FCC Radio Test Report

FCC ID: V7TSS9V1

This report concerns: Original Grant

Project No.	:	2010C044
Equipment	:	Smart Wi-Fi Dimmer Switch
Brand Name	:	Tenda
Test Model	:	SS9
Series Model	:	N/A
Applicant	:	SHENZHEN TENDA TECHNOLOGY CO.,LTD
Address	:	6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052
Manufacturer	:	SHENZHEN TENDA TECHNOLOGY CO.,LTD
Address	:	6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052
Date of Receipt	:	Oct. 14, 2020
Date of Test	:	Oct. 15, 2020 ~ Oct. 29, 2020
Issued Date	:	Nov. 11, 2020
Report Version	:	R00
Test Sample	:	Engineering Sample No.:DG202010167
Standard(s)	:	FCC Part15, Subpart C (15.247) ANSI C63.10-2013 FCC KDB 558074 D01 15.247 Meas Guidance v05r02

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

Prepared by : Peggy Zhu

Approved by : Ethan Ma

Certificate #5123.02

Add: No.3, Jinshagang 1st Road, Shixia, Dalang Town,Dongguan, Guangdong, China.
Tel: +86-769-8318-3000
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.

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 9

2 . GENERAL INFORMATION 10

2.1 GENERAL DESCRIPTION OF EUT 10

2.2 DESCRIPTION OF TEST MODES 11

2.3 PARAMETERS OF TEST SOFTWARE 12

2.4 DUTY CYCLE 13

2.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED 14

2.6 SUPPORT UNITS 14

3 . AC POWER LINE CONDUCTED EMISSIONS TEST 15

3.1 LIMIT 15

3.2 TEST PROCEDURE 15

3.3 DEVIATION FROM TEST STANDARD 15

3.4 TEST SETUP 16

3.5 EUT OPERATION CONDITIONS 16

3.6 TEST RESULTS 16

4 . RADIATED EMISSIONS TEST 17

4.1 LIMIT 17

4.2 TEST PROCEDURE 18

4.3 DEVIATION FROM TEST STANDARD 18

4.4 TEST SETUP 19

4.5 EUT OPERATION CONDITIONS 20

4.6 TEST RESULTS - 9 KHZ TO 30 MHZ 20

4.7 TEST RESULTS - 30 MHZ TO 1000 MHZ 20

4.8 TEST RESULTS - ABOVE 1000 MHZ 20

5 . BANDWIDTH TEST 21

5.1 LIMIT 21

5.2 TEST PROCEDURE 21

5.3 DEVIATION FROM STANDARD 21

5.4 TEST SETUP 21

Table of Contents Page

5.5 EUT OPERATION CONDITIONS 21
5.6 TEST RESULTS 21
6 . MAXIMUM OUTPUT POWER TEST 22
6.1 LIMIT 22
6.2 TEST PROCEDURE 22
6.3 DEVIATION FROM STANDARD 22
6.4 TEST SETUP 22
6.5 EUT OPERATION CONDITIONS 22
6.6 TEST RESULTS 22
7 . CONDUCTED SPURIOUS EMISSIONS 23
7.1 LIMIT 23
7.2 TEST PROCEDURE 23
7.3 DEVIATION FROM STANDARD 23
7.4 TEST SETUP 23
7.5 EUT OPERATION CONDITIONS 23
7.6 TEST RESULTS 23
8 . POWER SPECTRAL DENSITY TEST 24
8.1 LIMIT 24
8.2 TEST PROCEDURE 24
8.3 DEVIATION FROM STANDARD 24
8.4 TEST SETUP 24
8.5 EUT OPERATION CONDITIONS 24
8.6 TEST RESULTS 24
9 . MEASUREMENT INSTRUMENTS LIST 25
10 . EUT TEST PHOTO 27
APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS 31
APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ 34
APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ 39
APPENDIX D - RADIATED EMISSION- ABOVE 1000 MHZ 42
APPENDIX E - BANDWIDTH 79
APPENDIX F - MAXIMUM OUTPUT POWER 83
APPENDIX G - CONDUCTED SPURIOUS EMISSIONS 85

Table of Contents **Page**

APPENDIX H - POWER SPECTRAL DENSITY **89**

REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Nov. 11, 2020

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part15, Subpart C (15.247)				
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.3,Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.
BTL's Test Firm Registration Number for FCC: 357015
BTL's Designation Number for FCC: CN1240

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)
DG-C02	CISPR	150kHz ~ 30MHz	2.68

B. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
DG-CB03	CISPR	9kHz ~ 30MHz	V	3.79
		9kHz ~ 30MHz	H	3.57
		30MHz ~ 200MHz	V	4.26
		30MHz ~ 200MHz	H	3.38
		200MHz ~ 1,000MHz	V	3.98
		200MHz ~ 1,000MHz	H	3.94
		1GHz ~ 6GHz	-	4.58
		6GHz ~ 18GHz	-	5.18
		18GHz ~ 26.5GHz	-	3.62
		26.5GHz ~ 40GHz	-	4.00

C. Other Measurement:

Parameter	Uncertainty
Bandwidth	±3.8 %
Maximum Output Power	±0.95 dB
Conducted Spurious Emission	±2.71 dB
Power Spectral Density	±0.86 dB
Temperature	±0.08 °C
Time	±0.58 %
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	25°C	53%	AC 120V/60Hz	Kwok Guo
Radiated Emissions-9K-30MHz	25°C	60%	AC 120V/60Hz	Kwok Guo
Radiated Emissions-30 MHz to 1GHz	26°C	52%	AC 120V/60Hz	Kwok Guo
Radiated Emissions-Above 1000 MHz	26°C	52%	AC 120V/60Hz	Kwok Guo
Bandwidth	20°C	42%	AC 120V/60Hz	Hayden Chen
Maximum output power	20°C	42%	AC 120V/60Hz	Laughing Zhang
Conducted Spurious Emissions	20°C	42%	AC 120V/60Hz	Hayden Chen
Power Spectral Density	20°C	42%	AC 120V/60Hz	Hayden Chen

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Smart Wi-Fi Dimmer Switch
Brand Name	Tenda
Test Model	SS9
Series Model	N/A
Model Difference(s)	N/A
Power Source	AC Mains.
Power Rating	I/P: 100-120V~, 60Hz, 7A Max
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 72.2 Mbps
Maximum Output Power	IEEE 802.11b: 22.59 dBm (0.1816 W) IEEE 802.11g: 27.21 dBm (0.5260 W) IEEE 802.11n (HT20): 27.13 dBm (0.5164 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	Internal	N/A	0

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-20 MHz Mode Channel 01/06/11
Mode 4	TX G Mode Channel 06

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 G Mode Channel 06

Radiated emissions test - Below 1GHz	
Final Test Mode:	Description
Mode 4	TX G 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-20 MHz 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-20 MHz Mode Channel 01/06/11

NOTE:

(1) The measurements are performed at the high, middle, low available channels.

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

(3) For radiated emission below 1 GHz test, the IEEE 802.11g Channel 06 is found to be the worst case and recorded.

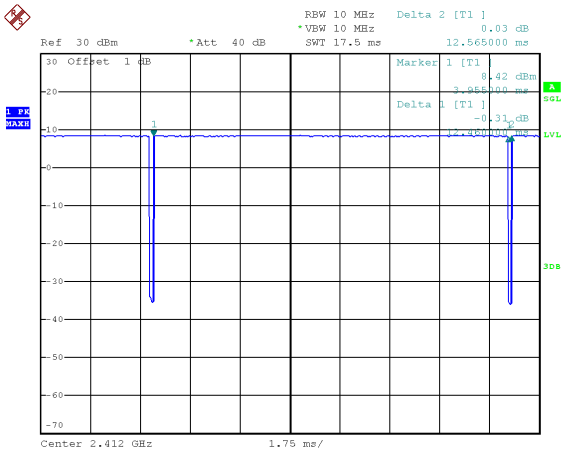
(4) For radiated emission above 1 GHz test, 1GHz~26.5GHz have been pre-tested and in this report only recorded the worst case. The remaining spurious points are all below the limit value of 20dB.

2.3 PARAMETERS OF TEST SOFTWARE

Test Software	UI_mptool.exe 1.0.0.1		
Frequency (MHz)	2412	2437	2462
IEEE 802.11b	43	41	43
IEEE 802.11g	50	61	48
IEEE 802.11n (HT20)	48	58	47

2.4 DUTY CYCLE

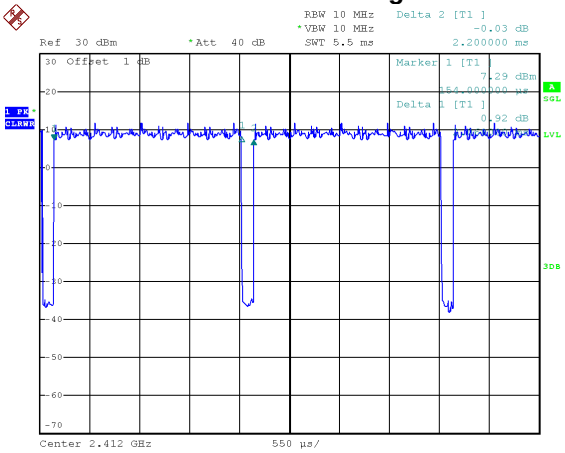
IEEE 802.11b



Date: 19.OCT.2020 17:37:40

Duty cycle = 12.460 ms / 12.565 ms = 99.16%
Duty Factor = 10 log(1/Duty cycle) = 0.00

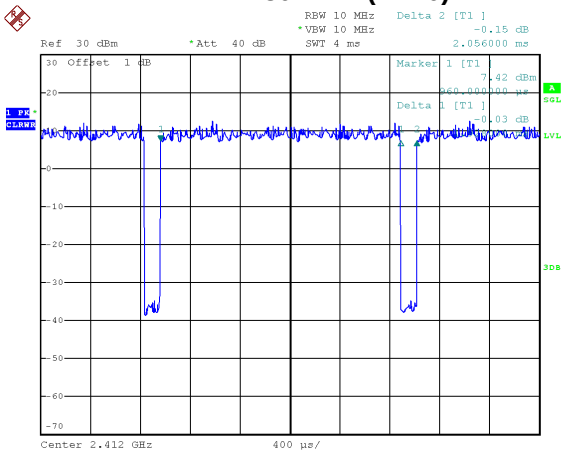
IEEE 802.11g



Date: 19.OCT.2020 17:38:01

Duty cycle = 2.068 ms / 2.200 ms = 94.00%
Duty Factor = 10 log(1/Duty cycle) = 0.27

IEEE 802.11n (HT20)

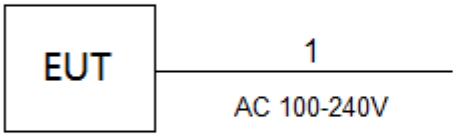


Date: 19.OCT.2020 17:38:24

Duty cycle = 1.928 ms / 2.056 ms = 93.77%
Duty Factor = 10 log(1/Duty cycle) = 0.28

NOTE:
For IEEE 802.11b, IEEE 802.11g and 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 (Duty cycle < 98%).

2.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.6 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.
-	-	-	-	-

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	AC Cable	NO	NO	1.2m

3. AC POWER LINE CONDUCTED EMISSIONS TEST

3.1 LIMIT

Frequency of Emission (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56*	56 to 46*
0.50 - 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.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

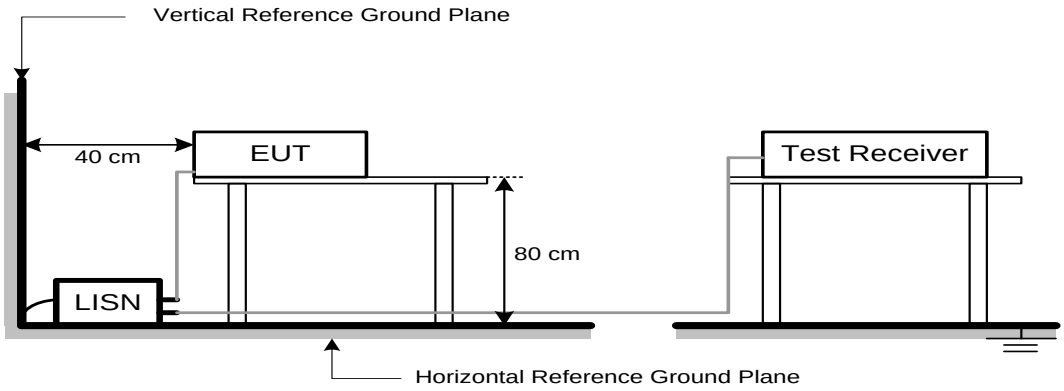
3.2 TEST PROCEDURE

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.

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 TEST

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 PART 15C.

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

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

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1 MHz / 3 MHz for Peak, 1 MHz / 1/T for Average

Receiver Parameter	Setting
Attenuation	Auto
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

4.2 TEST PROCEDURE

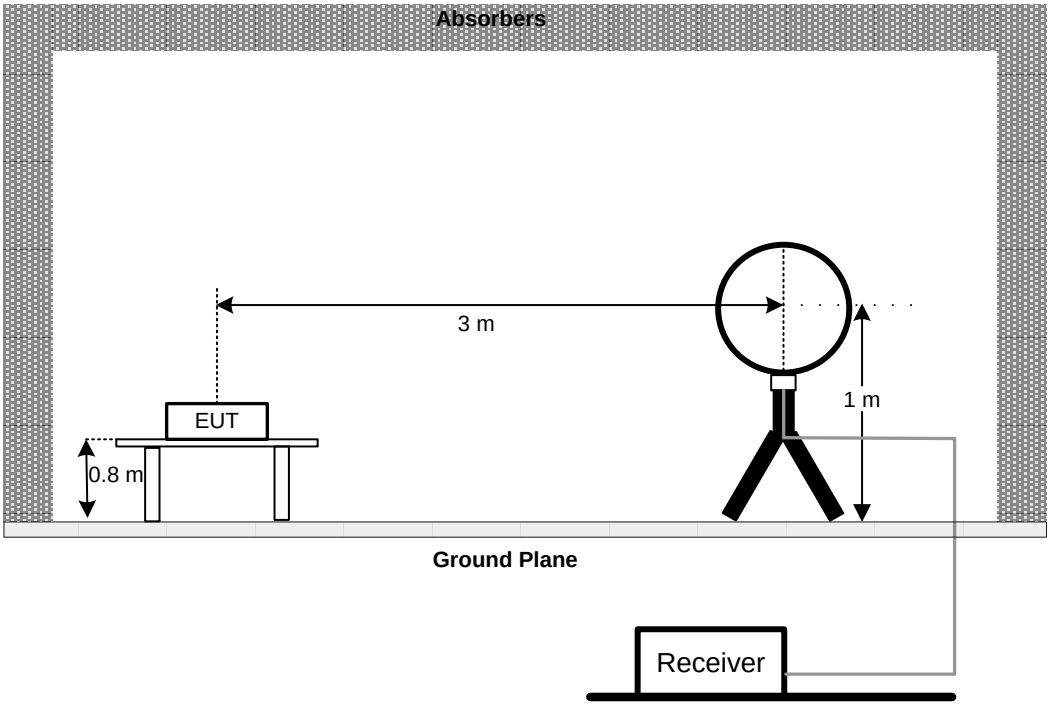
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1 GHz)
b. The measuring distance of 3 m or 1.5m 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 1GHz)
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.

4.3 DEVIATION FROM TEST STANDARD

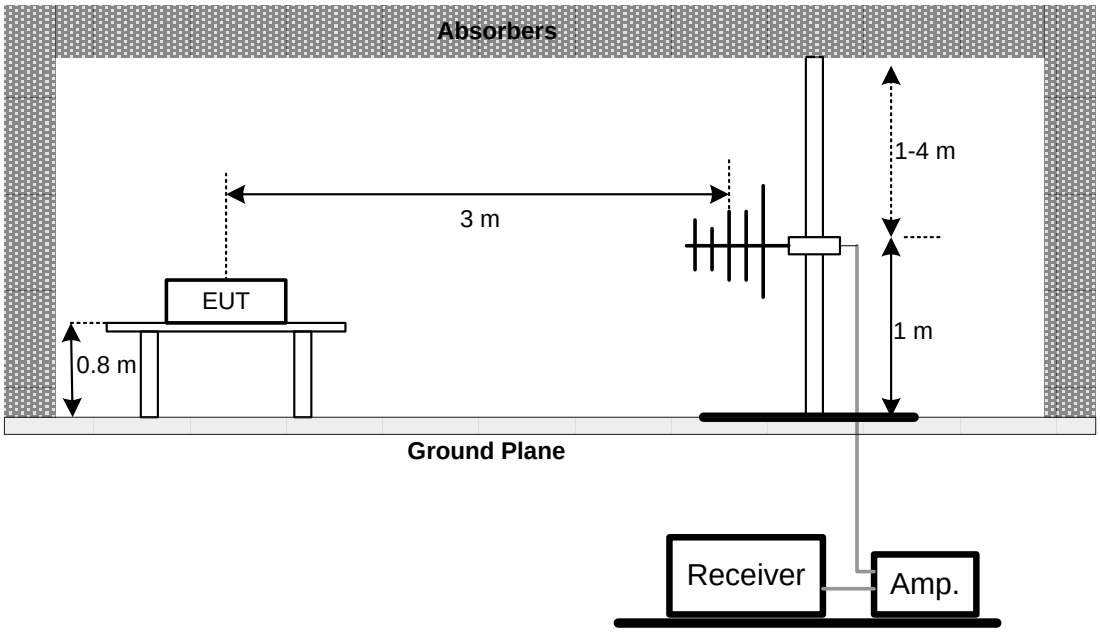
No deviation

4.4 TEST SETUP

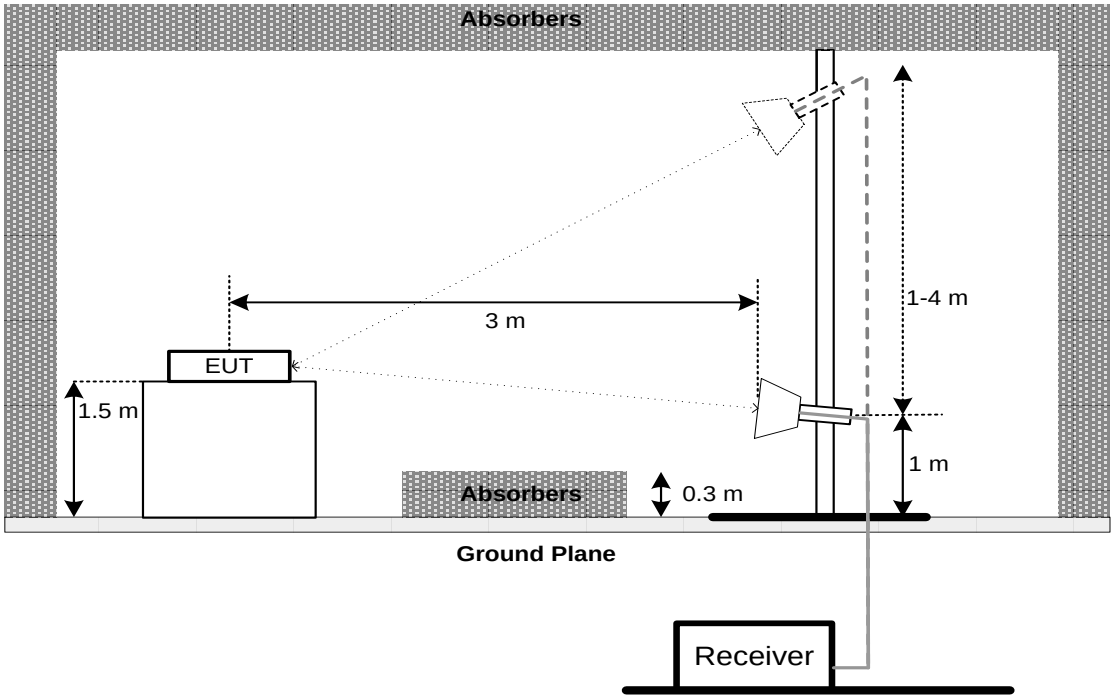
9 kHz-30 MHz



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 TEST

5.1 LIMIT

FCC Part15, Subpart C (15.247)		
Section	Test Item	Limit
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.

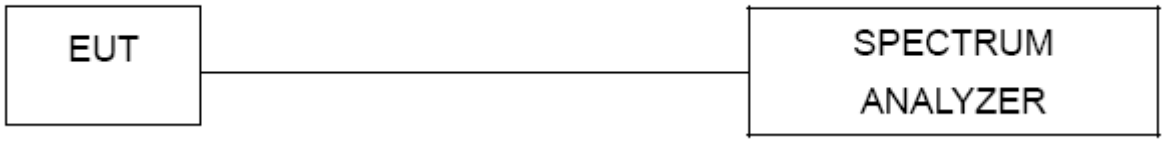
b. Spectrum Setting:
For 6 dB Bandwidth : RBW= 100 kHz, VBW=300 kHz, Sweep time = auto.
For 99% Emission Bandwidth B/G/N-20 Mode: RBW= 300 KHz, VBW=1 MHz, Sweep time = 2.5 ms.

c. The bandwidth was performed in accordance with method 11.8.1 of ANSI C63.10-2013.

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 TEST

6.1 LIMIT

FCC Part15, Subpart C (15.247)		
Section	Test Item	Limit
15.247(b)(3)	Maximum Output Power	1 Watt or 30dBm

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 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.

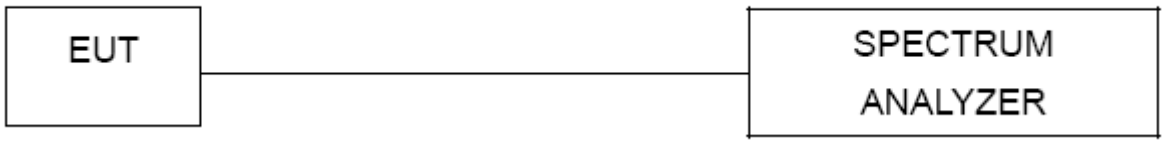
7.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. Spectrum Setting: RBW= 100 kHz, VBW=300 kHz, 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 TEST

8.1 LIMIT

FCC Part15, Subpart C (15.247)		
Section	Test Item	Limit
15.247(e)	Power Spectral Density	8 dBm (in any 3 kHz)

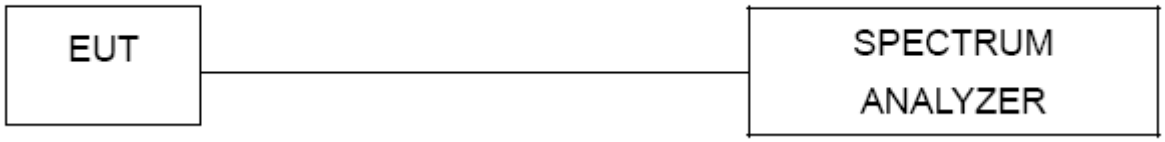
8.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. Spectrum Setting: RBW=3 kHz, VBW=10 kHz, Sweep time = Auto.
c. The Power Spectral Density was performed in accordance with method 11.10.2 of ANSI C63.10-2013.

