

# FCC Radio Test Report FCC ID: V7TFH1201

This report concerns (check one):	Original Grant	Class II Change

**Project No.** : 1406C022

**Equipment**: High Power Wireless AC1200 Dual-band

Router

Model Name : FH1201

Applicant: SHENZHEN TENDA TECHNOLOGY

CO.,LTD

Address : 6-8 Floor, Tower E3, No. 1001,

Zhongshanyuan Road, Nanshan District,

Shenzhen, China. 518052

**Tested by:** BTL Inc. EMC Laboratory **Date of Receipt:** Jun. 06, 2014

Date of Test: Jun. 06, 2014 ~ Jul. 07, 2014

**Issued Date:** Jul. 07, 2014

Testing Engineer : Javid Mac

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Report No.: NEI-FCCP-2-1406C022 Page 1 of 162



#### **Declaration**

**BTL** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C.**, or National Institute of Standards and Technology (**NIST**) of **U.S.A.** 

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#### Limitation

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Report No.: NEI-FCCP-2-1406C022 Page 2 of 162



Table of Contents	Page
1. CERTIFICATION	7
2. SUMMARY OF TEST RESULTS	8
2.1 TEST FACILITY	9
2.2 MEASUREMENT UNCERTAINTY	9
3. GENERAL INFORMATION	10
3.1 GENERAL DESCRIPTION OF EUT	10
3.2 DESCRIPTION OF TEST MODES	12
3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING	13
3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TEST	ED 14
3.5 DESCRIPTION OF SUPPORT UNITS	15
4 . EMC EMISSION TEST	16
4.1 CONDUCTED EMISSION MEASUREMENT	16
4.1.1 POWER LINE CONDUCTED EMISSION	16
4.1.2 TEST PROCEDURE 4.1.3 DEVIATION FROM TEST STANDARD	16 16
4.1.4 TEST SETUP	17
4.1.5 EUT OPERATING CONDITIONS	17
4.1.6 EUT TEST CONDITIONS	17
4.1.7 TEST RESULTS	17
4.2 RADIATED EMISSION MEASUREMENT 4.2.1 RADIATED EMISSION LIMITS	18 18
4.2.2 TEST PROCEDURE	19
4.2.3 DEVIATION FROM TEST STANDARD	19
4.2.4 TEST SETUP	19
4.2.5 EUT OPERATING CONDITIONS 4.2.6 EUT TEST CONDITIONS	20 20
4.2.7 TEST RESULTS (9K TO 30MHz)	21
4.2.8 TEST RESULTS (BETWEEN 30 TO 1000 MHz)	21
4.2.9 TEST RESULTS (ABOVE 1000 MHz)	21
5 . 26dB SPECTRUM BANDWIDTH	22
5.1 APPLIED PROCEDURES / LIMIT	22
5.1.1 TEST PROCEDURE 5.1.2 DEVIATION FROM STANDARD	22 22
5.1.2 DEVIATION FROM STANDARD 5.1.3 TEST SETUP	22 22
5.1.4 EUT OPERATION CONDITIONS	22
5.1.5 EUT TEST CONDITIONS	22
5.1.6 TEST RESULTS	22

Report No.: NEI-FCCP-2-1406C022 Page 3 of 162



Table of Contents	Page
6 . MAXIMUM CONDUCTED OUTPUT POWER	23
6.1 APPLIED PROCEDURES / LIMIT	23
6.1.1 TEST PROCEDURE	23
6.1.2 DEVIATION FROM STANDARD 6.1.3 TEST SETUP	24 24
6.1.4 EUT OPERATION CONDITIONS	24 24
6.1.5 EUT TEST CONDITIONS	24
6.1.6 TEST RESULTS	24
7 . ANTENNA CONDUCTED SPURIOUS EMISSION	25
7.1 APPLIED PROCEDURES / LIMIT	25
7.1.1 TEST PROCEDURE	25
7.1.2 DEVIATION FROM STANDARD	<b>25</b>
7.1.3 TEST SETUP 7.1.4 EUT OPERATION CONDITIONS	25 25
7.1.5 EUT TEST CONDITIONS	25 25
7.1.6 TEST RESULTS	25
8 . POWER SPECTRAL DENSITY TEST	26
8.1 APPLIED PROCEDURES / LIMIT	26
8.1.1 TEST PROCEDURE	26
8.1.2 DEVIATION FROM STANDARD	26
8.1.3 TEST SETUP 8.1.4 EUT OPERATION CONDITIONS	26 26
8.1.5 EUT TEST CONDITIONS	26 26
8.1.6 TEST RESULTS	26
9. FREQUENCY STABILITY MEASUREMENT	27
9.1 APPLIED PROCEDURES / LIMIT	27
9.1.1 TEST PROCEDURE	27
9.1.2 DEVIATION FROM STANDARD	27
9.1.3 TEST SETUP 9.1.4 EUT OPERATION CONDITIONS	28
9.1.5 EUT TEST CONDITIONS	28 28
9.1.6 TEST RESULTS	28
10 . MEASUREMENT INSTRUMENTS LIST	29
11 . EUT TEST PHOTOS	31
ATTACHMENT A - CONDUCTED EMISSION	35
ATTACHMENT B - RADIATED EMISSION (9KHZ TO 30MHZ)	38
ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)	40

Report No.: NEI-FCCP-2-1406C022 Page 4 of 162



Table of Contents	Page
ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)	47
ATTACHMENT E – 26DB BANDWIDTH	104
ATTACHMENT F - MAXIMUM OUTPUT POWER	121
ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION	128
ATTACHMENT H - POWER SPECTRAL DENSITY	140
ATTACHMENT I – FREQUENCY STABILITY	161

Report No.: NEI-FCCP-2-1406C022 Page 5 of 162



# **REPORT ISSUED HISTORY**

Issued No.	Description	Issued Date
NEI-FCCP-2-1406C022	Original Issue.	Jul. 07, 2014

Report No.: NEI-FCCP-2-1406C022 Page 6 of 162



#### 1. CERTIFICATION

Equipment : High Power Wireless AC1200 Dual-band Router

Brand Name: Tenda Model Name: FH1201

Applicant : SHENZHEN TENDA TECHNOLOGY CO.,LTD Manufacturer : SHENZHEN TENDA TECHNOLOGY CO.,LTD

Address : 6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District,

Shenzhen, China. 518052

Date of Test : Jun. 06, 2014 ~ Jul. 07, 2014 Test Item : ENGINEERING SAMPLE

Standard(s) : FCC Part15, Subpart E(15.407) / ANSI C63.4 : 2009

FCC KDB 789033 D01 General UNII Test Procedures v01r03.

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

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-2-1406C022) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

Report No.: NEI-FCCP-2-1406C022 Page 7 of 162



# 2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part15, Subpart E				
Standard(s) Section FCC	Test Item	Judgment	Remark	
15.207	AC Power Line Conducted Emissions	PASS		
15.407(a)	26dB Spectrum Bandwidth	PASS		
15.407(a)	Maximum Conducted Output Power	PASS		
15.407(a)	Power Spectral Density	PASS		
15.407(a)	Peak Excursion	PASS		
15.407(a)	Radiated Emissions	PASS		
15.407(b)	Band Edge Emissions	PASS		
15.407(g)	Frequency Stability	PASS		
15.203	Antenna Requirements	PASS		

#### NOTE:

(1)" N/A" denotes test is not applicable in this test report

Report No.: NEI-FCCP-2-1406C022 Page 8 of 162



#### 2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **DG-C02/DG-CB03** at the location of No.3, Jinshagang 1st Road, ShiXia, Dalang Town, Dong Guan, China.523792 BTL's test firm number for FCC: 319330

#### 2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $\mathbf{y} \pm \mathbf{U}$ , where expended uncertainty  $\mathbf{U}$  is based on a standard uncertainty multiplied by a coverage factor of  $\mathbf{k=2}$ , providing a level of confidence of approximately  $\mathbf{95}\%$   $\circ$ 

#### A. Conducted Measurement:

Test Site	Method	Measurement Frequency Range	U,(dB)	NOTE
DG-C02	CISPR	150 KHz ~ 30MHz	1.94	

#### B. Radiated Measurement:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)	NOTE
		9KHz~30MHz	V	3.79	
		9KHz~30MHz	Н	3.57	
		30MHz ~ 200MHz	V	3.82	
		30MHz ~ 200MHz	Н	3.60	
DG-CB03	CISPR	200MHz ~ 1,000MHz	V	3.86	
DG-CB03	CISER	200MHz ~ 1,000MHz	Н	3.94	
		1GHz~18GHz	V	3.12	
		1GHz~18GHz	Н	3.68	
		18GHz~40GHz	V	4.15	
		18GHz~40GHz	Н	4.14	

Report No.: NEI-FCCP-2-1406C022 Page 9 of 162



# 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

Equipment	High Power Wireless AC1200 Dual-band Router		
Brand Name	Tenda		
Model Name	FH1201		
Mode Different	N/A		
	Operation Frequency	5150MHz~5250MHz	
	Modulation Type	802.11a/n/ac:OFDM	
Product Description	Bit Rate of Transmitter	11a:6/ 9/12/18/24/36/48/54Mbps 11n:300Mbps	
	Conducted Output Power (Max.)	802.11a: 14.24dBm 802.11n (20M): 18.83dBm 802.11n (40M): 14.76dBm 802.11ac (20M): 14.73dBm 802.11ac (40M): 14.65dBm 802.11ac (80M): 12.39dBm	
	More details of EUT technical User's Manual.	specification, please refer to the	
Power Source	DC Voltage supplied from AC/DC adapter. #1 Manufacturer:GOSPELL DIGITAL TECHNOLOGY CO.,LTD Model: GP005U-120-150 #2 Manufacturer: Dongguan Ponon Technology Co.,Ltd. Model: TEA12U-12150		
Power Rating	#1 I/P: AC 100-240V~0.5A 50 60Hz O/P: DC 12V/1.5A #2 I/P: AC 100-240V~50/60Hz 0.6A O/P: DC 12V/1.5A		
Connecting I/O Port(s)	Please refer to the User's Manua	al	

#### Note:

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

Report No.: NEI-FCCP-2-1406C022 Page 10 of 162



#### 2. Channel List:

	802.11a / 802.11n 20MHz/802.11ac 20MHz		802.11n 40M/802.11ac 40MHz		ac 80MHz
Ba	Band 1		Band 1		and 1
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	38	5190	44	5210
40	5200	46	5230		
44	5220				
48	5240				

# 3. Antenna Specification:

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)
2	<b>Tenda</b> °	Q5117	Dipole	N/A	4.85
3	<b>Tenda</b> °	Q5117	Dipole	N/A	4.85

#### Note:

The EUT incorporates a MIMO function. Physically, the EUT provides two completed two transmitters and two receivers (2T2R). all transmit signals are completely uncorrelated, then, Direction gain =  $G_{ANT}$ , that is Directional gain=4.85.

4.

