

# **FCC Radio Test Report**

FCC ID: TE7EAP235WALL

This report concerns: Original Grant

**Project No.** : 1909C126

**Equipment**: AC1200 Wireless MU-MIMO Gigabit Wall Plate Access Point

Brand Name : tp-link

Test Model : EAP235-Wall

Series Model : N/A

**Applicant**: TP-Link Technologies Co., Ltd.

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Manufacturer : TP-Link Technologies Co., Ltd.

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Date of Receipt : Sep. 20, 2019

**Date of Test** : Sep. 20, 2019 ~ Oct. 27, 2019

**Issued Date** : Dec. 17, 2019

Report Version : R01

Test Sample : Engineering Sample No.: DG2019092092

Standard(s) : FCC Part15, Subpart C (15.247)

ANSI C63.10-2013

FCC KDB 558074 D01 DTS Meas Guidance v05r02 FCC KDB 662911 D01 Multiple Transmitter Output v02r01

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.	Nov. 22, 2019
R01	Updated the test photo.	Dec. 17, 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)									
		9kHz ~ 30MHz	V	3.79									
		9kHz ~ 30MHz	Н	3.57									
		30MHz ~ 200MHz	V	4.88									
	-CB03 CISPR -	30MHz ~ 200MHz	Н	4.14									
DC CB03		CISPR	CICDD	CICDD	CICDD	CICDD	CICDD	CICDD	CICDD	CICDD	200MHz ~ 1,000MHz	V	4.62
DG-CB03			200MHz ~ 1,000MHz	Н	4.80								
		1GHz ~ 6GHz	-	4.58									
		6GHz ~ 18GHz	-	5.18									
		18GHz ~ 26	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	<b>25</b> ℃	53%	AC 120V/60Hz	Damon Deng
Radiated Emissions -9K-30MHz	<b>25</b> ℃	60%	AC 120V/60Hz	Damon Deng
Radiated Emissions -30 MHz to 1GHz	<b>24</b> °C	68%	AC 120V/60Hz	Sheldon Ou
Radiated Emissions -Above 1000 MHz	<b>26</b> ℃	65%	AC 120V/60Hz	Sheldon Ou
Bandwidth	<b>24</b> °C	60%	AC 120V/60Hz	Jonas Chen
Maximum Average Output Power	<b>24</b> °C	60%	AC 120V/60Hz	Laughing Zhang
Conducted Spurious Emissions	<b>24</b> °C	60%	AC 120V/60Hz	Jonas Chen
Power Spectral Density	<b>24</b> °C	60%	AC 120V/60Hz	Jonas Chen



# 2. GENERAL INFORMATION

# 2.1 GENERAL DESCRIPTION OF EUT

Equipment	AC1200 Wireless MU-MIMO Gigabit Wall Plate Access Point
Brand Name	tp-link
Test Model	EAP235-Wall
Series Model	N/A
Model Difference(s)	N/A
Power Source	Supplied from PoE switch.
Power Rating	DC 42.5~57V, 0.6A
Operation Frequency	2412 MHz ~ 2462 MHz
	IEEE 802.11b: DSSS
Modulation Type	IEEE 802.11g: OFDM
	IEEE 802.11n: OFDM
	IEEE 802.11b: 11/5.5/2/1 Mbps
Bit Rate of Transmitter	IEEE 802.11g: 54/48/36/24/18/12/9/6 Mbps
	IEEE 802.11n: up to 300 Mbps
	IEEE 802.11b: 22.81 dBm (0.1908 W)
Maximum Average Output	IEEE 802.11g: 23.06 dBm (0.2025 W)
Power	IEEE 802.11n (HT20): 23.05 dBm (0.2020 W)
	IEEE 802.11n (HT40): 21.48 dBm (0.1407 W)

# Note:

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

# 2. Channel List:

Official Li	O						
	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	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	PCB	N/A	2.68
2	N/A	N/A	PCB	N/A	2.83

#### Note:

This EUT supports CDD, and antenna gains are not equal, so Directional gain=  $10\log[(10^{G1/20}+10^{G2/20}+...10^{GN/20})^2/N]dBi$ , that is Directional gain= $10\log[(10^{2.68/20}+10^{2.83/20})^2/2]dBi$  =5.77.



4. Table for Antenna Configuration:

Operating Mode TX Mode	2TX
IEEE 802.11b	V (Ant. 1 + Ant. 2)
IEEE 802.11g	V (Ant. 1 + Ant. 2)
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 G Mode Channel 06
Mode 6	TX B Mode Channel 01/02/06/10/11
Mode 7	TX G Mode Channel 01/02/06/10/11
Mode 8	TX N-20 MHz Mode Channel 01/02/06/10/11
Mode 9	TX N-40 MHz Mode Channel 03/04/06/08/09

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 5	TX G Mode Channel 06	

Radiated emissions test - Below 1GHz		
Final Test Mode	Description	
Mode 5	TX G Mode Channel 06	

Radiated emissions test- Above 1GHz		
Final Test Mode	Description	
Mode 6	TX B Mode Channel 01/02/06/10/11	
Mode 7	TX G Mode Channel 01/02/06/10/11	
Mode 8	TX N-20 MHz Mode Channel 01/02/06/10/11	
Mode 9	TX N-40 MHz Mode Channel 03/04/06/08/09	



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) All the bit rate of transmitter have been tested and found the lowest rate is found to be the worst case and recorded.
- (3) For radiated emission below 1 GHz test, the IEEE 802.11g Channel 06 is found to be the worst case and recorded.
- (4) For radiated emission above 1 GHz test, 1GHz~26.5GHz have been pre-tested and in this report only recorded the worst case. The remaining spurious points are all below the limit value of 20dB.

#### 2.3 PARAMETERS OF TEST SOFTWARE

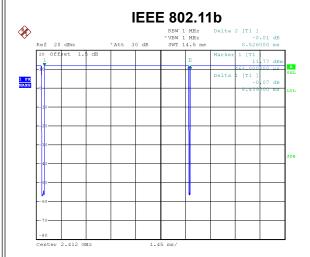
Test Software	QATool_Dbg0.0.1.85		
Frequency (MHz)	2412	2437	2462
IEEE 802.11b	25	24	24
IEEE 802.11g	20	24	1E
IEEE 802.11n (HT20)	1D	24	1E
Frequency (MHz)	2422	2437	2452
IEEE 802.11n (HT40)	17	20	18





#### 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.



Ref 20 dBm \*Att 30 dB \*WT 4 ms 1.552000 ms

Ref 20 dBm \*Att 30 dB \*WT 4 ms 1.552000 ms

1.552000 ms

Ref 20 dBm \*Att 30 dB \*WT 4 ms 1.552000 ms

Delta 1 [T1]

1.77 dB

1.77 dB

1.79 dW 1.75 dBm 1.75 dB

**IEEE 802.11g** 

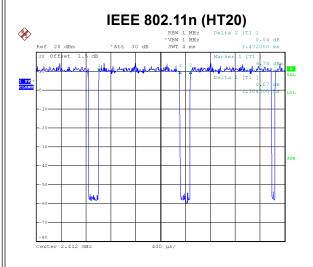
Date: 24.SEP.2019 21:29:58

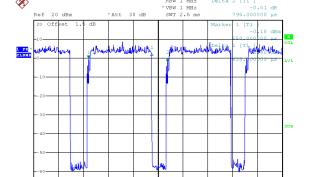
Duty cycle = 8.439 ms / 8.526 ms = 98.98% Duty Factor = 10 log(1/Duty cycle) = 0.00 Duty cycle = 1.392 ms / 1.552 ms = 89.69% Duty Factor = 10 log(1/Duty cycle) = 0.47

IEEE 802.11n (HT40)

Date: 24.SEP.2019 21:30:56

Date: 24.SEP.2019 21:33:40





Date: 24.SEP.2019 21:31:56

Duty cycle = 1.304 ms / 1.472 ms = 88.59% Duty Factor = 10 log(1/Duty cycle) = 0.53 Duty cycle = 0.635 ms / 0.795 ms = 79.87%Duty Factor =  $10 \log(1/\text{Duty cycle}) = 0.98$ 

#### NOTE:

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

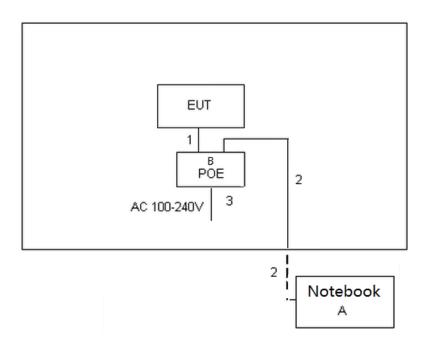
For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 1 kHz (Duty cycle < 98%).

#### 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.
Α	Notebook	Lenovo	INSPIRON 1420	JX193A01SDC2
В	POE	N/A	N/A	N/A

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	RJ45 Cable	NO	NO	1.5m
2	RJ45 Cable	NO	NO	10m
3	AC Cable	NO	NO	1.5m



#### 3. AC POWER LINE CONDUCTED EMISSIONS TEST

#### **3.1 LIMIT**

Fraguency of Emission (MHz)	Limit (dBμV)		
Frequency of Emission (MHz)	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

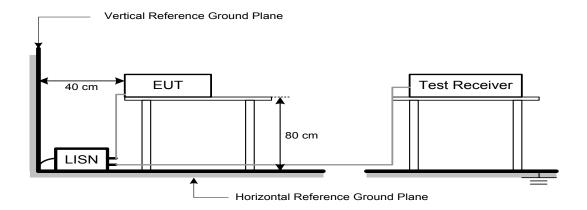
- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- 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)

Fraguency (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).



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 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.

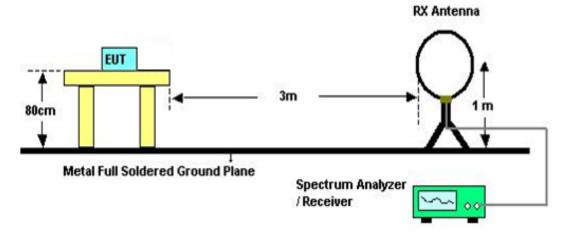
#### 4.3 DEVIATION FROM TEST STANDARD

No deviation

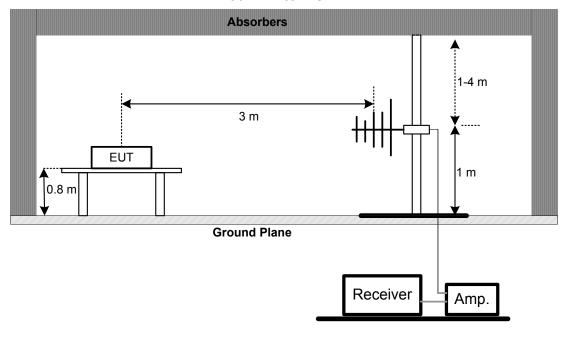


# 4.4 TEST SETUP

# 9 kHz-30 MHz

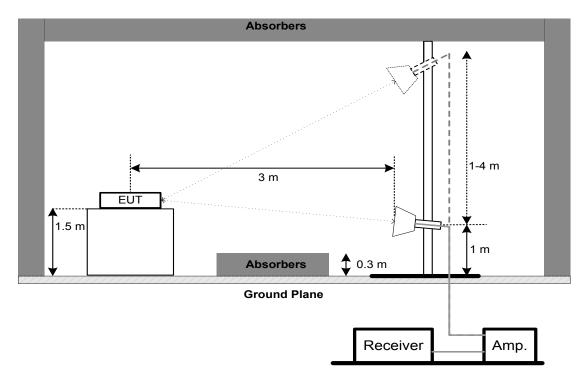


# 30 MHz to 1 GHz





#### **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				
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. For 6dB Bandwidth Spectrum setting: RBW= 100KHz, VBW=300KHz, Sweep time = 2.5 ms. For 99% OBW Spectrum Setting: For B,G,N20 mode: RBW= 300KHz, VBW=1MHz; For N40 mode: RBW= 1MHz, VBW=3MHz, 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 AVERAGE OUTPUT POWER TEST

#### **6.1 LIMIT**

FCC Part15, Subpart C (15.247)				
Section Test Item Limit				
15.247(b)(3) Maximum Average 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 11.9.2.3.1 of ANSI C63.10-2013 and FCC KDB 662911 D01 v02r01 Multiple Transmitter Output.

# **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		
10.217(0)	1 ower opeoural Belloity	(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	EMI Test Receiver	R&S	ESCI	100382	Mar. 10, 2020	
2	LISN	EMCO	3816/2	52765	Mar. 10, 2020	
3	TWO-LINE V-NETWORK	R&S	ENV216	101447	May. 19, 2020	
4	50Ω Terminator	SHX	TF5-3	15041305	Mar. 10, 2020	
5	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A	
6	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	Item Kind of Equipment   Manufacturer   Type No.   Serial No.   Calibrated until									
1	Spectrum Analyzer	R&S	FSP40	100185	Aug. 03, 2020					

	Maximum Average 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.

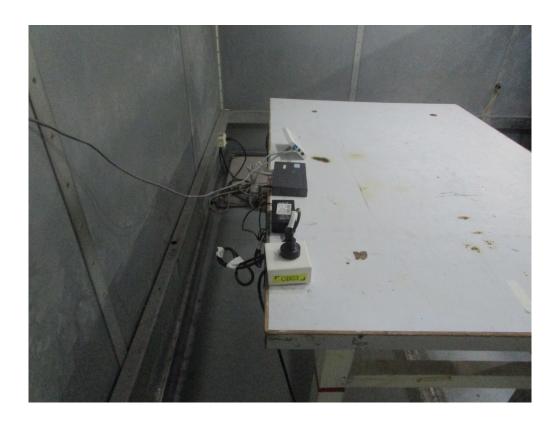
Except \* item, all calibration period of equipment list is one year.



