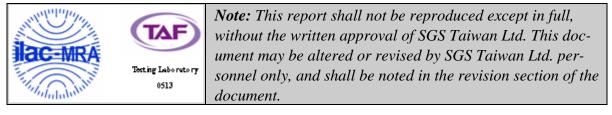


# ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

#### INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART E REQUIREMENT OF

Product Name:	Mobile Phone
Brand Name:	Sony
Type No.:	PM-0855-BV
Model Difference:	N/A
FCC ID:	PY7-PM0855
<b>Report No.:</b>	ER/2014/B0055
Issue Date:	Jan. 19, 2015
FCC Rule Part:	<b>§15.407</b>
Prepared for:	Sony Mobile Communications AB Nya Vattentornet 22188 Lund/Sweden
Prepared by:	SGS Taiwan Ltd. Electronics & Communication Laboratory No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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# **VERIFICATION OF COMPLIANCE**

Applicant:	Sony Mobile Communications AB Nya Vattentornet 22188 Lund/Sweden
Product Name:	Mobile Phone
Brand Name:	Sony
Type No.:	PM-0855-BV
Model Difference:	N/A
FCC ID:	PY7-PM0855
File Number:	ER/2014/B0046
Date of test:	Nov. 06, 2014 ~ Nov. 28, 2014
Date of EUT Received:	Nov. 06, 2014

# We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4:2009 & ANSI C63.10: 2009 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.407.

The test results of this report relate only to the tested sample identified in this report.

Test By:	Marcus Tseng	Date:	Jan. 19, 2015	
Prepared By:	Marcus Tseng / Engineer Allon Tsai	 Date:	Jan. 19, 2015	-
	Allen Tsai / Engineer Tim Ch ang		L 10 2015	_
Approved By:	Jim Chang / Supervisor	Date:	Jan. 19, 2015	_

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# **Revision History**

Report Number	Revision	Description	Issue Date
ER/2014/B0055	Rev.00	Rev.00 Initial creation of document	
ER/2014/B0055	Rev.01	Updated HW, SW, and Internal photos	Jan. 09, 2015
ER/2014/B0055	/B0055 Rev.02 Added description in section Limit		Jan. 19, 2015

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#### **FCC ID: PY7-PM0855**

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#### **GENERAL INFORMATION** 1.

# **1.1. Product Description**

General:

Product Name:	Mobile Phone		
Brand Name:	Sony		
Type No.:	PM-0855-	BV	
Model Difference:	N/A		
Data Cable (USB):		: EC450, Supplier: K-one AI-0700, Length: 100 cm	
Simple Hands-Free (SHF-White):	Model No.: MH410c, Supplier: Foster Electric Type No.: AG-1100		
Car Charger:	Model No.: AN400, Supplier: Salcomp Type No.: CAA-0003013		
BT PHF:	Model No.: SBH20, Supplier: Sony Type No.: RD-0010 coupling with Simple Hands Free (Model No.: MH755, Supplier: BALDA, Type No.: AG-0503)		
Hardware Version:	А		
Software Version:	25.0.B.0.3	5	
	3.8Vdc		
Power Supply:	Battery:	Model No.: LIS1574ERPC, Supplier: Sony Type No.: N/A	
	Adapter:	Model No.: EP800, Supplier: Salcomp Type No.: CAA-0002016-US	

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#### Bluetooth\_BR+EDR:

Bluetooth Version:	V4.1 dual mode + HS
Channel number:	79 channels
Modulation type:	Frequency Hopping Spread Spectrum
Transmit Power:	5.38dBm
Frequency Range:	2.402GHz – 2.480GHz
Dwell Time:	<= 0.4s
Antenna Designation:	PIFA Antenna, Gain: 2.52dBi

#### Bluetooth Low Energy:

Frequency Range:	2402 – 2480MHz
Bluetooth Version:	V4.1 dual mode + HS
Channel number:	40 channels
Modulation type:	GFSK
Transmit Power:	-1.49dBm (Peak)
Antenna Designation:	PIFA Antenna, Gain: 2.52dBi

#### WLAN 2.4GHz:

Wi-Fi	Frequency Range	Channels	Rated Power	Modulation Technology		
11b/g	2412-2462	11	b: 18.87dBm g: 22.66dBm	DSSS, OFDM		
11n	HT20 2412-2462	11	HT20: 21.09dBm	OFDM		
11n	HT40 2422-2452	7	HT40: 22.22dBm	OFDM		
Antenna Des	Antenna Designation:		PIFA Antenna, Gain: 2.52dBi			
Modulation type:		CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM				
Transition Rate:		802.11 g: 6/9 802.11 n_20	2/5.5/11 Mbps; 9/12/18/24/36/48/54 Mbps MHz: 6.5 – 72.2Mbps MHz: 13.5 –135Mbps			

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WLAN 5GHz:

Wi-Fi	Frequency Range	Channels	Avg. Power	Modulation Technology			
	5150~5250	4	13.96dBm				
11-	5250~5350	4	13.99dBm	OEDM			
11a	5470~5725	8	13.96dBm	OFDM			
	5725-5850	5	13.79dBm				
	HT20 5150~5250	4	HT20: 12.99dBm				
	HT20 5250~5350	4	HT20: 12.95dBm	OFDM			
11n	HT20 5470~5725	8	HT20: 12.99dBm	OFDM			
	HT20 5725-5850	5	HT20: 12.79dBm				
	HT40 5150~5250	2	HT40: 11.95dBm				
11n	HT40 5250~5350	2	HT40: 11.93dBm	OFDM			
1111	HT40 5470~5725	3	HT40: 11.96dBm	OI DIVI			
	HT40 5725-5850	2	HT40: 11.98dBm				
Antenna Designation	PIFA Antenna, 5GHz Gain: -0.54dBi (5150MHz-5250MHz) 5GHz Gain: -0.89dBi (5250MHz-5350MHz) 5GHz Gain: -0.34dBi (5470MHz-5725MHz) 5GHz Gain: -0.19dBi (5725MHz-5850MHz)						
Modulation type	64QAM, 16QAM	64QAM, 16QAM, QPSK, BPSK for OFDM					
Transition Rate:	802.11 a: 6/9/12/18/24/36/48/54 Mbps 802.11 n_20MHz: 6.5 - 65.0Mbps 802.11 n_40MHz: 13.5 - 135.0Mbps						

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



#### GSM / WCDMA/ LTE:

	Operating Frequency		Rated Power
	GSM/GPRS 850, Class 12	824.2 MHz- 848.8 MHz	33dBm
	EDGE 850, Class 12	824.2 MHz- 848.8 MHz	27dBm
	GSM/GPRS 1900, Class 12	1850.2MHz - 1909.8MHz	30dBm
	EDGE 1900, Class 12	1850.2MHz - 1909.8MHz	26dBm
	WCDMA/HSUPA/HSDPA /HSPA+ Band II	1852.4MHz – 1907.6MHz	24dBm
Cellular Phone	WCDMA/HSUPA/HSDPA /HSPA+ Band V	826.4MHz - 846.6MHz	24dBm
Standards Frequency Range and Power	1.4MHz BW LTE-Band 2	1850MHz- 1909.3MHz	23dBm
	3MHz BW LTE-Band 2	1851.5MHz – 1908.5MHz	23dBm
	5MHz BW LTE-Band 2	1852.5MHz – 1907.5MHz	23dBm
	10MHz BW LTE-Band 2	1855MHz – 1905MHz	23dBm
	15MHz BW LTE-Band 2	1857.5MHz – 1902.5MHz	23dBm
	20MHz BW LTE-Band 2	1860MHz – 1900MHz	23dBm
	5MHz BW LTE-Band 5	2502.5MHz – 2567.5MHz	23dBm
	10MHz BW LTE-Band 5	2505.0MHz - 2565.0MHz	23dBm
	15MHz BW LTE-Band 5	2507.5MHz – 2562.5MHz	23dBm
	20MHz BW LTE-Band 5	2510.0MHz – 2560MHz	23dBm

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	GSM 850: 247KGXW, GSM 1900: 250KGXW GPRS 850: 246KGXW, GPRS 1900: 246KGXW EDGE 850: 250KG7W, EDGE 1900: 248KG7W WCDMA Band II: 4M22F9W, WCDMA Band V: 4M23F9W HSDPA Band II: 4M21F9W, HSDPA Band V: 4M23F9W HSUPA Band II: 4M20F9W, HSUPA Band V: 4M23F9W 1.4MHz BW LTE-Band 2 QPSK:1M10G7D
Type of Emission:	1.4MHz BW LTE-Band 2 16QAM: 1M10D7W 3MHz BW LTE-Band 2 QPSK: 2M71 G7D 3MHz BW LTE-Band 2 16QAM: 2M71D7W 5MHz BW LTE-Band 2 QPSK: 4M53 G7D 5MHz BW LTE-Band 2 16QAM: 4M53D7W 10MHz BW LTE-Band 2 QPSK: 8M99 G7D 10MHz BW LTE-Band 2 16QAM: 8M99D7W 15MHz BW LTE-Band 2 QPSK: 13M52 G7D 15MHz BW LTE-Band 2 16QAM: 13M53D7W 20MHz BW LTE-Band 2 QPSK: 18M03 G7D
	20MHz BW LTE-Band 2 16QAM: 10M05 07D 20MHz BW LTE-Band 2 16QAM: 18M00D7W 1.4MHz BW LTE-Band 5 QPSK: 1M10 G7D 1.4MHz BW LTE-Band 5 16QAM: 1M10D7W 3MHz BW LTE-Band 5 QPSK: 2M70 G7D 3MHz BW LTE-Band 5 16QAM: 2M70D7W 5MHz BW LTE-Band 5 16QAM: 4M51D7W 10MHz BW LTE-Band 5 QPSK: 8M97 G7D 10MHz BW LTE-Band 5 16QAM: 8M95D7W
IMEI:	00440245-380610-5 / 00440245-380611-3

This report applies for frequency bands 5150MHz-5250MHz, 5250MHz-5350MHz, 5470MHz-5725MHz and 5725MHz-5850MHz.

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#### IEEE 802.11n Spec:

MCS	MCS				NG	Manna		NDBPS		Datarate(Mbps)		
Index Nss	Modulation	R	NBPSC	NCBPS		ND	BPS	800	800nsGI 40		nsGI	
					20MHz	40MHz	20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5	7.200	15
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0	14.400	30
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5	21.700	45
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0	28.900	60
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0	43.300	90
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0	57.800	120
6	1	64-QAM	3/4	6	312	648	234	486	58.5	121.5	65.000	135
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0	72.200	150

Symbol	Explanation
NSS	Number of spatial streams
R	Code rate
NBPSC	Number of coded bite per single carrier
NCBPS	Number of coded bite per symbol
NDBPS	Number of data bite per symbol
GI	Guard interval

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# **1.2.** Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: <u>PY7-PM0855</u> filing to comply with Section 15.407 of the FCC Part 15, Subpart C Rules. The composite system (digital device) is compliance with Subpart B is authorized under the certification procedure.

## 1.3. Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4:2009 & ANSI C63.10:2009 & 789033 D02 published on 06, 06, 2014 General UNII Test Procedure New Rules v01. Radiated testing was performed at an antenna to EUT distance 3 meters.

Tested in accordance with Jun. 2014 KDB789033 D02v01 for compliance to FCC 47CFR 15.407 requirements.

## 1.4. Test Facility

The measurement facilities used to collect the 3m Radiated Emission and AC power line conducted data are located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2009 & ANSI C63.10:2009. FCC Registration Numbers are: 990257, Canada Registration Number: 4620A-4.

The 10 m Open Area Test Sites located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No.2, Keji 1st Rd., Guishan Township, Taoyuan County, Taiwan, which is constructed and calibrated to meet the CISPR 22/EN 55022 requirements. SGS Site No. 1(3 &10 meters) and FCC Registration Number: 455997.

### **1.5.** Special Accessories

There are no special accessories used while test was conducted.

# 1.6. Equipment Modifications

There was no modification incorporated into the EUT.

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# 2. SYSTEM TEST CONFIGURATION

## 2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### 2.2. EUT Exercise

An engineering test mode (software/firmware) that applicant provided was utilized to manipulate the EUT into transmit, selection of the test channel, and modulation scheme.

#### 2.3. Test Procedure

#### 2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the general criterion in Section 7.1 of ANSI C63.4:2009 & 6.2 ANSI 63.10:2009.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz, and the measurement procedure 7.3 in ANSI 63.4:2009 & 6.2.2, and 6.2.3 in ANSI 63.10:2009 is followed to carry out the test. The CISPR Quasi-Peak and Average detector mode is employed according to §15.107

#### 2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna according to the requirements in Section 8 and 13 and of ANSI C63.4:2009, & Section 6.3, 6.4, 6.5, and 6.6 of ANSI 63.10:2009.ANSI C63.10:2009.

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# 2.4. Configuration of Tested System

#### Fig. 2-1 Radiated Emission



### Fig. 2-2 Conducted (Antenna Port) Configuration



Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	<b>Power Cord</b>
1.	WLAN Test Software	N/A	N/A	N/A	N/A	N/A
2.	DC Power Sup- ply	HP	E3640A	KR93300208	N/A	N/A

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**FCC ID: PY7-PM0855** 

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## Fig. 2-3 AC Power Line Conducted Emission



### **Table 2-2 Equipment Used in Tested System**

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	<b>Power Cord</b>
1.	WLAN Test Software	N/A	N/A	N/A	N/A	N/A

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#### **SUMMARY OF TEST RESULT** 3.

FCC Rules	Description Of Test	Result
815 207	AC Power Line Conducted	Compliant
§15.207	Emission	
\$15 407(a) (1) (2)	26 dB & 6dB Emission	Compliant
§15.407(a) (1) (2)	Bandwidth	
815 407(a) (1) (2)	The Maximum Output Power	Compliant
§15.407(a) (1) (2)	Measurement	
\$15 407(c) (5)	Peak Power Spectral Density	Compliant
§15.407(a) (5)	Measurement	
§15.407(b) (1) (2) (3)(6)	Undesirable Emission – Radiated	Compliant
(7)	Measurement	
\$15.407(a)	Transmission in case of Absence	Compliant
§15.407(c)	of Information	
§15.407(g)	Frequency Stability	Compliant
§15.203	Antenna Requirement	Compliant

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# 4. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting mode is programmed.

a mode:

5150MHz-5250MHz: Channel lowest(5180MHz), Mid(5220MHz) and Highest(5240MHz).