Operating Mode		
TX Mode	1TX	2TX
802.11a	V (ANT 2 or ANT 3)	
002.11a	V (AINT 2 OF AINT 3)	-
802.11n(20MHz)	-	V (ANT 2 + ANT 3)
802.11n(40MHz)	-	V (ANT 2 + ANT 3)
802.11ac(40MHz)	-	V (ANT 2 + ANT 3)
802.11ac(80MHz)	-	V (ANT 2 + ANT 3)

Report No.: NEI-FCCP-2-1406C022 Page 11 of 162



#### 3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Test Mode	Description
Mode 1	TX A Mode / CH36, CH40, CH48(Band 1)
Mode 2	TX N20 Mode / CH36, CH40, CH48(Band 1)
Mode 3	TX N40 Mode / CH38, CH46 (Band 1)
Mode 4	TX AC N20 Mode / CH36, CH40, CH48(Band 1)
Mode 5	TX AC N40 Mode / CH38, CH46 (Band 1)
Mode 6	TX AC N80 Mode / CH44 (Band 1)
Mode 7	TX Mode

The EUT system operated these modes were found to be the worst case during the pre-scanning test as following:

For Conducted Test		
Final Test Mode Description		
Mode 4	TX Mode	

Note: For Conducted test, the Dipole antenna with external cable is found to be the worst case and recorded.

For Radiated Test			
Final Test Mode Description			
Mode 1	TX A Mode / CH36, CH40, CH48(Band 1)		
Mode 2	TX N20 Mode / CH36, CH40, CH48(Band 1)		
Mode 3	TX N40 Mode / CH38, CH46 (Band 1)		
Mode 4	TX AC N20 Mode / CH36, CH40, CH48(Band 1)		
Mode 5	TX AC N40 Mode / CH38, CH46 (Band 1)		
Mode 6	TX AC N80 Mode / CH44 (Band 1)		

Note: For Radiated Below 1G test, the 802.11a mode is found to be the worst case and recorded.

Report No.: NEI-FCCP-2-1406C022 Page 12 of 162



#### 3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product

Test software version	MTOOL			
Frequency	5180 MHz 5200MHz 5240 MHz			
A Mode	55	55	66	
N20 Mode	55	55	65	
AC 20 Mode	50	48	64	

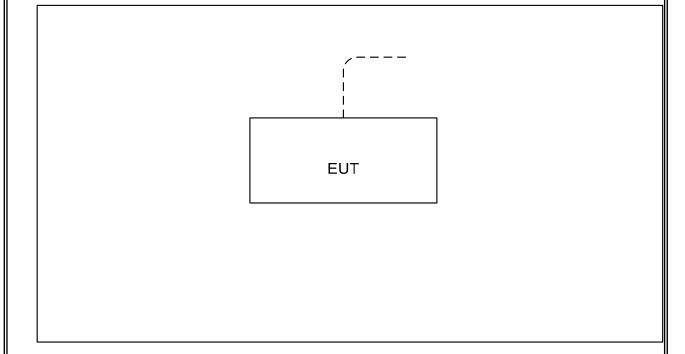
Test software version	MTOOL		
Frequency	5190 MHz	5230MHz	
N40 Mode	51	43	
AC 40 Mode	49	40	

Test software version	MTOOL		
Frequency	5210 MHz		
AC 80 Mode	40		

Report No.: NEI-FCCP-2-1406C022 Page 13 of 162



# 3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



Report No.: NEI-FCCP-2-1406C022

C-1 RJ45 Cable

E-1 PC



#### 3.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	PC	Dell 745	DCSM	DOC	G7K832X	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	10m	-

Report No.: NEI-FCCP-2-1406C022 Page 15 of 162



#### 4. EMC EMISSION TEST

#### 4.1 CONDUCTED EMISSION MEASUREMENT

#### **4.1.1 POWER LINE CONDUCTED EMISSION** (Frequency Range 150KHz-30MHz)

	Class A (dBuV)		Class B (dBuV)	
FREQUENCY (MHz)	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

#### 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.

#### 4.1.2 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 equipments 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.

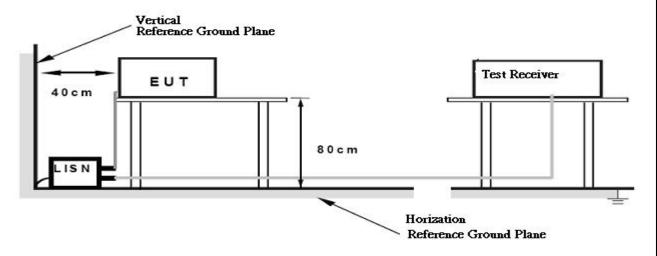
#### 4.1.3 DEVIATION FROM TEST STANDARD

No deviation

Report No.: NEI-FCCP-2-1406C022 Page 16 of 162



#### 4.1.4 TEST SETUP



#### 4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

The EUT was programmed to be in continuously transmitting/TX Mode mode.

#### 4.1.6 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: AC 120V/60Hz

#### 4.1.7 TEST RESULTS

Please refer to the Attachment A.

#### Remark:

- (1) All readings are QP Mode value unless otherwise stated AVG in column of Note ... If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform on this case, a " \* " marked in AVG Mode column of Interference Voltage Measured on the North AVG Mode column of Interference Voltage Measured on
- (2) Measuring frequency range from 150KHz to 30MHz o

Report No.: NEI-FCCP-2-1406C022 Page 17 of 162



#### **4.2 RADIATED EMISSION MEASUREMENT**

#### 4.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a) and RSS-210 section 2.2&A8.5, then the 15.209(a) and RSS-Gen limit in the table below has to be followed.

Frequencies	Field Strength	Measurement Distance
(MHz)	(micorvolts/meter)	(meters)
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

#### Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.

LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

Frequencies	EIRP Limit (dBm)	Equivalent Field Strength
(MHz)	LINE LIIIII (UDIII)	at 3m (dBµV/m)
5150~5250	-27	68.3
5250~5350	-27	68.3
5470~5725	-27	68.3
5725~5825	-27	68.3
	-17	78.3

NOTE: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000 | \sqrt{30P}}{3} \quad \mu V/m, \text{ where P is the eirp (Watts)}$$

Report No.: NEI-FCCP-2-1406C022 Page 18 of 162



#### **4.2.2 TEST PROCEDURE**

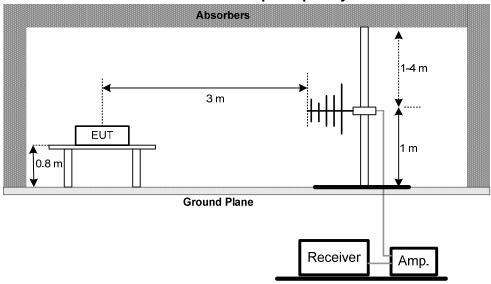
- a. The measuring distance of at 1.5m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; 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. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

#### 4.2.3 DEVIATION FROM TEST STANDARD

No deviation

#### 4.2.4 TEST SETUP

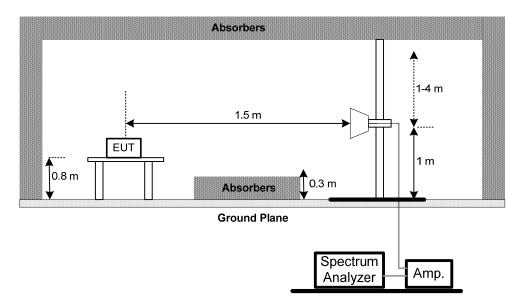
#### Radiated Emission Test Set-Up Frequency30 - 1000MHz



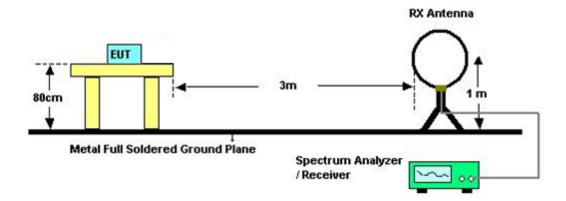
Report No.: NEI-FCCP-2-1406C022 Page 19 of 162



#### Radiated Emission Test Set-Up Frequency Above 1 GHz



#### Radiated emissions below 30MHz



#### 4.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.6** Unless otherwise a special operating condition is specified in the follows during the testing.

#### 4.2.6 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: AC 120V/60Hz

Report No.: NEI-FCCP-2-1406C022 Page 20 of 162



#### 4.2.7 TEST RESULTS (9K TO 30MHz)

Please refer to the Attachment B

#### 4.2.8 TEST RESULTS (BETWEEN 30 TO 1000 MHz)

Please refer to the Attachment C.

#### Remark:

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time =  $0.3 \text{ sec./MHz} \circ$
- (2) 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 ∘
- (3) Measuring frequency range from 30MHz to 1000MHz •
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table  $\circ$

#### 4.2.9 TEST RESULTS (ABOVE 1000 MHz)

Please refer to the Attachment D.

#### Remark:

- (1) Spectrum Setting: 30MHz 1000MHz, RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto
- (2) All readings are Peak unless otherwise stated AV in column of 『Note』. Peak denotes that the Peak reading compliance with the AV Limits and then AV Mode measurement didn't perform.
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission  $\circ$
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axes:
  - "X" denotes Laid on Table; "Y" denotes Vertical Stand; "Z" denotes Side Stand
- (7) During the measurements above 1GHz it is taken care of that the EUT is always within the 3dB cone of radiation BW of the used antenna.

Report No.: NEI-FCCP-2-1406C022 Page 21 of 162



#### 5. 26dB SPECTRUM BANDWIDTH

#### 5.1 APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E			
Test Item	Result		
26 dB Bandwidth		5150MHz~5250	PASS

#### **5.1.1 TEST PROCEDURE**

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.

tile bloc	ck diagram below,		
b.	Spectrum Parameters	Setting	
	Attenuation	Auto	
	Span Frequency	> 26dB Bandwidth	
	RB	300 kHz	
	VB	1000 kHz	
	Detector	Peak	
	Trace	Max Hold	
	Sweep Time	Auto	
	1 (1 ( ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '		

c. Measured the spectrum width with power higher than 26dB below carrier

#### **5.1.2 DEVIATION FROM STANDARD**

No deviation.

#### 5.1.3 TEST SETUP



#### **5.1.4 EUT OPERATION CONDITIONS**

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

#### **5.1.5 EUT TEST CONDITIONS**

Temperature: 25°C Relative Humidity: 55% Test Voltage: AC 120V/60HZ

#### **5.1.6 TEST RESULTS**

Please refer to the Attachment E.

Report No.: NEI-FCCP-2-1406C022 Page 22 of 162



# **6. MAXIMUM CONDUCTED OUTPUT POWER**

#### **6.1 APPLIED PROCEDURES / LIMIT**

FCC Part15, Subpart E				
Test Item	Frequency Range (MHz)	Limit	Result	
Conducted Output Power	5150 - 5250	Indoor AP:1 Watt Mobile and portable:250mW Fixed P to P AP:1W Outdoor AP:1 Watt The maximum e.i.r.p. at anyelevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).	PASS	

Note: where "B" is the 26 dB emissions bandwidth in MHz.

#### **6.1.1 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 Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	= 1 MHz.
VBW	≥ 3 MHz.
Detector	RMS
Trace	Max Hold
Sweep Time	auto

b. Test was performed in accordance with method of KDB 789033 D01.

Report No.: NEI-FCCP-2-1406C022 Page 23 of 162



#### **6.1.2 DEVIATION FROM STANDARD**

No deviation.

#### 6.1.3 TEST SETUP

EUT	SPECTRUM
	ANALYZER

#### **6.1.4 EUT OPERATION CONDITIONS**

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

#### **6.1.5 EUT TEST CONDITIONS**

Temperature: 25°C Relative Humidity: 55% Test Voltage: AC 120V/60Hz

#### **6.1.6 TEST RESULTS**

Please refer to the Attachment F.