# 10. EUT TEST PHOTO





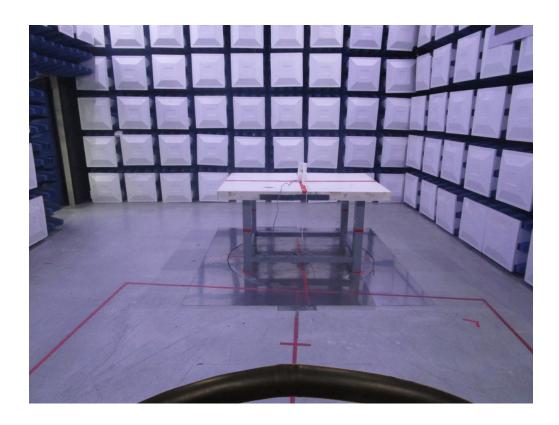




# **Radiated Emissions Test Photos**

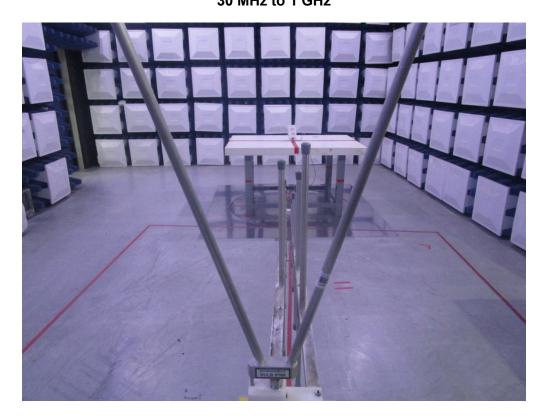
9 kHz to 30 MHz







# Radiated Emissions Test Photos 30 MHz to 1 GHz

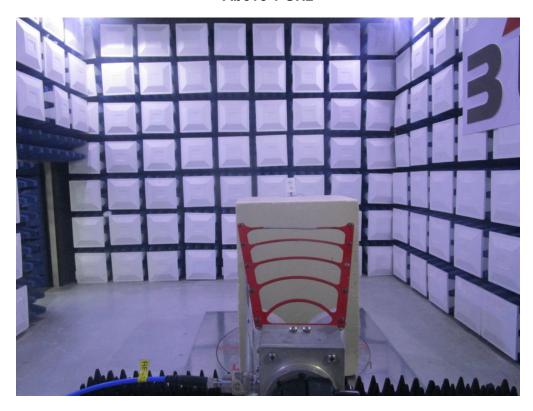






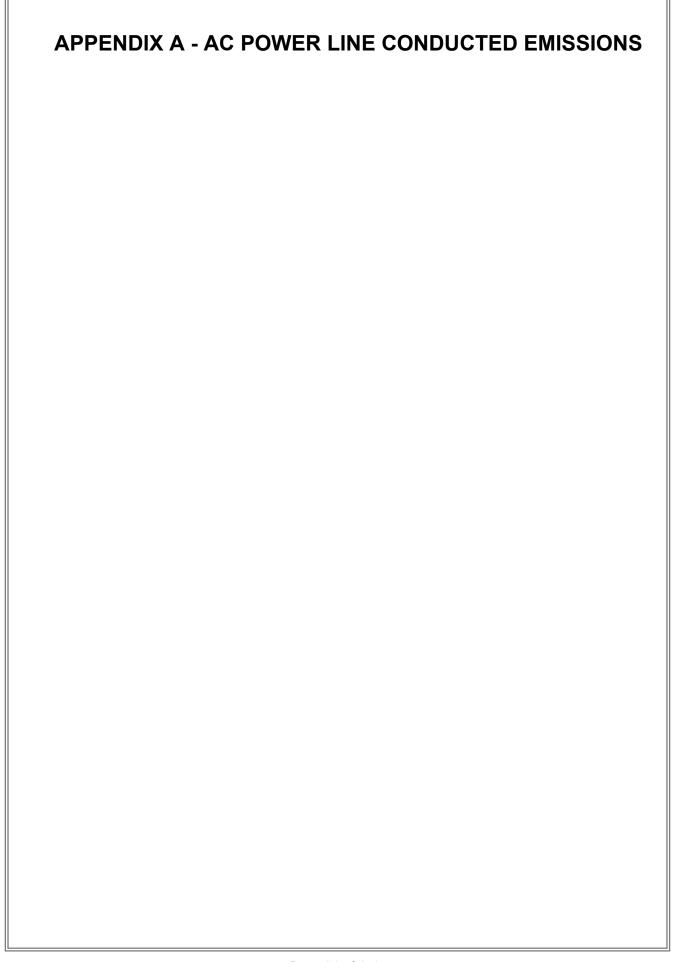
# **Radiated Emissions Test Photos**

# Above 1 GHz





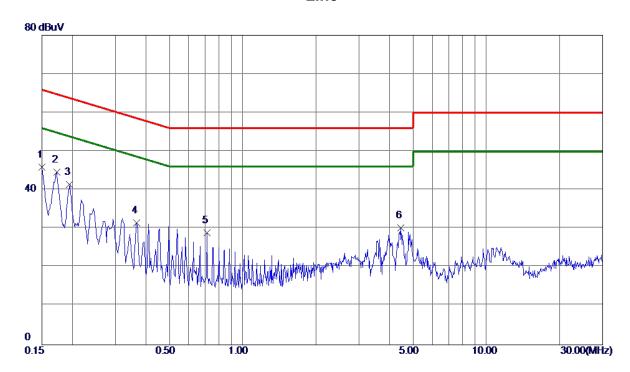






Test Mode: TX G Mode Channel 06

# Line



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	0.1500	36. 17	9.82	45.99	66.00	-20.01	Peak	
2	0.1725	34.80	9.82	44.62	64.84	-20. 22	Peak	
3	0. 1949	31.63	9.82	41.45	63.83	-22. 38	Peak	
4	0.3672	21.66	9.81	31.47	58. 56	-27.09	Peak	
5	0.7124	19. 09	9. 87	28. 96	56.00	-27.04	Peak	
6	4. 4520	20. 02	10. 16	30. 18	56. 00	-25. 82	Peak	

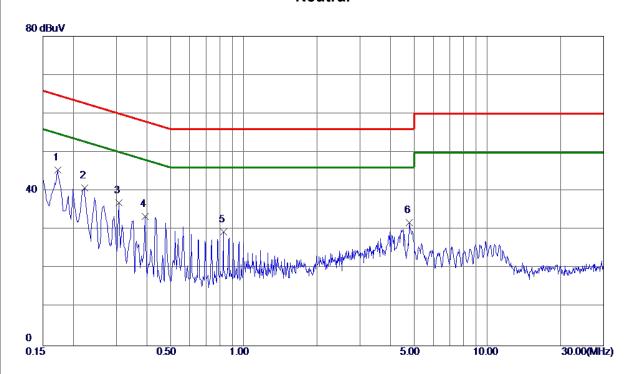
# **REMARKS**:

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



Test Mode: TX G Mode Channel 06

# **Neutral**



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	0.1725	35. 54	9. 91	45.45	64.84	-19. 39	Peak	
2	0. 2220	30.86	9. 91	40.77	62.74	-21.97	Peak	
3	0.3075	27.05	9. 93	36. 98	60.04	-23.06	Peak	
4	0.3930	23. 45	9. 95	33.40	58. <b>00</b>	-24.60	Peak	
5	0.8250	19. 33	10.09	29.42	56.00	-26. 58	Peak	
6	4.7940	21. 47	10. 38	31.85	56. 00	-24. 15	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**

0.150



10 0.0

0.009

Test Mode: TX G Mode Channel 06

# Ant 0° 160.0 dBuV/m 150 140 130 120 110 100 90 80 70 the safety of the same of the safety of the 60 50 40 30 20

No. Mk.	Freq.		Correct Factor	Measure ment	- Limit	Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	0.018	37.32	14.51	51.83	122.65	-70.82	AVG	
2	0.036	31.47	13.88	45.35	116.55	-71.20	AVG	
3	0.057	26.25	13.82	40.07	112.49	-72.42	AVG	

(MHz)

# **REMARKS**:

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

30.000



Test Mode: TX G Mode Channel 06

# Ant 0° 160.0 dBuV/m 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0.0

No. Mk.	Freq.		Correct Factor	Measure ment	- Limit	Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	0.181	32.51	13.59	46.10	102.43	-56.33	AVG	
2	0.953	23.38	12.52	35.90	68.02	-32.12	QP	
3 *	2.225	26.68	11.68	38.36	69.54	-31.18	QP	

(MHz)

# **REMARKS**:

0.150

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

0.150



Test Mode: TX G Mode Channel 06

# Ant 90° 160.0 dBuV/m 150 140 130 120 110 100 90 80 70 60 40 30 20 0.0

No. Mk.	Freq.	Reading Level		Measure ment	Limit	Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	0.015	35.29	15.44	50.73	124.32	-73.59	AVG	
2	0.026	31.39	13.84	45.23	119.31	-74.08	AVG	
3	0.049	25.15	13.93	39.08	113.80	-74.72	AVG	

(MHz)

# **REMARKS**:

0.009

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

30.000



10 0.0

0.150

Test Mode: TX G Mode Channel 06

# Ant 90° 160.0 dBuV/m 150 140 130 120 110 100 90 80 70 60 40 30 20

	No. Mk.	Freq.			Measure- ment		Margin		
-		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-	1	0.227	30.62	13.64	44.26	100.50	-56.24	AVG	
-	2	0.614	25.39	12.84	38.23	71.84	-33.61	QP	
-	3 *	2.144	25.01	11.73	36.74	69.54	-32.80	QP	

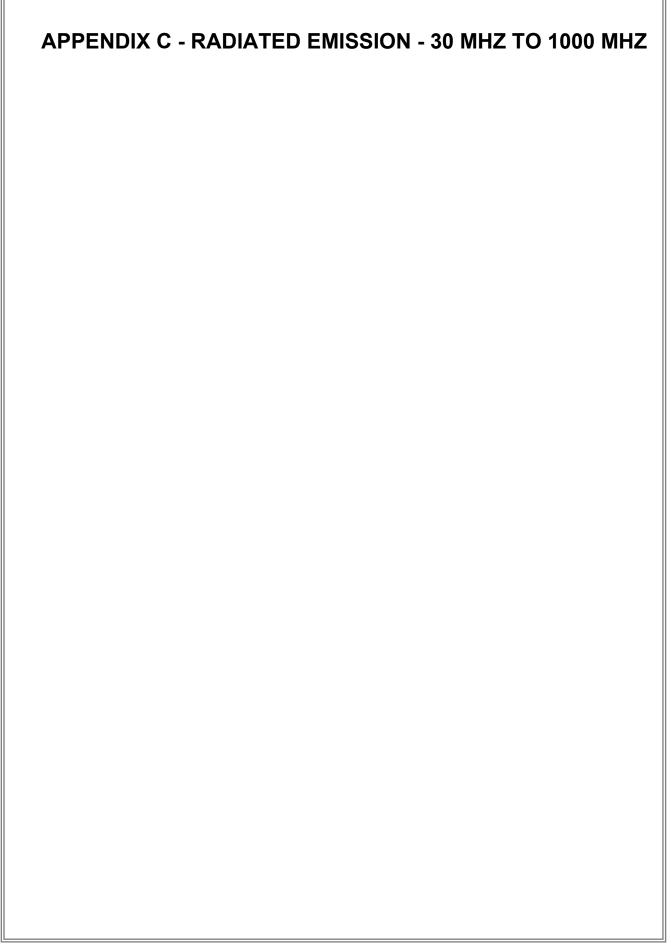
(MHz)

# **REMARKS**:

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

0.5

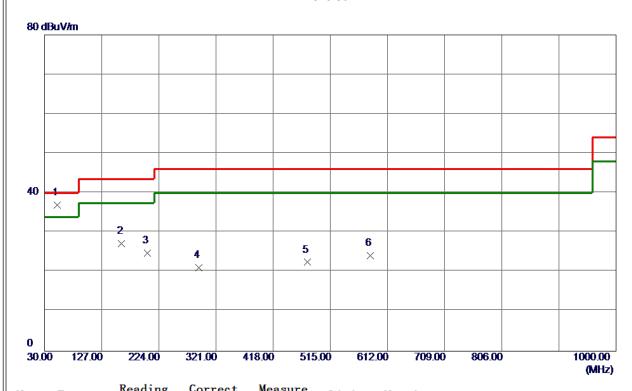








### Vertical



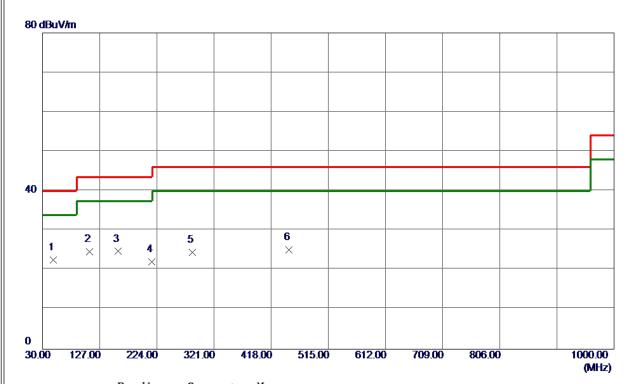
No.	Freq.	Keading Level	Correct Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	51.3400	<b>50. 98</b>	-13. 97	37.01	40.00	-2. 99	Peak	
2	160.9500	38. 35	-11. 20	27. 15	43.50	-16. 35	Peak	
3	205. 0850	40. 23	-15. 46	24.77	43.50	-18.73	Peak	
4	292. 3850	33. 09	-11. 91	21. 18	46.00	-24.82	Peak	
5	476.6850	30.42	-7.94	22.48	46.00	-23. 52	Peak	
6	582. 9000	30. 52	-6. 31	24. 21	46.00	-21. 79	Peak	

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



Test Mode: TX G Mode Channel 06

# Horizontal



Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
48. 4300	36.80	-14. 19	22.61	40.00	-17.39	Peak	
110.0250	39. 22	-14. 57	24.65	43. 50	-18.85	Peak	
158. 5250	35. 98	-11. 26	24.72	43. 50	-18.78	Peak	
215. 2700	37. 29	-15. 16	22. 13	43.50	-21. 37	Peak	
284. 1400	36. 89	-12.41	24.48	46.00	-21. 52	Peak	
448. 0700	33. 32	-8. 20	25. 12	46.00	-20.88	Peak	
	MHz 48. 4300 110. 0250 158. 5250 215. 2700 284. 1400	Hreq. Level MHz dBuV/m	MHz         dBuV/m         dB           48.4300         36.80         -14.19           110.0250         39.22         -14.57           158.5250         35.98         -11.26           215.2700         37.29         -15.16           284.1400         36.89         -12.41	MHz         dBuV/m         dB         dBuV/m           48.4300         36.80         -14.19         22.61           110.0250         39.22         -14.57         24.65           158.5250         35.98         -11.26         24.72           215.2700         37.29         -15.16         22.13           284.1400         36.89         -12.41         24.48	MHz         dBuV/m         dB         dBuV/m         dBuV/m           48.4300         36.80         -14.19         22.61         40.00           110.0250         39.22         -14.57         24.65         43.50           158.5250         35.98         -11.26         24.72         43.50           215.2700         37.29         -15.16         22.13         43.50           284.1400         36.89         -12.41         24.48         46.00	MHz         dBuV/m         dB         dBuV/m         dBuV/m         dB           48.4300         36.80         -14.19         22.61         40.00         -17.39           110.0250         39.22         -14.57         24.65         43.50         -18.85           158.5250         35.98         -11.26         24.72         43.50         -18.78           215.2700         37.29         -15.16         22.13         43.50         -21.37           284.1400         36.89         -12.41         24.48         46.00         -21.52	MHz         dBuV/m         dB         dBuV/m         dBuV/m         dB uV/m         dB uV/m

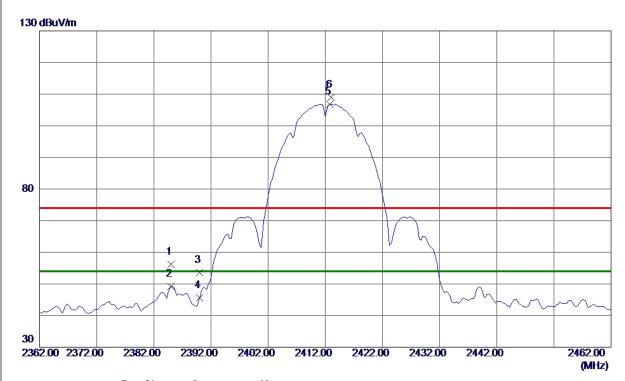
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.



