



# **FCC Radio Test Report**

FCC ID: MCLCS-E340W

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

Project No. : 1308C100E

Equipment : Cisco Edge 340

Model Name : CS-E340W

Applicant : HON HAI Precision Ind. Co., Ltd.

Address : 5F-1, 5, Hsin-An Road, Hsinchu Science-Based

Industrial Park, Hsinchu, Taiwan

Date of Receipt : Apr. 08, 2016

Date of Test : Apr. 08, 2016 ~ Jul. 19, 2016 | Issued Date : Jul. 20, 2016 | Ested by : BTL Inc.

# BTL INC.

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# **REPORT ISSUED HISTORY**

Issued No.	Description	Issued Date
NEI-FICP-3-1308C100	Original Report.	Sep. 12, 2013
BTL-FCCP-2-1308C100E	Compared with the previous report (NEI-FICP-3-1308C100), the standards are updated to the latest and the adapter model has changed, all items have been re-evaluated and recorded in the test report.	Jul. 20, 2016

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#### 1. CERTIFICATION

Equipment : Cisco Edge 340

Brand Name: Cisco Model Name: CS-E340W

Applicant : HON HAI Precision Ind. Co., Ltd. Manufacturer : Hon Hai Precision Ind Co., Ltd

Address : Hsinchu Science Park Branch Office 5F-1 5, Hsin-an Rd Hsinchu Science

Based Industrial Park Hsinchu, Taiwan

Factory : HONG FU JIN PRECISION INDUSTRY (SHEN ZHEN) CO LTD

Address : Bldg D10, F21, No 2, 2 nd DONGGUAN RD, 10 th YOUSONG INDUSTRIAL

DISTRICT, LONGHUA TOWN, BAOAN, SHENZHEN, GUANGDONG, CHINA.

Date of Test : Apr. 08, 2016 ~ Jul. 19, 2016

Test Sample: Engineering Sample

Standard(s) : FCC Part15, Subpart E(15.407) / ANSI C63.10-2013

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

This test report consists of 159 pages in total.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-2-1308C100E) 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).

Test results included in this report is only for the 5G Band 4 WiFi part.

Testing Engineer : Kush Fac

(Rush Kao)

Technical Manager :

(Jeff Yang)

Authorized Signatory

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# 2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part15, Subpart E					
Standard(s) Section	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)	Radiated Emissions	PASS			
15.407(b)	Band Edge Emissions	PASS			
15.407(g)	Frequency Stability	PASS			

#### NOTE:

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

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#### 2.1 TEST FACILITY

The test facilities used to collect the test data in this report:

#### **Conducted emission Test:**

**C05:** (VCCI RN: C-4742; FCC RN:949005; FCC DN:TW1082)

No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

#### Radiated emission Test (Below 1 GHz):

**CB11:** (VCCI RN: R-4260; FCC RN:949005; FCC DN:TW1082; IC Assigned Code:20088) No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

#### Radiated emission Test (Above 1 GHz):

**CB11:** (VCCI RN: G-868; FCC RN:949005; FCC DN:TW1082; IC Assigned Code:20088) No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

#### 2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2 U<sub>cispr</sub> requirement.

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

#### A. Conducted Measurement:

Test Site	Method	Measurement Frequency Range	U, (dB)
C05	CISPR	150 kHz ~ 30MHz	2.04

#### B. Radiated Measurement:

Test Site	Method	Measurement Frequency Range	U, (dB)
CB11	CISPR	9kHz ~ 150kHz	4.00
(3m)	CISER	150kHz ~ 30MHz	4.00

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
		30 MHz ~ 200 MHz	V	3.06
		30 MHz ~ 200 MHz	Ι	2.58
	CISPR	200 MHz ~ 1, 000 MHz	<b>V</b>	3.50
CB11		200 MHz ~ 1, 000 MHz	Ι	3.10
(3m)		1GHz ~ 6GHz	<b>V</b>	4.14
		1GHz ~ 6GHz	Ι	4.14
		6GHz ~ 18GHz	<b>V</b>	5.34
		6GHz ~ 18GHz	Ι	5.34

Test Site	Method	Measurement Frequency Range	U, (dB)
CB11	CISPR	18 ~ 26.5 GHz	4.66
(3m)	CISER	26.5 ~ 40 GHz	4.74

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

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# 3. GENERAL INFORMATION

# 3.1 GENERAL DESCRIPTION OF EUT

Equipment	Cisco Edge 340			
Brand Name	Cisco			
Model Name	CS-E340W			
Mode Different	N/A			
Product Description	Operation Frequency Modulation Type Bit Rate of Transmitter	UNII-3: 5 802.11a/i 300Mbps		
Power Source	DC voltage supplied from AC/DC adapter #1 Brand /Model name: LITEON /PA-1660-2SA1 #2 Brand /Model name: DELTA /ADP-66CR B #3 PoE			
Power Rating	#1 I/P 100-240V~50-60Hz 2A O/P 12V 5.5A #2 I/P 100-240V~50-60Hz 2A O/P 12V 5.5A #3 DC 48V			
Output Power	Output Power (Max.)		802.11a: 12.39dBm 802.11n (20M): 12.00dBm 802.11n (40M): 14.39dBm	
Connecting I/O Port(s)	USB port*4 IR Extension port Console port RS232 port Audio out port Audio in port HDMI port VGA port Gigabit Ethernet port Power SD card 802.11a/b/g/n Bluetooth			

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#### Note:

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

UNI	I-3	UNII-3		
Channel	Frequency (MHz)	Channel	Frequency (MHz)	
149	5745	151	5755	
153	5765	159	5795	
157	5785			
161	5805			
165	5825			

3. Antenna Specification:

**Group 1** 

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)
1	FOXCONN	FX01G64-0G-EF	Integral	N/A	3.2
2	FOXCONN	FX01G65-0G-EF	Integral	N/A	3.6

Group 2

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)
3	FOXCONN	FX01G67-0G-EF	Dipole	N/A	2.82
4	FOXCONN	FX01G67-0G-EF	Dipole	N/A	2.82

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R), all transmit signals are completely uncorrelated, then, **Direction gain = Gant**, that is Directional gain=2.82 for Dipole antenna and Directional gain=3.6 for Integral Antenna.

This external dipole antenna can be connected to the EUT either directly or by a external cable, after assessing it is the worst case when the antenna is connected to the EUT by the external cable.

4.

Operating Mode	2TX
TX Mode	217
802.11a	V (ANT 1 & ANT 2 or ANT 3 & ANT 4)
802.11n(20MHz)	V (ANT 1 & ANT 2 or ANT 3 & ANT 4)
802.11n(40MHz)	V (ANT 1 & ANT 2 or ANT 3 & ANT 4)





#### 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 Mode	Description
Mode 1	TX A Mode / CH149,CH157,CH165 (UNII-3)
Mode 2	TX N20 Mode / CH149,CH157,CH165 (UNII-3)
Mode 3	TX N40 Mode / CH151,CH159 (UNII-3)
Mode 4	TX Mode

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

For Conducted emissionTest		
Final Test Mode	Description	
Mode 4	TX Mode	

For Radiated emissionTest		
Final Test Mode	Description	
Mode 1	TX A Mode / CH149,CH157,CH165 (UNII-3)	
Mode 2	TX N20 Mode / CH149,CH157,CH165 (UNII-3)	
Mode 3	TX N40 Mode / CH151,CH159 (UNII-3)	

#### Note:

- (1) For radiated emission below 1GHz test, the 802.11a mode is found to be the worst case and recorded.
- (2) For Conducted emission test, the Dipole antenna with external cable is found to be the worst case and recorded.

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#### 3.3 TABLE OF PARAMETERS OF TEST 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

UNII-3 for Integral Antenna			
Test Software Version	RT5x9x_V1.0.8.0_AP		
Frequency (MHz)	5745	5785	5825
A Mode	0E	0E	0E
Frequency (MHz)	5745	5785	5825
N20 Mode	0F	0E	0F
Frequency (MHz)	5755	5795	
N40 Mode	1B	12	

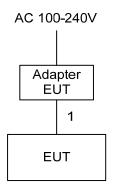
Note: For Conducted test, the Integral Antenna is found to be the worst case and recorded.

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#### 3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



#### 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.
-	-	-	-	-	-

Ite	em	Shielded Type	Ferrite Core	Length	Note
	1	NO	NO	1.5m	Power Cable

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#### 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

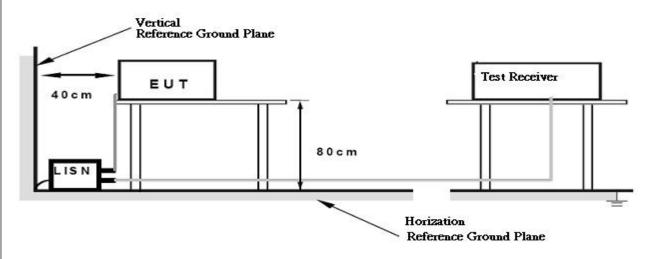
No deviation

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#### 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: 24°C Relative Humidity: 60% 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 In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured •
- (2) Measuring frequency range from 150kHz to 30MHz o

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#### 4.2 RADIATED EMISSION MEASUREMENT

#### 4.2.1 RADIATED EMISSION LIMITS

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.

Frequencies	Field Strength	Measurement Distance
(MHz)	(micorvolts/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

#### Note:

- (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	EIDD Limit (dDm)	Equivalent Field Strength
(MHz)	EIRP Limit (dBm)	at 3m (dBµV/m)
5150-5250	-27	68.3
5250-5350	-27	68.3
5470-5725	-27	68.3
5725-5850	-27(Note 2)	68.3
	10(Note 2)	105.3
	15.6(Note 2)	110.9
	27(Note 2)	122.3

#### Note:

1. The following formula is used to convert the equipment isotropic radiated power (eirp) to  $\frac{1000000\sqrt{30P}}{1000000\sqrt{30P}}$ 

field strength:  $E = \frac{1000000\sqrt{30P}}{2} \mu V/m$ , where P is the eirp (Watts)

2. According to FCC 16-24,All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below theband edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above orbelow the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27dBm/MHz at the band edge.

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#### 4.2.2 TEST PROCEDURE

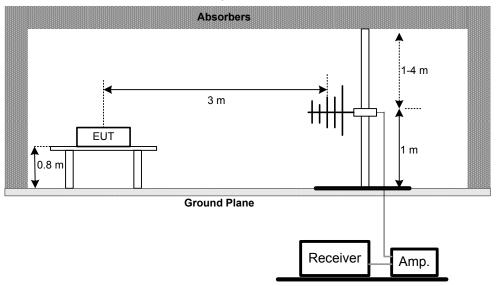
- a. The measuring distance of at 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The measuring distance of at 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 1GHz)
- c. The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
- f. The initial step in collecting conducted 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 1GHz)
- 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 1GHz)
- i. 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

(A)Radiated Emission Test Set-Up Frequency Below 1GHz

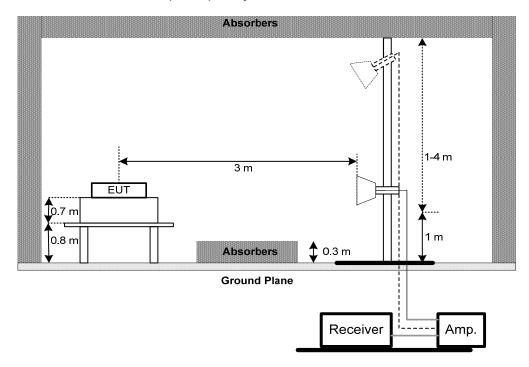


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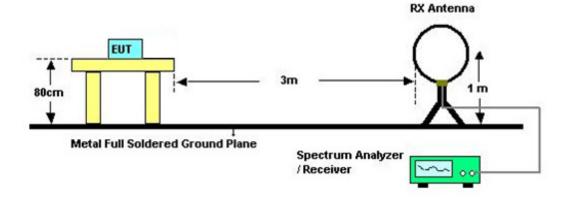




#### (B) Radiated Emission Test Set-Up Frequency Above 1 GHz



#### (C) Radiated emissions below 30MHz



#### **4.2.5 EUT OPERATING CONDITIONS**

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

#### **4.2.6 EUT TEST CONDITIONS**

Temperature: 24°C Relative Humidity: 52% Test Voltage: AC 120V/60Hz

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

Please refer to the Attachment B

#### 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.

#### 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 sec./MHz ∘
- (2) All readings are Peak unless otherwise stated QP in column of  ${}^{\mathbb{F}}$ Note ${}_{\mathbb{F}}$ . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform  ${}^{\circ}$
- (3) Measuring frequency range from 30MHz to 1000MHz  $\circ$
- (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 •
- (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.
- (8) No limit: This is fundamental signal, the judgment is not applicable. For fundamental signal judgment was referred to Peak output test.

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#### 5. 26dB SPECTRUM BANDWIDTH

#### **5.1 APPLIED PROCEDURES / LIMIT**

FCC Part15, Subpart E			
Test Item	Limit	Frequency Range (MHz)	Result
Bandwidth	Minimum 500kHz 6dB Bandwidth	5725-5850	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,

b.	Spectrum Parameters	Setting	
,	Attenuation	Auto	
·	Span Frequency	> 26dB Bandwidth	
	RBW	300 kHz	
·	VBW	1000 kHz	
·	Detector	Peak	
·	Trace	Max Hold	
·	Sweep Time	Auto	

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 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

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# **5.1.5 EUT TEST CONDITIONS** Temperature: 24°C Relative Humidity: 52% Test Voltage: AC 120V/60Hz 5.1.6 TEST RESULTS Please refer to the Attachment E.





# **6. MAXIMUM CONDUCTED OUTPUT POWER**

# **6.1 APPLIED PROCEDURES / LIMIT**

FCC Part15, Subpart E					
Test Item Limit Frequency Range (MHz) Result					
Conducted Output Power	1 Watt (30dBm)	5725-5850	PASS		

#### **6.1.1 TEST PROCEDURE**

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

b.

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

c. Test was performed in accordance with method of KDB 789033 D02.





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

No deviation.

#### 6.1.3 TEST SETUP



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

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

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

Temperature: 24°C Relative Humidity: 52% Test Voltage: AC 120V/60Hz

#### 6.1.6 TEST RESULTS

Please refer to the Attachment F.

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#### 7. POWER SPECTRAL DENSITY TEST

#### 7.1 APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E				
Test Item Limit Frequency Range (MHz)				
Power Spectral Density	30dBm/500kHz	5725-5850	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,
- b. offset=compensation factor +cable loss+max antenna gain

C.	Spectrum Parameter	Setting
	Attenuation	Auto
	Chan Fraguenay	Encompass the entire emissions bandwidth (EBW) of the
	Span Frequency	signal
	RBW	= 1MHz.
	VBW	≥ 3MHz.
	Detector	RMS
	Trace average	100 trace
	Sweep Time	Auto

#### Note:

- 1. For UNII-3, according to KDB publication 789033 D02 General UNII Test Procedures New Rules v01r02, section II.F.5., it is acceptable to set RBW at 1MHz and VBW at 3MHz if the spectrum analyzer does not have 500kHz RBW.
- 2. The value measured with RBW=1MHz is to be added with 10log(500kHz/1MHz) which is -3dB. For example, if the measured value is +10dBm using RBW=1MHz (that is +10dBm/MHz), then the converted value will be +7dBm/500kHz.

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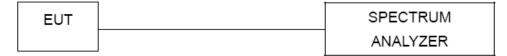




#### 7.1.1 DEVIATION FROM STANDARD

No deviation.

#### 7.1.2 TEST SETUP



#### 7.1.3 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

## 7.1.4 EUT TEST CONDITIONS

Temperature: 24°C Relative Humidity: 52% Test Voltage: AC 120V/60Hz

#### 7.1.5 TEST RESULTS

Please refer to the Attachment G.

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## 8. FREQUENCY STABILITY MEASUREMENT

#### 8.1 APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E				
Test Item	Limit	Frequency Range (MHz)	Result	
Frequency Stability	Specified in the user's manual	5725-5850	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,

	are the state of t				
b.	Spectrum Parameter	Setting			
	Attenuation	Auto			
	Span Frequency	Entire absence of modulation emissions bandwidth			
	RBW	10 kHz			
	VBW	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.

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

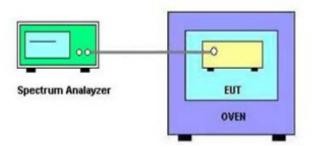
No deviation.

d. User manual temperature is -5°C~50°C.





#### 8.1.3 TEST SETUP



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

The EUT tested system was configured as the statements of 4.1.5 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.

