

FCC Radio Test Report

FCC ID: 2AG7CSPEED15

This report concerns: Original Grant

Project No. : 2102H005 Equipment : IP CAMERA

Brand Name : N/A

Test Model : Speed 15S

Series Model : Speed 15X, Speed 15T

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Date of Receipt : Feb. 01, 2021

Date of Test : Feb. 01, 2021~Feb. 18, 2021

Issued Date : Feb. 20, 2021

Report Version : R00

Test Sample: Engineering Sample No.: SH2021020111-1 for radiated;

SH2021020111-2 for conducted.

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.

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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.	Feb. 20, 2021



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. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai 201210, China

BTL's Test Firm Registration Number for FCC: 476765

BTL's Designation Number for FCC: CN1241

1.2 MEASUREMENT UNCERTAINTY

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

The BTL measurement uncertainty as below table:

A. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	U, (dB)
SH-C01	CISPR	150 KHz~30 MHz	2.70

B. Radiated emissions test:

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

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

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By
AC Power Line Conducted Emissions	17°C	49%	AC 120V/60Hz	Joven Xiong
Radiated Emissions-30 MHz to 1GHz	24°C	58%	AC 120V/60Hz	Forest Li
Radiated Emissions-Above 1000 MHz	24°C	58%	AC 120V/60Hz	Forest Li
Bandwidth	23°C	62%	AC 120V/60Hz	Danny Dang
Maximum output power	23°C	62%	AC 120V/60Hz	Vince Zong
Conducted Spurious Emissions	23°C	62%	AC 120V/60Hz	Danny Dang
Power Spectral Density	23°C	62%	AC 120V/60Hz	Danny Dang



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	IP CAMERA
Brand Name	N/A
Test Model	Speed 15S
Series Model	Speed 15X, Speed 15T
Model Difference(s)	Only different in model name.
Software Version	Smart life
Hardware Version	PCB-SPEED15S-S1MB-F37 REV1_0
Power Source	DC Voltage supplied from AC/ DC adapter. #1 Brand/Model: GPO/ GTA92-0501000US #2 Brand/Model: SZTY/ TPA-46B050100UU
Power Rating	#1 I/P: 100-240V ~ 50/60Hz 0.3A O/P: USB-A 5.0V 1.0A, 5.0W #2 I/P: 100-240V ~ 50/60Hz 0.2A O/P: 5.0V 1000mA
Operation Frequency	2412 MHz ~ 2462 MHz
Modulation Type	IEEE 802.11b: DSSS IEEE 802.11g: OFDM IEEE 802.11n: OFDM
Bit Rate of Transmitter	IEEE 802.11b: 11/5.5/2/1 Mbps IEEE 802.11g: 54/48/36/24/18/12/9/6 Mbps IEEE 802.11n: up to 150 Mbps
Maximum Output Power Non-Beamforming	IEEE 802.11b: 18.08 dBm (0.0643 W) IEEE 802.11g: 24.78 dBm (0.3006 W) IEEE 802.11n (HT20): 24.62 dBm (0.2897 W) IEEE 802.11n (HT40): 24.12 dBm (0.2582 W)
Product Covered	
and the second s	

Note:

2. Channel List:

	CH01 - CH11 for IEEE 802.11b, IEEE 802.11g, IEEE 802.11n (HT20) CH03 - CH09 for IEEE 802.11n (HT40)						
				Frequency (MHz)			
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	80	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	FPC	N/A	1.92

Note: The antenna gain is provided by the manufacturer.

^{1.} For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.



2.2 DESCRIPTION OF TEST MODES

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

modo.	·
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

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 2	TX G Mode Channel 06	

Radiated emissions test - Below 1GHz		
Final Test Mode:	Description	
Mode 2	TX G Mode Channel 06	

Radiated emissions test- Above 1GHz		
Final Test Mode:	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) 802.11b mode: CCK (1 Mbps) 802.11g mode: OFDM (6 Mbps)

802.11n HT20 mode : BPSK (6.5 Mbps) 802.11n HT40 mode : BPSK (13.5 Mbps)

For radiated emission tests, the highest output powers were set for final test.

- (3) For AC Power Line Conducted Emissions & 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.



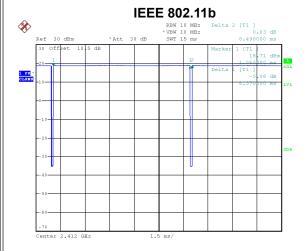
2.3 PARAMETERS OF TEST SOFTWARE

Test Software	IPOP_4.0		
Frequency (MHz)	2412	2437	2462
IEEE 802.11b	default	default	default
IEEE 802.11g	default	default	default
IEEE 802.11n (HT20)	default	default	default
Frequency (MHz)	2422	2437	2452
IEEE 802.11n (HT40)	default	default	default



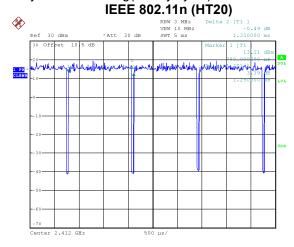
2.4 DUTY CYCLE

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



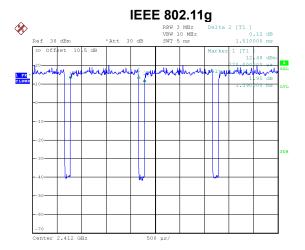
Date: 2.FEB.2021 16:56:53

Duty cycle = 8.370 ms / 8.490 ms = 98.59% Duty Factor = 10 log(1/Duty cycle) = 0.06



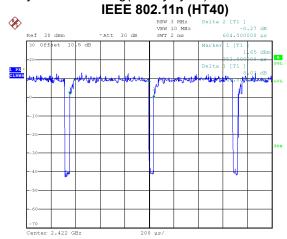
Date: 2.FEB.2021 17:00:49

Duty cycle = 1.290 ms / 1.330 ms = 96.99% Duty Factor = 10 log(1/Duty cycle) = 0.13,



Date: 2.FEB.2021 16:59:50

Duty cycle = 1.390 ms / 1.510 ms = 92.05% Duty Factor = 10 log(1/Duty cycle) = 0.36



Date: 2.FEB.2021 17:01:47

Duty cycle = 0.644 ms / 0.684 ms = 94.15%Duty Factor = $10 \log(1/\text{Duty cycle}) = 0.26$

NOTE:

For IEEE 802.11b:

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz (Duty cycle > 98%).

For IEEE 802.11g and IEEE 802.11n (HT20):

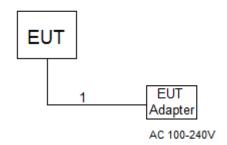
For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 1 kHz (Duty cycle < 98%).

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	Brand	Model/Type No.	Series No.
1	-	-	-	-

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



3. AC POWER LINE CONDUCTED EMISSIONS TEST

3.1 LIMIT

Frequency of Emission (MHz)	Limit (dl	ΒμV)
	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

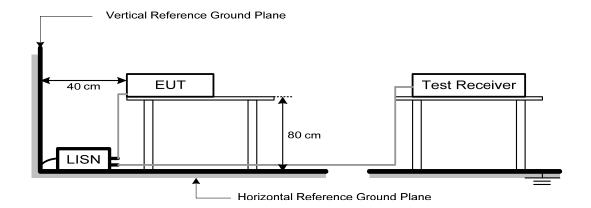
- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- 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	Field Strength	Measurement Distance
(MHz)	(microvolts/meter)	(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)	
Frequency (MHz)	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).
- (4) The test result calculated as following: Measurement Value = Reading Level + Correct Factor Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use) Margin Level = Measurement Value - Limit Value



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

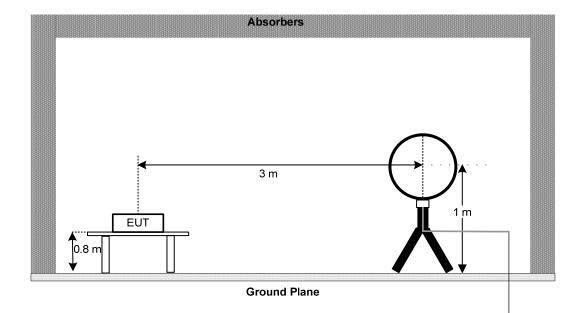
4.3 DEVIATION FROM TEST STANDARD

No deviation

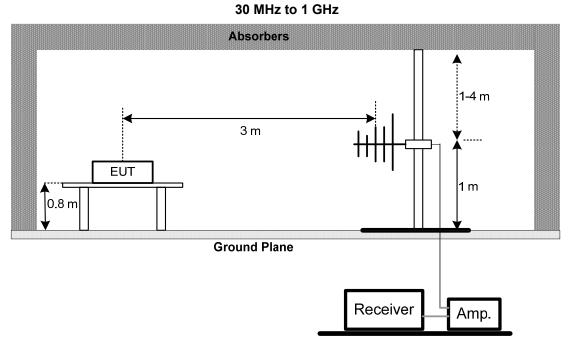


4.4 TEST SETUP

9 kHz-30 MHz

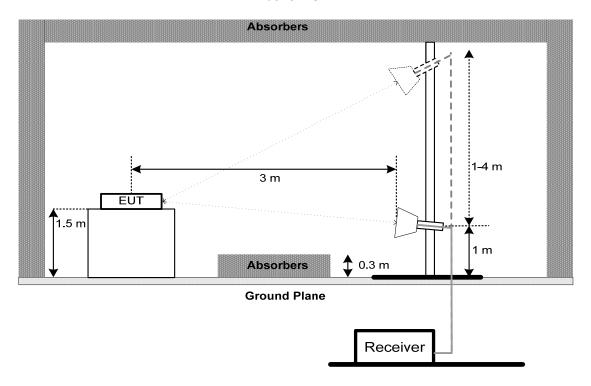


Receiver





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					
45.047(-)/0)	6 dB Bandwidth	Minimum 500 kHz			
15.247(a)(2)	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.

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

EUT		SPECTRUM	
		ANALYZER	

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 (for peak power) or 11.9.2.3.1 (for AVG power) of ANSI C63.10-2013.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 TEST RESULTS

Please refer to the APPENDIX F.



7. CONDUCTED SPURIOUS EMISSIONS

7.1 LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak Output Power limits. If the transmitter complies with the Output Power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required.

7.2 TEST PROCEDURE

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

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP

EUT		SPECTRUM	
		ANALYZER	

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

EUT		SPECTRUM	
		ANALYZER	

8.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 TEST RESULTS

Please refer to the APPENDIX H.