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	EMI Test Receiver	R&S	ESCI	100382	Feb. 28, 2021
2	LISN	EMCO	3816/2	52765	Mar. 01, 2021
3	TWO-LINE V-NETWORK	R&S	ENV216	101447	Feb. 28, 2021
4	50Ω Terminator	SHX	TF5-3	15041305	Mar. 01, 2021
5	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
6	Cable	N/A	RG223	12m	Mar. 10, 2021
7	643 Shield Room	ETS	6*4*3m	N/A	N/A

Radiated Emissions - 9 kHz to 30 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	EM	EM-6876-1	230	Apr. 16, 2021
2	Cable	N/A	RG 213/U	N/A	May 29, 2021
3	EMI Test Receiver	R&S	ESCI	100895	Feb. 28, 2021
4	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
5	966 Chambe Room	RM	9*6*6m	N/A	Jul. 25, 2021

Radiated Emissions - 30 MHz to 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarzbeck	VULB9160	9160-3232	Mar. 09, 2021
2*	Amplifier	HP	8447D	2944A09673	Aug. 11, 2021
3	Receiver	Agilent	N9038A	MY52130039	Jul. 25, 2021
4	Cable	emci	LMR-400(30MHz-1 GHz)(8m+5m)	N/A	May 22, 2021
5	Controller	CT	SC100	N/A	N/A
6	Controller	MF	MF-7802	MF780208416	N/A
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
8	966 Chambe Room	RM	9*6*6m	N/A	Jul. 25, 2021

Radiated Emissions - Above 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Double Ridged Guide Antenna	ETS	3115	75789	May 12, 2021
2	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Jul. 07, 2021
3	Amplifier	Agilent	8449B	3008A02333	Mar. 01, 2021
4	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 07, 2021
5	Receiver	Agilent	N9038A	MY52130039	Jul. 25, 2021
6	Controller	CT	SC100	N/A	N/A
7	Controller	MF	MF-7802	MF780208416	N/A
8	Cable	N/A	EMC104-SM-SM-6 000	N/A	May 09, 2021
9	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
10	Filter	STI	STI15-9912	N/A	Jul. 25, 2021
11	966 Chambe Room	RM	9*6*6m	N/A	Jul. 25, 2021

Bandwidth & Antenna Conducted Spurious Emissions & Power Spectral Density					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Jul. 25, 2021
2	RF Cable	Tongkaichuan	N/A	N/A	N/A
3	DC Block	Mini	N/A	N/A	N/A

Maximum Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Peak Power Analyzer	Keysight	8990B	MY51000506	Aug. 07, 2021
2	Wideband power sensor	Keysight	N1923A	MY58310004	Jul. 25, 2021
3	Attenuator	WOKEN	6SM3502	VAS1214NL	Feb. 11, 2021
4	RF Cable	Tongkaichuan	N/A	N/A	N/A

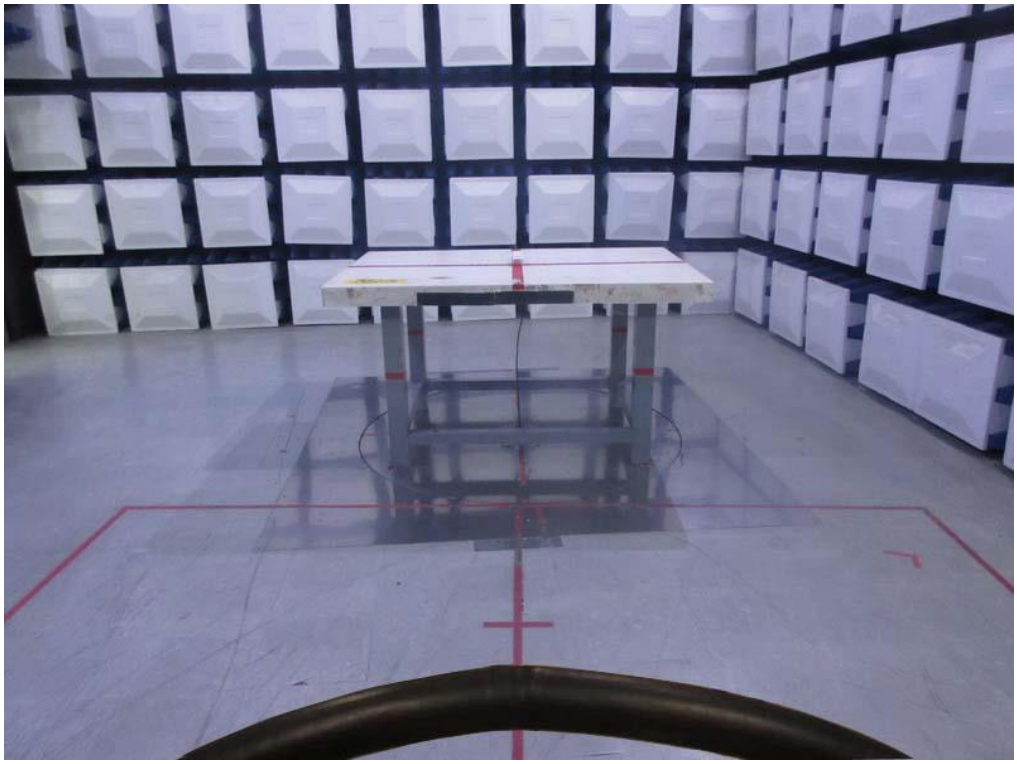
Remark: ”N/A” denotes no model name, serial no. or calibration specified.
“*” calibration period of equipment list is three year.
Except * item, all calibration period of equipment list is one year.

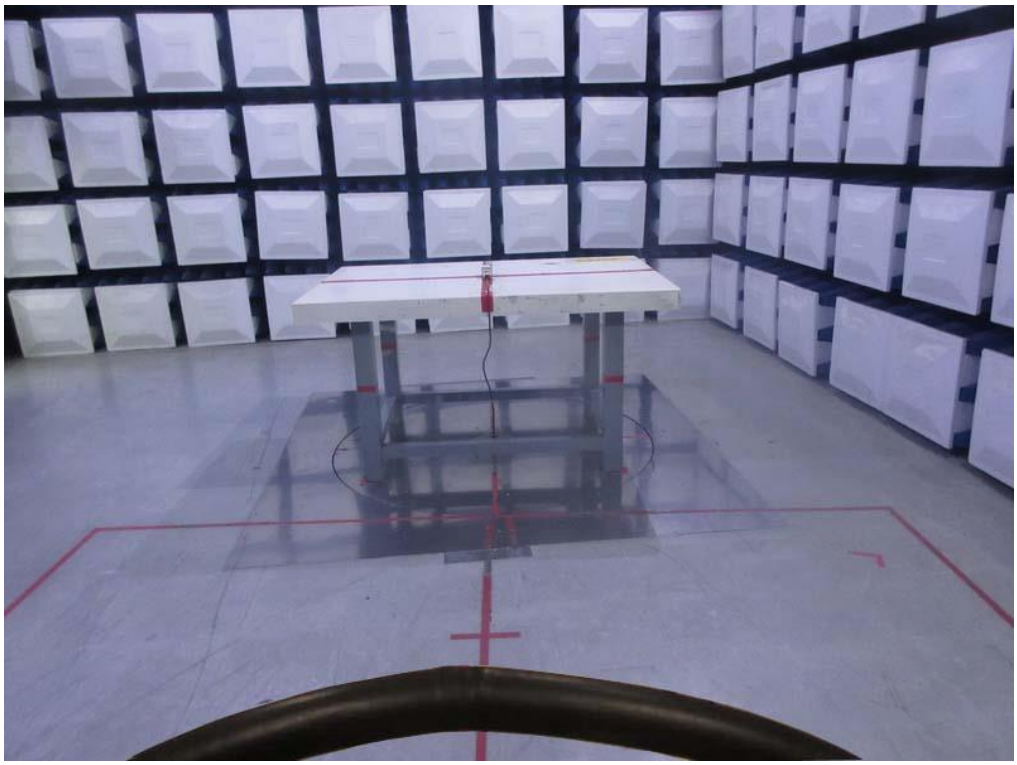
10. EUT TEST PHOTO

AC Power Line Conducted Emissions Test Photos

Radiated Emissions Test Photos

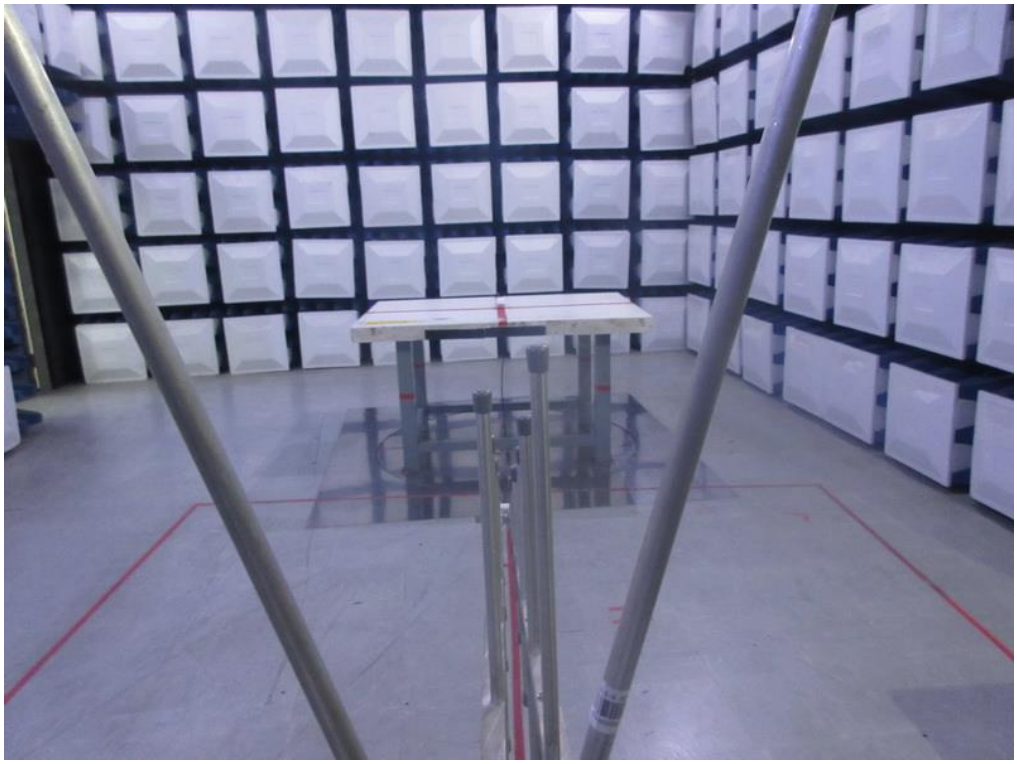
9 kHz to 30 MHz

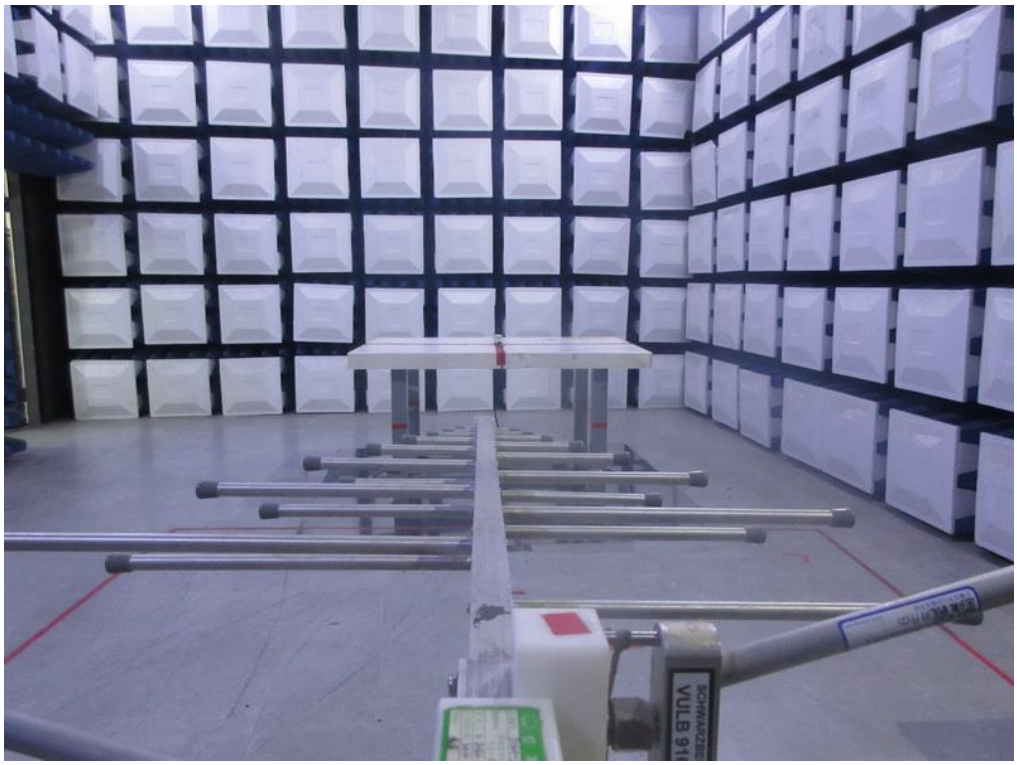




Radiated Emissions Test Photos

30 MHz to 1 GHz





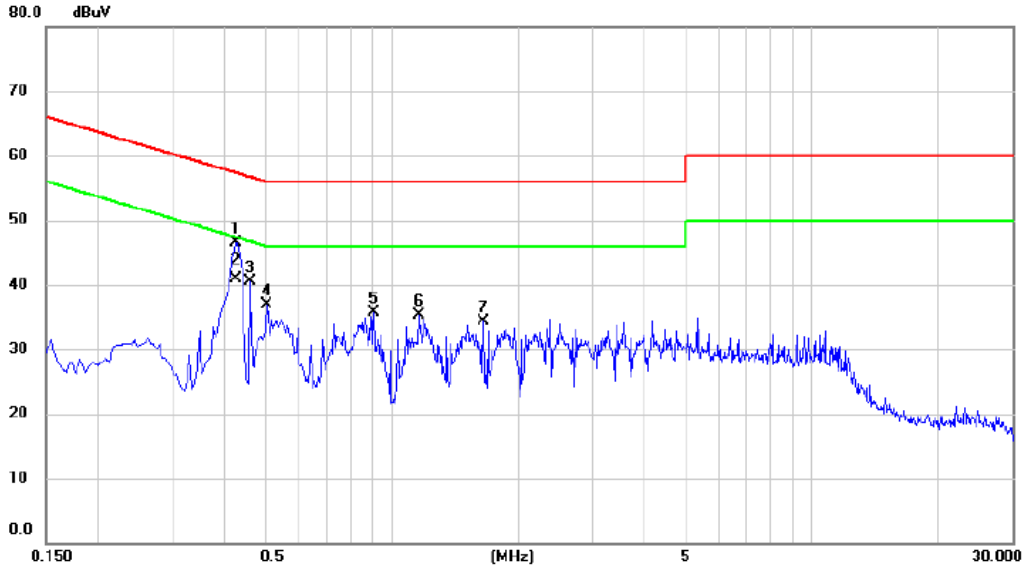
Radiated Emissions Test Photos

Above 1 GHz

APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

Test Mode:	TX G Mode Channel 06

Line

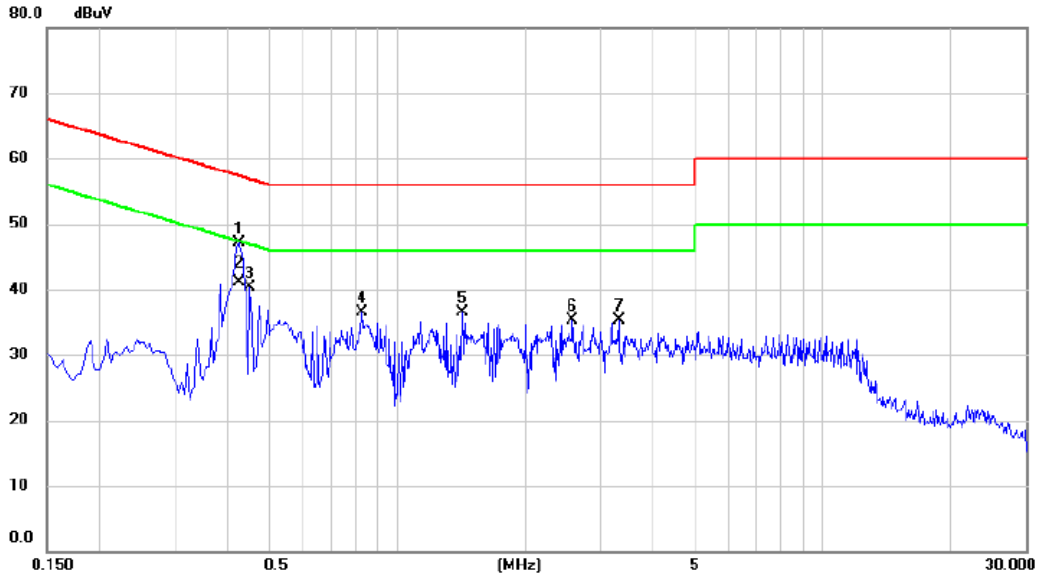


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.4245	36.54	9.92	46.46	57.36	-10.90	peak	
2	*	0.4245	30.90	9.92	40.82	47.36	-6.54	AVG	
3		0.4605	30.56	9.94	40.50	56.68	-16.18	peak	
4		0.5055	26.88	9.95	36.83	56.00	-19.17	peak	
5		0.9060	25.72	10.00	35.72	56.00	-20.28	peak	
6		1.1580	25.34	10.02	35.36	56.00	-20.64	peak	
7		1.6530	24.26	10.06	34.32	56.00	-21.68	peak	

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

Test Mode:	TX G Mode Channel 06

Neutral



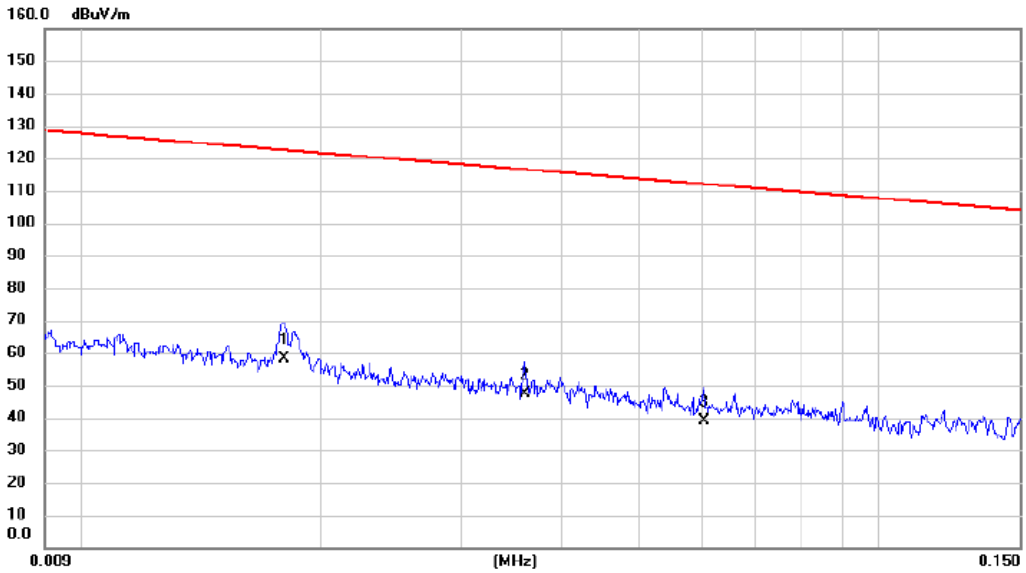
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.4245	36.98	10.10	47.08	57.36	-10.28	peak	
2	*	0.4245	31.00	10.10	41.10	47.36	-6.26	AVG	
3		0.4515	30.26	10.12	40.38	56.85	-16.47	peak	
4		0.8250	26.20	10.24	36.44	56.00	-19.56	peak	
5		1.4235	26.07	10.35	36.42	56.00	-19.58	peak	
6		2.5845	24.91	10.47	35.38	56.00	-20.62	peak	
7		3.3135	24.67	10.54	35.21	56.00	-20.79	peak	

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

APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ

Test Mode:	TX G Mode Channel 06

Ant 0°

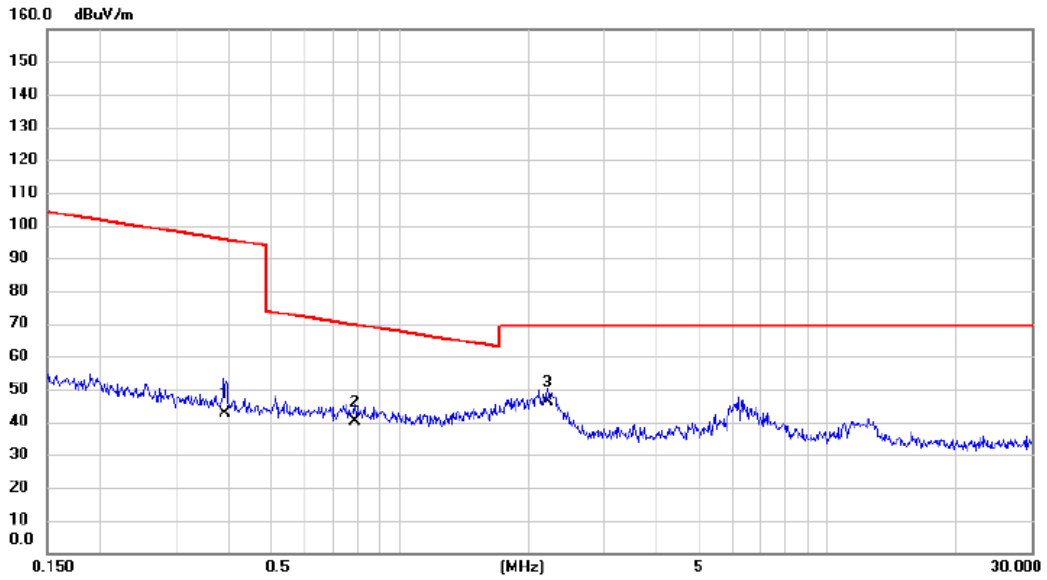


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0180	44.35	13.84	58.19	122.50	-64.31	AVG	
2		0.0360	34.76	12.79	47.55	116.48	-68.93	AVG	
3		0.0603	26.49	12.48	38.97	112.00	-73.03	AVG	

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

Test Mode:	TX G Mode Channel 06

Ant 0°

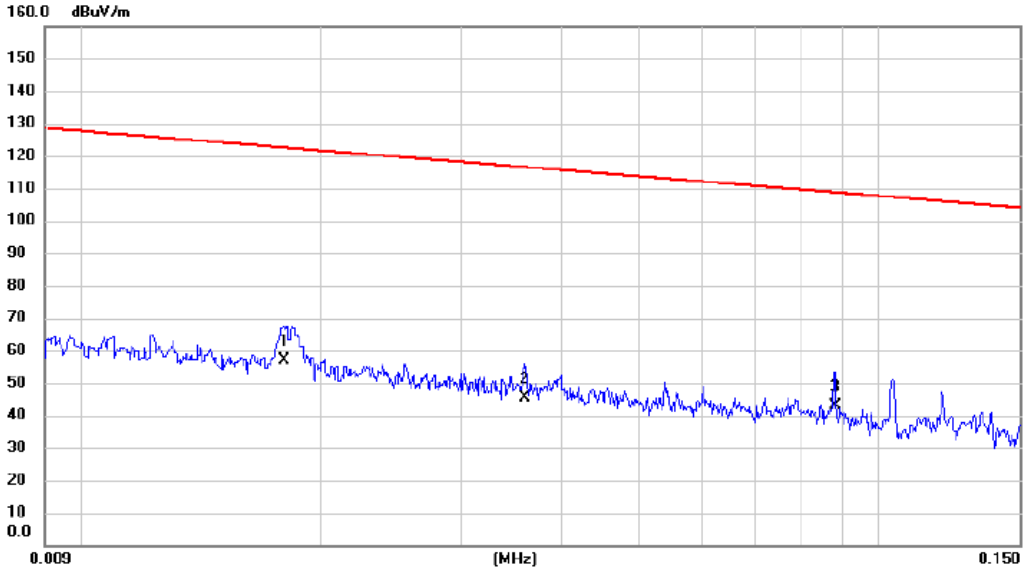


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.3893	30.32	12.29	42.61	95.80	-53.19	AVG	
2		0.7876	28.49	11.88	40.37	69.68	-29.31	QP	
3	*	2.2250	34.88	11.20	46.08	69.54	-23.46	QP	