Report No.: NEI-FCCP-2-1406C022 Page 24 of 162



#### 7. ANTENNA CONDUCTED SPURIOUS EMISSION

#### 7.1 APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E				
Test Item	Limit	Frequency Range (MHz)	Result	
Antenna conducted Spurious Emission	-27 dBm/1MHz	5150 – 5250	PASS	

#### 7.1.1 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,

n	
v	
-	

Spectrum Parameter	Setting
Attenuation	Auto
RB	1000 kHz
VB	1000 kHz
Trace	Max Hold
Sweep Time	Auto

#### 7.1.2 DEVIATION FROM STANDARD

No deviation.

#### 7.1.3 TEST SETUP

EUT	·	SPECTRUM
		ANALYZER

#### 7.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

#### 7.1.5 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: AC 120V/60HZ

#### 7.1.6 TEST RESULTS

Please refer to the Attachment G.

Report No.: NEI-FCCP-2-1406C022 Page 25 of 162



#### 8. POWER SPECTRAL DENSITY TEST

#### 8.1 APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E				
Test Item	Limit	Frequency Range (MHz)	Result	
Power Spectral Density	Other then Mobile and portable:17dBm/Mhz Mobile and portable:11dBm/MHz	5150 - 5250	PASS	

#### **8.1.1 TEST PROCEDURE**

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,

	۱	

Spectrum Parameter	Setting
Attenuation	Auto
Span Fraguency	Encompass the entire emissions bandwidth (EBW) of
Span Frequency	the signal
RB	= 1 MHz.
VB	≥ 3 MHz.
Detector	RMS
Trace	Max Hold
Sweep Time	Auto

#### **8.1.2 DEVIATION FROM STANDARD**

No deviation.

#### 8.1.3 TEST SETUP

EUT	SPECTRUM
	ANALYZER

#### **8.1.4 EUT OPERATION CONDITIONS**

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

#### **8.1.5 EUT TEST CONDITIONS**

Temperature: 25°C Relative Humidity: 55% Test Voltage: AC 120V/60HZ

#### 8.1.6 TEST RESULTS

Please refer to the Attachment H.

Report No.: NEI-FCCP-2-1406C022 Page 26 of 162



#### 9. FREQUENCY STABILITY MEASUREMENT

#### 9.1 APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E 15.407(g)						
Test Item	Limit	Frequency Range (MHz)	Result			
Frequency Stability	specified in the user's manual	5150 – 5250	PASS			

#### 9.1.1 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,

	nt alagram bolon,				
b.	Spectrum Parameter	Setting			
	Attenuation	Auto			
	Span Frequency	Entire absence of modulation emissions bandwidth			
	RB	10 kHz			
VB		10 kHz			
	Sweep Time	Auto			

c. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.

#### 9.1.2 DEVIATION FROM STANDARD

No deviation.

Report No.: NEI-FCCP-2-1406C022 Page 27 of 162

d. user manual temperature is 0°C~40°C.



#### 9.1.3 TEST SETUP

EUT	SPECTRUM
	ANALYZER

#### 9.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

#### 9.1.5 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: AC 120V/60HZ

#### 9.1.6 TEST RESULTS

Please refer to the Attachment J.

Report No.: NEI-FCCP-2-1406C022 Page 28 of 162



# **10. MEASUREMENT INSTRUMENTS LIST**

	Conducted Emission Measurement								
Item	Kind of Equipment	d of Equipment Manufacturer Ty		Serial No.	Calibrated until				
1	LISN	EMCO	3816/2	00052765	Mar. 29, 2015				
2	LISN	R&S	ENV216	100087	Mar. 29, 2015				
3	Test Cable	N/A	C_17	N/A	Mar. 14, 2015				
4	EMI TEST RECEIVER	R&S	ESCS30	826547/022	Mar. 29, 2015				
5	50Ω Terminator	SHX	TF2-3G-A	08122902	Mar. 29, 2015				

	Radiated Emission Measurement								
Item	Kind of Equipment	Manufacturer	Type No. Serial No.		Calibrated until				
1	Antenna	Schwarbeck	VULB9160	9160-3232	Mar. 29, 2015				
2	Amplifier	HP	8447D	2944A09673	Mar. 29, 2015				
3	Test Receiver	R&S	ESCI	100382	Mar. 29, 2015				
4	Test Cable	N/A	C-01_CB03	N/A	Jul. 01, 2015				
5	Antenna	ETS	3115	00075789	Mar. 29, 2015				
6	Amplifier	Agilent	8449B	3008A02274	Mar. 29, 2015				
7	Spectrum	Agilent	E4408B	US39240143	Nov. 09, 2014				
8	Test Cable	HUBER+SUHNER	C-45	N/A	Mar. 29, 2015				
9	Controller	CT	SC100	N/A	N/A				
10	Horn Antenna	EMCO	3115	9605-4803	Mar. 29, 2015				
11	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Mar. 29, 2015				
12	Broad-Band Horn Antenna (40G)	Schwarzbeck	BBHA 9170	9170319	Feb. 22, 2015				

Report No.: NEI-FCCP-2-1406C022 Page 29 of 162



	26dB Spectrum Bandwidth Measurement							
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until			
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014			

	Maximum Conducted Output Power Measurement						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until		
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014		

	Antenna Conducted Spurious Emission Measurement							
Item	Kind of Equipment Manufacture		Type No.	Serial No.	Calibrated until			
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014			

	Power Spectral Density Measurement							
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until			
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014			

	Peak Excurison Measurement							
Item	Kind of Equipment	Manufacturer	Serial No.	Calibrated until				
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014			

	Frequency Stability Measurement								
Item	em Kind of Equipment Manufacturer Type No. Serial No. Calibrated								
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014				
2	Precision Oven Tester	HOLINK	H-T-1F-D	BA03101701	May. 25, 2014				

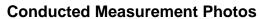
Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

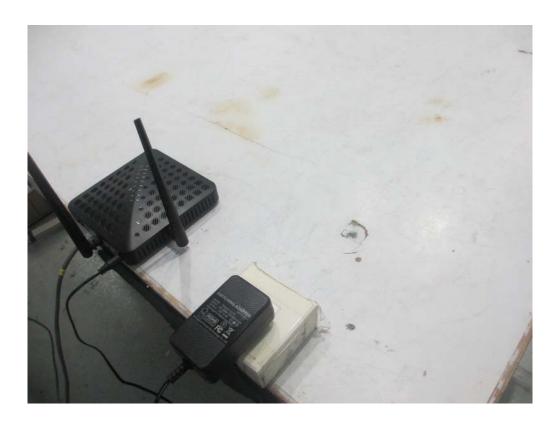
Report No.: NEI-FCCP-2-1406C022 Page 30 of 162



# **11. EUT TEST PHOTOS**







Report No.: NEI-FCCP-2-1406C022 Page 31 of 162



Radiated Measurement Photos 9KHz to 30MHz





Report No.: NEI-FCCP-2-1406C022 Page 32 of 162



# Radiated Measurement Photos 30MHz to 1000MHz





Report No.: NEI-FCCP-2-1406C022 Page 33 of 162



# Radiated Measurement Photos Above 1000MHz





Report No.: NEI-FCCP-2-1406C022 Page 34 of 162

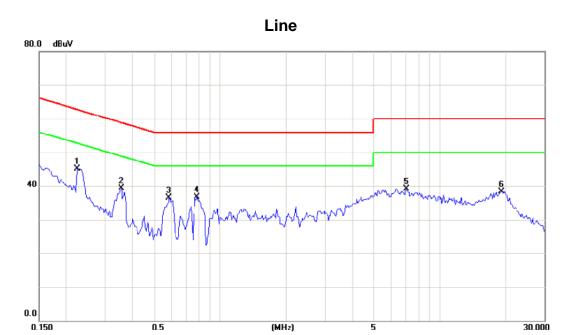


# **ATTACHMENT A - CONDUCTED EMISSION**

Report No.: NEI-FCCP-2-1406C022 Page 35 of 162



Test Mode : TX MODE



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.2242	35.59	9.55	45.14	62.66	-17.52	peak	
2		0.3570	29.63	9.63	39.26	58.80	-19.54	peak	
3		0.5875	26.89	9.67	36.56	56.00	-19.44	peak	
4		0.7906	27.10	9.65	36.75	56.00	-19.25	peak	
5		7.0703	29.21	9.99	39.20	60.00	-20.80	peak	
6		19.2030	27.86	10.42	38.28	60.00	-21.72	peak	

Note: The test result has included the cable loss.

Report No.: NEI-FCCP-2-1406C022 Page 36 of 162



Test Mode : TX MODE

### 

No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	0.2203	36.37	9.61	45.98	62.81	-16.83	peak	
2	0.3688	26.21	9.63	35.84	58.53	-22.69	peak	
3	0.6617	25.44	9.66	35.10	56.00	-20.90	peak	
4	1.1461	23.71	9.68	33.39	56.00	-22.61	peak	
5	6.2344	29.08	9.93	39.01	60.00	-20.99	peak	
6	19.6836	25.51	10.42	35.93	60.00	-24.07	peak	

Note: The test result has included the cable loss.

Report No.: NEI-FCCP-2-1406C022 Page 37 of 162



# ATTACHMENT B - RADIATED EMISSION (9KHZ TO 30MHZ)

Report No.: NEI-FCCP-2-1406C022 Page 38 of 162



Test Mode : TX Mode

Freq.	Ant.	Reading(RA)	Corr.Factor(CF)	Measured(FS)	Limits(QP)	Margin	Note
(MHz)	0°/90°	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	NOIC
0.0213	0°	16.52	24.22	40.74	121.04	-80.30	AVG
0.0213	0°	18.19	24.22	42.41	141.04	-98.63	PEAK
0.0279	0°	17.15	23.80	40.95	118.69	-77.74	AVG
0.0279	0°	19.03	23.80	42.83	138.69	-95.86	PEAK
0.0331	0°	17.16	23.47	40.63	117.21	-76.58	AVG
0.0331	0°	20.08	23.47	43.55	137.21	-93.66	PEAK
0.0528	0°	18.47	22.34	40.81	113.15	-72.34	AVG
0.0528	0°	21.55	22.34	43.89	133.15	-89.26	PEAK
0.3170	0°	18.36	20.24	38.60	97.58	-58.98	AVG
0.3170	0°	21.05	20.24	41.29	117.58	-76.29	PEAK
1.5250	0°	18.73	19.55	38.28	63.94	-25.66	QP

Freq.	Ant.	Reading(RA)	Corr.Factor(CF)	Measured(FS)	Limits(QP)	Margin	Note
(MHz)	0°/90°	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	NOLE
0.0175	90°	17.51	24.30	41.81	122.74	-80.93	AVG
0.0175	90°	19.23	24.30	43.53	142.74	-99.21	PEAK
0.0269	90°	16.95	23.86	40.81	119.01	-78.20	AVG
0.0269	90°	18.33	23.86	42.19	139.01	-96.82	PEAK
0.0378	90°	20.03	23.17	43.20	116.05	-72.85	AVG
0.0378	90°	21.68	23.17	44.85	136.05	-91.20	PEAK
0.0519	90°	20.25	22.36	42.61	113.30	-70.69	AVG
0.0519	90°	23.39	22.36	45.75	133.30	-87.55	PEAK
0.3270	90°	18.45	20.22	38.67	97.31	-58.65	AVG
0.3270	90°	20.72	20.22	40.94	117.31	-76.38	PEAK
1.6750	90°	18.63	19.53	38.16	63.12	-24.96	QP

### Remark:

- (1) The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
- (2) Distance extrapolation factor = 40 log (specific distance / test distance) (dB); (3) Limit line = specific limits (dBuV) + distance extrapolation factor.