9. MEASUREMENT INSTRUMENTS LIST

	AC Power Line Conducted Emissions					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	Line Impedance Stabilisation Network	Schwarzbeck	NNLK 8121	8121-822	Mar. 21, 2021	
2	TWO-LINE V-NETWORK	R&S	ENV216	101340	Aug. 23, 2021	
3	Test Cable	emci	EMCRG400-BM-N M-10000	170628	Jul. 15, 2021	
4	EMI Test Receiver	R&S	ESCI	100082	Mar. 21, 2021	
5	50Ω Terminator	SHX	TF2-1G-A	17051602	Mar. 21, 2021	
6	50Ω coaxial switch	Anritsu	MP59B	6201750902	Mar. 21, 2021	
7	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	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	719	Apr. 02, 2021	
2	Pre-Amplifier	emci	EMC9135	980400	Mar. 21, 2021	
3	MXE EMI Receiver	Keysight	N9038A	MY57150106	Mar. 21, 2021	
4	Test Cable	emci	EMC104-SM-SM-7 000	170330	Apr. 13, 2021	
5	Test Cable	emci	EMC104-SM-SM-1 000	170331	Apr. 13, 2021	
6	Test Cable	emci	EMC104-SM-NM-3 500	170621	Apr. 13, 2021	
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A	



	Radiated Emissions - Above 1 GHz					
Itom	Kind of Equipment				Calibrated until	
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Cambrated until	
1	Double-Ridged Waveguide Horn	ETS-Lindgren	9120D	00206960	Apr. 02, 2021	
' '	Antenna	E 10 Emagron	01200	0020000	7 (ρ1. 02, 2021	
2	Pre-Amplifier	emci	EMC012645SE	980421	May. 11, 2021	
3	EXA Spectrum Analyzer	Keysight	N9010A	MY56480545	Mar. 21, 2021	
4	Test Cable	emci	EMC104-SM-SM-7 000	170330	Apr. 13, 2021	
5	Test Cable	emci	EMC104-SM-SM-1 000	170331	Apr. 13, 2021	
6	Test Cable	emci	EMC104-SM-NM-3 500	170621	Apr. 13, 2021	
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A	
8	MXE EMI Receiver	Keysight	N9038A	MY57150106	May. 06, 2021	
9	Double-Ridged Waveguide Horn Antenna	ETS-Lindgren	3116C	00203919	Jul. 20, 2021	
10	Pre-Amplifier	emci	EMC184045SE	980409	Mar. 21, 2021	
11	EXA Spectrum Analyzer	Keysight	N9010A	MY56480579	Mar. 21, 2021	
12	Test Cable	emci	EMC102-KM-KM-8 00	170654	Apr. 13, 2021	
13	Test Cable	emci	Super Reliable-40G-SS11- 7000	W0030860001	Apr. 13, 2021	
14	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A	

Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 06, 2021

Maximum Output Power						
Item Kind of Equipment Manufacturer Type No. Serial No. Calibrated un						
1	Peak Power Analyze	Keysight	8990B	MY51000507	Mar. 06, 2021	
2	Wideband Power Sensor	Keysight	N9123A	MY58310003	Mar. 06, 2021	

Antenna Conducted Spurious Emissions										
Item	em Kind of Equipment Manufacturer Type No. Serial No. Calibrated until									
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 06, 2021					

Power Spectral Density										
Item	Item Kind of Equipment Manufacturer Type No. Serial No. Calibrated unt									
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 06, 2021					

Remark: "N/A" denotes no model name, serial no. or calibration specified.

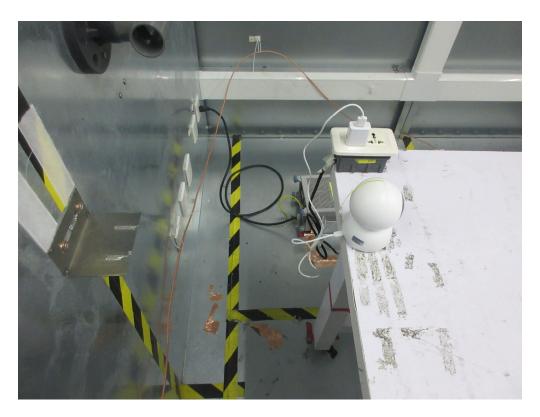
All calibration period of equipment list is one year.



10. EUT TEST PHOTO

Conducted Emissions Test Photos

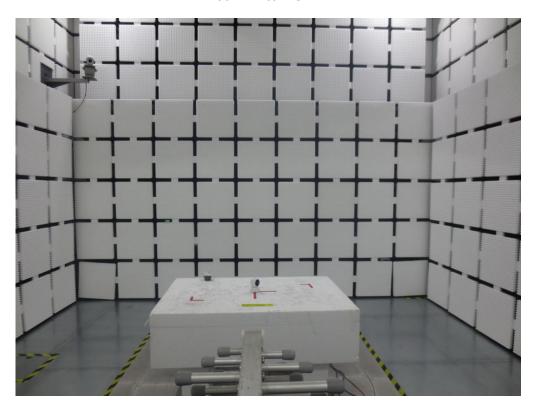


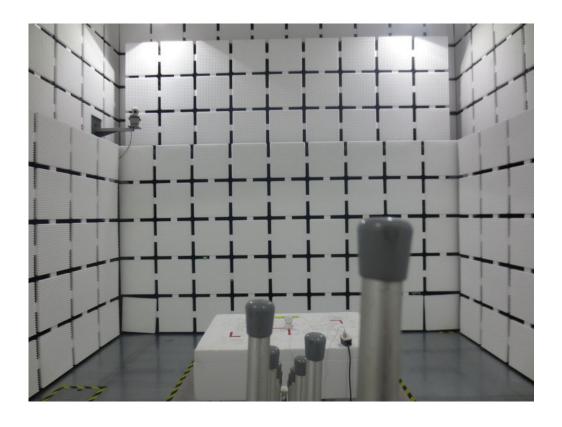




Radiated Emissions Test Photos

30 MHz to 1 GHz

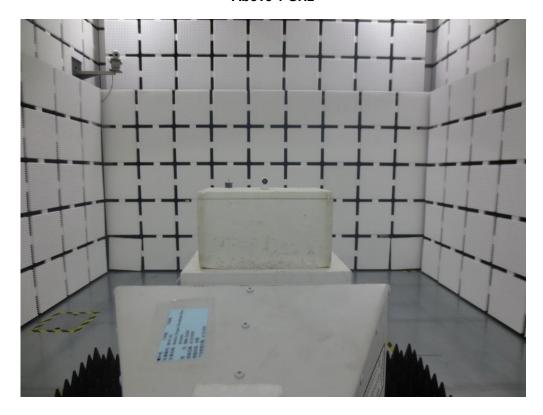


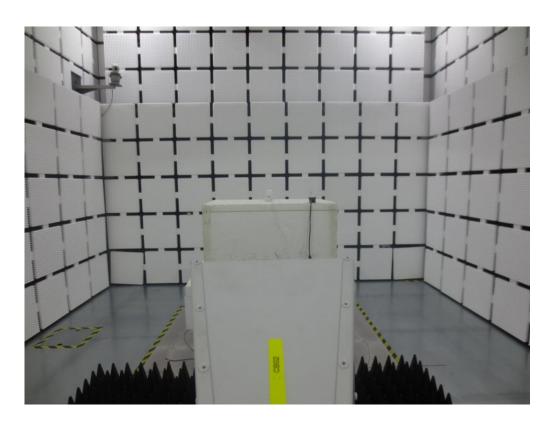




Radiated Emissions Test Photos

Above 1 GHz



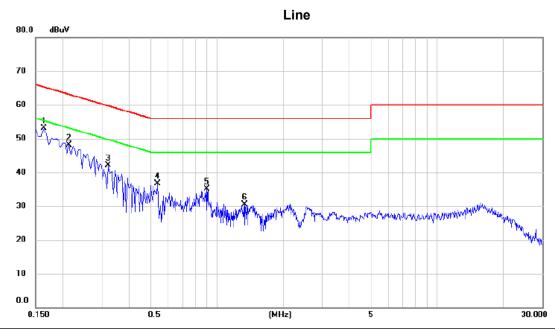




APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS





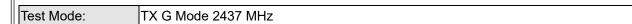


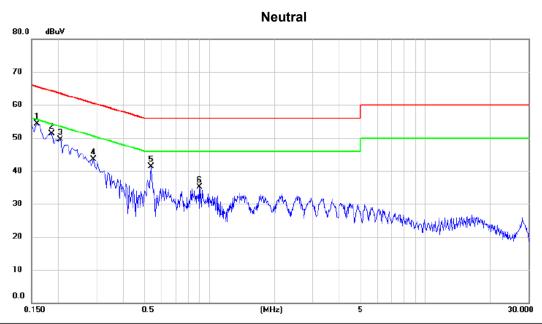
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	0.1635	43.36	9.73	53.09	65.28	-12.19	peak	
2	0.2130	38.44	9.74	48.18	63.09	-14.91	peak	
3	0.3210	32.31	9.76	42.07	59.68	-17.61	peak	
4	0.5370	26.98	9.80	36.78	56.00	-19.22	peak	
5	0.8970	25.30	9.82	35.12	56.00	-20.88	peak	
6	1.3380	20.64	9.86	30.50	56.00	-25.50	peak	

REMARKS:

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







No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1590	44.58	9.69	54.27	65.52	-11.25	peak	
2		0.1860	41.56	9.70	51.26	64.21	-12.95	peak	
3		0.2040	39.71	9.71	49.42	63.45	-14.03	peak	
4		0.2895	33.70	9.73	43.43	60.54	-17.11	peak	
5		0.5370	31.49	9.78	41.27	56.00	-14.73	peak	
6		0.8970	25.33	9.80	35.13	56.00	-20.87	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

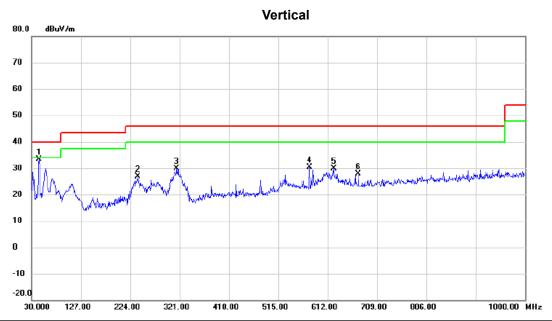
Note: The measured value have enough margin over 20dB than the limit, therefore they are not reported.



APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ







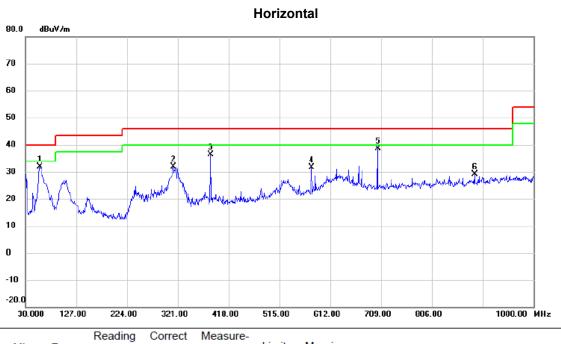
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	44.5500	50.28	-16.94	33.34	40.00	-6.66	peak	
2		239.0350	44.70	-17.83	26.87	46.00	-19.13	peak	
3		315.6650	45.06	-15.17	29.89	46.00	-16.11	peak	
4		576.1100	40.20	-9.80	30.40	46.00	-15.60	peak	
5		624.1250	38.75	-8.87	29.88	46.00	-16.12	peak	
6		672.1400	36.26	-8.34	27.92	46.00	-18.08	peak	

REMARKS:

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



Test Mode: TX G Mode Channel 06



No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		57.6450	48.99	-17.05	31.94	40.00	-8.06	peak	
2		312.7550	47.01	-15.25	31.76	46.00	-14.24	peak	
3		384.0500	50.07	-13.66	36.41	46.00	-9.59	peak	
4		576.1100	41.48	-9.80	31.68	46.00	-14.32	peak	
5	*	702.6950	46.57	-7.98	38.59	46.00	-7.41	peak	
6		887.9650	35.19	-6.05	29.14	46.00	-16.86	peak	

REMARKS:

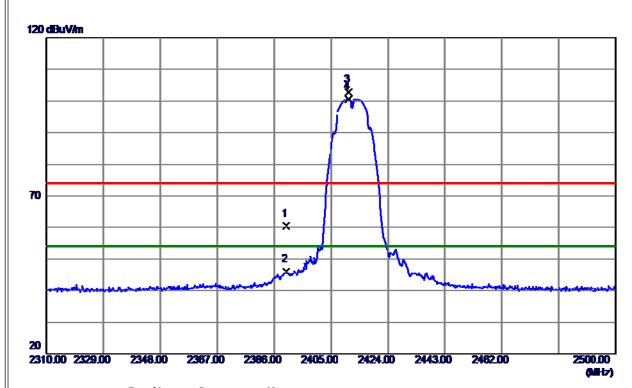
- (1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value Limit Value.