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# 9. MEASUREMENT INSTRUMENTS LIST

	Conducted Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	TWO-LINE V-NETWORK	R&S	ENV216	101050	Jan. 25, 2017	
2	Test Cable	TIMES	CFD300-NL	C05	Jun. 13, 2017	
3	EMI Test Receiver	R&S	ESR7	101433	Dec. 09, 2016	
4	Measurement Software	Farad	EZ_EMC (Version NB-03A)	N/A	N/A	

	Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	Trilog-Broadband Antenna	Schwarzbeck	VULB9168-352	9168-352	Feb. 04, 2017	
2	Horn Antenna	Schwarzbeck	BBHA 9120	D-546	Nov. 05, 2017	
3	Pre-Amplifier	HP	8447D	2944A08891	Mar. 09, 2017	
4	Pre-Amplifier	Agilent	8449B	3008A02331	Jan. 24, 2017	
5	Test Cable	EMCI	EMC8D-NM-NM -8000	150301	Mar. 09, 2017	
6	Test Cable	EMCI	EMC104-SM-S M-2500	150303	Mar. 09, 2017	
7	Test Cable	EMCI	EMC104-NM-S M-1000	150304	Mar. 09, 2017	
8	Test Cable	EMCI	EMC104-SM-S M-5000	150302	Mar. 29, 2017	
9	Test Cable	EMCI	EMC104-SM-S M-800	150305	Mar. 29, 2017	
10	EXA Spectrum Analyzer	Agilent	N9010A	MY52220990	Feb. 24, 2017	
11	EMI Test Receiver	Agilent	N9038A	MY51210215	Jan. 08, 2017	
12	Loop Antenna	EMCO	6502	00042960	Nov. 07, 2016	

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Spectrum Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Jan. 18, 2017

	Maximum Conducted Output Power Measurement				
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	Anritsu	ML2487A	6K00004714	May 18, 2017
2	Power Meter Sensor	Anritsu	MA2491A	034138	May 18, 2017

	Power Spectral Density Measurement				
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Jan. 18, 2017

	Frequency Stability Measurement				
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Jan. 18, 2017

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

All calibration period of equipment list is one year.

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# **10. EUT TEST PHOTOS**

# Conducted Measurement Photos Dipole Antenna





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Conducted Measurement Photos Integral Antenna



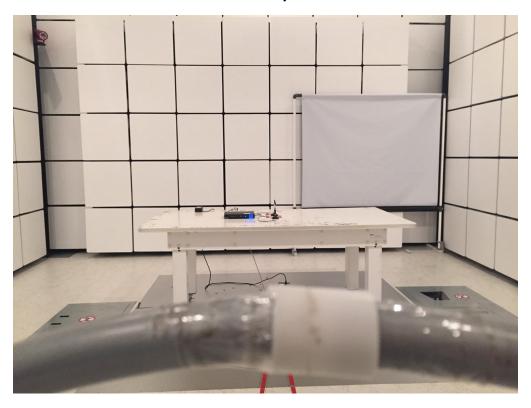


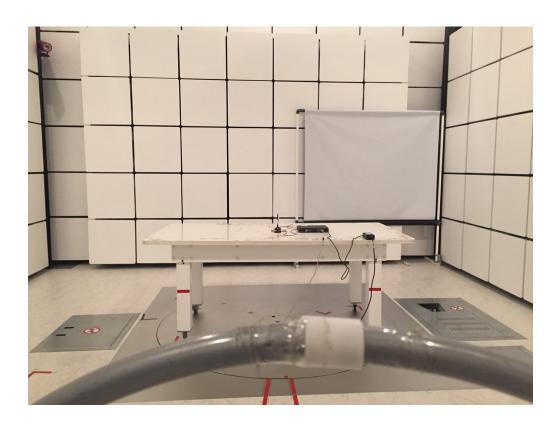
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# 9KHz to 30MHz Dipole Antenna

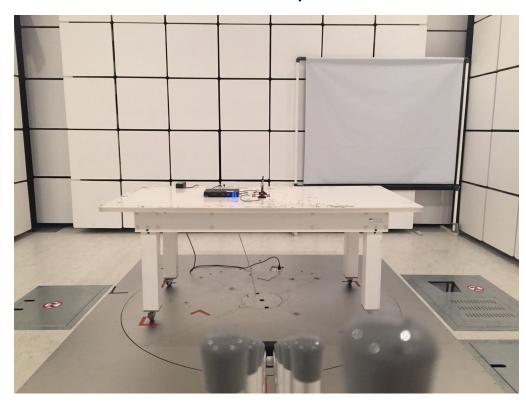


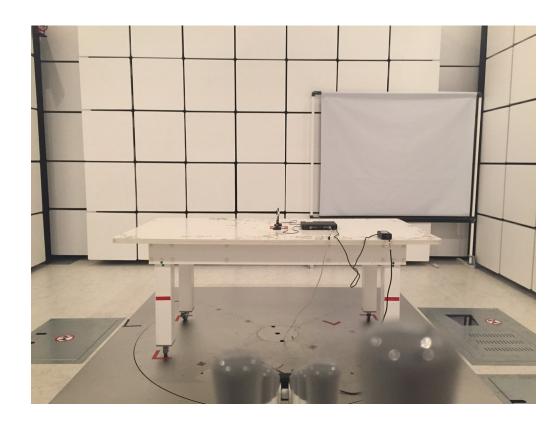






# 30MHz to 1000MHz Dipole Antenna









# **Above 1000MHz Dipole Antenna**

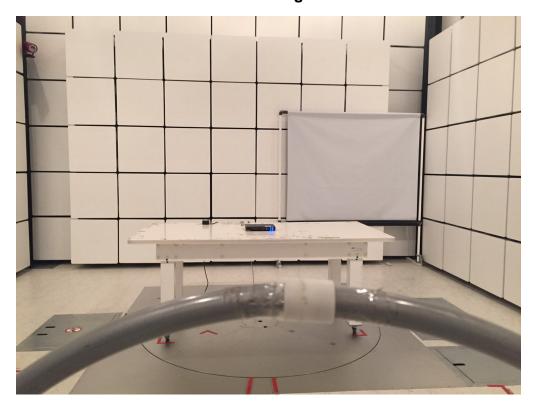


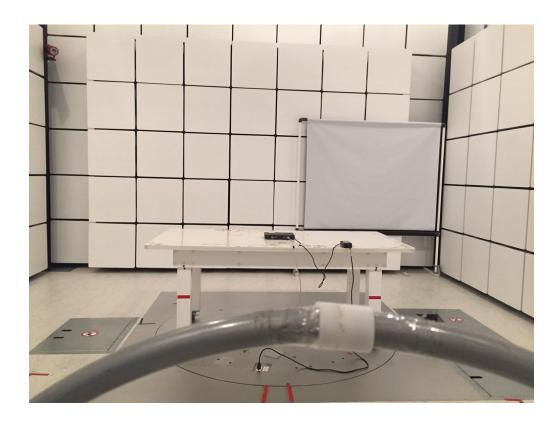






# 9KHz to 30MHz Integral Antenna



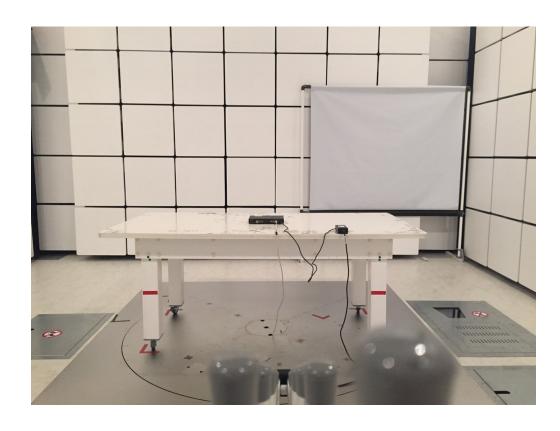






# 30MHz to 1000MHz Integral Antenna









# **Radiated Measurement Photos**

# Above 1000MHz Integral Antenna





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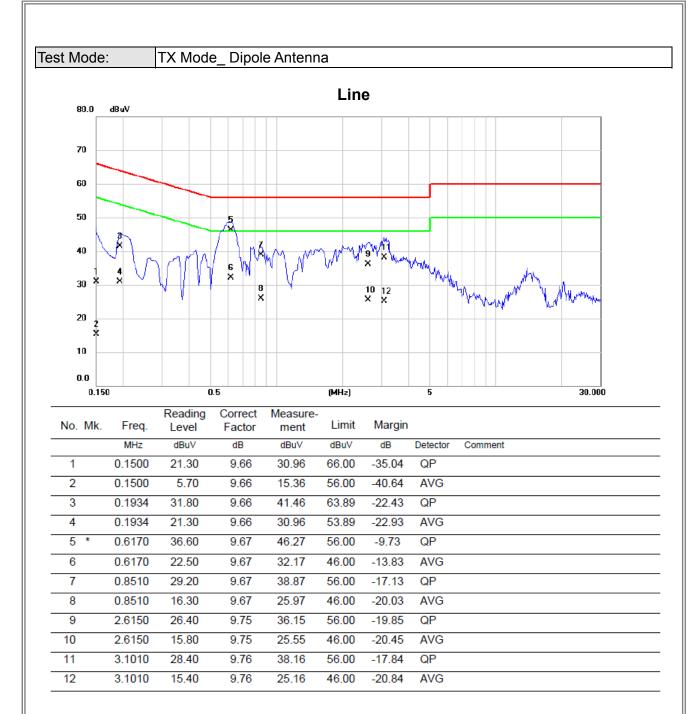


ATTACHMENT /	A - CONDUCTED	<b>EMISSION</b>
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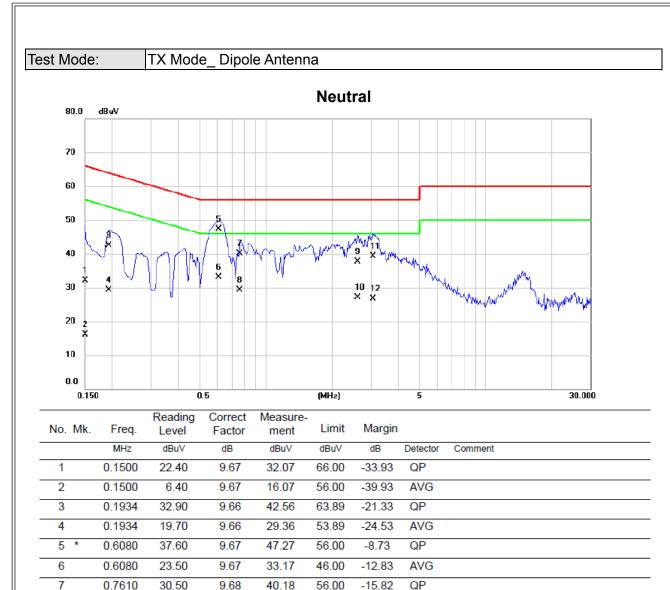




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19.70

28.00

17.40

29.60

17.00

9.68

9.75

9.75

9.77

9.77

29.38

37.75

27.15

39.37

26.77

46.00

56.00

46.00

56.00

46.00

-16.62

-18.25

-18.85

-16.63

-19.23

AVG

QP

AVG

QP

AVG

0.7610

2.6150

2.6150

3.0830

3.0830

9

10

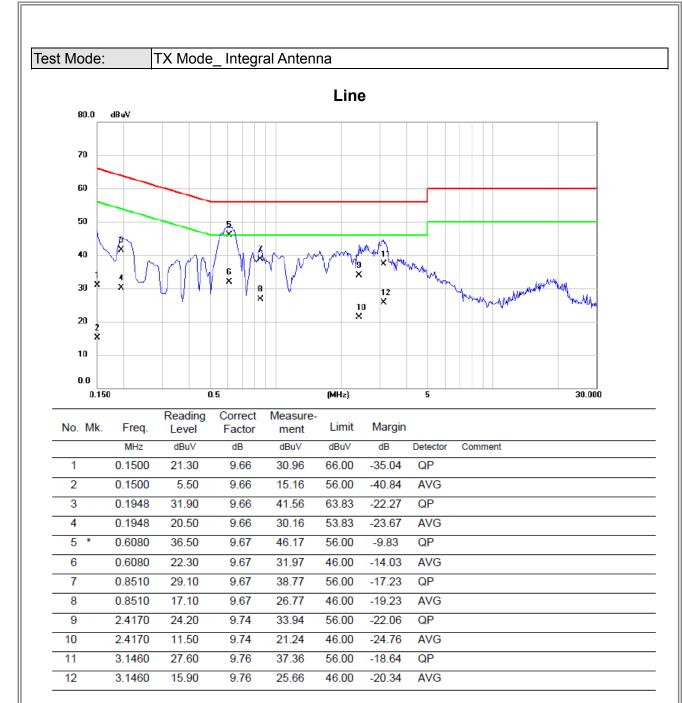
11

12

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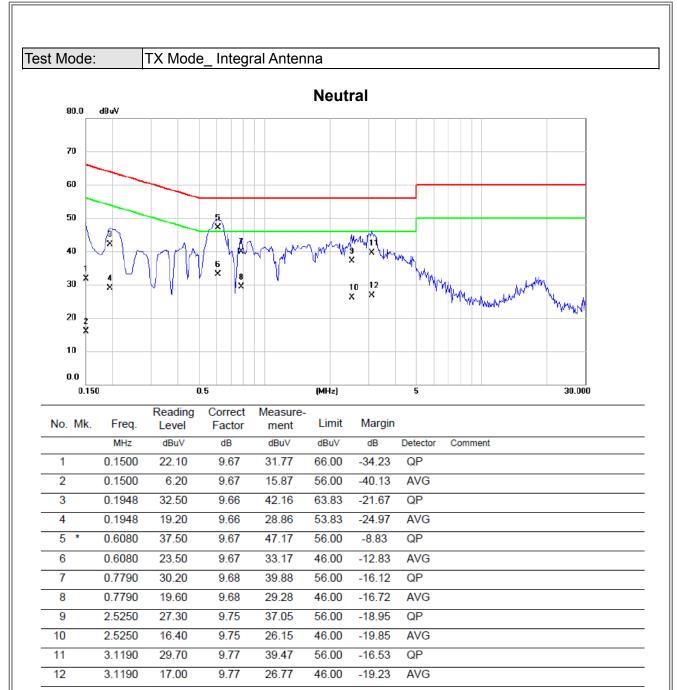




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ATTACHMENT B - RADIATED EMISSION (9KHZ TO 30MHZ)

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Test Mode: TX Mode\_ Dipole Antenna Open 130.0 dBuV/m 120 110 100 90 80 70 60 X 50 40 30 20 10 0.0 0.07 0.09 0.11 0.15 0.009 0.02 0.04 0.05 0.08 0.12 MHz

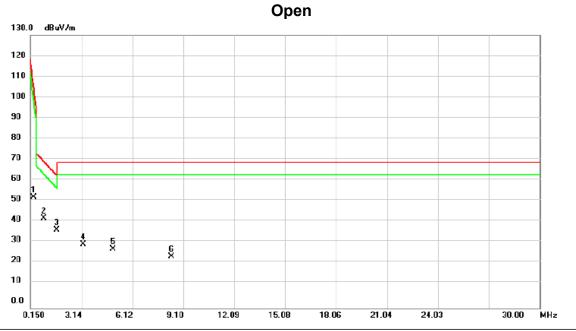
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment		Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	0.0405	41.50	13.95	55.45	126.25	-70.80	peak	

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Test Mode: TX Mode\_ Dipole Antenna



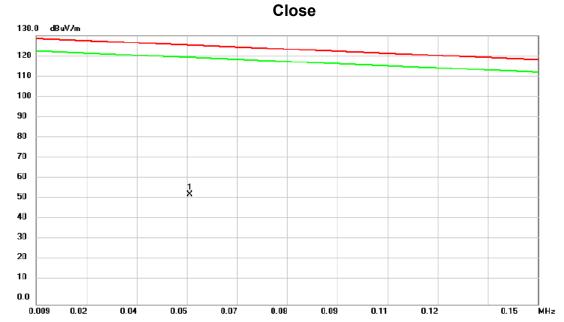
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	0.3291	40.93	11.80	52.73	105.41	-52.68	peak	
2	0.9261	30.79	11.97	42.76	69.91	-27.15	peak	
3 *	1.7020	25.41	11.68	37.09	63.00	-25.91	peak	
4	3.2244	19.31	11.13	30.44	69.54	-39.10	peak	
5	4.9855	16.62	11.40	28.02	69.54	-41.52	peak	
6	8.4184	13.23	11.33	24.56	69.54	-44.98	peak	

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Test Mode: TX Mode\_ Dipole Antenna



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0522	40.30	12.96	53.26	125.40	-72.14	peak	

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Test Mode: TX Mode Dipole Antenna Close 130.0 dBuV∕m 120 110 100 90 80 70 60 50 **4**0 30 ź 5 X <u>6</u> 20 10 0.0 0.150 3.14 6.12 9.10 12.09 15.08 18.06 21.04 24.03 30.00 MHz Reading Correct Measure-Limit Margin No. Mk. Freq. Level Factor ment MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 0.1500 47.16 12.03 59.19 118.34 -59.15 1 peak 2 0.5675 35.78 47.61 73.11 -25.50 11.83 peak 3 1.2242 28.18 11.90 40.08 67.26 -27.18 peak

