FCC Radio Test Report

FCC ID: 2AC23-WT84R2600

This report concerns: Original Grant

Project No.	:	1809C134A
Equipment	:	WIFI+BT Module
Brand Name	:	GSD
Test Model	:	WT84R2600
Series Model	:	N/A
Applicant	:	Hui Zhou Gaoshengda Technology Co., LTD
Address	:	NO.75 Zhongkai Development Area, Huizhou, Guangdong
Manufacturer	:	Hui Zhou Gaoshengda Technology Co., LTD
Address	:	NO.75 Zhongkai Development Area, Huizhou, Guangdong
Factory	:	Hui Zhou Gaoshengda Technology Co., LTD
Address	:	NO.75 Zhongkai Development Area, Huizhou, Guangdong
Date of Receipt	:	Sep. 23, 2018
Date of Test	:	Sep. 24, 2018 ~ Oct. 13, 2019
Issued Date	:	Oct. 28, 2019
Report Version	:	R00
Test Sample	:	Engineering Sample No.: DG201909248
Standard(s)	:	FCC Part15, Subpart C (15.247) ANSI C63.10-2013 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.

Rose. Liu

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Certificate #5123.02

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Declaration

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

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

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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.

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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Oct. 28, 2019

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 Average 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	150 kHz ~ 30 MHz	2.32

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	4.88
		30MHz ~ 200MHz	H	4.14
		200MHz ~ 1,000MHz	V	4.62
		200MHz ~ 1,000MHz	H	4.80
		1GHz ~ 6GHz	-	4.58
		6GHz ~ 18GHz	-	5.18
		18GHz ~ 26.5GHz	-	3.80
		26.5GHz ~ 40GHz	-	4.30

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	27°C	39%	DC 5V	Laughing Zhang
Radiated Emissions-9K-30MHz	25°C	60%	DC 5V	Laughing Zhang
Radiated Emissions-30 MHz to 1GHz	25°C	60%	DC 5V	Laughing Zhang
Radiated Emissions-Above 1000 MHz	25℃	60%	DC 5V	Laughing Zhang
Bandwidth	25℃	46%	DC 5V	Jonas Chen
Maximum output power	25°C	46%	DC 5V	Jonas Chen
Conducted Spurious Emissions	25°C	46%	DC 5V	Jonas Chen
Power Spect□al Density	25°C	46%	DC 5V	Jonas Chen

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	WIFI+BT Module
Brand Name	GSD
Test Model	WT84R2600
Series Model	N/A
Model Difference(s)	N/A
Software Version	N/A
Hardware Version	N/A
Power Source	Supplied from PC USB port.
Power Rating	DC 5V
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 300 Mbps
Maximum Output Power	IEEE 802.11b: 19.66 dBm (0.0925 W) IEEE 802.11g: 24.65 dBm (0.2917 W) IEEE 802.11n (HT20): 26.74 dBm (0.4721 W) IEEE 802.11n (HT40): 26.74 dBm (0.4716 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	GSD	G.5.13.WF0FAXXXXX	PIFA	N/A	1.88
2	GSD	G.5.13.WF0FBXXXXX	PIFA	N/A	1.88

Note:
The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R).
So Directional gain =10log[$(10^{G1/20}+10^{G2/20}+...10^{GN/20})^2$/N]dBi, that is
Directional gain=10log [$(10^{1.88/20}+10^{1.88/20})^2$/2]dBi =4.89.

4. Table for Antenna Configuration:

Operating Mode / TX Mode	TX	2TX
IEEE 802.11b	V (Ant. 1)	-
IEEE 802.11g	V (Ant. 1)	-
IEEE 802.11n (HT20)	-	V (Ant. 1 + Ant. 2)
IEEE 802.11n (HT40)	-	V (Ant. 1 + Ant. 2)

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 N-40 MHz Mode Channel 03/06/09
Mode 5	TX N20 Mode Channel 06

Following mode(s) as (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 5	TX N20 Mode Channel 06

Radiated emissions test - Below 1GHz	
Final Test Mode:	Description
Mode 5	TX N20 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
Mode 4	TX N-40 MHz 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-20 MHz Mode Channel 01/06/11
Mode 4	TX N-40 MHz Mode Channel 03/06/09

NOTE:

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

(2) For radiated emission below 1 GHz test, the IEEE 802.11n20 is found to be the worst case and recorded.

(3) 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.

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

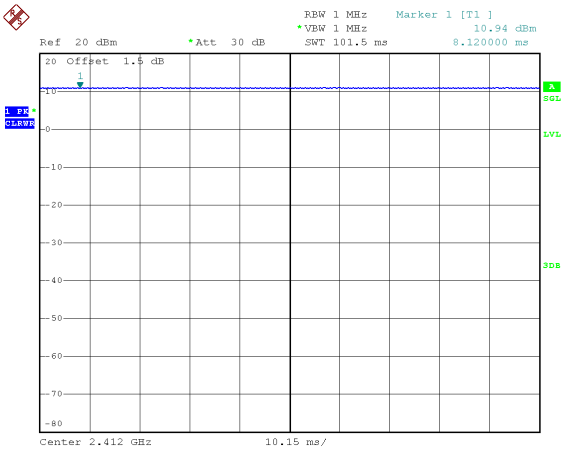
2.3 PARAMETERS OF TEST SOFTWARE

Test Software	MPTool		
Frequency (MHz)	2412	2437	2462
IEEE 802.11b	37	36	35
IEEE 802.11g	41	43	40
IEEE 802.11n (HT20)	39	40	39
Frequency (MHz)	2422	2437	2452
IEEE 802.11n (HT40)	39	43	39

2.4 DUTY CYCLE

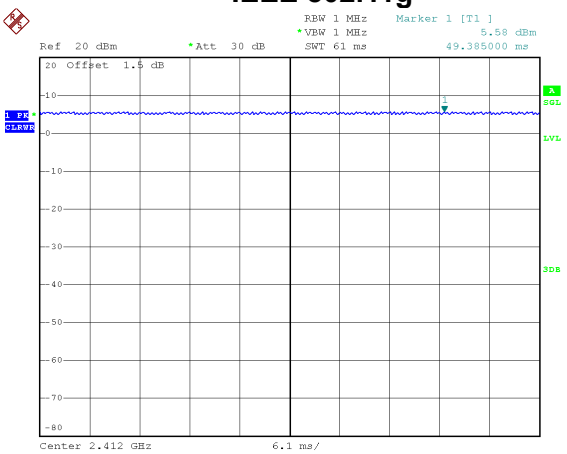
If duty cycle is ≥ 98 %, duty factor is not required.
If duty cycle is < 98 %, duty factor shall be considered.
The output power = measured power + duty factor.

IEEE 802.11b



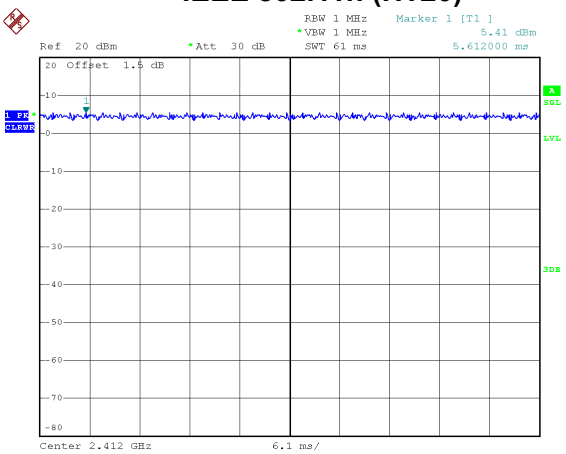
Duty cycle = 101.500 ms / 101.500 ms = 100%
Duty Factor = 10 log(1/Duty cycle) = 0.00

IEEE 802.11g



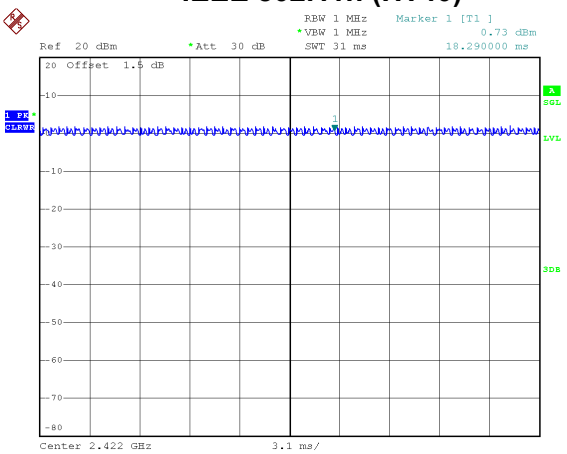
Duty cycle = 61.000 ms / 61.000 ms = 100%
Duty Factor = 10 log(1/Duty cycle) = 0.00

IEEE 802.11n (HT20)



Duty cycle = 61.000 ms / 61.000 ms = 100%
Duty Factor = 10 log(1/Duty cycle) = 0.00,

IEEE 802.11n (HT40)

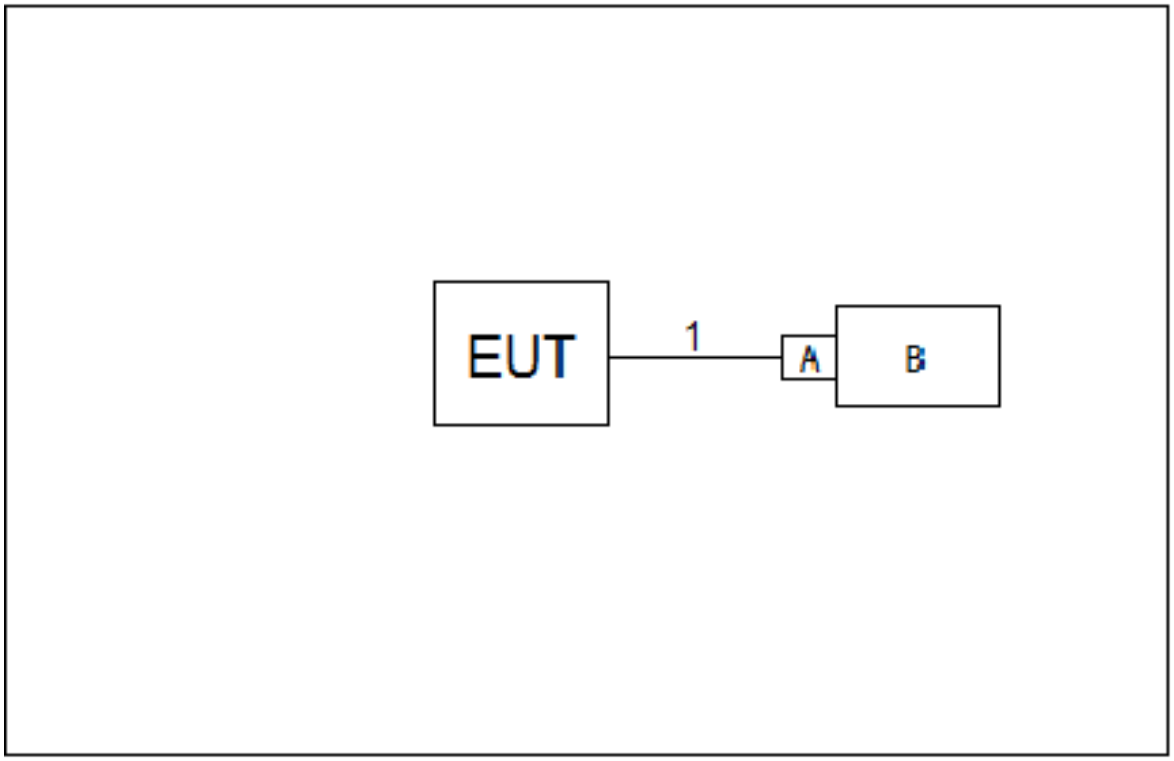


Duty cycle = 31.000 ms / 31.000 ms = 100%
Duty Factor = 10 log(1/Duty cycle) = 0.00

NOTE:
For 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%).

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 (Duty cycle < 98%).

2.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.6 SUPPORT UNITS

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.
A	Test Fixture	N/A	N/A	N/A
B	Notebook	Lenovo	G410	N/A

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	0.5m	Data Cable

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

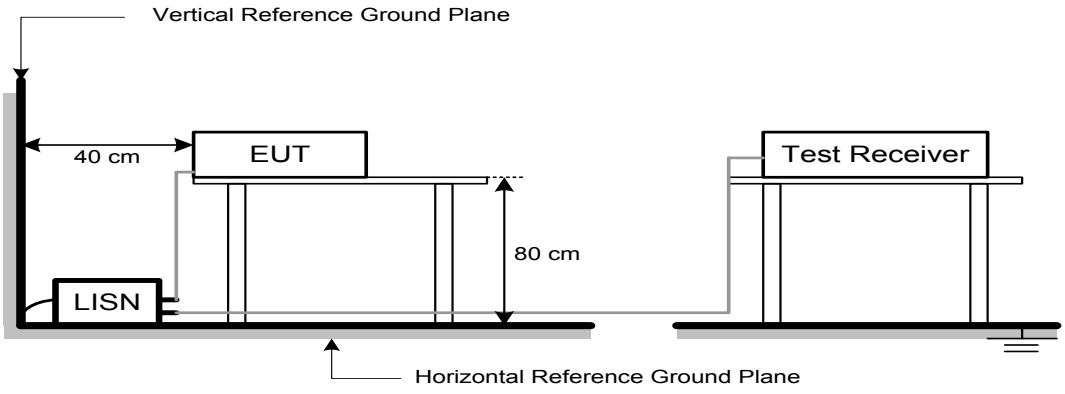
3.2 TEST PROCEDURE

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

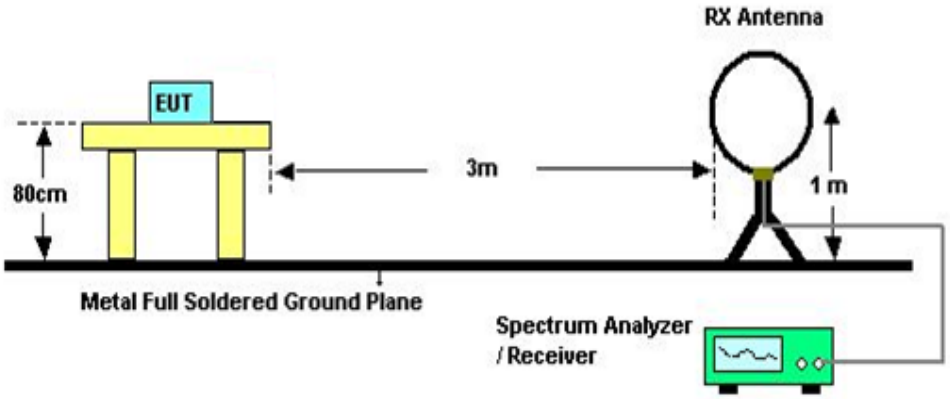
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1 GHz)
b. The measuring distance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

4.3 DEVIATION FROM TEST STANDARD

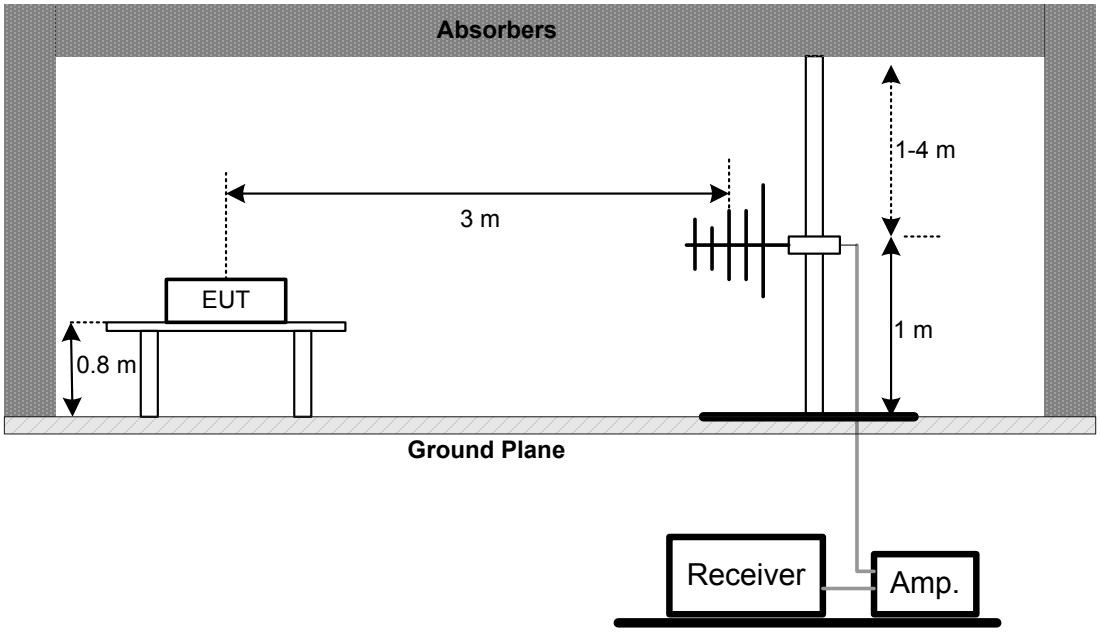
No deviation

4.4 TEST SETUP

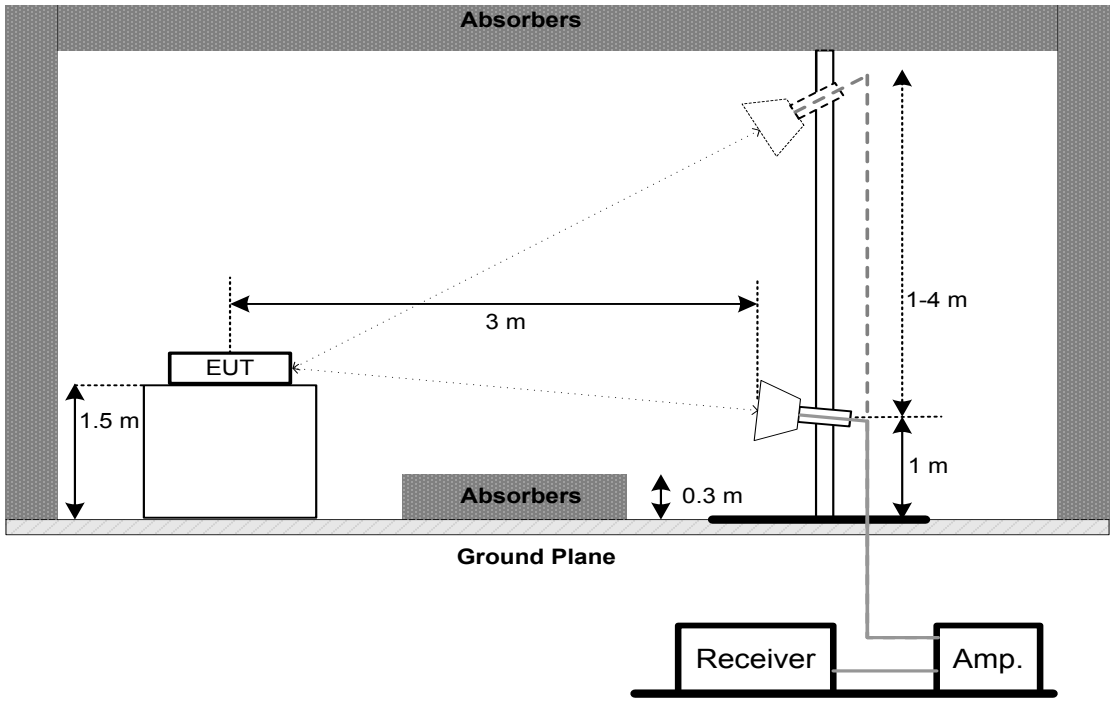
9 kHz-30 MHz



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	-

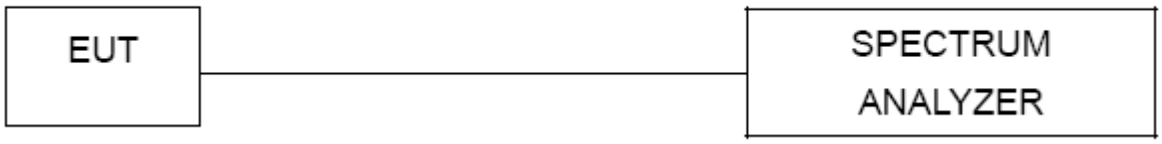
5.2 TEST PROCEDURE

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 = 2.5 ms.
For 99% Emission Bandwidth B/G/N-20 Mode: RBW= 300 KHz, VBW=1 MHz, Sweep time = 2.5 ms.
For 99% Emission Bandwidth N-40 Mode: RBW= 1 MHz, VBW=3 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