APPENDIX D - RADIATED EMISSION- ABOVE 1000 MHZ



Vertical

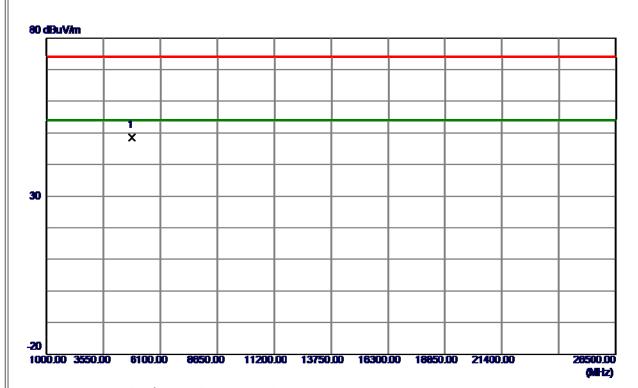


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	28. 72	31.74	60.46	74.00	-13.54	Peak	
2	2390.0000	14. 18	31.74	45.92	54.00	-8.08	AVG	
3	2410. 9850	71. 09	31.72	102.81	74.00	28. 81	Peak	
4 *	2410. 9850	68. 91	31.72	100.63	54.00	46.63	AVG	

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



Vertical

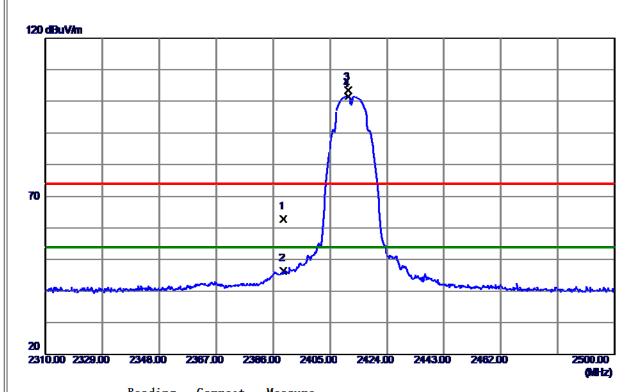


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4823. 7250	59.44	-10.9 1	48.53	74.00	-25. 47	Peak	

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



Horizontal

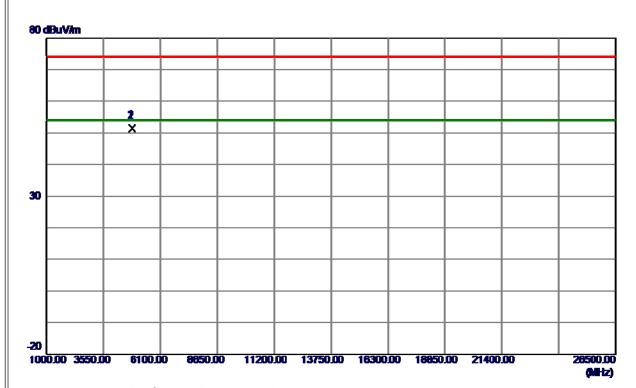


No.	Freq.	Level	Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2389. 4200	31. 10	31.74	62.84	74.00	-11. 16	Peak	
2	2389. 4200	14.75	31.74	46.49	54.00	-7.51	AVG	
3	2411.0800	71. 80	31.72	103. 52	74.00	29. 52	Peak	
4 *	2411. 0800	69. 96	31.72	101. 68	54.00	47.68	AVG	

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



Horizontal

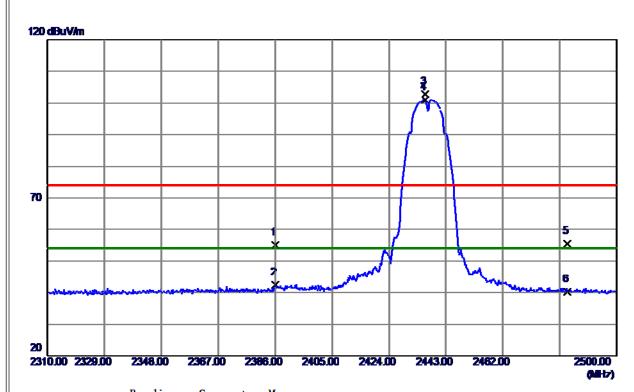


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4823.7250	62.43	-10.9 1	51.52	74.00	-22.48	Peak	
2 *	4824.0650	62. 33	-10.9 1	51.42	54.00	-2.58	AVG	

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



Vertical

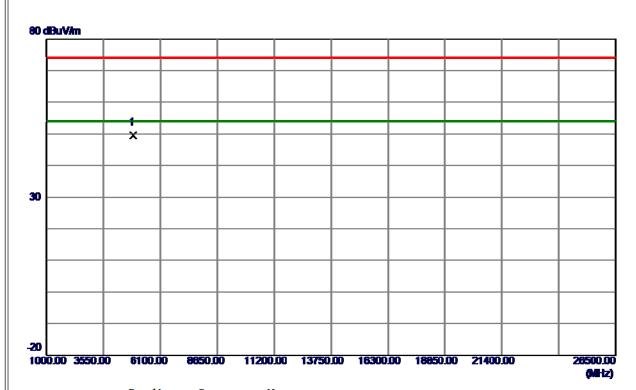


No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2386. 0950	23. 30	31. 75	55.05	74.00	-18.95	Peak	
2	2386. 0950	10.65	31. 75	42.40	54.00	-11.60	AVG	
3	2436.0650	71. 14	31.72	102.86	74.00	28.86	Peak	
4 *	2436. 0650	69. 30	31. 72	101. 02	54.00	47.02	AVG	
5	2483. 5000	23. 70	31.71	55.41	74.00	-18.59	Peak	
6	2483. 5000	8. 43	31.71	40.14	54.00	-13.86	AVG	

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



Vertical

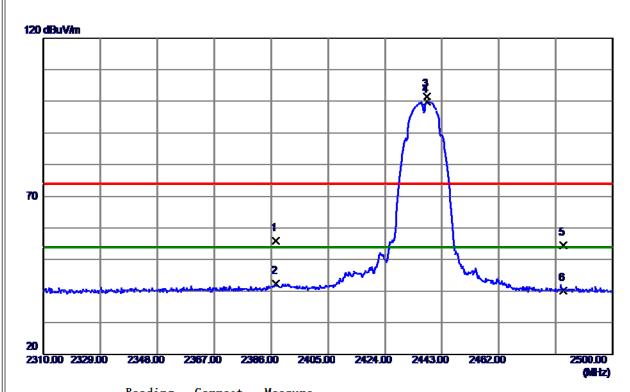


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 *	4874. 7250	0 60.47	-10.79	49.68	74.00	-24. 32	Peak		

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



Horizontal

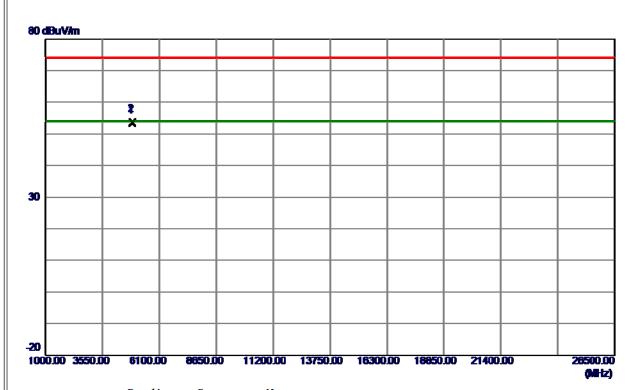


No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2387. 4250	24. 30	31.74	56.04	74.00	-17.96	Peak	
2	2387.4250	10.64	31.74	42.38	54.00	-11.62	AVG	
3	2437.9650	69. 79	31.72	101. 51	74.00	27.51	Peak	
4 *	2437.9650	68. 01	31.72	99.73	54.00	45.73	AVG	
5	2483. 5000	22. 90	31.71	54.61	74.00	-19.39	Peak	
6	2483. 5000	8. 45	31.71	40.16	54.00	-13.84	AVG	

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



Horizontal

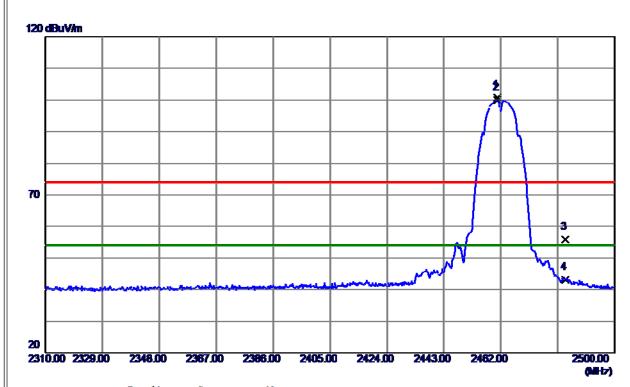


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.0350	64. 27	-10.79	53.48	54.00	-0.52	AVG	
2	4874.7250	64.54	-10.79	53.75	74.00	-20. 25	Peak	

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



Vertical

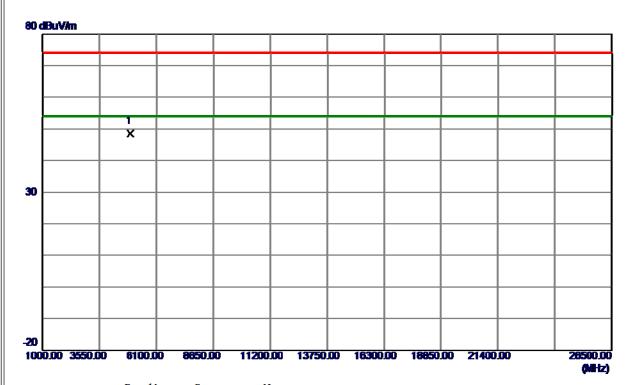


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2460. 9550	69. 01	31.71	100.72	74.00	26.72	Peak	
2 *	2460.9550	68. 23	31.71	99.94	54.00	45.94	AVG	
3	2483. 5000	24. 08	31.71	55.79	74.00	-18. 21	Peak	
4	2483. 5000	11. 39	31.71	43.10	54.00	-10.90	AVG	

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



Vertical

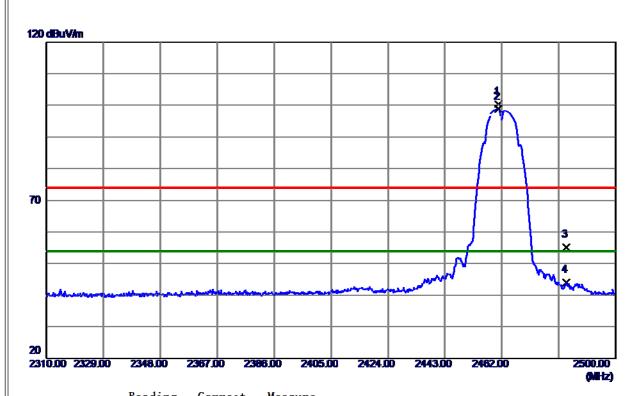


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 *	4924. 4500	59. 25	-10.62	48.63	74.00	-25. 37	Peak		

