FCC Radio Test Report

FCC ID: XMR2022SC262RWF

This report concerns: Original Grant

Project No.	:	2204H021
Equipment	:	Smart Module
Brand Name	:	Quectel
Test Model	:	SC262R-WF
Series Model	:	N/A
Applicant	:	Quectel Wireless Solutions Co., Ltd
Address	:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233
Manufacturer	:	Quectel Wireless Solutions Co., Ltd
Address	:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233
Date of Receipt	:	May 20, 2022
Date of Test	:	May 24, 2022~Jun. 08, 2022
Issued Date	:	Jun. 29, 2022
Report Version	:	R00
Test Sample	:	Engineering Sample No.: SH2022052370 for radiated, SH2022052371 for conduted.
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

Prepared by : Maker Qi

Ryan. Wang

Approved by : Ryan Wang

TESTING CERT #5123.03

Add: No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai 201210,China
TEL: +86-021-61765666
Web: www.newbtl.com

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.

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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.

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REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-1-2204H021	R00	Original Report	Jun. 29, 2022	Valid

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	PASS	------
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 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. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	U, (dB)
SH-C01	CISPR	150 kHz ~ 30 MHz	2.64

B. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
SH-CB02	CISPR	9 KHz~30 MHz	-	2.16
		30 MHz~200 MHz	V	4.04
		30 MHz~200 MHz	H	2.90
		200 MHz~1,000 MHz	V	3.76
		200 MHz~1,000 MHz	H	3.82
		1GHz ~ 6GHz	-	4.56
		6GHz ~ 18GHz	-	4.14
		18 ~ 26.5 GHz	-	3.48

C. Conducted test:

Parameter	U
Output Power	±0.95 dB
Occupied Channel Bandwidth	±3.8 %
Power Spectral Density	±0.86 dB
Conducted Spurious Emission	±2.71 dB
Temperature	±0.08 °C
Humidity	±1.5 %
Supply voltages	±0.3 %

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
AC Power Line Conducted Emissions	22°C	54%	AC 120V/60Hz	Joven Xiong
Radiated Emissions-9kHz to 30 MHz	24°C	58%	AC 120V/60Hz	Jane Wang
Radiated Emissions-30MHz to 1000MHz	24°C	58%	AC 120V/60Hz	Jane Wang
Radiated Emissions-Above 1000MHz	24°C	58%	AC 120V/60Hz	Jane Wang
Bandwidth	28°C	34%	AC 120V/60Hz	Forest Li
Maximum Output Power	28°C	34%	AC 120V/60Hz	Forest Li
Conducted Spurious Emissions	28°C	34%	AC 120V/60Hz	Forest Li
Power Spectral Density	28°C	34%	AC 120V/60Hz	Forest Li

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Smart Module
Brand Name	Quectel
Test Model	SC262R-WF
Series Model	N/A
Model Difference(s)	N/A
Software Version	N/A
Hardware Version	R1.0
Power Source	DC Voltage supplied from AC/DC adapter. Model: P12F050200
Power Rating	I/P: 100-240V ~ 50/60Hz 0.3A O/P: 5.0V ⎓ 2.0A
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 150 Mbps
Maximum Output Power	IEEE 802.11n20: 23.19 dBm (0.2084 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) CH03 - CH09 for IEEE 802.11n(HT40)							
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	P/N	Antenna Type	Connector	Gain (dBi)
1	圣丹纳 SAINTENNA	SAA31578A	Dipole	SMA-J	0.47

Note:

1) The antenna gain and is 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 N(HT40) Mode Channel 03/06/09

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

AC power line conducted emissions test	
Final Test Mode	Description
Mode 4	TX N(HT40) Mode Channel 03

Radiated emissions test - Below 1GHz	
Final Test Mode	Description
Mode 4	TX N(HT40) Mode Channel 03

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
Mode 4	TX N(HT40) Mode Channel 03/06/09

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
Mode 4	TX N(HT40) Mode Channel 03/06/09

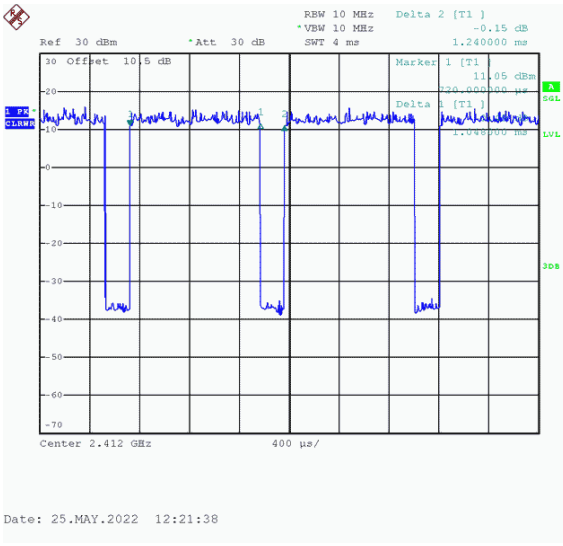
NOTE:
(1) All the bit rate of transmitter have been tested and found the lowest rate is found to be the worst case and recorded.
(2) For AC power line conducted emissions and radiated emission below 1 GHz test, the TX N(HT40) Mode Channel 03 is found to be the worst case and recorded.
(3) For radiated 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	QRCT		
Frequency (MHz)	2412	2437	2462
IEEE 802.11b	16.00	16.00	16.00
IEEE 802.11g	14.50	14.00	11.50
IEEE 802.11n(HT20)	13.00	15.00	11.00
Frequency (MHz)	2422	2437	2452
IEEE 802.11n(HT40)	14.00	14.50	12.00

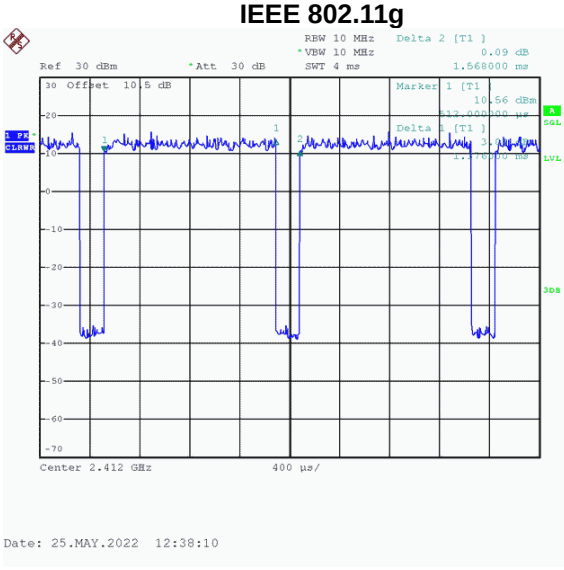
2.4 DUTY CYCLE

IEEE 802.11b



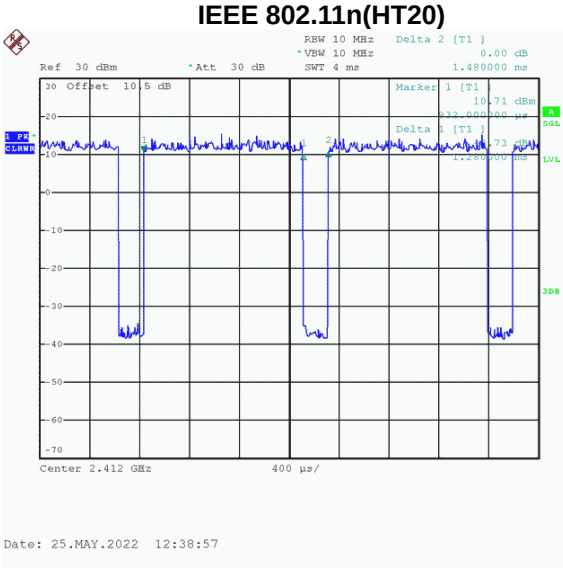
Duty cycle = 1.0480 ms / 1.2400 ms = 84.52%
Duty Factor = 10 log(1/Duty cycle) = 0.81

IEEE 802.11g



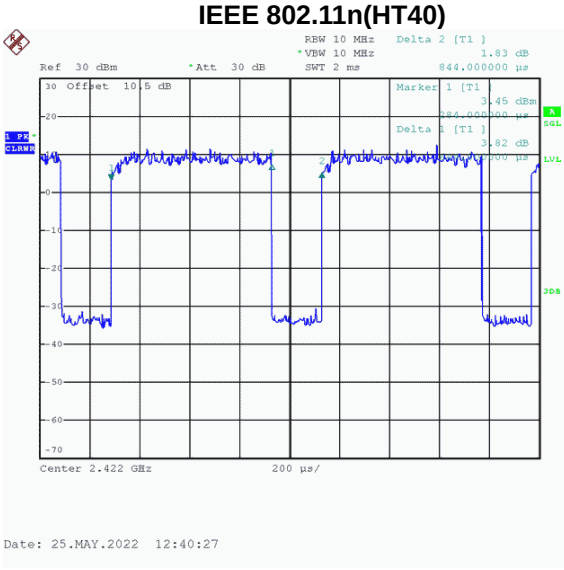
Duty cycle = 1.3760 ms / 1.5680 ms = 87.76%
Duty Factor = 10 log(1/Duty cycle) = 0.64

IEEE 802.11n(HT20)



Duty cycle = 1.2800 ms / 1.4800 ms = 86.49%
Duty Factor = 10 log(1/Duty cycle) = 0.68

IEEE 802.11n(HT40)



Duty cycle = 0.6880 ms / 0.8440 ms = 81.52%
Duty Factor = 10 log(1/Duty cycle) = 1.18

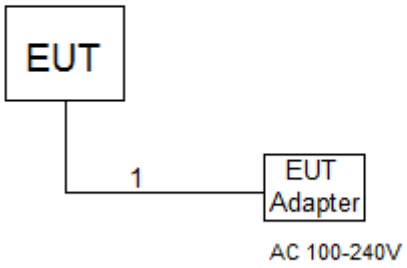
NOTE:
For IEEE 802.11b:
For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 1 kHz.

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

For IEEE 802.11n(HT20):
For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 1 kHz.

For IEEE 802.11n(HT40):
For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 2 kHz.

2.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.6 SUPPORT UNITS

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	DC	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.

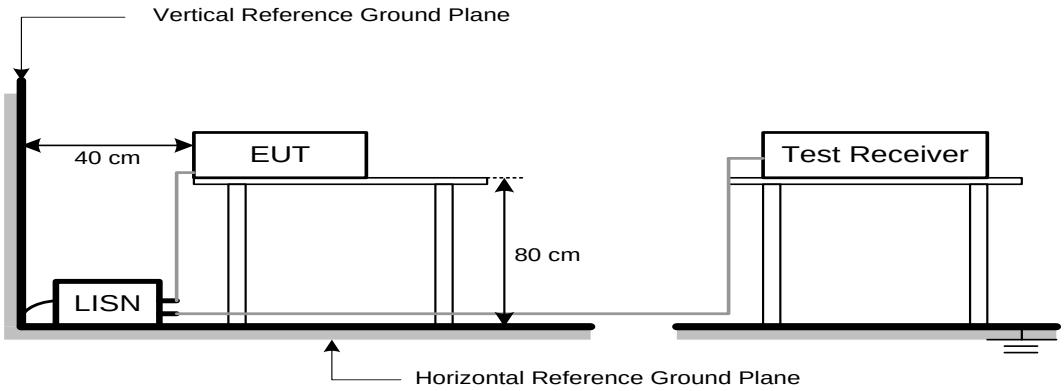
The following table is the setting of the receiver:

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

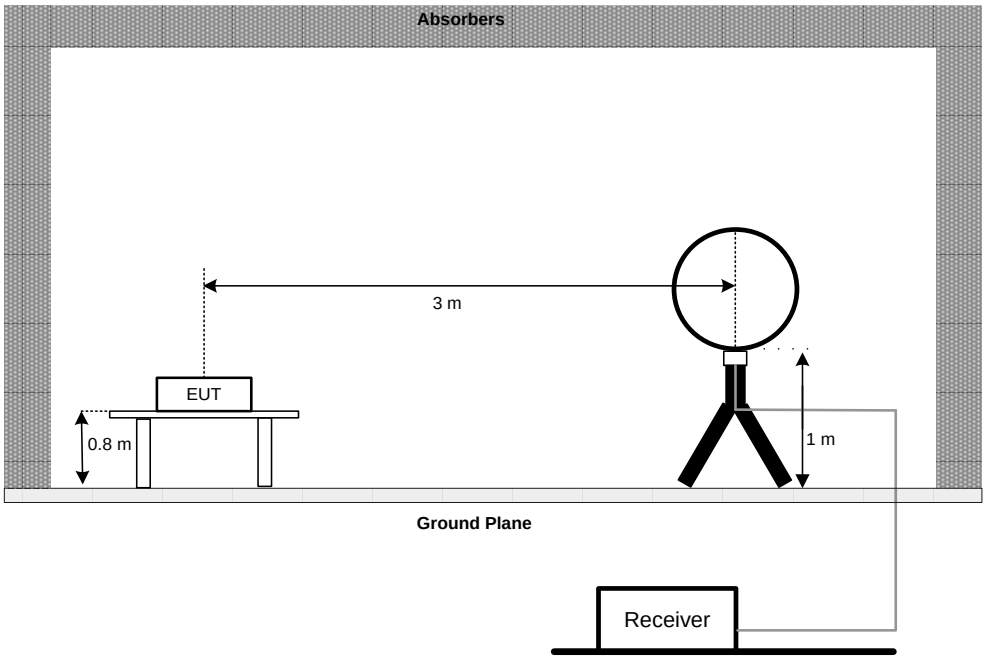
Receiver Parameters	Setting
Start ~ Stop Frequency	9 kHz~90 kHz for PK/AVG detector
Start ~ Stop Frequency	90 kHz~110 kHz for QP detector
Start ~ Stop Frequency	110 kHz~490 kHz for PK/AVG detector
Start ~ Stop Frequency	490 kHz~30 MHz for QP detector
Start ~ Stop Frequency	30 MHz~1000 MHz for QP detector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

4.3 DEVIATION FROM TEST STANDARD

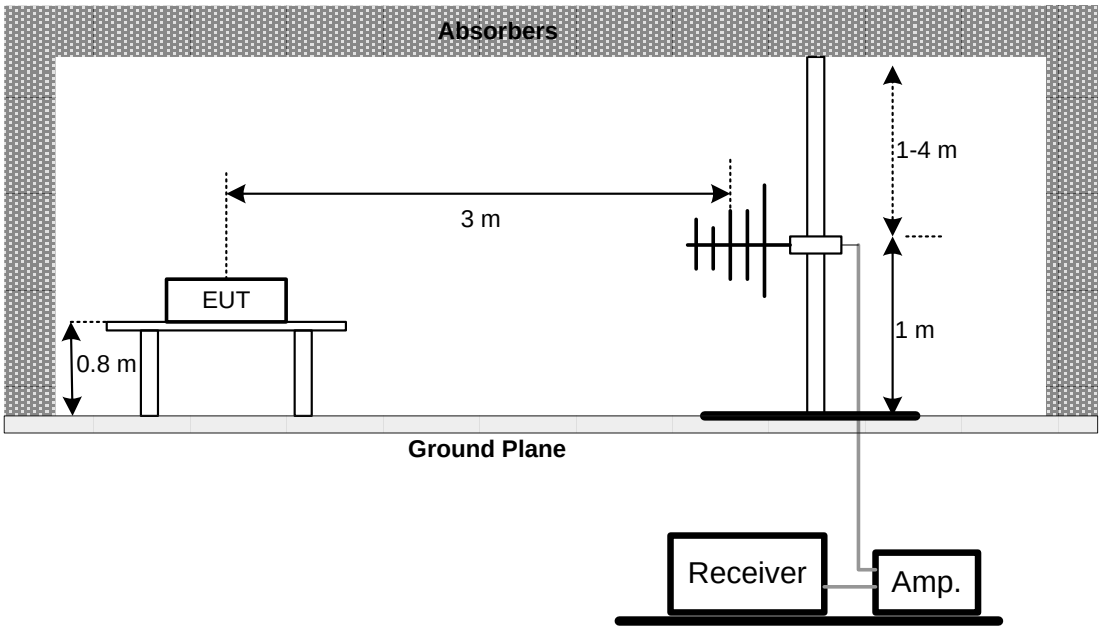
No deviation.

4.4 TEST SETUP

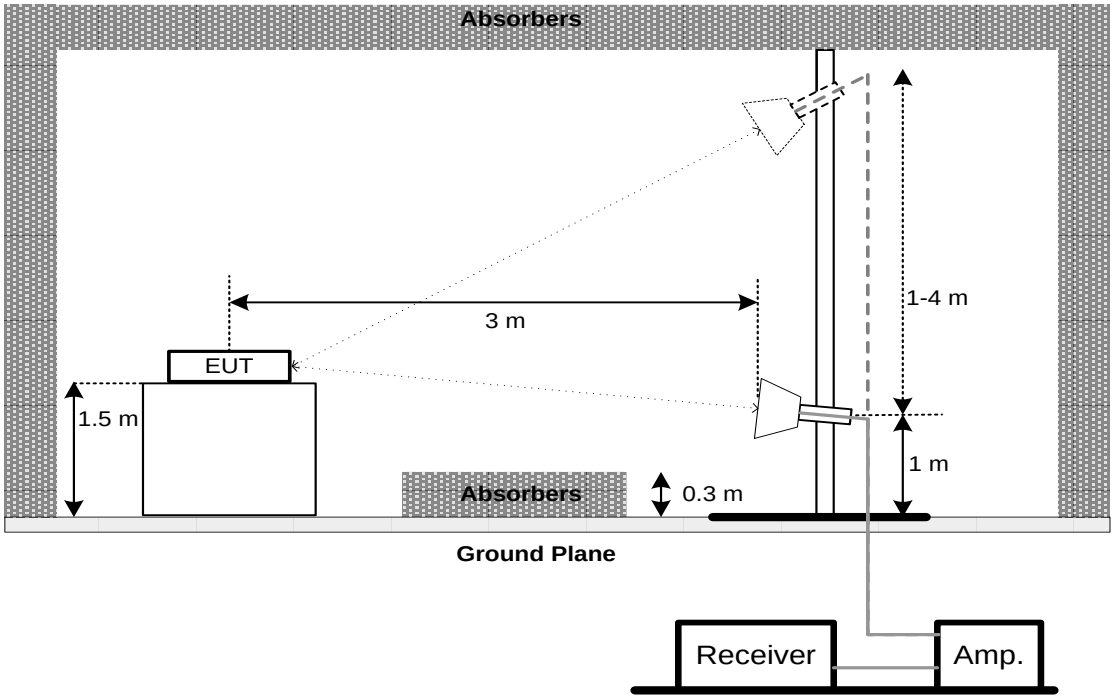
9 kHz to 30 MHz



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

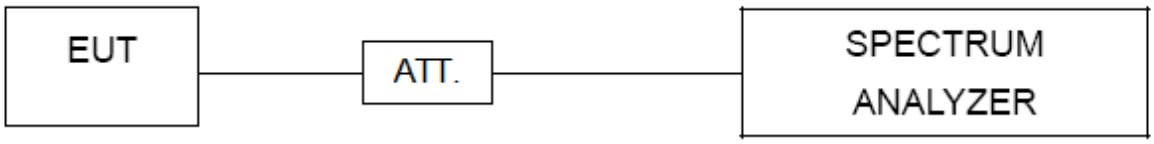
For 99% Emission Bandwidth:

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

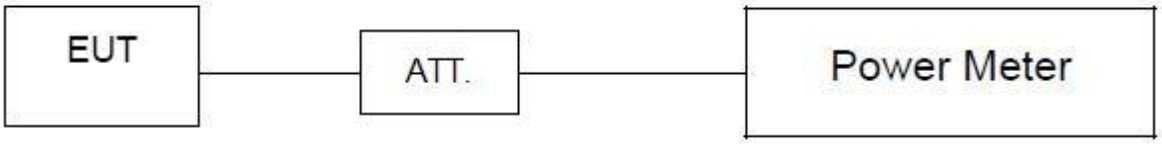
6.2 TEST PROCEDURE

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 11.9.1.3 (for peak 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	300 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

AC Power Line Conducted Emissions					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Line Impedance Stabilisation Network	Schwarzbeck	NNLK 8121	8121-822	Mar. 20, 2023
2	TWO-LINE V-NETWORK	R&S	ENV216	101340	Aug. 23, 2022
3	Test Cable	emci	EMCRG400-BM-NM-10000	170628	Apr. 05, 2023
4	EMI Test Receiver	R&S	ESCI	100082	Mar. 20, 2023
5	50Ω Terminator	SHX	TF2-1G-A	17051602	Mar. 20, 2023
6	50Ω coaxial switch	Anritsu	MP59B	6201750902	Mar. 20, 2023
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

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	Mar. 20, 2023
2	MXE EMI Receiver	Keysight	N9038A	MY56400088	Mar. 20, 2023
3	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Radiated Emissions - 30 MHz to 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarzbeck	VULB 9160	9160-3233	Mar. 23, 2023
2	Pre-Amplifier	emci	EMC9135	980401	Mar. 20, 2023
3	MXE EMI Receiver	Keysight	N9038A	MY56400088	Mar. 20, 2023
4	Test Cable	emci	EMC104-SM-SM-7000	181020	Apr. 05, 2023
5	Test Cable	emci	EMC104-SM-SM-2500	170618	Apr. 05, 2023
6	Test Cable	emci	EMC104-SM-SM-800	170647	Apr. 05, 2023
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	BBHA 9120D	9120D-1817	Mar. 23, 2023
2	Pre-Amplifier	emci	EMC051845SE	980725	Aug. 23, 2022
3	EXA Spectrum Analyzer	Keysight	N9010A	MY56480579	Mar. 20, 2023
4	Test Cable	emci	EMC104-SM-SM-7000	181020	Apr. 05, 2023
5	Test Cable	emci	EMC104-SM-SM-2500	170618	Apr. 05, 2023
6	Test Cable	emci	EMC104-SM-SM-800	170647	Apr. 05, 2023
7	Double-Ridged Waveguide Horn Antenna	ETS-Lindgren	3116C	00203919	Mar. 20, 2023
8	Pre-Amplifier	emci	EMC184045B	980265	Apr. 05, 2023
9	Test Cable	emci	EMC102-SM-SM-800	170335	Apr. 05, 2023
10	Test Cable	emci	EMC102-KM-KM-2500	170627	Apr. 05, 2023
11	MXE EMI Receiver	Keysight	N9038A	MY5640088	Mar. 20, 2023
12	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 20, 2023
2	Attenuator	JUK	ATT-2W6G-S-10	N/A	N/A

Maximum Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Peak Power Analyze	Keysight	8990B	MY51000507	Mar. 20, 2023
2	Wideband Power Sensor	Keysight	N1923A	MY58310003	Mar. 20, 2023
3	Attenuator	JUK	ATT-2W6G-S-10	N/A	N/A

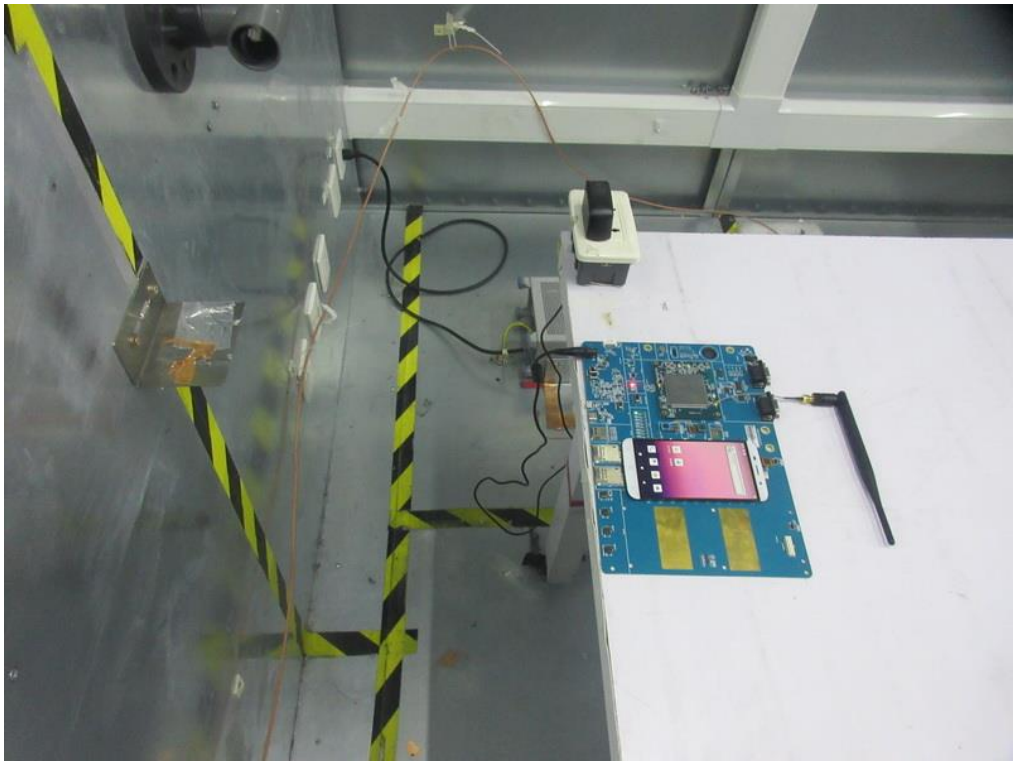
Antenna Conducted Spurious Emissions					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 20, 2023
2	Attenuator	JUK	ATT-2W6G-S-10	N/A	N/A

Power Spectral Density					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 20, 2023
2	Attenuator	JUK	ATT-2W6G-S-10	N/A	N/A