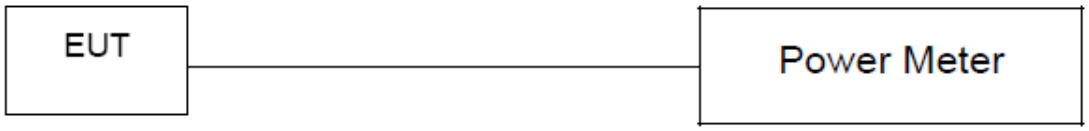
6.2 TEST PROCEDURE

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	Mar. 10, 2020
2	LISN	EMCO	3816/2	52765	Mar. 10, 2020
3	50ohm Terminator	SHX	TF5-3	15041305	Mar. 10, 2020
4	TWO-LINE V-NETWORK	R&S	ENV216	101447	May. 19, 2020
5	TRANSIENT LIMITER	EM	EM-7600	772	Mar. 10, 2020
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
7	Cable	N/A	RG223	12m	Mar. 12, 2020

Radiated Emissions - 9 kHz to 30 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Loop Antenna	EM	EM-6876-1	230	Jan. 15, 2020
2	Cable	N/A	RG 213/U	C-102	May 31, 2020
3	EMI Test Receiver	R&S	ESCI	100895	Mar. 10, 2020
4	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	VULB9160	9160-3232	Mar. 09, 2020
2*	Amplifier*	HP	8447D	2944A09673	Aug. 11, 2021
3	Receiver	Agilent	N9038A	MY52130039	Aug. 03, 2020
4	Cable	emci	LMR-400(30MHz-1GHz)(8m+5m)	N/A	May 24, 2020
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

Radiated Emissions - Above 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Double Ridged Guide Antenna	ETS	3115	75789	Mar. 09, 2020
2	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Jun. 23, 2020
3	Amplifier	Agilent	8449B	3008A02333	Mar. 10, 2020
4	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 10, 2020
5	Receiver	Agilent	N9038A	MY52130039	Aug. 03, 2020
6	Controller	CT	SC100	N/A	N/A
7	Controller	MF	MF-7802	MF780208416	N/A
8	Cable	mitron	B10-01-01-12M	18072744	Jun. 29, 2020
9	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

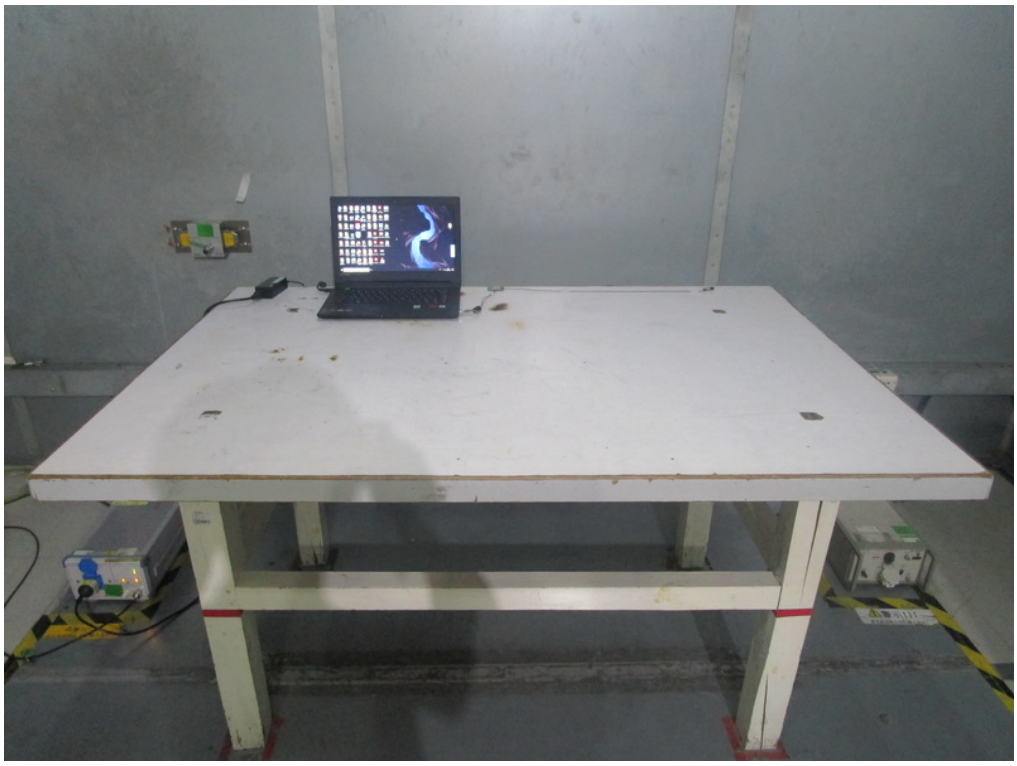
Bandwidth & Antenna Conducted Spurious Emissions & Power Spectral Density					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Aug. 03, 2020

Maximum Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Peak Power Analyzer	Keysight	8990B	MY51000506	Aug. 03, 2020
2	Wideband power sensor	Keysight	N1923A	MY58310004	Aug. 03, 2020

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.

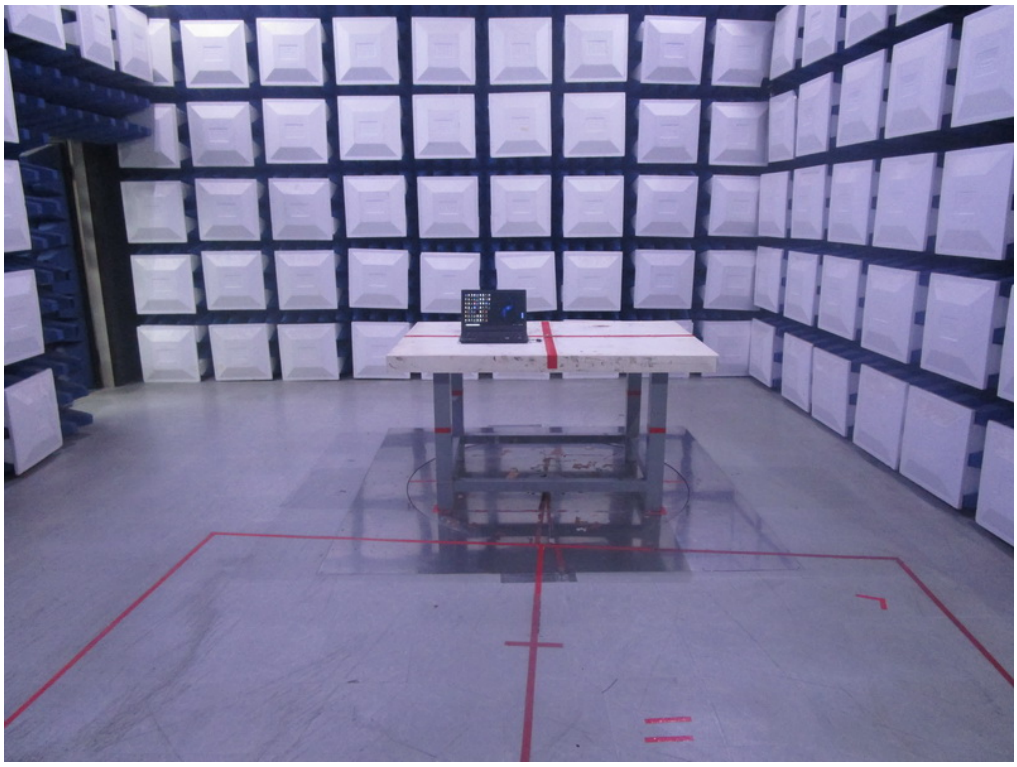
10. EUT TEST PHOTO

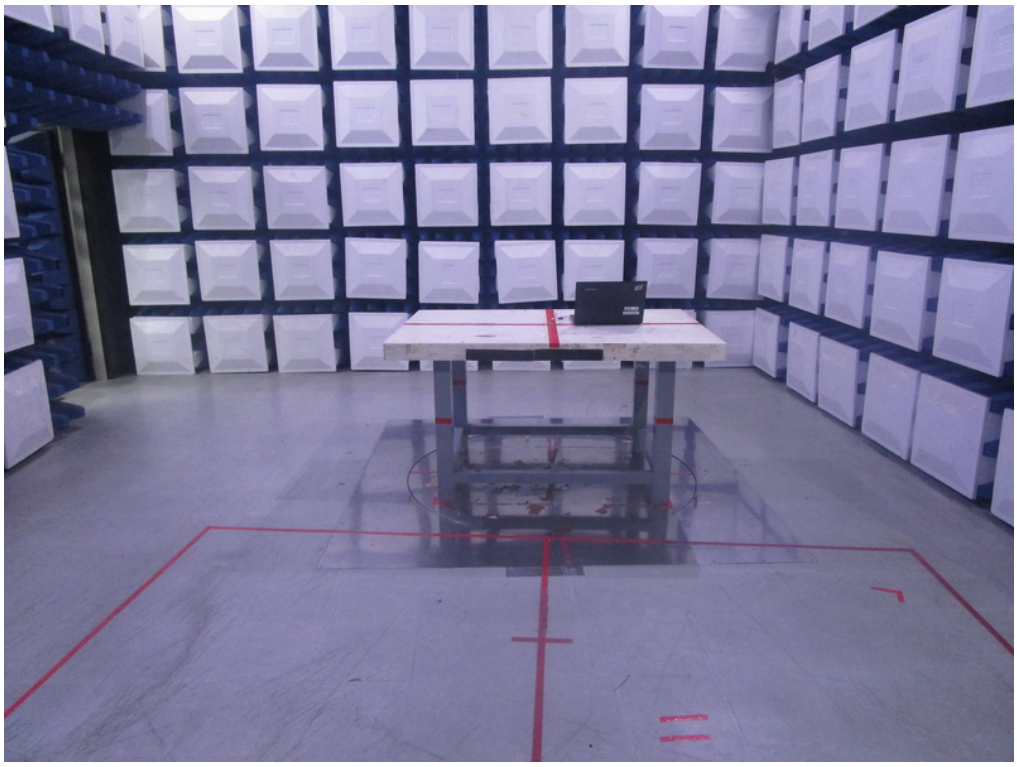
AC Power Line Conducted Emissions Test Photos