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



Horizontal

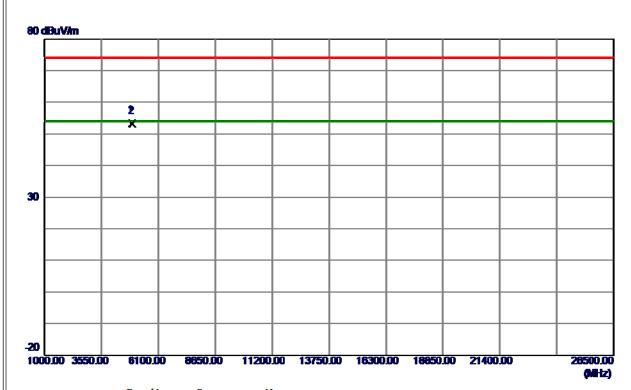


No.	Freq.	Level	Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2460.9550	68.74	31.71	100. 45	74.00	26. 45	Peak	
2 *	2460.9550	67. 08	31.71	98.79	54.00	44.79	AVG	
3	2483. 5000	23. 44	31.71	55. 15	74.00	-18.85	Peak	
4	2483. 5000	12. 38	31.71	44.09	54.00	-9. 91	AVG	
4								

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



Horizontal

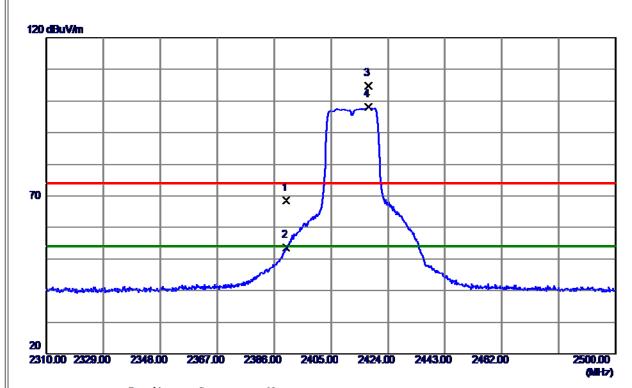


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4924. 0379	63. 95	-10.63	53.32	54.00	-0.68	AVG	
2	4924. 4500	63.85	-10.62	53.23	74.00	-20.77	Peak	

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



Vertical

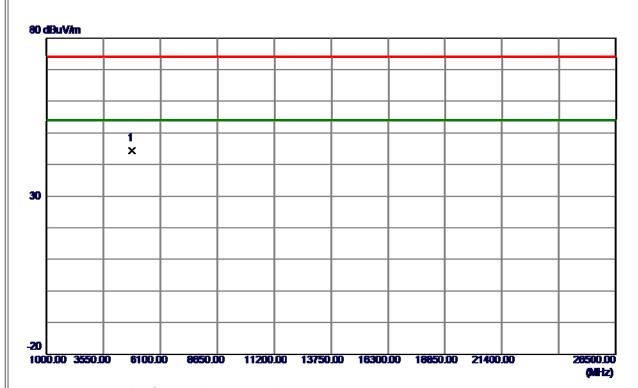


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	36. 83	31.74	68. 57	74.00	-5. 43	Peak	
2	2390.0000	21.86	31.74	53.60	54.00	-0.40	AVG	
3	2417.4450	73. 17	31.72	104. 89	74.00	30.89	Peak	
4 *	2417. 4450	66. 42	31.72	98. 14	54.00	44. 14	AVG	

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



Vertical

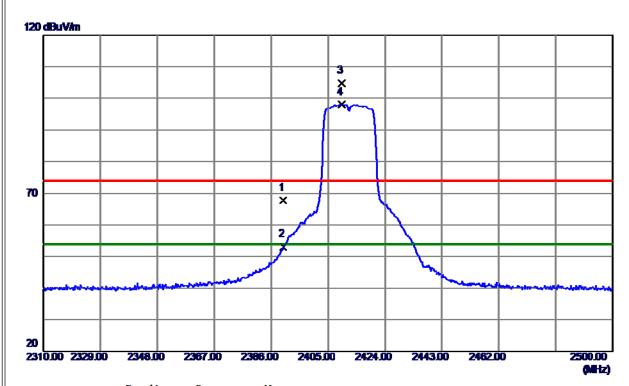


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 *	4825. 000	0 55. 37	-10. 90	44.47	74.00	-29. 53	Peak		

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



Horizontal

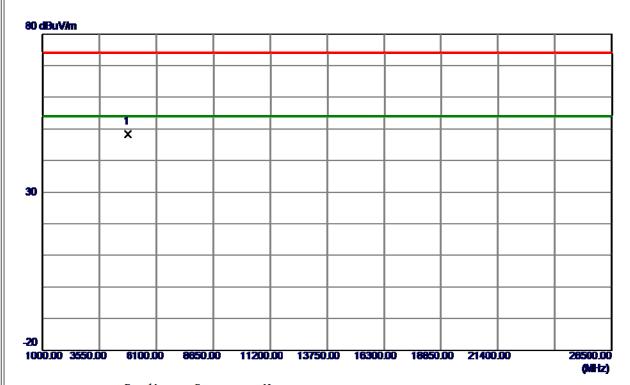


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390. 0000	36. 10	31.74	67.84	74.00	-6. 16	Peak	
2	2390.0000	21.42	31.74	53. 16	54.00	-0.84	AVG	
3	2409. 6550	73. 13	31.72	104. 85	74.00	30.85	Peak	
4 *	2409.6550	66. 33	31.72	98.05	54.00	44.05	AVG	

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



Horizontal

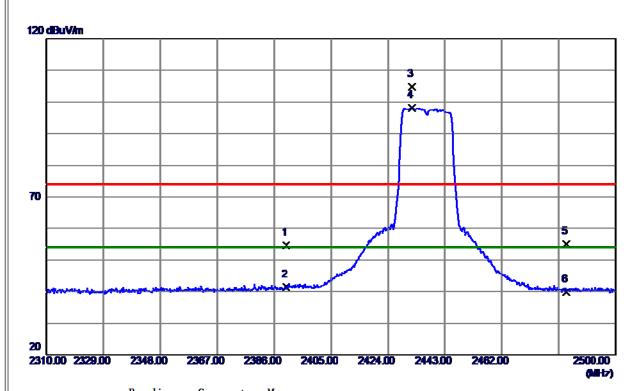


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 *	4822. 4500	59. 28	-10.9 1	48. 37	74.00	-25. 63	Peak		

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



Vertical

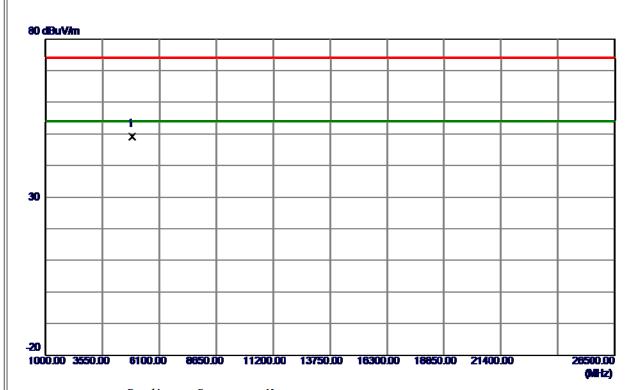


No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390. 0000	22. 88	31. 74	54.62	74.00	-19. 38	Peak	
2	2390.0000	9. 63	31.74	41.37	54.00	-12.63	AVG	
3	2432.0750	73. 01	31. 72	104. 73	74.00	30.73	Peak	
4 *	2432.0750	66. 54	31. 72	98. 26	54.00	44. 26	AVG	
5	2483. 5000	23. 28	31.71	54.99	74.00	-19.01	Peak	
6	2483. 5000	8. 16	31.71	39.87	54.00	-14. 13	AVG	

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



Vertical

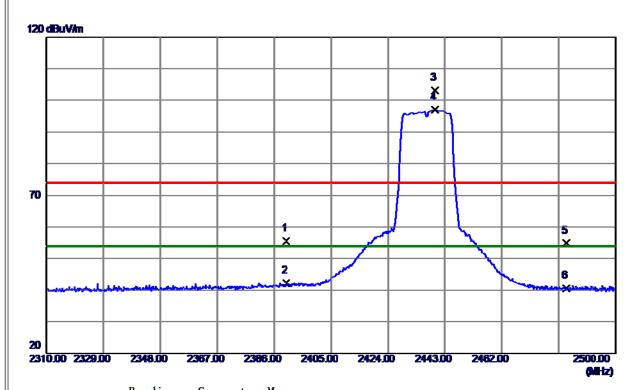


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 *	4873. 4500	60.01	-10.79	49. 22	74.00	-24. 78	Peak		

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



Horizontal

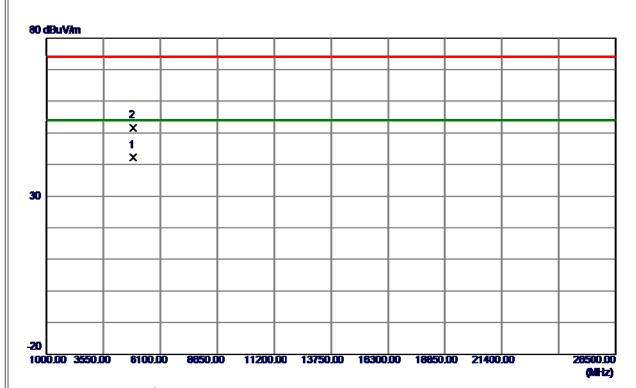


No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390. 0000	23. 92	31.74	55.66	74.00	-18. 34	Peak	
2	2390.0000	10. 47	31.74	42.21	54.00	-11.79	AVG	
3	2439.6750	71. 53	31. 72	103. 25	74.00	29. 25	Peak	
4 *	2439.6750	65. 19	31.72	96. 91	54.00	42.91	AVG	
5	2483. 5000	23. 19	31.71	54.90	74.00	-19. 10	Peak	
6	2483. 5000	8.88	31.71	40.59	54.00	-13.41	AVG	

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



Horizontal

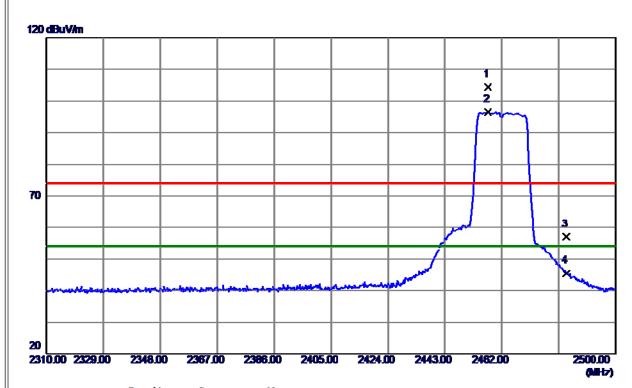


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874. 3400	52. 94	-10.79	42.15	54.00	-11.85	AVG	
2	4874.7250	62. 31	-10.79	51.52	74.00	-22.48	Peak	

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



Vertical

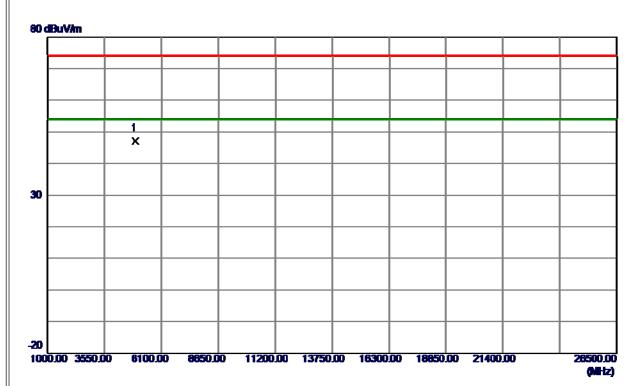


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2457. 3450	72. 68	31.71	104. 39	74.00	30. 39	Peak	
2 *	2457.3450	64.91	31.71	96.62	54.00	42.62	AVG	
3	2483. 5000	25. 21	31.71	56.92	74.00	-17. 08	Peak	
4	2483. 5000	13. 79	31.71	45.50	54.00	-8. 50	AVG	