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

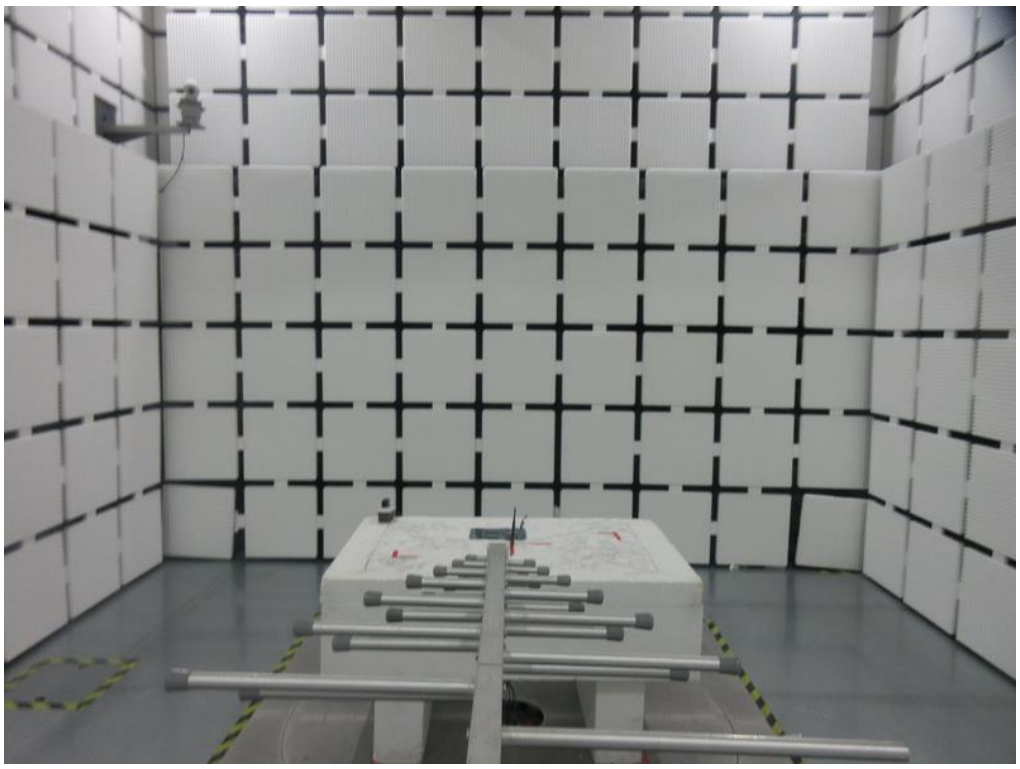
10. EUT TEST PHOTO

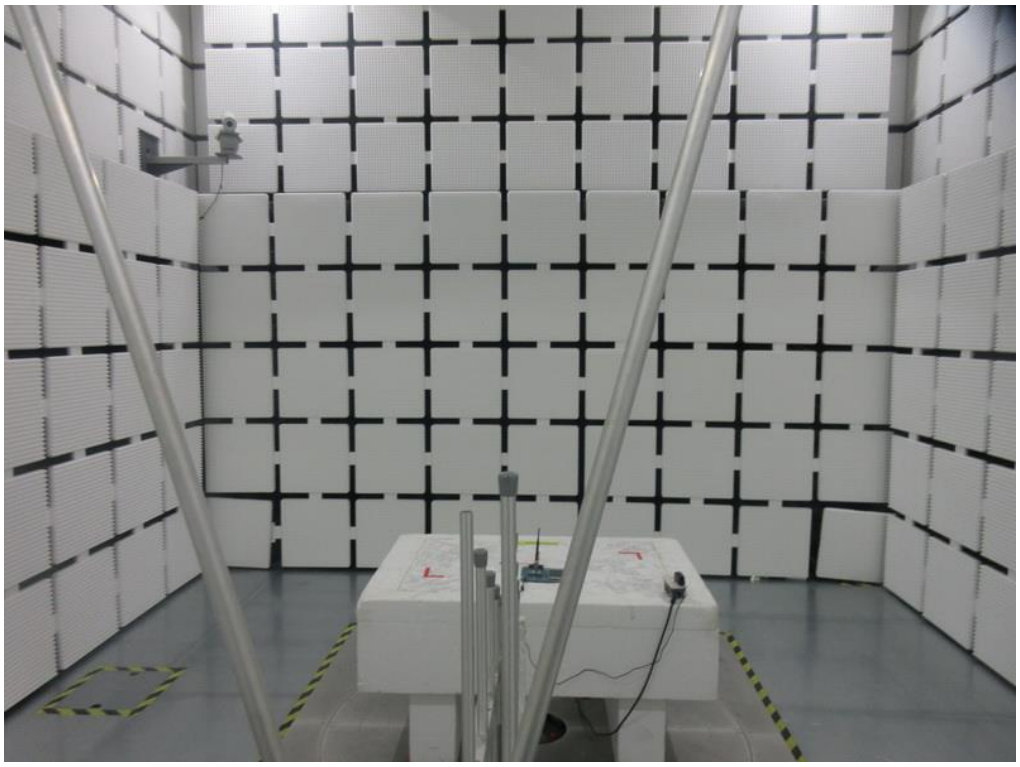
AC Power Line Conducted Emissions Test Photos



Radiated Emissions Test Photos

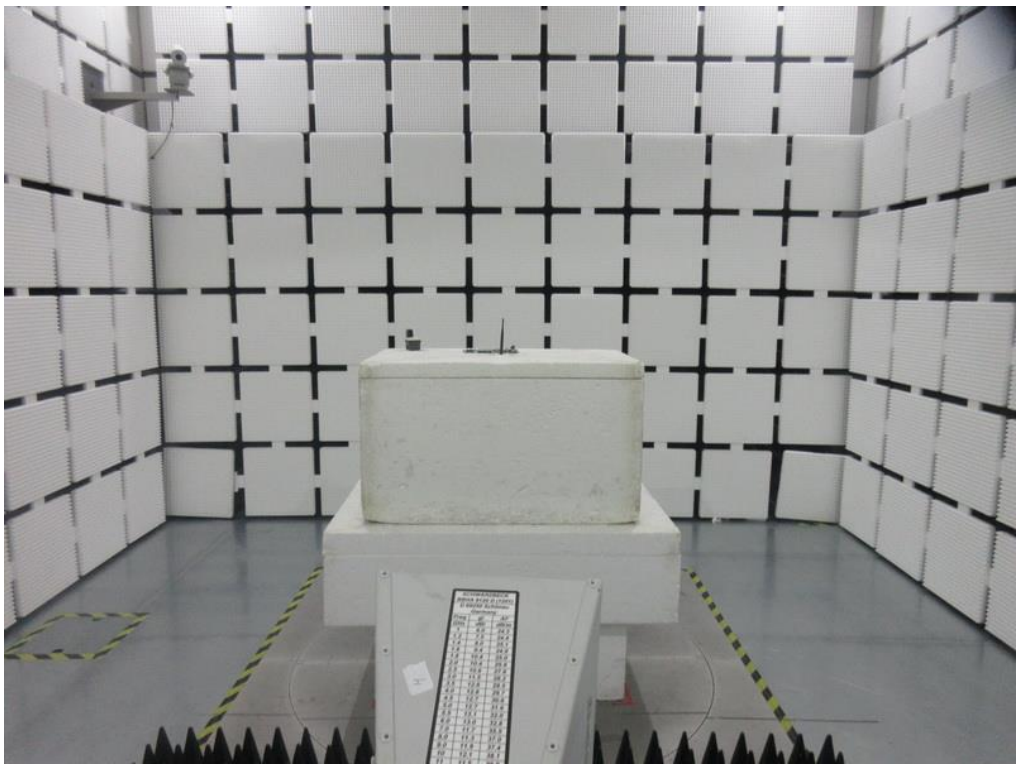
30 MHz to 1 GHz

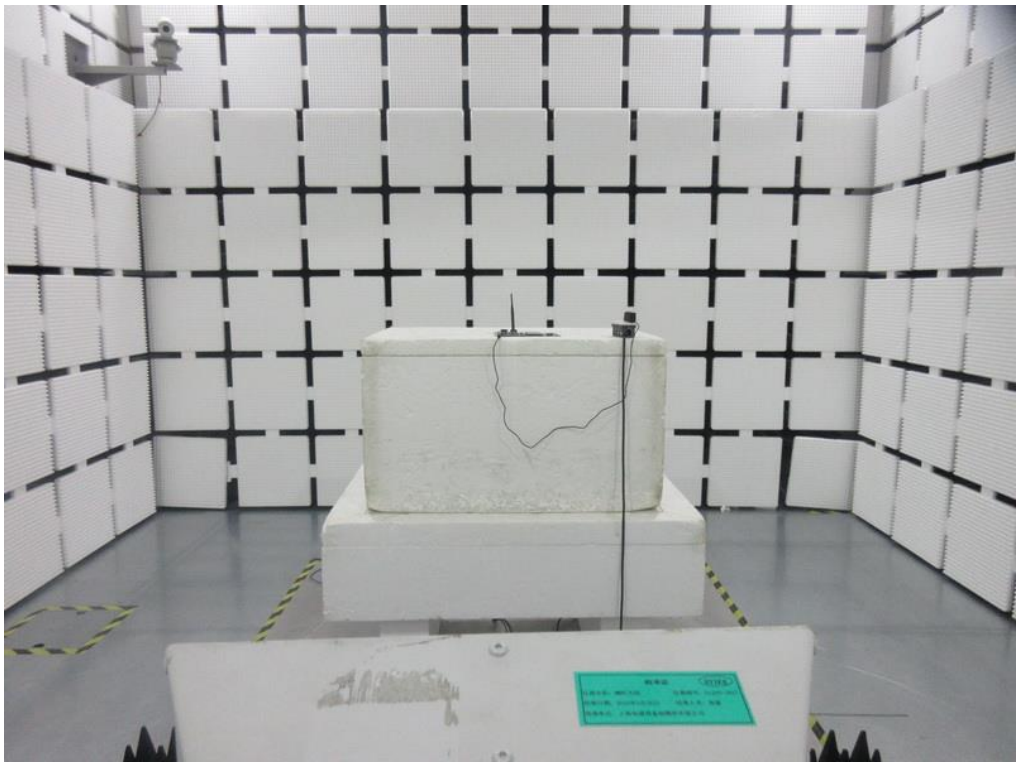




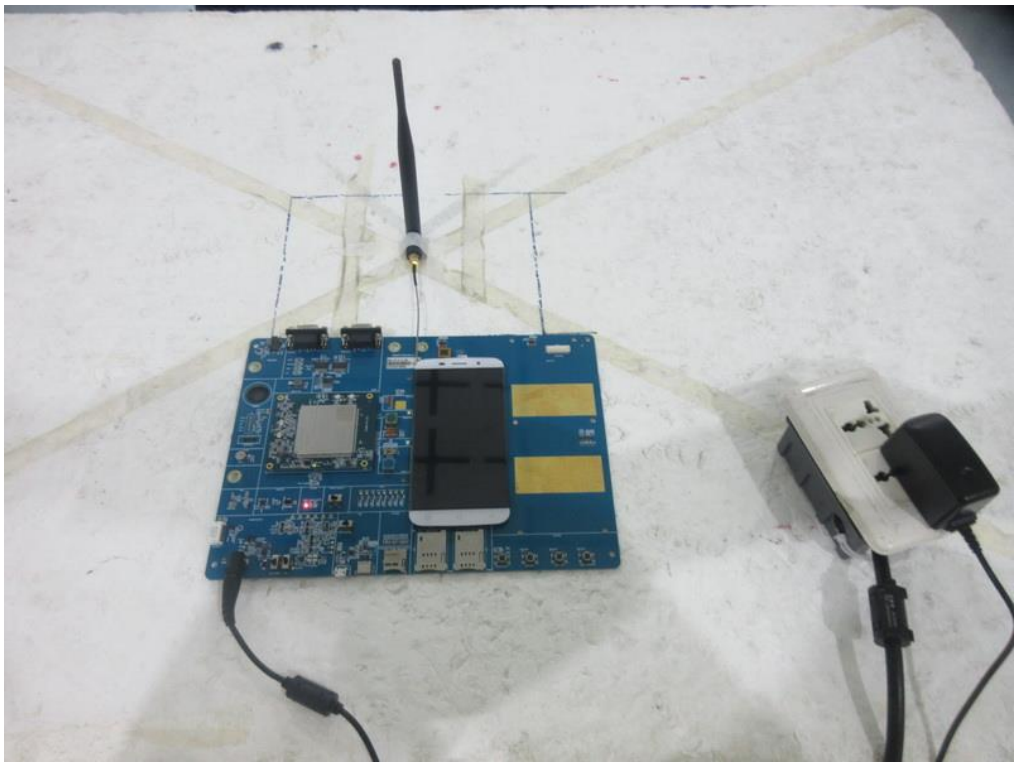
Radiated Emissions Test Photos

Above 1 GHz



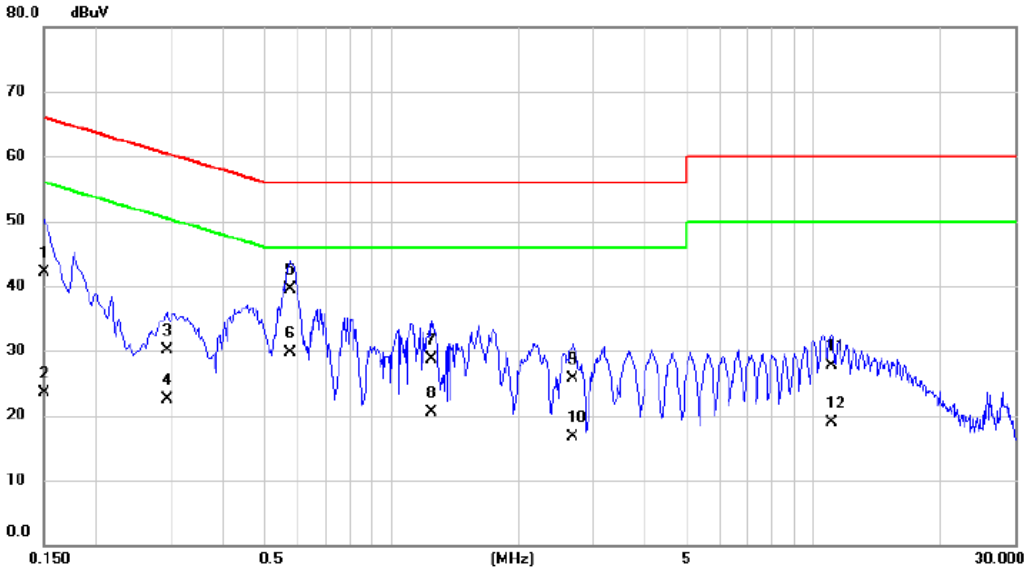


Close-up Test Photos



APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

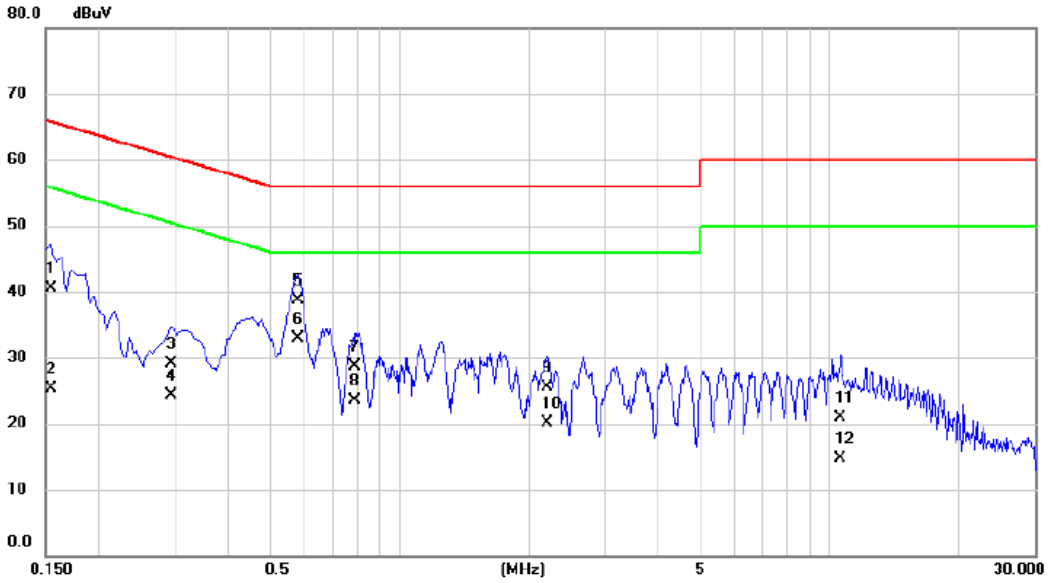
Test Mode	TX N(HT40) Mode Channel 03	Phase	Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	32.50	9.65	42.15	66.00	-23.85	QP	
2		0.1500	13.80	9.65	23.45	56.00	-32.55	AVG	
3		0.2940	20.40	9.75	30.15	60.41	-30.26	QP	
4		0.2940	12.70	9.75	22.45	50.41	-27.96	AVG	
5		0.5775	29.70	9.73	39.43	56.00	-16.57	QP	
6	*	0.5775	20.00	9.73	29.73	46.00	-16.27	AVG	
7		1.2435	18.90	9.87	28.77	56.00	-27.23	QP	
8		1.2435	10.60	9.87	20.47	46.00	-25.53	AVG	
9		2.6925	15.70	9.98	25.68	56.00	-30.32	QP	
10		2.6925	6.80	9.98	16.78	46.00	-29.22	AVG	
11		11.0355	17.40	10.25	27.65	60.00	-32.35	QP	
12		11.0355	8.60	10.25	18.85	50.00	-31.15	AVG	

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

Test Mode	TX N(HT40) Mode Channel 03	Phase	Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1545	31.00	9.59	40.59	65.75	-25.16	QP	
2		0.1545	15.80	9.59	25.39	55.75	-30.36	AVG	
3		0.2940	19.40	9.61	29.01	60.41	-31.40	QP	
4		0.2940	14.60	9.61	24.21	50.41	-26.20	AVG	
5		0.5820	29.00	9.79	38.79	56.00	-17.21	QP	
6	*	0.5820	23.10	9.79	32.89	46.00	-13.11	AVG	
7		0.7845	18.90	9.73	28.63	56.00	-27.37	QP	
8		0.7845	13.70	9.73	23.43	46.00	-22.57	AVG	
9		2.2110	15.60	9.85	25.45	56.00	-30.55	QP	
10		2.2110	10.30	9.85	20.15	46.00	-25.85	AVG	
11		10.6080	10.50	10.39	20.89	60.00	-39.11	QP	
12		10.6080	4.40	10.39	14.79	50.00	-35.21	AVG	

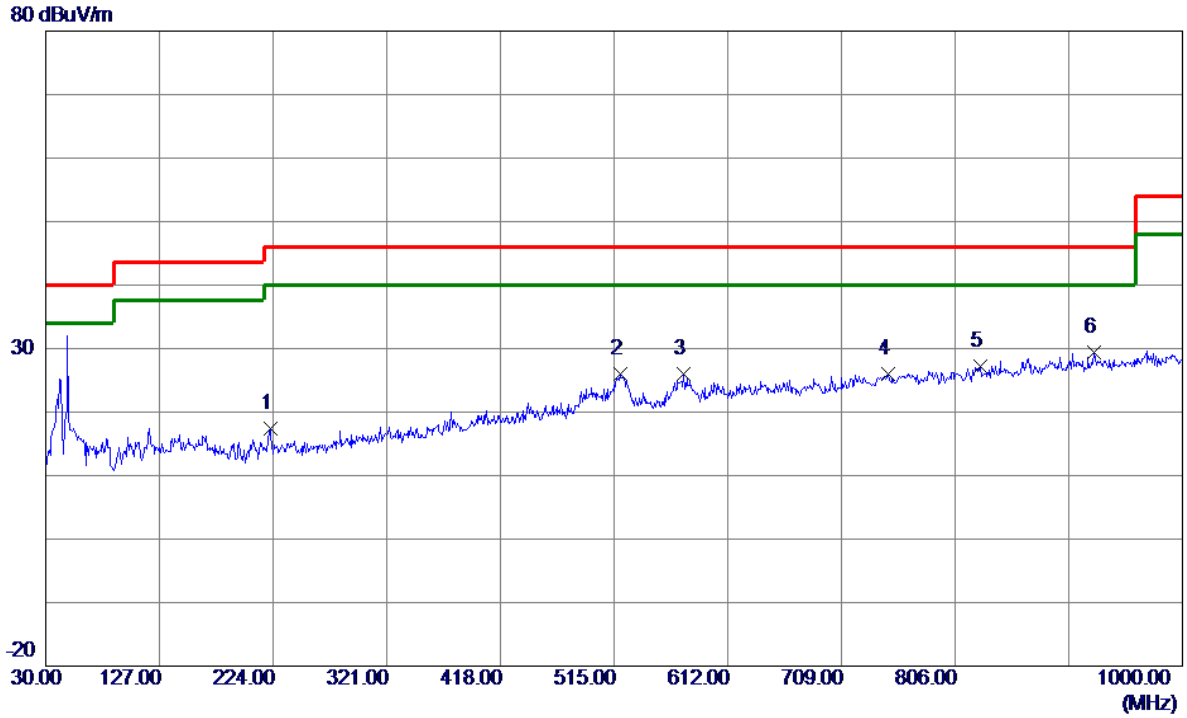
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

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

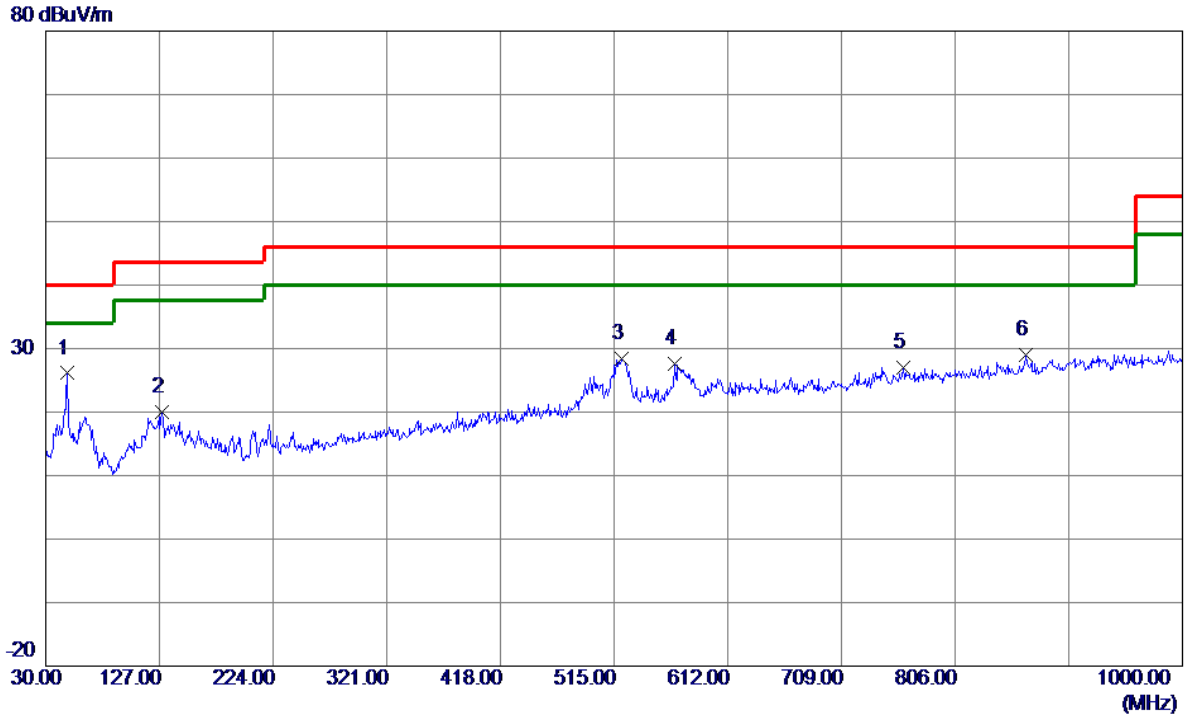
Test Mode	TX N(HT40) Mode Channel 03	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	221.5750	35.51	-18.19	17.32	46.00	-28.68	Peak	
2	520.3350	36.28	-10.26	26.02	46.00	-19.98	Peak	
3	574.1700	35.19	-9.16	26.03	46.00	-19.97	Peak	
4	749.2550	32.27	-6.20	26.07	46.00	-19.93	Peak	
5	827.8250	32.78	-5.57	27.21	46.00	-18.79	Peak	
6 *	924.8250	33.78	-4.42	29.36	46.00	-16.64	Peak	