Radiated Emissions Test Photos

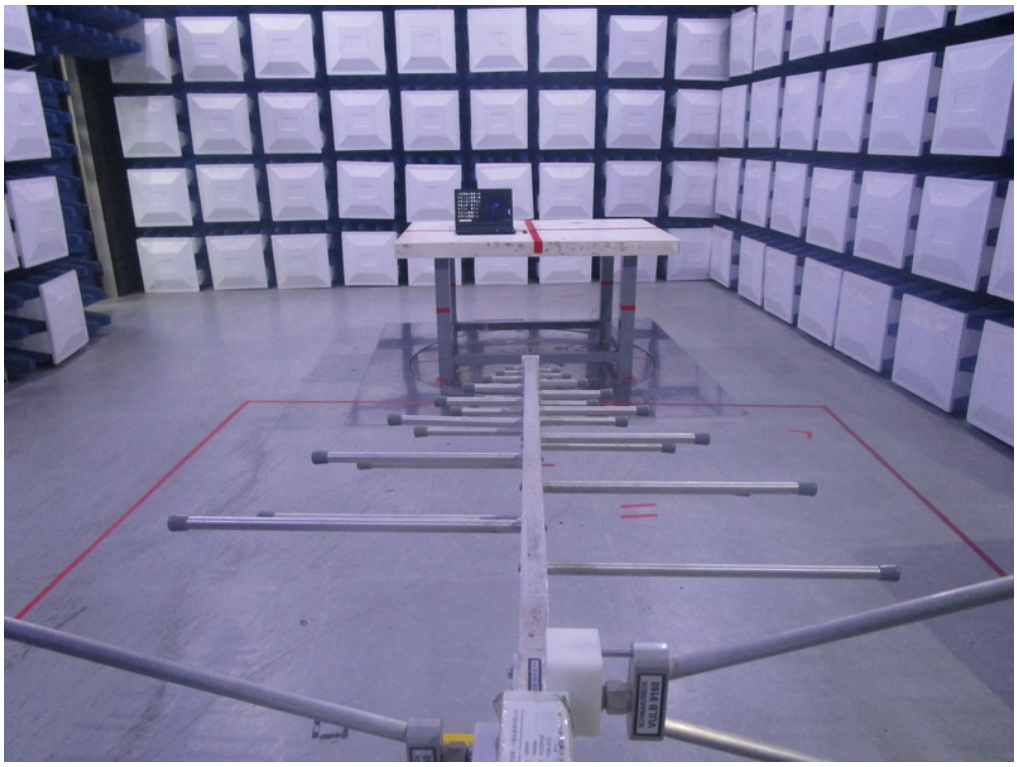
9 kHz to 30 MHz

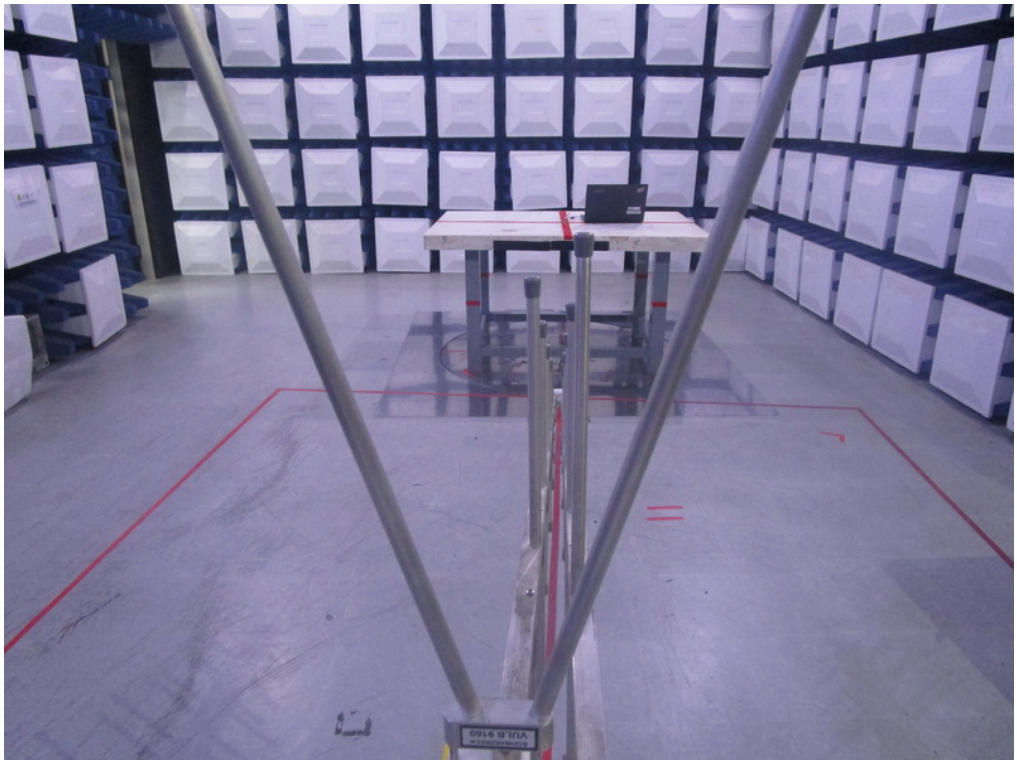




Radiated Emissions Test Photos

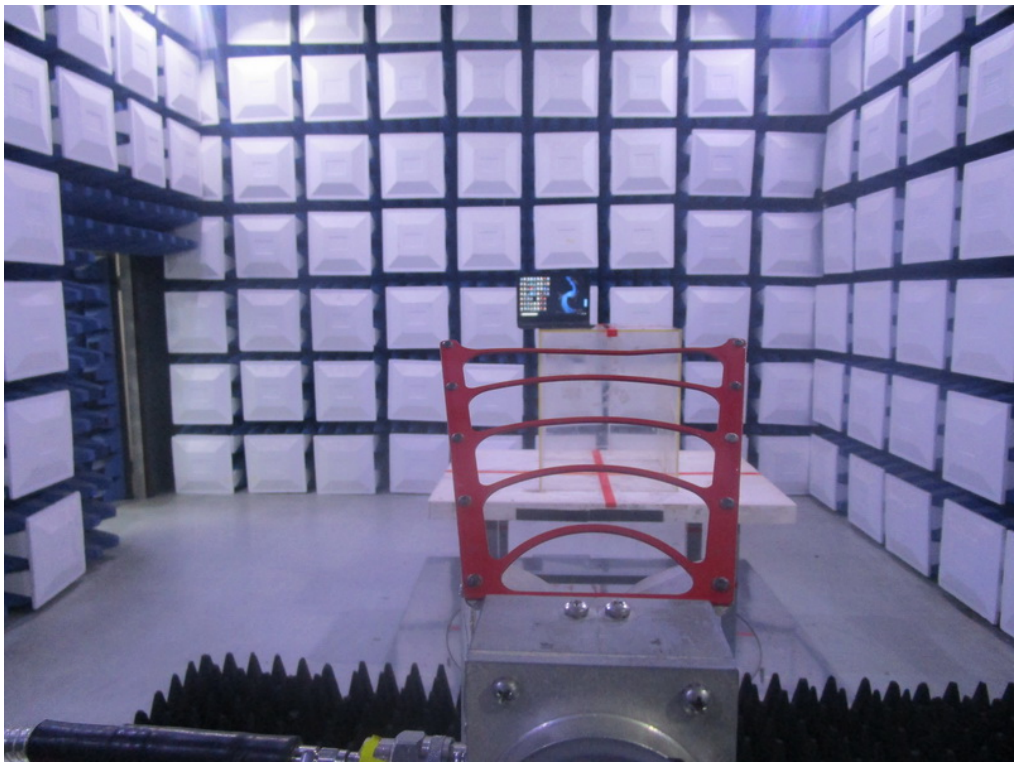
30 MHz to 1 GHz

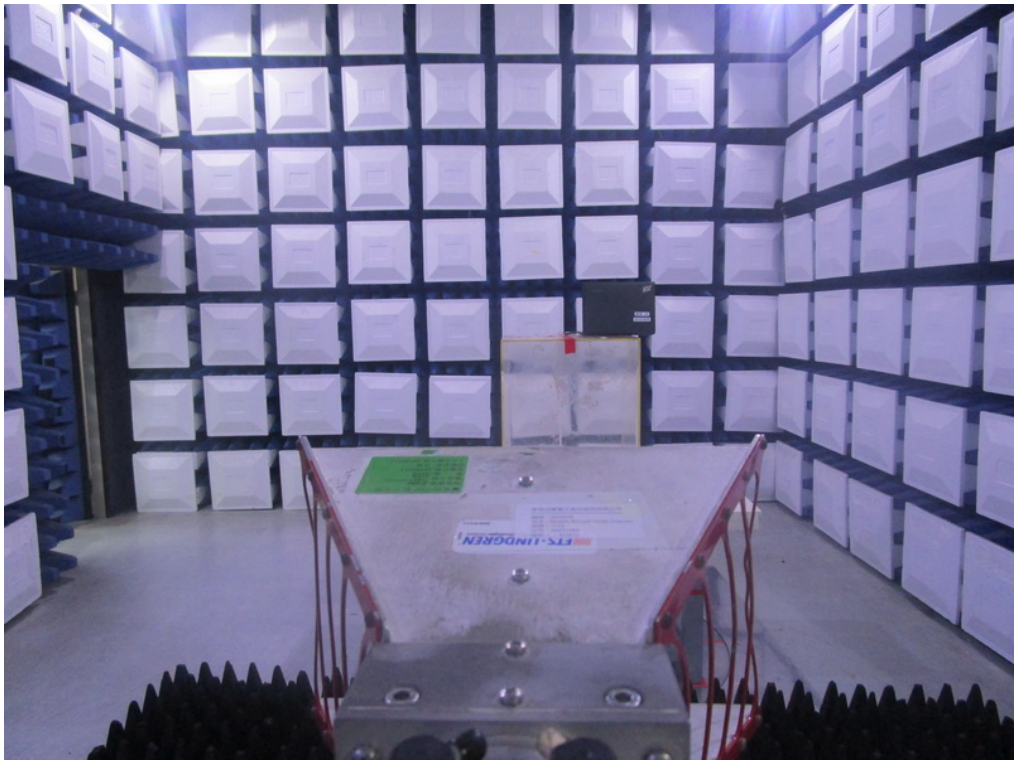




Radiated Emissions Test Photos

Above 1 GHz

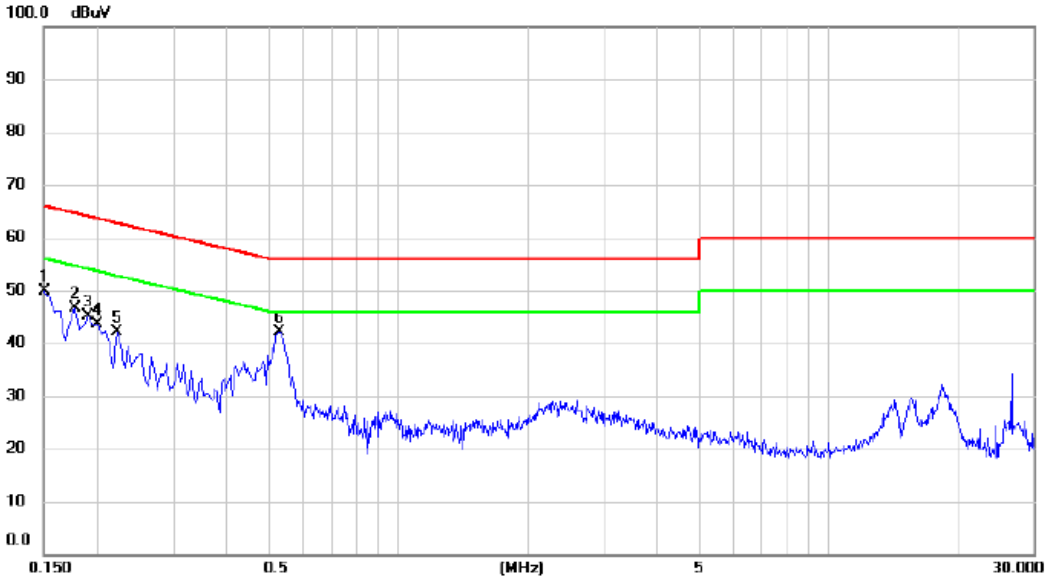




APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

Test Mode:	TX N20 Mode Channel 06

Line

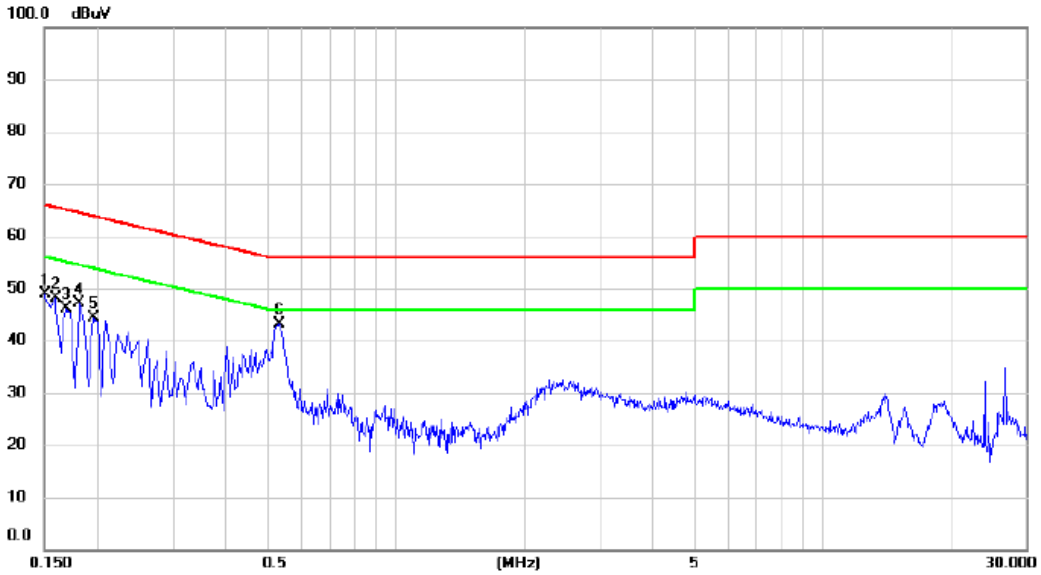


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	40.12	9.82	49.94	66.00	-16.06	peak	
2		0.1770	36.91	9.83	46.74	64.63	-17.89	peak	
3		0.1905	35.41	9.82	45.23	64.01	-18.78	peak	
4		0.1996	33.70	9.82	43.52	63.63	-20.11	peak	
5		0.2220	32.31	9.82	42.13	62.74	-20.61	peak	
6	*	0.5280	32.38	9.80	42.18	56.00	-13.82	peak	

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

Test Mode:	TX N20 Mode Channel 06

Neutral



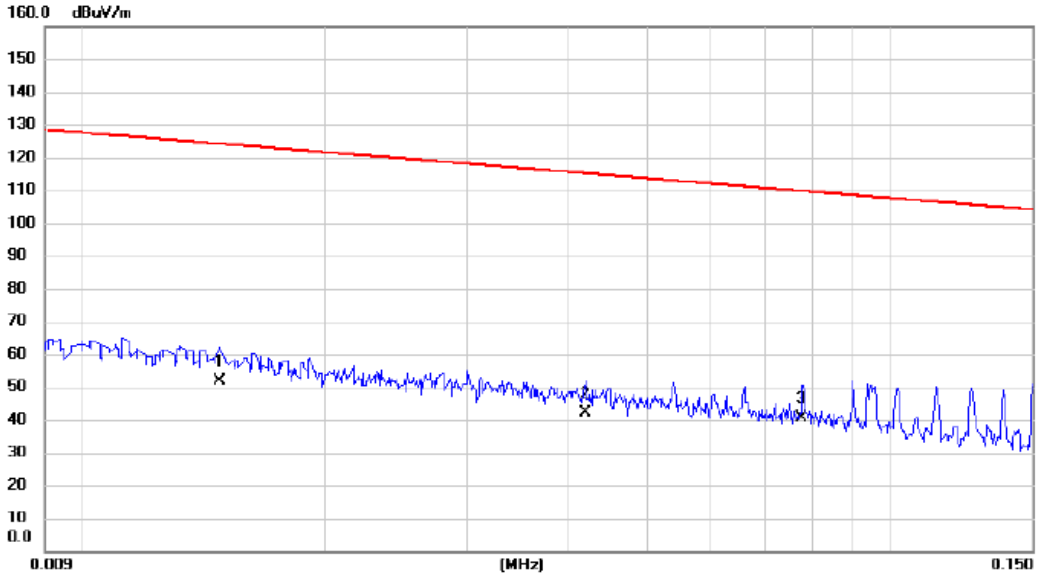
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	38.93	9.91	48.84	66.00	-17.16	peak	
2		0.1590	38.26	9.91	48.17	65.52	-17.35	peak	
3		0.1680	36.22	9.91	46.13	65.06	-18.93	peak	
4		0.1815	37.28	9.92	47.20	64.42	-17.22	peak	
5		0.1950	34.35	9.91	44.26	63.82	-19.56	peak	
6	*	0.5325	33.21	9.95	43.16	56.00	-12.84	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 N20 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		0.0148	36.47	15.38	51.85	124.20	-72.35	AVG	
2		0.0420	28.16	13.90	42.06	115.14	-73.08	AVG	
3	*	0.0778	26.94	13.54	40.48	109.79	-69.31	AVG	

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

Test Mode:	TX N20 Mode Channel 06

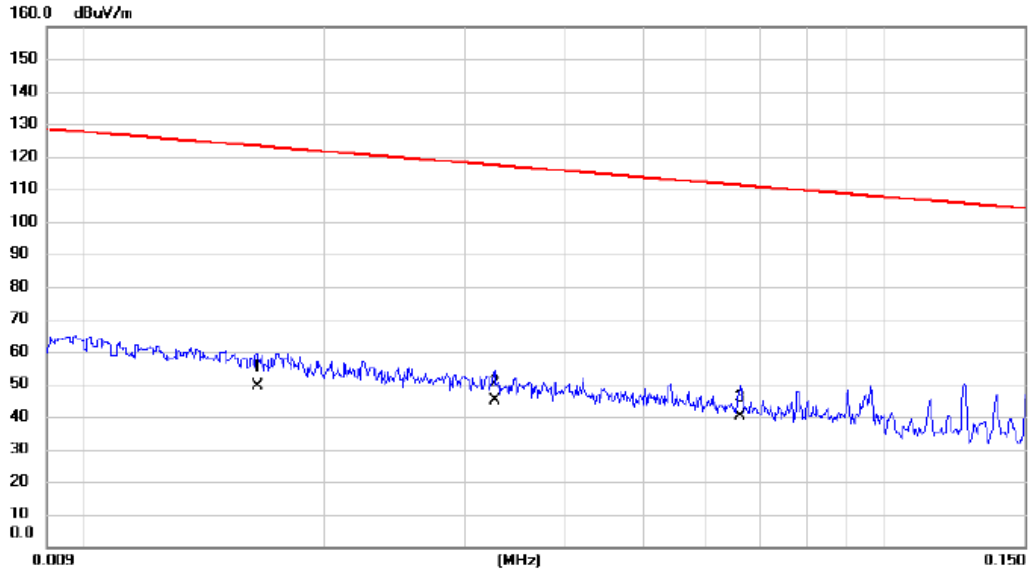
Ant 0°

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.4260	47.03	13.24	60.27	95.02	-34.75	AVG	
2	*	1.4953	36.04	12.16	48.20	64.11	-15.91	QP	
3		4.4304	34.97	10.91	45.88	69.54	-23.66	QP	

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

Test Mode:	TX N20 Mode Channel 06

Ant 90°

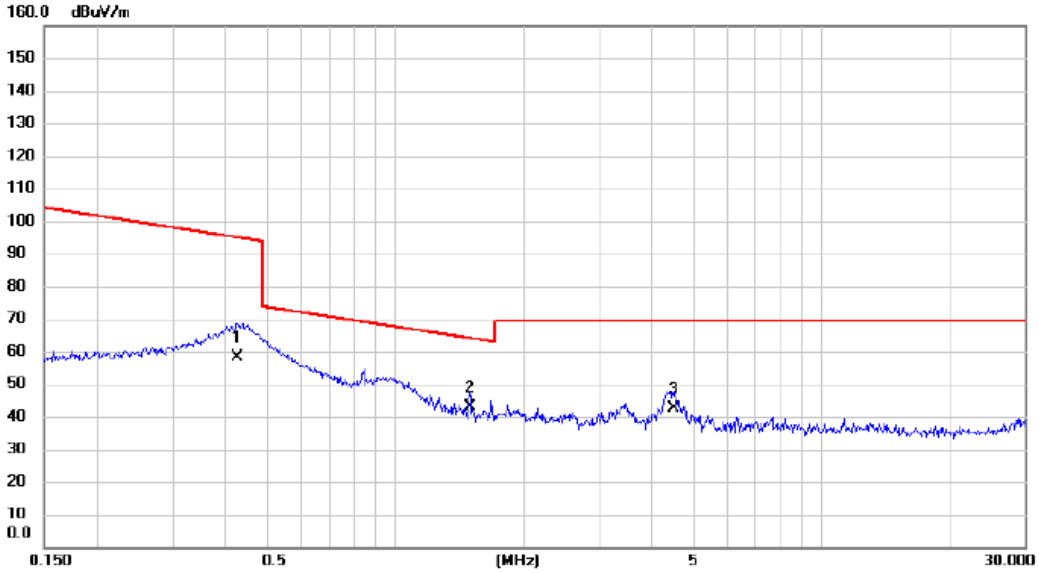


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0165	34.67	14.87	49.54	123.26	-73.72	AVG	
2		0.0326	31.14	13.87	45.01	117.34	-72.33	AVG	
3	*	0.0662	26.38	13.67	40.05	111.19	-71.14	AVG	

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

Test Mode:	TX N20 Mode Channel 06

Ant 90°



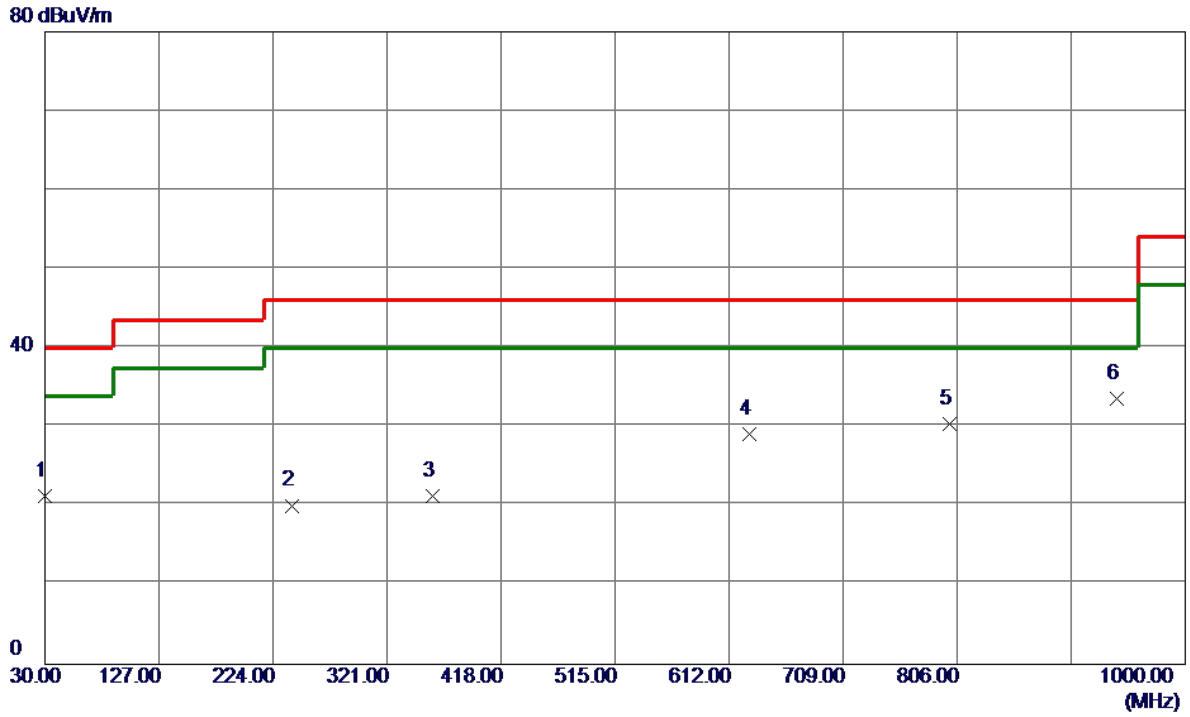
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.4260	45.16	13.24	58.40	95.02	-36.62	AVG	
2	*	1.4953	30.66	12.16	42.82	64.11	-21.29	QP	
3		4.5014	31.84	10.90	42.74	69.54	-26.80	QP	

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 N20 Mode Channel 06

Vertical

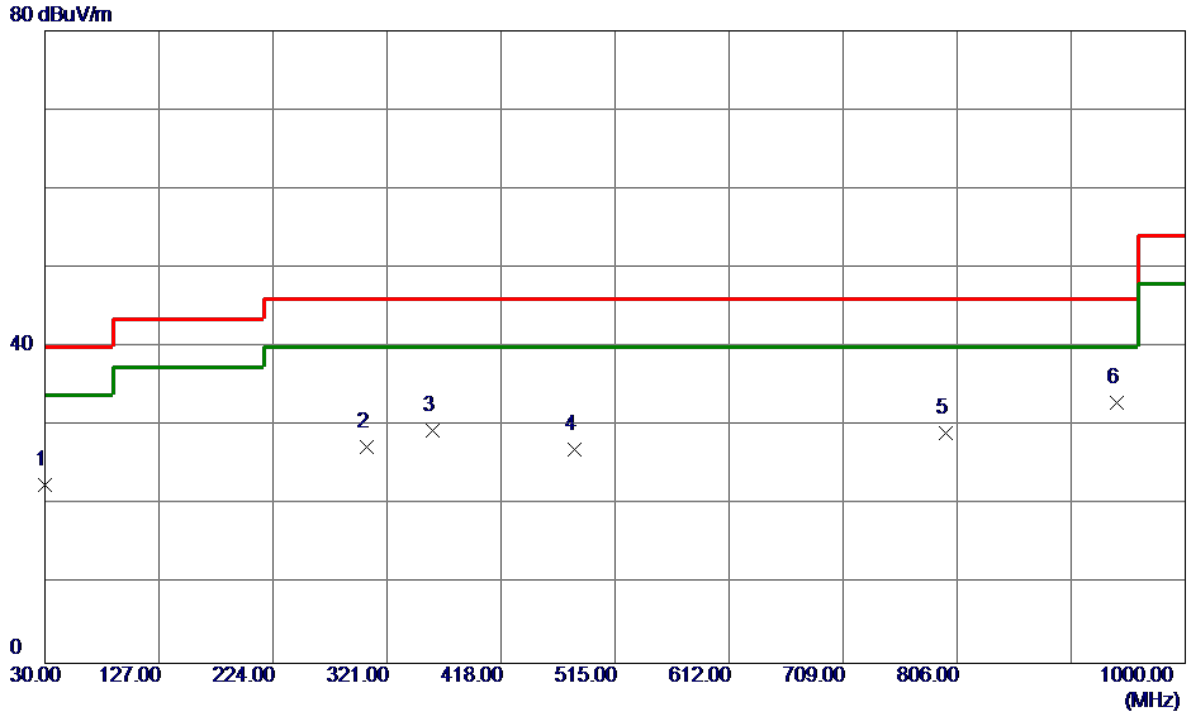


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	30.0000	36.28	-14.97	21.31	40.00	-18.69	Peak	
2	240.0050	34.75	-14.67	20.08	46.00	-25.92	Peak	
3	359.8000	31.97	-10.74	21.23	46.00	-24.77	Peak	
4	629.4600	34.76	-5.64	29.12	46.00	-16.88	Peak	
5	799.6950	31.53	-1.06	30.47	46.00	-15.53	Peak	
6 *	941.8000	32.54	1.08	33.62	46.00	-12.38	Peak	

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

Test Mode:	TX N20 Mode Channel 06

Horizontal



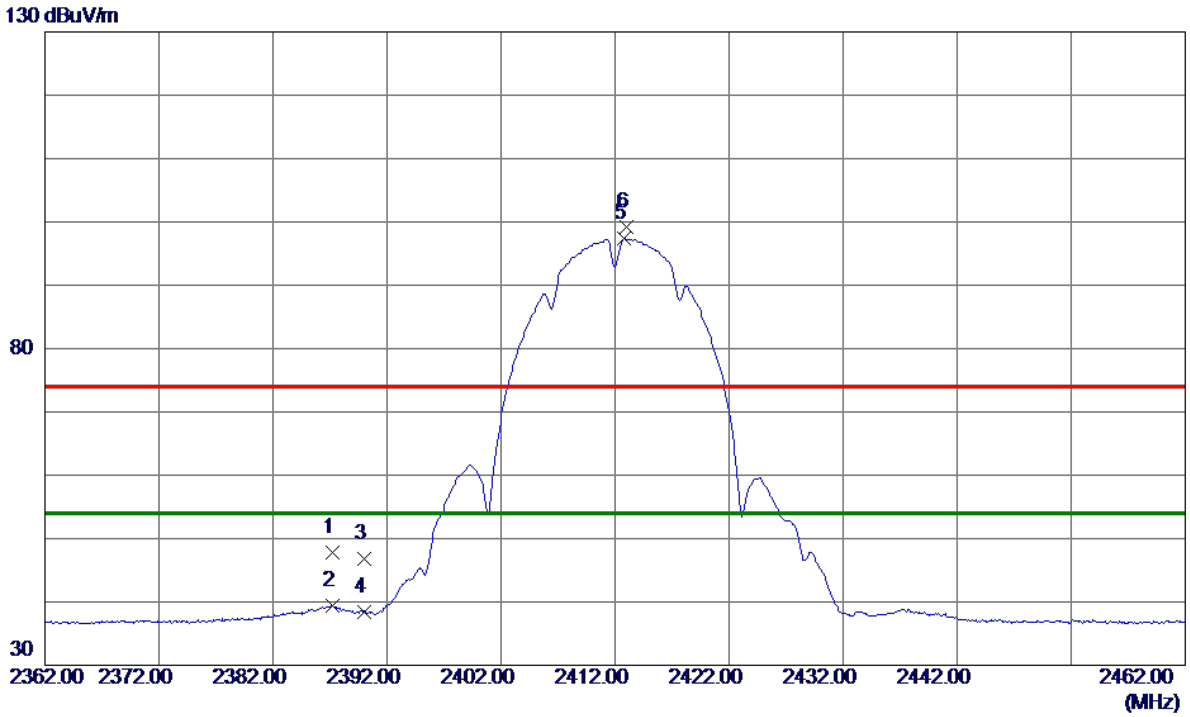
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	30.0000	37.54	-14.97	22.57	40.00	-17.43	Peak	
2	303.5400	37.76	-10.42	27.34	46.00	-18.66	Peak	
3	359.8000	40.22	-10.74	29.48	46.00	-16.52	Peak	
4	480.0800	35.11	-8.08	27.03	46.00	-18.97	Peak	
5	796.7849	30.41	-1.23	29.18	46.00	-16.82	Peak	
6 *	941.8000	31.90	1.08	32.98	46.00	-13.02	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	2387.2000	41.16	6.62	47.78	74.00	-26.22	Peak	
2	2387.2000	32.73	6.62	39.35	54.00	-14.65	AVG	
3	2390.0000	40.16	6.62	46.78	74.00	-27.22	Peak	
4	2390.0000	31.73	6.62	38.35	54.00	-15.65	AVG	
5 *	2412.8000	90.80	6.62	97.42	54.00	43.42	AVG	No Limit
6	2412.9500	92.67	6.62	99.29	74.00	25.29	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