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4.2991

8.8361

13.2240

4

5

6

17.28

12.04

11.57

11.29

11.32

11.20

28.57

23.36

22.77

69.54

69.54

69.54

-40.97

-46.18

-46.77

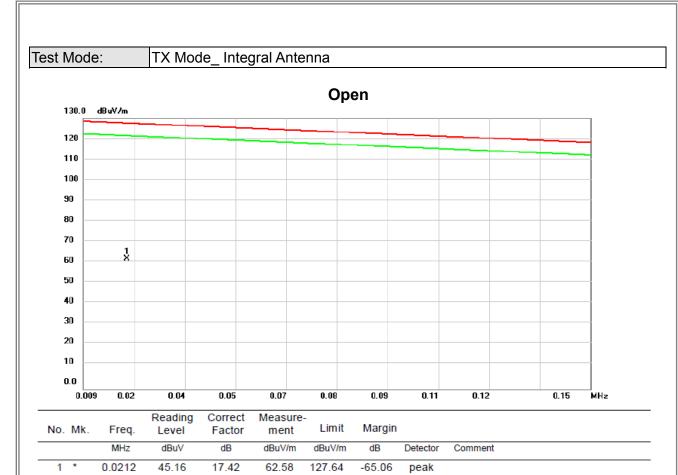
peak

peak

peak





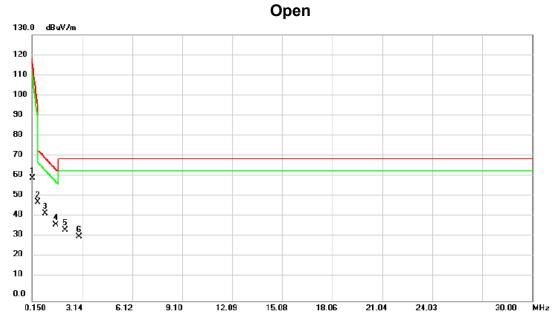


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Test Mode: TX Mode\_ Integral Antenna



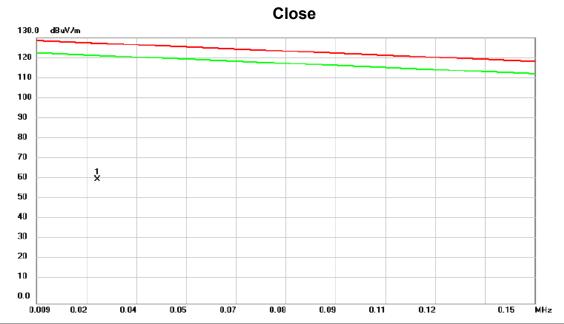
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	0.1500	47.93	12.03	59.96	118.34	-58.38	peak	
2 *	0.5080	36.55	11.80	48.35	73.64	-25.29	peak	
3	0.9261	30.79	11.97	42.76	69.91	-27.15	peak	
4	1.5530	25.58	11.75	37.33	64.32	-26.99	peak	
5	2.1200	23.06	11.50	34.56	69.54	-34.98	peak	
6	2.9560	20.15	11.12	31.27	69.54	-38.27	peak	

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Test Mode: TX Mode\_ Integral Antenna



No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	0.0262	44.44	16.04	60.48	127.28	-66.80	peak	

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Test Mode: TX Mode\_ Integral Antenna



No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	0.3886	38.05	11.80	49.85	101.12	-51.27	peak	
2 *	0.9261	31.48	11.97	43.45	69.91	-26.46	peak	
3	1.6126	24.88	11.72	36.60	63.79	-27.19	peak	
4	2.4483	21.67	11.35	33.02	69.54	-36.52	peak	
5	3.9410	18.34	11.24	29.58	69.54	-39.96	peak	
6	6.3887	15.28	11.37	26.65	69.54	-42.89	peak	

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

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558.6500

741.0100

5

6 \*

29.04

28.91

-1.30

2.15

27.74

31.06

46.00

46.00

-18.26

-14.94

peak

peak



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Test Mode: UNII-3/TX A Mode 5745MHz\_Dipole Antenna Vertical 80.0 dBuV/m 70 60 50 40 Š 30 5 X X **4** 1 2 X X 20 10 0.0 30.000 127.00 224.00 321.00 418.00 515.00 612.00 709.00 806.00 1000.00 MHz Reading Correct Measure-Limit Margin No. Mk. Freq. Level Factor ment MHz dBuV dΒ dBuV/m dBuV/m dΒ Detector Comment 1 86.2600 34.11 -13.03 21.08 40.00 -18.92 peak 2 120.2100 31.87 -10.45 21.42 43.50 -22.08 peak 3 269.5900 30.72 -8.39 22.33 46.00 -23.67 peak 4 347.1900 28.95 -6.08 22.87 46.00 -23.13 peak

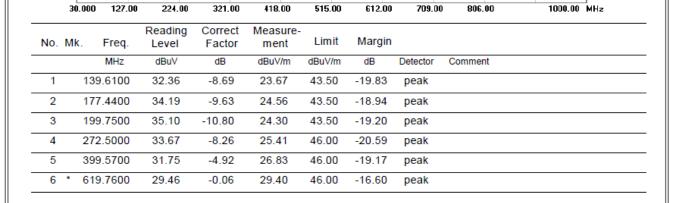
Report No.: BTL-FCCP-2-1308C100E



0.0



Test Mode: UNII-3/TX A Mode 5745MHz \_Dipole Antenna Horizontal 80.0 dBuV/m 70 60 50 40 ĕ 30 Š 4 × 1 2 3 X X X 20 10

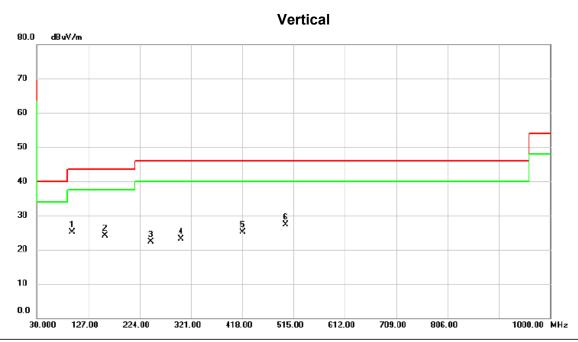


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Test Mode: UNII-3/TX A Mode 5745MHz\_Integral Antenna

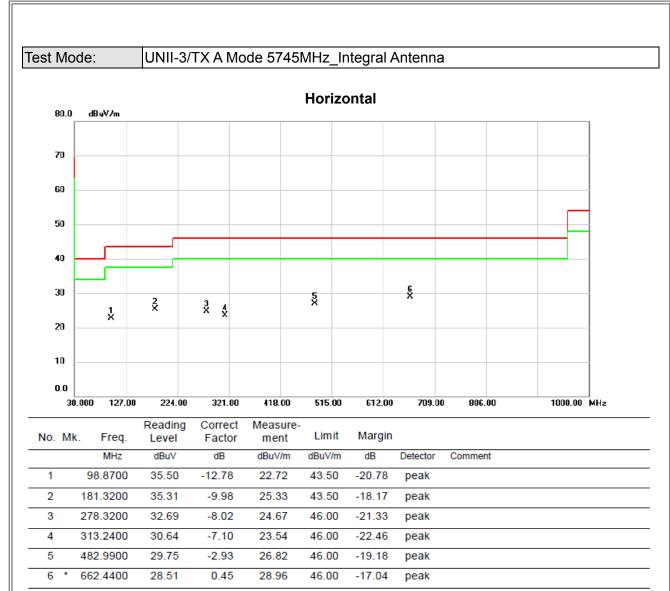


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	96.9300	38.01	-12.95	25.06	43.50	-18.44	peak	
2		158.0400	32.68	-8.59	24.09	43.50	-19.41	peak	
3		245.3400	31.65	-9.31	22.34	46.00	-23.66	peak	
4		302.5700	30.62	-7.42	23.20	46.00	-22.80	peak	
5		418.9700	29.39	-4.37	25.02	46.00	-20.98	peak	
6		500.4500	30.04	-2.64	27.40	46.00	-18.60	peak	

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ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)

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Orthogonal Axis: X
Test Mode: UNII-3/TX A Mode 5745MHz\_Dipole Antenna

#### Vertical 120.0 dBuV/m 110 100 90 80 70 60 50 40 30 20 10 0.05645.000 5665.00 5685.00 5705.00 5725.00 5745.00 5765.00 5785.00 5805.00 5845.00 MHz

	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
-			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
_	1		5645.055	12.40	39.29	51.69	68.20	-16.51	peak	
-	2		5663.100	11.71	39.34	51.05	77.89	-26.84	peak	
_	3		5719.920	13.15	39.51	52.66	110.78	-58.12	peak	
-	4		5724.105	15.63	39.52	55.15	111.95	-56.80	peak	
_	5		5745.000	49.03	39.58	88.61	112.20	-23.59	peak	
	6	*	5745.000	41.61	39.58	81.19	54.00	27.19	AVG	No Limit
_										

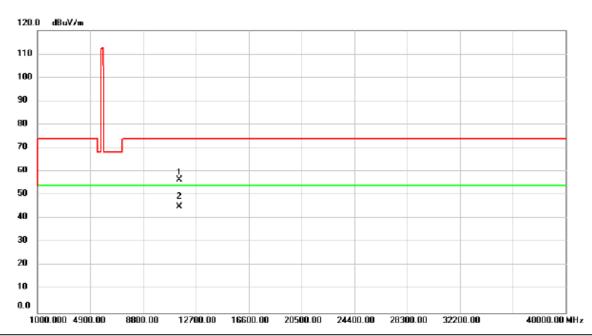
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Orthogonal Axis:	X
Test Mode:	UNII-3/TX A Mode 5745MHz_Dipole Antenna

# Vertical



No.	Mk.	. Freq.		Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11490.00	51.22	5.23	56.45	74.00	-17.55	peak	
2	*	11490.00	39.94	5.23	45.17	54.00	-8.83	AVG	

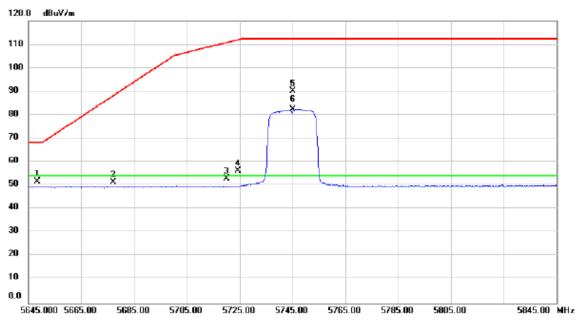
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Orthogonal Axis: X
Test Mode: UNII-3/TX A Mode 5745MHz\_Dipole Antenna

# Horizontal



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5648.440	12.34	39.30	51.64	68.20	-16.56	peak	
2		5677.150	11.98	39.39	51.37	88.29	-36.92	peak	
3		5719.980	13.55	39.51	53.06	110.79	-57.73	peak	
4		5724.260	16.61	39.52	56.13	111.99	-55.86	peak	
5		5745.000	50.66	39.58	90.24	112.20	-21.96	peak	
6	*	5745.000	42.82	39.58	82.40	54.00	28.40	AVG	No Limit

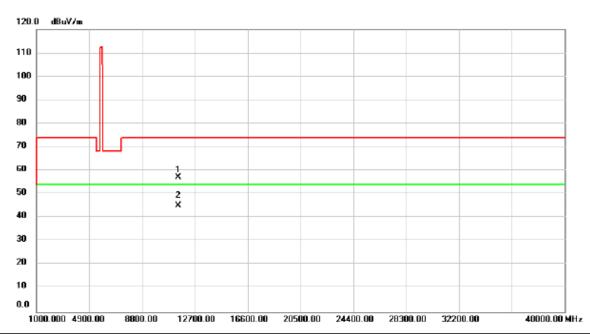
Report No.: BTL-FCCP-2-1308C100E Page 60 of 159





Orthogonal Axis:	X
Test Mode:	UNII-3/TX A Mode 5745MHz_Dipole Antenna

# Horizontal



No.	Mk	. Freq.		Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11490.00	51.90	5.23	57.13	74.00	-16.87	peak	
2	*	11490.00	39.91	5.23	45.14	54.00	-8.86	AVG	

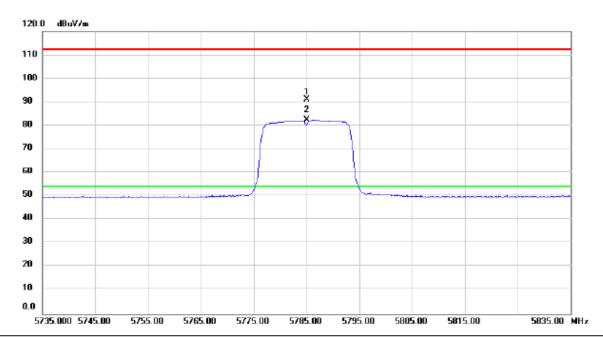
Report No.: BTL-FCCP-2-1308C100E Page 61 of 159





Orthogonal Axis: X
Test Mode: UNII-3/TX A Mode 5785MHz \_Dipole Antenna

# Vertical



	No.	М	k. F	req.	Reading Level		Measure- ment		Margin		
_			N	ИHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
_	1		5785.	000	51.31	39.70	91.01	112.20	-21.19	peak	
	2	*	5785.	000	42.61	39.70	82.31	54.00	28.31	AVG	No Limit

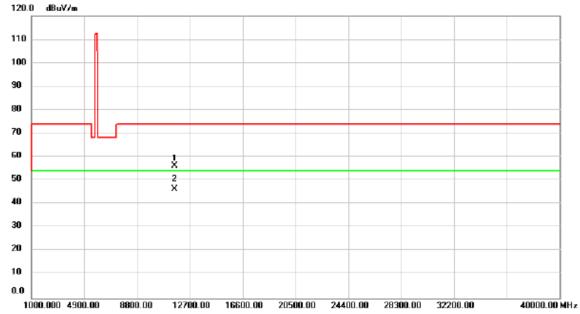
Report No.: BTL-FCCP-2-1308C100E Page 62 of 159





Orthogonal Axis: X
Test Mode: UNII-3/TX A Mode 5785MHz\_Dipole Antenna

# Vertical



No.	Mk	. Freq.		Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11570.00	51.27	5.13	56.40	74.00	-17.60	peak	
2	*	11570.00	41.10	5.13	46.23	54.00	-7.77	AVG	

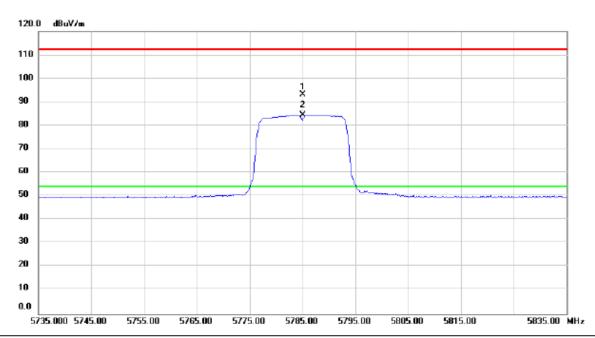
Report No.: BTL-FCCP-2-1308C100E Page 63 of 159





Orthogonal Axis: X
Test Mode: UNII-3/TX A Mode 5785MHz \_Dipole Antenna

# Horizontal



	No.	M	k. Fred	_	Correct Factor			Margin			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
-	1		5785.00	0 53.31	39.70	93.01	112.20	-19.19	peak		
	2	*	5785.00	0 44.77	39.70	84.47	54.00	30.47	AVG	No Limit	

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Orthogonal Axis: X
Test Mode: UNII-3/TX A Mode 5785MHz\_Dipole Antenna

#### Horizontal



No.	Mk.	Freq.			Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11570.00	51.33	5.13	56.46	74.00	-17.54	peak	
2	*	11570.00	40.12	5.13	45.25	54.00	-8.75	AVG	

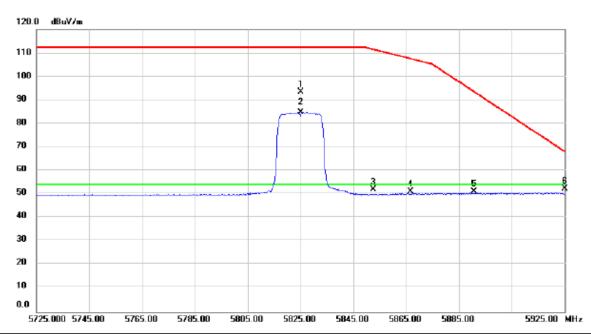
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Orthogonal Axis: X
Test Mode: UNII-3/TX A Mode 5825MHz \_Dipole Antenna

# **Vertical**



No.	М	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5825.000	53.52	39.82	93.34	112.20	-18.86	peak	
2	*	5825.000	44.88	39.82	84.70	54.00	30.70	AVG	No Limit
3		5852.625	12.06	39.89	51.95	111.47	-59.52	peak	
4		5866.800	11.21	39.93	51.14	107.50	-56.36	peak	
5		5890.800	11.23	40.01	51.24	93.51	-42.27	peak	
6		5925.000	12.27	40.11	52.38	68.20	-15.82	peak	

