FCC Radio Test Report

FCC ID: 2ACSVHF-LPS170

This report concerns: Original Grant

Project No.	:	2103H034
Equipment	:	Low Power SDIO Wi-Fi + BLE Module
Brand Name	:	High-Flying
Test Model	:	HF-LPS170
Series Model	:	N/A
Applicant	:	High-Flying Electronics Technology Co., Ltd.
Address	:	Room 1002, Building 1, No.3000, Longdong Avenue, Pudong New Area, Shanghai ,China
Manufacturer	:	High-Flying Electronics Technology Co., Ltd.
Address	:	Room 1002, Building 1, No.3000, Longdong Avenue, Pudong New Area, Shanghai ,China
Factory	:	China Dragon Technology Limited
Address	:	B4 Building, Haosan NO.1 Industrial Zone, Nanpu Road,Xinqiao Street, Baoan District, Shenzhen
Date of Receipt	:	Apr. 22, 2021
Date of Test	:	Apr. 22, 2021~Jun.04, 2021
Issued Date	:	Jun. 16, 2021
Report Version	:	R00
Test Sample	:	Engineering Sample No.: SH2021040798-2
Standard(s)	:	FCC CFR Title 47, Part 15, Subpart C FCC KDB 558074 D01 15.247 Meas Guidance v05r02 ANSI C63.10-2013

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

Maker Qi

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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, A2LA, or any agency of the U.S. Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and ourselves, the test report shall not be reproduced, except in full, without our written approval.

BTL's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.
Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

Table of Contents Page

REPORT ISSUED HISTORY 6

1 . SUMMARY OF TEST RESULTS 7

1.1 TEST FACILITY 8

1.2 MEASUREMENT UNCERTAINTY 8

1.3 TEST ENVIRONMENT CONDITIONS 8

2 . GENERAL INFORMATION 9

2.1 GENERAL DESCRIPTION OF EUT 9

2.2 DESCRIPTION OF TEST MODES 10

2.3 PARAMETERS OF TEST SOFTWARE 11

2.4 DUTY CYCLE 12

2.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED 13

2.6 SUPPORT UNITS 13

3 . AC POWER LINE CONDUCTED EMISSIONS 14

3.1 LIMIT 14

3.2 TEST PROCEDURE 14

3.3 DEVIATION FROM TEST STANDARD 14

3.4 TEST SETUP 15

3.5 EUT OPERATION CONDITIONS 15

3.6 TEST RESULTS 15

4 . RADIATED EMISSIONS 16

4.1 LIMIT 16

4.2 TEST PROCEDURE 17

4.3 DEVIATION FROM TEST STANDARD 18

4.4 TEST SETUP 18

4.5 EUT OPERATION CONDITIONS 19

4.6 TEST RESULTS - 9 KHZ TO 30 MHZ 19

4.7 TEST RESULTS - 30 MHZ TO 1000 MHZ 19

4.8 TEST RESULTS - ABOVE 1000 MHZ 19

5 . BANDWIDTH 20

5.1 LIMIT 20

5.2 TEST PROCEDURE 20

5.3 DEVIATION FROM STANDARD 20

5.4 TEST SETUP 20

Table of Contents Page

5.5 EUT OPERATION CONDITIONS 20
5.6 TEST RESULTS 20
6 . MAXIMUM OUTPUT POWER 21
6.1 LIMIT 21
6.2 TEST PROCEDURE 21
6.3 DEVIATION FROM STANDARD 21
6.4 TEST SETUP 21
6.5 EUT OPERATION CONDITIONS 21
6.6 TEST RESULTS 21
7 . CONDUCTED SPURIOUS EMISSIONS 22
7.1 LIMIT 22
7.2 TEST PROCEDURE 22
7.3 DEVIATION FROM STANDARD 22
7.4 TEST SETUP 22
7.5 EUT OPERATION CONDITIONS 22
7.6 TEST RESULTS 22
8 . POWER SPECTRAL DENSITY 23
8.1 LIMIT 23
8.2 TEST PROCEDURE 23
8.3 DEVIATION FROM STANDARD 23
8.4 TEST SETUP 23
8.5 EUT OPERATION CONDITIONS 23
8.6 TEST RESULTS 23
9 . MEASUREMENT INSTRUMENTS LIST 24
10 . EUT TEST PHOTO 26
APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS 28
APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ 29
APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ 30
APPENDIX D - RADIATED EMISSION- ABOVE 1000 MHZ 33
APPENDIX E - BANDWIDTH 70
APPENDIX F - MAXIMUM OUTPUT POWER 74
APPENDIX G - CONDUCTED SPURIOUS EMISSIONS 76

Table of Contents

Page

APPENDIX H - POWER SPECTRAL DENSITY **80**

REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Jun. 16, 2021

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC CFR Title 47, Part 15, Subpart C				
Standard(s) Section	**Test Item**	**Test Result**	**Judgment**	**Remark**
15.207	AC Power Line Conducted Emissions	APPENDIX A	N/A	------
15.247(d) 15.205(a) 15.209(a)	Radiated Emissions	APPENDIX B APPENDIX C APPENDIX D	PASS	------
15.247(a)(2)	Bandwidth	APPENDIX E	PASS	------
15.247(b)(3)	Maximum Output Power	APPENDIX F	PASS	------
15.247(d)	Conducted Spurious Emissions	APPENDIX G	PASS	------
15.247(e)	Power Spectral Density	APPENDIX H	PASS	------
15.203	Antenna Requirement	------	PASS	Note(2)

Note:

(1) “N/A” denotes test is not applicable in this test report.

(2) The device what use a permanently attached antenna were considered sufficient to comply with the provisions of 15.203.

1.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai 201210,China
BTL's Test Firm Registration Number for FCC: 476765
BTL's Designation Number for FCC: CN1241

1.2 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))
The BTL measurement uncertainty as below table:

A. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
SH-CB01	CISPR	9 KHz~30 MHz	V	3.79
		9 KHz~30 MHz	H	3.57
		30 MHz~200 MHz	V	4.04
		30 MHz~200 MHz	H	3.76
		200 MHz~1,000 MHz	V	4.24
		200 MHz~1,000 MHz	H	3.84
		1 GHz~18 GHz	V	4.46
		1 GHz~18 GHz	H	4.40
		18 GHz~40 GHz	V	3.95
		18 GHz~40 GHz	H	3.95

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By
Radiated Emissions-30MHz to 1000MHz	24°C	58%	DC 3.3V	Forest Li
Radiated Emissions-Above 1000MHz	24°C	58%	DC 3.3V	Forest Li
Bandwidth	26°C	42%	DC 3.3V	Danny Dang
Maximum Output Power	26°C	42%	DC 3.3V	Danny Dang
Conducted Spurious Emissions	26°C	42%	DC 3.3V	Danny Dang
Power Spectral Density	26°C	42%	DC 3.3V	Danny Dang

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Low Power SDIO Wi-Fi + BLE Module
Brand Name	High-Flying
Test Model	HF-LPS170
Series Model	N/A
Model Difference(s)	N/A
Software Version	2.0.07
Hardware Version	V2.0
Power Source	DC voltage supplied via Notebook.
Power Rating	DC 3.3V
Operation Frequency	2412 MHz ~ 2462 MHz
Modulation Type	IEEE 802.11b: DSSS IEEE 802.11g: OFDM IEEE 802.11n: OFDM
Bit Rate of Transmitter	IEEE 802.11b: 11/5.5/2/1 Mbps IEEE 802.11g: 54/48/36/24/18/12/9/6 Mbps IEEE 802.11n: up to 65 Mbps
Maximum Output Power	IEEE 802.11g: 25.83 dBm (0.3828 W)

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. Channel List:

CH01 - CH11 for IEEE 802.11b, IEEE 802.11g, IEEE 802.11n(HT20)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

3. Antenna Specification:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Dipole	N/A	3

Note:

1) The antenna gain and beamforming gain are provided by the manufacturer.

2.2 DESCRIPTION OF TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

Pretest Mode	Description
Mode 1	TX B Mode Channel 01/06/11
Mode 2	TX G Mode Channel 01/06/11
Mode 3	TX N(HT20) Mode Channel 01/06/11
Mode 4	TX B Mode Channel 06

Following mode(s) was (were) found to be the worst case(s) and selected for the final test.

Radiated emissions test - Below 1GHz	
Final Test Mode	Description
Mode 4	TX B Mode Channel 06

Radiated emissions test- Above 1GHz	
Final Test Mode	Description
Mode 1	TX B Mode Channel 01/06/11
Mode 2	TX G Mode Channel 01/06/11
Mode 3	TX N(HT20) Mode Channel 01/06/11
Conducted test	
Final Test Mode	Description
Mode 1	TX B Mode Channel 01/06/11
Mode 2	TX G Mode Channel 01/06/11
Mode 3	TX N(HT20) Mode Channel 01/06/11

NOTE:

(1) All the bit rate of transmitter have been tested and found the lowest rate is found to be the worst case and recorded.

(2) For radiated emission below 1 GHz test, the TX B Mode Channel 06 is found to be the worst case and recorded.

(3) For radiated emission above 1 GHz test, the spurious points of 1GHz~26.5GHz have been pre-tested and in this report only recorded the worst case. The remaining spurious points are all below the limit value of 20dB.

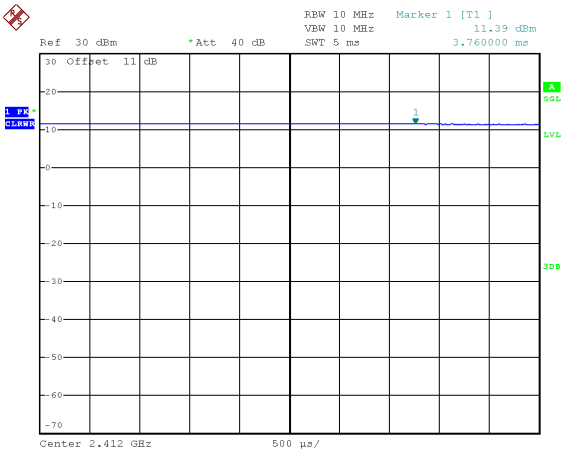
2.3 PARAMETERS OF TEST SOFTWARE

Test Software Version	BLDevCube V1.4.7		
Frequency (MHz)	2412	2437	2462
IEEE 802.11b	19.00	19.00	19.00
IEEE 802.11g	17.00	17.00	17.00
IEEE 802.11n(HT20)	16.00	16.00	16.00

2.4 DUTY CYCLE

If duty cycle is ≥ 98 %, duty factor is not required.
If duty cycle is < 98 %, duty factor shall be considered.
The output power = measured power + duty factor.

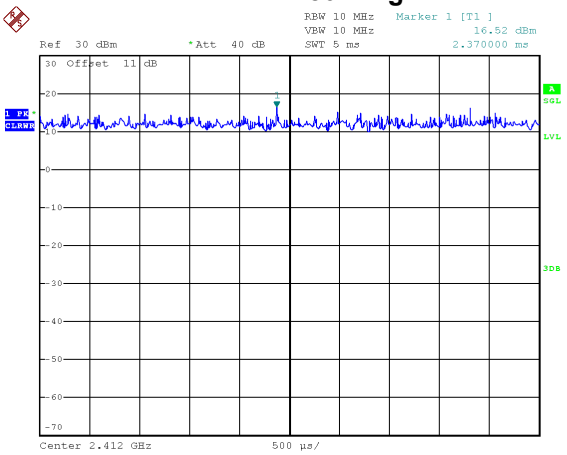
IEEE 802.11b



Date: 27.APR.2021 18:13:23

Duty cycle = 3.760 ms / 3.760 ms = 100.00%
Duty Factor = 10 log(1/Duty cycle) = 0.00

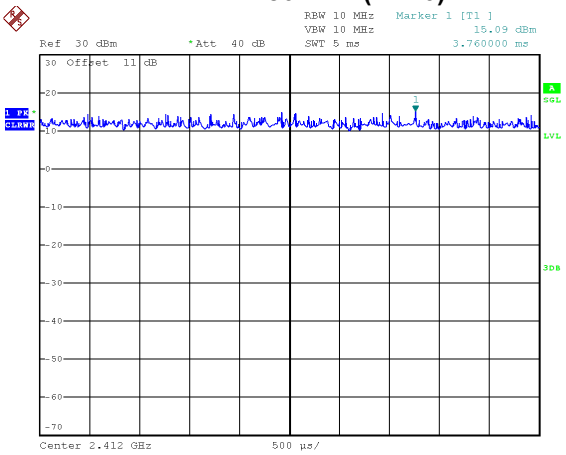
IEEE 802.11g



Date: 27.APR.2021 18:13:33

Duty cycle = 2.370 ms / 2.370 ms = 100.00%
Duty Factor = 10 log(1/Duty cycle) = 0.00

IEEE 802.11n(HT20)

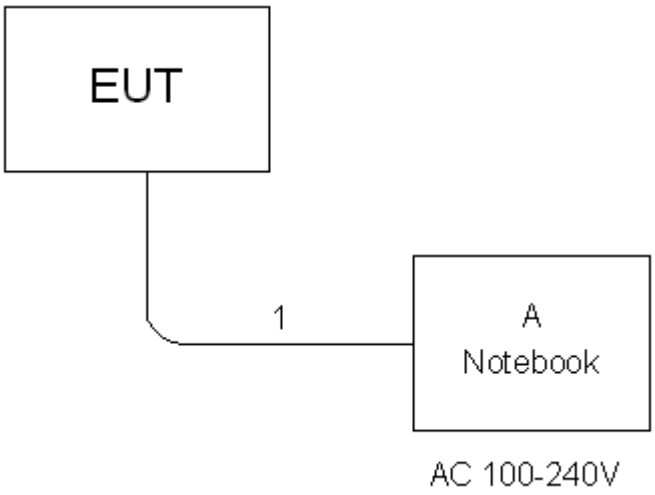


Date: 27.APR.2021 18:13:58

Duty cycle = 3.760 ms / 3.760 ms = 100.00%
Duty Factor = 10 log(1/Duty cycle) = 0.00

NOTE:
For IEEE 802.11b/g/n20:
For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10Hz.

2.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.6 SUPPORT UNITS

Item	Equipment	Brand	Model/Type No.	Series No.
A	Notebook	Dell	Inspiron 14-7472	N/A

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	USB Cable	N/A	N/A	1m

3. AC POWER LINE CONDUCTED EMISSIONS

3.1 LIMIT

Frequency of Emission (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56*	56 to 46*
0.5 - 5.0	56	46
5.0 - 30.0	60	50

NOTE:

(1) The tighter limit applies at the band edges.
(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

3.2 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

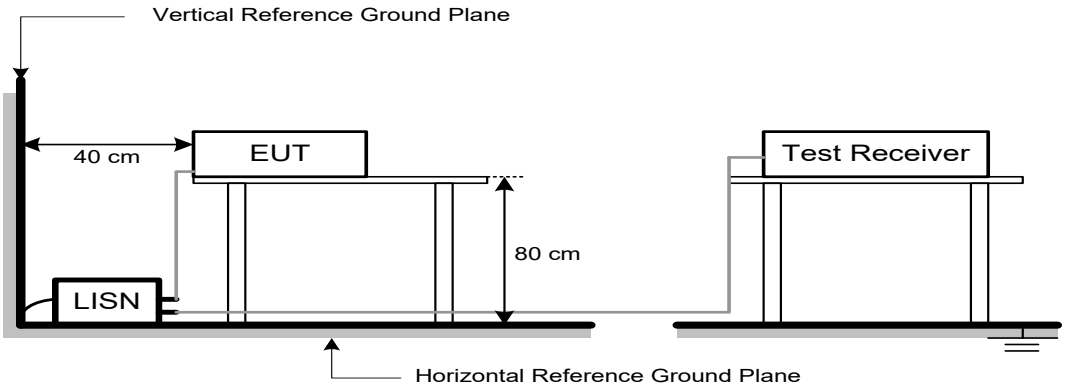
The following table is the setting of the receiver:

Receiver Parameters	Setting
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.3 DEVIATION FROM TEST STANDARD

No deviation.

3.4 TEST SETUP



3.5 EUT OPERATION CONDITIONS

EUT was programmed to be in continuously transmitting mode.

3.6 TEST RESULTS

Please refer to the APPENDIX A.

4. RADIATED EMISSIONS

4.1 LIMIT

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (9 kHz-1000 MHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000 MHz)

Frequency (MHz)	(dBuV/m at 3 m)	
	Peak	Average
Above 1000	74	54

NOTE:

(1) The limit for radiated test was performed according to FCC CFR Title 47, Part 15, Subpart C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

4.2 TEST PROCEDURE

a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1 GHz)
b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1 GHz)
c. The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1 GHz)
h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1 GHz)
i. For the actual test configuration, please refer to the related Item -EUT Test Photos.

