FCC CERTIFICATION TEST REPORT

For

FCC ID:2APCM-MTC1905

Report Reference No. ..... :	19EFAS07021 0791
FCC Registration Number..... :	171688
FCC Designation Number..... :	CN1235
IC Registration Number..... :	11033A
Date of issue ..... :	2019-7-31
Testing Laboratory ..... :	DongGuan ShuoXin Electronic Technology Co., Ltd.
Address ..... :	Zone A, 1F, No. 6, XinGang Road YuanGang Street, XinAn District, ChangAn Town, DongGuan City, GuangDong, China
Applicant's name……..:	MATATALAB CO., LTD
Address……..:	Buliding 5, Pingshan Minqi Technology Park, Xili Town, Nanshan District, Shenzhen, China
Manufacturer……..:	MATATALAB CO., LTD

Test specification:

Test item description ..... :	Controller
Trade Mark ..... :	matatalab
Model/Type reference ..... :	MTC1905
Ratings ..... :	I/P: DC 3.8 V Li-ion Battery Charging By DC 5V

Test Engineer

Lake Hu

Responsible Engineer :

Smile Wang

Authorized Signatory:

King Wang

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TEST REPORT DECLARE

Applicant	:	MATATALAB CO., LTD
Address	:	Buliding 5, Pingshan Minqi Technology Park, Xili Town, Nanshan District, Shenzhen, China
Equipment under Test	:	Controller
Test Model No	:	MTC1905
Manufacturer	:	MATATALAB CO., LTD
Address	:	Buliding 5, Pingshan Minqi Technology Park, Xili Town, Nanshan District, Shenzhen, China

Test Standard Used: FCC:FCC Rules and Regulations Part 15 Subpart C (15.247)

Test procedure used: ANSI C63.10:2013, KDB558074 D01 DTS Meas Guidance v05r02

We Declare:

The equipment described above is tested by DongGuan ShuoXin Electronic Technology Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and DongGuan ShuoXin Electronic Technology Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

Report No:	19EFAS07021 0791		
Date of Test:	2019-06-22 To 2019-07-25	**Date of Report**:	2019-8-11

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of DongGuan ShuoXin Electronic Technology Co., Ltd.

1. SUMMARY OF TEST STANDARDS AND RESULTS

The EUT have been tested according to the applicable standards as referenced below.

Description of Test Item	Standard	Results
6dB Bandwidth and 99% Occupied Bandwidth	FCC:15.247(a)(2)	PASS
Peak Output Power	FCC:15.247(b)(3)	PASS
Power Spectral Density	FCC:15.247(e)	PASS
Spurious Emissions at Antenna Port	FCC:15.247(d)	PASS
Spurious Emissions	FCC:15.205,15.209,15.247(d)	PASS
100 kHz Bandwidth of Frequency Band Edge	FCC:15.247(d)	PASS
AC Line Conducted Emissions	FCC:15.207	PASS
Antenna requirement	FCC:15.203	PASS

2. GENERAL TEST INFORMATION

2.1. Accresitations

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

FCC Registration Number:171688 and IC Registration Number: 11033A

2.2. Description of EUT

EUT* Name	:	Controller
Model Number	:	MTC1905
Trade Mark	:	matatalab
EUT function description	:	Please reference user manual of this device
Power supply	:	DC 3.8V Li-ion Battery Charging By DC 5V
Radio Specification	:	BLE
Operation frequency	:	2402 MHz -2480MHz
Modulation	:	GFSK
Antenna Type	:	PCB Antenna, Maximum PK gain:-4.3dBi
Date of Receipt	:	2019/07/26
Sample Type	:	Series production

Note: EUT is the ab. of equipment under test.

Channle information:

CH	Frequency	CH	Frequency	CH	Frequency	CH	Frequency
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

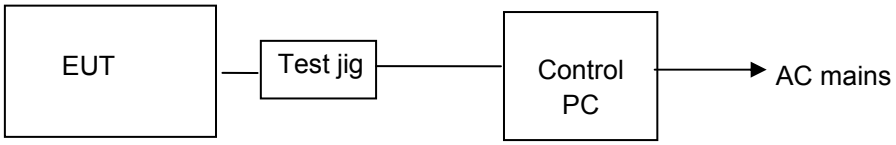
2.3. Accessories of EUT

Description of Accessories	Manufacturer	Model number or Type	Other
/	/	/	/

2.4. Assistant equipment used for test

Description of Assistant equipment	Manufacturer	Model number or Type	Other
Notebook	ACER	MS2367	32807810766
Adapter	Aohai	MCS-V01EA	IP:100-240V,50/60Hz OP:5V,1A

2.5. Block diagram of EUT configuration for test



EUT was connected to control to a special test jig provided by manufacturer which has a USB connector to Notebook, and the Notebook will run a special test software to control EUT work in Continuous TX mode, and select test channel, wireless mode and data rate. New battery is used during all test.
"BLE" provided by manufacturer to control EUT work in test mode as blow table.

Mode	Channel	Frequency (MHz)
BLE	Low :CH0	2402
	Middle: CH19	2440
	High: CH39	2480

2.6. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature range:	21-25℃
Humidity range:	40-75%
Pressure range:	86-106kPa

2.7. Measurement uncertainty

Test Item	Uncertainty
Uncertainty for Conduction emission test (9kHz-150kHz)	3.7 dB
Uncertainty for Conduction emission test (150kHz-30MHz)	3.3 dB
Uncertainty for Radiation Emission test (30MHz-200MHz)	4.60 dB (Polarize: V)
	4.60 dB (Polarize: H)
Uncertainty for Radiation Emission test (200MHz-1GHz)	6.10 dB (Polarize: V)
	5.08 dB (Polarize: H)
Uncertainty for Radiation Emission test (1GHz-6GHz)	5.01 dB (Polarize: V)
	5.01 dB (Polarize: H)
Uncertainty for Radiation Emission test (6GHz-18GHz)	5.26 dB (Polarize: V)
	5.26 dB (Polarize: H)
Uncertainty for Radiation Emission test (18GHz-40GHz)	5.06 dB (Polarize: V)
	5.06 dB (Polarize: H)
Uncertainty for radio frequency	±0.048kHz
Uncertainty for conducted RF Power	±0.32dB

Note：This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2.8 TABLE OF PARAMETERS OF TEST SOFTWARE SETTING

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RFoutput power expected by the customer and is going to be fixed on the firmware of the final end product.

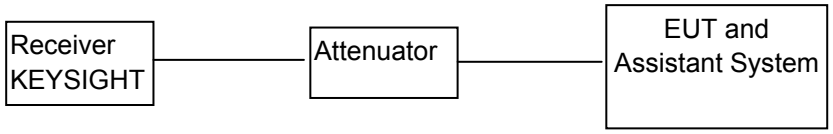
Test Software Version	nRF Go		
Frequency (MHz)	2402	2440	2480
Power Parameters (GFSK)	default	default	default

3. 6DB BANDWIDTH AND 99% OCCUPIED BANDWIDTH

3.1. Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Due.	Cal. Interval
1	Spectrum analyzer	KEYSIGHT	N9010A	MY55150427	2020/05/27	1 Year
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2019/12/16	1 Year
3	RF Cable	Micable	C10-01-01-1	100309	2019/12/16	1 Year

3.2. Block diagram of test setup



3.3. Limits

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500 KHz

3.4. Test Procedure

(1) Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.

(2) Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.

(3) Measure the frequency difference of two frequencies that were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth.

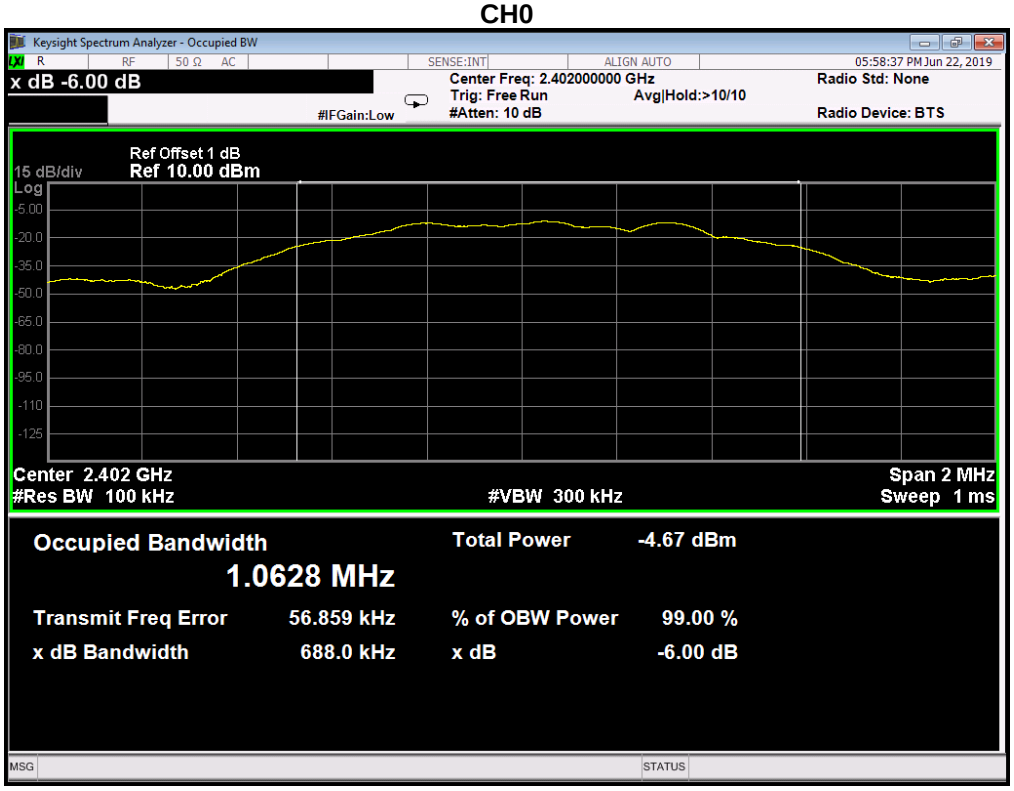
(4) Repeat above procedures until all frequencies measured were complete.

3.5. Test Result

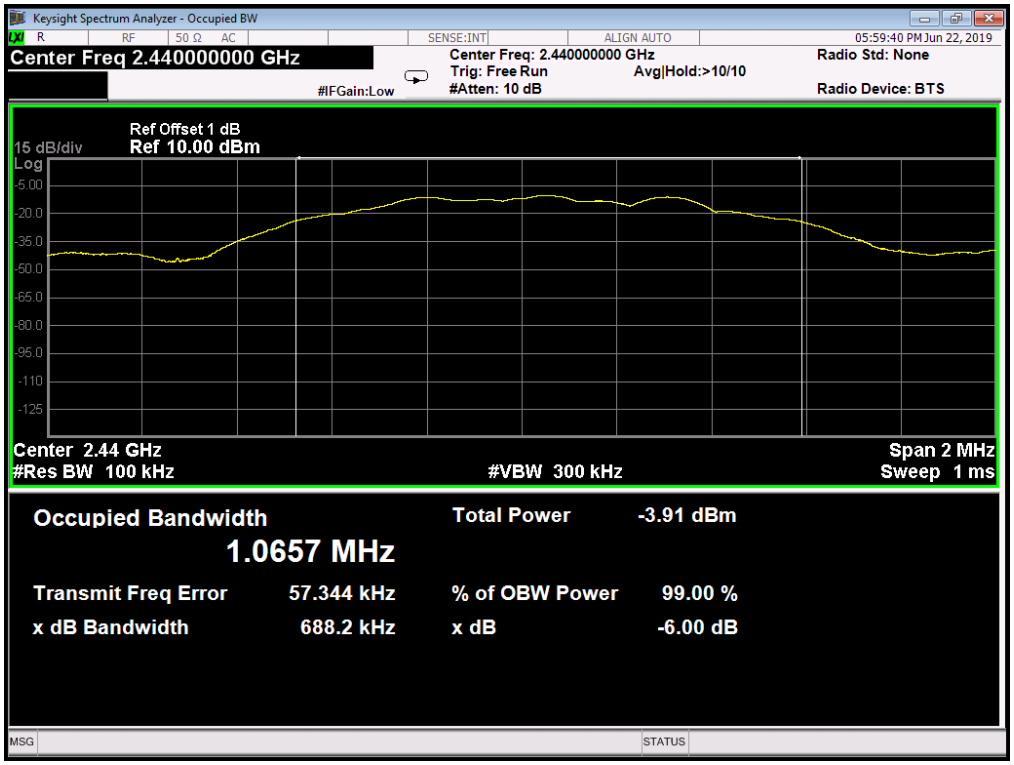
EUT Set Mode	CH or Frequency	6 dB bandwidth	99% dB bandwidth	Limt	Conclusion
		Result (MHz)	Result (MHz)		
BLE	CH0	0.6880	1.0628	>500KHz	PASS
	CH19	0.6882	1.0657	>500KHz	PASS
	CH39	0.6866	1.0681	>500KHz	PASS

3.6. Original test data

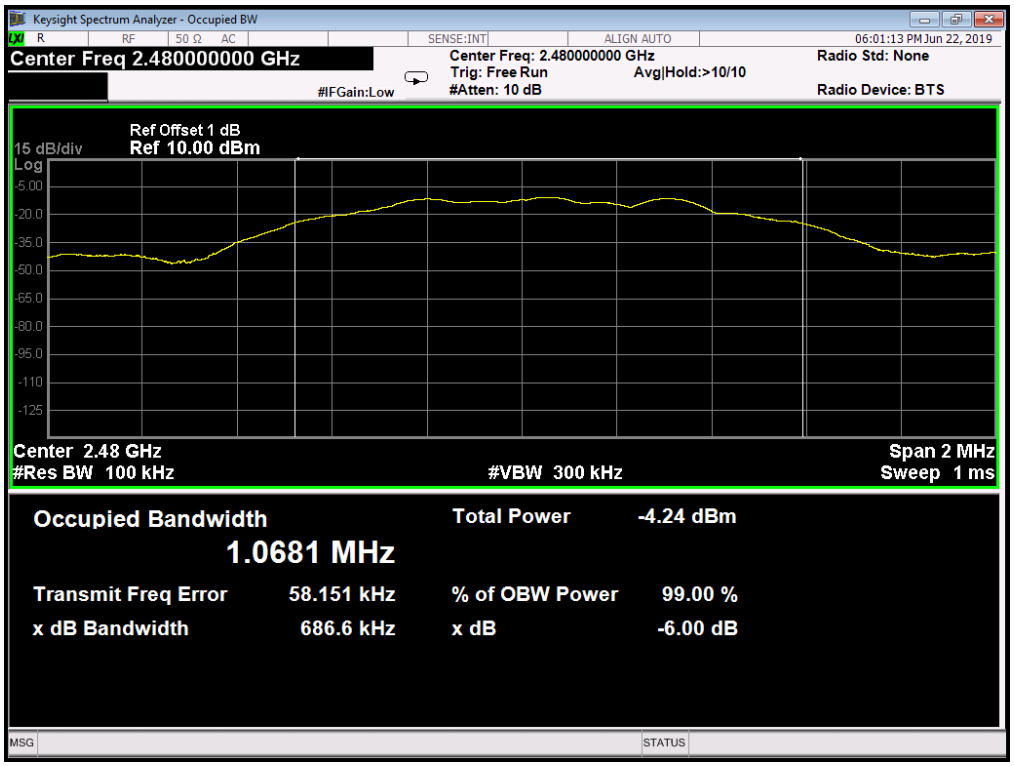
CH0



CH19



CH39

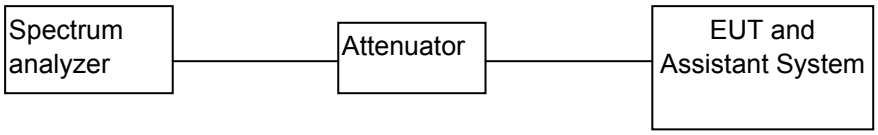

Keysight Spectrum Analyzer - Occupied BW
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
06:01:13 PM Jun 22, 2019
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 10 dB
Radio Std: None
Radio Device: BTS
Ref Offset 1 dB
15 dB/div
Ref 10.00 dBm
Log
-5.00
-20.0
-35.0
-50.0
-65.0
-80.0
-95.0
-110
-125
Center 2.48 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 2 MHz
Sweep 1 ms
Occupied Bandwidth
1.0681 MHz
Total Power
-4.24 dBm
Transmit Freq Error
58.151 kHz
% of OBW Power
99.00 %
x dB Bandwidth
686.6 kHz
x dB
-6.00 dB
MSG
STATUS

4. MAXIMUM PEAK OUTPUT POWER

4.1. Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Due.	Cal. Interval
1	Spectrum analyzer	KEYSIGHT	N9010A	MY55150427	2020/05/27	1 Year
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2019/12/16	1 Year
3	RF Cable	Micable	C10-01-01-1	100309	2019/12/16	1 Year

4.2. Block diagram of test setup



4.3. Limits

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz bands: 1 Watt. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

4.4. Test Procedure

(1) Configure EUT and assistant system according clause 2.4 and 3.2

(2) Connect EUT's antenna output to spectrum analyzer by RF cable.