# **APPENDIX D - RADIATED EMISSION- ABOVE 1000 MHZ**



# Vertical

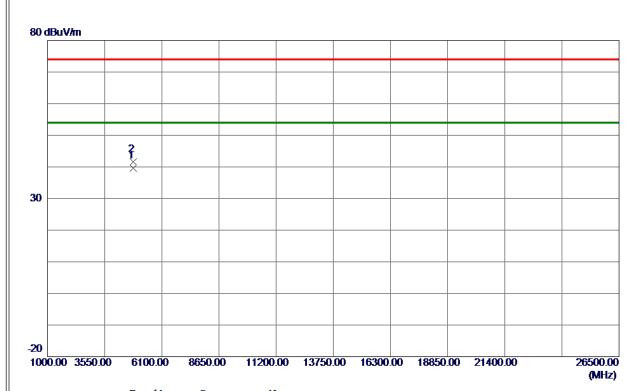


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2385.0000	48. 59	7. 55	56. 14	74.00	-17.86	Peak	
2	2385. 0000	41.73	7. 55	49. 28	54.00	-4.72	AVG	
3	2390.0000	46.09	7. 56	53.65	74.00	-20. 35	Peak	
4	2390.0000	37. 95	7. 56	45. 51	54.00	-8.49	AVG	
5 *	2412.7500	99. 21	7.64	106.85	54.00	52.85	AVG	No Limit
6	2413.0000	101. 30	7.64	108.94	74.00	34.94	Peak	No Limit

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



# Vertical

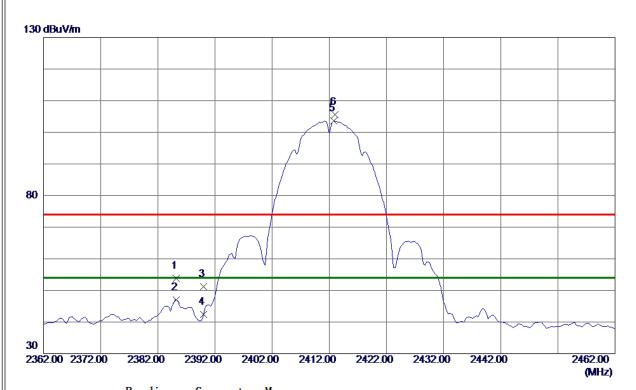


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4824.0000	35. 33	4. 26	39. 59	<b>54.00</b>	-14.41	AVG	
2	4824.0750	37. 28	4. 26	41.54	74.00	-32.46	Peak	

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



### Horizontal

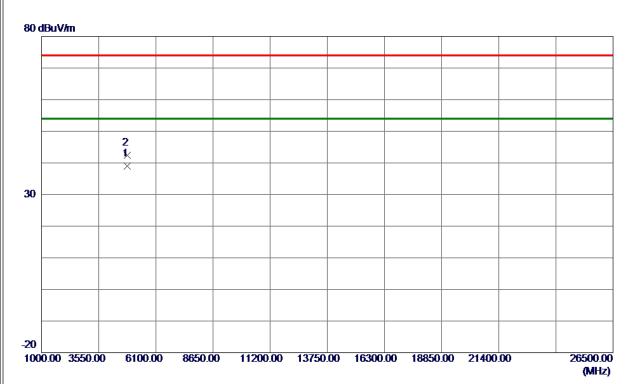


Keading Level	Correct   Factor	Measure ment	Limit	Margin		
dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
2500 46.30	7. 55	53.85	74.00	-20. 15	Peak	
2500 39.43	7. 55	46. 98	54.00	<b>-7.02</b>	AVG	
0000 43.62	7. 56	51. 18	74.00	-22.82	Peak	
0000 34.77	7. 56	42. 33	54.00	-11.67	AVG	
7500 95.89	7.64	103. 53	54.00	49. 53	AVG	No Limit
0000 97.98	7.64	105. 62	74.00	31.62	Peak	No Limit
	Level	Level         Factor           dBuV/m         dB           2500 46.30         7.55           2500 39.43         7.55           0000 43.62         7.56           0000 34.77         7.56           7500 95.89         7.64	Level         Factor         ment           dBuV/m         dB         dBuV/m           2500 46.30         7.55         53.85           2500 39.43         7.55         46.98           0000 43.62         7.56         51.18           0000 34.77         7.56         42.33           7500 95.89         7.64         103.53	Level         Factor         ment         L1m1t           dBuV/m         dB         dBuV/m         dBuV/m           2500 46.30         7.55         53.85         74.00           2500 39.43         7.55         46.98         54.00           0000 43.62         7.56         51.18         74.00           0000 34.77         7.56         42.33         54.00           7500 95.89         7.64         103.53         54.00	Level         Factor         ment         Limit         Margin           dBuV/m         dB         dBuV/m         dBuV/m         dB           2500 46.30         7.55         53.85         74.00         -20.15           2500 39.43         7.55         46.98         54.00         -7.02           0000 43.62         7.56         51.18         74.00         -22.82           0000 34.77         7.56         42.33         54.00         -11.67           7500 95.89         7.64         103.53         54.00         49.53	Level         Factor         ment         Limit         Margin           dBuV/m         dB         dBuV/m         dBuV/m         dB         Detector           2500 46.30         7.55         53.85         74.00         -20.15         Peak           2500 39.43         7.55         46.98         54.00         -7.02         AVG           0000 43.62         7.56         51.18         74.00         -22.82         Peak           0000 34.77         7.56         42.33         54.00         -11.67         AVG           7500 95.89         7.64         103.53         54.00         49.53         AVG

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



# Horizontal

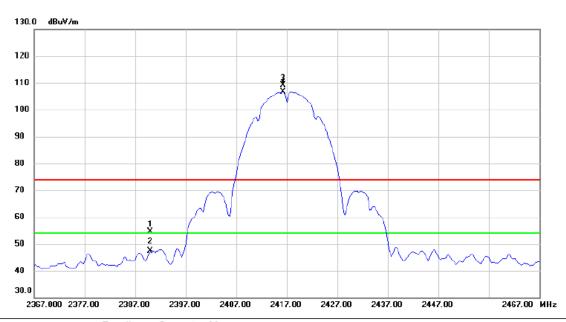


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4824. 0000	34.75	4. 26	39. 01	54.00	-14.99	AVG	
2	4824 0250	38 23	4 26	42 49	74 00	-31 51	Peak	

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



### **Vertical**

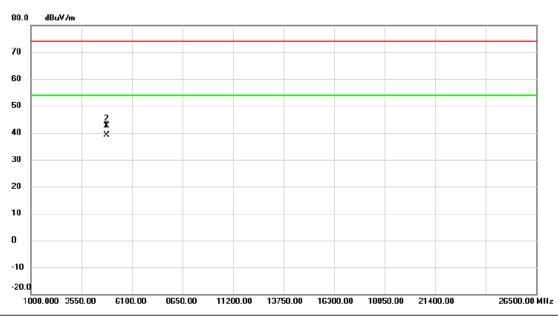


N	o. M	lk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	23	390.000	46.98	7.57	54.55	74.00	-19.45	peak	
	2	23	390.000	39.70	7.57	47.27	54.00	-6.73	AVG	
	3 X	24	116.250	101.41	7.66	109.07	74.00	35.07	peak	No Limit
	4 *	24	116.250	99.03	7.66	106.69	54.00	52.69	AVG	No Limit

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



# Vertical

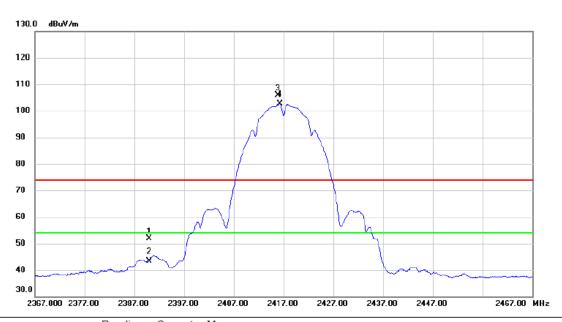


No.	Mk	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4833.975	34.73	4.29	39.02	54.00	-14.98	AVG	
2		4834.025	38.37	4.29	42.66	74.00	-31.34	peak	

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



# Horizontal



	No. M	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
-			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	23	390.000	44.28	7.57	51.85	74.00	-22.15	peak	
-	2	23	390.000	35.93	7.57	43.50	54.00	-10.50	AVG	
-	3 X	24	415.800	98.16	7.65	105.81	74.00	31.81	peak	No Limit
-	4 *	24	416.250	94.97	7.66	102.63	54.00	48.63	AVG	No Limit

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



### Horizontal

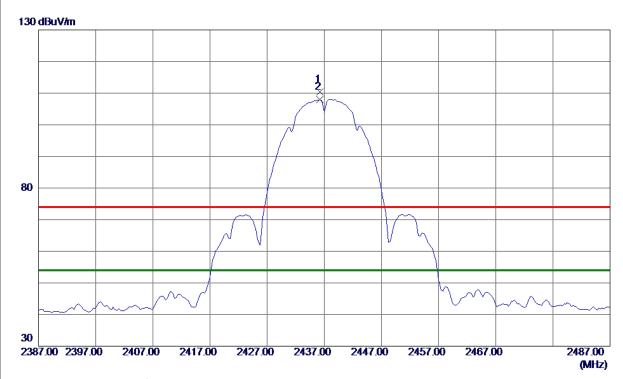


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4	1833.875	36.68	4.29	40.97	74.00	-33.03	peak	
2	* 4	1833.975	32.43	4.29	36.72	54.00	-17.28	AVG	

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



# Vertical

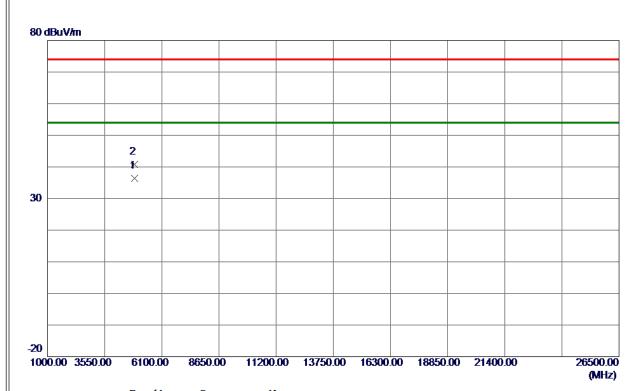


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2436. 2500	102.64	7.72	110. 36	74.00	36. 36	Peak	No Limit
2 *	2436, 2500	100. 25	7.72	107.97	54.00	53. 97	AVG	No Limit

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



# Vertical

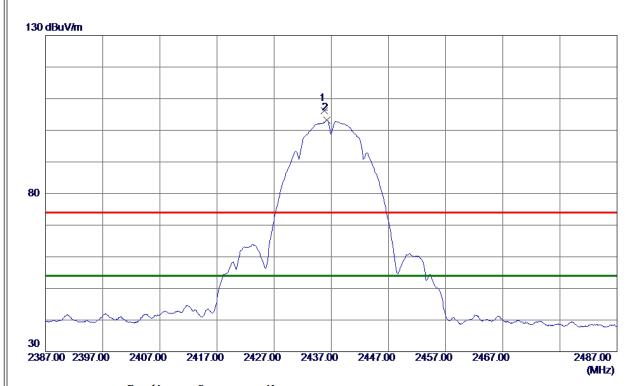


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.0000	31. 92	4.44	36. 36	54.00	-17.64	AVG	
2	4874. 2000	36. 40	4.44	40.84	74.00	-33. 16	Peak	

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



# Horizontal

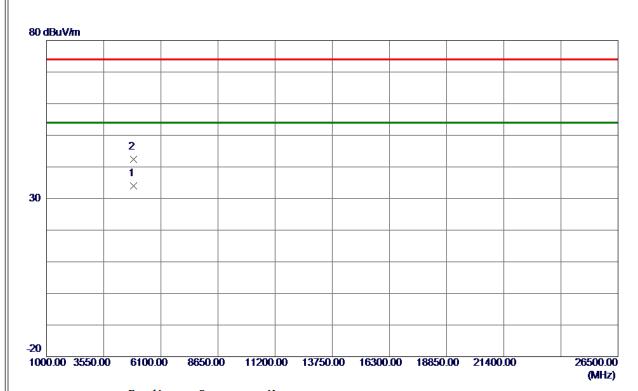


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2435.8000	98. 53	7.72	106. 25	74.00	32. 25	Peak	No Limit
2 *	2436. 2500	95. 39	7.72	103. 11	54.00	49. 11	AVG	No Limit

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



# Horizontal

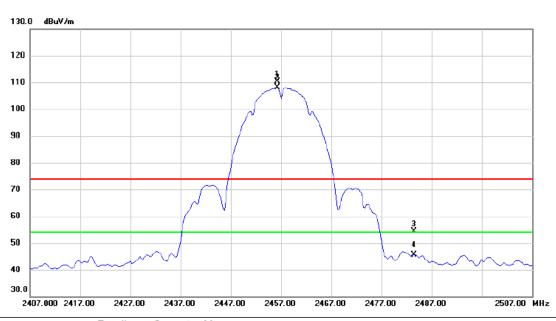


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.0070	29. 48	4.44	33. 92	<b>54.00</b>	-20.08	AVG	
2	4874.0170	38. 02	4.44	42.46	74.00	-31.54	Peak	