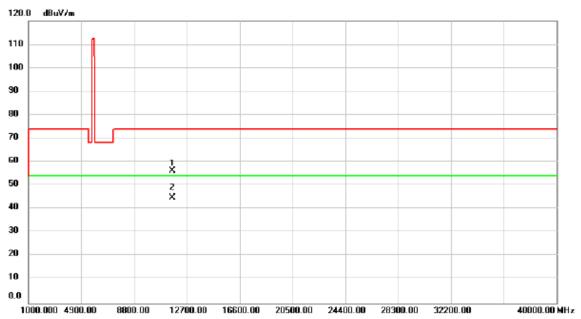
Report No.: BTL-FCCP-2-1308C100E Page 66 of 159





Orthogonal Axis: X
Test Mode: UNII-3/TX A Mode 5825MHz \_Dipole Antenna

# Vertical



No.	Mk.	. Freq.			Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11650.00	51.35	4.99	56.34	74.00	-17.66	peak	
2	*	11650.00	39.77	4.99	44.76	54.00	-9.24	AVG	

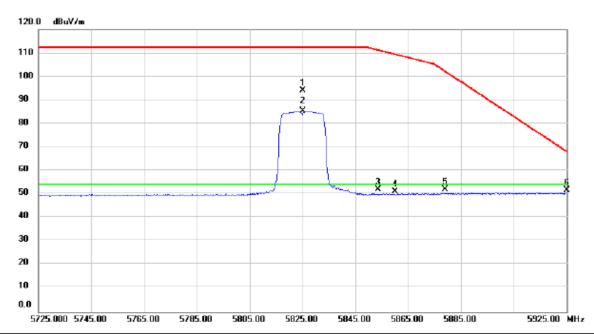
Report No.: BTL-FCCP-2-1308C100E Page 67 of 159





Orthogonal Axis: X
Test Mode: UNII-3/TX A Mode 5825MHz \_Dipole Antenna

# Horizontal



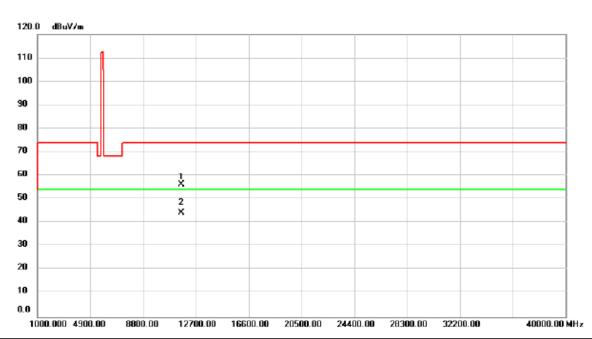
No.	М	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5825.000	54.08	39.82	93.90	112.20	-18.30	peak	
2	*	5825.000	45.45	39.82	85.27	54.00	31.27	AVG	No Limit
3		5853.760	12.26	39.90	52.16	111.15	-58.99	peak	
4		5860.140	11.19	39.91	51.10	109.36	-58.26	peak	
5		5878.950	12.14	39.97	52.11	102.28	-50.17	peak	
6		5925.000	11.79	40.11	51.90	68.20	-16.30	peak	





Orthogonal Axis:	X
Test Mode:	UNII-3/TX A Mode 5825MHz Dipole Antenna

# Horizontal



No.	Mk.	. Freq.		Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11650.00	51.35	4.99	56.34	74.00	-17.66	peak	
2	*	11650.00	39.36	4.99	44.35	54.00	-9.65	AVG	

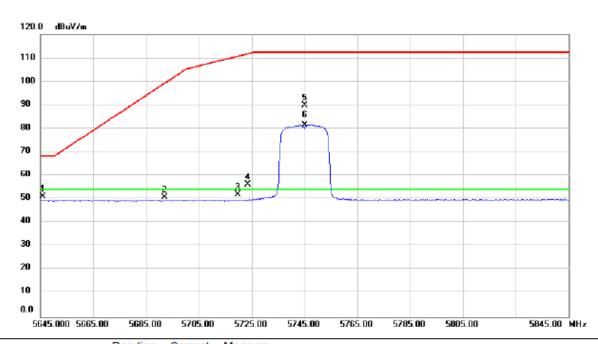
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Orthogonal Axis: X
Test Mode: UNII-3/TX N20 Mode 5745MHz\_Dipole Antenna

# **Vertical**



	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
-			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-	1	;	5646.030	11.75	39.29	51.04	68.20	-17.16	peak	
-	2		5692.000	11.38	39.43	50.81	99.28	-48.47	peak	
-	3	;	5719.820	12.63	39.51	52.14	110.75	-58.61	peak	
-	4		5723.550	16.60	39.52	56.12	111.79	-55.67	peak	
-	5	;	5745.000	50.19	39.58	89.77	112.20	-22.43	peak	
-	6	*	5745.000	42.02	39.58	81.60	54.00	27.60	AVG	No Limit
_										

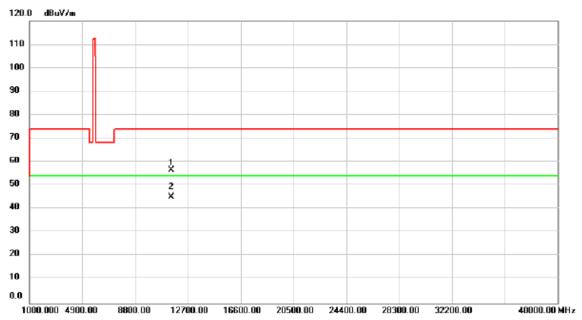
Report No.: BTL-FCCP-2-1308C100E Page 70 of 159





Orthogonal Axis: X
Test Mode: UNII-3/TX N20 Mode 5745MHz\_Dipole Antenna

# Vertical



No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11490.00	51.46	5.23	56.69	74.00	-17.31	peak	
2	*	11490.00	39.95	5.23	45.18	54.00	-8.82	AVG	

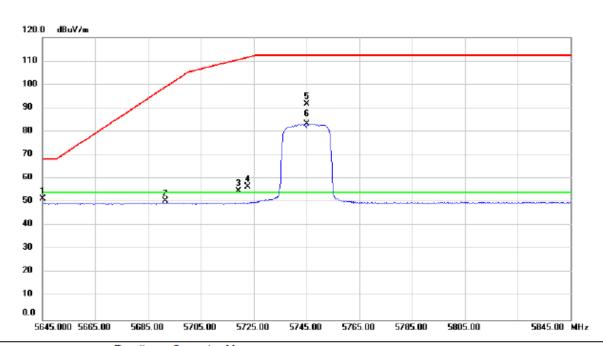
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Orthogonal Axis:	X
Test Mode:	UNII-3/TX N20 Mode 5745MHz_Dipole Antenna

# Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5645.095	12.19	39.29	51.48	68.20	-16.72	peak	
2		5691.500	11.01	39.43	50.44	98.91	-48.47	peak	
3		5719.400	15.22	39.51	54.73	110.63	-55.90	peak	
4		5722.715	17.01	39.51	56.52	111.56	-55.04	peak	
5		5745.000	52.06	39.58	91.64	112.20	-20.56	peak	
6	*	5745.000	43.59	39.58	83.17	54.00	29.17	AVG	No Limit

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## Horizontal



No.	Mk	. Freq.		Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11490.00	51.73	5.23	56.96	74.00	-17.04	peak	
2	*	11490.00	40.96	5.23	46.19	54.00	-7.81	AVG	

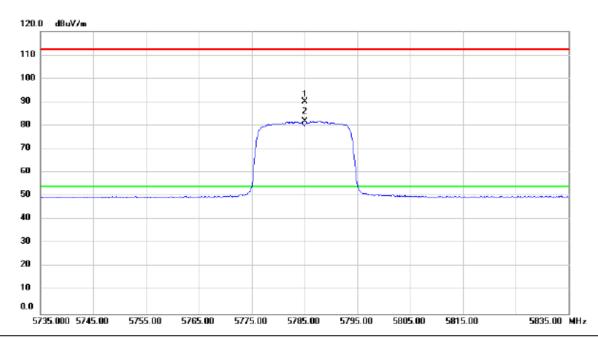
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Orthogonal Axis:	X
Test Mode:	UNII-3/TX N20 Mode 5785MHz _Dipole Antenna

## Vertical



No.	Mi	. Freq.	Reading Level		Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5785.000	50.60	39.70	90.30	112.20	-21.90	peak	
2	*	5785.000	42.04	39.70	81.74	54.00	27.74	AVG	No Limit

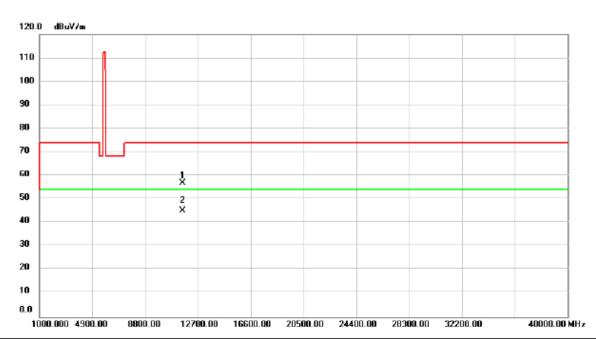
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Orthogonal Axis:	X
Test Mode:	UNII-3/TX N20 Mode 5785MHz _Dipole Antenna

## **Vertical**



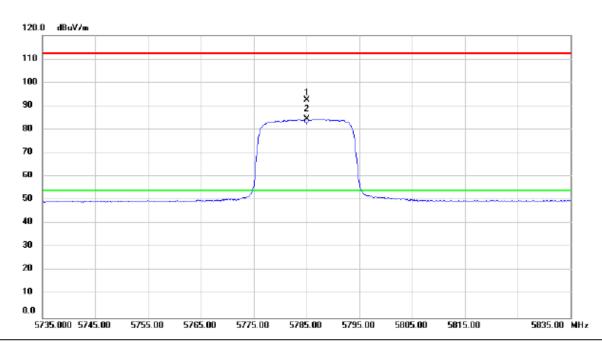
No.	Mk	. Freq.		Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11570.00	51.78	5.13	56.91	74.00	-17.09	peak	
2	*	11570.00	40.16	5.13	45.29	54.00	-8.71	AVG	

Report No.: BTL-FCCP-2-1308C100E Page 75 of 159





Orthogonal Axis:	X
Test Mode:	UNII-3/TX N20 Mode 5785MHz _Dipole Antenna



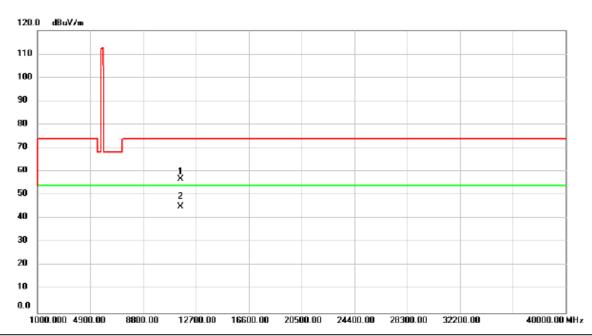
No.	Mi	. Freq.	Reading Level		Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5785.000	52.89	39.70	92.59	112.20	-19.61	peak	
2	*	5785.000	44.66	39.70	84.36	54.00	30.36	AVG	No Limit

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Orthogonal Axis:	X
Test Mode:	UNII-3/TX N20 Mode 5785MHz _Dipole Antenna



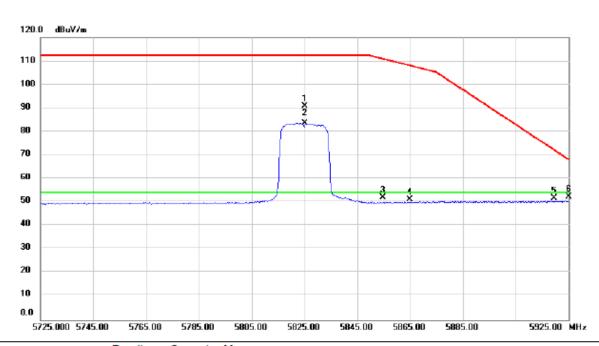
No.	Mk.	. Freq.	Reading Level		Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11570.00	51.66	5.13	56.79	74.00	-17.21	peak	
2	*	11570.00	40.10	5.13	45.23	54.00	-8.77	AVG	

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## Vertical



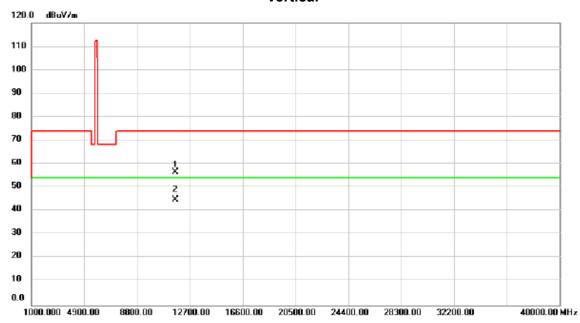
	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
-			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-	1		5825.000	51.01	39.82	90.83	112.20	-21.37	peak	
-	2	*	5825.000	43.66	39.82	83.48	54.00	29.48	AVG	No Limit
-	3		5854.665	12.17	39.90	52.07	110.89	-58.82	peak	
-	4		5864.900	11.19	39.93	51.12	108.03	-56.91	peak	
	5		5919.450	11.52	40.09	51.61	72.31	-20.70	peak	
-	6		5925.000	12.22	40.11	52.33	68.20	-15.87	peak	
-										

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## Vertical



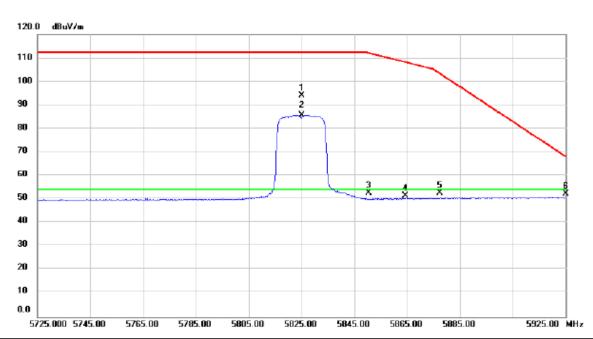
	No.	Mk	. Freq.	Level		ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1		11650.00	51.51	4.99	56.50	74.00	-17.50	peak	
	2	*	11650.00	39.81	4.99	44.80	54.00	-9.20	AVG	
_										

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## Horizontal



No.	M	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5825.000	54.30	39.82	94.12	112.20	-18.08	peak	
2	*	5825.000	45.93	39.82	85.75	54.00	31.75	AVG	No Limit
3		5850.365	12.91	39.89	52.80	112.10	-59.30	peak	
4		5864.400	11.43	39.93	51.36	108.17	-56.81	peak	
5		5877.500	12.58	39.97	52.55	103.35	-50.80	peak	
6		5925.000	12.31	40.11	52.42	68.20	-15.78	peak	

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## Horizontal



No.	Mk	. Freq.		Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11650.00	51.14	4.99	56.13	74.00	-17.87	peak	
2	*	11650.00	39.82	4.99	44.81	54.00	-9.19	AVG	

Report No.: BTL-FCCP-2-1308C100E Page 81 of 159





#### Vertical 120.0 dBuV/m 110 100 90 80 70 3× 50 40 30 20 10 0.0 5555.000 5595.00 5635.00 5675.00 5715.00 5755.00 5795.00 5835.00 5875.00 5955.00 MHz

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5598.415	11.90	39.16	51.06	68.20	-17.14	peak	
2		5696.950	14.64	39.45	54.09	102.94	-48.85	peak	
3		5719.920	24.17	39.51	63.68	110.78	-47.10	peak	
4		5724.115	27.66	39.52	67.18	111.95	-44.77	peak	
5		5755.000	52.06	39.61	91.67	112.20	-20.53	peak	
6	*	5755.000	44.67	39.61	84.28	54.00	30.28	AVG	No Limit

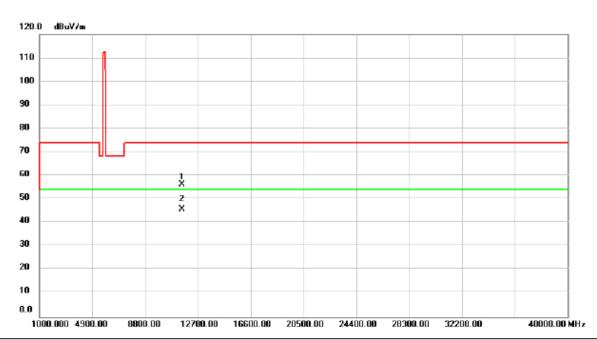
Report No.: BTL-FCCP-2-1308C100E Page 82 of 159





