



FCC ID: 2ADTD-D0212020
Report No.: T200519D09-RP

ISED No.: 20199- D0212020

Page: 1 / 49
Rev.: 01

FCC RADIO TEST REPORT

FCC 47 CFR PART 15 SUBPART C

INDUSTRY CANADA RSS-210

Test Standard	FCC Part 15.249 IC RSS-210 issue 10 and IC RSS-GEN issue 5
Trade name	HIKVISION
Product name	Dual-tech Detector
Model No.	DS-PDD12-EG2, DS-PDD12P-EG2UHK, DS-PDD12P-EG2UVS, DS-PDD12P-EG2HUN, DS-PDD12-EG2CKV, DS-PDD12-EG2KVO, DS-PDD12-EG2UHK , DS-PDD12P-EG2CKV, DS-PDD12P-EG2KVO,DS-PDD12P-EG2, DS-PDD12-EG2UVS, DS-PDD12-EG2HUN
Test Result	Pass

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.

The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc. (Wugu Laboratory)

Approved by:

Kevin Tsai
Deputy Manager

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com.tw/Terms-and-Conditions> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com.tw/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: T200519D09-RP

Page: 2 / 49
Rev.: 01

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	June 29, 2020	Initial Issue	ALL	Angel Cheng
01	July 24, 2020	1. Revised section 1.1. 2. Revised section 1.2. 3. Revised section 1.6. 4. Revised section 4.2. 5. Revised section 4.3. 6. Revised setup photo test report number.	P.4, P.5, P.7, P.17~19, P.23~32, A-1~A-8	Angel Cheng



Report No.: T200519D09-RP

Page: 3 / 49
Rev.: 01

Table of contents

1. GENERAL INFORMATION	4
1.1 EUT INFORMATION	4
1.2 EUT CHANNEL INFORMATION	5
1.3 ANTENNA INFORMATION	5
1.4 MEASUREMENT UNCERTAINTY	6
1.5 FACILITIES AND TEST LOCATION	7
1.6 INSTRUMENT CALIBRATION	7
1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT	9
2. TEST SUMMERY	10
3. DESCRIPTION OF TEST MODES	11
3.1 THE WORST MODE OF MEASUREMENT	11
4. TEST RESULT	12
4.1 AC POWER LINE CONDUCTED EMISSION	12
4.2 20dB BANDWIDTH AND OCCUPIED BANDWIDTH (99%)	17
4.3 FIELD STRENGTH OF FUNDAMENTAL AND RADIATION SPURIOUS EMISSION	20
APPENDIX 1 - PHOTOGRAPHS OF EUT	



Report No.: T200519D09-RP

Page: 4 / 49
Rev.: 01

1. GENERAL INFORMATION

1.1 EUT INFORMATION

FCC Applicant	Hangzhou Hikvision Digital Technology No. 555 Qianmo Road, Binjiang District, Hangzhou 310052, China
IC Applicant	No. 555 Qianmo Road, Binjiang District Hangzhou 310052 China (Peoples Republic Of)
FCC Manufacturer	Shanghai Kohler Electronics., Ltd. No. 1955, Fengxiang Road, Baoshan Area, Shanghai, PRC Post code: 200444
IC Manufacturer	No. 555 Qianmo Road, Binjiang District Hangzhou 310052 China (Peoples Republic Of)
Equipment	Dual-tech Detector
Model Name	DS-PDD12-EG2, DS-PDD12P-EG2UHK, DS-PDD12P-EG2UVS, DS-PDD12P-EG2HUN, DS-PDD12-EG2CKV, DS-PDD12-EG2KVO, DS-PDD12-EG2UHK , DS-PDD12P-EG2CKV, DS-PDD12P-EG2KVO, DS-PDD12P-EG2, DS-PDD12-EG2UVS, DS-PDD12-EG2HUN
Model Discrepancy	Difference of the model numbers (list on this report) are just for marketing purpose only.
Trade Name	HIKVISION
EUT Functions	24G Radar
Received Date	May 19, 2020
Date of Test	May 25 ~ June 18, 2020
Output Power	24.1925GHz Peak : 94.81dBuV/m @1m Average : 94.26dBuV/m @1m 24.2125GHz Peak : 98.78dBuV/m @1m Average : 98.53dBuV/m @1m
Power Operation	DC 12V by Adapter .
Hardware Version	RPCB700E
Software Version	V1.0.0
SN	A12S6A298



Report No.: T200519D09-RP

Page: 5 / 49
Rev.: 01

1.2 EUT CHANNEL INFORMATION

Frequency Range	24.1925GHz~24.2125GHz
Modulation Type	FMCW
Number of channel	2

1.3 ANTENNA INFORMATION

Antenna Type	Array antenna
Antenna Gain	0 dBi
Antenna Connector	N/A



Report No.: T200519D09-RP

Page: 6 / 49
Rev.: 01

1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	+/- 1.2575
Emission bandwidth, 20dB bandwidth	+/- 0.0014
RF output power, conducted	+/- 1.14
Power density, conducted	+/- 1.40
3M Semi Anechoic Chamber / 30M~200M	+/- 4.12
3M Semi Anechoic Chamber / 200M~1000M	+/- 4.68
3M Semi Anechoic Chamber / 1G~8G	+/- 5.18
3M Semi Anechoic Chamber / 8G~18G	+/- 5.47
3M Semi Anechoic Chamber / 18G~26G	+/- 3.81
3M Semi Anechoic Chamber / 26G~40G	+/- 3.87
3M Semi Anechoic Chamber / 40G~60G	+/- 1.8509
3M Semi Anechoic Chamber / 60G~90G	+/- 3.43
3M Semi Anechoic Chamber / 90G~140G	+/- 3.52

Remark:

1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$
2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.



Report No.: T200519D09-RP

Page: 7 / 49
Rev.: 01

1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at
No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)

Test site	Test Engineer	Remark
AC Conduction Room	Dally Hong	-
Radiation	Jerry Chang	-
RF Conducted	Dally Hong	-

Remark: The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

1.6 INSTRUMENT CALIBRATION

Conducted Emissions Test Site					
Name of Equipment	Manufacturer	Model	Serial Number	Cal Date	Cal Due
Coaxial Cable	Woken	WC12	CC003	06/28/2019	06/27/2020
Coaxial Cable	Woken	WC12	CC001	06/28/2019	06/27/2020
Horn Antenna	ETS LINDGREN	3116	00026370	12/18/2019	12/17/2020
K Type Cable	Huber+Suhner	SUCOFLEX 102	29406/2	12/17/2019	12/16/2020
K Type Cable	Huber+Suhner	SUCOFLEX 102	22470/2	12/17/2019	12/16/2020
Pre-Amplifier	EMEC	EM01G26G	060570	06/27/2019	06/26/2020
Signal Analyzer	R&S	FSV 40	101073	09/25/2019	09/24/2020
Thermostatic/Humidity Chamber	TAICHY	MHG-150LF	930619	10/04/2019	10/03/2020
Horn Antenna / Harmonic Mixer	ROHDE&SCHWARZ	FH-PP-110 / FS-Z110	10003 / 100096	12/09/2019	12/08/2021
Horn Antenna / Harmonic Mixer	ROHDE&SCHWARZ	FH-PP-75 / FS-Z75	10001 / 100162	12/09/2019	12/08/2021
Horn Antenna / Harmonic Mixer	A-INFOMW / ROHDE&SCHWARZ	LB-19-20-A / FS-Z60	J202020872 / 100142	12/09/2019	12/08/2021
Software	N/A				



Report No.: T200519D09-RP

Page: 8 / 49
Rev.: 01

3M 966A Chamber Test Site					
Name of Equipment	Manufacturer	Model	Serial Number	Cal Date	Cal Due
Band Reject Filters	MICRO TRONICS	BRM 50702	120	02/25/2020	02/24/2021
Coaxial Cable	HUBER SUHNER	SUCOFLEX 104PEA	20995	02/25/2020	02/24/2021
Coaxial Cable	EMCI	EMC105	190914+25111	09/20/2019	09/19/2020
Digital Thermo-Hygro Meter	WISEWIND	1206	D07	01/15/2020	01/14/2021
double Ridged Guide Horn Antenna	ETC	MCTD 1209	DRH13M02003	10/04/2019	10/03/2020
Loop Ant	COM-POWER	AL-130	121051	03/27/2020	03/26/2021
Pre-Amplifier	EMEC	EM330	060609	02/25/2020	02/24/2021
Pre-Amplifier	HP	8449B	3008A00965	02/25/2020	02/24/2021
Horn Antenna	ETS LINDGREN	3116	00026370	12/18/2019	12/17/2020
K Type Cable	Huber+Suhner	SUCOFLEX 102	29406/2	12/17/2019	12/16/2020
K Type Cable	Huber+Suhner	SUCOFLEX 102	22470/2	12/17/2019	12/16/2020
Pre-Amplifier	EMEC	EM01G26G	060570	06/27/2019	06/26/2020
Signal Analyzer	R&S	FSV 40	101073	09/25/2019	09/24/2020
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R
Software	e3 6.11-20180413				

3M 966A Chamber Test Site					
Name of Equipment	Manufacturer	Model	Serial Number	Cal Date	Cal Due
CABLE	EMCI	CFD300-NL	CERF	06/27/2019	06/26/2020
EMI Test Receiver	R&S	ESCI	100064	07/26/2019	07/25/2020
LISN	SCHAFFNER	NNB 41	03/10013	02/13/2020	02/12/2021
Software	EZ-EMC(CCS-3A1-CE-五股)				

Remark: Each piece of equipment is scheduled for calibration once a year.



Report No.: T200519D09-RP

Page: 9 / 49
Rev.: 01

1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

EUT Accessories Equipment					
No.	Equipment	Brand	Model	Series No.	FCC ID
	N/A				

Support Equipment					
No.	Equipment	Brand	Model	Series No.	FCC ID
1.	Power Adapter	MOSO	MSA-C1500IC12.0-18P-US	N/A	N/A

1.8 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 15.249, RSS-210 Issue 10 and RSS-GEN Issue 5.



Report No.: T200519D09-RP

Page: 10 / 49
Rev.: 01

2. TEST SUMMERY

FCC Standard Section	IC Standard Section	Report Section	Test Item	Result
15.203	-	1.3	Antenna Requirement	Pass
15.207(a)	RSS-GEN 8.8	4.1	AC Conducted Emission	Pass
15.215	RSS-GEN 6.7	4.2	20dB Bandwidth and Occupied Bandwidth (99%)	Pass
15.249(a)	RSS-210 B 10	4.3	Filed strength of fundamental	Pass
15.249(a)	RSS-GEN 8.9, 8.10	4.3	Radiation Spurious Emission	Pass

3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF MEASUREMENT

Radiated Emission Measurement Above 1G	
Test Condition	Radiated Emission Above 1G
Power supply Mode	Mode 1: EUT power by Adapter
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4
Worst Position	☐ Placed in fixed position. ☐ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☒ Placed in fixed position at Z-Plane (H-Plane)

Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT power by Adapter
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Remark:

- 1. The worst mode was record in this test report.*
- 2. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(Z-Plane) were recorded in this report*

4. TEST RESULT

4.1 AC POWER LINE CONDUCTED EMISSION

4.1.1 Test Limit

According to §15.207(a) and RSS-GEN section 8.8,

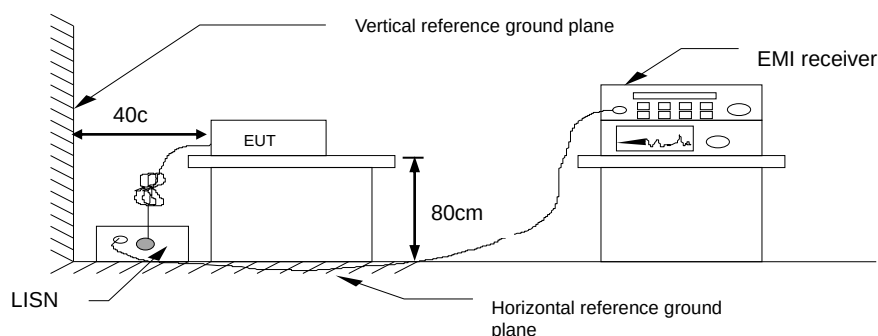
Frequency Range (MHz)	Limits(dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

* Decreases with the logarithm of the frequency.

4.1.2 Test Procedure

1. The EUT was placed on a non-conducted table, which is 0.8m above horizontal ground plane and 0.4m above vertical ground plane.
2. EUT connected to the line impedance stabilization network (LISN)
3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. Recorded Line for Neutral and Line.