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



# Vertical

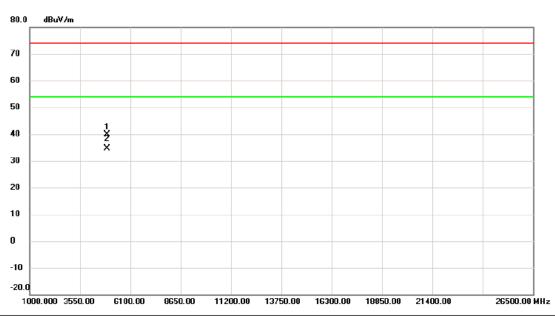


No. Mi	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 X	2456.250	102.65	7.78	110.43	74.00	36.43	peak	No Limit
2 *	2456.250	100.23	7.78	108.01	54.00	54.01	AVG	No Limit
3	2483.500	46.56	7.87	54.43	74.00	-19.57	peak	
4	2483.500	37.82	7.87	45.69	54.00	-8.31	AVG	

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



# Vertical

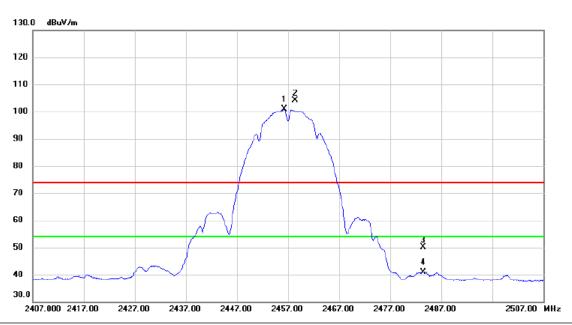


No.	Mk.	Freq.			Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4914.000	35.25	4.58	39.83	74.00	-34.17	peak	
2	*	4914.025	29.94	4.58	34.52	54.00	-19.48	AVG	

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



### Horizontal

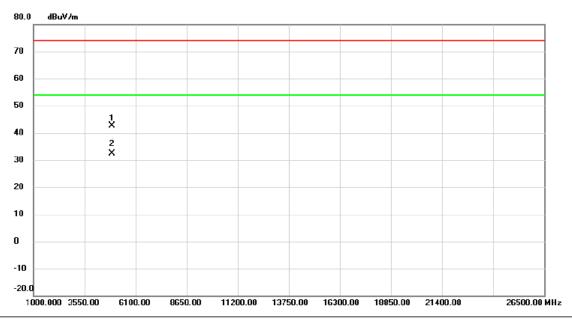


	No. M	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
Ī	1 *	2456.250	93.07	7.78	100.85	54.00	46.85	AVG	No Limit
Ī	2 X	2458.350	96.38	7.79	104.17	74.00	30.17	peak	No Limit
	3	2483.500	42.16	7.87	50.03	74.00	-23.97	peak	
	4	2483.500	33.10	7.87	40.97	54.00	-13.03	AVG	

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



### Horizontal

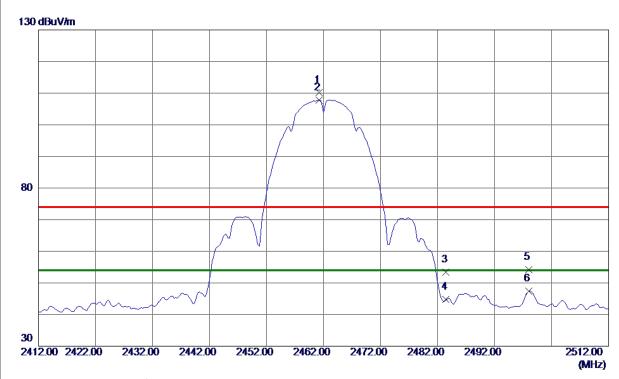


	No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Margin		
-			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
_	1	4	1913.682	37.97	4.58	42.55	74.00	-31.45	peak	
_	2	* 4	1913.938	27.79	4.58	32.37	54.00	-21.63	AVG	

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



# Vertical

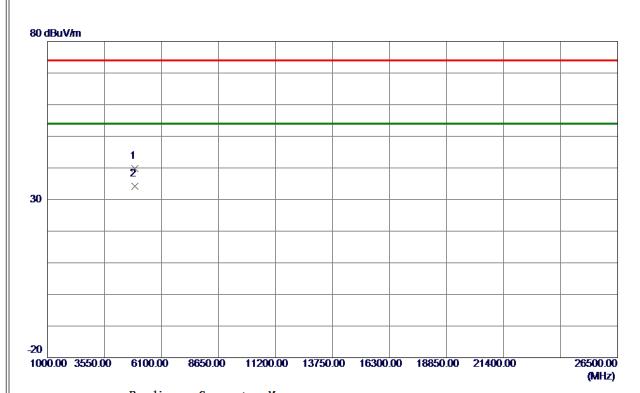


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2461. 2500	102.37	7.80	110. 17	74.00	36. 17	Peak	No Limit
2 *	2461. 2500	100.07	7.80	107.87	54.00	53.87	AVG	No Limit
3	2483. 5000	45. 54	7.88	53.42	74.00	<b>-20.</b> 58	Peak	
4	2483. 5000	37.00	7. 88	44.88	54.00	-9. 12	AVG	
5	2498. 0000	46. 35	7. 92	54. 27	74.00	-19.73	Peak	
6	2498. 0000	39. 44	7. 92	47. 36	54.00	-6. 64	AVG	

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



### Vertical

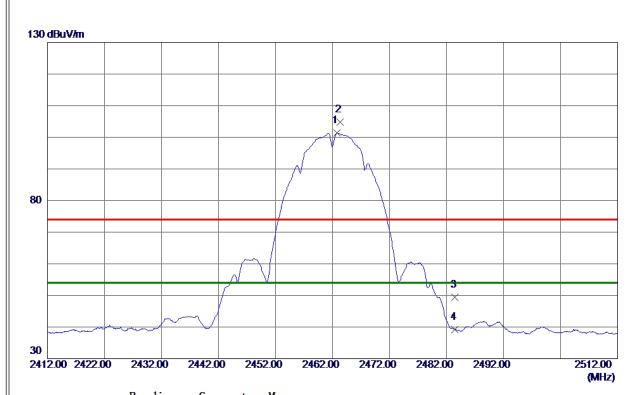


No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4923.9750	35. 17	4.63	39.80	74.00	-34.20	Peak	
2 *	4924.0750	29. 48	4.63	34. 11	54.00	-19.89	AVG	

- (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	2462.8000	93. 51	7.81	101.32	74.00	27. 32	Peak	No Limit
2 *	2463. 3000	96. 90	7.81	104.71	74.00	30.71	Peak	No Limit
3	2483. 5000	41.51	7.88	49. 39	74.00	-24.61	Peak	
4	2483. 5000	31. 26	7.88	39. 14	74.00	-34.86	Peak	
ı								

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



### Horizontal

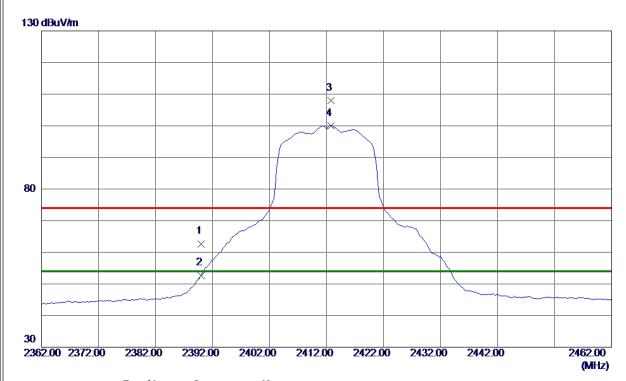


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4923.7670	38. 26	4.63	42.89	74.00	-31. 11	Peak	
2 *	4924. 0299	28. 15	4.63	32.78	54.00	-21. 22	AVG	

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



# Vertical

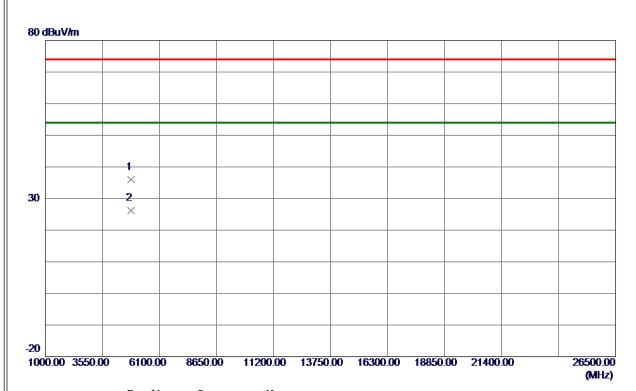


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	55. 14	7. 56	62.70	74.00	-11.30	Peak	
2	2390.0000	45. 14	7. 56	52.70	54.00	-1.30	AVG	
3	2412.7500	100.39	7.64	108. 03	74.00	34.03	Peak	No Limit
4 *	2412.7500	92. 39	7.64	100.03	54.00	46. 03	AVG	No Limit

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



### Vertical

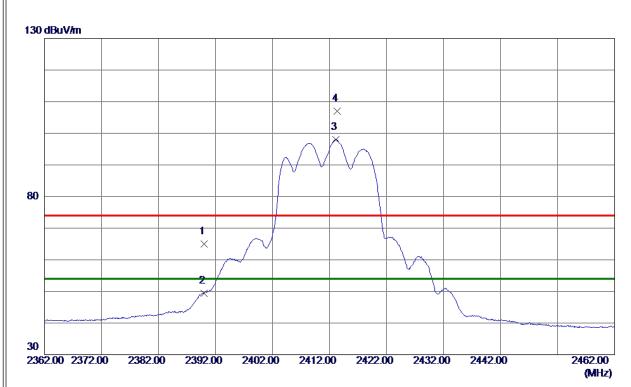


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4822. 4250	31.78	4. 25	36. 03	74.00	-37.97	Peak	
2 *	4822. 9250	22. 04	4. 25	26. 29	54.00	-27.71	AVG	

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



# Horizontal

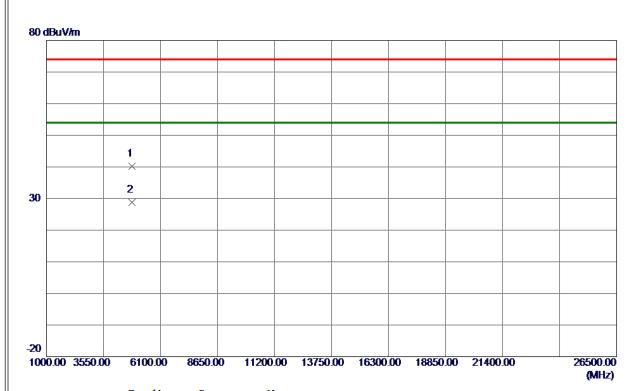


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	57. 53	7. 56	65. 09	74.00	-8. 91	Peak	
2	2390.0000	41.89	7. 56	49.45	54.00	-4.55	AVG	
3 *	2413. 1500	90. 34	7.64	97. 98	54.00	43.98	AVG	No Limit
4	2413. 3000	99. 40	7.64	107.04	74.00	33. 04	Peak	No Limit

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



# Horizontal

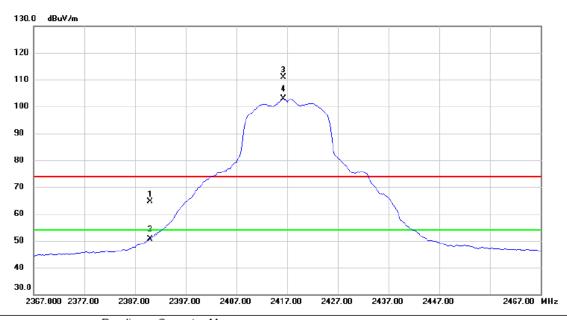


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4819.0000	35. 87	4. 24	40. 11	74.00	-33.89	Peak	
2 *	4825. 4400	24.46	4. 26	28.72	54.00	-25. 28	AVG	

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



### **Vertical**



	No. M	lk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
_			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-	1	23	390.000	56.99	7.57	64.56	74.00	-9.44	peak	
Ī	2	23	390.000	43.15	7.57	50.72	54.00	-3.28	AVG	
Ī	3 X	24	416.250	103.25	7.66	110.91	74.00	36.91	peak	No Limit
-	4 *	24	416.250	95.14	7.66	102.80	54.00	48.80	AVG	No Limit

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



### Vertical

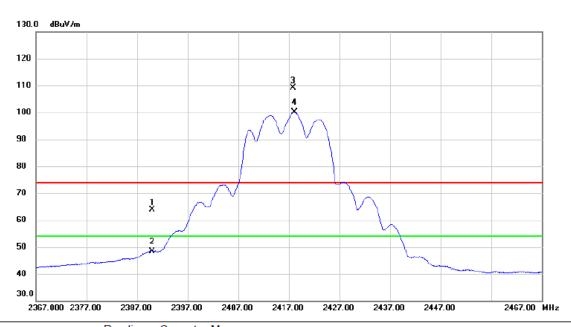


No.	Mk.	Freq.			Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	* 4	1833.900	23.71	4.29	28.00	54.00	-26.00	AVG	
2	4	1834.200	34.27	4.29	38.56	74.00	-35.44	peak	

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



### Horizontal

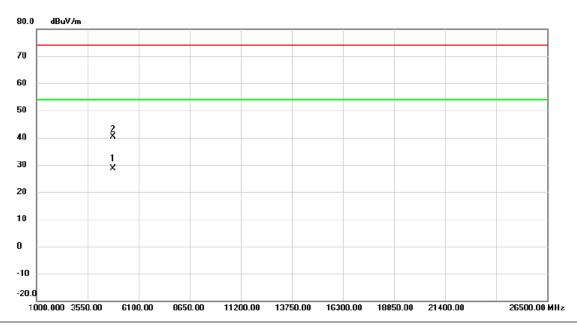


No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.000	56.32	7.57	63.89	74.00	-10.11	peak	
2	2390.000	40.82	7.57	48.39	54.00	-5.61	AVG	
3 X	2417.850	101.42	7.66	109.08	74.00	35.08	peak	No Limit
4 *	2418.150	92.51	7.66	100.17	54.00	46.17	AVG	No Limit

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



### Horizontal

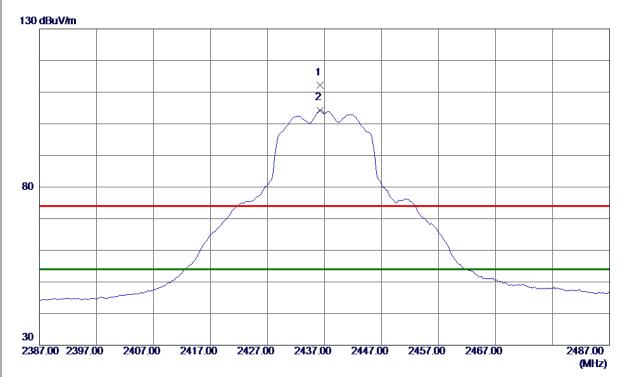


No. N	Лk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	48	827.680	24.42	4.27	28.69	54.00	-25.31	AVG	
2	48	839.280	36.05	4.31	40.36	74.00	-33.64	peak	