The following table is the setting of the receiver:

Spectrum Parameters	Setting
Start ~ Stop Frequency	9 kHz~150 kHz for RBW 200 Hz
Start ~ Stop Frequency	0.15 MHz~30 MHz for RBW 9 kHz
Start ~ Stop Frequency	30 MHz~1000 MHz for RBW 100 kHz

Spectrum Parameters	Setting
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1 MHz / 3 MHz for PK value 1 MHz / 1/T Hz for AVG value

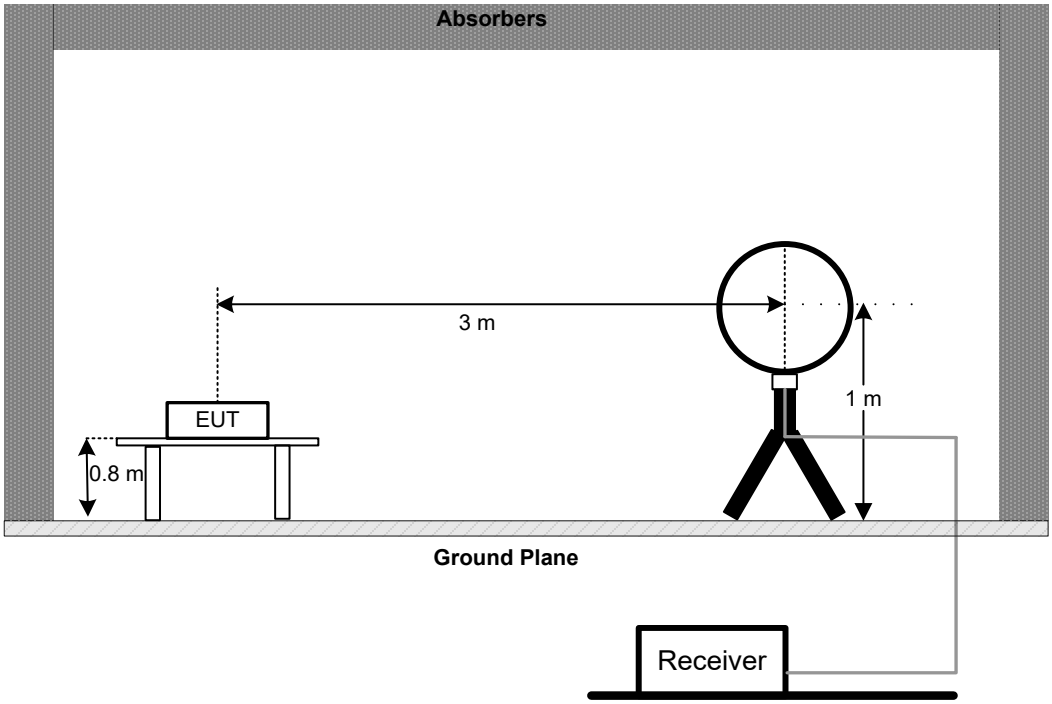
Receiver Parameters	Setting
Start ~ Stop Frequency	9 kHz~90 kHz for PK/AVG detector
Start ~ Stop Frequency	90 kHz~110 kHz for QP detector
Start ~ Stop Frequency	110 kHz~490 kHz for PK/AVG detector
Start ~ Stop Frequency	490 kHz~30 MHz for QP detector
Start ~ Stop Frequency	30 MHz~1000 MHz for QP detector
Start ~ Stop Frequency	1 GHz~26.5 GHz for PK/AVG detector

4.3 DEVIATION FROM TEST STANDARD

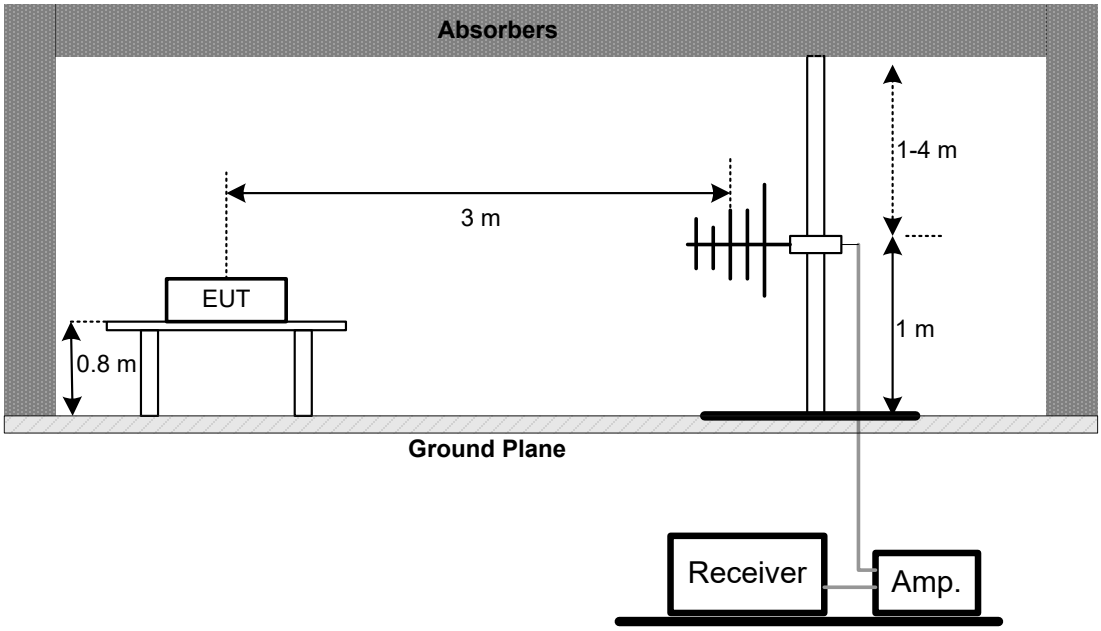
No deviation.

4.4 TEST SETUP

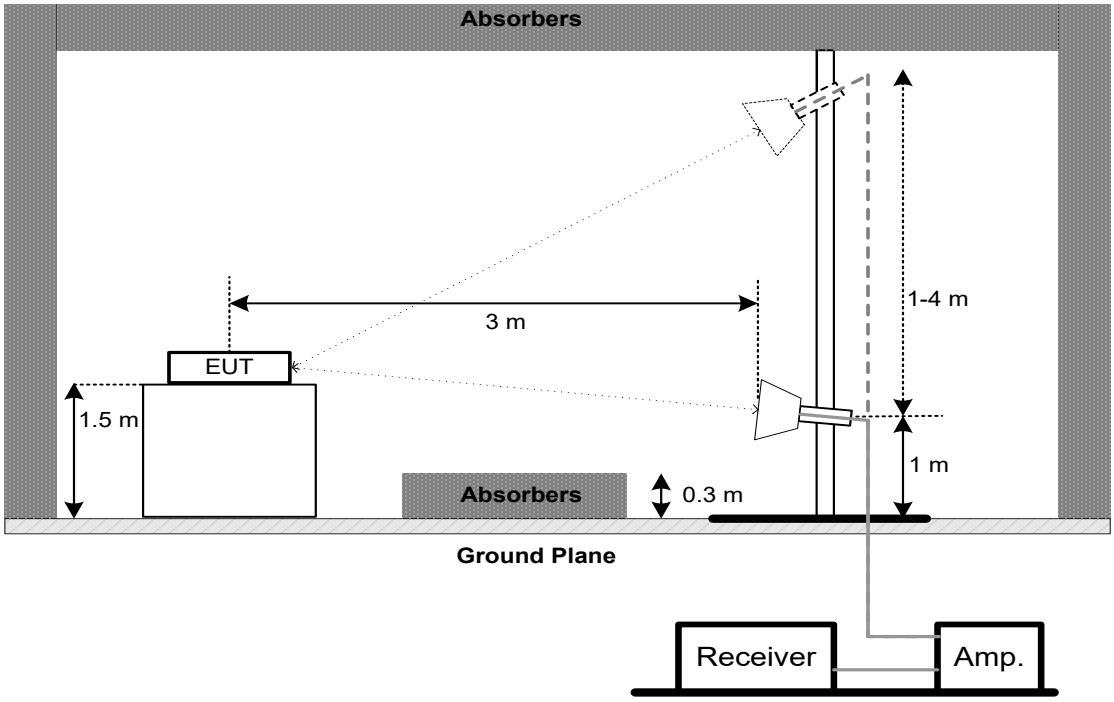
9 kHz to 30 MHz



30 MHz to 1 GHz



Above 1 GHz



4.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.6 TEST RESULTS - 9 KHZ TO 30 MHZ

Please refer to the APPENDIX B.

Remark:

(1) Distance extrapolation factor = 40 log (specific distance / test distance) (dB).
(2) Limit line = specific limits (dBuV) + distance extrapolation factor.

4.7 TEST RESULTS - 30 MHZ TO 1000 MHZ

Please refer to the APPENDIX C.

4.8 TEST RESULTS - ABOVE 1000 MHZ

Please refer to the APPENDIX D.

Remark:

(1) No limit: This is fundamental signal, the judgment is not applicable.
For fundamental signal judgment was referred to Peak output test.

5. BANDWIDTH

5.1 LIMIT

Section	Test Item	Limit
FCC 15.247(a)(2)	6 dB Bandwidth	Minimum 500 kHz
	99% Emission Bandwidth	-

5.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. The following table is the setting of the spectrum analyzer:

For 6 dB Bandwidth:

Spectrum Parameters	Setting
Span Frequency	> Measurement Bandwidth
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

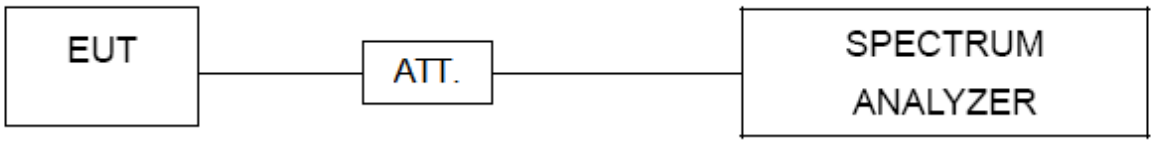
For 99% Emission Bandwidth:

Spectrum Parameters	Setting
Span Frequency	Between 1.5 times and 5.0 times the OBW
RBW	300 kHz For 20MHz 1 MHz For 40MHz
VBW	1 MHz For 20MHz 3 MHz For 40MHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULTS

Please refer to the APPENDIX E.

6. MAXIMUM OUTPUT POWER

6.1 LIMIT

Section	Test Item	Limit
FCC 15.247(b)(3)	Maximum Output Power	1.0000 Watt or 30.00 dBm

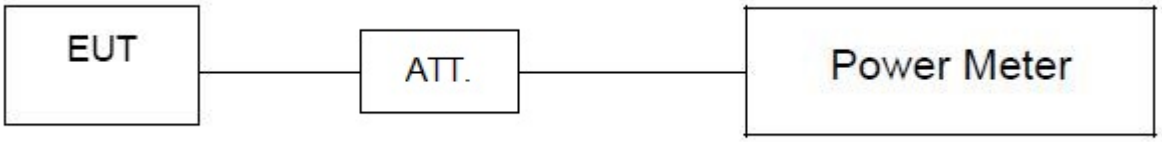
6.2 TEST PROCEDURE

a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.
b. The maximum conducted output power was performed in accordance with method 11.9.2.3.1 (for AVG power) of ANSI C63.10-2013.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 TEST RESULTS

Please refer to the APPENDIX F.

7. CONDUCTED SPURIOUS EMISSIONS

7.1 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 Output Power limits. If the transmitter complies with the Output 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 Section 15.209(a) is not required.

7.2 TEST PROCEDURE

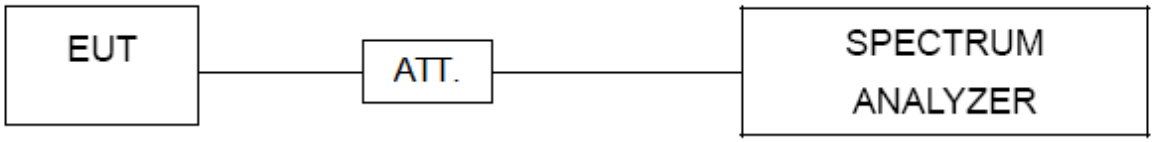
a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting
Start Frequency	30 MHz
Stop Frequency	26.5 GHz
RBW	100 kHz
VBW	100 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6 TEST RESULTS

Please refer to the APPENDIX G.

8. POWER SPECTRAL DENSITY

8.1 LIMIT

Section	Test Item	Limit
FCC 15.247(e)	Power Spectral Density	8 dBm (in any 3 kHz)

8.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.

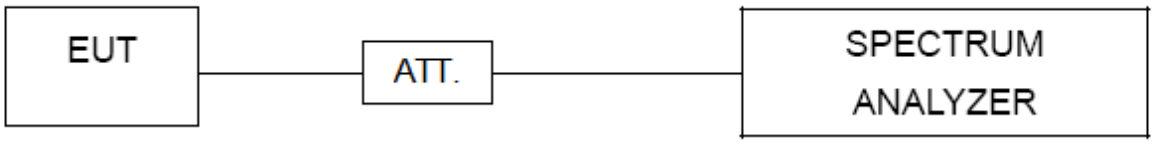
b. The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting
Span Frequency	25 MHz (20 MHz) / 60 MHz (40 MHz)
RBW	3 kHz
VBW	10 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 TEST RESULTS

Please refer to the APPENDIX H.

9. MEASUREMENT INSTRUMENTS LIST

Radiated Emissions - 9 kHz to 30 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Loop Antenna	EMCI	EMCI LPA600	275	Apr. 15, 2022
2	Cable	N/A	EMCRG400-BM-NM-10000	170628	Apr. 11, 2022
3	MXE EMI Receiver	Keysight	N9038A	MY57150106	Mar. 21, 2022
4	Measurement Software	Farad	EZ-EMC Ver.BTL-2ANT-1	N/A	N/A

Radiated Emissions - 30 MHz to 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	719	Mar. 26, 2022
2	Pre-Amplifier	emci	EMC9135	980400	Mar. 20, 2022
3	MXE EMI Receiver	Keysight	N9038A	MY57150106	Mar. 21, 2022
4	Test Cable	emci	EMC104-SM-SM-7000	170330	Apr. 11, 2022
5	Test Cable	emci	EMC104-SM-SM-1000	170331	Apr. 11, 2022
6	Test Cable	emci	EMC104-SM-NM-3500	170621	Apr. 11, 2022
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Radiated Emissions - Above 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Double-Ridged Waveguide Horn Antenna	ETS-Lindgren	9120D	9120D-1786	Mar. 26, 2022
2	Pre-Amplifier	emci	EMC012645SE	980421	May. 11, 2021 May. 10, 2022
3	EXA Spectrum Analyzer	Keysight	N9010A	MY56480545	Mar. 20, 2022
4	Test Cable	emci	EMC104-SM-SM-7000	170330	Apr. 11, 2022
5	Test Cable	emci	EMC104-SM-SM-1000	170331	Apr. 11, 2022
6	Test Cable	emci	EMC104-SM-NM-3500	170621	Apr. 11, 2022
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
8	MXE EMI Receiver	Keysight	N9038A	MY57150106	Mar. 21, 2022
9	Double-Ridged Waveguide Horn Antenna	ETS-Lindgren	3116C	00203919	Mar. 27, 2022
10	Pre-Amplifier	emci	EMC184045SE	980409	Mar. 20, 2022
11	Test Cable	emci	EMC102-KM-KM-800	170654	Apr. 15, 2022
12	Test Cable	emci	Super Reliable-40G-SS11-7000	W0030860001	Apr. 15, 2022

Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 07, 2022
2	Attenuator	Solvang Technology	5.8GHz 0-65dB	STI02-0203-01	Aug. 23, 2021

Maximum Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 07, 2022
2	Attenuator	Solvang Technology	5.8GHz 0-65dB	STI02-0203-01	Aug. 23, 2021

Antenna Conducted Spurious Emissions					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 07, 2022
2	Attenuator	Solvang Technology	5.8GHz 0-65dB	STI02-0203-01	Aug. 23, 2021

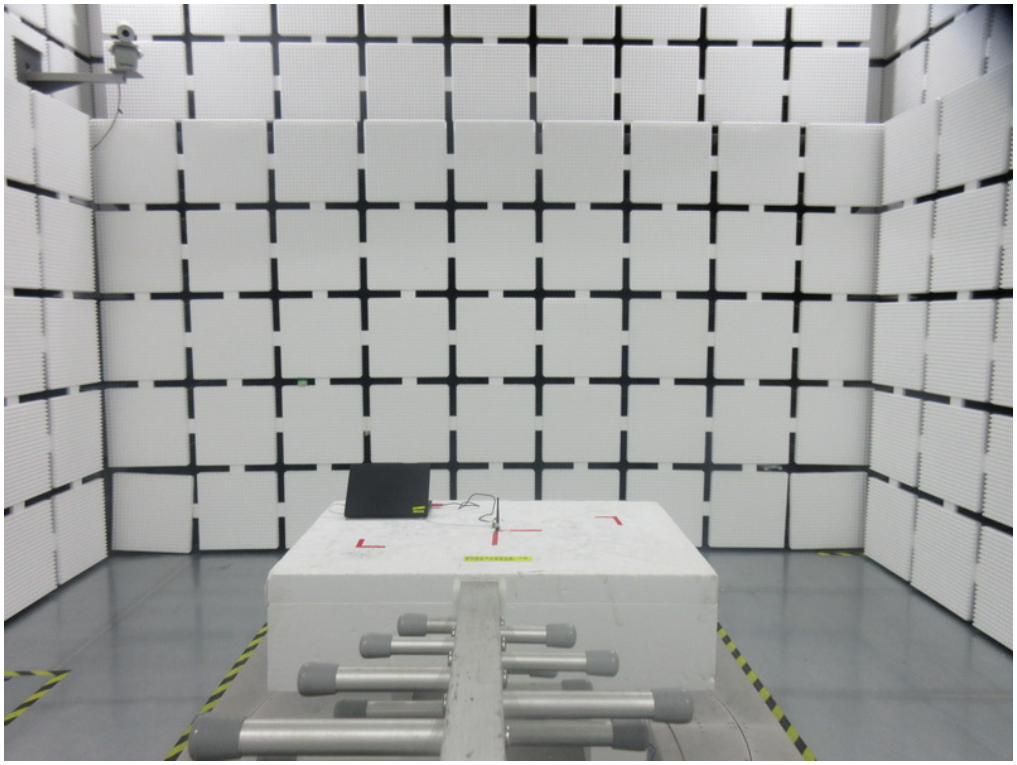
Power Spectral Density					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 07, 2022
2	Attenuator	Solvang Technology	5.8GHz 0-65dB	STI02-0203-01	Aug. 23, 2021