4.1.3 Test Setup



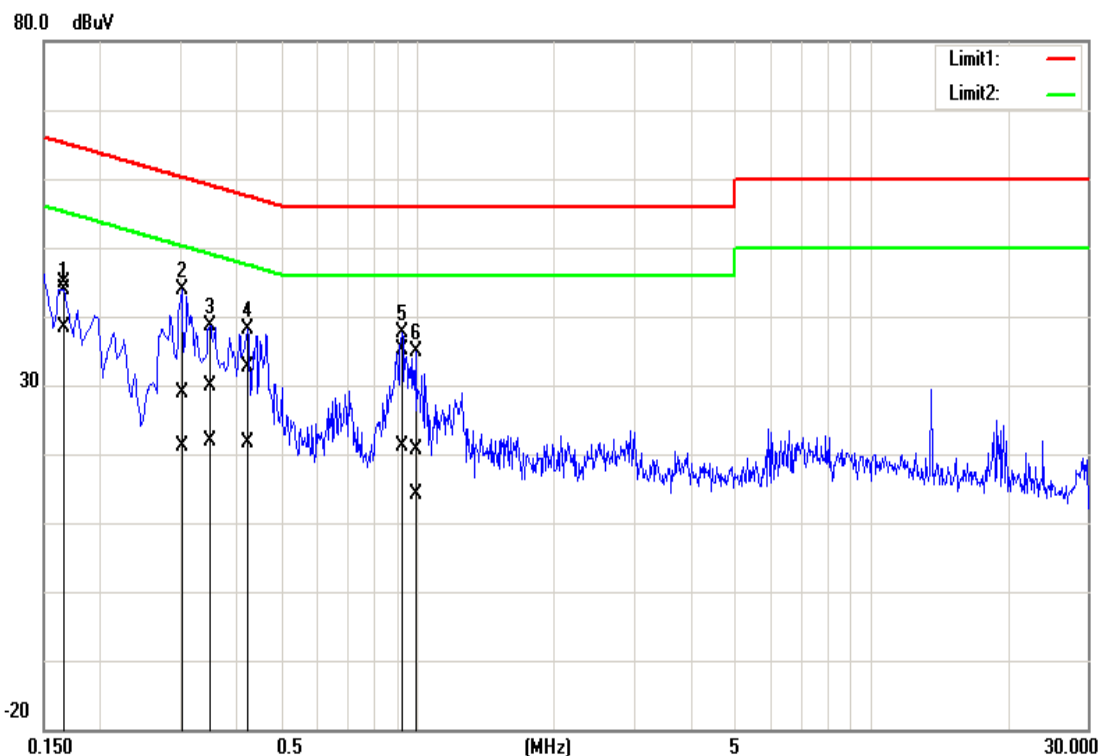
4.1.4 Test Result

PASS

Test Data

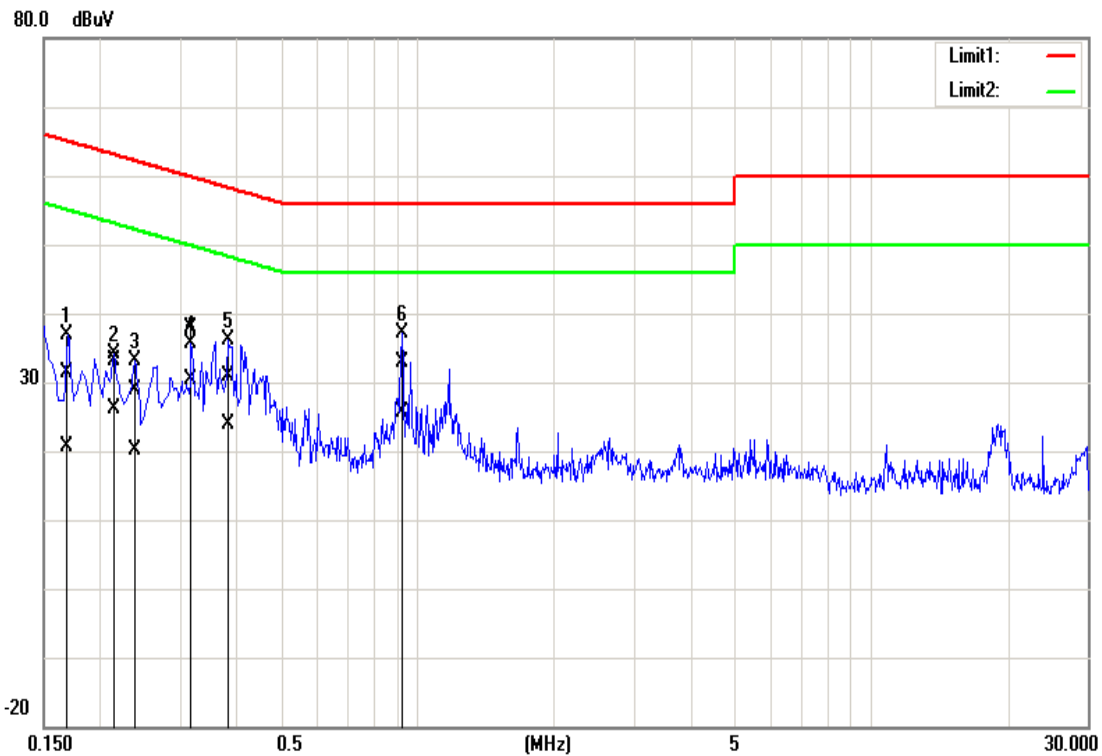
24.1925GHz

Test Mode:	Mode 1	Temp/Hum	24(°C)/ 50%RH
Phase:	Line	Test Date	May 25, 2020
		Test Engineer	Dally Hong



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1660	34.57	28.18	10.22	44.79	38.40	65.16	55.16	-20.37	-16.76	Pass
0.3020	18.71	10.86	10.22	28.93	21.08	60.19	50.19	-31.26	-29.11	Pass
0.3500	19.69	11.69	10.22	29.91	21.91	58.96	48.96	-29.05	-27.05	Pass
0.4220	22.30	11.53	10.22	32.52	21.75	57.41	47.41	-24.89	-25.66	Pass
0.9260	24.91	10.90	10.24	35.15	21.14	56.00	46.00	-20.85	-24.86	Pass
0.9940	10.37	3.91	10.24	20.61	14.15	56.00	46.00	-35.39	-31.85	Pass

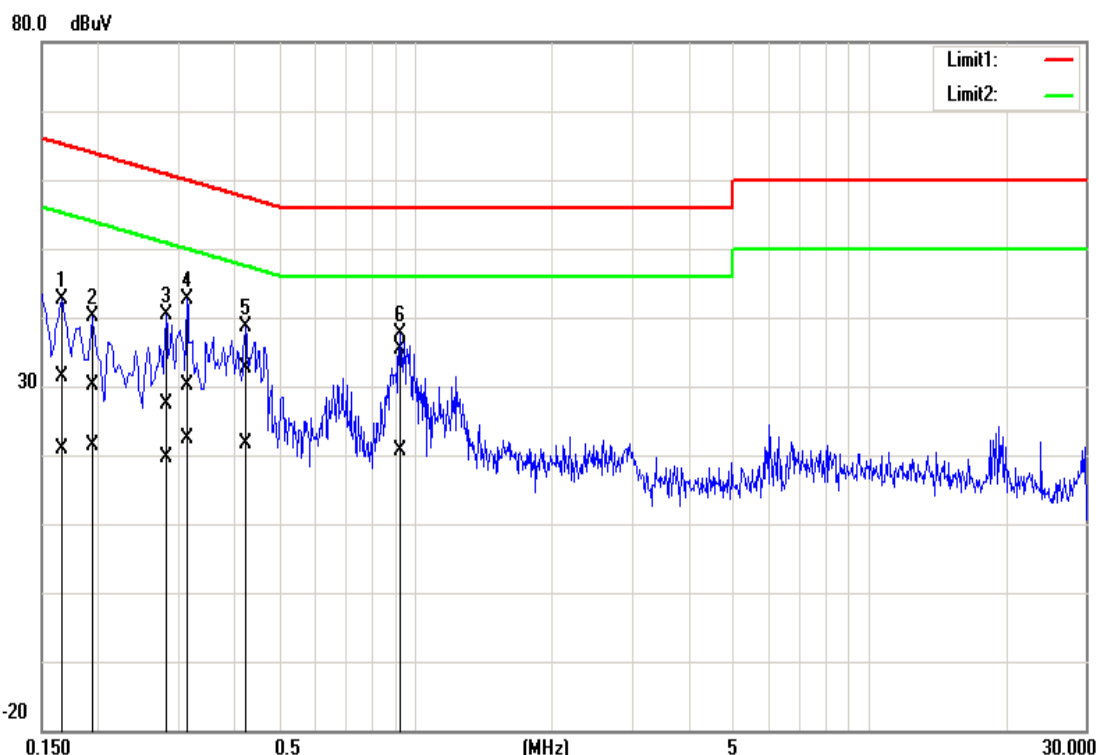
Test Mode:	Mode 1	Temp/Hum	24(°C)/ 50%RH
Phase:	Neutral	Test Date	May 25, 2020
		Test Engineer	Dally Hong



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1700	21.29	10.46	10.19	31.48	20.65	64.96	54.96	-33.48	-34.31	Pass
0.2140	23.04	16.04	10.19	33.23	26.23	63.04	53.05	-29.81	-26.82	Pass
0.2380	18.65	9.90	10.19	28.84	20.09	62.16	52.17	-33.32	-32.08	Pass
0.3180	27.70	20.25	10.19	37.89	30.44	59.76	49.76	-21.87	-19.32	Pass
0.3820	20.73	13.77	10.19	30.92	23.96	58.23	48.24	-27.31	-24.28	Pass
0.9260	22.56	15.30	10.21	32.77	25.51	56.00	46.00	-23.23	-20.49	Pass

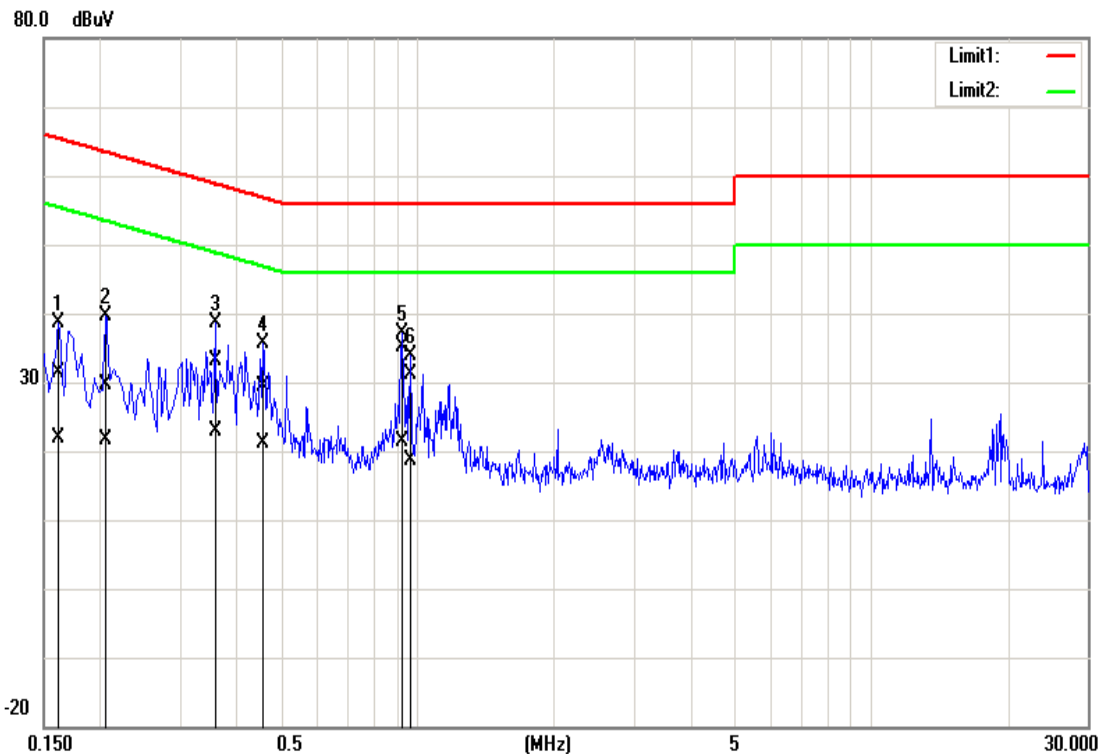
24.2125GHz

Test Mode:	Mode 1	Temp/Hum	24(°C)/ 50%RH
Phase:	Line	Test Date	May 25, 2020
		Test Engineer	Dally Hong



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1660	21.26	10.63	10.22	31.48	20.85	65.16	55.16	-33.68	-34.31	Pass
0.1940	20.00	11.10	10.21	30.21	21.31	63.86	53.86	-33.65	-32.55	Pass
0.2820	17.10	9.52	10.21	27.31	19.73	60.76	50.76	-33.45	-31.03	Pass
0.3140	19.89	12.07	10.22	30.11	22.29	59.86	49.86	-29.75	-27.57	Pass
0.4220	22.39	11.53	10.22	32.61	21.75	57.41	47.41	-24.80	-25.66	Pass
0.9260	25.04	10.38	10.24	35.28	20.62	56.00	46.00	-20.72	-25.38	Pass

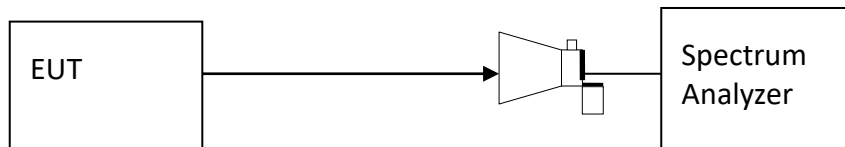
Test Mode:	Mode 1	Temp/Hum	24(°C)/ 50%RH
Phase:	Neutral	Test Date	May 25, 2020
		Test Engineer	Dally Hong



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1620	21.30	11.66	10.19	31.49	21.85	65.36	55.36	-33.87	-33.51	Pass
0.2060	19.37	11.44	10.19	29.56	21.63	63.37	53.37	-33.81	-31.74	Pass
0.3580	22.88	12.71	10.19	33.07	22.90	58.77	48.77	-25.70	-25.87	Pass
0.4580	19.27	10.85	10.19	29.46	21.04	56.73	46.73	-27.27	-25.69	Pass
0.9260	25.01	11.27	10.21	35.22	21.48	56.00	46.00	-20.78	-24.52	Pass
0.9660	21.00	8.53	10.21	31.21	18.74	56.00	46.00	-24.79	-27.26	Pass

4.2 20dB BANDWIDTH AND OCCUPIED BANDWIDTH (99%)

TEST CONFIGURATION



TEST PROCEDURE

1. Place the EUT on the table and set it in the transmitting mode.
2. SA set RBW = 1% ~ 5% OBW, VBW = three times the RBW and Detector = Peak, to measurement 99% Bandwidth and 20dB Bandwidth
3. Measure and record the result of 20 dB Bandwidth and 99% Bandwidth. in the test report.