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



# Vertical

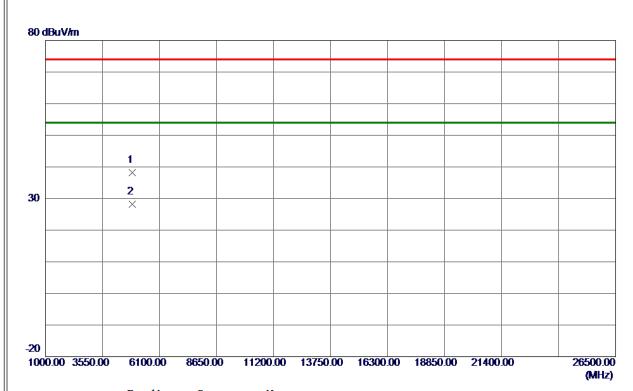


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2436. 2500	104.48	7.72	112. 20	74.00	38. 20	Peak	No Limit
2 *	2436. 2500	96. 58	7.72	104.30	54.00	50. 30	AVG	No Limit

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



### Vertical



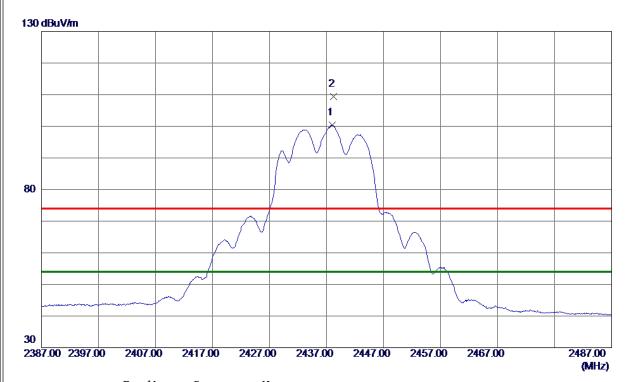
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4873. 1250	33. 67	4.44	38. 11	74.00	-35.89	Peak	
2 *	4874.9000	23.72	4.44	28. 16	54.00	-25.84	AVG	

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



Test Mode: TX G Mode 2437 MHz

#### Horizontal



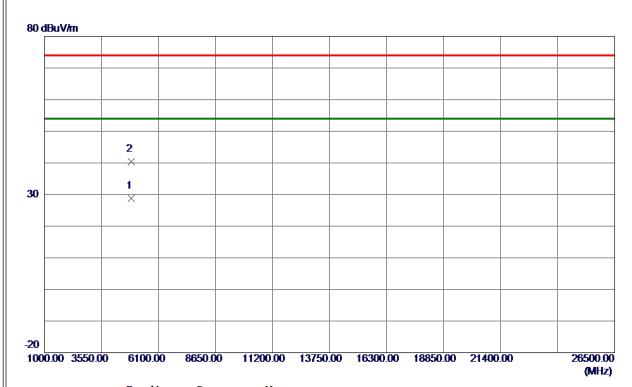
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2437.9500	92.64	7.72	100.36	<b>54.00</b>	46. 36	AVG	No Limit
2	2438. 2500	101.73	7.73	109.46	74.00	35. 46	Peak	No Limit

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



Test Mode: TX G Mode 2437 MHz

#### Horizontal



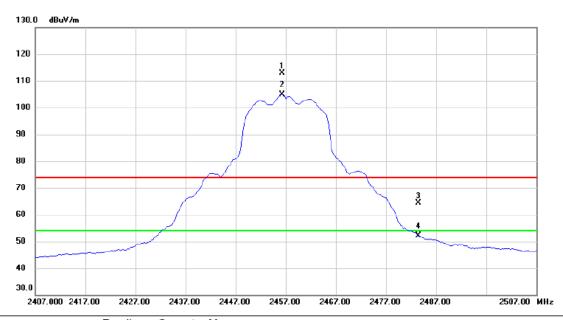
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4875. 0299	24. 32	4.45	28.77	54.00	-25. 23	AVG	
2	4875.9700	35. 94	4.45	40.39	74.00	-33.61	Peak	

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



Test Mode: TX G Mode 2457 MHz

### **Vertical**



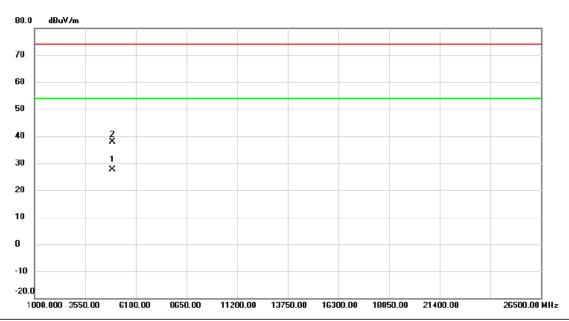
	No. MI	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-	1 X	2456.250	105.00	7.78	112.78	74.00	38.78	peak	No Limit
	2 *	2456.250	97.08	7.78	104.86	54.00	50.86	AVG	No Limit
	3	2483.500	56.43	7.87	64.30	74.00	-9.70	peak	
	4	2483.500	44.30	7.87	52.17	54.00	-1.83	AVG	

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



Test Mode: TX G Mode 2457 MHz

### **Vertical**



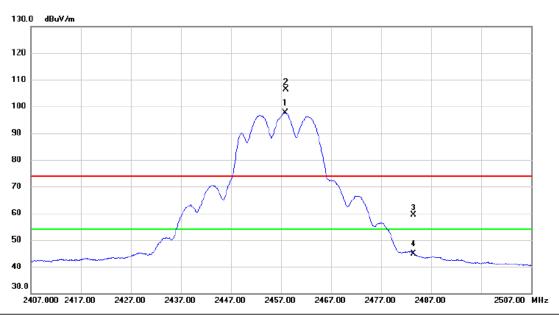
No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4914.250	23.03	4.58	27.61	54.00	-26.39	AVG	
2		4915.650	33.35	4.60	37.95	74.00	-36.05	peak	

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



Test Mode: TX G Mode 2457 MHz

#### Horizontal



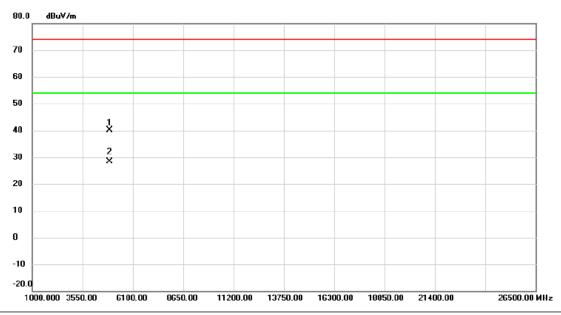
	No. MI	k. Fre	eq.	Reading Level		Measure- ment	Limit	Margin				
•		MH	z	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment		
	1 *	2457.9	000	89.94	7.79	97.73	54.00	43.73	AVG	No Limit		
	2 X	2458.0	50	98.67	7.79	106.46	74.00	32.46	peak	No Limit		
	3	2483.5	00	51.52	7.87	59.39	74.00	-14.61	peak			
•	4	2483.5	00	37.02	7.87	44.89	54.00	-9.11	AVG			

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



Test Mode: TX G Mode 2457 MHz

#### Horizontal



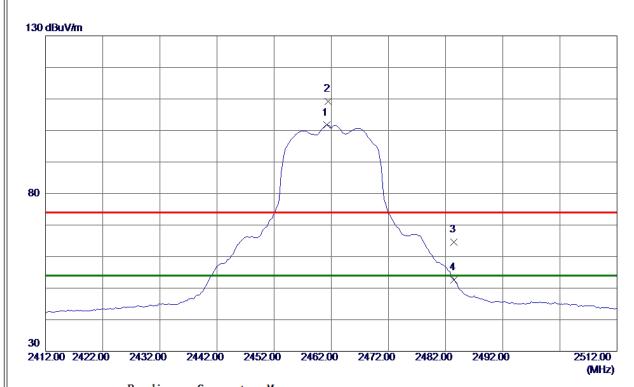
	No.	Mk.	Freq.			Measure- ment	Limit	Margin		
_			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-	1	4	1917.250	35.50	4.61	40.11	74.00	-33.89	peak	
-	2	* 4	1920.010	23.84	4.61	28.45	54.00	-25.55	AVG	

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



Test Mode: TX G Mode 2462 MHz

### Vertical



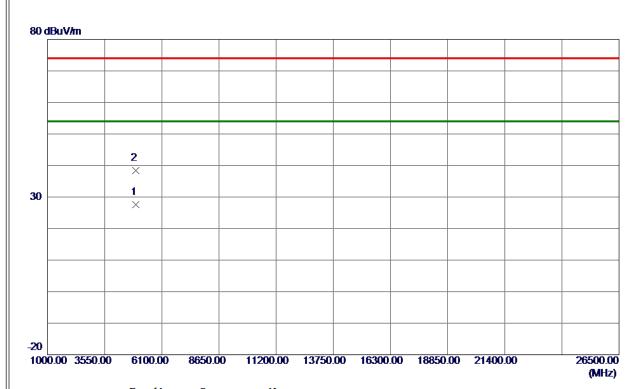
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Limit
Limit
]

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



Test Mode: TX G Mode 2462 MHz

#### **Vertical**



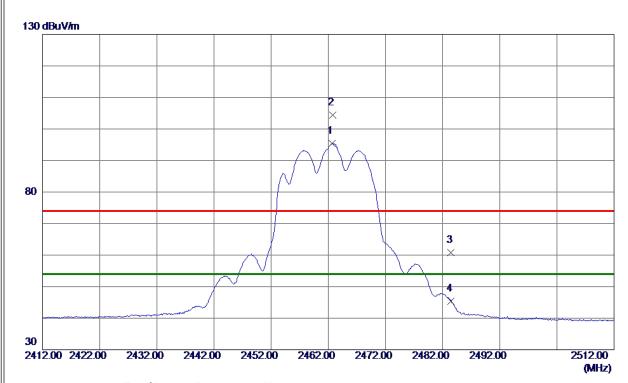
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4924. 3250	23. 01	4.63	27.64	54.00	-26. 36	AVG	
2	4928.7500	33. 78	4.64	38. 42	74.00	-35. 58	Peak	

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



Test Mode: TX G Mode 2462 MHz

### Horizontal



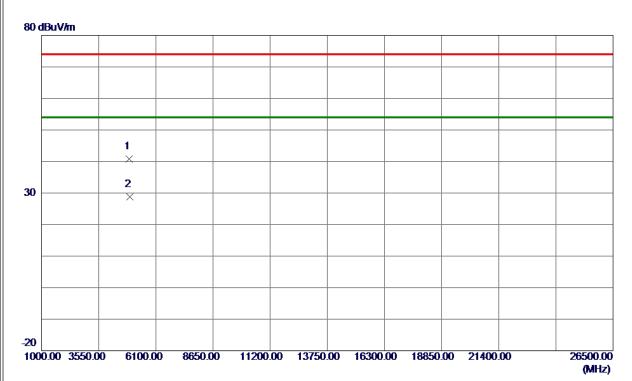
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2462.7000	87. 59	7.81	95. 40	54.00	41.40	AVG	No Limit
2	2462.7500	96. 50	7.81	104.31	74.00	30. 31	Peak	No Limit
3	2483. 5000	52. 98	7.88	60.86	74.00	-13. 14	Peak	
4	2483. 5000	37.45	7.88	45. 33	54.00	-8. 67	AVG	

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



Test Mode: TX G Mode 2462 MHz

## Horizontal



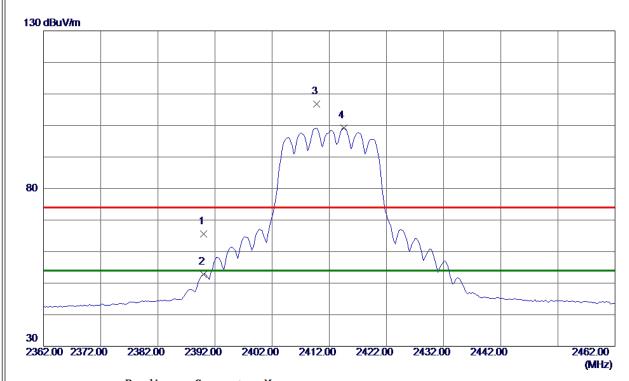
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4919. 2900	36. 25	4.61	40.86	74.00	-33. 14	Peak	
2 *	4933, 2900	24. 14	4. 66	28, 80	54.00	-25, 20	AVG	

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



Test Mode: TX N-20M Mode 2412 MHz

### Vertical



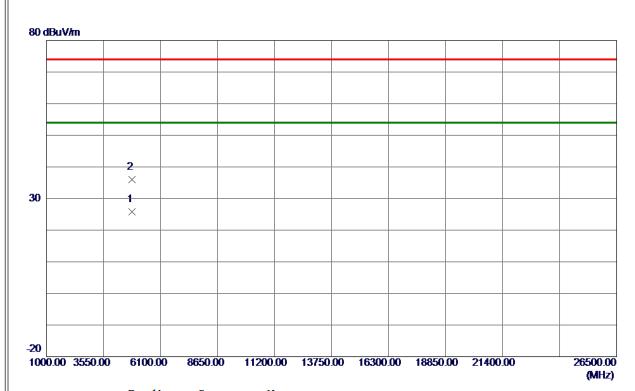
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	58. 06	7. 56	65. 62	74.00	-8. 38	Peak	
2	2390.0000	45. 16	7. 56	52.72	54.00	-1.28	AVG	
3	2409.7500	99. 18	7. 63	106.81	74.00	32.81	Peak	No Limit
4 *	2414. 5000	91. 50	7.65	99. 15	54.00	45. 15	AVG	No Limit

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



Test Mode: TX N-20M Mode 2412 MHz

#### **Vertical**



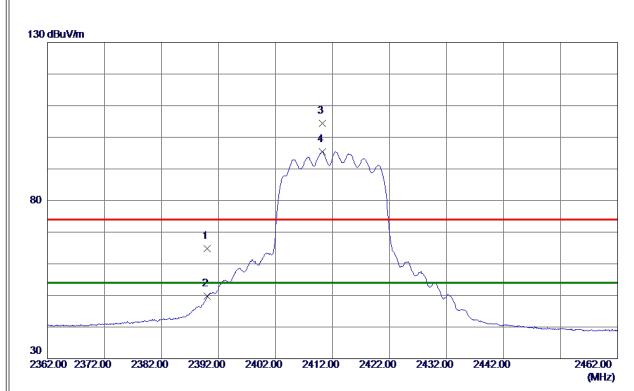
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4823. 5250	21.62	4. 25	25. 87	54.00	-28. 13	AVG	
2	4826. 2500	31.83	4. 26	36. 09	74.00	-37.91	Peak	