Report No.: NEI-FCCP-2-1406C022 Page 39 of 162



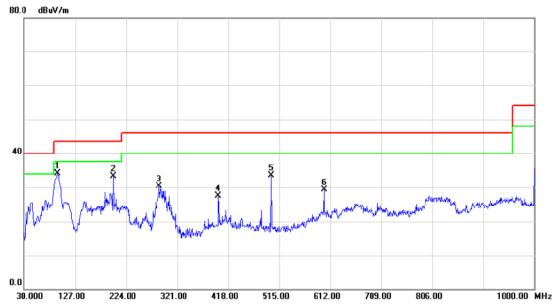
ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)

Report No.: NEI-FCCP-2-1406C022 Page 40 of 162



Test Mode: Band 1/TX A Mode 5180MHz

### Vertical



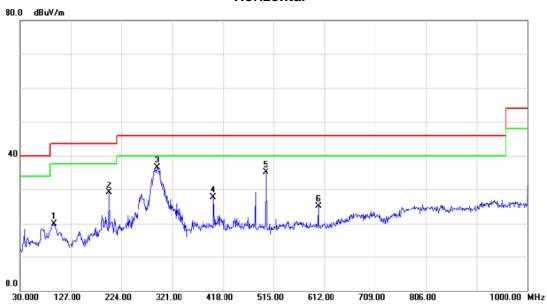
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dΒ	Detector	Comment
1	*	94.0200	51.37	-17.33	34.04	43.50	-9.46	peak	
2		199.7500	48.35	-15.13	33.22	43.50	-10.28	peak	
3		287.0500	41.90	-11.58	30.32	46.00	-15.68	peak	
4		399.5700	37.20	-9.70	27.50	46.00	-18.50	peak	
5		500.4500	44.07	-10.52	33.55	46.00	-12.45	peak	
6		600.3600	37.44	-8.08	29.36	46.00	-16.64	peak	

Report No.: NEI-FCCP-2-1406C022 Page 41 of 162



Test Mode: Band 1/TX A Mode 5180MHz

### Horizontal



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		94.9900	37.25	-17.25	20.00	43.50	-23.50	peak	
2		199.7500	44.24	-15.13	29.11	43.50	-14.39	peak	
3	*	291.9000	47.77	-11.19	36.58	46.00	-9.42	peak	
4		399.5700	37.32	-9.70	27.62	46.00	-18.38	peak	
5		500.4500	45.59	-10.52	35.07	46.00	-10.93	peak	
6		600.3600	33.16	-8.08	25.08	46.00	-20.92	peak	

Report No.: NEI-FCCP-2-1406C022 Page 42 of 162



Test Mode: Band 1/TX A Mode 5200MHz

## Vertical 80.0 dBuV/n 40 40 30.000 127.00 224.00 321.00 418.00 515.00 612.00 709.00 806.00 1000.00 MHz

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		93.0500	50.51	-17.42	33.09	43.50	-10.41	peak	
2	*	199.7500	48.35	-15.13	33.22	43.50	-10.28	peak	
3		287.0500	40.40	-11.58	28.82	46.00	-17.18	peak	
4		399.5700	34.70	-9.70	25.00	46.00	-21.00	peak	
5		500.4500	43.07	-10.52	32.55	46.00	-13.45	peak	
6		600.3600	36.44	-8.08	28.36	46.00	-17.64	peak	

Report No.: NEI-FCCP-2-1406C022 Page 43 of 162



Test Mode: Band 1/TX A Mode 5200MHz

## Horizontal 80.0 dBuV/m 40 40 30.000 127.00 224.00 321.00 418.00 515.00 612.00 709.00 806.00 1000.00 MHz

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		94.0200	37.39	-17.33	20.06	43.50	-23.44	peak	
2		199.7500	43.24	-15.13	28.11	43.50	-15.39	peak	
3	*	291.9000	48.77	-11.19	37.58	46.00	-8.42	peak	
4		500.4500	45.59	-10.52	35.07	46.00	-10.93	peak	
5		600.3600	34.16	-8.08	26.08	46.00	-19.92	peak	
6		800.1800	29.17	-2.91	26.26	46.00	-19.74	peak	

Report No.: NEI-FCCP-2-1406C022 Page 44 of 162



Test Mode: Band 1/TX A Mode 5240MHz

## Vertical 80.0 dBw/m 40 40 30.000 127.00 224.00 321.00 418.00 515.00 612.00 709.00 806.00 1000.00 MHz

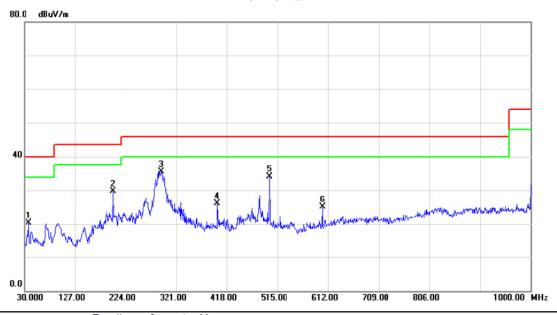
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		93.0500	50.51	-17.42	33.09	43.50	-10.41	peak	
2	*	199.7500	49.85	-15.13	34.72	43.50	-8.78	peak	
3		293.8400	39.56	-11.15	28.41	46.00	-17.59	peak	
4		399.5700	36.70	-9.70	27.00	46.00	-19.00	peak	
5		500.4500	43.57	-10.52	33.05	46.00	-12.95	peak	
6		600.3600	38.94	-8.08	30.86	46.00	-15.14	peak	

Report No.: NEI-FCCP-2-1406C022 Page 45 of 162



Test Mode: Band 1/TX A Mode 5240MHz

### Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		37.7600	34.83	-14.53	20.30	40.00	-19.70	peak	
2		199.7500	44.74	-15.13	29.61	43.50	-13.89	peak	
3	*	291.9000	46.77	-11.19	35.58	46.00	-10.42	peak	
4		399.5700	35.82	-9.70	26.12	46.00	-19.88	peak	
5		500.4500	44.59	-10.52	34.07	46.00	-11.93	peak	
6		600.3600	33.16	-8.08	25.08	46.00	-20.92	peak	

Report No.: NEI-FCCP-2-1406C022 Page 46 of 162

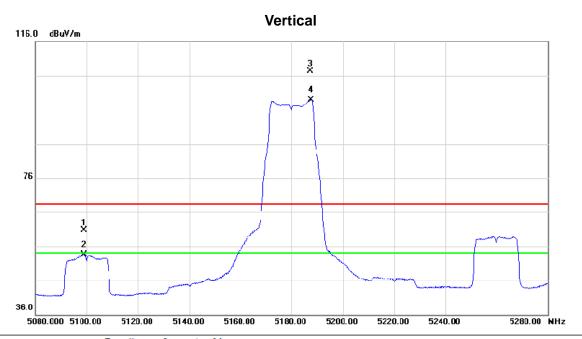


# ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)

Report No.: NEI-FCCP-2-1406C022 Page 47 of 162



Test Mode: Band 1/ TX A Mode 5180MHz



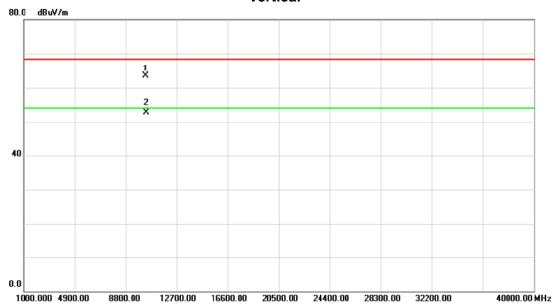
No.	Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5099.000	18.87	41.79	60.66	68.30	-7.64	peak	
2		5099 000	11 69	41 79	53 48	54 00	-0 52	AVG	
3	X	5187.400	65.15	42.14	107.29	68.30	38.99	peak	Fundamental frequency, no limit
4	*	5187.600	56.80	42.15	98.95	54.00	44.95	AVG	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 48 of 162



Test Mode: Band 1/ TX A Mode 5180MHz

### Vertical



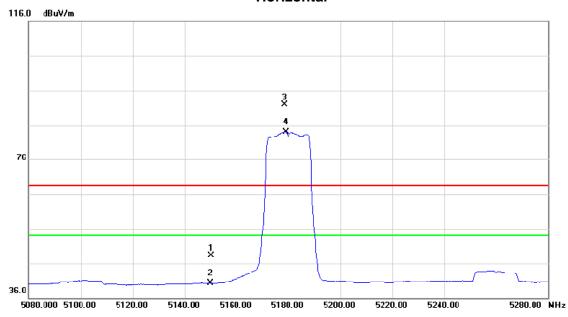
No.	Mk.	Freq.			Measure- ment		Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10358.75	47.86	15.70	63.56	68.30	-4.74	peak	
2	*	10359.75	36.91	15.70	52.61	54.00	-1.39	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 49 of 162



Test Mode: Band 1/ TX A Mode 5180MHz

### Horizontal



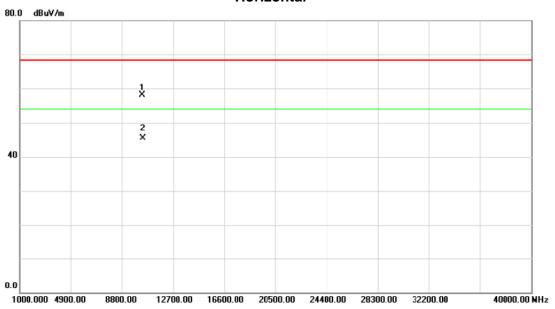
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBu∨	dB	dBuV/m	dBuV/m	dΒ	Detector	Comment
1		5150.000	6.35	41.99	48.34	68.30	-19.96	peak	
2		5150.000	-1.68	41.99	40.31	54.00	-13.69	AVG	
3	X	5178.600	49.73	42.11	91.84	68.30	23.54	peak	Fundamental frequency, no limit
4	*	5179.000	41.99	42.11	84.10	54.00	30.10	AVG	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 50 of 162



Test Mode: Band 1/ TX A Mode 5180MHz

### Horizontal



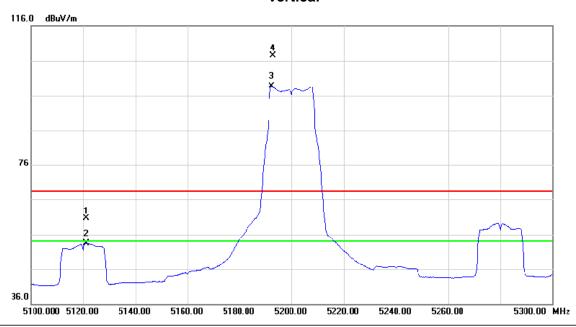
No.	Mk.	. Freq.	Reading Level		Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10359.80	42.46	15.70	58.16	68.30	-10.14	peak	
2	*	10361.40		15.69	45.54	54.00	-8.46	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 51 of 162



Test Mode: Band 1/ TX A Mode 5200MHz

### **Vertical**



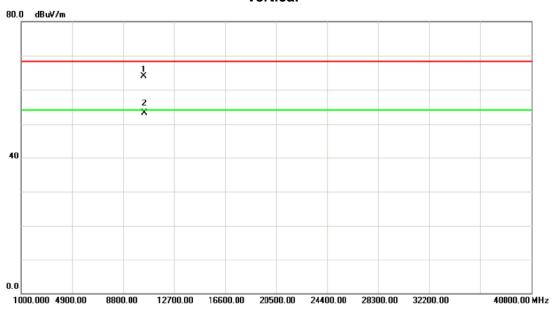
	No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
			MHz	dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1		5121.200	18.56	41.88	60.44	68.30	-7.86	peak	
	2		5121.200	11.52	41.88	53.40	54.00	-0.60	AVG	
	3	*	5192 400	56 59	42 16	98 75	54 00	44 75	AVG	Fundamental frequency, no limit
	4	Χ	5193.000	65.29	42.16	107.45	68.30	39.15	peak	Fundamental frequency, no limit
_										