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

Test Mode:	TX G Mode Channel 06

Ant 90°

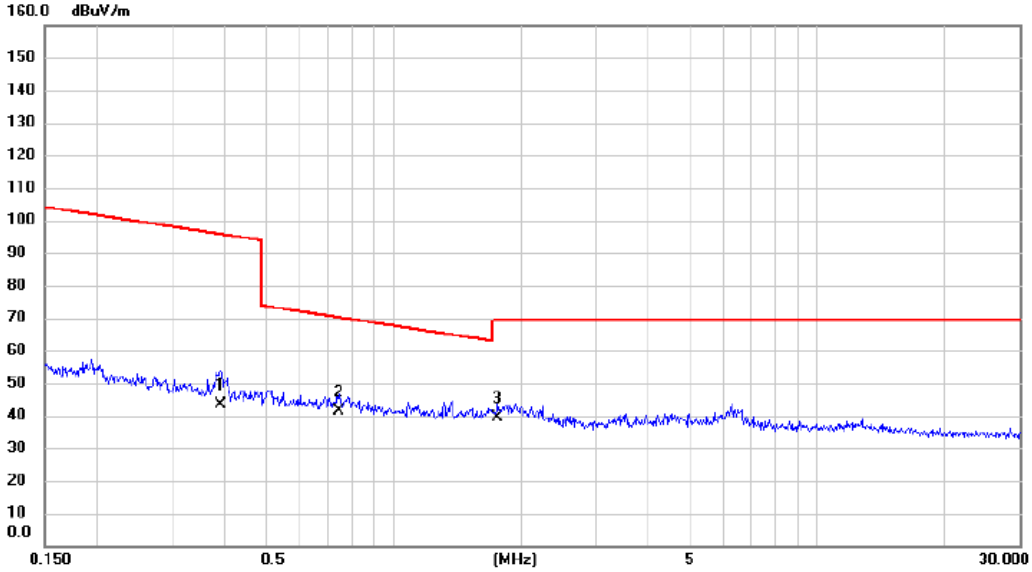


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0180	43.32	13.84	57.16	122.50	-65.34	AVG	
2		0.0360	32.56	12.79	45.35	116.48	-71.13	AVG	
3		0.0881	30.19	12.65	42.84	108.71	-65.87	AVG	

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

Test Mode:	TX G Mode Channel 06

Ant 90°



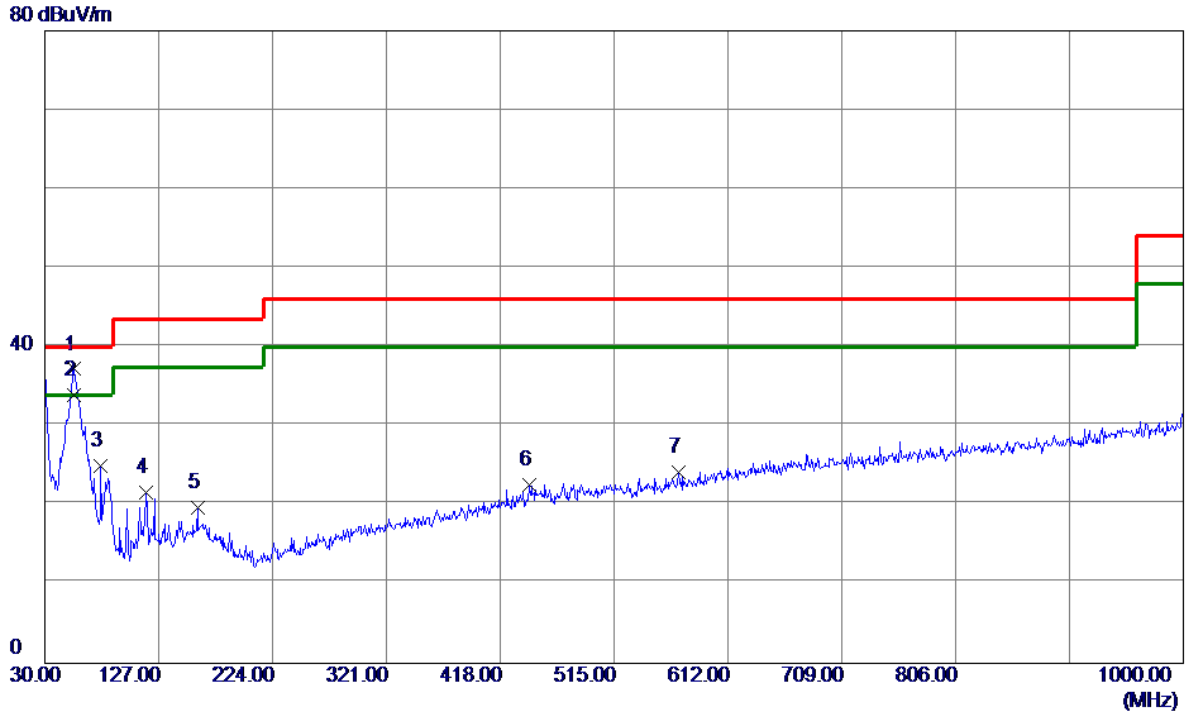
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.3914	31.22	12.29	43.51	95.75	-52.24	AVG	
2	*	0.7430	29.48	11.91	41.39	70.18	-28.79	QP	
3		1.7623	27.88	11.42	39.30	69.54	-30.24	QP	

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

APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ

Test Mode:	TX G Mode Channel 06

Vertical

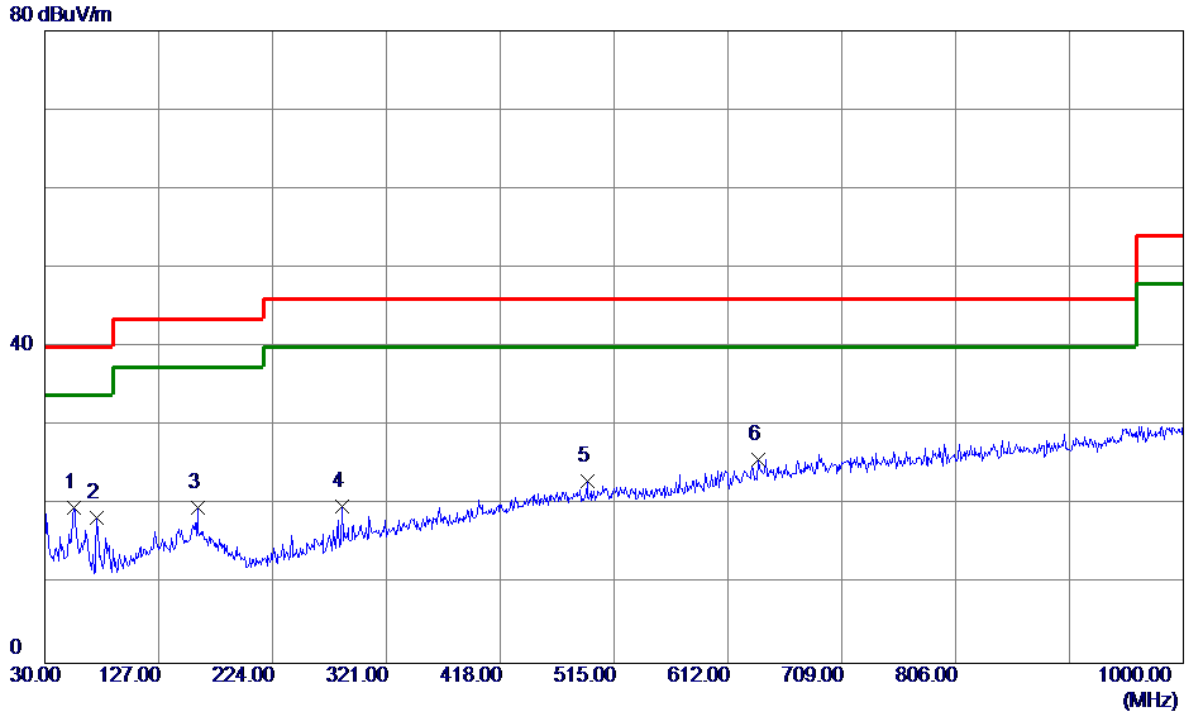


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	54.7350	50.85	-13.65	37.20	40.00	-2.80	Peak	
2	54.7350	47.59	-13.65	33.94	40.00	-6.06	QP	
3	77.5300	42.17	-17.28	24.89	40.00	-15.11	Peak	
4	116.3300	34.89	-13.28	21.61	43.50	-21.89	Peak	
5	159.9800	30.32	-10.67	19.65	43.50	-23.85	Peak	
6	442.7350	30.37	-7.83	22.54	46.00	-23.46	Peak	
7	569.8050	30.46	-6.23	24.23	46.00	-21.77	Peak	

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

Test Mode:	TX G Mode Channel 06

Horizontal



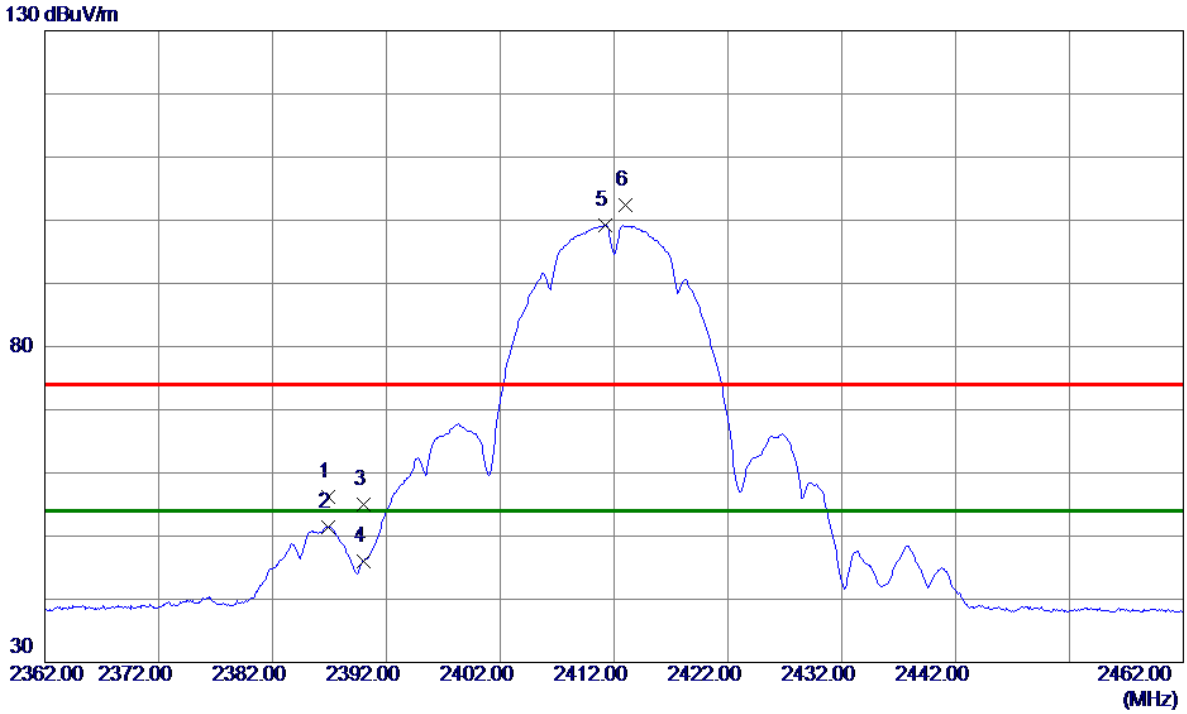
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	54.7350	33.28	-13.65	19.63	40.00	-20.37	Peak	
2	74.6200	35.20	-16.78	18.42	40.00	-21.58	Peak	
3	159.9800	30.31	-10.67	19.64	43.50	-23.86	Peak	
4	283.1700	31.86	-11.95	19.91	46.00	-26.09	Peak	
5	492.2050	30.36	-7.32	23.04	46.00	-22.96	Peak	
6 *	638.1900	30.30	-4.52	25.78	46.00	-20.22	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

Vertical

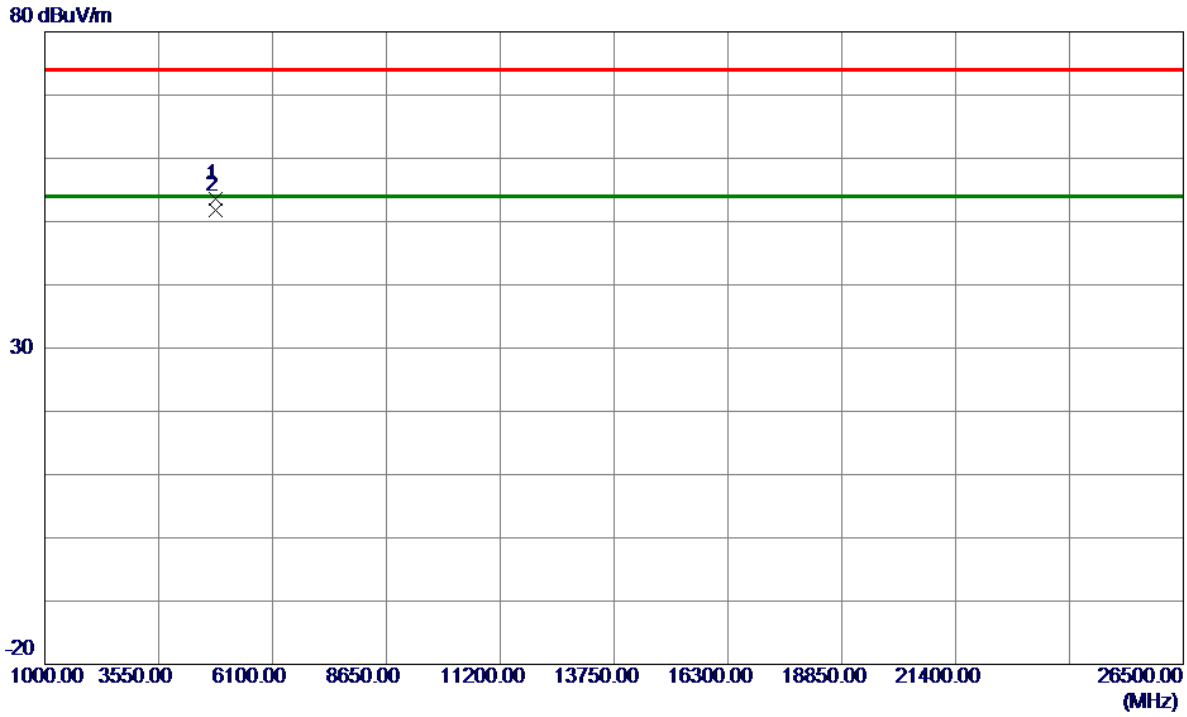


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2386.9000	48.92	7.26	56.18	74.00	-17.82	Peak	
2	2386.9000	44.21	7.26	51.47	54.00	-2.53	AVG	
3	2390.0000	47.75	7.26	55.01	74.00	-18.99	Peak	
4	2390.0000	38.81	7.26	46.07	54.00	-7.93	AVG	
5 *	2411.2000	91.99	7.26	99.25	54.00	45.25	AVG	No Limit
6	2413.0000	95.05	7.26	102.31	74.00	28.31	Peak	No Limit

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

Test Mode:	TX B Mode 2412 MHz

Vertical

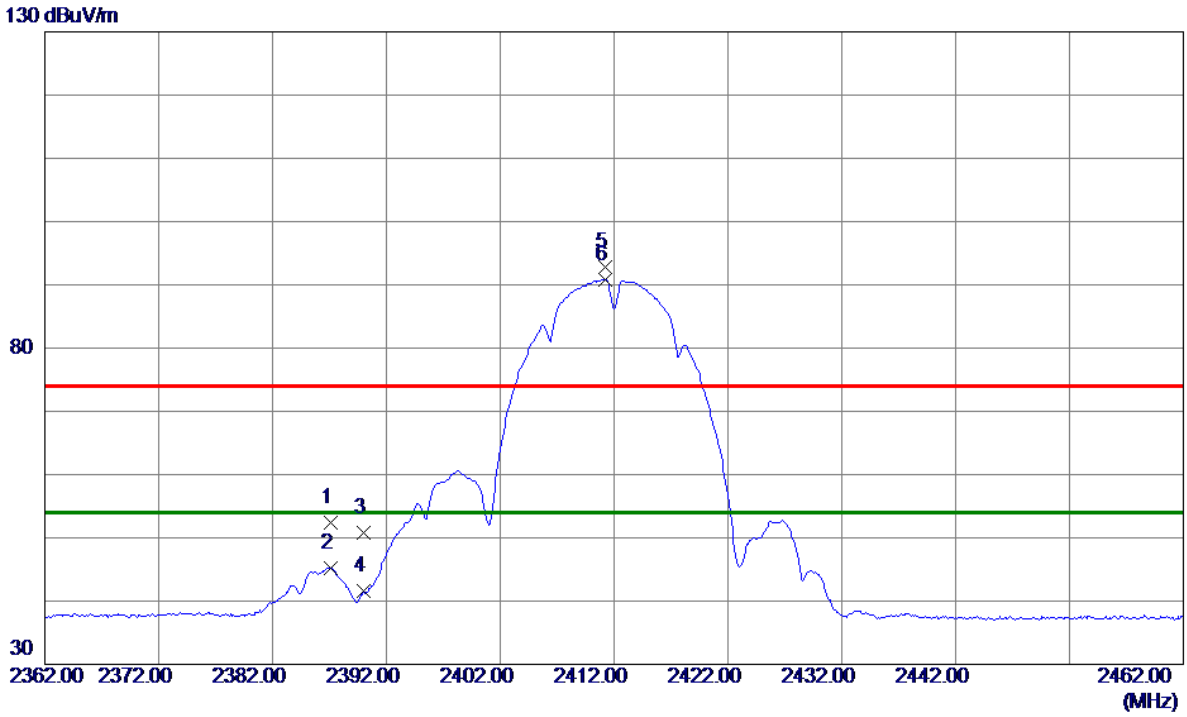


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4823.9700	49.22	4.45	53.67	74.00	-20.33	Peak	
2 *	4823.9800	47.40	4.45	51.85	54.00	-2.15	AVG	

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

Test Mode:	TX B Mode 2412 MHz

Horizontal

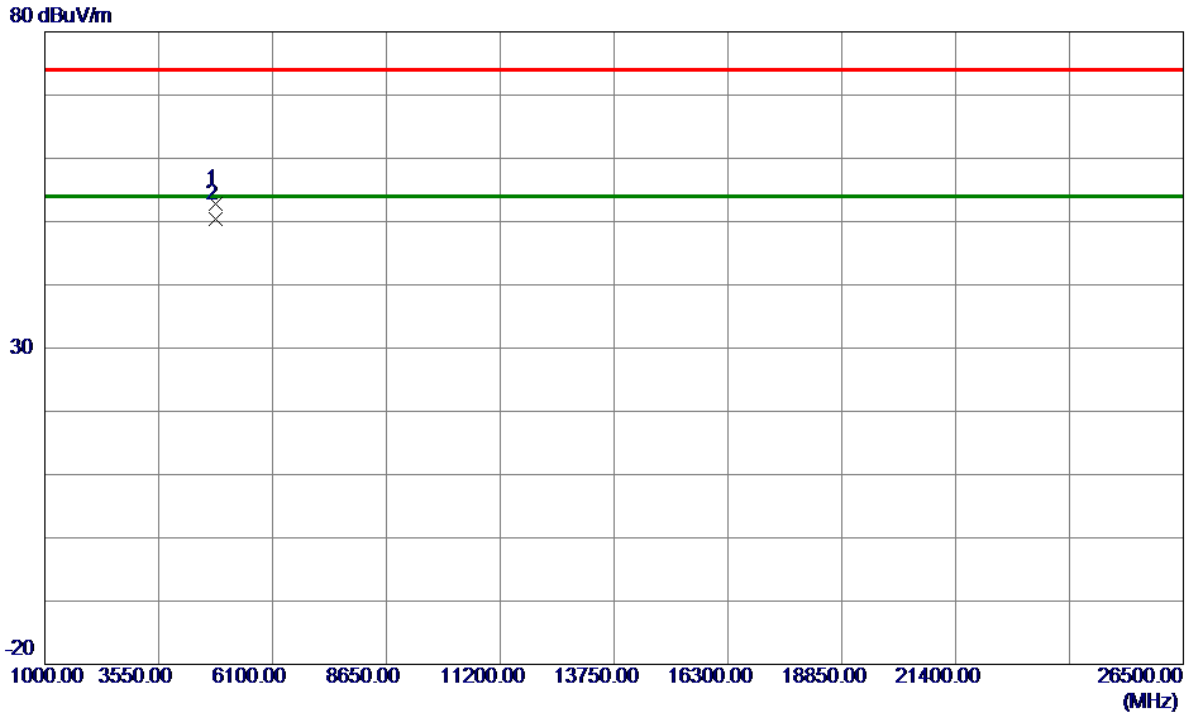


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2387.1000	45.23	7.26	52.49	74.00	-21.51	Peak	
2	2387.1000	38.00	7.26	45.26	54.00	-8.74	AVG	
3	2390.0000	43.49	7.26	50.75	74.00	-23.25	Peak	
4	2390.0000	34.32	7.26	41.58	54.00	-12.42	AVG	
5	2411.2000	85.59	7.26	92.85	74.00	18.85	Peak	No Limit
6 *	2411.2000	83.59	7.26	90.85	54.00	36.85	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

Horizontal

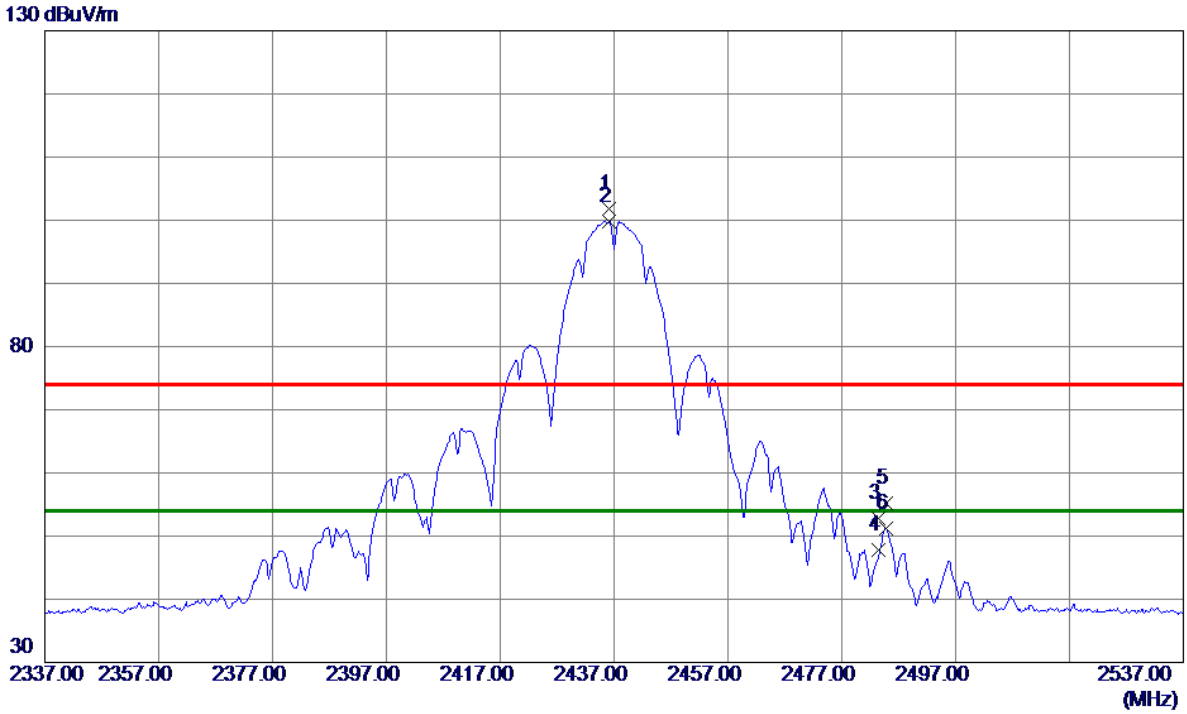


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4823.9700	48.39	4.45	52.84	74.00	-21.16	Peak	
2 *	4823.9900	45.95	4.45	50.40	54.00	-3.60	AVG	