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

Test Mode	TX N(HT40) Mode Channel 03	Polarization	Horizontal

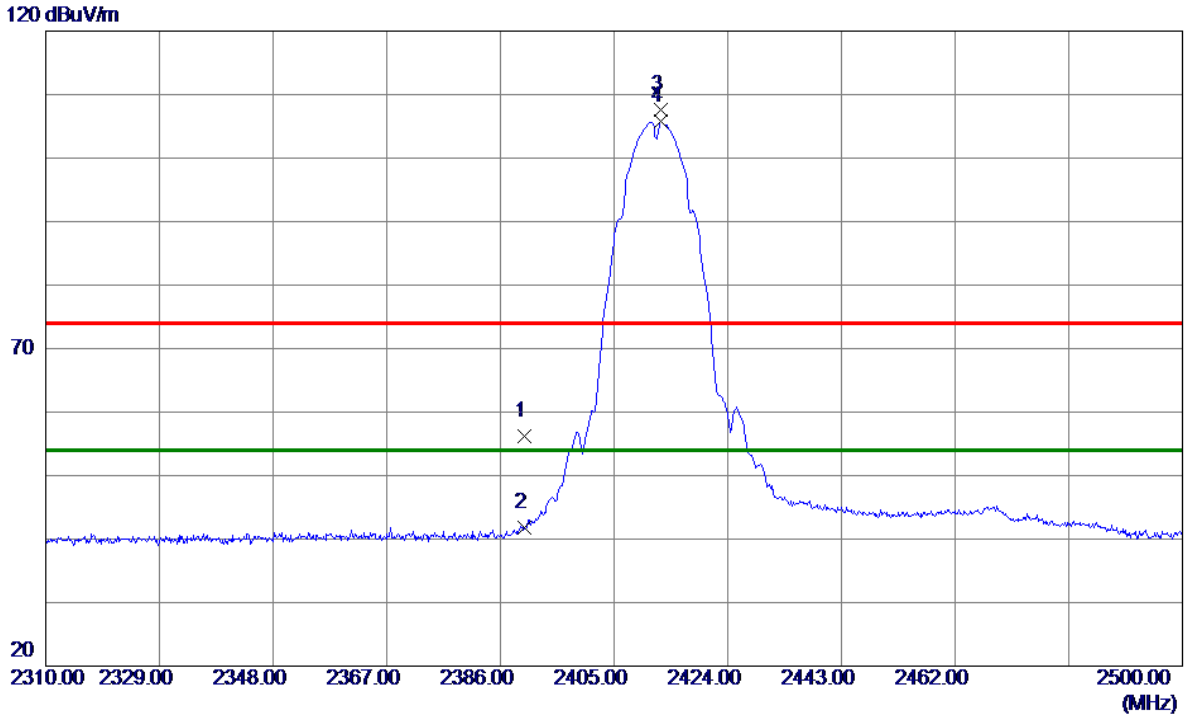


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	48.4300	43.40	-17.30	26.10	40.00	-13.90	Peak	
2	129.4250	37.15	-17.19	19.96	43.50	-23.54	Peak	
3	521.3050	38.70	-10.24	28.46	46.00	-17.54	Peak	
4	566.8950	37.05	-9.36	27.69	46.00	-18.31	Peak	
5	761.8650	33.11	-6.07	27.04	46.00	-18.96	Peak	
6	866.6250	33.94	-5.02	28.92	46.00	-17.08	Peak	

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

APPENDIX D - RADIATED EMISSION- ABOVE 1000 MHZ

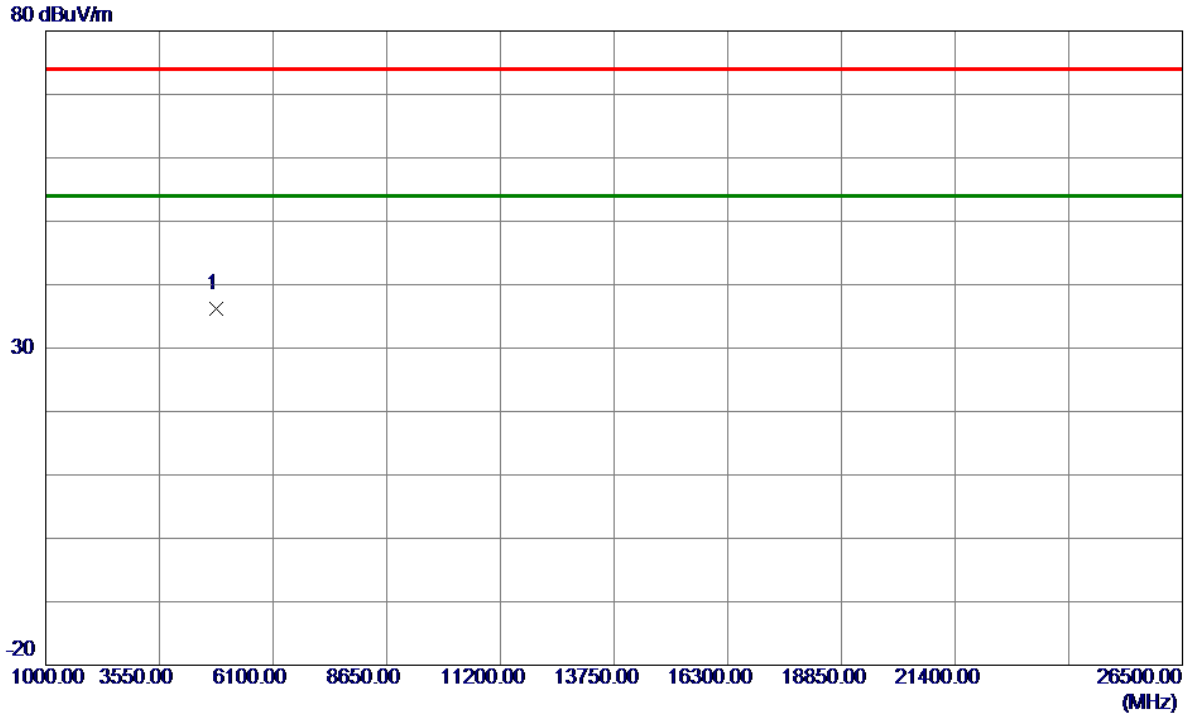
Test Mode	TX B Mode 2412 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	25.58	30.55	56.13	74.00	-17.87	Peak	
2	2390.0000	11.27	30.55	41.82	54.00	-12.18	AVG	
3	2412.7900	76.88	30.64	107.52	74.00	33.52	Peak	No Limit
4 *	2412.7900	75.11	30.64	105.75	54.00	51.75	AVG	No Limit

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

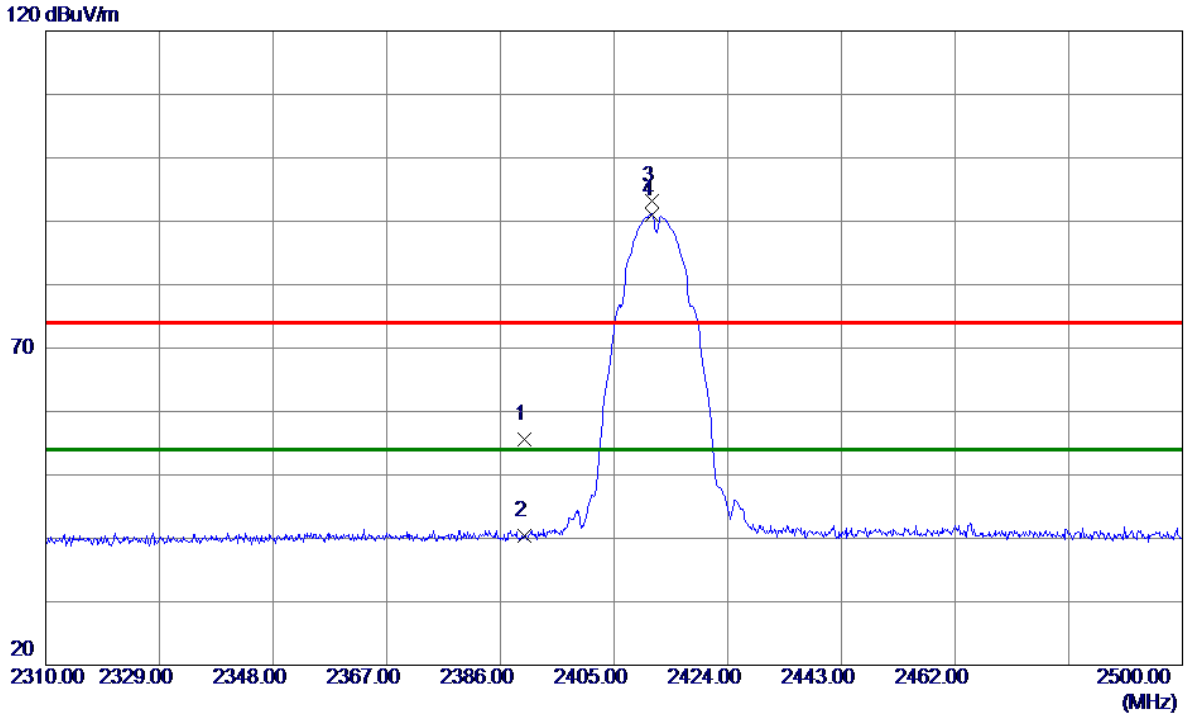
Test Mode	TX B Mode 2412 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4824.0000	53.40	-17.19	36.21	74.00	-37.79	Peak	

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

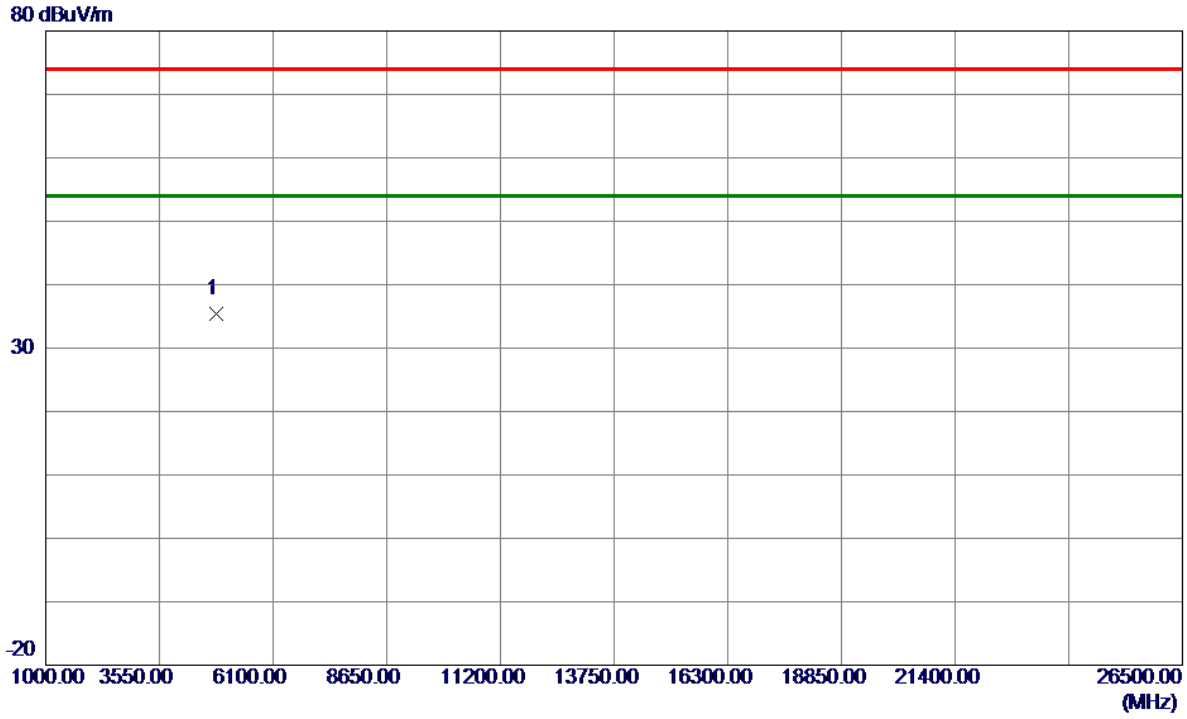
Test Mode	TX B Mode 2412 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	25.00	30.55	55.55	74.00	-18.45	Peak	
2	2390.0000	9.84	30.55	40.39	54.00	-13.61	AVG	
3	2411.2700	62.48	30.64	93.12	74.00	19.12	Peak	No Limit
4 *	2411.2700	60.46	30.64	91.10	54.00	37.10	AVG	No Limit

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

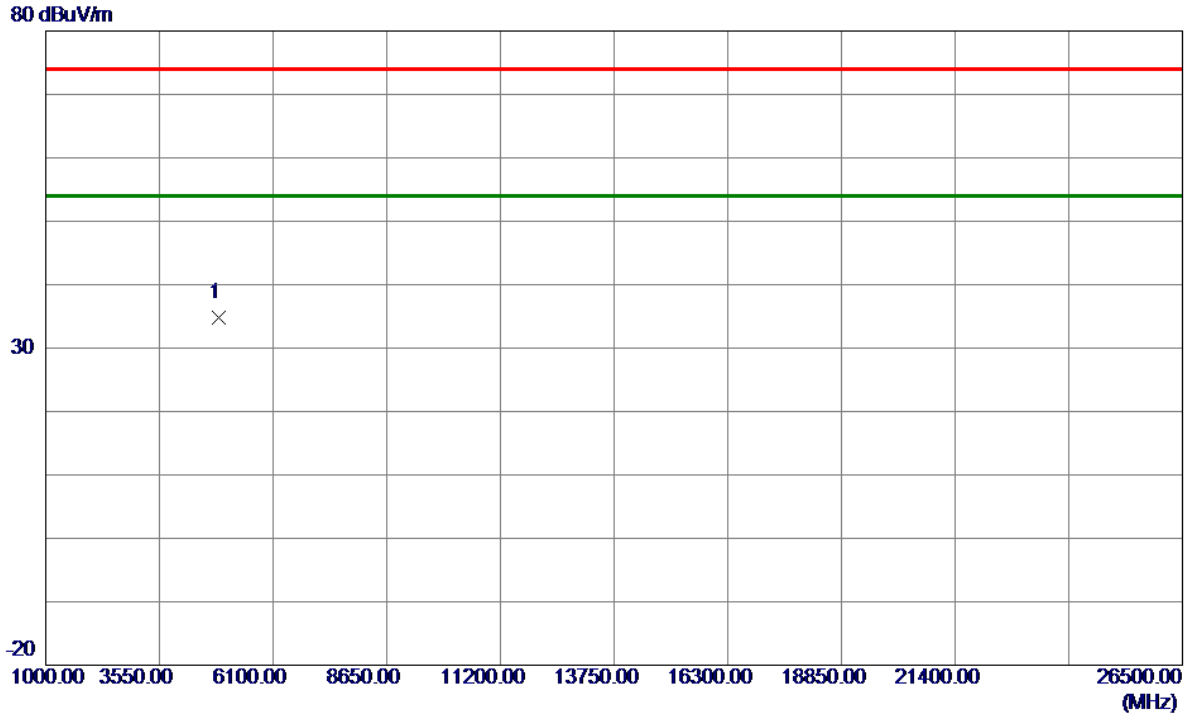
Test Mode	TX B Mode 2412 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4824.0000	52.58	-17.19	35.39	74.00	-38.61	Peak	

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

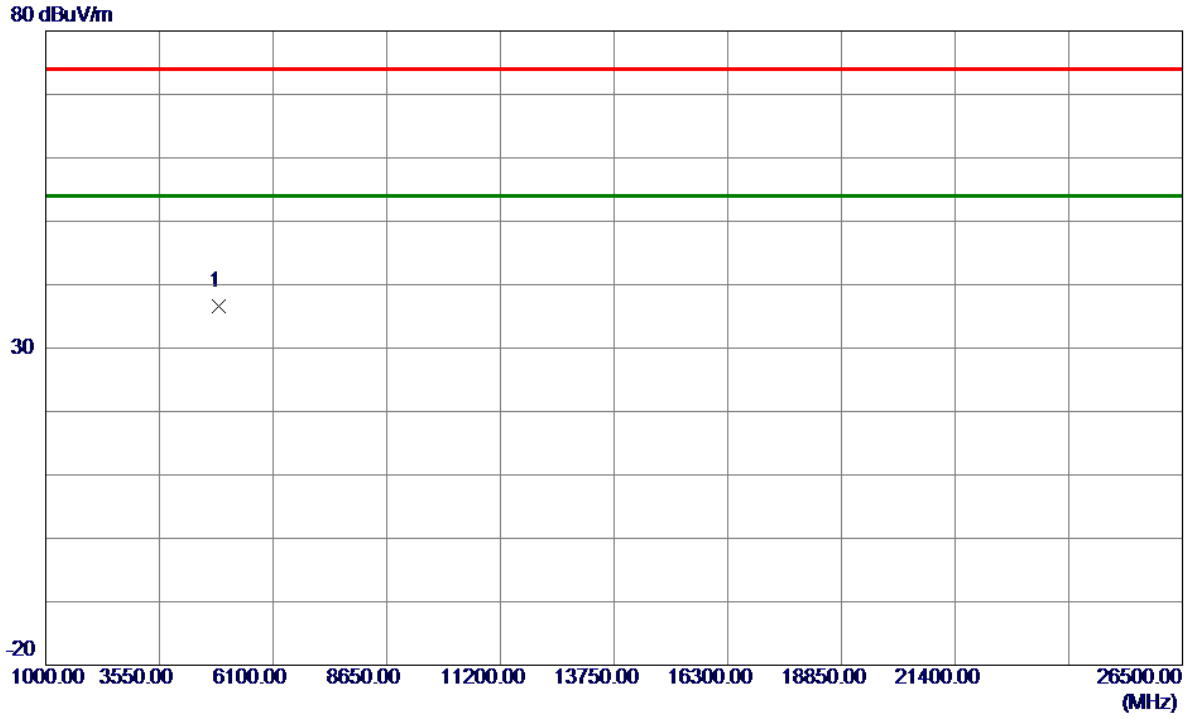
Test Mode	TX B Mode 2437 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.0000	51.89	-17.01	34.88	74.00	-39.12	Peak	

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

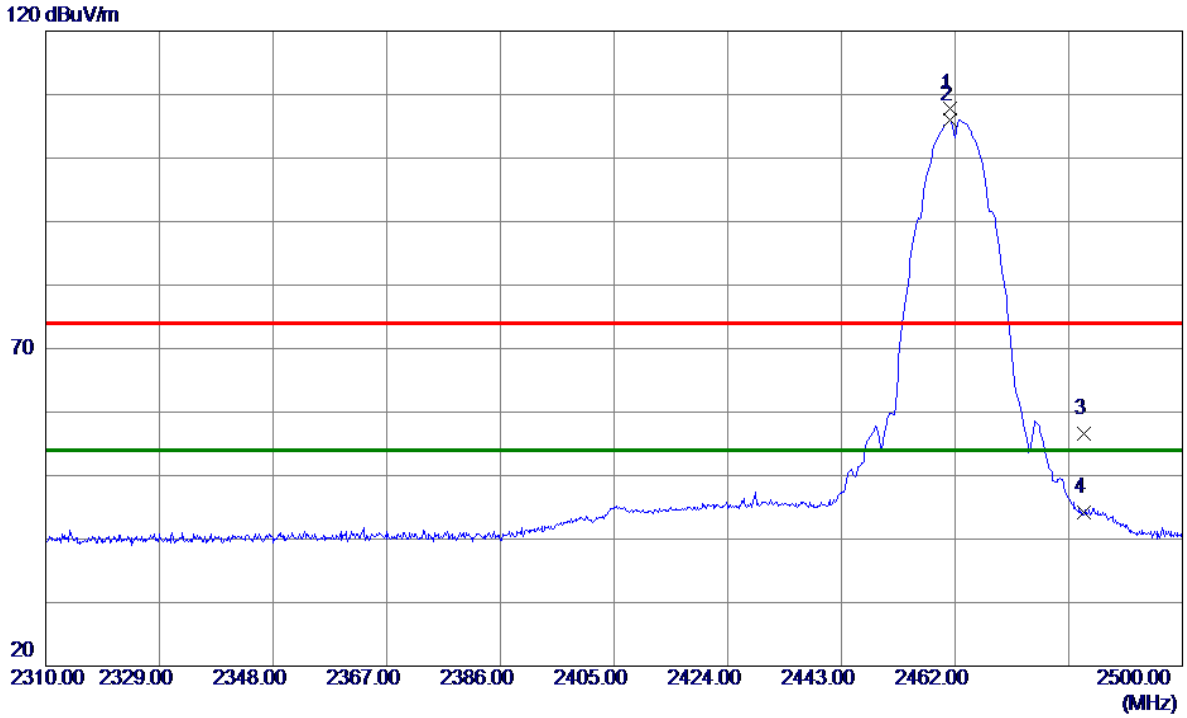
Test Mode	TX B Mode 2437 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.0000	53.69	-17.01	36.68	74.00	-37.32	Peak	

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

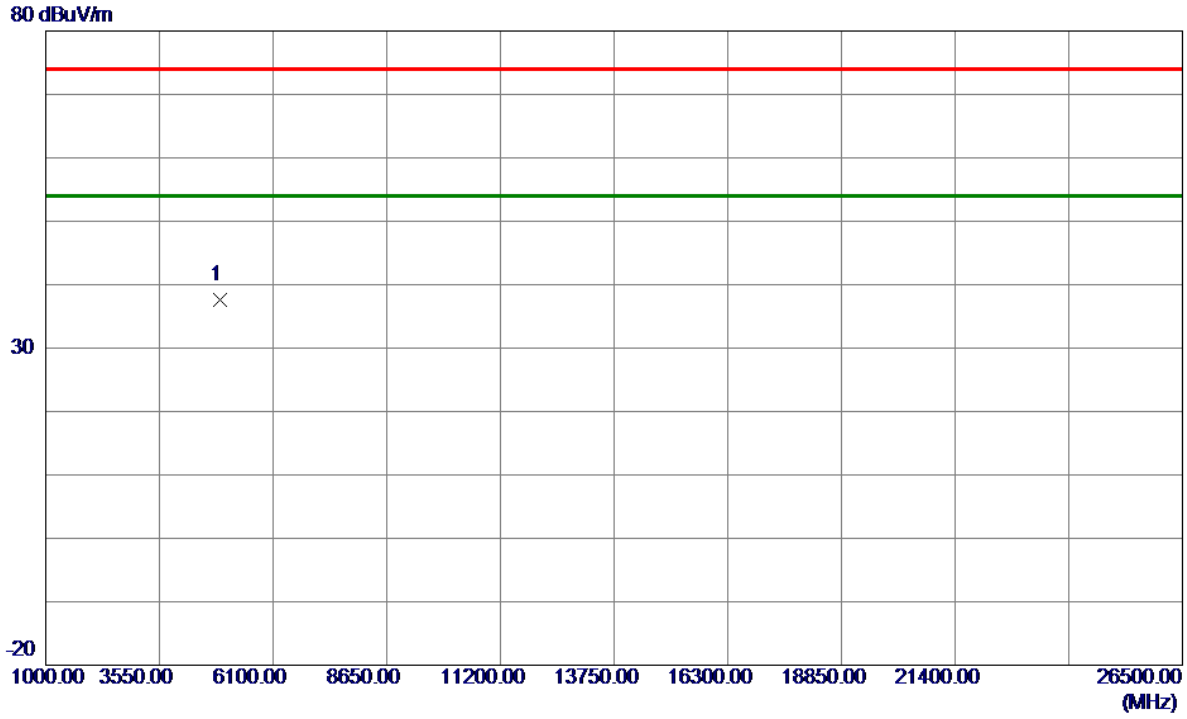
Test Mode	TX B Mode 2462 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2461.2400	77.02	30.85	107.87	74.00	33.87	Peak	No Limit
2 *	2461.2400	75.16	30.85	106.01	54.00	52.01	AVG	No Limit
3	2483.5000	25.58	30.94	56.52	74.00	-17.48	Peak	
4	2483.5000	13.28	30.94	44.22	54.00	-9.78	AVG	

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

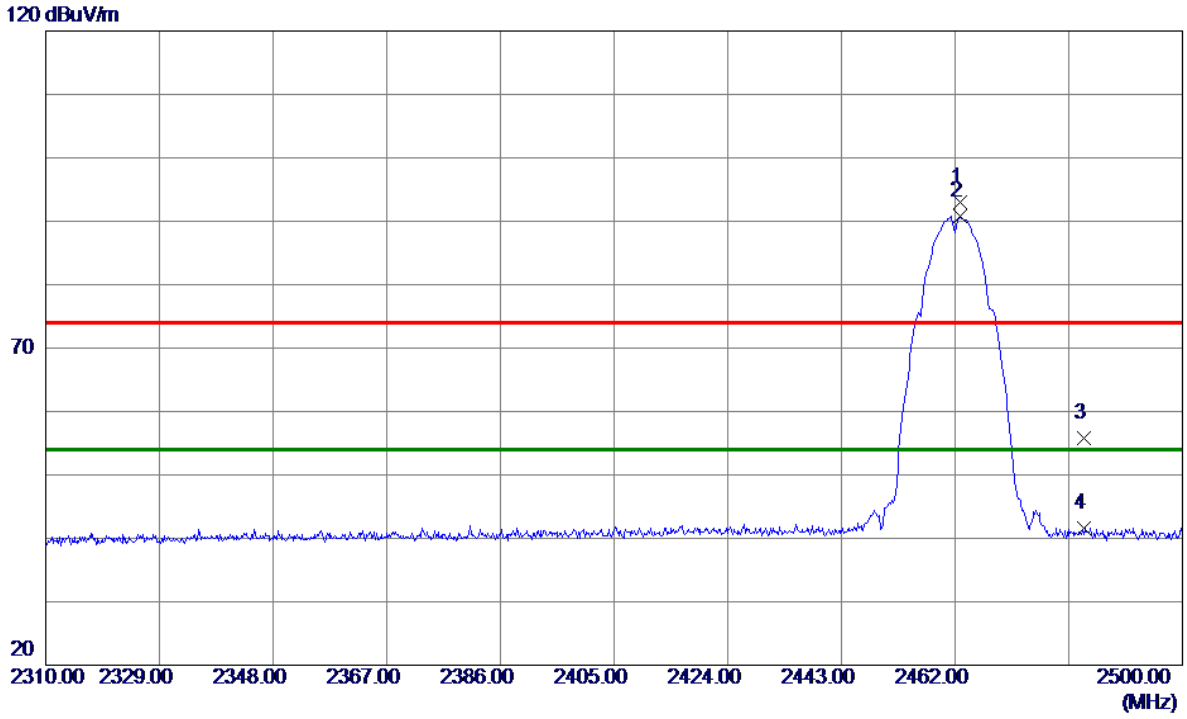
Test Mode	TX B Mode 2462 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4924.0000	54.39	-16.82	37.57	74.00	-36.43	Peak	