Orthogonal Axis:	X
Test Mode:	UNII-3/TX N40 Mode 5755MHz_Dipole Antenna

## **Vertical**



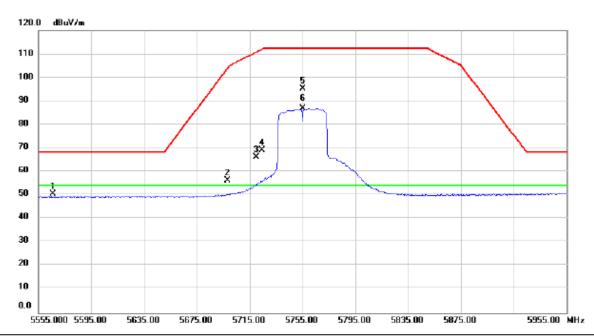
No.	Mk.	. Freq.		Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11510.00	50.97	5.23	56.20	74.00	-17.80	peak	
2	*	11510.00	40.40	5.23	45.63	54.00	-8.37	AVG	

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Orthogonal Axis:	X
Test Mode:	UNII-3/TX N40 Mode 5755MHz_Dipole Antenna



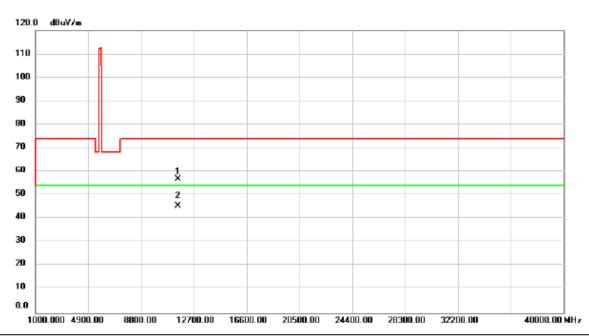
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5565.925	11.44	39.06	50.50	68.20	-17.70	peak	
2		5698.400	16.68	39.45	56.13	104.02	-47.89	peak	
3		5719.960	26.65	39.51	66.16	110.79	-44.63	peak	
4		5724.350	29.66	39.52	69.18	112.02	-42.84	peak	
5		5755.000	55.51	39.61	95.12	112.20	-17.08	peak	
6	*	5755.000	47.21	39.61	86.82	54.00	32.82	AVG	No Limit

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Orthogonal Axis:	X
Test Mode:	UNII-3/TX N40 Mode 5755MHz_Dipole Antenna



No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11510.00	51.58	5.23	56.81	74.00	-17.19	peak	
2	*	11510.00	40.12	5.23	45.35	54.00	-8.65	AVG	

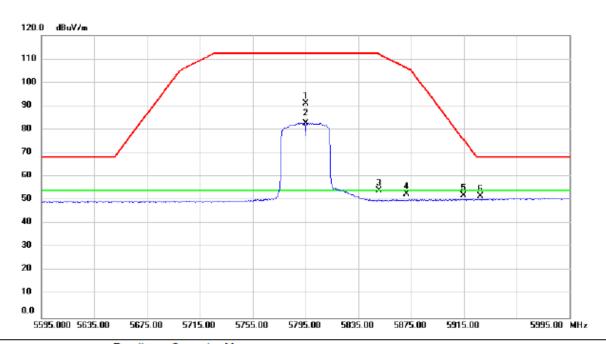
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Orthogonal Axis:	X
Test Mode:	UNII-3/TX N40 Mode 5795MHz Dipole Antenna

## Vertical



	No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
-			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-	1		5795.000	51.26	39.72	90.98	112.20	-21.22	peak	
-	2	*	5795.000	43.04	39.72	82.76	54.00	28.76	AVG	No Limit
	3		5850.915	14.15	39.89	54.04	111.94	-57.90	peak	
-	4		5871.360	12.80	39.95	52.75	106.22	-53.47	peak	
-	5		5914.600	11.87	40.07	51.94	75.90	-23.96	peak	
_	6		5927.375	11.76	40.11	51.87	68.20	-16.33	peak	
_					· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·				

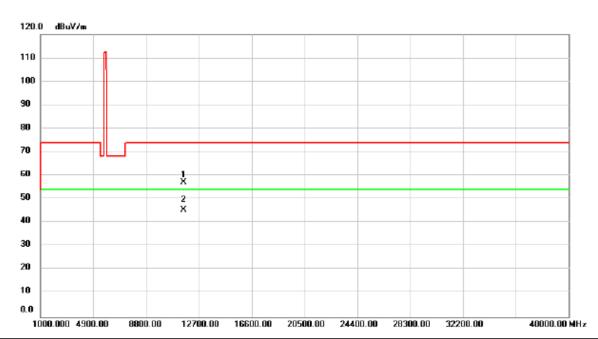
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Orthogonal Axis:	X
Test Mode:	UNII-3/TX N40 Mode 5795MHz_Dipole Antenna

## **Vertical**



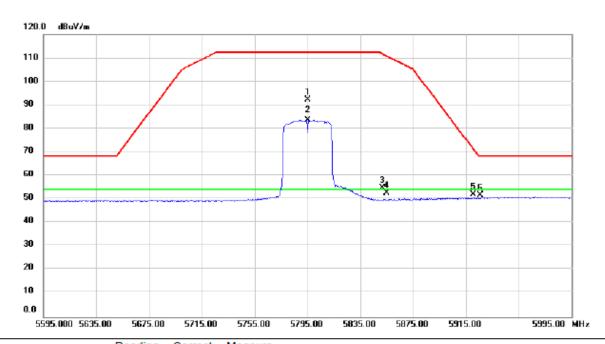
No.	Mk	. Freq.		Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11590.00	52.18	5.10	57.28	74.00	-16.72	peak	
2	*	11590.00	40.31	5.10	45.41	54.00	-8.59	AVG	

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Orthogonal Axis:	X
Test Mode:	UNII-3/TX N40 Mode 5795MHz Dipole Antenna



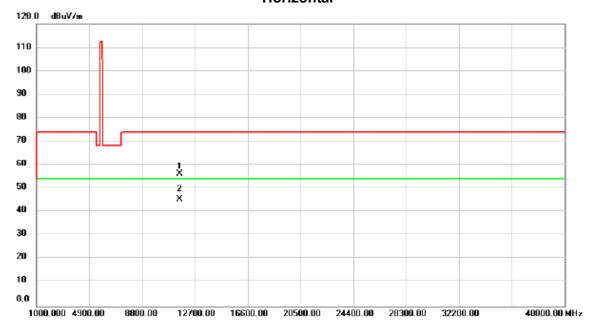
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5795.000	52.54	39.72	92.26	112.20	-19.94	peak	
2	*	5795.000	43.77	39.72	83.49	54.00	29.49	AVG	No Limit
3		5851.870	14.79	39.89	54.68	111.68	-57.00	peak	
4		5855.040	12.62	39.90	52.52	110.79	-58.27	peak	
5		5920.600	12.08	40.09	52.17	71.46	-19.29	peak	
6		5925.800	11.70	40.11	51.81	68.20	-16.39	peak	

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## Horizontal



	No.	Mk	. Freq.	Level		ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1		11590.00	51.26	5.10	56.36	74.00	-17.64	peak	
	2	*	11590.00	40.21	5.10	45.31	54.00	-8.69	AVG	
_										

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Orthogonal Axis: X
Test Mode: UNII-3/TX A Mode 5745MHz\_Integral Antenna

#### Vertical 120.0 dBuV/m 110 100 90 80 70 60 50 40 30 20 10 0.0 5645.000 5665.00 5685.00 5705.00 5725.00 5745.00 5765.00 5785.00 5805.00 5845.00 MHz

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5647.885	14.25	39.30	53.55	68.20	-14.65	peak	
2		5692.650	14.31	39.43	53.74	99.76	-46.02	peak	
3		5719.980	22.34	39.51	61.85	110.79	-48.94	peak	
4		5724.630	28.52	39.52	68.04	112.10	-44.06	peak	
5		5745.000	64.43	39.58	104.01	112.20	-8.19	peak	
6	*	5745.000	55.83	39.58	95.41	54.00	41.41	AVG	No Limit

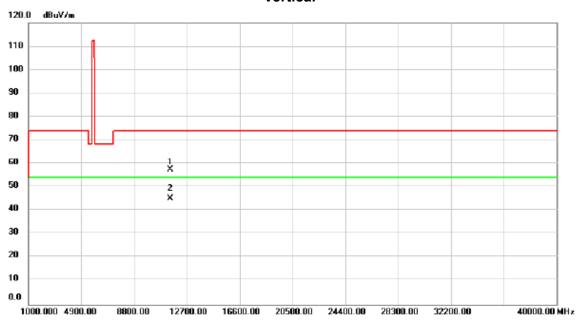
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Orthogonal Axis: X
Test Mode: UNII-3/TX A Mode 5745MHz\_Integral Antenna

## Vertical



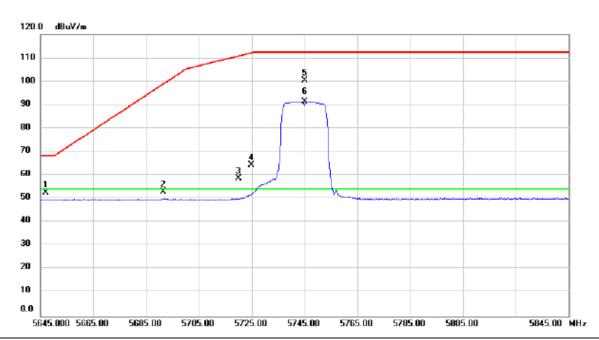
No.	Mk	. Freq.		Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11490.00	52.33	5.23	57.56	74.00	-16.44	peak	
2	*	11490.00	40.02	5.23	45.25	54.00	-8.75	AVG	

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Orthogonal Axis:	X
Test Mode:	UNII-3/TX A Mode 5745MHz_Integral Antenna



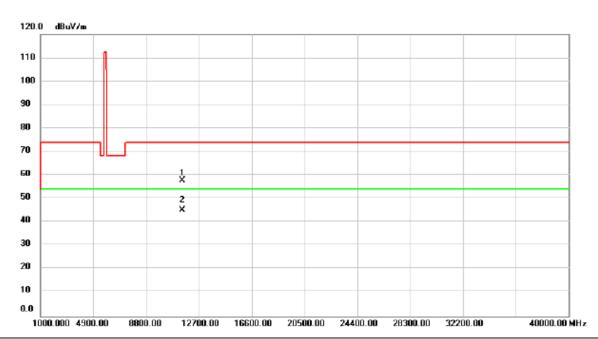
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5646.910	13.46	39.30	52.76	68.20	-15.44	peak	
2		5691.500	13.50	39.43	52.93	98.91	-45.98	peak	
3		5720.000	19.12	39.51	58.63	110.80	-52.17	peak	
4		5724.890	24.68	39.52	64.20	112.17	-47.97	peak	
5		5745.000	60.83	39.58	100.41	112.20	-11.79	peak	
6	*	5745.000	51.80	39.58	91.38	54.00	37.38	AVG	No Limit

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Orthogonal Axis:	X
Test Mode:	UNII-3/TX A Mode 5745MHz_Integral Antenna



No.	Mk.	Freq.			Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11490.00	52.51	5.23	57.74	74.00	-16.26	peak	
2	*	11490.00	39.93	5.23	45.16	54.00	-8.84	AVG	

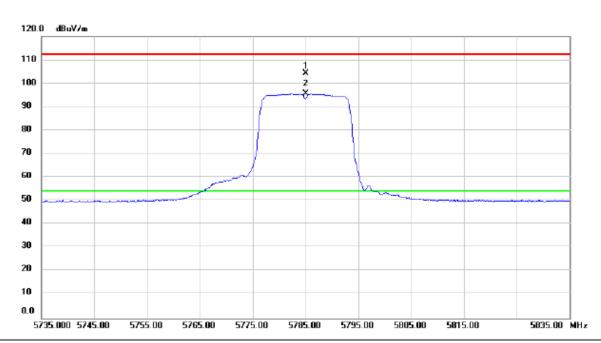
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Orthogonal Axis: X
Test Mode: UNII-3/TX A Mode 5785MHz \_Integral Antenna

## **Vertical**



	No.	MI	k.	Freq.	Reading Level		Measure- ment	Limit	Margin		
Ī				MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
Ī	1		578	85.000	64.58	39.70	104.28	112.20	-7.92	peak	
-	2	*	578	85.000	55.82	39.70	95.52	54.00	41.52	AVG	No Limit

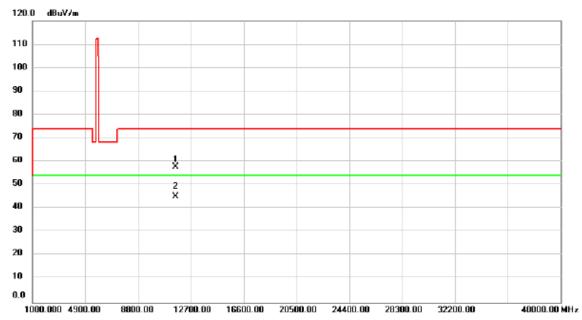
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Orthogonal Axis: X
Test Mode: UNII-3/TX A Mode 5785MHz\_Integral Antenna

## Vertical



No.	Mk	. Freq.			Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11570.00	52.72	5.13	57.85	74.00	-16.15	peak	
2	*	11570.00	40.04	5.13	45.17	54.00	-8.83	AVG	

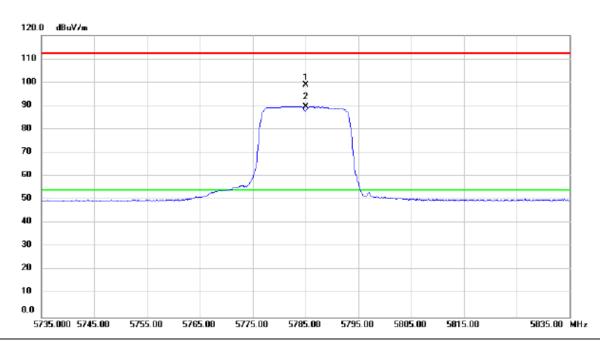
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Orthogonal Axis: X
Test Mode: UNII-3/TX A Mode 5785MHz\_Integral Antenna

## Horizontal



No.	M	k. Fr	eq.		Correct Factor	Measure- ment	Limit	Margin		
		M	Ηz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5785.0	000	59.15	39.70	98.85	112.20	-13.35	peak	
2	*	5785.0	000	49.99	39.70	89.69	54.00	35.69	AVG	No Limit

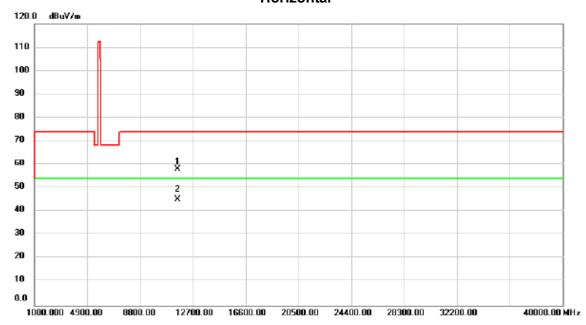
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Orthogonal Axis: X
Test Mode: UNII-3/TX A Mode 5785MHz\_Integral Antenna

## Horizontal



No.	Mk	. Freq.		Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11570.00	52.82	5.13	57.95	74.00	-16.05	peak	
2	*	11570.00	39.96	5.13	45.09	54.00	-8.91	AVG	

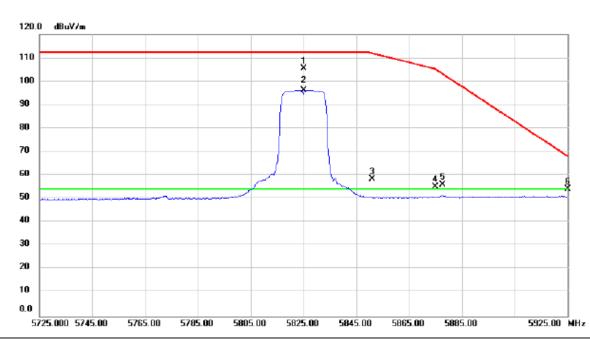
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Orthogonal Axis: X
Test Mode: UNII-3/TX A Mode 5825MHz \_Integral Antenna

## Vertical



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5825.000	65.66	39.82	105.48	112.20	-6.72	peak	
2	*	5825.000	56.38	39.82	96.20	54.00	42.20	AVG	No Limit
3		5851.125	18.43	39.89	58.32	111.89	-53.57	peak	
4		5874.980	15.24	39.95	55.19	105.21	-50.02	peak	
5		5877.650	15.96	39.97	55.93	103.24	-47.31	peak	
6		5925.000	13.98	40.11	54.09	68.20	-14.11	peak	

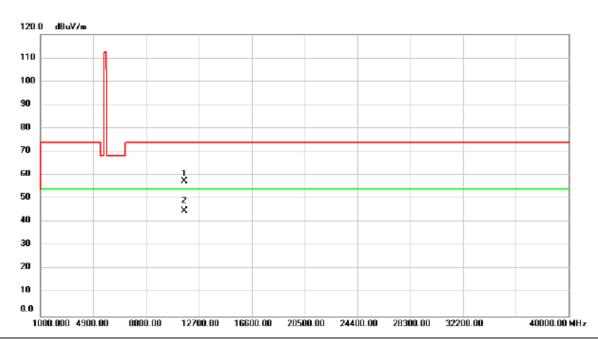
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Orthogonal Axis:	X
Test Mode:	UNII-3/TX A Mode 5825MHz _Integral Antenna

