measurement=Peak Measurement + Duty Cycle Correct Factor
2. The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Harmonic Radiated Emission
 Test Mode : Mode 1: Transmit - 1Mbps(2480MHz)
 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	4960.000	41.28	74.00	-32.72	40.58	0.70	PK
2	7440.000	43.36	74.00	-30.64	38.43	4.93	PK
* 3	9920.000	44.33	74.00	-29.67	36.93	7.40	PK

Note:

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

Frequency MHz	Peak Measurement dBμV/m	Duty Cycle Factor dB	Average Measurement dBμV/m	Margin dB	Peak Limit dBμV/m	Average Limit dBμV/m
--	--	--	--	--	74.000	54.000

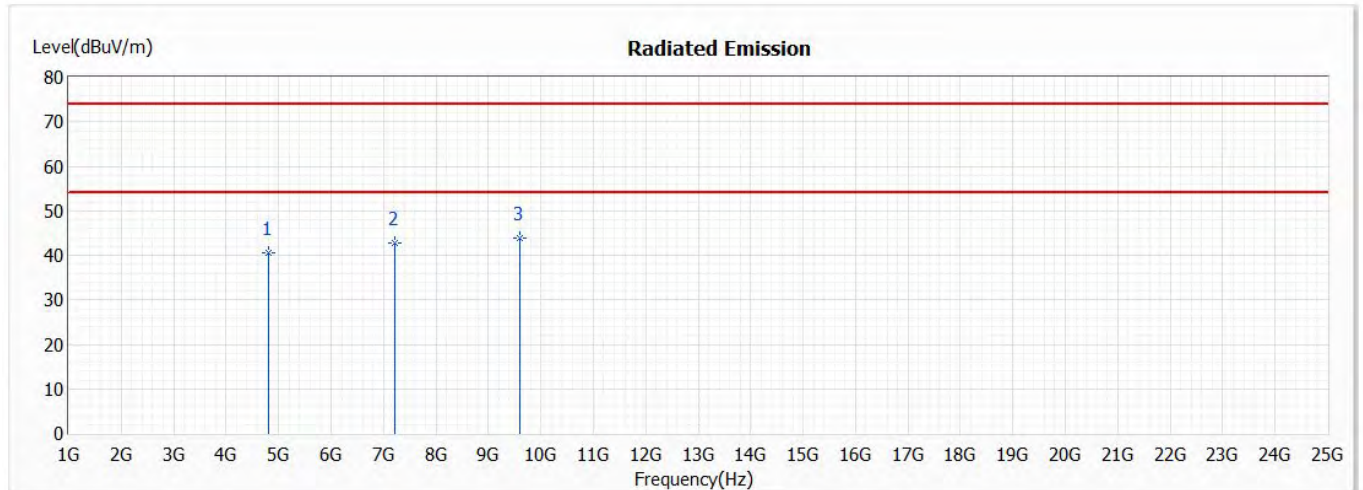
Average Detector:

Note:

- AVG Measurement=Peak Measurement + Duty Cycle Correct Factor
- The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Harmonic Radiated Emission
 Test Mode : Mode 2: Transmit - 3Mbps(2402MHz)
 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	4804.000	40.67	74.00	-33.33	40.18	0.49	PK
2	7206.000	42.70	74.00	-31.30	37.99	4.71	PK
* 3	9608.000	43.76	74.00	-30.24	36.91	6.85	PK

Note:

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

Frequency MHz	Peak Measurement dBμV/m	Duty Cycle Factor dB	Average Measurement dBμV/m	Margin dB	Peak Limit dBμV/m	Average Limit dBμV/m
--	--	--	--	--	74.000	54.000

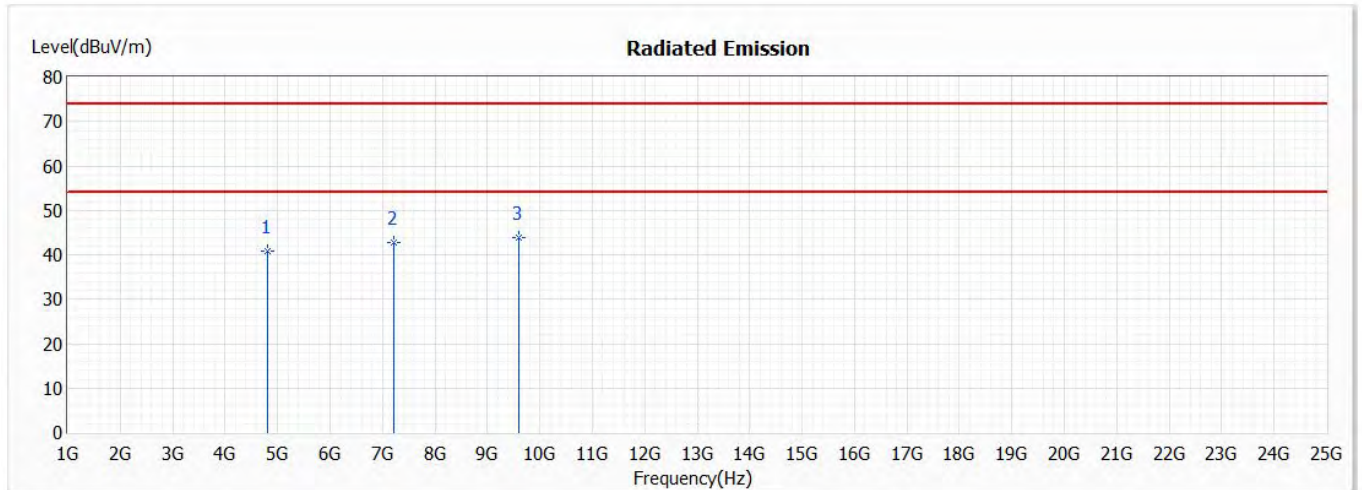
Average Detector:

Note:

1. AVG Measurement=Peak Measurement + Duty Cycle Correct Factor
2. The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Harmonic Radiated Emission
 Test Mode : Mode 2: Transmit - 3Mbps(2402MHz)
 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	4804.000	40.91	74.00	-33.09	40.42	0.49	PK
2	7206.000	42.89	74.00	-31.11	38.18	4.71	PK
* 3	9608.000	43.84	74.00	-30.16	36.99	6.85	PK

Note:

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

Frequency MHz	Peak Measurement dBμV/m	Duty Cycle Factor dB	Average Measurement dBμV/m	Margin dB	Peak Limit dBμV/m	Average Limit dBμV/m
--	--	--	--	--	74.000	54.000

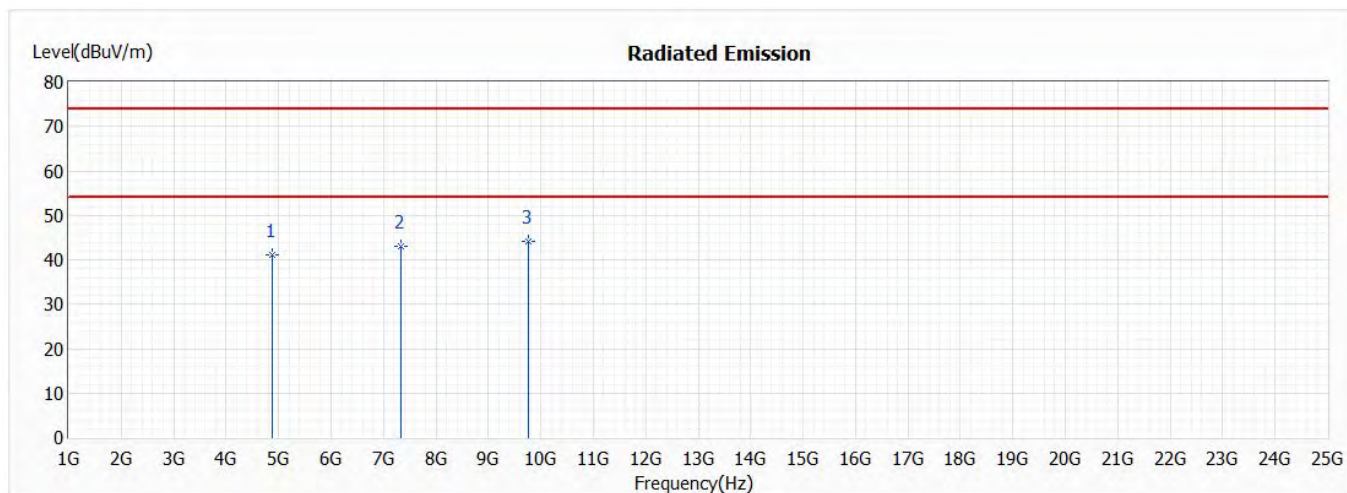
Average Detector:

Note:

1. AVG Measurement=Peak Measurement + Duty Cycle Correct Factor
2. The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Harmonic Radiated Emission
 Test Mode : Mode 2: Transmit - 3Mbps (2441MHz)
 Test Date : 2021/06/03

Horizontal



Note:

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

Frequency MHz	Peak Measurement dBμV/m	Duty Cycle Factor dB	Average Measurement dBμV/m	Margin dB	Peak Limit dBμV/m	Average Limit dBμV/m
--	--	--	--	--	74.000	54.000

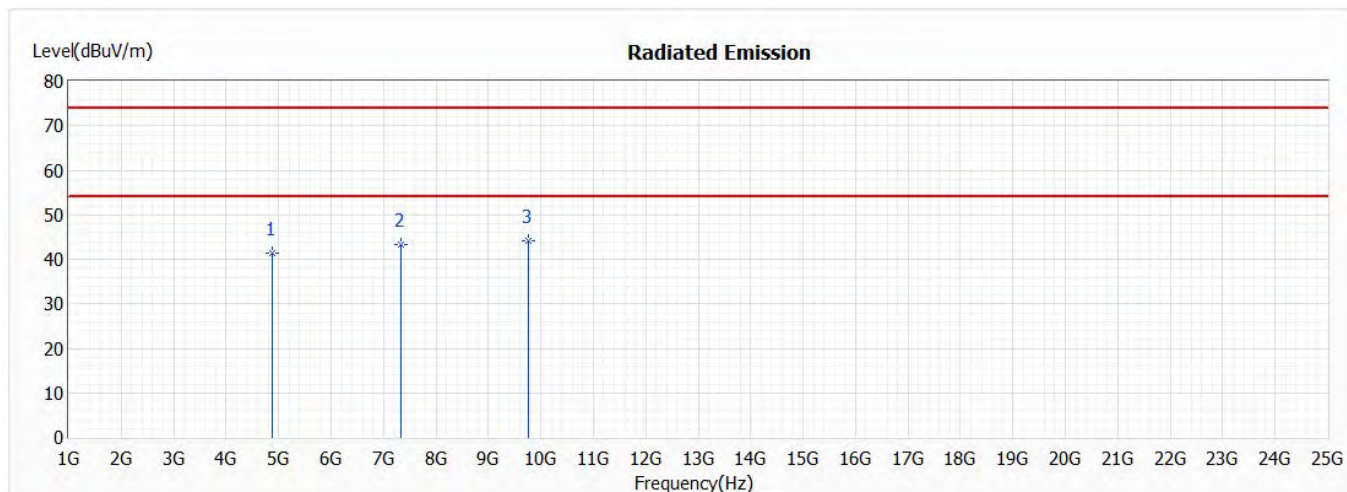
Average Detector:

Note:

1. AVG Measurement=Peak Measurement + Duty Cycle Correct Factor
2. The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Harmonic Radiated Emission
 Test Mode : Mode 2: Transmit - 3Mbps (2441MHz)
 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	4882.000	41.34	74.00	-32.66	40.74	0.60	PK
2	7323.000	43.27	74.00	-30.73	38.43	4.84	PK
* 3	9764.000	44.11	74.00	-29.89	36.88	7.23	PK

Note:

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

Frequency MHz	Peak Measurement dBμV/m	Duty Cycle Factor dB	Average Measurement dBμV/m	Margin dB	Peak Limit dBμV/m	Average Limit dBμV/m
--	--	--	--	--	74.000	54.000

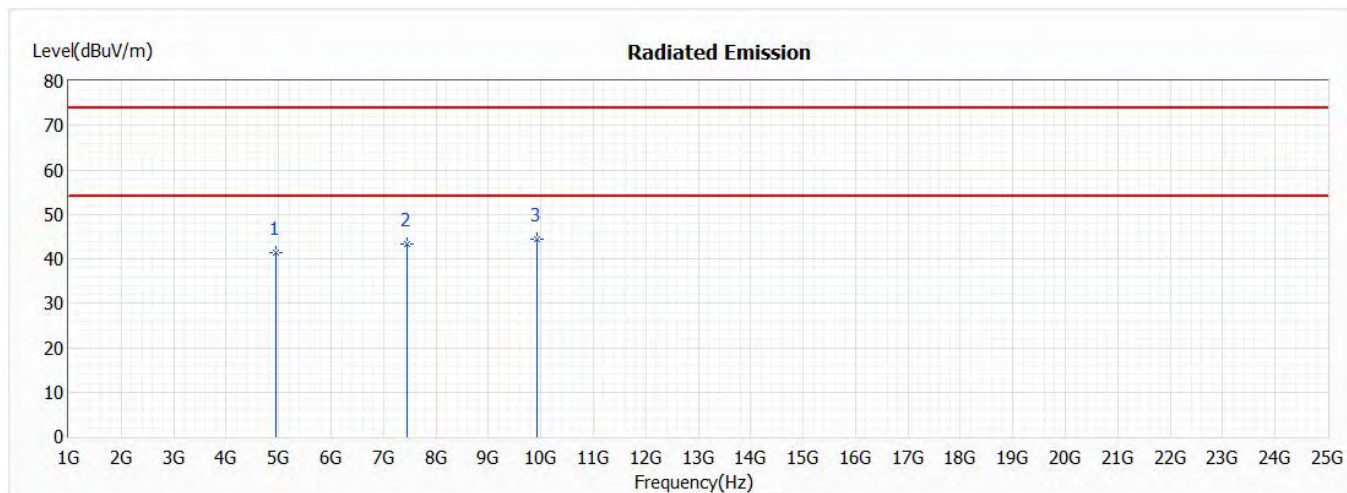
Average Detector:

Note:

1. AVG Measurement=Peak Measurement + Duty Cycle Correct Factor
2. The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Harmonic Radiated Emission
 Test Mode : Mode 2: Transmit - 3Mbps (2480MHz)
 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	4960.000	41.37	74.00	-32.63	40.67	0.70	PK
2	7440.000	43.26	74.00	-30.74	38.33	4.93	PK
* 3	9920.000	44.41	74.00	-29.59	37.01	7.40	PK

Note:

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

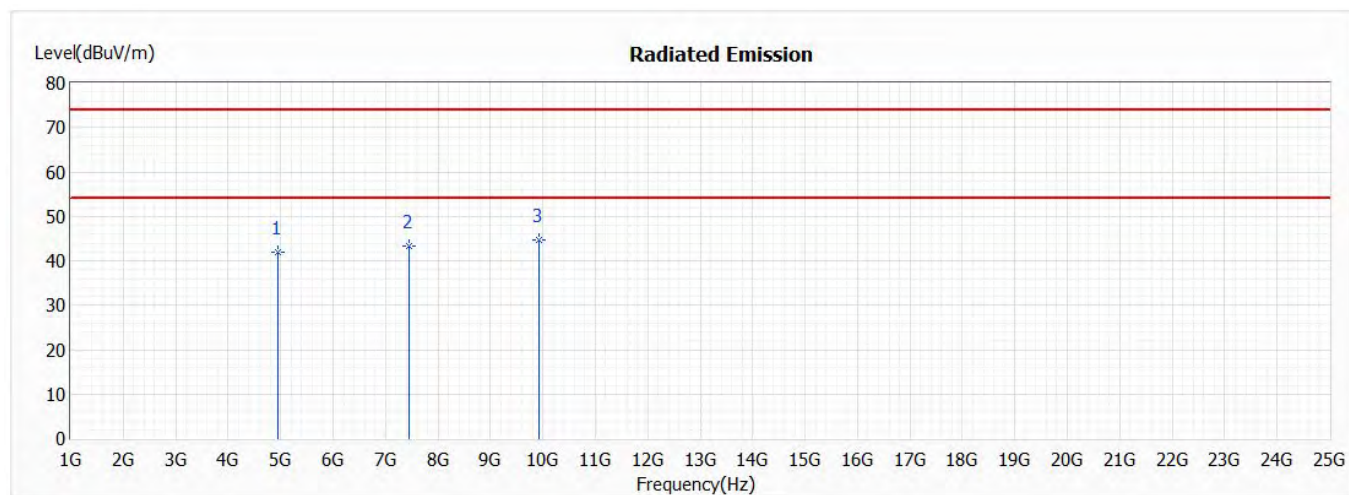
Frequency MHz	Peak Measurement dBμV/m	Duty Cycle Factor dB	Average Measurement dBμV/m	Margin dB	Peak Limit dBμV/m	Average Limit dBμV/m
Average Detector:						
--	--	--	--	--	74.000	54.000