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

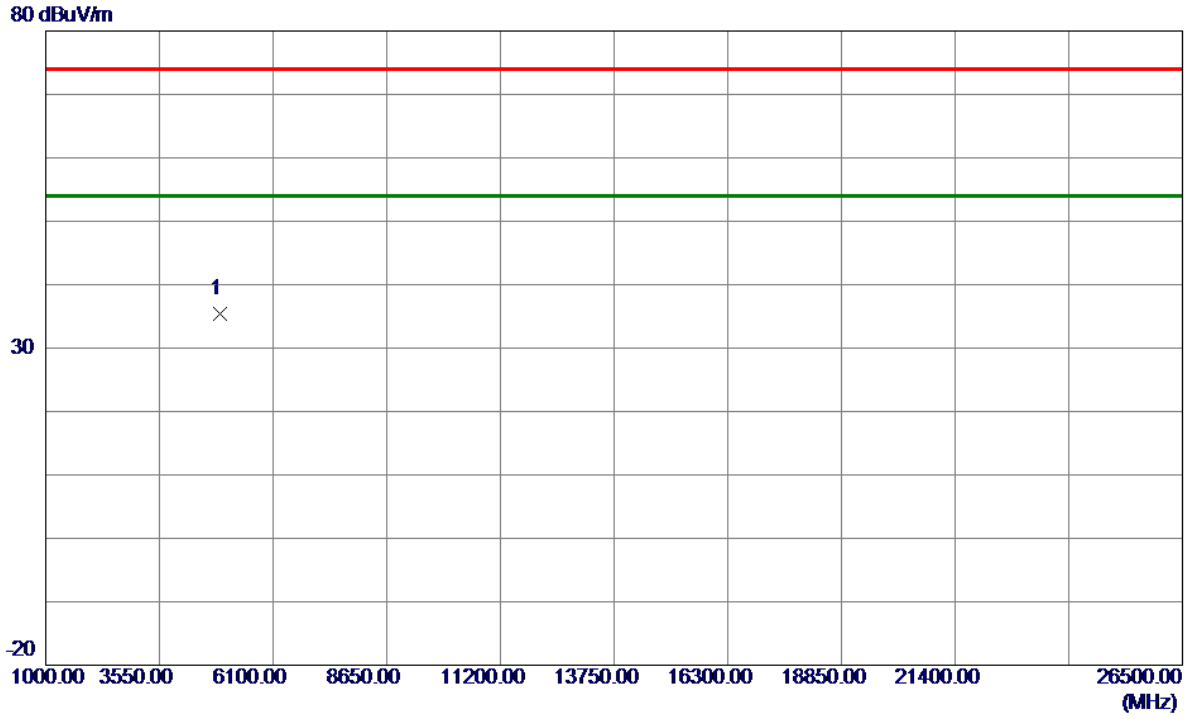
Test Mode	TX B Mode 2462 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2462.7600	62.09	30.85	92.94	74.00	18.94	Peak	No Limit
2 *	2462.7600	59.98	30.85	90.83	54.00	36.83	AVG	No Limit
3	2483.5000	24.88	30.94	55.82	74.00	-18.18	Peak	
4	2483.5000	10.70	30.94	41.64	54.00	-12.36	AVG	

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

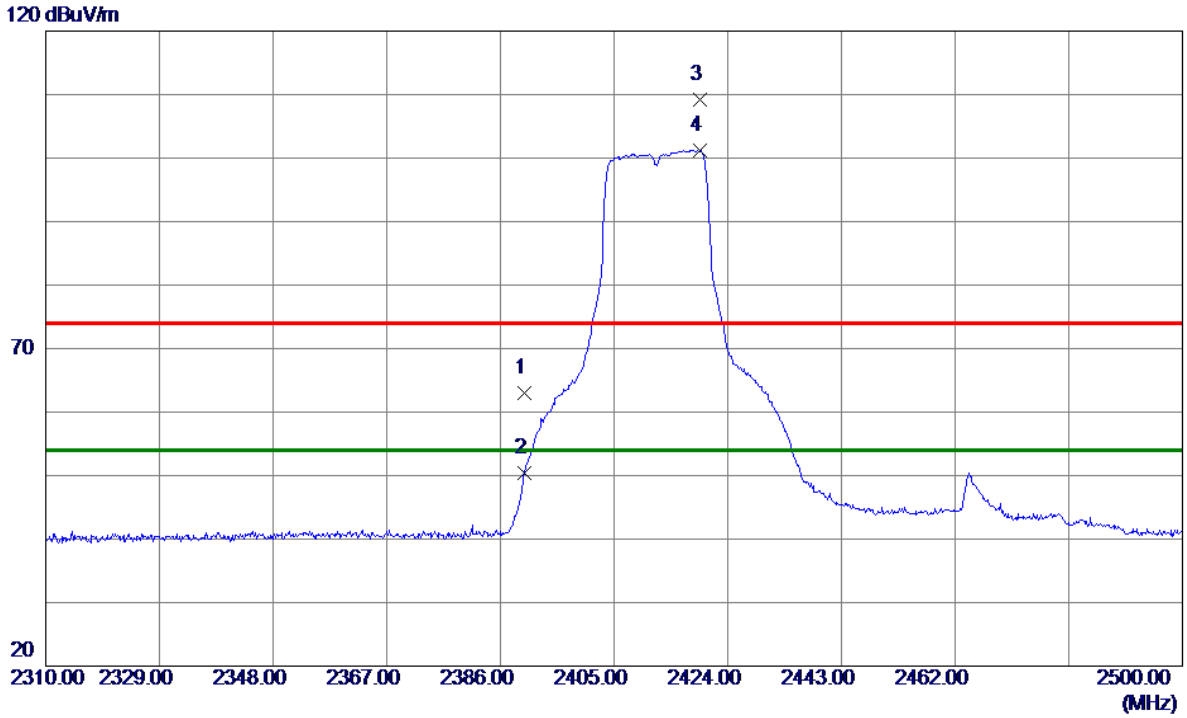
Test Mode	TX B Mode 2462 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4924.0000	52.28	-16.82	35.46	74.00	-38.54	Peak	

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

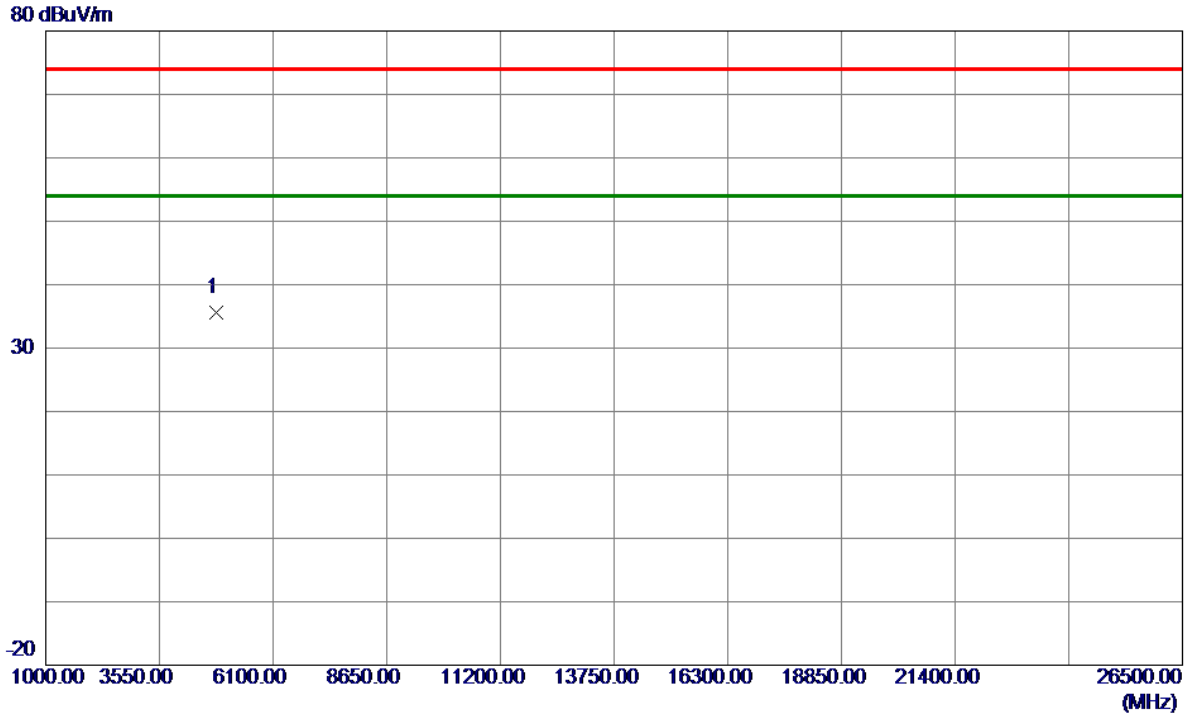
Test Mode	TX G Mode 2412 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	32.45	30.55	63.00	74.00	-11.00	Peak	
2	2390.0000	19.81	30.55	50.36	54.00	-3.64	AVG	
3	2419.4400	78.58	30.67	109.25	74.00	35.25	Peak	No Limit
4 *	2419.4400	70.56	30.67	101.23	54.00	47.23	AVG	No Limit

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

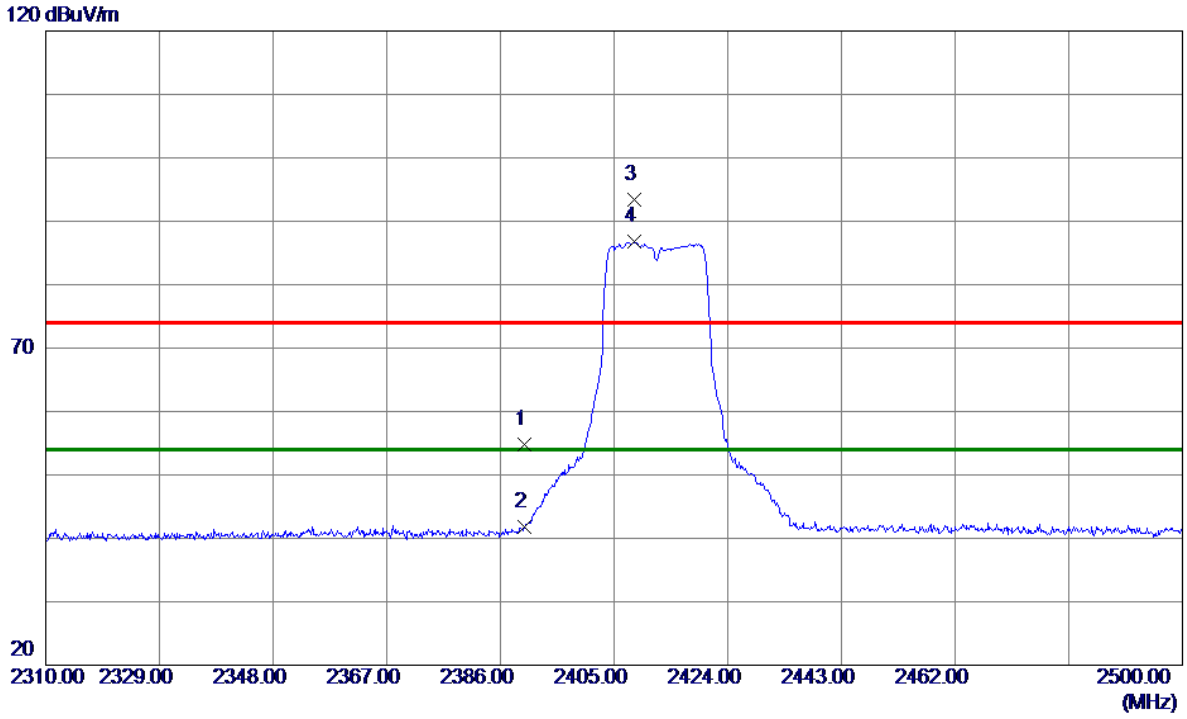
Test Mode	TX G Mode 2412 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4824.0000	52.81	-17.19	35.62	74.00	-38.38	Peak	

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

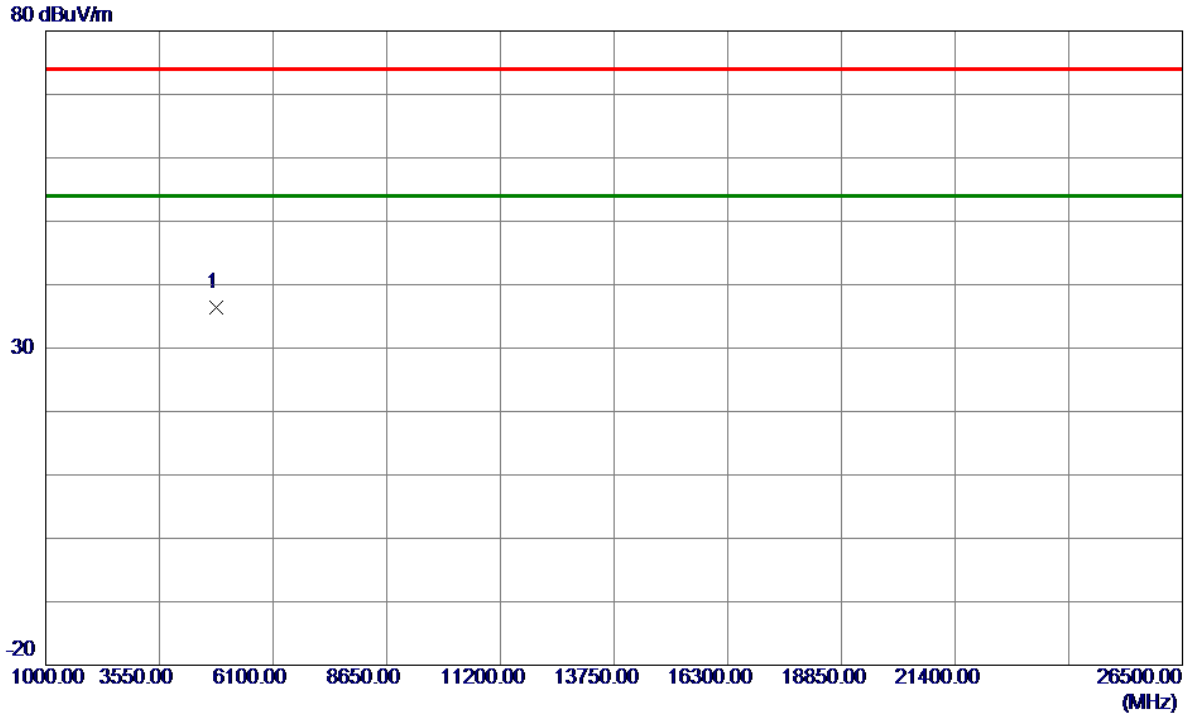
Test Mode	TX G Mode 2412 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	24.17	30.55	54.72	74.00	-19.28	Peak	
2	2390.0000	11.21	30.55	41.76	54.00	-12.24	AVG	
3	2408.3250	62.81	30.62	93.43	74.00	19.43	Peak	No Limit
4 *	2408.3250	56.16	30.62	86.78	54.00	32.78	AVG	No Limit

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

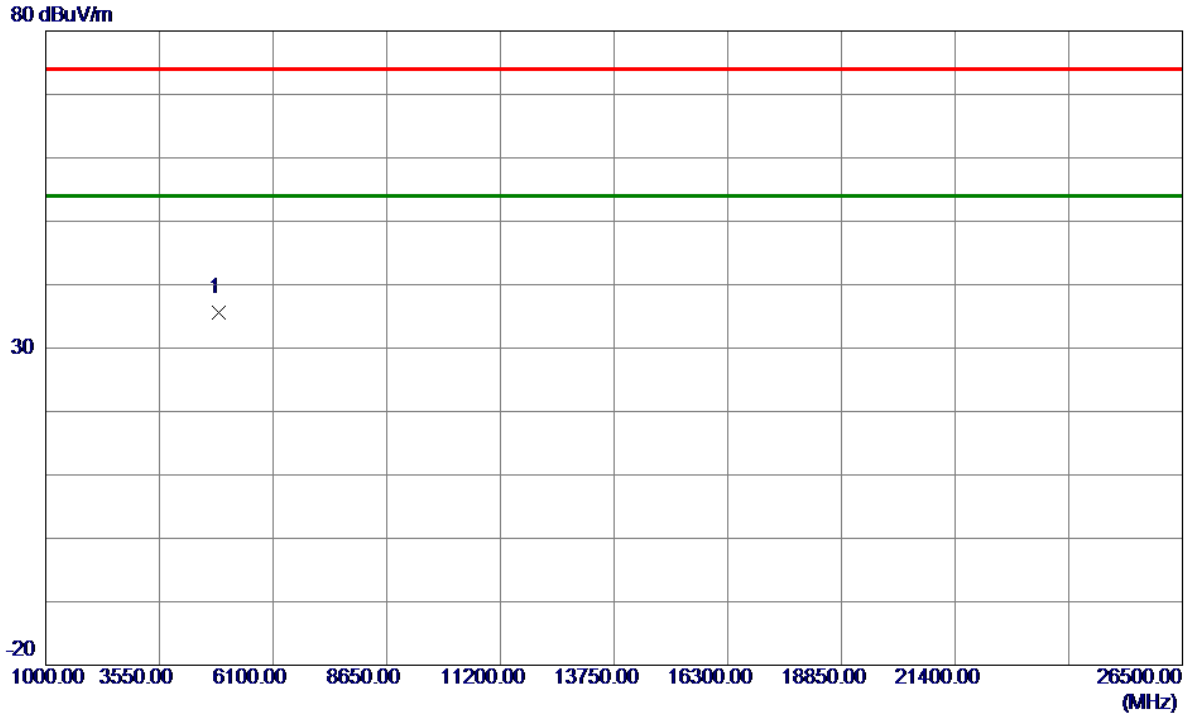
Test Mode	TX G Mode 2412 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4824.0000	53.60	-17.19	36.41	74.00	-37.59	Peak	

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

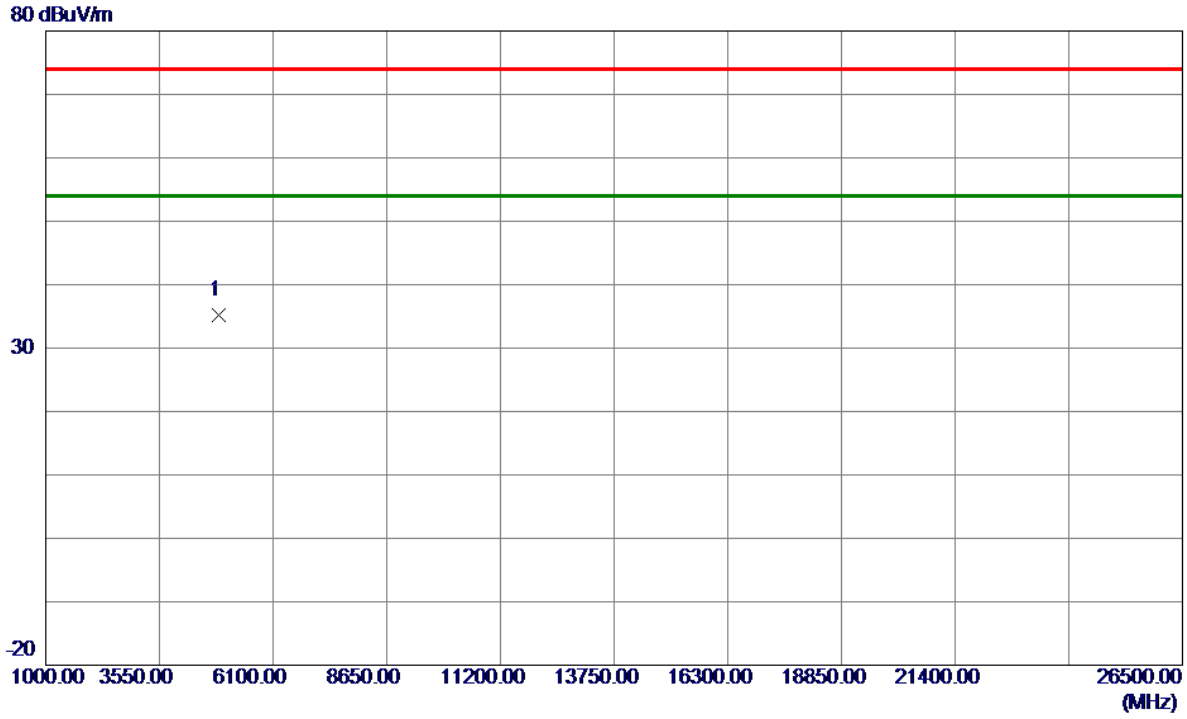
Test Mode	TX G Mode 2437 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.0000	52.63	-17.01	35.62	74.00	-38.38	Peak	

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

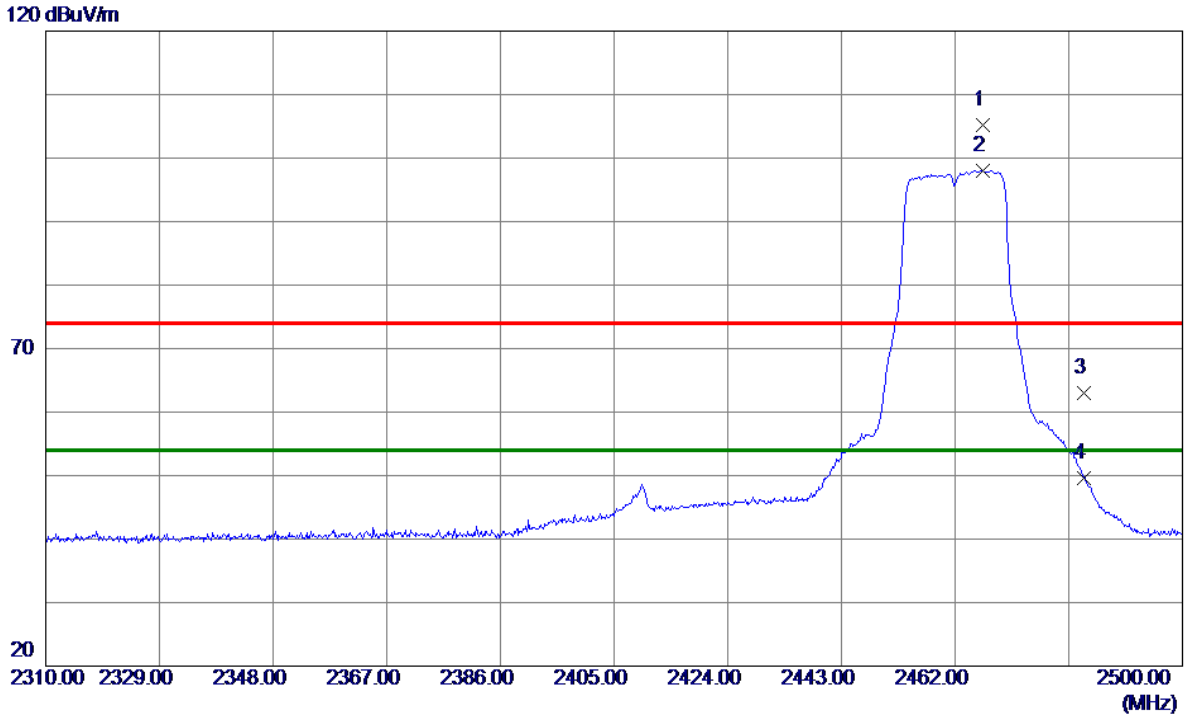
Test Mode	TX G Mode 2437 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.0000	52.29	-17.01	35.28	74.00	-38.72	Peak	

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

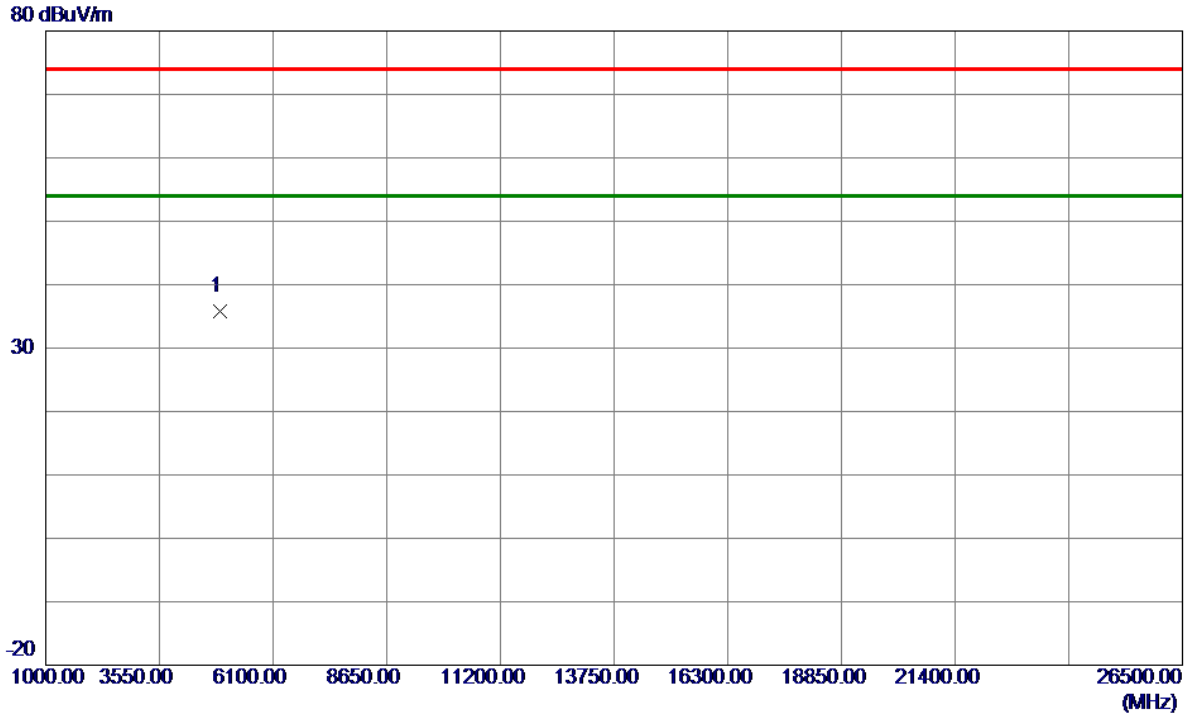
Test Mode	TX G Mode 2462 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2466.7500	74.33	30.87	105.20	74.00	31.20	Peak	No Limit
2 *	2466.7500	67.12	30.87	97.99	54.00	43.99	AVG	No Limit
3	2483.5000	32.01	30.94	62.95	74.00	-11.05	Peak	
4	2483.5000	18.62	30.94	49.56	54.00	-4.44	AVG	