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



Vertical

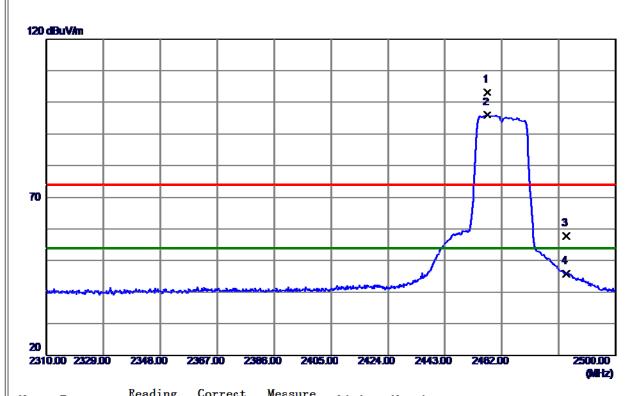


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 *	4934. 6500	57.87	-10. 58	47.29	74.00	-26.71	Peak		

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



Horizontal

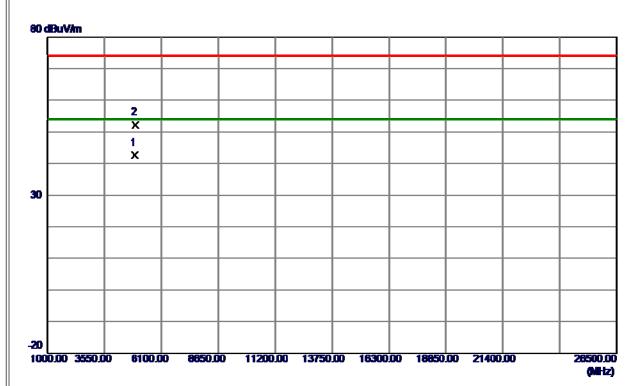


No.	Freq.	Level	Factor	measure	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2457.0600	71.41	31.71	103. 12	74.00	29. 12	Peak	
2 *	2457.0600	64.36	31.71	96.07	54.00	42.07	AVG	
3	2483. 5000	26. 01	31.71	57.72	74.00	-16. 28	Peak	
4	2483. 5000	14.03	31.71	45.74	54.00	-8. 26	AVG	

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



Horizontal

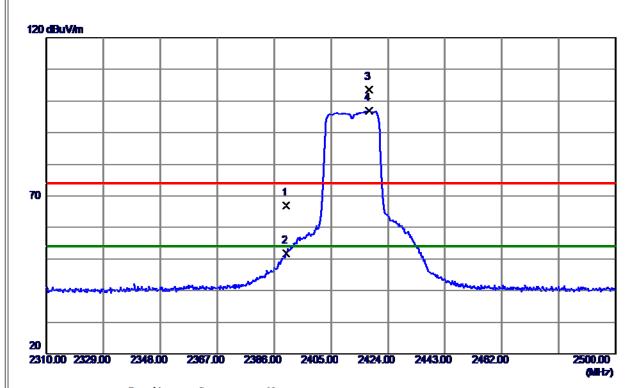


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4923. 9380	53. 31	-10.63	42.68	54.00	-11. 32	AVG	
2	4924. 4500	62.89	-10.62	52.27	74.00	-21.73	Peak	

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



Vertical

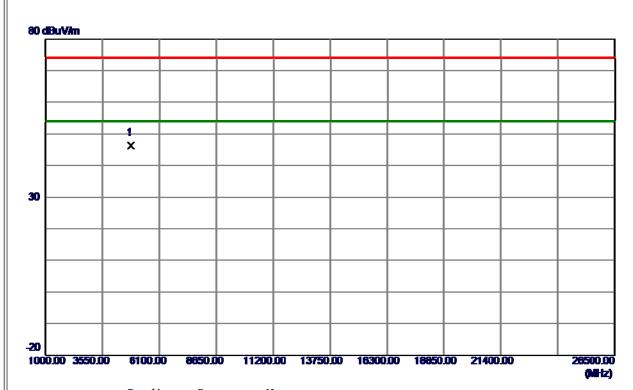


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	35. 34	31.74	67.08	74.00	-6. 92	Peak	
2	2390.0000	20. 14	31.74	51.88	54.00	-2. 12	AVG	
3	2417.6350	71.86	31.72	103. 58	74.00	29. 58	Peak	
4 *	2417.6350	65. 23	31.72	96.95	54.00	42.95	AVG	

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



Vertical

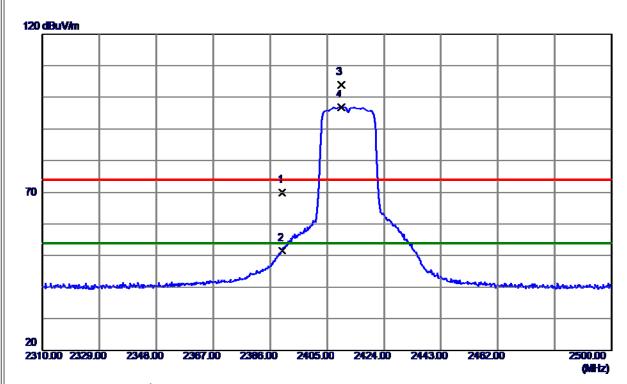


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 *	4831. 375	0 57.37	-10.89	46.48	74.00	-27. 52	Peak		

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



Horizontal

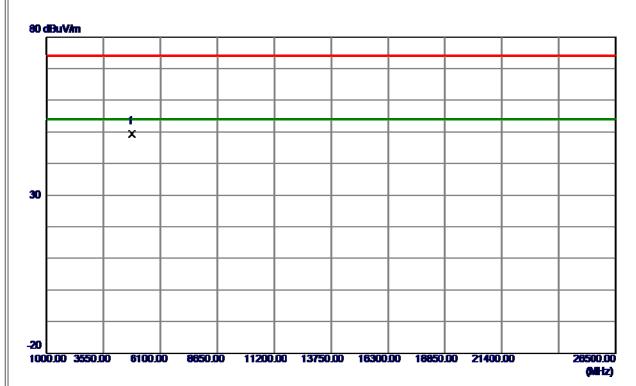


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	38. 19	31.74	69.93	74.00	-4.07	Peak	
2	2390.0000	19. 92	31.74	51.66	54.00	-2.34	AVG	
3	2409.7500	72. 18	31.72	103. 90	74.00	29. 90	Peak	
4 *	2409.7500	65. 16	31.72	96.88	54.00	42.88	AVG	

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



Horizontal

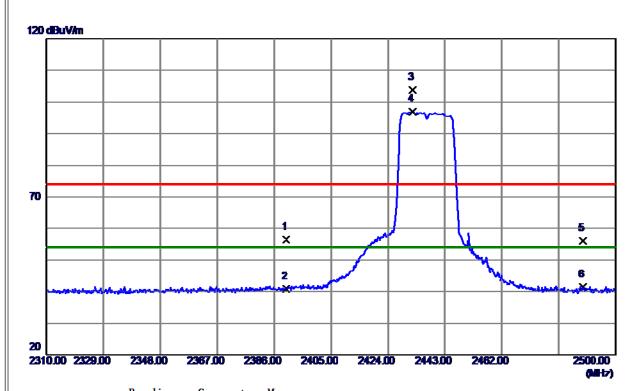


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 *	4828. 8250	60.37	-10. 90	49.47	74.00	-24.53	Peak		

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



Vertical

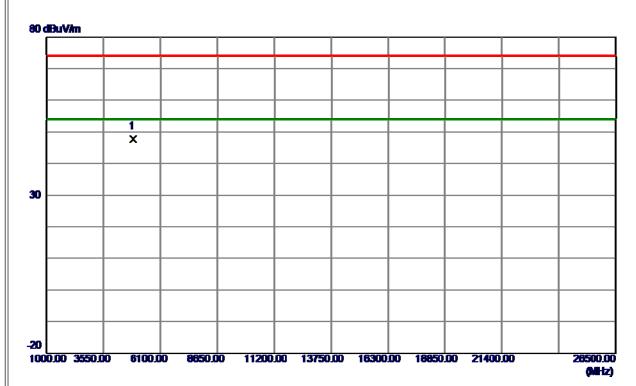


No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390. 0000	24. 67	31. 74	56.41	74.00	-17. 59	Peak	
2	2390.0000	9. 13	31.74	40.87	54.00	-13. 13	AVG	
3	2432. 2649	72. 02	31. 72	103. 74	74.00	29.74	Peak	
4 *	2432. 2649	65. 28	31. 72	97.00	54.00	43.00	AVG	
5	2489.0750	24. 38	31.71	56.09	74.00	-17.91	Peak	
6	2489. 0750	9. 75	31.71	41.46	54.00	-12.54	AVG	

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



Vertical

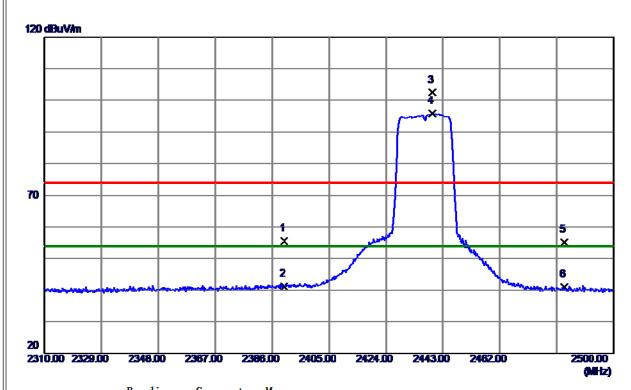


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 *	4873. 4500	58. 56	-10.79	47.77	74.00	-26. 23	Peak		

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



Horizontal

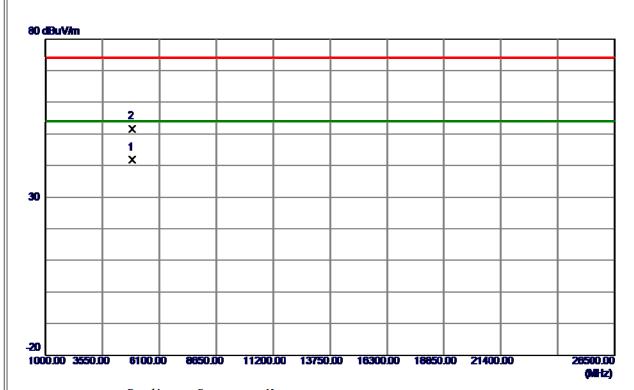


No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	23. 79	31.74	55. 53	74.00	-18.47	Peak	
2	2390.0000	9.41	31.74	41.15	54.00	-12.85	AVG	
3	2439. 3899	70. 78	31. 72	102. 50	74.00	28. 50	Peak	
4 *	2439. 3899	64.04	31. 72	95.76	54.00	41.76	AVG	
5	2483. 5000	23.41	31.71	55. 12	74.00	-18.88	Peak	
6	2483. 5000	9. 37	31.71	41.08	54.00	-12. 92	AVG	