Report No.: NEI-FCCP-2-1406C022 Page 52 of 162



Test Mode: Band 1/ TX A Mode 5200MHz

### Vertical



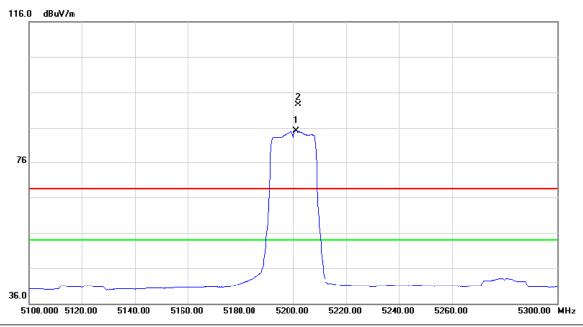
No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10400.17	48.30	15.64	63.94	68.30	-4.36	peak	
2		10400.17	37.41	15.64	53.05	54.00	-0.95	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 53 of 162



Test Mode: Band 1/ TX A Mode 5200MHz

### Horizontal



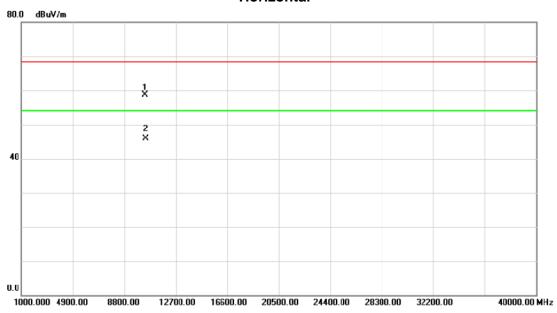
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5201.200	42.90	42.20	85.10	54.00	31.10	AVG	Fundamental frequency, no limit
2	Χ	5202.000	50.31	42.21	92.52	68.30	24.22	peak	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 54 of 162



Test Mode: Band 1/ TX A Mode 5200MHz

### Horizontal



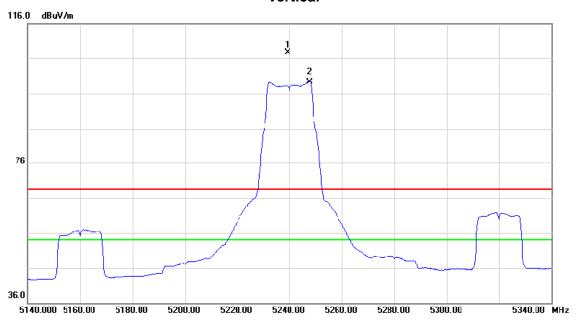
No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10399.28	43.15	15.64	58.79	68.30	-9.51	peak	
2	*	10399.28	30.19	15.64	45.83	54.00	-8.17	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 55 of 162



Test Mode: Band 1/ TX A Mode 5240MHz

### Vertical



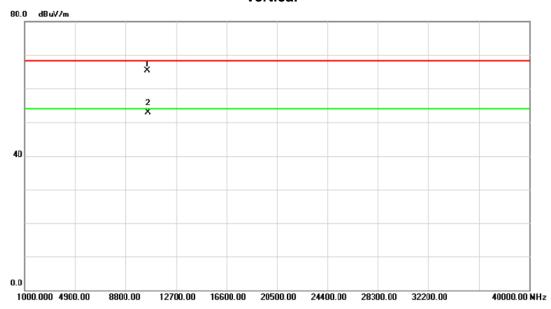
-	No.	Mk	k. Fre		Reading Level	Correct Factor	Measure- ment	Limit	Over		
			MH	Z	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-	1	X	5239.2	00	65.28	42.35	107.63	68.30	39.33	peak	Fundamental frequency, no limit
-	2	k	5247.6	00	56.96	42.39	99.35	54.00	45.35	AVG	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 56 of 162



Test Mode: Band 1/ TX A Mode 5240MHz

### Vertical



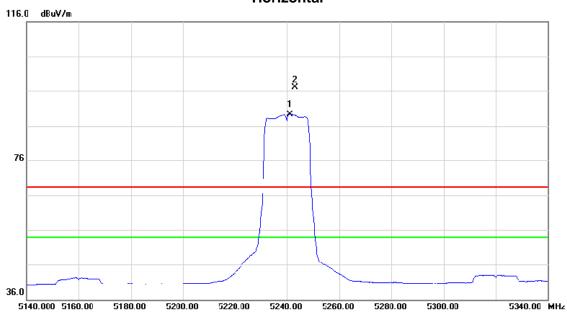
No.	Mk	. Freq.	Reading Level		Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10480.12	49.79	15.51	65.30	68.30	-3.00	peak	
2	*	10480.12	37.41	15.51	52.92	54.00	-1.08	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 57 of 162



Test Mode: Band 1/ TX A Mode 5240MHz

### Horizontal



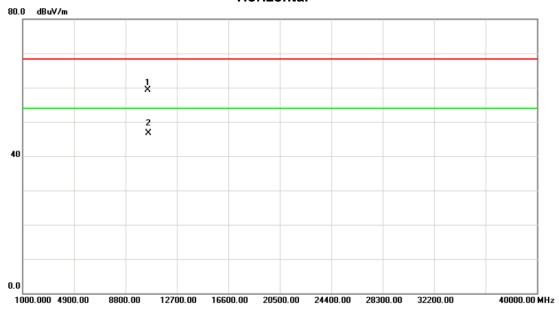
No. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	5241.200	46.98	42.37	89.35	54.00	35.35	AVG	Fundamental frequency, no limit
2 X	5243.000	54.76	42.37	97.13	68.30	28.83	peak	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 58 of 162



Test Mode: Band 1/ TX A Mode 5240MHz

### Horizontal



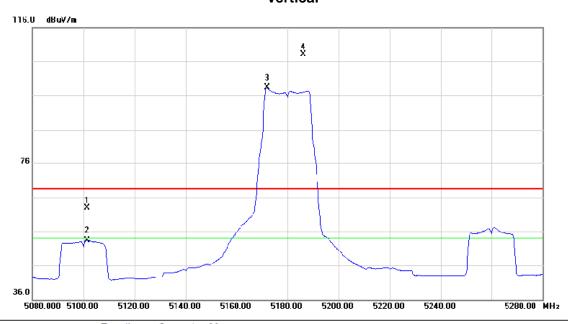
No.	Mk	. Freq.		Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10479.92	43.79	15.52	59.31	68.30	-8.99	peak	
2	*	10479.92	31.25	15.52	46.77	54.00	-7.23	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 59 of 162



Test Mode: Band 1/ TX N20 Mode 5180MHz

### **Vertical**



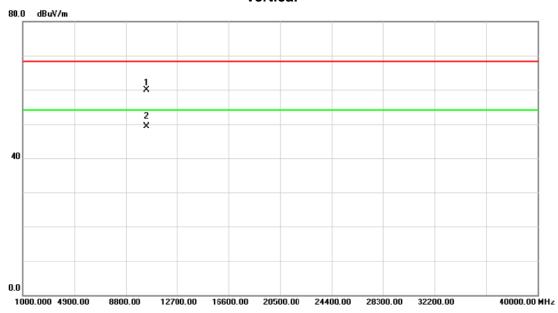
No.	M	k. Freq.	Reading Level	Correct Factor	Measure- ment	I imit	Over		
		MHz	dBu∨	dВ	dBuV/m	dBu∨/m	dВ	Detector	Comment
1		5101.400	21.01	41.80	62.81	68.30	-5.49	peak	
2		5101.400	11.53	41.80	53.33	54.00	-0.67	AVG	
3	*	5172.000	56.15	42.08	98.23	54.00	44.23	AVG	Fundamental frequency, no limit
4	Χ	5186.200	66.03	42.14	108.17	68.30	39.87	peak	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 60 of 162



Test Mode: Band 1/ TX N20 Mode 5180MHz

### Vertical



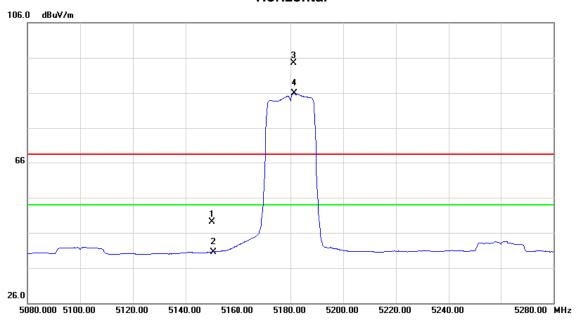
No.	Mk	(. Freq.	Reading Level		Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10360.08	44.24	15.70	59.94	68.30	-8.36	peak	
2	*	10360.08	33.56	15.70	49.26	54.00	-4.74	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 61 of 162



Test Mode: Band 1/ TX N20 Mode 5180MHz

### Horizontal



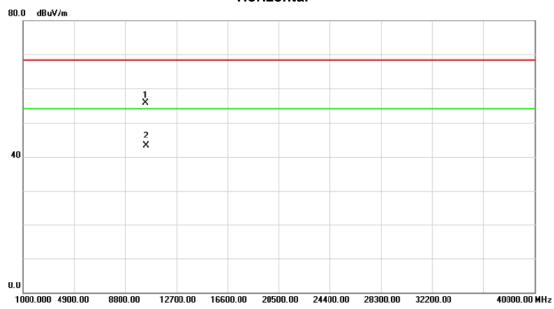
	No.	Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
-			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1		5150.000	7.06	41.99	49.05	68.30	-19.25	peak	
	2		5150.000	-1.42	41.99	40.57	54.00	-13.43	AVG	
-	3	Χ	5181.200	52.32	42.12	94.44	68.30	26.14	peak	Fundamental frequency, no limit
_	4	*	5181.400	43.75	42.12	85.87	54.00	31.87	AVG	Fundamental frequency, no limit
_										

Report No.: NEI-FCCP-2-1406C022 Page 62 of 162



Test Mode: Band 1/ TX N20 Mode 5180MHz

### Horizontal



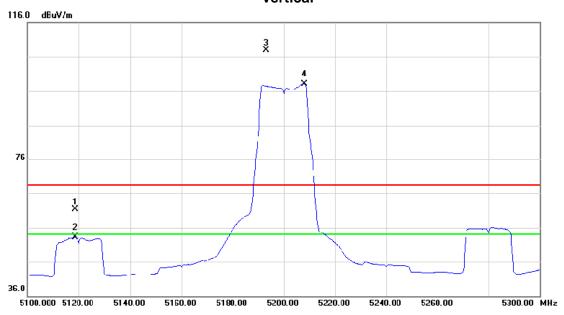
No.	Mk	. Freq.		Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1			40.16	15.70	55.86	68.30	-12.44	peak	
2		10359.83			43.26	54.00	-10.74	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 63 of 162