TEST RESULTS

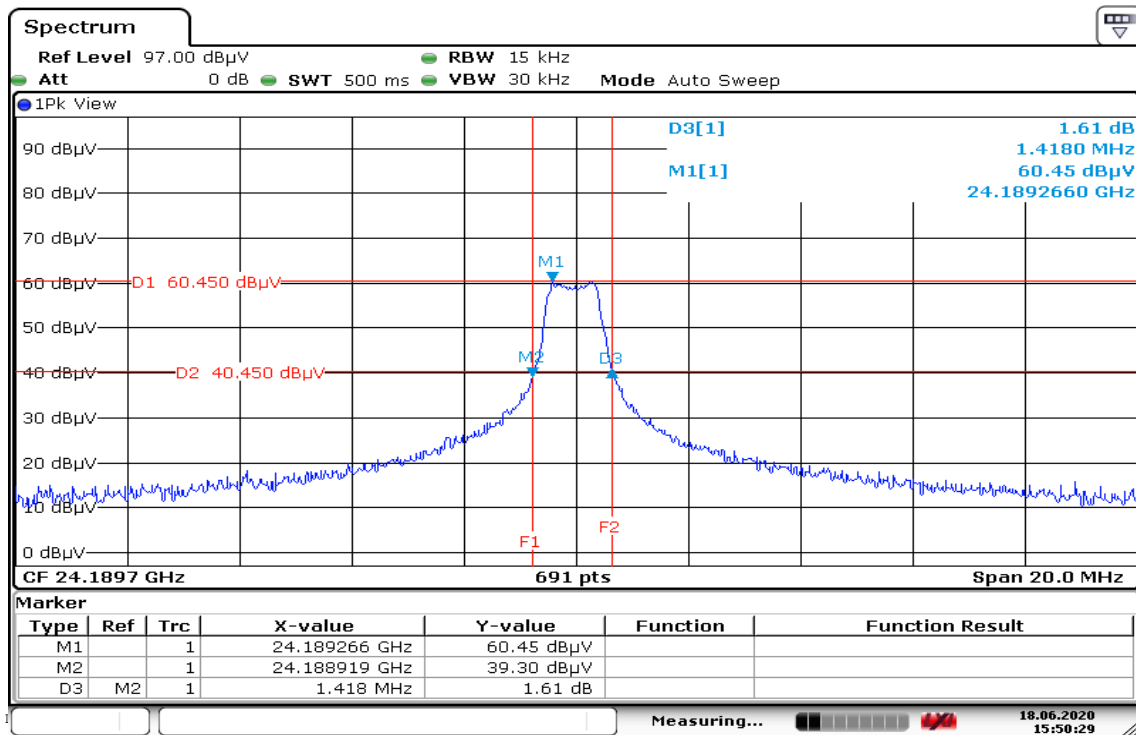
No non-compliance noted

Test Condition	Frequency(Hz)	Occupied Bandwidth 99% (MHz)	20 dB Bandwidth (MHz)
24G Radar	24.1925G	1.3024	1.4180
24G Radar	24.2125G	1.4182	1.6210

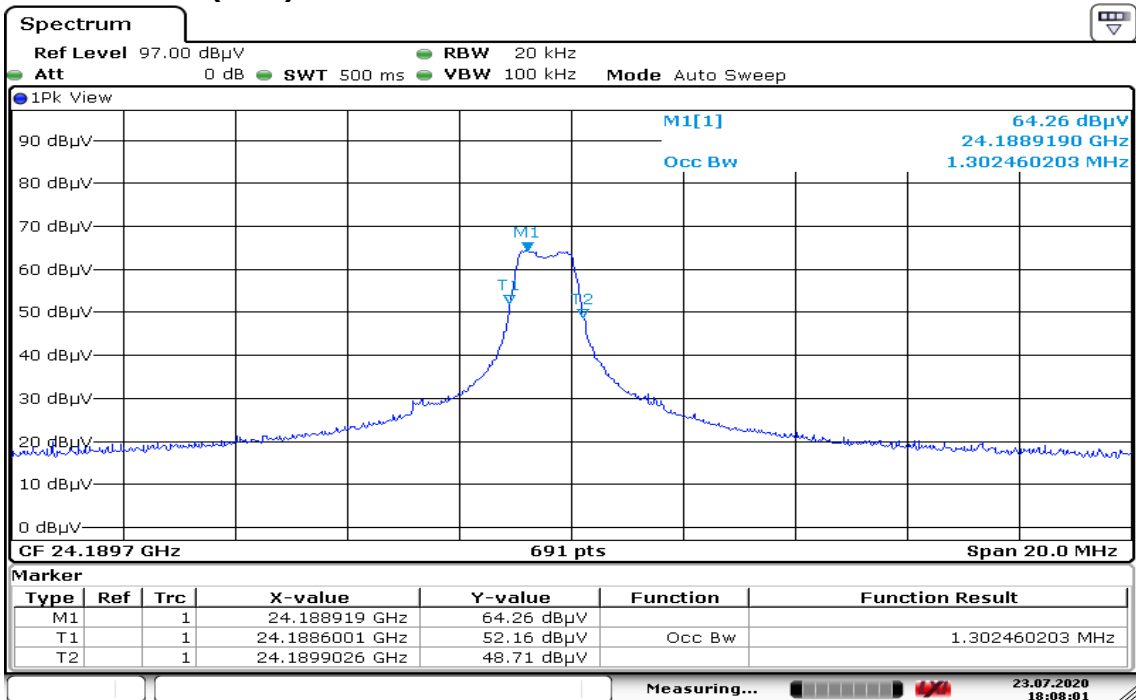
Report No.: T200519D09-RP

Page: 18 / 49
Rev.: 01

Test Plot 24.1925GHz 20dB Bandwidth



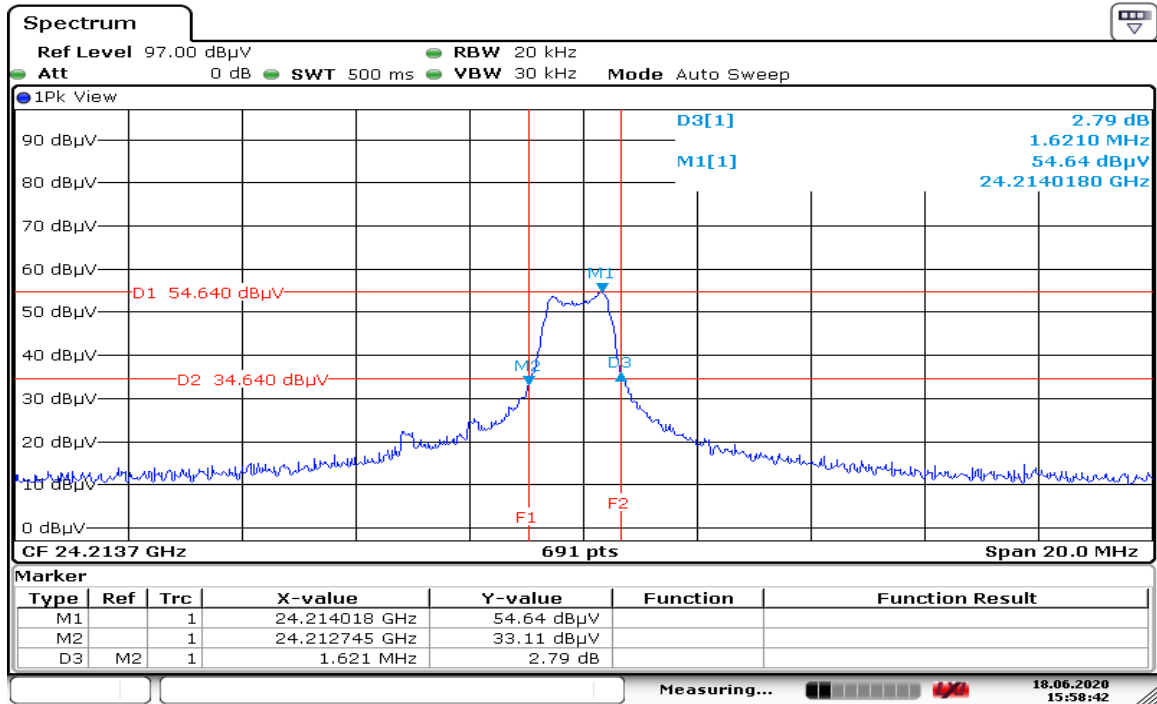
BANDWIDTH (99%)



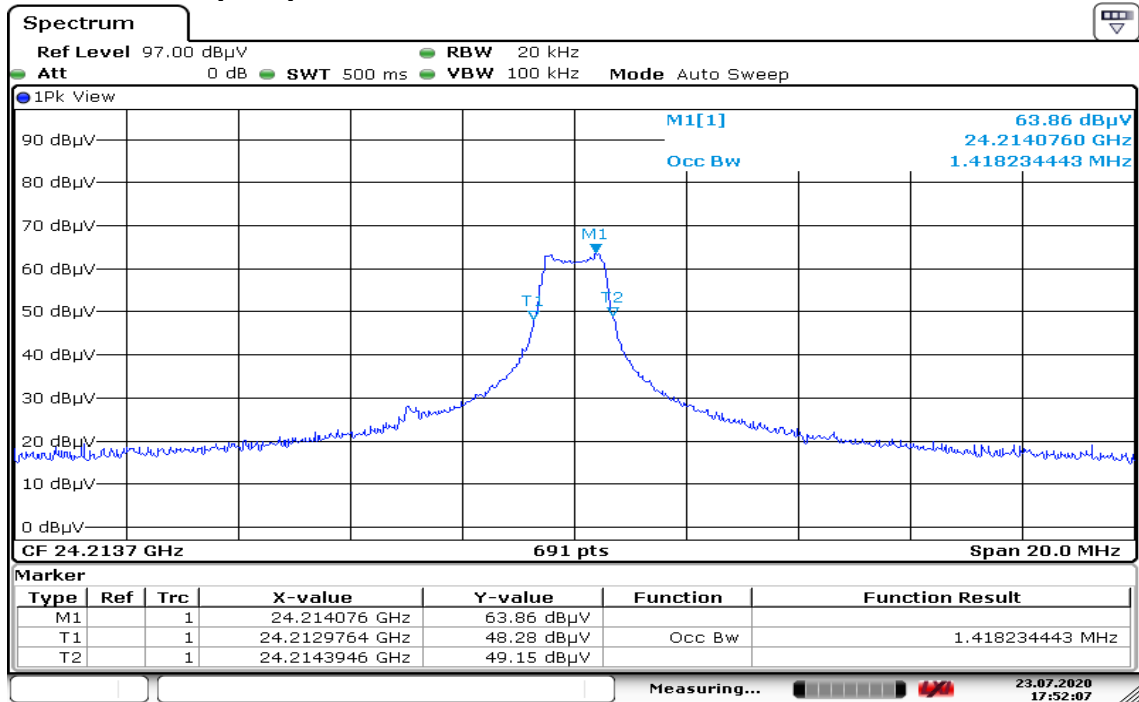
Date: 23.JUL.2020 18:08:02

Report No.: T200519D09-RP

24.2125GHz 20dB Bandwidth



BANDWIDTH (99%)



Date: 23.JUL.2020 17:52:08

4.3 FIELD STRENGTH OF FUNDAMENTAL AND RADIATION SPURIOUS EMISSION

4.3.1 Test Limit

FCC according to §15.249(a).

(1) The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency (MHz)	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
2400-2483.5	50	500
5725-5875	50	500
24000-24250	250	2500

* Field strength limits are specified at a distance of 3 meters

Fundamental Limit Conversion			
Average (mV/m) at 3M	Average (dBuV/m) at 3M	Average (dBuV/m) at 1M	Peak (dBuV/m) at 1M
250	107.9588	117.50	137.50

*(Limit=107.9588+20LOG(3/1)=117.50 dBuV/m)

Harmonic Limit Conversion			
Average (uV/m) at 3M	Average (dBuV/m) at 3M	Average (dBuV/m) at 1M	Peak (dBuV/m) at 1M
2500	67.9588	77.50	97.50

*(Limit=67.9588+20LOG(3/1)=77.50 dBuV/m)

(2) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209(follow the table), whichever is the lesser attenuation

Below 30 MHz

Frequency	Field Strength ($\mu\text{A/m}$)	Magnetic field strength (H-Field) ($\mu\text{A/m}$)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/F (F in kHz)	30
1.705-30 MHz	30	N/A	30

Above 30 MHz

Frequency (MHz)	Field Strength microvolts/m at 3 metres (watts, e.i.r.p.)	
	Transmitters	Receivers
30-88	100 (3 nW)	100 (3 nW)
88-216	150 (6.8 nW)	150 (6.8 nW)
216-960	200 (12 nW)	200 (12 nW)
Above 960	500 (75 nW)	500 (75 nW)

IC according to RSS-Gen, Section 8.9 and 8.10.

RSS-Gen Table 3 and Table 5 – General Field Strength Limits for Transmitters and Receivers at Frequencies Above 30 MHz ^(Note)

Frequency (MHz)	Field Strength microvolts/m at 3 metres (watts, e.i.r.p.)	
	Transmitters	Receivers
30-88	100 (3 nW)	100 (3 nW)
88-216	150 (6.8 nW)	150 (6.8 nW)
216-960	200 (12 nW)	200 (12 nW)
Above 960	500 (75 nW)	500 (75 nW)

Note: Measurements for compliance with the limits in table 3 may be performed at distances other than 3 metres, in accordance with Section 6.6.

RSS-Gen Table 6: General Field Strength Limits for Transmitters at Frequencies Below 30 MHz (Transmit)

Frequency	Magnetic field strength (H-Field) ($\mu\text{A/m}$)	Measurement Distance (m)
9-490 kHz ^{Note}	6.37/F (F in kHz)	300
490-1,705 kHz	63.7/F (F in kHz)	30
1.705-30 MHz	0.08	30

Note: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector..

4.3.2 Test Procedure

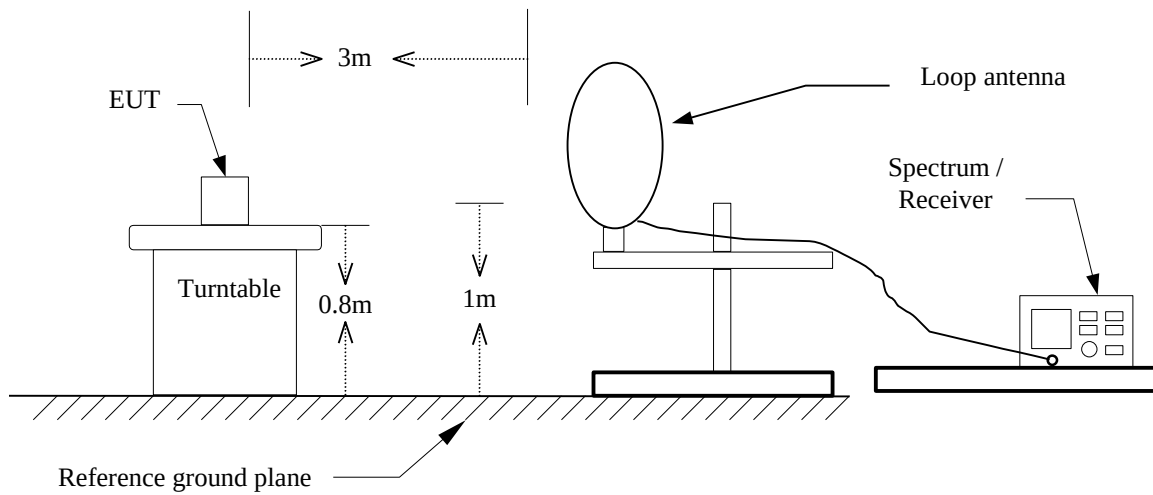
1. The EUT is placed on a turntable, Above 1 GHz is 1.5m, below 1 GHz and above 40G is 0.8m above ground plane. The EUT Configured un accordance with ANSI C63.10: 2013, and the EUT set in a continuous mode.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. And EUT is set 3m away from the receiving antenna, which is scanned from 1m to 4m above the ground plane to find out the highest emissions. Measurement are made polarized in both the vertical and the horizontal positions with antenna.
3. The measurement distance above 40 GHz is set 15cm away from the receiving antenna.
4. The SA setting following :
 - (1) Below 1G : RBW = 100kHz, VBW $\geq$ 3 RBW, Sweep = Auto, Detector = Peak,
 - (2) Above 1G :
 - (2.1) For Peak measurement : RBW = 1MHz, VBW $\geq$ 3 RBW.
 - (2.2) For Average measurement : RBW = 1MHz, VBW = 10Hz.