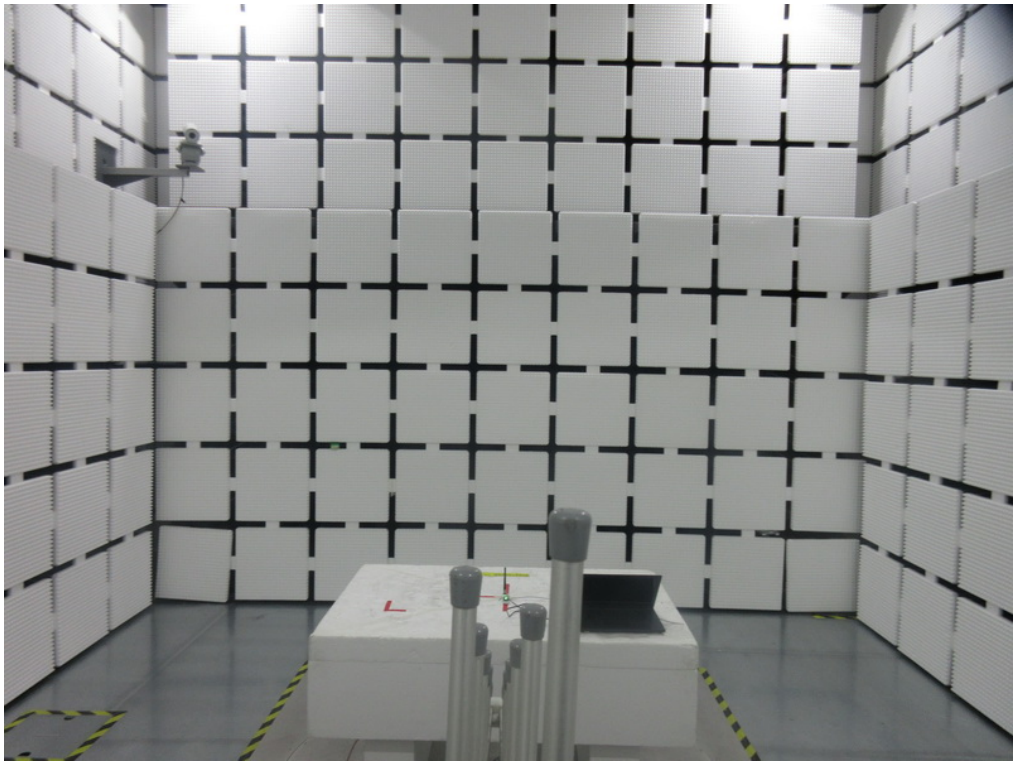
Remark: ”N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

10. EUT TEST PHOTO

Radiated Emissions Test Photos

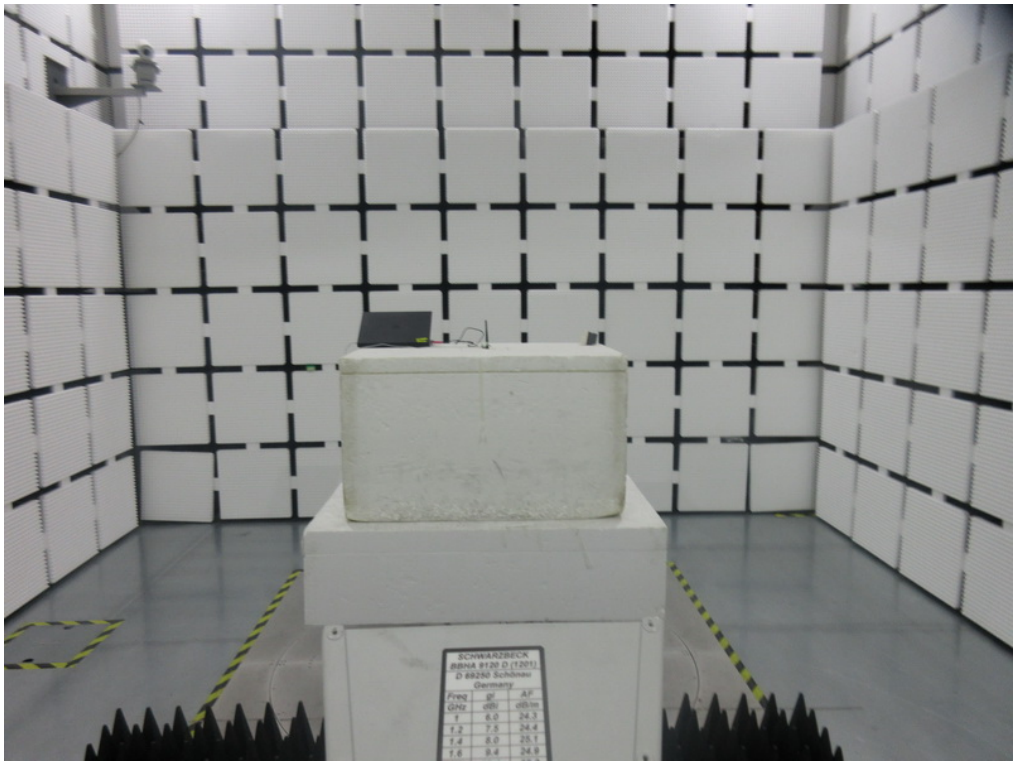
30 MHz to 1 GHz

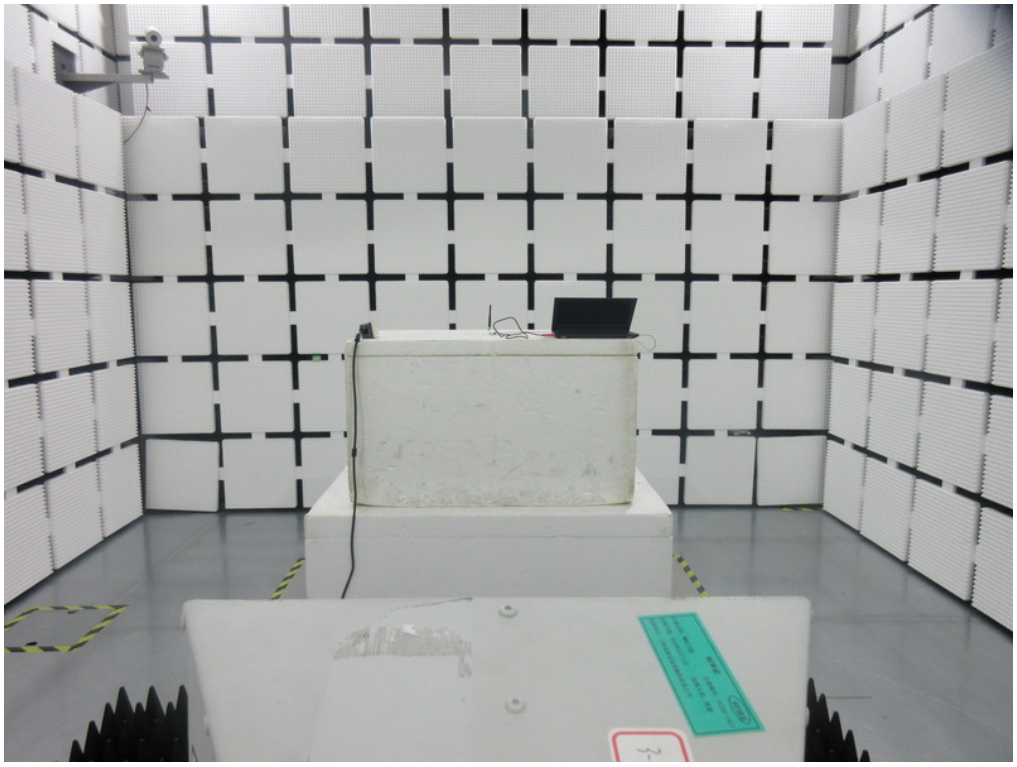




Radiated Emissions Test Photos

Above 1 GHz





APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

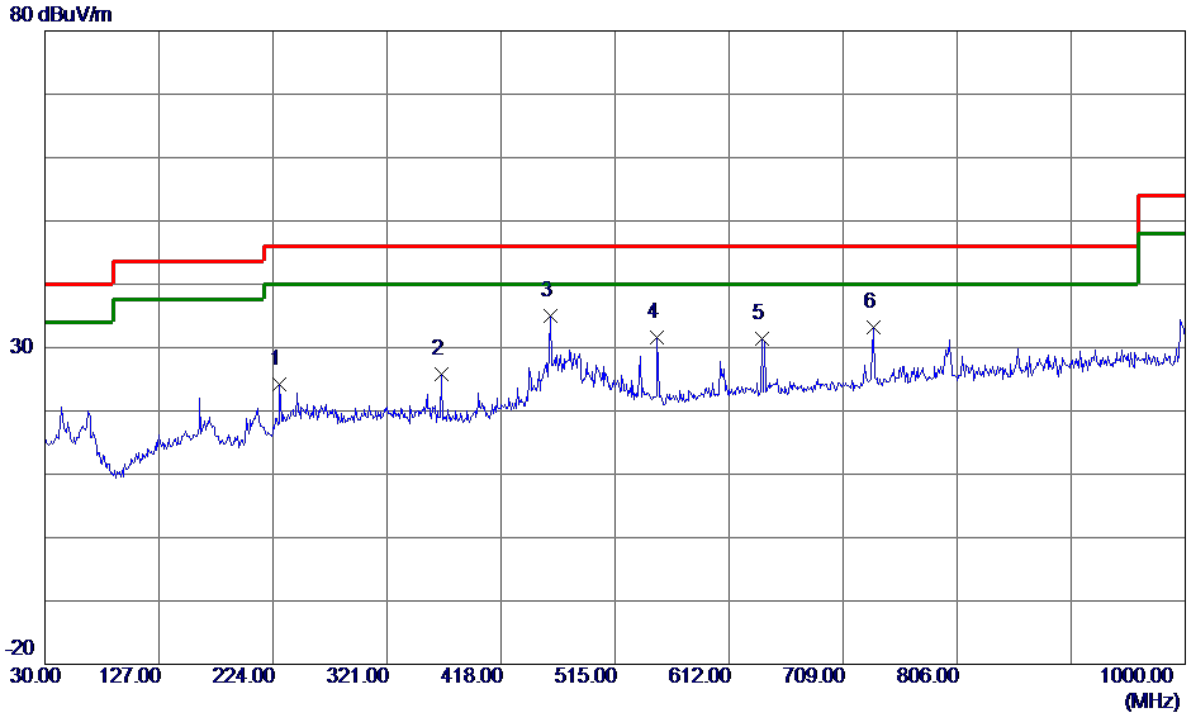
Note: The EUT is DC power supply, so this item is not applicable.

APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ

Note: The measured value have enough margin over 20dB than the limit, therefore they are not reported.

APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ

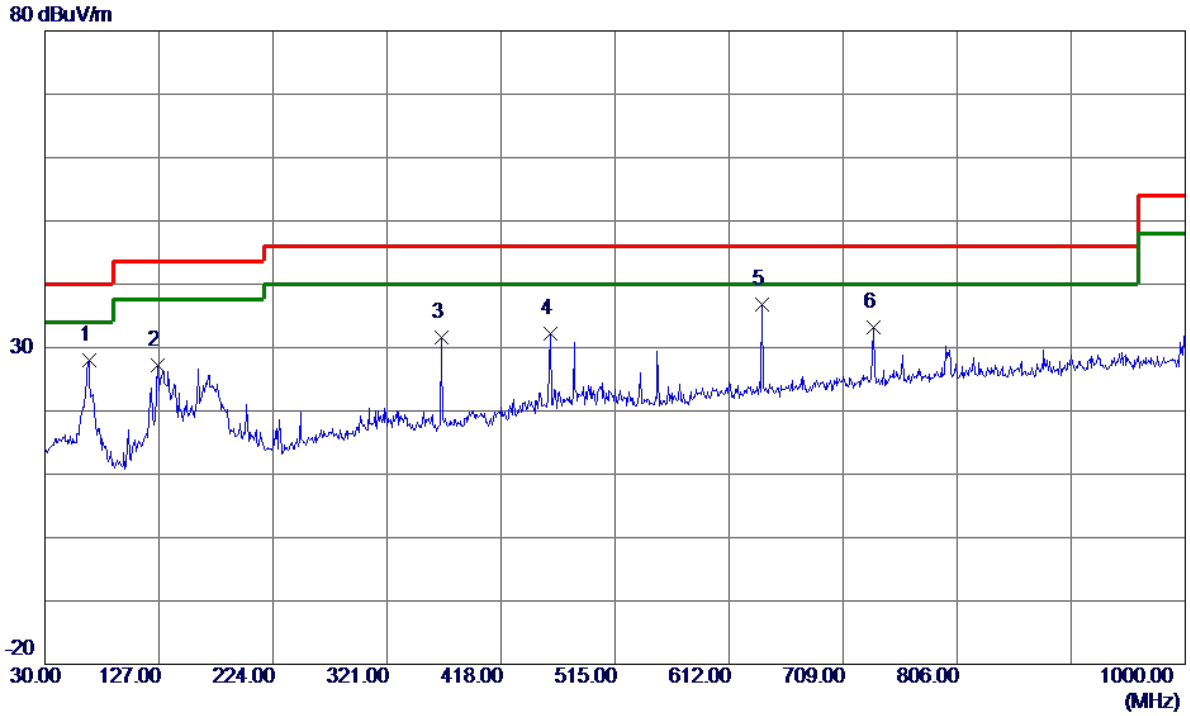
Test Mode	TX B Mode Channel 06	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	229.8200	43.10	-18.83	24.27	46.00	-21.73	Peak	
2	367.0750	39.99	-14.15	25.84	46.00	-20.16	Peak	
3 *	459.7100	46.67	-11.71	34.96	46.00	-11.04	Peak	
4	550.8900	42.01	-10.48	31.53	46.00	-14.47	Peak	
5	640.1300	40.05	-8.67	31.38	46.00	-14.62	Peak	
6	734.7050	40.59	-7.41	33.18	46.00	-12.82	Peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX B Mode Channel 06	Polarization	Horizontal

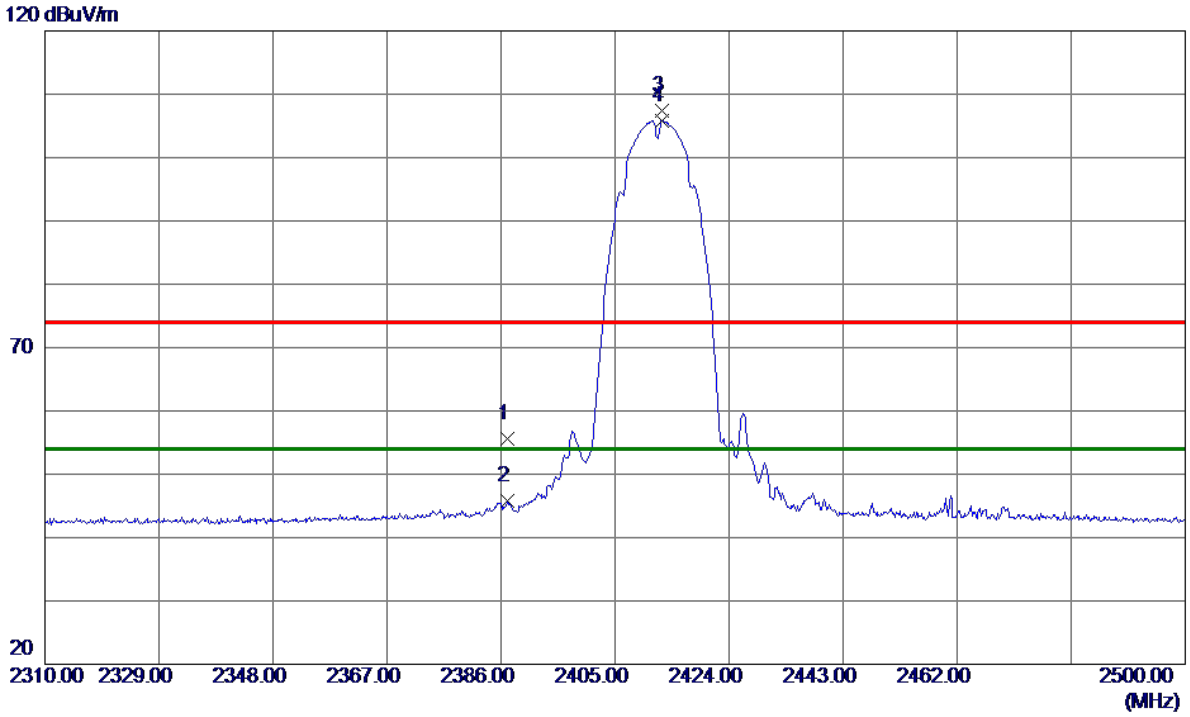


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	67.3450	46.08	-18.15	27.93	40.00	-12.07	Peak	
2	126.0300	45.19	-18.08	27.11	43.50	-16.39	Peak	
3	367.0750	45.74	-14.15	31.59	46.00	-14.41	Peak	
4	459.7100	43.87	-11.71	32.16	46.00	-13.84	Peak	
5 *	640.1300	45.44	-8.67	36.77	46.00	-9.23	Peak	
6	734.7050	40.66	-7.41	33.25	46.00	-12.75	Peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX D - RADIATED EMISSION- ABOVE 1000 MHZ