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



Test Mode: TX N-20M Mode 2412 MHz

### Horizontal



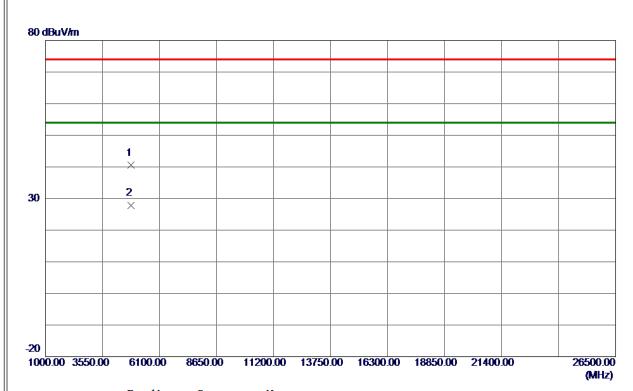
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	57. 18	7. 56	64.74	74.00	-9. 26	Peak	
2	2390.0000	42. 16	7. 56	49.72	54.00	-4. 28	AVG	
3	2410. 2000	96. 78	7. 63	104.41	74.00	30.41	Peak	No Limit
4 *	2410. 2000	87.82	7. 63	95. 45	54.00	41.45	AVG	No Limit

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



Test Mode: TX N-20M Mode 2412 MHz

#### Horizontal



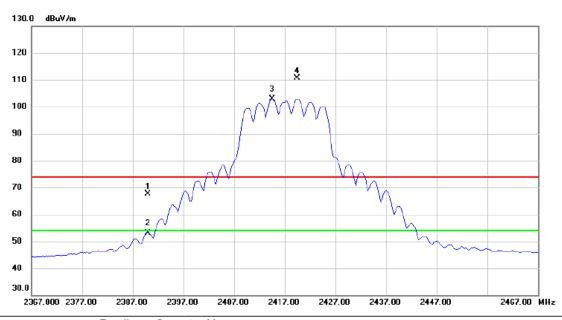
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4814. 1300	36. 28	4. 22	40. 50	74.00	-33. 50	Peak	
2 *	4814.6700	23.65	4. 22	27.87	54.00	-26. 13	AVG	

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



Test Mode: TX N-20M Mode 2417 MHz

### **Vertical**



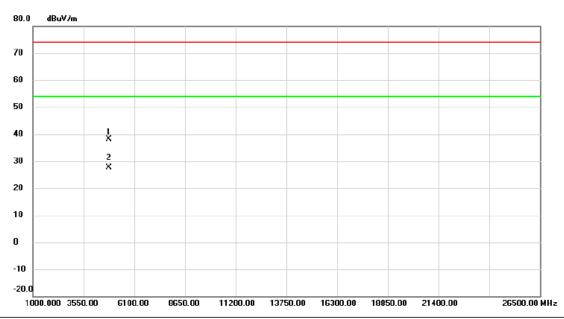
	No. N	Иk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	23	390.000	60.13	7.57	67.70	74.00	-6.30	peak	
	2	23	390.000	45.50	7.57	53.07	54.00	-0.93	AVG	
Ī	3 *	24	414.500	95.35	7.65	103.00	54.00	49.00	AVG	No Limit
	4 X	24	419.500	103.06	7.66	110.72	74.00	36.72	peak	No Limit

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



Test Mode: TX N-20M Mode 2417 MHz

### **Vertical**



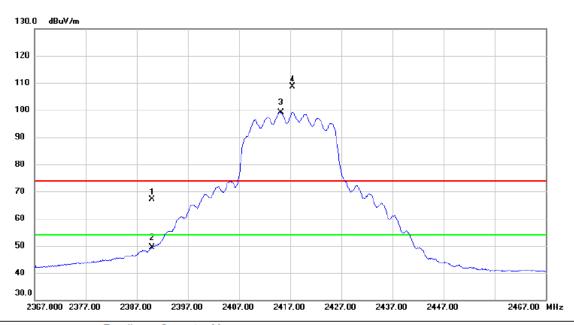
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4834.775	33.78	4.30	38.08	74.00	-35.92	peak	
2	*	4837.450	23.21	4.30	27.51	54.00	-26.49	AVG	

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



Test Mode: TX N-20M Mode 2417 MHz

#### Horizontal



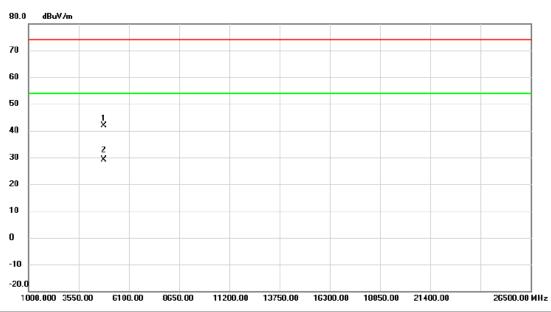
Ν	lo. M	lk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	23	390.000	59.61	7.57	67.18	74.00	-6.82	peak	
	2	23	390.000	41.86	7.57	49.43	54.00	-4.57	AVG	
	3 *	24	415.150	91.56	7.65	99.21	54.00	45.21	AVG	No Limit
	4 X	24	417.450	100.90	7.66	108.56	74.00	34.56	peak	No Limit

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



Test Mode: TX N-20M Mode 2417 MHz

#### Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4	1827.050	37.51	4.27	41.78	74.00	-32.22	peak	
2	* 4	1831.025	24.81	4.28	29.09	54.00	-24.91	AVG	

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



Test Mode: TX N-20M Mode 2437 MHz

### Vertical



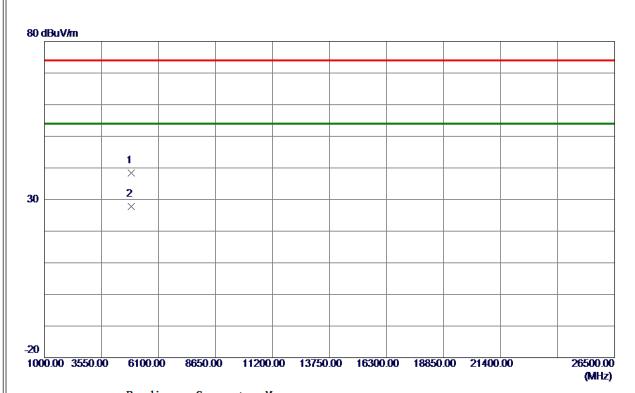
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2439. 5000	103.87	7.73	111.60	74.00	37.60	Peak	No Limit
2 *	2439. 5000	96. 87	7. 73	104.60	54.00	50. 60	AVG	No Limit

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



Test Mode: TX N-20M Mode 2437 MHz

#### **Vertical**



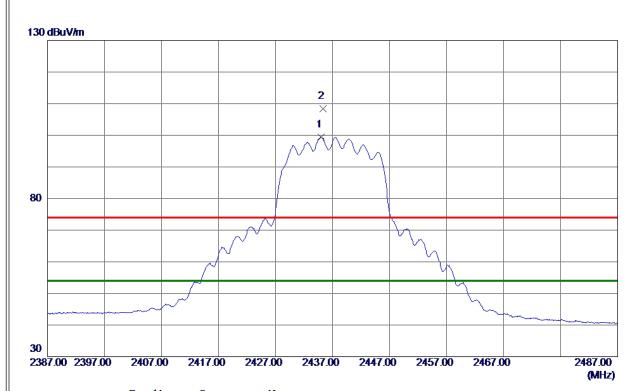
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4869. 4250	34.05	4.42	38. 47	74.00	-35.53	Peak	
2 *	4873.7500	23. 28	4.44	27.72	54.00	-26. 28	AVG	

- (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 *	2434.9500	91.71	7.71	99. 42	54.00	45.42	AVG	No Limit
2	2435. 3000	100.65	7.72	108. 37	74.00	34. 37	Peak	No Limit

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



Test Mode: TX N-20M Mode 2437 MHz

#### Horizontal



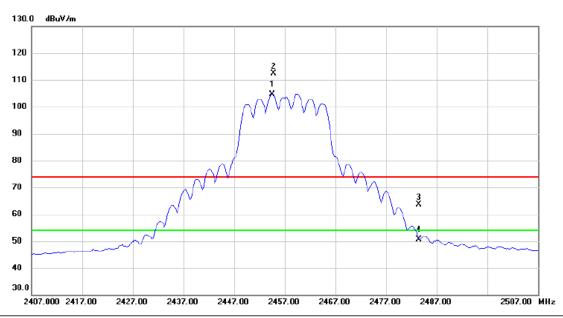
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4874.9500	36. 67	4.44	41.11	74.00	-32.89	Peak	
2 *	4875. 2250	24.06	4.45	28. 51	54.00	-25.49	AVG	

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



Test Mode: TX N-20M Mode 2457 MHz

#### **Vertical**



	No. MI	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
-		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-	1 *	2454.500	96.88	7.78	104.66	54.00	50.66	AVG	No Limit
Ī	2 X	2454.750	104.59	7.78	112.37	74.00	38.37	peak	No Limit
	3	2483.500	55.72	7.87	63.59	74.00	-10.41	peak	
Ī	4	2483.500	42.84	7.87	50.71	54.00	-3.29	AVG	

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



Test Mode: TX N-20M Mode 2457 MHz

### Vertical



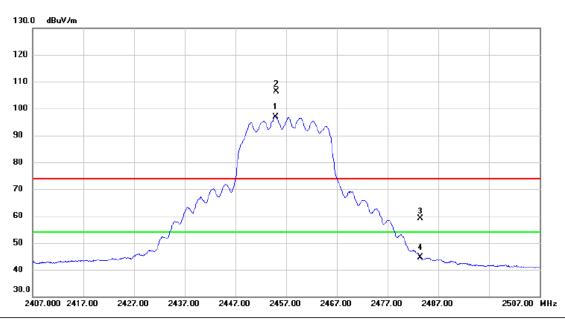
No.	Mk.	Freq.			Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	* 4	4914.275	22.70	4.58	27.28	54.00	-26.72	AVG	
2	4	4915.775	33.23	4.60	37.83	74.00	-36.17	peak	

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



Test Mode: TX N-20M Mode 2457 MHz

### Horizontal



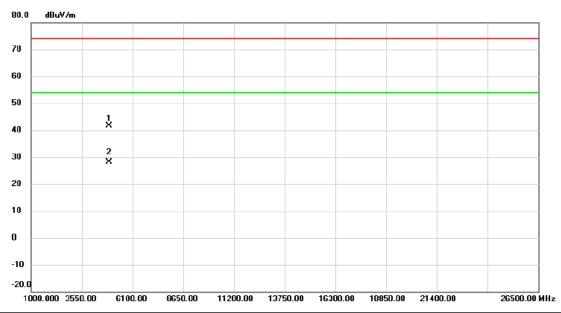
	No. MI	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
Ī	1 *	2454.950	89.18	7.78	96.96	54.00	42.96	AVG	No Limit
	2 X	2455.050	98.50	7.78	106.28	74.00	32.28	peak	No Limit
	3	2483.500	51.19	7.87	59.06	74.00	-14.94	peak	
	4	2483.500	36.67	7.87	44.54	54.00	-9.46	AVG	

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



Test Mode: TX N-20M Mode 2457 MHz

#### Horizontal



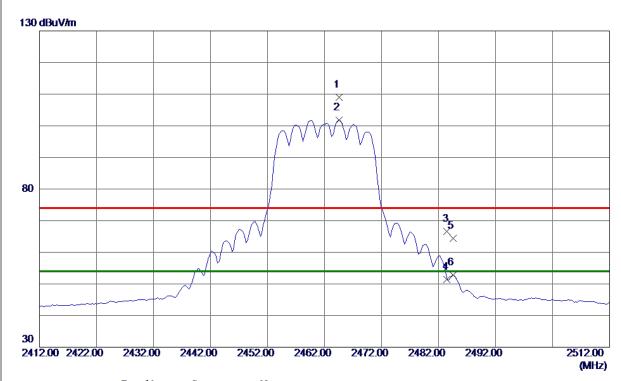
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4911.530	37.02	4.58	41.60	74.00	-32.40	peak	
2	*	4913.390	23.65	4.58	28.23	54.00	-25.77	AVG	

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



Test Mode: TX N-20M Mode 2462 MHz

### Vertical



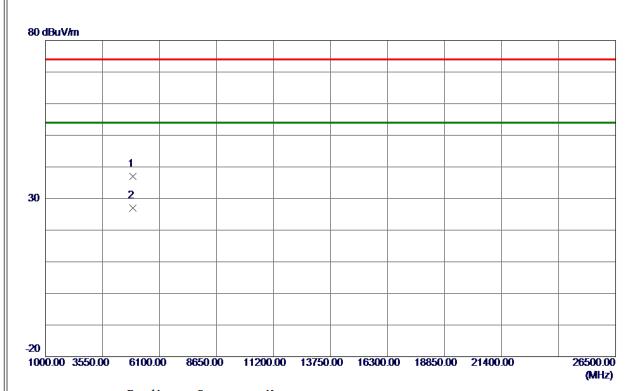
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2464. 5000	101. 27	7.81	109.08	74.00	35. 08	Peak	No Limit
2 *	2464. 5000	93. 93	7.81	101.74	54.00	47.74	AVG	No Limit
3	2483. 5000	58. 68	7.88	66. 56	74.00	-7.44	Peak	
4	2483. 5000	43. 58	7.88	51.46	54.00	-2.54	AVG	
5	2484. 5000	56. 57	7.88	64.45	74.00	-9. 55	Peak	
6	2484. 5000	44.84	7.88	52.72	54.00	-1. 28	AVG	