## Vertical



No.	Mk	. Freq.			Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0	52.55		57.54	74.00	-16.46	peak	
2	*	11650.00	39.80	4.99	44.79	54.00	-9.21	AVG	

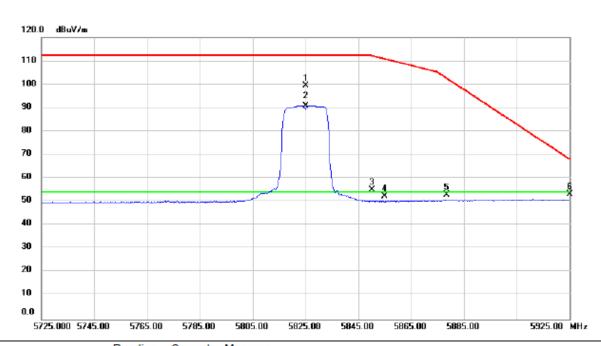
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Orthogonal Axis: X
Test Mode: UNII-3/TX A Mode 5825MHz \_Integral Antenna

## Horizontal



No.	MI	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		582	25.000	59.68	39.82	99.50	112.20	-12.70	peak	
2	*	582	25.000	51.05	39.82	90.87	54.00	36.87	AVG	No Limit
3		588	50.130	15.16	39.89	55.05	112.16	-57.11	peak	
4		585	55.060	12.53	39.90	52.43	110.78	-58.35	peak	
5		587	78.550	12.99	39.97	52.96	102.57	-49.61	peak	
6		592	25.000	13.19	40.11	53.30	68.20	-14.90	peak	

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Orthogonal Axis: X
Test Mode: UNII-3/TX A Mode 5825MHz\_Integral Antenna

## Horizontal



No.	Mk	. Freq.		Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11650.00	52.37	4.99	57.36	74.00	-16.64	peak	
2	*	11650.00	39.75	4.99	44.74	54.00	-9.26	AVG	

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Orthogonal Axis: X
Test Mode: UNII-3/TX N20 Mode 5745MHz\_Integral Antenna

#### Vertical dBuV/m 120.0 110 100 90 80 70 60 50 40 30 20 10 5645.000 5665.00 5685.00 5705.00 5725.00 5745.00 5765.00 5785.00 **58**05.00 5845.00 MHz

	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
_	1		5647.025	14.84	39.30	54.14	68.20	-14.06	peak	
_	2		5692.650	16.44	39.43	55.87	99.76	-43.89	peak	
_	3		5719.740	24.57	39.51	64.08	110.73	-46.65	peak	
_	4		5724.710	30.19	39.52	69.71	112.12	-42.41	peak	
_	5		5745.000	63.86	39.58	103.44	112.20	-8.76	peak	
-	6	*	5745.000	55.97	39.58	95.55	54.00	41.55	AVG	No Limit
_										

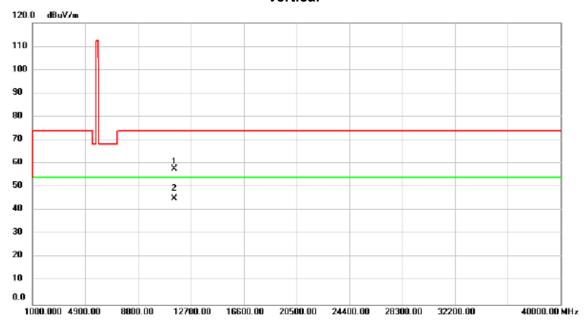
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Orthogonal Axis: X
Test Mode: UNII-3/TX N20 Mode 5745MHz\_Integral Antenna

# Vertical



No.	Mk.	Freq.		Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11490.00	52.60	5.23	57.83	74.00	-16.17	peak	
2	*	11490.00	40.00	5.23	45.23	54.00	-8.77	AVG	

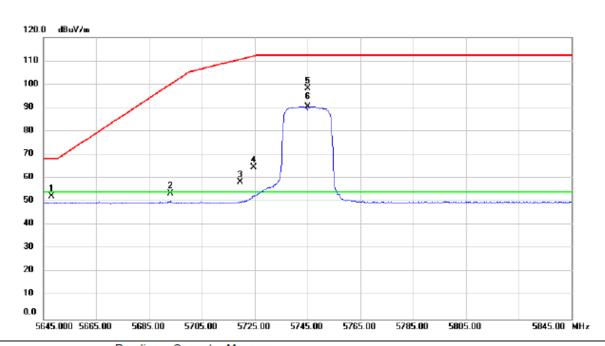
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Orthogonal Axis: X
Test Mode: UNII-3/TX N20 Mode 5745MHz\_Integral Antenna

## Horizontal



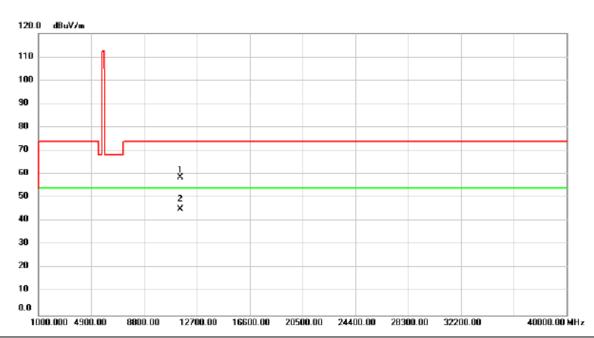
No	o. M	lk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-	1	56	47.985	13.18	39.30	52.48	68.20	-15.72	peak	
	2	56	93.100	14.12	39.43	53.55	100.09	-46.54	peak	
- ;	3	57	19.580	18.79	39.51	58.30	110.68	-52.38	peak	
-	4	57	24.690	25.28	39.52	64.80	112.11	-47.31	peak	
- 1	5	57	45.000	58.77	39.58	98.35	112.20	-13.85	peak	
(	6 *	57	45.000	50.94	39.58	90.52	54.00	36.52	AVG	No Limit

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Orthogonal Axis:	X
Test Mode:	UNII-3/TX N20 Mode 5745MHz_Integral Antenna



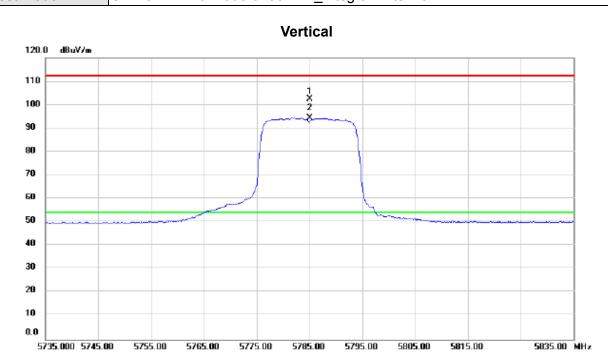
No.	Mk	. Freq.		Correct Factor	Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11490.00	53.54	5.23	58.77	74.00	-15.23	peak	
2		11490.00		5.23	45.11	54.00	-8.89	AVG	

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Orthogonal Axis: X
Test Mode: UNII-3/TX N20 Mode 5785MHz\_Integral Antenna



	No.	М	k. Fred		g Correct Factor		Limit	Margin			
_			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
_	1		5785.00	0 62.78	39.70	102.48	112.20	-9.72	peak		
	2	*	5785.00	0 54.62	39.70	94.32	54.00	40.32	AVG	No Limit	

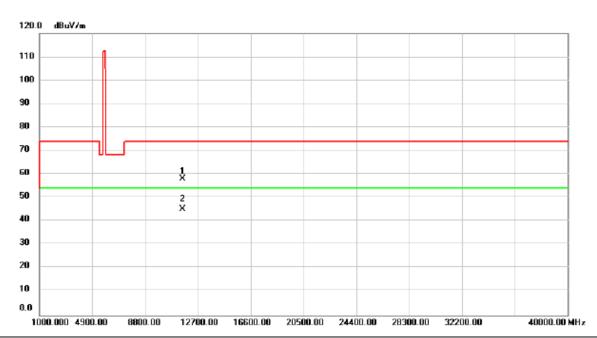
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Orthogonal Axis:	X
Test Mode:	UNII-3/TX N20 Mode 5785MHz Integral Antenna

## Vertical



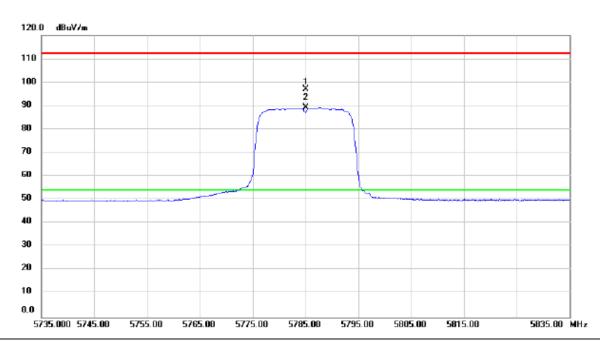
No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11570.00	53.06	5.13	58.19	74.00	-15.81	peak	
2		11570.00	40.00	5.13	45.13	54.00	-8.87	AVG	

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## Horizontal



No.	Mł	. Freq		Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5785.000	57.33	39.70	97.03	112.20	-15.17	peak	
2	*	5785.000	49.47	39.70	89.17	54.00	35.17	AVG	No Limit

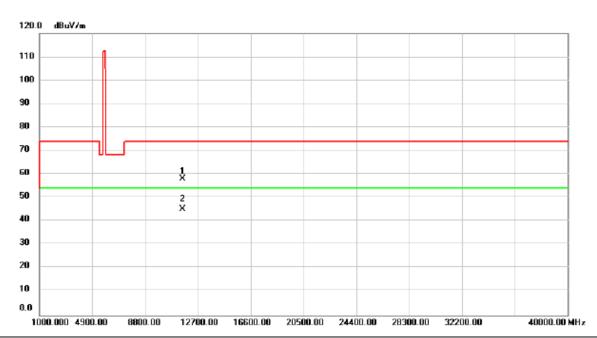
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Orthogonal Axis:	X
Test Mode:	UNII-3/TX N20 Mode 5785MHz_Integral Antenna

### Horizontal



No.	Mk.	Freq.	Reading Level		Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11570.00	53.06	5.13	58.19	74.00	-15.81	peak	
2		11570.00	39.96	5.13	45.09	54.00	-8.91	AVG	

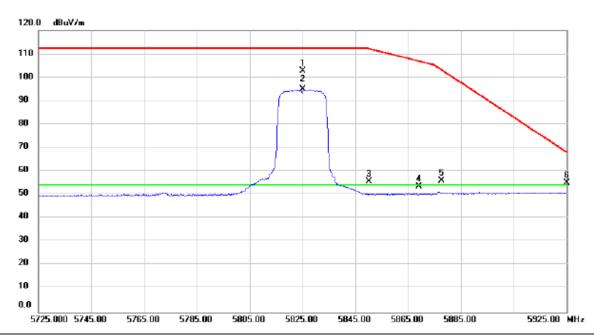
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Orthogonal Axis: X
Test Mode: UNII-3/TX N20 Mode 5825MHz \_Integral Antenna

### **Vertical**



No.	Mł	۲.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		58	25.000	62.98	39.82	102.80	112.20	-9.40	peak	
2	*	58	25.000	54.99	39.82	94.81	54.00	40.81	AVG	No Limit
3		58	50.085	15.85	39.89	55.74	112.18	-56.44	peak	
4		58	69.080	13.64	39.94	53.58	106.86	-53.28	peak	
5		58	77.650	15.98	39.97	55.95	103.24	-47.29	peak	
6		59	25.000	14.89	40.11	55.00	68.20	-13.20	peak	

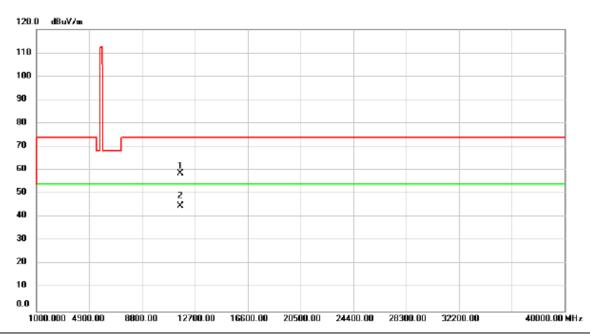
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Orthogonal Axis:	X
Test Mode:	UNII-3/TX N20 Mode 5825MHz_Integral Antenna

### Vertical



No.	Mk.	. Freq.		Correct Factor	Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11650.00	53.72	4.99	58.71	74.00	-15.29	peak	
2		11650.00	39.81		44.80	54.00	-9.20	AVG	

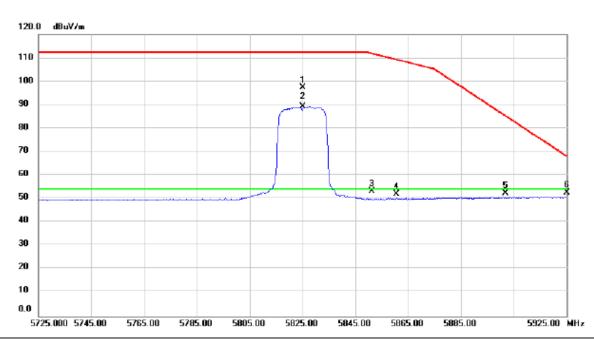
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Orthogonal Axis: X
Test Mode: UNII-3/TX N20 Mode 5825MHz \_Integral Antenna

### Horizontal



No.	M	. Fre	Read Leve				Margin	1			
		MH	: dBu	V dB	dBuV/r	m dBuV/m	dB	Detector	Comment		
1		5825.00	0 57.6	2 39.8	2 97.44	112.20	-14.76	peak			
2	*	5825.00	0 49.3	4 39.8	2 89.16	54.00	35.16	AVG	No Limit		
3		5851.19	0 13.3	1 39.8	9 53.20	111.87	-58.67	peak			
4		5860.70	0 12.2	8 39.9	1 52.19	109.20	-57.01	peak			
5		5901.85	0 12.2	8 40.0	3 52.31	85.33	-33.02	peak			
6		5925.00	0 12.6	5 40.1	1 52.76	68.20	-15.44	peak			

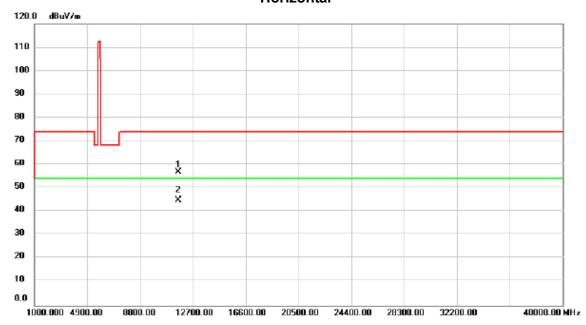
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Orthogonal Axis: X
Test Mode: UNII-3/TX N20 Mode 5825MHz \_Integral Antenna

### Horizontal



No.	Mk	. Freq.	Reading Level		Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11650.00	51.91	4.99	56.90	74.00	-17.10	peak	
2	*	11650.00	39.76	4.99	44.75	54.00	-9.25	AVG	

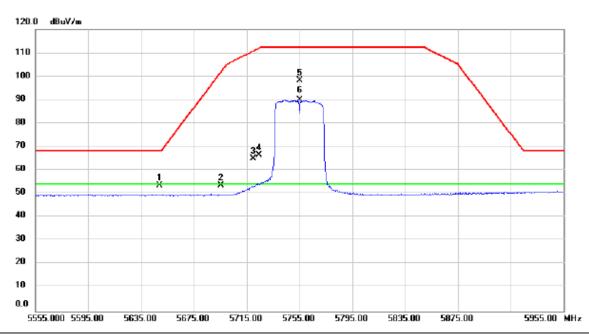
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Orthogonal Axis: X
Test Mode: UNII-3/TX N40 Mode 5755MHz\_Integral Antenna

### Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5649.335	14.15	39.30	53.45	68.20	-14.75	peak	
2		5695.600	13.99	39.43	53.42	101.94	-48.52	peak	
3	;	5720.000	25.51	39.51	65.02	110.80	-45.78	peak	
4		5724.240	27.01	39.52	66.53	111.99	-45.46	peak	
5	;	5755.000	58.64	39.61	98.25	112.20	-13.95	peak	
6	*	5755.000	50.20	39.61	89.81	54.00	35.81	AVG	No Limit

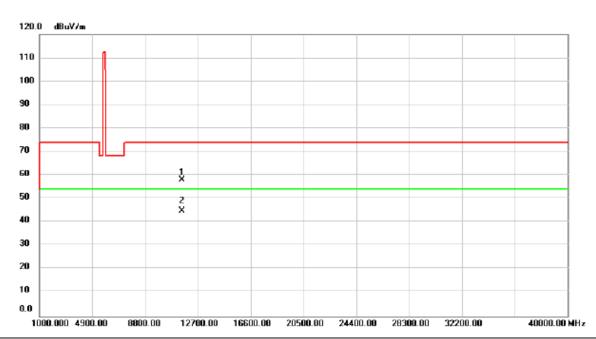
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Orthogonal Axis:	X
Test Mode:	UNII-3/TX N40 Mode 5755MHz_Integral Antenna