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



Horizontal

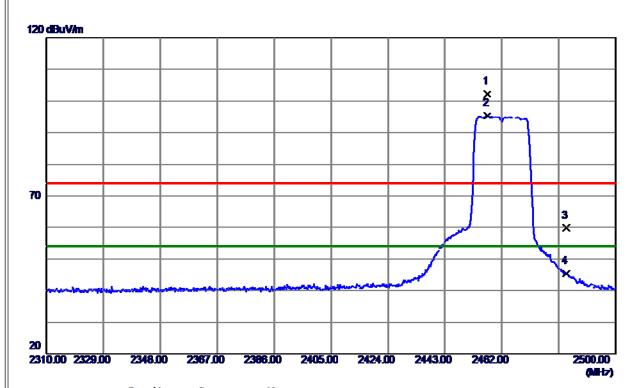


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4875. 0800	52.64	-10.79	41.85	54.00	-12. 15	AVG	
2	4877. 2750	62.45	-10.79	51.66	74.00	-22.34	Peak	

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



Vertical

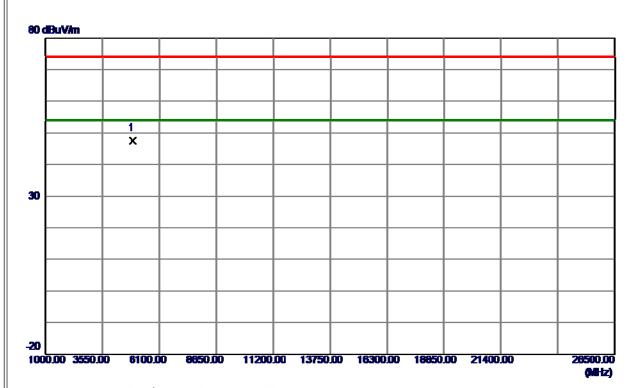


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2457. 1550	70. 56	31.71	102. 27	74.00	28. 27	Peak	
2 *	2457. 1550	63.72	31.71	95.43	54.00	41.43	AVG	
3	2483. 5000	28. 09	31.71	59.80	74.00	-14.20	Peak	
4	2483. 5000	13. 70	31.71	45.41	54.00	-8. 59	AVG	

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



Vertical

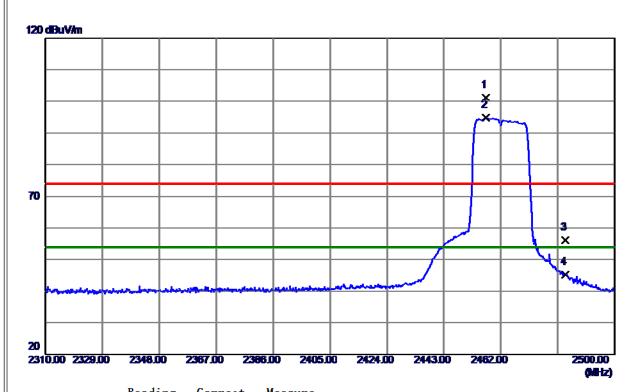


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 *	4923. 1750	58. 22	-10.63	47.59	74.00	-26.41	Peak		

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



Horizontal



No.	Freq.	Level	Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2456. 9650	69. 53	31.71	101. 24	74.00	27. 24	Peak	
2 *	2456. 9650	63.04	31.71	94.75	54.00	40.75	AVG	
3	2483. 5000	24. 52	31.71	56. 23	74.00	-17.77	Peak	
4	2483. 5000	13. 56	31.71	45. 27	54.00	-8.73	AVG	

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



Horizontal

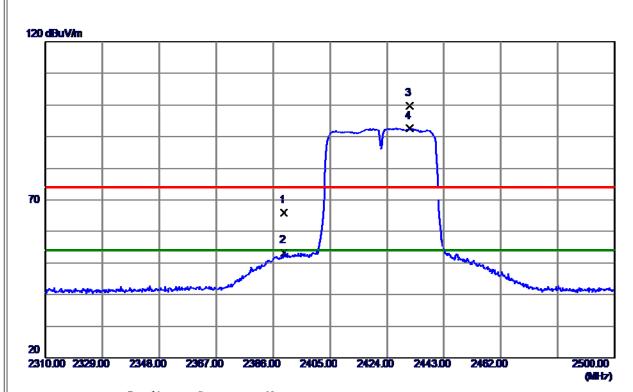


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4921. 9000	61. 95	-10.6 4	51.31	74.00	-22.69	Peak	
2 *	4925. 3980	52. 53	-10.62	41.91	54.00	-12.09	AVG	

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



Vertical

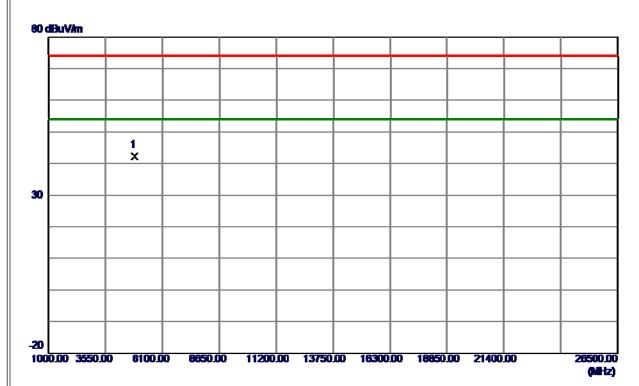


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2389. 5149	34. 28	31.74	66.02	74.00	-7. 98	Peak	
2	2389. 5149	21.40	31.74	53.14	54.00	-0.86	AVG	
3	2431.6950	68. 07	31.72	99.79	74.00	25. 79	Peak	
4 *	2431.6950	60.82	31.72	92.54	54.00	38. 54	AVG	

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



Vertical

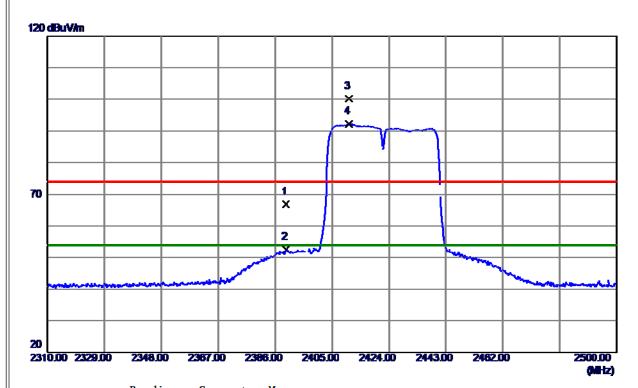


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 *	4847. 9500	52. 95	-10.85	42.10	74.00	-31. 90	Peak		

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



Horizontal

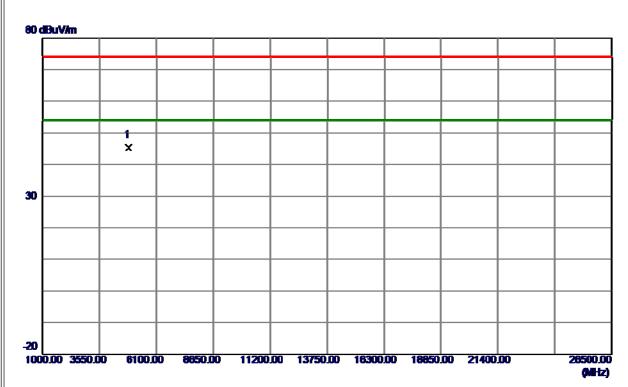


No.	Freq.	Level	Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2389. 5149	35. 07	31.74	66.81	74.00	-7. 19	Peak	
2	2389. 5149	20.82	31.74	52.56	54.00	-1.44	AVG	
3	2410. 7950	68. 42	31.72	100. 14	74.00	26. 14	Peak	
4 *	2410.7950	60. 47	31.72	92.19	54.00	38. 19	AVG	

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



Horizontal

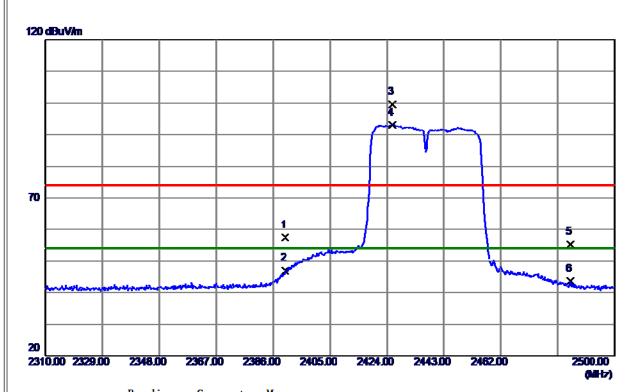


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4845. 4000	56. 25	-10.86	45.39	74.00	-28.61	Peak	

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



Vertical

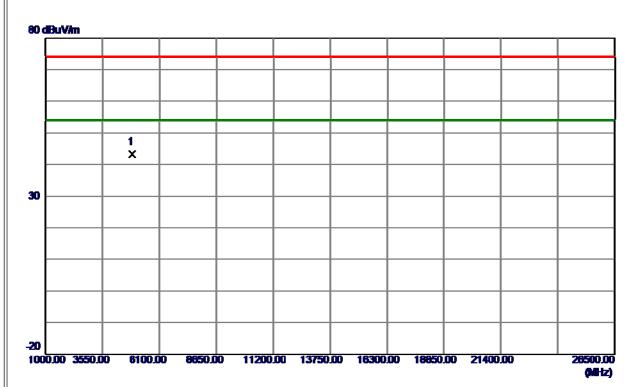


No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390. 0000	25. 63	31.74	57.37	74.00	-16. 63	Peak	
2	2390.0000	15. 30	31.74	47.04	54.00	-6. 96	AVG	
3	2425. 8050	67.85	31.72	99. 57	74.00	25. 57	Peak	
4 *	2425. 8050	61. 28	31.72	93.00	54.00	39. 00	AVG	
5	2485. 1800	23. 51	31.71	55. 22	74.00	-18.78	Peak	
6	2485. 1800	11.82	31.71	43.53	54.00	-10.47	AVG	

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



Vertical

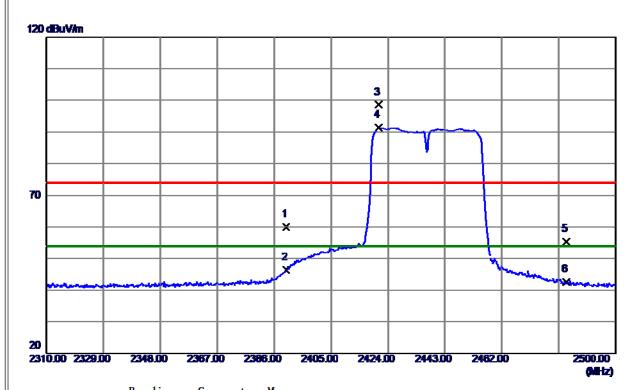


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4869. 6250	53. 99	-10.80	43. 19	74.00	-30.81	Peak	