5250MHz-5350MHz: Channel lowest(5260MHz), Mid(5300MHz) and Highest(5320MHz).

5470MHz-5725MHz: Channel lowest(5500MHz), Mid(5580MHz) and Highest(5700MHz) and with 6Mbps data rate are chosen for full testing.

5725 MHz-5850MHz: Channel lowest(5745MHz), Mid(5785MHz) and Highest(5825MHz)with 6Mbps data rate are chosen for full testing.

n HT 20 mode:

5150MHz-5250MHz: Channel lowest(5180MHz), Mid(5220MHz) and Highest(5240MHz).

5250MHz-5350MHz: Channel lowest(5260MHz), Mid(5300MHz) and Highest(5320MHz).

5470MHz-5725MHz: Channel lowest(5500MHz), Mid(5580MHz) and Highest(5700MHz)with 6.5Mbps data rate are chosen for full testing

5725 MHz-5850MHz: Channel lowest(5745MHz), Mid(5785MHz) and Highest(5825MHz)with 6.5 Mbps data rate are chosen for full testing.

n HT 40 mode:

5150MHz-5250MHz: Channel lowest (5190MHz) and Highest (5230MHz).

5250MHz-5350MHz: Channel lowest (5270MHz) and Highest (5310MHz).

5470MHz-5725MHz: Channel lowest(5510MHz) 、 Mid(5550MHz) and Highest(5670MHz)with 13.5Mbps data rate are chosen for full testing

5755MHz-5795MHz: Channel lowest (5755MHz) and Highest (5795MHz)with 13.5Mbps data rate are chosen for full testing

The worst case is determined by the output power that generates the highest emission. As examined in the section of output power measurement, the section 7.5, the lowest data rate at a/n\_HT20/n\_HT40 resulted the highest level of fundamental emission, and therefore, the lowest data rate is chosen as the worst-case to conduct the remaining of other mandatory test cases.

The field strength of radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for 802.11a/n WLAN Transmitter for channel Low, Mid and High, the worst case E1 position was reported.

Type no, PM-0850-BV, and Type no PM-00855-BV share the equivalently identical enclosure, material of coating, I/O function, PCB board, display, and power source. In addition, PM-0850-BV, and Type no PM-0855-BV implement the same Bluetooth/WLAN chipset/module with the same antenna that operates with the same transmitted power level. Hence, this given test report contains the identical test results that inherent from PM-0850-BV.

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*Remark:* While conducting average power measurement, duty cycle of each mode ( $a/n_ht20/n_ht40$ ) shall be greater than 98%. All duty cycle is pre-scanned, but verified to be greater than 98%, where a = 99% and  $n_HT20\&n_HT40 = 99\%$ , where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage. *Formula:* 

*Duty Cycle* = *Ton* / (*Ton*+*Toff*)

### Test Procedure:

Set span = 0, RBW = 8MHz, the largest as possible, VBW = 8MHz, Detector = Peak, and RBW, and VBW = 8 MHz where zero-span is permissible, that > 50/T, where T is ~ 4.3ms

	UNII Band 1	UNII Band 2 – Subband1	UNII Band 2 – Subband2	UNII Band 3 – Subband3
802.11a	0.99	0.99	0.99	0.99
802.11n_20	0.99	0.99	0.99	0.99
802.11n_40	0.99	0.99	0.99	0.99

Duty Cycle Factor:  $10 * \log (1/0.99) = 0.04$ 

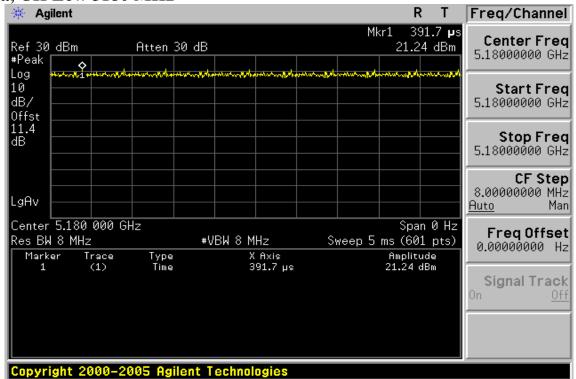
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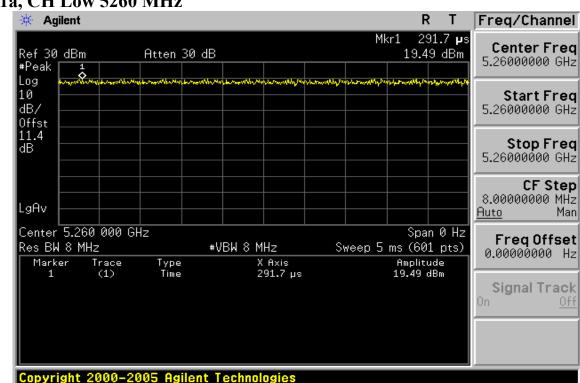
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# **DUTY CYCLE OF TEST SIGNAL** 802.11a, CH Low 5180 MHz





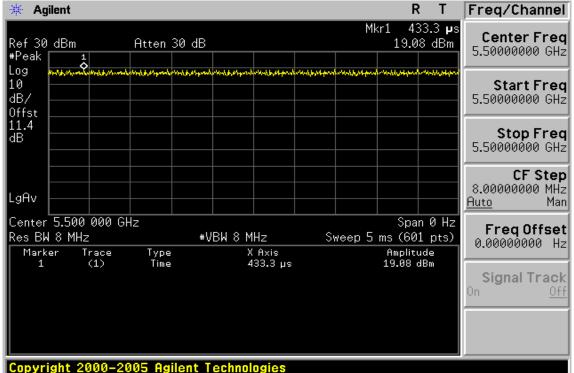
802.11a. CH Low 5260 MHz

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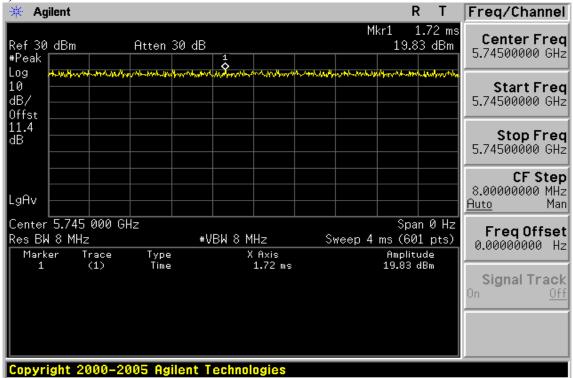
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## 802.11a, CH Low 5500 MHz



# 802.11a, CH Low 5745 MHz

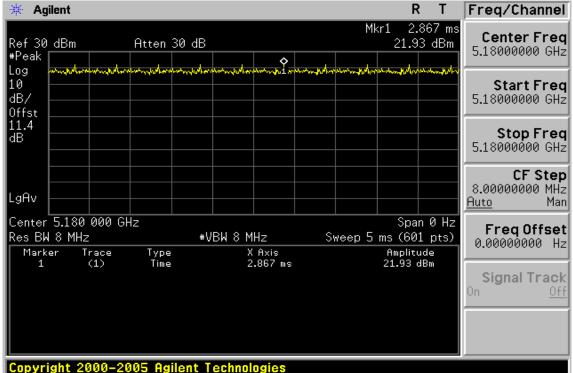


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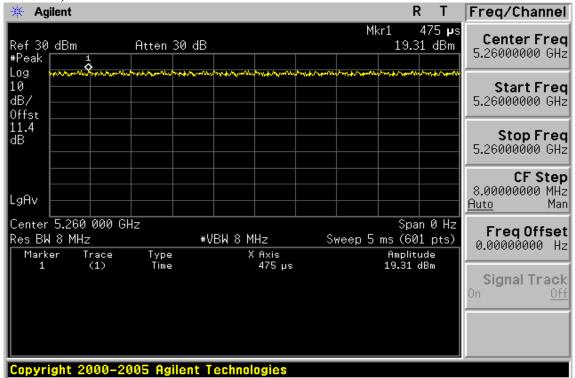
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## 802.11n HT20, CH Low 5180 MHz



# 802.11n HT20, CH Low 5260 MHz

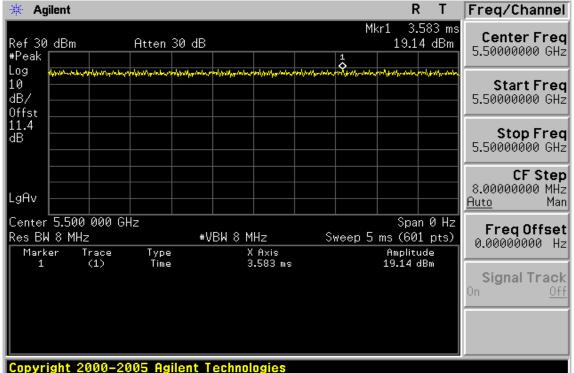


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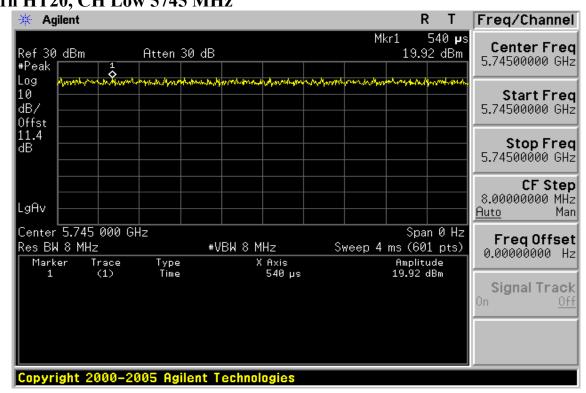
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## 802.11n HT20, CH Low 5500 MHz



802.11n HT20, CH Low 5745 MHz

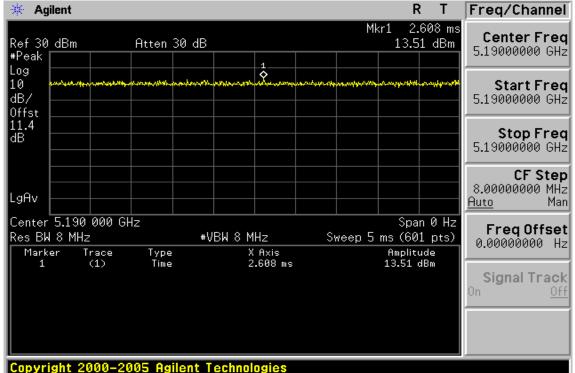


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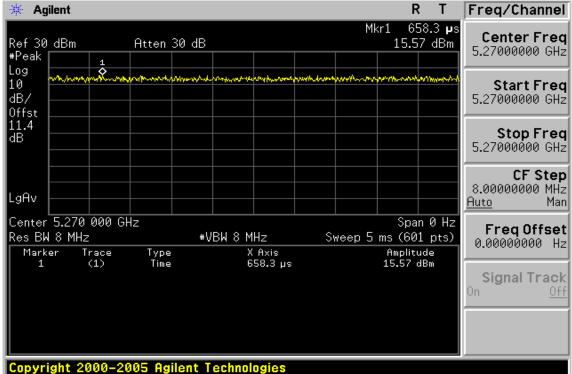


## 802.11n HT40, CH Low 5190 MHz



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#### 802.11n HT40, CH Low 5270 MHz

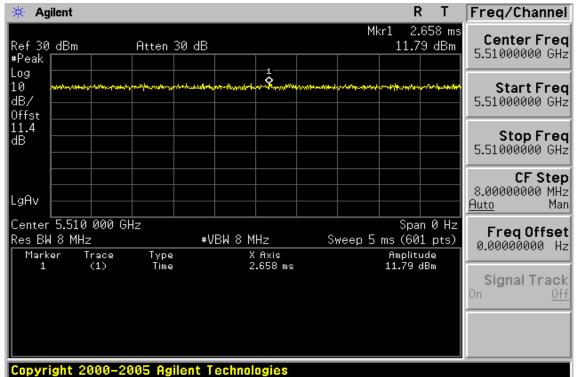


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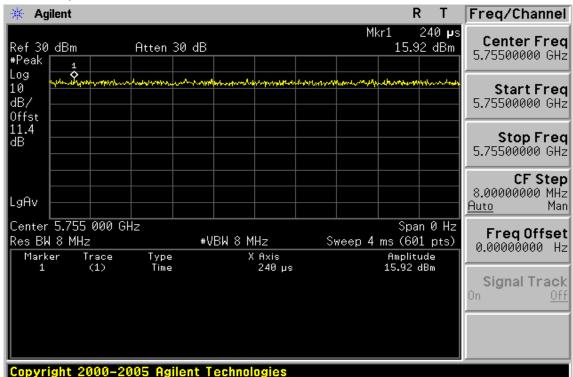
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# 802.11n HT40, CH Low 5510 MHz



# 802.11n HT40, CH Low 5755 MHz



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#### **MEASUREMENT UNCERTAINTY** 5.

Test Items	Uncertainty	
AC Power Line Conducted Emission	+/- 2.586 dB	
26dB Emission Bandwidth	+/- 123.36 Hz	
The Maximum Output Power Measurement	+/- 1.42 dB	
Peak Power Spectral Density Measurement	+/- 1.55 dB	
Peak Excursion Measurement	+/- 1.55 dB	
Undesirable Emission –	+/- 1.55 dB	
Conducted Measurement	17 1.00 dB	
Transmission in case of Absence of Information	+/- 1.55 dB	
Frequency Stability	+/- 123.36 Hz	
Temperature	+/- 0.8 °C	
Humidity	+/- 4.7 %	
DC / AC Power Source	DC= +/- 1%, AC=+/- 0.2%	

**Radiated Spurious Emission:** 

	30MHz - 180MHz: +/- 3.37dB
Measurement uncertainty	180MHz -417MHz: +/- 3.19dB
(Polarization : Vertical)	0.417GHz-1GHz: +/- 3.19dB
	1GHz - 18GHz: +/- 4.04dB
	18GHz - 40GHz: +/- 4.04dB

	30MHz - 167MHz: +/- 4.22dB
Measurement uncertainty	167MHz -500MHz: +/- 3.44dB
(Polarization : Horizontal)	0.5GHz-1GHz: +/- 3.39dB
	1GHz - 18GHz: +/- 4.08dB
	18GHz - 40GHz: +/- 4.08dB

This uncertainty represents an expanded uncertainty expressed at approximately the

95% confidence level using a coverage factor of k=2.