(3) Configure EUT work in test mode as stated in clause 2.4.

(4) Set the spectrum analyzer as follows:

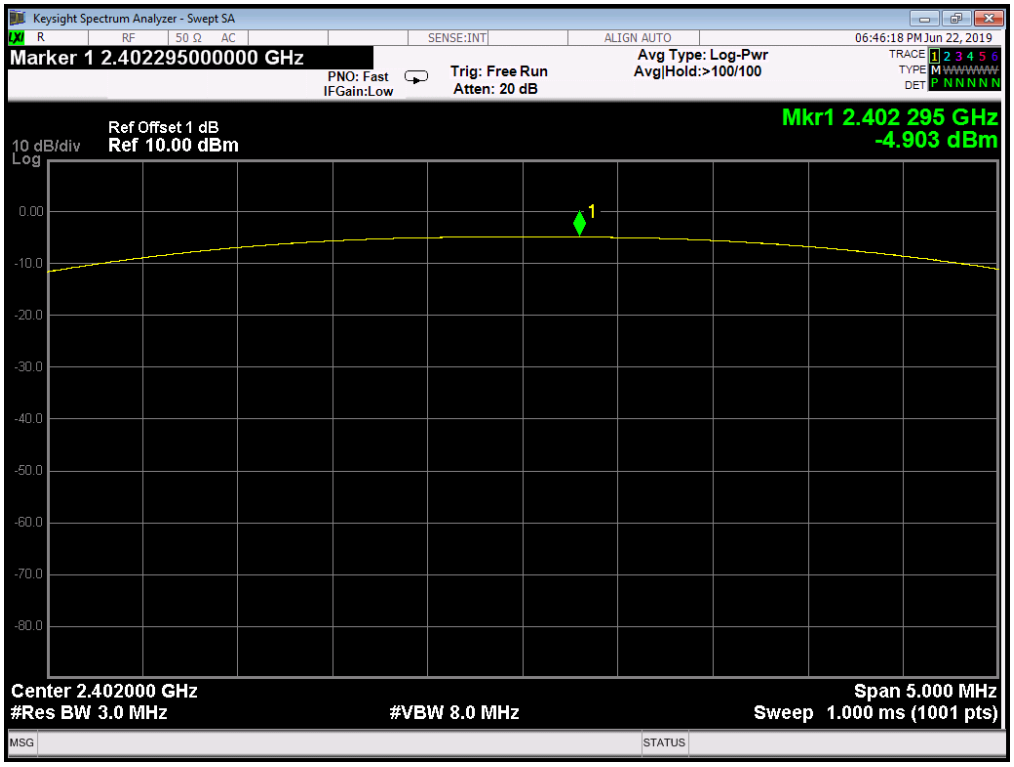
GFSK	RBW:	3MHz
	VBW:	8MHz
Span		≥ 3 x DTS bandwidth
Detector Mode:		Peak
Sweep time:		auto
Trace mode		Max hold

4.5. Test Result

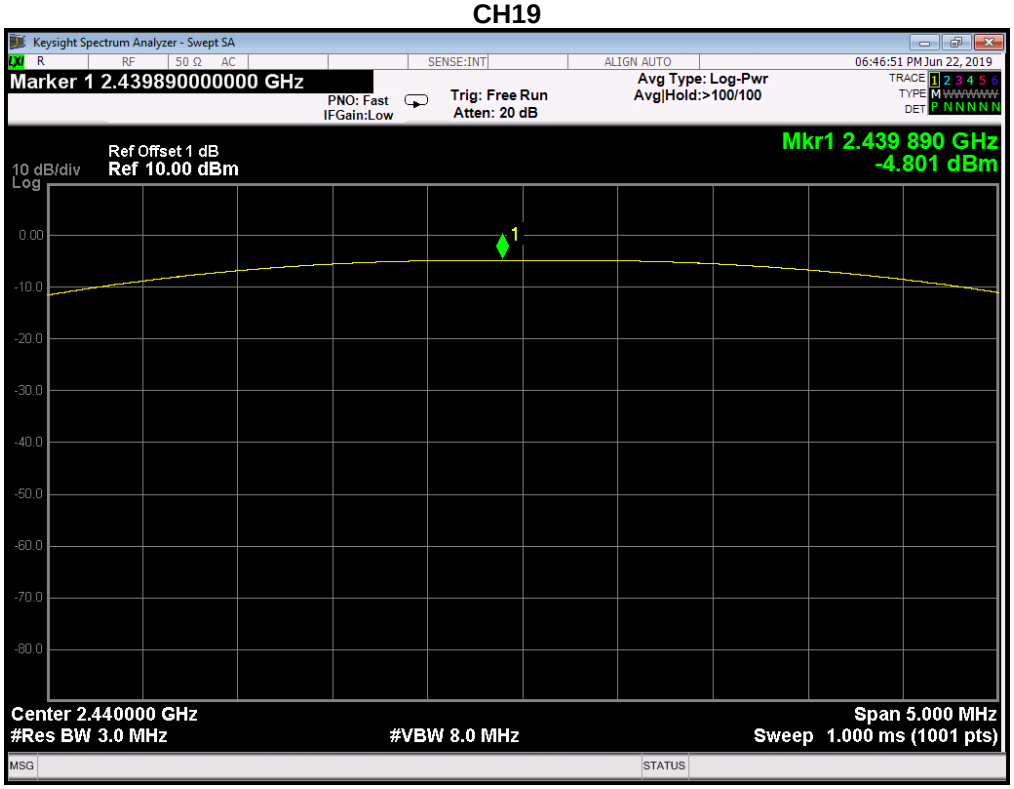
EUT Set Mode	Limit(Peak)	Conclusion	CH	Result(dBm)
				Peak
BLE	30dBm	PASS	CH0	-4.903
			CH19	-4.801
			CH39	-5.295

4.6 Original test data

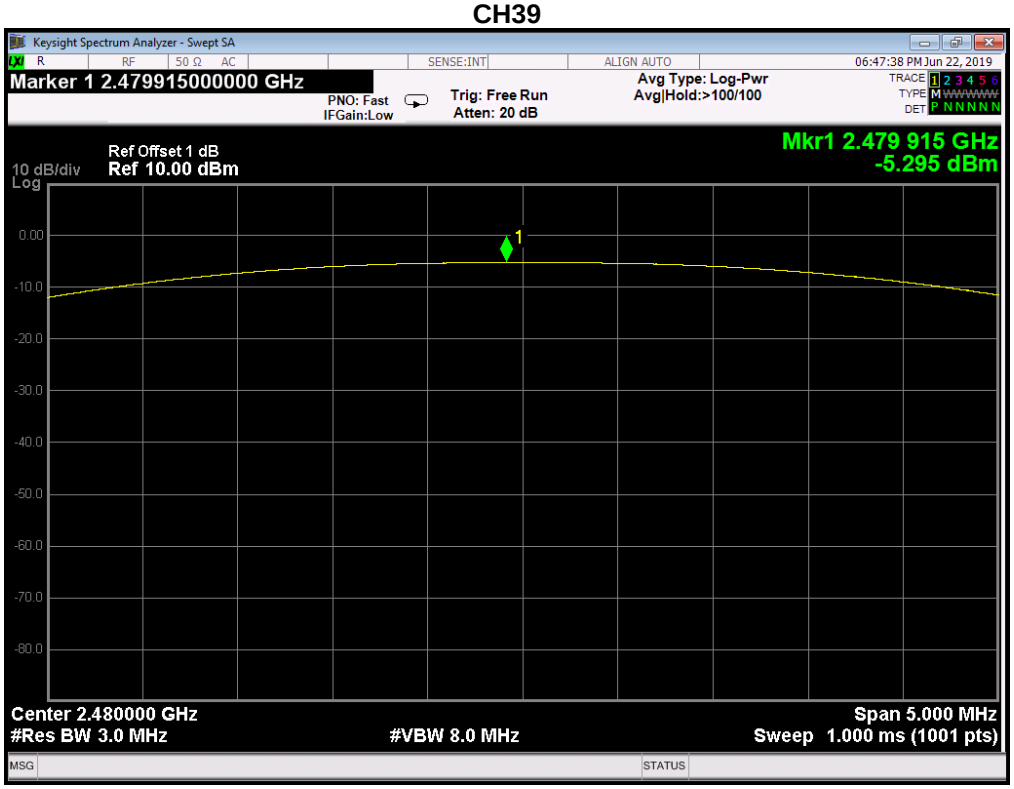
CH0



CH19



CH39

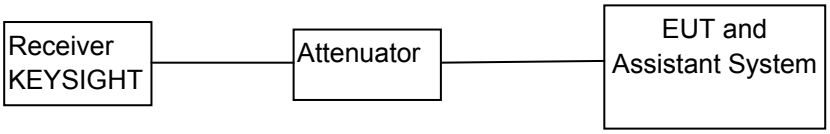

Keysight Spectrum Analyzer - Swept SA
R
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
06:47:38 PM Jun 22, 2019
Marker 1 2.479915000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Ref Offset 1 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 2.479 915 GHz
-5.295 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.480000 GHz
#Res BW 3.0 MHz
#VBW 8.0 MHz
Span 5.000 MHz
Sweep 1.000 ms (1001 pts)
MSG
STATUS

5. POWER SPECTRAL DENSITY

5.1. Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Due.	Cal. Interval
1	Spectrum analyzer	KEYSIGHT	N9010A	MY55150427	2020/05/27	1 Year
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2019/12/16	1 Year
3	RF Cable	Micable	C10-01-01-1	100309	2019/12/16	1 Year

5.2. Block diagram of test setup



5.3. Limits

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.

5.4. Test Procedure

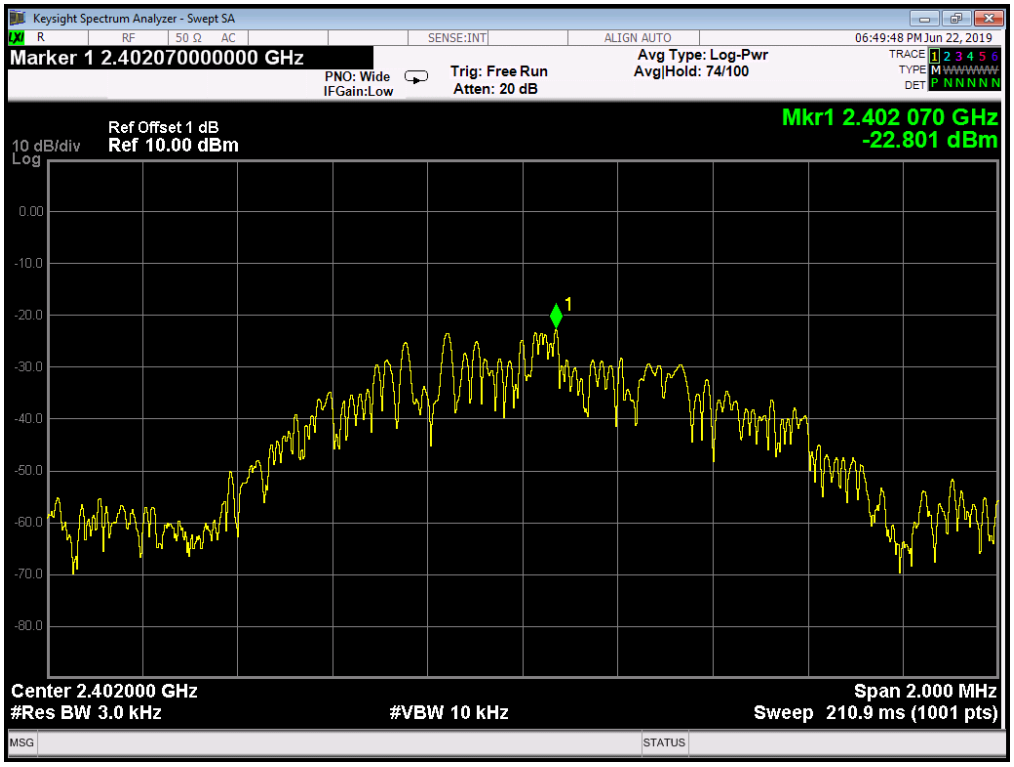
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generatorl.
2. Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range
3. According to KDB 558074 D01 DTS Meas Guidance v05r02, set the RBW = 3 kHz, VBW = 10 kHz, Set the span to 1.5 times the DTS channel bandwidth.
4. Use the peak marker function to determine the maximum power level in any 3 kHz band segment within the fundamental EBW

5.5. Test Result

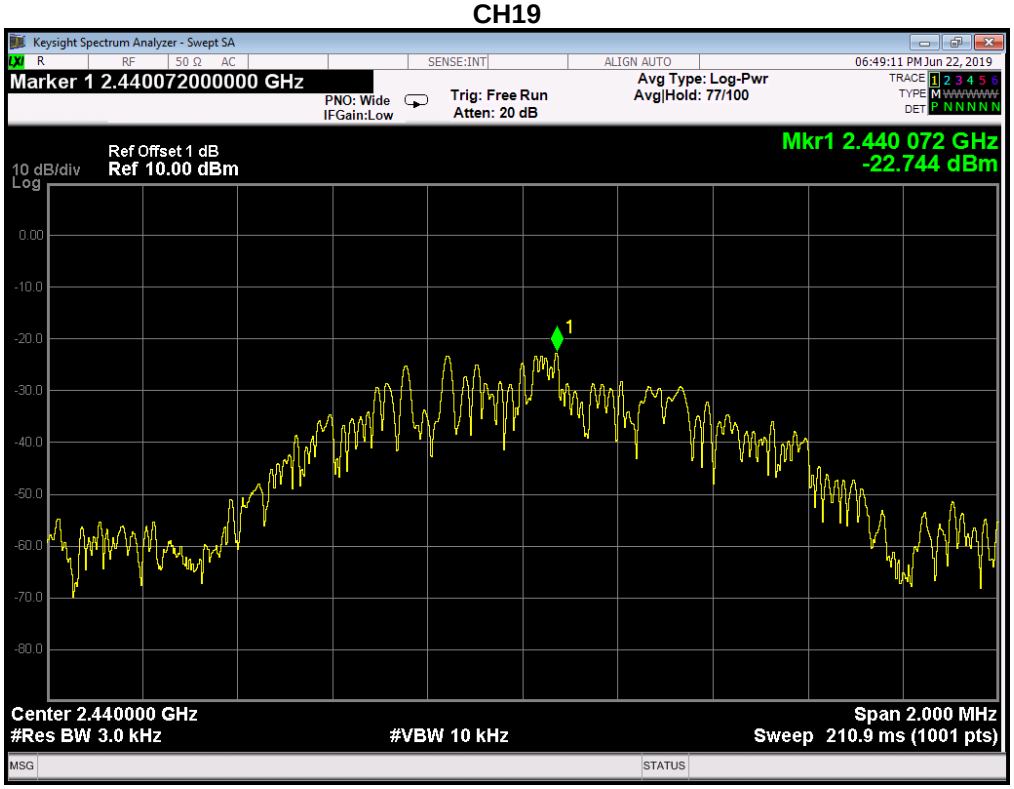
EUT Set Mode	CH or Frequency	Result	Limit: <dBm/3KHz	Conclusion
BLE	CH0	-22.801	8	PASS
	CH19	-22.744	8	PASS
	CH39	-23.202	8	PASS