Note: the measurement distance of the Fundamental frequency is 1m.

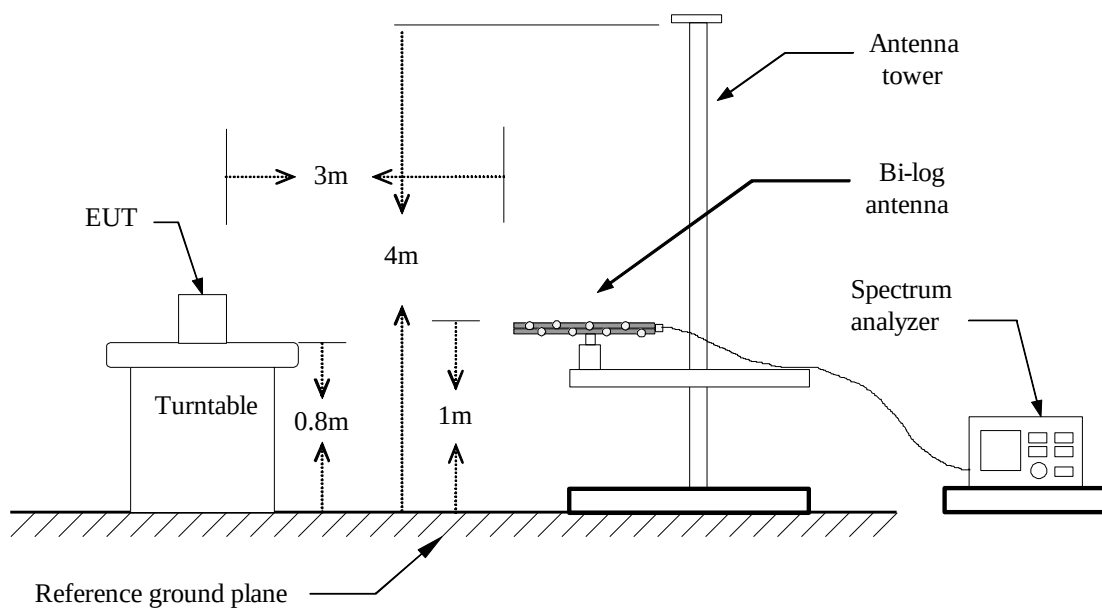
The measurement distance 30 MHz to 1 GHz is set 3m away from the receiving antenna.
The measurement distance 1 GHz to 40 GHz is set 1m away from the receiving antenna.

4.3.3 Test Setup

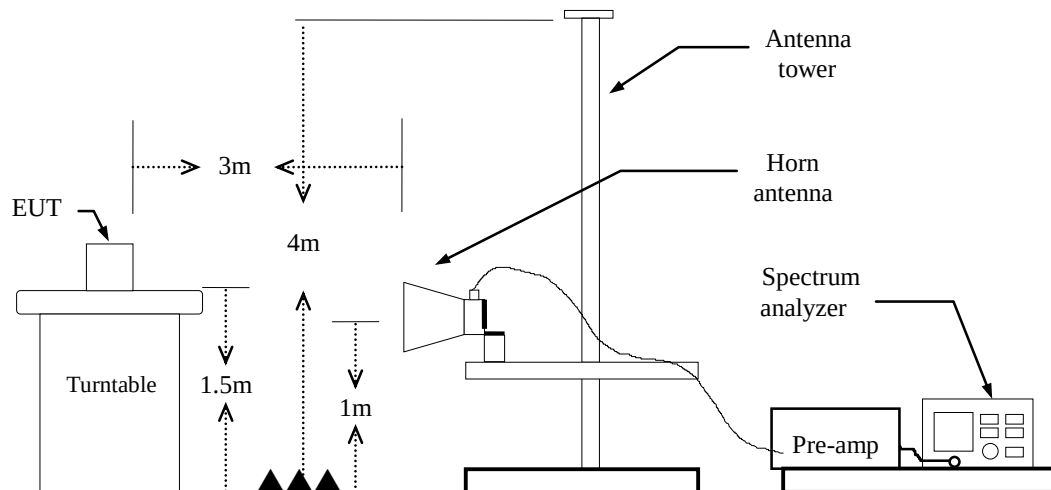
9kHz ~ 30MHz



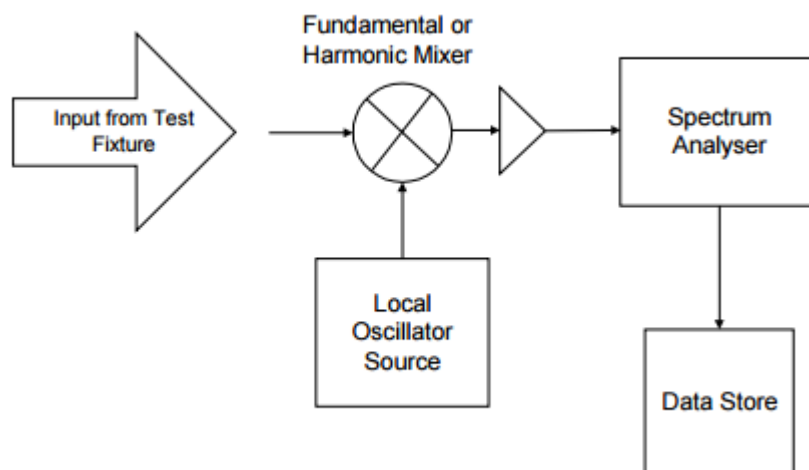
30MHz ~ 1GHz



Above 1 GHz



Above 40 GHz





Report No.: T200519D09-RP

Page: 26 / 49
Rev.: 01

4.3.4 Test Result

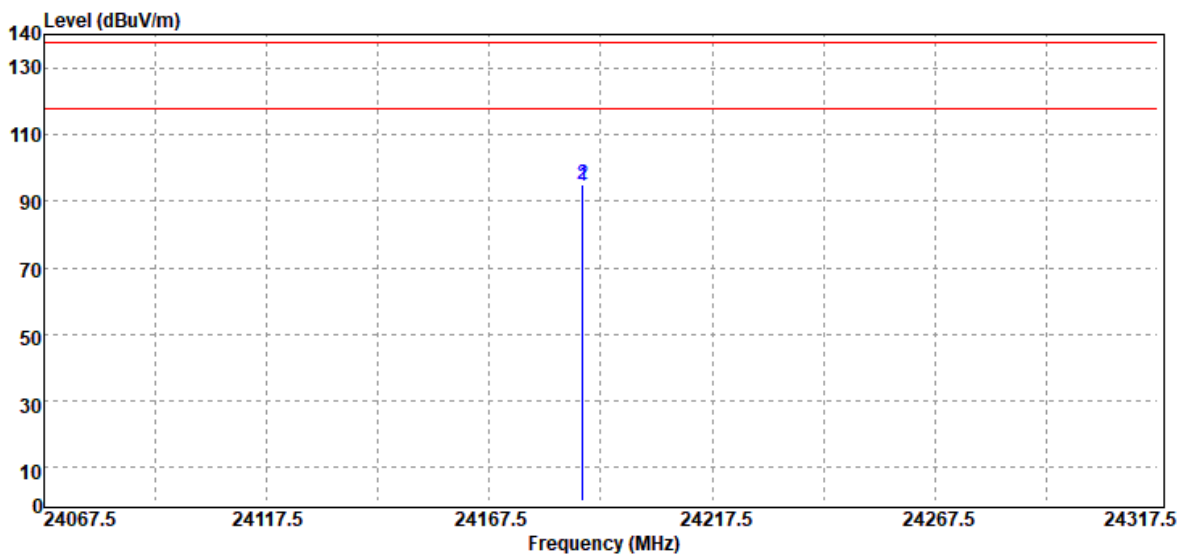
24.1925GHz

Freq. (GHz)	Peak Value (dBuV/m)	Average Value (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result	Antenna Polarization (V/H)
24188.50	94.81	94.26	137.5	117.5	Pass	V
24191.75	89.04	88.77	137.5	117.5	Pass	H

Test Data

(1) Filed strength of fundamental :

Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	Fundamental	Test Date	June 4, 2020
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak & Average		

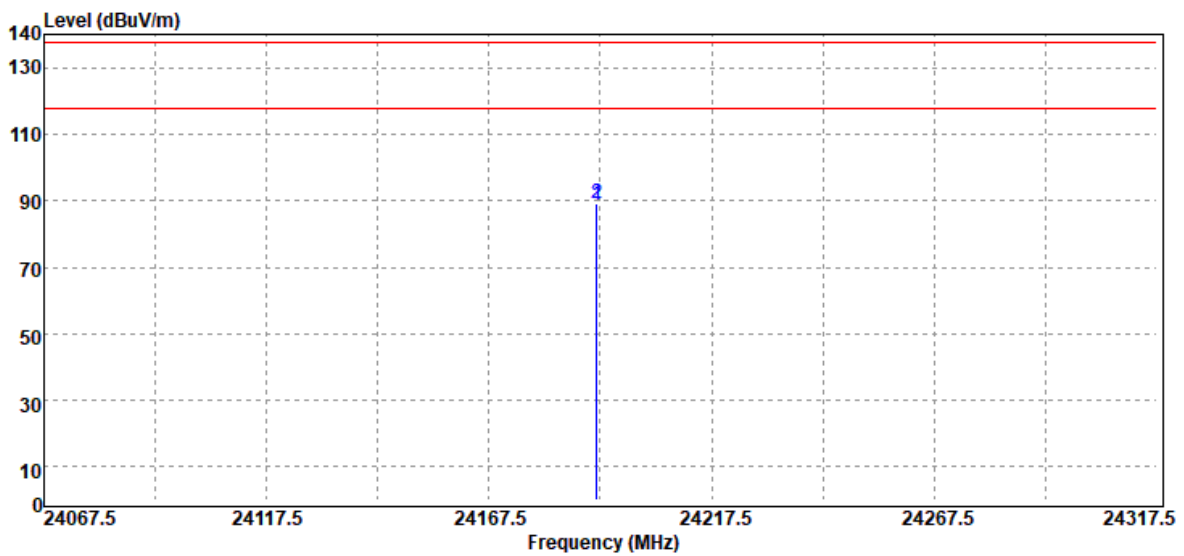




Report No.: T200519D09-RP

Page: 27 / 49
Rev.: 01

Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	Fundamental	Test Date	June 4, 2020
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		





Report No.: T200519D09-RP

Page: 28 / 49
Rev.: 01

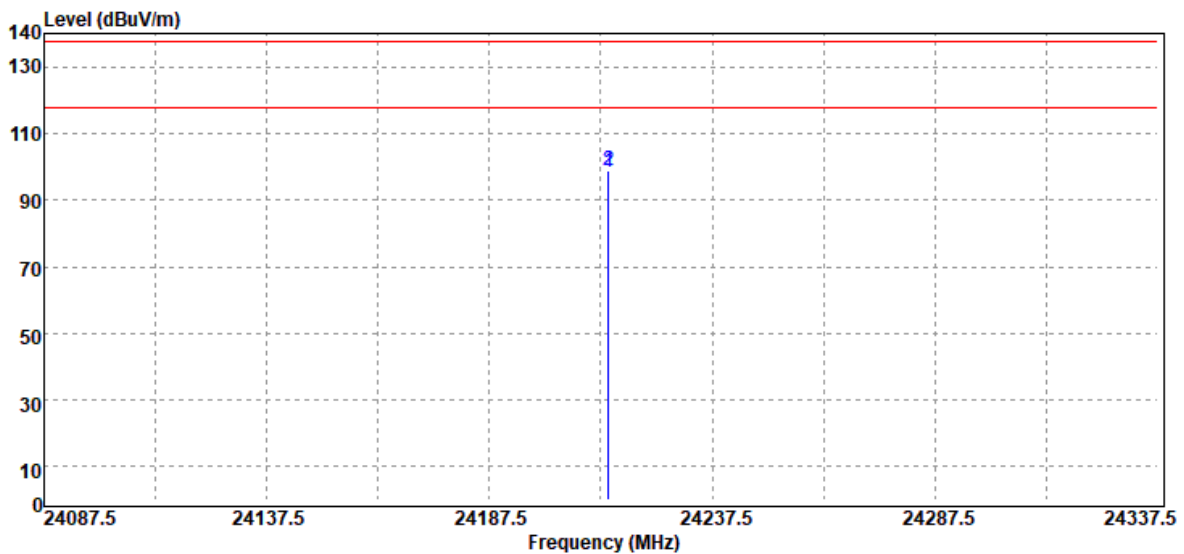
24.2125GHz

Freq. (GHz)	Peak Value (dBuV/m)	Average Value (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result	Antenna Polarization (V/H)
24214.25	98.78	98.53	137.5	117.5	Pass	V
24214.00	59.93	59.73	137.5	117.5	Pass	H

Test Data

(1) Filed strength of fundamental :

Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	Fundamental	Test Date	June 4, 2020
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak & Average		