Note:

1. AVG Measurement=Peak Measurement + Duty Cycle Correct Factor
2. The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Harmonic Radiated Emission
 Test Mode : Mode 2: Transmit - 3Mbps (2480MHz)
 Test Date : 2021/06/03

Vertical



Note:

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

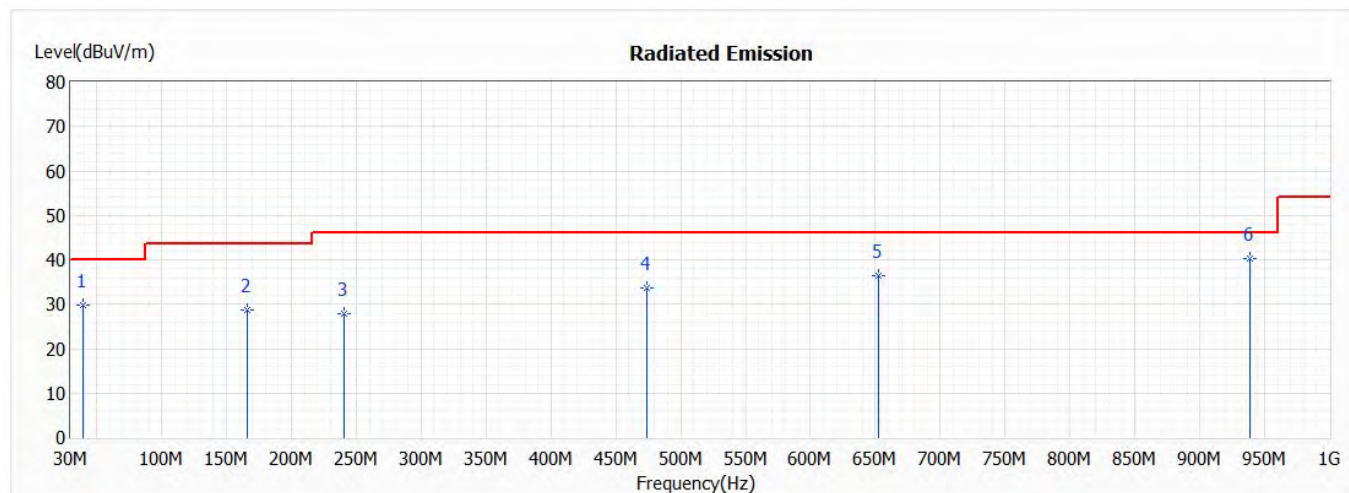
Frequency MHz	Peak Measurement dBμV/m	Duty Cycle Factor dB	Average Measurement dBμV/m	Margin dB	Peak Limit dBμV/m	Average Limit dBμV/m
Average Detector:						
--	--	--	--	--	74.000	54.000

Note:

1. AVG Measurement=Peak Measurement + Duty Cycle Correct Factor
2. The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : General Radiated Emission
 Test Mode : Mode 2: Transmit - 3Mbps (2441MHz)
 Test Date : 2021/06/04

Horizontal



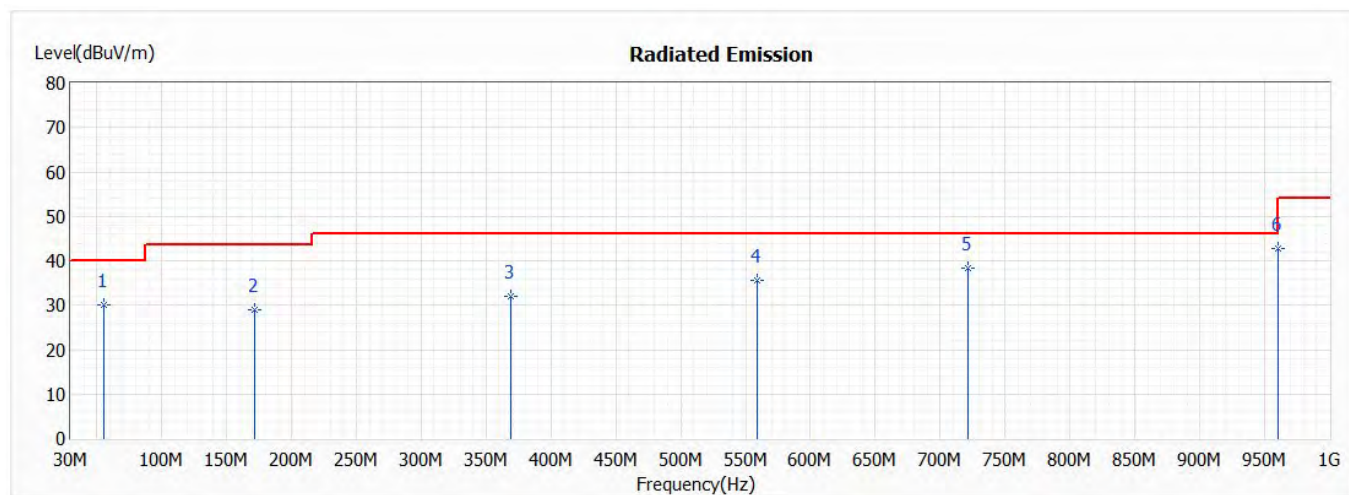
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	39.700	29.81	40.00	-10.19	40.78	-10.97	QP
2	165.800	28.65	43.50	-14.85	38.92	-10.27	QP
3	240.490	27.94	46.00	-18.06	39.29	-11.35	QP
4	474.260	33.72	46.00	-12.28	39.33	-5.61	QP
5	652.740	36.44	46.00	-9.56	38.79	-2.35	QP
* 6	938.890	40.20	46.00	-5.80	38.46	1.74	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
 Test Mode : Mode 2: Transmit - 3Mbps (2441MHz)
 Test Date : 2021/06/04

Vertical



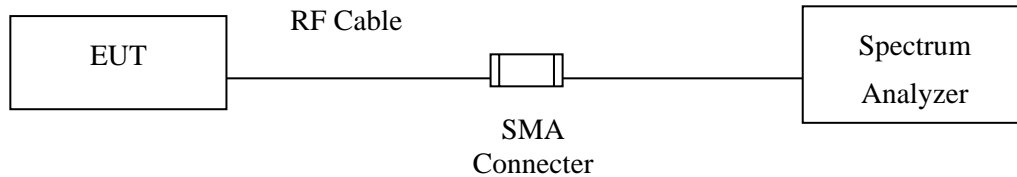
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	55.220	30.02	40.00	-9.98	40.71	-10.69	QP
2	171.620	28.92	43.50	-14.58	39.24	-10.32	QP
3	369.500	31.95	46.00	-14.05	39.87	-7.92	QP
4	558.650	35.60	46.00	-10.40	39.50	-3.90	QP
* 5	721.610	38.23	46.00	-7.77	39.44	-1.21	QP
6	960.230	42.64	54.00	-11.36	40.65	1.99	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



5.2. 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.

5.3. Test Procedure

Tested according to FHSS test procedure of KDB558074 section 9 b) for compliance to FCC 47CFR 15.247 requirements.

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 - 1Mbps
Test Date : 2021/06/08

Figure Channel 00:

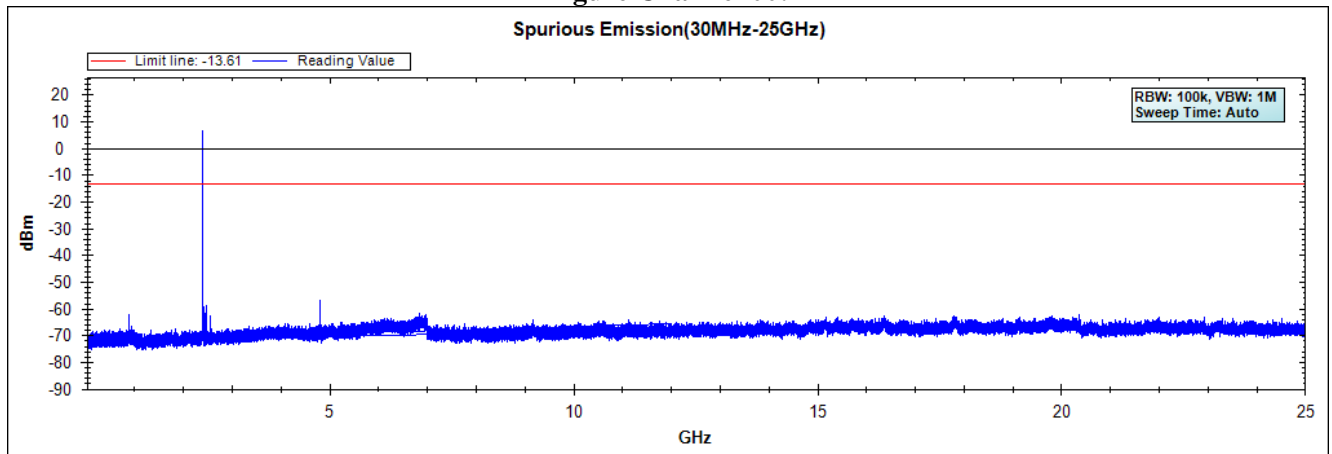


Figure Channel 39:

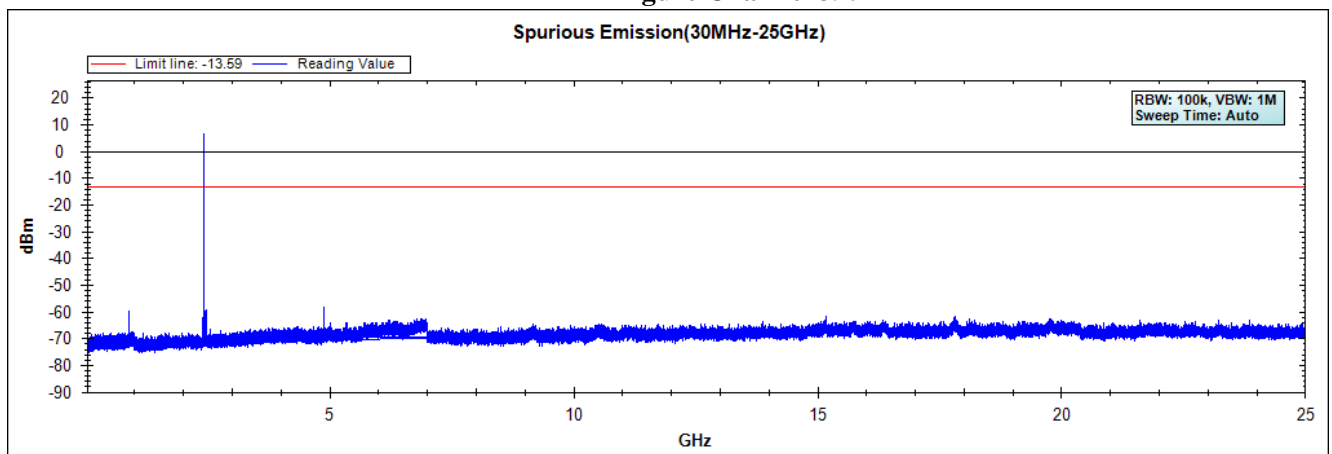
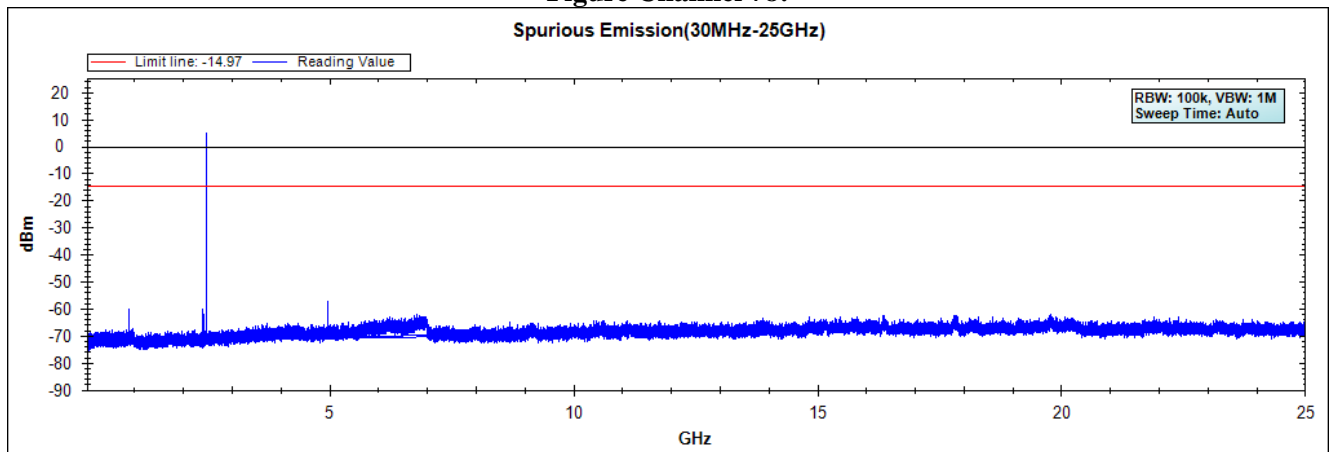
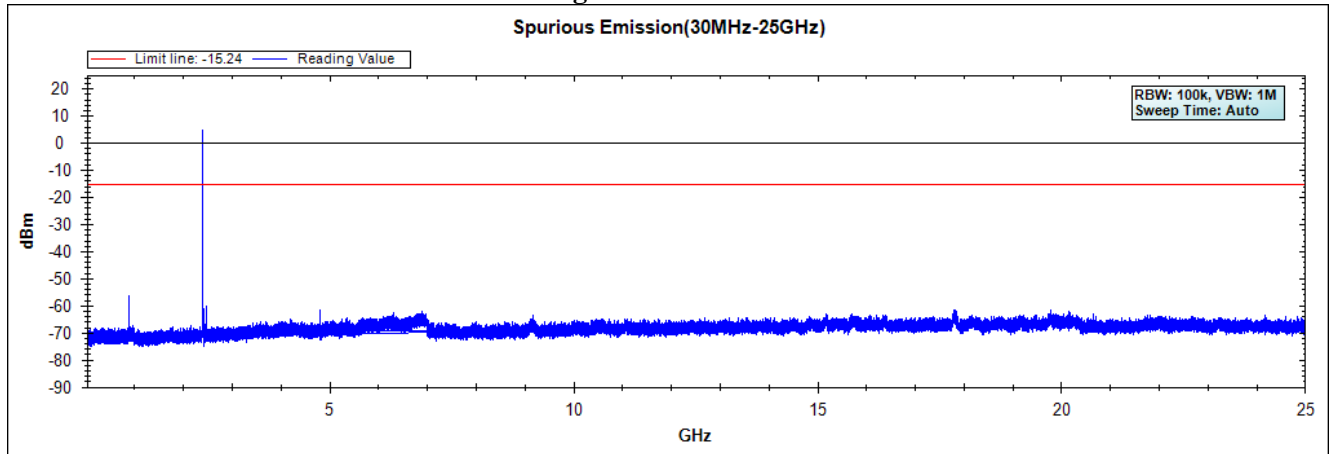
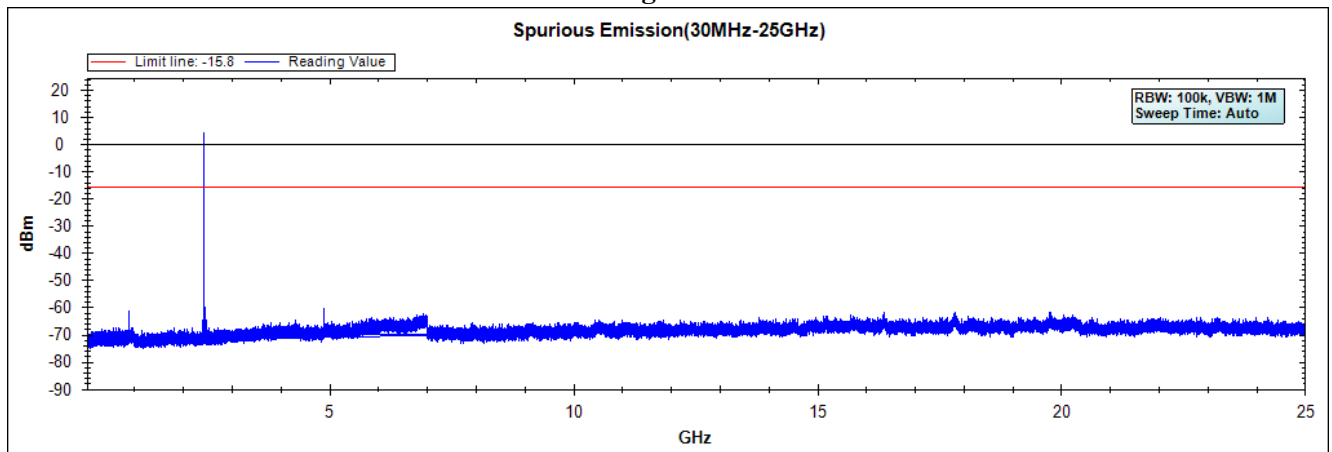
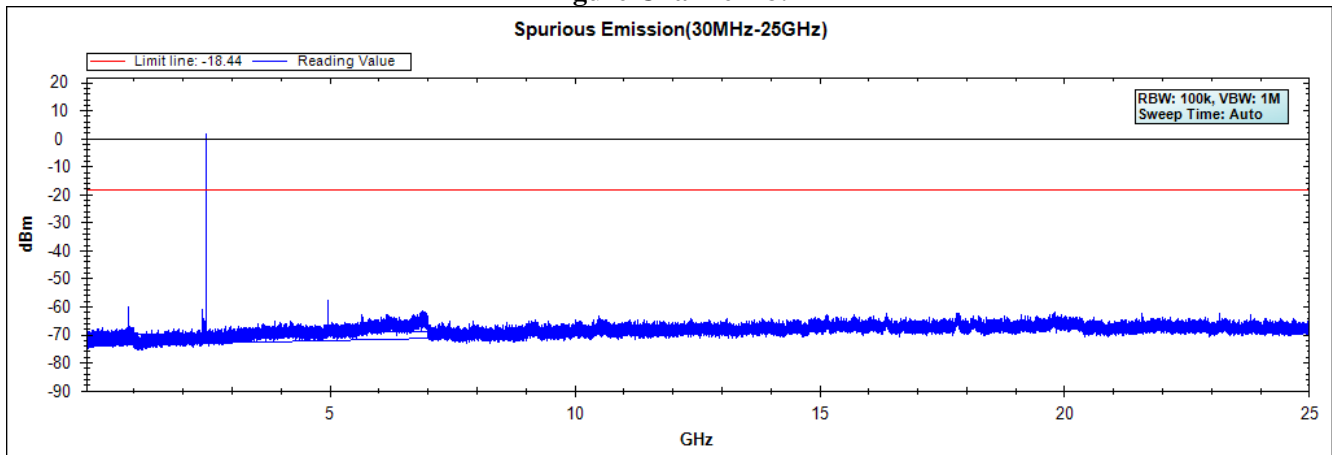