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# 6. CONDUCTED EMISSION TEST

# 6.1. Standard Applicable

According to §15.207, frequency range within 150 kHz to 30 MHz shall not exceed the Limit table as below.

Frequency range	Limits dB(uV)		
MHz	Quasi-peak Average		
0.15 to 0.50	66 to 56	56 to 46	
0.50 to 5	56	46	
5 to 30	60	50	
Note			
1. The lower limit shall apply at the transition frequencies			
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.			

## 6.2. Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
ТҮРЕ		NUMBER	NUMBER	CAL.	
EMI Test Receiver	R&S	ESCI7	100760	05/26/2014	05/25/2015
LISN	Rolf-Heine	NNB-2/16Z	99012	03/26/2014	03/25/2015
LISN	FCC	FCC-LISN-50/250-25-2-01	04034	03/19/2014	03/18/2015
Coaxial Cables	N/A	WK CE Cable	N/A	11/26/2013	11/25/2014

# 6.3. EUT Setup

- 1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.4:2009 & ANSI C63.10:2009.
- 2. The AC/DC Power adaptor of EUT was plug-in LISN. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
- 3. The LISN was connected with 120Vac/60Hz power source.

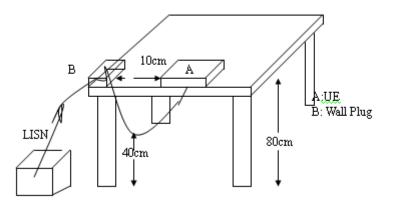
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# 6.4. Test SET-UP (Block Diagram of Configuration)



### 6.5. Measurement Procedure

- 1. The EUT was placed on a table which is 0.8m above ground plane.
- 2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 3. Repeat above procedures until all phases of power being supplied by given UE are completed.

### 6.6. Measurement Result

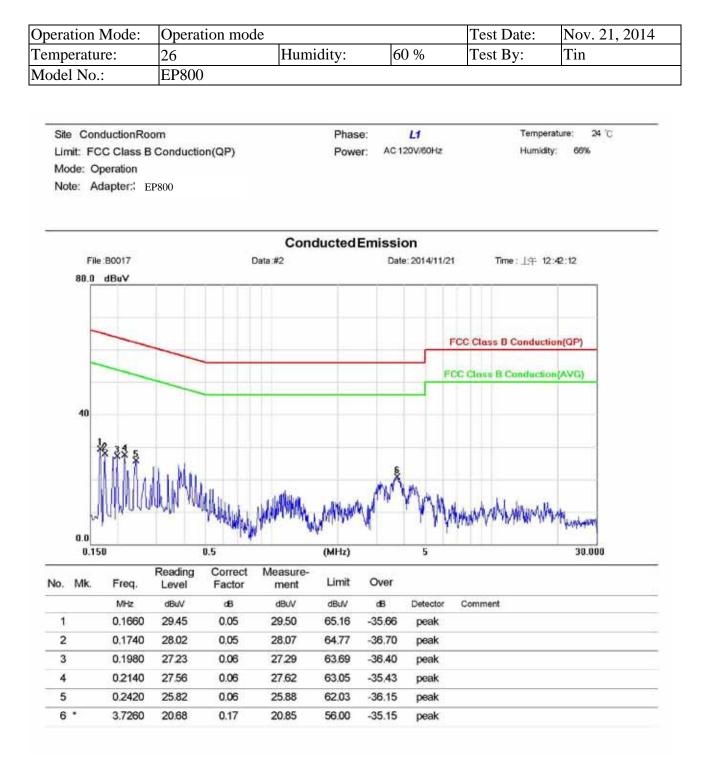
Note: Refer to next page for measurement data and plots. Note2: The \* reveals the worst-case results that that closet to the limit

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# AC POWER LINE CONDUCTED EMISSION TEST DATA



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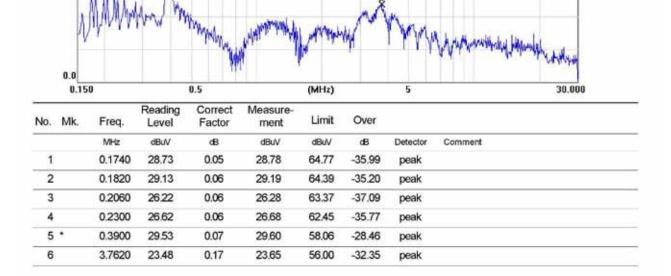


#### FCC ID: PY7-PM0855

24 TC

66%

Site ConductionRoom Phase: N Temperature: AC 120V/60Hz Humidity: Limit: FCC Class B Conduction(QP) Power: Mode: @DeraRhome Note: Adapter EP800 **Conducted Emission** File:80017 Data #1 Date: 2014/11/21 Time: 上午 12:41:20 80.0 dBuV FCC Class B Conduction(OP) FCC Class B Conduction(AVG) 40



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# 7. 26dB & 6dB EMISSION BANDWIDTH MEASUREMENT

# 7.1 Standard Applicable

According to §15.407(a). No Limit required.

# 7.2 Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the Antenna port to the spectrum analyzer.
- 3.
- a. 26dB Band width Measurement: Set the spectrum analyzer as 1% of emission BW Sweep=auto, Detector = Peak, Trace Mode = Max Hold, Manually readjust RBW until the RBW/EBW ratio is 1% based on EBW as observed on the result of pre-sequence measurement.
- b. Mark the peak frequency and -26dB (upper and lower) frequency.
- 4. Repeat the procedures as list above until all test default channels (low, middle, and high) are completed.
- 5. Minimum Emission Bandwidth for the band 5.725-5.850GHz
- a. Set the spectrum analyzer as RBW = 100 kHz, VBW = 3\*RBW, Span = 30M/50MHz, Detector=Peak, Sweep=auto
- b. Mark the peak frequency and -6dB (upper and lower) frequency.

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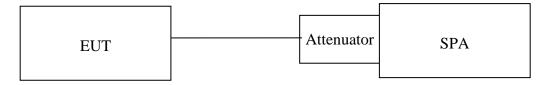
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## 7.3 Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
ТҮРЕ		NUMBER	NUMBER	CAL.	
Power Meter	Anritsu	ML2495A	1005007	01/13/2014	01/12/2015
Power Sensor	Anritsu	MA2411B	917032	01/13/2014	01/12/2015
Spectrum Analyzer	Agilent	E4446A	MY51100003	05/19/2014	05/18/2015
Spectrum Analyzer	Agilent	E4440A	MY45304525	03/08/2014	03/07/2015
DC Block	Mini-Circuits	BLK-18-S+	1	02/27/2014	02/26/2015
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	01/03/2014	01/02/2015
Attenuator	Mini-Circuit	BW-S10W2+	002	02/27/2014	02/26/2015
Splitter	Agilent	11636B	N/A	02/27/2014	02/26/2015

#### 7.4 **Test Set-up:**



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#### 7.5 Measurement Result

## **26dB Bandwidth**

802.11a, 5150~5250 MHz

Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log (B) (dB)
5180	20.455	13.11
5220	19.741	12.95
5240	19.347	12.87

#### 802.11a, 5250~5350 MHz

Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log (B) (dB)
5260	19.383	12.87
5300	20.052	13.02
5320	20.007	13.01

#### 802.11a, 5470~5725 MHz

Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log (B) (dB)
5500	19.157	12.82
5580	19.501	12.90
5700	19.976	13.01

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#### 802.11n HT20, 5150~5250 MHz

Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log (B) (dB)
5180	19.837	12.97
5220	19.744	12.95
5240	19.652	12.93

#### 802.11n HT20, 5250~5350 MHz

Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log (B) (dB)
5260	19.727	12.95
5300	19.710	12.95
5320	19.748	12.96

#### 802.11n HT20, 5470~5725 MHz

Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log (B) (dB)
5500	19.814	12.97
5580	19.770	12.96
5700	19.842	12.98

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#### 802.11n HT40, 5150~5250 MHz

Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log (B) (dB)
5190	39.867	16.01
5230	39.655	15.98

#### 802.11n HT40, 5250~5350 MHz

Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log (B) (dB)
5270	39.542	15.97
5310	39.826	16.00

#### 802.11n HT40, 5470~5725 MHz

Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log (B) (dB)
5510	39.878	16.01
5550	39.688	15.99
5670	39.756	15.99

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#### **6dB Bandwidth**

802.11a, 5725~5850 MHz

Frequency (MHz)	6dB Bandwidth (B) (MHz)	10 Log (B) (dB)
5745	16.439	12.16
5785	16.412	12.15
5825	16.420	12.15

#### 802.11n HT20, 5725~5850 MHz

Frequency (MHz)	6dB Bandwidth (B) (MHz)	10 Log (B) (dB)
5745	17.667	12.47
5785	17.643	12.47
5825	17.642	12.47

#### 802.11n HT40, 5725~5850 MHz

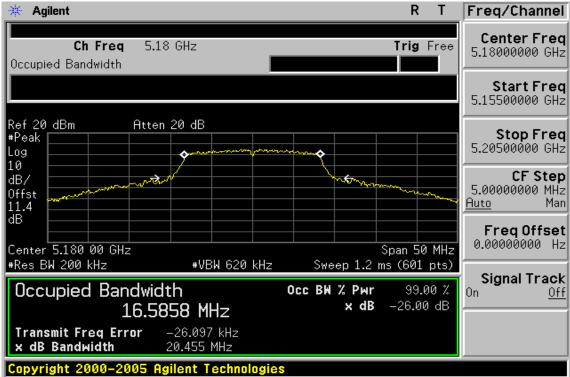
Frequency (MHz)	6dB Bandwidth (B) (MHz)	10 Log (B) (dB)
5755	36.397	15.61
5795	36.388	15.61

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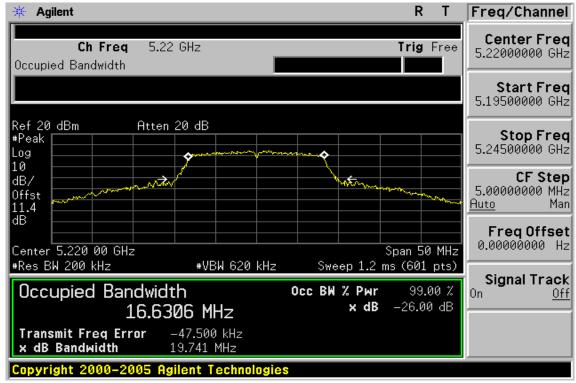
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# 802.11a, 5150~5250 MHz 26dB Band Width Test Data CH-Low (5180MHz)



# 26dB Band Width Test Data CH-Mid (5220MHz)

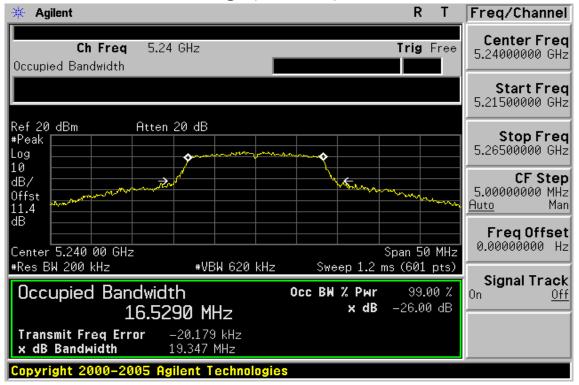


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### 26dB Band Width Test Data CH-High (5240MHz)



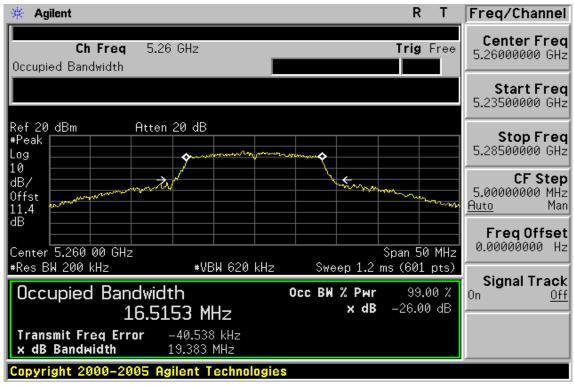
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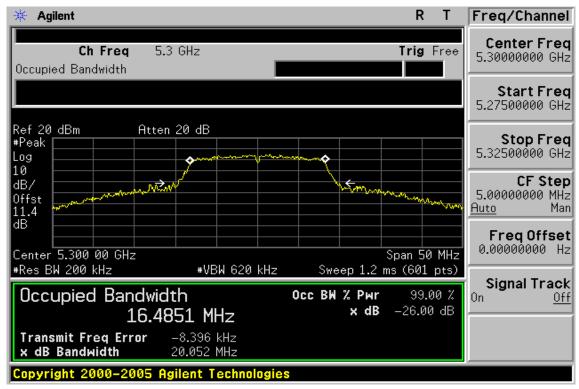
(ボオラオ) 就切 " 近根 学感 不僅 町利気(人体の資 貝 )" 问 呼び(後の恒 性) 留切 大 " 本規 管 大型 本公 可 音 型 計 可 " 木 可 申 切 複 泉" This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document is unlawful and offenders may be prosecuted to the fullest extent of the law.