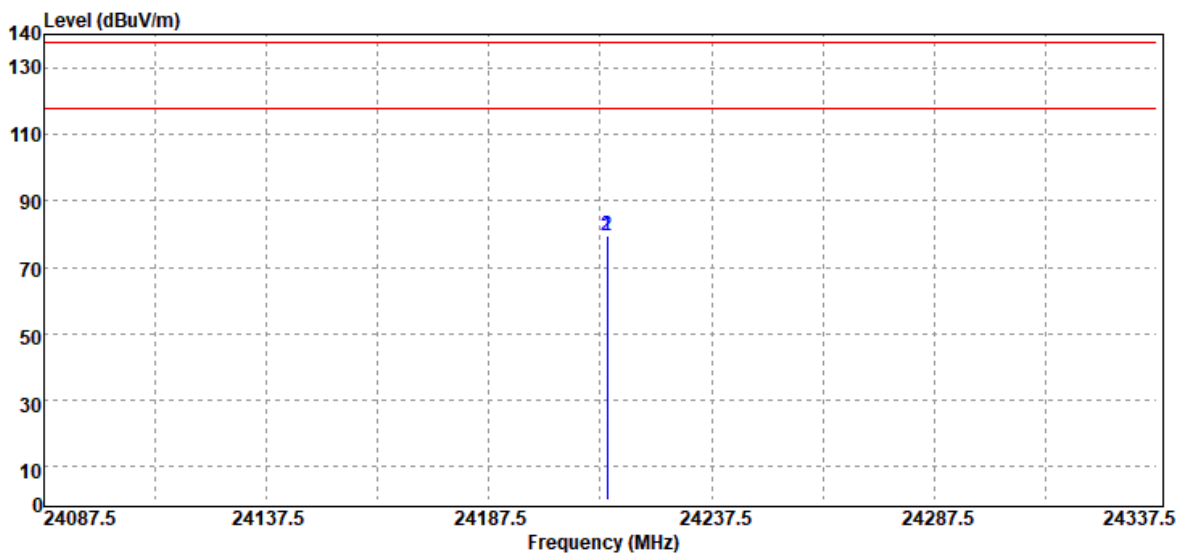




Report No.: T200519D09-RP

Page: 29 / 49
Rev.: 01

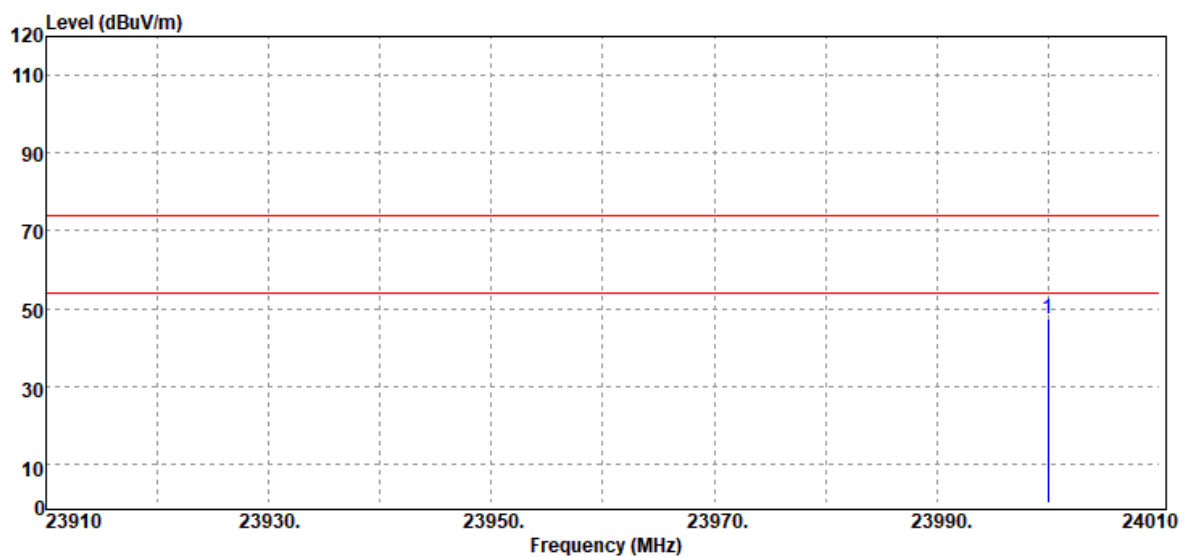
Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	Fundamental	Test Date	June 4, 2020
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



(2) Band Edge Test Data

24.1925GHz

Test Mode:	24 GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	Band Edge	Test Date	May 29, 2020
Polarize	Vertical	Test Engineer	Jerry Chang



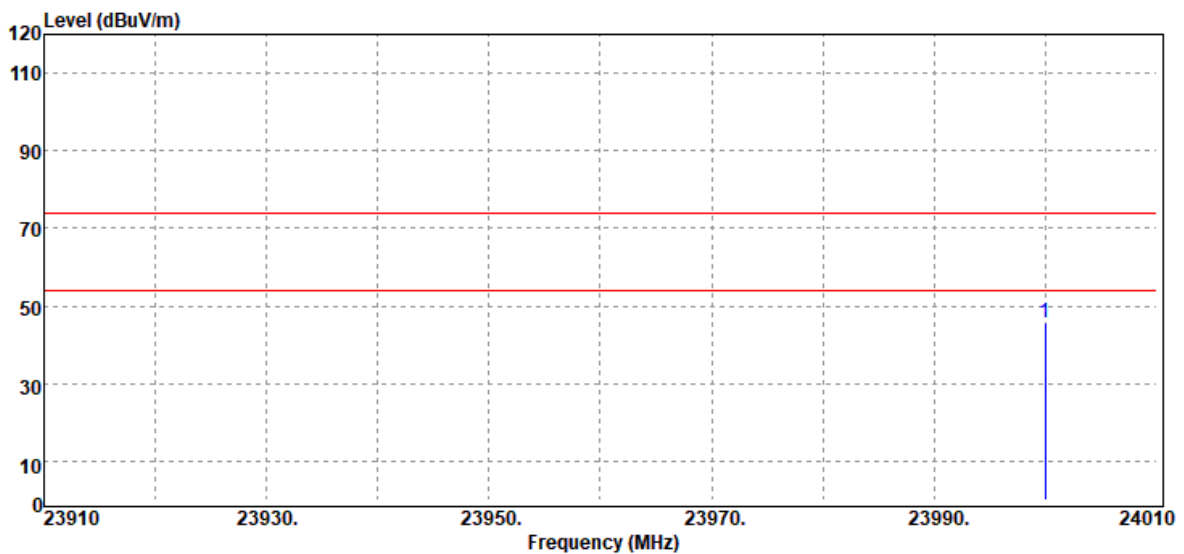
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	24000.00	26.29	20.96	47.25	74.00	-26.75	Peak



Report No.: T200519D09-RP

Page: 31 / 49
Rev.: 01

Test Mode:	24 GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	Band Edge	Test Date	May 29, 2020
Polarize	Horizontal	Test Engineer	Jerry Chang



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	24000.00	24.86	20.96	45.82	74.00	-28.18	Peak

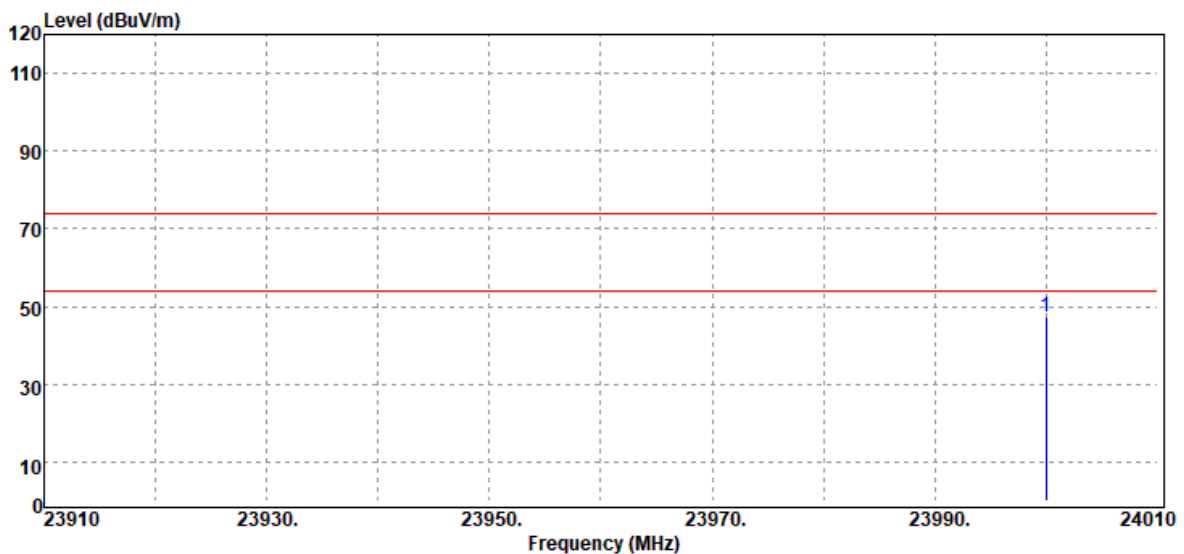


Report No.: T190220D01-RP

Page: 32 / 57
Rev.: 00

24.2125GHz

Test Mode:	24 GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	Band Edge	Test Date	May 29, 2020
Polarize	Vertical	Test Engineer	Jerry Chang



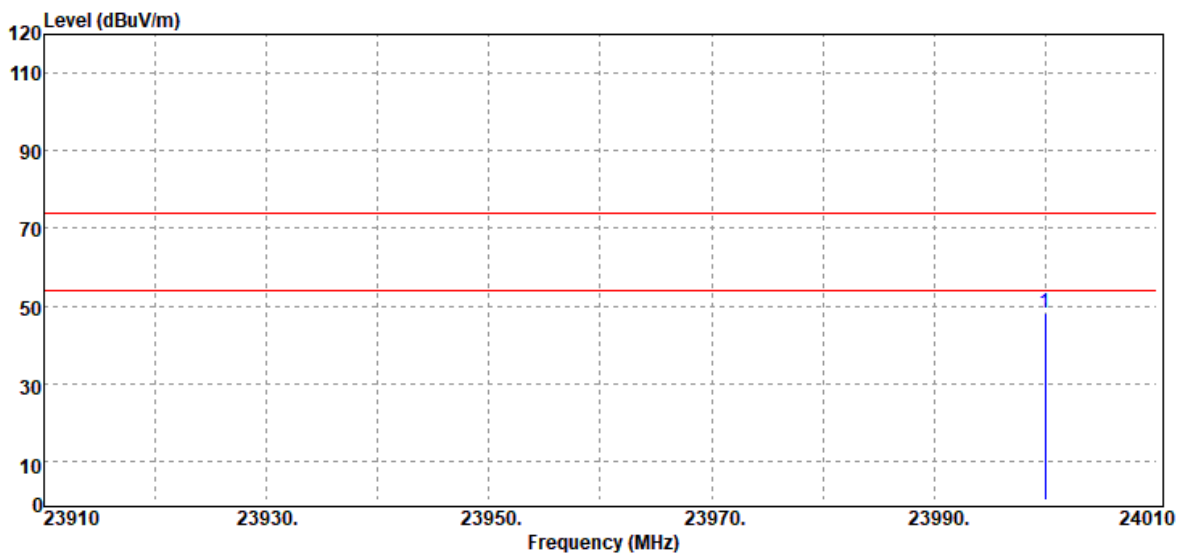
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	24000.00	26.30	20.96	47.26	74.00	-26.74	Peak



Report No.: T200519D09-RP

Page: 33 / 49
Rev.: 01

Test Mode:	24 GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	Band Edge	Test Date	May 29, 2020
Polarize	Horizontal	Test Engineer	Jerry Chang

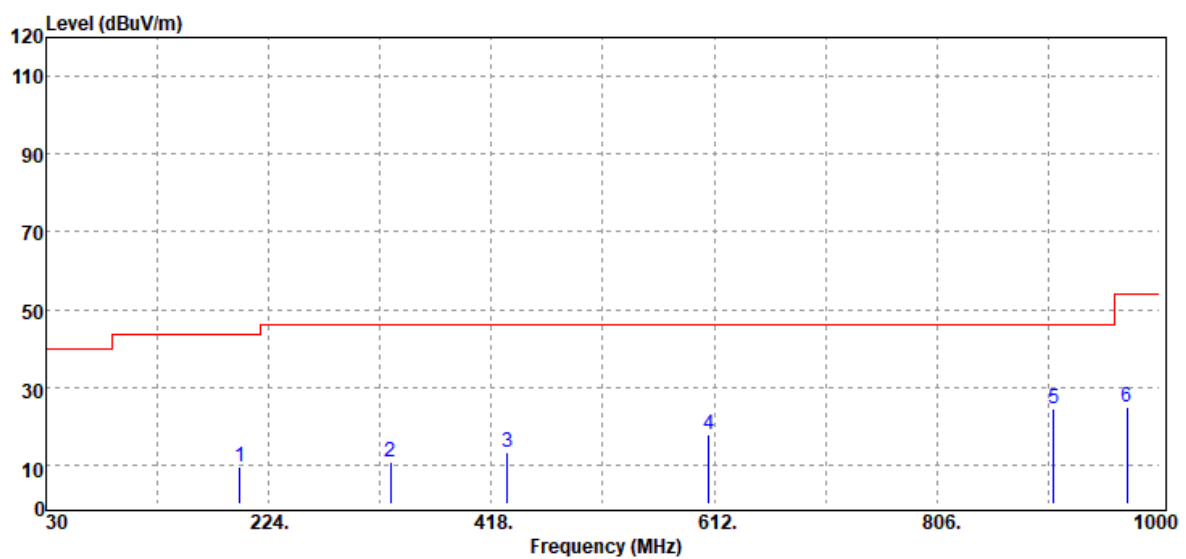


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	24000.00	27.18	20.96	48.14	74.00	-25.86	Peak

(3) Below 1G:

24.1925GHz

Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	30MHz-1GHz	Test Date	May 29, 2020
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak and Qusi-peak		



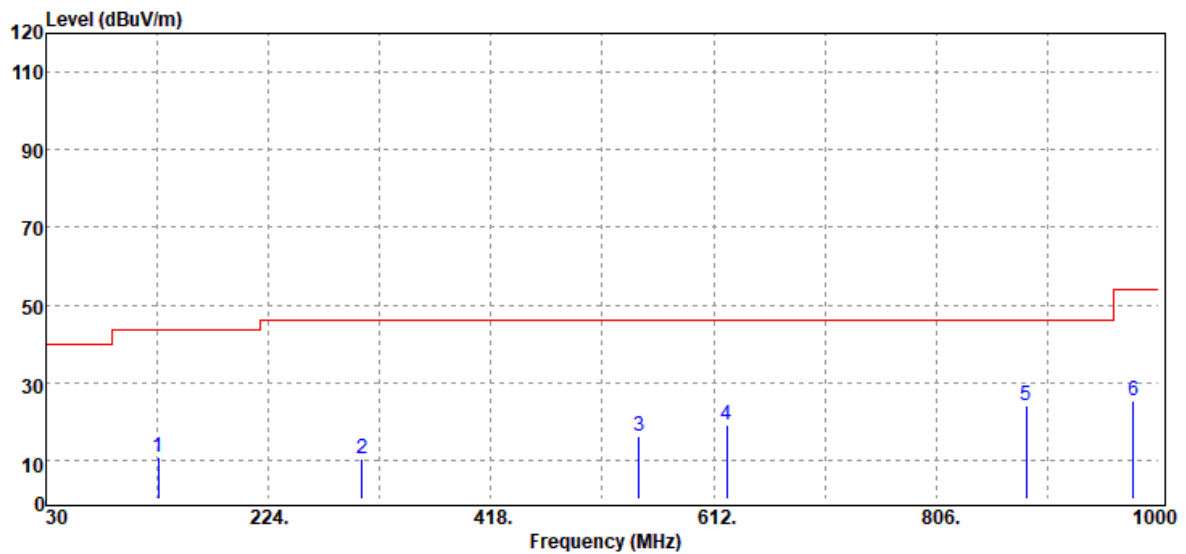
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
198.78	19.00	-9.54	9.46	43.50	-34.04	Peak
329.73	18.61	-7.72	10.89	46.00	-35.11	Peak
431.58	17.88	-4.78	13.10	46.00	-32.90	Peak
607.15	19.39	-1.64	17.75	46.00	-28.25	Peak
907.85	20.93	3.55	24.48	46.00	-21.52	Peak
971.87	20.38	4.33	24.71	54.00	-29.29	Peak