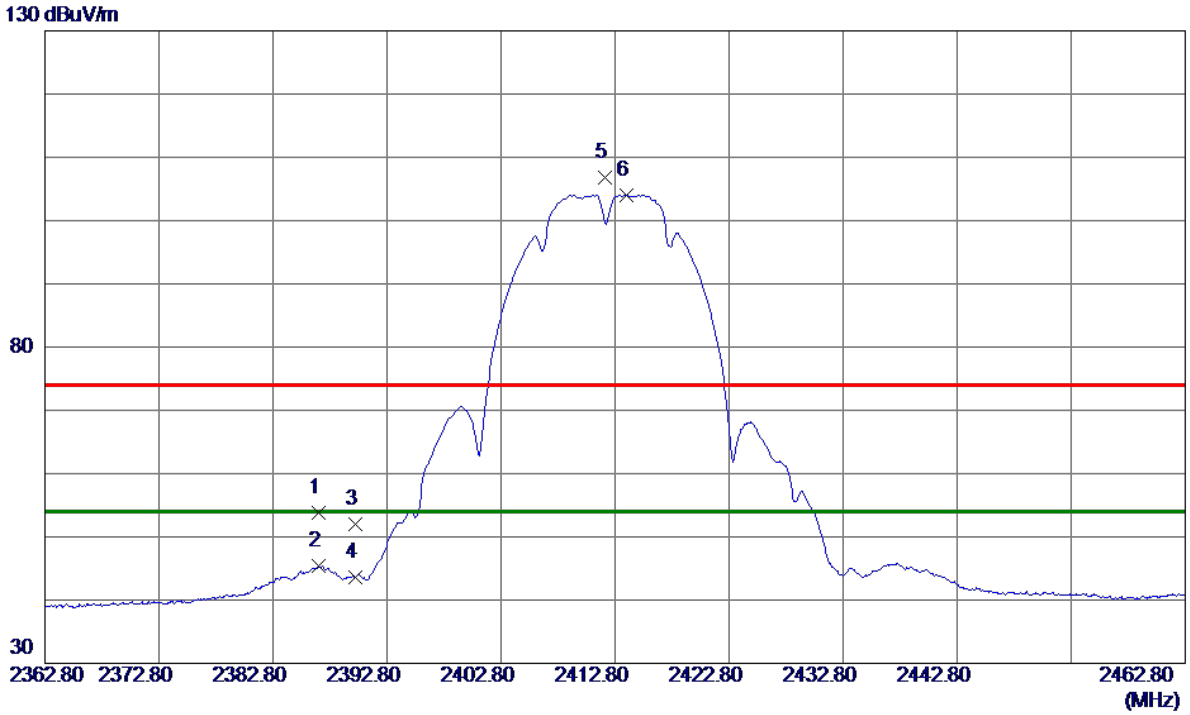
Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4823.9250	47.14	3.57	50.71	74.00	-23.29	Peak	
2 *	4824.0250	44.69	3.57	48.26	54.00	-5.74	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	2386.7500	47.15	6.62	53.77	74.00	-20.23	Peak	
2	2386.7500	38.71	6.62	45.33	54.00	-8.67	AVG	
3	2390.0000	45.30	6.62	51.92	74.00	-22.08	Peak	
4	2390.0000	37.00	6.62	43.62	54.00	-10.38	AVG	
5	2411.9500	100.27	6.62	106.89	74.00	32.89	Peak	No Limit
6 *	2413.7500	97.44	6.62	104.06	54.00	50.06	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

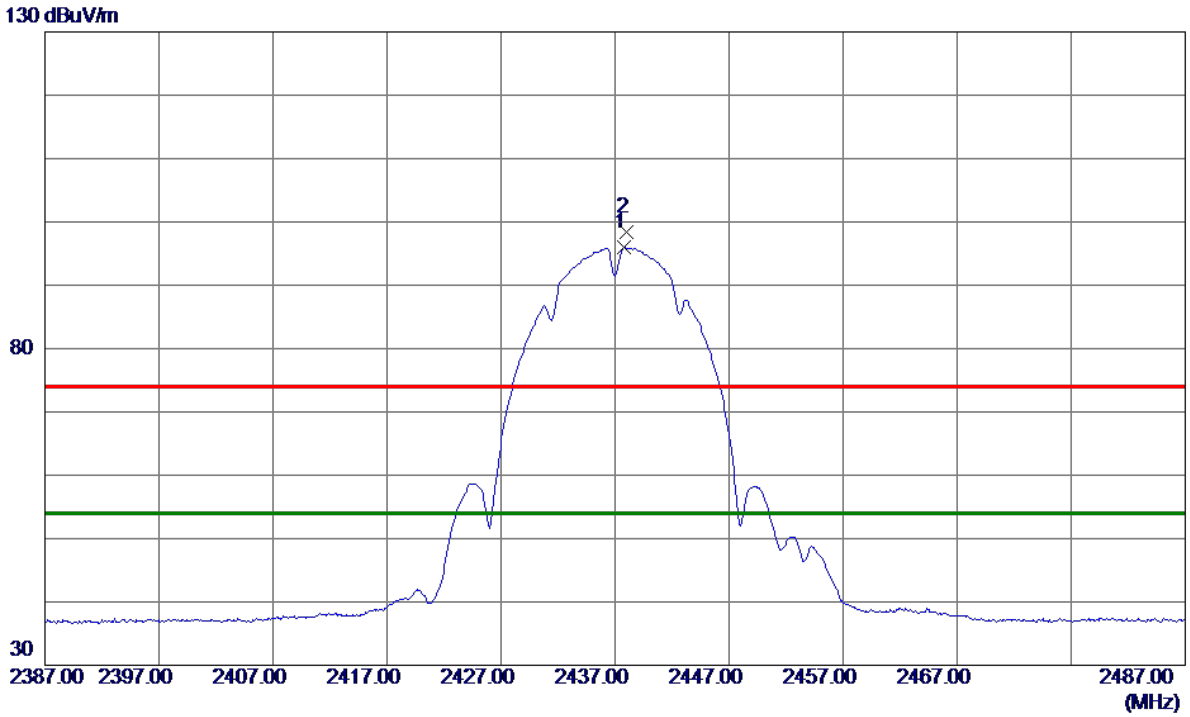
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4823.9550	48.49	3.57	52.06	74.00	-21.94	Peak	
2 *	4824.0299	45.96	3.57	49.53	54.00	-4.47	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 *	2437.8000	89.39	6.61	96.00	54.00	42.00	AVG	No Limit
2	2437.9500	91.83	6.61	98.44	74.00	24.44	Peak	No Limit

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

Test Mode:	TX B Mode 2437 MHz

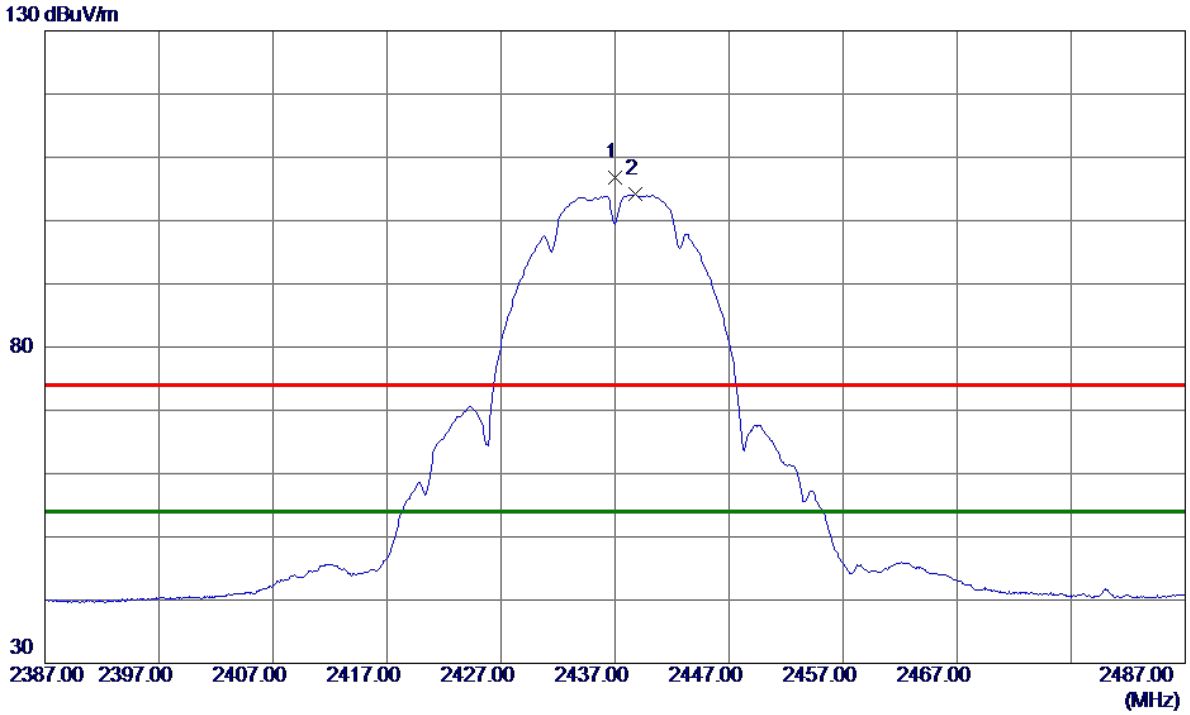
Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.0130	41.52	3.68	45.20	54.00	-8.80	AVG	
2	4874.0330	44.82	3.68	48.50	74.00	-25.50	Peak	

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	2436.9500	100.27	6.61	106.88	74.00	32.88	Peak	No Limit
2 *	2438.7500	97.50	6.61	104.11	54.00	50.11	AVG	No Limit

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

Test Mode:	TX B Mode 2437 MHz

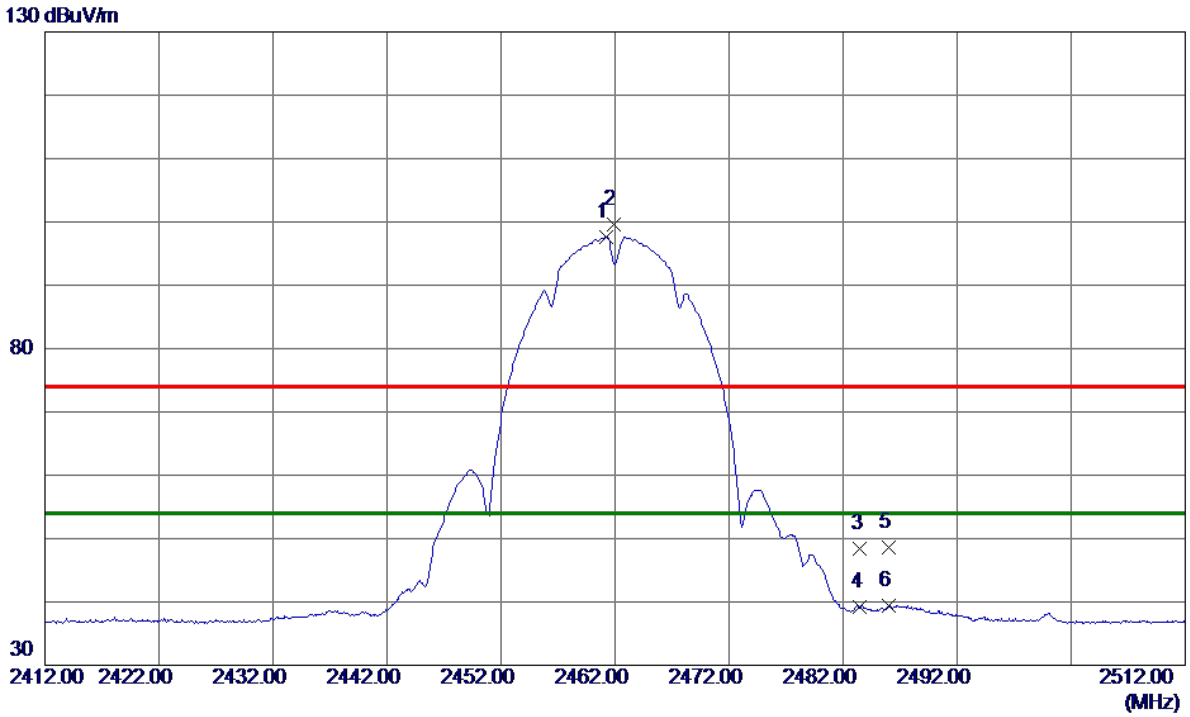
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4873.9970	44.31	3.68	47.99	54.00	-6.01	AVG	
2	4874.0730	46.79	3.68	50.47	74.00	-23.53	Peak	

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 *	2461.2500	91.02	6.61	97.63	54.00	43.63	AVG	No Limit
2	2461.9000	93.01	6.61	99.62	74.00	25.62	Peak	No Limit
3	2483.5000	41.77	6.61	48.38	74.00	-25.62	Peak	
4	2483.5000	32.64	6.61	39.25	54.00	-14.75	AVG	
5	2486.0500	41.99	6.61	48.60	74.00	-25.40	Peak	
6	2486.0500	32.77	6.61	39.38	54.00	-14.62	AVG	

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

Test Mode:	TX B Mode 2462 MHz

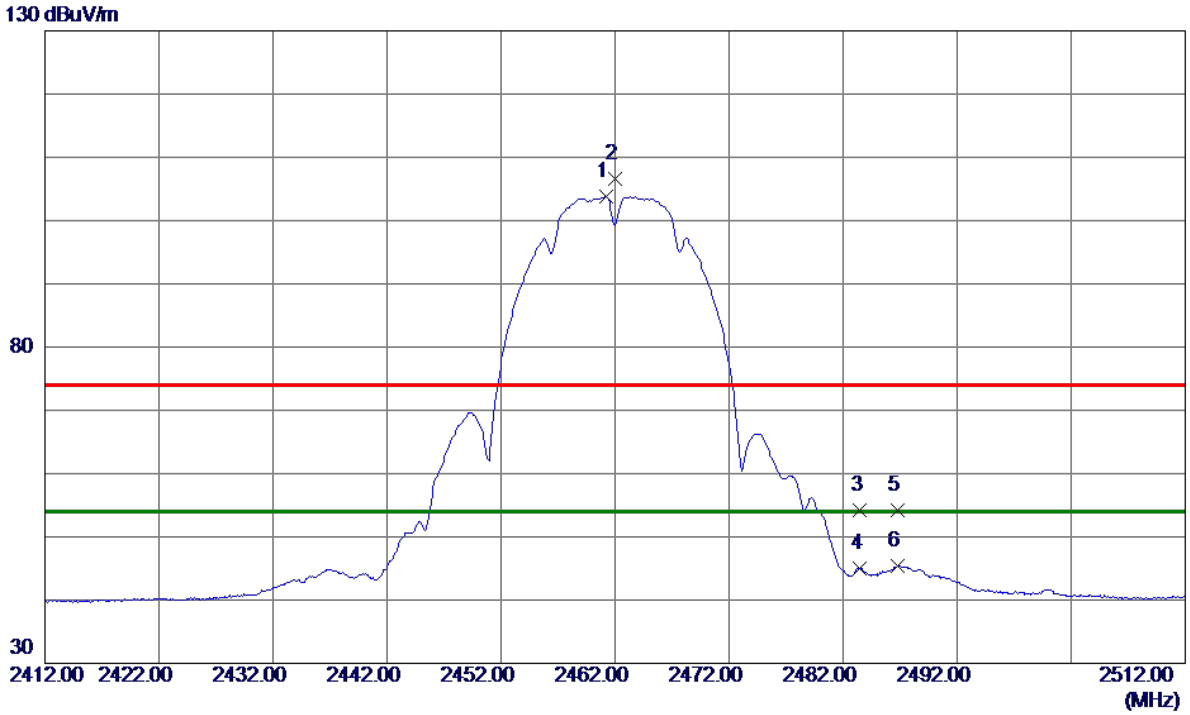
Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4924.0190	44.37	3.79	48.16	54.00	-5.84	AVG	
2	4924.0330	46.35	3.79	50.14	74.00	-23.86	Peak	

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 *	2461.2500	97.13	6.61	103.74	54.00	49.74	AVG	No Limit
2	2462.0500	100.06	6.61	106.67	74.00	32.67	Peak	No Limit
3	2483.5000	47.65	6.61	54.26	74.00	-19.74	Peak	
4	2483.5000	38.35	6.61	44.96	54.00	-9.04	AVG	
5	2486.7500	47.52	6.61	54.13	74.00	-19.87	Peak	
6	2486.7500	38.87	6.61	45.48	54.00	-8.52	AVG	

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

Test Mode:	TX B Mode 2462 MHz

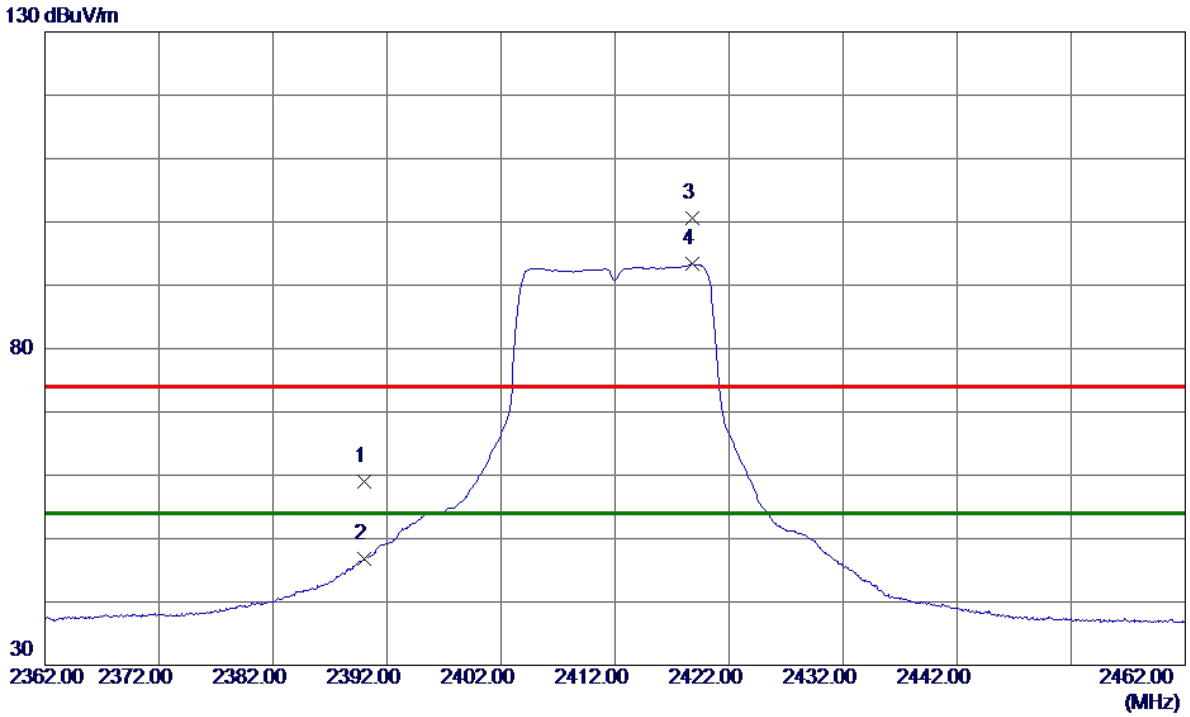
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4923.9850	45.04	3.79	48.83	54.00	-5.17	AVG	
2	4924.0179	47.37	3.79	51.16	74.00	-22.84	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	52.37	6.62	58.99	74.00	-15.01	Peak	
2	2390.0000	40.17	6.62	46.79	54.00	-7.21	AVG	
3	2418.7500	94.05	6.62	100.67	74.00	26.67	Peak	No Limit
4 *	2418.7500	86.74	6.62	93.36	54.00	39.36	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