Figure Channel 78:



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

Product : WCDMA/LTE Mobile Phone
Test Item : RF Antenna Conducted Test
Test Mode : Mode 2: Transmit - 3Mbps
Test Date : 2021/06/08

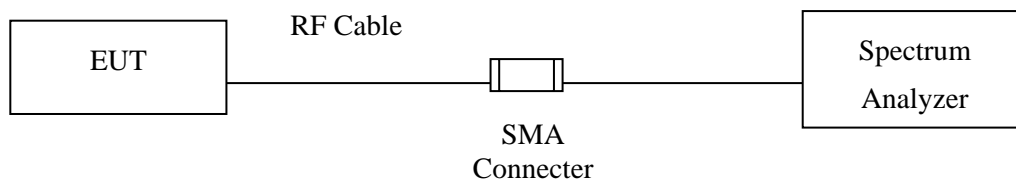
Figure Channel 00:**Figure Channel 39:****Figure Channel 78:**

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

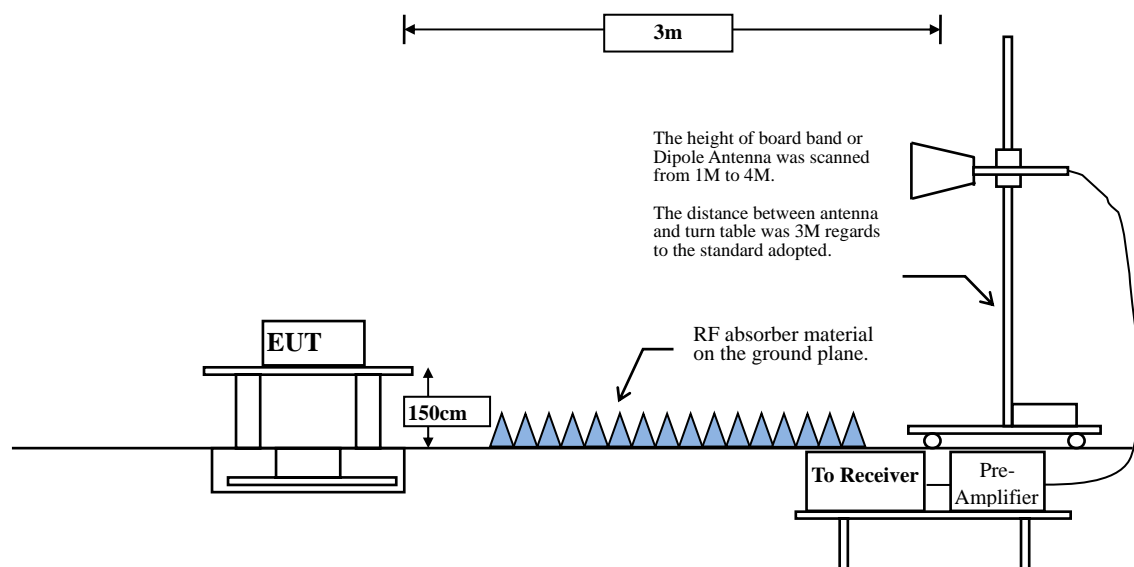
6. Band Edge

6.1. Test Setup

RF Conducted Measurement



RF Radiated Measurement:



6.2. Limit

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 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 can move up and down between 1 meter and 4 meters to find out the maximum emission level.

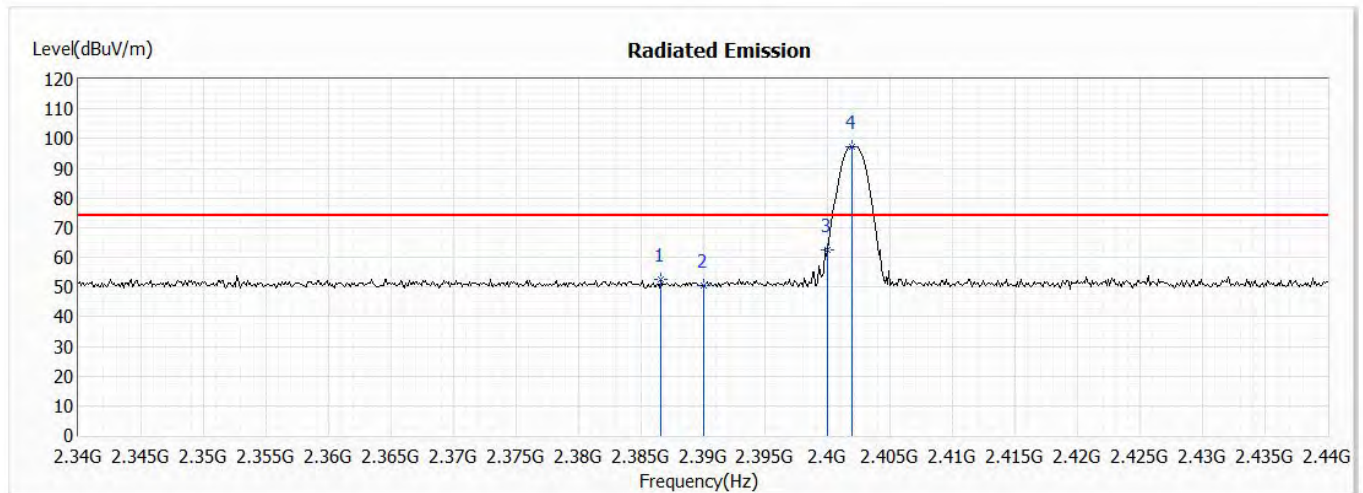
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

The bandwidth setting below 1GHz and above 1GHz on the field strength meter is 120 kHz and 1MHz, respectively.

6.4. Test Result of Band Edge

Product : WCDMA/LTE Mobile Phone
 Test Item : Band Edge
 Test Mode : Mode 1: Transmit - 1Mbps (2402MHz)
 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	2386.600	52.68	74.00	-21.32	39.52	13.16	PK
2	2390.000	50.39	74.00	-23.61	37.23	13.16	PK
3	2400.000	62.59	74.00	-11.41	49.41	13.18	PK
4	2401.900	97.33	74.00	23.33	84.15	13.18	PK

Note:

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

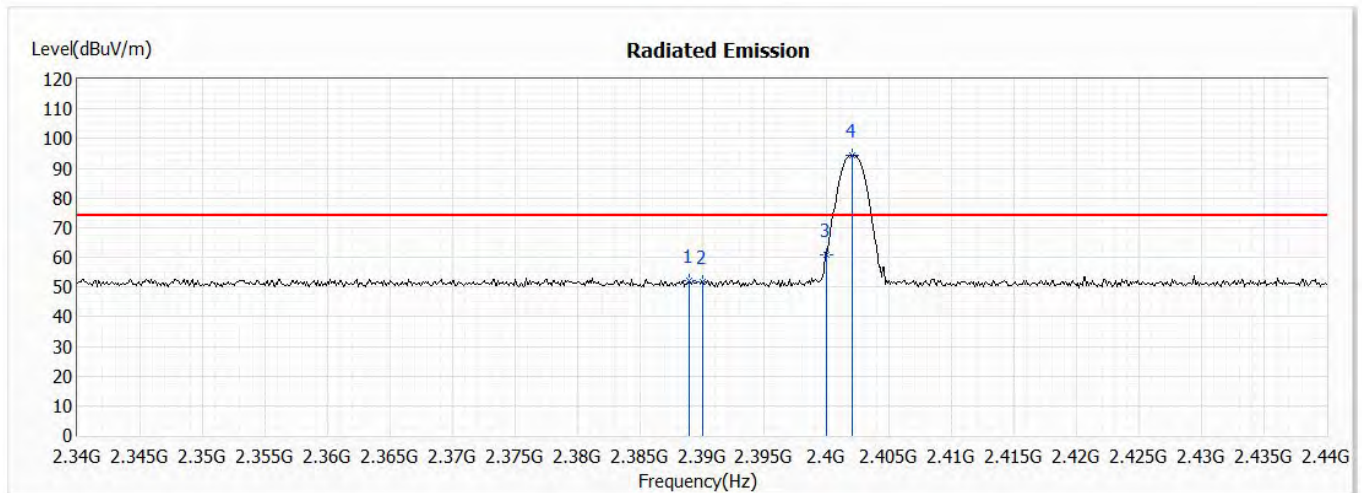
Channel No.	Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Average Measurement (dBμV/m)	Margin (dB)	Average Limit (dBμV/m)	Result
00 (Average)	2386.6	52.68	-30.873	21.807	-32.193	54.000	Pass
00 (Average)	2390	50.39	-30.873	19.517	-34.483	54.000	Pass
00 (Average)	2400	62.59	-30.873	31.717	-22.283	54.000	Pass
00 (Average)	2401.9	97.33	-30.873	66.457	--	--	Pass

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Band Edge
 Test Mode : Mode 1: Transmit - 1Mbps (2402MHz)
 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	2389.000	52.19	74.00	-21.81	39.03	13.16	PK
2	2390.000	51.81	74.00	-22.19	38.65	13.16	PK
3	2400.000	60.83	74.00	-13.17	47.65	13.18	PK
4	2402.000	94.24	74.00	20.24	81.06	13.18	PK

Note:

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

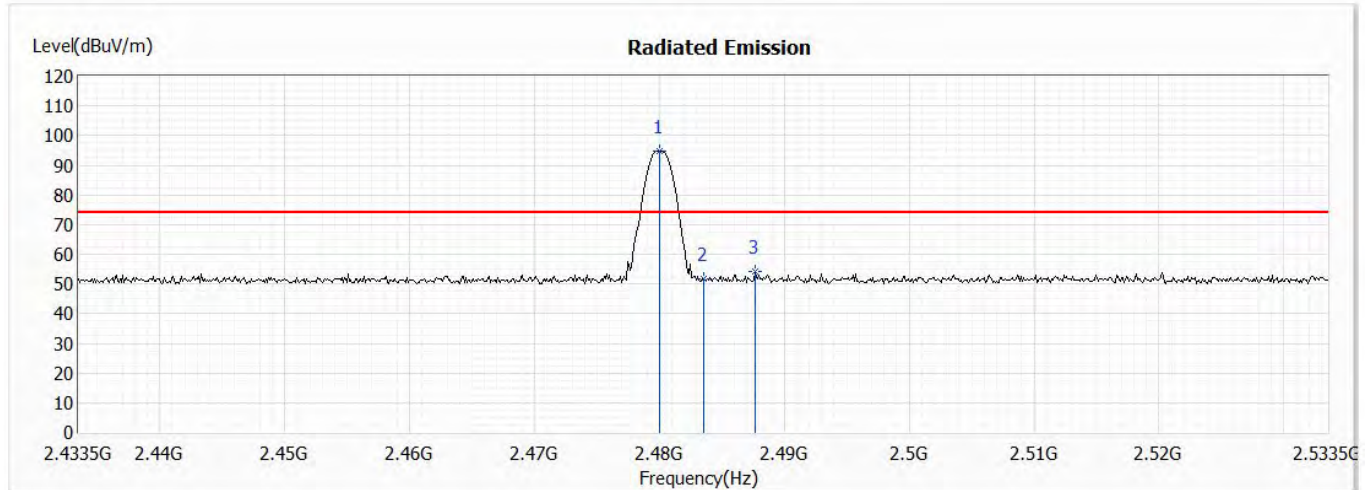
Channel No.	Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Average Measurement (dBμV/m)	Margin (dB)	Average Limit (dBμV/m)	Result
00 (Average)	2389	52.19	-30.873	21.317	-32.683	54.000	Pass
00 (Average)	2390	51.81	-30.873	20.937	-33.063	54.000	Pass
00 (Average)	2400	60.83	-30.873	29.957	-24.043	54.000	Pass
00 (Average)	2402	94.24	-30.873	63.367	--	--	Pass

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Band Edge
 Test Mode : Mode 1: Transmit - 1Mbps (2480MHz)
 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	2480.000	94.74	74.00	20.74	81.55	13.19	PK
2	2483.500	51.82	74.00	-22.18	38.63	13.19	PK
3	2487.700	54.07	74.00	-19.93	40.87	13.20	PK

Note:

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

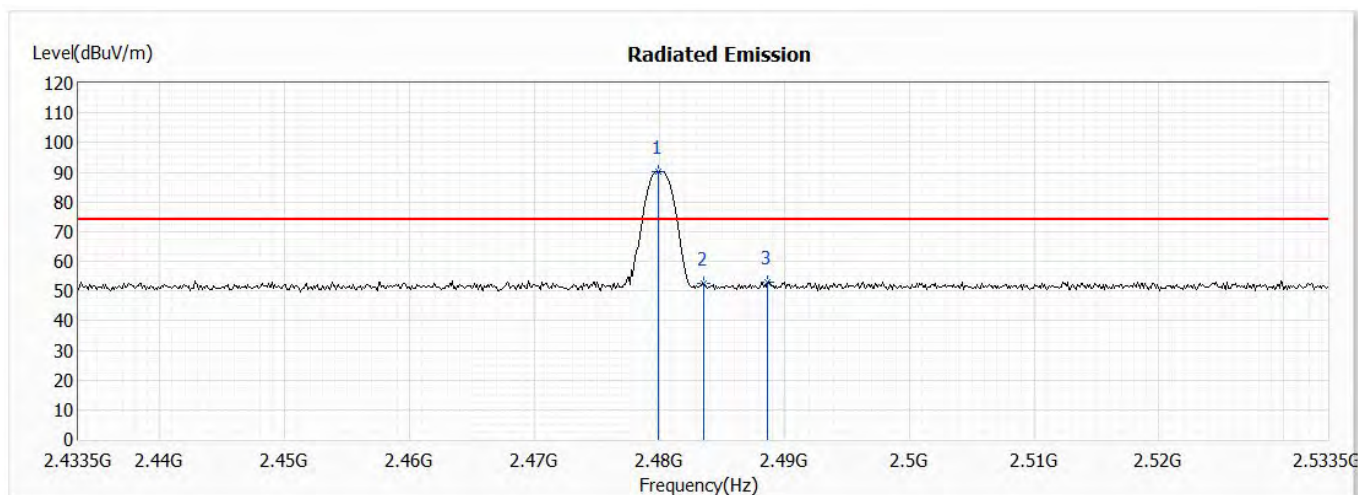
Channel No.	Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Average Measurement (dBμV/m)	Margin (dB)	Average Limit (dBμV/m)	Result
78 (Average)	2480	94.74	-30.873	63.867	--	--	Pass
78 (Average)	2483.5	51.82	-30.873	20.947	-33.053	54.000	Pass
78 (Average)	2487.7	54.07	-30.873	23.197	-30.803	54.000	Pass