Test Mode	TX B Mode 2412 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2387.1399	23.94	31.74	55.68	74.00	-18.32	Peak	
2	2387.1399	13.98	31.74	45.72	54.00	-8.28	AVG	
3	2412.8850	75.77	31.72	107.49	74.00	33.49	Peak	No limit
4 *	2412.8850	74.15	31.72	105.87	54.00	51.87	AVG	No limit

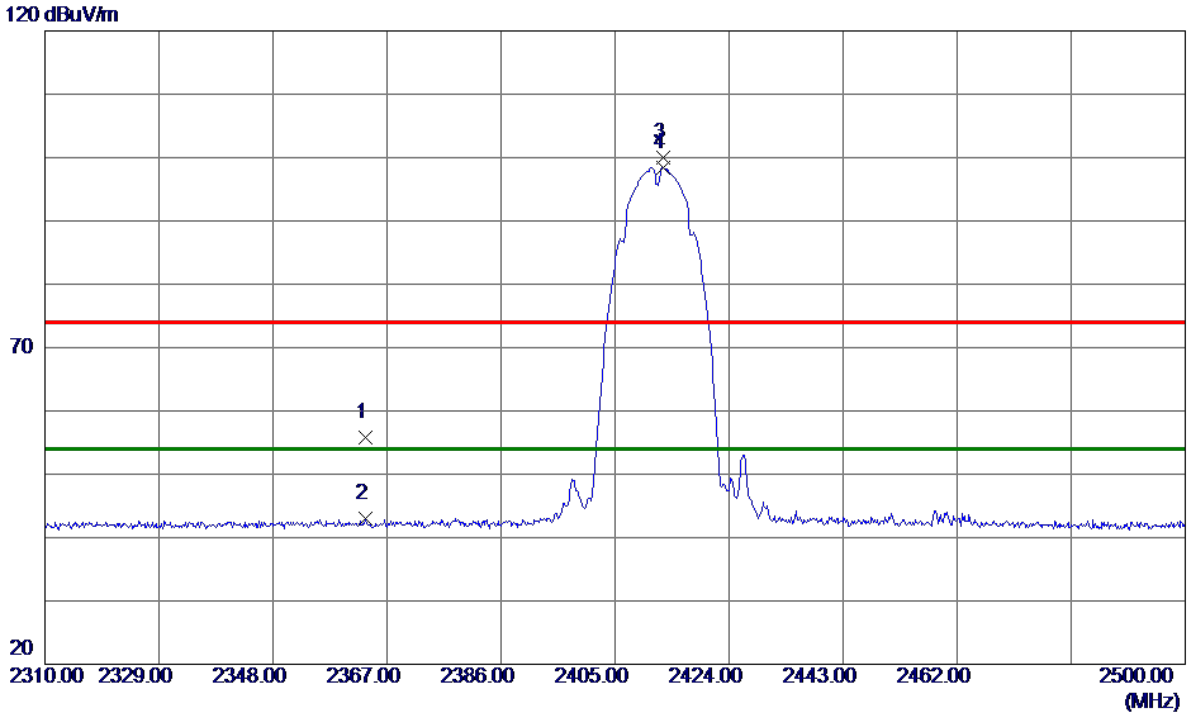
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX B Mode 2412 MHz	Polarization	Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4823.7250	66.99	-10.91	56.08	74.00	-17.92	Peak	
2 *	4824.0010	64.17	-10.91	53.26	54.00	-0.74	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX B Mode 2412 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2363.4850	24.00	31.79	55.79	74.00	-18.21	Peak	
2	2363.4850	11.17	31.79	42.96	54.00	-11.04	AVG	
3	2412.9800	68.19	31.72	99.91	74.00	25.91	Peak	No limit
4 *	2412.9800	66.71	31.72	98.43	54.00	44.43	AVG	No limit

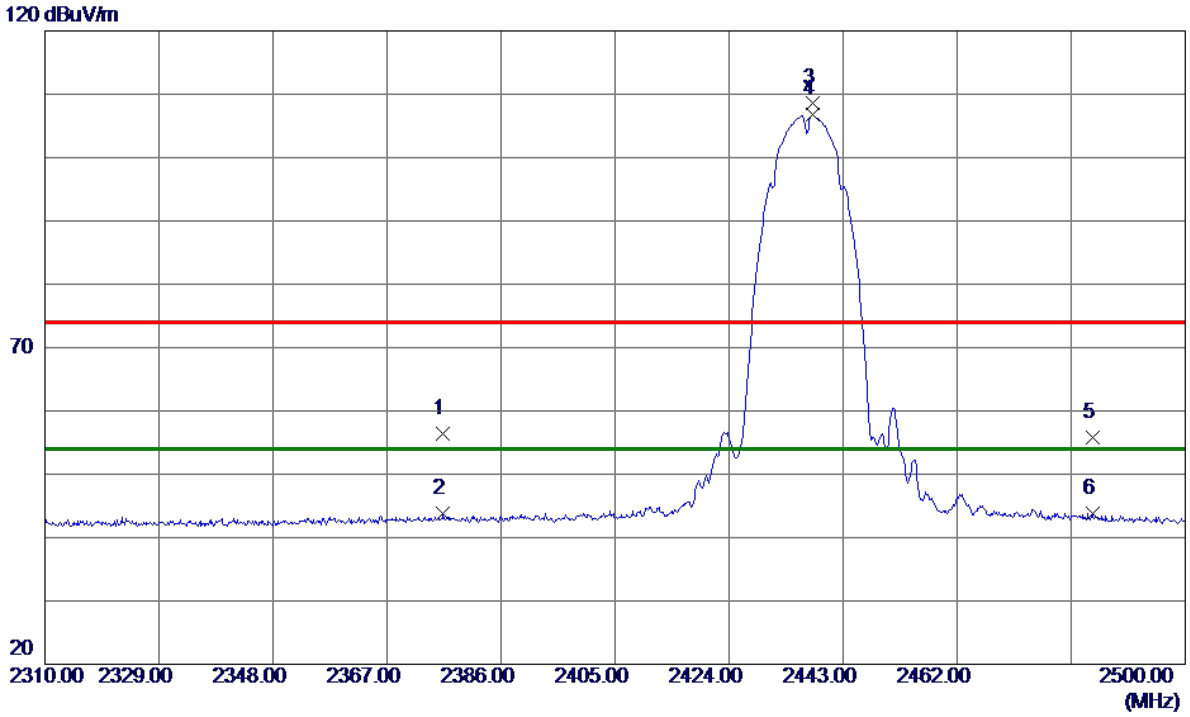
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX B Mode 2412 MHz	Polarization	Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4823.7250	63.26	-10.91	52.35	74.00	-21.65	Peak	
2 *	4824.0310	63.46	-10.91	52.55	54.00	-1.45	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX B Mode 2437 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2376.3100	24.59	31.77	56.36	74.00	-17.64	Peak	
2	2376.3100	11.99	31.77	43.76	54.00	-10.24	AVG	
3	2437.8700	76.79	31.72	108.51	74.00	34.51	Peak	No limit
4 *	2437.8700	75.02	31.72	106.74	54.00	52.74	AVG	No limit
5	2484.5149	24.09	31.71	55.80	74.00	-18.20	Peak	
6	2484.5149	12.12	31.71	43.83	54.00	-10.17	AVG	

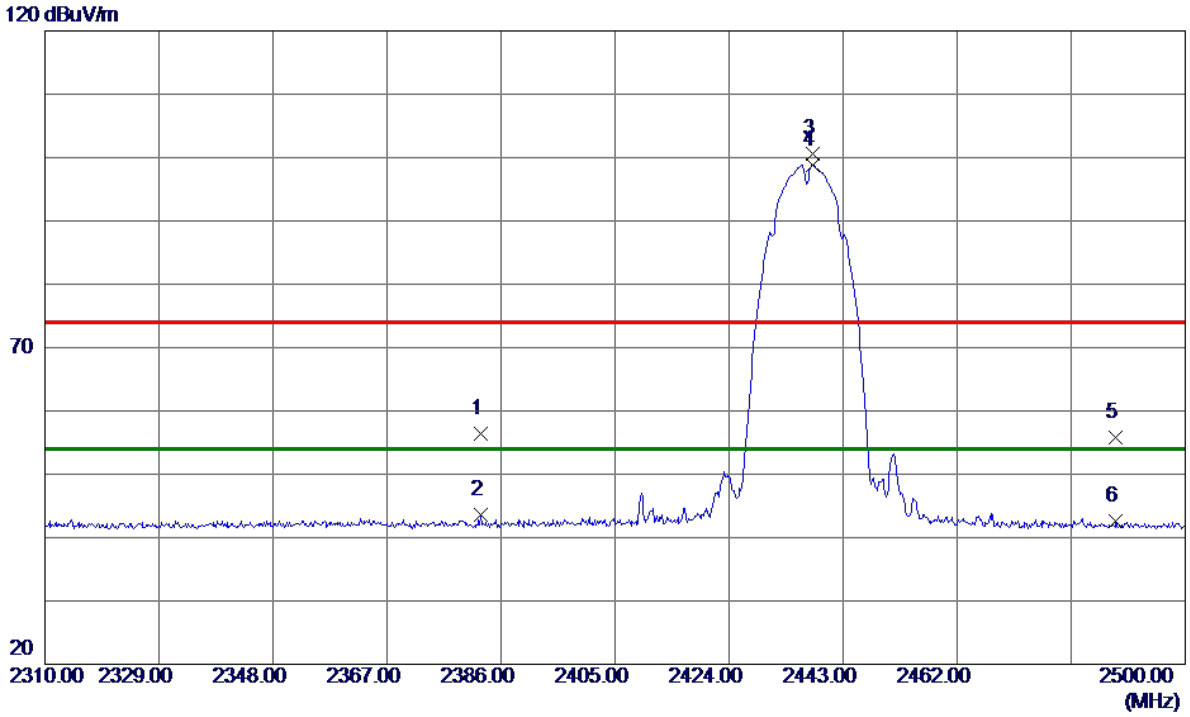
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX B Mode 2437 MHz	Polarization	Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4873.9850	64.03	-10.79	53.24	54.00	-0.76	AVG	
2	4874.7250	68.86	-10.79	58.07	74.00	-15.93	Peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX B Mode 2437 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2382.5800	24.65	31.75	56.40	74.00	-17.60	Peak	
2	2382.5800	11.77	31.75	43.52	54.00	-10.48	AVG	
3	2437.9650	68.88	31.72	100.60	74.00	26.60	Peak	No limit
4 *	2437.9650	67.15	31.72	98.87	54.00	44.87	AVG	No limit
5	2488.4100	24.00	31.71	55.71	74.00	-18.29	Peak	
6	2488.4100	10.89	31.71	42.60	54.00	-11.40	AVG	

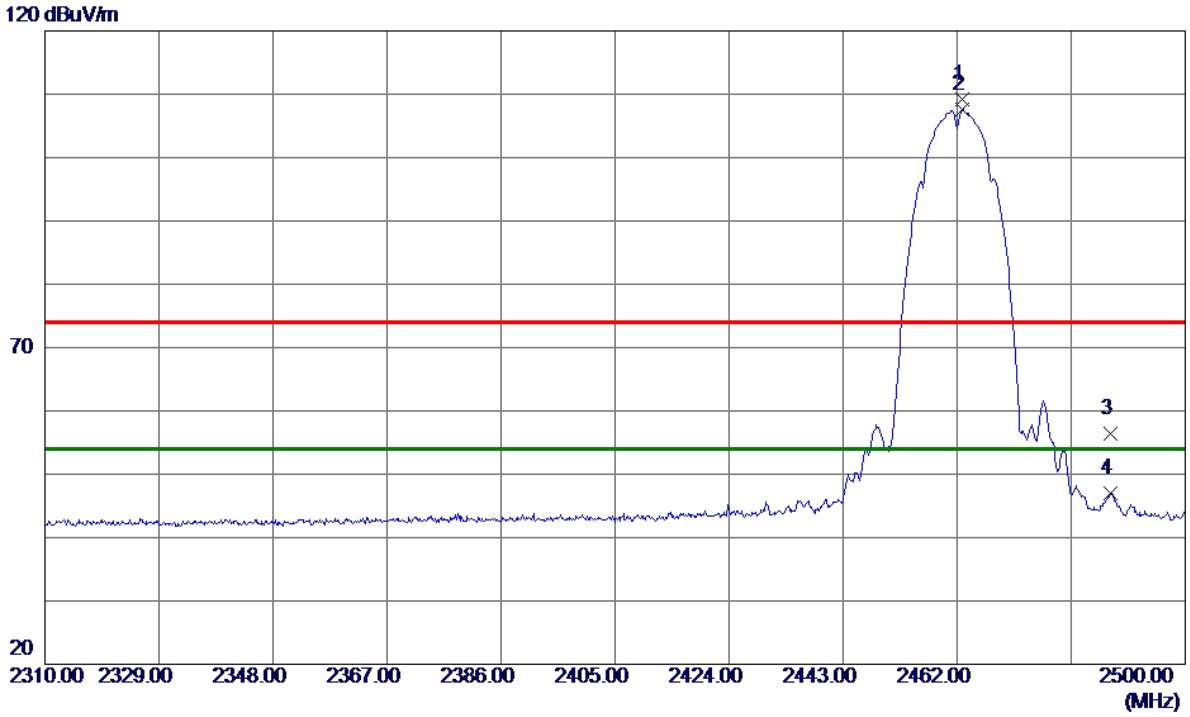
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX B Mode 2437 MHz	Polarization	Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4873.9950	63.04	-10.79	52.25	54.00	-1.75	AVG	
2	4874.7250	64.23	-10.79	53.44	74.00	-20.56	Peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX B Mode 2462 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2462.8550	77.53	31.71	109.24	74.00	35.24	Peak	No limit
2 *	2462.8550	75.84	31.71	107.55	54.00	53.55	AVG	No limit
3	2487.5550	24.70	31.71	56.41	74.00	-17.59	Peak	
4	2487.5550	15.36	31.71	47.07	54.00	-6.93	AVG	

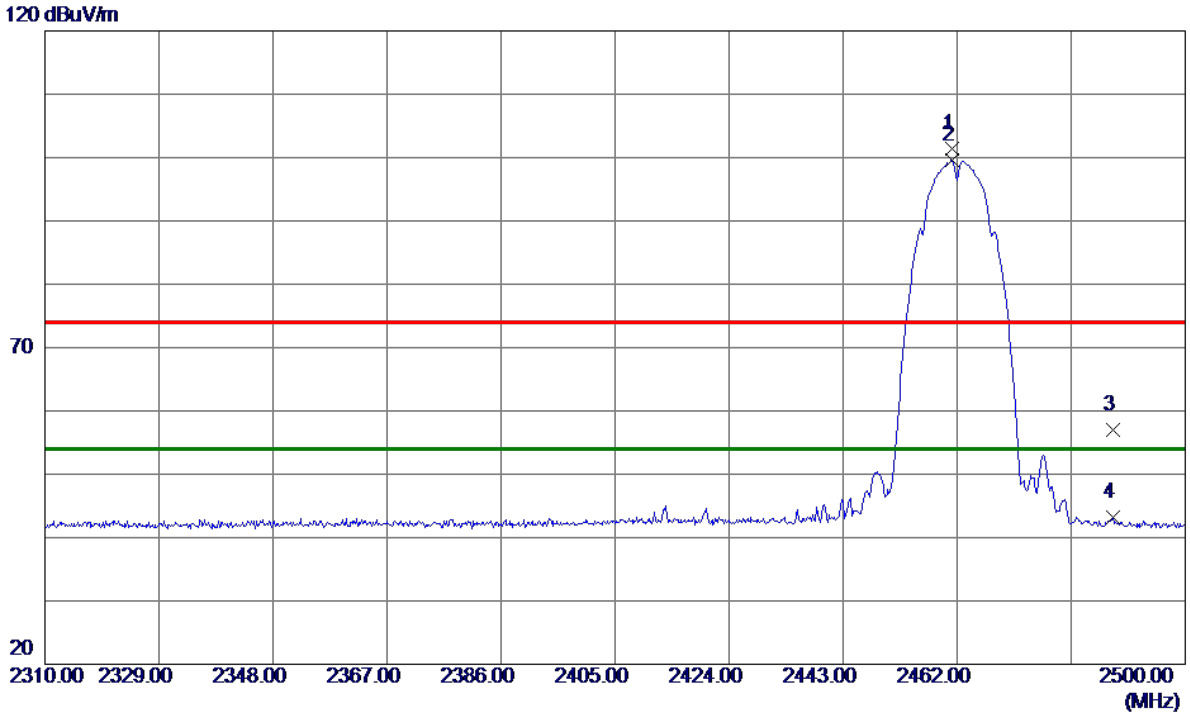
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX B Mode 2462 MHz	Polarization	Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4923.9930	64.15	-10.63	53.52	54.00	-0.48	AVG	
2	4924.4500	64.17	-10.62	53.55	74.00	-20.45	Peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX B Mode 2462 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2461.0500	69.63	31.71	101.34	74.00	27.34	Peak	No limit
2 *	2461.0500	67.87	31.71	99.58	54.00	45.58	AVG	No limit
3	2488.0300	25.29	31.71	57.00	74.00	-17.00	Peak	
4	2488.0300	11.45	31.71	43.16	54.00	-10.84	AVG	