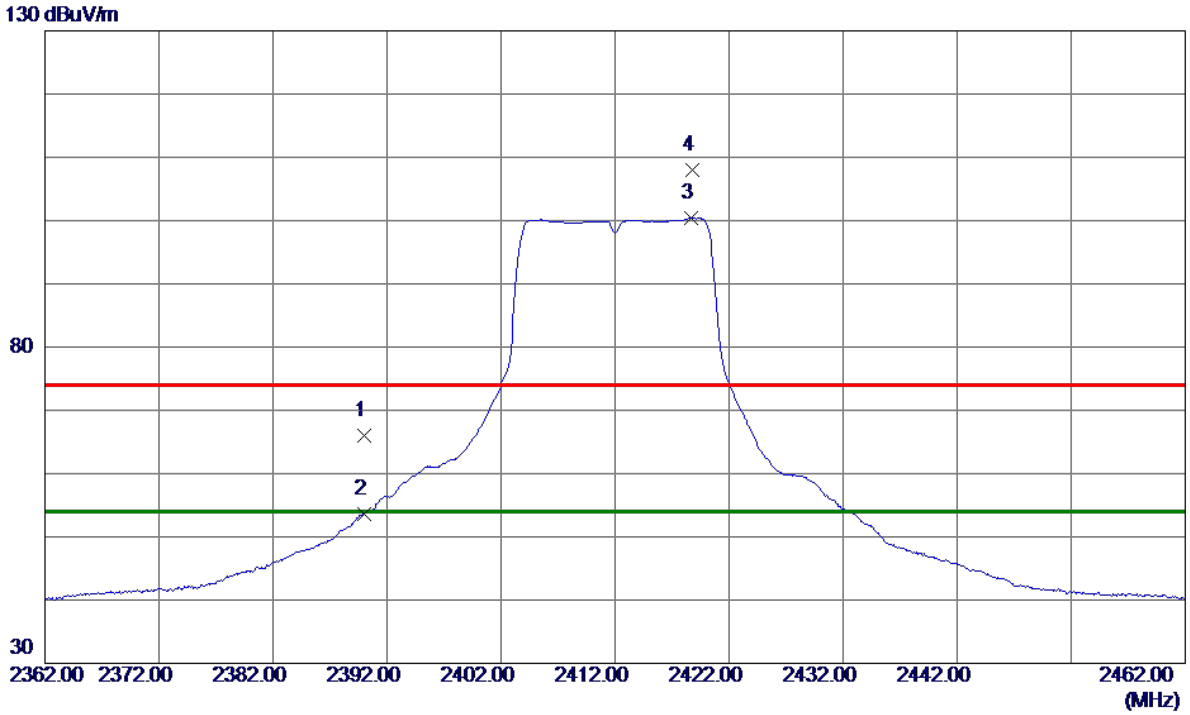
Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4822.8370	40.62	3.57	44.19	74.00	-29.81	Peak	
2 *	4824.0850	30.07	3.57	33.64	54.00	-20.36	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	59.30	6.62	65.92	74.00	-8.08	Peak	
2	2390.0000	47.01	6.62	53.63	54.00	-0.37	AVG	
3 *	2418.7000	93.87	6.62	100.49	54.00	46.49	AVG	No Limit
4	2418.8000	101.32	6.62	107.94	74.00	33.94	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

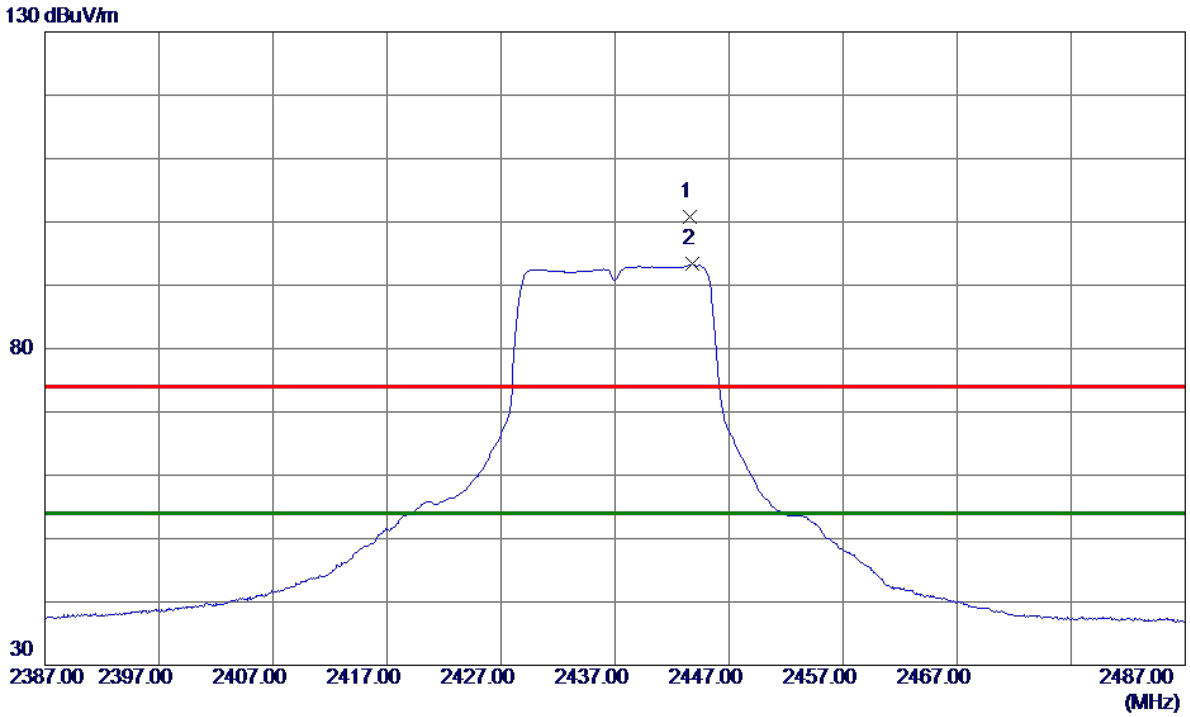
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4823.9450	33.77	3.57	37.34	54.00	-16.66	AVG	
2	4824.9770	46.30	3.57	49.87	74.00	-24.13	Peak	

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	2443.6000	94.27	6.61	100.88	74.00	26.88	Peak	No Limit
2 *	2443.7500	86.70	6.61	93.31	54.00	39.31	AVG	No Limit

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

Test Mode:	TX G Mode 2437 MHz

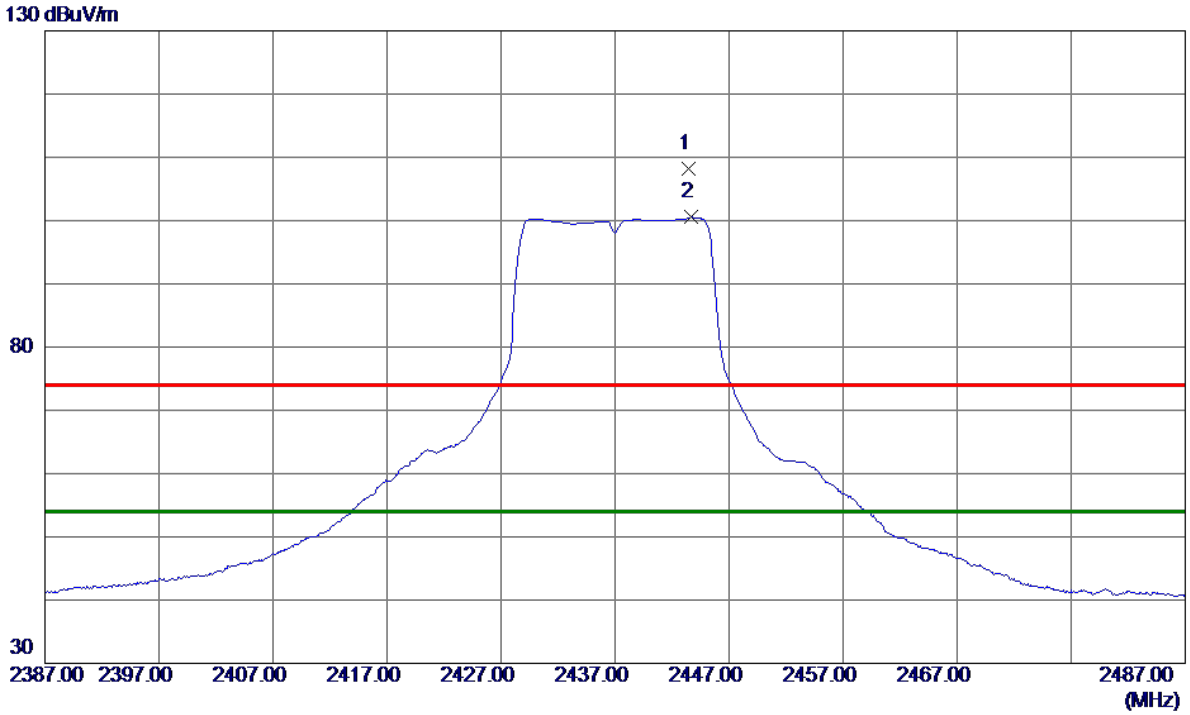
Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4873.8950	30.02	3.68	33.70	54.00	-20.30	AVG	
2	4874.8280	42.20	3.68	45.88	74.00	-28.12	Peak	

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	2443.4500	101.58	6.61	108.19	74.00	34.19	Peak	No Limit
2 *	2443.6500	93.94	6.61	100.55	54.00	46.55	AVG	No Limit

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

Test Mode:	TX G Mode 2437 MHz

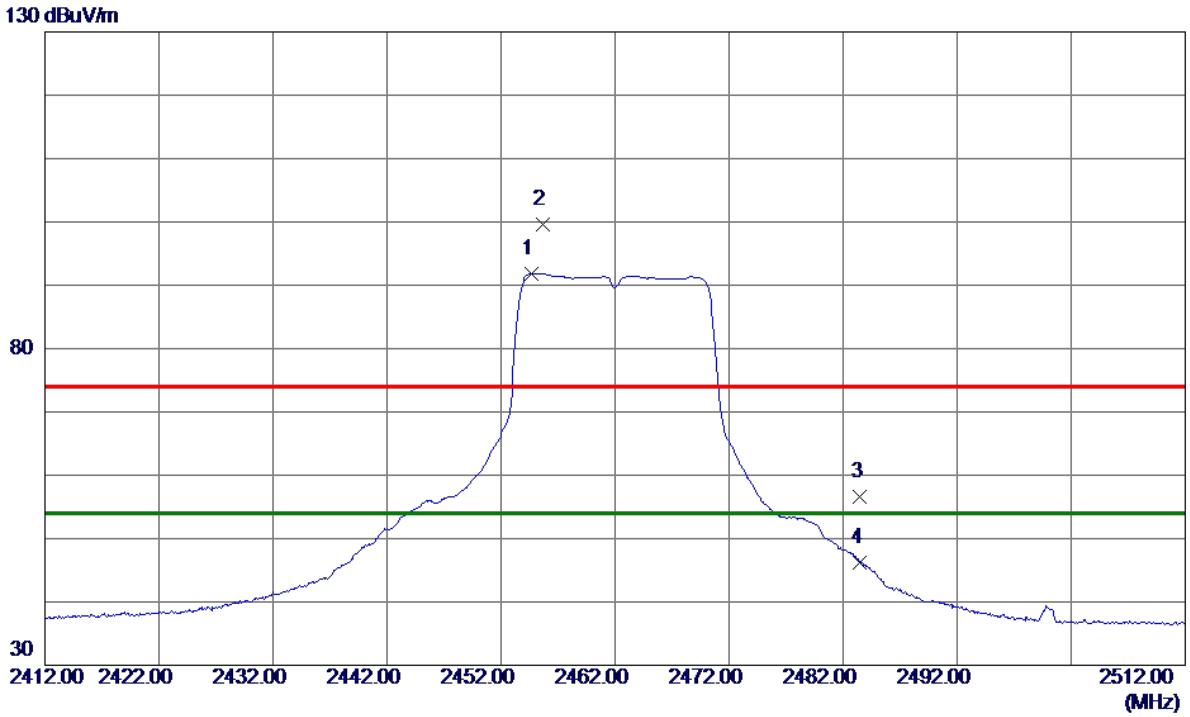
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4873.9270	34.95	3.68	38.63	54.00	-15.37	AVG	
2	4875.0099	47.31	3.68	50.99	74.00	-23.01	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 *	2454.7000	85.28	6.61	91.89	54.00	37.89	AVG	No Limit
2	2455.6500	93.08	6.61	99.69	74.00	25.69	Peak	No Limit
3	2483.5000	49.91	6.61	56.52	74.00	-17.48	Peak	
4	2483.5000	39.66	6.61	46.27	54.00	-7.73	AVG	

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

Test Mode:	TX G Mode 2462 MHz

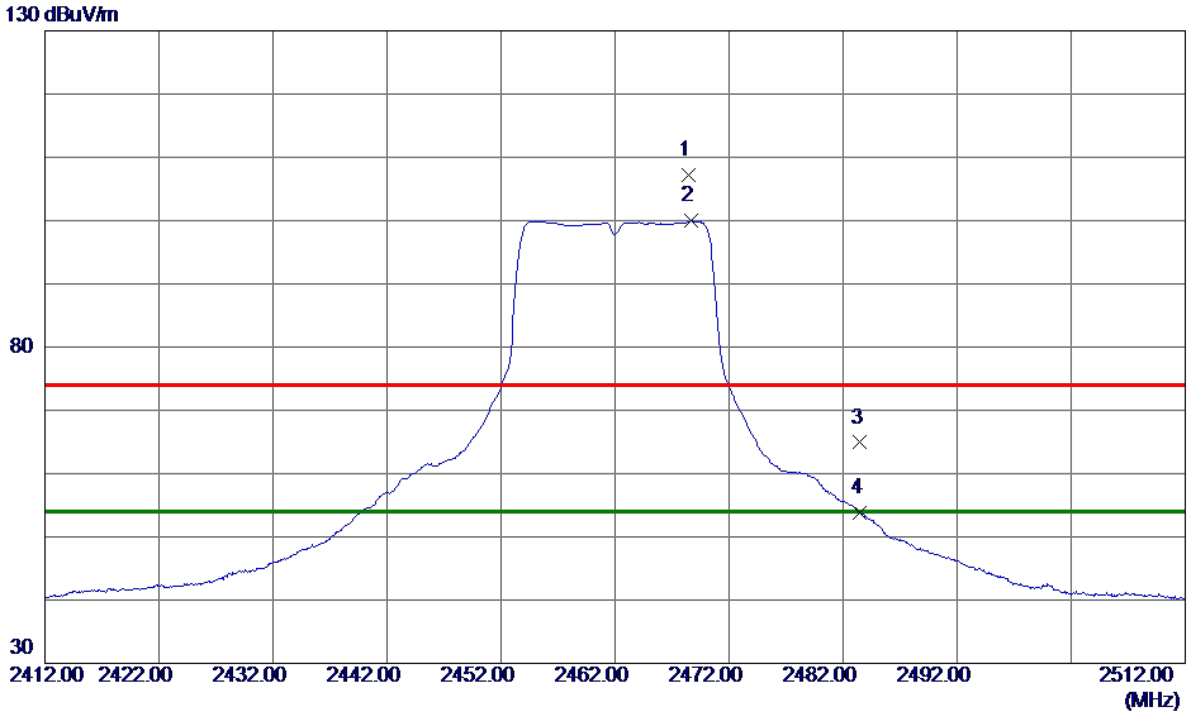
Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4924.0500	34.32	3.79	38.11	54.00	-15.89	AVG	
2	4924.7250	45.35	3.79	49.14	74.00	-24.86	Peak	

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	2468.4500	100.67	6.61	107.28	74.00	33.28	Peak	No Limit
2 *	2468.7000	93.32	6.61	99.93	54.00	45.93	AVG	No Limit
3	2483.5000	58.29	6.61	64.90	74.00	-9.10	Peak	
4	2483.5000	47.12	6.61	53.73	54.00	-0.27	AVG	

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

Test Mode:	TX G Mode 2462 MHz

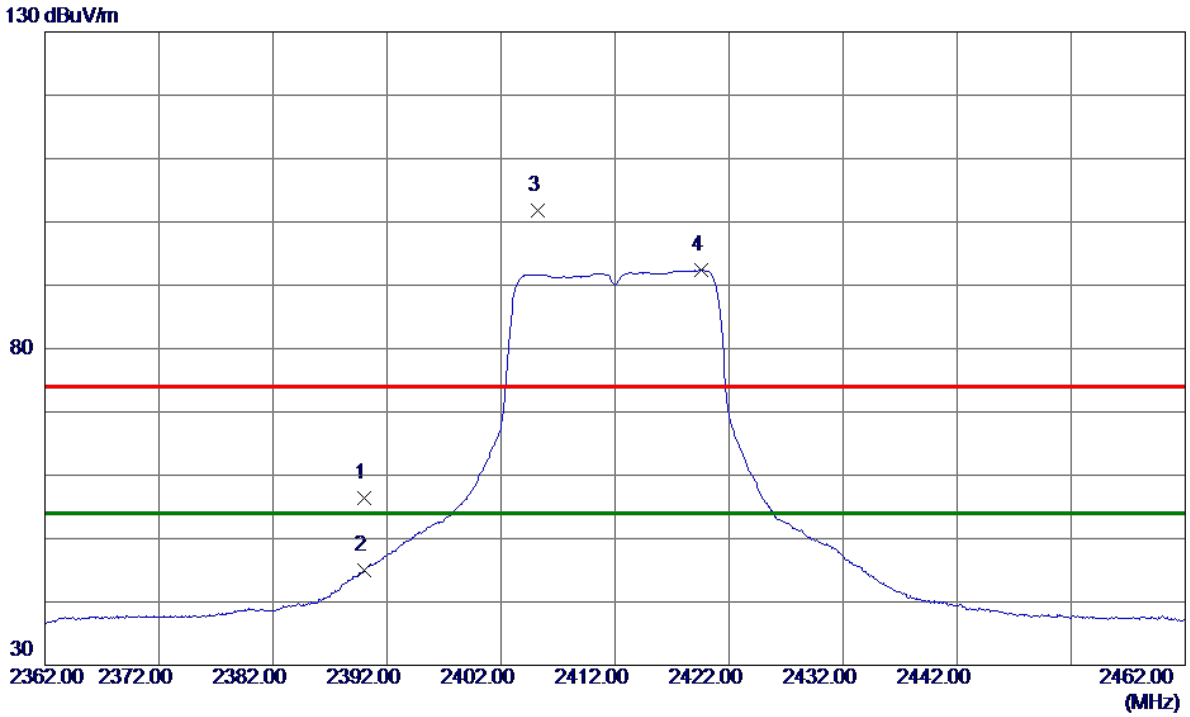
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4924.0370	35.72	3.79	39.51	54.00	-14.49	AVG	
2	4924.8500	47.60	3.79	51.39	74.00	-22.61	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	49.83	6.62	56.45	74.00	-17.55	Peak	
2	2390.0000	38.40	6.62	45.02	54.00	-8.98	AVG	
3	2405.2000	95.20	6.62	101.82	74.00	27.82	Peak	No Limit
4 *	2419.5500	85.78	6.62	92.40	54.00	38.40	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

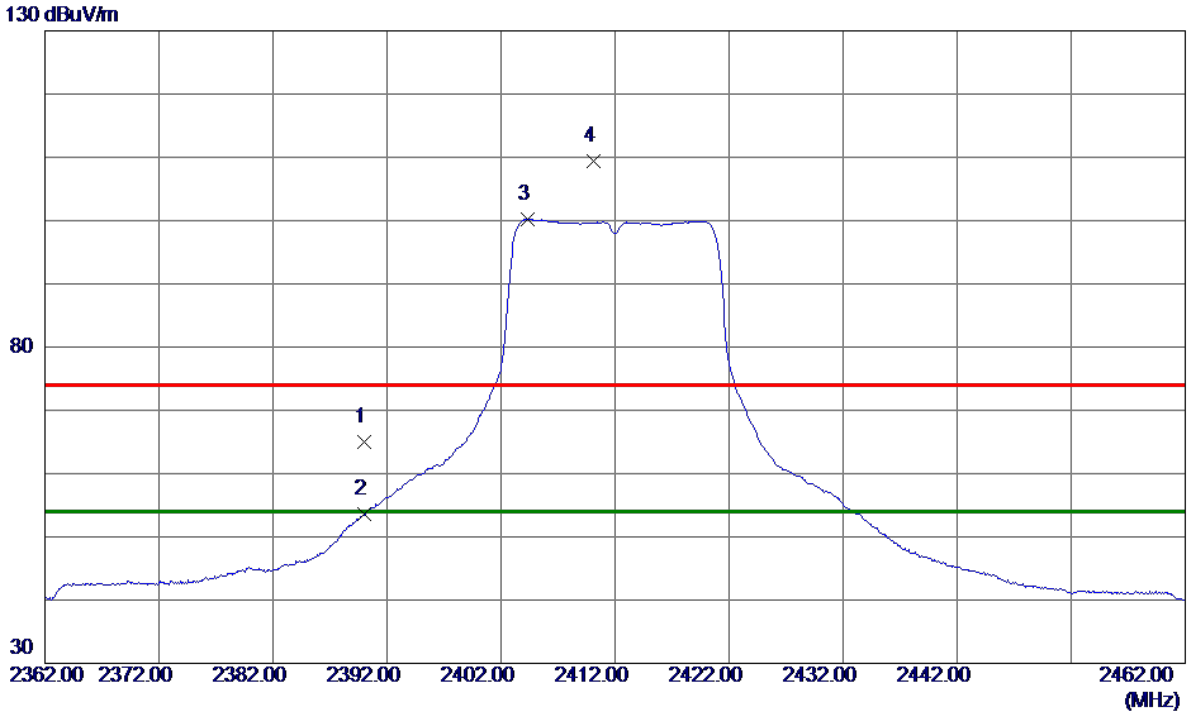
Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4822.9030	38.96	3.57	42.53	74.00	-31.47	Peak	
2 *	4824.0019	28.48	3.57	32.05	54.00	-21.95	AVG	