Test Mode: Band 1/ TX N20 Mode 5200MHz

### Vertical



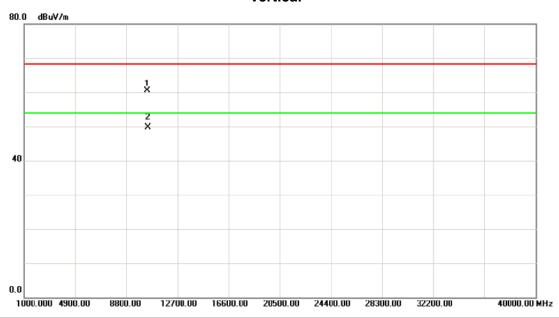
N	lo. I	Mk.	Freq.	Level	Factor	ment	Limit	Over		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	5	118.600	19.50	41.87	61.37	68.30	-6.93	peak	
	2	5	118.600	11.21	41.87	53.08	54.00	-0.92	AVG	
	3 2	X 5	193.200	65.78	42.17	107.95	68.30	39.65	peak	Fundamental frequency, no limit
	4	* 5	208.000	55.86	42.23	98.09	54.00	44.09	AVG	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 64 of 162



Test Mode: Band 1/ TX N20 Mode 5200MHz

### **Vertical**



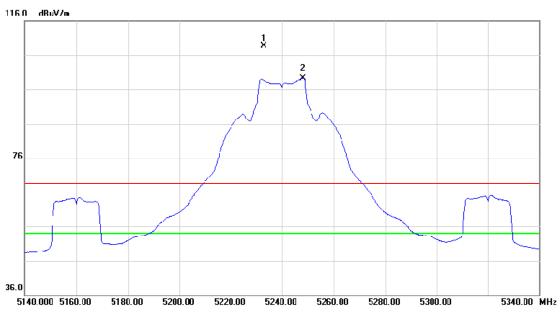
No.	Mk	. Freq.	Reading Level		Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10400.15	44.89	15.64	60.53	68.30	-7.77	peak	
2	*	10400.15		15.64	49.71	54.00	-4.29	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 65 of 162



Test Mode: Band 1/ TX N20 Mode 5200MHz

### Horizontal



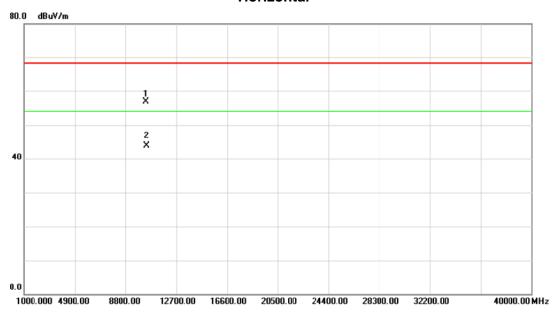
No	Mk	Freq	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5232.800	66.47	42.33	108.80	68.30	40.50	peak	Fundamental frequency, no limit
2	*	5248.200	56.94	42.39	99.33	54.00	45.33	AVG	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 66 of 162



Test Mode: Band 1/ TX N20 Mode 5200MHz

### Horizontal



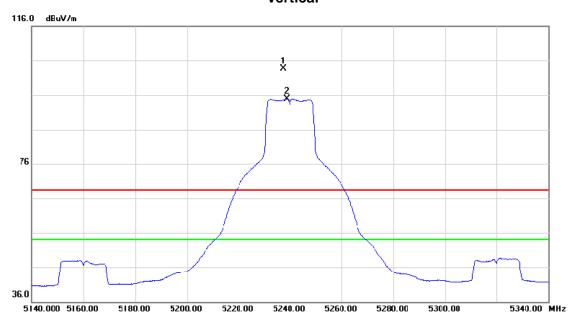
No.	М	k. Freq			Measure- ment		Over		
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10400.23	41.17	15.64	56.81	68.30	-11.49	peak	
2	*	10400.23	28.35	15.64	43.99	54.00	-10.01	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 67 of 162



Test Mode: Band 1/ TX N20 Mode 5240MHz

### Vertical



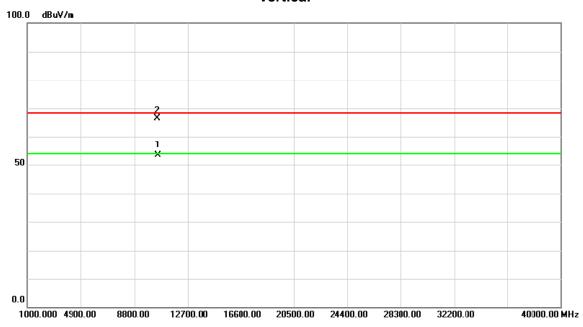
No.	Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	k	5237.400	61.46	42.34	103.80	68.30	35.50	peak	Fundamental frequency, no limit
2	X	5238.800	52.63	42.35	94.98	68.30	26.68	peak	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 68 of 162



Test Mode: Band 1/ TX N20 Mode 5240MHz

### **Vertical**



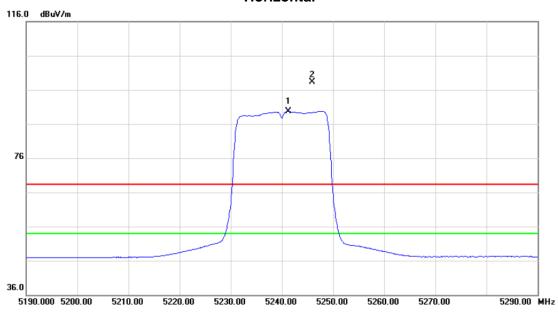
No.	Mk	. Freq.			Measure- ment		Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	*	10480.05	37.75	15.52	53.27	54.00	-0.73	AVG		
2		10480.10	51.05	15.52	66.57	68.30	-1.73	peak		

Report No.: NEI-FCCP-2-1406C022 Page 69 of 162



Test Mode: Band 1/ TX N20 Mode 5240MHz

### Horizontal



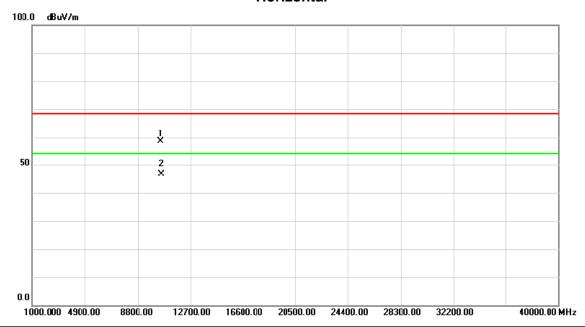
•	No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	*	5241.300	47.38	42.37	89.75	54.00	35.75	AVG	Fundamental frequency, no limit
	2	Χ	5245.900	55.82	42.39	98.21	68.30	29.91	peak	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 70 of 162



Test Mode: Band 1/ TX N20 Mode 5240MHz

### Horizontal



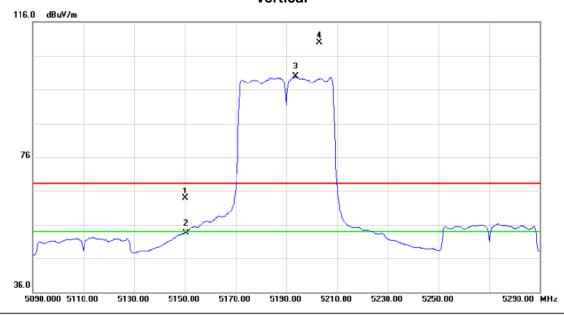
No.	Mk.	Freq.			Measure- ment		Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10478.70		15.52	58.60	68.30	-9.70	peak	
2	ŧ	10480.00	31.07	15.52	46.59	54.00	-7.41	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 71 of 162



Test Mode: Band 1/ TX N40 Mode 5190MHz

### Vertical



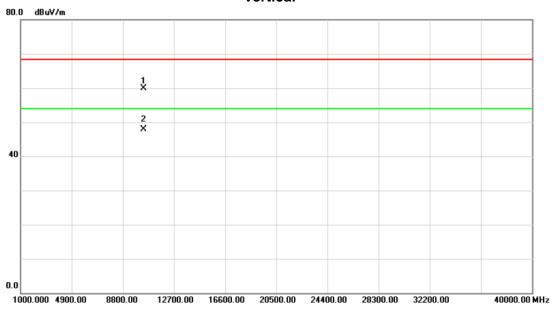
No	. MI	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-		51	50.000	21.85	41.99	63.84	68.30	-4.46	peak	
2	2	51	50.000	11.42	41.99	53.41	54.00	-0.59	AVG	
	*	51	93.600	57.66	42.17	99.83	54.00	45.83	AVG	Fundamental frequency, no limit
4	X	52	02.800	67.67	42.21	109.88	68.30	41.58	peak	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 72 of 162



Test Mode: Band 1/ TX N40 Mode 5190MHz

## **Vertical**



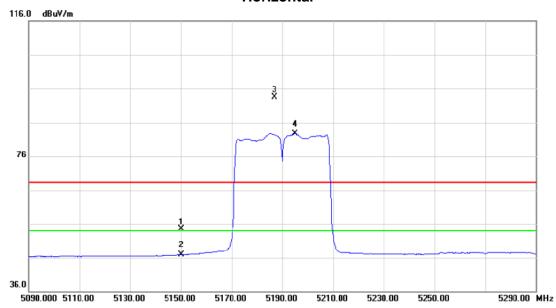
No.	Mk	. Freq.	Reading Level		Measure- ment		Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10379.91	44.23	15.67	59.90	68.30	-8.40	peak	
2		10379.91		15.67	47.84	54.00	-6.16	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 73 of 162



Test Mode: Band 1/ TX N40 Mode 5190MHz

# Horizontal



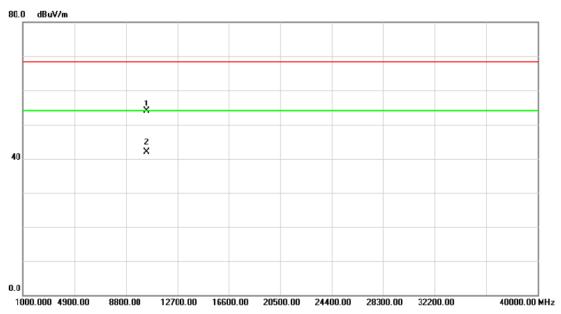
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5150.000	12.49	41.99	54.48	68.30	-13.82	peak	
2		5150.000	4.87	41.99	46.86	54.00	-7.14	AVG	
3	X	5186.800	51.44	42.14	93.58	68.30	25.28	peak	Fundamental frequency, no limit
4	×	5195.000	40.58	42.17	82.75	54.00	28.75	AVG	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 74 of 162



Test Mode: Band 1/ TX N40 Mode 5190MHz

### Horizontal



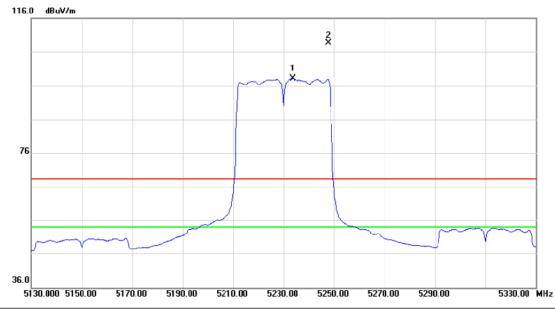
No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10380.03	38.23	15.67	53.90	68.30	-14.40	peak	
2	*	10380.03	26.17	15.67	41.84	54.00	-12.16	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 75 of 162



Test Mode: Band 1/ TX N40 Mode 5230MHz

# Vertical



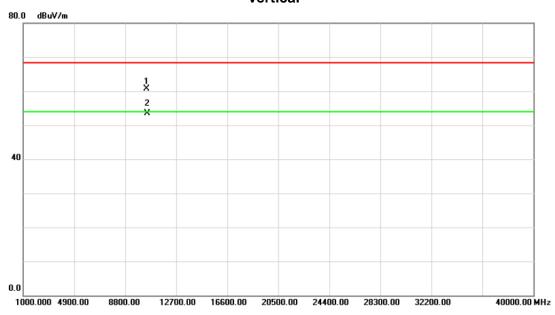
No.	М	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
			MI Iz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	523	33.600	55.81	42.33	98.14	54.00	44.14	A∀G	Fundamental frequency, no limit
2	X	524	47.800	66.26	42.39	108.65	68.30	40.35	peak	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 76 of 162