5.6. Original test data

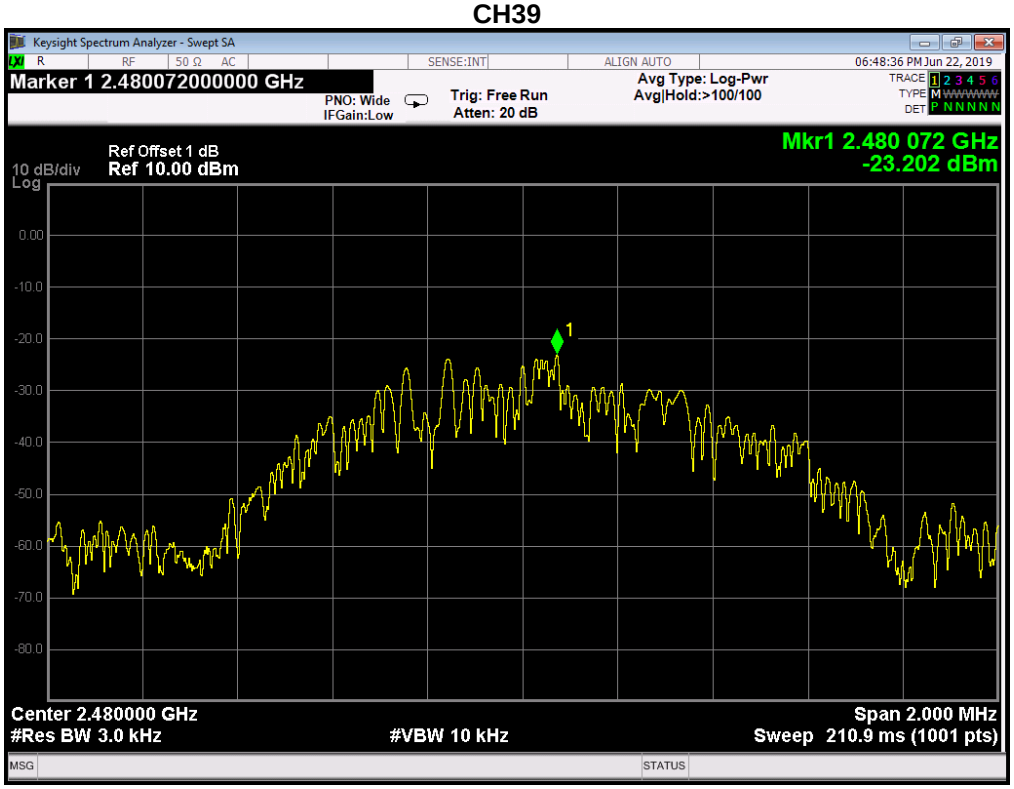
CH0



CH19



CH39


Keysight Spectrum Analyzer - Swept SA
R
RF
50 Ω
AC
SENSE:INT
ALIGN AUTO
06:48:36 PM Jun 22, 2019
Marker 1 2.480072000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Ref Offset 1 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 2.480 072 GHz
-23.202 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
1
Center 2.480000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 2.000 MHz
Sweep 210.9 ms (1001 pts)
MSG
STATUS

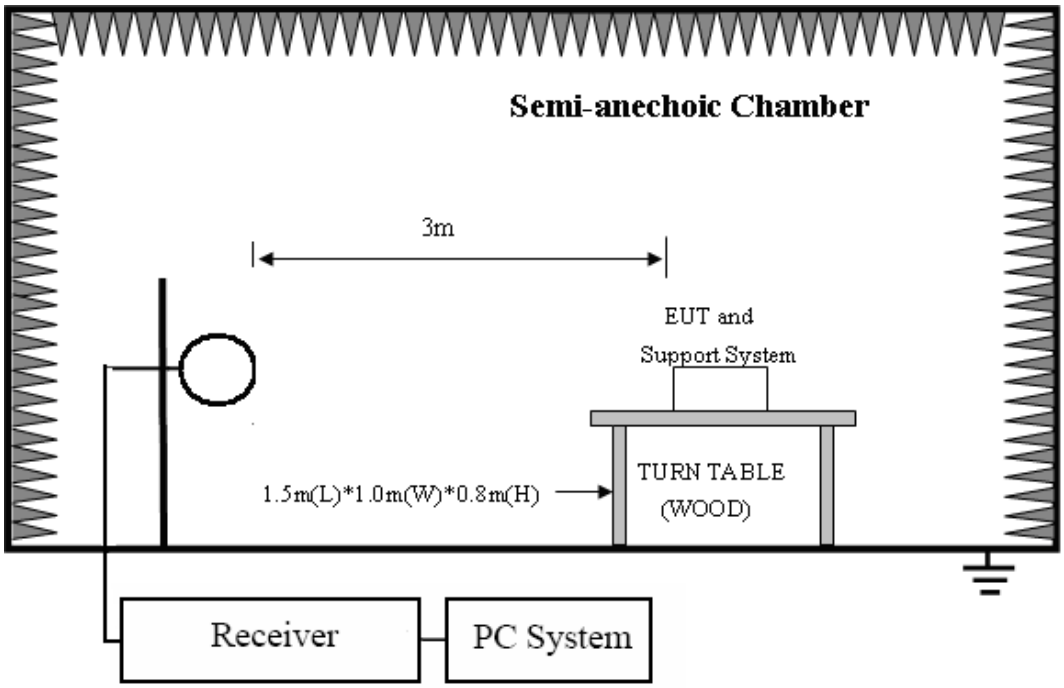
6. SPURIOUS EMISSIONS

6.1. Test equipment

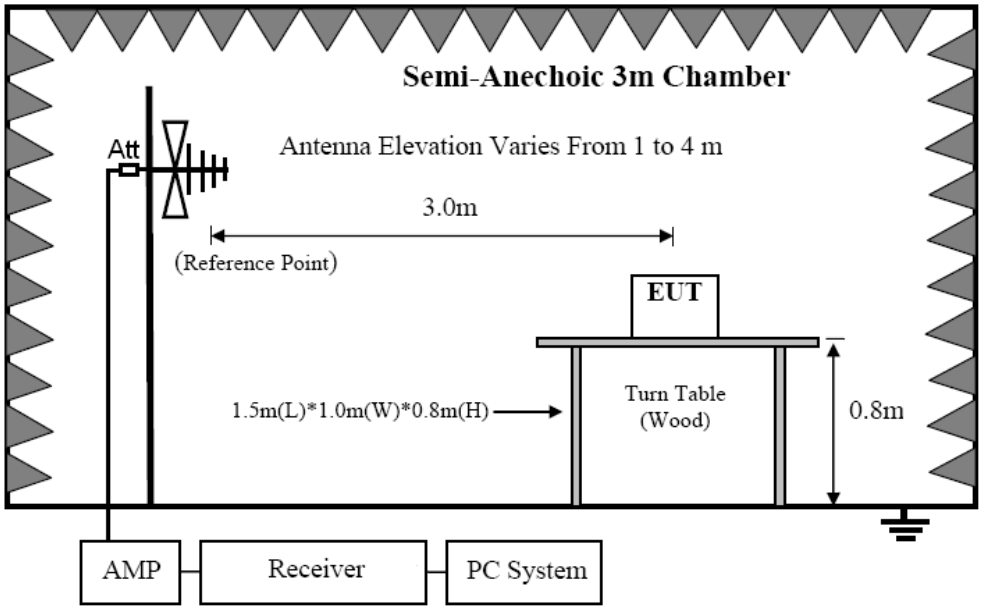
Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Due.	Cal. Interval
1	EMI Test Receiver	R&S	ESCI	101307	2019/12/16	1 Year
2	Spectrum Analyzer	Agilent	E4407B	US40240708	11/20/2019	1 Year
3	Spectrum analyzer	R&S	FSU	1166.1660.26	2019/12/16	1 Year
4	Loop antenna	TESEQ	HLA6120	20129	2019/12/16	1 Year
5	Trilog Broadband Antenna	Schwarzbeck	VULB9163	9163-462	2019/12/16	1 Year
6	Double Ridged Horn Antenna	Schwarzbeck	BBHA9120D	9120D 1065	2019/12/16	1 Year
7	Horn Antenna	Schwarzbeck	BBHA 9170	9170 1248	2019/12/16	1 Year
8	Pre-amplifier	A.H.	PAM-1840VH	562	2019/12/16	1 Year
9	Pre-amplifier	R&S	AFS33-18002 650-30-8P-44	SEL0080	2019/12/16	1 Year
10	Pre-Amplifier	HP	8449B	3274A06298	2019/12/16	1 Year
11	RF Cable	R&S	R01	10403	2019/12/16	1 Year
12	RF Cable	R&S	R02	10512	2019/12/16	1 Year
13	Measurement Software	Farad	EZ-EMC (Ver.ATT-03A)	N/A	N/A	N/A

6.2. Block diagram of test setup

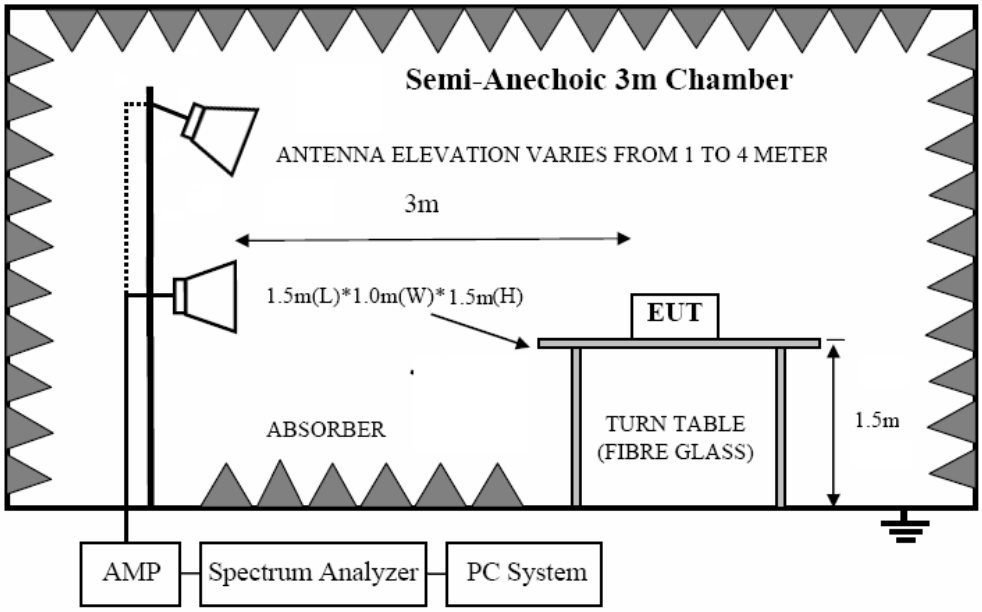
In 3m Anechoic Chamber Test Setup Diagram for below 1GHz



In 3m Anechoic Chamber Test Setup Diagram for 30MHz-1GHz



In 3m Anechoic Chamber Test Setup Diagram for frequency above 1GHz



Note: For harmonic emissions test a appropriate high pass filter was inserted in the input port of AMP.

6.3. Limit

6.3.1 FCC 15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])

6.3.2 FCC 15.209 Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

6.3.3 Limit for this EUT

The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the

ANSI C63.10:2013. The specification used was the FCC 15.209, and FCC 15.247 limits.

6.4. Test Procedure

(1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber.

(2) Setup EUT and assistant system according clause 2.4 and 8.2

(3) Test antenna was located 3m from the EUT on an adjustable mast. Below pre-scan procedure was first performed in order to find prominent radiated emissions.

(a) Change work frequency or channel of device if practicable.

(b) Change modulation type of device if practicable.

(c) Change power supply range from 85% to 115% of the rated supply voltage

(d) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions

(4) Spectrum frequency from 9MHz to 25GHz (tenth harmonic of fundamental frequency) was investigated, and no any obvious emission were detected from 9KHz to 30MHz and 18GHz to 25GHz, so below final test was performed with frequency range from 30MHz to 18GHz.

(5) For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna

height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10 2013 on Radiated Emission test.

(6) For emissions from 30MHz to 1GHz, Quasi-Peak values were measured with EMI Receiver and the bandwidth of Receiver is 120 KHz.

(7)For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz, VBW is set at 3MHz for Peak measure, Detector is at PK; RBW is set at 1MHz, VBW is set at 3MHz for Average measure, Detector is at RMS..

6.5. Test result

Below 30M

EUT:	Controller	**Model No.:**	MTC1905
Temperature:	24℃	**Relative Humidity:**	55%
Distance:	3m	**Test Power:**	DC 3.7V
Polarization:	--	**Test Result:**	Pass
Test Mode:	Keeping TX mode	**Test By:**	Lake

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	P
--	--	--	--	P

Note:

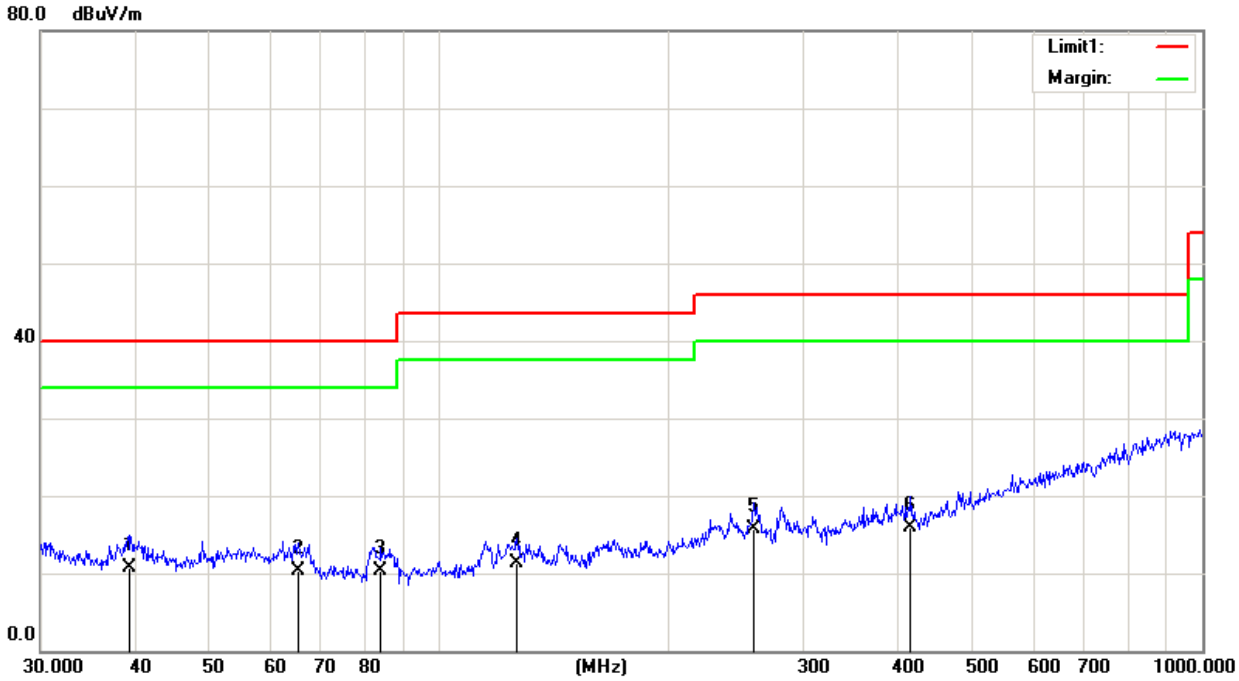
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =20 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuv) + distance extrapolation factor

Between 30M – 1000 MHz

EUT:	**Controller**	**Model No.:**	**MTC1905**
Temperature:	**24℃**	**Relative Humidity:**	**66%**
Distance:	**3m**	**Test Power:**	**DC 3.7V**
Polarization:	**Vertical**	**Test Result:**	**Pass**
Test Time:	**2019-6-22**	**Test By:**	**Lake**
Standard:	**(RE)FCC PART 15 class B 3m**		
Test Mode:	**Keeping TX Mdoe**		
Note:	**2402MHz**		