### 802.11a, 5250~5350 MHz 26dB Band Width Test Data CH-Low (5260MHz)



# 26dB Band Width Test Data CH-Mid (5300MHz)



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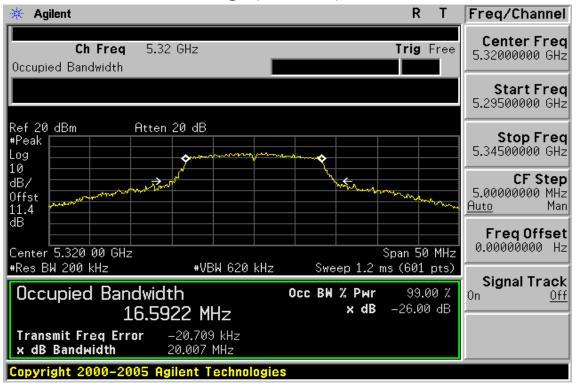
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台灣檢驗科技股份有限公司	t (886-2) 2299-3279	f (886-2) 2298-0488	www.tw.sgs.com	



### 26dB Band Width Test Data CH-High (5320MHz)



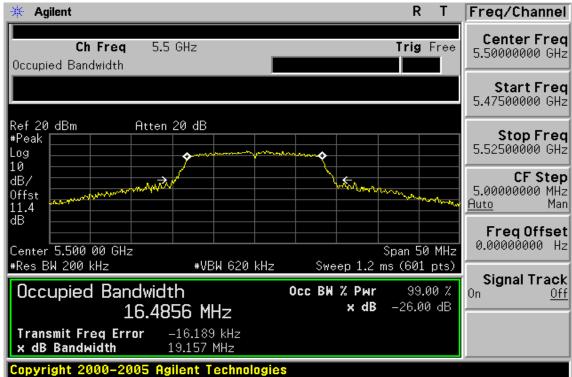
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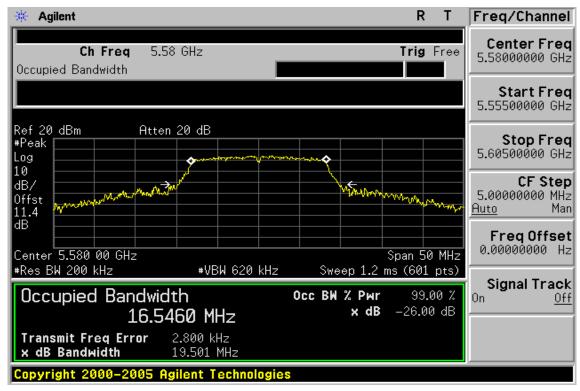
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### 802.11a, 5470~5725 MHz 26dB Band Width Test Data CH-Low (5500MHz)



26dB Band Width Test Data CH-Mid (5580MHz)



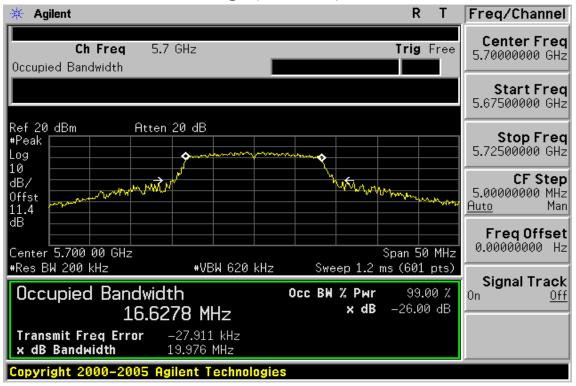
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### 26dB Band Width Test Data CH-High (5700MHz)

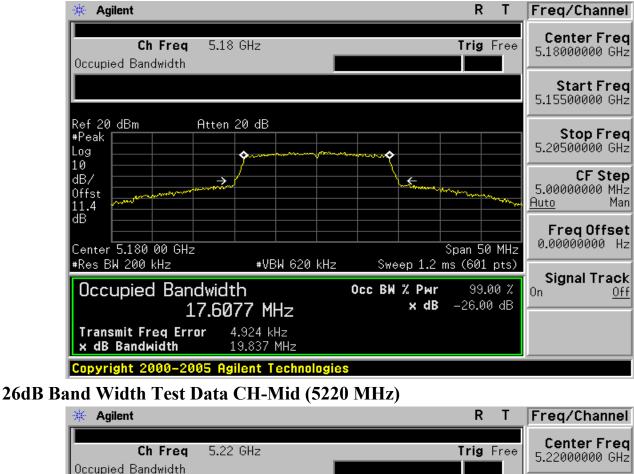


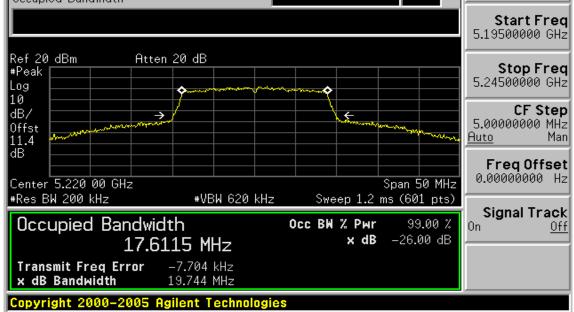
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# 802.11n HT20, 5150~5250 MHz 26dB Band Width Test Data CH-Low (5180 MHz)





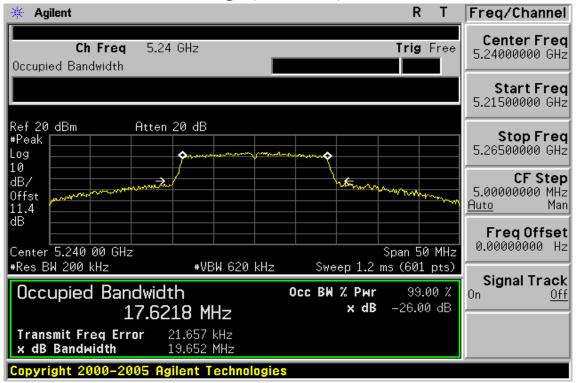
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### 26dB Band Width Test Data CH-High (5240 MHz)

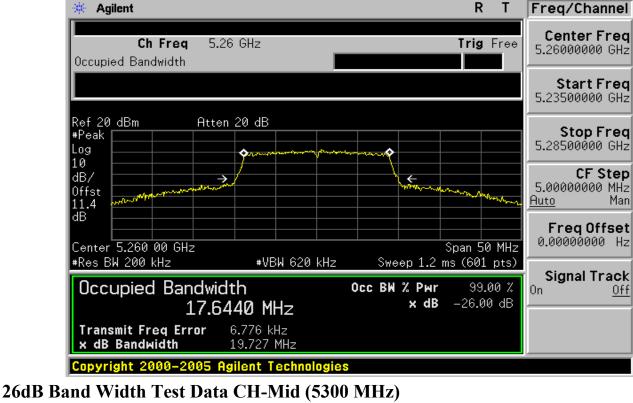


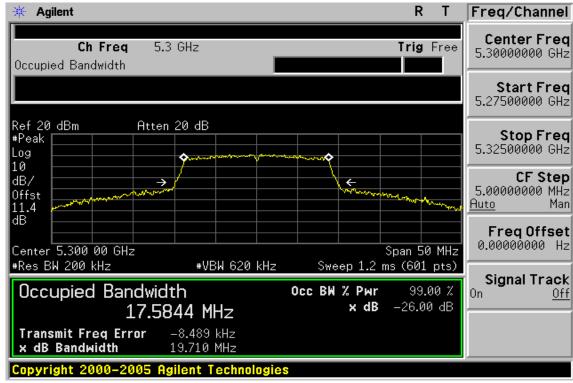
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# 802.11n HT20, 5250~5350 MHz 26dB Band Width Test Data CH-Low (5260 MHz)





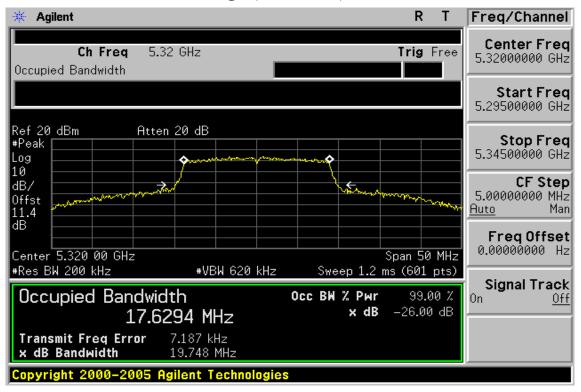
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### 26dB Band Width Test Data CH-High (5320 MHz)

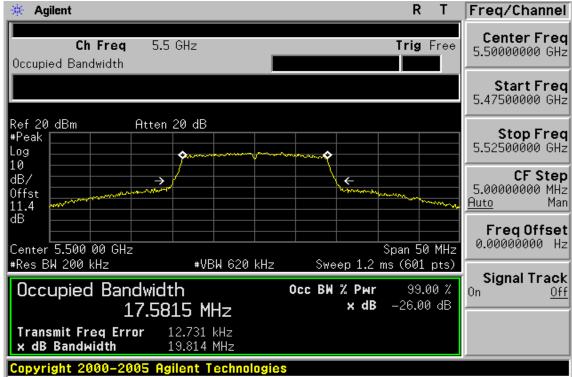


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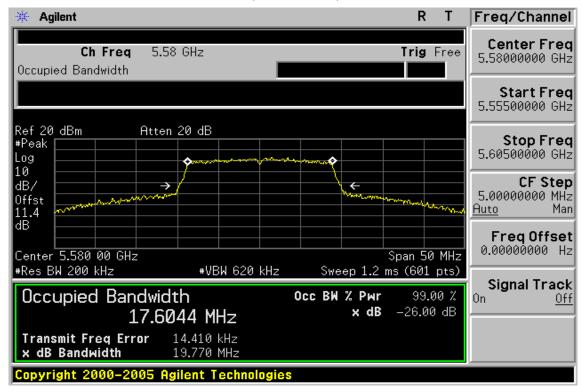
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# 802.11n HT20, 5470~5725 MHz 26dB Band Width Test Data CH-Low (5500 MHz)



### 26dB Band Width Test Data CH-Mid (5580 MHz)



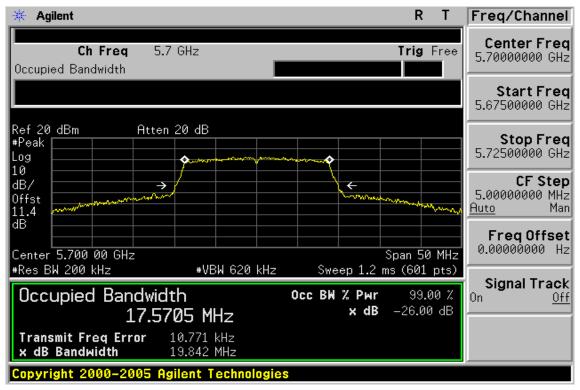
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### 26dB Band Width Test Data CH-High (5700 MHz)

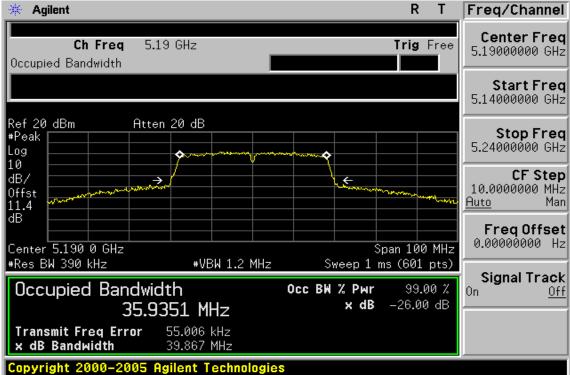


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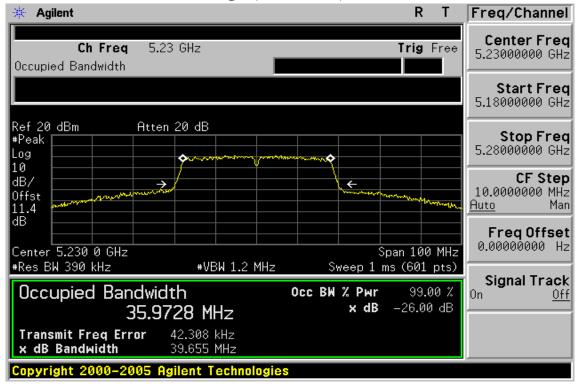
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# 802.11n HT40, 5150~5250 MHz 26dB Band Width Test Data CH-Low (5190 MHz)



# 26dB Band Width Test Data CH-High (5230 MHz)



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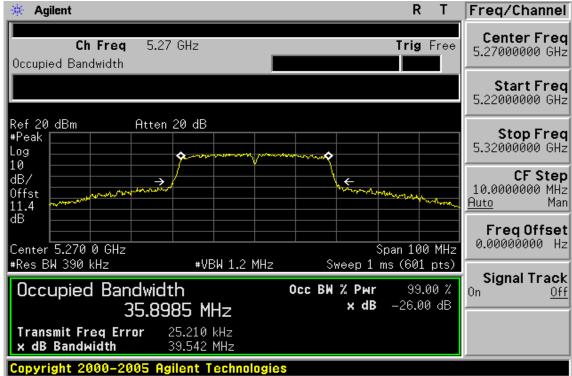
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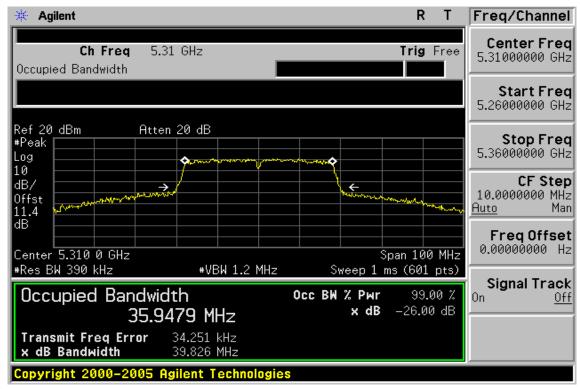
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# 802.11n HT40, 5250~5350 MHz 26dB Band Width Test Data CH-Low (5270 MHz)