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



Test Mode: TX N-20M Mode 2462 MHz

#### **Vertical**



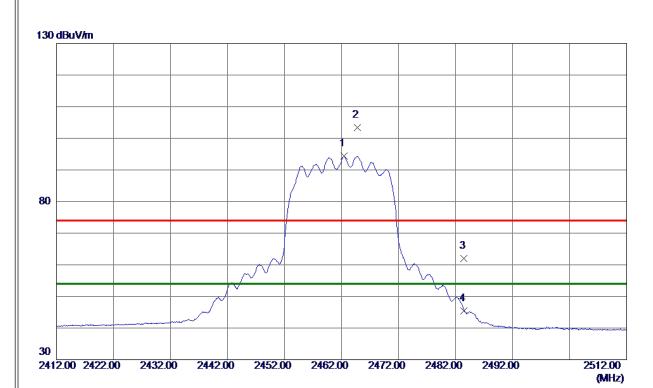
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4921. 1000	32.41	4.62	37.03	74.00	-36. 97	Peak	
2 *	4922. 4500	22.45	4.62	27.07	54.00	-26.93	AVG	

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



Test Mode: TX N-20M Mode 2462 MHz

## Horizontal



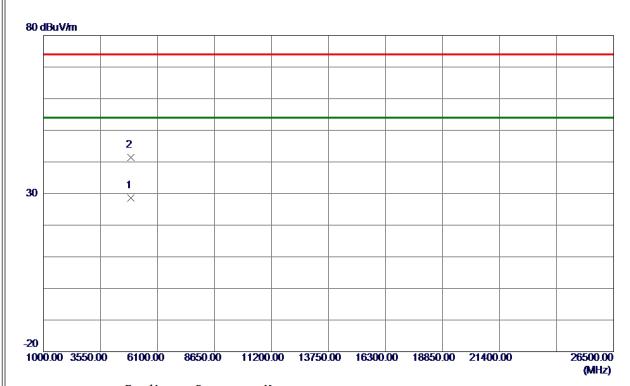
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2462. 4000	86. 57	7.81	94. 38	54.00	40.38	AVG	No Limit
2	2464.7500	95. 53	7.81	103. 34	74.00	29. 34	Peak	No Limit
3	2483. 5000	54. 21	7. 88	62.09	74.00	-11.91	Peak	
4	2483. 5000	37. 58	7.88	45. 46	54.00	-8. 54	AVG	
ı								

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



Test Mode: TX N-20M Mode 2462 MHz

## Horizontal



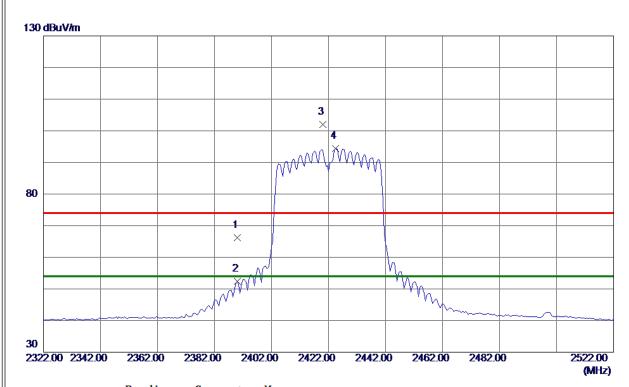
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4922.6050	23.95	4.62	28. 57	54.00	-25.43	AVG	
2	4923. 2080	36. 76	4.62	41.38	74.00	-32.62	Peak	

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



Test Mode: TX N-40M Mode 2422 MHz

#### **Vertical**



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	58. 69	7. 56	66. 25	74.00	-7.75	Peak	
2	2390.0000	44.86	7. 56	52.42	54.00	-1. 58	AVG	
3	2420.0000	94. 30	7. 66	101.96	74.00	27.96	Peak	No Limit
4 *	2424. 5000	86. 80	7. 68	94.48	54.00	40.48	AVG	No Limit

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



Test Mode: TX N-40M Mode 2422 MHz

#### **Vertical**



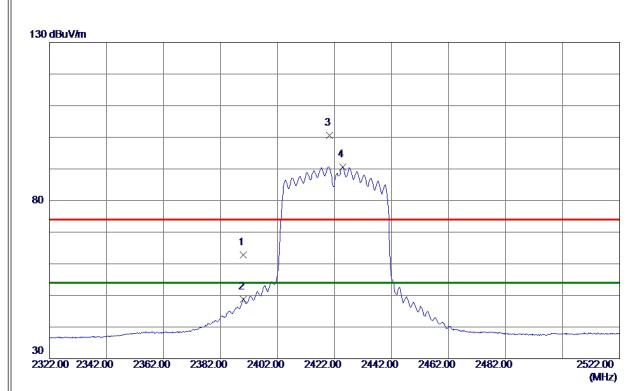
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4846. 4500	32. 37	4.34	36.71	74.00	-37.29	Peak	
2 *	4848. 4250	22.40	4. 35	26. 75	54.00	-27.25	AVG	

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



Test Mode: TX N-40M Mode 2422 MHz

#### Horizontal



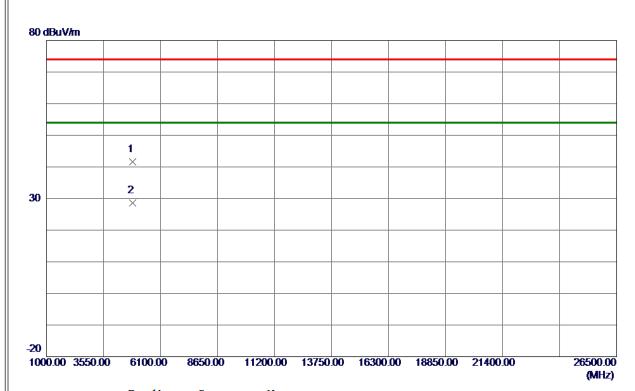
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	55. 22	7. 56	62. 78	74.00	-11. 22	Peak	
2	2390.0000	41. 17	7. 56	48.73	54.00	-5. 27	AVG	
3	2420. 2000	92. 90	7. 67	100. 57	74.00	26. 57	Peak	No Limit
4 *	2424.8000	82. 99	7. 68	90. 67	54.00	36. 67	AVG	No Limit

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



Test Mode: TX N-40M Mode 2422 MHz

## Horizontal



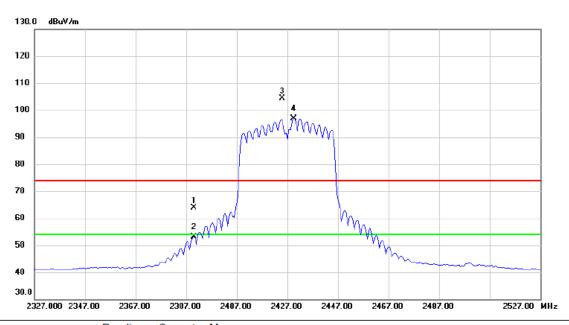
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4842.0000	37. 26	4.32	41.58	74.00	-32.42	Peak	
2 *	4842.7000	24. 30	4.32	28. 62	54.00	-25.38	AVG	

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



Test Mode: TX N-40M Mode 2427 MHz

#### **Vertical**



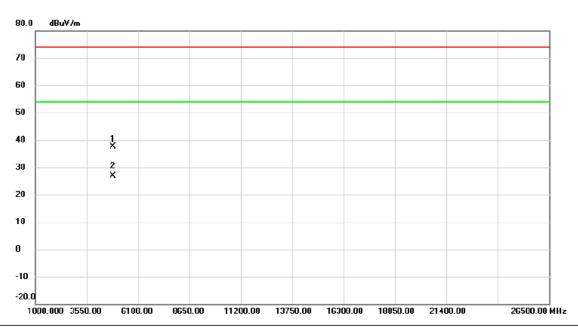
	No. M	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
_	1	23	390.000	56.22	7.57	63.79	74.00	-10.21	peak	
Ī	2	23	390.000	45.47	7.57	53.04	54.00	-0.96	AVG	
_	3 X	24	125.000	96.81	7.69	104.50	74.00	30.50	peak	No Limit
-	4 *	24	129.500	89.09	7.69	96.78	54.00	42.78	AVG	No Limit

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



Test Mode: TX N-40M Mode 2427 MHz

#### **Vertical**



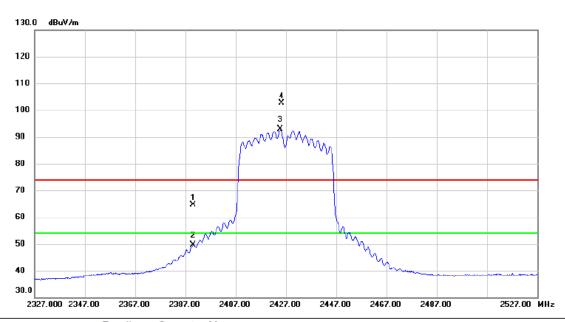
	No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	4	1870.600	33.27	4.43	37.70	74.00	-36.30	peak	
_	2	* 4	1873.625	22.45	4.45	26.90	54.00	-27.10	AVG	

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



Test Mode: TX N-40M Mode 2427 MHz

### Horizontal



	No. M	lk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	239	90.000	56.99	7.57	64.56	74.00	-9.44	peak	
	2	239	90.000	42.01	7.57	49.58	54.00	-4.42	AVG	
	3 *	242	24.800	85.12	7.68	92.80	54.00	38.80	AVG	No Limit
-	4 X	242	25.300	95.02	7.69	102.71	74.00	28.71	peak	No Limit

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



Test Mode: TX N-40M Mode 2427 MHz

### Horizontal



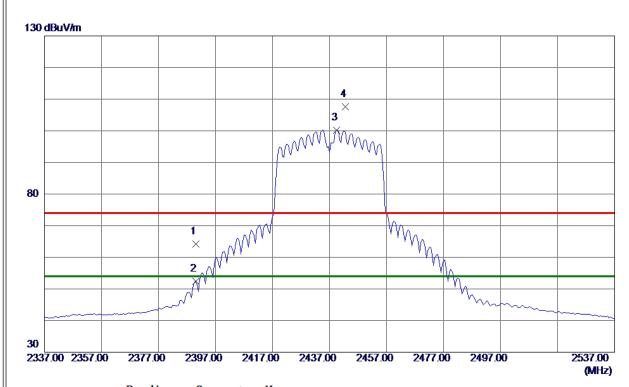
	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
-			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-	1	* 4	1853.115	24.03	4.36	28.39	54.00	-25.61	AVG	
Ī	2	4	1853.976	37.03	4.37	41.40	74.00	-32.60	peak	

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



Test Mode: TX N-40M Mode 2437 MHz

### **Vertical**



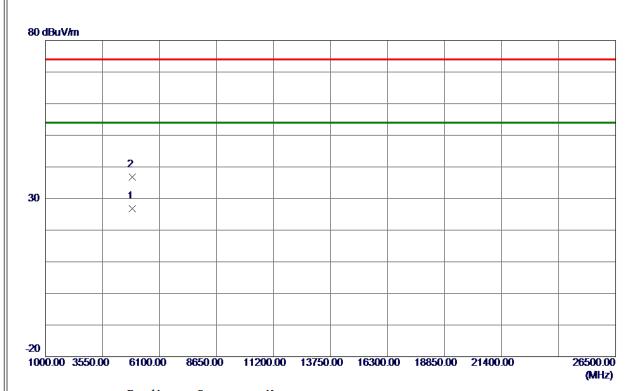
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	56. 59	7. 56	64. 15	74.00	-9.85	Peak	
2	2390.0000	44.75	7. 56	52. 31	54.00	-1.69	AVG	
3 *	2439. 5000	92. 56	7.73	100. 29	54.00	46. 29	AVG	No Limit
4	2442. 5000	99. 78	7.74	107. 52	74.00	33. 52	Peak	No Limit

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



Test Mode: TX N-40M Mode 2437 MHz

### **Vertical**



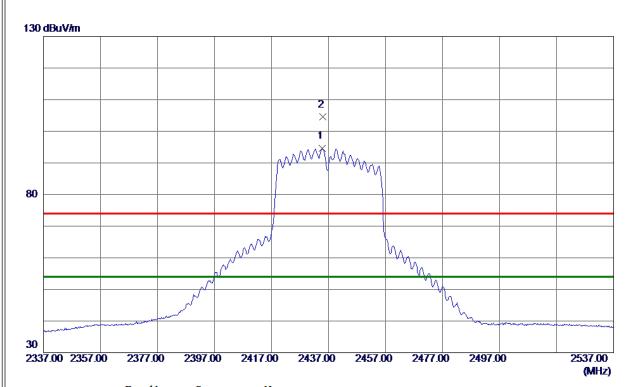
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4869.0500	22. 31	4.42	26.73	54.00	-27.27	AVG	
2	4870. 1750	32. 38	4.43	36. 81	74.00	-37.19	Peak	

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



Test Mode: TX N-40M Mode 2437 MHz

### Horizontal



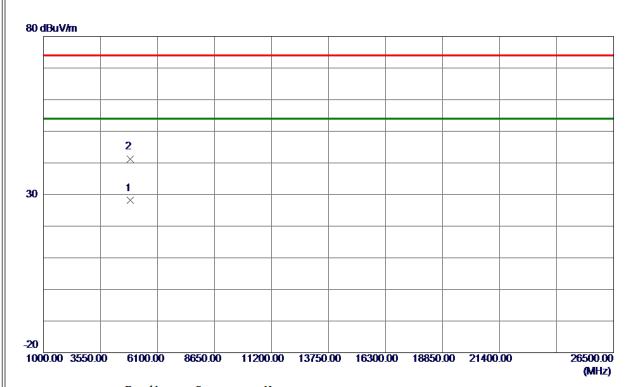
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2434.8000	86. 97	7.71	94.68	54.00	40.68	AVG	No Limit
2	2435.0000	96. 79	7.71	104.50	74.00	30. 50	Peak	No Limit

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



Test Mode: TX N-40M Mode 2437 MHz

### Horizontal



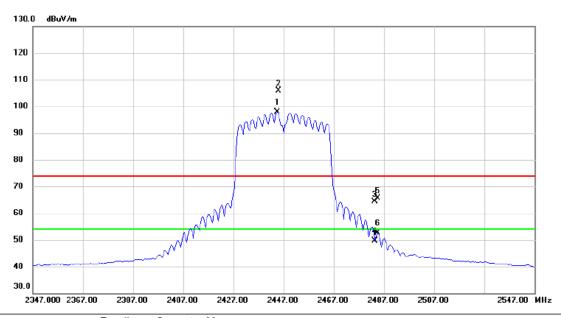
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4873.9670	23.66	4.44	28. 10	<b>54.00</b>	-25.90	AVG	
2	4874.0040	36.71	4.44	41. 15	74.00	-32.85	Peak	