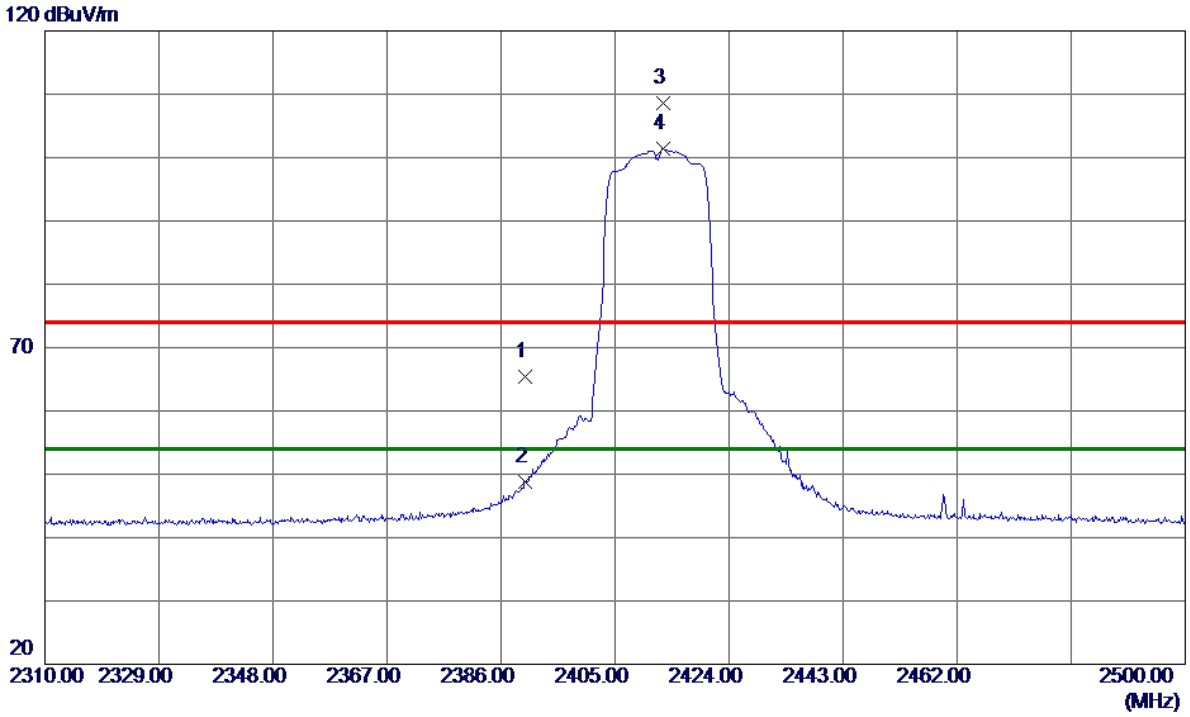
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX B Mode 2462 MHz	Polarization	Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4924.0160	62.91	-10.63	52.28	54.00	-1.72	AVG	
2	4924.4500	63.10	-10.62	52.48	74.00	-21.52	Peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX G Mode 2412 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	33.68	31.74	65.42	74.00	-8.58	Peak	
2	2390.0000	17.15	31.74	48.89	54.00	-5.11	AVG	
3	2412.9800	76.97	31.72	108.69	74.00	34.69	Peak	No limit
4 *	2412.9800	69.62	31.72	101.34	54.00	47.34	AVG	No limit

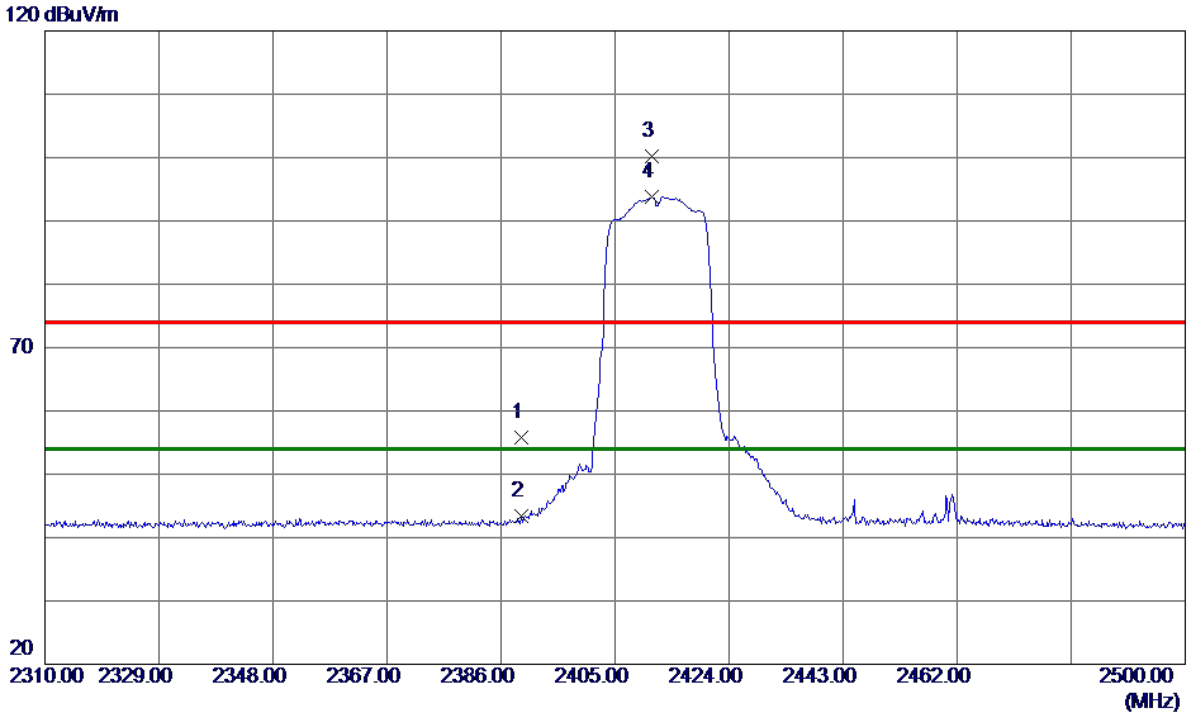
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX G Mode 2412 MHz	Polarization	Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4824.7650	54.91	-10.90	44.01	54.00	-9.99	AVG	
2	4828.8250	64.38	-10.90	53.48	74.00	-20.52	Peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX G Mode 2412 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2389.4200	24.14	31.74	55.88	74.00	-18.12	Peak	
2	2389.4200	11.61	31.74	43.35	54.00	-10.65	AVG	
3	2411.0800	68.51	31.72	100.23	74.00	26.23	Peak	No limit
4 *	2411.0800	62.10	31.72	93.82	54.00	39.82	AVG	No limit

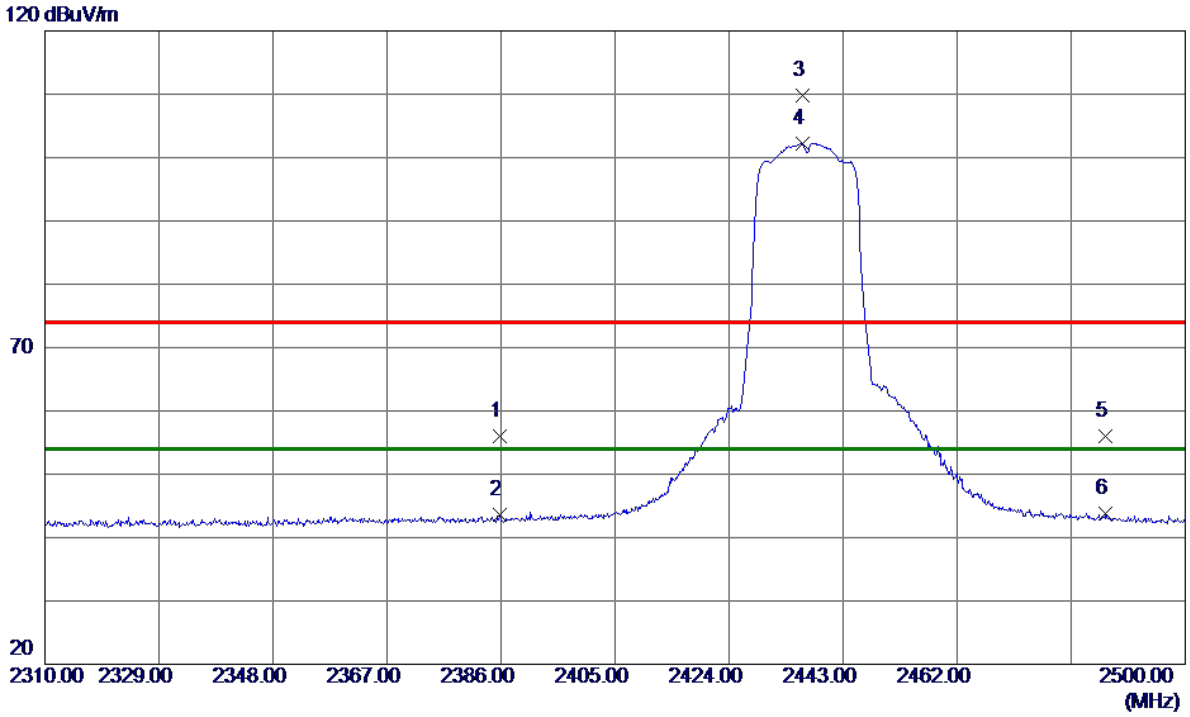
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX G Mode 2412 MHz	Polarization	Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4822.9860	53.35	-10.91	42.44	54.00	-11.56	AVG	
2	4827.5500	60.18	-10.90	49.28	74.00	-24.72	Peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX G Mode 2437 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2385.8100	24.30	31.75	56.05	74.00	-17.95	Peak	
2	2385.8100	11.83	31.75	43.58	54.00	-10.42	AVG	
3	2436.1600	78.11	31.72	109.83	74.00	35.83	Peak	No limit
4 *	2436.1600	70.57	31.72	102.29	54.00	48.29	AVG	No limit
5	2486.7950	24.35	31.71	56.06	74.00	-17.94	Peak	
6	2486.7950	12.07	31.71	43.78	54.00	-10.22	AVG	

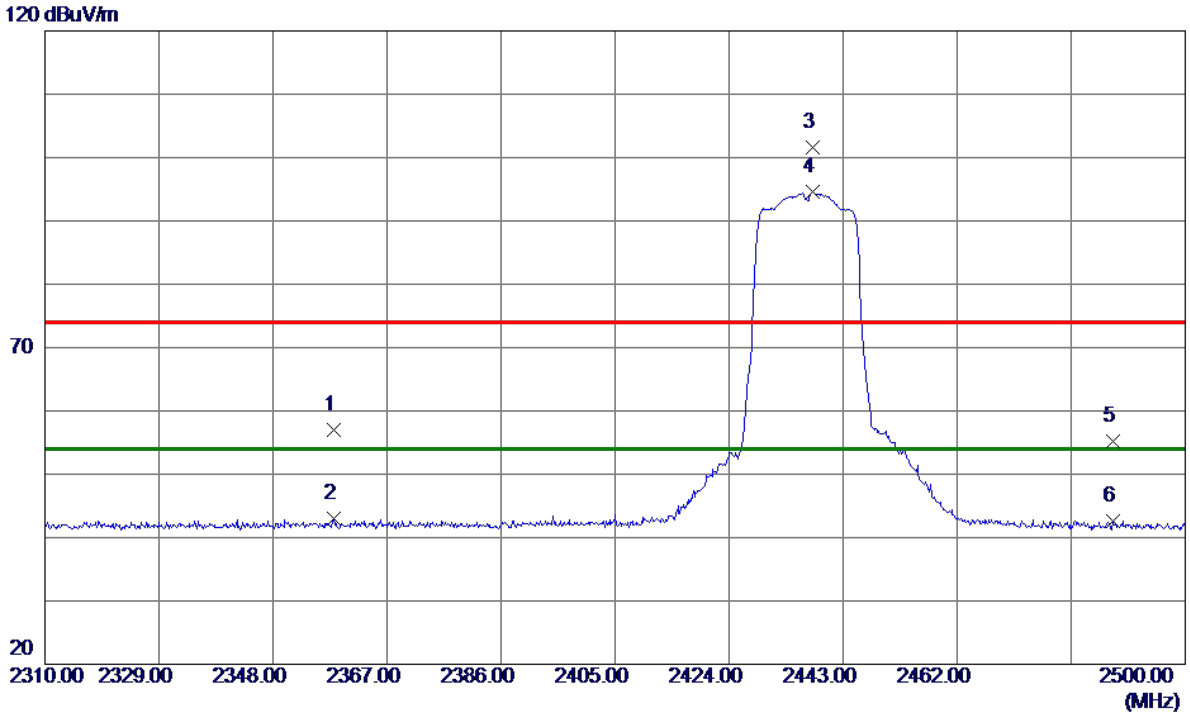
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX G Mode 2437 MHz	Polarization	Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4873.4500	63.09	-10.79	52.30	74.00	-21.70	Peak	
2 *	4875.2580	55.57	-10.79	44.78	54.00	-9.22	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX G Mode 2437 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2358.0700	25.18	31.80	56.98	74.00	-17.02	Peak	
2	2358.0700	11.11	31.80	42.91	54.00	-11.09	AVG	
3	2437.8700	69.97	31.72	101.69	74.00	27.69	Peak	No limit
4 *	2437.8700	62.81	31.72	94.53	54.00	40.53	AVG	No limit
5	2487.9350	23.48	31.71	55.19	74.00	-18.81	Peak	
6	2487.9350	10.93	31.71	42.64	54.00	-11.36	AVG	

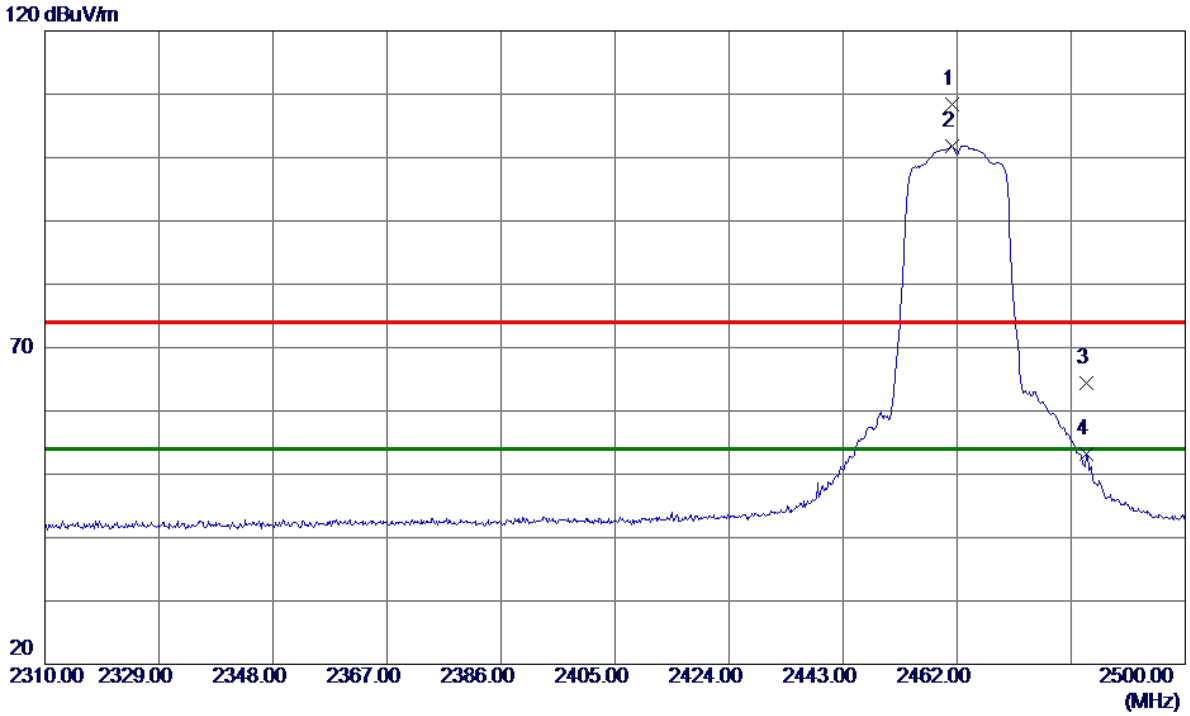
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX G Mode 2437 MHz	Polarization	Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4870.9000	60.56	-10.80	49.76	74.00	-24.24	Peak	
2 *	4874.3300	54.21	-10.79	43.42	54.00	-10.58	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX G Mode 2462 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2461.2400	76.74	31.71	108.45	74.00	34.45	Peak	No limit
2 *	2461.2400	70.18	31.71	101.89	54.00	47.89	AVG	No limit
3	2483.5000	32.61	31.71	64.32	74.00	-9.68	Peak	
4	2483.5000	21.44	31.71	53.15	54.00	-0.85	AVG	