### 26dB Band Width Test Data CH-High (5310MHz)



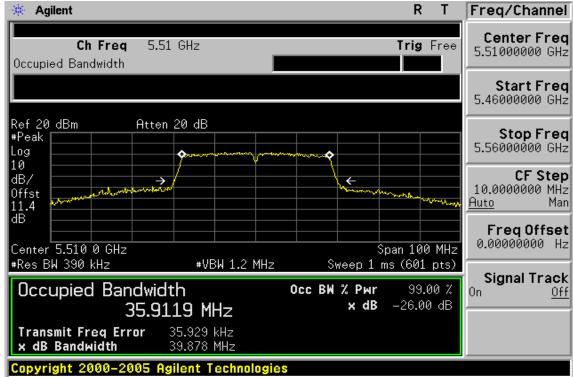
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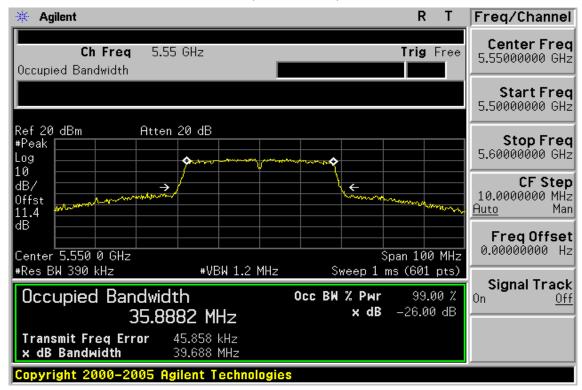
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# 802.11n HT40, 5470~5725 MHz 26dB Band Width Test Data CH-Low (5510 MHz)



### 26dB Band Width Test Data CH-Mid (5550 MHz)



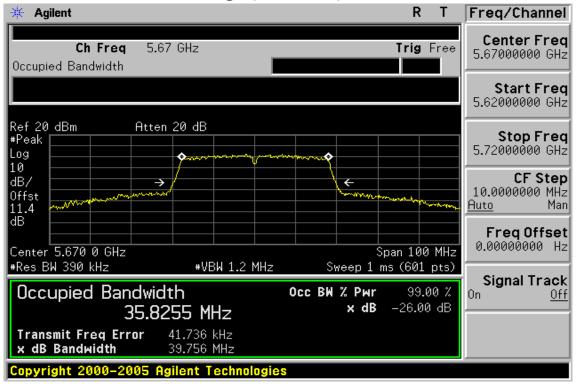
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### 26dB Band Width Test Data CH-High (5670 MHz)

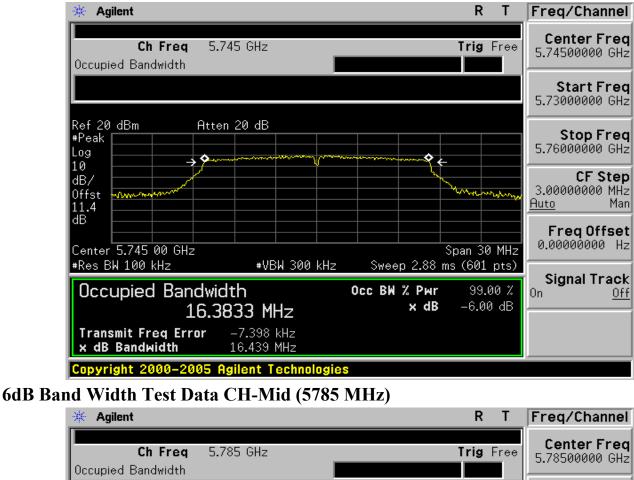


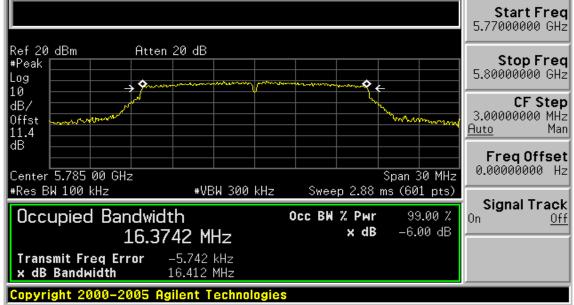
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### 802.11a, 5725~5850 MHz 6dB Band Width Test Data CH-Low (5745 MHz)





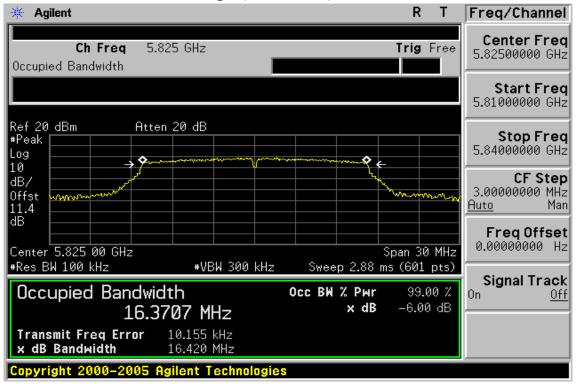
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### 6dB Band Width Test Data CH-High (5825 MHz)



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dB

Center 5.785 00 GHz

Transmit Freq Error

x dB Bandwidth

台灣

Occupied Bandwidth

#Res BW 100 kHz

# 802.11n HT20, 5725~5850 MHz 6dB Band Width Test Data CH-Low (5745 MHz)



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4.995 kHz

17.643 MHz

17.5536 MHz

#VBW 300 kHz

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Occ BW % Pwr

Freq Offset 0.0000000 Hz

Signal Track

Off

Span 30 MHz

99.00 %

-6.00 dB

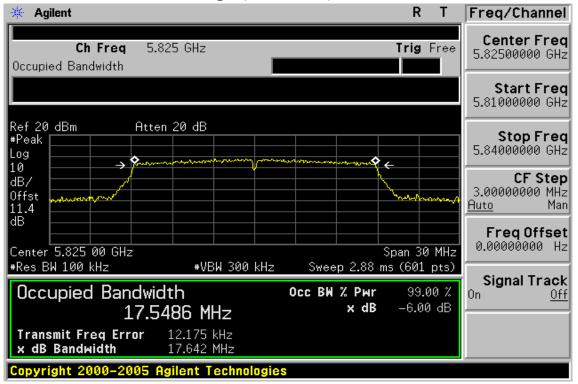
0n

Sweep 2.88 ms (601 pts)

x dB



### 6dB Band Width Test Data CH-High (5825 MHz)

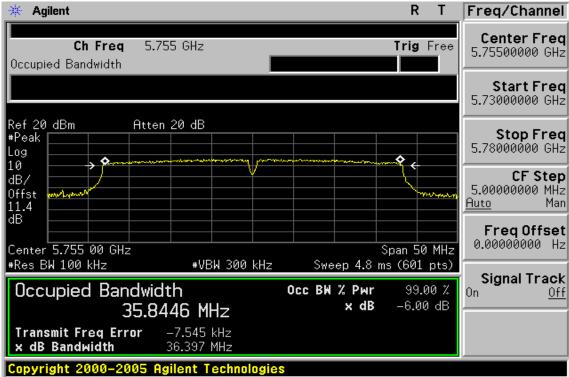


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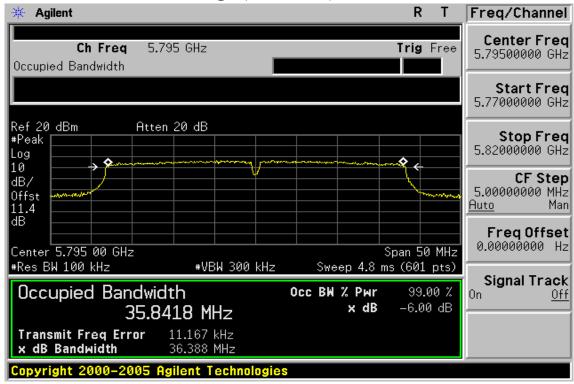
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# 802.11n HT40, 5725~5850 MHz for Main 6dB Band Width Test Data CH-Low (5755 MHz)



6dB Band Width Test Data CH-High (5795 MHz)



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# 8. The MAXIMUM OUTPUT POWER MEASUREMENT

# 8.1 Standard Applicable

According to §15.407(a)

- 1. For the band 5.150-5.250 GHz, the maximum conducted power over the frequency of operation shall not exceed the lesser of 250mW (23.98dBm).
- 2. For the band 5.25-5.35 GHz and 5.47-5.725GMHz, the maximum conducted power over the frequency of operation shall not exceed the lesser of 250 mW (23.98dBm) or 11 dBm + 10log B.
- 3. For the band 5.725-5.825 GHz, the maximum conducted power over the frequency of operation shall not exceed the lesser of 1W (30dBm) or 17 dBm + 10log B.
- 4. For the band 5.725-5.850 GHz, the maximum conducted power over the frequency of operation shall not exceed the lesser of 1W (30dBm).

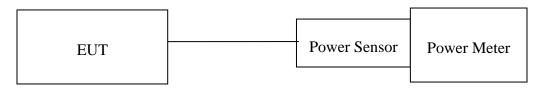
### 8.2 Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter
- 3. Set the offset  $10*\log(1/x)$  (x=0.99), 0.04 approximately
- 4. Record the max. reading.
- 5. Repeat above procedures until all frequency (low, middle, and high channel) measured were complete.

### 8.3 Measurement Equipment Used:

Refer to section 7.3 for details.

### 8.4 Test Set-up:



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#### 8.5 Measurement Result

802.1	11a
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Cat	ble loss $= 0$	The Maximum Output Power								
СН	Frequency (MHz)		Data Rate							Required Limit
	(14112)	6	9	12	18	24	36	48	54	Required Linin
36	5180	13.88	13.74	13.64	13.60	13.52	13.38	13.20	13.12	23.98dBm
44	5220	13.86	13.77	13.62	13.52	13.38	13.30	13.22	13.11	23.98dBm
48	5240	13.96	13.90	13.86	13.74	13.68	13.50	13.45	13.37	23.98dBm
52	5260	13.99	13.87	13.80	13.70	13.51	13.44	13.33	13.19	23.98dBm or 11+10log(B) = 23.87dBm
60	5300	13.83	13.70	13.59	13.51	13.46	13.38	13.21	13.12	23.98dBm or 11+10log(B) = 24.02dBm
64	5320	13.95	13.84	13.77	13.67	13.63	13.47	13.41	13.28	23.98dBm or 11+10log(B) = 24.01dBm
100	5500	13.96	13.94	13.75	13.68	13.50	13.34	13.31	13.25	23.98dBm or 11+10log(B) = 23.82dBm
116	5580	13.85	13.77	13.61	13.58	13.45	13.42	13.34	13.26	23.98dBm or 11+10log(B) = 23.90dBm
140	5700	13.96	13.89	13.82	13.63	13.62	13.50	13.34	13.20	23.98dBm or 11+10log(B) = 24.01dBm
149	5745	13.77	13.63	13.53	13.48	13.41	13.23	13.18	13.07	30dBm
157	5785	13.74	13.65	13.46	13.41	13.35	13.20	13.17	13.12	30dBm
165	5825	13.79	13.69	13.63	13.54	13.44	13.41	13.39	13.33	30dBm

*Note: Limit is re-adjusted in terms of dBm* 

10\*log(250mW)=23.98dBm

Note: Cable loss is 11.4dB is set as the offset on the spectrum to compensate the loss causing by cable

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802.11n HT20

Cał	ble loss $= 0$	The Maximum Output Power								
СН	Frequency (MHz)		Data Rate							Required Limit
	(11112)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	Kequireu Linni
36	5180	12.92	12.82	12.64	12.53	12.52	12.33	12.28	12.13	23.98dBm
44	5220	12.99	12.89	12.74	12.62	12.55	12.53	12.35	12.29	23.98dBm
48	5240	12.96	12.88	12.71	12.54	12.50	12.39	12.38	12.31	23.98dBm
52	5260	12.94	12.80	12.70	12.63	12.62	12.53	12.44	12.41	23.98dBm or 11+10log(B) = 23.95dBm
60	5300	12.84	12.65	12.50	12.47	12.30	12.13	11.99	11.88	23.98dBm or 11+10log(B) = 23.95dBm
64	5320	12.95	12.93	12.90	12.71	12.62	12.52	12.40	12.23	23.98dBm or 11+10log(B) = 23.96dBm
100	5500	12.98	12.96	12.78	12.77	12.71	12.70	12.67	12.50	23.98dBm or 11+10log(B) = 23.97dBm
116	5580	12.99	12.92	12.82	12.64	12.63	12.55	12.52	12.35	23.98dBm or 11+10log(B) = 23.96dBm
140	5700	12.89	12.78	12.71	12.63	12.45	12.32	12.14	12.13	23.98dBm or 11+10log(B) = 23.98dBm
149	5745	12.79	12.67	12.59	12.51	12.35	12.26	12.21	12.15	30dBm
157	5785	12.73	12.55	12.50	12.46	12.41	12.25	12.14	12.00	30dBm
165	5825	12.69	12.59	12.56	12.52	12.37	12.28	12.10	11.92	30dBm

Note: Offset 11.4dB

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802	2.11n HT40									
Cat	ble loss $= 0$	The Maximum Output Power								
СН	Frequency (MHz)				Data	Rate				Required Limit
	(11112)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	Required Emit
38	5190	10.46	10.29	10.13	9.97	9.79	9.68	9.53	9.34	23.98dBm
46	5230	11.95	11.88	11.83	11.64	11.56	11.49	11.47	11.32	23.98dBm
54	5270	11.93	11.91	11.83	11.82	11.73	11.63	11.49	11.43	23.98dBm or 11+10log(B) = 26.97dBm
62	5310	11.46	11.39	11.34	11.25	11.07	11.05	10.86	10.73	23.98dBm or 11+10log(B) = 27.00dBm
102	5510	11.37	11.30	11.25	11.22	11.17	11.09	11.03	10.98	23.98dBm or 11+10log(B) = 27.01dBm
110	5550	11.96	11.84	11.67	11.48	11.30	11.25	11.15	11.07	23.98dBm or 11+10log(B) = 26.99dBm
134	5670	11.86	11.81	11.73	11.65	11.50	11.38	11.25	11.18	23.98dBm or 11+10log(B) = 26.99dBm
151	5755	11.98	11.80	11.67	11.64	11.61	11.42	11.24	11.10	30dBm
159	5795	11.87	11.72	11.70	11.52	11.46	11.39	11.30	11.18	30dBm

Note: Offset 11.4dB

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### 9. PEAK POWER SPECTRAL DENSITY

## 9.1 Standard Applicable

According to §15.407(a)

- 1. For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 11 dBm in any 1 MHz band.
- 2. For the band 5.25-5.35 GHz, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band.
- 3. For the band 5.725-5.850 GHz and 5.47-5.725GMHz, the peak power spectral density shall not exceed 30 dBm in any 500KHz band.