Test Mode: Band 1/ TX N40 Mode 5230MHz

### **Vertical**

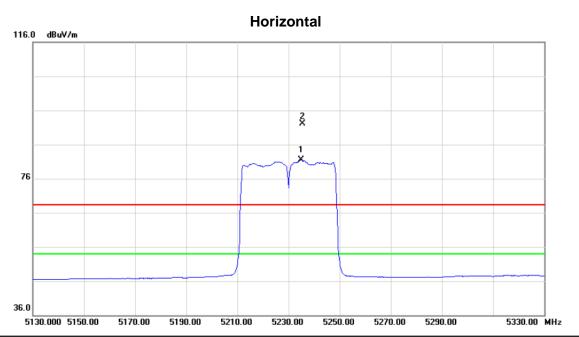


No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10459.86	45.23	15.54	60.77	68.30	-7.53	peak	
2		10459.86	37.89	15.54	53.43	54.00	-0.57	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 77 of 162



Test Mode: Band 1/ TX N40 Mode 5230MHz



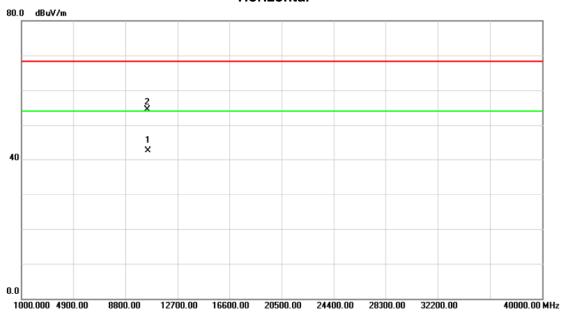
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5234.800	39.14	42.34	81.48	54.00	27.48	AVG	Fundamental frequency, no limit
2	X	5235.400	49.68	42.34	92.02	68.30	23.72	peak	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 78 of 162



Test Mode: Band 1/ TX N40 Mode 5230MHz

## Horizontal



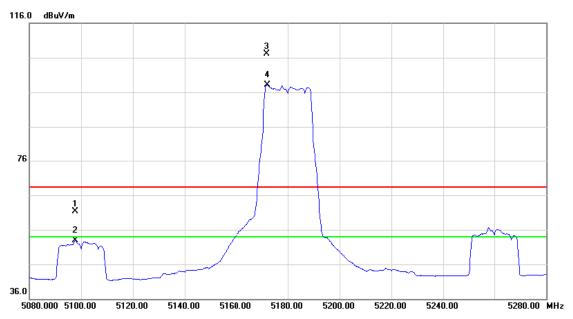
No.	Mk	. Freq.		Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10460.24	27.25	15.54	42.79	54.00	-11.21	AVG	
2		10460.24	39.03	15.54	54.57	68.30	-13.73	peak	

Report No.: NEI-FCCP-2-1406C022 Page 79 of 162



Test Mode: Band 1/ TX AC N20 Mode 5180MHz

### **Vertical**



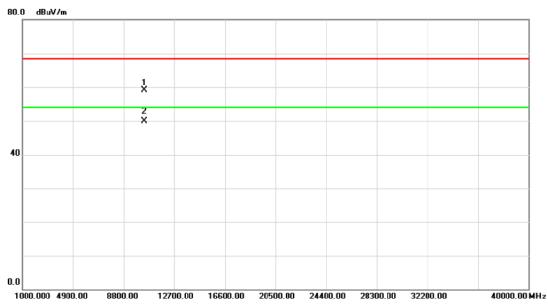
	No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
			MHz	dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1		5097.800	19.60	41.78	61.38	68.30	-6.92	peak	
-	2		5097.800	11.14	41.78	52.92	54.00	-1.08	AVG	
-	3	X	5171.800	65.00	42.08	107.08	68.30	38.78	peak	Fundamental frequency, no limit
	4	*	5172.200	55.96	42.08	98.04	54.00	44.04	AVG	Fundamental frequency, no limit
-										

Report No.: NEI-FCCP-2-1406C022 Page 80 of 162



Test Mode: Band 1/ TX AC N20 Mode 5180MHz

### **Vertical**



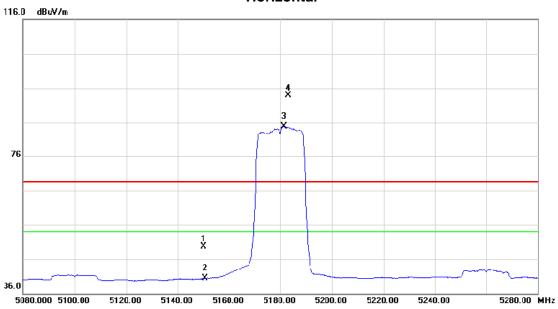
No.	Mk	. Freq.			Measure- ment		Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10360.23	43.42	15.70	59.12	68.30	-9.18	peak	
2	*	10360.23	34.12	15.70	49.82	54.00	-4.18	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 81 of 162



Test Mode: Band 1/ TX AC N20 Mode 5180MHz

# Horizontal



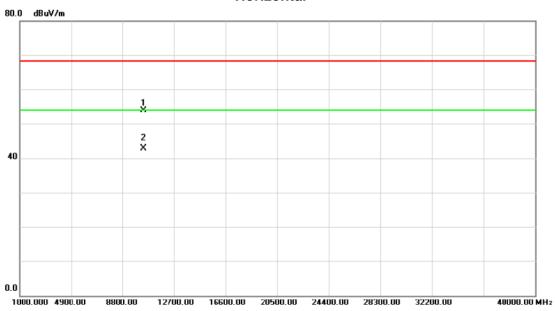
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5150.000	7.69	41.99	49.68	68.30	-18.62	peak	
2		5150.000	-1.53	41.99	40.46	54.00	-13.54	AVG	
3	*	5181.400	42.86	42.12	84.98	54.00	30.98	AVG	Fundamental frequency, no limit
4	Х	5183.000	51.72	42.13	93.85	68.30	25.55	peak	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 82 of 162



Test Mode: Band 1/ TX AC N20 Mode 5180MHz

### Horizontal



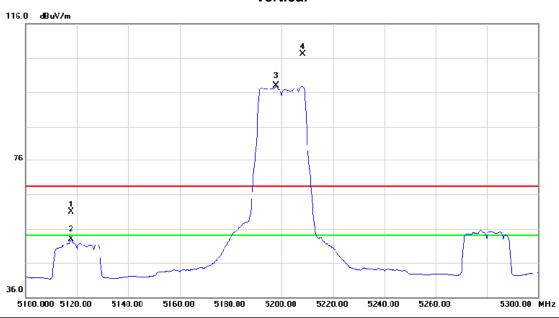
No.	Mk	. Freq.	Reading Level		Measure- ment	Limit	Over		
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10360.08		15.70	53.93	68.30	-14.37	peak	
2	*	10360.08	27.26	15.70	42.96	54.00	-11.04	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 83 of 162



Test Mode: Band 1/ TX AC N20 Mode 5200MHz

## **Vertical**



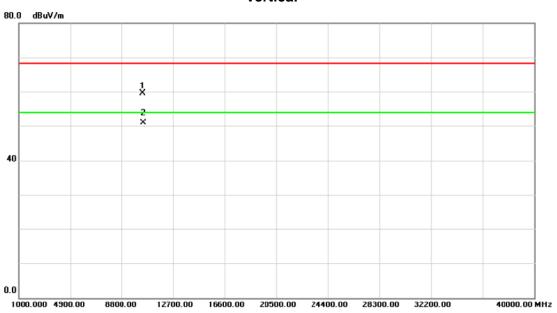
	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
-			MHz	dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	5	117.800	19.13	41.86	60.99	68.30	-/.31	peak	
	2	5	117.800	11.08	41.86	52.94	54.00	-1.06	AVG	
	3	* 5	197.800	55.74	42.18	97.92	54.00	43.92	AVG	Fundamental frequency, no limit
	4	X 5	208.200	64.78	42.23	107.01	68.30	38.71	peak	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 84 of 162



Test Mode: Band 1/ TX AC N20 Mode 5200MHz

## **Vertical**



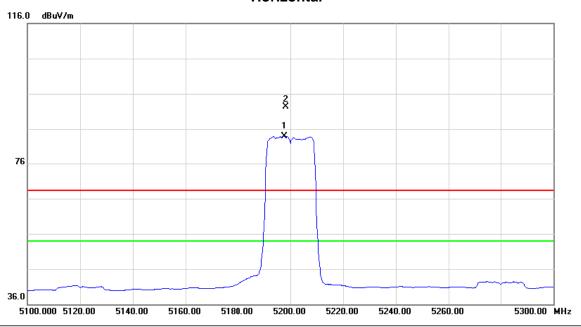
No.	Mk	. Freq.		Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10400.17	43.95	15.64	59.59	68.30	-8.71	peak	
2	*	10400.17	35.24	15.64	50.88	54.00	-3.12	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 85 of 162



Test Mode: Band 1/ TX AC N20 Mode 5200MHz

## Horizontal



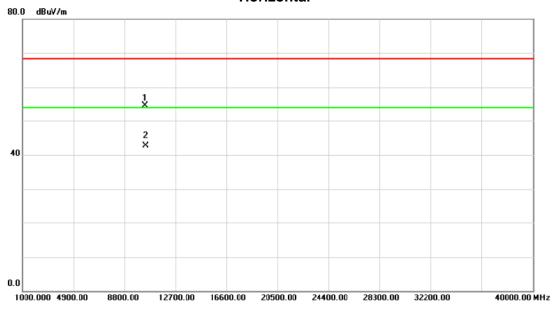
	No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
_			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	*	5197.600	41.74	42.18	83.92	54.00	29.92	AVG	Fundamental frequency, no limit
_	2	X	5198.200	50.21	42.19	92.40	68.30	24.10	peak	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 86 of 162



Test Mode: Band 1/ TX AC N20 Mode 5200MHz

## Horizontal



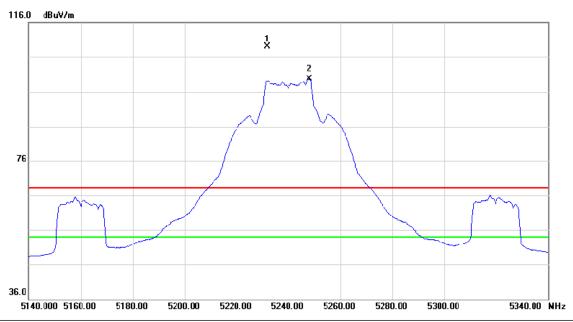
No.	Mk.	Freq.			Measure- ment		Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10400.12	38.96	15.64	54.60	68.30	-13.70	peak	
2	*	10400.12	27.16	15.64	42.80	54.00	-11.20	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 87 of 162