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

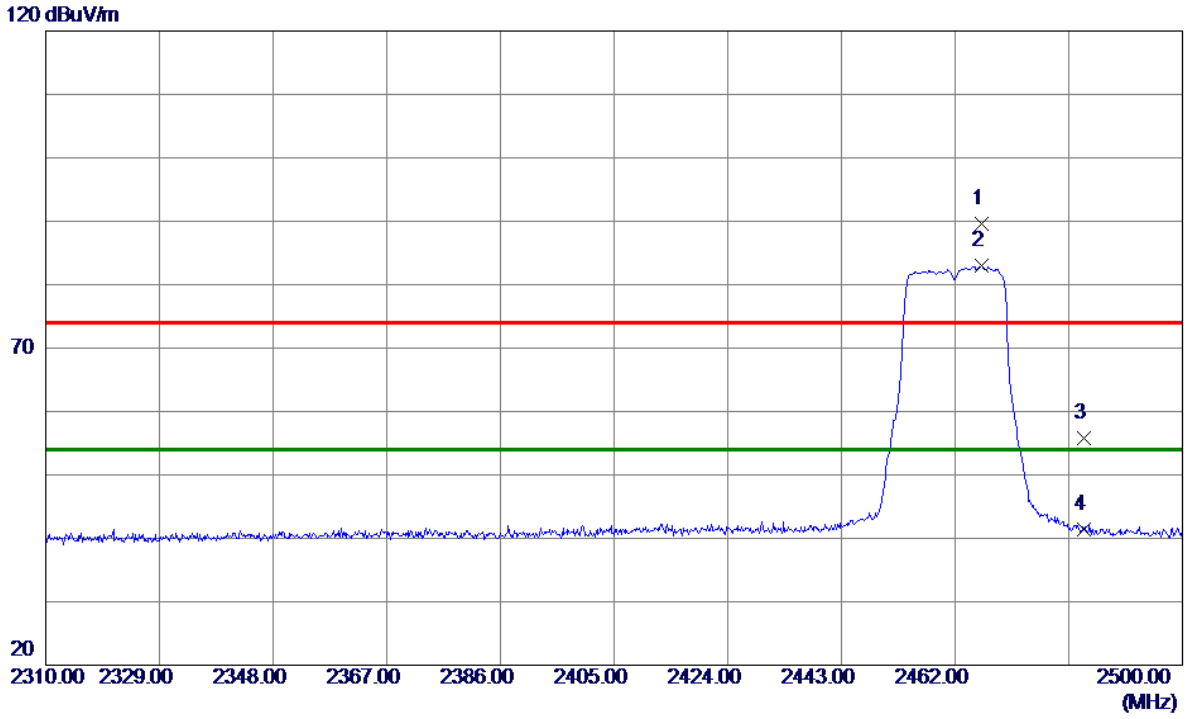
Test Mode	TX G Mode 2462 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4924.0000	52.59	-16.82	35.77	74.00	-38.23	Peak	

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

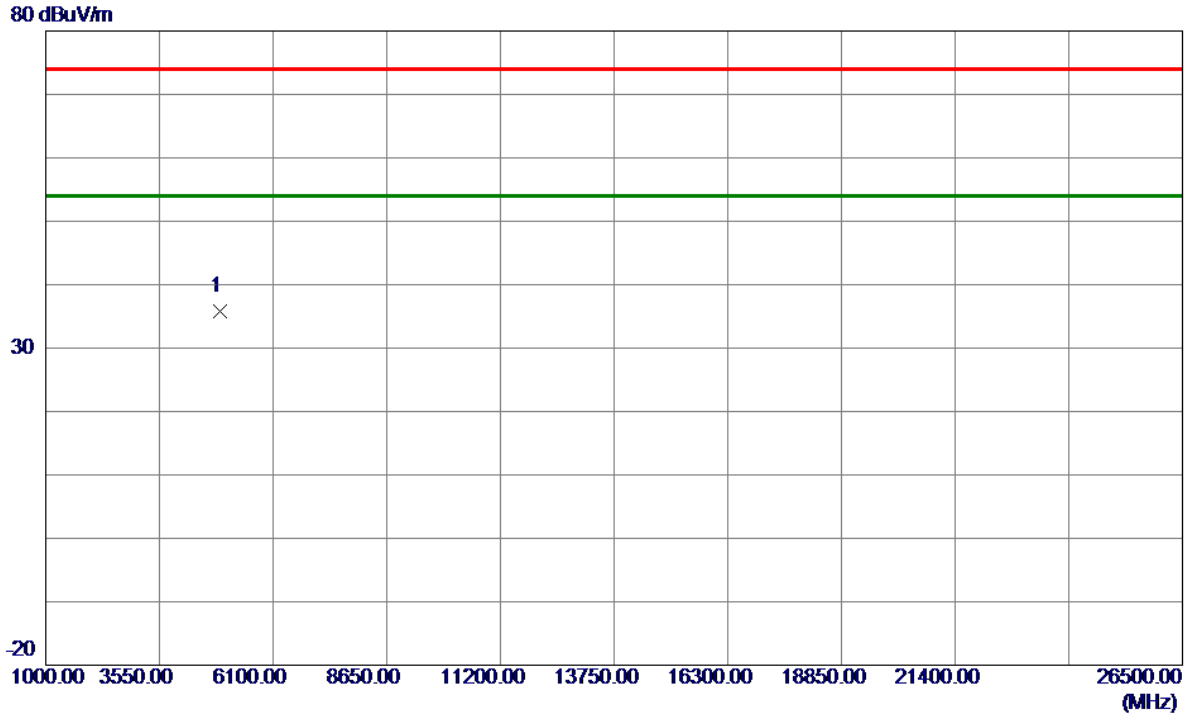
Test Mode	TX G Mode 2462 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2466.4650	58.73	30.87	89.60	74.00	15.60	Peak	No Limit
2 *	2466.4650	52.04	30.87	82.91	54.00	28.91	AVG	No Limit
3	2483.5000	24.92	30.94	55.86	74.00	-18.14	Peak	
4	2483.5000	10.51	30.94	41.45	54.00	-12.55	AVG	

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

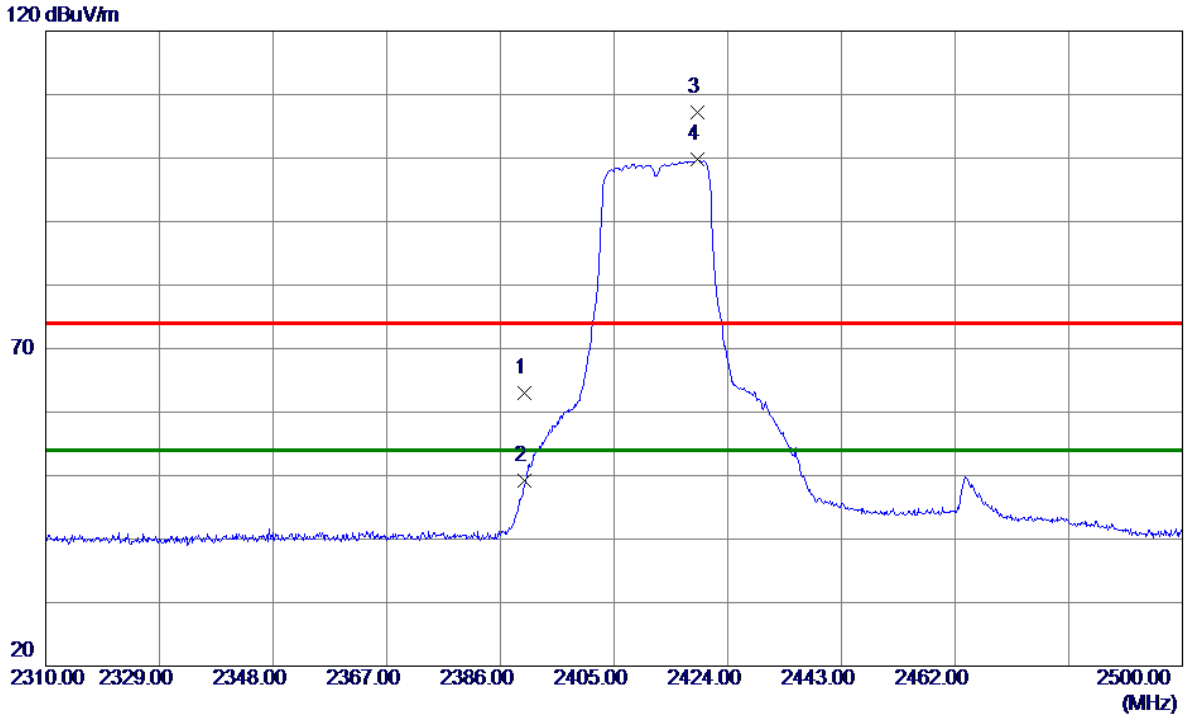
Test Mode	TX G Mode 2462 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4924.0000	52.66	-16.82	35.84	74.00	-38.16	Peak	

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

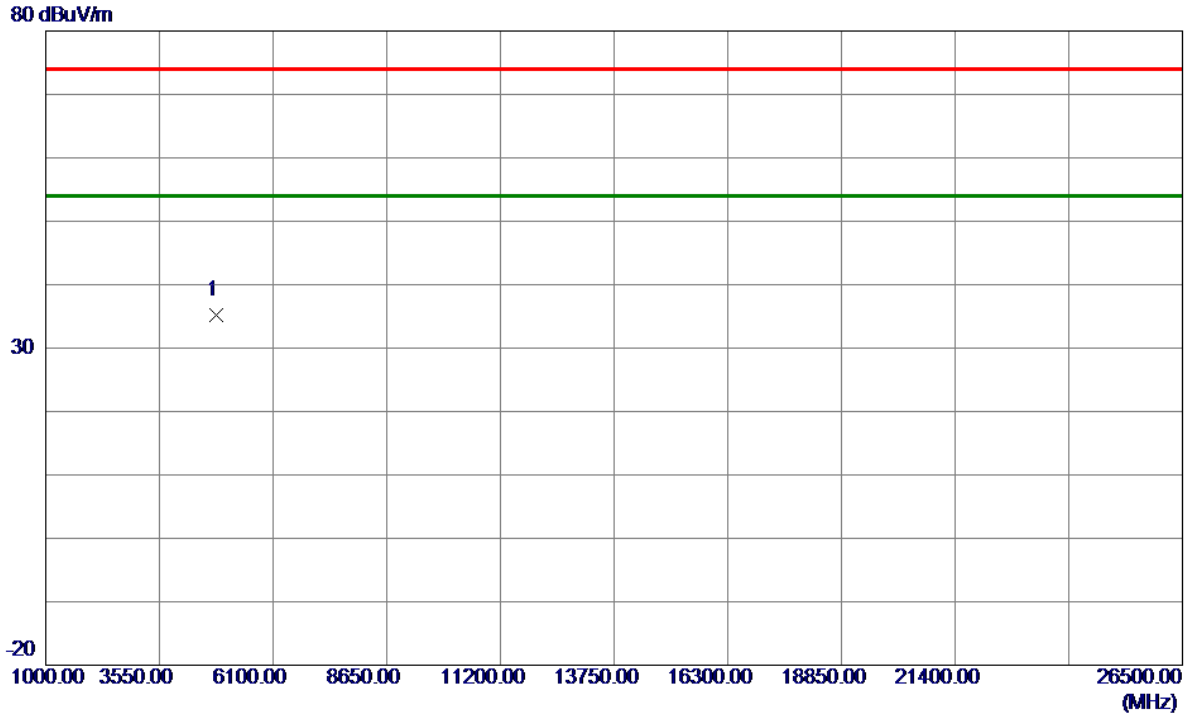
Test Mode	TX N(HT20) Mode 2412 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	32.47	30.55	63.02	74.00	-10.98	Peak	
2	2390.0000	18.62	30.55	49.17	54.00	-4.83	AVG	
3	2418.9650	76.62	30.67	107.29	74.00	33.29	Peak	No Limit
4 *	2418.9650	69.04	30.67	99.71	54.00	45.71	AVG	No Limit

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

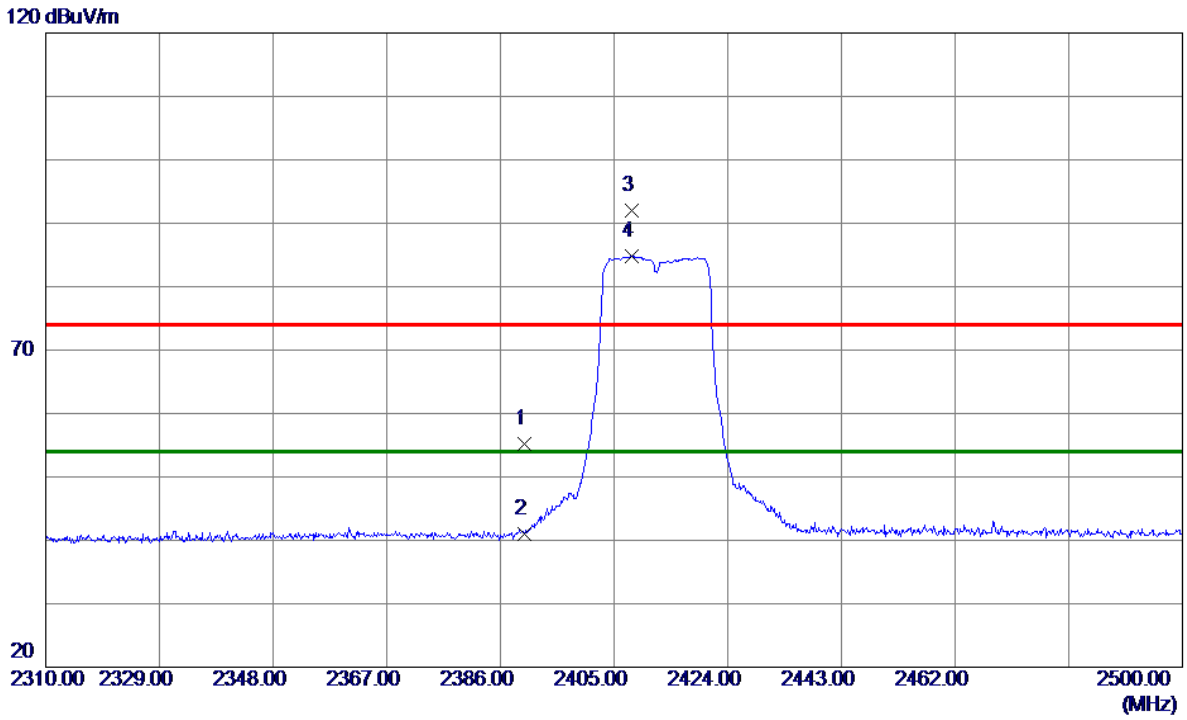
Test Mode	TX N(HT20) Mode 2412 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4824.0000	52.35	-17.19	35.16	74.00	-38.84	Peak	

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

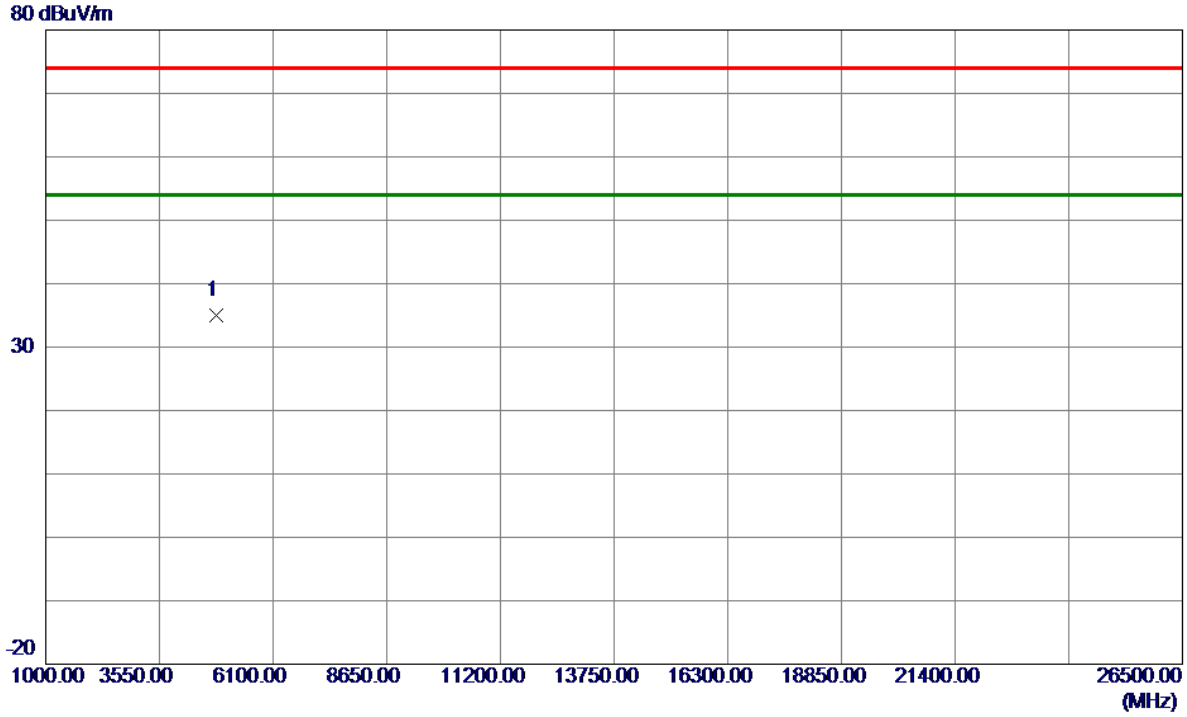
Test Mode	TX N(HT20) Mode 2412 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	24.69	30.55	55.24	74.00	-18.76	Peak	
2	2390.0000	10.49	30.55	41.04	54.00	-12.96	AVG	
3	2407.9450	61.43	30.62	92.05	74.00	18.05	Peak	No Limit
4 *	2407.9450	54.22	30.62	84.84	54.00	30.84	AVG	No Limit

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

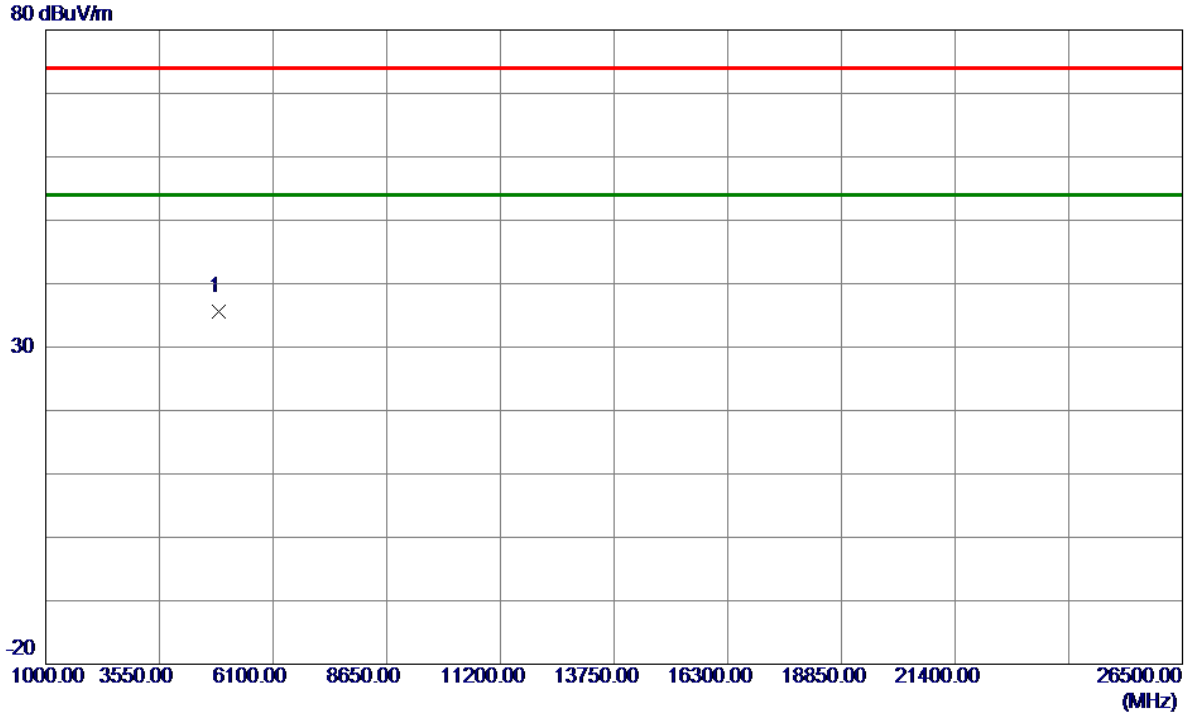
Test Mode	TX N(HT20) Mode 2412 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4824.0000	52.28	-17.19	35.09	74.00	-38.91	Peak	

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

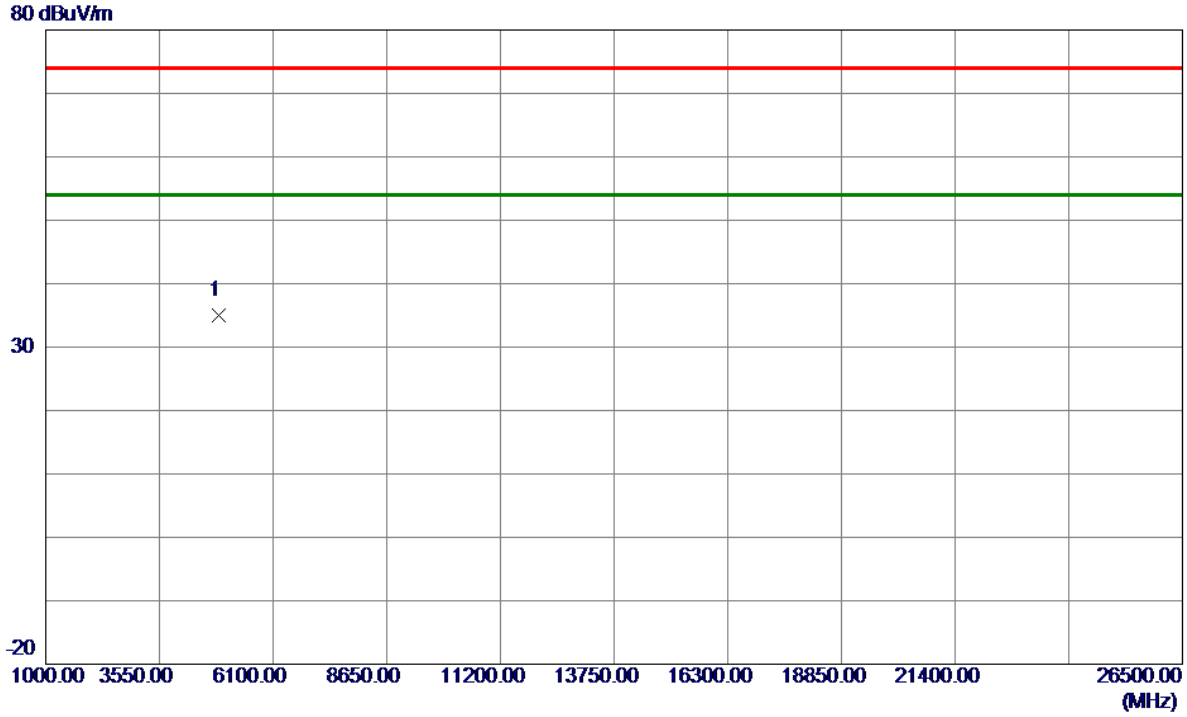
Test Mode	TX N(HT20) Mode 2437 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.0000	52.57	-17.01	35.56	74.00	-38.44	Peak	

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

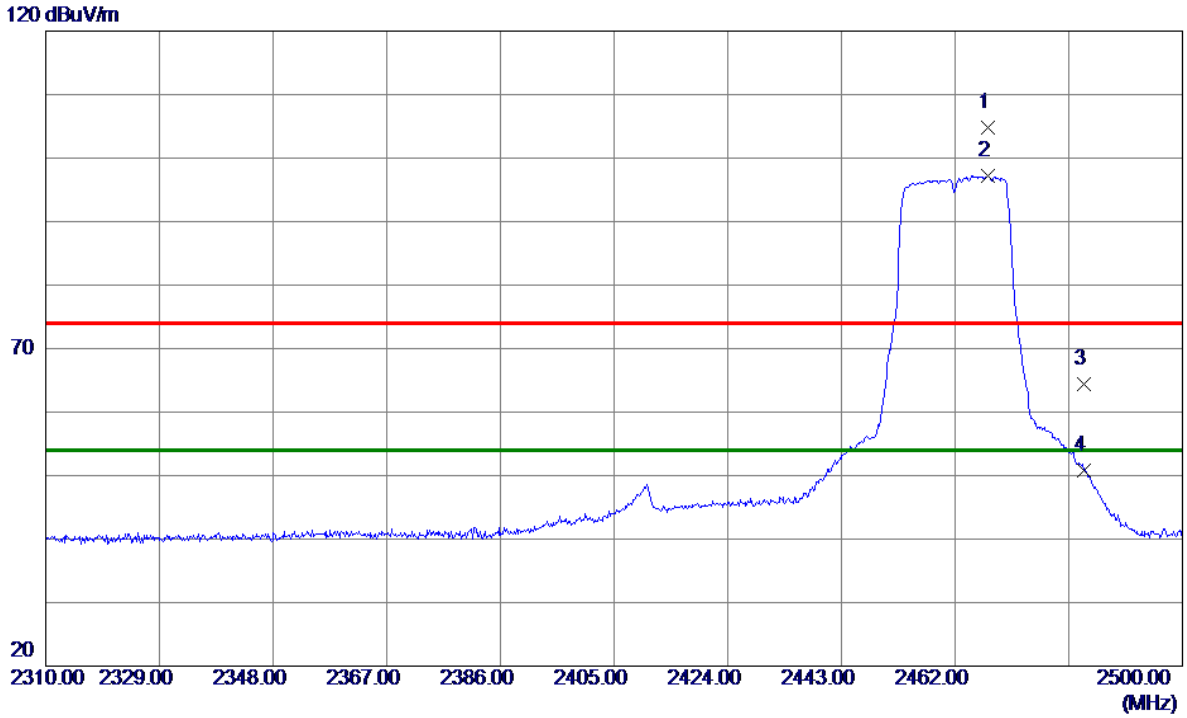
Test Mode	TX N(HT20) Mode 2437 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.0000	52.02	-17.01	35.01	74.00	-38.99	Peak	