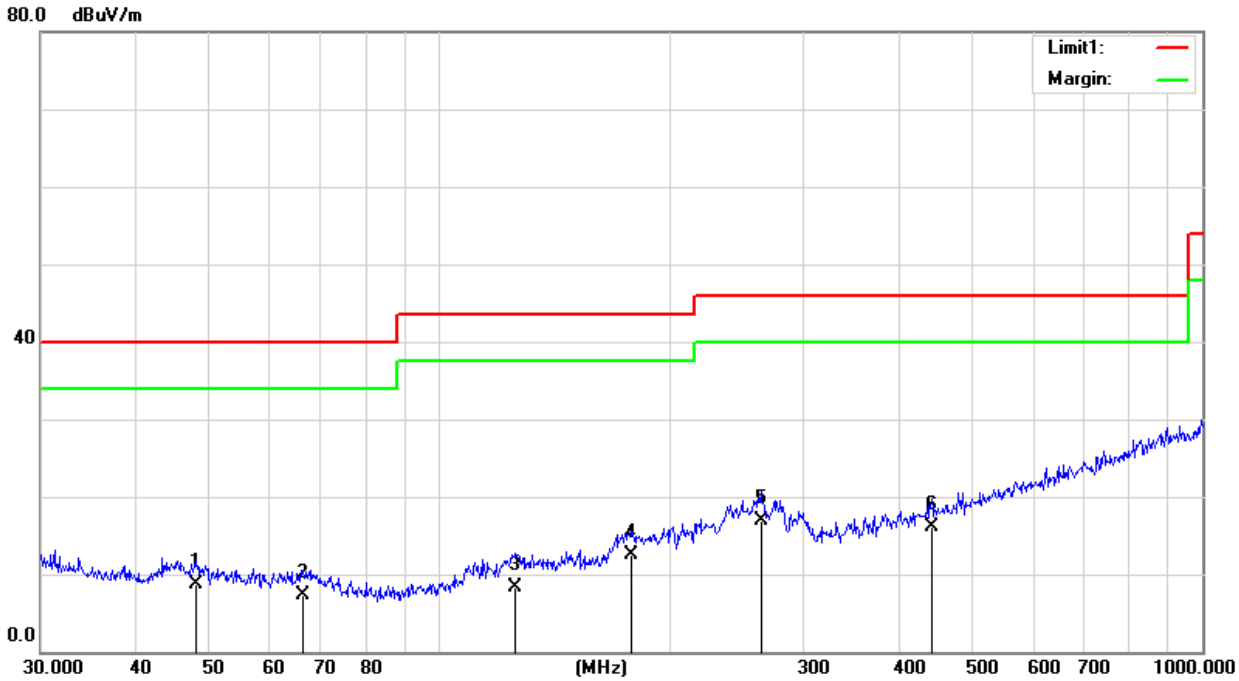


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	39.1616	24.03	-13.38	10.65	40.00	-29.35	QP
2	65.3431	23.49	-13.11	10.38	40.00	-29.62	QP
3	83.8156	26.29	-16.04	10.25	40.00	-29.75	QP
4	126.3285	23.83	-12.49	11.34	43.50	-32.16	QP
5	258.3264	22.95	-7.24	15.71	46.00	-30.29	QP
6	414.7223	23.11	-7.18	15.93	46.00	-30.07	QP

The test result is calculated as the following:

(1) Result = Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain + Attenuator
(3) Margin = Result - Limit

EUT:	Controller	Model No.:	MTC1905
Temperature:	24℃	Relative Humidity:	66%
Distance:	3m	Test Power:	DC 3.7V
Polarization:	Horizontal	Test Result:	Pass
Test Time:	2019-6-22	Test By:	Lake
Standard:	(RE)FCC PART 15 class B 3m		
Test Mode:	Keeping TX Mdoe		
Note:	2402MHz		

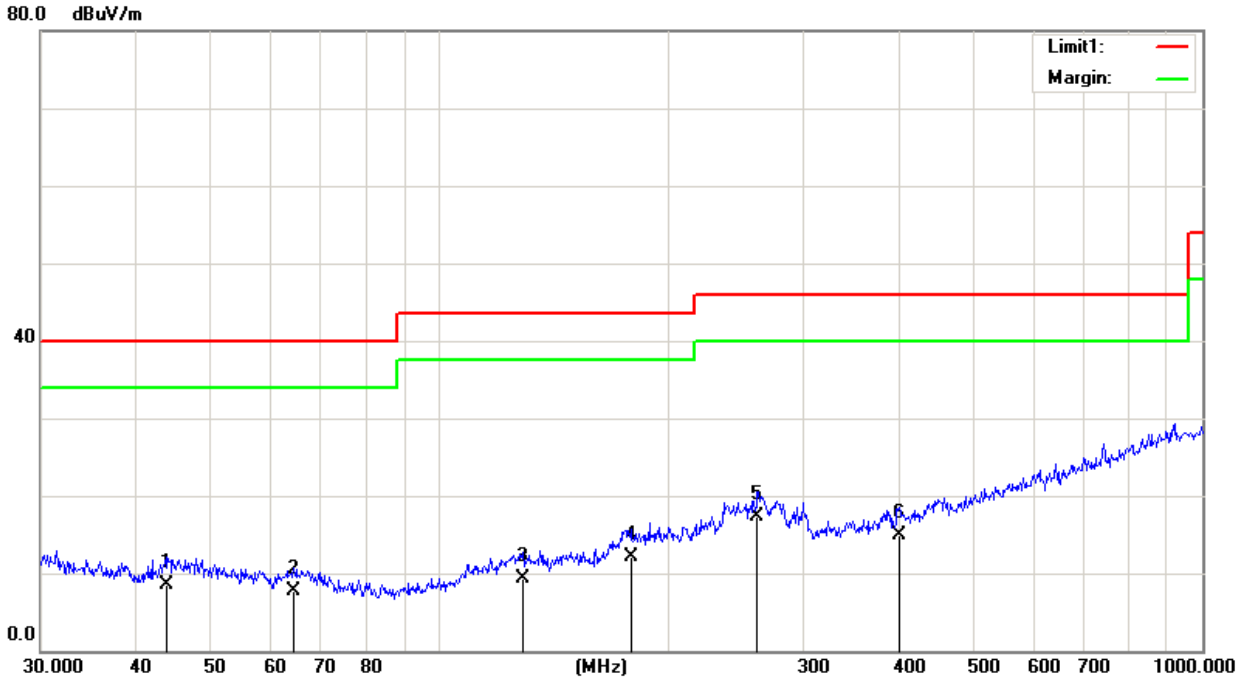


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	47.9939	23.71	-15.05	8.66	40.00	-31.34	QP
2	66.2661	23.30	-16.05	7.25	40.00	-32.75	QP
3	125.8863	21.74	-13.43	8.31	43.50	-35.19	QP
4	178.1327	22.86	-10.37	12.49	43.50	-31.01	QP
5	263.8190	22.27	-5.42	16.85	46.00	-29.15	QP
6	441.7425	23.40	-7.37	16.03	46.00	-29.97	QP

The test result is calculated as the following:

(1) Result = Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain + Attenuator
(3) Margin = Result - Limit

EUT:	Controller	Model No.:	MTC1905
Temperature:	24℃	Relative Humidity:	66%
Distance:	3m	Test Power:	DC 3.7V
Polarization:	Horizontal	Test Result:	Pass
Test Time:	2019-6-22	Test By:	Lake
Standard:	(RE)FCC PART 15 class B 3m		
Test Mode:	Keeping TX Mdoe		
Note:	2480MHz		

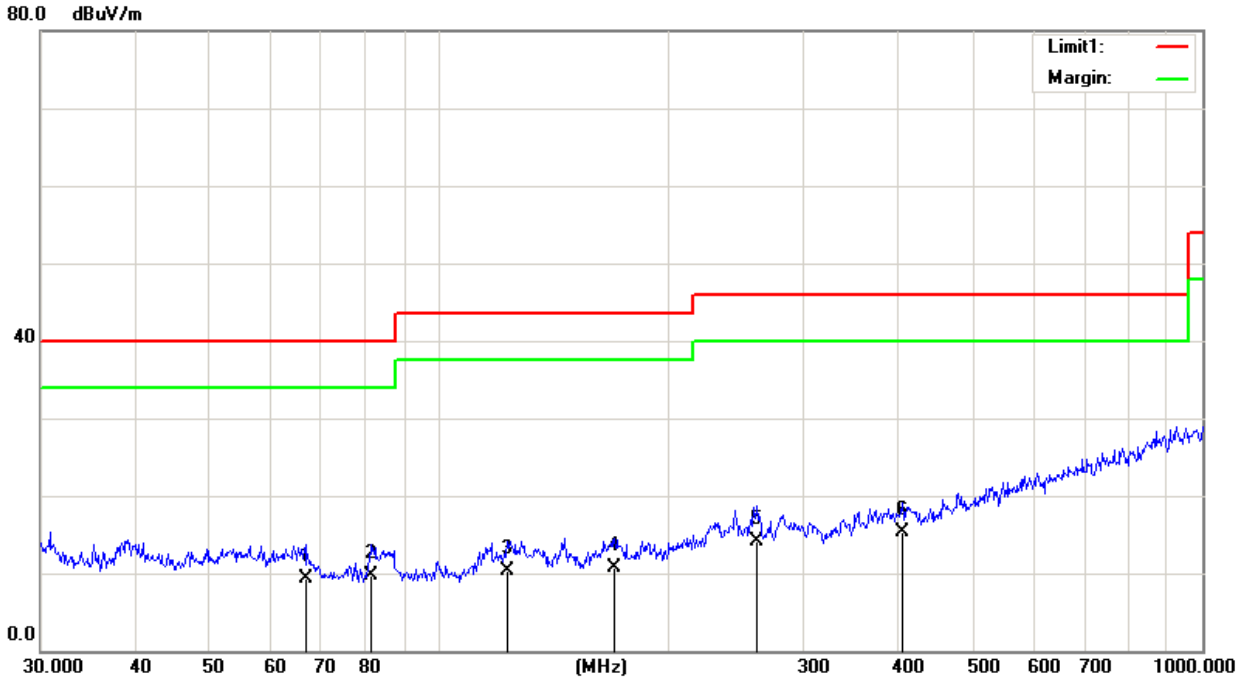


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.8119	23.43	-14.84	8.59	40.00	-31.41	QP
2	64.4330	23.63	-15.99	7.64	40.00	-32.36	QP
3	128.5629	23.09	-13.77	9.32	43.50	-34.18	QP
4	178.1327	22.41	-10.37	12.04	43.50	-31.46	QP
5	261.0583	22.84	-5.51	17.33	46.00	-28.67	QP
6	400.4318	22.55	-7.70	14.85	46.00	-31.15	QP

The test result is calculated as the following:

(1) Result = Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain + Attenuator
(3) Margin = Result - Limit

EUT:	**Controller**	**Model No.:**	**MTC1905**
Temperature:	**24℃**	**Relative Humidity:**	**66%**
Distance:	**3m**	**Test Power:**	**DC 3.7V**
Polarization:	**Vertical**	**Test Result:**	**Pass**
Test Time:	**2019-6-22**	**Test By:**	**Lake**
Standard:	**(RE)FCC PART 15 class B 3m**		
Test Mode:	**Keeping TX Mdoe**		
Note:	**2480MHz**		



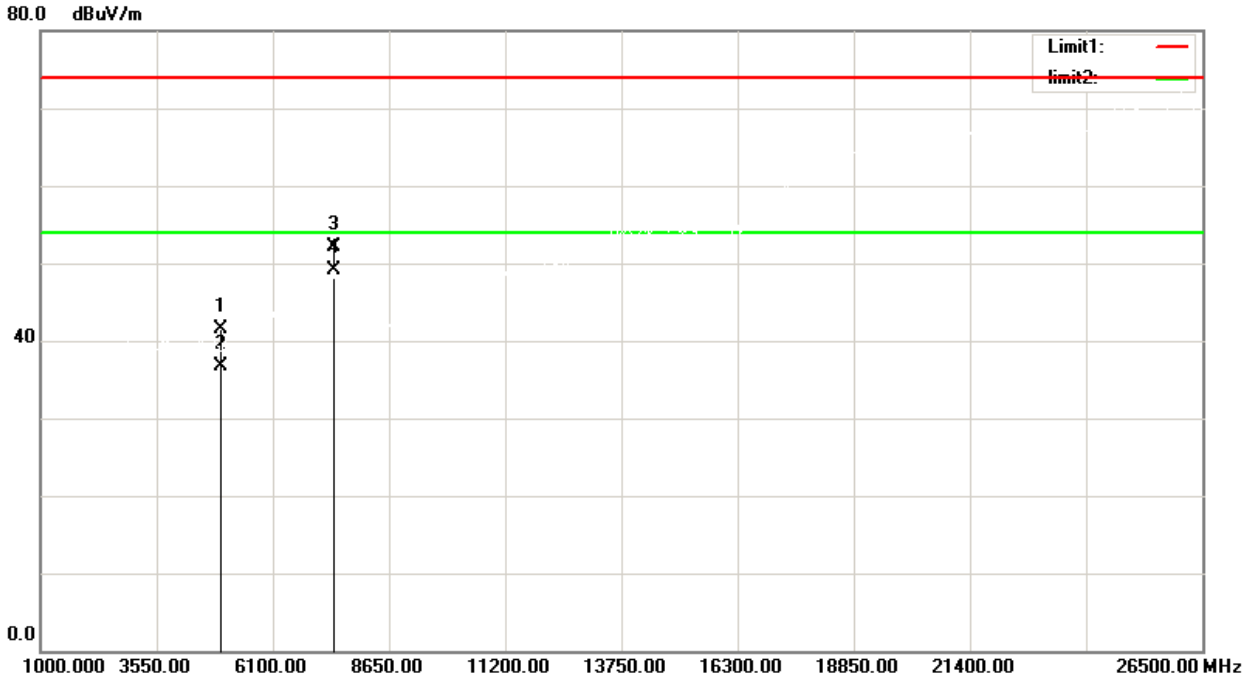
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	66.7325	23.05	-13.80	9.25	40.00	-30.75	QP
2	81.4969	25.76	-16.12	9.64	40.00	-30.36	QP
3	122.8340	23.24	-12.89	10.35	43.50	-33.15	QP
4	169.5989	21.78	-11.00	10.78	43.50	-32.72	QP
5	261.0583	21.17	-7.14	14.03	46.00	-31.97	QP
6	404.6664	22.87	-7.48	15.39	46.00	-30.61	QP

The test result is calculated as the following:

(1) Result = Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain + Attenuator
(3) Margin = Result - Limit

Between 1000M – 26500 MHz

EUT:	Controller	Model No.:	MTC1905
Temperature:	24℃	Relative Humidity:	66%
Distance:	3m	Test Power:	DC 3.7V
Polarization:	Vertical	Test Result:	Pass
Test Time:	2019-6-22	Test By:	Lake
Standard:	FCC PART 15 C 1-26.5G PEAK		
Test Mode:	TX		
Note:	2480MHz		

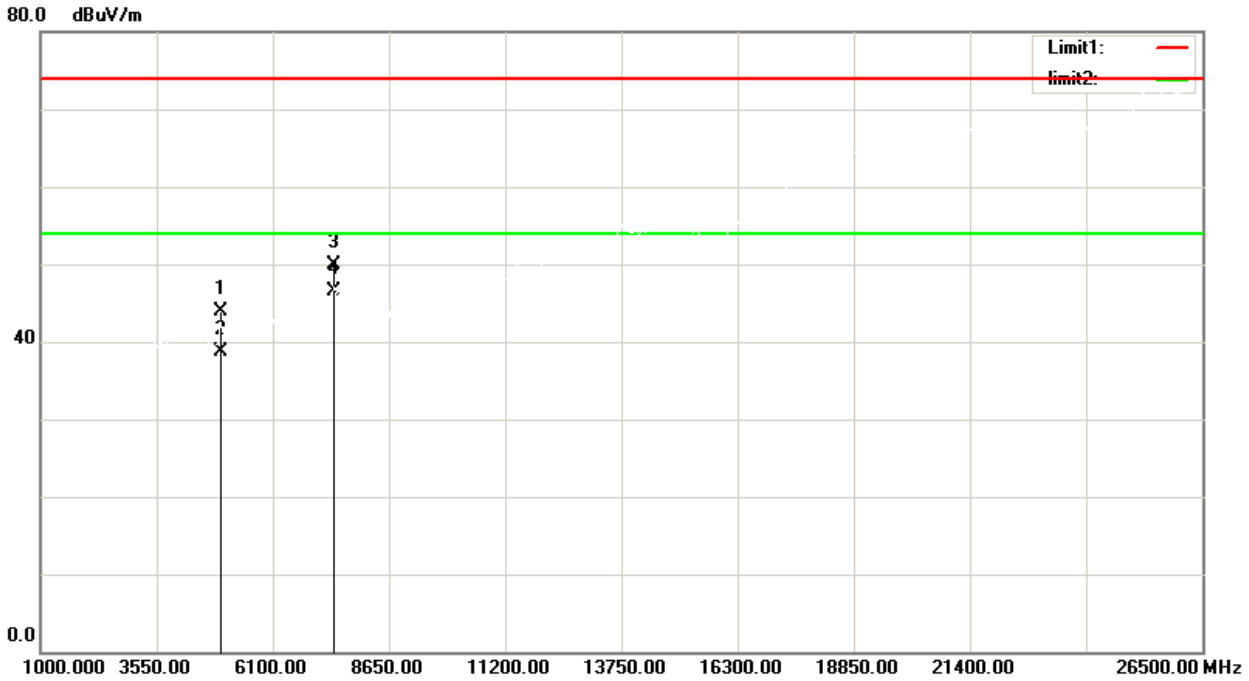


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	51.50	-10.08	41.42	74.00	-32.58	peak
2	4960.000	46.87	-10.08	36.79	54.00	-17.21	AVG
3	7440.000	55.11	-3.00	52.11	74.00	-21.89	peak
4	7440.000	52.12	-3.00	49.12	54.00	-4.88	AVG