### Vertical



No.	Mk.	Freq.			Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11510.00	52.90	5.23	58.13	74.00	-15.87	peak	
2	*	11510.00	39.66	5.23	44.89	54.00	-9.11	AVG	

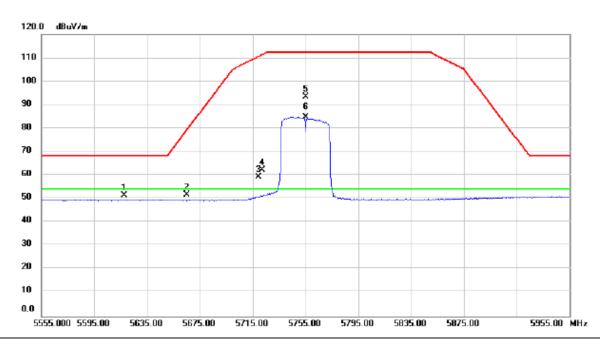
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Orthogonal Axis:	X
Test Mode:	UNII-3/TX N40 Mode 5755MHz_Integral Antenna

### Horizontal



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5617.415	12.35	39.21	51.56	68.20	-16.64	peak	
2		5665.215	12.33	39.35	51.68	79.46	-27.78	peak	
3		5719.440	19.84	39.51	59.35	110.64	-51.29	peak	
4		5722.460	22.73	39.51	62.24	111.49	-49.25	peak	
5		5755.000	53.74	39.61	93.35	112.20	-18.85	peak	
6	*	5755.000	45.20	39.61	84.81	54.00	30.81	AVG	No Limit

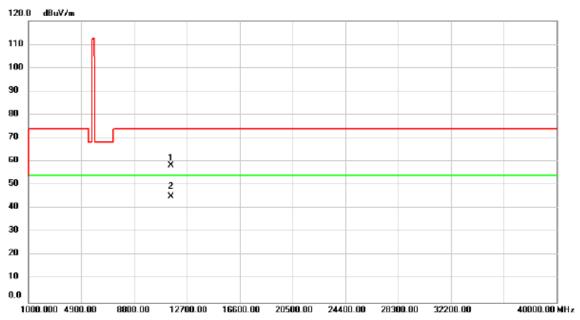
Report No.: BTL-FCCP-2-1308C100E Page 116 of 159





Orthogonal Axis: X
Test Mode: UNII-3/TX N40 Mode 5755MHz\_Integral Antenna

### Horizontal



No.	Mk	. Freq.		Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11510.00	53.19	5.23	58.42	74.00	-15.58	peak	
2	*	11510.00	40.01	5.23	45.24	54.00	-8.76	AVG	

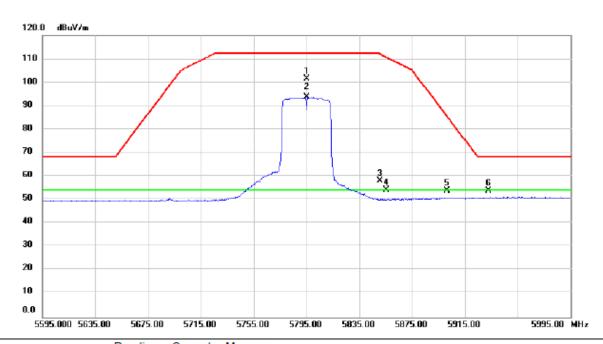
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Orthogonal Axis:	X
Test Mode:	UNII-3/TX N40 Mode 5795MHz Integral Antenna

### **Vertical**



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5795.000	61.84	39.72	101.56	112.20	-10.64	peak	
2	*	5795.000	53.97	39.72	93.69	54.00	39.69	AVG	No Limit
3		5850.995	18.13	39.89	58.02	111.92	-53.90	peak	
4		5855.560	14.37	39.90	54.27	110.64	-56.37	peak	
5		5901.350	13.70	40.03	53.73	85.70	-31.97	peak	
6		5932.950	13.73	40.13	53.86	68.20	-14.34	peak	

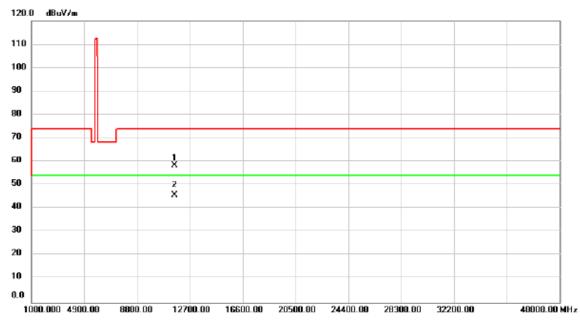
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Orthogonal Axis: X
Test Mode: UNII-3/TX N40 Mode 5795MHz\_Integral Antenna





No.	Mk	. Freq.		Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0	53.23		58.33	74.00	-15.67	peak	
2	*	11590.00	40.68	5.10	45.78	54.00	-8.22	AVG	

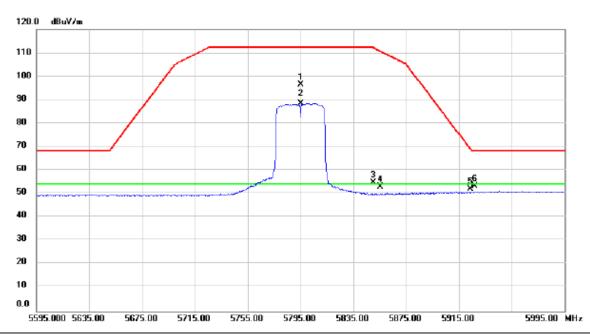
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Orthogonal Axis: X
Test Mode: UNII-3/TX N40 Mode 5795MHz\_Integral Antenna

### Horizontal



No.	М	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		57	95.000	56.76	39.72	96.48	112.20	-15.72	peak	
2	*	57	95.000	48.78	39.72	88.50	54.00	34.50	AVG	No Limit
3		58	50.385	14.90	39.89	54.79	112.09	-57.30	peak	
4		58	55.420	13.02	39.90	52.92	110.68	-57.76	peak	
5		59	23.950	12.05	40.10	52.15	68.98	-16.83	peak	
6		59	26.750	13.08	40.11	53.19	68.20	-15.01	peak	

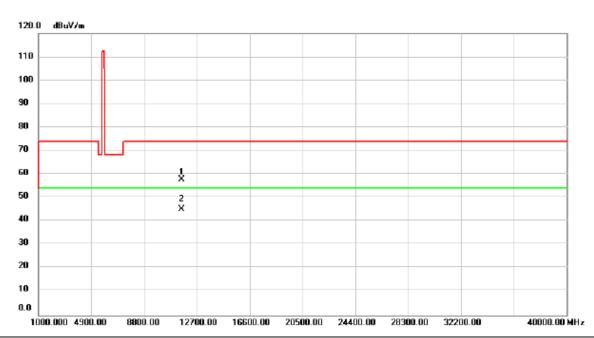
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Orthogonal Axis:	X
Test Mode:	UNII-3/TX N40 Mode 5795MHz_Integral Antenna

### Horizontal



No.	Mk.	Freq.			Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11590.00	52.74	5.10	57.84	74.00	-16.16	peak	
2			40.11		45.21	54.00	-8.79	AVG	

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### TX A Mode\_DUTY CYCLE

Duty cycle: TX DUTYMHz

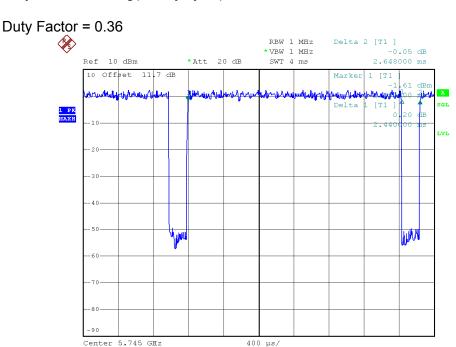
Duty cycle =  $T_{ON} / T_{Total}$ 

T<sub>ON</sub>:2.44msec

T<sub>Total</sub>:2.648 msec

Duty cycle: 92.15%

Duty Factor = 10 log(1/Duty cycle)



Date: 15.JUL.2016 16:05:40

Note: The EUT was programmed to be in countinously transmitting mode and the transmit duty cycle is not less than 98 %, so, the output power and power density should be cacluated as Output Power = Measured power + Ducy factor

Power Spectral Density = Measured density + Duty factor

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### TX N20 Mode\_DUTY CYCLE

Duty cycle: TX DUTYMHz

Duty cycle =  $T_{ON} / T_{Total}$ 

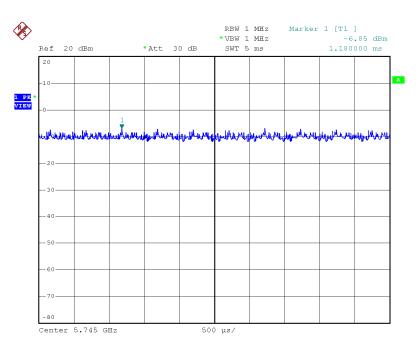
T<sub>ON</sub>: 1 msec

T<sub>Total</sub>: 1 msec

Duty cycle: 100%

Duty Factor = 10 log(1/Duty cycle)

Duty Factor = 0



Date: 19.JUL.2016 19:01:31

Note: The EUT was programmed to be in countinously transmitting mode and the transmit duty cycle is not less than 98 %, so, the output power and power density should be cacluated as Output Power = Measured power + Ducy factor

Power Spectral Density = Measured density + Duty factor

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### TX N40 Mode\_DUTY CYCLE

Duty cycle: TX DUTYMHz

Duty cycle =  $T_{ON} / T_{Total}$ 

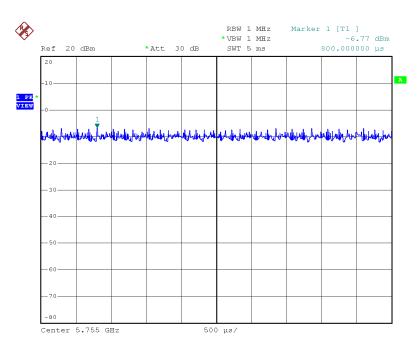
T<sub>ON</sub>: 1 msec

T<sub>Total</sub>:1 msec

Duty cycle:100%

Duty Factor = 10 log(1/Duty cycle)

Duty Factor = 0



Date: 19.JUL.2016 19:02:55

Note: The EUT was programmed to be in countinously transmitting mode and the transmit duty cycle is not less than 98 %, so, the output power and power density should be cacluated as Output Power = Measured power + Ducy factor

Power Spectral Density = Measured density + Duty factor

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ATT	ACHN	IENT	<b>E</b> - <b>B</b>	AND	WIDTH
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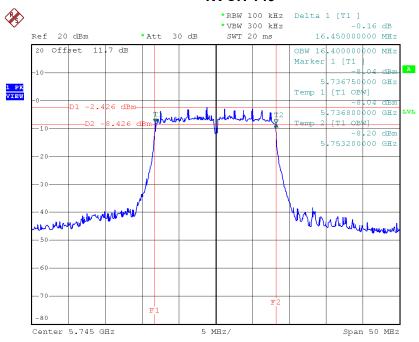




### Test Mode: UNII-3/ TX A Mode\_CH149/CH157/CH165\_Ant 1

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (kHz)
CH149	5745	16.45	16.40	>=500
CH157	5785	16.55	16.40	>=500
CH165	5825	16.55	16.50	>=500

#### **TX CH 149**



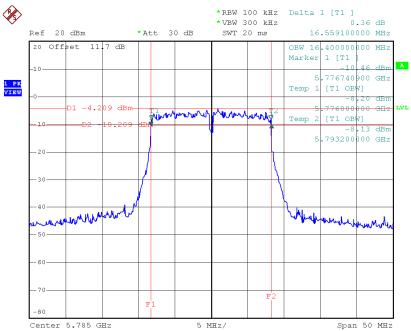
Date: 15.JUL.2016 16:05:12

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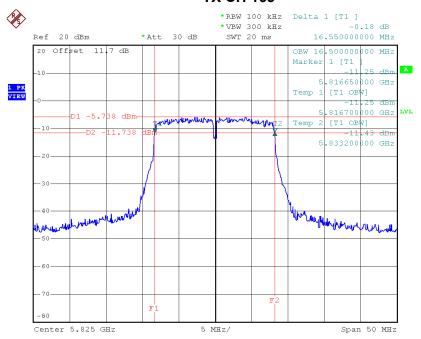






Date: 15.JUL.2016 16:06:56

### **TX CH 165**



Date: 15.JUL.2016 16:11:11

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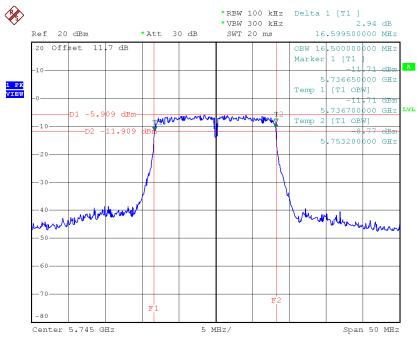




# Test Mode: UNII-3/ TX A Mode\_CH149/CH157/CH165\_Ant 2

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (kHz)
CH149	5745	16.59	16.50	>=500
CH157	5785	16.59	16.50	>=500
CH165	5825	16.55	16.50	>=500

#### **TX CH 149**



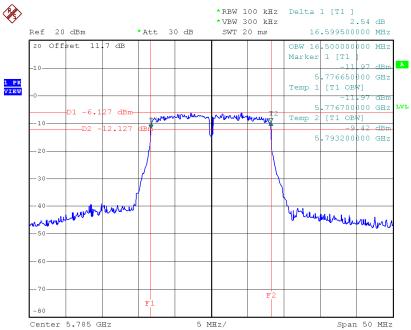
Date: 15.JUL.2016 17:07:01

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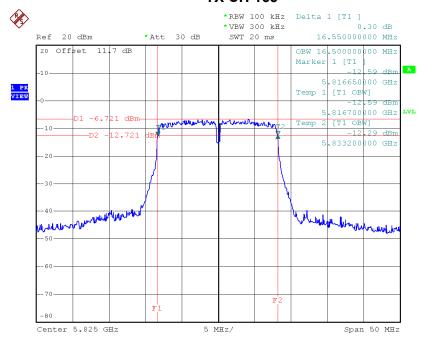






Date: 15.JUL.2016 17:09:20

### **TX CH 165**



Date: 15.JUL.2016 17:10:50

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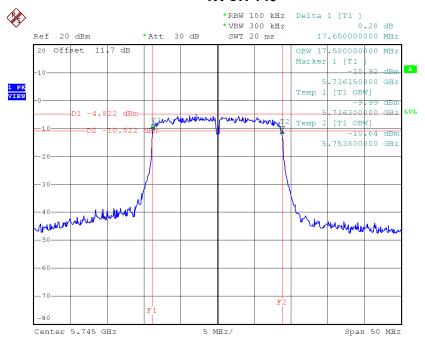




# Test Mode: UNII-3/ TX N20 Mode\_CH149/CH157/CH165\_Ant 1

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (kHz)
CH149	5745	17.65	17.50	>=500
CH157	5785	17.65	17.40	>=500
CH165	5825	17.58	17.60	>=500

#### **TX CH 149**

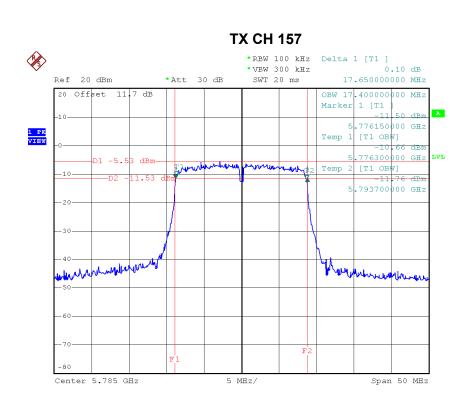


Date: 15.JUL.2016 16:13:39

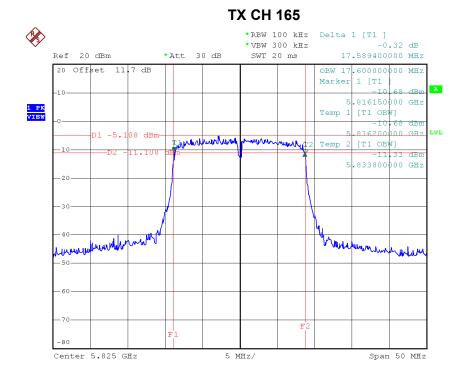
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Date: 15.JUL.2016 16:17:01