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



Horizontal

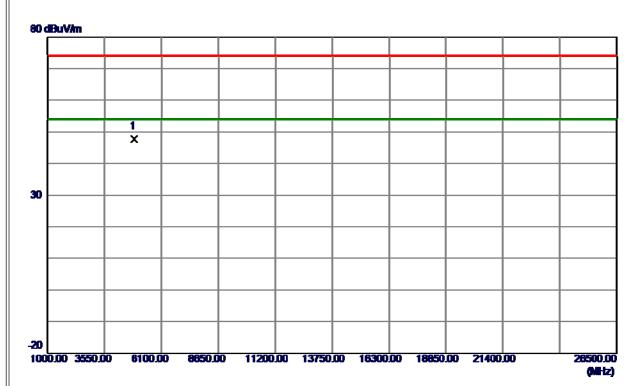


No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390. 0000	28. 33	31.74	60.07	74.00	-13.93	Peak	
2	2390.0000	14.64	31.74	46.38	54.00	-7.62	AVG	
3	2420.8650	66. 95	31.72	98. 67	74.00	24.67	Peak	
4 *	2420.8650	59.62	31.72	91.34	54.00	37. 34	AVG	
5	2483. 5000	23. 73	31.71	55.44	74.00	-18. 56	Peak	
6	2483. 5000	10. 94	31.71	42.65	54.00	-11. 35	AVG	

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



Horizontal

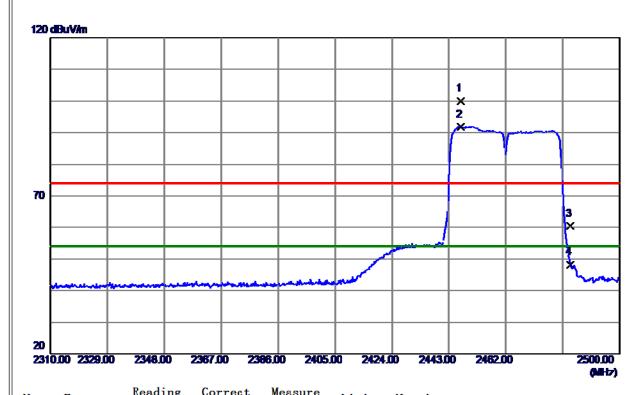


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 *	4872. 1750	58. 59	-10.80	47.79	74.00	-26. 21	Peak		

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



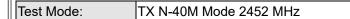
Vertical



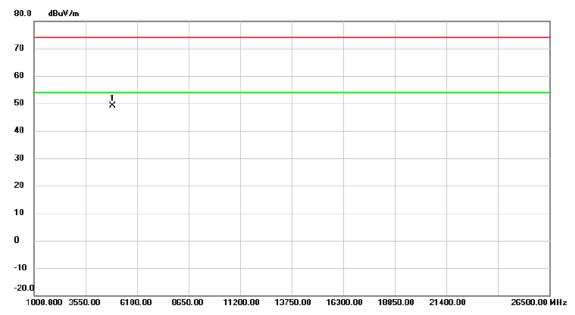
No.	Freq.	Level	Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2447. 0850	68. 28	31.72	100.00	74.00	26.00	Peak	
2 *	2447.0850	60. 16	31.72	91.88	54.00	37.88	AVG	
3	2483. 5000	28.74	31.71	60.45	74.00	-13. 55	Peak	
4	2483. 5000	16. 43	31.71	48. 14	54.00	-5. 86	AVG	

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





Vertical

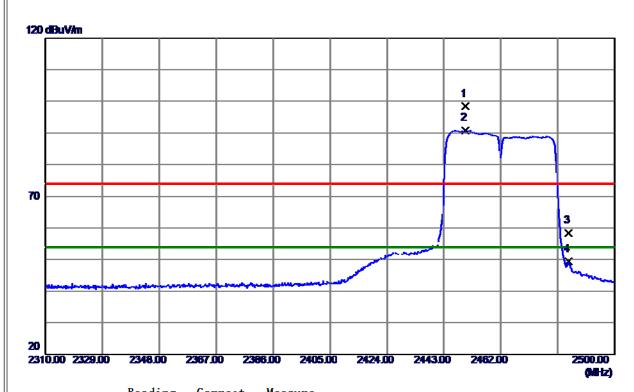


No. MI	k. Freq.	Reading Level		Measure- ment	Limit	Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4909.150	59.73	-10.70	49.03	74.00	-24.97	peak	

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



Horizontal

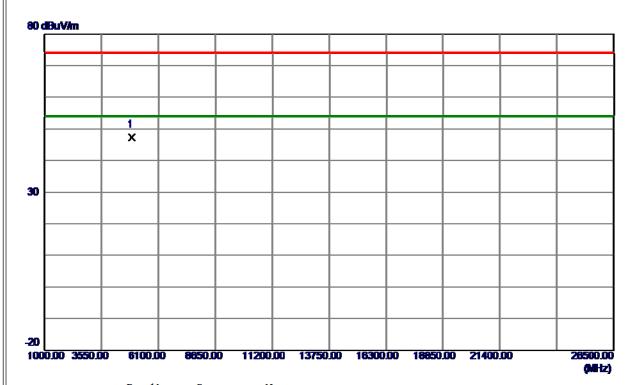


No.	Freq.	Level	Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2450. 1250	66. 67	31.71	98. 38	74.00	24. 38	Peak	
2 *	2450. 1250	59. 10	31.71	90.81	54.00	36.81	AVG	
3	2484.6100	26. 76	31.71	58.47	74.00	-15. 53	Peak	
4	2484.6100	17. 70	31.71	49.41	54.00	-4.59	AVG	
4								

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



Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 *	4921. 9000	58. 01	-10. 64	47.37	74.00	-26. 63	Peak		

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



APPENDIX E - BANDWIDTH	

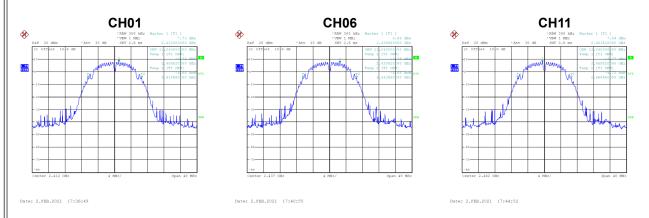


Test Mode	TX B Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	10.06	500	Complies
06	2437	9.66	500	Complies
11	2462	9.64	500	Complies



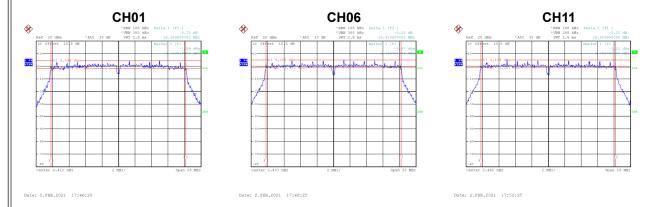
Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
01	2412	13.04	Complies
06	2437	13.04	Complies
11	2462	13.04	Complies



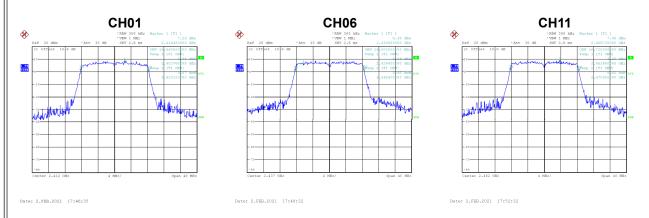


Test Mode	TX G Mode	

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	16.37	500	Complies
06	2437	16.42	500	Complies
11	2462	16.41	500	Complies



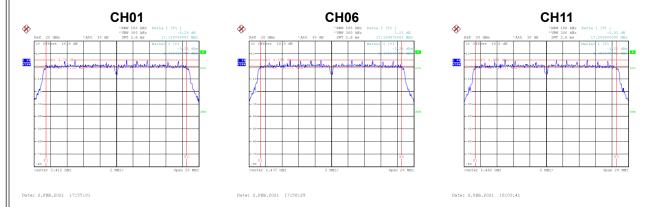
Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
01	2412	16.56	Complies
06	2437	16.80	Complies
11	2462	16.72	Complies



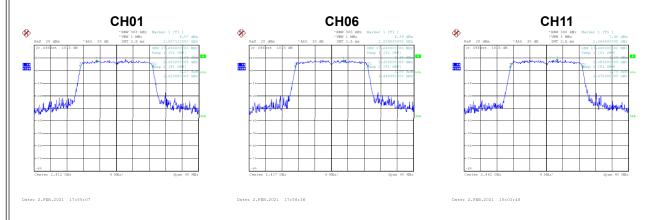


Т	est Mode	lтх	N-20M	Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	17.12	500	Complies
06	2437	17.20	500	Complies
11	2462	17.21	500	Complies



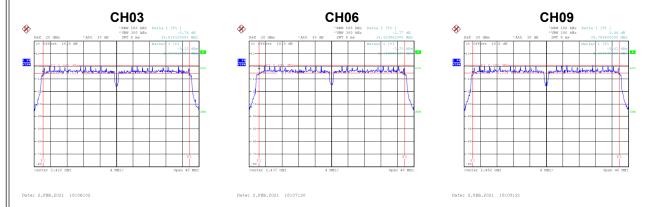
Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
01	2412	17.68	Complies
06	2437	17.68	Complies
11	2462	17.68	Complies



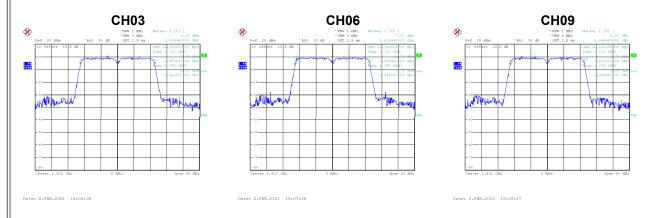


Test Mode	TX N-40M Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
03	2422	35.53	500	Complies
06	2437	35.43	500	Complies
09	2452	35.76	500	Complies



Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
03	2422	36.16	Complies
06	2437	36.16	Complies
09	2452	36.16	Complies





APPENDIX F - MAXIMUM OUTPUT POWER



Test Mode TX B Mode

Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	17.82	30.00	1.0000	Complies
06	2437	17.99	30.00	1.0000	Complies
11	2462	18.08	30.00	1.0000	Complies

Test Mode TX G Mode

Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	24.35	30.00	1.0000	Complies
06	2437	24.78	30.00	1.0000	Complies
11	2462	24.44	30.00	1.0000	Complies

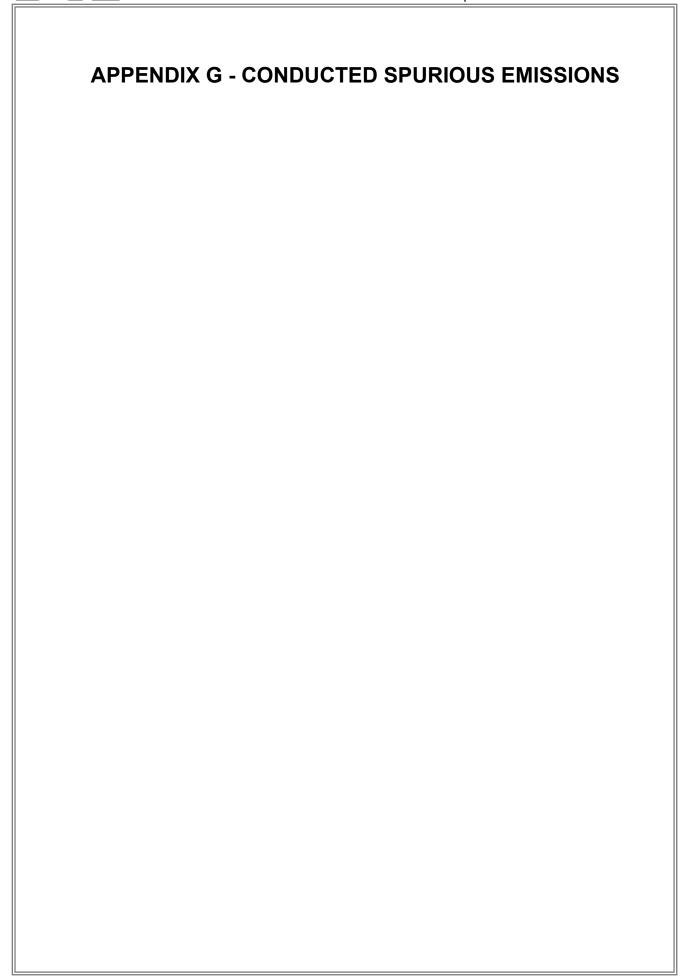
Test Mode TX N-20M Mode

Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	24.58	30.00	1.0000	Complies
06	2437	24.62	30.00	1.0000	Complies
11	2462	24.55	30.00	1.0000	Complies