The test result is calculated as the following:

(1) Result = Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain
(3) Margin = Result - Limit

EUT:	Controller	Model No.:	MTC1905
Temperature:	24℃	Relative Humidity:	66%
Distance:	3m	Test Power:	DC 3.7V
Polarization:	Horizontal	Test Result:	Pass
Test Time:	2019-6-22	Test By:	Lake
Standard:	FCC PART 15 C 1-26.5G PEAK		
Test Mode:	TX		
Note:	2480MHz		

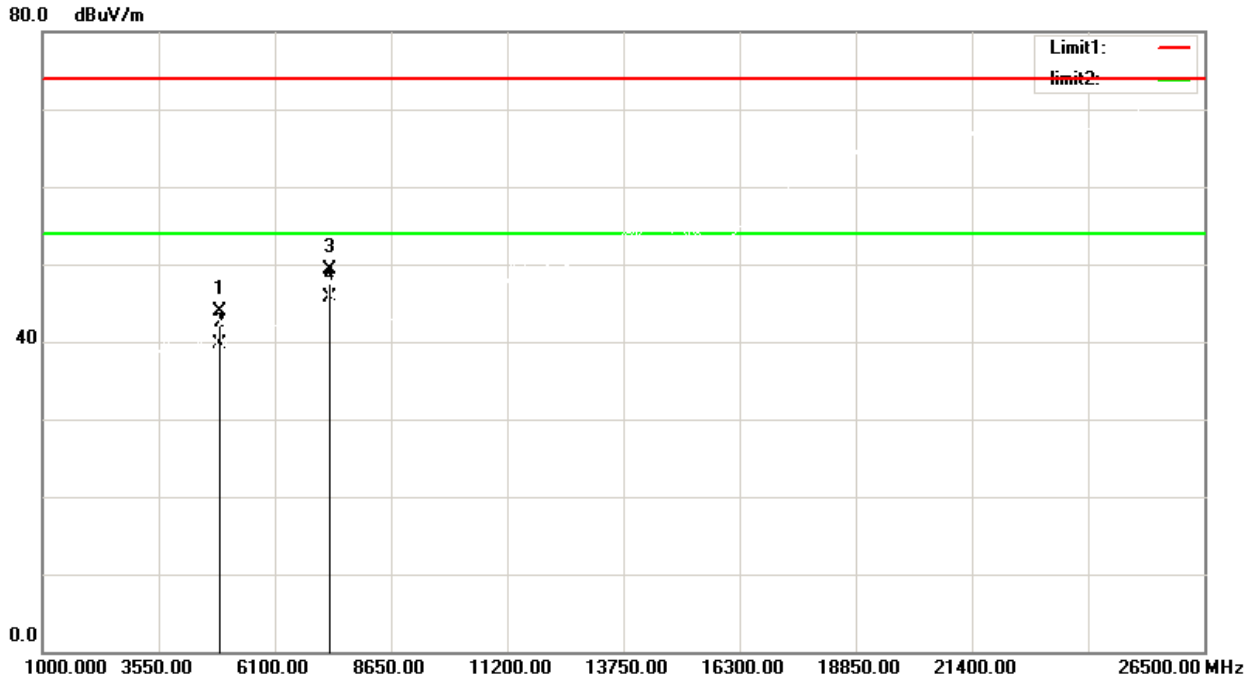


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	54.07	-10.08	43.99	74.00	-30.01	peak
2	4960.000	48.75	-10.08	38.67	54.00	-15.33	AVG
3	7440.000	52.85	-3.00	49.85	74.00	-24.15	peak
4	7440.000	49.46	-3.00	46.46	54.00	-7.54	AVG

The test result is calculated as the following:

(1) Result = Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain
(3) Margin = Result - Limit

EUT:	Controller	Model No.:	MTC1905
Temperature:	24℃	Relative Humidity:	66%
Distance:	3m	Test Power:	DC 3.7V
Polarization:	Horizontal	Test Result:	Pass
Test Time:	2019-6-22	Test By:	Lake
Standard:	FCC PART 15 C 1-26.5G PEAK		
Test Mode:	TX		
Note:	2440MHz		

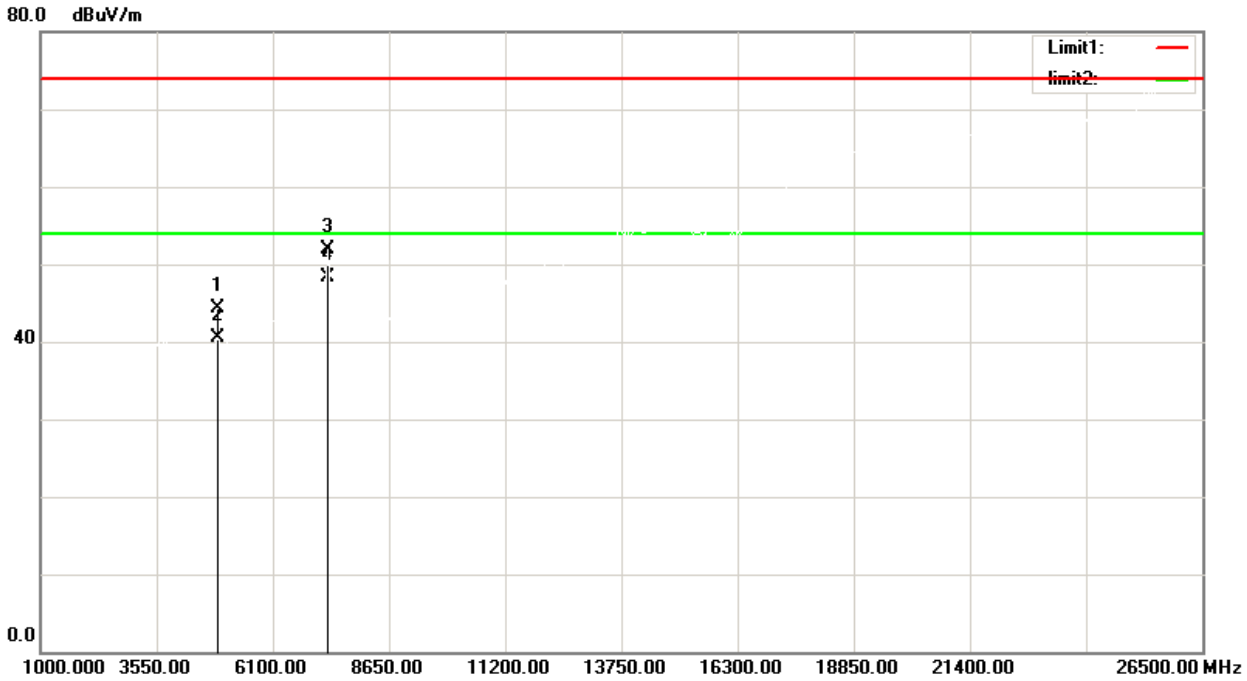


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	54.38	-10.44	43.94	74.00	-30.06	peak
2	4880.000	50.12	-10.44	39.68	54.00	-14.32	AVG
3	7320.000	52.63	-3.30	49.33	74.00	-24.67	peak
4	7320.000	49.02	-3.30	45.72	54.00	-8.28	AVG

The test result is calculated as the following:

(1) Result = Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain
(3) Margin = Result - Limit

EUT:	Controller	Model No.:	MTC1905
Temperature:	24℃	Relative Humidity:	66%
Distance:	3m	Test Power:	DC 3.7V
Polarization:	Vertical	Test Result:	Pass
Test Time:	2019-6-22	Test By:	
Standard:	FCC PART 15 C 1-26.5G PEAK		
Test Mode:	TX		
Note:	2440MHz		

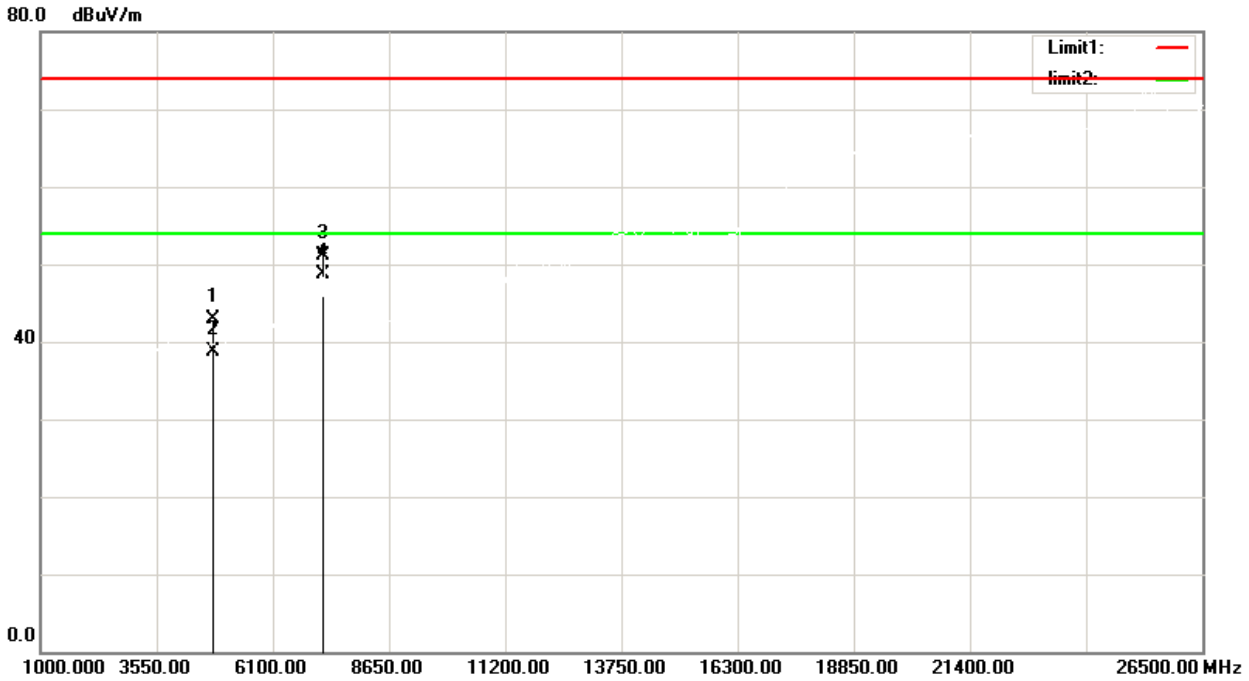


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880.000	54.76	-10.44	44.32	74.00	-29.68	peak
2	4880.000	50.87	-10.44	40.43	54.00	-13.57	AVG
3	7320.000	55.15	-3.30	51.85	74.00	-22.15	peak
4	7320.000	51.62	-3.30	48.32	54.00	-5.68	AVG

The test result is calculated as the following:

(1) Result = Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain
(3) Margin = Result - Limit

EUT:	Controller	Model No.:	MTC1905
Temperature:	24℃	Relative Humidity:	66%
Distance:	3m	Test Power:	DC 3.7V
Polarization:	Vertical	Test Result:	Pass
Test Time:	2019-6-22	Test By:	
Standard:	FCC PART 15 C 1-26.5G PEAK		
Test Mode:	TX		
Note:	2402MHz		

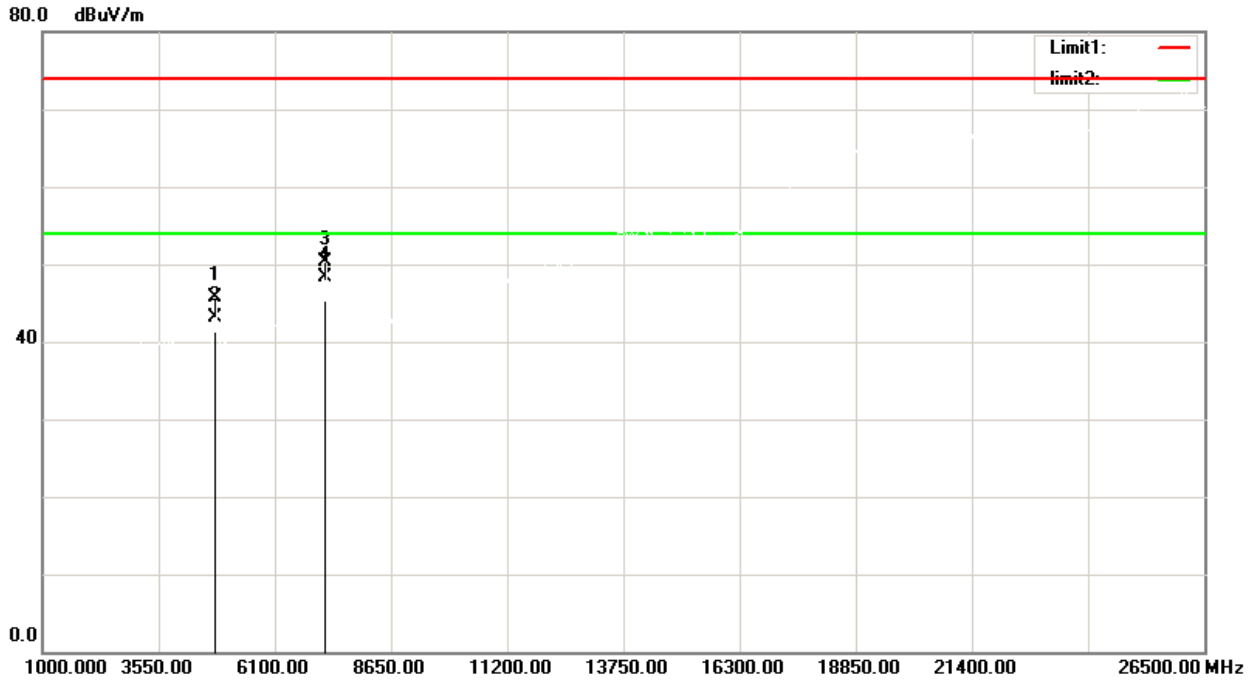


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	53.72	-10.79	42.93	74.00	-31.07	peak
2	4804.000	49.55	-10.79	38.76	54.00	-15.24	AVG
3	7206.000	54.59	-3.58	51.01	74.00	-22.99	peak
4	7206.000	52.34	-3.58	48.76	54.00	-5.24	AVG

The test result is calculated as the following:

(1) Result = Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain
(3) Margin = Result - Limit

EUT:	Controller	Model No.:	MTC1905
Temperature:	24℃	Relative Humidity:	66%
Distance:	3m	Test Power:	DC 3.7V
Polarization:	Horizontal	Test Result:	Pass
Test Time:	2019-6-22	Test By:	
Standard:	FCC PART 15 C 1-26.5G PEAK		
Test Mode:	TX		
Note:	2402MHz		