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

Test Mode:	TX B Mode 2437 MHz

Vertical

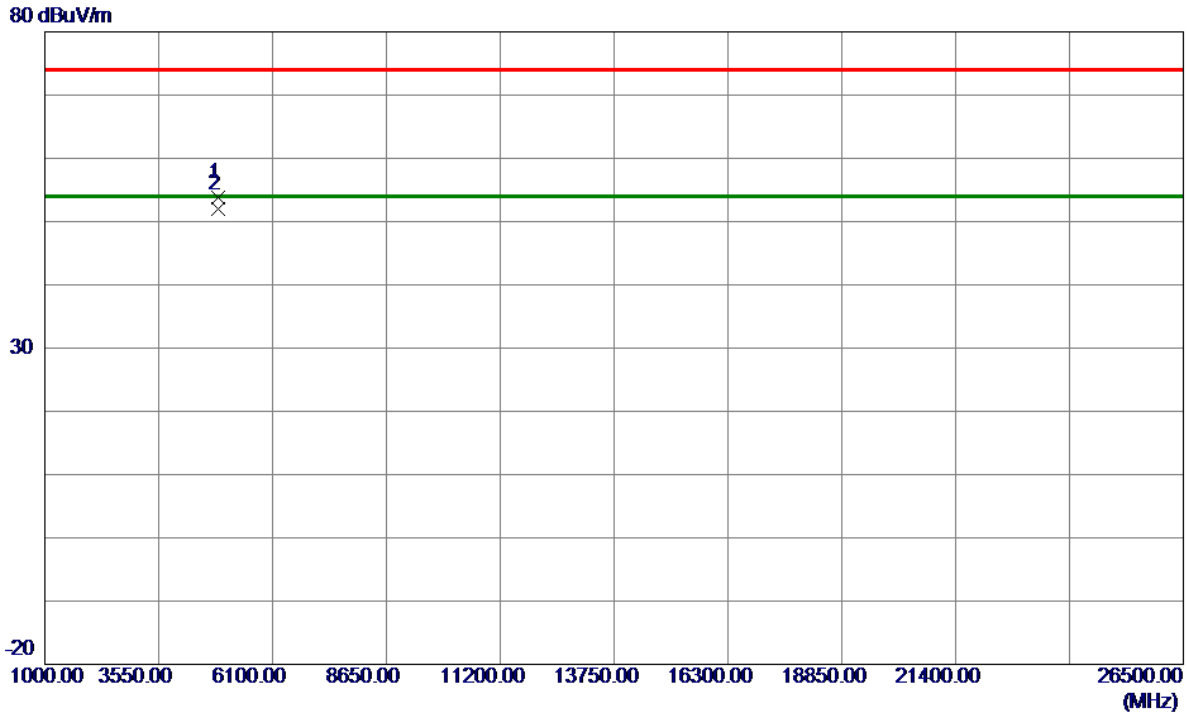


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2436.2000	94.51	7.25	101.76	74.00	27.76	Peak	No Limit
2 *	2436.2000	92.60	7.25	99.85	54.00	45.85	AVG	No Limit
3	2483.5000	45.52	7.25	52.77	74.00	-21.23	Peak	
4	2483.5000	40.47	7.25	47.72	54.00	-6.28	AVG	
5	2484.8000	47.86	7.25	55.11	74.00	-18.89	Peak	
6	2484.8000	43.97	7.25	51.22	54.00	-2.78	AVG	

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

Test Mode:	TX B Mode 2437 MHz

Vertical

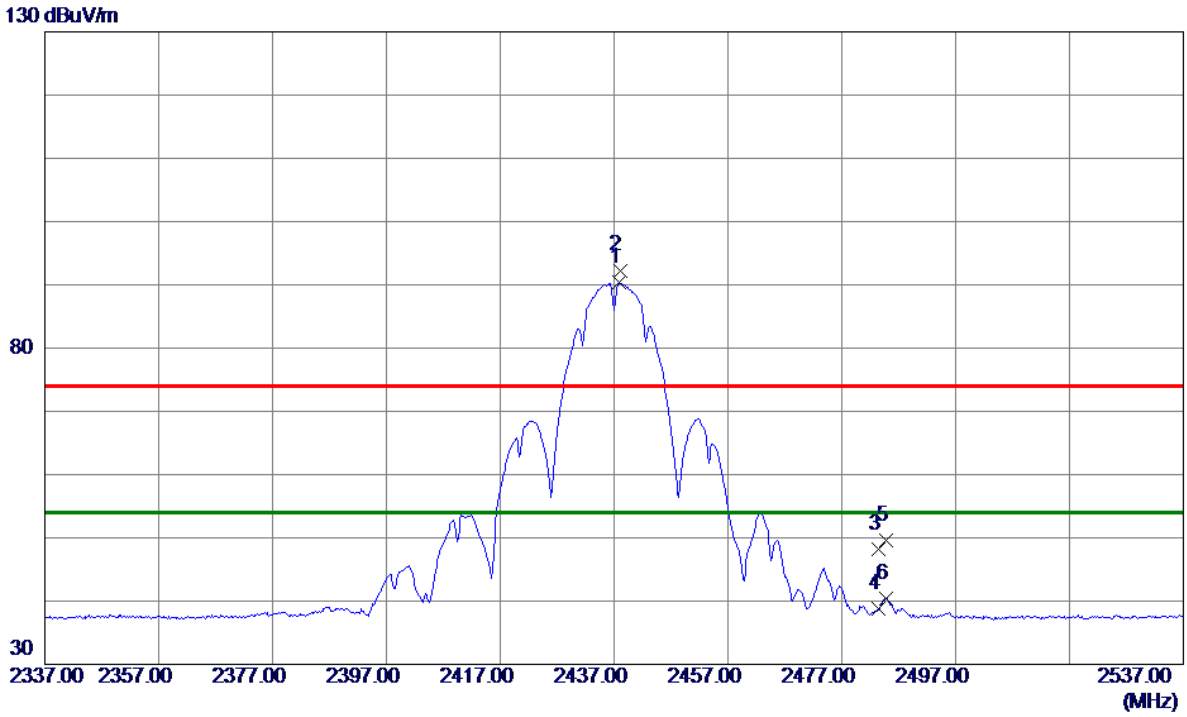


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4873.9500	49.21	4.58	53.79	74.00	-20.21	Peak	
2 *	4874.0000	47.35	4.58	51.93	54.00	-2.07	AVG	

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

Test Mode:	TX B Mode 2437 MHz

Horizontal

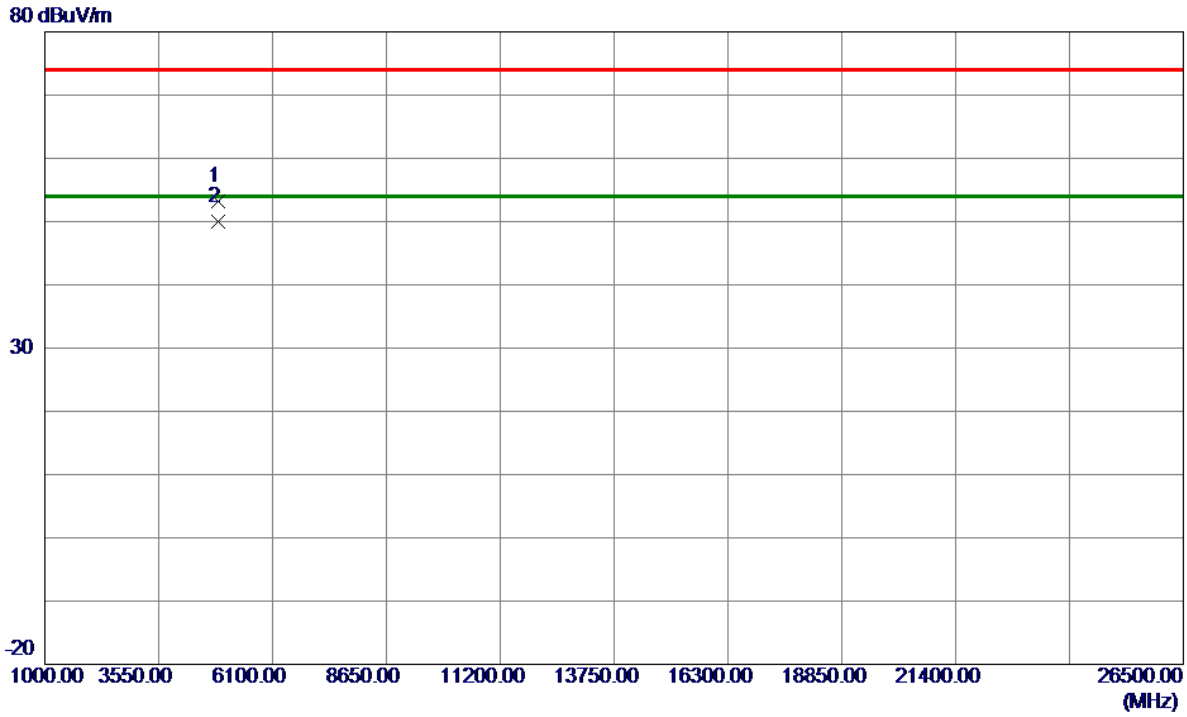


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2437.8000	83.06	7.25	90.31	54.00	36.31	AVG	No Limit
2	2438.0000	85.05	7.25	92.30	74.00	18.30	Peak	No Limit
3	2483.5000	41.03	7.25	48.28	74.00	-25.72	Peak	
4	2483.5000	31.63	7.25	38.88	54.00	-15.12	AVG	
5	2484.8000	42.39	7.25	49.64	74.00	-24.36	Peak	
6	2484.8000	33.22	7.25	40.47	54.00	-13.53	AVG	

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

Test Mode:	TX B Mode 2437 MHz

Horizontal

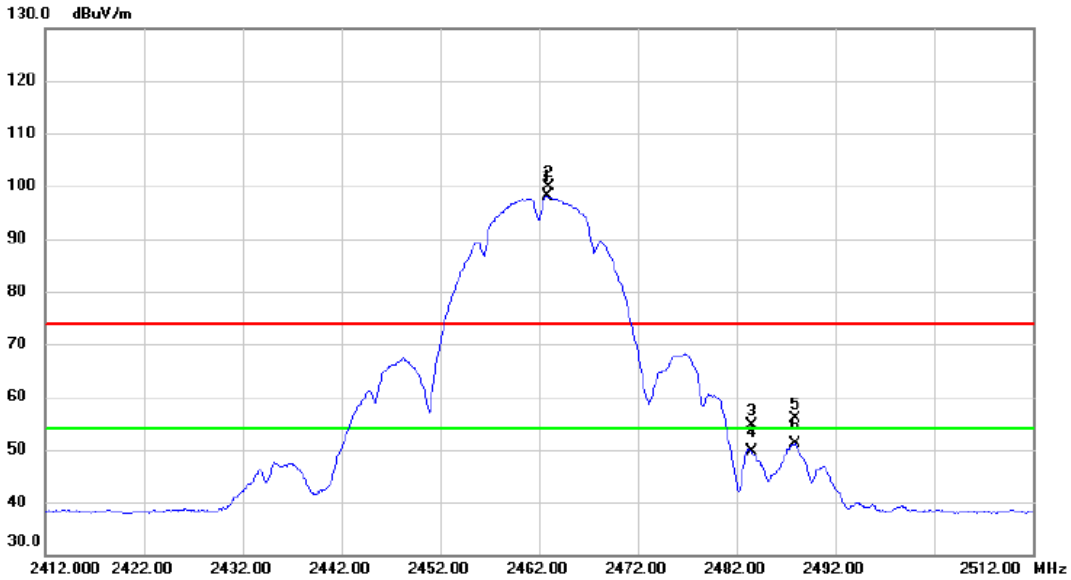


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4873.9700	48.65	4.58	53.23	74.00	-20.77	Peak	
2 *	4873.9700	45.51	4.58	50.09	54.00	-3.91	AVG	

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

Test Mode:	TX B Mode 2462 MHz

Vertical

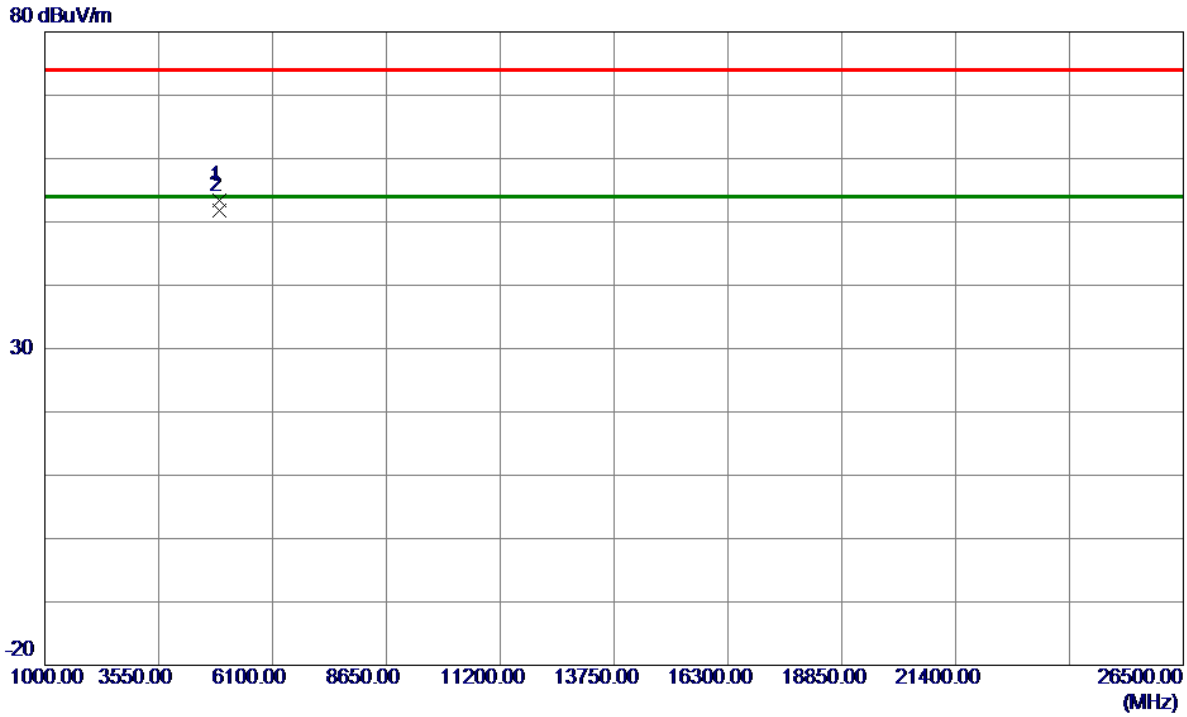


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2462.800	90.84	7.25	98.09	54.00	44.09	AVG	No Limit
2	X	2463.000	92.71	7.25	99.96	74.00	25.96	peak	No Limit
3		2483.500	47.45	7.25	54.70	74.00	-19.30	peak	
4		2483.500	42.43	7.25	49.68	54.00	-4.32	AVG	
5		2487.900	48.53	7.24	55.77	74.00	-18.23	peak	
6		2487.900	43.84	7.24	51.08	54.00	-2.92	AVG	

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

Test Mode:	TX B Mode 2462 MHz

Vertical

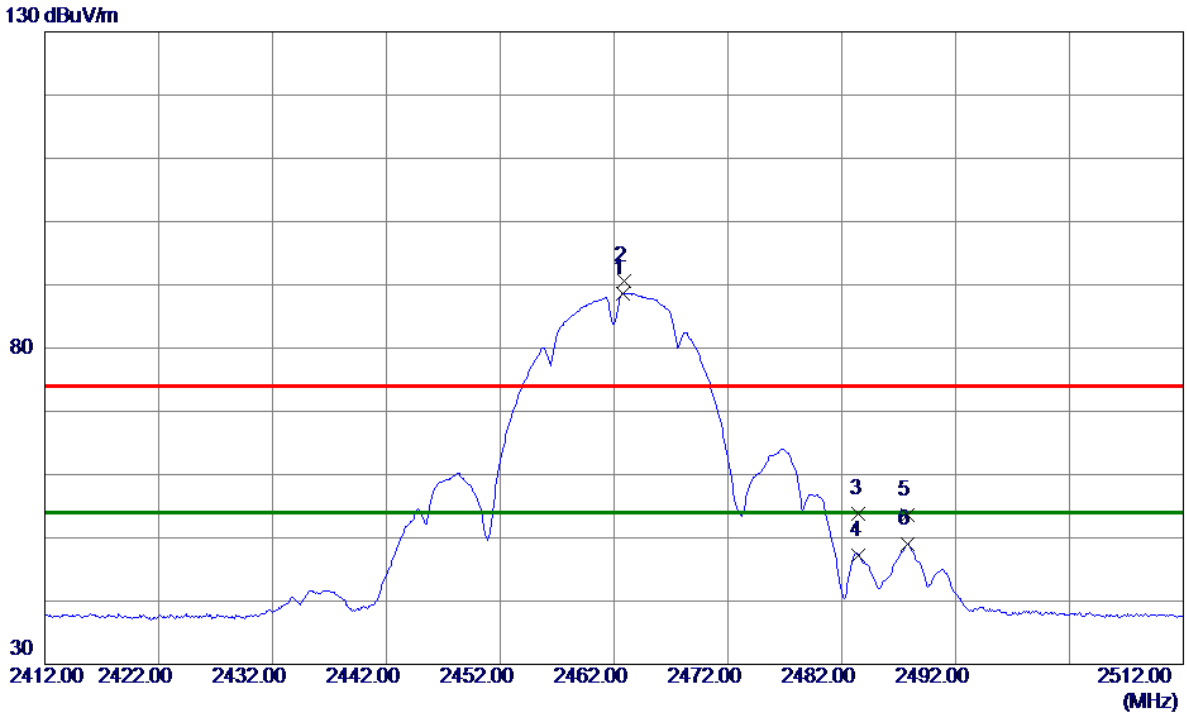


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4923.9500	48.69	4.72	53.41	74.00	-20.59	Peak	
2 *	4924.0000	47.03	4.72	51.75	54.00	-2.25	AVG	

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

Test Mode:	TX B Mode 2462 MHz

Horizontal

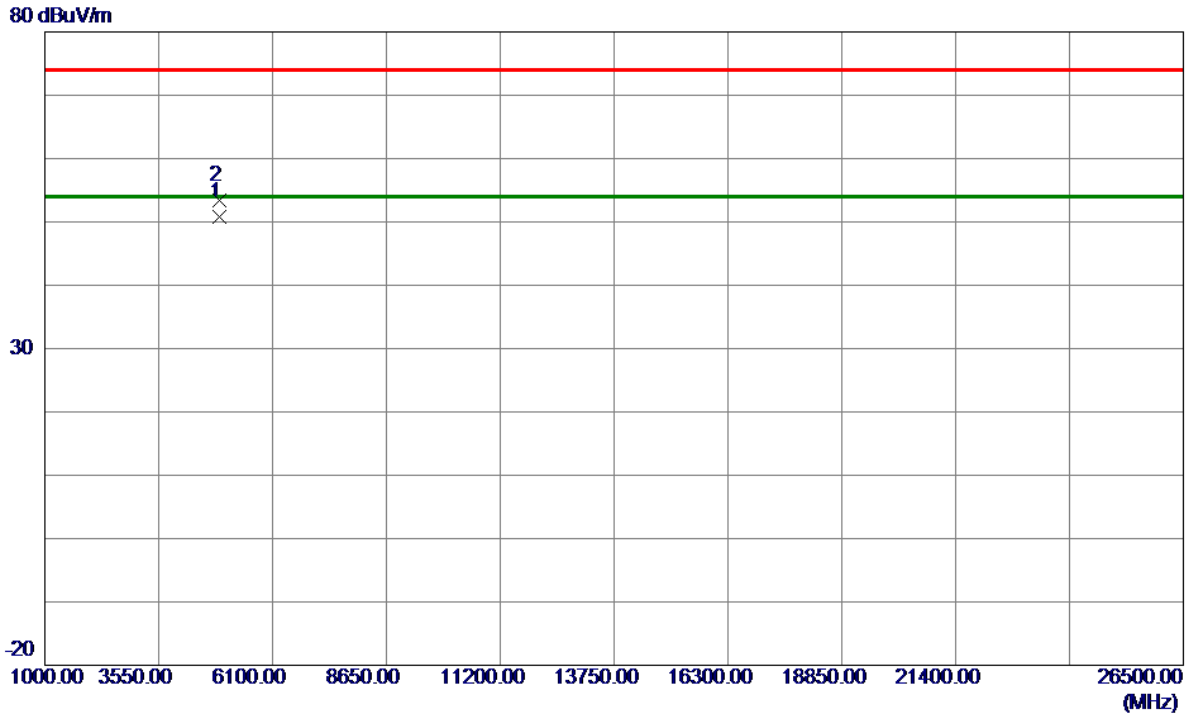


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2462.8000	81.40	7.25	88.65	54.00	34.65	AVG	No Limit
2	2462.9000	83.36	7.25	90.61	74.00	16.61	Peak	No Limit
3	2483.5000	46.56	7.25	53.81	74.00	-20.19	Peak	
4	2483.5000	40.04	7.25	47.29	54.00	-6.71	AVG	
5	2487.8000	46.28	7.25	53.53	74.00	-20.47	Peak	
6	2487.8000	41.67	7.25	48.92	54.00	-5.08	AVG	

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

Test Mode:	TX B Mode 2462 MHz

Horizontal

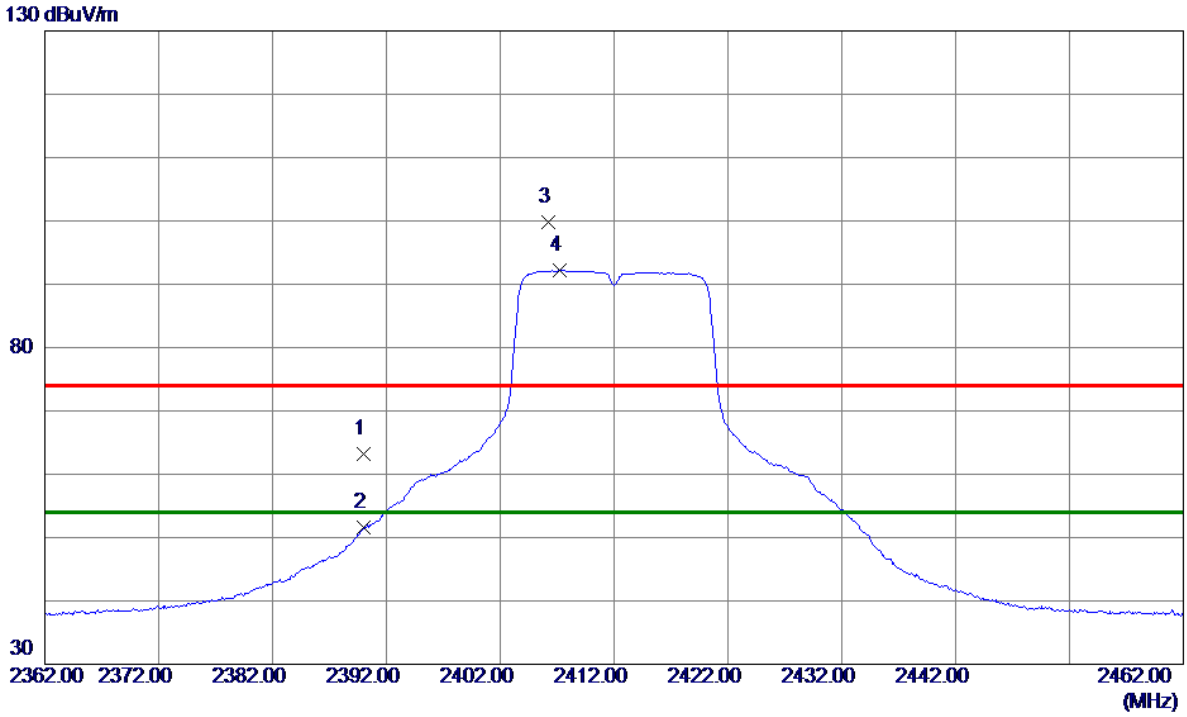


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4923.9800	46.02	4.72	50.74	54.00	-3.26	AVG	
2	4924.0500	48.63	4.72	53.35	74.00	-20.65	Peak	