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Band Edge
 Test Mode : Mode 1: Transmit - 1Mbps (2480MHz)
 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	2479.900	90.30	74.00	16.30	77.11	13.19	PK
2	2483.500	52.62	74.00	-21.38	39.43	13.19	PK
3	2488.700	52.83	74.00	-21.17	39.63	13.20	PK

Note:

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

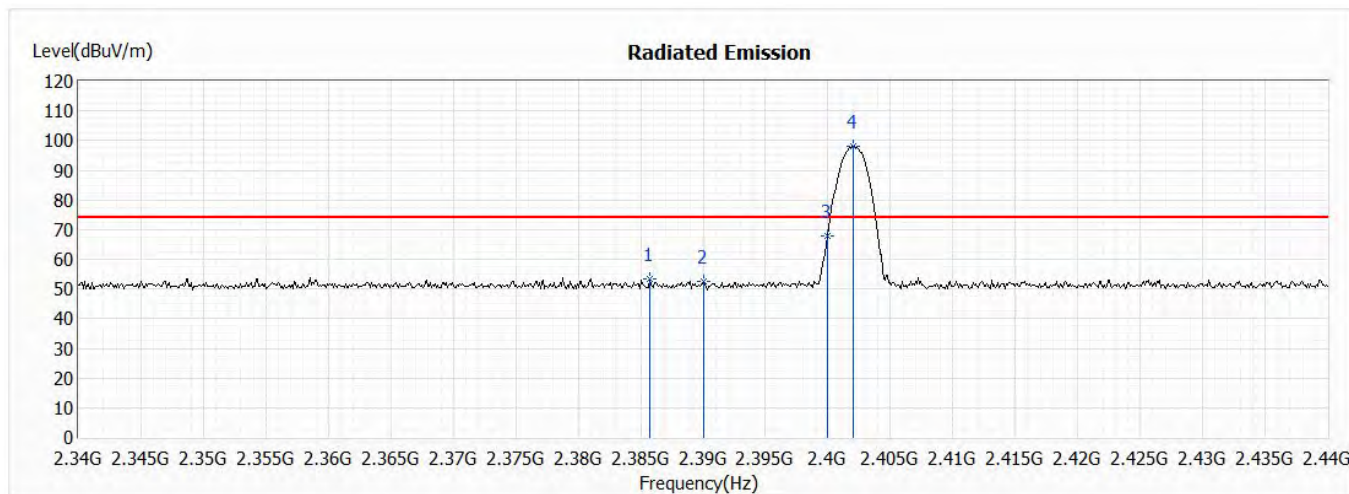
Channel No.	Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Average Measurement (dBμV/m)	Margin (dB)	Average Limit (dBμV/m)	Result
78 (Average)	2479.9	90.3	-30.873	59.427	--	--	Pass
78 (Average)	2483.5	52.62	-30.873	21.747	-32.253	54.000	Pass
78 (Average)	2488.7	52.83	-30.873	21.957	-32.043	54.000	Pass

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Band Edge
 Test Mode : Mode 2: Transmit - 3Mbps (2402MHz)
 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	2385.700	53.26	74.00	-20.74	40.10	13.16	PK
2	2390.000	52.46	74.00	-21.54	39.30	13.16	PK
3	2400.000	67.89	74.00	-6.11	54.71	13.18	PK
4	2402.000	97.99	74.00	23.99	84.81	13.18	PK

Note:

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

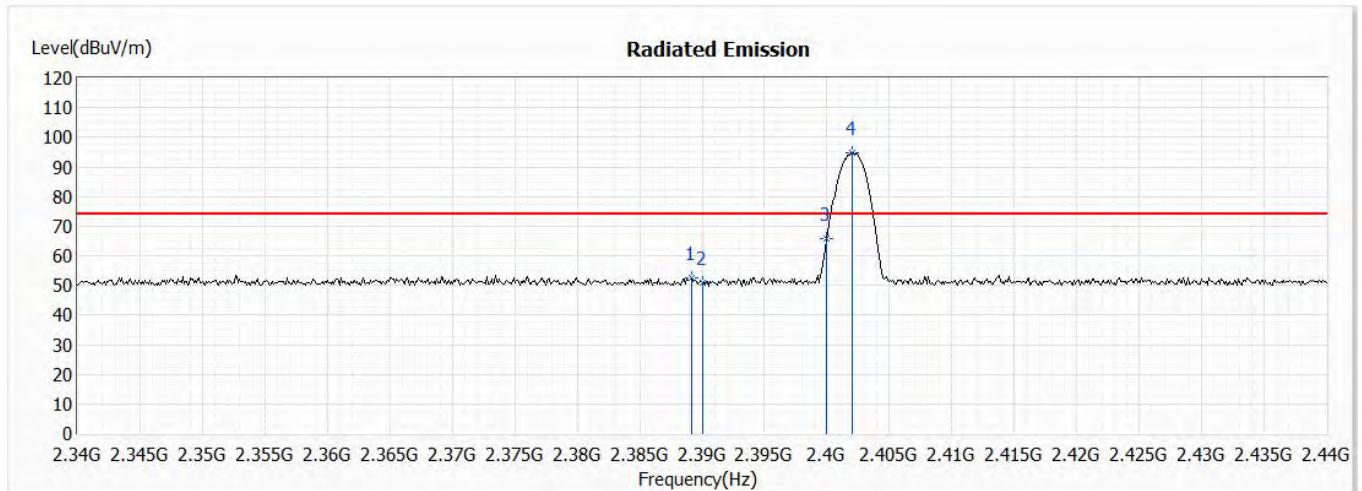
Channel No.	Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Average Measurement (dBμV/m)	Margin (dB)	Average Limit (dBμV/m)	Result
00 (Average)	2385.7	53.26	-31.182	22.078	-31.922	54.000	Pass
00 (Average)	2390	52.46	-31.182	21.278	-32.722	54.000	Pass
00 (Average)	2400	67.89	-31.182	36.708	-17.292	54.000	Pass
00 (Average)	2402	97.99	-31.182	66.808	--	--	Pass

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Band Edge
 Test Mode : Mode 2: Transmit - 3Mbps (2402MHz)
 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	2389.200	52.48	74.00	-21.52	39.32	13.16	PK
2	2390.000	50.81	74.00	-23.19	37.65	13.16	PK
3	2400.000	65.59	74.00	-8.41	52.41	13.18	PK
4	2402.000	94.62	74.00	20.62	81.44	13.18	PK

Note:

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

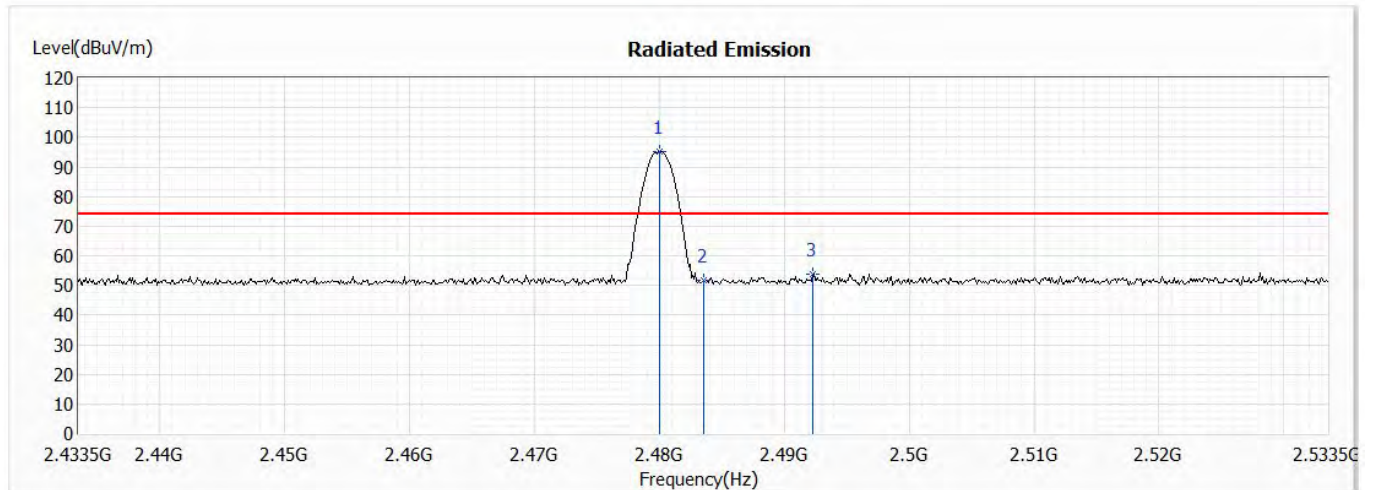
Channel No.	Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Average Measurement (dBμV/m)	Margin (dB)	Average Limit (dBμV/m)	Result
00 (Average)	2389.2	52.48	-31.182	21.298	-32.702	54.000	Pass
00 (Average)	2390	50.81	-31.182	19.628	-34.372	54.000	Pass
00 (Average)	2400	65.59	-31.182	34.408	-19.592	54.000	Pass
00 (Average)	2402	94.62	-31.182	63.438	--	--	Pass

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Band Edge
 Test Mode : Mode 2: Transmit - 3Mbps (2480MHz)
 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	2480.000	95.23	74.00	21.23	82.04	13.19	PK
2	2483.500	51.70	74.00	-22.30	38.51	13.19	PK
3	2492.300	53.95	74.00	-20.05	40.75	13.20	PK

Note:

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

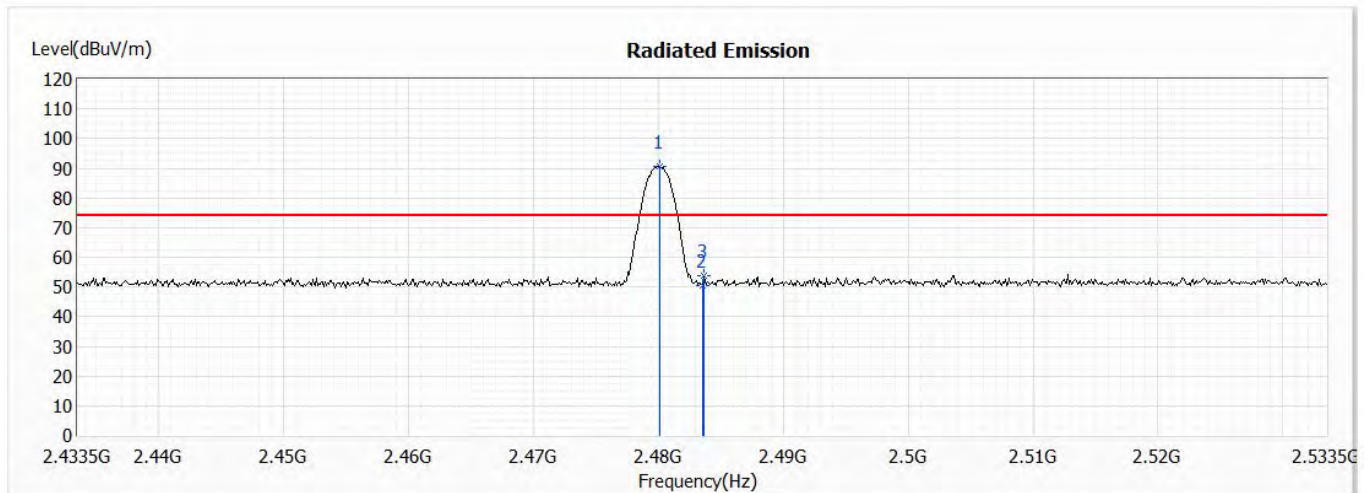
Channel No.	Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Average Measurement (dBμV/m)	Margin (dB)	Average Limit (dBμV/m)	Result
78 (Average)	2480	95.23	-31.182	64.048	--	--	Pass
78 (Average)	2483.5	51.7	-31.182	20.518	-33.482	54.000	Pass
78 (Average)	2492.3	53.95	-31.182	22.768	-31.232	54.000	Pass

Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Band Edge
 Test Mode : Mode 2: Transmit - 3Mbps (2480MHz)
 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	2480.100	90.72	74.00	16.72	77.53	13.19	PK
2	2483.500	50.51	74.00	-23.49	37.32	13.19	PK
3	2483.600	53.79	74.00	-20.21	40.60	13.19	PK

Note:

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

Channel No.	Frequency (MHz)	Peak Measurement (dBμV/m)	Duty Cycle Factor (dB)	Average Measurement (dBμV/m)	Margin (dB)	Average Limit (dBμV/m)	Result
78 (Average)	2480.1	90.72	-31.182	59.538	--	--	Pass
78 (Average)	2483.5	50.51	-31.182	19.328	-34.672	54.000	Pass
78 (Average)	2483.6	53.79	-31.182	22.608	-31.392	54.000	Pass

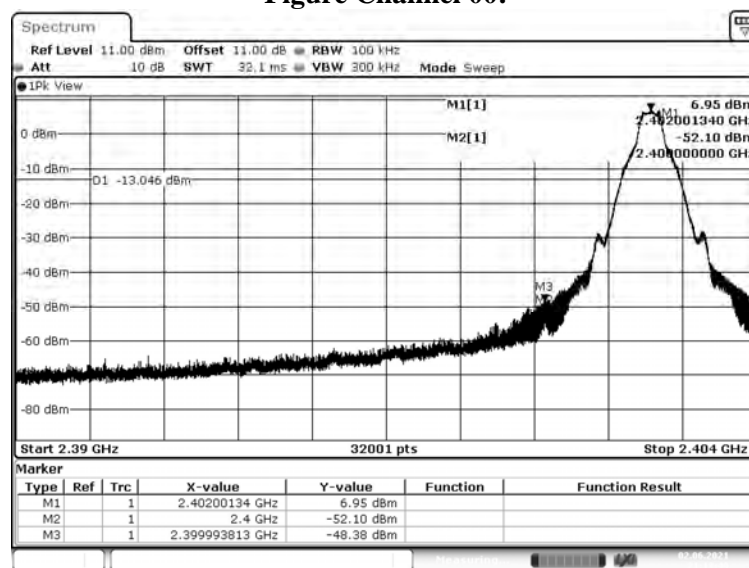
Note:

1. Average Measurement=Peak Measurement + Duty Cycle Factor
2. The Duty Cycle is refer to section 11.

Product : WCDMA/LTE Mobile Phone
 Test Item : Band Edge
 Test Mode : Mode 1: Transmit - 1Mbps(Hopping off)
 Test Date : 2021/06/08

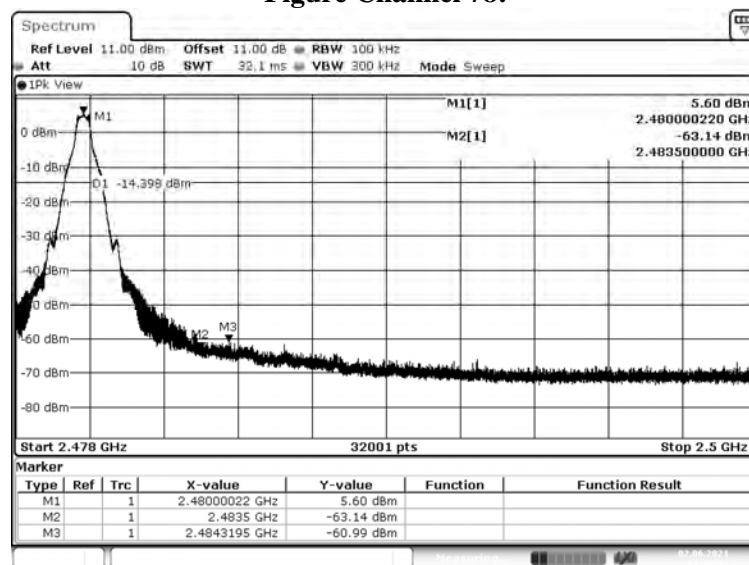
Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel 00:



Date: 2 JUN 2021 21:13:49

Figure Channel 78:

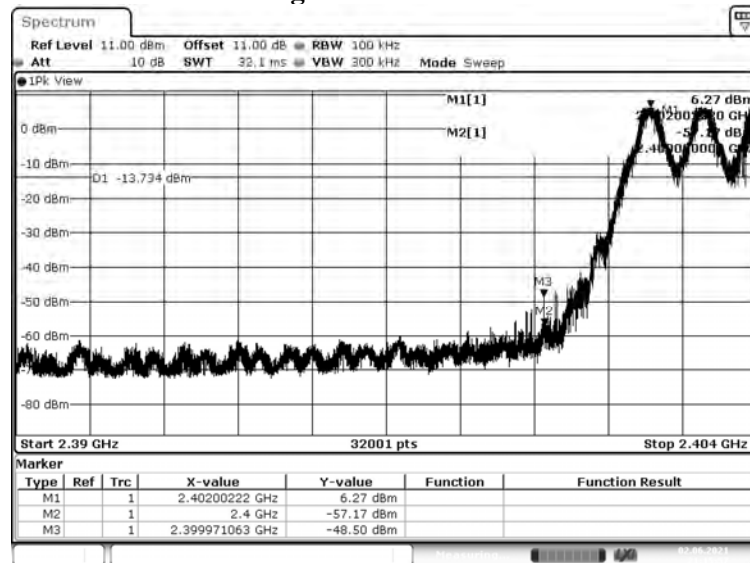


Date: 2 JUN 2021 21:26:52

Product : WCDMA/LTE Mobile Phone
 Test Item : Band Edge
 Test Mode : Mode 2: Transmit - 3Mbps (Hopping off)
 Test Date : 2021/06/08

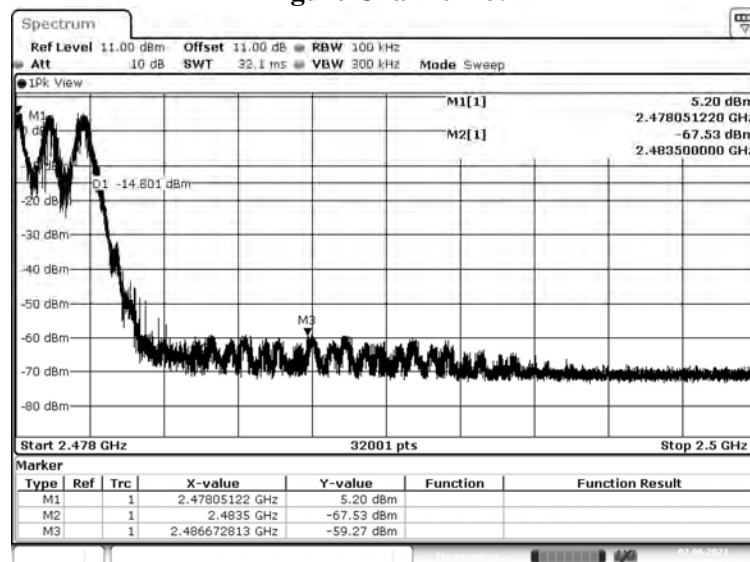
Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel 00:



Date: 2 JUN.2021 21:15:56

Figure Channel 78:

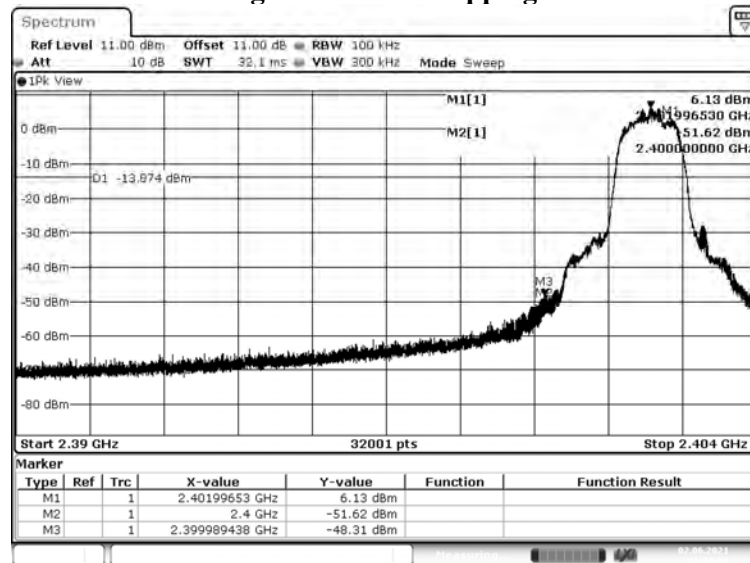


Date: 2 JUN.2021 21:30:46

Product : WCDMA/LTE Mobile Phone
 Test Item : Band Edge
 Test Mode : Mode 1: Transmit - 1Mbps(Hopping on)
 Test Date : 2021/06/08

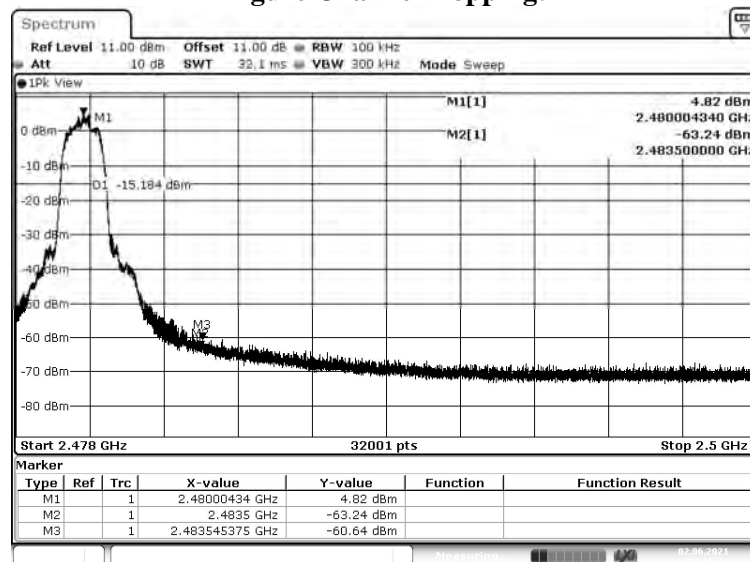
Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel Hopping:



Date: 2 JUN.2021 21:38:09

Figure Channel Hopping:

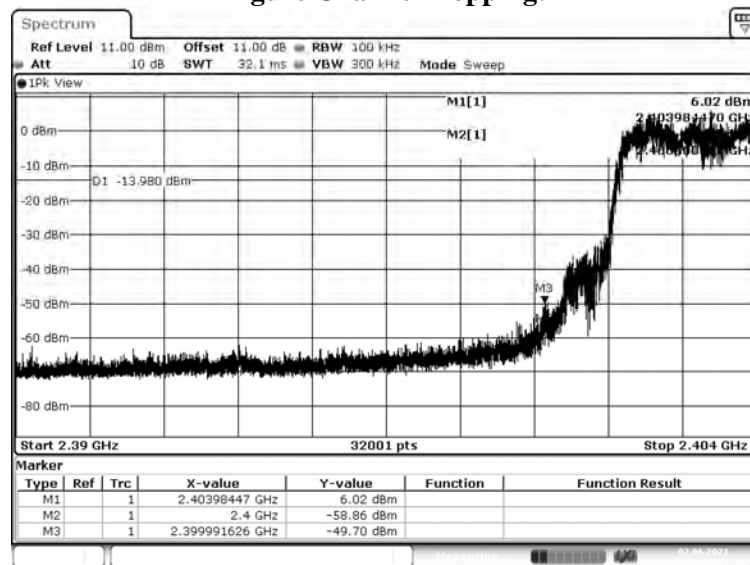


Date: 2 JUN.2021 22:05:13

Product : WCDMA/LTE Mobile Phone
 Test Item : Band Edge
 Test Mode : Mode 2: Transmit - 3Mbps (Hopping on)
 Test Date : 2021/06/08

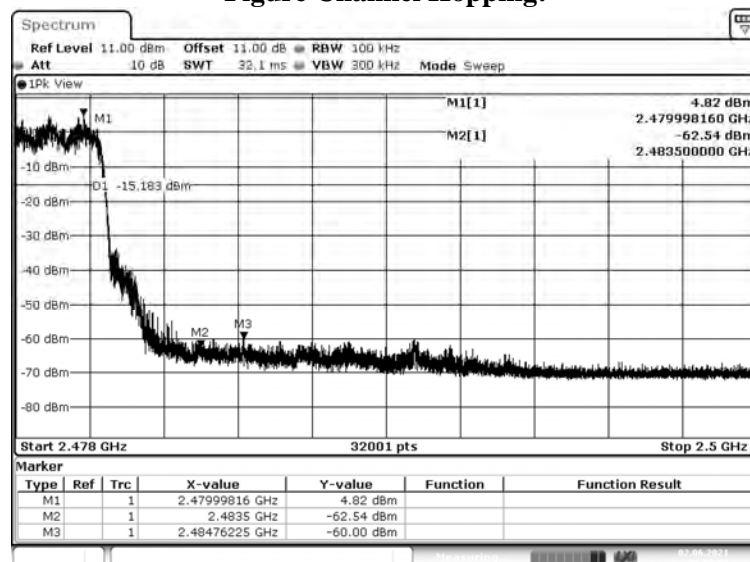
Measurement Level Δ (dB)	Result
> 20	PASS

Figure Channel Hopping:



Date: 2 JUN 2021 21:40:19

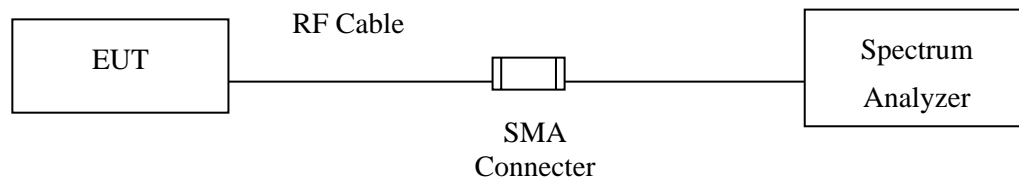
Figure Channel Hopping:



Date: 2 JUN 2021 22:07:59

7. Channel Number

7.1. Test Setup



7.2. Limit

Frequency hopping systems operating in the 2400-2483.5 MHz bands shall use at least 75 hopping frequencies.

7.3. Test Procedure

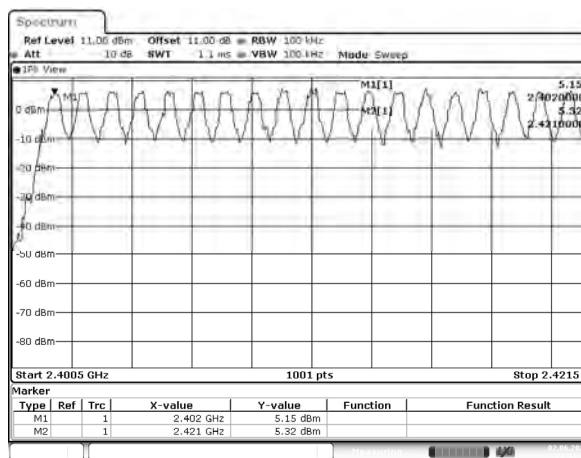
Tested according to FHSS test procedure of KDB558074 section 9 (b for compliance to FCC 47CFR 15.247 requirements.

7.4. Test Result of Channel Number

Product : WCDMA/LTE Mobile Phone
 Test Item : Channel Number
 Test Mode : Mode 1: Transmit - 1Mbps
 Test Date : 2021/06/08

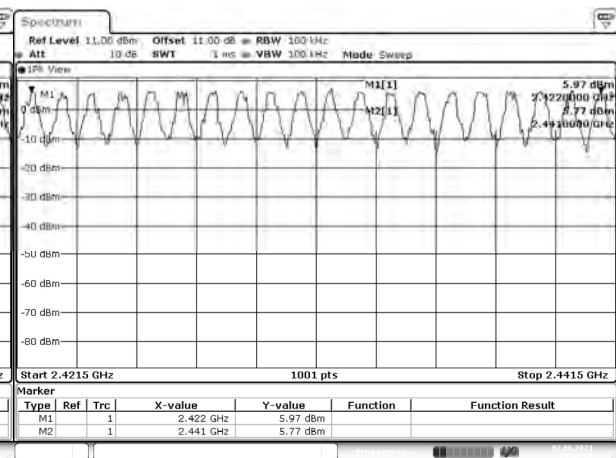
Frequency Range (MHz)	Measurement (Hopping Channel)	Required Limit (Hopping Channel)	Result
2402 ~ 2480	79	>75	Pass

2402-2421MHz



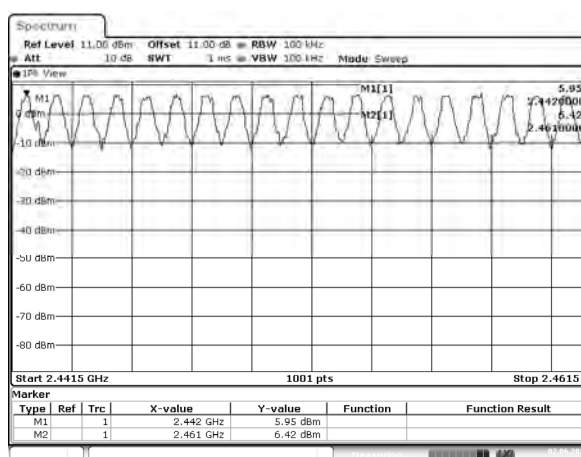
Date: 2 JUN 2021 21:31:40

2422-2441MHz



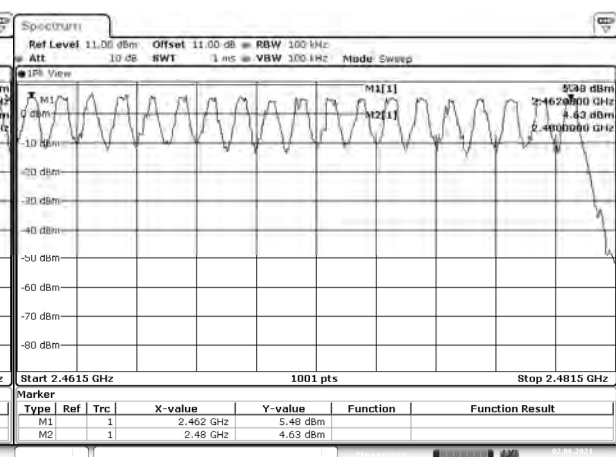
Date: 2 JUN 2021 21:32:04

2442-2461MHz



Date: 2 JUN 2021 21:32:36

2462-2480MHz

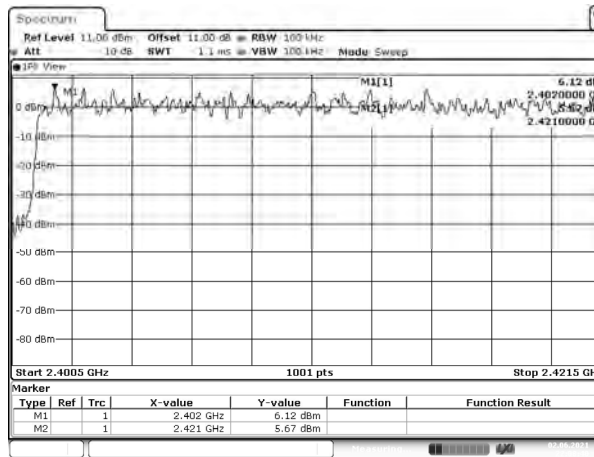


Date: 2 JUN 2021 21:33:03

Product : WCDMA/LTE Mobile Phone
 Test Item : Channel Number
 Test Mode : Mode 2: Transmit - 3Mbps
 Test Date : 2021/06/08

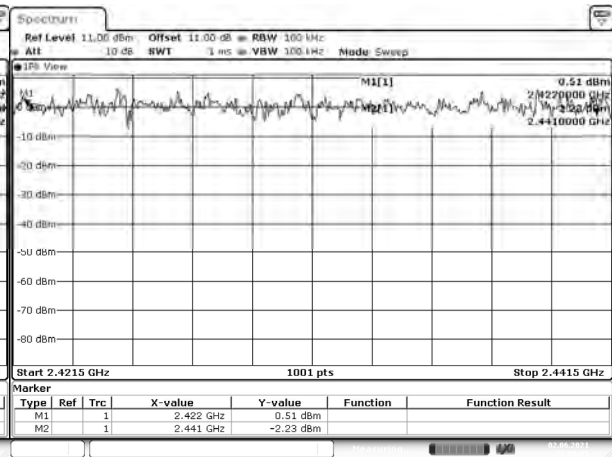
Frequency Range (MHz)	Measurement (Hopping Channel)	Required Limit (Hopping Channel)	Result
2402 ~ 2480	79	>75	Pass

2402-2421MHz



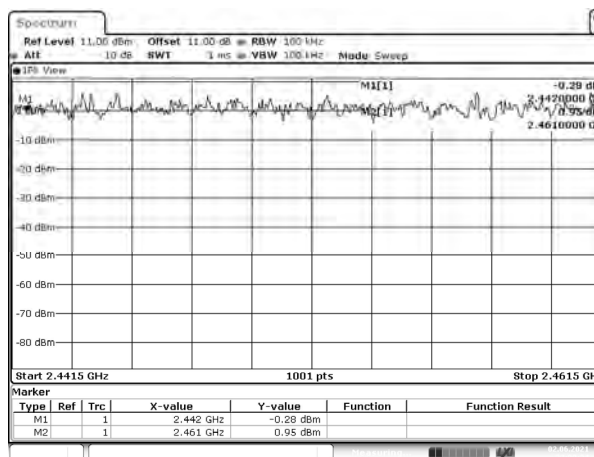
Date: 2 JUN 2021 22:08:41

2422-2441MHz



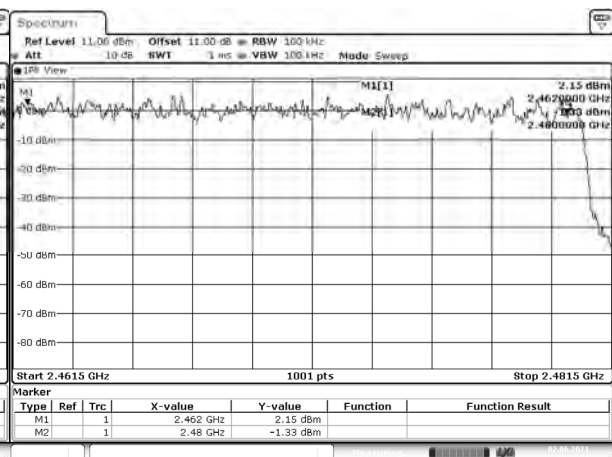
Date: 2 JUN 2021 22:09:05

2442-2461MHz



Date: 2 JUN 2021 22:09:34

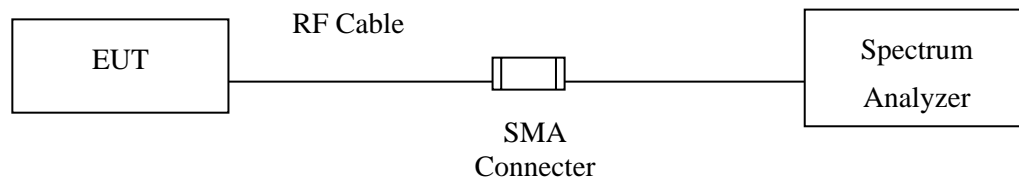
2462-2480MHz



Date: 2 JUN 2021 22:10:04

8. Channel Separation

8.1. Test Setup



8.2. Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

8.3. Test Procedure

Tested according to FHSS test procedure of KDB558074 section 9 (b for compliance to FCC 47CFR 15.247 requirements).