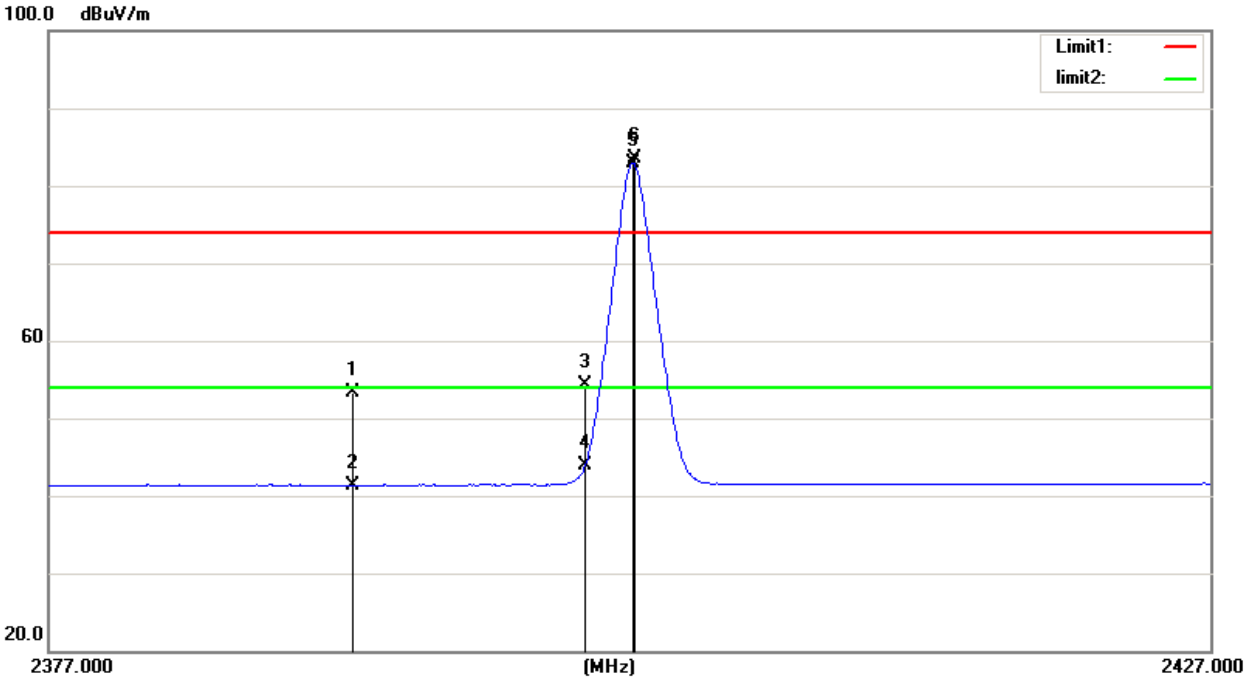
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	56.55	-10.79	45.76	74.00	-28.24	peak
2	4804.000	53.98	-10.79	43.19	54.00	-10.81	AVG
3	7206.000	53.97	-3.58	50.39	74.00	-23.61	peak
4	7206.000	51.82	-3.58	48.24	54.00	-5.76	AVG

The test result is calculated as the following:

(1) Result = Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain
(3) Margin = Result - Limit

Radiated band edge:

EUT:	Controller	Model No.:	MTC1905
Temperature:	24℃	Relative Humidity:	66%
Distance:	3m	Test Power:	DC 3.7V
Polarization:	Vertical	Test Result:	PASS
Test Time:	2019-6-22	Test By:	Lake
Standard:	FCC PART 15 C 1-26.5G PEAK		
Test Mode:	TX		
Note:	2402MHz		

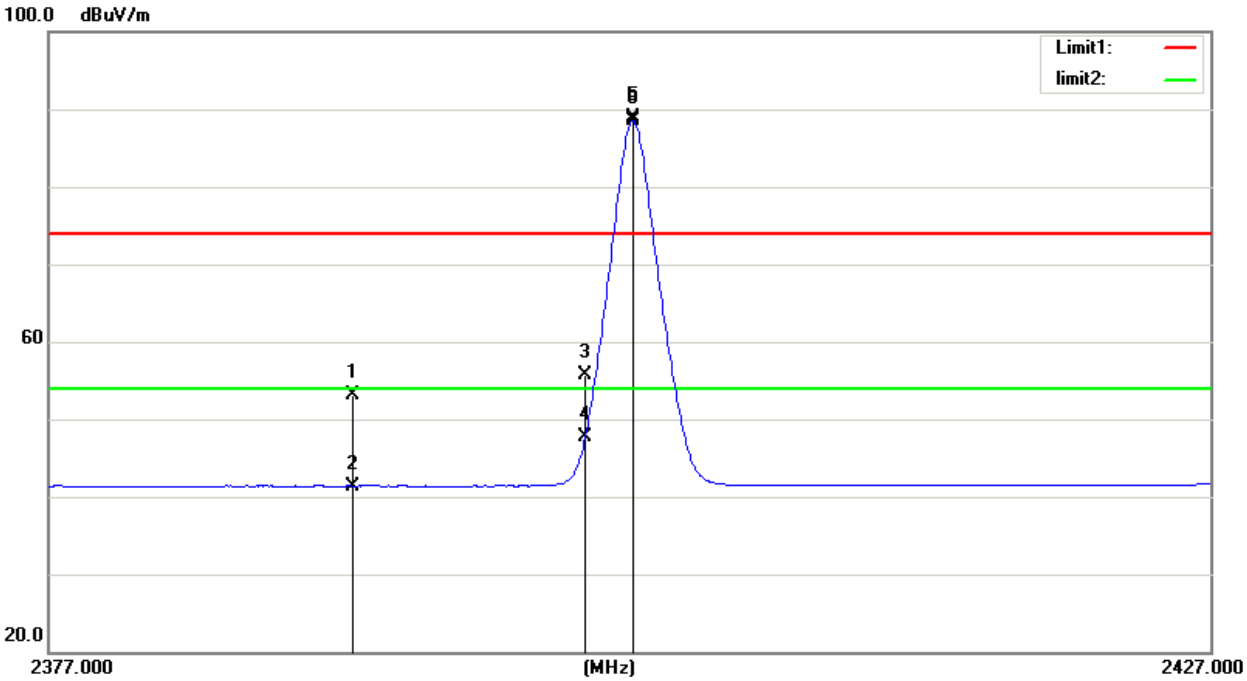


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	22.36	30.85	53.21	74.00	-20.79	peak
2	2390.000	10.50	30.85	41.35	54.00	-12.65	AVG
3	2400.000	23.41	30.87	54.28	74.00	-19.72	peak
4	2400.000	13.09	30.87	43.96	54.00	-10.04	AVG
5	2402.050	51.99	30.87	82.86			AVG
6	2402.100	52.63	30.87	83.50			peak

The test result is calculated as the following:

(1) Result = Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss
(3) Margin = Result - Limit

EUT:	Controller	Model No.:	MTC1905
Temperature:	24℃	Relative Humidity:	66%
Distance:	3m	Test Power:	DC 3.7V
Polarization:	Horizontal	Test Result:	PASS
Test Time:	2019-6-22	Test By:	Lake
Standard:	FCC PART 15 C 1-26.5G PEAK		
Test Mode:	TX		
Note:	2402MHz		

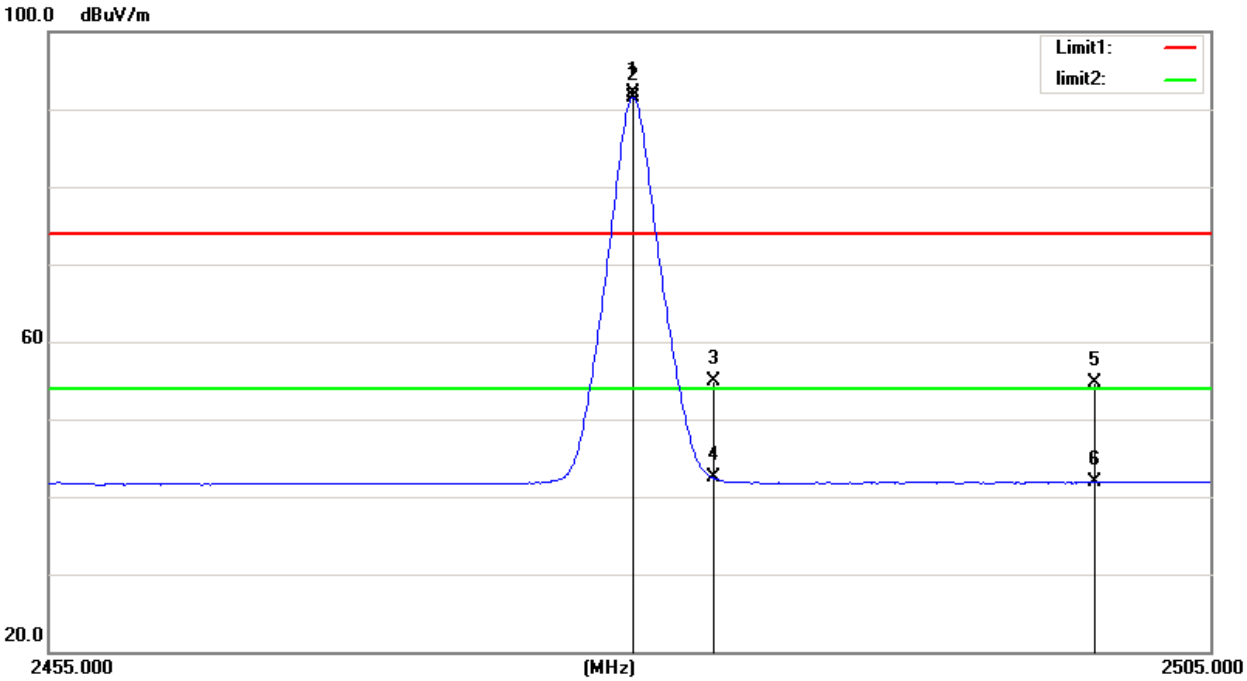


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	22.17	30.85	53.02	74.00	-20.98	peak
2	2390.000	10.55	30.85	41.40	54.00	-12.60	AVG
3	2400.000	24.78	30.87	55.65	74.00	-18.35	peak
4	2400.000	16.85	30.87	47.72	54.00	-6.28	AVG
5	2402.050	58.13	30.87	89.00			peak
6	2402.050	57.61	30.87	88.48			AVG

The test result is calculated as the following:

(1) Result = Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss
(3) Margin = Result - Limit

EUT:	Controller	Model No.:	MTC1905
Temperature:	24℃	Relative Humidity:	66%
Distance:	3m	Test Power:	DC 3.7V
Polarization:	Horizontal	Test Result:	PASS
Test Time:	2019-6-22	Test By:	Lake
Standard:	FCC PART 15 C 1-26.5G PEAK		
Test Mode:	TX		
Note:	2480MHz		

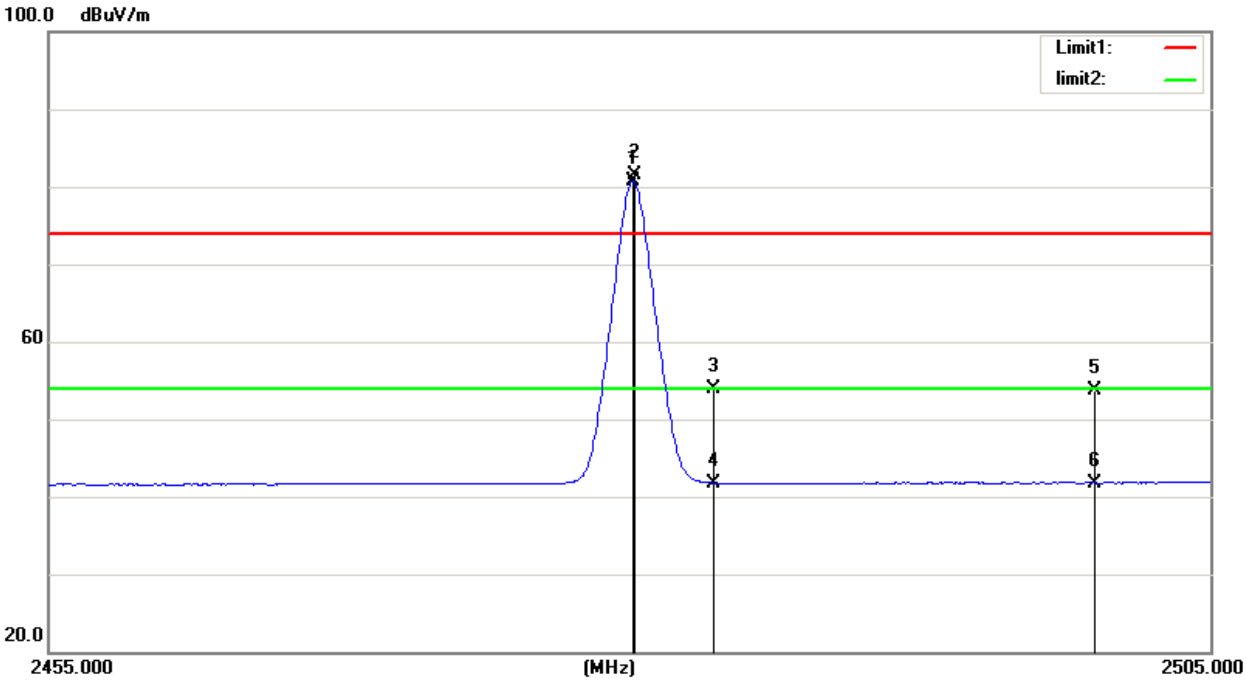


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.050	61.03	31.06	92.09			peak
2	2480.050	60.48	31.06	91.54			AVG
3	2483.500	23.90	31.07	54.97	74.00	-19.03	peak
4	2483.500	11.37	31.07	42.44	54.00	-11.56	AVG
5	2500.000	23.63	31.11	54.74	74.00	-19.26	peak
6	2500.000	10.72	31.11	41.83	54.00	-12.17	AVG

The test result is calculated as the following:

(1) Result = Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss
(3) Margin = Result - Limit

EUT:	Controller	Model No.:	MTC1905
Temperature:	24℃	Relative Humidity:	66%
Distance:	3m	Test Power:	DC 3.7V
Polarization:	Vertical	Test Result:	PASS
Test Time:	2019-6-22	Test By:	Lake
Standard:	FCC PART 15 C 1-26.5G PEAK		
Test Mode:	TX		
Note:	2480MHz		



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.050	49.65	31.06	80.71			AVG
2	2480.100	50.42	31.06	81.48			peak
3	2483.500	22.83	31.07	53.90	74.00	-20.10	peak
4	2483.500	10.72	31.07	41.79	54.00	-12.21	AVG
5	2500.000	22.63	31.11	53.74	74.00	-20.26	peak
6	2500.000	10.69	31.11	41.80	54.00	-12.20	AVG

The test result is calculated as the following:

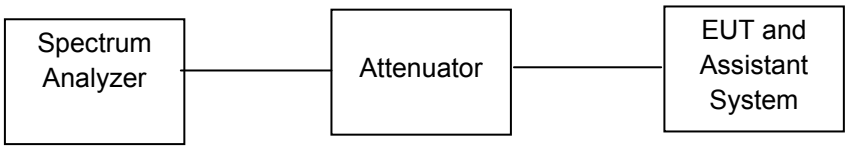
(1) Result = Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss
(3) Margin = Result - Limit

7. 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE

7.1. Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Due.	Cal. Interval
1	Spectrum analyzer	KEYSIGHT	N9010A	MY55150427	2020/05/27	1 Year
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2019/12/16	1 Year
3	RF Cable	Micable	C10-01-01-1	100309	2019/12/16	1 Year