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

Test Mode:	TX G Mode 2412 MHz

Vertical

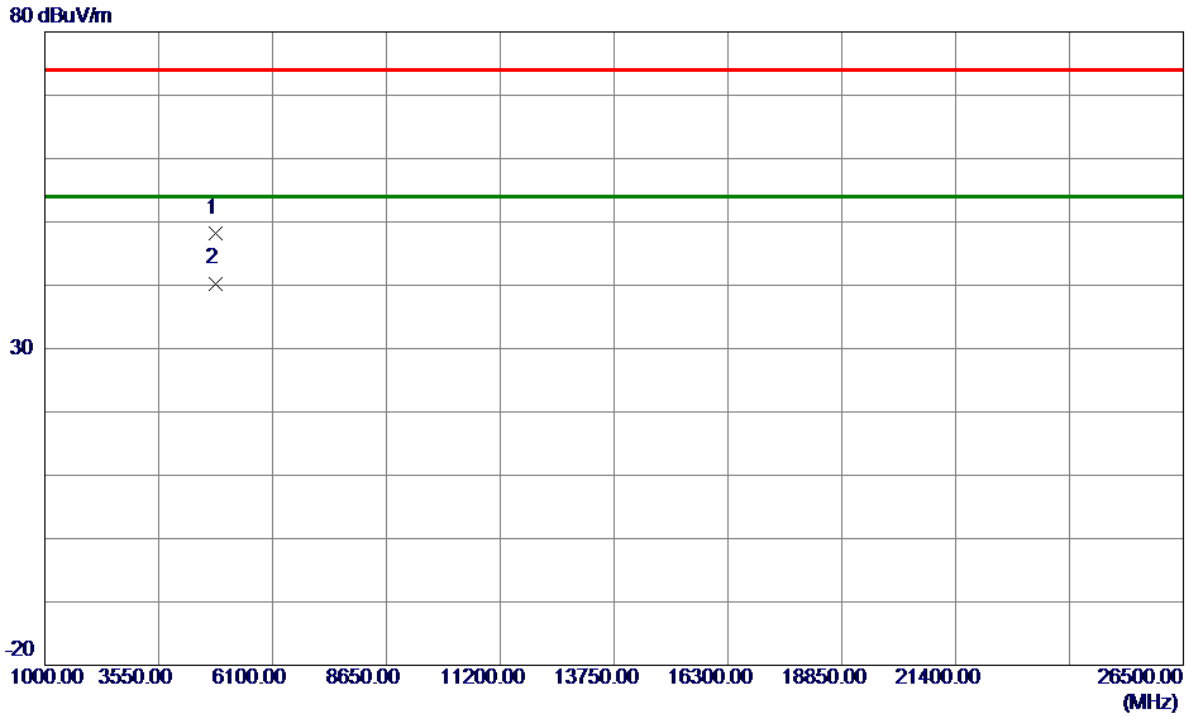


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	56.02	7.26	63.28	74.00	-10.72	Peak	
2	2390.0000	44.27	7.26	51.53	54.00	-2.47	AVG	
3	2406.2000	92.60	7.26	99.86	74.00	25.86	Peak	No Limit
4 *	2407.2000	84.96	7.26	92.22	54.00	38.22	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

Vertical

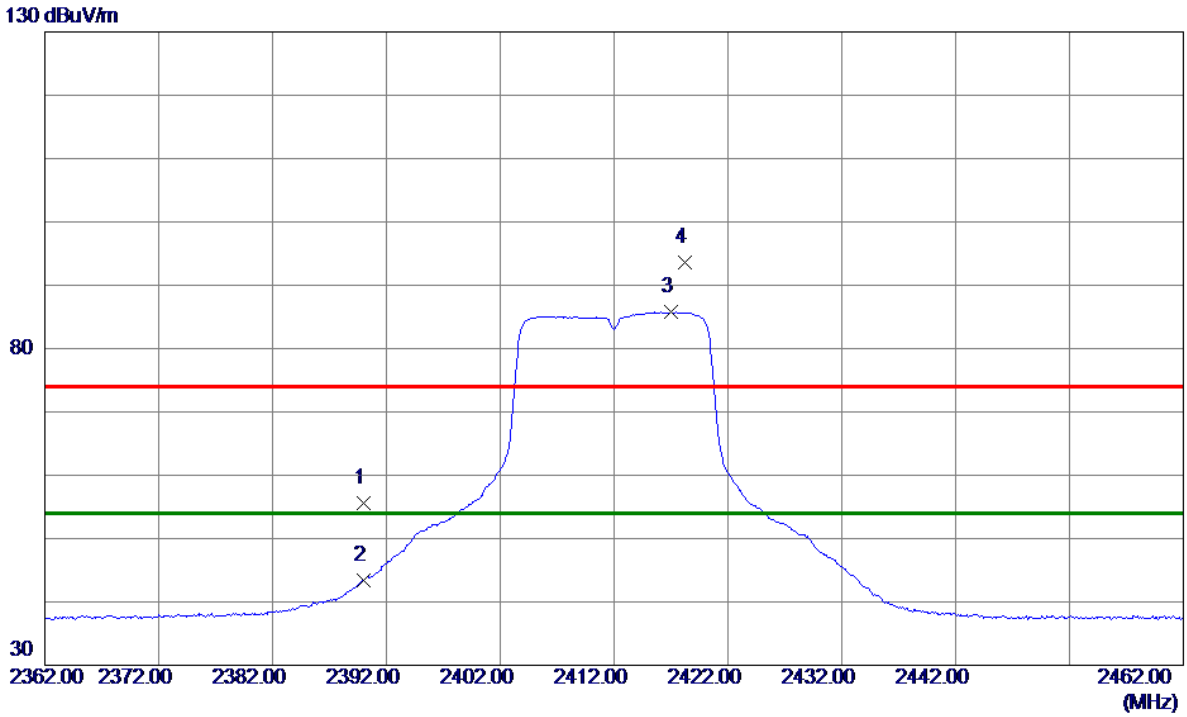


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4823.6700	43.75	4.45	48.20	74.00	-25.80	Peak	
2 *	4823.9200	35.85	4.45	40.30	54.00	-13.70	AVG	

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

Test Mode:	TX G Mode 2412 MHz

Horizontal

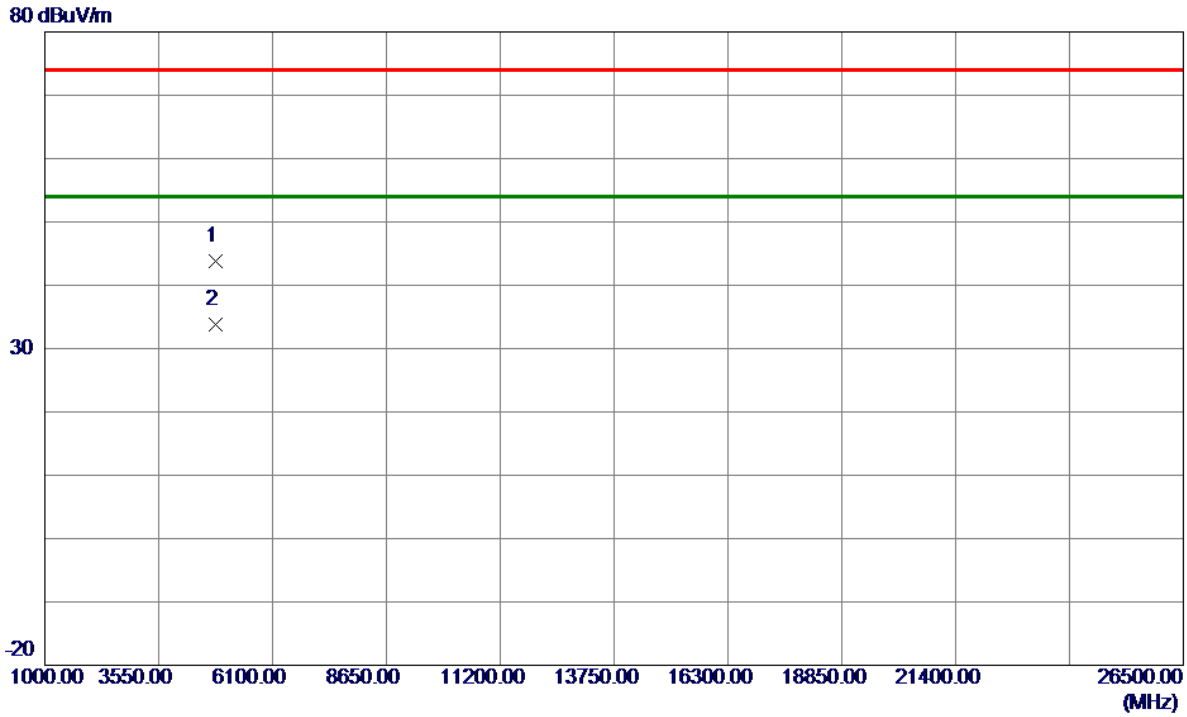


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	48.38	7.26	55.64	74.00	-18.36	Peak	
2	2390.0000	36.11	7.26	43.37	54.00	-10.63	AVG	
3 *	2417.0000	78.46	7.26	85.72	54.00	31.72	AVG	No Limit
4	2418.2000	86.41	7.26	93.67	74.00	19.67	Peak	No Limit

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

Test Mode:	TX G Mode 2412 MHz

Horizontal

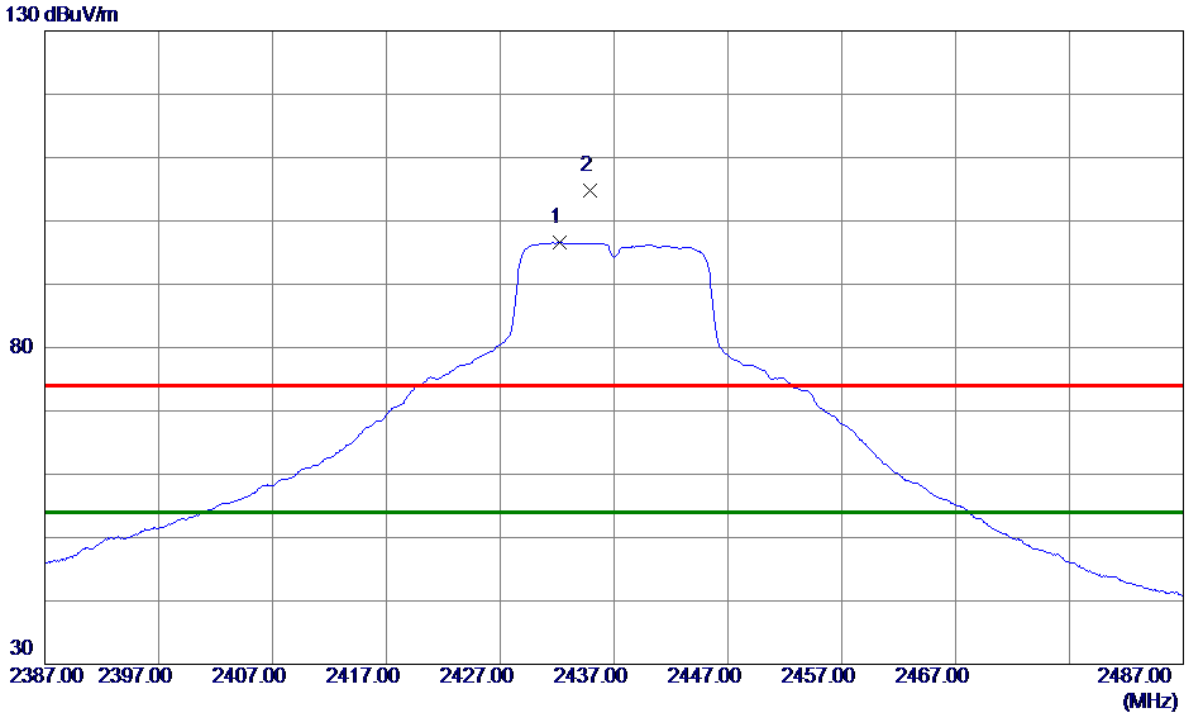


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4823.2400	39.44	4.45	43.89	74.00	-30.11	Peak	
2 *	4824.0099	29.28	4.45	33.73	54.00	-20.27	AVG	

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

Test Mode:	TX G Mode 2437 MHz

Vertical

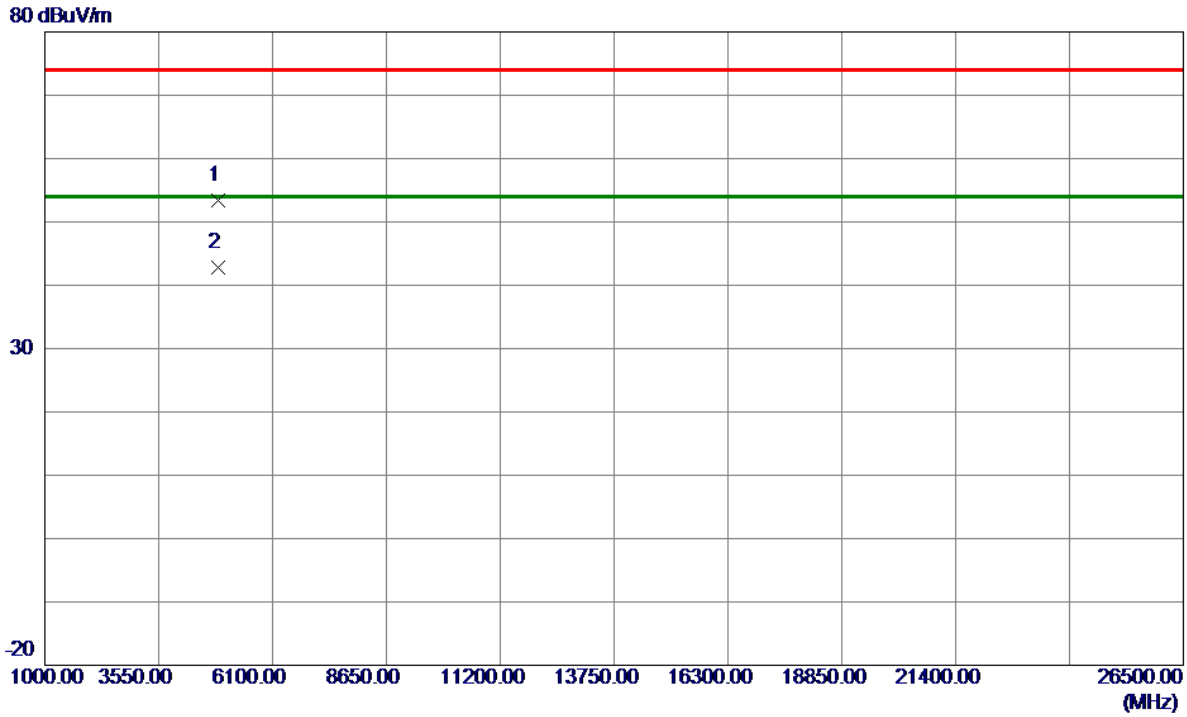


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2432.2000	89.40	7.25	96.65	54.00	42.65	AVG	No Limit
2	2434.9000	97.63	7.25	104.88	74.00	30.88	Peak	No Limit

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

Test Mode:	TX G Mode 2437 MHz

Vertical

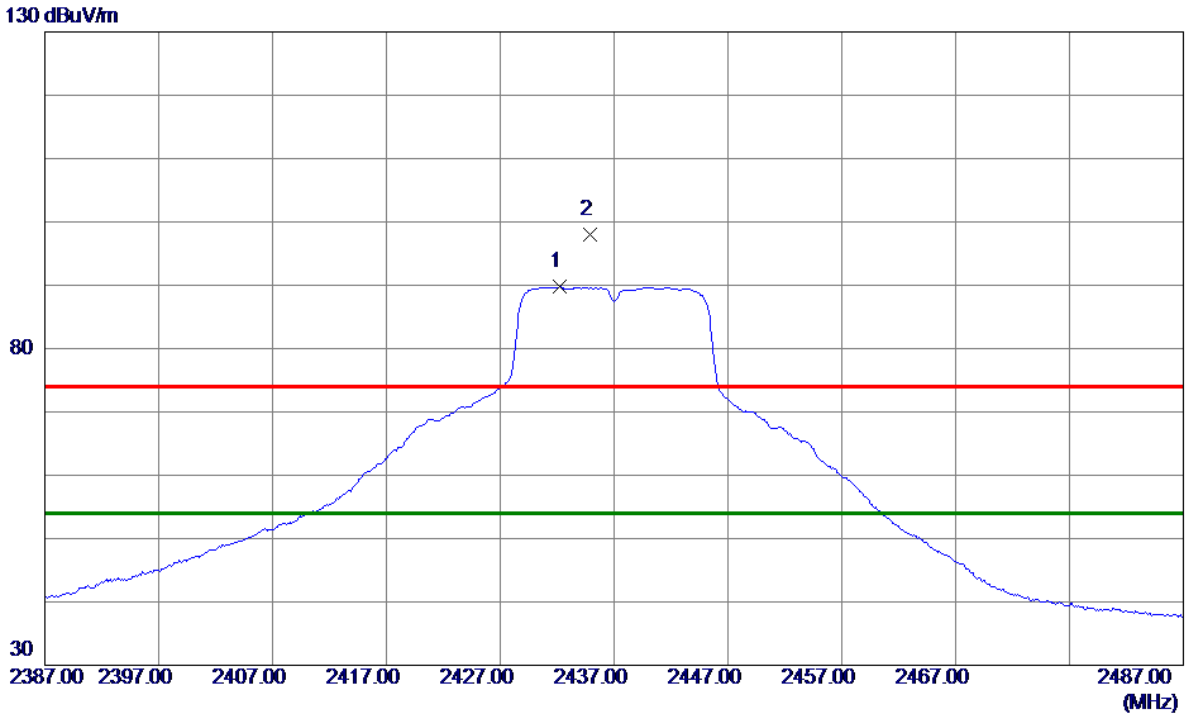


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4872.0400	48.73	4.58	53.31	74.00	-20.69	Peak	
2 *	4873.8300	38.28	4.58	42.86	54.00	-11.14	AVG	

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

Test Mode:	TX G Mode 2437 MHz

Horizontal

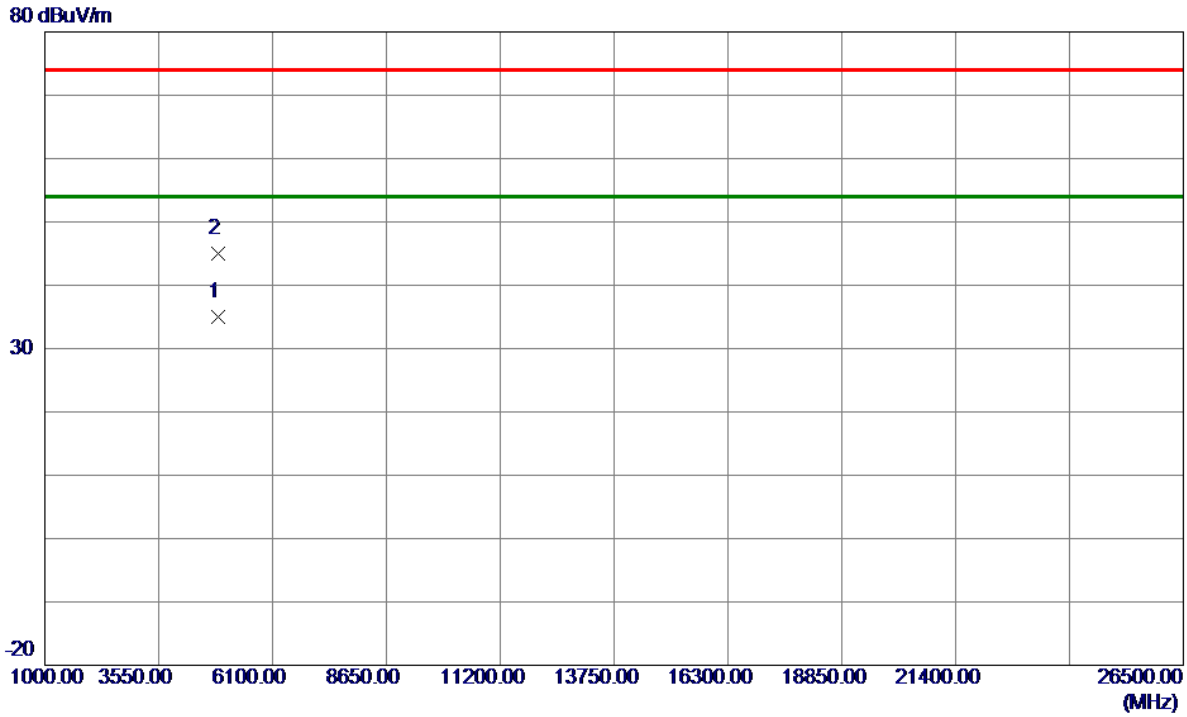


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2432.2000	82.56	7.25	89.81	54.00	35.81	AVG	No Limit
2	2434.9000	90.78	7.25	98.03	74.00	24.03	Peak	No Limit

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

Test Mode:	TX G Mode 2437 MHz

Horizontal

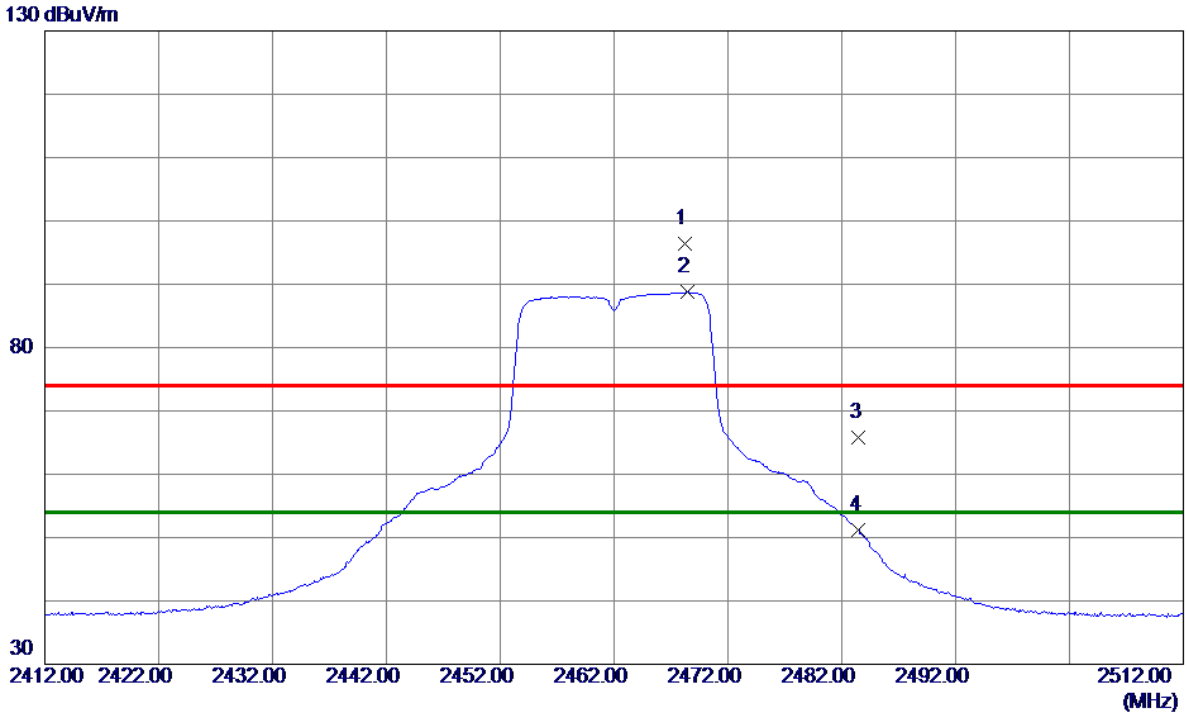


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.1000	30.35	4.58	34.93	54.00	-19.07	AVG	
2	4875.1600	40.45	4.59	45.04	74.00	-28.96	Peak	

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

Test Mode:	TX G Mode 2462 MHz

Vertical

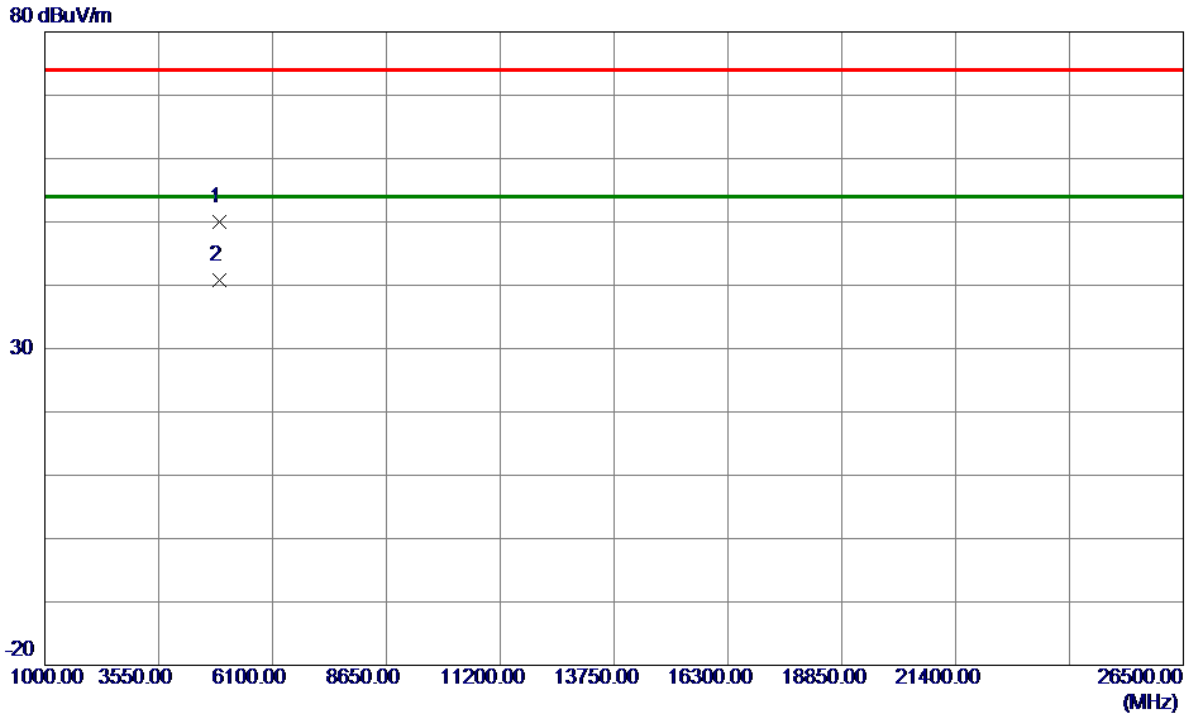


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2468.2000	89.21	7.25	96.46	74.00	22.46	Peak	No Limit
2 *	2468.4000	81.51	7.25	88.76	54.00	34.76	AVG	No Limit
3	2483.5000	58.63	7.25	65.88	74.00	-8.12	Peak	
4	2483.5000	43.94	7.25	51.19	54.00	-2.81	AVG	