If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### 9.2 Measurement Procedure (following procedure F, & E) d) method SA-2 in KDB789033 D02)

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to Spectrum.
- 3. Set RBW=1MHz, VBW=3MHz, Span=50MHz/80MHz (Base Mode), where span is enough to capture the entire bandwidth, Sweep time = Auto (601 pts), detector = sample, traces 100 sweeps of video averaging. (SA-2 with the omission of procedure x, the integration with 26dB EBW bandwidth)
- 4. User the cursor on spectrum to peak search the highest level of trace
- 5. Add offset, duty factor =0.04, on the spectrum
- 6. Record the max. reading.
- 7. Repeat above procedures until all default test channel (low, middle, and high) was complete.

### 9.3 Measurement Equipment Used:

Refer to section 7.3 for details.

### 9.4 Test Set-up:

Refer to section 7.4 for details.

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#### 9.5 Measurement Result

802.11a, 5150~5250 MHz

Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
5180	0.89	11.00	-10.11
5220	1.04	11.00	-9.96
5240	1.03	11.00	-9.97

#### 802.11a, 5250~5350 MHz

Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
5260	2.00	11.00	-9.00
5300	0.70	11.00	-10.30
5320	1.28	11.00	-9.72

#### 802.11a, 5470~5725 MHz

Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
5500	0.94	11.00	-10.06
5580	1.44	11.00	-9.56
5700	1.01	11.00	-9.99

#### 802.11a, 5725~5850 MHz

Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
5745	7.11	30.00	-22.89
5785	6.85	30.00	-23.15
5825	6.32	30.00	-23.68

#### Note: Offset 11.4dB

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802.11n HT20, 5150~5250 MHz

Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
5180	1.57	11.00	-9.43
5220	0.30	11.00	-10.70
5240	-0.39	11.00	-11.39

802.11n HT20, 5250~5350 MHz

Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
5260	-0.36	11.00	-11.36
5300	-0.75	11.00	-11.75
5320	-2.23	11.00	-13.23

802.11n HT20, 5470~5725 MHz

Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
5500	-0.71	11.00	-11.71
5580	-0.96	11.00	-11.96
5700	-0.15	11.00	-11.15

802.11n HT20, 5725~5850 MHz

Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
5745	6.17	30.00	-23.83
5785	6.52	30.00	-23.48
5825	5.85	30.00	-24.15

Note: Offset 11.4dB

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<b>&gt; 灣檢驗科技股份有限公司</b>	t (886-2) 2299-3279	f (886-2) 2298-0488	www.tw.sgs.com	



#### 802.11n HT40, 5150~5250 MHz

Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
5190	-6.04	11.00	-17.04
5230	-3.59	11.00	-14.59

#### 802.11n HT40, 5250~5350 MHz

Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
5270	-3.12	11.00	-14.12
5310	-6.30	11.00	-17.30

#### 802.11n HT40, 5470~5725 MHz

Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
5510	-6.42	11.00	-17.42
5550	-3.58	11.00	-14.58
5670	-7.10	11.00	-18.10

#### 802.11n HT40, 5725~5850 MHz

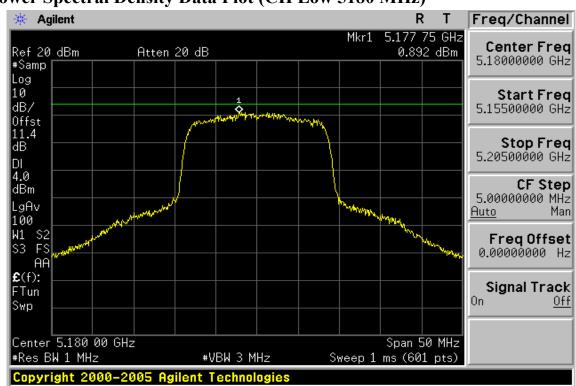
Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
5755	3.54	30.00	-26.46
5795	2.48	30.00	-27.52

Note: Offset 11.4dB

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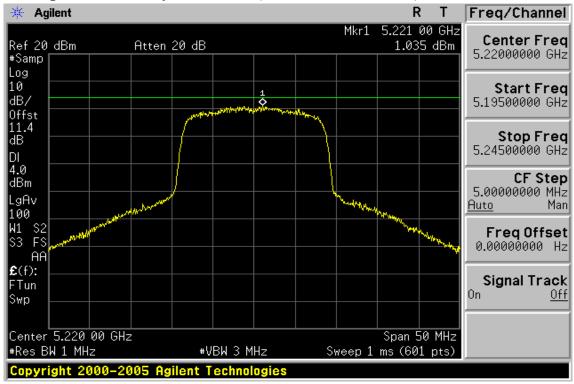
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### 802.11a, 5150~5250 MHz Peak Power Spectral Density Data Plot (CH Low 5180 MHz)

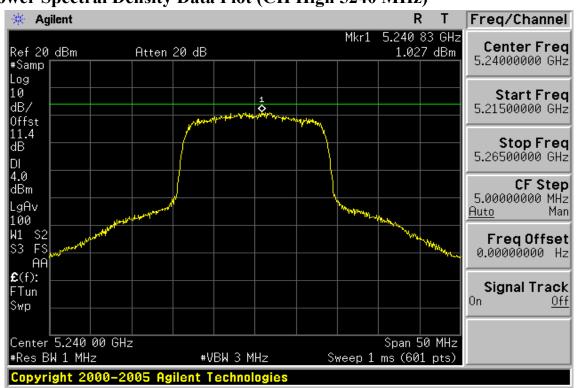
Peak Power Spectral Density Data Plot (CH Mid 5220 MHz)



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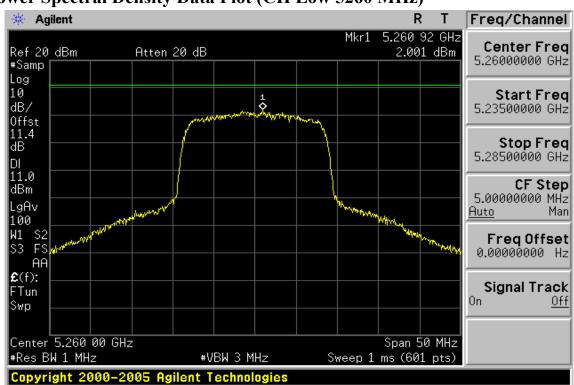
### Peak Power Spectral Density Data Plot (CH High 5240 MHz)

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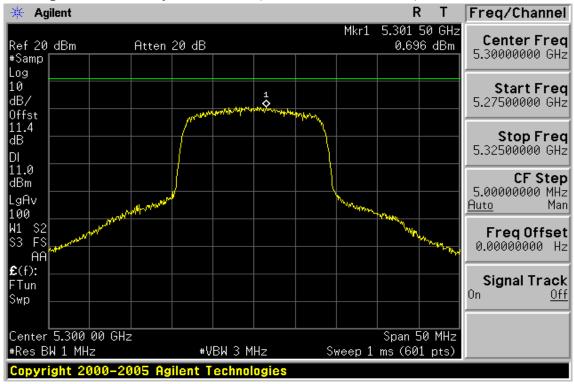
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### 802.11a, 5250~5350 MHz Peak Power Spectral Density Data Plot (CH Low 5260 MHz)

Peak Power Spectral Density Data Plot (CH Mid 5300 MHz)

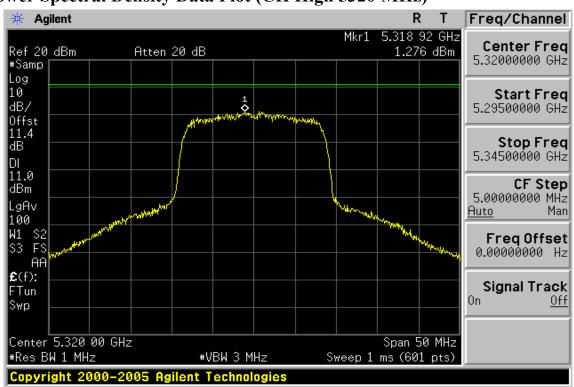


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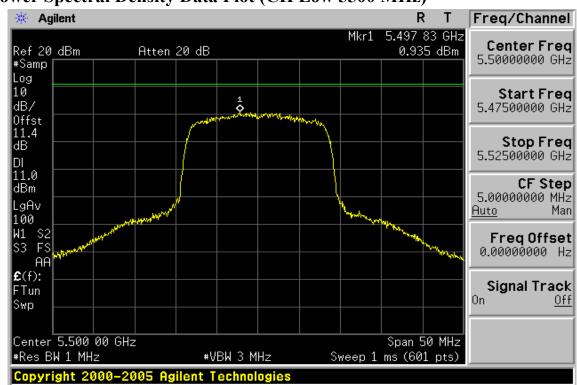
### Peak Power Spectral Density Data Plot (CH High 5320 MHz)

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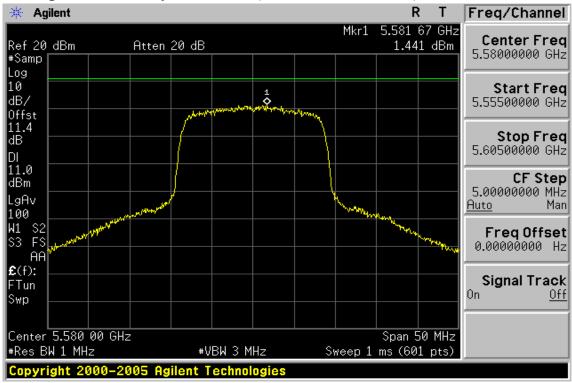
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### 802.11a, 5470~5725 MHz Peak Power Spectral Density Data Plot (CH Low 5500 MHz)

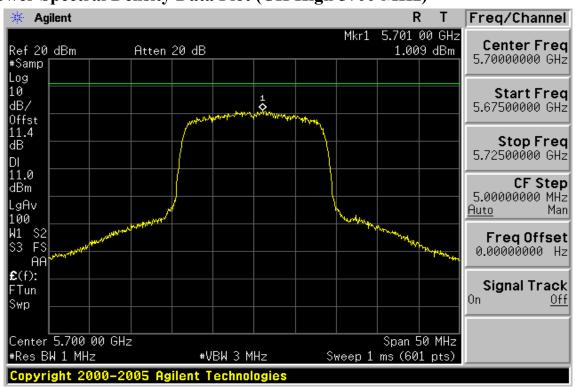
Peak Power Spectral Density Data Plot (CH Mid 5580 MHz)



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### Peak Power Spectral Density Data Plot (CH High 5700 MHz)

### 802.11a, 5725~5850 MHz

### Peak Power Spectral Density Data Plot (CH Low 5745 MHz)

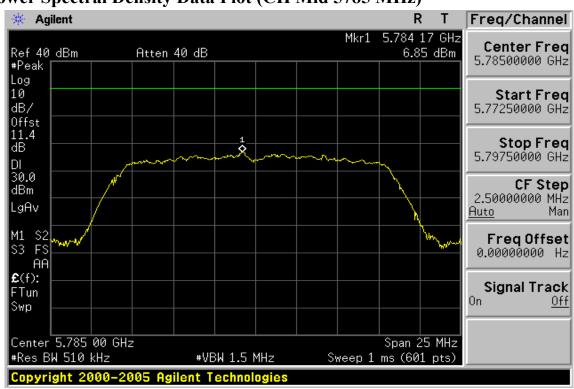


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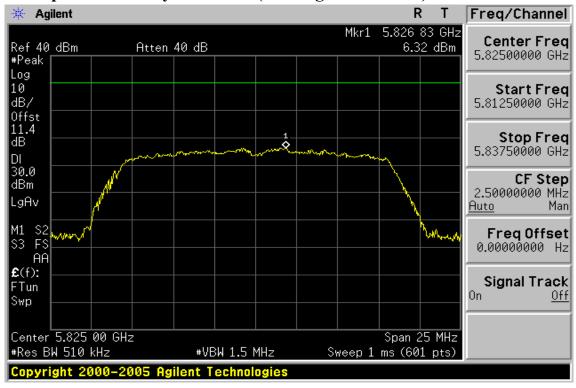
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# Peak Power Spectral Density Data Plot (CH Mid 5785 MHz)

### Peak Power Spectral Density Data Plot (CH High 5825 MHz)



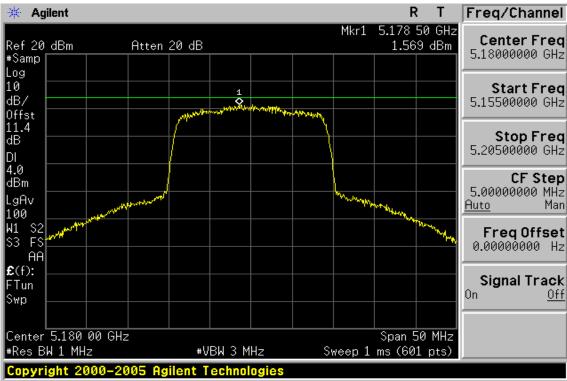
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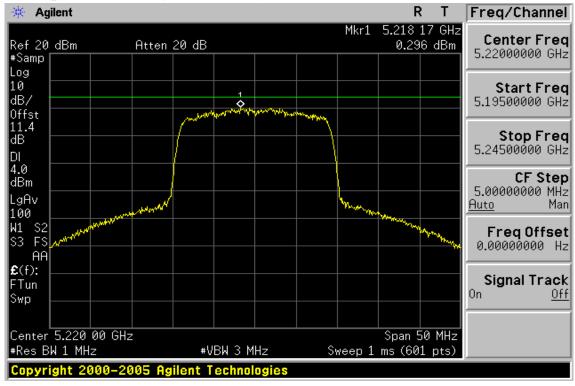
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# 802.11n HT20, 5150~5250 MHz Peak Power Spectral Density Data Plot (CH Low 5180 MHz)



Peak Power Spectral Density Data Plot (CH Mid 5220 MHz)