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

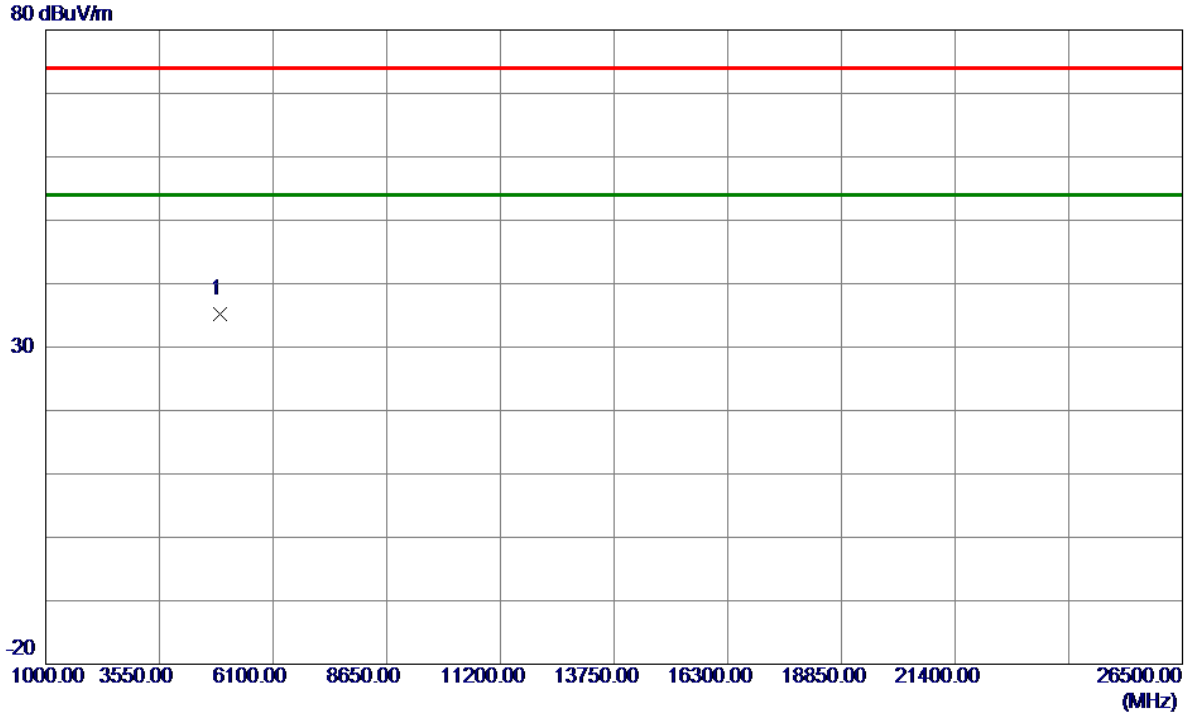
Test Mode	TX N(HT20) Mode 2462 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2467.4150	73.93	30.87	104.80	74.00	30.80	Peak	No Limit
2 *	2467.4150	66.38	30.87	97.25	54.00	43.25	AVG	No Limit
3	2483.5000	33.38	30.94	64.32	74.00	-9.68	Peak	
4	2483.5000	19.81	30.94	50.75	54.00	-3.25	AVG	

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

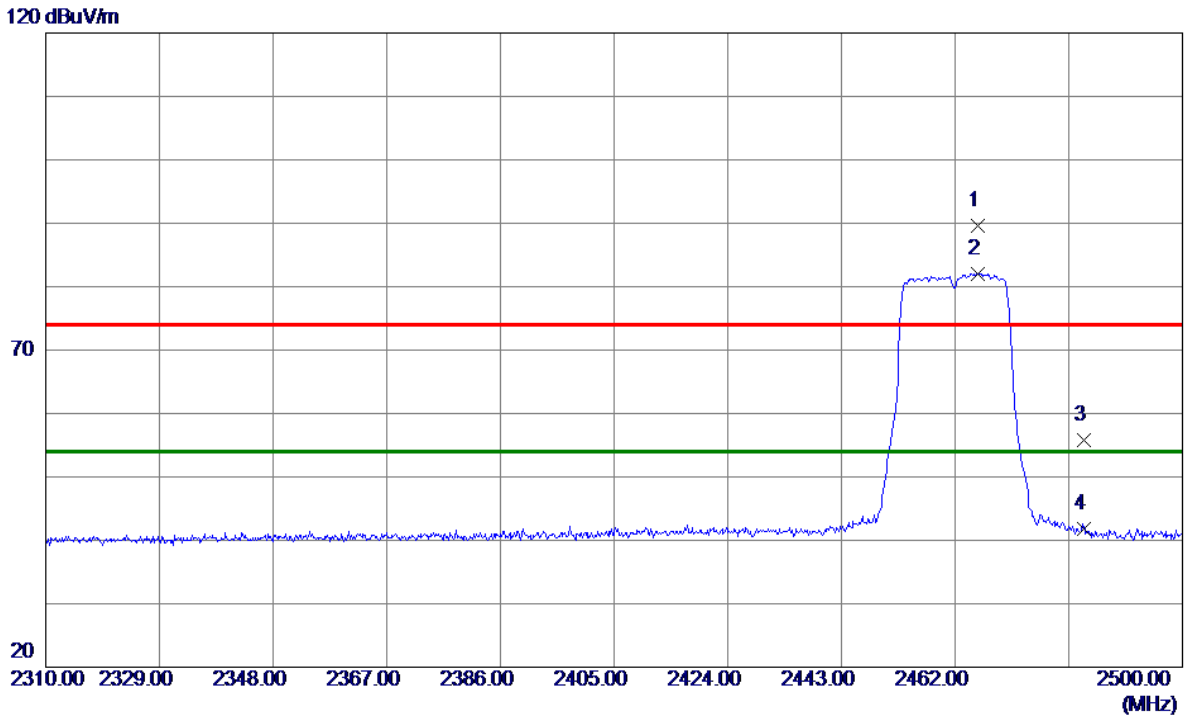
Test Mode	TX N(HT20) Mode 2462 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4924.0000	52.06	-16.82	35.24	74.00	-38.76	Peak	

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

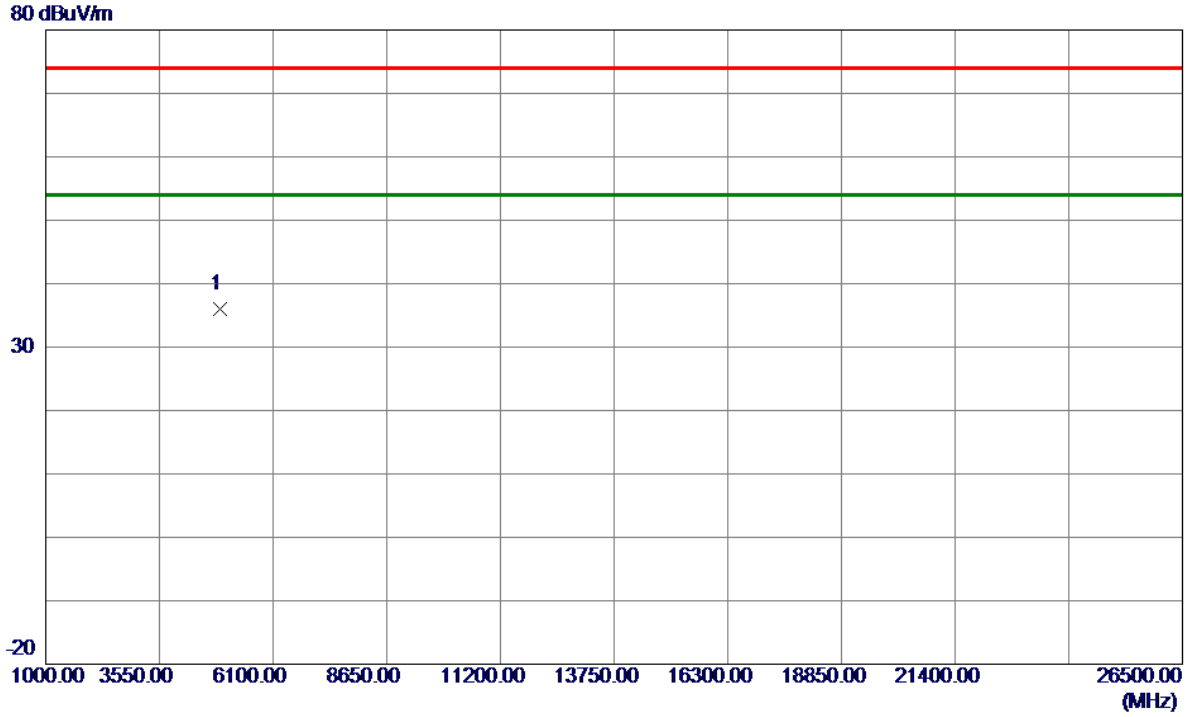
Test Mode	TX N(HT20) Mode 2462 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2465.8950	58.71	30.87	89.58	74.00	15.58	Peak	No Limit
2 *	2465.8950	51.23	30.87	82.10	54.00	28.10	AVG	No Limit
3	2483.5000	24.80	30.94	55.74	74.00	-18.26	Peak	
4	2483.5000	10.83	30.94	41.77	54.00	-12.23	AVG	

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

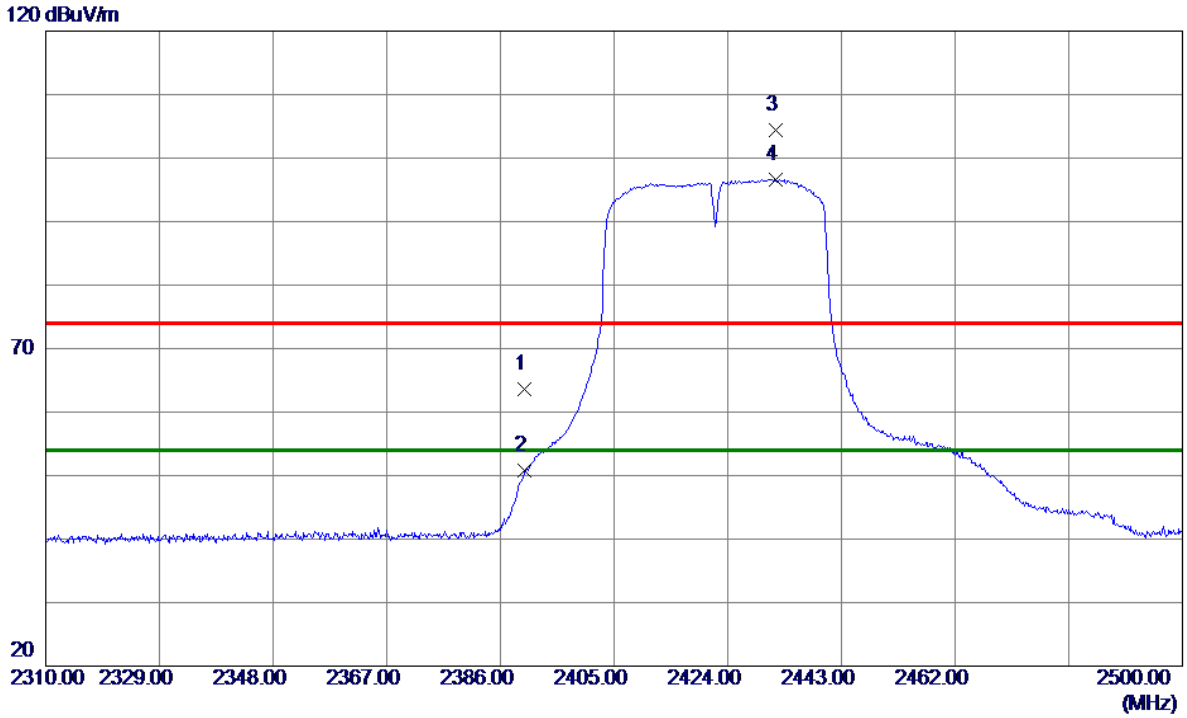
Test Mode	TX N(HT20) Mode 2462 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4924.0000	52.78	-16.82	35.96	74.00	-38.04	Peak	

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

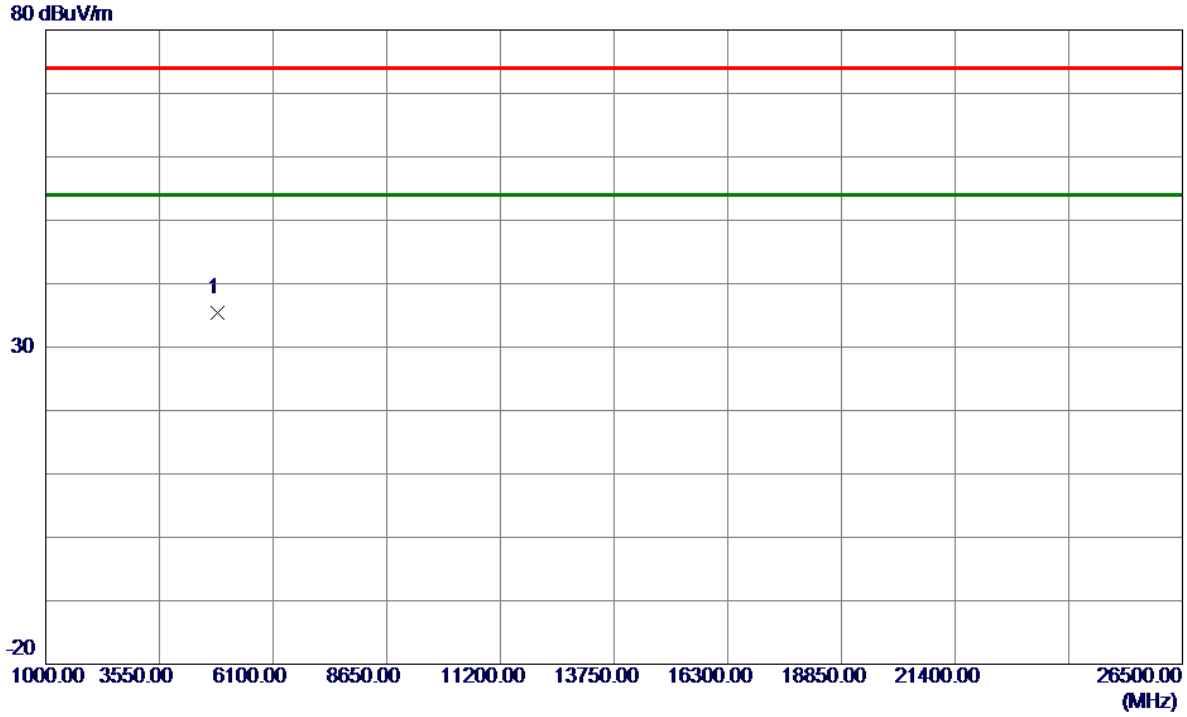
Test Mode	TX N(HT40) Mode 2422 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	33.02	30.55	63.57	74.00	-10.43	Peak	
2	2390.0000	20.26	30.55	50.81	54.00	-3.19	AVG	
3	2432.0750	73.67	30.72	104.39	74.00	30.39	Peak	No Limit
4 *	2432.0750	65.92	30.72	96.64	54.00	42.64	AVG	No Limit

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

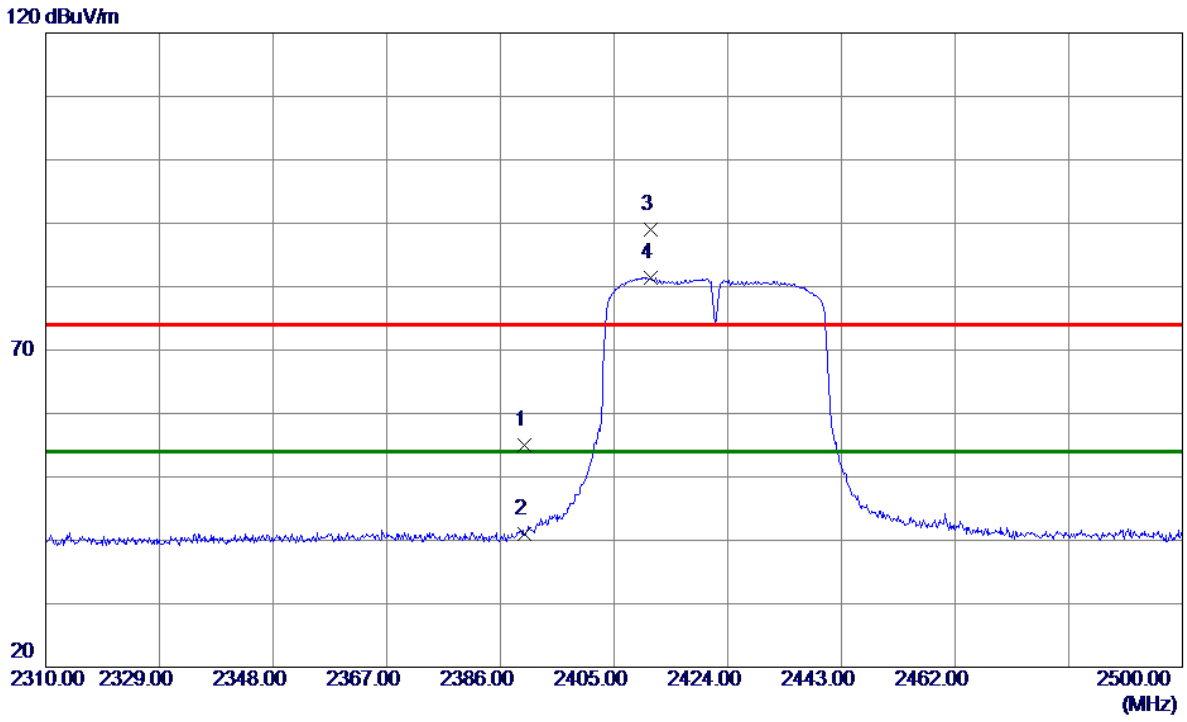
Test Mode	TX N(HT40) Mode 2422 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4844.0000	52.58	-17.12	35.46	74.00	-38.54	Peak	

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

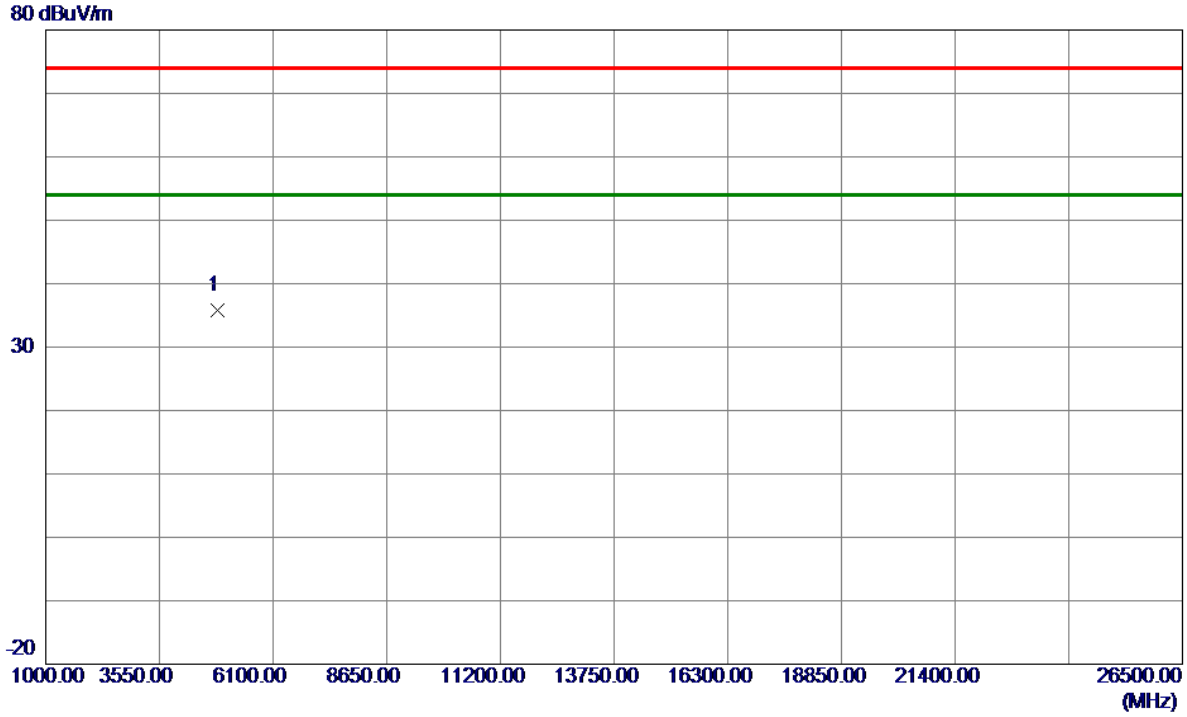
Test Mode	TX N(HT40) Mode 2422 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	24.50	30.55	55.05	74.00	-18.95	Peak	
2	2390.0000	10.44	30.55	40.99	54.00	-13.01	AVG	
3	2411.1750	58.44	30.64	89.08	74.00	15.08	Peak	No Limit
4 *	2411.1750	50.75	30.64	81.39	54.00	27.39	AVG	No Limit

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

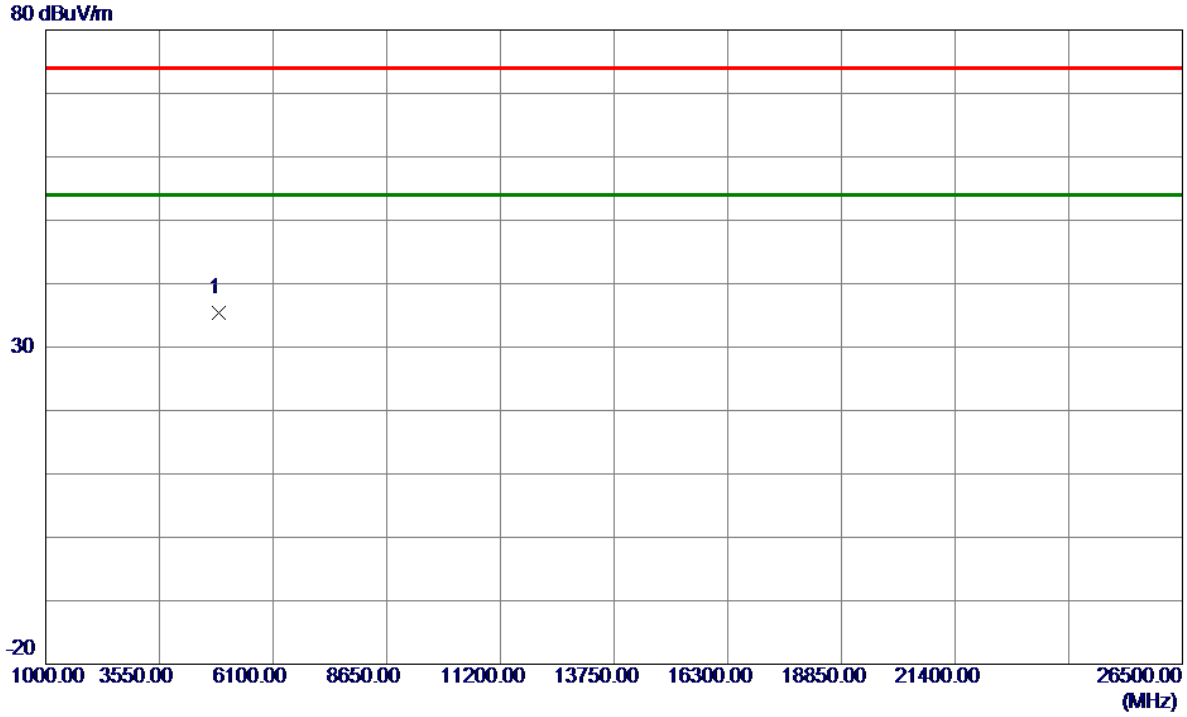
Test Mode	TX N(HT40) Mode 2422 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4844.0000	52.85	-17.12	35.73	74.00	-38.27	Peak	

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

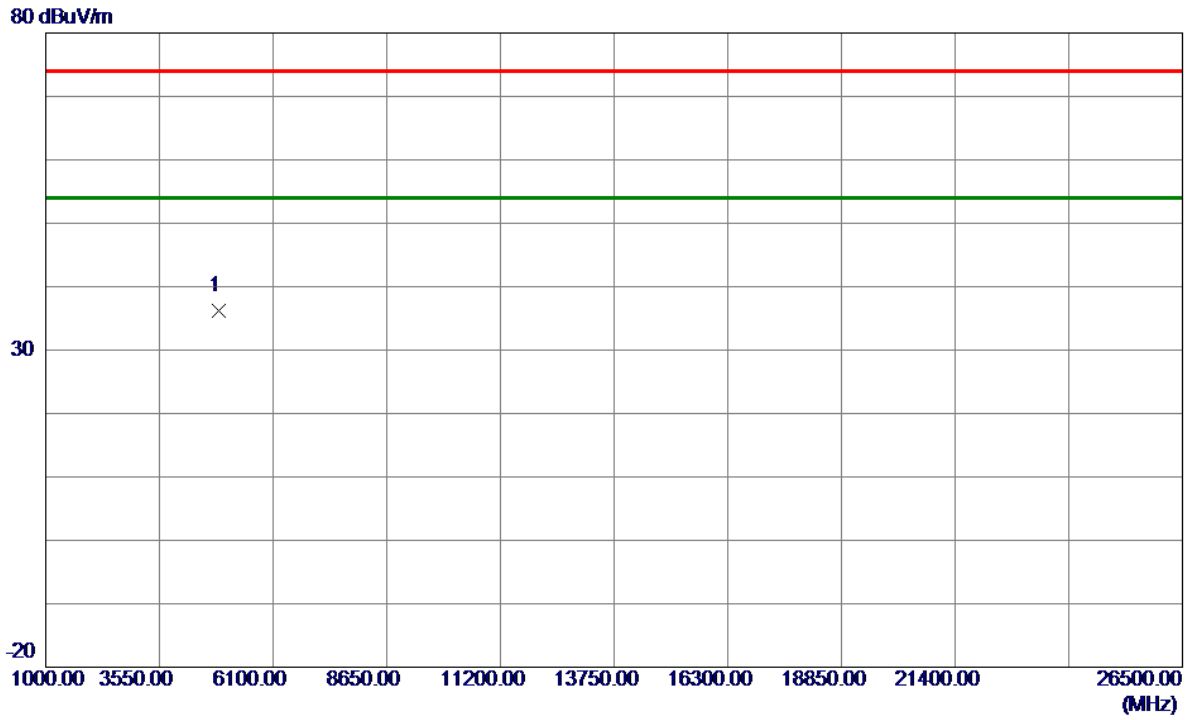
Test Mode	TX N(HT40) Mode 2437 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.0000	52.48	-17.01	35.47	74.00	-38.53	Peak	