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

Test Mode:	TX G Mode 2462 MHz

Vertical

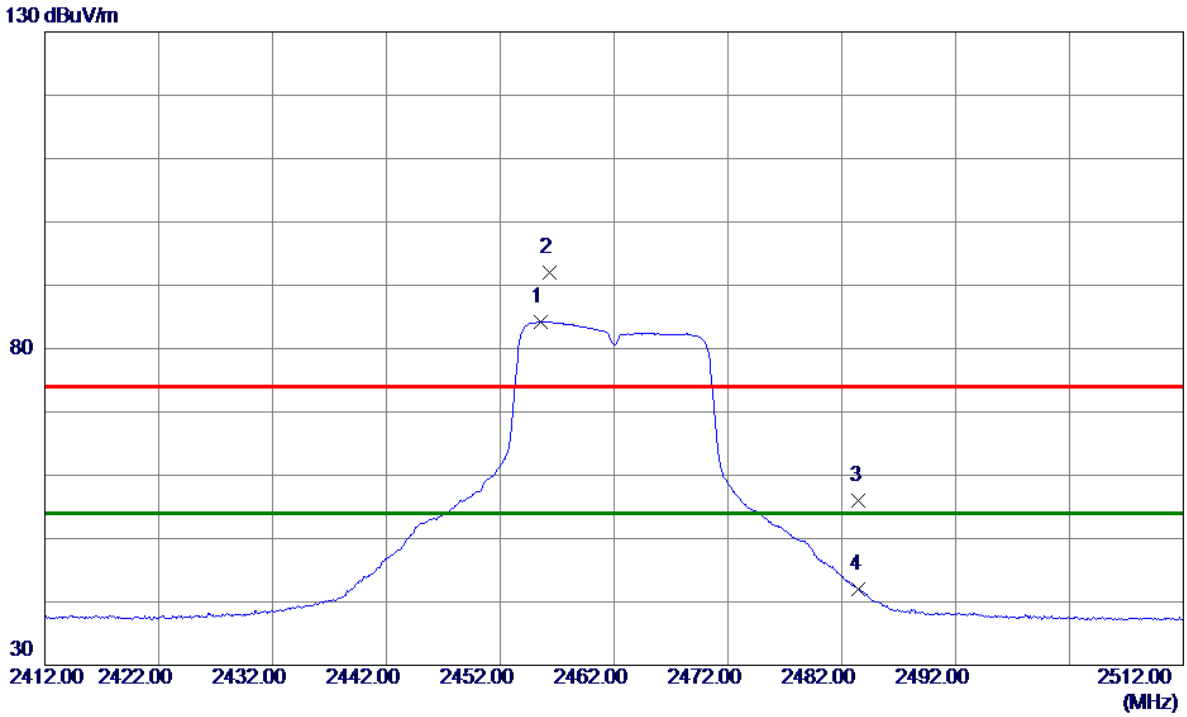


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4923.9200	45.29	4.72	50.01	74.00	-23.99	Peak	
2 *	4923.9600	36.14	4.72	40.86	54.00	-13.14	AVG	

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

Test Mode:	TX G Mode 2462 MHz

Horizontal

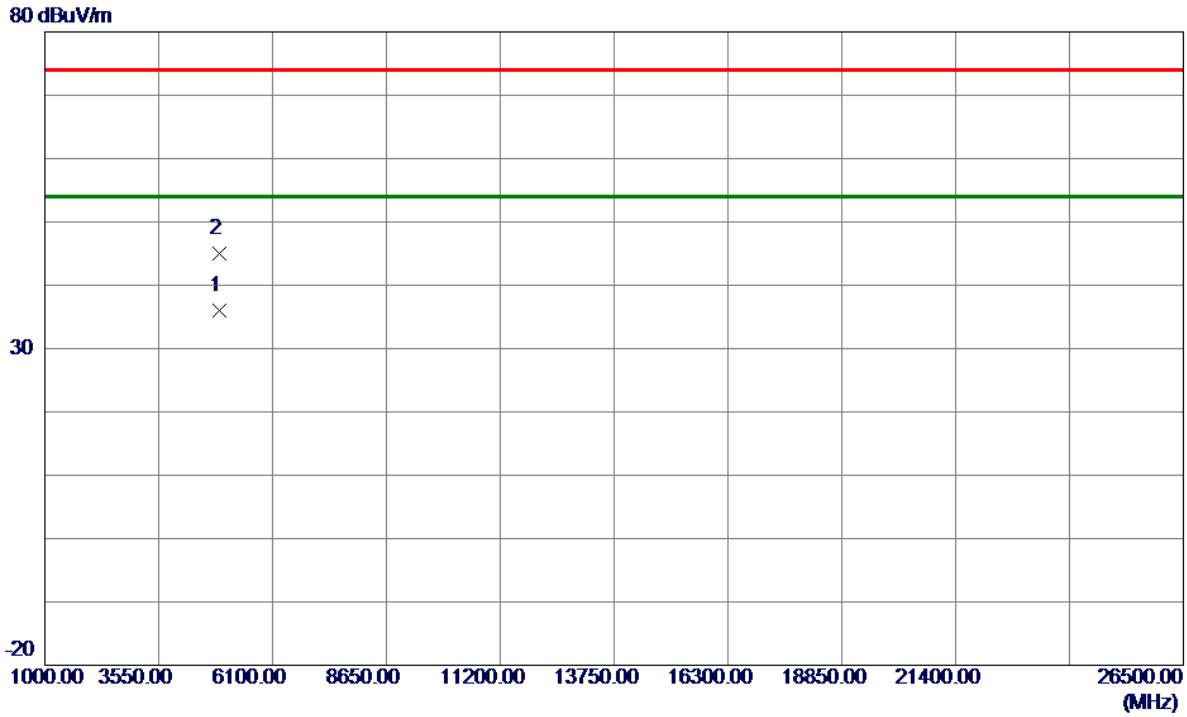


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2455.6000	76.91	7.25	84.16	54.00	30.16	AVG	No Limit
2	2456.3000	84.79	7.25	92.04	74.00	18.04	Peak	No Limit
3	2483.5000	48.70	7.25	55.95	74.00	-18.05	Peak	
4	2483.5000	34.76	7.25	42.01	54.00	-11.99	AVG	

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

Test Mode:	TX G Mode 2462 MHz

Horizontal

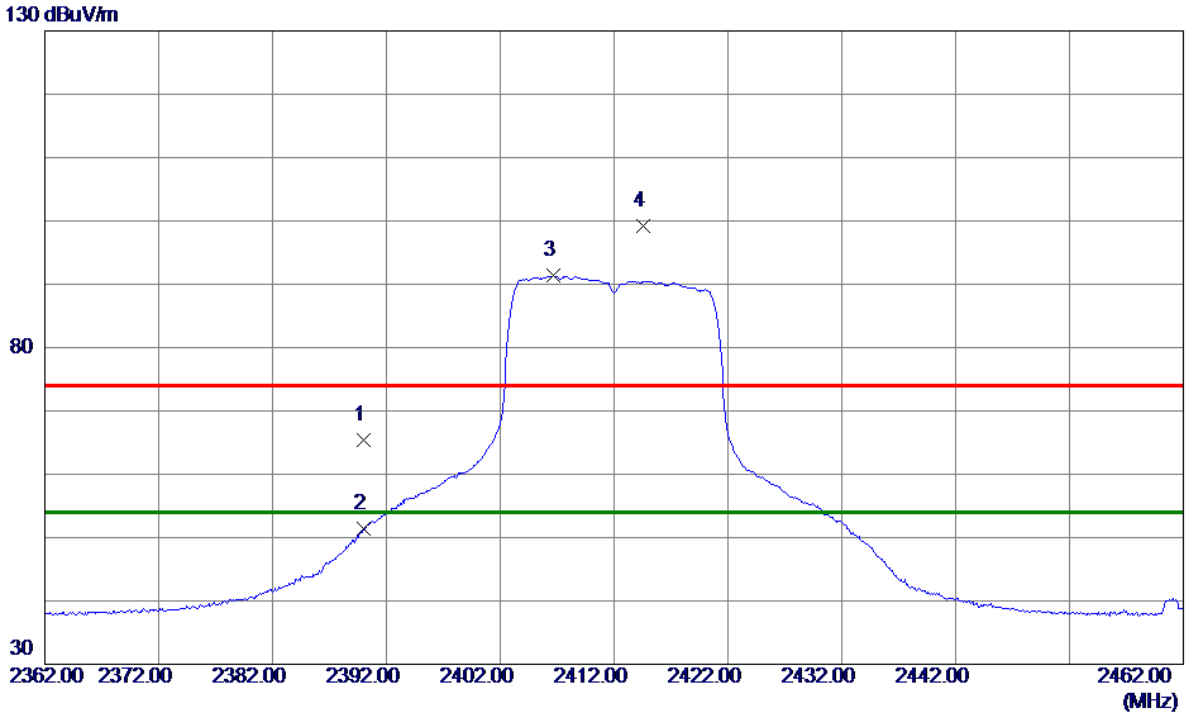


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4923.9300	31.25	4.72	35.97	54.00	-18.03	AVG	
2	4923.9900	40.34	4.72	45.06	74.00	-28.94	Peak	

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

Test Mode:	TX N-20M Mode 2412 MHz

Vertical

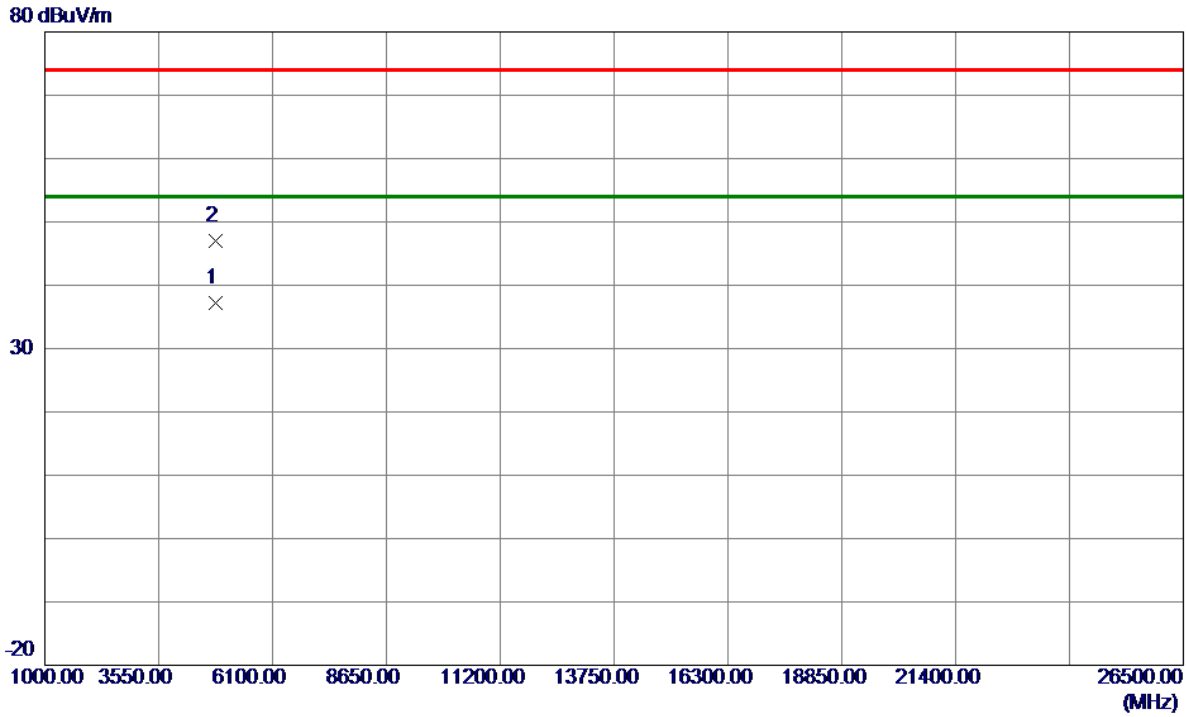


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	58.23	7.26	65.49	74.00	-8.51	Peak	
2	2390.0000	44.07	7.26	51.33	54.00	-2.67	AVG	
3 *	2406.7000	84.06	7.26	91.32	54.00	37.32	AVG	No Limit
4	2414.6000	91.98	7.26	99.24	74.00	25.24	Peak	No Limit

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

Test Mode:	TX N-20M Mode 2412 MHz

Vertical

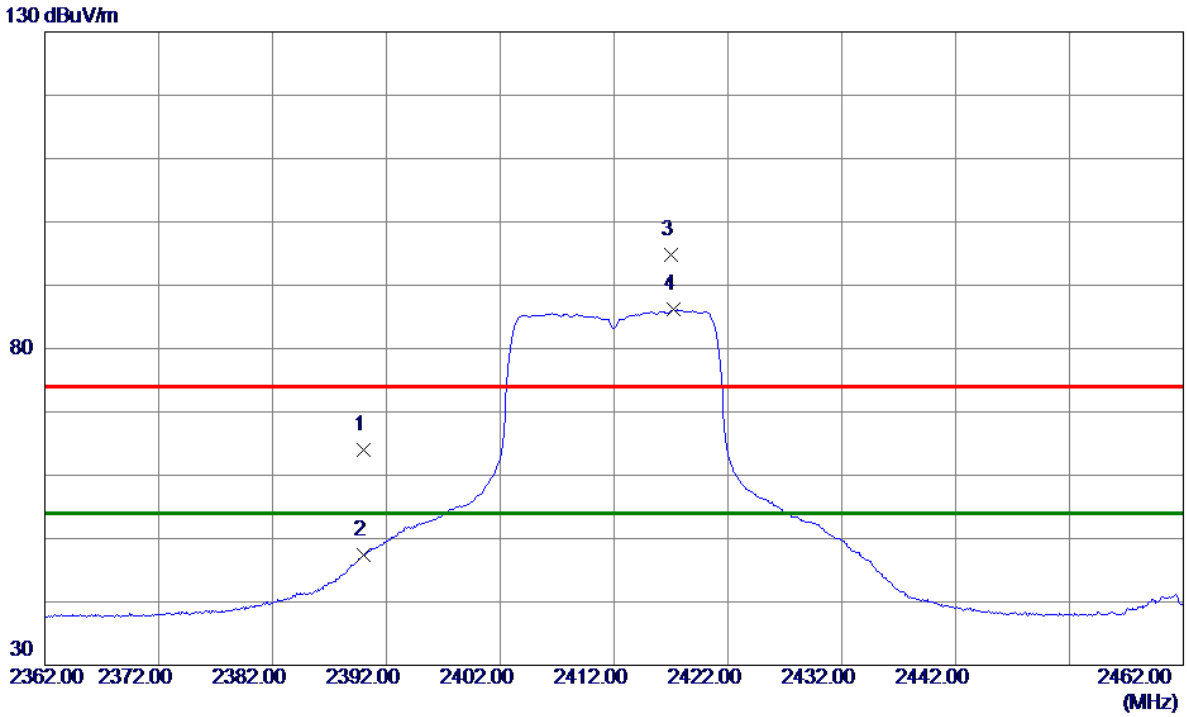


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4823.8400	32.77	4.45	37.22	54.00	-16.78	AVG	
2	4827.4500	42.61	4.46	47.07	74.00	-26.93	Peak	

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

Test Mode:	TX N-20M Mode 2412 MHz

Horizontal

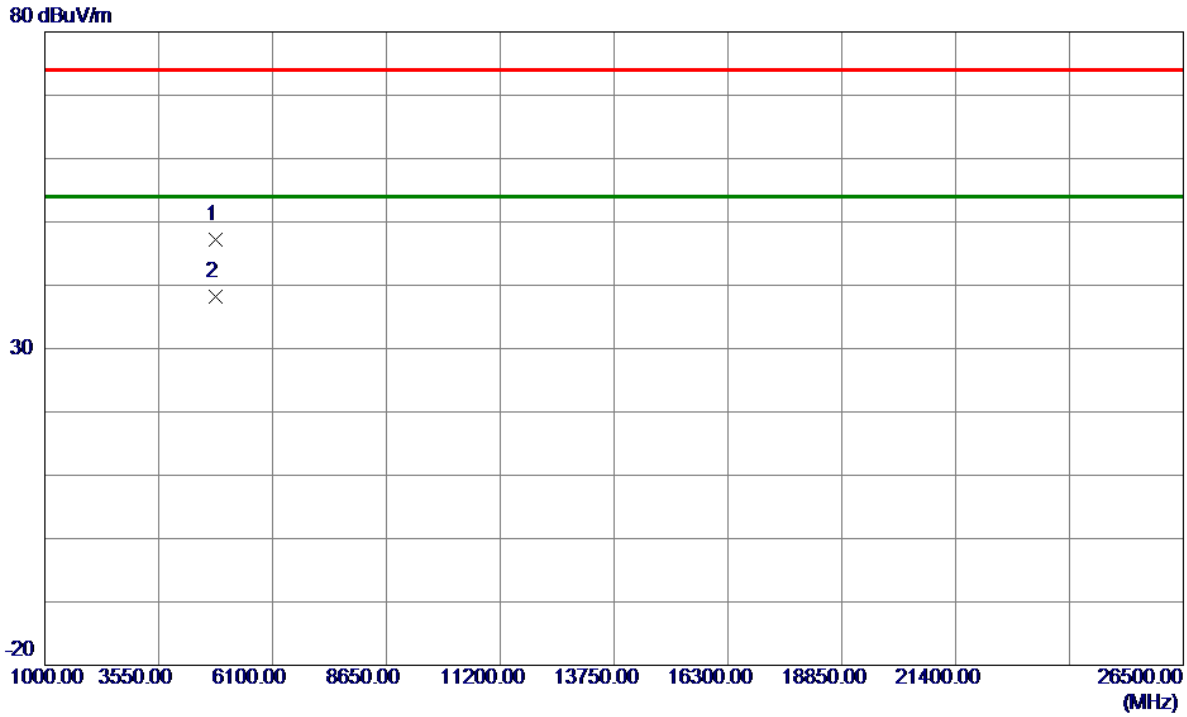


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	56.70	7.26	63.96	74.00	-10.04	Peak	
2	2390.0000	40.12	7.26	47.38	54.00	-6.62	AVG	
3	2417.0000	87.63	7.26	94.89	74.00	20.89	Peak	No Limit
4 *	2417.2000	78.85	7.26	86.11	54.00	32.11	AVG	No Limit

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

Test Mode:	TX N-20M Mode 2412 MHz

Horizontal

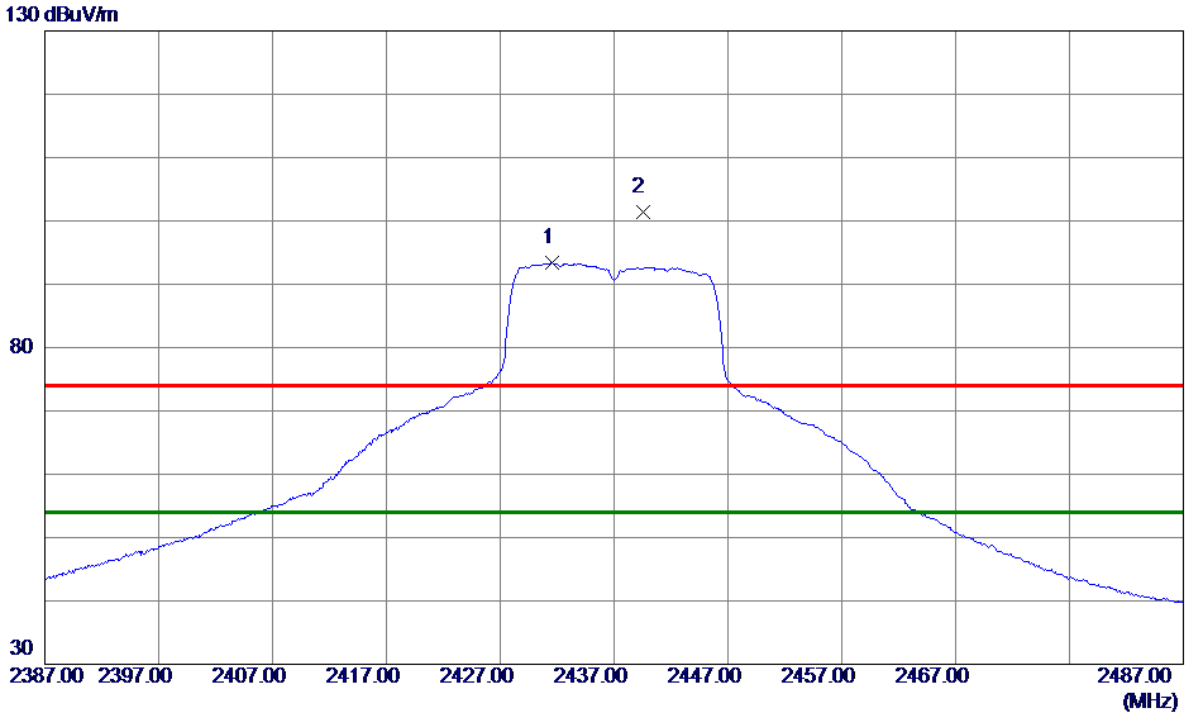


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4823.6300	42.81	4.45	47.26	74.00	-26.74	Peak	
2 *	4823.9100	33.80	4.45	38.25	54.00	-15.75	AVG	

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

Test Mode:	TX N-20M Mode 2437 MHz

Vertical

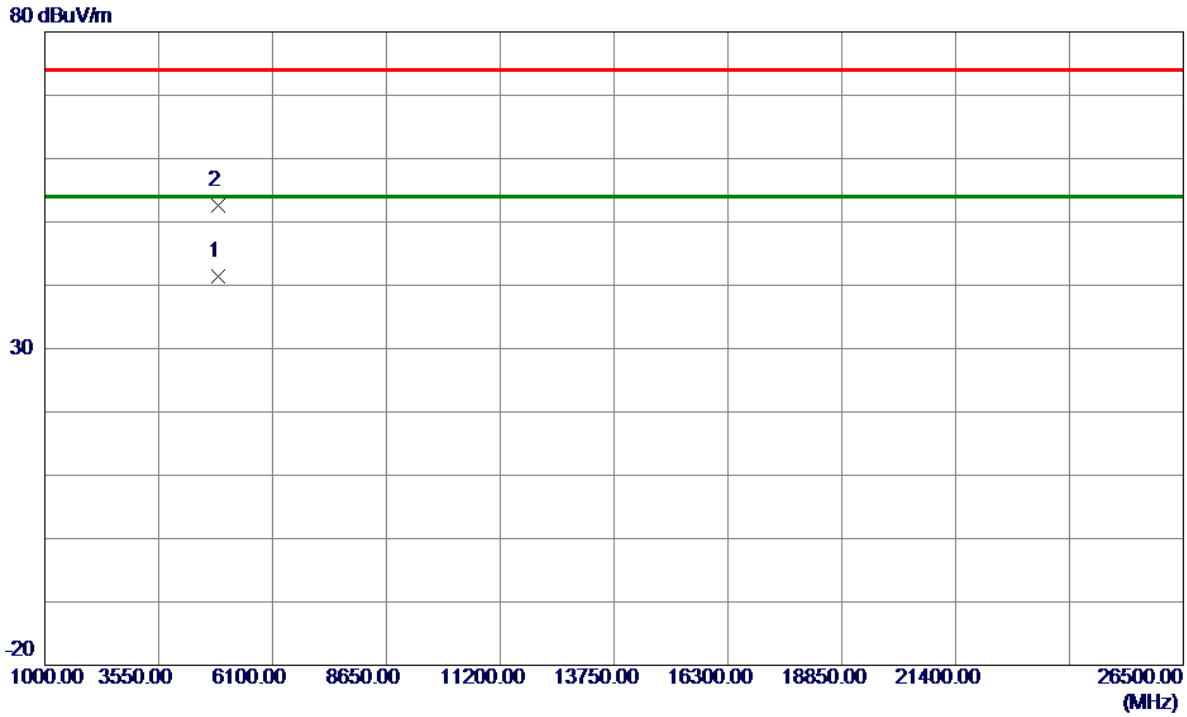


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2431.6000	86.10	7.25	93.35	54.00	39.35	AVG	No Limit
2	2439.5000	94.15	7.25	101.40	74.00	27.40	Peak	No Limit