Report No.: T200519D09-RP

Page: 35 / 49
Rev.: 01

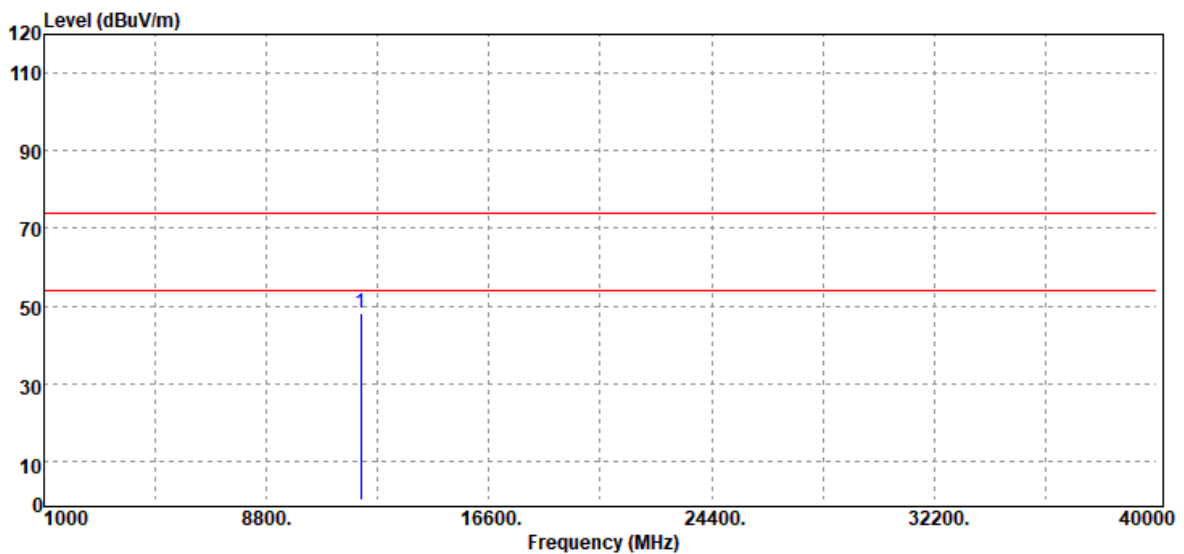
Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	30MHz-1GHz	Test Date	May 29, 2020
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak and Qusi-peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
127.97	19.77	-9.12	10.65	43.50	-32.85	Peak
305.48	18.53	-8.33	10.20	46.00	-35.80	Peak
547.01	18.85	-2.48	16.37	46.00	-29.63	Peak
623.64	20.10	-0.97	19.13	46.00	-26.87	Peak
884.57	20.92	3.21	24.13	46.00	-21.87	Peak
977.69	20.63	4.51	25.14	54.00	-28.86	Peak

(4) Above 1G :

Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	1GHz-40GHz	Test Date	May 29, 2020
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak and Average		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
12096.25	32.54	15.83	48.37	74.00	-25.63	Peak
N/A						

Remark:

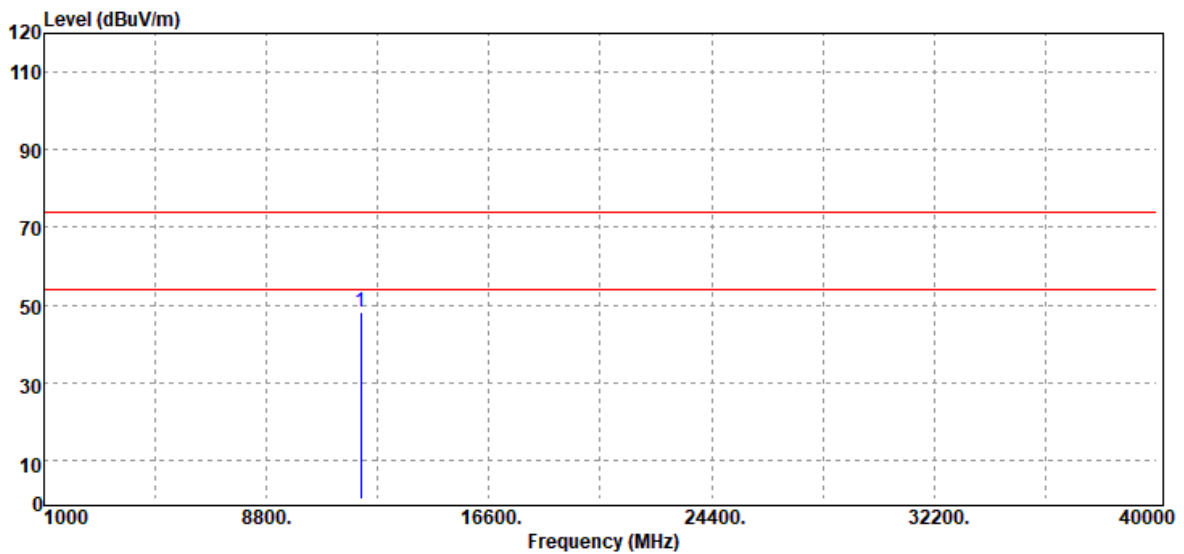
- For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit



Report No.: T200519D09-RP

Page: 37 / 49
Rev.: 01

Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	1GHz-40GHz	Test Date	May 29, 2020
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak and Average		

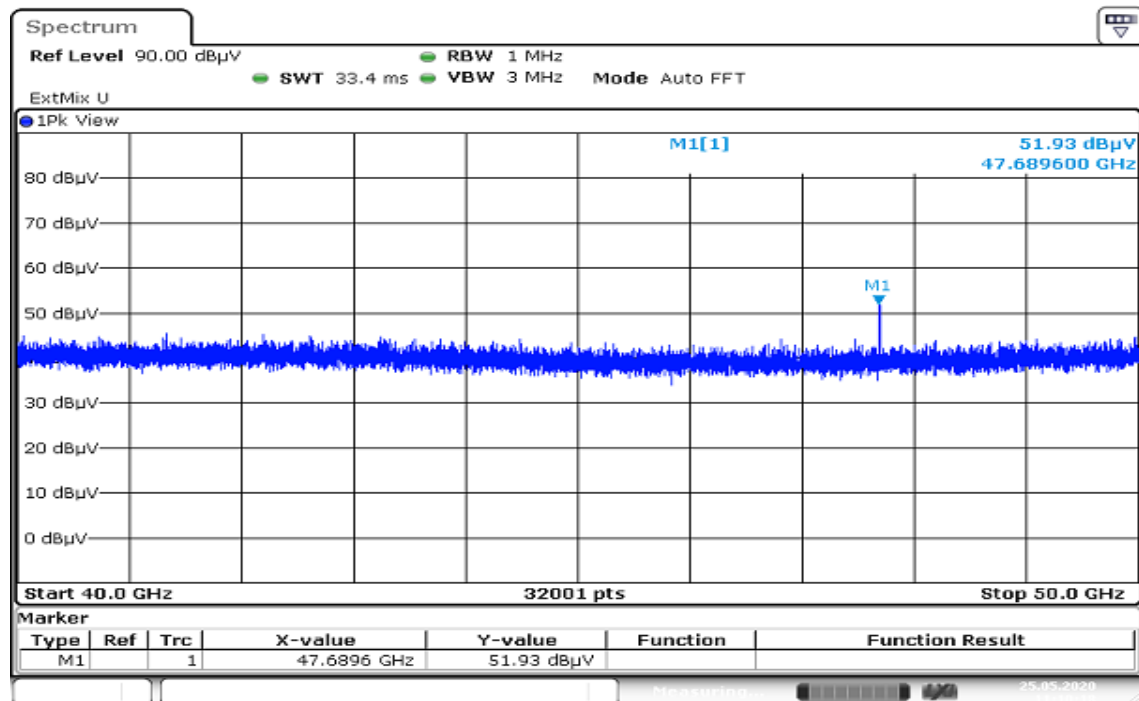


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
12096.25	32.48	15.83	48.31	74.00	-25.69	Peak
N/A						

Remark:

- For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	40GHz-50GHz	Test Date	May 29, 2020
Polarize	Vertical/Horizontal	Test Engineer	Jerry Chang
Detector	Peak and Average		



Date: 25.MAY.2020 11:10:18

Unwanted Emission 40GHz~50GHz

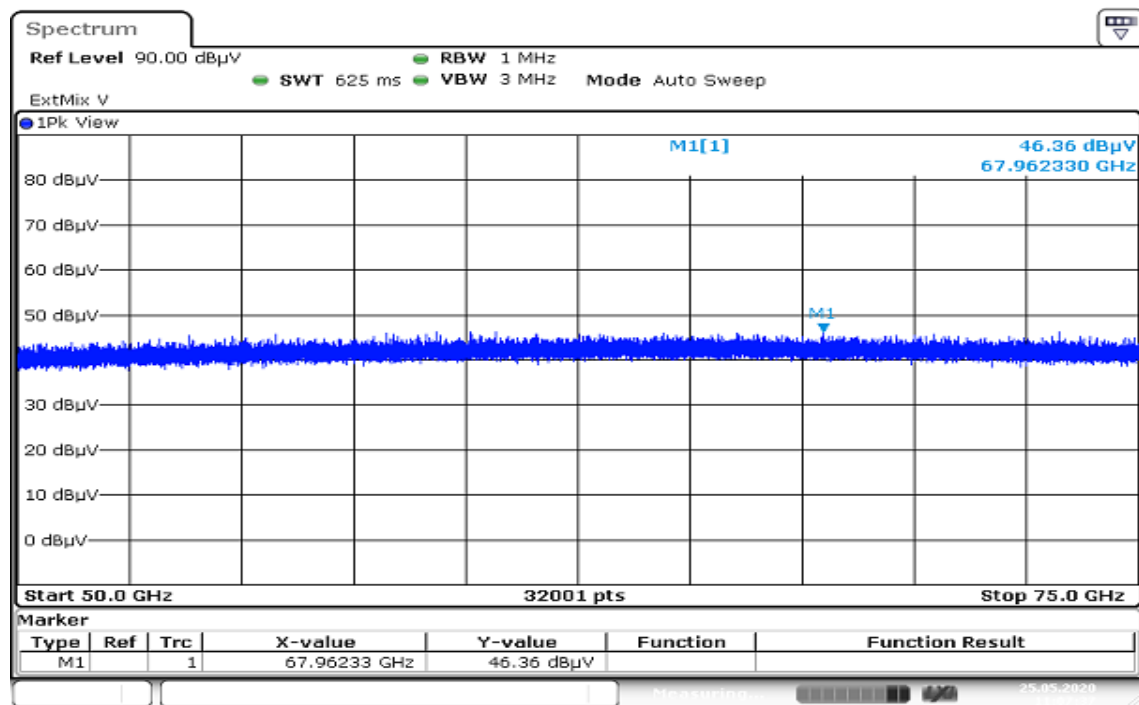
Frequency (GHz)	Spectrum Reading (dBuV)	Antenna Factor (dB/m)	Distance (m)	dBuV/m	Limit (dBuV/m)
47.6896	51.93	44.7	0.15	96.63	<= 100

$$\text{dBuV/m} = \text{Spectrum Reading (dBuV)} + \text{Antenna Factor (dB/m)}$$

Remark:

- For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	50GHz-75GHz	Test Date	May 29, 2020
Polarize	Vertical/Horizontal	Test Engineer	Jerry Chang
Detector	Peak and Average		

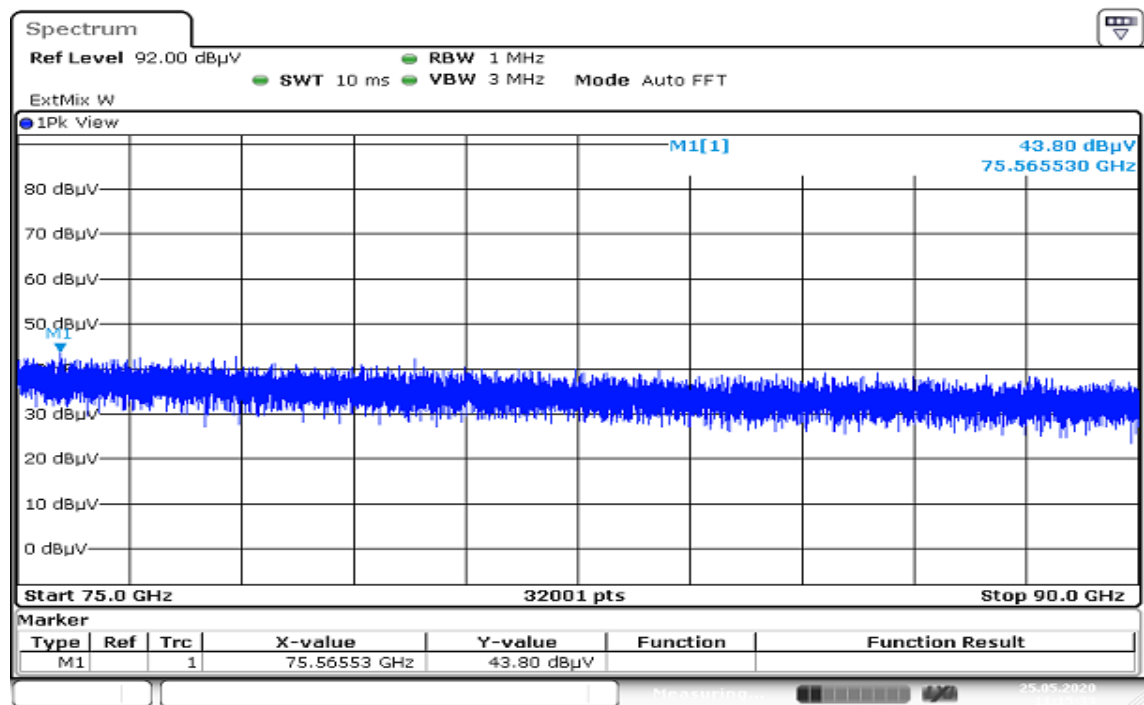


Unwanted Emission 50GHz~75GHz					
Frequency (GHz)	Spectrum Reading (dBuV)	Antenna Factor (dB/m)	Distance (m)	dBuV/m	Limit (dBuV/m)
67.96233	46.36	45.6	0.15	91.96	<= 100
dBuV/m = Spectrum Reading (dBuV) + Antenna Factor (dB/m)					