7.2. Block diagram of test setup



7.3. Limit

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

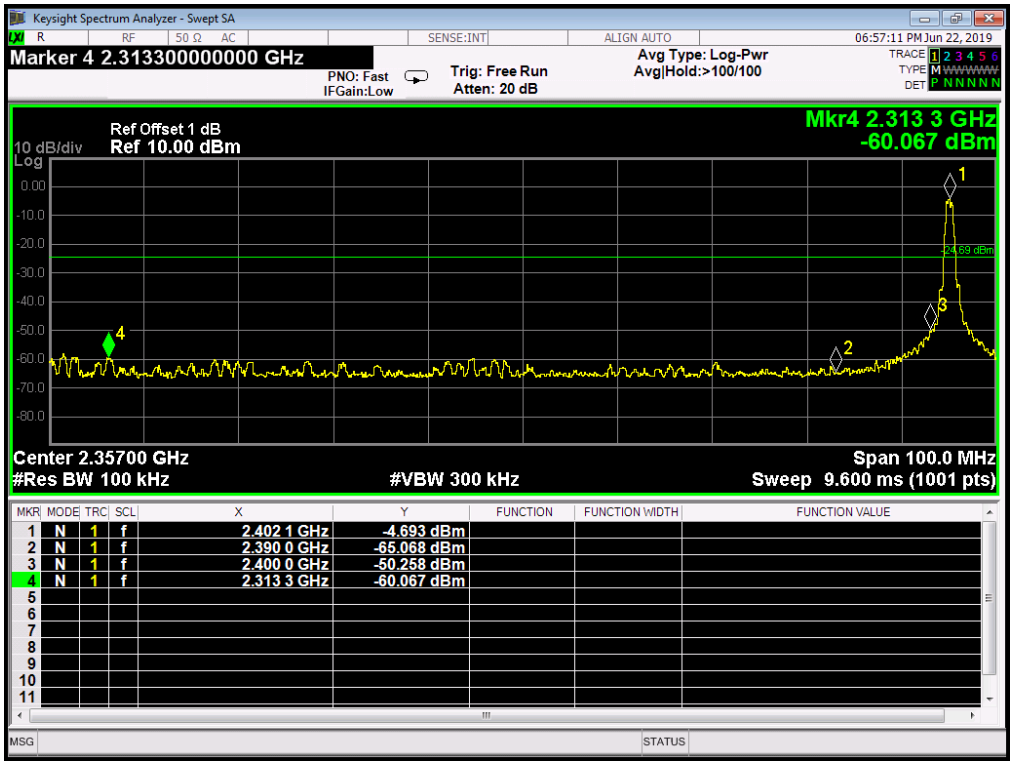
7.4. Test Procedure

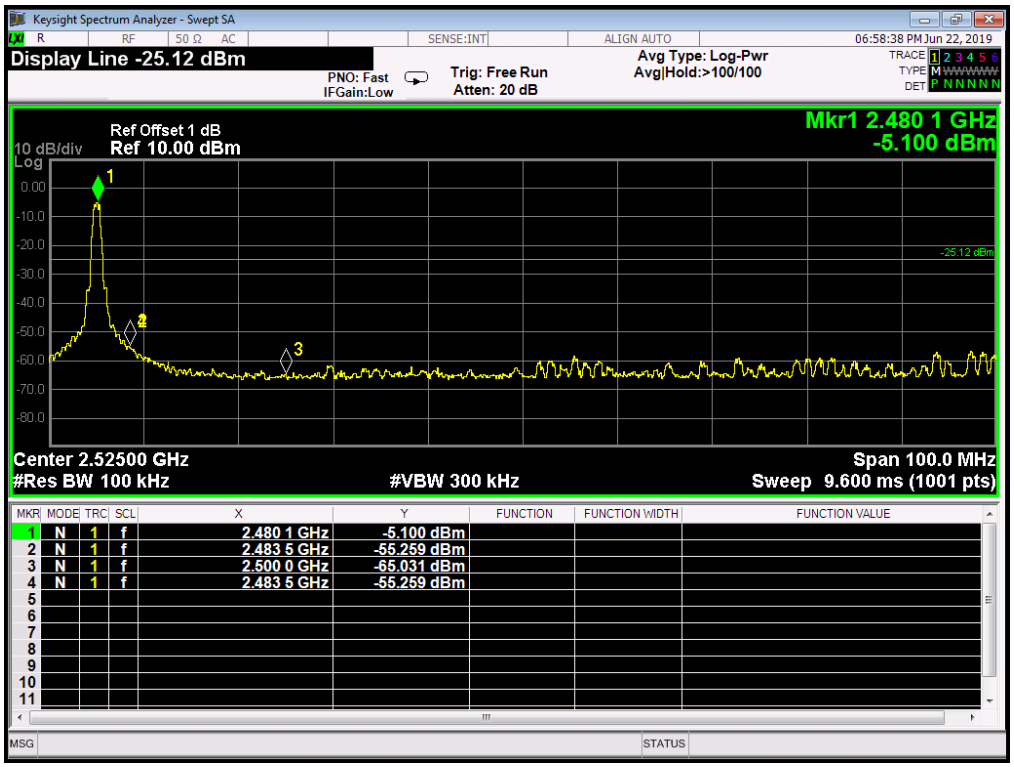
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Remove the antenna from the EUT and then connect to a low loss RF cable from the antenna port to a EMI test receiver, then turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range.
3. Set both RBW and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

7.5. Test result

Frequency Band	Delta Peak to band emission (dBc)	＞Limit (dBc)	Result
BLE Mode			
2400	45.565	20	Pass
2483.5	50.159	20	Pass

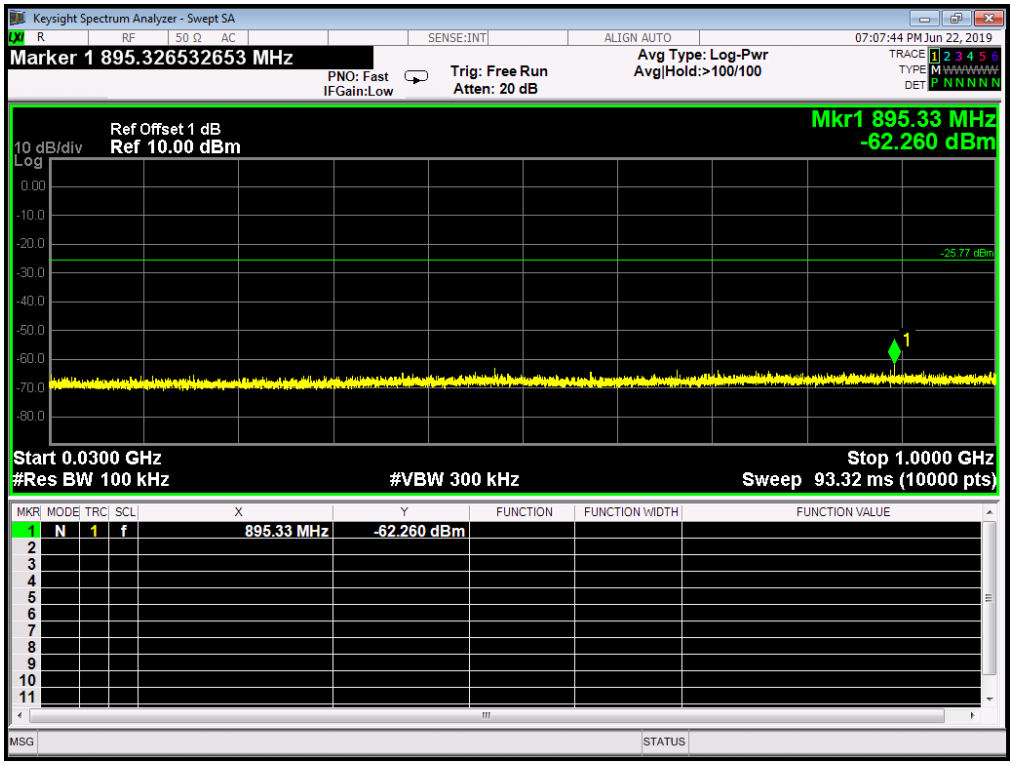
BLE

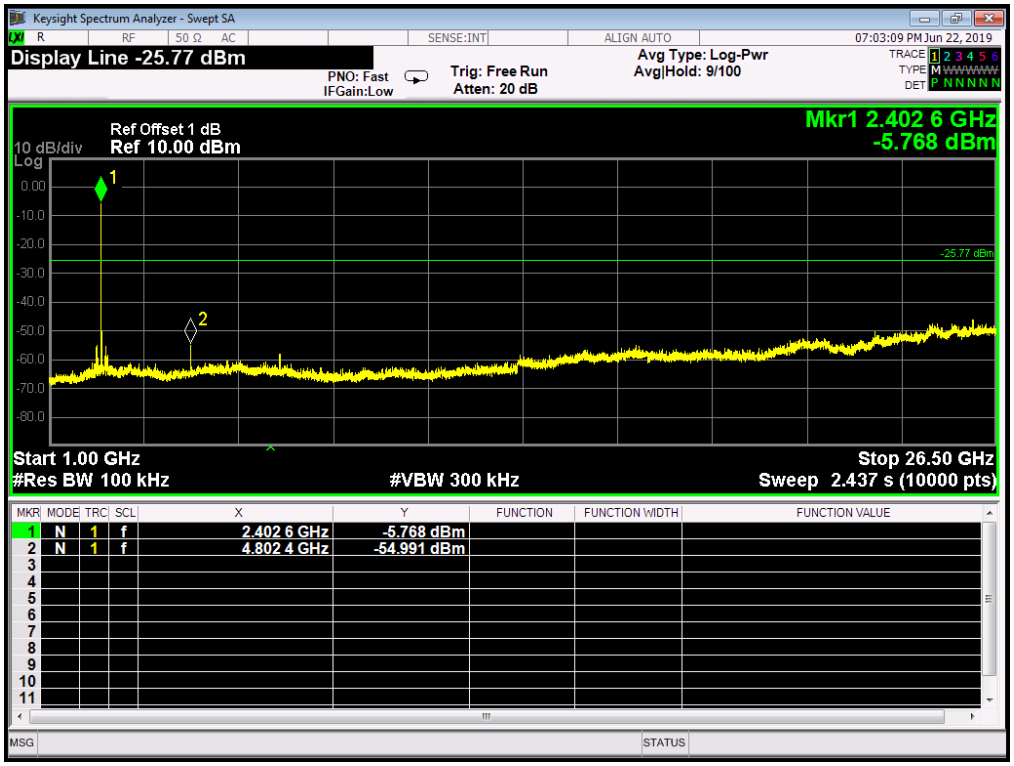

Keysight Spectrum Analyzer - Swept SA
Marker 4 2.313300000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
06:57:11 PM Jun 22, 2019
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr4 2.313 3 GHz
-60.067 dBm
-24.69 dBm
Center 2.35700 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 100.0 MHz
Sweep 9.600 ms (1001 pts)
1 N 1 f 2.402 1 GHz -4.693 dBm
2 N 1 f 2.390 0 GHz -65.068 dBm
3 N 1 f 2.400 0 GHz -50.258 dBm
4 N 1 f 2.313 3 GHz -60.067 dBm


Keysight Spectrum Analyzer - Swept SA
Display Line -25.12 dBm
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
06:58:38 PM Jun 22, 2019
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 2.480 1 GHz
-5.100 dBm
-25.12 dBm
Center 2.52500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 100.0 MHz
Sweep 9.600 ms (1001 pts)
1 N 1 f 2.480 1 GHz -5.100 dBm
2 N 1 f 2.483 5 GHz -55.259 dBm
3 N 1 f 2.500 0 GHz -65.031 dBm
4 N 1 f 2.483 5 GHz -55.259 dBm