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

Test Mode:	TX N-20M Mode 2437 MHz

Vertical

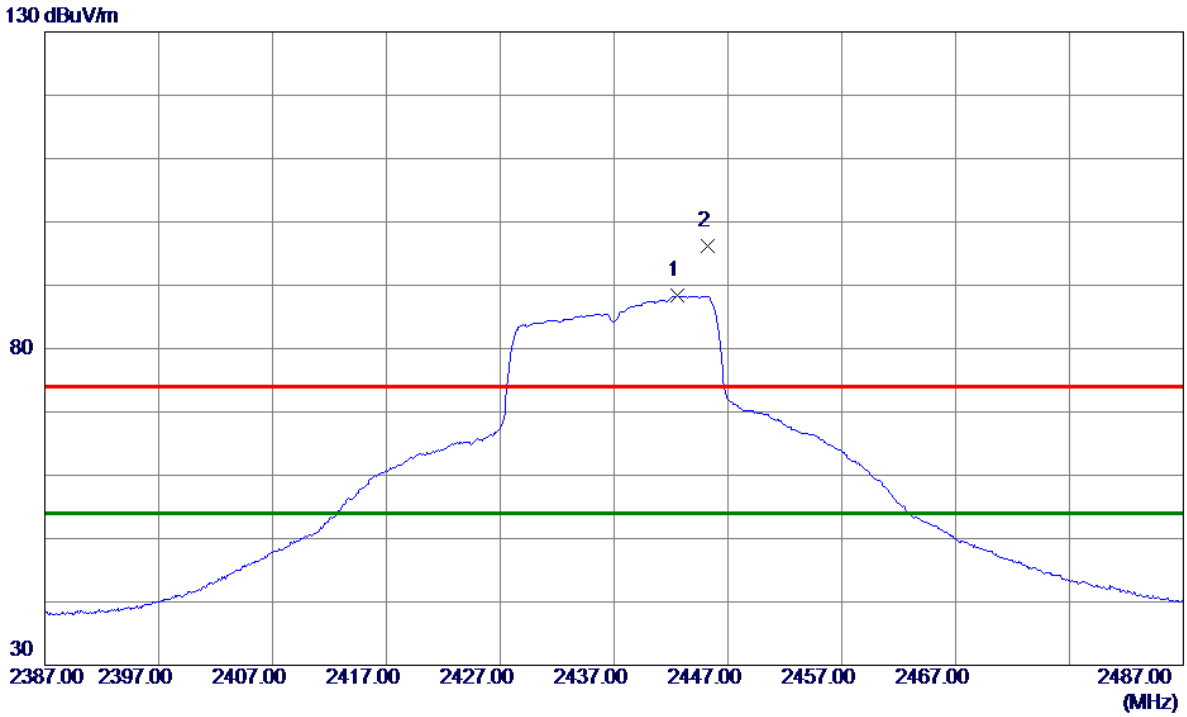


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4873.9700	36.82	4.58	41.40	54.00	-12.60	AVG	
2	4874.7500	47.92	4.59	52.51	74.00	-21.49	Peak	

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

Test Mode:	TX N-20M Mode 2437 MHz

Horizontal

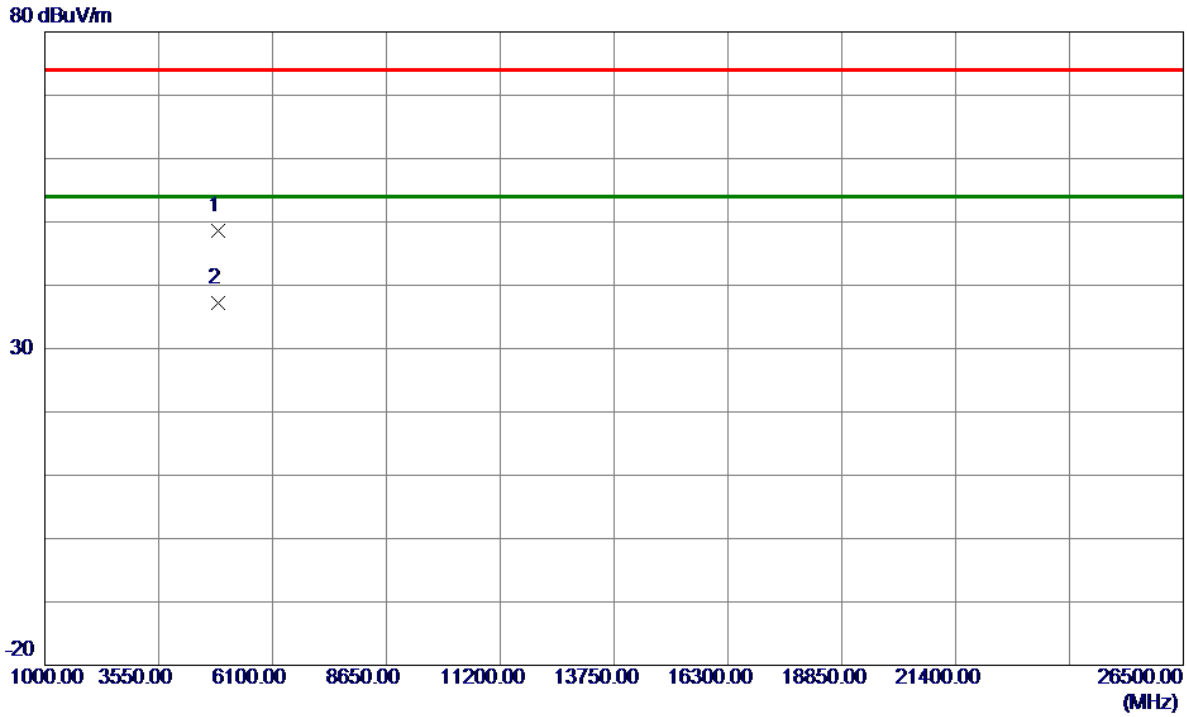


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2442.6000	81.07	7.25	88.32	54.00	34.32	AVG	No Limit
2	2445.2000	88.99	7.25	96.24	74.00	22.24	Peak	No Limit

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

Test Mode:	TX N-20M Mode 2437 MHz

Horizontal

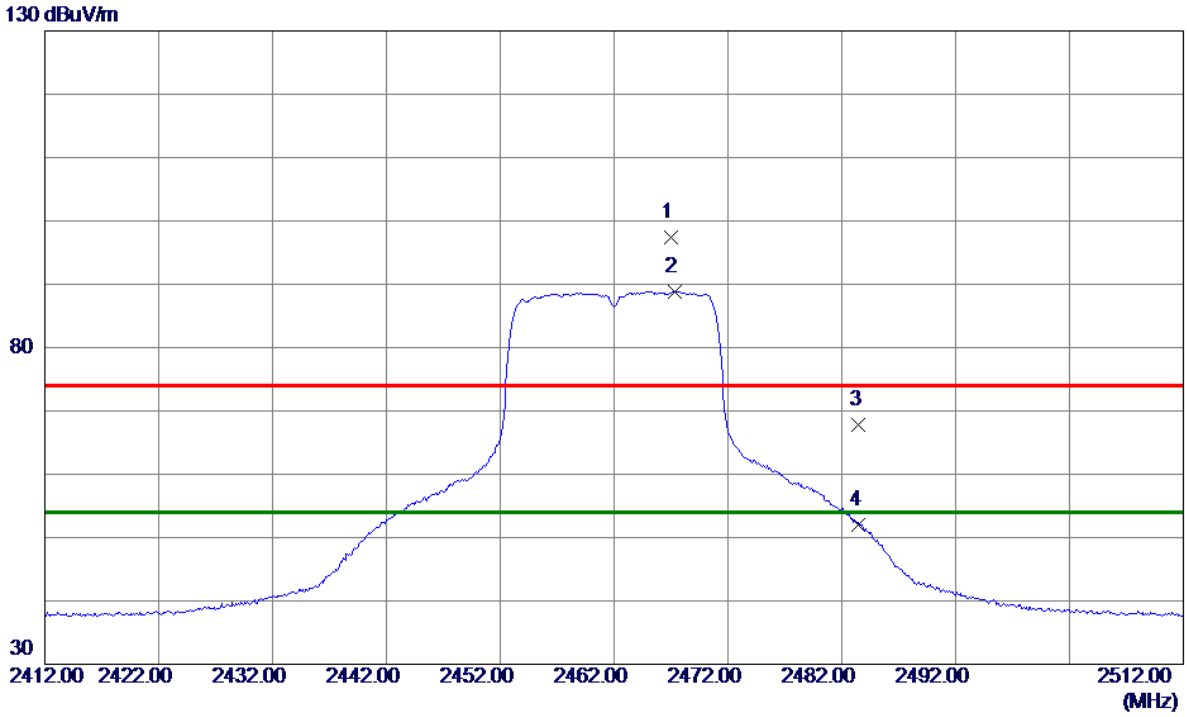


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4873.8900	43.99	4.58	48.57	74.00	-25.43	Peak	
2 *	4873.9500	32.63	4.58	37.21	54.00	-16.79	AVG	

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

Test Mode:	TX N-20M Mode 2462 MHz

Vertical

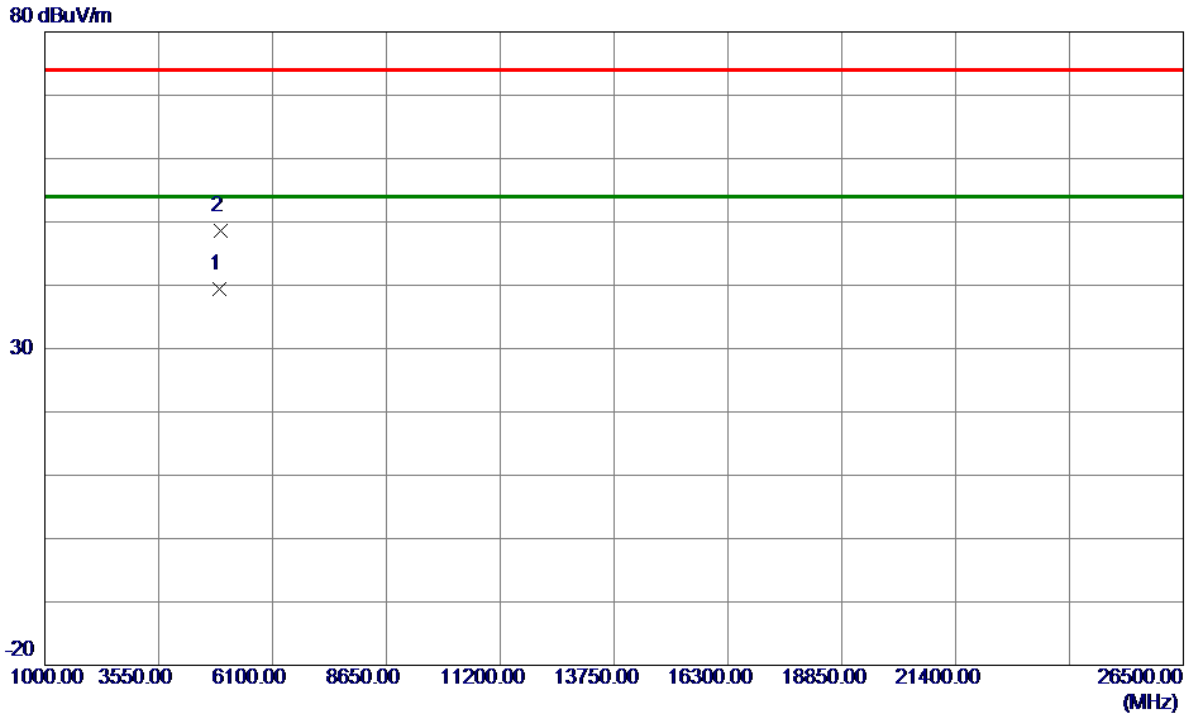


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2467.0000	90.14	7.25	97.39	74.00	23.39	Peak	No Limit
2 *	2467.3000	81.57	7.25	88.82	54.00	34.82	AVG	No Limit
3	2483.5000	60.48	7.25	67.73	74.00	-6.27	Peak	
4	2483.5000	44.75	7.25	52.00	54.00	-2.00	AVG	

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

Test Mode:	TX N-20M Mode 2462 MHz

Vertical

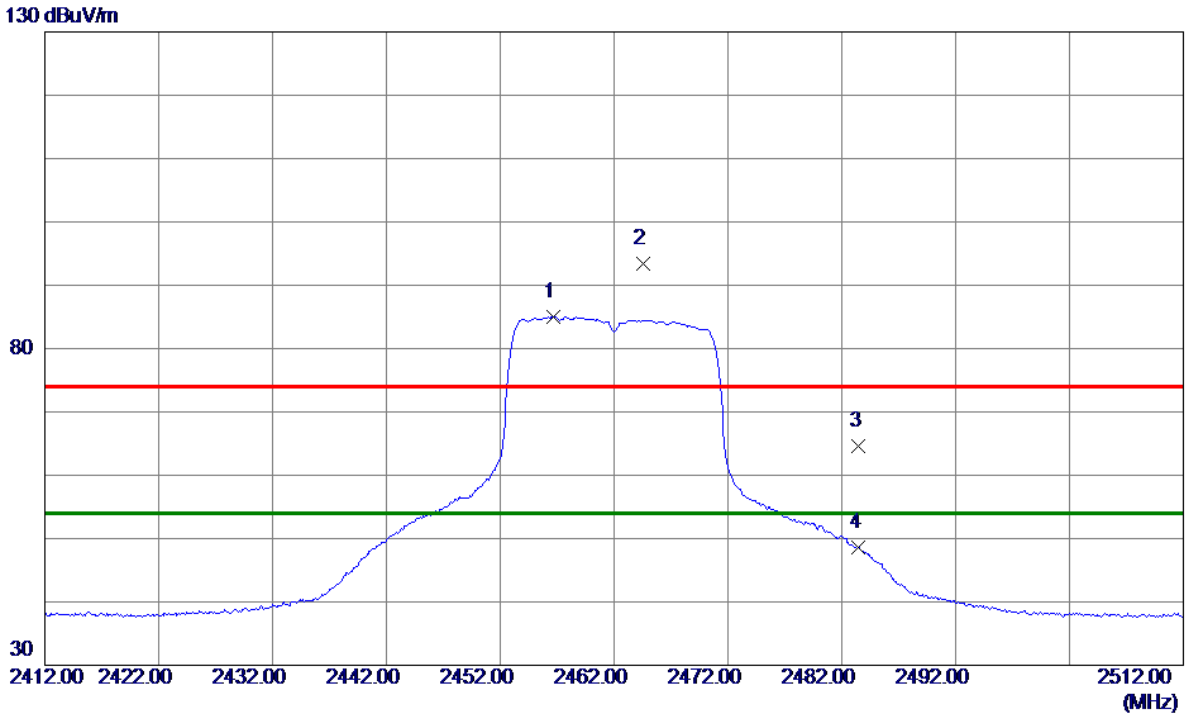


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4923.9900	34.76	4.72	39.48	54.00	-14.52	AVG	
2	4924.2000	43.83	4.72	48.55	74.00	-25.45	Peak	

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

Test Mode:	TX N-20M Mode 2462 MHz

Horizontal

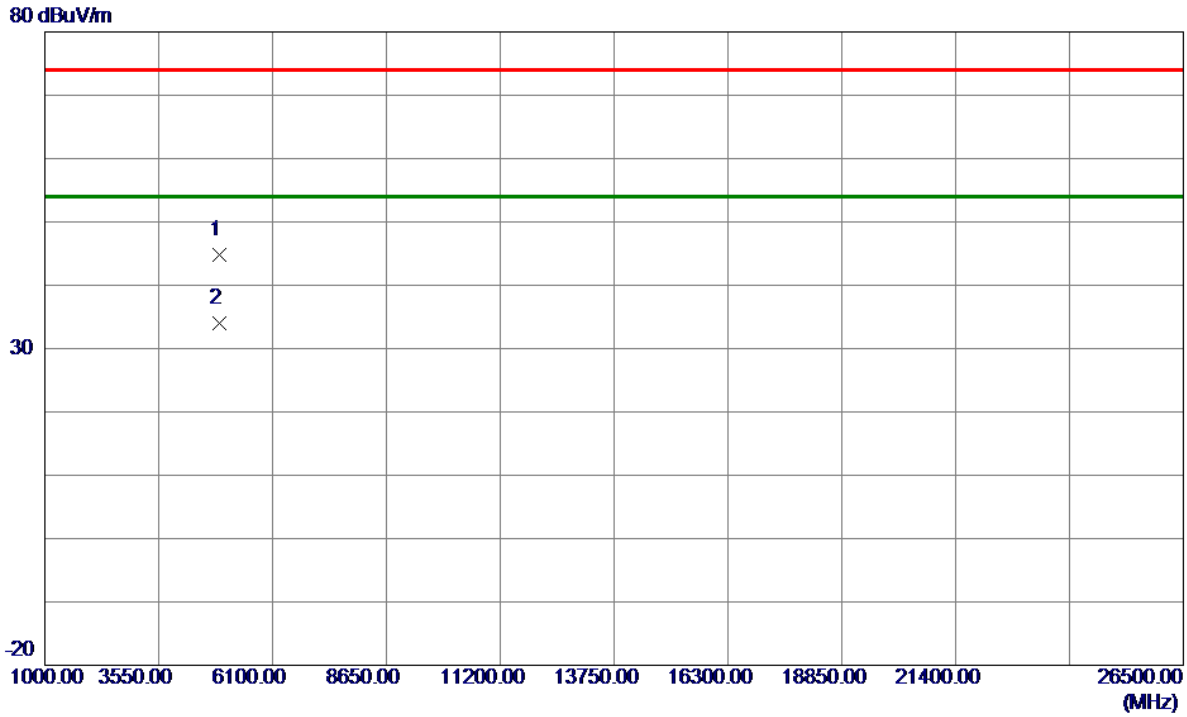


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2456.7000	77.75	7.25	85.00	54.00	31.00	AVG	No Limit
2	2464.6000	86.17	7.25	93.42	74.00	19.42	Peak	No Limit
3	2483.5000	57.44	7.25	64.69	74.00	-9.31	Peak	
4	2483.5000	41.39	7.25	48.64	54.00	-5.36	AVG	

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

Test Mode:	TX N-20M Mode 2462 MHz

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4919.5600	40.00	4.71	44.71	74.00	-29.29	Peak	
2 *	4924.0800	29.31	4.72	34.03	54.00	-19.97	AVG	

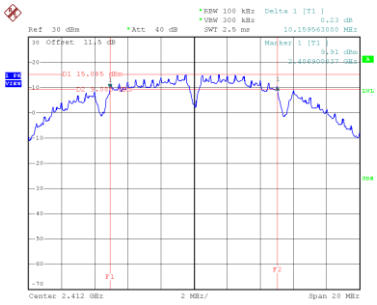
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX E - BANDWIDTH

Test Mode	TX B Mode

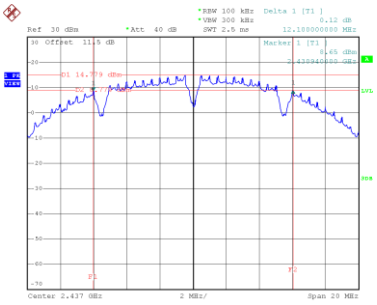
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	10.16	500	Complies
06	2437	12.10	500	Complies
11	2462	10.12	500	Complies

CH01



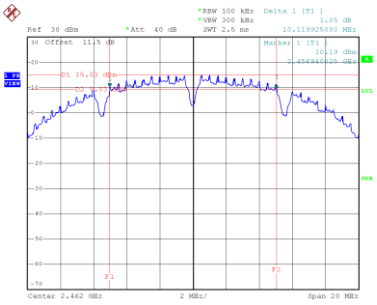
Date: 21.OCT.2020 10:00:00

CH06



Date: 21.OCT.2020 10:08:57

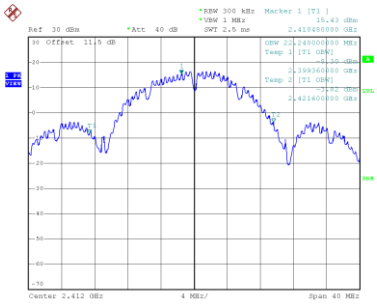
CH11



Date: 21.OCT.2020 10:15:47

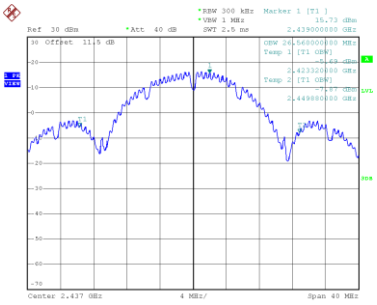
Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
01	2412	22.24	Complies
06	2437	26.56	Complies
11	2462	26.56	Complies

CH01



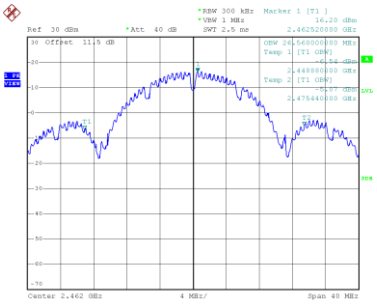
Date: 21.OCT.2020 10:00:08

CH06



Date: 21.OCT.2020 10:09:05

CH11

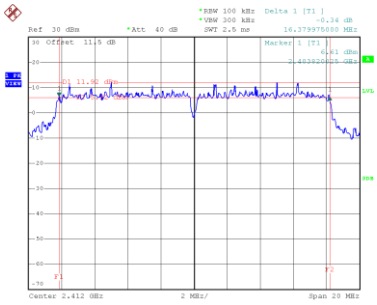


Date: 21.OCT.2020 10:15:55

Test Mode	TX G Mode

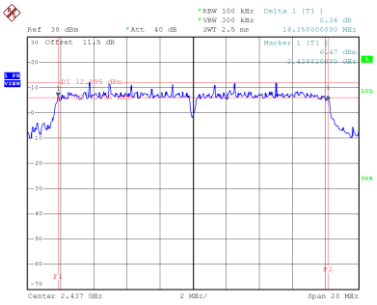
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	16.38	500	Complies
06	2437	16.35	500	Complies
11	2462	16.36	500	Complies

CH01



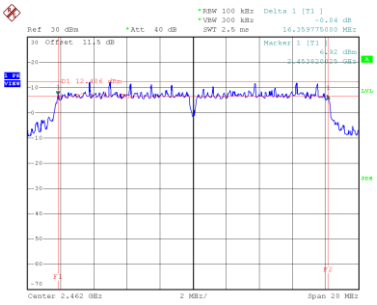
Date: 21.OCT.2020 10:17:28

CH06



Date: 21.OCT.2020 10:20:26

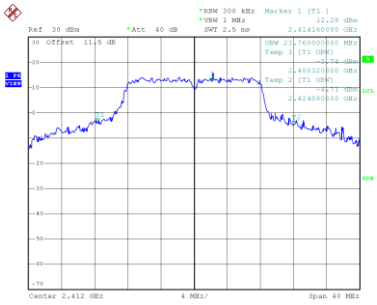
CH11



Date: 21.OCT.2020 10:22:04

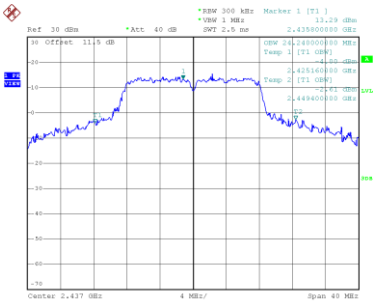
Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
01	2412	23.76	Complies
06	2437	24.24	Complies
11	2462	24.48	Complies