Date: 15.JUL.2016 16:43:38

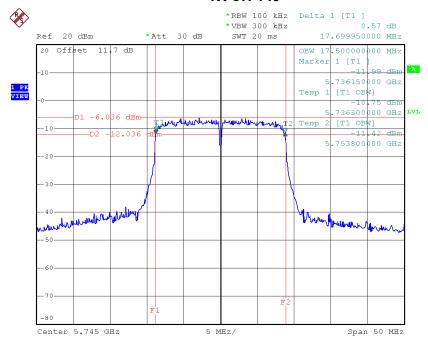




# Test Mode: UNII-3/ TX N20 Mode\_CH149/CH157/CH165\_Ant 2

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (kHz)
CH149	5745	17.69	17.50	>=500
CH157	5785	17.65	17.50	>=500
CH165	5825	17.58	17.50	>=500

#### **TX CH 149**

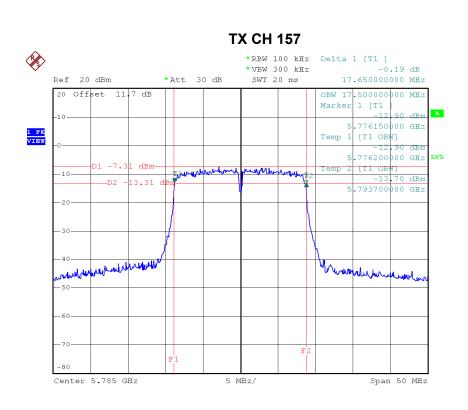


Date: 15.JUL.2016 17:13:24

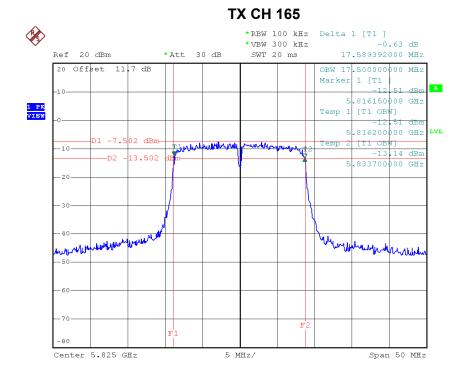
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Date: 15.JUL.2016 17:15:52



Date: 15.JUL.2016 17:18:14





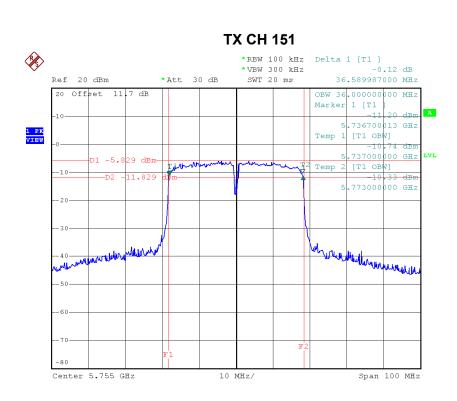
# Test Mode: UNII-3/ TX N40 Mode\_CH151/CH159\_Ant 1

Channel	Frequency	6dB Bandwidth	99% Occupied Bandwidth	Limit
	(MHz)	(MHz)	(MHz)	(kHz)
CH151	5755	36.58	36.00	>=500
CH159	5795	36.49	36.00.	>=500

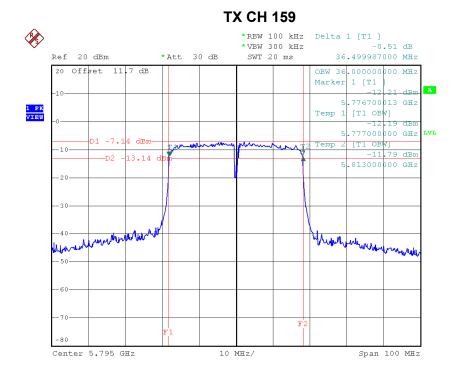
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Date: 15.JUL.2016 16:49:49



Date: 15.JUL.2016 16:51:42

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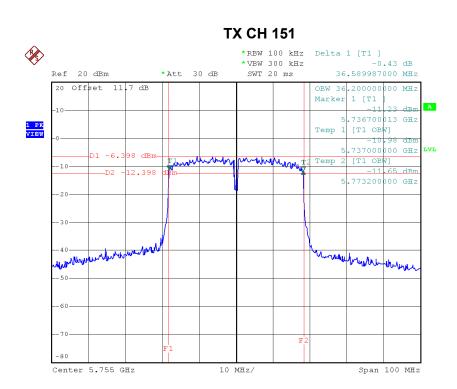
# Test Mode: UNII-3/ TX N40 Mode\_CH151/CH159\_Ant 2

Channel Frequency (MHz)	Frequency	6dB Bandwidth	99% Occupied Bandwidth	Limit
	(MHz)	(MHz)	(MHz)	(kHz)
CH151	5755	36.58	36.20	>=500
CH159	5795	36.49	36.00	>=500

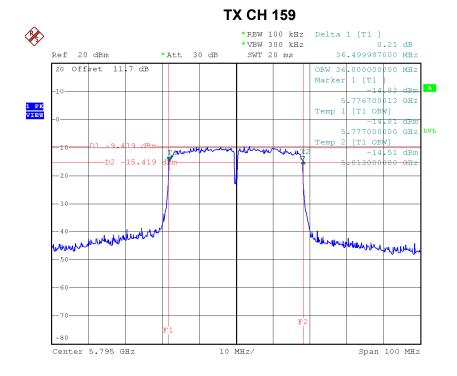
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Date: 15.JUL.2016 17:20:46



Date: 15.JUL.2016 17:23:47

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ATTACHMENT F	- MAXIMUM	OUTPUT	POWER
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### Test Mode: UNII-3/ TX A Mode\_Ant 1

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Limit (dBm)	Limit (Watt)
CH149	5745	8.90	0.36	9.26	30.00	1.00
CH157	5785	8.57	0.36	8.93	30.00	1.00
CH165	5825	8.06	0.36	8.42	30.00	1.00

# Test Mode: UNII-3/ TX A Mode\_Ant 2

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Limit (dBm)	Limit (Watt)
CH149	5745	9.14	0.36	9.50	30.00	1.00
CH157	5785	8.94	0.36	9.30	30.00	1.00
CH165	5825	8.46	0.36	8.82	30.00	1.00

### Test Mode: UNII-3/ TX A Mode\_Total

Channel	Frequency	Output Power	Limit	Limit
	(MHz)	(dBm)	(dBm)	(Watt)
CH149	5745	12.39	30.00	1.00
CH157	5785	12.13	30.00	1.00
CH165	5825	11.63	30.00	1.00

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### Test Mode: UNII-3/TX N20 Mode\_Ant 1

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Limit (dBm)	Limit (Watt)
CH149	5745	8.88	0	8.88	30.00	1.00
CH157	5785	8.28	0	8.28	30.00	1.00
CH165	5825	8.01	0	8.01	30.00	1.00

# Test Mode: UNII-3/TX N20 Mode\_Ant 2

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Limit (dBm)	Limit (Watt)
CH149	5745	9.09	0	9.09	30.00	1.00
CH157	5785	8.56	0	8.56	30.00	1.00
CH165	5825	8.34	0	8.34	30.00	1.00

### Test Mode: UNII-3/TX N20 Mode\_Total

Channel	Frequency	Output Power	Limit	Limit
	(MHz)	(dBm)	(dBm)	(Watt)
CH149	5745	12.00	30.00	1.00
CH157	5785	11.43	30.00	1.00
CH165	5825	11.19	30.00	1.00

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# Test Mode: UNII-3/ TX N40 Mode\_Ant 1

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Limit (dBm)	Limit (Watt)
CH151	5755	11.41	0	11.41	30.00	1.00
CH159	5795	10.25	0	10.25	30.00	1.00

### Test Mode: UNII-3/ TX N40 Mode\_Ant 2

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Limit (dBm)	Limit (Watt)
CH151	5755	11.34	0	11.34	30.00	1.00
CH159	5795	10.83	0	10.83	30.00	1.00

# Test Mode: UNII-3/ TX N40 Mode\_Total

Channel	Frequency	Output Power	Limit	Limit
	(MHz)	(dBm)	(dBm)	(Watt)
CH151	5755	14.39	30.00	1.00
CH159	5795	13.56	30.00	1.00

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# **ATTACHMENT G - POWER SPECTRAL DENSITY**

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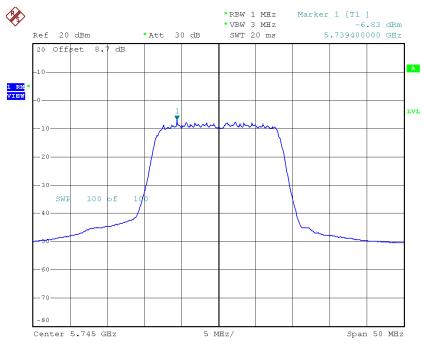




### Test Mode: UNII-3/TX A Mode\_CH149/CH157/CH165\_Ant 1

Channel	Frequency (MHz)	Power Density (dBm/500kHz)	Duty Factor	Power Density + Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)
CH149	5745	-6.83	0.36	-6.47	30.00
CH157	5785	-6.49	0.36	-6.13	30.00
CH165	5825	-6.41	0.36	-6.05	30.00

### **TX CH149**



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Date: 15.JUL.2016 16:07:04



Date: 15.JUL.2016 16:11:20

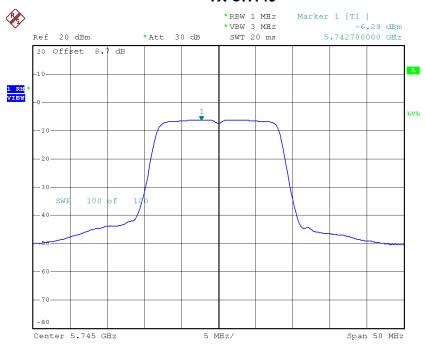




#### Test Mode: UNII-3/TX A Mode\_CH149/CH157/CH165\_Ant 2

Channel	Frequency (MHz)	Power Density (dBm/500kHz)	Duty Factor	Power Density + Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)
CH149	5745	-6.29	0.36	-5.93	30.00
CH157	5785	-7.05	0.36	-6.69	30.00
CH165	5825	-7.41	0.36	-7.05	30.00

#### **TX CH149**

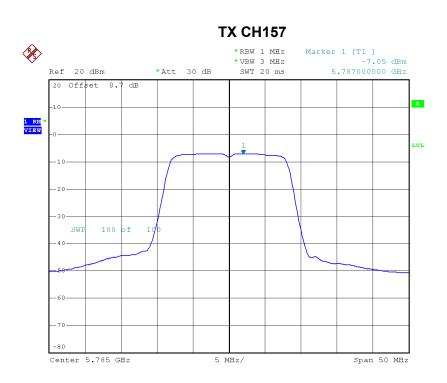


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Date: 15.JUL.2016 17:09:29



Date: 15.JUL.2016 17:10:59





## Test Mode: UNII-3/TX A Mode\_CH149/CH157/CH165\_Total

Channel	Frequency (MHz)	Power Density (dBm/500kHz)	Limit (dBm/500kHz)
CH149	5745	-3.18	30.00
CH157	5785	-3.39	30.00
CH165	5825	-3.51	30.00

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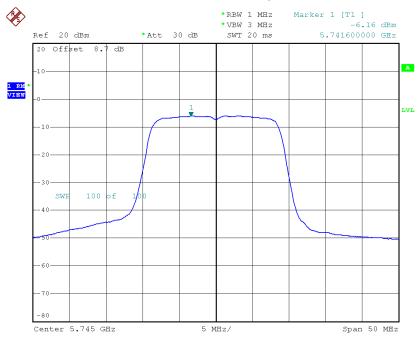




#### Test Mode: UNII-3/ TX N20 Mode\_CH149/CH157/CH165\_Ant 1

Channel	Frequency (MHz)	Power Density (dBm/500kHz)	Duty Factor	Power Density + Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)
CH149	5745	-6.16	0	-6.16	30.00
CH157	5785	-6.86	0	-6.86	30.00
CH165	5825	-6.60	0	-6.60	30.00

#### **TX CH149**

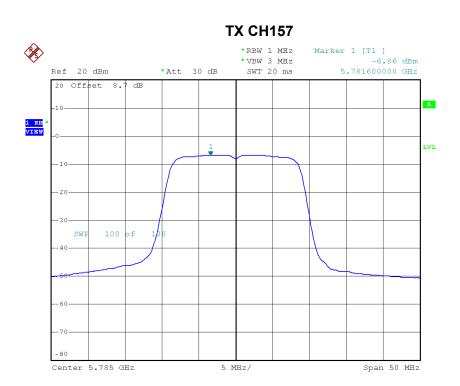


Date: 15.JUL.2016 16:13:47

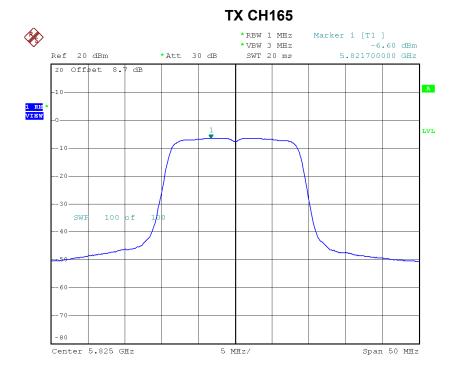
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Date: 15.JUL.2016 16:17:09



Date: 15.JUL.2016 16:43:46

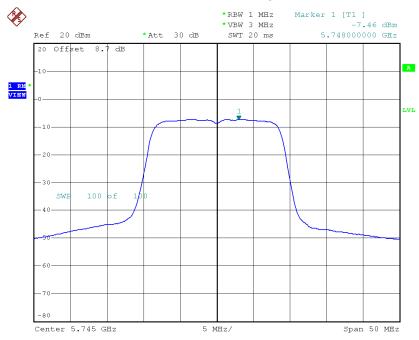




#### Test Mode: UNII-3/ TX N20 Mode\_CH149/CH157/CH165\_Ant 2

Channel	Frequency (MHz)	Power Density (dBm/500kHz)	Duty Factor	Power Density + Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)
CH149	5745	-7.46	0	-7.46	30.00
CH157	5785	-8.77	0	-8.77	30.00
CH165	5825	-8.81	0	-8.81	30.00

#### **TX CH149**

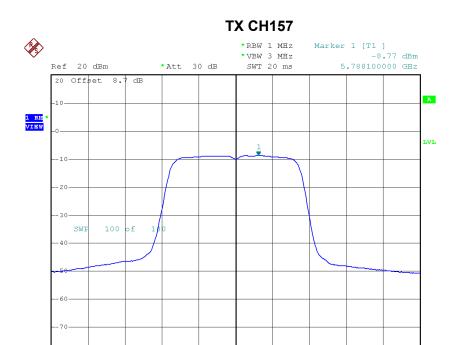


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Span 50 MHz

Date: 15.JUL.2016 17:16:01



Date: 15.JUL.2016 17:18:22





## Test Mode: UNII-3/ TX N20 Mode\_CH149/CH157/CH165\_Total

Channel	Frequency (MHz)	Power Density (dBm/500kHz)	Limit (dBm/500kHz)
CH149	5745	-3.75	30.00
CH157	5785	-4.70	30.00
CH165	5825	-4.56	30.00

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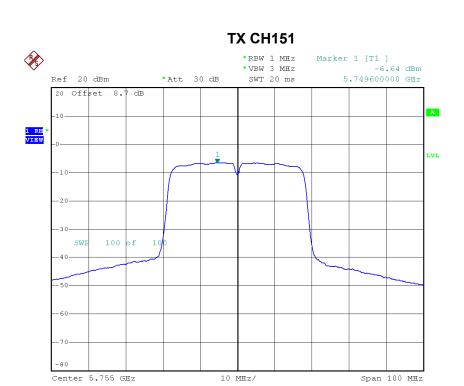
## Test Mode: UNII-3/ TX N40 Mode\_CH151/CH159\_Ant 1

Channel	Frequency (MHz)	Power Density (dBm/500kHz)	Duty Factor	Power Density + Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)
CH151	5755	-6.64	0	-6.64	30.00
CH159	5795	-7.91	0	-7.91	30.00

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## Test Mode: UNII-3/ TX N40 Mode\_CH151/CH159\_Ant 2

Channel	Frequency (MHz)	Power Density (dBm/500kHz)	Duty Factor	Power Density + Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)
CH151	5755	-8.51	0	-8.51	30.00
CH159	5795	-10.22	0	-10.22	30.00

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Date: 15.JUL.2016 17:23:55





## Test Mode: UNII-3/ TX N40 Mode\_CH151/CH159\_Total

Channel	Frequency (MHz)	Power Density (dBm/500kHz)	Limit (dBm/500kHz)
CH151	5755	-4.46	30.00
CH159	5795	-5.90	30.00

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# **ATTACHMENT H - FREQUENCY STABILITY**

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Test Mode: UNII-3

## Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)
(V)	5745.0000
132	5744.9560
120	5744.9564
108	5744.9564
Max. Deviation (MHz)	0.0440
Max. Deviation (ppm)	7.6588

## Temperature vs. Frequency Stability

Voltage	Measurement Frequency (MHz)
(℃)	5745.0000
-5	5744.9564
5	5744.9564
15	5744.9568
25	6744.9564
35	5744.9564
45	5744.9564
50	5744.9564
Max. Deviation (MHz)	0.0436
Max. Deviation (ppm)	7.5892

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