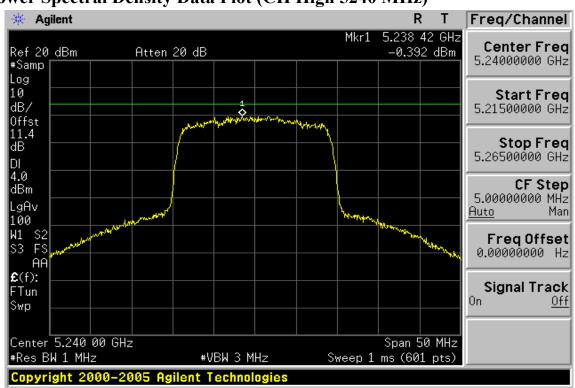


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#### Peak Power Spectral Density Data Plot (CH High 5240 MHz)

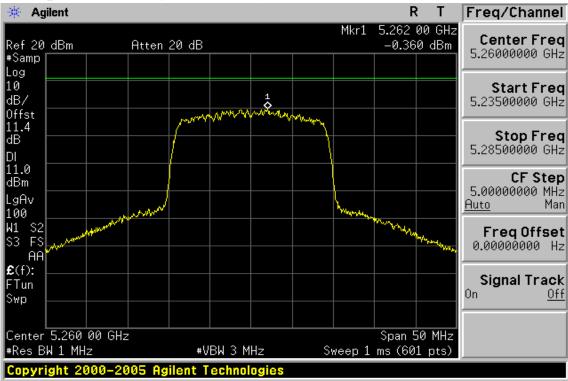
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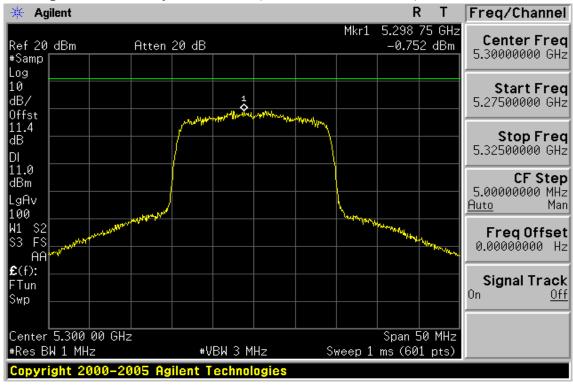
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#### 802.11n HT20, 5250~5350 MHz Peak Power Spectral Density Data Plot (CH Low 5260MHz)



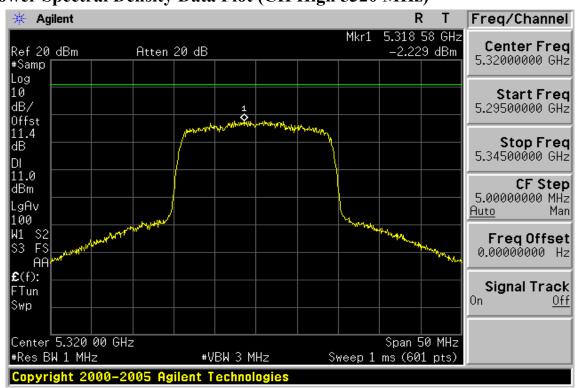
Peak Power Spectral Density Data Plot (CH Mid 5300 MHz)



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#### Peak Power Spectral Density Data Plot (CH High 5320 MHz)

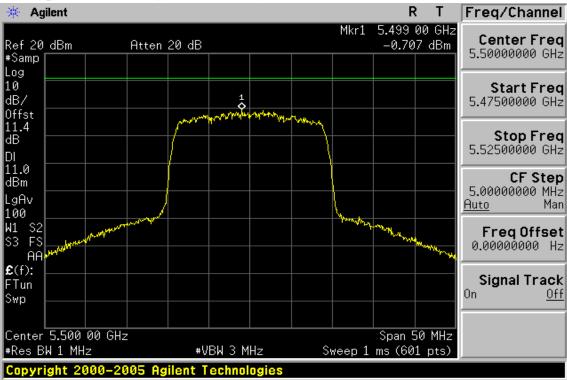
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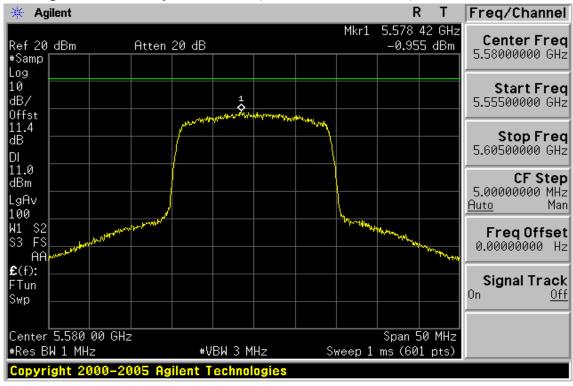
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### 802.11n HT20, 5470~5725 MHz Peak Power Spectral Density Data Plot (CH Low 5500 MHz)



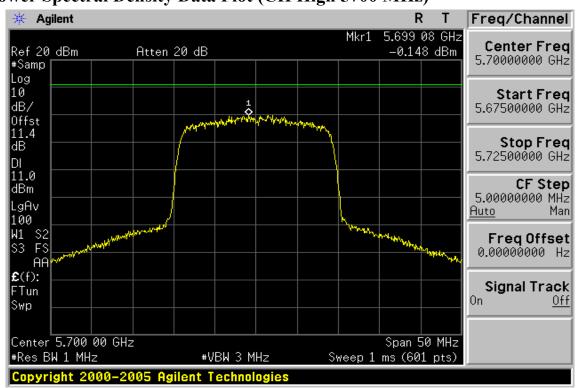
Peak Power Spectral Density Data Plot (CH Mid 5580MHz)



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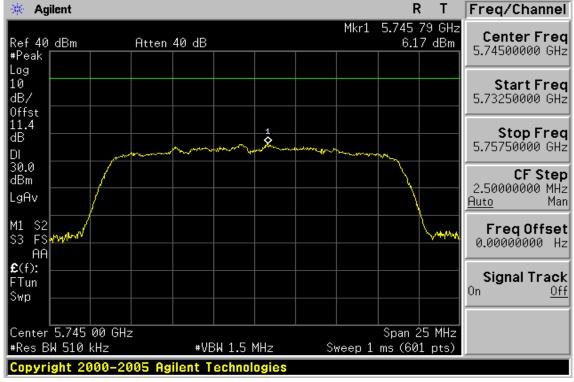
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#### Peak Power Spectral Density Data Plot (CH High 5700 MHz)

#### 802.11n HT20, 5725~5850 MHz

#### Peak Power Spectral Density Data Plot (CH Low 5745 MHz)

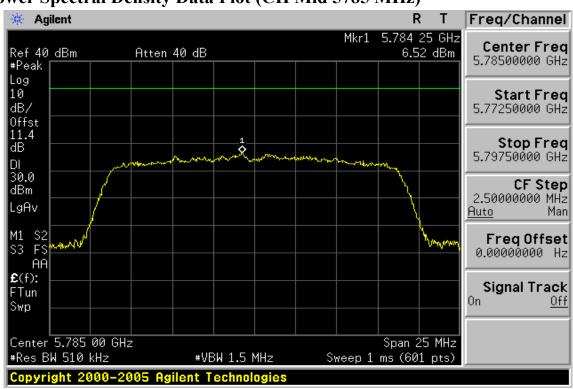


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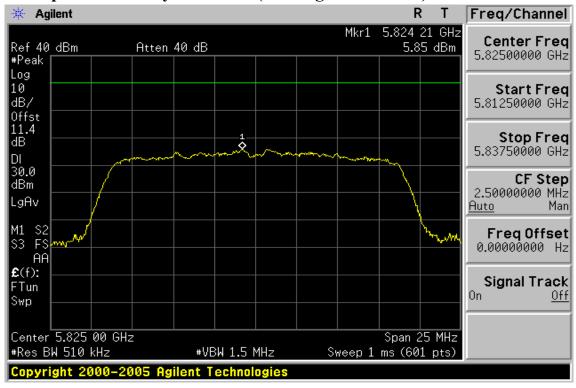
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#### Peak Power Spectral Density Data Plot (CH Mid 5785 MHz)

#### Peak Power Spectral Density Data Plot (CH High 5825 MHz)



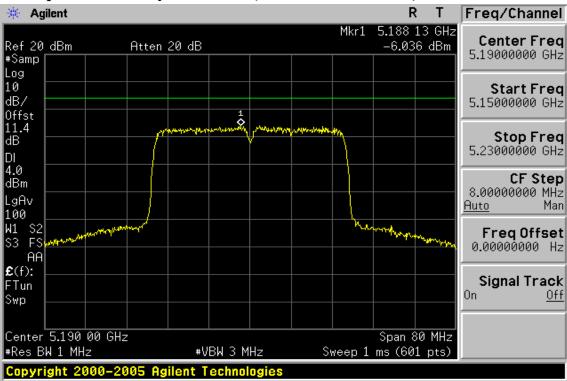
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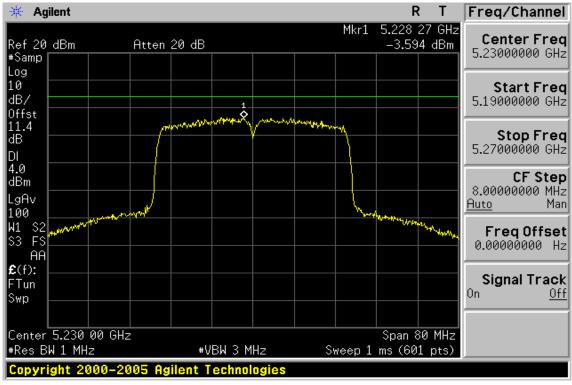
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#### 802.11n HT40, 5150~5250 MHz Peak Power Spectral Density Data Plot (CH Low 5190 MHz)



Peak Power Spectral Density Data Plot (CH High 5230 MHz)



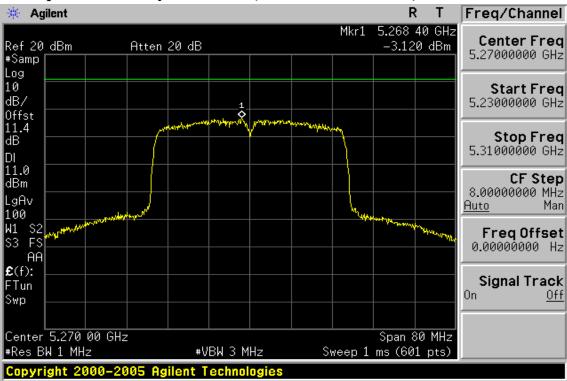
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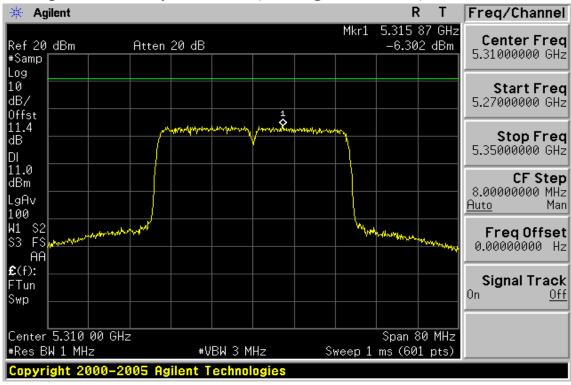
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#### 802.11n HT40, 5250~5350 MHz Peak Power Spectral Density Data Plot (CH Low 5270 MHz)



Peak Power Spectral Density Data Plot (CH High 5310 MHz)



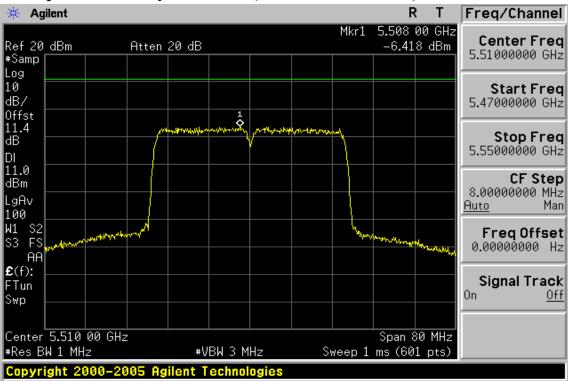
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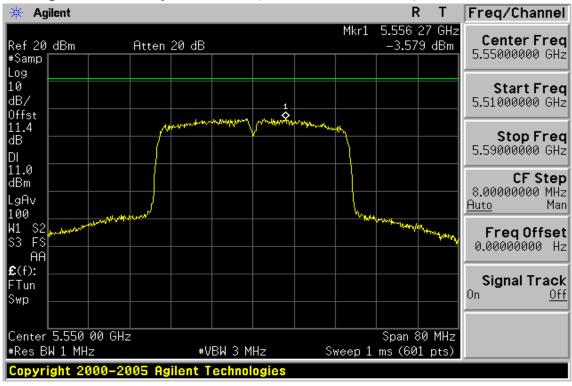
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### 802.11n HT40, 5470~5725 MHz Peak Power Spectral Density Data Plot (CH Low 5510 MHz)



#### Peak Power Spectral Density Data Plot (CH Mid 5550 MHz)

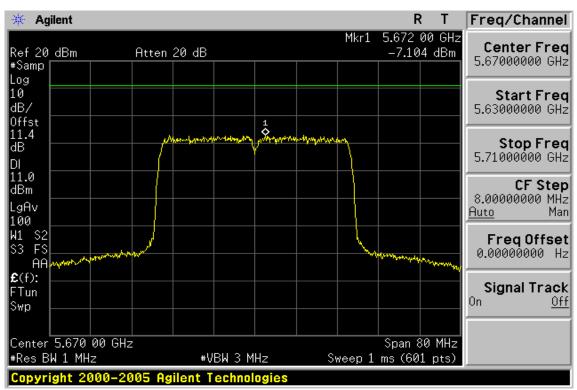


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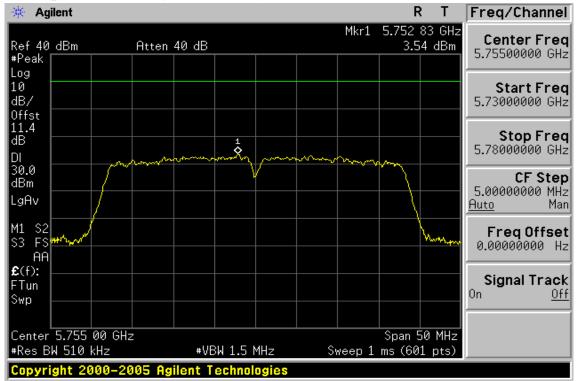




### Peak Power Spectral Density Data Plot (CH High 5670 MHz)

### 802.11n HT40, 5725~5850 MHz

#### Peak Power Spectral Density Data Plot (CH Low 5755 MHz)

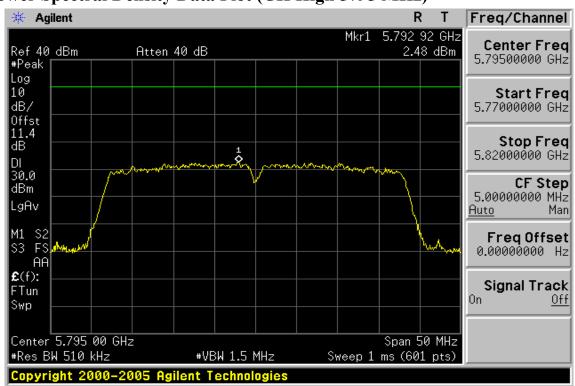


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#### Peak Power Spectral Density Data Plot (CH High 5795 MHz)

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# 10. UNDESIRABLE EMISSION - RADIATED MEASUREMENT110.1 Standard Applicable

According to §15.407(b) (6) (7),

(b) Undesirable Emission Limits: Except as shown in Paragraph (b)(6) of this section, the peak emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in Section 15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in Section 15.207.
- (2) The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.
- (3) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency block edges as the design of the equipment permits.