CH01



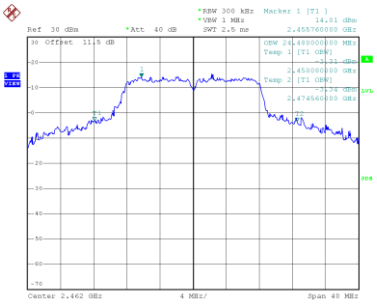
Date: 21.OCT.2020 10:17:36

CH06



Date: 21.OCT.2020 10:20:34

CH11

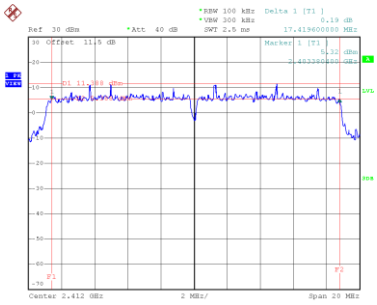


Date: 21.OCT.2020 10:22:12

Test Mode	TX N-20M Mode

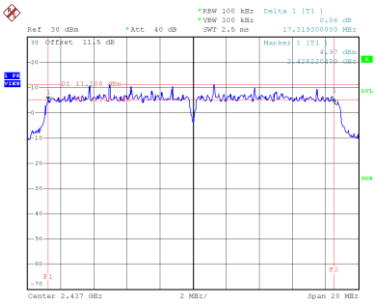
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	17.42	500	Complies
06	2437	17.32	500	Complies
11	2462	17.40	500	Complies

CH01



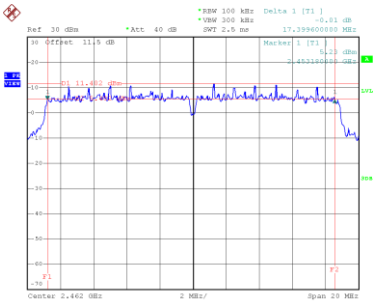
Date: 21.OCT.2020 10:23:56

CH06



Date: 21.OCT.2020 10:25:24

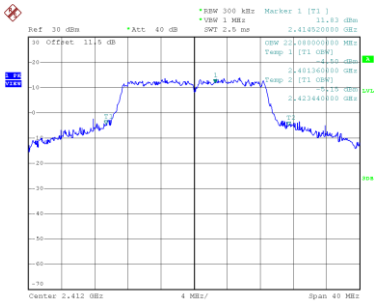
CH11



Date: 21.OCT.2020 10:27:01

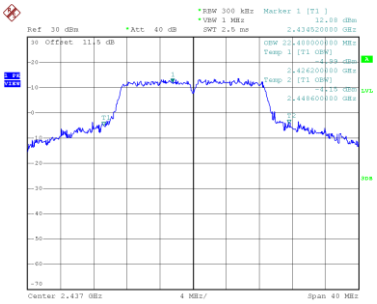
Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
01	2412	22.08	Complies
06	2437	22.40	Complies
11	2462	22.80	Complies

CH01



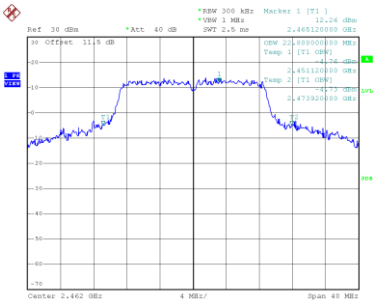
Date: 21.OCT.2020 10:24:03

CH06



Date: 21.OCT.2020 10:25:32

CH11



Date: 21.OCT.2020 10:27:08

APPENDIX F - MAXIMUM OUTPUT POWER

Test Mode	TX B Mode

Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Result
01	2412	22.59	30.00	Complies
06	2437	21.84	30.00	Complies
11	2462	22.15	30.00	Complies

Test Mode	TX G Mode

Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Result
01	2412	23.73	30.00	Complies
06	2437	27.21	30.00	Complies
11	2462	23.06	30.00	Complies

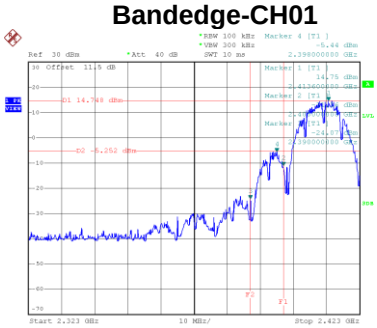
Test Mode	TX N-20M Mode

Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Result
01	2412	23.17	30.00	Complies
06	2437	27.13	30.00	Complies
11	2462	22.58	30.00	Complies

APPENDIX G - CONDUCTED SPURIOUS EMISSIONS

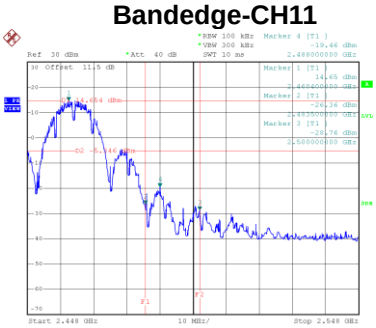
Test Mode	TX B Mode

Bandedge-CH01



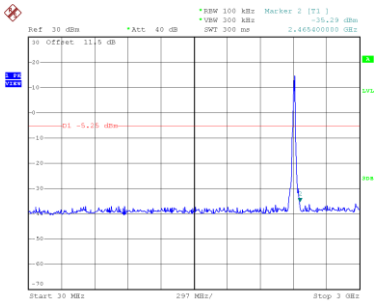
Date: 21.OCT.2020 10:01:03

Bandedge-CH11

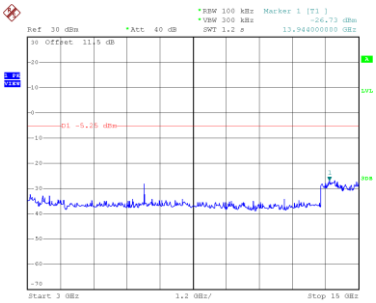


Date: 21.OCT.2020 10:16:04

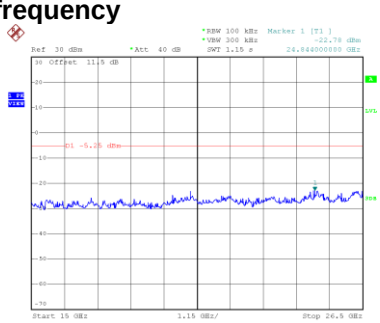
CH01 – 10th Harmonic of the fundamental frequency



Date: 21.OCT.2020 10:01:17

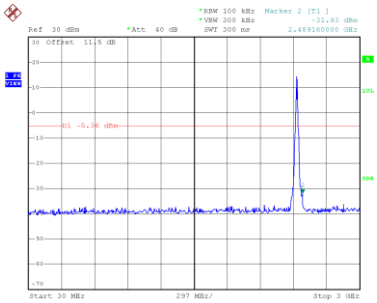


Date: 21.OCT.2020 10:01:26

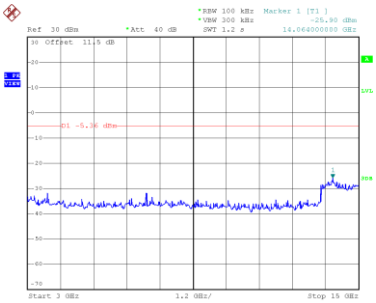


Date: 21.OCT.2020 10:01:34

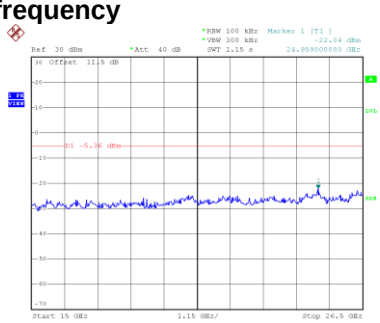
CH06 – 10th Harmonic of the fundamental frequency



Date: 21.OCT.2020 10:09:27

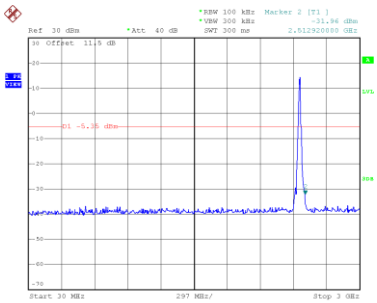


Date: 21.OCT.2020 10:09:36

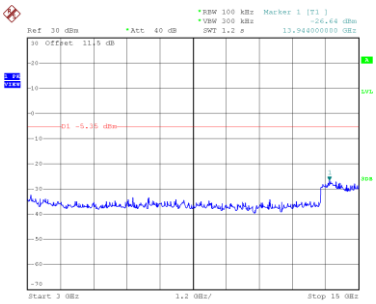


Date: 21.OCT.2020 10:09:44

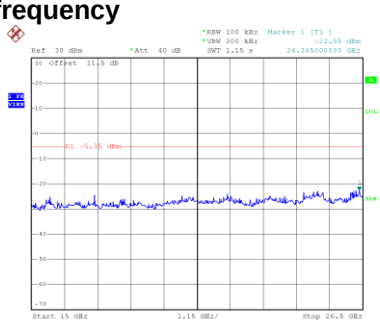
CH11 – 10th Harmonic of the fundamental frequency



Date: 21.OCT.2020 10:16:17



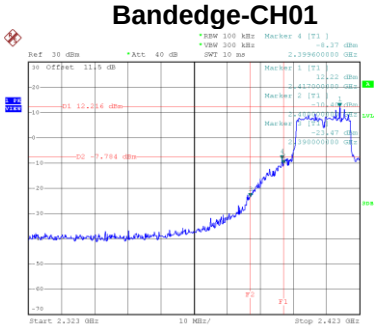
Date: 21.OCT.2020 10:16:26



Date: 21.OCT.2020 10:16:34

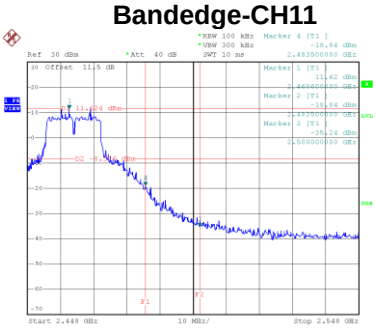
Test Mode	TX G Mode

Bandedge-CH01



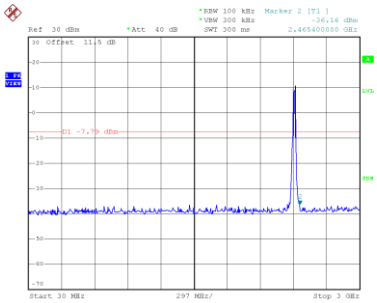
Date: 21.OCT.2020 10:19:33

Bandedge-CH11

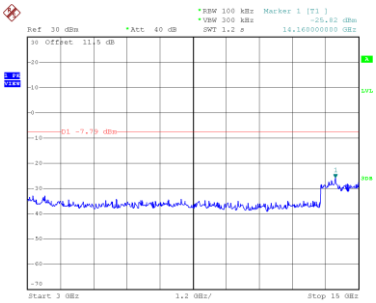


Date: 21.OCT.2020 10:22:20

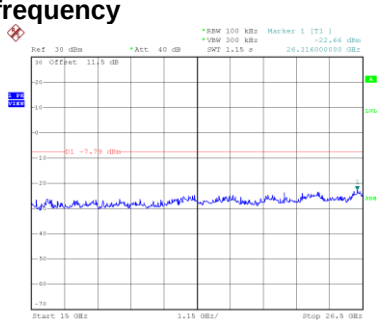
CH01 – 10th Harmonic of the fundamental frequency



Date: 21.OCT.2020 10:18:15

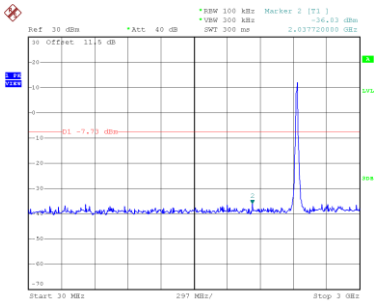


Date: 21.OCT.2020 10:18:24

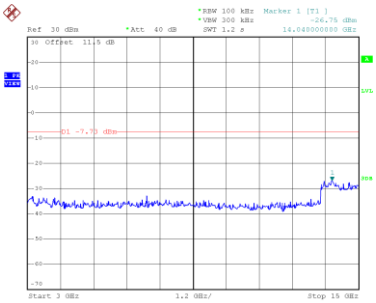


Date: 21.OCT.2020 10:18:32

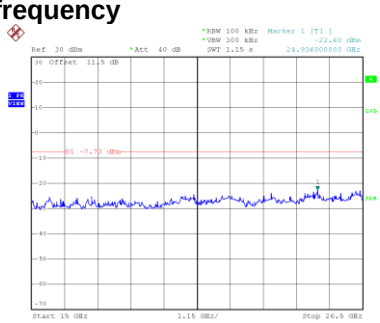
CH06 – 10th Harmonic of the fundamental frequency



Date: 21.OCT.2020 10:20:56

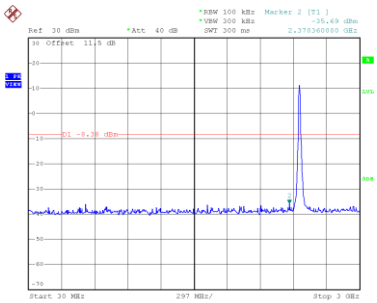


Date: 21.OCT.2020 10:21:04

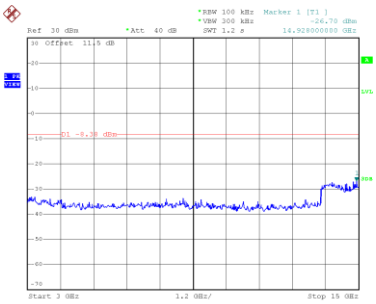


Date: 21.OCT.2020 10:21:13

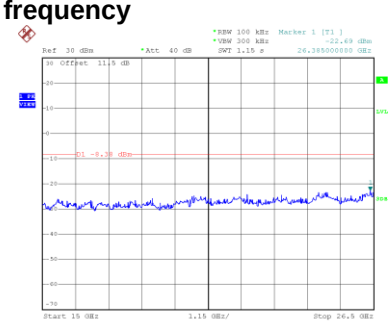
CH11 – 10th Harmonic of the fundamental frequency



Date: 21.OCT.2020 10:22:34



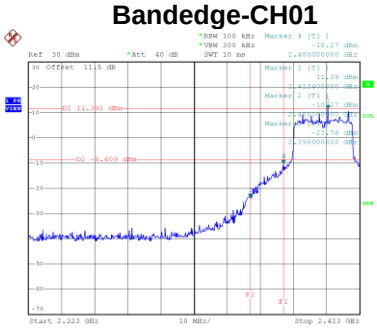
Date: 21.OCT.2020 10:22:43



Date: 21.OCT.2020 10:22:51

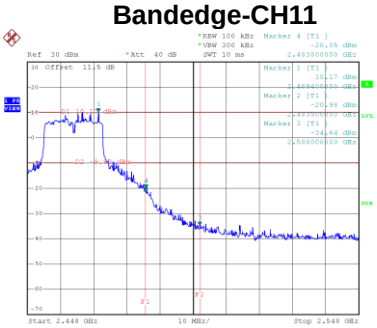
Test Mode	TX N-20M Mode

Bandedge-CH01



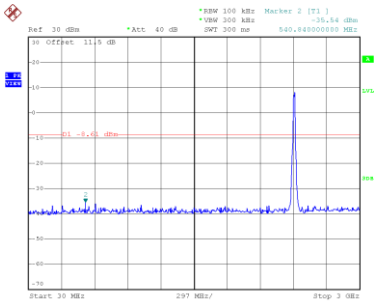
Date: 21.OCT.2020 10:24:12

Bandedge-CH11

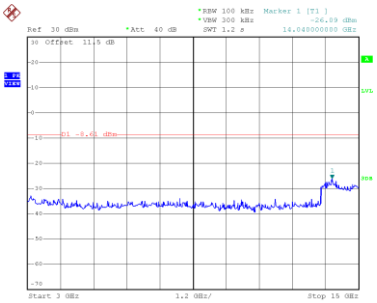


Date: 21.OCT.2020 10:27:33

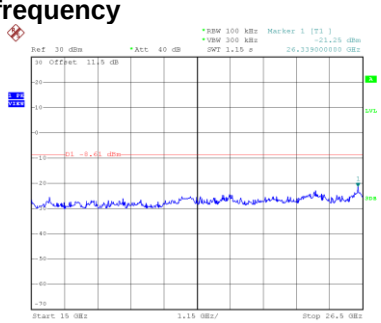
CH01 – 10th Harmonic of the fundamental frequency



Date: 21.OCT.2020 10:24:26

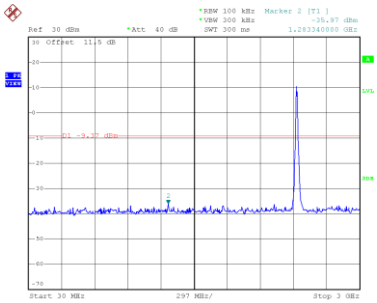


Date: 21.OCT.2020 10:24:34

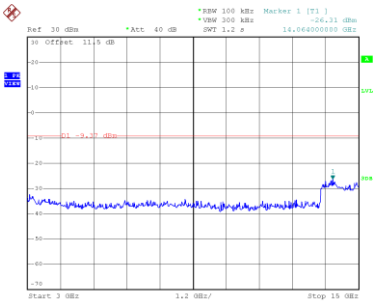


Date: 21.OCT.2020 10:24:43

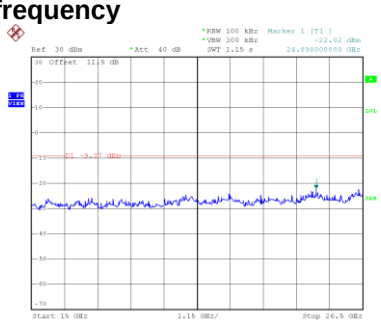
CH06 – 10th Harmonic of the fundamental frequency



Date: 21.OCT.2020 10:25:54

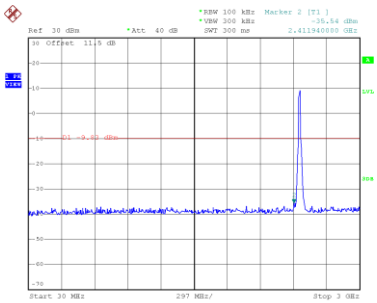


Date: 21.OCT.2020 10:26:03

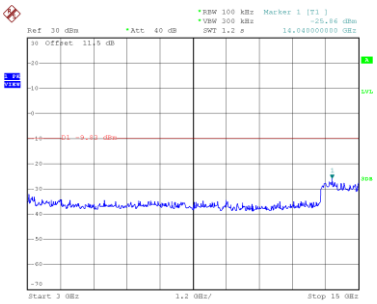


Date: 21.OCT.2020 10:26:11

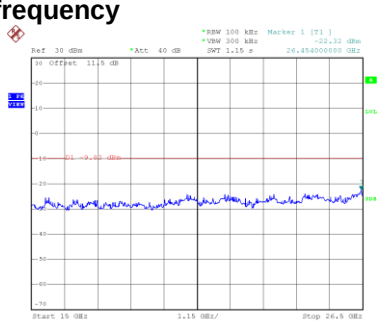
CH11 – 10th Harmonic of the fundamental frequency



Date: 21.OCT.2020 10:27:47



Date: 21.OCT.2020 10:27:56



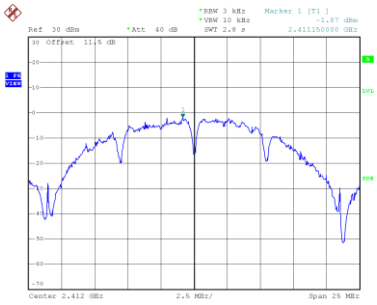
Date: 21.OCT.2020 10:28:05

APPENDIX H - POWER SPECTRAL DENSITY

Test Mode	TX B Mode

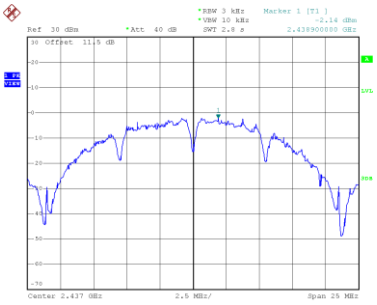
Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-1.87	8	Complies
06	2437	-2.14	8	Complies
11	2462	-1.98	8	Complies

CH01



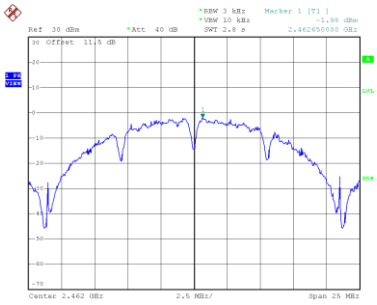
Date: 21.OCT.2020 10:03:52

CH06



Date: 21.OCT.2020 10:14:44

CH11

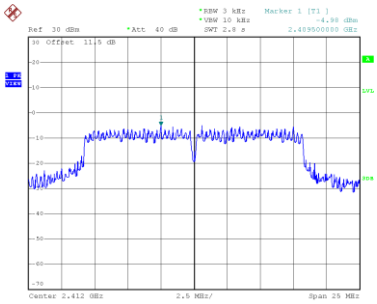


Date: 21.OCT.2020 10:16:44

Test Mode	TX G Mode

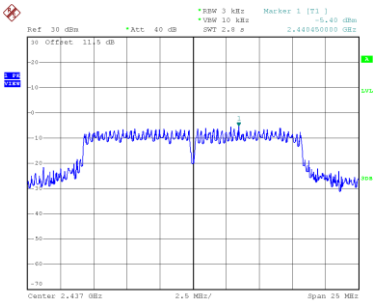
Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-4.98	8	Complies
06	2437	-5.40	8	Complies
11	2462	-5.45	8	Complies

CH01



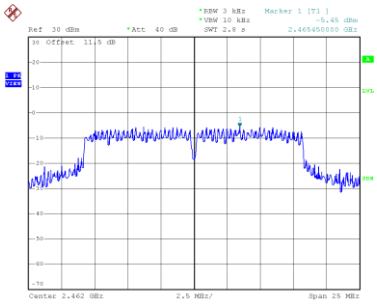
Date: 21.OCT.2020 10:18:42

CH06



Date: 21.OCT.2020 10:21:22

CH11

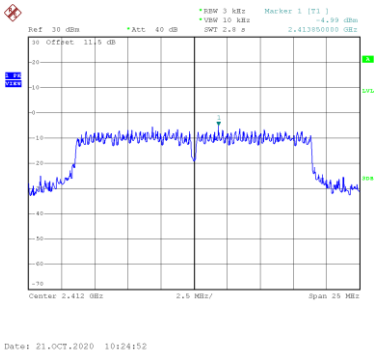


Date: 21.OCT.2020 10:23:01

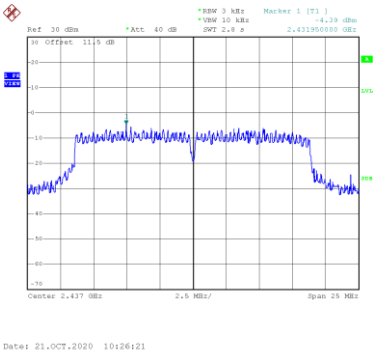
Test Mode	TX N-20M Mode

Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-4.99	8	Complies
06	2437	-4.39	8	Complies
11	2462	-5.61	8	Complies

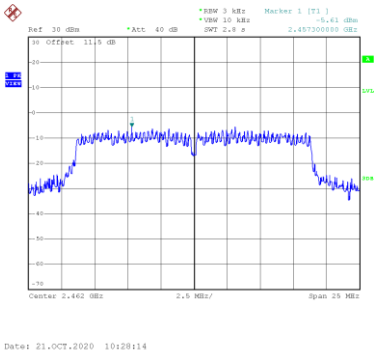
CH01



CH06



CH11



End of Test Report