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	58.46	6.62	65.08	74.00	-8.92	Peak	
2	2390.0000	46.98	6.62	53.60	54.00	-0.40	AVG	
3 *	2404.3000	93.57	6.62	100.19	54.00	46.19	AVG	No Limit
4	2410.1500	102.84	6.62	109.46	74.00	35.46	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

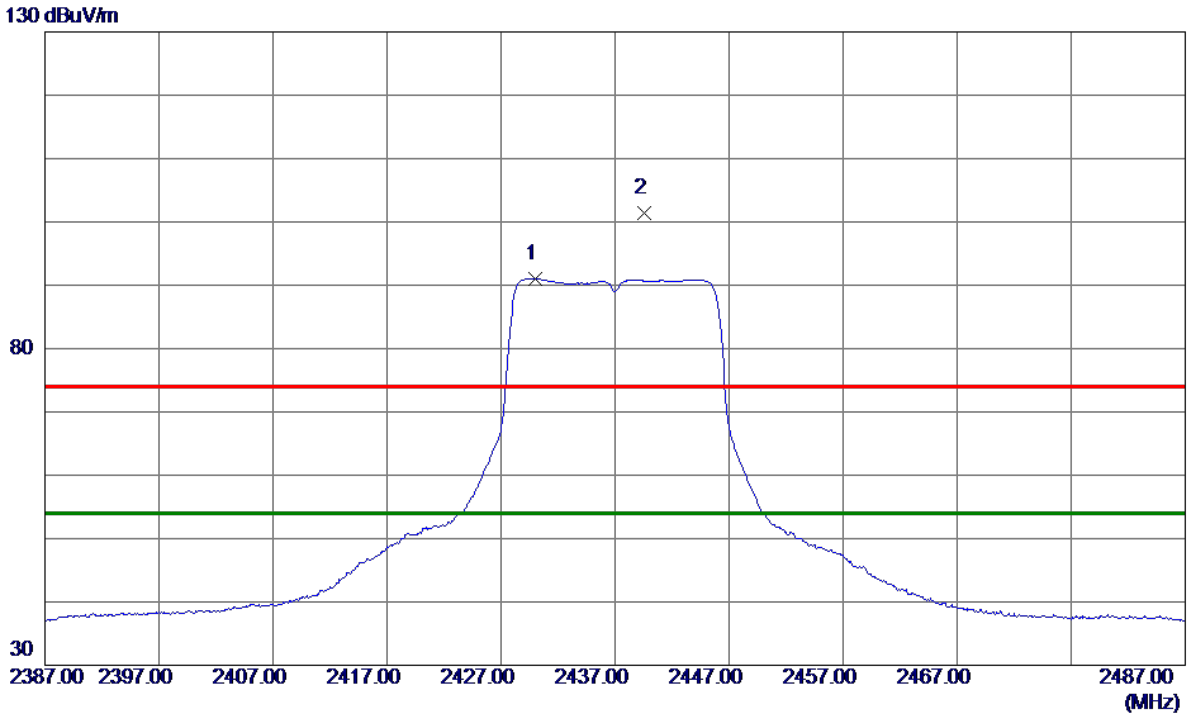
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4823.8920	32.18	3.57	35.75	54.00	-18.25	AVG	
2	4824.3130	41.16	3.57	44.73	74.00	-29.27	Peak	

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 *	2429.9500	84.41	6.62	91.03	54.00	37.03	AVG	No Limit
2	2439.6000	94.80	6.61	101.41	74.00	27.41	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

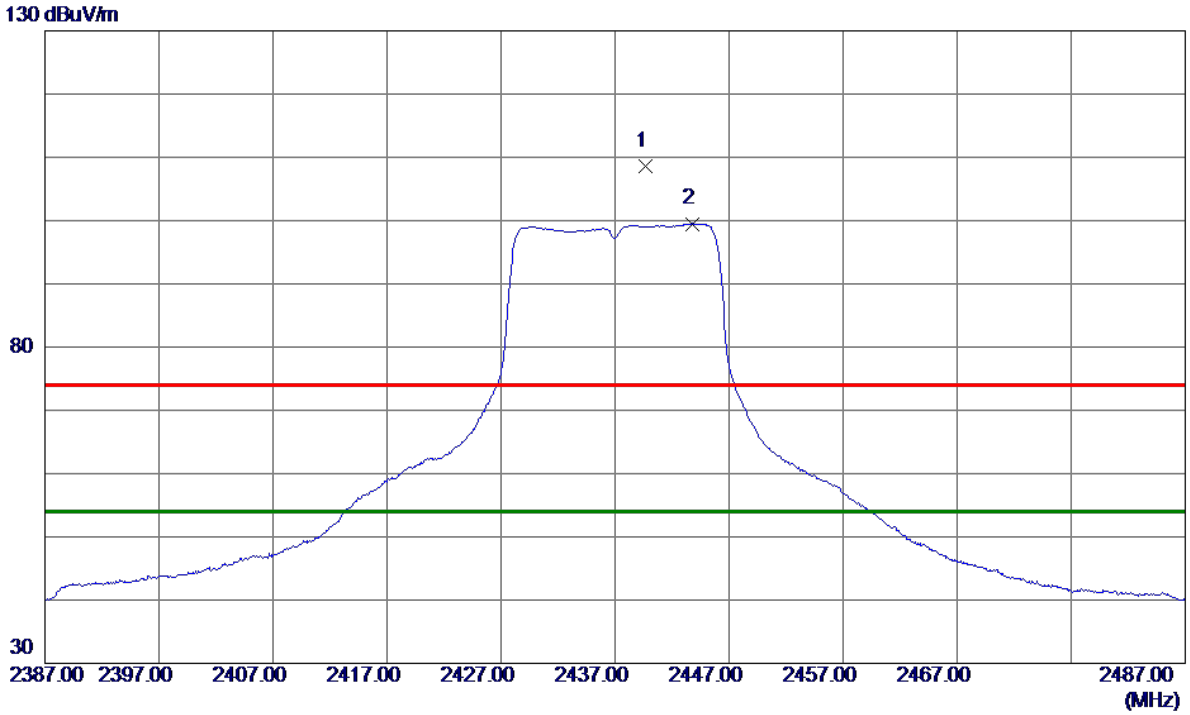
Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4873.9430	38.52	3.68	42.20	74.00	-31.80	Peak	
2 *	4874.0050	27.94	3.68	31.62	54.00	-22.38	AVG	

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	2439.6500	102.03	6.61	108.64	74.00	34.64	Peak	No Limit
2 *	2443.8000	92.89	6.61	99.50	54.00	45.50	AVG	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

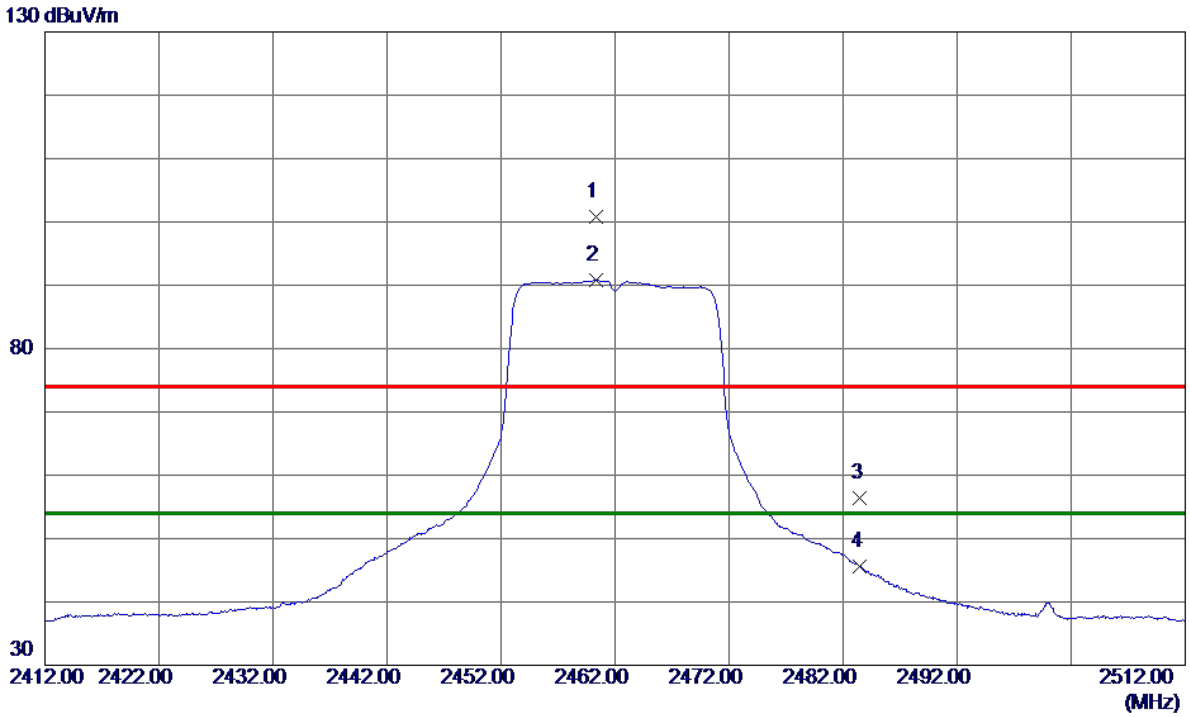
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.0830	31.77	3.68	35.45	54.00	-18.55	AVG	
2	4874.1850	42.00	3.68	45.68	74.00	-28.32	Peak	

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	2460.3500	94.14	6.61	100.75	74.00	26.75	Peak	No Limit
2 *	2460.3500	84.18	6.61	90.79	54.00	36.79	AVG	No Limit
3	2483.5000	49.84	6.61	56.45	74.00	-17.55	Peak	
4	2483.5000	39.08	6.61	45.69	54.00	-8.31	AVG	

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

Test Mode:	TX N-20M Mode 2462 MHz

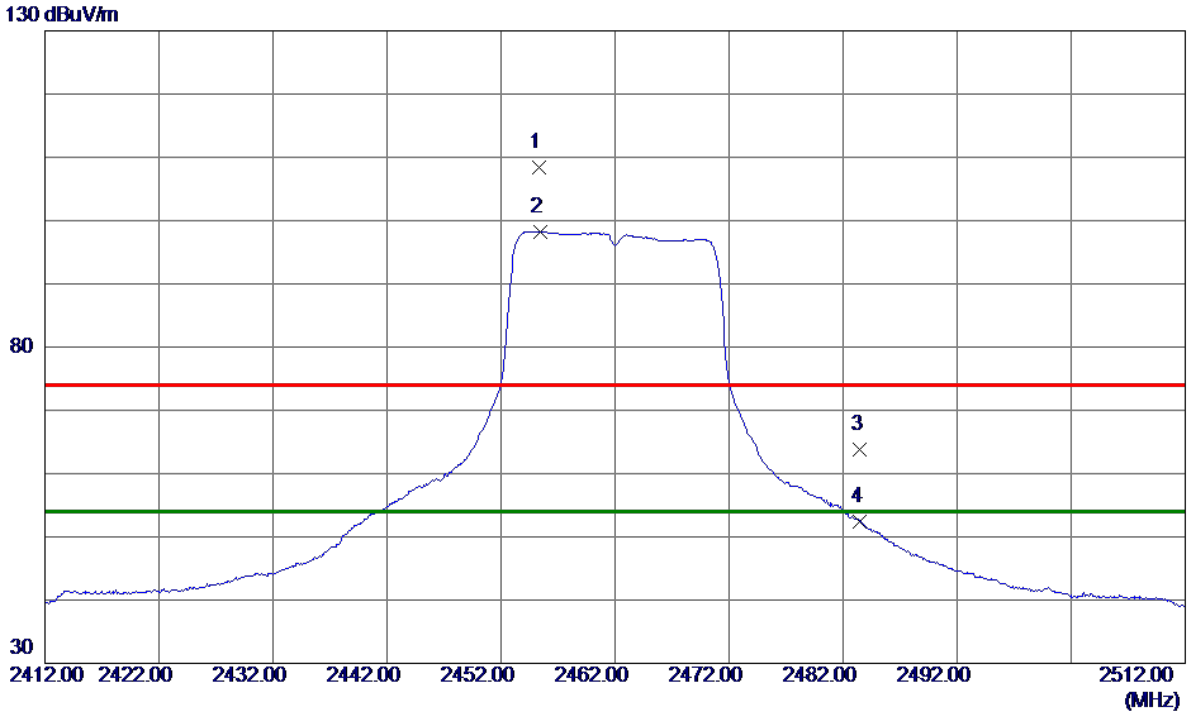
Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4922.3200	40.03	3.79	43.82	74.00	-30.18	Peak	
2 *	4924.1300	29.60	3.79	33.39	54.00	-20.61	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	2455.3000	101.78	6.61	108.39	74.00	34.39	Peak	No Limit
2 *	2455.4000	91.68	6.61	98.29	54.00	44.29	AVG	No Limit
3	2483.5000	57.13	6.61	63.74	74.00	-10.26	Peak	
4	2483.5000	45.85	6.61	52.46	54.00	-1.54	AVG	

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

Test Mode:	TX N-20M Mode 2462 MHz

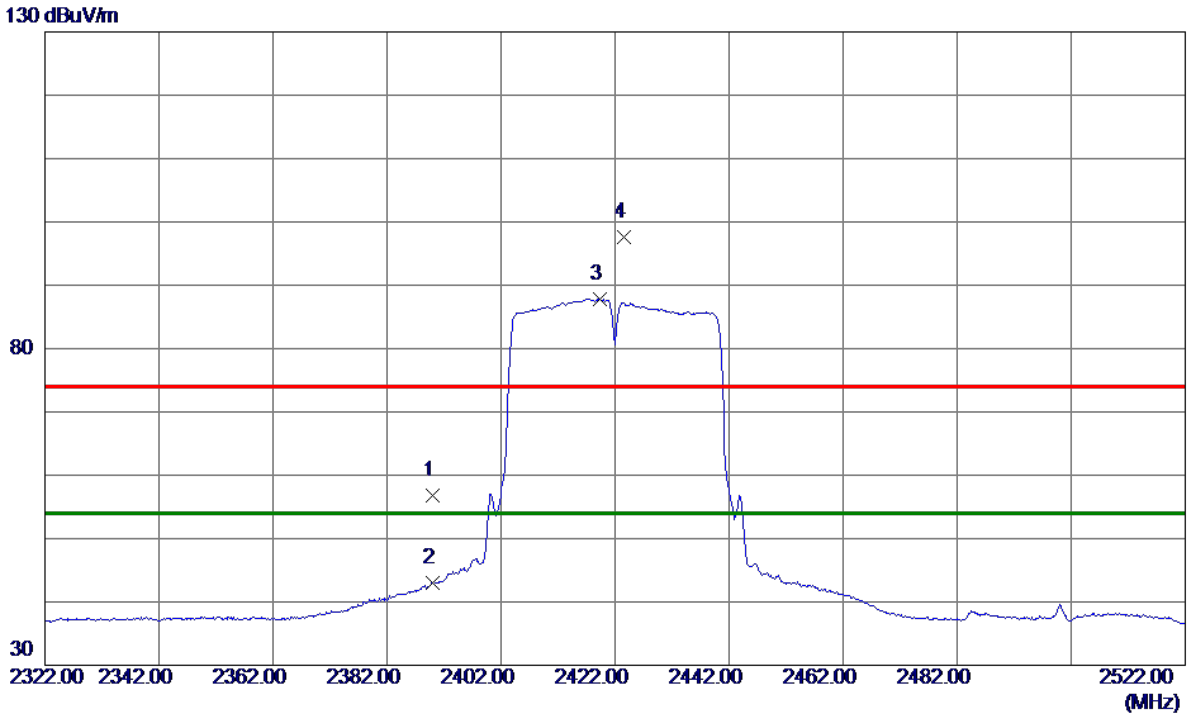
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4923.1950	42.81	3.79	46.60	74.00	-27.40	Peak	
2 *	4924.1269	32.56	3.79	36.35	54.00	-17.65	AVG	

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

Test Mode:	TX N-40M Mode 2422MHz

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	50.18	6.62	56.80	74.00	-17.20	Peak	
2	2390.0000	36.34	6.62	42.96	54.00	-11.04	AVG	
3 *	2419.3000	81.16	6.62	87.78	54.00	33.78	AVG	No Limit
4	2423.5000	90.89	6.62	97.51	74.00	23.51	Peak	No Limit

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

Test Mode:	TX N-40M Mode 2422MHz

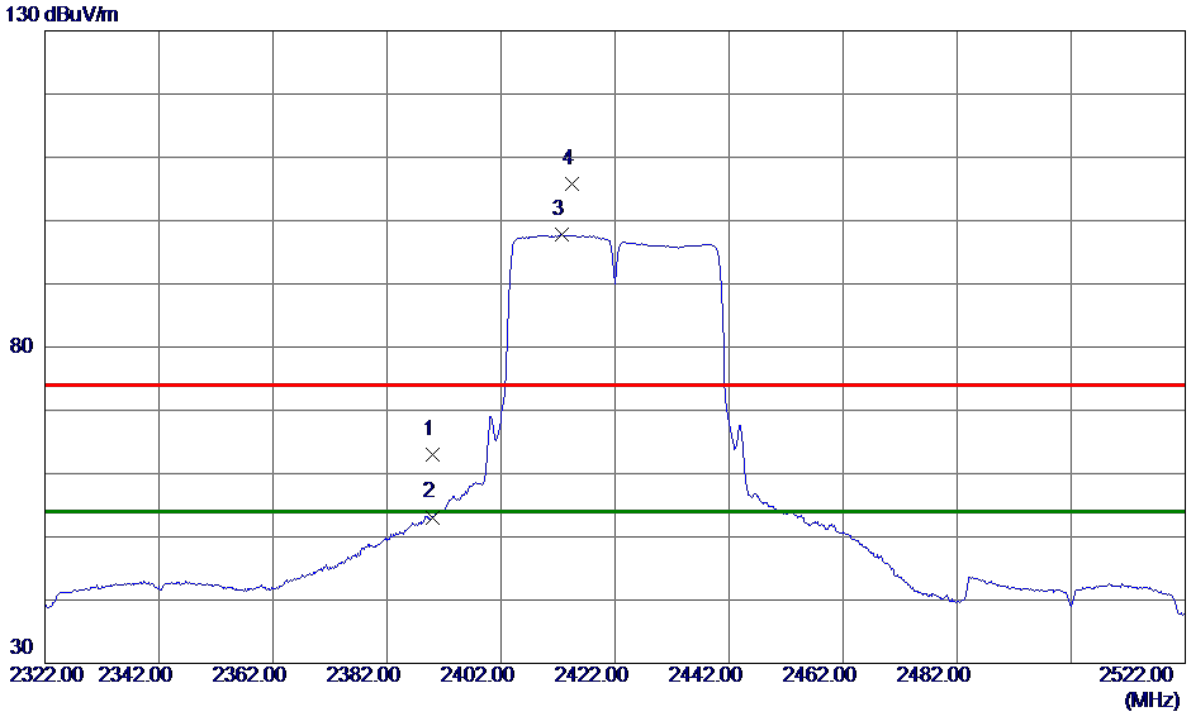
Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4843.9500	28.07	3.62	31.69	54.00	-22.31	AVG	
2	4844.1600	39.06	3.62	42.68	74.00	-31.32	Peak	

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

Test Mode:	TX N-40M Mode 2422MHz

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	56.43	6.62	63.05	74.00	-10.95	Peak	
2	2390.0000	46.48	6.62	53.10	54.00	-0.90	AVG	
3 *	2412.6000	91.10	6.62	97.72	54.00	43.72	AVG	No Limit
4	2414.5000	99.21	6.62	105.83	74.00	31.83	Peak	No Limit