Remark:

- For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	75GHz-90GHz	Test Date	May 29, 2020
Polarize	Vertical/Horizontal	Test Engineer	Jerry Chang
Detector	Peak and Average		



Date: 25.MAY.2020 11:15:32

Unwanted Emission 75GHz~90GHz

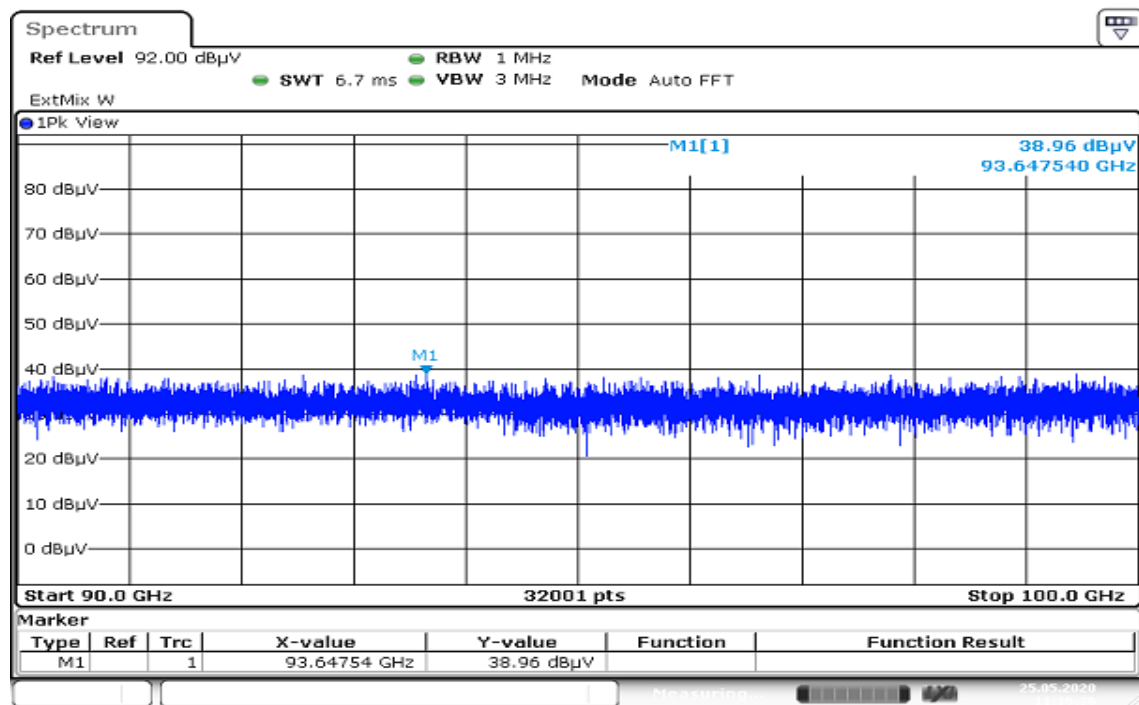
Frequency (GHz)	Spectrum Reading (dBuV)	Antenna Factor (dB/m)	Distance (m)	dBuV/m	Limit (dBuV/m)
75.56553	43.8	48.8	0.15	92.6	<= 100

$$\text{dBuV/m} = \text{Spectrum Reading (dBuV)} + \text{Antenna Factor (dB/m)}$$

Remark:

- For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	90GHz-100GHz	Test Date	May 29, 2020
Polarize	Vertical/Horizontal	Test Engineer	Jerry Chang
Detector	Peak and Average		



Date: 25.MAY.2020 11:16:36

Unwanted Emission 90GHz~100GHz

Frequency (GHz)	Spectrum Reading (dBuV)	Antenna Factor (dB/m)	Distance (m)	dBuV/m	Limit (dBuV/m)
93.64754	38.96	48.8	0.15	87.76	<= 100

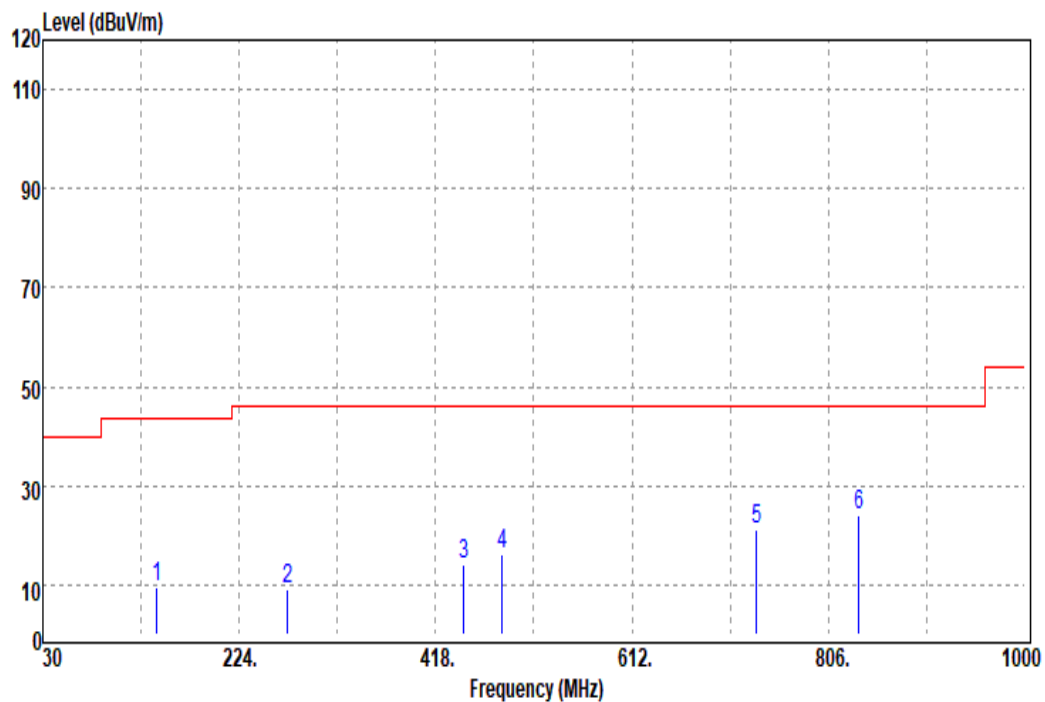
$$\text{dBuV/m} = \text{Spectrum Reading (dBuV)} + \text{Antenna Factor (dB/m)}$$

Remark:

- For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit

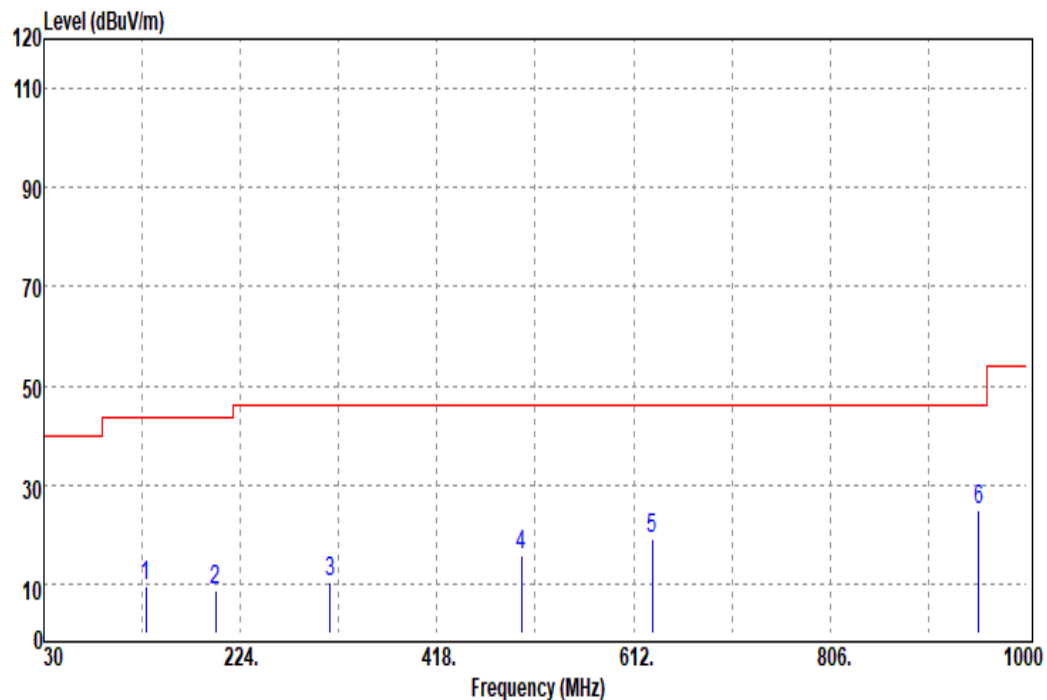
24.2125GHz

Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	30MHz-1GHz	Test Date	May 29, 2020
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak and Qusi-peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
142.52	19.45	-10.01	9.44	43.50	-34.06	Peak
271.53	18.06	-8.81	9.25	46.00	-36.75	Peak
446.13	18.49	-4.39	14.10	46.00	-31.90	Peak
483.96	19.37	-3.28	16.09	46.00	-29.91	Peak
735.19	20.68	0.57	21.25	46.00	-24.75	Peak
836.07	21.49	2.55	24.04	46.00	-21.96	Peak

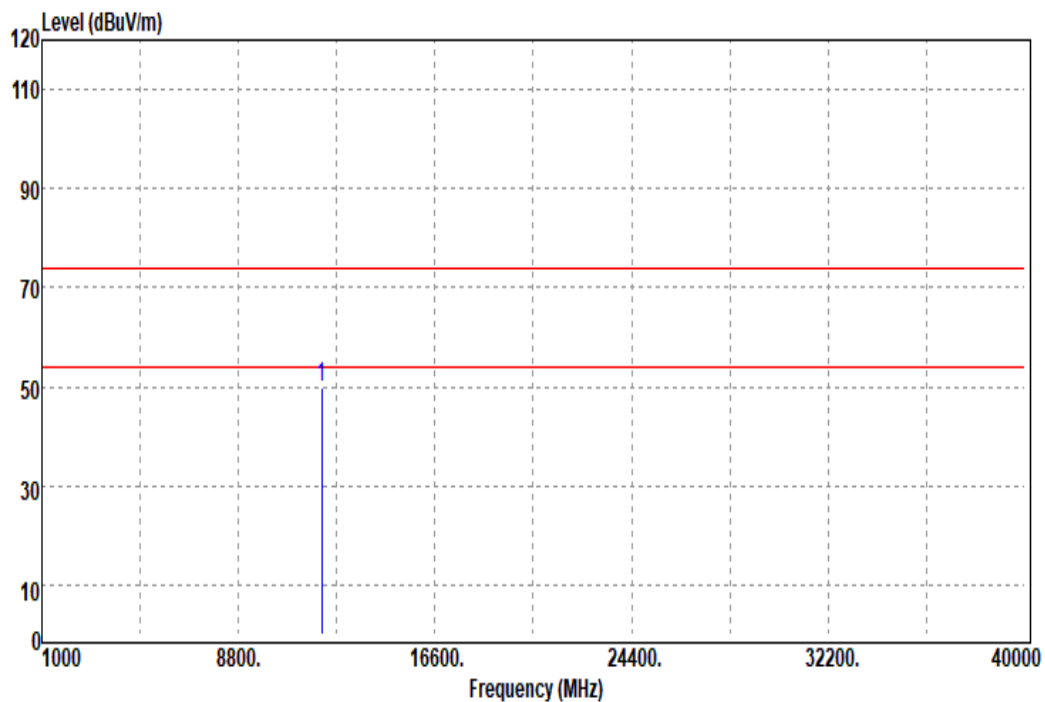
Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	30MHz-1GHz	Test Date	May 29, 2020
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak and Qusi-peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
130.88	18.59	-9.17	9.42	43.50	-34.08	Peak
199.75	18.39	-9.58	8.81	43.50	-34.69	Peak
312.27	18.50	-8.06	10.44	46.00	-35.56	Peak
501.42	18.93	-3.29	15.64	46.00	-30.36	Peak
630.43	19.67	-0.74	18.93	46.00	-27.07	Peak
952.47	20.92	4.14	25.06	46.00	-20.94	Peak

(4) Above 1G :

Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	1GHz-40GHz	Test Date	May 29, 2020
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak and Average		