Test Mode: Band 1/ TX AC N20 Mode 5240MHz

## **Vertical**



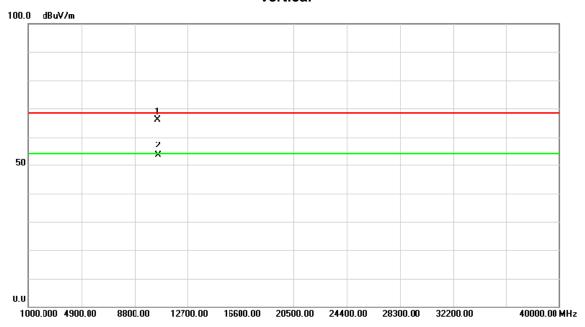
1	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
			MHZ	dBuV	dB	dBuV/m	dBuV/m	ďВ	Detector	Comment
	1	X	5231.800	66.84	42.32	109.16	68.30	40.86	peak	Fundamental frequency, no limit
	2	*	5248.200	57.23	42.39	99.62	54.00	45.62	AVG	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 88 of 162



Test Mode: Band 1/ TX AC N20 Mode 5240MHz

## Vertical



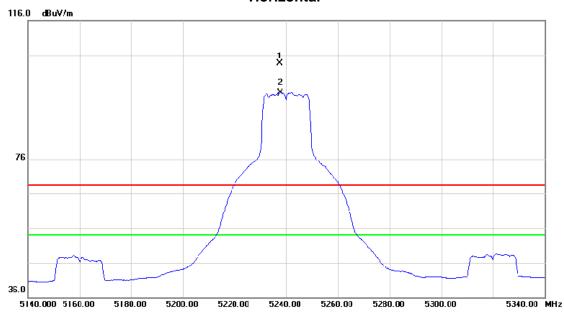
No.	Mk	. Freq.			Measure- ment		Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10475.35	50.71	15.52	66.23	68.30	-2.07	peak	
2		10480.10			53.44	54.00	-0.56	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 89 of 162



Test Mode: Band 1/ TX AC N20 Mode 5240MHz

## Horizontal



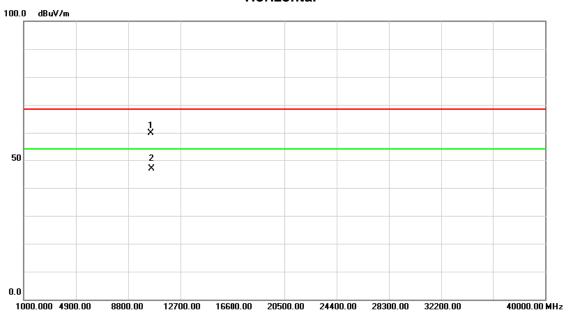
	No.	Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
			MHZ	dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	Comment
_	1	X	5237.400	61.28	42.34	103.62	68.30	35.32	peak	Fundamental frequency, no limit
	2	*	5237.800	53.03	42.35	95.38	54.00	41.38	AVG	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 90 of 162



Test Mode: Band 1/ TX AC N20 Mode 5240MHz

## Horizontal



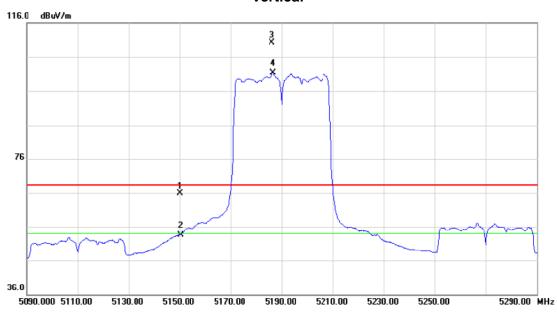
No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10478.80	44.30		59.82	68.30	-8.48	peak	
2	*	10479.00	31.36	15.52	46.88	54.00	-7.12	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 91 of 162



Test Mode: Band 1/ TX AC N40 Mode 5190MHz

## Vertical



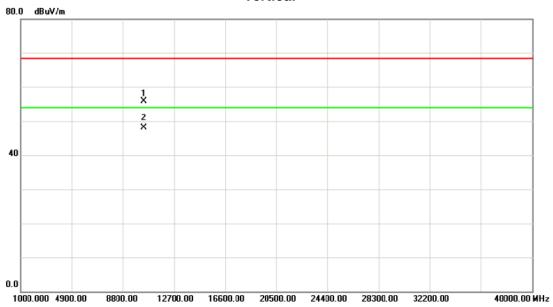
	No.	M	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
Ī			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1		5150.000	23.90	41.99	65.89	68.30	-2.41	peak	
	2		5150.000	11.61	41.99	53.60	54.00	-0.40	AVG	
	3	X	5186.200	68.19	42.14	110.33	68.30	42.03	peak	Fundamental frequency, no limit
	4	*	5186.600	59.21	42.14	101.35	54.00	47.35	AVG	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 92 of 162



Test Mode: Band 1/ TX AC N40 Mode 5190MHz

### **Vertical**



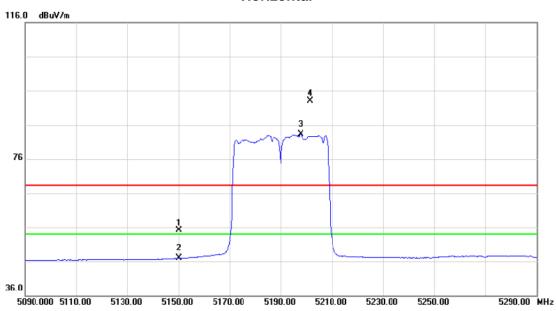
No.	Mk	. Freq.			Measure- ment		Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10380.12	40.14	15.67	55.81	68.30	-12.49	peak	
2	*	10380.12	32.47	15.67	48.14	54.00	-5.86	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 93 of 162



Test Mode: Band 1/ TX AC N40 Mode 5190MHz

### Horizontal



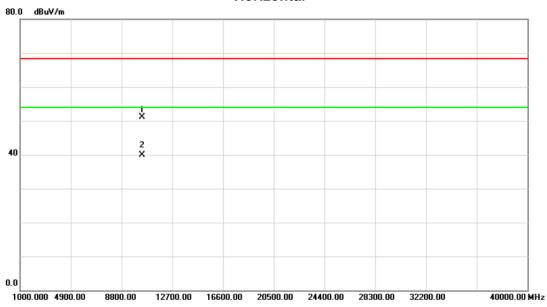
N	0.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1		5150.000	13.11	41.99	55.10	68.30	-13.20	peak	
	2		5150.000	4.83	41.99	46.82	54.00	-7.18	A∀G	
	3	*	5197.800	41.19	42.18	83.37	54.00	29.37	AVG	Fundamental frequency, no limit
	4	Χ	5201.600	50.90	42.21	93.11	68.30	24.81	peak	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 94 of 162



Test Mode: Band 1/ TX AC N40 Mode 5190MHz

### Horizontal



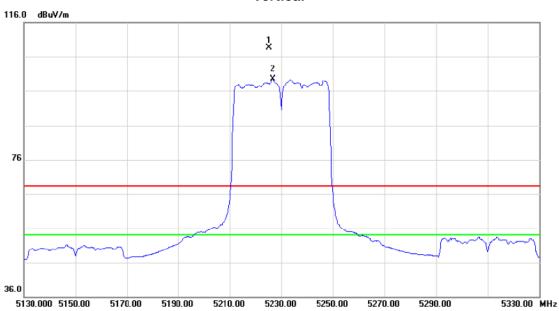
No.	Mk.	Freq.		Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10380.23	35.48	15.67	51.15	68.30	-17.15	peak	
2	*	10380.23	24.26	15.67	39.93	54.00	-14.07	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 95 of 162



Test Mode: Band 1/ TX AC N40 Mode 5230MHz

### **Vertical**



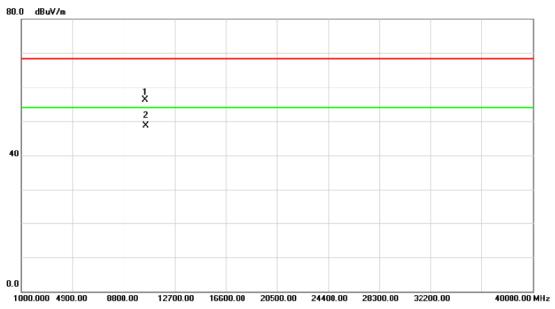
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5225.000	66.23	42.30	108.53	68.30	40.23	peak	Fundamental frequency, no limit
2	*	5226.600	57.21	42.31	99.52	54.00	45.52	AVG	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 96 of 162



Test Mode: Band 1/ TX AC N40 Mode 5230MHz

### **Vertical**



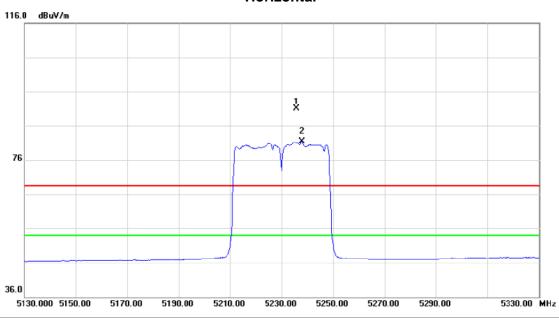
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10459.87	40.86	15.54	56.40	68.30	-11.90	peak	
2	*	10459.87	33.14	15.54	48.68	54.00	-5.32	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 97 of 162



Test Mode: Band 1/ TX AC N40 Mode 5230MHz

## Horizontal



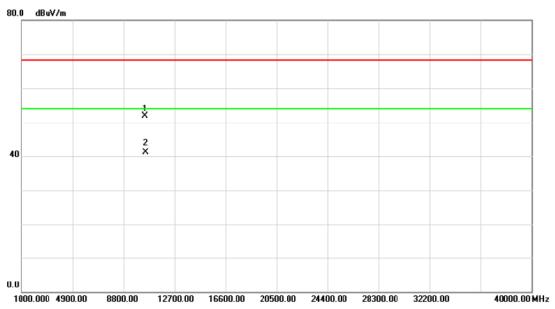
No.	M	k. F	req.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		N	ИHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5235	.600	48.54	42.34	90.88	68.30	22.58	peak	Fundamental frequency, no limit
2	*	5237	.800	39.13	42.35	81.48	54.00	27.48	AVG	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 98 of 162



Test Mode: Band 1/ TX AC N40 Mode 5230MHz

### Horizontal



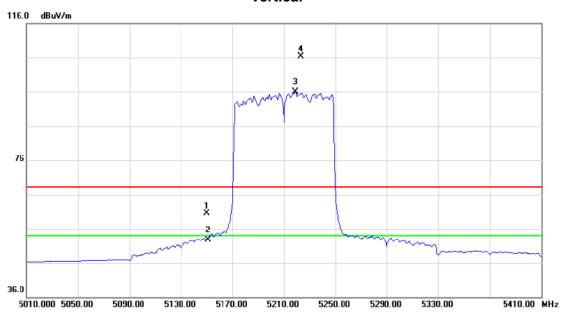
No.	Mk	. Freq.	Reading Level		Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1			36.30	15.54	51.84	68.30	-16.46	peak	
2	*	10460.05	25.52	15.54	41.06	54.00	-12.94	AVG	

Report No.: NEI-FCCP-2-1406C022 Page 99 of 162



Test Mode: Band 1/ TX AC N80 Mode 5210MHz

## Vertical



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5150.000	18.48	41.99	60.47	68.30	-7.83	peak	
2		5150.000	10.79	41.99	52.78	54.00	-1.22	AVG	
3	*	5218.800	53.60	42.28	95.88	54.00	41.88	AVG	Fundamental frequency, no limit
4	Χ	5223.200	63.95	42.29	106.24	68.30	37.94	peak	Fundamental frequency, no limit

Report No.: NEI-FCCP-2-1406C022 Page 100 of 162