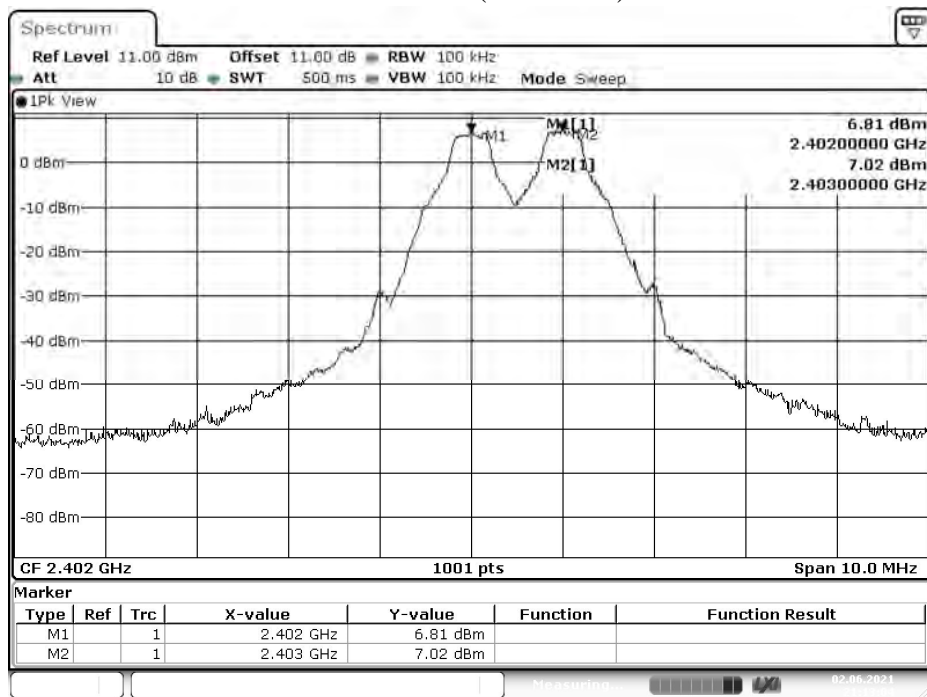
8.4. Test Result of Channel Separation

Product : WCDMA/LTE Mobile Phone
 Test Item : Channel Separation
 Test Mode : Mode 1: Transmit - 1Mbps
 Test Date : 2021/06/08

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
00	2402	1000	>25 kHz	684.0	Pass
39	2441	1000	>25 kHz	686.0	Pass
78	2480	1000	>25 kHz	686.0	Pass

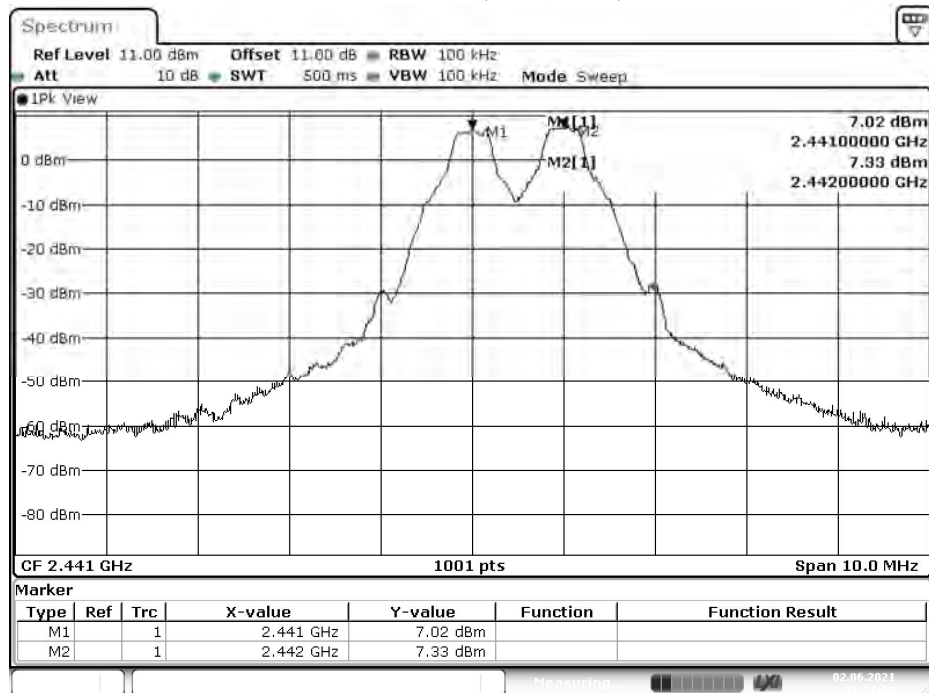
NOTE: The 20dB Bandwidth is refer to section 10.

Channel 00 (2402MHz)



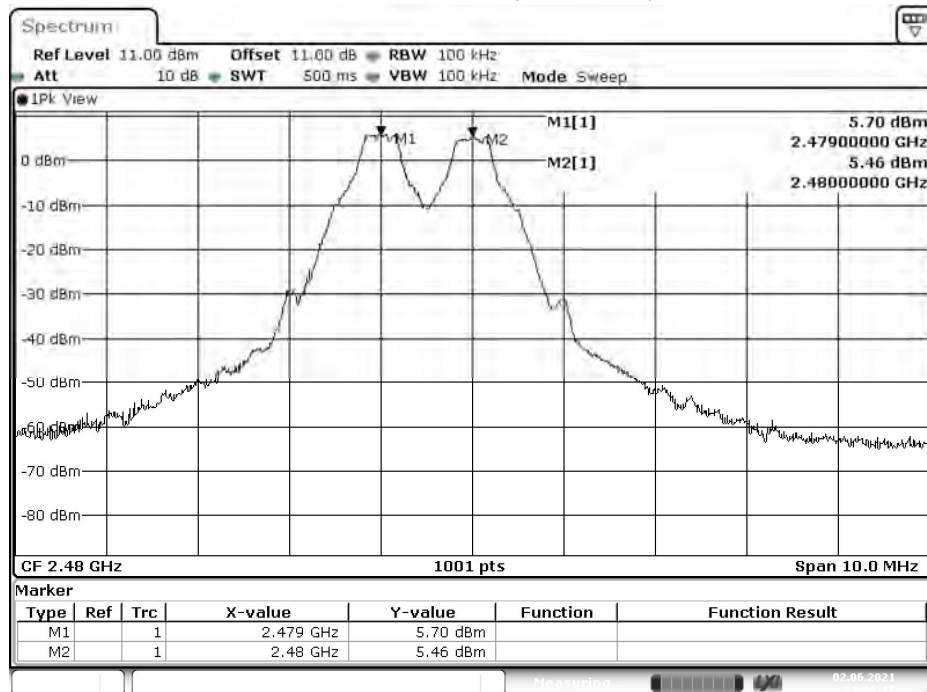
Date: 2 JUN 2021 21:13:05

Channel 39 (2441MHz)



Date: 2 JUN.2021 21:21:04

Channel 78 (2480MHz)



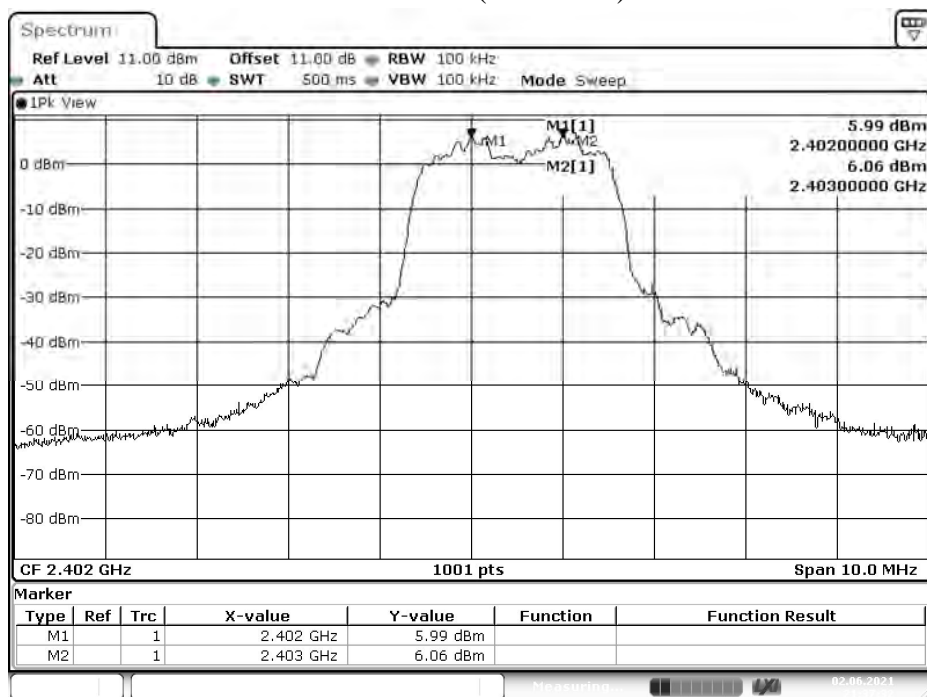
Date: 2 JUN.2021 21:26:18

Product : WCDMA/LTE Mobile Phone
 Test Item : Channel Separation
 Test Mode : Mode 2: Transmit - 3Mbps
 Test Date : 2021/06/08

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
00	2402	1000	>25 kHz	874.0	Pass
39	2441	1000	>25 kHz	884.0	Pass
78	2480	1000	>25 kHz	874.0	Pass

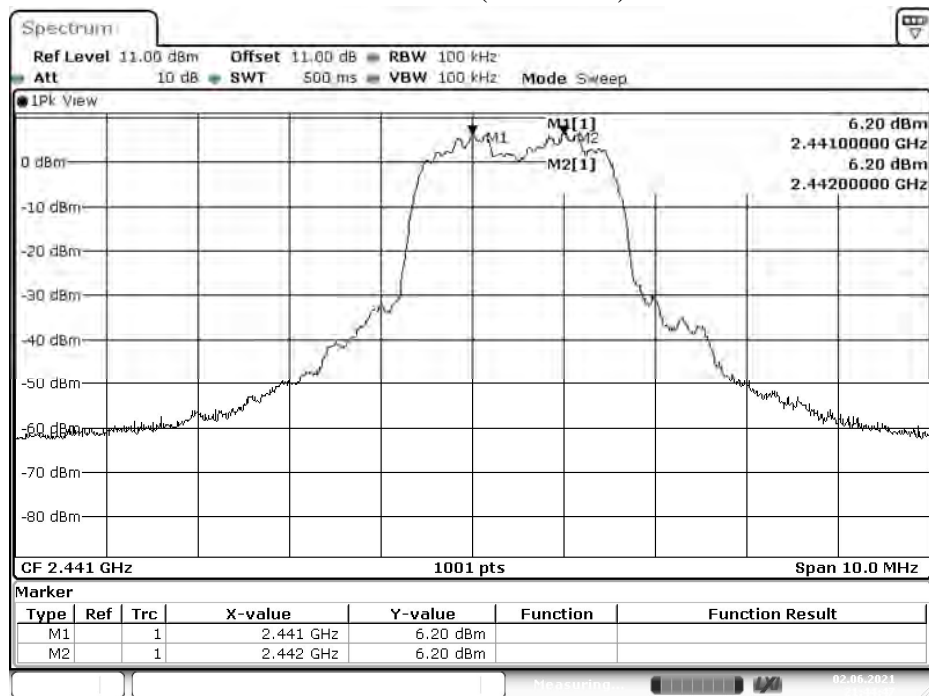
NOTE: The 20dB Bandwidth is refer to section 10.

Channel 00 (2402MHz)



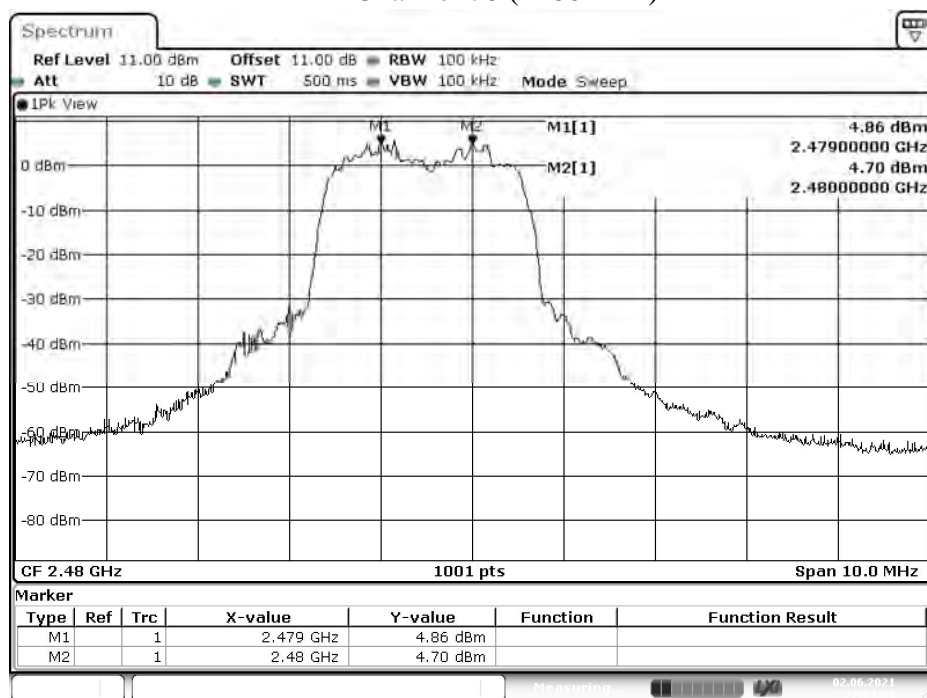
Date: 2 JUN 2021 21:37:33

Channel 39 (2441MHz)



Date: 2 JUN.2021 21:44:48

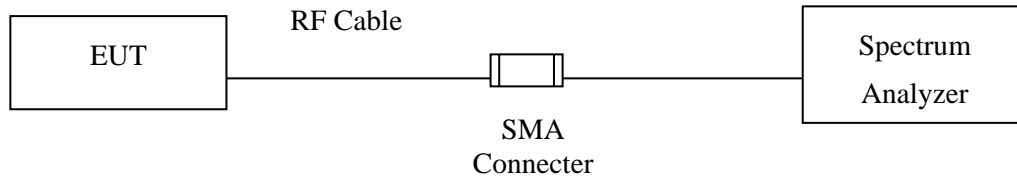
Channel 78 (2480MHz)



Date: 2 JUN.2021 22:04:05

9. Dwell Time

9.1. Test Setup



9.2. Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

9.3. Test Procedure

Tested according to FHSS test procedure of KDB558074 section 9 (b for compliance to FCC 47CFR 15.247 requirements).