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

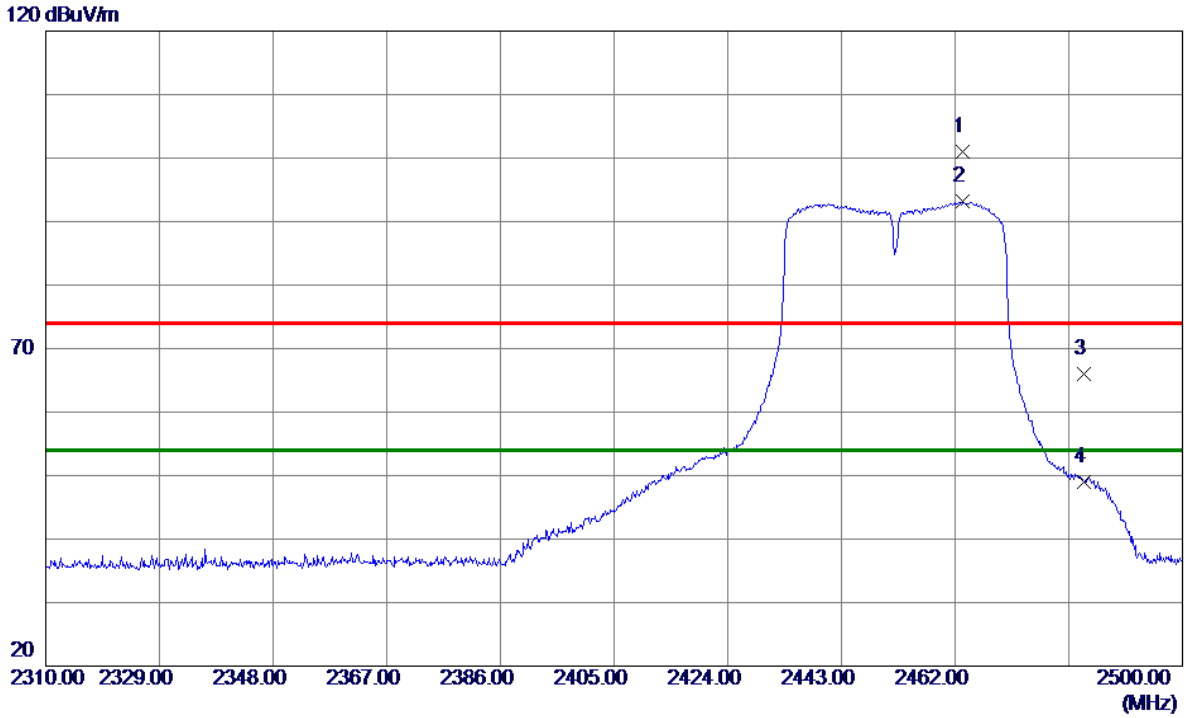
Test Mode	TX N(HT40) Mode 2437 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.0000	53.20	-17.01	36.19	74.00	-37.81	Peak	

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

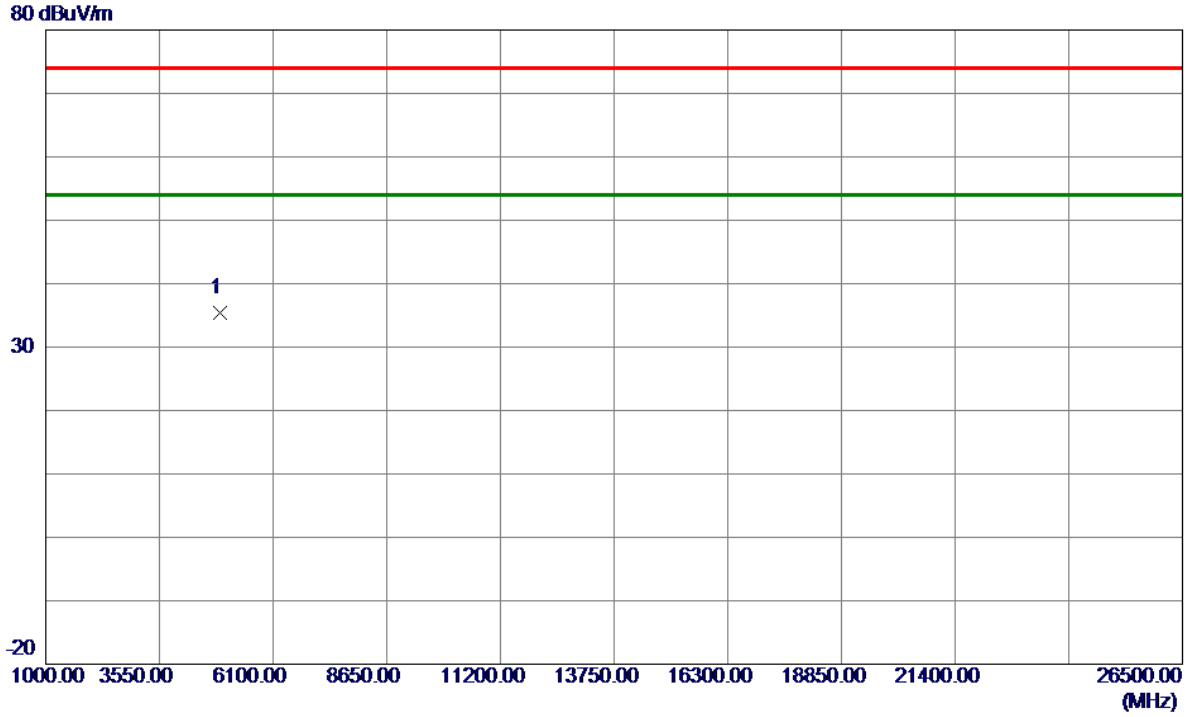
Test Mode	TX N(HT40) Mode 2452 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2463.3300	70.14	30.86	101.00	74.00	27.00	Peak	
2 *	2463.3300	62.28	30.86	93.14	54.00	39.14	AVG	
3	2483.5000	35.13	30.94	66.07	74.00	-7.93	Peak	
4	2483.5000	18.05	30.94	48.99	54.00	-5.01	AVG	

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

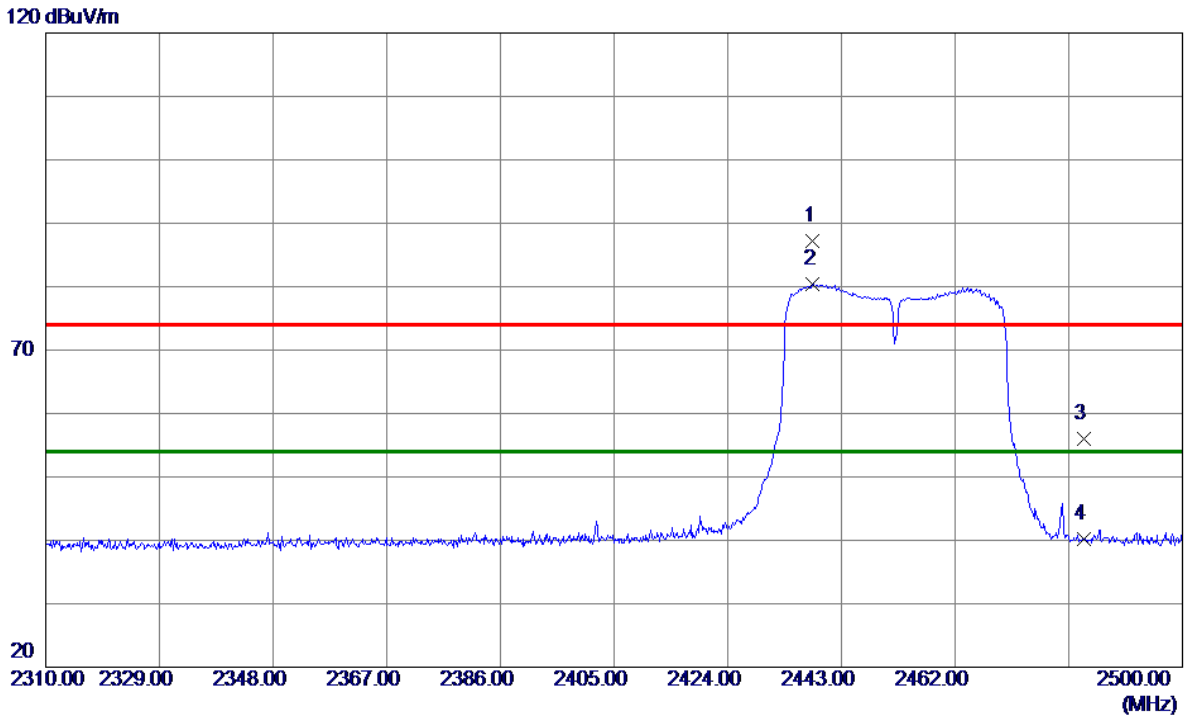
Test Mode	TX N(HT40) Mode 2452 MHz	Polarization	Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4904.0000	52.27	-16.89	35.38	74.00	-38.62	Peak	

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

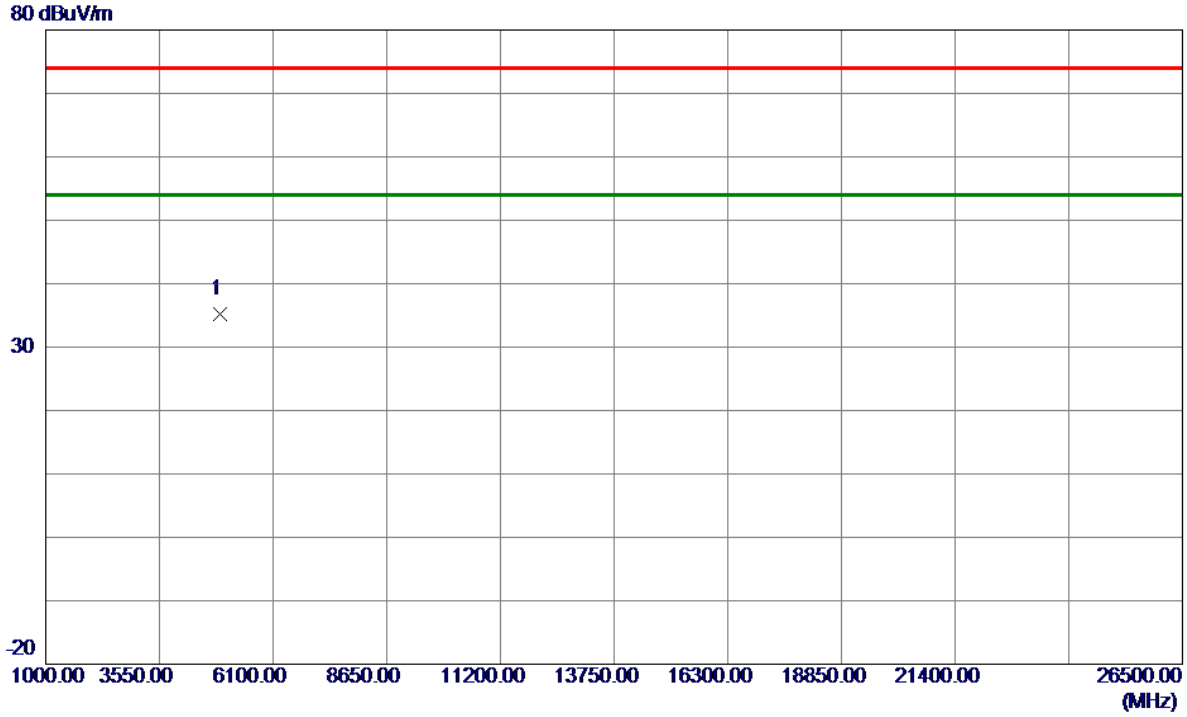
Test Mode	TX N(HT40) Mode 2452 MHz	Polarization	Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2438.2500	56.48	30.75	87.23	74.00	13.23	Peak	
2 *	2438.2500	49.66	30.75	80.41	54.00	26.41	AVG	
3	2483.5000	24.97	30.94	55.91	74.00	-18.09	Peak	
4	2483.5000	9.28	30.94	40.22	54.00	-13.78	AVG	

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

Test Mode	TX N(HT40) Mode 2452 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 *	4904.0000	52.09	-16.89	35.20	74.00	-38.80	Peak	

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

APPENDIX E - BANDWIDTH

Test Mode	TX B Mode

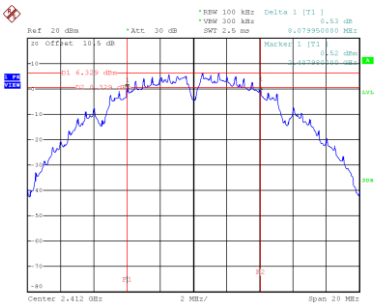
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result
01	2412	8.080	12.320	0.5	Complies
06	2437	7.600	12.320	0.5	Complies
11	2462	8.070	12.240	0.5	Complies

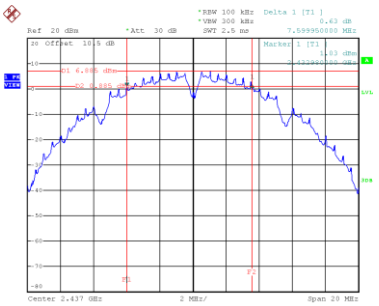
CH01

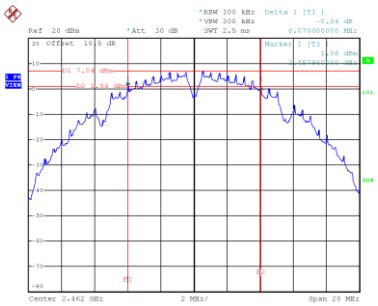
CH06

6 dB Bandwidth

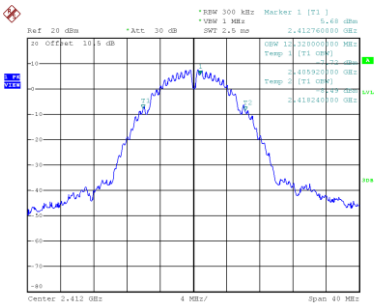
CH11

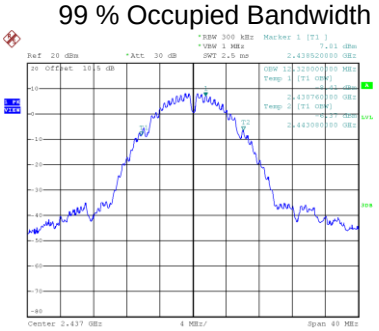


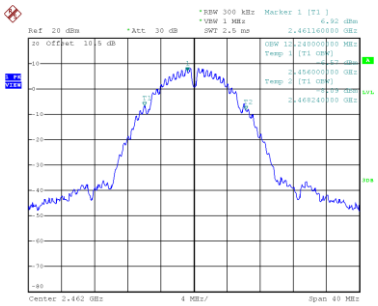




99 % Occupied Bandwidth



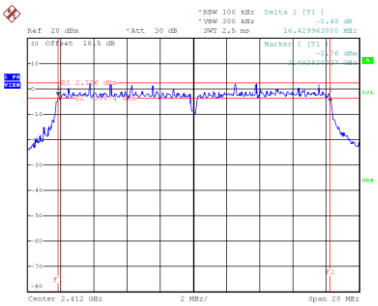




Test Mode	TX G Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result
01	2412	16.430	17.280	0.5	Complies
06	2437	16.380	17.280	0.5	Complies
11	2462	16.410	17.040	0.5	Complies

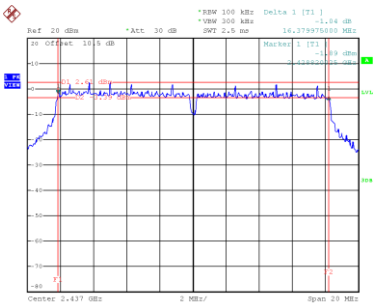
CH01



Date: 26.MAY.2022 19:17:58

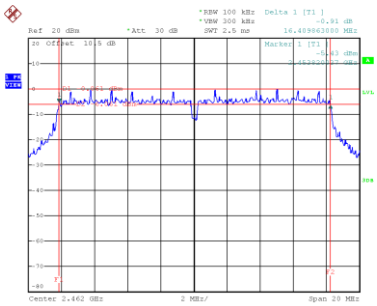
CH06

6 dB Bandwidth

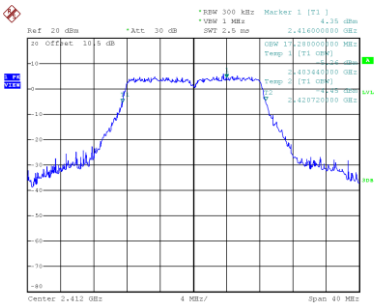


Date: 26.MAY.2022 19:19:53

CH11

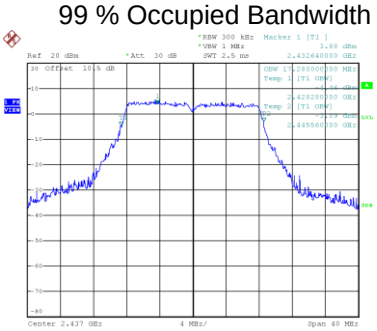


Date: 26.MAY.2022 19:21:39

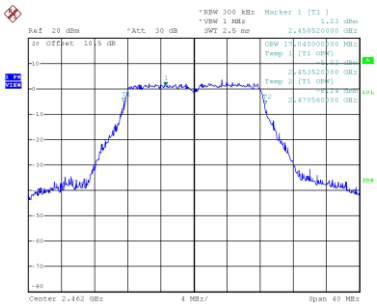


Date: 26.MAY.2022 19:18:05

99 % Occupied Bandwidth



Date: 26.MAY.2022 19:20:00



Date: 26.MAY.2022 19:21:45

Test Mode	TX N(HT20) Mode

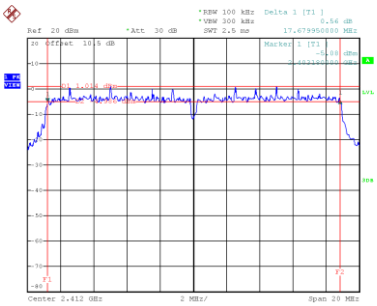
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result
01	2412	17.680	18.240	0.5	Complies
06	2437	17.620	18.240	0.5	Complies
11	2462	17.660	18.160	0.5	Complies

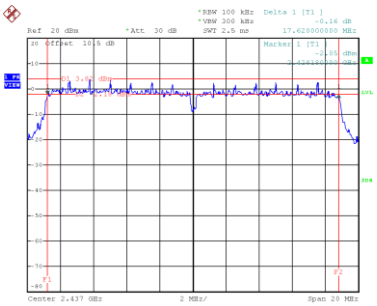
CH01

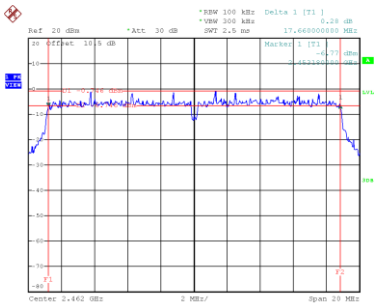
CH06

6 dB Bandwidth

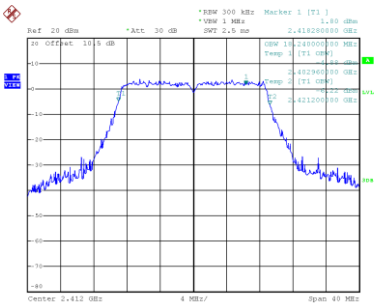
CH11

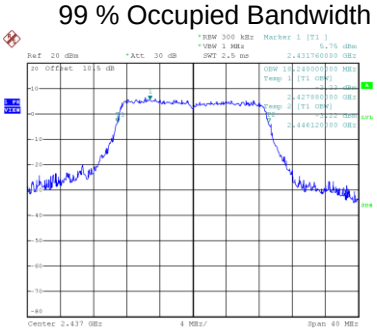


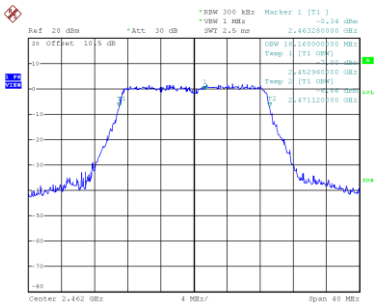




99 % Occupied Bandwidth



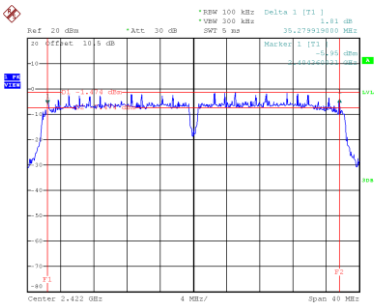




Test Mode	TX N(HT40) Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result
03	2422	35.280	36.640	0.5	Complies
06	2437	35.280	36.960	0.5	Complies
09	2452	35.270	37.120	0.5	Complies

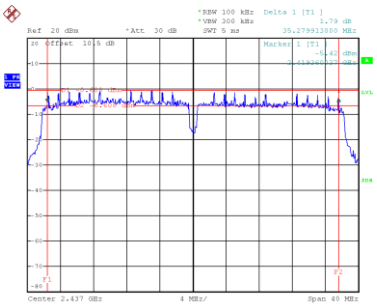
CH03



Date: 26.MAY.2022 19:28:24

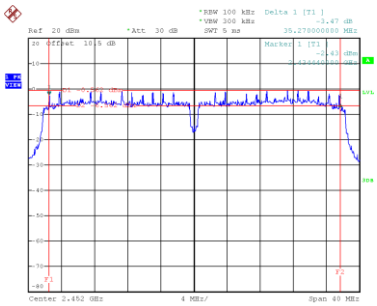
CH06

6 dB Bandwidth

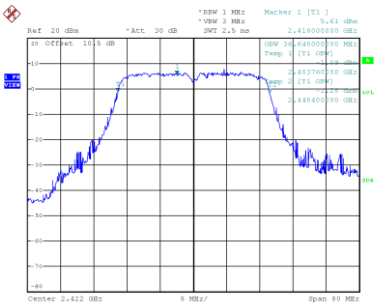


Date: 26.MAY.2022 19:36:02

CH09

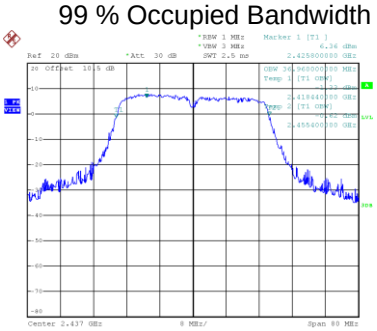


Date: 26.MAY.2022 19:37:45

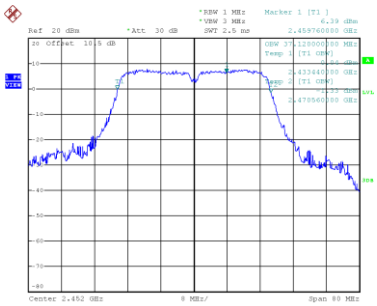


Date: 26.MAY.2022 19:28:31

99 % Occupied Bandwidth



Date: 26.MAY.2022 19:36:09



Date: 26.MAY.2022 19:37:52

APPENDIX F - MAXIMUM OUTPUT POWER

Test Mode	TX B Mode_Ant. 1

Channel	Frequency (MHz)	Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	18.33	30.00	1.0000	Complies
06	2437	18.41	30.00	1.0000	Complies
11	2462	18.52	30.00	1.0000	Complies

Test Mode	TX G Mode_Ant. 1

Channel	Frequency (MHz)	Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	22.55	30.00	1.0000	Complies
06	2437	22.95	30.00	1.0000	Complies
11	2462	20.65	30.00	1.0000	Complies

Test Mode	TX N(HT20) Mode_Ant. 1

Channel	Frequency (MHz)	Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	22.03	30.00	1.0000	Complies
06	2437	23.19	30.00	1.0000	Complies
11	2462	20.66	30.00	1.0000	Complies

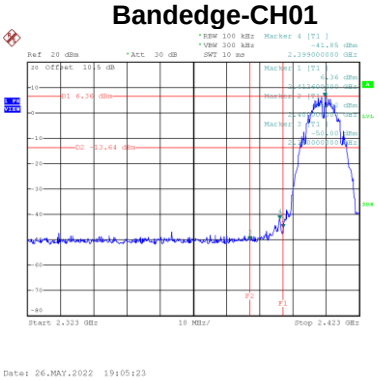
Test Mode	TX N(HT40) Mode_Ant. 1

Channel	Frequency (MHz)	Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	22.44	30.00	1.0000	Complies
06	2437	22.38	30.00	1.0000	Complies
09	2452	20.44	30.00	1.0000	Complies