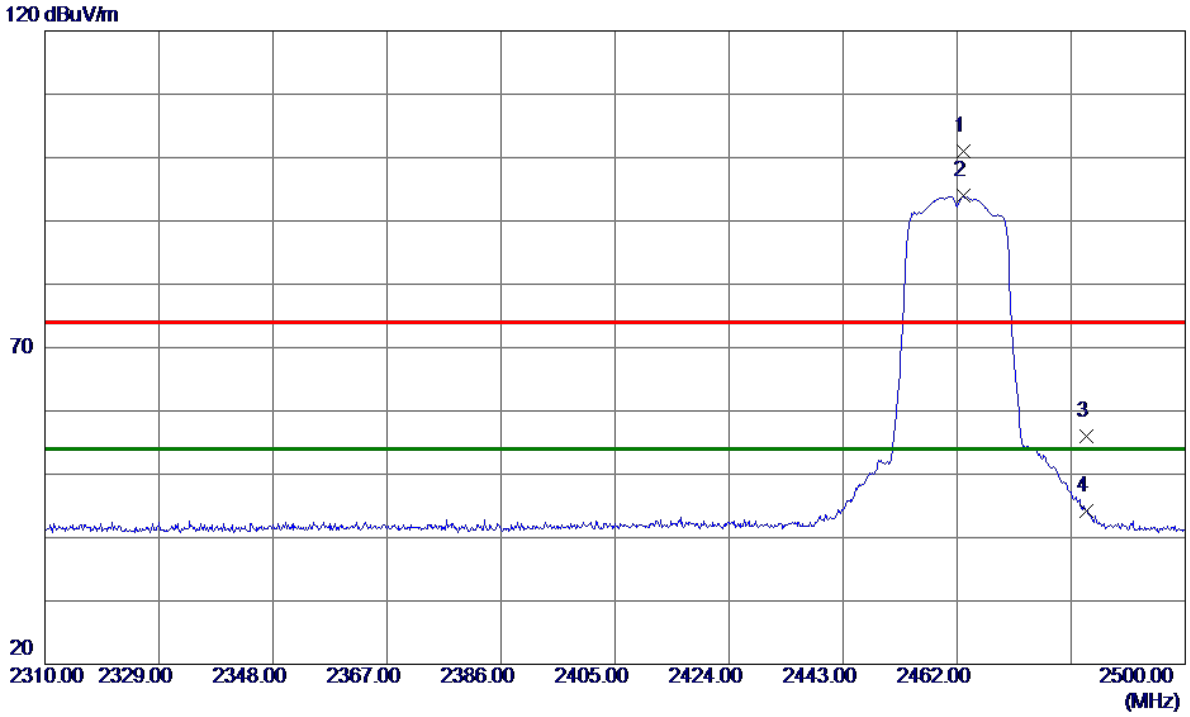
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX G Mode 2462 MHz	Polarization	Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4922.6690	54.84	-10.63	44.21	54.00	-9.79	AVG	
2	4925.7250	62.56	-10.62	51.94	74.00	-22.06	Peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX G Mode 2462 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2463.0450	69.25	31.71	100.96	74.00	26.96	Peak	No limit
2 *	2463.0450	62.23	31.71	93.94	54.00	39.94	AVG	No limit
3	2483.5000	24.29	31.71	56.00	74.00	-18.00	Peak	
4	2483.5000	12.54	31.71	44.25	54.00	-9.75	AVG	

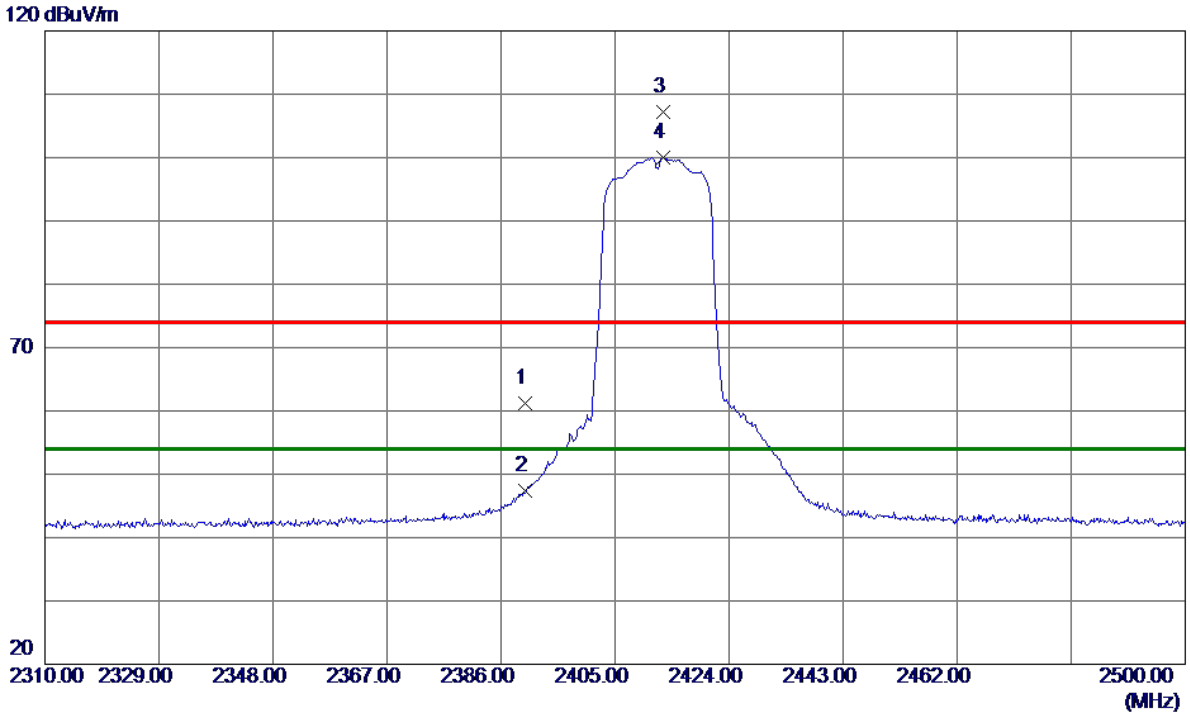
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX G Mode 2462 MHz	Polarization	Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4923.7470	52.34	-10.63	41.71	54.00	-12.29	AVG	
2	4925.7250	59.14	-10.62	48.52	74.00	-25.48	Peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX N(HT20) Mode 2412 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	29.51	31.74	61.25	74.00	-12.75	Peak	
2	2390.0000	15.63	31.74	47.37	54.00	-6.63	AVG	
3	2412.9800	75.46	31.72	107.18	74.00	33.18	Peak	No limit
4 *	2412.9800	68.20	31.72	99.92	54.00	45.92	AVG	No limit

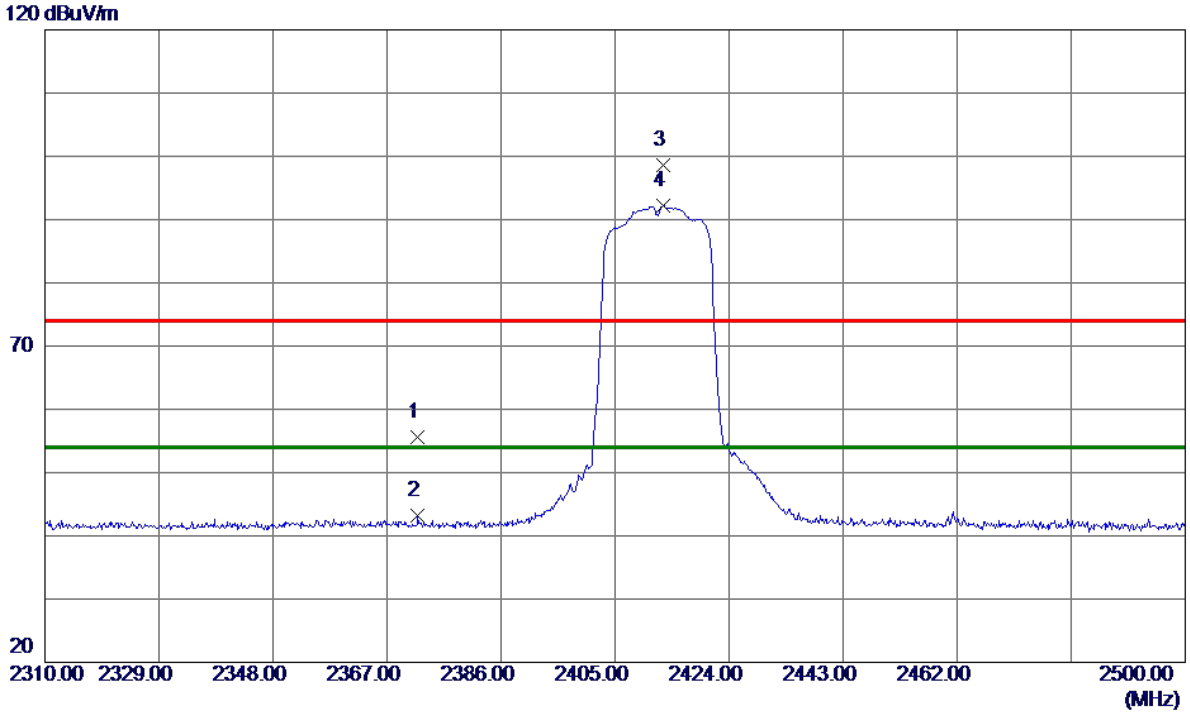
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX N(HT20) Mode 2412 MHz	Polarization	Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4824.2930	52.01	-10.91	41.10	54.00	-12.90	AVG	
2	4828.8250	61.16	-10.90	50.26	74.00	-23.74	Peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX N(HT20) Mode 2412 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2372.1299	23.82	31.77	55.59	74.00	-18.41	Peak	
2	2372.1299	11.52	31.77	43.29	54.00	-10.71	AVG	
3	2413.0750	66.85	31.72	98.57	74.00	24.57	Peak	No limit
4 *	2413.0750	60.54	31.72	92.26	54.00	38.26	AVG	No limit

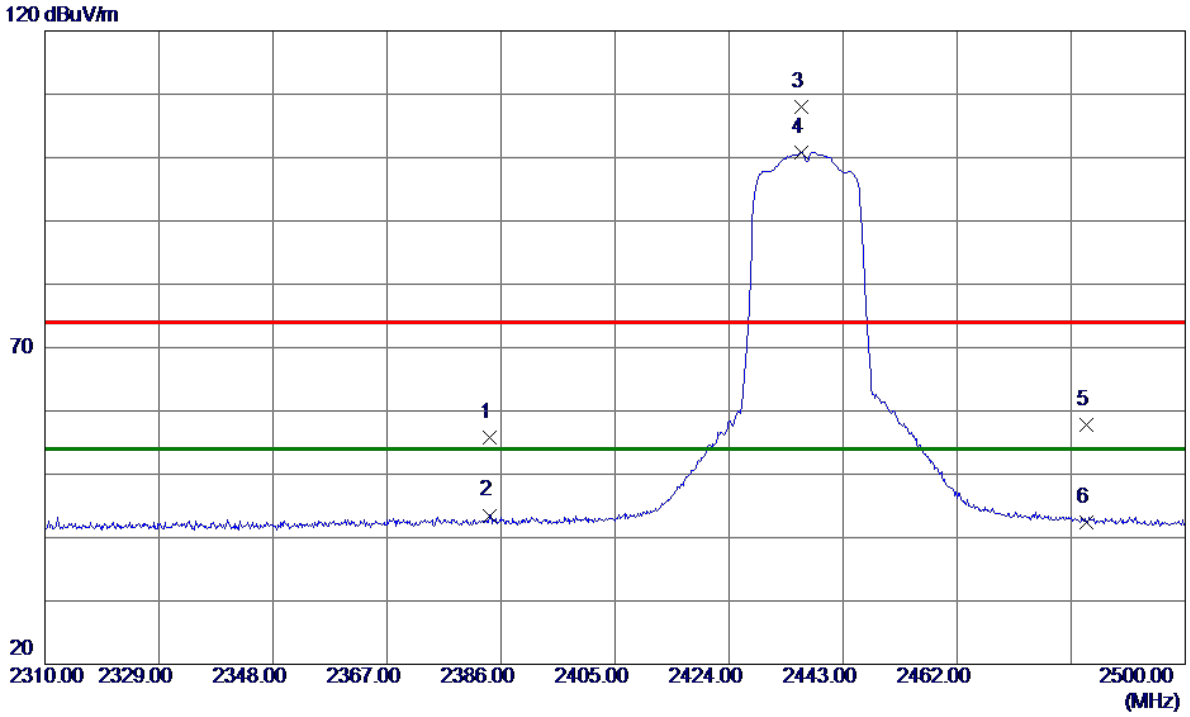
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX N(HT20) Mode 2412 MHz	Polarization	Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4822.4500	55.61	-10.91	44.70	74.00	-29.30	Peak	
2 *	4824.7280	49.91	-10.90	39.01	54.00	-14.99	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX N(HT20) Mode 2437 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2384.1950	24.11	31.75	55.86	74.00	-18.14	Peak	
2	2384.1950	11.75	31.75	43.50	54.00	-10.50	AVG	
3	2436.0650	76.21	31.72	107.93	74.00	33.93	Peak	No limit
4 *	2436.0650	69.12	31.72	100.84	54.00	46.84	AVG	No limit
5	2483.5000	26.02	31.71	57.73	74.00	-16.27	Peak	
6	2483.5000	10.68	31.71	42.39	54.00	-11.61	AVG	

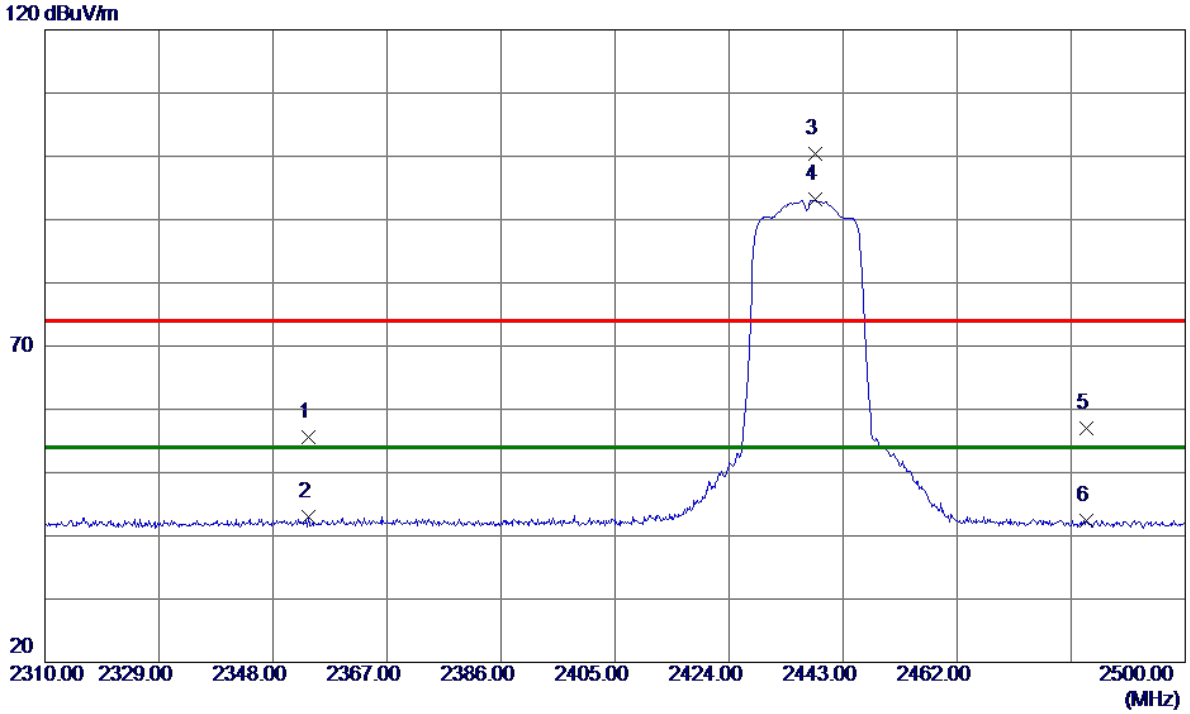
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX N(HT20) Mode 2437 MHz	Polarization	Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4876.0000	60.84	-10.79	50.05	74.00	-23.95	Peak	
2 *	4877.1220	53.85	-10.79	43.06	54.00	-10.94	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX N(HT20) Mode 2437 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2353.9850	23.78	31.81	55.59	74.00	-18.41	Peak	
2	2353.9850	11.13	31.81	42.94	54.00	-11.06	AVG	
3	2438.3450	68.66	31.72	100.38	74.00	26.38	Peak	No limit
4 *	2438.3450	61.43	31.72	93.15	54.00	39.15	AVG	No limit
5	2483.5000	25.31	31.71	57.02	74.00	-16.98	Peak	
6	2483.5000	10.75	31.71	42.46	54.00	-11.54	AVG	