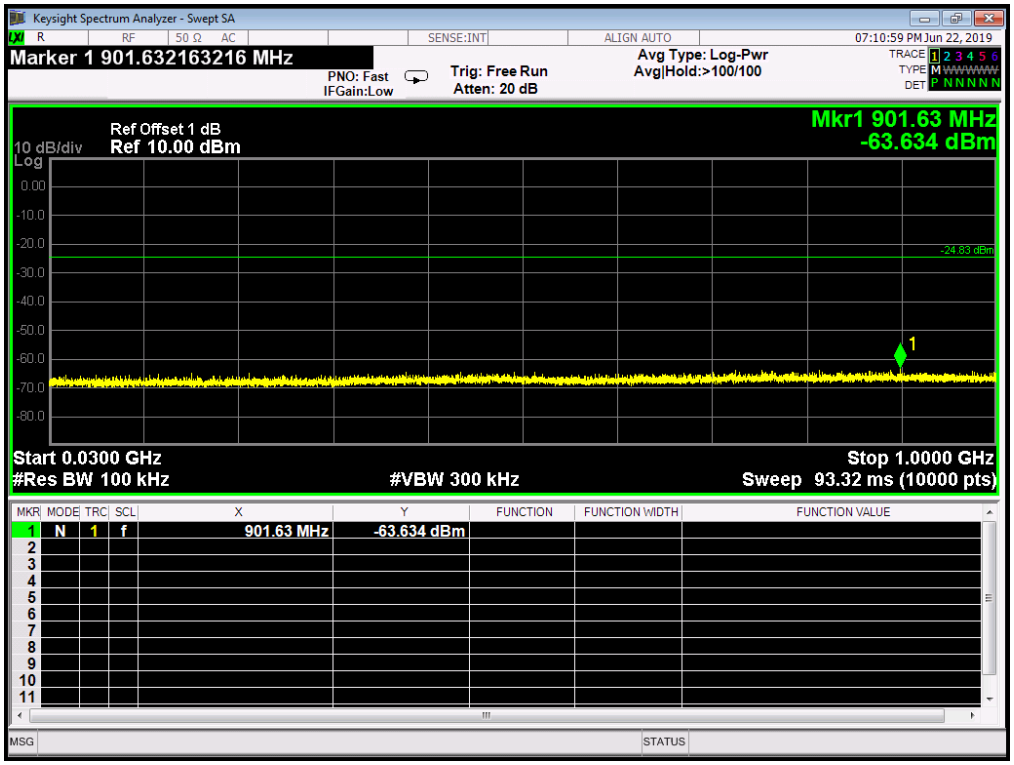
Conducted Emission

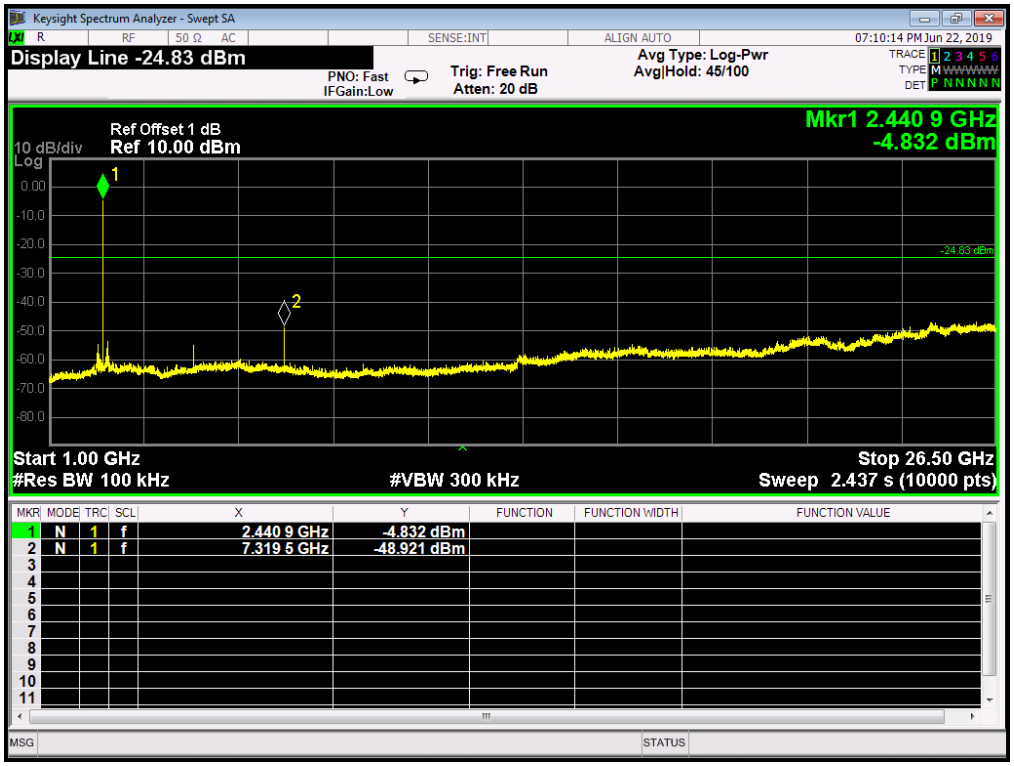
BLE 2402MHz



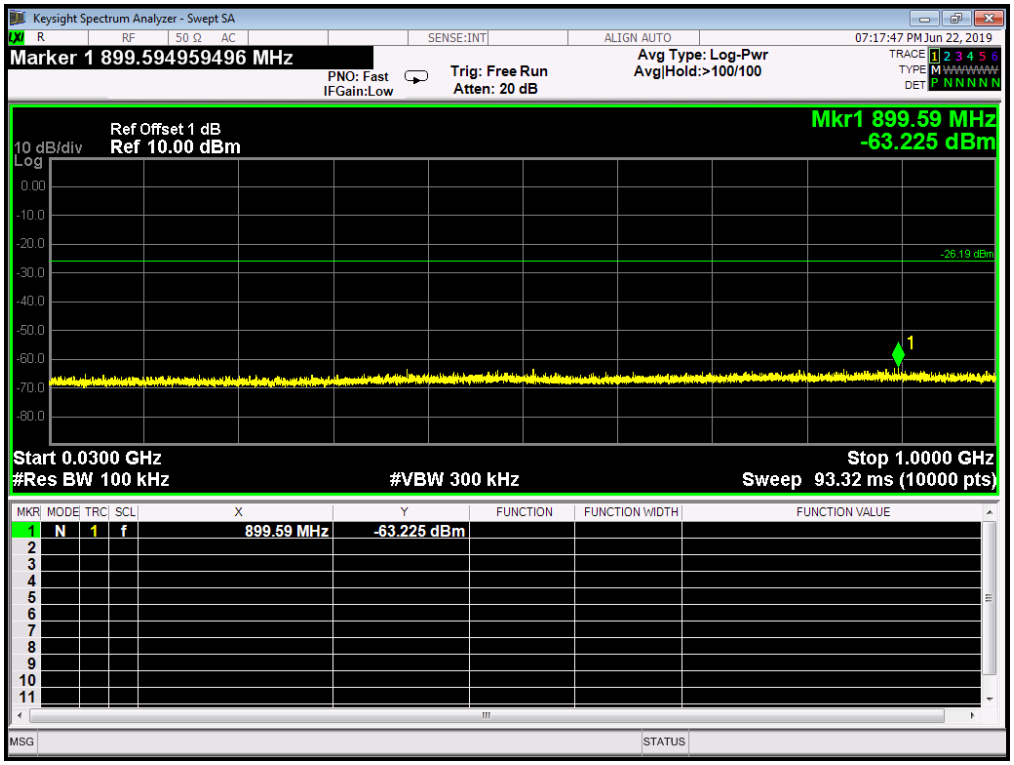


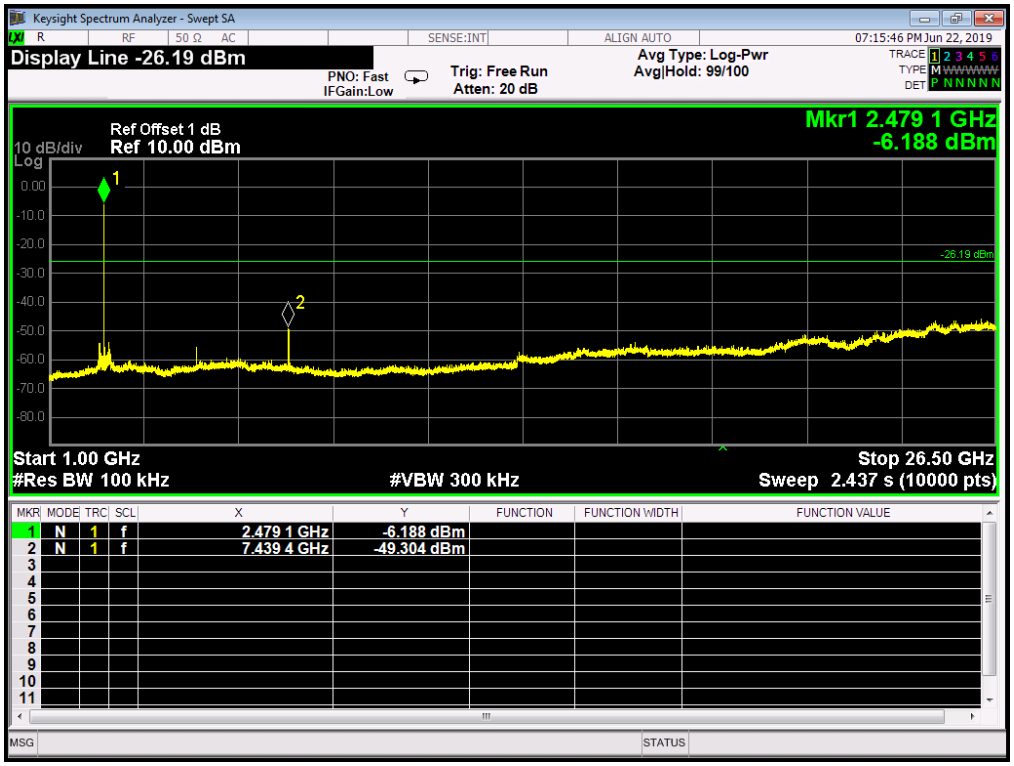
BLE 2440MHz


Keysight Spectrum Analyzer - Swept SA
Marker 1 901.632163216 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
07:10:59 PM Jun 22, 2019
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 901.63 MHz
-63.634 dBm
-24.83 dBm
Start 0.0300 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 93.32 ms (10000 pts)
1 N 1 f 901.63 MHz -63.634 dBm


Keysight Spectrum Analyzer - Swept SA
Display Line -24.83 dBm
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 45/100
07:10:14 PM Jun 22, 2019
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 2.440 9 GHz
-4.832 dBm
-24.83 dBm
Start 1.00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 26.50 GHz
Sweep 2.437 s (10000 pts)
1 N 1 f 2.440 9 GHz -4.832 dBm
2 N 1 f 7.319 5 GHz -48.921 dBm

BLE 2480MHz


Keysight Spectrum Analyzer - Swept SA
Marker 1 899.594959496 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
07:17:47 PM Jun 22, 2019
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 899.59 MHz
-63.225 dBm
-26.19 dBm
Start 0.0300 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 93.32 ms (10000 pts)
1 N 1 f 899.59 MHz -63.225 dBm

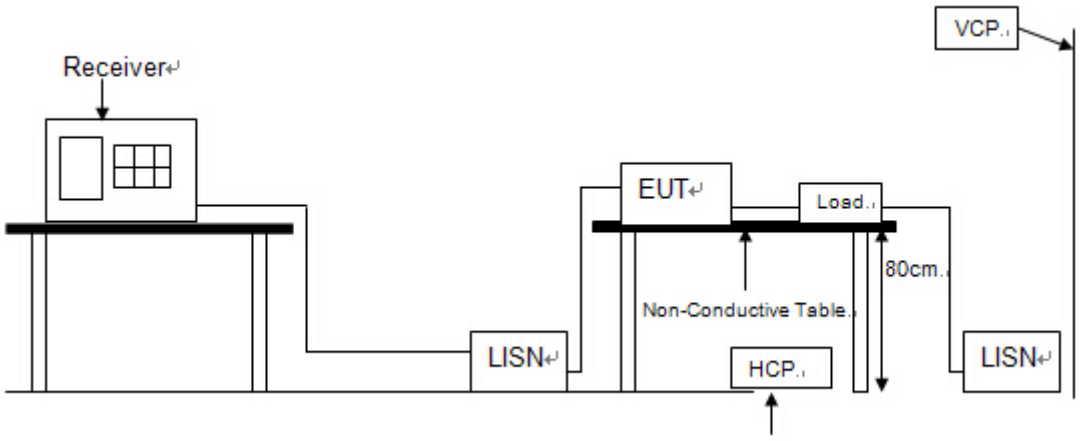

Keysight Spectrum Analyzer - Swept SA
Display Line -26.19 dBm
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 99/100
07:15:46 PM Jun 22, 2019
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 2.479 1 GHz
-6.188 dBm
-26.19 dBm
Start 1.00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 26.50 GHz
Sweep 2.437 s (10000 pts)
1 N 1 f 2.479 1 GHz -6.188 dBm
2 N 1 f 7.439 4 GHz -49.304 dBm

8. POWER LINE CONDUCTED EMISSION

8.1 Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Pulse Limiter	MTS-systemtechnik	MTS-IMP-136	261115-010-0024	12/16/2019
2	EMI Test Receiver	R&S	ESCI	101308	12/16/2019
3	LISN	AFJ	LS16	16011103219	12/16/2019
4	LISN	Schwarzbeck	NSLK 8127	8127-432	12/16/2019
5	Measurement Software	Farad	EZ-EMC (Ver.ATT-03A)	N/A	N/A
6	MeasurementSoftware	Farad	EZ-EMC (Ver.ATT-03A)	N/A	N/A

8.2 Block diagram of test setup



8.3 Power Line Conducted Emission Limits(Class B)

Frequency	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Note 1: * Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

8.4 Test Procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm above the ground plane.

Configuration EUT to simulate typical usage as described in clause 2.4 and test equipment as described in clause 10.2 of this report.

All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

The test mode(s) described in clause 2.4 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level.

The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions.

Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

The test data of the worst-case condition(s) was recorded.

The bandwidth of test receiver is set at 9 KHz.

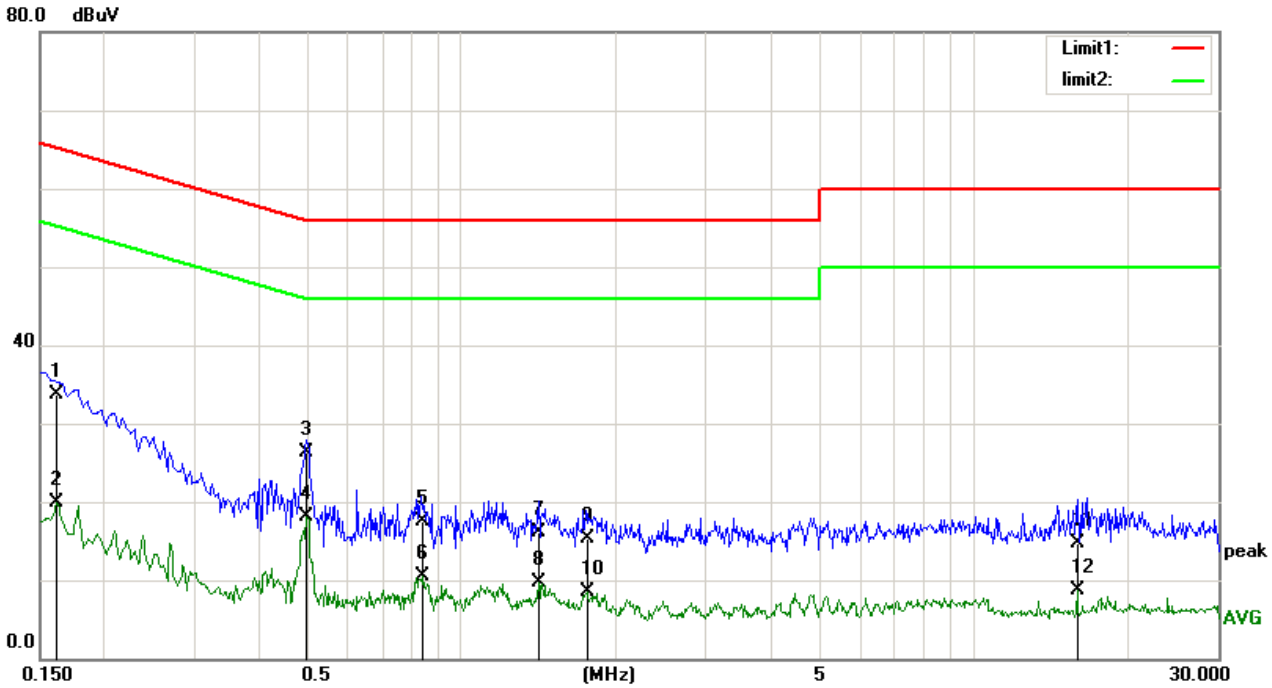
8.5 Test Result

PASS. (See below detailed test result)

Note1: All emissions not reported below are too low against the prescribed limits.

Note2: “-----” means peak detection; “-----” mans average detection

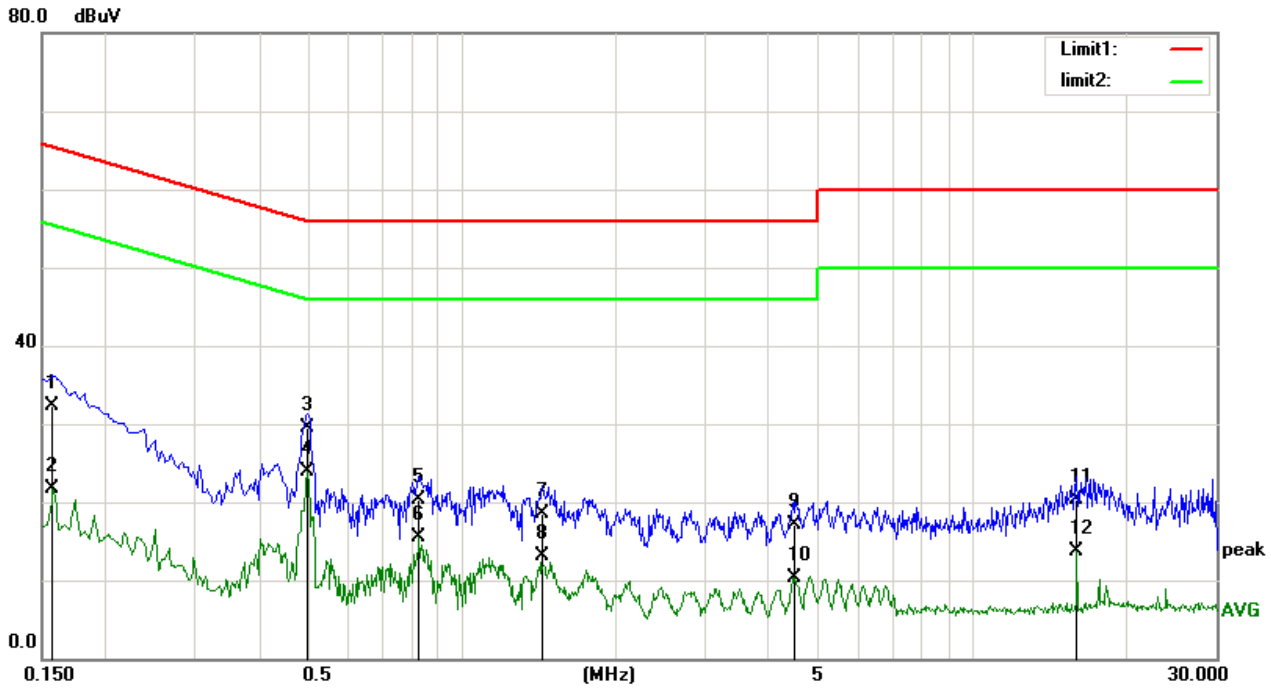
EUT:	Controller	Model No.:	MTC1905
Temperature:	24	Relative Humidity:	55%
		Test Power:	DC 5V From Adapter
Probe:	L1	Test Result:	Pass
Test Time:	2019-7-25	Test By:	
Standard:	(CE)FCC PART 15 Class B_QP		
Test Mode:	Charging		
Note:			



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1620	22.23	11.39	33.62	65.36	-31.74	QP
2	0.1620	8.55	11.39	19.94	55.36	-35.42	AVG
3	0.4980	16.17	10.18	26.35	56.03	-29.68	QP
4	0.4980	7.83	10.18	18.01	46.03	-28.02	AVG
5	0.8420	7.38	10.10	17.48	56.00	-38.52	QP
6	0.8420	0.49	10.10	10.59	46.00	-35.41	AVG
7	1.4180	5.93	10.10	16.03	56.00	-39.97	QP
8	1.4180	-0.33	10.10	9.77	46.00	-36.23	AVG
9	1.7540	5.11	10.11	15.22	56.00	-40.78	QP
10	1.7540	-1.70	10.11	8.41	46.00	-37.59	AVG
11	15.9619	4.59	10.16	14.75	60.00	-45.25	QP
12	15.9619	-1.53	10.16	8.63	50.00	-41.37	AVG

The test result is calculated as the following:
(1) ,Result = Reading + Correct Factor
(2),Correct Factor = (LISN, ISN, PLC or Current Probe) Factor + Cable Loss +Attenuator
(3),Margin = Result - Limit

EUT:	Controller	Model No.:	MTC1905
Temperature:	24	Relative Humidity:	55%
		Test Power:	DC 5V From Adapter
Probe:	N	Test Result:	Pass
Test Time:	2019-7-25	Test By:	
Standard:	(CE)FCC PART 15 Class B_QP		
Test Mode:	Charging		
Note:			



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1580	20.89	11.41	32.30	65.56	-33.26	QP
2	0.1580	10.36	11.41	21.77	55.56	-33.79	AVG
3	0.4980	19.42	10.18	29.60	56.03	-26.43	QP
4	0.4980	13.81	10.18	23.99	46.03	-22.04	AVG
5	0.8220	10.25	10.09	20.34	56.00	-35.66	QP
6	0.8220	5.32	10.09	15.41	46.00	-30.59	AVG
7	1.4340	8.38	10.10	18.48	56.00	-37.52	QP
8	1.4340	2.93	10.10	13.03	46.00	-32.97	AVG
9	4.4618	6.99	10.12	17.11	56.00	-38.89	QP
10	4.4618	0.11	10.12	10.23	46.00	-35.77	AVG
11	15.9859	10.07	10.16	20.23	60.00	-39.77	QP
12	15.9859	3.45	10.16	13.61	50.00	-36.39	AVG

The test result is calculated as the following:
(1) ,Result = Reading + Correct Factor
(2),Correct Factor = (LISN, ISN, PLC or Current Probe) Factor + Cable Loss +Attenuator
(3),Margin = Result - Limit

9. ANTENNA REQUIREMENTS

9.1. Limit

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

9.2. Result

The EUT antenna is permanent attached antenna. It comply with the standard requirement.

END OF REPORT