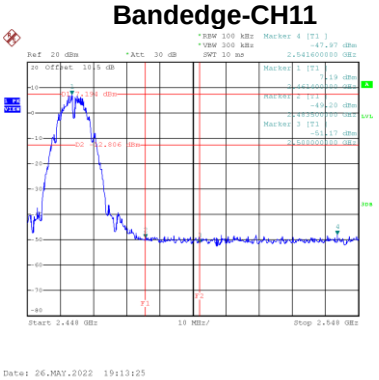
APPENDIX G - CONDUCTED SPURIOUS EMISSIONS

Test Mode	TX B Mode_Ant. 1

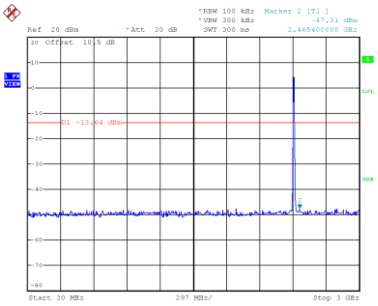
Bandedge-CH01

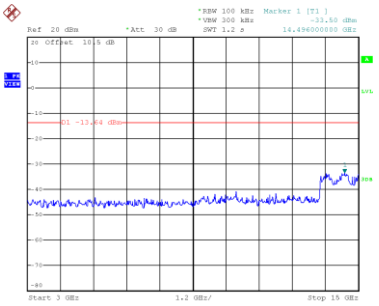


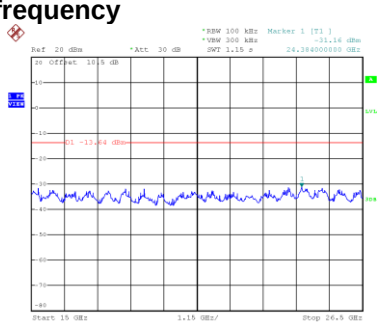
Bandedge-CH11



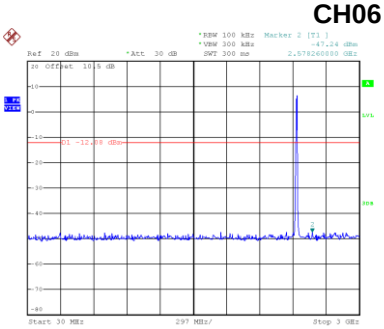
CH01 – 10th Harmonic of the fundamental frequency

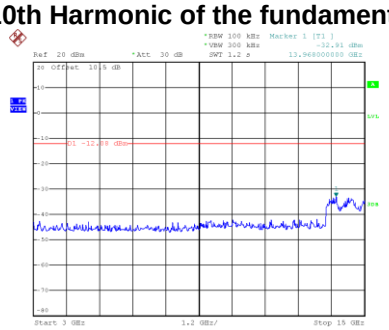


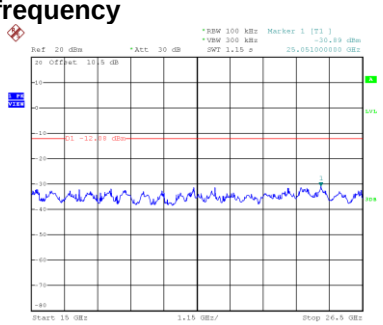




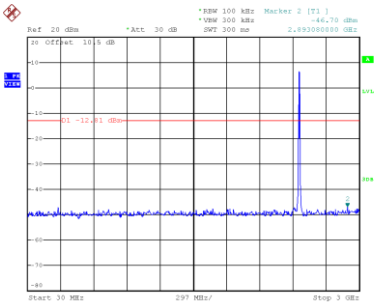
CH06 – 10th Harmonic of the fundamental frequency

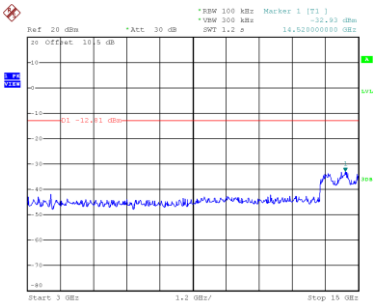


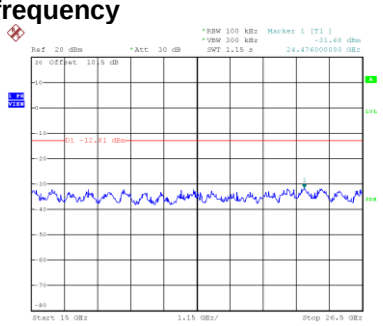




CH11 – 10th Harmonic of the fundamental frequency

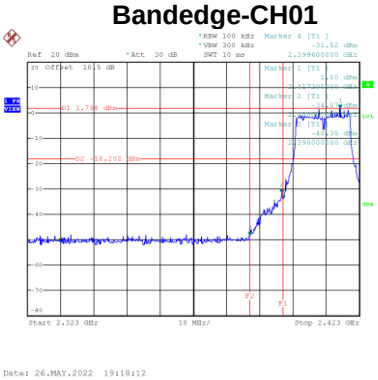




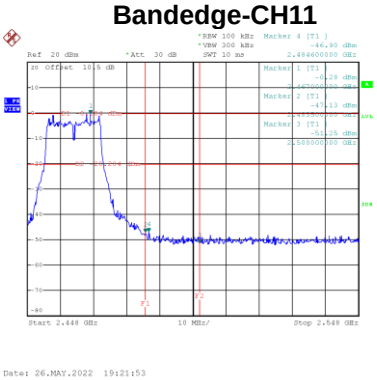


Test Mode	TX G Mode_Ant. 1

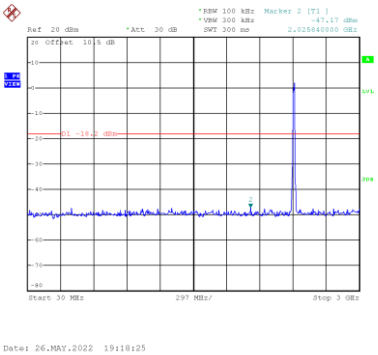
Bandedge-CH01

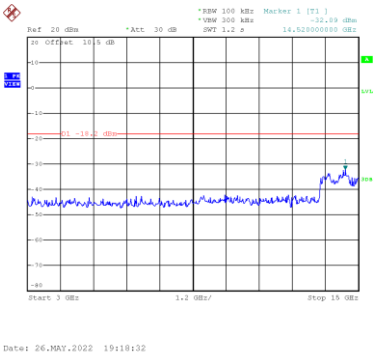


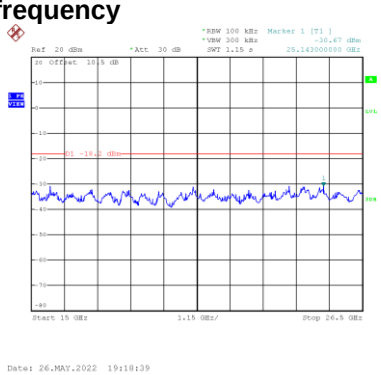
Bandedge-CH11



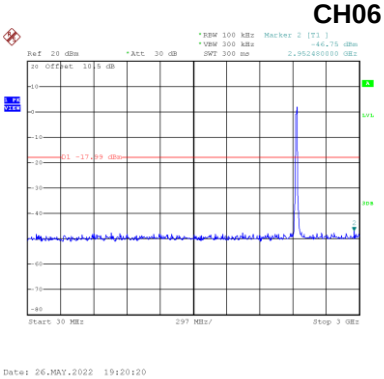
CH01 – 10th Harmonic of the fundamental frequency

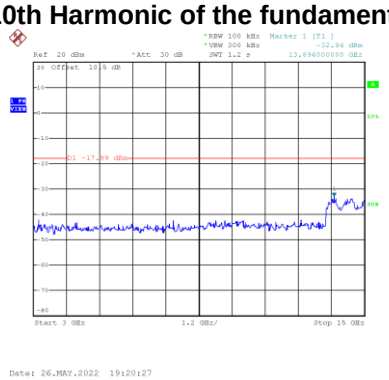


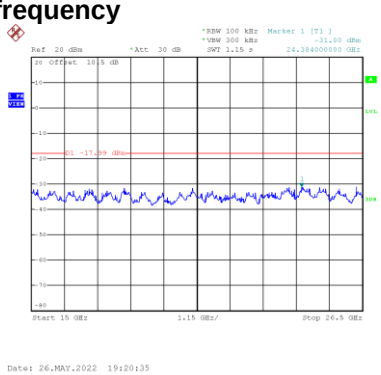




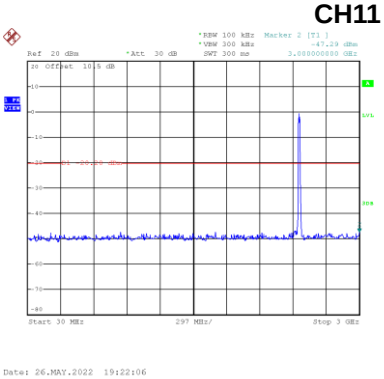
CH06 – 10th Harmonic of the fundamental frequency

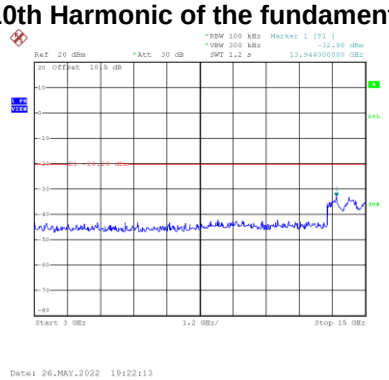


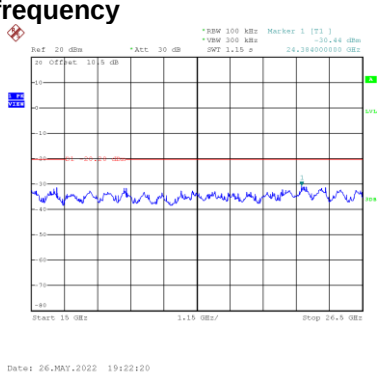




CH11 – 10th Harmonic of the fundamental frequency

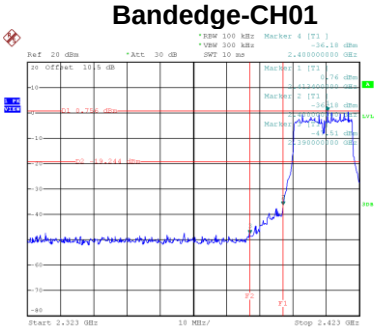




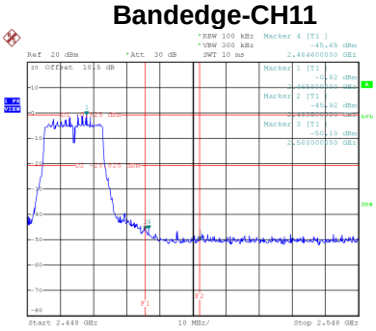


Test Mode	TX N(HT20) Mode_Ant. 1

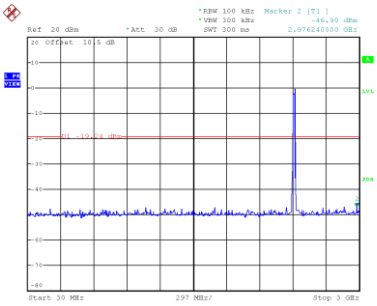
Bandedge-CH01

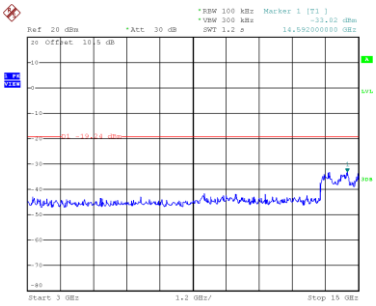


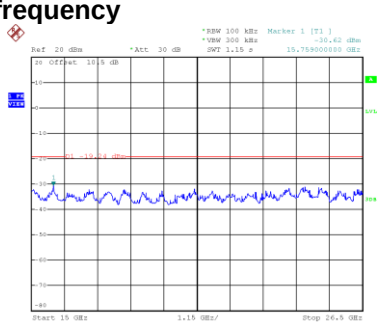
Bandedge-CH11



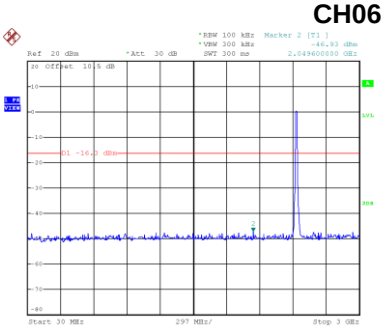
CH01 – 10th Harmonic of the fundamental frequency

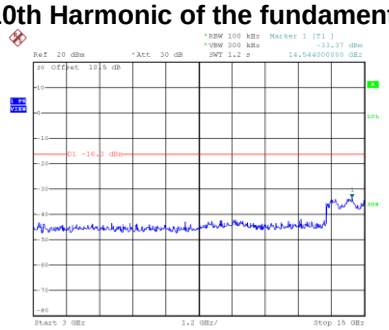


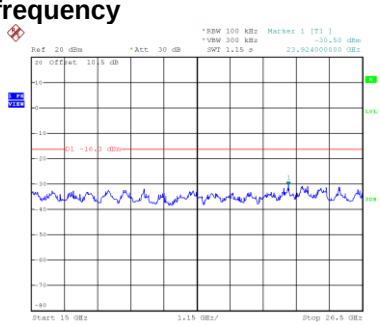




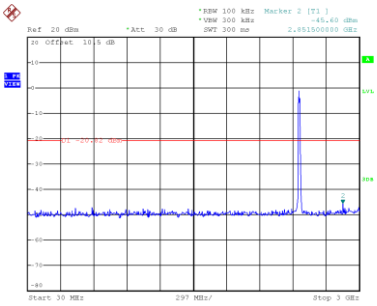
CH06 – 10th Harmonic of the fundamental frequency

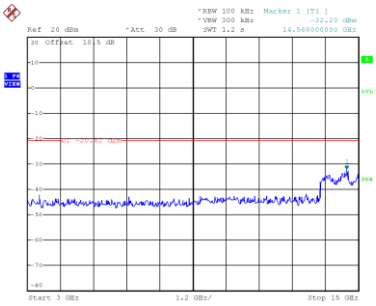


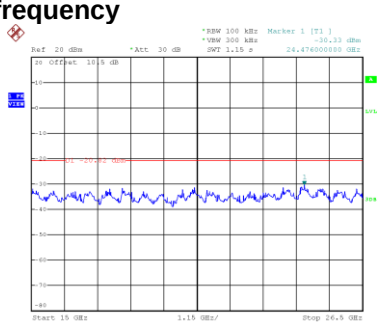




CH11 – 10th Harmonic of the fundamental frequency

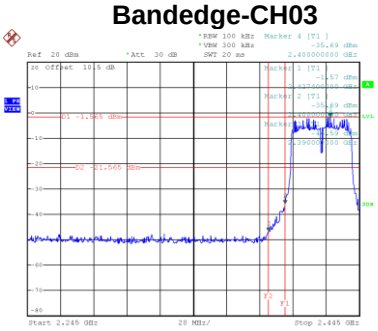




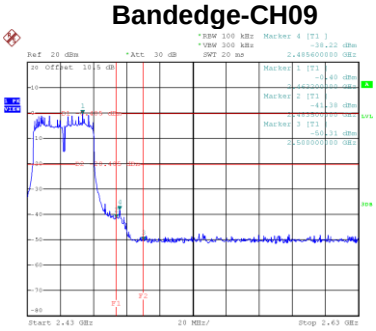


Test Mode	TX N(HT40) Mode_Ant. 1

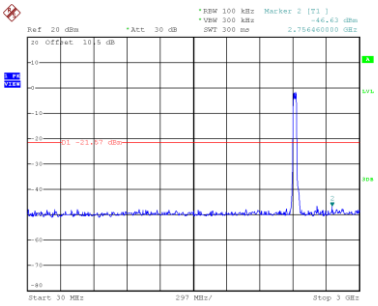
Bandedge-CH03

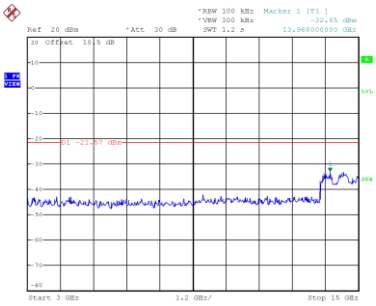


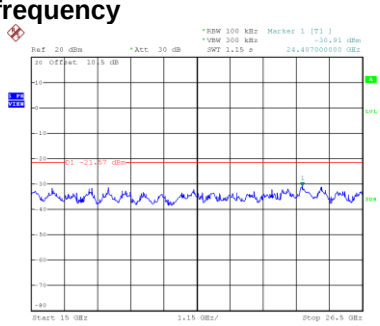
Bandedge-CH09



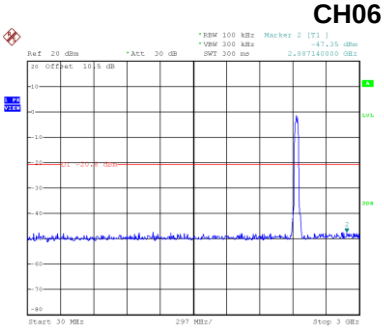
CH03 – 10th Harmonic of the fundamental frequency

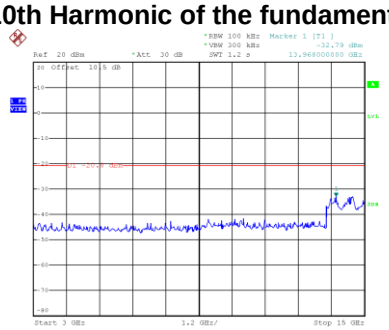


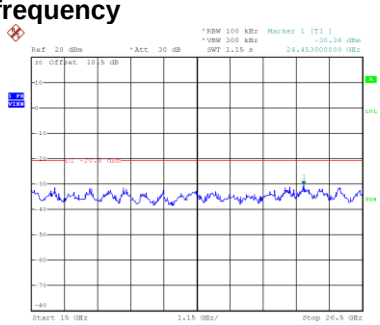




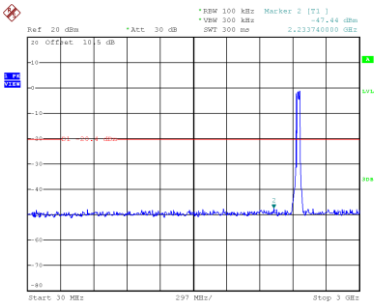
CH06 – 10th Harmonic of the fundamental frequency

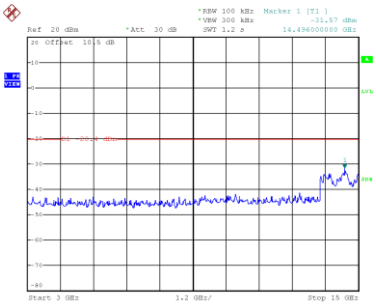


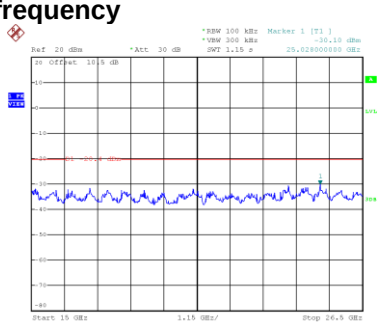




CH09 – 10th Harmonic of the fundamental frequency





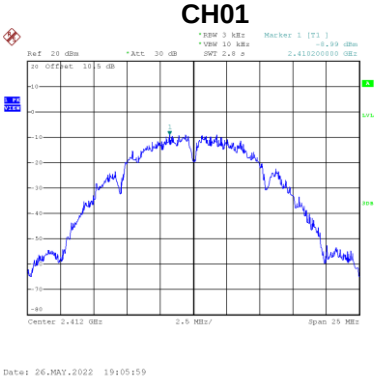


APPENDIX H - POWER SPECTRAL DENSITY

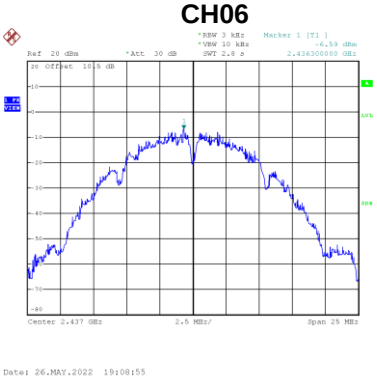
Test Mode	TX B Mode_Ant. 1

Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-8.99	8.00	Complies
06	2437	-6.59	8.00	Complies
11	2462	-7.27	8.00	Complies

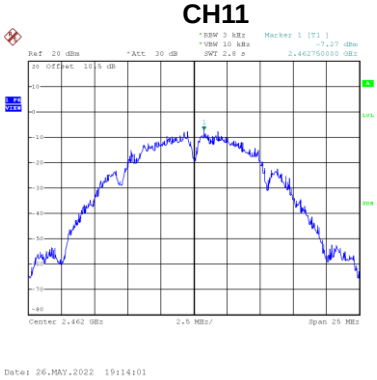
CH01



CH06



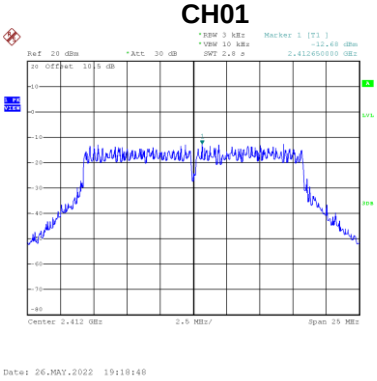
CH11



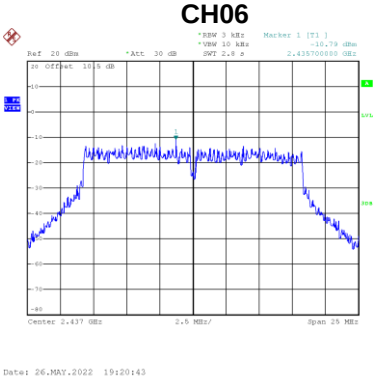
Test Mode	TX G Mode_Ant. 1

Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-12.68	8.00	Complies
06	2437	-10.79	8.00	Complies
11	2462	-15.07	8.00	Complies

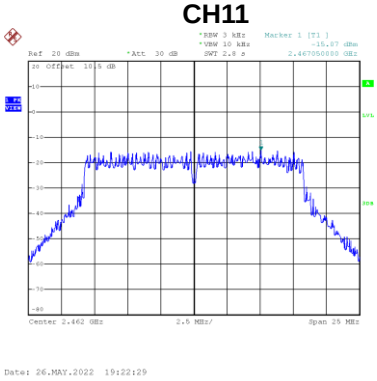
CH01



CH06



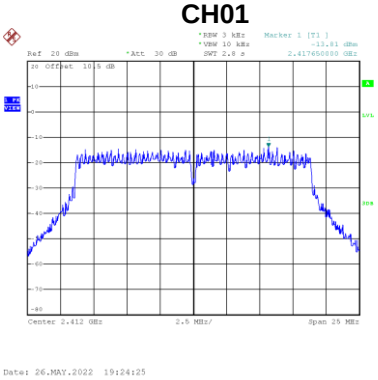
CH11



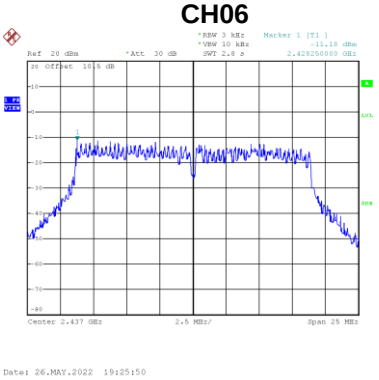
Test Mode	TX N(HT20) Mode_Ant. 1

Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-13.81	8.00	Complies
06	2437	-11.18	8.00	Complies
11	2462	-15.10	8.00	Complies

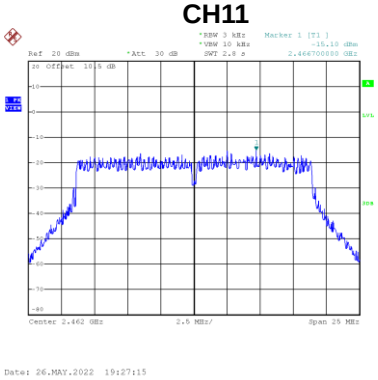
CH01



CH06



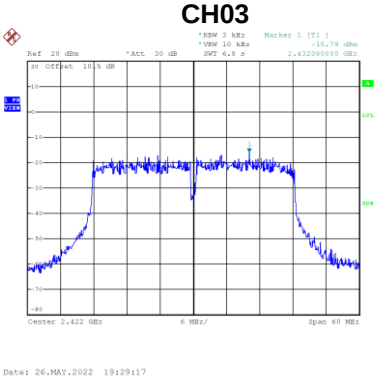
CH11



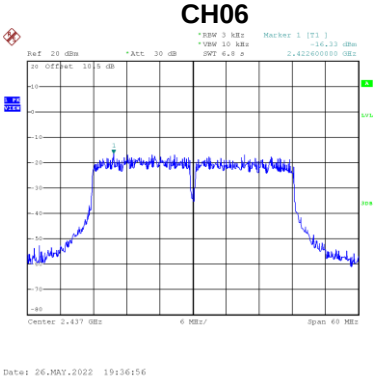
Test Mode	TX N(HT40) Mode_Ant. 1

Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
03	2422	-15.79	8.00	Complies
06	2437	-16.33	8.00	Complies
09	2452	-15.68	8.00	Complies

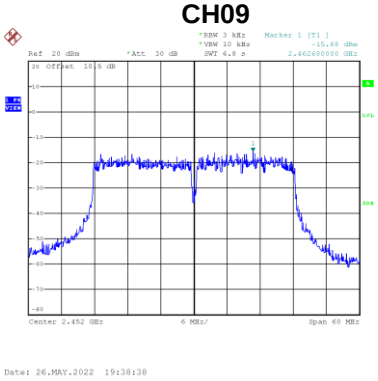
CH03



CH06



CH09



End of Test Report