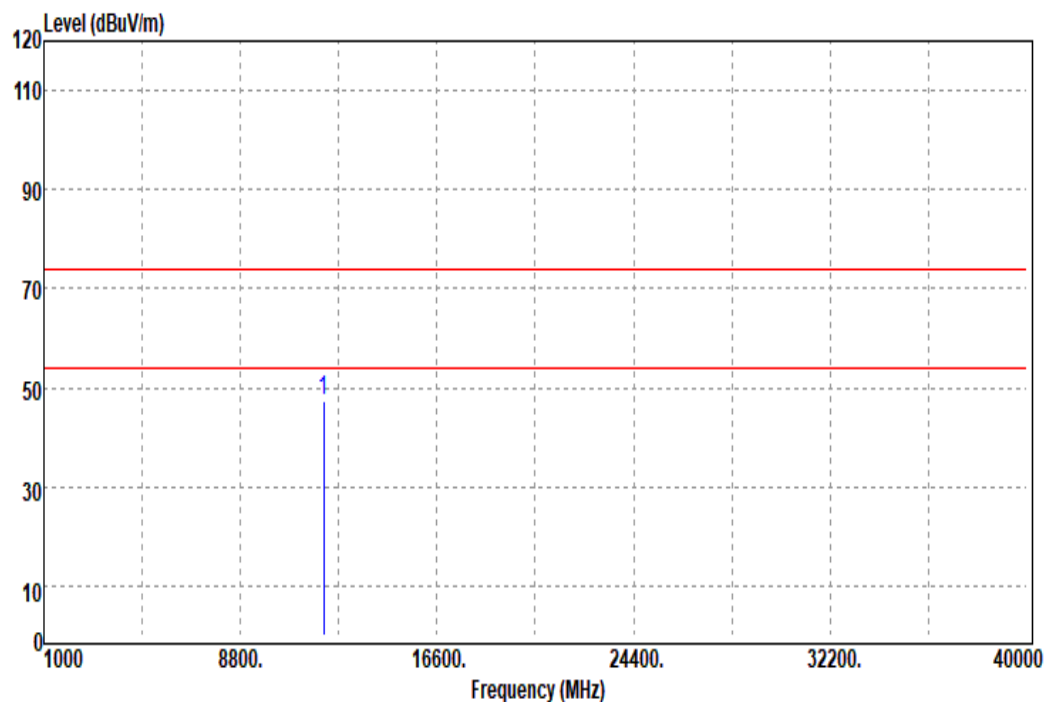


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
12106.25	33.83	15.87	49.70	74.00	-24.30	Peak
N/A						

Remark:

- For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	1GHz-40GHz	Test Date	May 29, 2020
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak and Average		

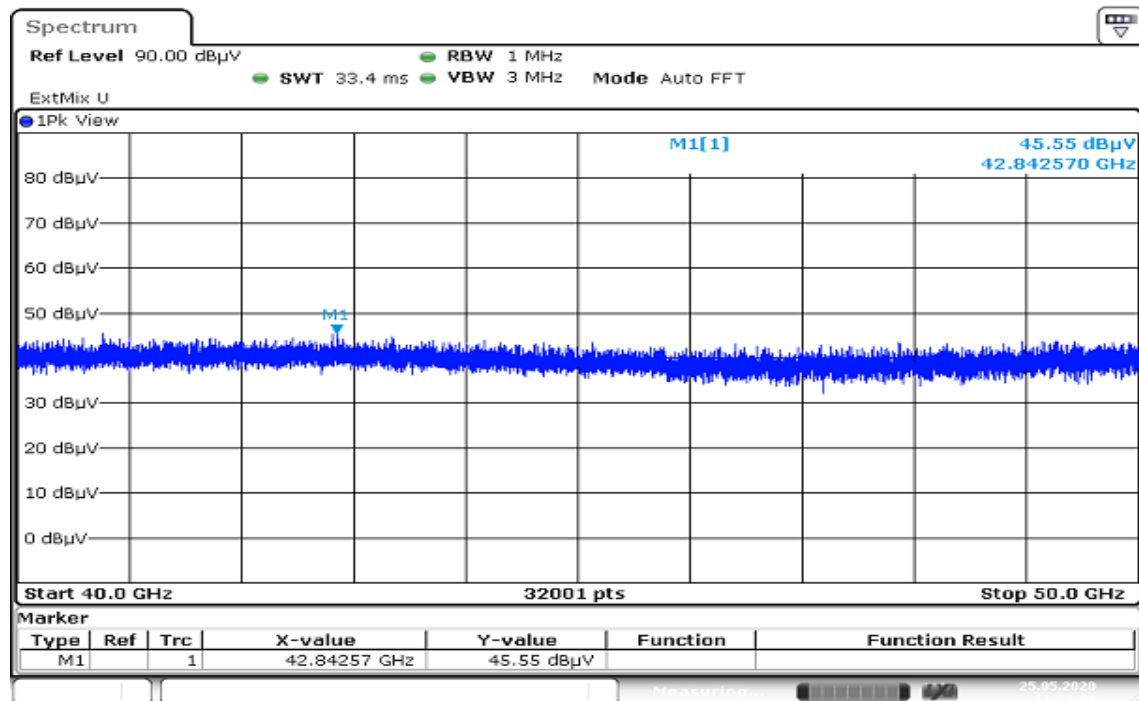


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
12106.25	31.52	15.87	47.39	74.00	-26.61	Peak
N/A						

Remark:

- For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	40GHz-50GHz	Test Date	May 29, 2020
Polarize	Vertical/Horizontal	Test Engineer	Jerry Chang
Detector	Peak and Average		



Date: 25.MAY.2020 11:11:01

Unwanted Emission 40GHz~50GHz

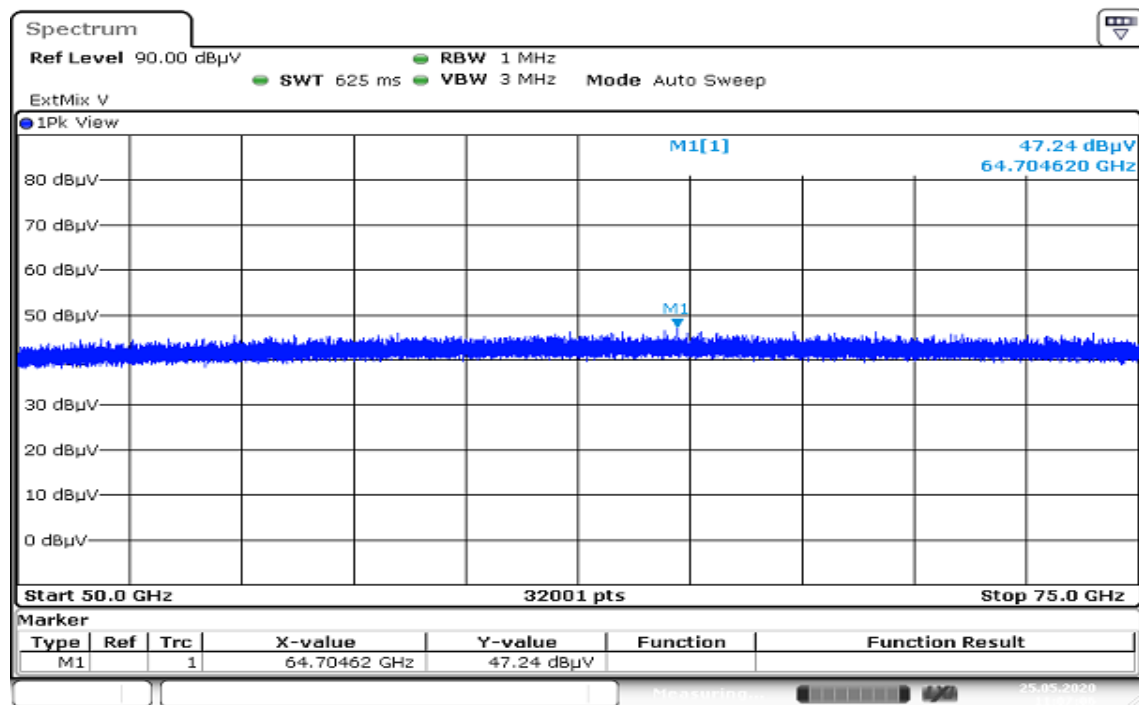
Frequency (GHz)	Spectrum Reading (dBuV)	Antenna Factor (dB/m)	Distance (m)	dBuV/m	Limit (dBuV/m)
42.84257	45.55	44.7	0.15	90.25	<= 100

$$\text{dBuV/m} = \text{Spectrum Reading (dBuV)} + \text{Antenna Factor (dB/m)}$$

Remark:

- For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	50GHz-75GHz	Test Date	May 29, 2020
Polarize	Vertical/Horizontal	Test Engineer	Jerry Chang
Detector	Peak and Average		



Date: 25.MAY.2020 11:07:06

Unwanted Emission 50GHz~75GHz

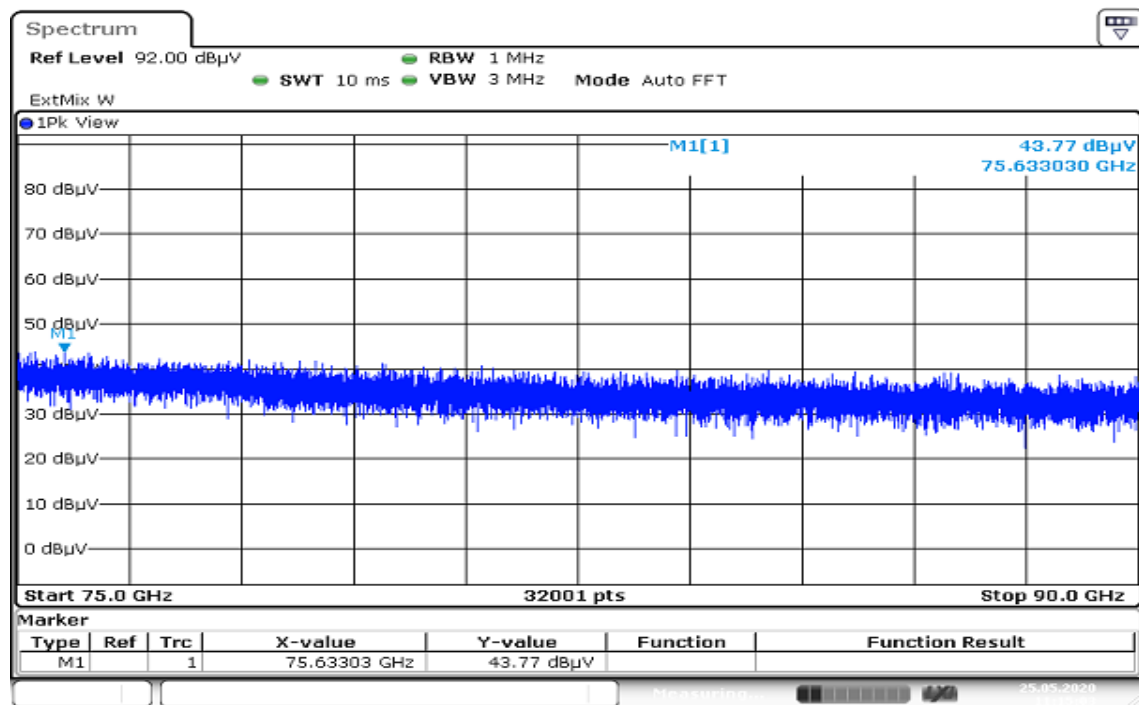
Frequency (GHz)	Spectrum Reading (dBuV)	Antenna Factor (dB/m)	Distance (m)	dBuV/m	Limit (dBuV/m)
64.70462	47.24	45.6	0.15	92.84	<= 100

$$\text{dBuV/m} = \text{Spectrum Reading (dBuV)} + \text{Antenna Factor (dB/m)}$$

Remark:

- For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	75GHz-90GHz	Test Date	May 29, 2020
Polarize	Vertical/Horizontal	Test Engineer	Jerry Chang
Detector	Peak and Average		



Date: 25.MAY.2020 11:15:03

Unwanted Emission 75GHz~90GHz

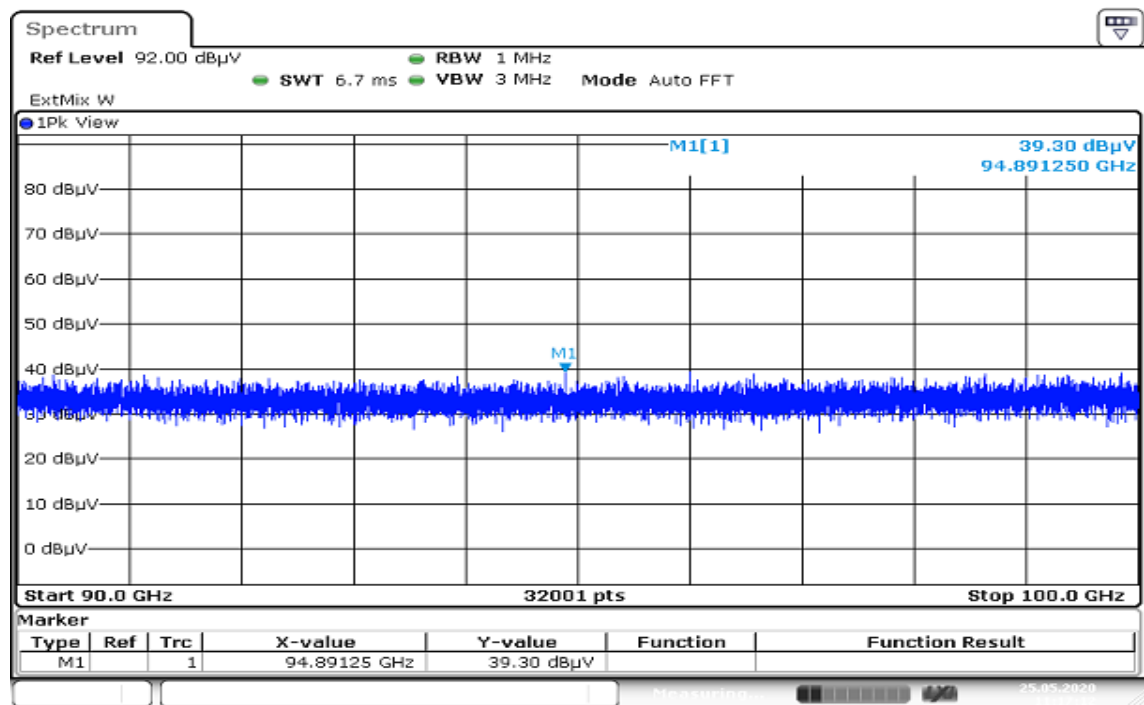
Frequency (GHz)	Spectrum Reading (dBuV)	Antenna Factor (dB/m)	Distance (m)	dBuV/m	Limit (dBuV/m)
75.63303	43.77	48.8	0.15	92.57	<= 100

$$\text{dBuV/m} = \text{Spectrum Reading (dBuV)} + \text{Antenna Factor (dB/m)}$$

Remark:

- For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test Mode:	TX-24GHz	Temp/Hum	24.3(°C)/ 63%RH
Test Item	90GHz-100GHz	Test Date	May 29, 2020
Polarize	Vertical/Horizontal	Test Engineer	Jerry Chang
Detector	Peak and Average		



Unwanted Emission 90GHz~100GHz

Frequency (GHz)	Spectrum Reading (dBuV)	Antenna Factor (dB/m)	Distance (m)	dBuV/m	Limit (dBuV/m)
94.89125	39.3	48.8	0.15	88.1	<= 100

$$\text{dBuV/m} = \text{Spectrum Reading (dBuV)} + \text{Antenna Factor (dB/m)}$$

Remark:

- For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit

--End of Report--