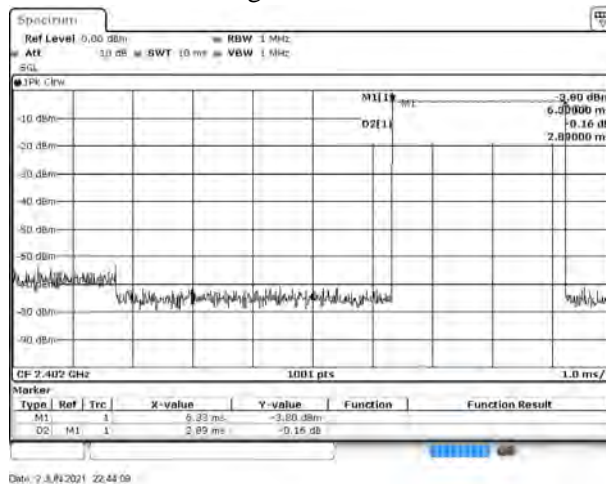
9.4. Test Result of Dwell Time

Product : WCDMA/LTE Mobile Phone
 Test Item : Dwell Time
 Test Mode : Mode 1: Transmit - 1Mbps (Channel 00,39,78)
 Test Date : 2019/06/24

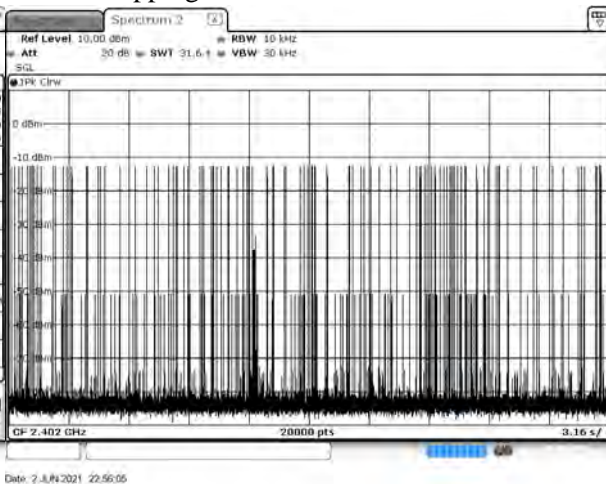
Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Dwell Time (ms)	Limit (ms)	Result
2402	2.890	98	31600	283.220	400	Pass
2441	2.860	101	31600	288.860	400	Pass
2480	2.880	95	31600	273.600	400	Pass

Dwell time = Time slot length(ms)*Hopping of Number

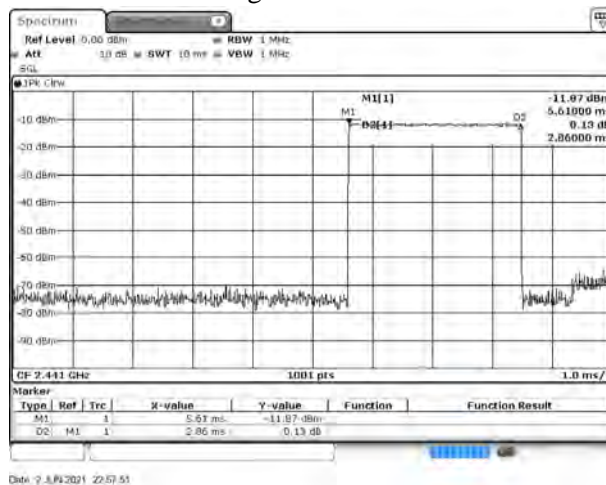
CH 00 Time slot length



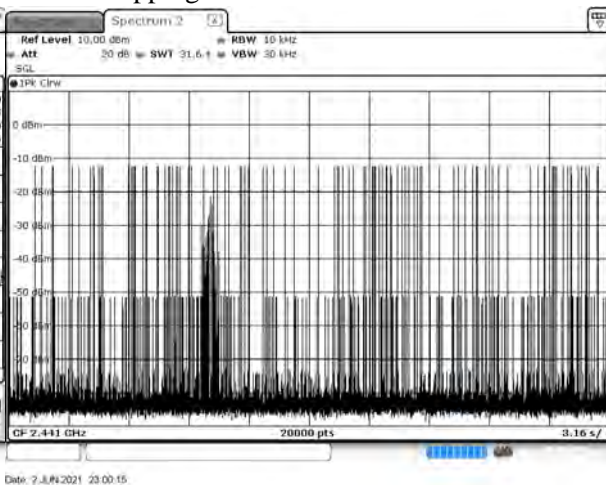
CH 00 Hopping of Number



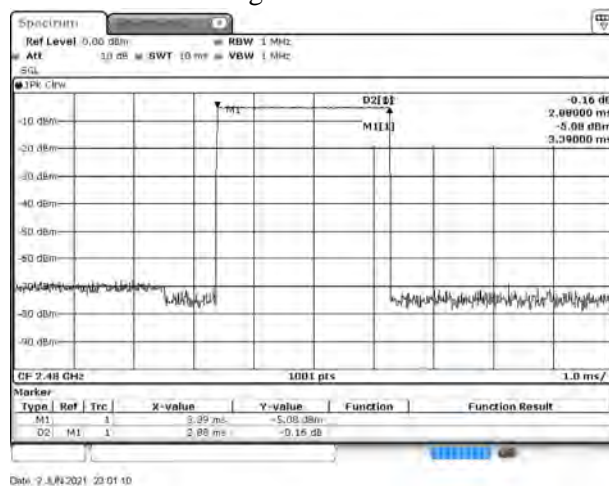
CH 39 Time slot length



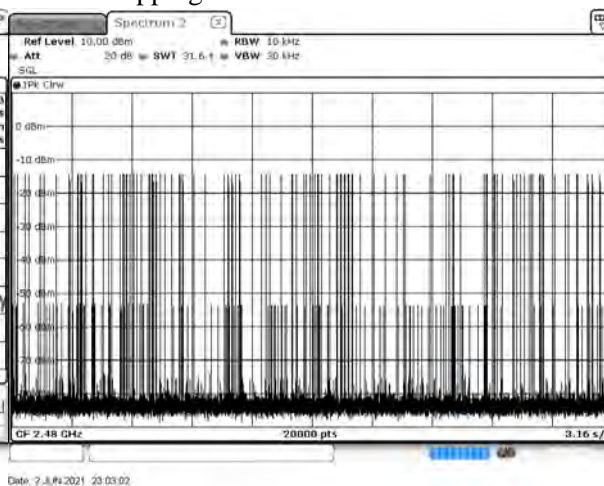
CH 39 Hopping of Number



CH 78 Time slot length



CH 78 Hopping of Number



Note:

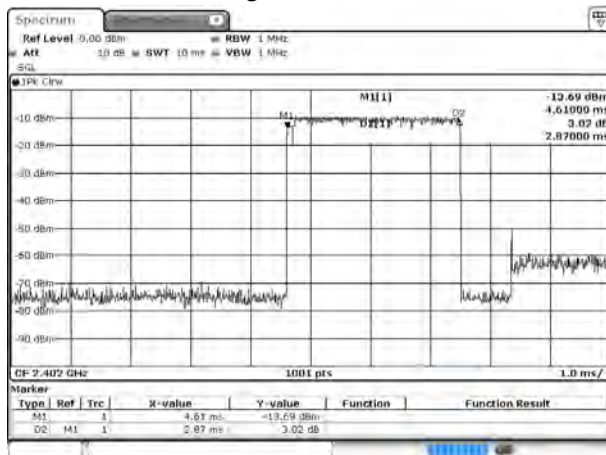
The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.

Product : WCDMA/LTE Mobile Phone
 Test Item : Dwell Time
 Test Mode : Mode 2: Transmit - 3Mbps (Channel 00,39,78)
 Test Date : 2019/06/24

Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Dwell Time (ms)	Limit (ms)	Result
2402	2.870	102	31600	292.740	400	Pass
2441	2.890	105	31600	303.450	400	Pass
2480	2.870	99	31600	284.130	400	Pass

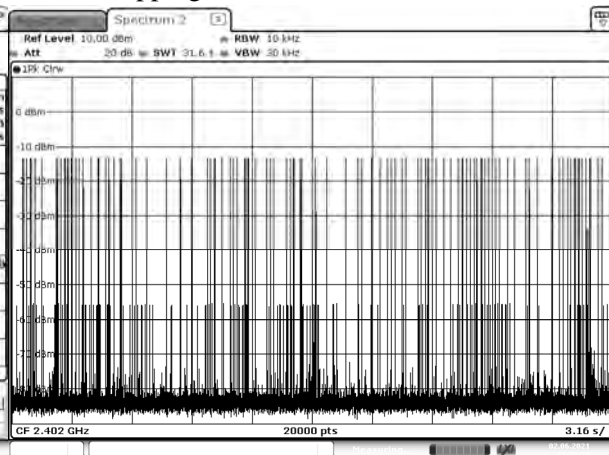
Dwell time = Time slot length(ms)*Hopping of Number

CH 00 Time slot length



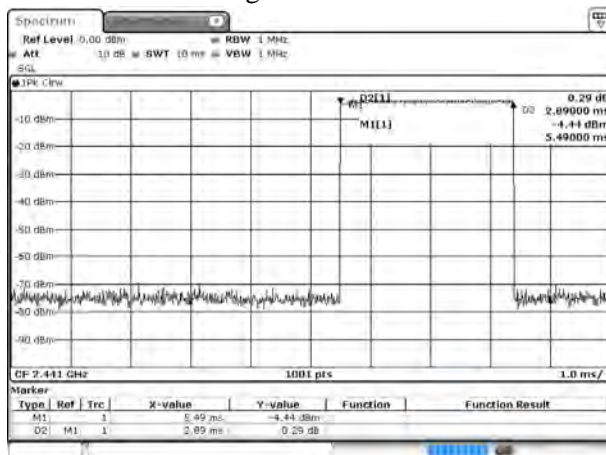
Date: 2 JUN 2021 23:23:43

CH 00 Hopping of Number



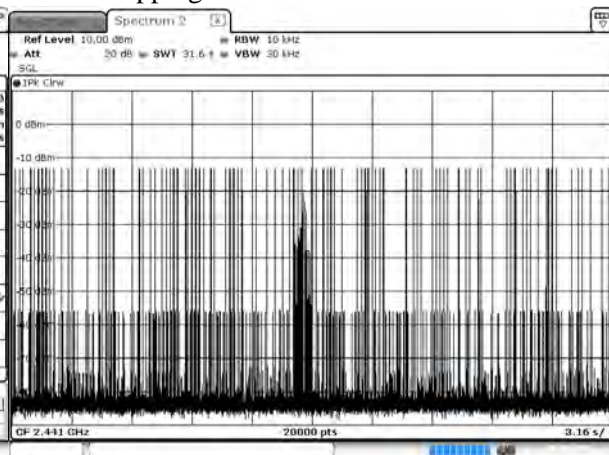
Date: 2 JUN 2021 23:20:38

CH 39 Time slot length



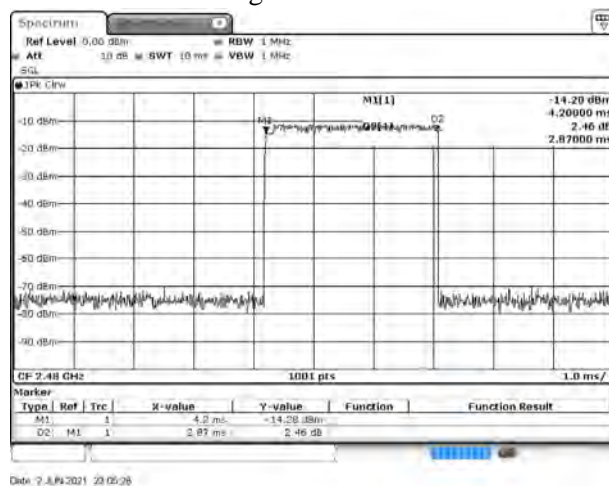
Date: 2 JUN 2021 23:06:20

CH 39 Hopping of Number

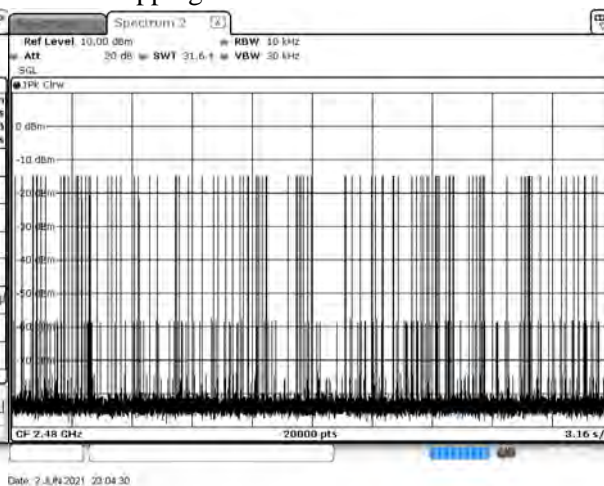


Date: 2 JUN 2021 23:09:32

CH 78 Time slot length



CH 78 Hopping of Number

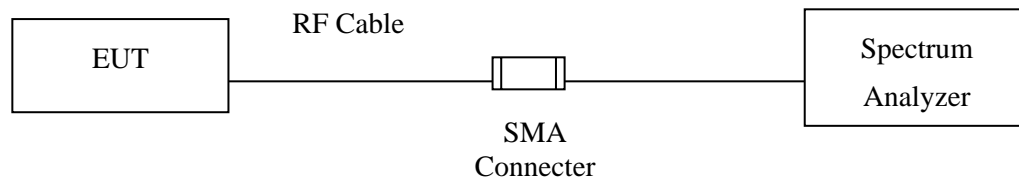


Note:

The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.

10. Occupied Bandwidth

10.1. Test Setup



10.2. Limits

N/A

10.3. Test Procedure

Tested according to FHSS test procedure of KDB558074 section 9 (b for compliance to FCC 47CFR 15.247 requirements.

10.4. Test Result of Occupied Bandwidth

Product : WCDMA/LTE Mobile Phone
 Test Item : Occupied Bandwidth Data
 Test Mode : Mode 1: Transmit - 1Mbps
 Test Date : 2021/06/08

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	963	--	NA
39	2441	957	--	NA
78	2480	1038	--	NA

Figure Channel 00:

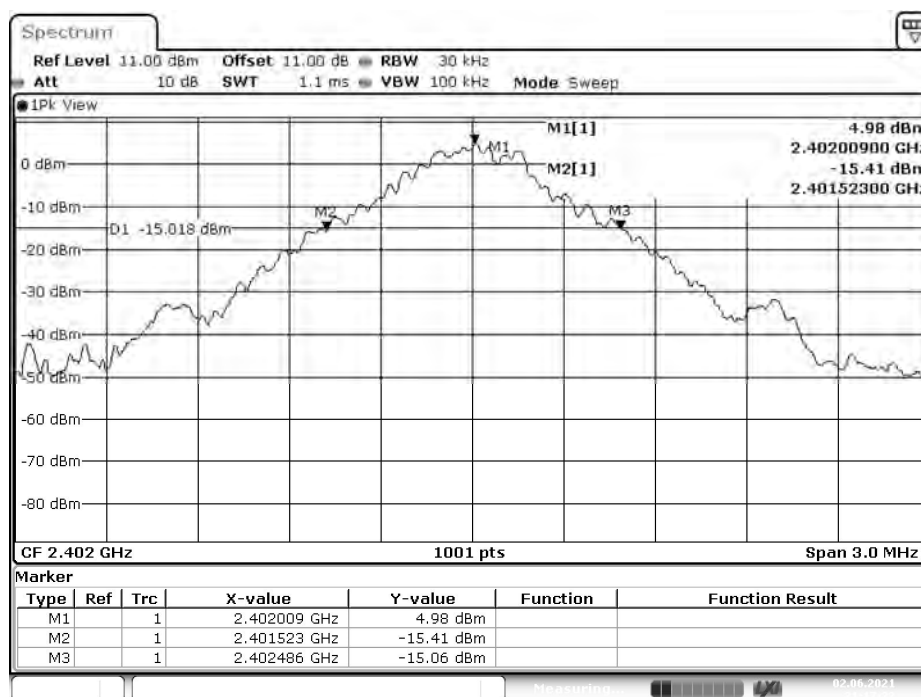
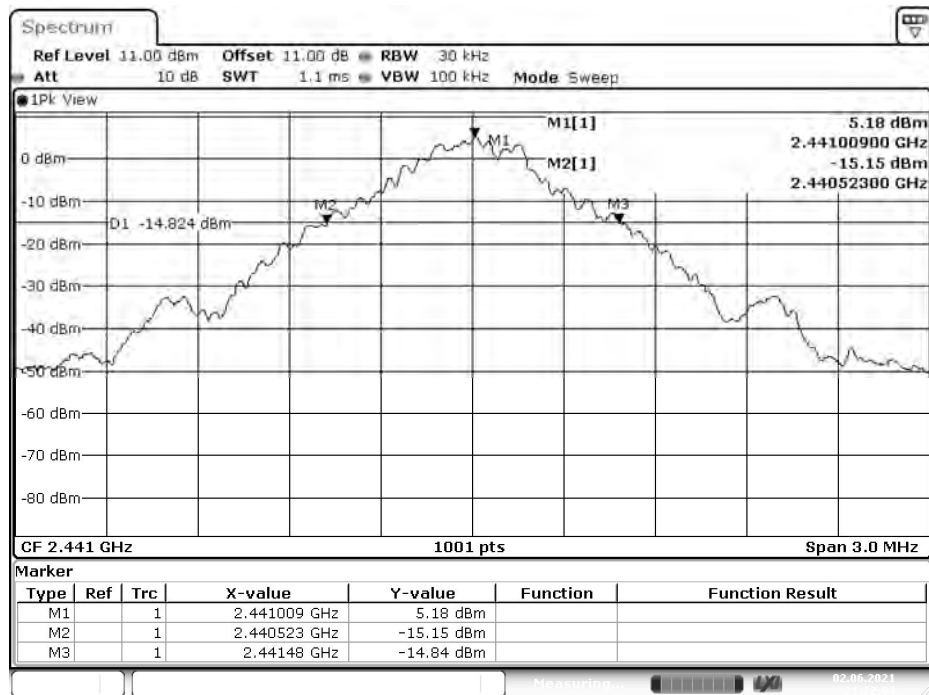
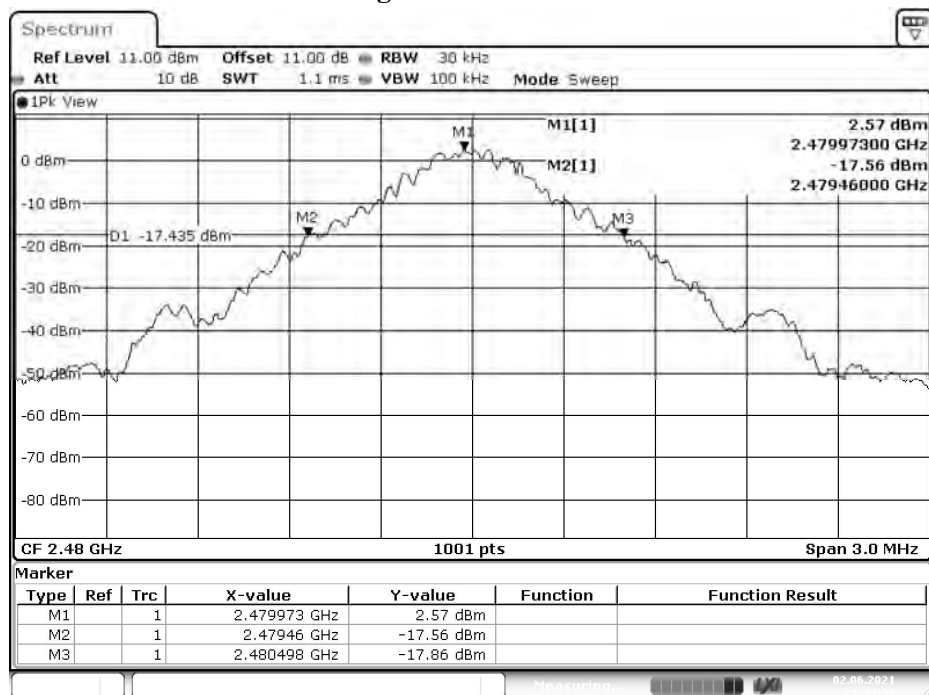


Figure Channel 39:



Date: 2.JUN.2021 21:22:04

Figure Channel 78:

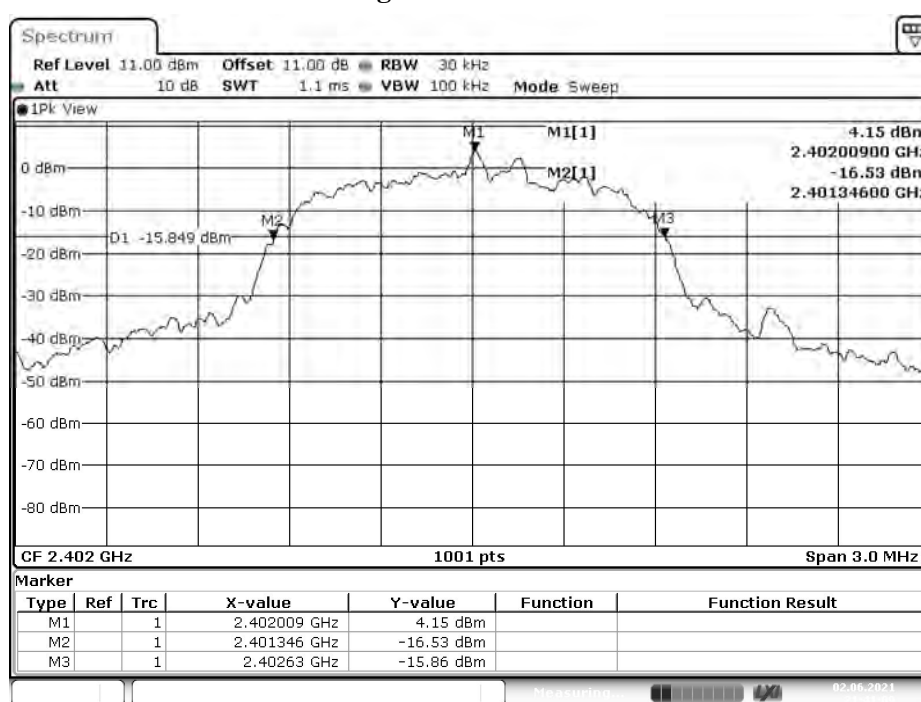


Date: 2.JUN.2021 21:33:54

Product : WCDMA/LTE Mobile Phone
 Test Item : Occupied Bandwidth Data
 Test Mode : Mode 2: Transmit - 3Mbps (2402MHz)
 Test Date : 2021/06/08

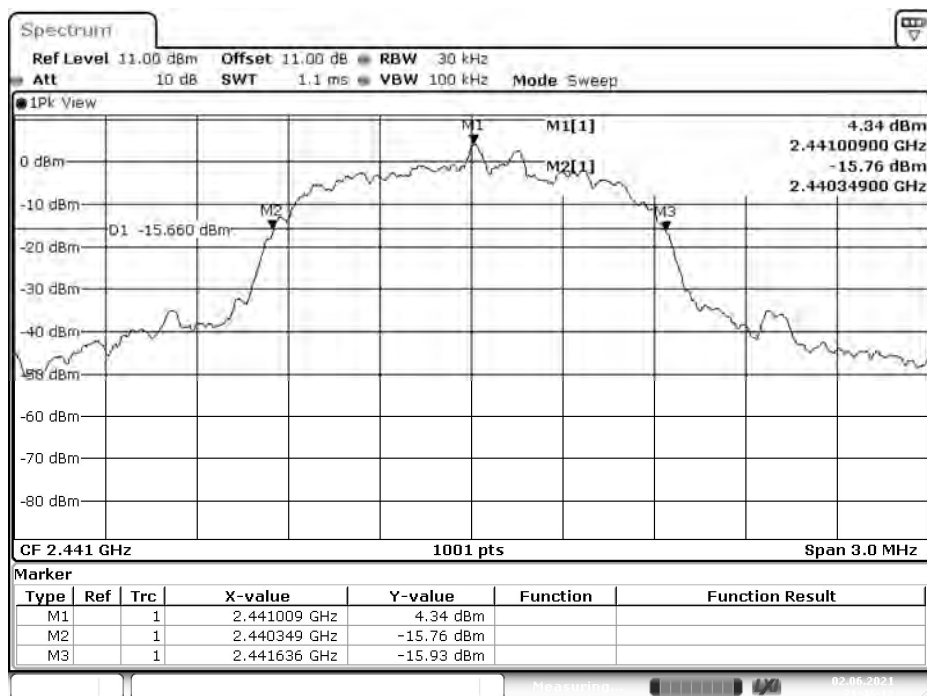
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	1284	--	NA
39	2441	1287	--	NA
78	2480	1290	--	NA

Figure Channel 00:



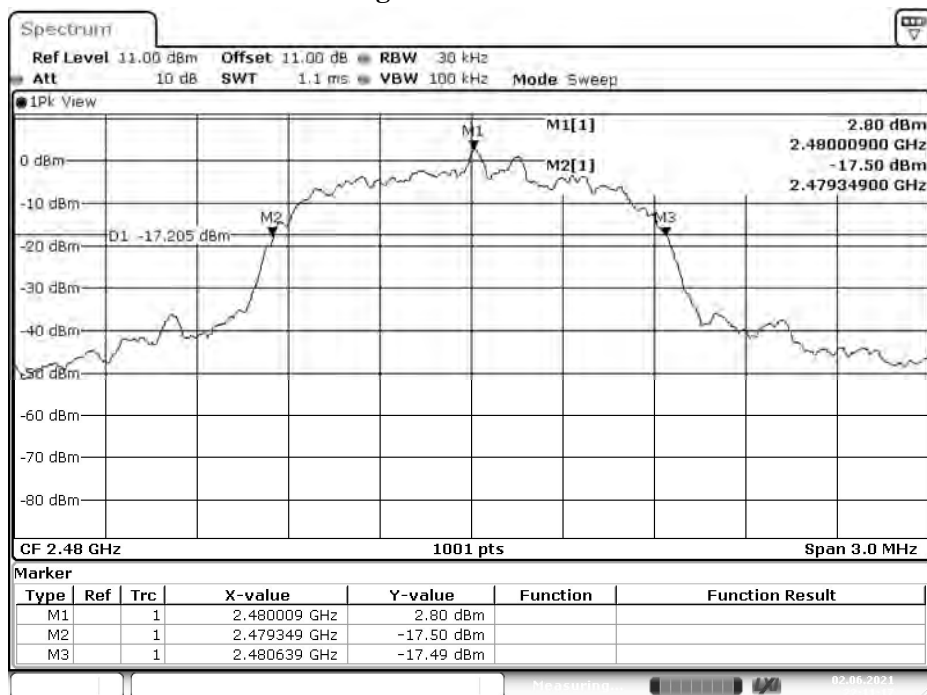
Date: 2 JUN 2021 21:41:10

Figure Channel 39:



Date: 2.JUN.2021 21:46:12

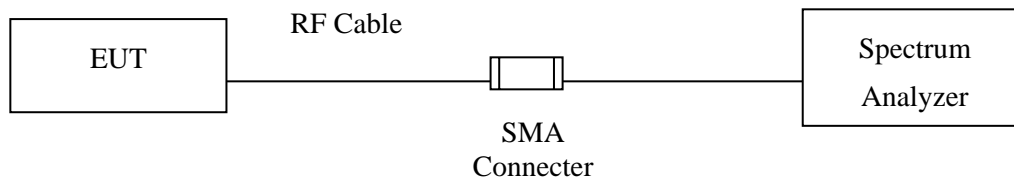
Figure Channel 78:



Date: 2.JUN.2021 22:11:18

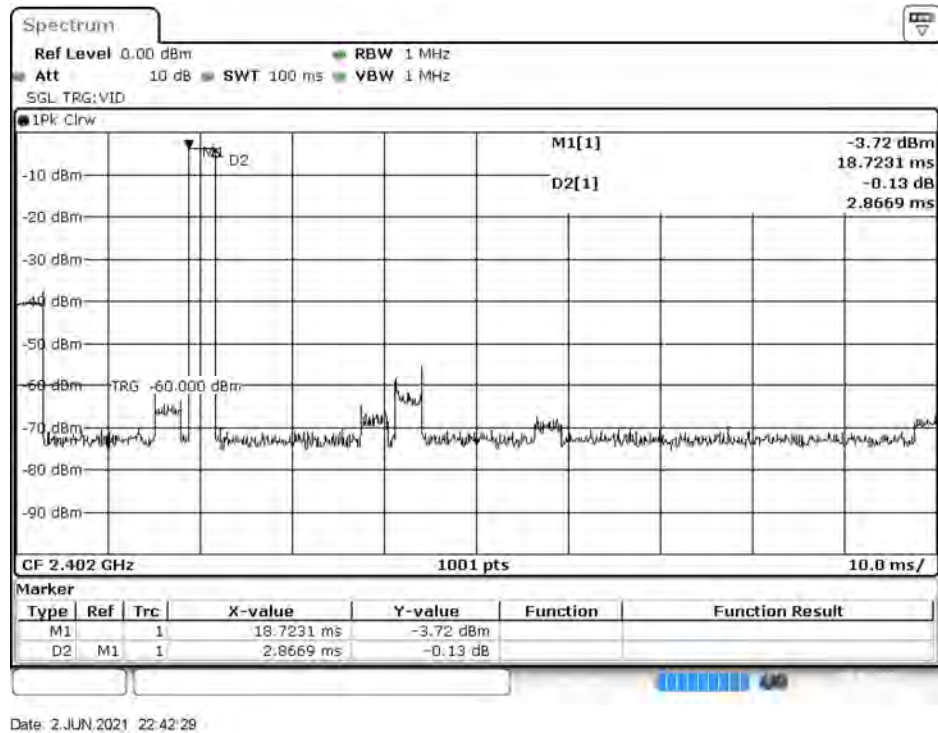
11. Duty Cycle

11.1. Test Setup



11.2. Test Result of Duty Cycle

Product : WCDMA/LTE Mobile Phone
 Test Item : Duty Cycle Data
 Test Mode : Mode 1: Transmit - 1Mbps



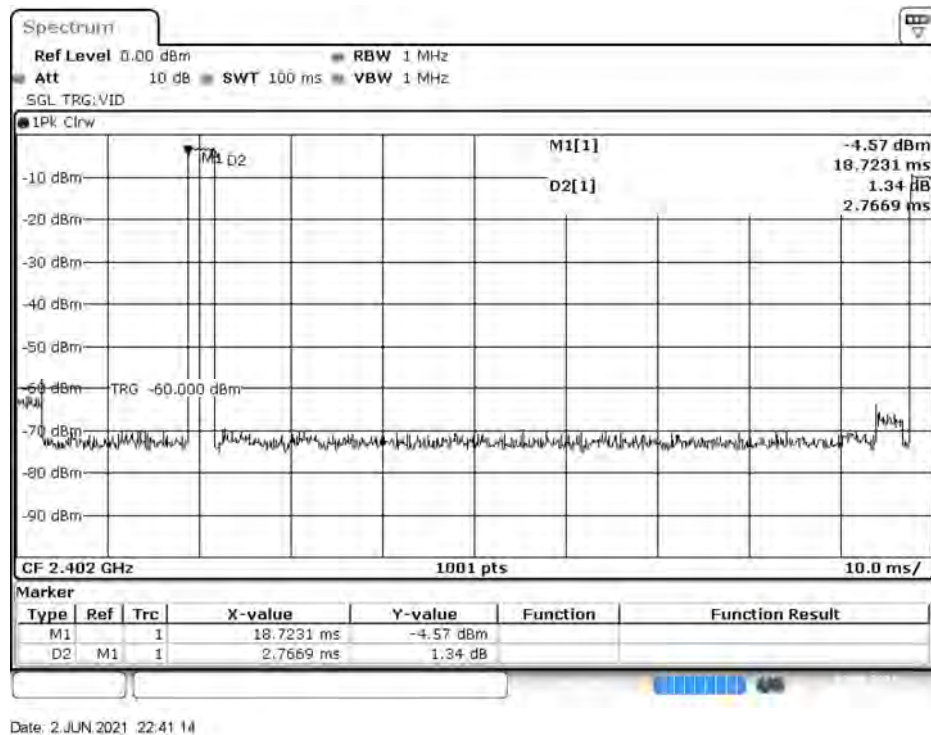
Time on of 100ms= 2.76ms*2= 5.52ms

Duty Cycle=5.78ms / 100ms= 0.0276

Duty Cycle correction factor= 20 LOG 0.276= -31.182 dB

Duty Cycle correction factor	-31.182	dB
------------------------------	---------	----

Product : WCDMA/LTE Mobile Phone
 Test Item : Duty Cycle Data
 Test Mode : Mode 2: Transmit - 3Mbps



Time on of 100ms= 2.76ms*2= 5.52ms

Duty Cycle=5.78ms / 100ms= 0.0276

Duty Cycle correction factor= 20 LOG 0.0276= -31.182 dB

Duty Cycle correction factor	-31.182	dB
------------------------------	---------	----

12. EMI Reduction Method During Compliance Testing

No modification was made during testing.