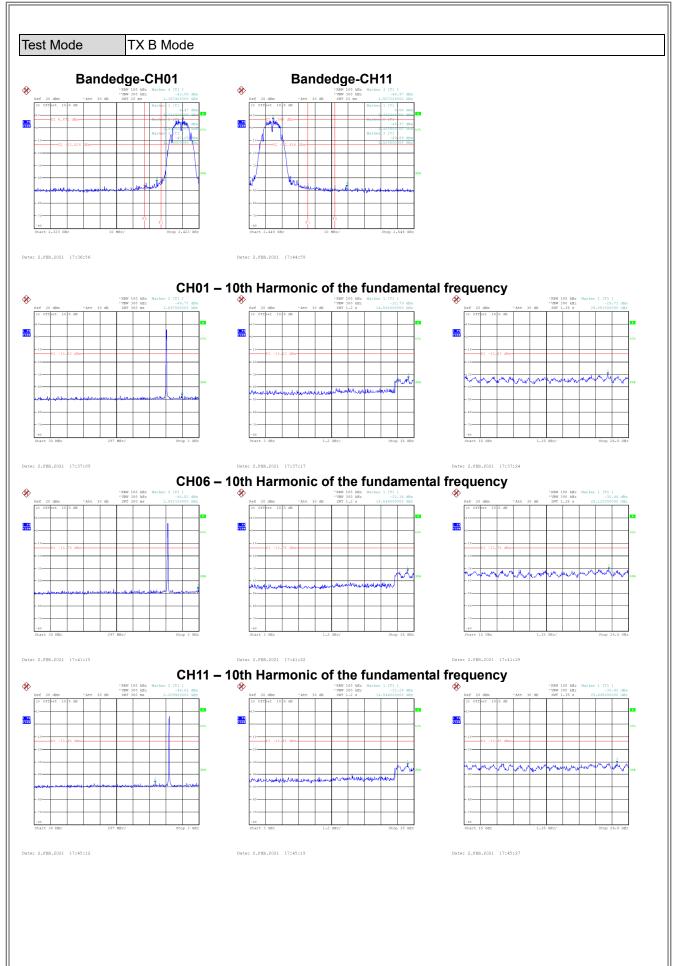
Test Mode TX N-40M Mode

Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	23.81	30.00	1.0000	Complies
06	2437	24.12	30.00	1.0000	Complies
09	2452	24.12	30.00	1.0000	Complies

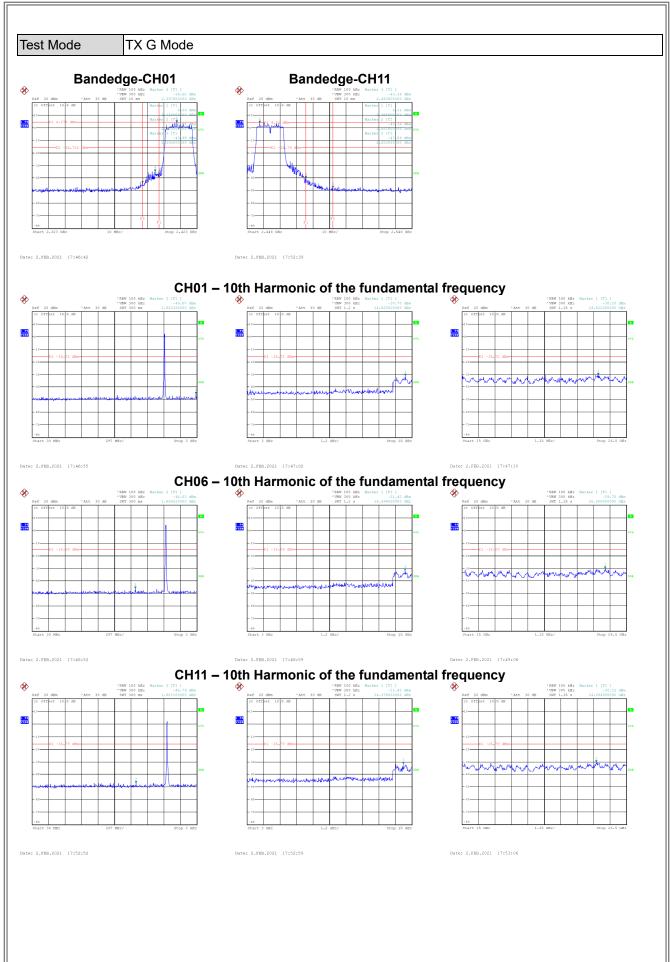




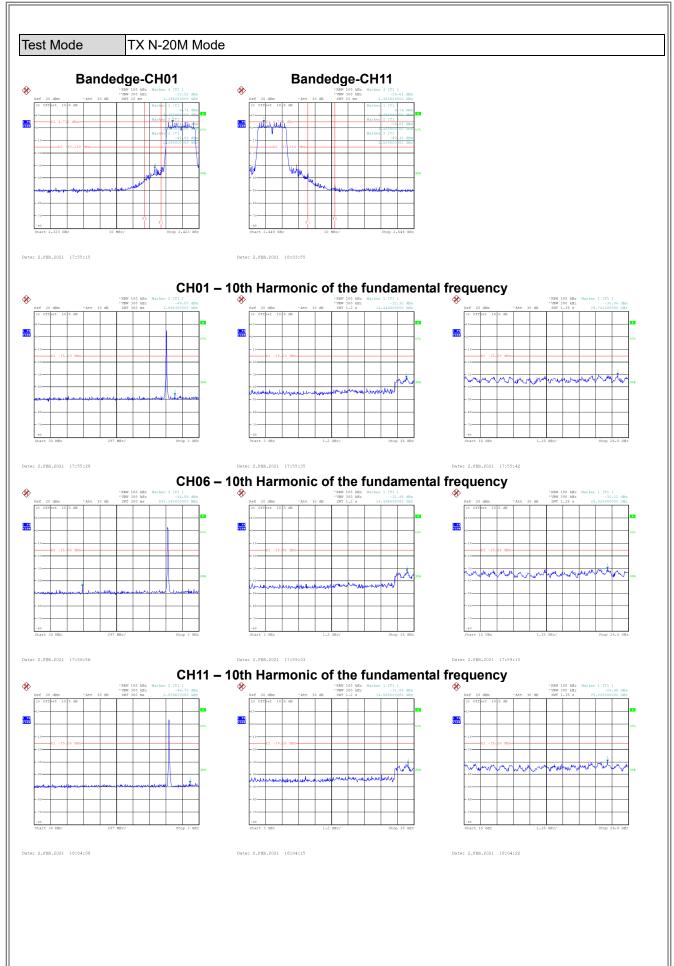




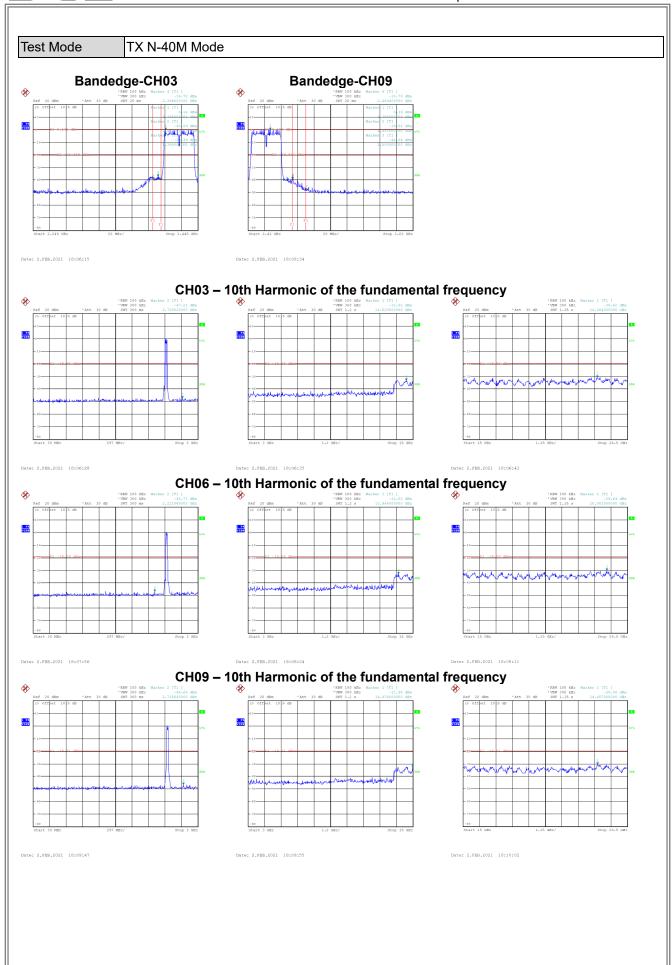














APPENDIX H - POWER SPECTRAL DENSITY



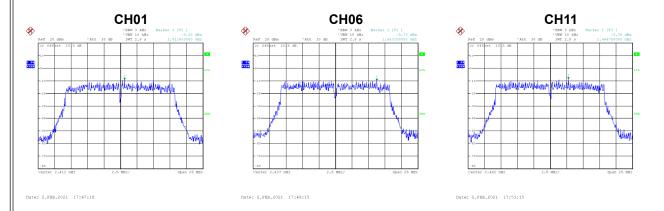
-	Test Mode	TX B Mode
	I COL IVICAC	

Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-8.02	8	Complies
06	2437	-8.16	8	Complies
11	2462	-7.55	8	Complies



Test Mode	TX G Mode
TEST MIDGE	I A G MICUE

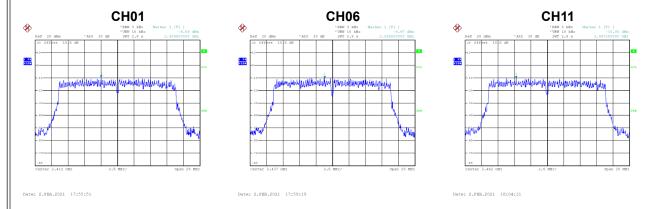
Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-9.12	8	Complies
06	2437	-9.73	8	Complies
11	2462	-8.38	8	Complies





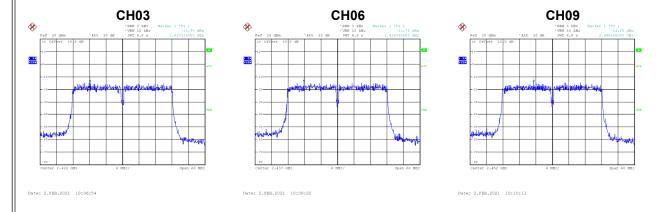
Test Mode	TX N-20M Mode
100t Woodo	TIX IN ZOWN WIGHT

Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-9.56	8	Complies
06	2437	-9.97	8	Complies
11	2462	-10.05	8	Complies



Test Mode	TX N-40M Mode
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Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
03	2422	-13.97	8	Complies
06	2437	-13.71	8	Complies
09	2452	-14.25	8	Complies



End of Test Report