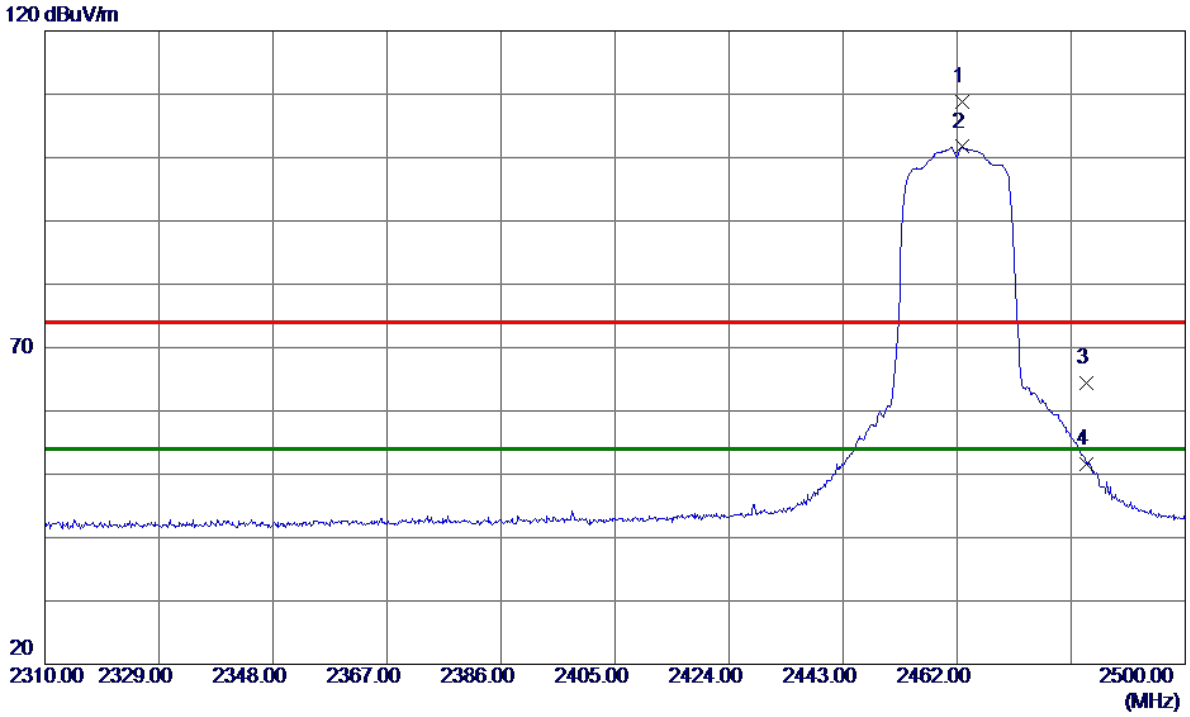
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX N(HT20) Mode 2437 MHz	Polarization	Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.8650	51.88	-10.79	41.09	54.00	-12.91	AVG	
2	4879.8250	59.34	-10.78	48.56	74.00	-25.44	Peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX N(HT20) Mode 2462 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2462.9500	77.00	31.71	108.71	74.00	34.71	Peak	No limit
2 *	2462.9500	69.99	31.71	101.70	54.00	47.70	AVG	No limit
3	2483.5000	32.68	31.71	64.39	74.00	-9.61	Peak	
4	2483.5000	19.81	31.71	51.52	54.00	-2.48	AVG	

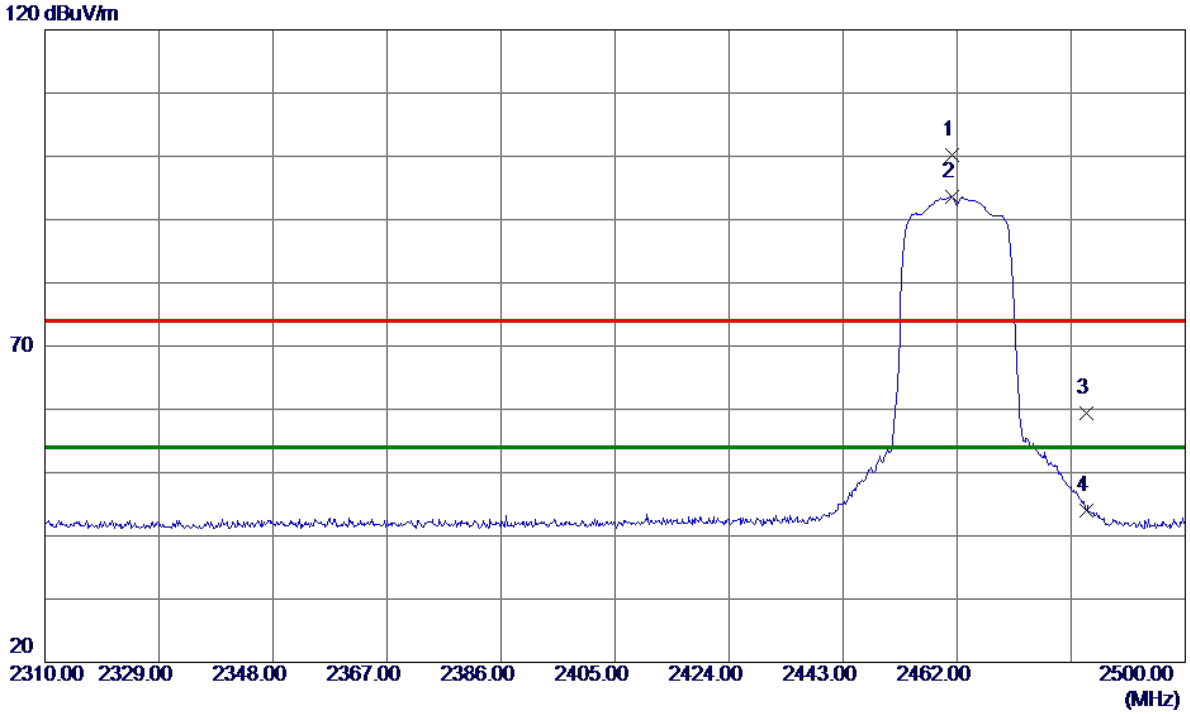
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX N(HT20) Mode 2462 MHz	Polarization	Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4926.1380	54.10	-10.62	43.48	54.00	-10.52	AVG	
2	4927.0000	62.37	-10.61	51.76	74.00	-22.24	Peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX N(HT20) Mode 2462 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2461.0500	68.51	31.71	100.22	74.00	26.22	Peak	No limit
2 *	2461.0500	61.87	31.71	93.58	54.00	39.58	AVG	No limit
3	2483.5000	27.74	31.71	59.45	74.00	-14.55	Peak	
4	2483.5000	12.34	31.71	44.05	54.00	-9.95	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX N(HT20) Mode 2462 MHz	Polarization	Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4924.1580	51.33	-10.63	40.70	54.00	-13.30	AVG	
2	4927.0000	57.67	-10.61	47.06	74.00	-26.94	Peak	

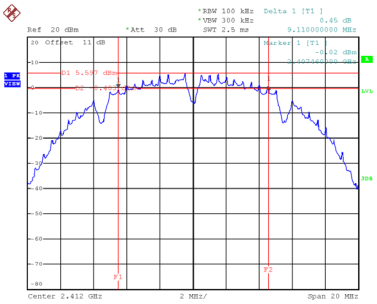
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX E - BANDWIDTH

Test Mode	TX B Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result
01	2412	9.110	13.360	0.5	Complies
06	2437	10.060	13.360	0.5	Complies
11	2462	9.089	13.360	0.5	Complies

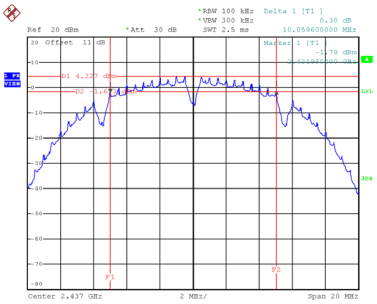
CH01



Date: 30.APR.2021 19:22:18

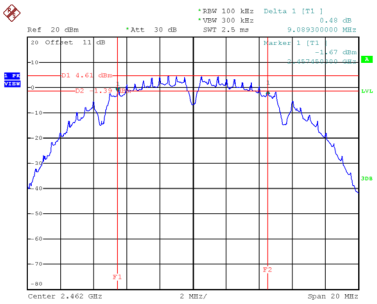
CH06

6 dB Bandwidth

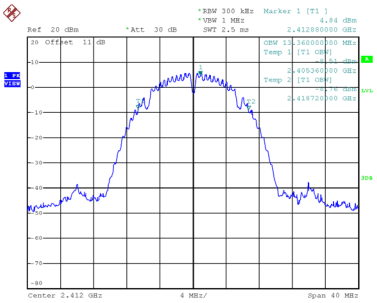


Date: 30.APR.2021 19:24:46

CH11

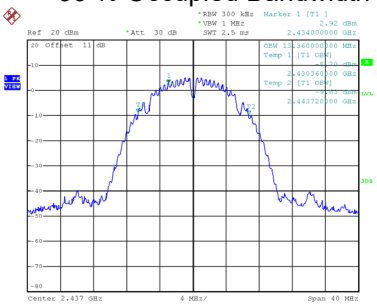


Date: 30.APR.2021 19:26:41

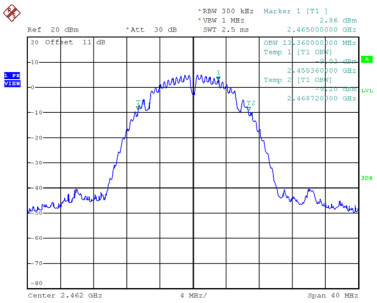


Date: 30.APR.2021 19:22:24

99 % Occupied Bandwidth



Date: 30.APR.2021 19:24:53

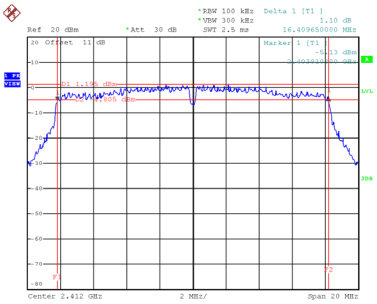


Date: 30.APR.2021 19:26:48

Test Mode	TX G Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result
01	2412	16.410	16.560	0.5	Complies
06	2437	16.380	16.560	0.5	Complies
11	2462	16.420	16.480	0.5	Complies

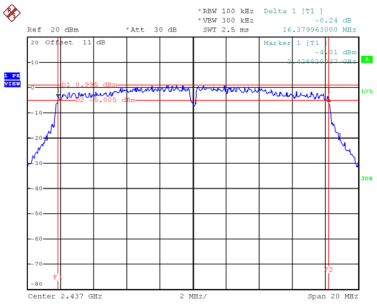
CH01



Date: 30.APR.2021 19:28:31

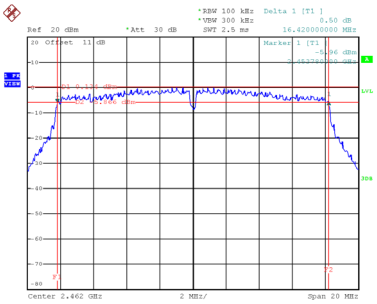
CH06

6 dB Bandwidth



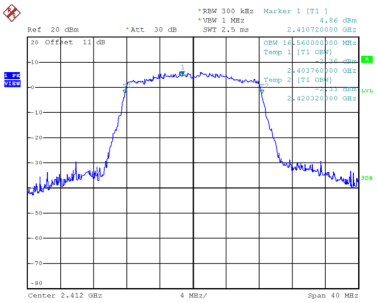
Date: 30.APR.2021 19:30:13

CH11

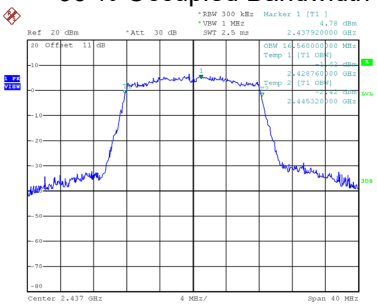


Date: 30.APR.2021 19:31:58

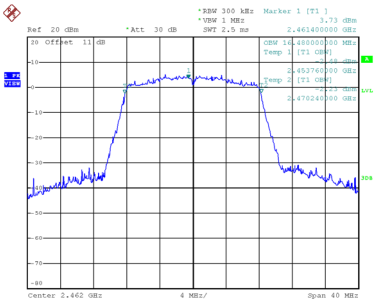
99 % Occupied Bandwidth



Date: 30.APR.2021 19:28:38



Date: 30.APR.2021 19:30:20

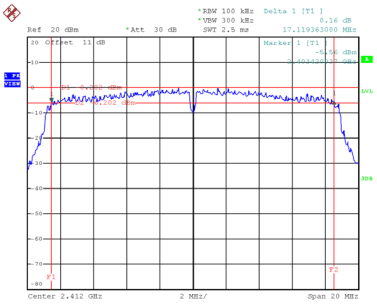


Date: 30.APR.2021 19:32:05

Test Mode	TX N(HT20) Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result
01	2412	17.119	17.360	0.5	Complies
06	2437	17.150	17.440	0.5	Complies
11	2462	17.000	17.440	0.5	Complies

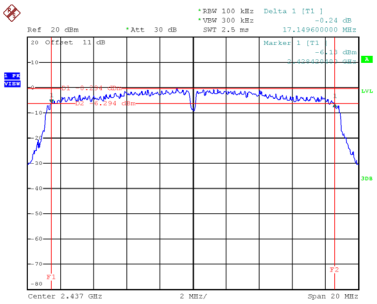
CH01



Date: 30.APR.2021 19:33:41

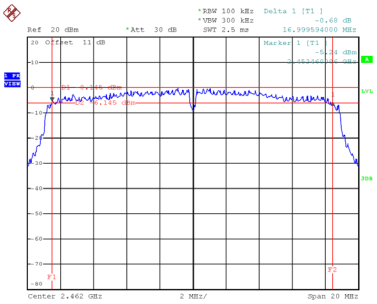
CH06

6 dB Bandwidth



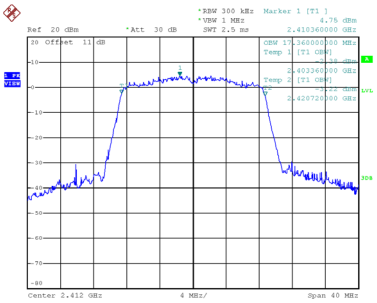
Date: 30.APR.2021 19:35:44

CH11

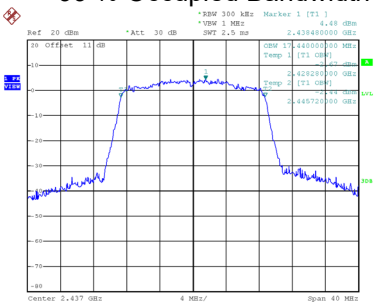


Date: 30.APR.2021 19:37:45

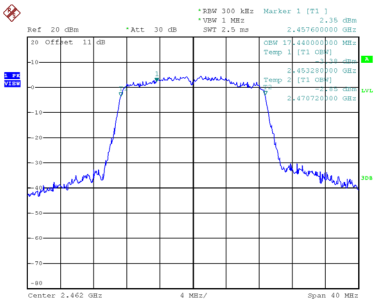
99 % Occupied Bandwidth



Date: 30.APR.2021 19:33:48



Date: 30.APR.2021 19:35:51



Date: 30.APR.2021 19:37:51

APPENDIX F - MAXIMUM OUTPUT POWER

Test Mode	TX B Mode_Ant. 1

Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	19.88	30.00	1.0000	Complies
06	2437	20.05	30.00	1.0000	Complies
11	2462	19.76	30.00	1.0000	Complies

Test Mode	TX G Mode_Ant. 1

Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	25.75	30.00	1.0000	Complies
06	2437	25.80	30.00	1.0000	Complies
11	2462	25.83	30.00	1.0000	Complies

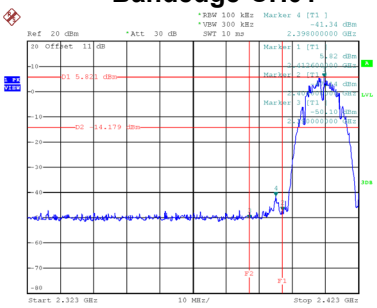
Test Mode	TX N(HT20) Mode_Ant. 1

Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	24.90	30.00	1.0000	Complies
06	2437	24.68	30.00	1.0000	Complies
11	2462	24.66	30.00	1.0000	Complies

APPENDIX G - CONDUCTED SPURIOUS EMISSIONS

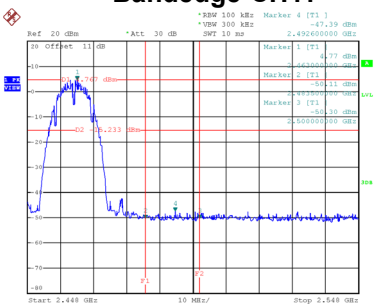
Test Mode	TX B Mode_Ant. 1

Bandedge-CH01



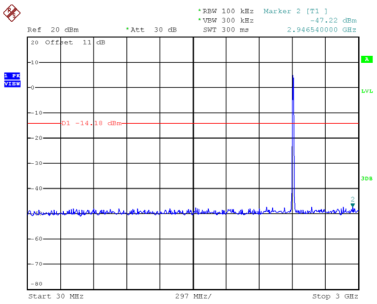
Date: 30.APR.2021 19:22:32

Bandedge-CH11

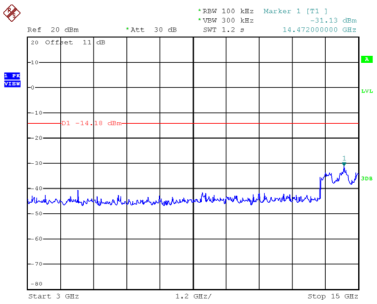


Date: 30.APR.2021 19:26:55

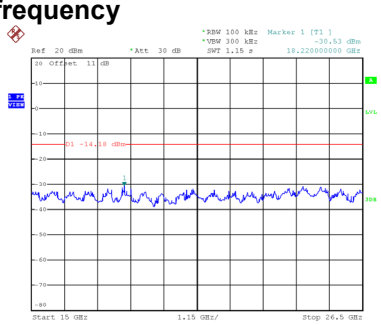
CH01 – 10th Harmonic of the fundamental frequency