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



Test Mode: TX N-40M Mode 2447 MHz

### **Vertical**



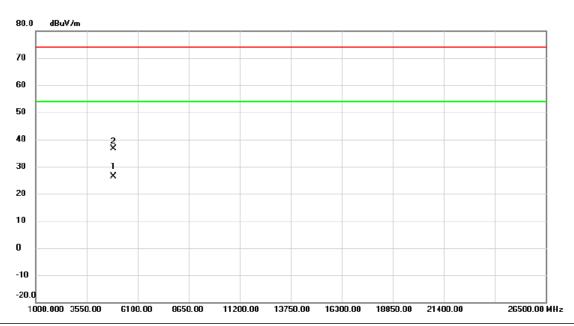
	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
-			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	*	2444.500	90.17	7.75	97.92	54.00	43.92	AVG	No Limit
-	2	Х	2445.000	98.09	7.75	105.84	74.00	31.84	peak	No Limit
-	3		2483.500	56.52	7.87	64.39	74.00	-9.61	peak	
-	4		2483.500	41.74	7.87	49.61	54.00	-4.39	AVG	
-	5		2484.500	57.87	7.88	65.75	74.00	-8.25	peak	
-	6		2484.500	44.72	7.88	52.60	54.00	-1.40	AVG	
_										

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



Test Mode: TX N-40M Mode 2447 MHz

### Vertical



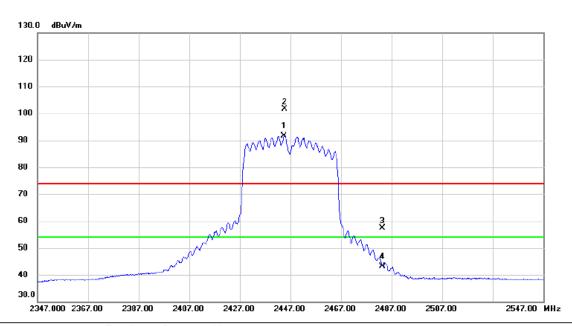
	No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Margin		
_			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
_	1	* 4	1889.875	21.85	4.49	26.34	54.00	-27.66	AVG	
-	2	4	1892.975	32.17	4.52	36.69	74.00	-37.31	peak	

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



Test Mode: TX N-40M Mode 2447 MHz

### Horizontal



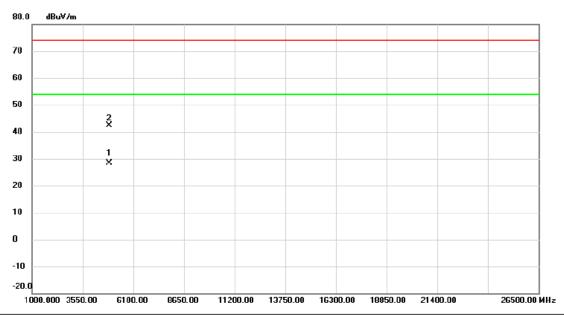
	No. Mi	Κ.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1 *	24	44.600	83.91	7.75	91.66	54.00	37.66	AVG	No Limit
	2 X	24	44.800	93.93	7.75	101.68	74.00	27.68	peak	No Limit
_	3	24	83.500	49.55	7.87	57.42	74.00	-16.58	peak	
	4	24	83.500	35.35	7.87	43.22	54.00	-10.78	AVG	

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



Test Mode: TX N-40M Mode 2447 MHz

### Horizontal



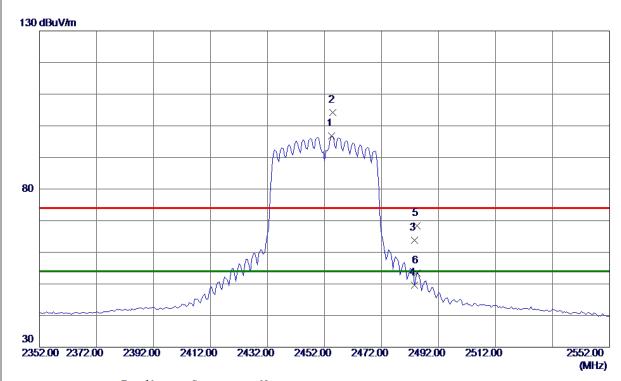
No. I	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4	894.141	23.85	4.52	28.37	54.00	-25.63	AVG	
2	48	894.722	37.85	4.52	42.37	74.00	-31.63	peak	

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



Test Mode: TX N-40M Mode 2452 MHz

### **Vertical**



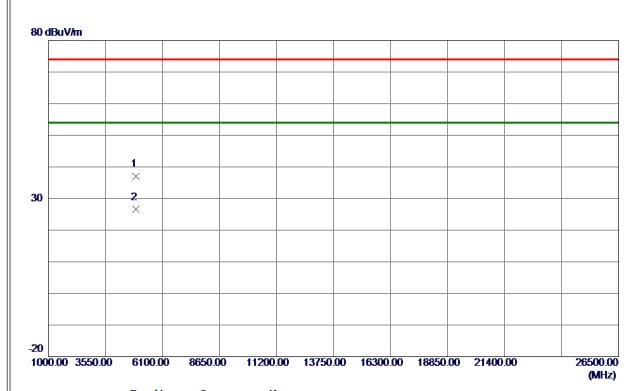
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2454. 5000	88. 93	7.78	96. 71	54.00	42.71	AVG	No Limit
2	2455. 0000	96. 45	7. 78	104. 23	74.00	30. 23	Peak	No Limit
3	2483. 5000	55. 87	7.88	63.75	74.00	-10.25	Peak	
4	2483. 5000	41.69	7. 88	49. 57	54.00	-4.43	AVG	
5	2484. 5000	60. 61	7.88	68. 49	74.00	-5. 51	Peak	
6	2484. 5000	45. 60	7.88	53.48	54.00	<b>-0.</b> 52	AVG	

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



Test Mode: TX N-40M Mode 2452 MHz

### Vertical



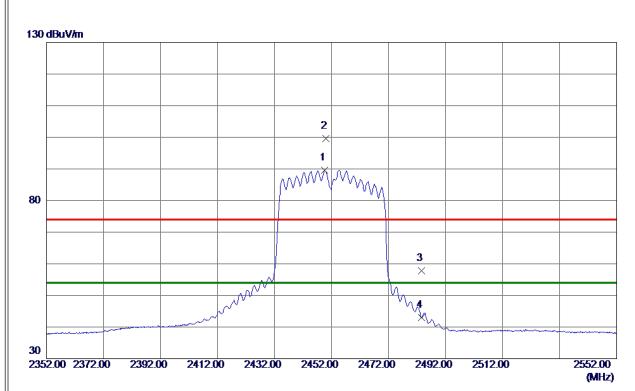
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4907.9500	32. 42	4. 57	36. 99	74.00	-37.01	Peak	
2 *	4908. 9500	21. 93	4. 57	26. 50	54.00	-27. 50	AVG	

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



Test Mode: TX N-40M Mode 2452 MHz

### Horizontal



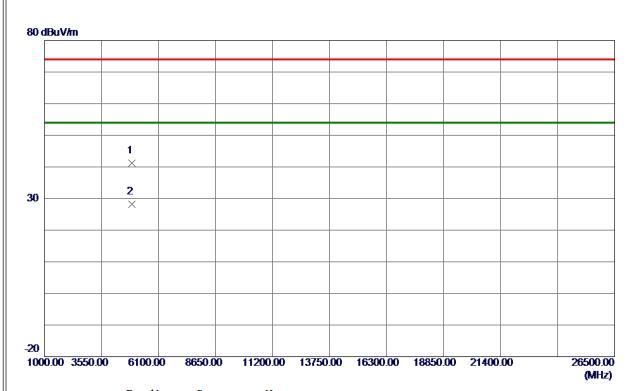
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2449.6000	81.84	7.76	89. 60	54.00	35. 60	AVG	No Limit
2	2449.9000	91.93	7.76	99. 69	74.00	25. 69	Peak	No Limit
3	2483. 5000	49.86	7.88	57.74	74.00	-16. 26	Peak	
4	2483. 5000	35. 04	7.88	42.92	54.00	-11.08	AVG	

- (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	4904.0000	36.64	4.55	41. 19	74.00	-32.81	Peak	
2 *	4904.0000	23.67	4.55	28. 22	54.00	-25.78	AVG	

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



# **APPENDIX E - BANDWIDTH**

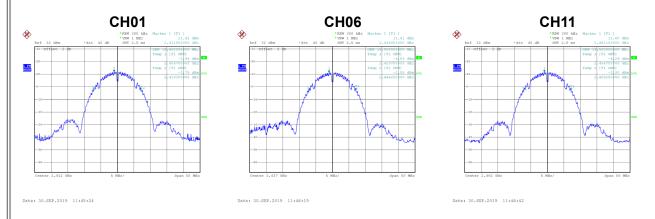


Test Mode	TX B Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	10.07	500	Complies
06	2437	10.08	500	Complies
11	2462	10.10	500	Complies



Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
01	2412	14.60	Complies
06	2437	14.50	Complies
11	2462	14.50	Complies





Test Mode	TX G Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	11.43	500	Complies
06	2437	15.14	500	Complies
11	2462	15.14	500	Complies



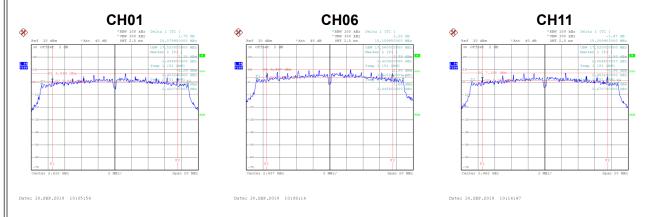
Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
01	2412	16.60	Complies
06	2437	16.90	Complies
11	2462	16.60	Complies





	Test Mode	TX N-20M Mode
ı	100t Wood	

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	15.08	500	Complies
06	2437	15.16	500	Complies
11	2462	15.06	500	Complies



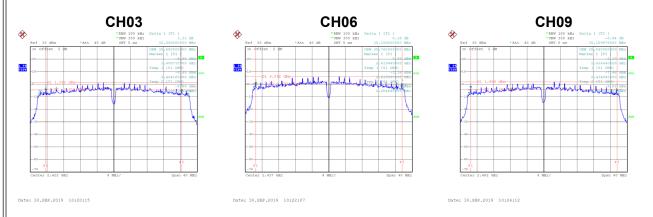
Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
01	2412	17.70	Complies
06	2437	17.90	Complies
11	2462	17.60	Complies





Test Mode	TX N-40M Mode

Channel	Frequency 6 dB Bandwidth (MHz) (MHz)		6 dB Bandwidth Min. Limit (kHz)	Result	
03	2422	32.65	500	Complies	
06	2437	35.16	500	Complies	
09	2452	35.16	500	Complies	



Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
03	2422	36.00	Complies
06	2437	36.00	Complies
09	2452	36.00	Complies





# **APPENDIX F - MAXIMUM AVERAGE OUTPUT POWER**



Test Mode	TX B Mode Ant.	1
100t Wood	17 D 111000_7 1110.	•

Channel	Frequency (MHz)	Average Output Power (dBm)	Duty Factor	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	19.86	0.00	19.86	30.00	1.0000	Complies
06	2437	19.55	0.00	19.55	30.00	1.0000	Complies
11	2462	19.56	0.00	19.56	30.00	1.0000	Complies

Test Mode	TX B Mode_	Ant. 2
ICSL WIOGC	I A D WOUC_	_/\III. Z

Channel	Frequency (MHz)	Average Output Power (dBm)	Duty Factor	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	19.73	0.00	19.73	30.00	1.0000	Complies
06	2437	19.76	0.00	19.76	30.00	1.0000	Complies
11	2462	19.62	0.00	19.62	30.00	1.0000	Complies

Test Mode	TX B Mode_Total
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Channel	Frequency (MHz)	Average Output Power (dBm)	Average Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	22.81	0.1908	30.00	1.0000	Complies
06	2437	22.67	0.1848	30.00	1.0000	Complies
11	2462	22.60	0.1820	30.00	1.0000	Complies



Test Mode	TX G Mode_Ant.	1
100t Wood	in Controdo mit.	•

Channel	Frequency (MHz)	Average Output Power (dBm)	Duty Factor	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	17.82	0.47	18.29	30.00	1.0000	Complies
06	2437	19.45	0.47	19.92	30.00	1.0000	Complies
11	2462	17.17	0.47	17.64	30.00	1.0000	Complies

Channel	Frequency (MHz)	Average Output Power (dBm)	Duty Factor	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	17.46	0.47	17.93	30.00	1.0000	Complies
06	2437	19.71	0.47	20.18	30.00	1.0000	Complies
11	2462	16.47	0.47	16.94	30.00	1.0000	Complies

Test Mode	TX G Mode_Total
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Channel	Frequency (MHz)	Average Output Power (dBm)	Average Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	21.13	0.1296	30.00	1.0000	Complies
06	2437	23.06	0.2025	30.00	1.0000	Complies
11	2462	20.32	0.1076	30.00	1.0000	Complies



Channel	Frequency (MHz)	Average Output Power (dBm)	Duty Factor	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	16.07	0.53	16.60	30.00	1.0000	Complies
06	2437	19.27	0.53	19.80	30.00	1.0000	Complies
11	2462	16.84	0.53	17.37	30.00	1.0000	Complies

Test Mode TX N-20M Mode_Ant. 2
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Channel	Frequency (MHz)	Average Output Power (dBm)	Duty Factor	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	15.98	0.53	16.51	30.00	1.0000	Complies
06	2437	19.75	0.53	20.28	30.00	1.0000	Complies
11	2462	16.42	0.53	16.95	30.00	1.0000	Complies

Test Mode T	X N-20M Mode_Total
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Channel	Frequency (MHz)	Average Output Power (dBm)	Average Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	19.56	0.0904	30.00	1.0000	Complies
06	2437	23.05	0.2020	30.00	1.0000	Complies
11	2462	20.17	0.1040	30.00	1.0000	Complies



Channel	Frequency (MHz)	Average Output Power (dBm)	Duty Factor	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	12.97	0.98	13.95	30.00	1.0000	Complies
06	2437	17.87	0.98	18.85	30.00	1.0000	Complies
09	2452	13.89	0.98	14.87	30.00	1.0000	Complies

Test Mode	TX N-40M Mode_	Ant. 2

Channel	Frequency (MHz)	Average Output Power (dBm)	Duty Factor	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	12.75	0.98	13.73	30.00	1.0000	Complies
06	2437	17.09	0.98	18.07	30.00	1.0000	Complies
09	2452	13.18	0.98	14.16	30.00	1.0000	Complies

### Test Mode TX N-40M Mode\_Total

Channel	Frequency (MHz)	Average Output Power (dBm)	Average Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	16.85	0.0484	30.00	1.0000	Complies
06	2437	21.48	0.1407	30.00	1.0000	Complies
09	2452	17.54	0.0567	30.00	1.0000	Complies



## **APPENDIX G - CONDUCTED SPURIOUS EMISSIONS**