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

Test Mode:	TX N-40M Mode 2422MHz

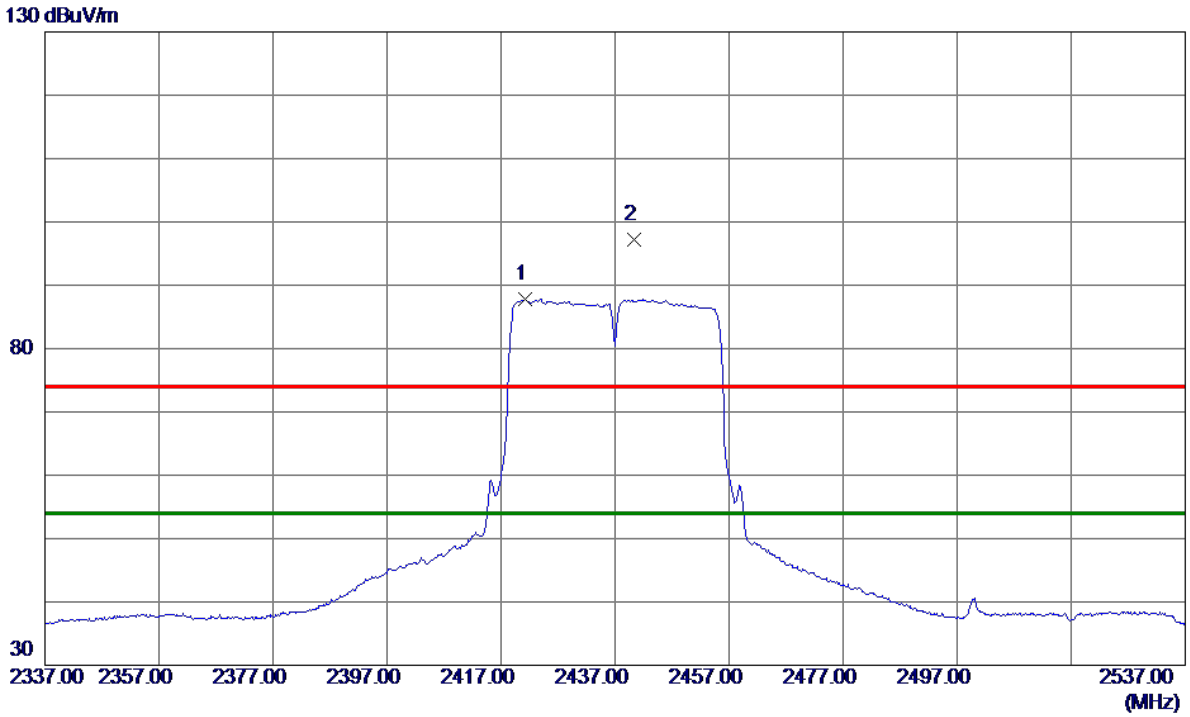
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4844.0330	30.94	3.62	34.56	54.00	-19.44	AVG	
2	4844.0850	40.72	3.62	44.34	74.00	-29.66	Peak	

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

Test Mode:	TX N-40M 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 *	2421.2000	81.12	6.62	87.74	54.00	33.74	AVG	No Limit
2	2440.4000	90.61	6.61	97.22	74.00	23.22	Peak	No Limit

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

Test Mode:	TX N-40M Mode 2437 MHz

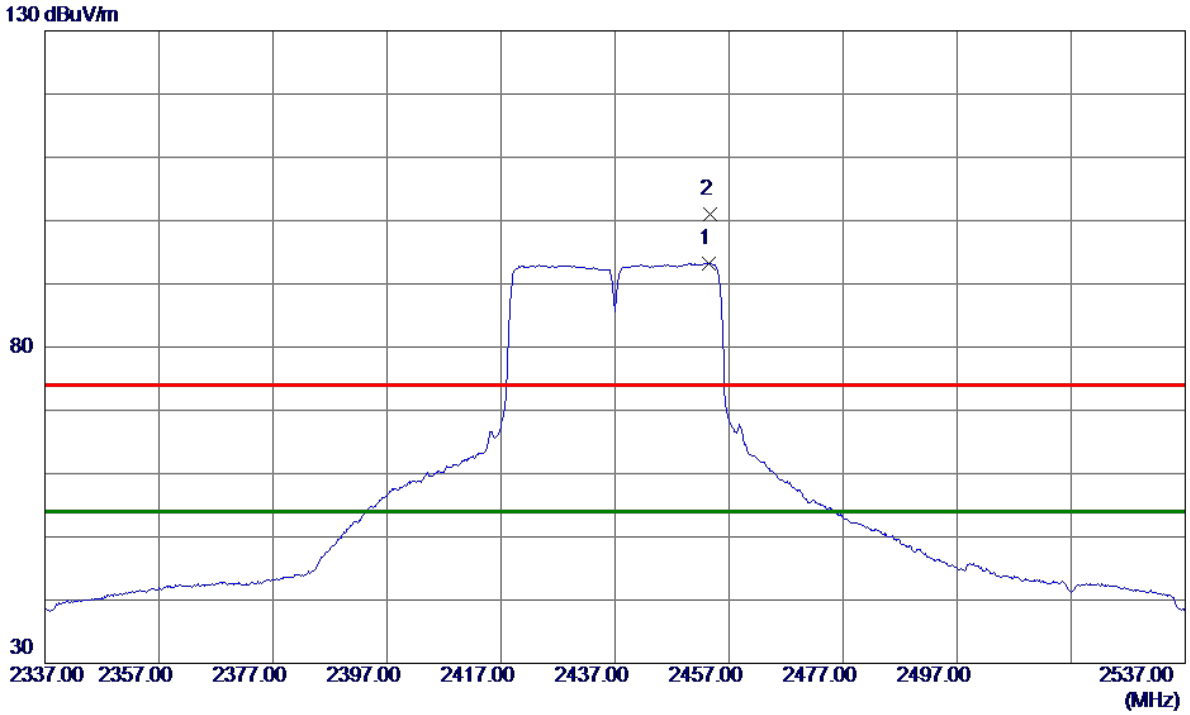
Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.1549	27.34	3.68	31.02	54.00	-22.98	AVG	
2	4876.1100	38.23	3.69	41.92	74.00	-32.08	Peak	

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

Test Mode:	TX N-40M 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 *	2453.5000	86.64	6.61	93.25	54.00	39.25	AVG	No Limit
2	2453.6000	94.49	6.61	101.10	74.00	27.10	Peak	No Limit

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

Test Mode:	TX N-40M Mode 2437 MHz

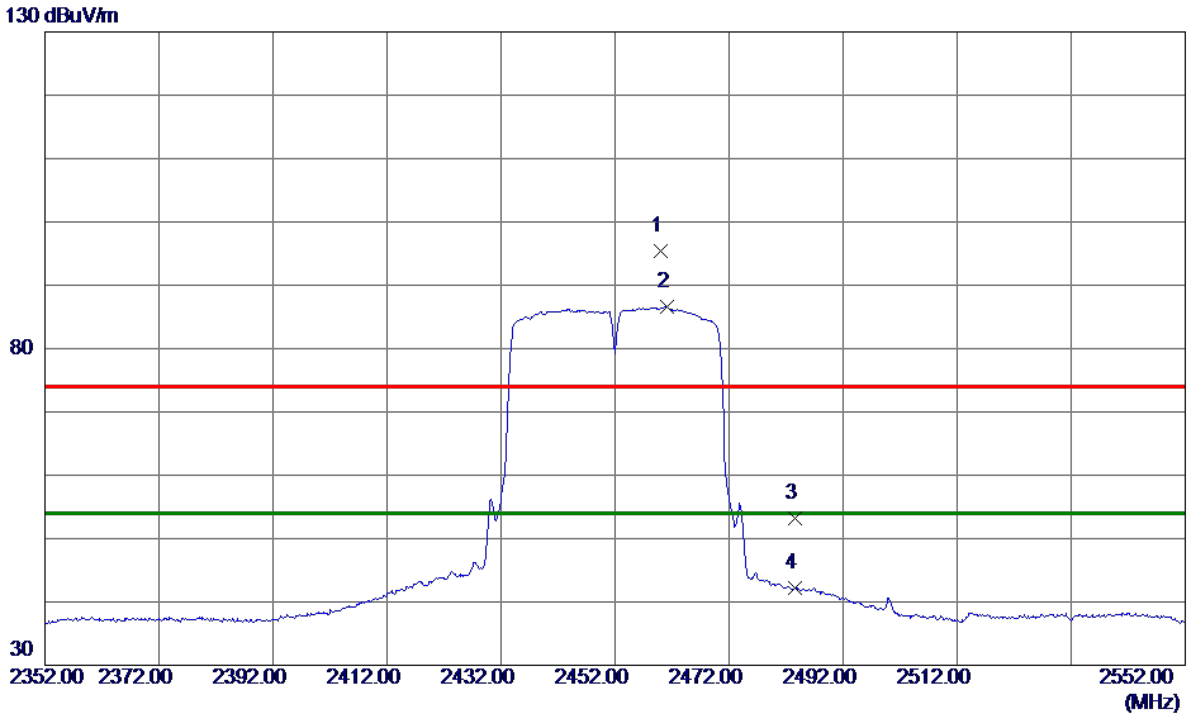
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4874.0419	40.27	3.68	43.95	74.00	-30.05	Peak	
2 *	4874.0520	30.39	3.68	34.07	54.00	-19.93	AVG	

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

Test Mode:	TX N-40M Mode 2452 MHz

Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2460.0000	88.87	6.61	95.48	74.00	21.48	Peak	No Limit
2 *	2461.1000	80.07	6.61	86.68	54.00	32.68	AVG	No Limit
3	2483.5000	46.63	6.61	53.24	74.00	-20.76	Peak	
4	2483.5000	35.55	6.61	42.16	54.00	-11.84	AVG	

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

Test Mode:	TX N-40M Mode 2452 MHz

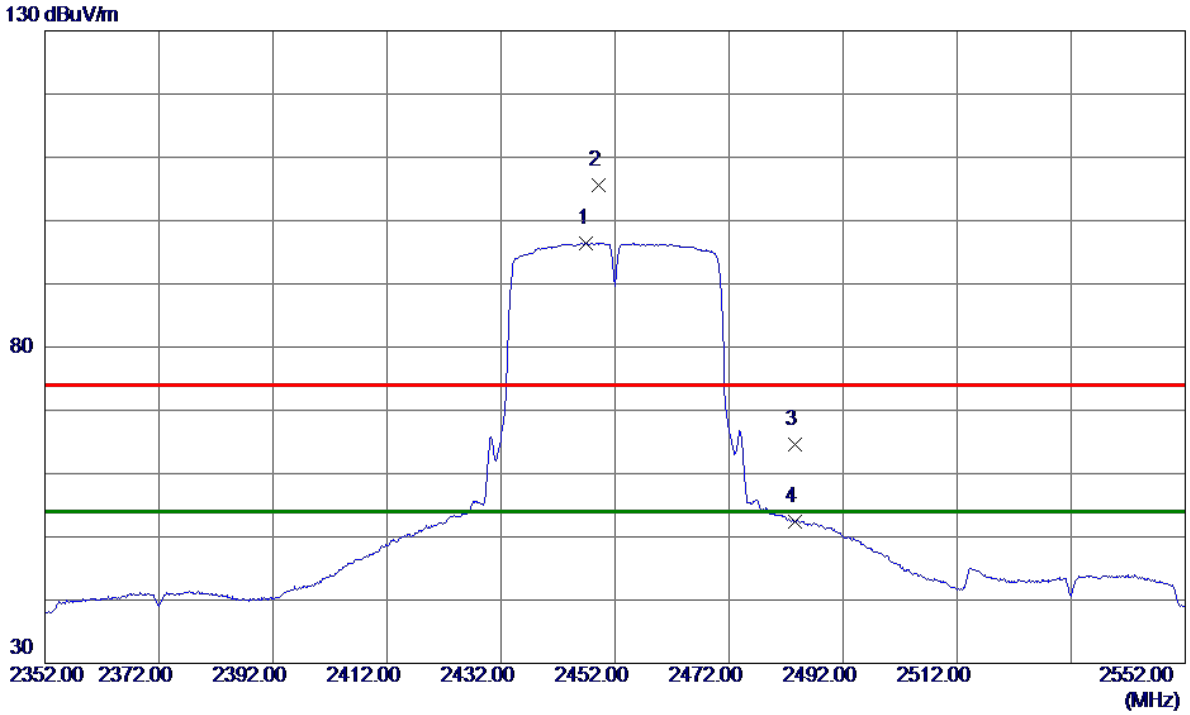
Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4903.7480	36.59	3.75	40.34	74.00	-33.66	Peak	
2 *	4904.0200	27.21	3.75	30.96	54.00	-23.04	AVG	

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

Test Mode:	TX N-40M Mode 2452 MHz

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2447.0000	89.81	6.61	96.42	54.00	42.42	AVG	No Limit
2	2449.1000	98.94	6.61	105.55	74.00	31.55	Peak	No Limit
3	2483.5000	57.93	6.61	64.54	74.00	-9.46	Peak	
4	2483.5000	45.79	6.61	52.40	54.00	-1.60	AVG	

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

Test Mode:	TX N-40M Mode 2452 MHz

Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4904.0379	39.34	3.75	43.09	74.00	-30.91	Peak	
2 *	4904.1050	30.12	3.75	33.87	54.00	-20.13	AVG	

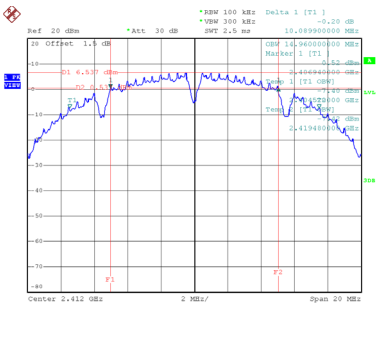
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX E - BANDWIDTH

Test Mode	TX B Mode

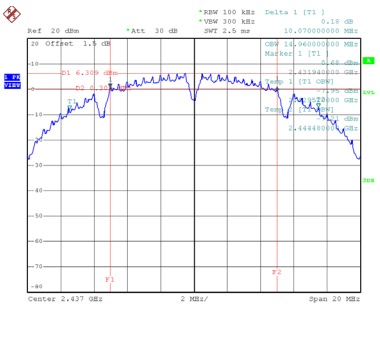
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	10.09	14.96	500	Complies
06	2437	10.07	14.96	500	Complies
11	2462	10.10	14.96	500	Complies

CH01



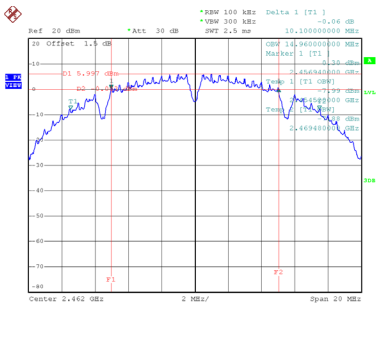
Date: 10.OCT.2018 11:32:47

CH06



Date: 10.OCT.2018 11:34:25

CH11

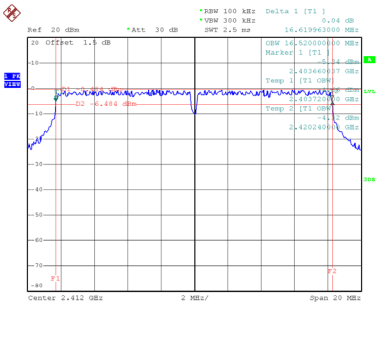


Date: 10.OCT.2018 11:35:53

Test Mode	TX G Mode

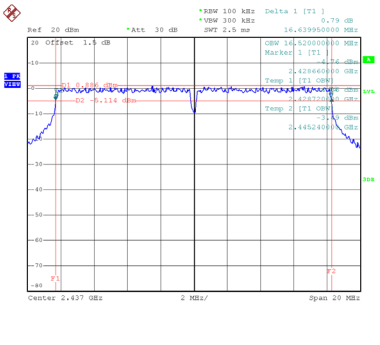
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	16.62	16.52	500	Complies
06	2437	16.64	16.52	500	Complies
11	2462	16.63	16.52	500	Complies

CH01



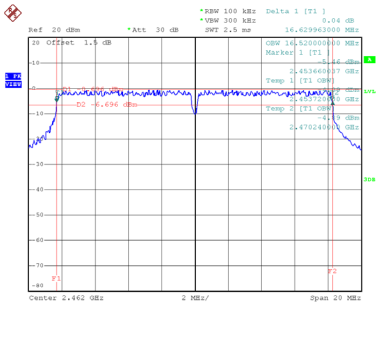
Date: 10.OCT.2018 11:37:15

CH06



Date: 10.OCT.2018 11:39:40

CH11

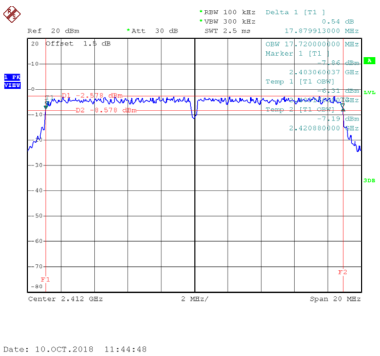


Date: 10.OCT.2018 11:41:16

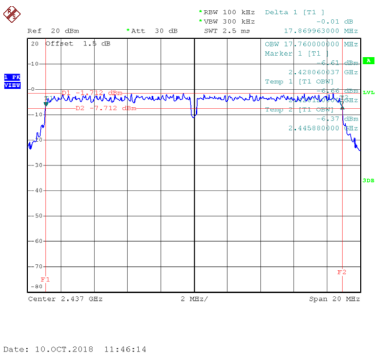
Test Mode	TX N-20M Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	17.88	17.72	500	Complies
06	2437	17.87	17.76	500	Complies
11	2462	17.86	17.72	500	Complies

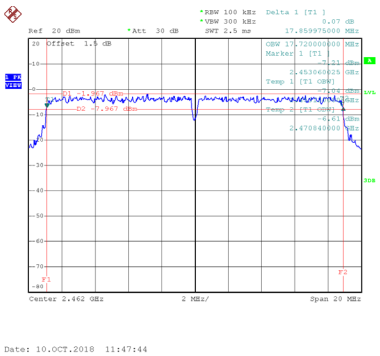
CH01



CH06



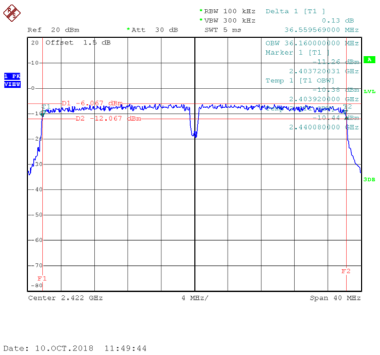
CH11



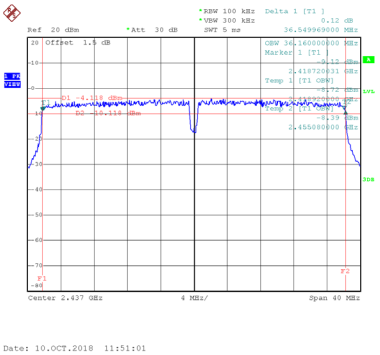
Test Mode	TX N-40M Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
03	2422	36.56	36.16	500	Complies
06	2437	36.55	36.16	500	Complies
09	2452	36.56	36.16	500	Complies

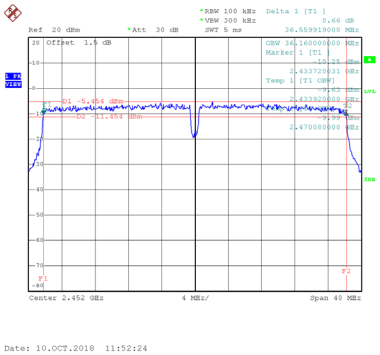
CH03



CH06



CH09



APPENDIX F - MAXIMUM OUTPUT POWER

Test Mode	TX B Mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	19.66	0.0925	30.00	1.0000	Complies
06	2437	19.41	0.0873	30.00	1.0000	Complies
11	2462	19.14	0.0820	30.00	1.0000	Complies

Test Mode	TX G Mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	24.21	0.2636	30.00	1.0000	Complies
06	2437	24.65	0.2917	30.00	1.0000	Complies
11	2462	24.04	0.2535	30.00	1.0000	Complies

Test Mode	TX N-20M Mode_Ant. 1

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	22.55	0.1799	30.00	1.0000	Complies
06	2437	23.68	0.2333	30.00	1.0000	Complies
11	2462	22.14	0.1637	30.00	1.0000	Complies

Test Mode	TX N-20M Mode_Ant. 2

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	22.51	0.1782	30.00	1.0000	Complies
06	2437	23.78	0.2388	30.00	1.0000	Complies
11	2462	22.09	0.1618	30.00	1.0000	Complies

Test Mode	TX N-20M Mode_Total

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	25.54	0.3581	30.00	1.0000	Complies
06	2437	26.74	0.4721	30.00	1.0000	Complies
11	2462	25.13	0.3255	30.00	1.0000	Complies

Test Mode	TX N-40M Mode_Ant. 1

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	21.62	0.1452	30.00	1.0000	Complies
06	2437	23.66	0.2323	30.00	1.0000	Complies
09	2452	22.38	0.1730	30.00	1.0000	Complies