Date: 30.APR.2021 19:22:44

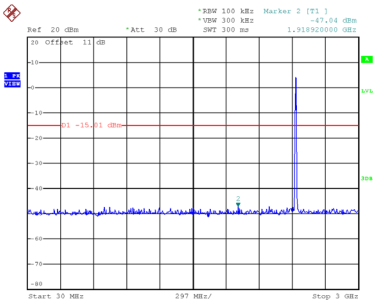


Date: 30.APR.2021 19:22:52

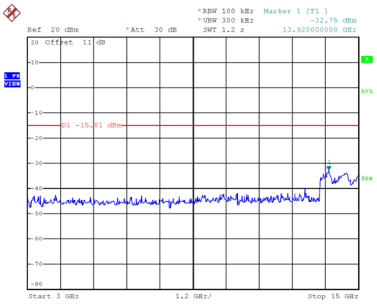


Date: 30.APR.2021 19:22:59

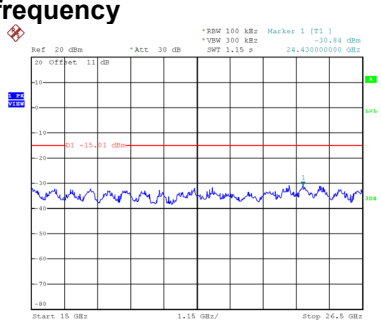
CH06 – 10th Harmonic of the fundamental frequency



Date: 30.APR.2021 19:25:13

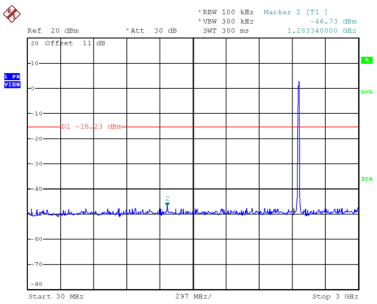


Date: 30.APR.2021 19:25:20

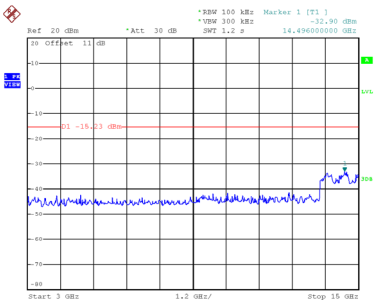


Date: 30.APR.2021 19:25:27

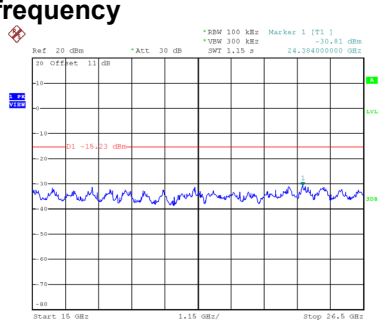
CH11 – 10th Harmonic of the fundamental frequency



Date: 30.APR.2021 19:27:08



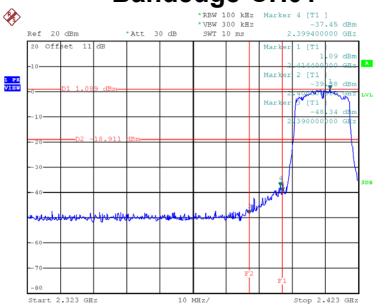
Date: 30.APR.2021 19:27:15



Date: 30.APR.2021 19:27:22

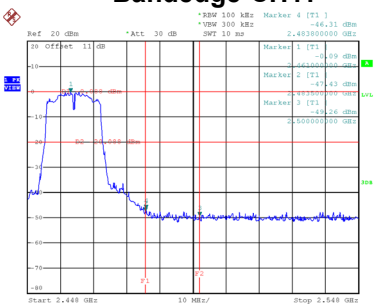
Test Mode	TX G Mode_Ant. 1

Bandedge-CH01



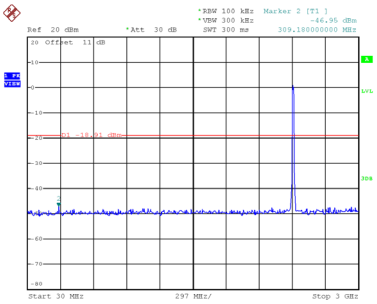
Date: 30.APR.2021 19:28:45

Bandedge-CH11

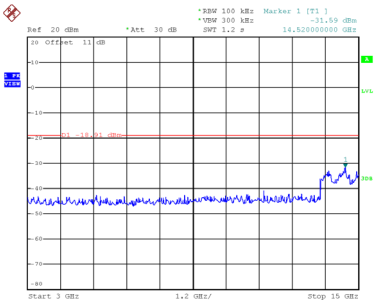


Date: 30.APR.2021 19:32:12

CH01 – 10th Harmonic of the fundamental frequency



Date: 30.APR.2021 19:28:58



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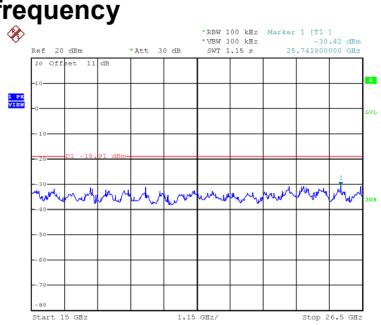

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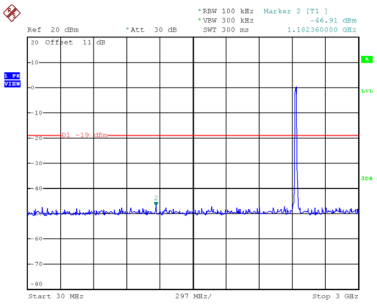
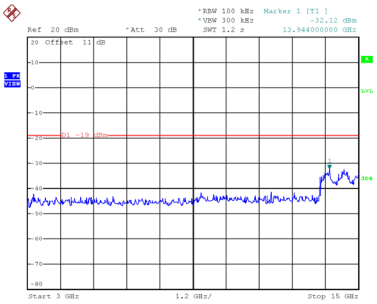
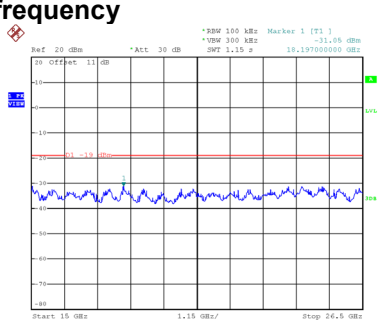
CH06 – 10th Harmonic of the fundamental frequency



Date: 30.APR.2021 19:30:40



Date: 30.APR.2021 19:30:47



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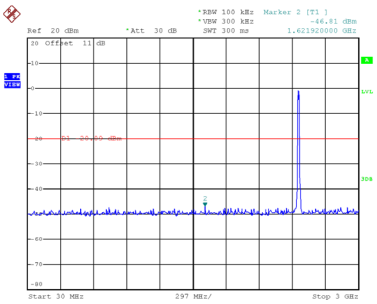
CH11 – 10th Harmonic of the fundamental frequency



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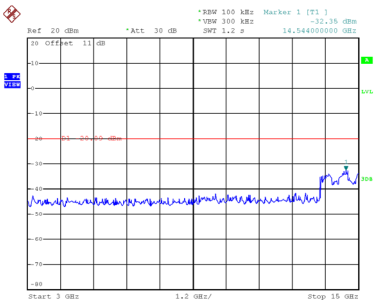
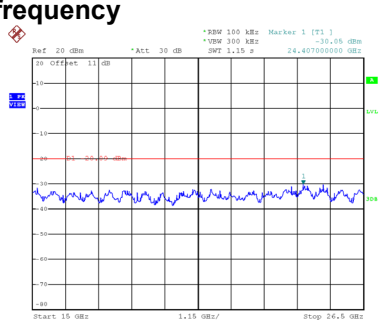


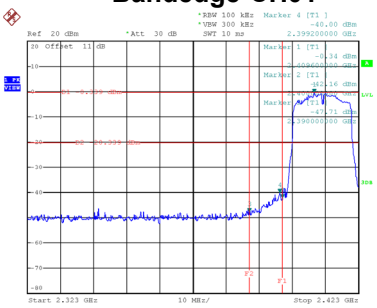
Date: 30.APR.2021 19:32:32



Date: 30.APR.2021 19:32:39

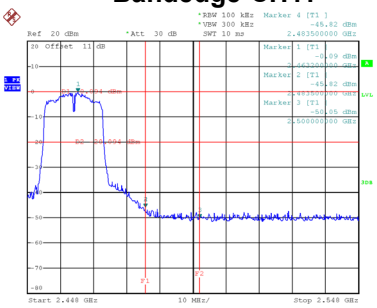
Test Mode	TX N(HT20) Mode_Ant. 1

Bandedge-CH01



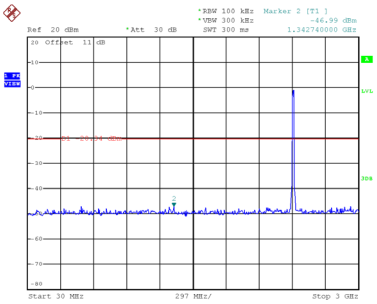
Date: 30.APR.2021 19:33:55

Bandedge-CH11

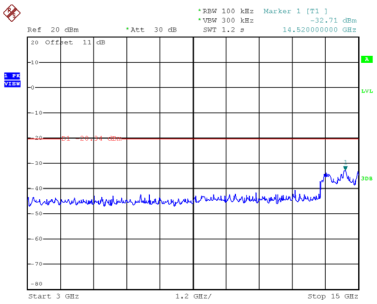


Date: 30.APR.2021 19:37:58

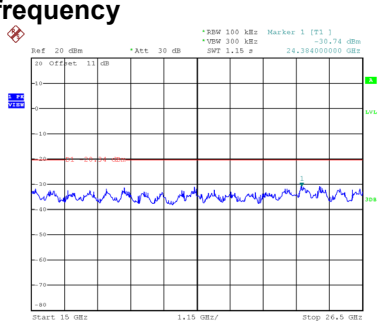
CH01 – 10th Harmonic of the fundamental frequency



Date: 30.APR.2021 19:34:08

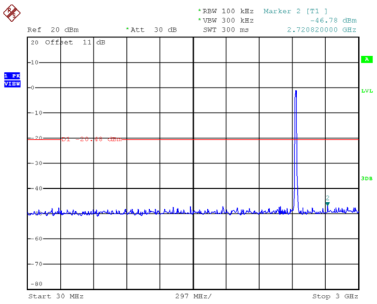


Date: 30.APR.2021 19:34:15

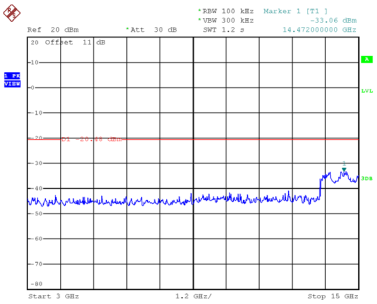


Date: 30.APR.2021 19:34:22

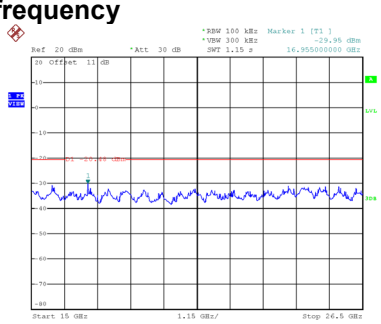
CH06 – 10th Harmonic of the fundamental frequency



Date: 30.APR.2021 19:36:11

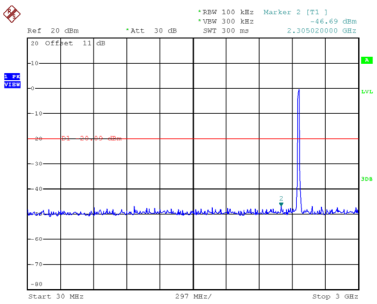


Date: 30.APR.2021 19:36:18

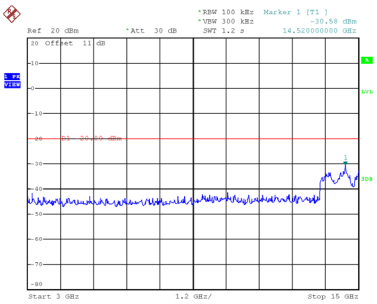


Date: 30.APR.2021 19:36:25

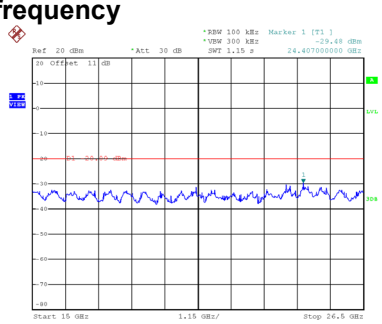
CH11 – 10th Harmonic of the fundamental frequency



Date: 30.APR.2021 19:38:11



Date: 30.APR.2021 19:38:18



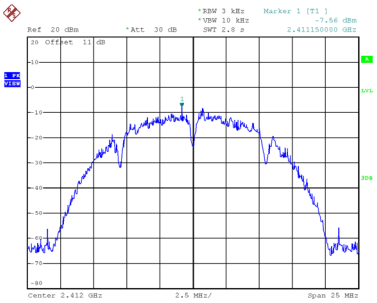
Date: 30.APR.2021 19:38:25

APPENDIX H - POWER SPECTRAL DENSITY

Test Mode	TX B Mode_Ant. 1

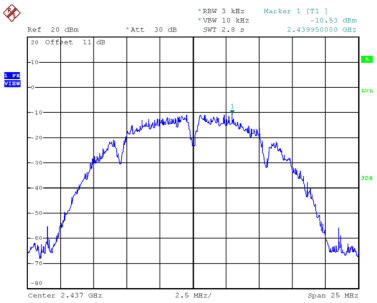
Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-7.56	8.00	Complies
06	2437	-10.53	8.00	Complies
11	2462	-9.30	8.00	Complies

CH01



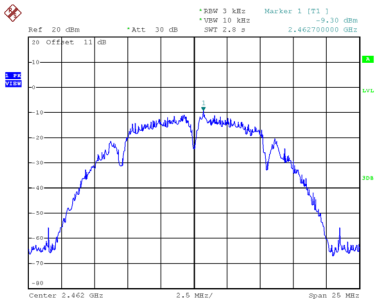
Date: 30.APR.2021 19:23:07

CH06



Date: 30.APR.2021 19:25:36

CH11

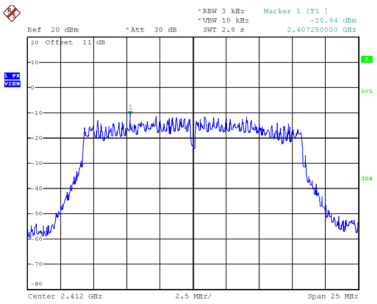


Date: 30.APR.2021 19:27:31

Test Mode	TX G Mode_Ant. 1

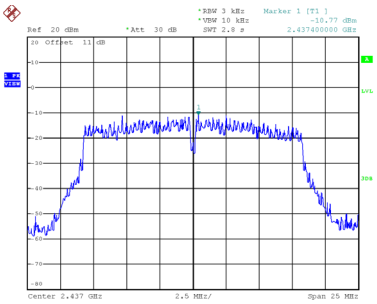
Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-10.94	8.00	Complies
06	2437	-10.77	8.00	Complies
11	2462	-12.42	8.00	Complies

CH01



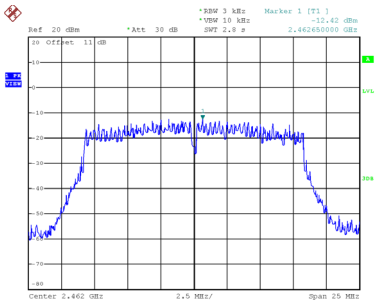
Date: 30.APR.2021 19:29:21

CH06



Date: 30.APR.2021 19:31:03

CH11

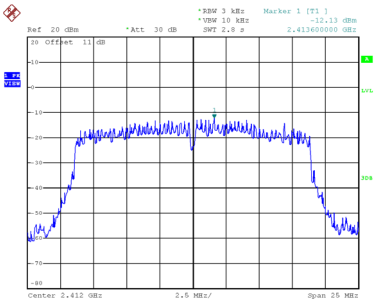


Date: 30.APR.2021 19:32:48

Test Mode	TX N(HT20) Mode_Ant. 1

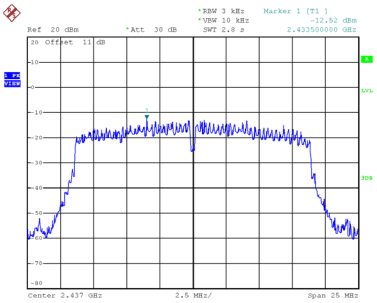
Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-12.13	8.00	Complies
06	2437	-12.52	8.00	Complies
11	2462	-11.87	8.00	Complies

CH01



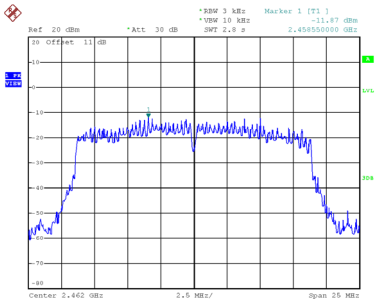
Date: 30.APR.2021 19:34:31

CH06



Date: 30.APR.2021 19:36:34

CH11



Date: 30.APR.2021 19:38:34

End of Test Report