Test Mode	TX N-40M Mode_Ant. 2

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	20.88	0.1225	30.00	1.0000	Complies
06	2437	23.79	0.2393	30.00	1.0000	Complies
09	2452	21.56	0.1432	30.00	1.0000	Complies

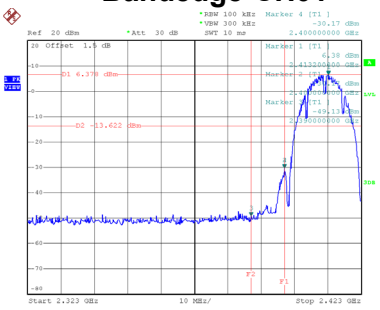
Test Mode	TX N-40M Mode_Total

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	24.28	0.2677	30.00	1.0000	Complies
06	2437	26.74	0.4716	30.00	1.0000	Complies
09	2452	25.00	0.3162	30.00	1.0000	Complies

APPENDIX G - CONDUCTED SPURIOUS EMISSIONS

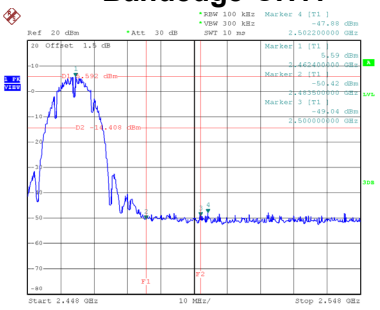
Test Mode	TX B Mode

Bandedge-CH01



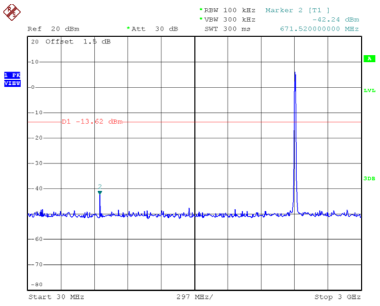
Date: 10.OCT.2018 11:32:55

Bandedge-CH11

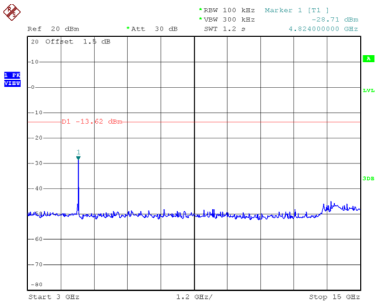


Date: 10.OCT.2018 11:36:01

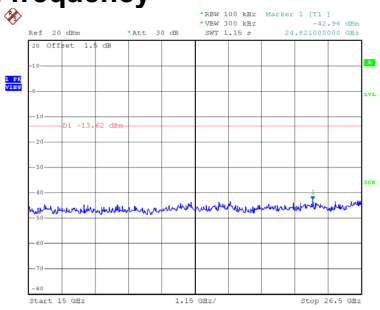
CH01 – 10th Harmonic of the fundamental frequency



Date: 10.OCT.2018 11:33:09

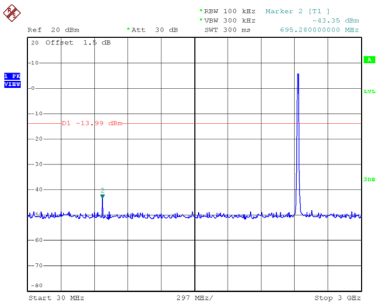


Date: 10.OCT.2018 11:33:18

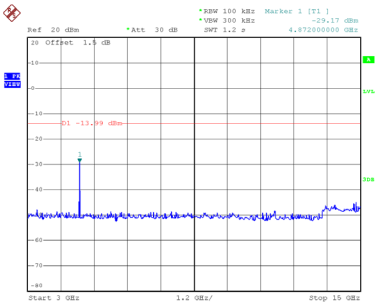


Date: 10.OCT.2018 11:33:26

CH06 – 10th Harmonic of the fundamental frequency



Date: 10.OCT.2018 11:34:47



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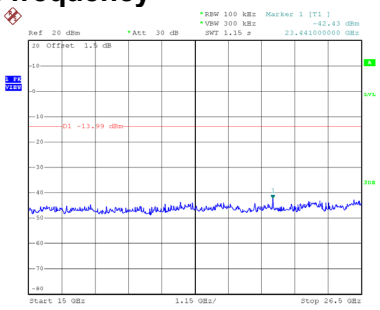
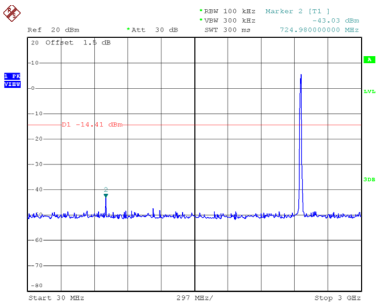
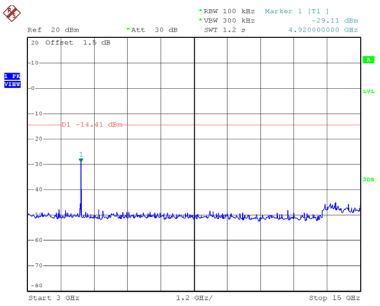


Date: 10.OCT.2018 11:35:04

CH11 – 10th Harmonic of the fundamental frequency



Date: 10.OCT.2018 11:36:15



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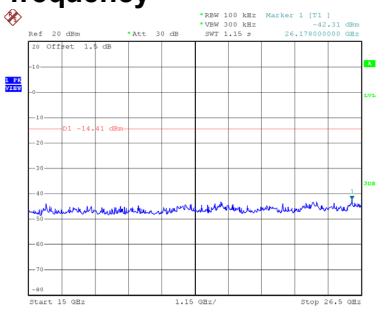
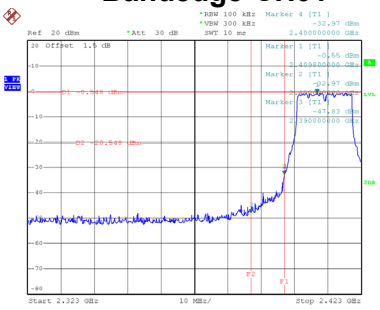


Date: 10.OCT.2018 11:36:32

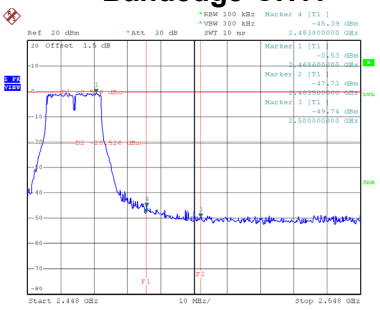
Test Mode	TX G Mode

Bandedge-CH01



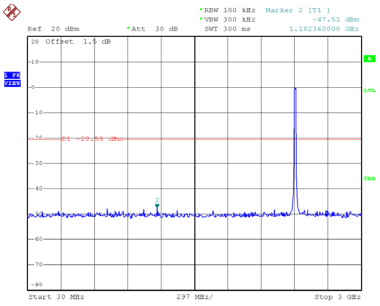
Date: 10.OCT.2018 11:37:23

Bandedge-CH11

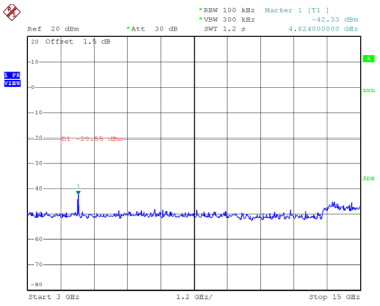


Date: 10.OCT.2018 11:41:24

CH01 – 10th Harmonic of the fundamental frequency



Date: 10.OCT.2018 11:37:37



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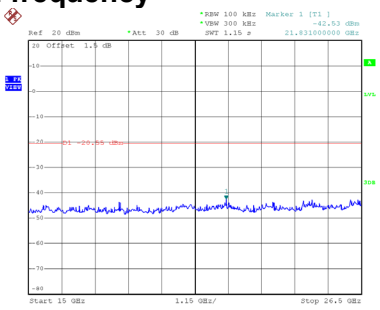
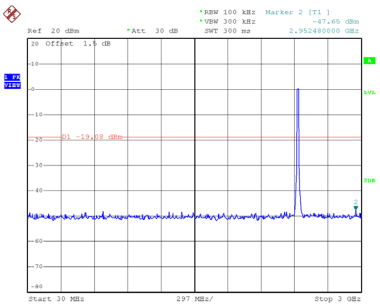


Date: 10.OCT.2018 11:37:54

CH06 – 10th Harmonic of the fundamental frequency



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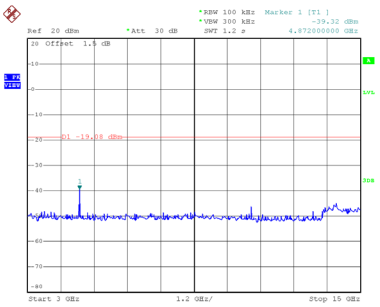

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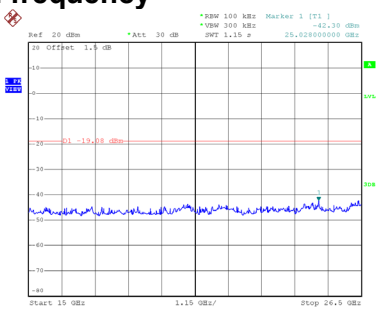

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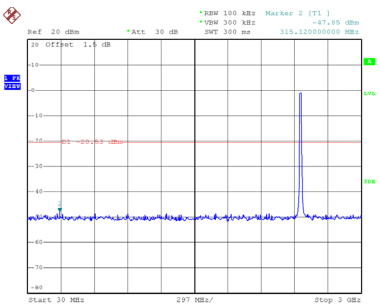
CH11 – 10th Harmonic of the fundamental frequency



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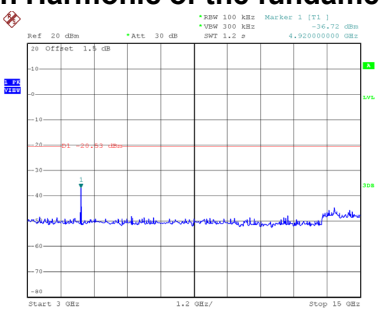

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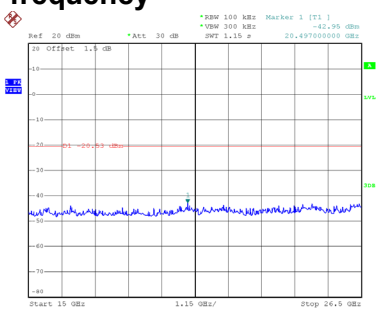
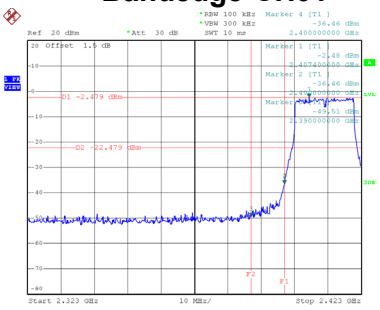


Date: 10.OCT.2018 11:41:55

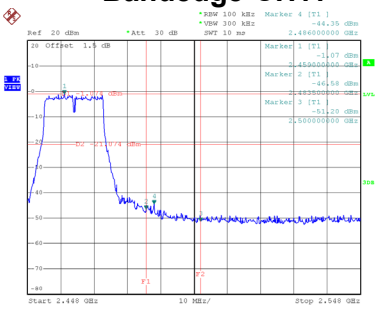
Test Mode	TX N-20M Mode_Ant. 1

Bandedge-CH01



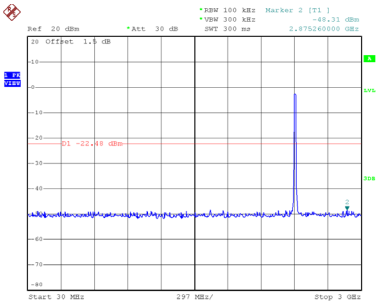
Date: 10.OCT.2018 11:44:55

Bandedge-CH11



Date: 10.OCT.2018 11:47:52

CH01 – 10th Harmonic of the fundamental frequency



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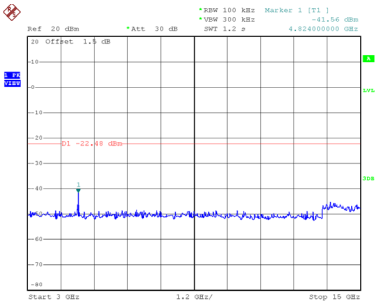

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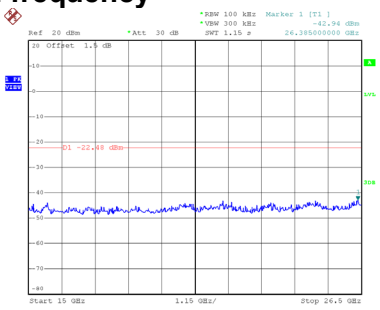
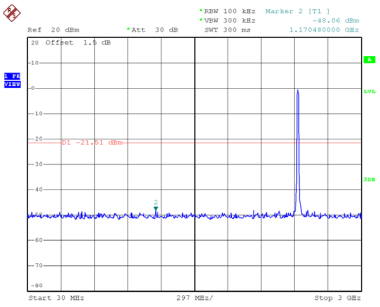
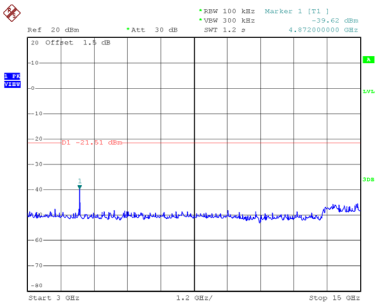


Date: 10.OCT.2018 11:45:26

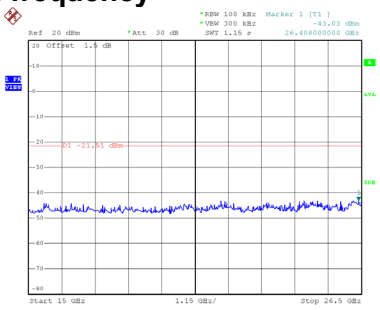
CH06 – 10th Harmonic of the fundamental frequency



Date: 10.OCT.2018 11:46:36

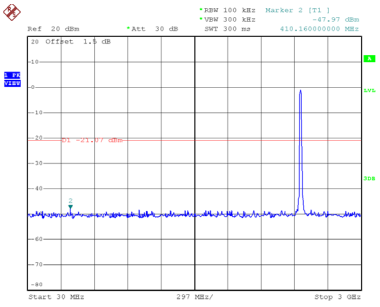


Date: 10.OCT.2018 11:46:44

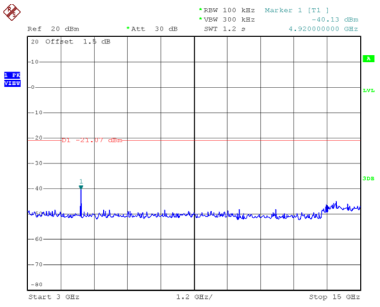


Date: 10.OCT.2018 11:46:53

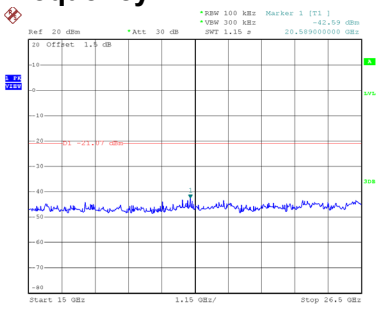
CH11 – 10th Harmonic of the fundamental frequency



Date: 10.OCT.2018 11:48:06



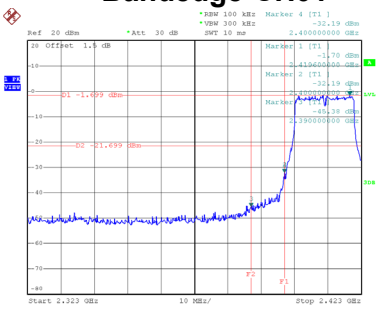
Date: 10.OCT.2018 11:48:14



Date: 10.OCT.2018 11:48:23

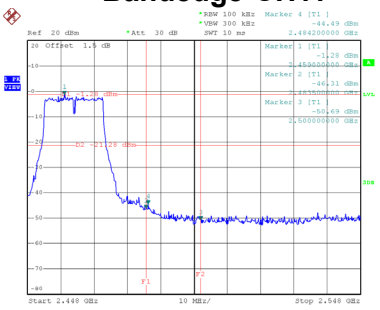
Test Mode	TX N-20M Mode_Ant. 2

Bandedge-CH01



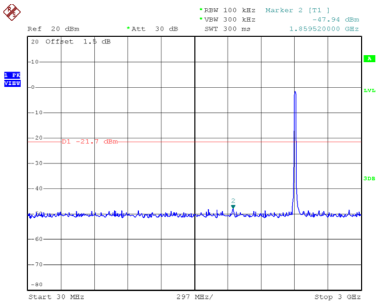
Date: 10.OCT.2018 11:57:24

Bandedge-CH11

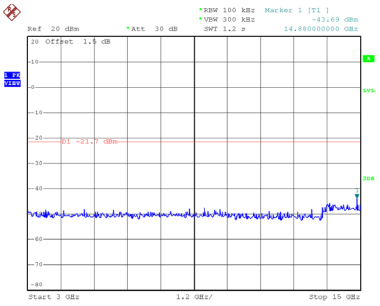


Date: 10.OCT.2018 12:00:17

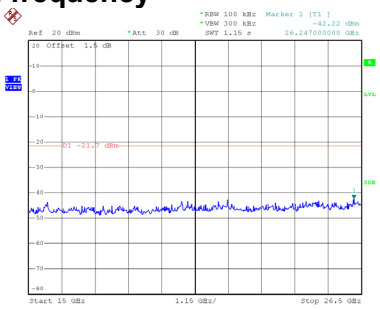
CH01 – 10th Harmonic of the fundamental frequency



Date: 10.OCT.2018 11:57:38

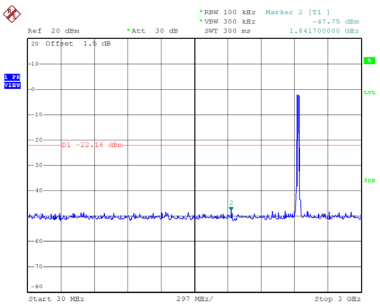


Date: 10.OCT.2018 11:57:47

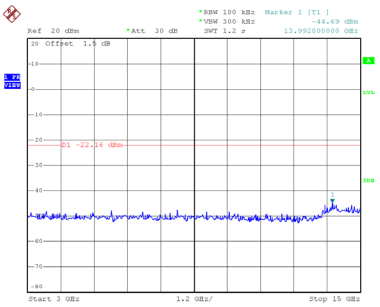


Date: 10.OCT.2018 11:57:55

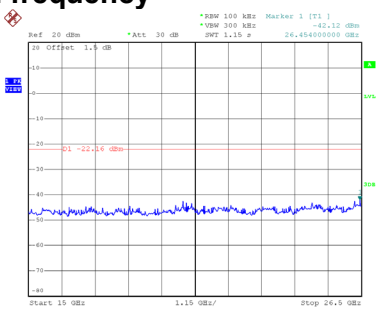
CH06 – 10th Harmonic of the fundamental frequency



Date: 10.OCT.2018 11:59:07

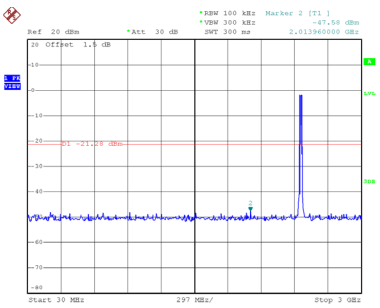


Date: 10.OCT.2018 11:59:16

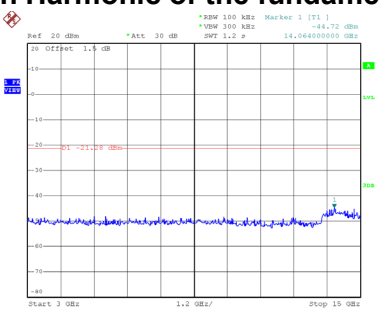


Date: 10.OCT.2018 11:59:24

CH11 – 10th Harmonic of the fundamental frequency



Date: 10.OCT.2018 12:00:30



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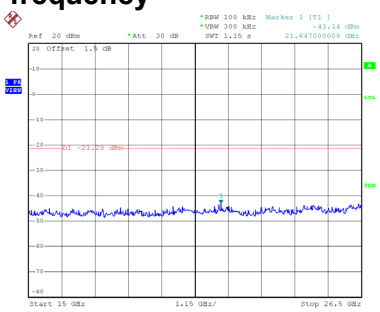

Date: 10.OCT.2018 12:00:47