Procedure H1) a) b) c) are adopted, KDB 789033 D02, where the conducted measurement is being used to comply with out of emission requirement as per FCC 15.407 b) 6) 7)

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#### **§15.205- RESTRICTED BANDS OF OPERATIONS**

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
<sup>1</sup> 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	( <sup>2</sup> )
13.36 - 13.41	322 - 335.4		

<sup>1</sup> Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup> Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

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#### §15.209- RADIATED EMISSION LIMITS: GENERAL REQUIREMENTS

FCC PART 15.209					
MEASURING DISTANCE OF 3 METER					
FREQUENCY RANGE	FIELD STRENGTH	FIELD STRENGTH			
(MHz)	(dBuV/m)				
30-88	100	40			
88-216	150	43.5			
216-960	200	46			
Above 960	500	54			

## FCC PART 15 209

#### **10.1.1 Transmitter Spurious Emission Limits**

Spurious emissions from licence-exempt transmitters shall comply with the field strength limits shown below. Additionally, the level of any transmitter spurious emission shall not exceed the level of the transmitter's fundamental emission.

#### Table 5: General Field Strength Limits for Transmitters at Frequencies Above 30 MHz

Frequency (MHz)	Field Strength (microvolt/m at 3 metres)
30-88	100
88-216	150
216-960	200
Above 960	500

**Note:** Transmitting devices are not permitted in Table 1 bands or, unless stated otherwise, in TV bands (54-72 MHz, 76-88 MHz, 174-216 MHz, 470-608 MHz and 614-806 MHz).

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#### 10.1.2 Unwanted Emission that complies with the undesirable emission ruling by 15.407 (b) (1) (2) (3)

Frequencies (MHz)	EIRP Limit (dBm)	Equivalent Field Strength at
		3m (dBuV/m)
5150 - 5250	-27	68.3
5250 - 5350	-27	68.3
5470 - 5725	-27	68.3
5725 - 5850	-27	68.3

Limit derivation in terms of Field Strength:

 $EIRP = ((E*d)^2) / 30$ , where E is the field in V/m, d is the measurement distance (3m), EIRP is the equivalent isotropically radiated power in Watts.

E = 1000000\* (30\*EIRP)^(1/2) / 3 uV/m = 68.3dBuV/m

#### 10.1.3 Band edge that complies with the ruling by FCC 14-30 (iv) (6),

Frequencies (MHz)	EIRP Limit (dBm)	Equivalent Field Strength at
		3m (dBuV/m)
5725 - 5850	-17	78.2

Limit derivation in terms of band edge:

 $E = 1000000* (30*EIRP)^{(1/2)} / 3 uV/m$ 

= 78.2dBuV/m

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#### 10.2 EUT Setup

- 1. The radiated emission tests were performed in the 3 meter open-test site, using the setup in accordance with the ANSI C63.4:2009 & ANSI C63.10:2009.
- 2. The EUT was put in the front of the test table. The host PC system was placed on the center of the back edge on the test table. The peripherals like modem, monitor printer, K/B, and mouse were placed on the side of the host PC system. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
- 3. The keyboard was placed directly in the front of the monitor, flushed with the front tabletop. The mouse was placed next to the Keyboard, flushed with the back of keyboard.
- 4. The spacing between the peripherals was 10 centimeters.
- 5. External I/O cables were draped along the edge of the test table and bundle when necessary.
- 6. The host PC system was connected with 120Vac/60Hz power source.

#### **10.3** Measurement Procedure

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Repeat above procedures until all frequency measured were complete.

For measurements below 1GHz, follow the KDB 789033 D01 requirements in section H)3), "General Requirements for Unwanted Emissions Measurements" Compliance shall be demonstrated using CISPR quasi-peak detection; however, peak detection is permitted as an alternative to quasi-peak detection.

For Measurement above 1GHz, for peak unwanted emission measurements follow the KDB 789033 D02 requirements in section H)5) b), for average unwanted emission measurements follow the KDB 789033 D02 requirements in section H)6) c) or d).

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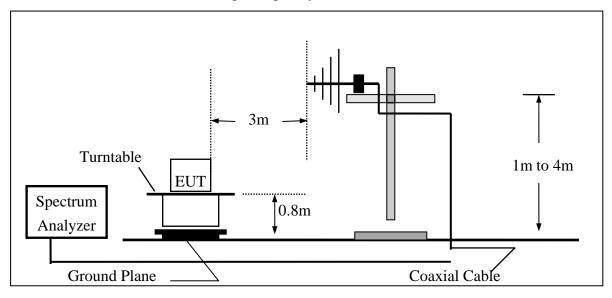
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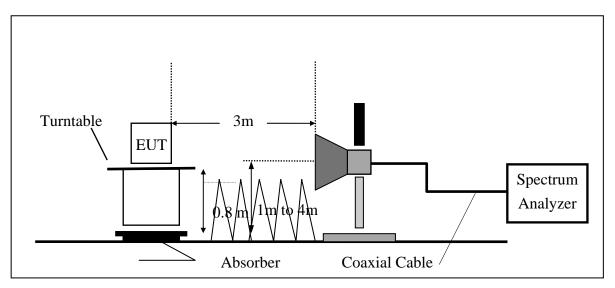


#### **10.4** Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



#### (B) Radiated Emission Test Set-UP Frequency Over 1 GHz



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#### **Measurement Equipment Used:** 10.5

966 Chamber							
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.		
ТҮРЕ		NUMBER	NUMBER	CAL.			
EMI Test Receiver	R&S	ESCI7	100760	05/26/2014	05/25/2015		
Spectrum Analyzer	Agilent	E4446A	MY51100003	05/19/2014	05/18/2015		
EXA Spectrum Analyzer	Agilent	N9010A	MY50420195	01/20/2014	01/19/2015		
Spectrum Analyzer	R&S	FSV-30	101398	10/07/2014	10/06/2015		
Loop Antenna	ETS.LINDGREN	6502	00148045	07/03/2014	07/02/2015		
Bilog Antenna	SCHWAZBECK	VULB9168	378	05/19/2014	05/18/2015		
Horn antenna	ETS.LINDGREN	3117	123995	05/19/2014	05/18/2015		
Horn Antenna	Schwarzbeck	BBHA9170	184	01/23/2014	01/22/2015		
Pre-Amplifier	EMC Instruments Corp.	EMC0126530	980038	01/03/2014	01/02/2015		
Pre-Amplifier	Agilent	8447D	2944A07676	01/03/2014	01/02/2015		
Pre-Amplifier	Agilent	8449B	3008A00578	01/03/2014	01/02/2015		
Pre-Amplifier	EMC Instruments Corp.	EMC184045	980135	01/24/2014	01/23/2015		
5150-5350 Band Reject Filter	Micro-Tronics	BRM50703	1	01/03/2014	01/02/2015		
5470-5725 Band Reject Filter	Micro-Tronics	BRM50704	1	01/03/2014	01/02/2015		
5725-5875 Band Reject Filter	Micro-Tronics	BRM50705	1	01/03/2014	01/02/2015		
1GHz High Pass Filter	Micro-Tronics	HPM50108	32	02/27/2014	02/26/2015		
2GHz High Pass Filter	Micro-Tronics	HPM50110	36	02/27/2014	02/26/2015		
Attenuator	Mini-Circuit	BW-S10W2+	002	02/27/2014	02/26/2015		
Turn Table	HD	DT420	N/A	N.C.R	N.C.R		
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R		
Controller	HD	HD100	N/A	N.C.R	N.C.R		
Low Loss Cable	Huber Suhner	966_Rx	9	01/03/2014	01/02/2015		
3m Site NSA	SGS	966 chamber	N/A	07/15/2014	07/14/2015		

Note: please refer to next page for the tablet.

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#### 10.6 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

#### 10.7 Measurement Result

Refer to attach tabular data sheets.

#### NOTE:

The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 100kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.

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#### Radiated Spurious Emission Measurement Result 802.11a, 5150~5250 MHz

For measurement plot of radiation revealing the compliance of 15.209, please refer to Appendix I.

Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5180 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX LOW	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
43.58	S	Peak	43.00	-13.27	29.73	40.00	-10.27
107.60	S	Peak	39.74	-16.47	23.27	43.50	-20.23
225.94	S	Peak	35.60	-14.14	21.46	46.00	-24.54
409.27	S	Peak	29.12	-8.81	20.31	46.00	-25.69
592.60	S	Peak	28.11	-5.10	23.01	46.00	-22.99
863.23	S	Peak	27.92	-1.45	26.47	46.00	-19.53
10360.00	Н	Peak	34.00	15.30	49.30	68.30	-19.00
15540.00	Н						
20720.00	Н						
25900.00	Н						
31080.00	Н						
36260.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5180 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX LOW	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

36260.00

Η

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV∕m	dB
51.34	S	Peak	30.41	-13.00	17.41	40.00	-22.59
147.37	S	Peak	27.58	-12.81	14.77	43.50	-28.73
360.77	S	Peak	26.60	-9.90	16.70	46.00	-29.30
581.93	S	Peak	28.01	-5.08	22.93	46.00	-23.07
764.29	S	Peak	28.18	-2.59	25.59	46.00	-20.41
941.80	S	Peak	27.16	0.16	27.32	46.00	-18.68
10360.00	Н	Peak	34.14	15.30	49.44	68.30	-18.86
15540.00	Н						
20720.00	Н						
25900.00	Н						
31080.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5220 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX MID	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

36540.00

Η

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
43.58	S	Peak	42.55	-13.27	29.28	40.00	-10.72
107.60	S	Peak	39.31	-16.47	22.84	43.50	-20.66
223.03	S	Peak	36.52	-14.24	22.28	46.00	-23.72
382.11	S	Peak	28.23	-9.43	18.80	46.00	-27.20
585.81	S	Peak	27.35	-5.04	22.31	46.00	-23.69
783.69	S	Peak	27.84	-2.56	25.28	46.00	-20.72
940.83	Н	Peak	26.66	0.14	26.80	46.00	-19.20
10440.00	Н	Peak	34.28	15.05	49.33	68.30	-18.97
15660.00	Н						
20880.00	Н						
26100.00	Н						
31320.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5220 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX MID	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

Factor(dB) = Antenna Factor( $dB\mu V/m$ ) + Cable Loss(dB) – Pre\_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
111.48	S	Peak	30.69	-15.86	14.83	43.50	-28.67
286.08	S	Peak	27.63	-11.51	16.12	46.00	-29.88
477.17	S	Peak	28.09	-7.65	20.44	46.00	-25.56
691.54	S	Peak	28.18	-3.69	24.49	46.00	-21.51
857.41	S	Peak	28.07	-1.50	26.57	46.00	-19.43
955.38	S	Peak	27.48	0.32	27.80	46.00	-18.20
10440.00	Н	Peak	34.99	15.05	50.04	68.30	-18.26
15660.00	Н						
20880.00	Н						
26100.00	Н						
31320.00	Н						
36540.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5240 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

36680.00

Η

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
43.58	S	Peak	42.26	-13.27	28.99	40.00	-11.01
155.13	S	Peak	36.23	-12.51	23.72	43.50	-19.78
224.00	S	Peak	36.32	-14.20	22.12	46.00	-23.88
377.26	S	Peak	28.14	-9.54	18.60	46.00	-27.40
586.78	S	Peak	28.76	-5.02	23.74	46.00	-22.26
807.94	S	Peak	27.50	-2.06	25.44	46.00	-20.56
10480.00	Н	Peak	34.96	15.48	50.44	68.30	-17.86
15720.00	Н						
20960.00	Н						
26200.00	Н						
31440.00	Н						
586.78 807.94 10480.00 15720.00 20960.00 26200.00	S S H H H	Peak Peak Peak  	28.76 27.50	-5.02 -2.06	23.74 25.44	46.00 46.00	-22.26 -20.56

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5240 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

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36680.00

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV∕m	dB
148.34	S	Peak	30.62	-12.77	17.85	43.50	-25.65
286.08	S	Peak	28.53	-11.51	17.02	46.00	-28.98
454.86	S	Peak	27.38	-8.07	19.31	46.00	-26.69
670.20	S	Peak	27.20	-4.05	23.15	46.00	-22.85
822.49	S	Peak	28.42	-2.01	26.41	46.00	-19.59
910.76	S	Peak	29.05	-0.46	28.59	46.00	-17.41
10480.00	Н	Peak	34.53	15.48	50.01	68.30	-18.29
15720.00	Н						
20960.00	Н						
26200.00	Н						
31440.00	Н						

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#### Band edge falling to restricted band

For measurement plot of	radiation revealing the	compliance of 15.209, please re	fer to Appendix I
Operation Band	:802.11 a	Test Date	:2014-11-17
Fundamental Frequency	:5180 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:Band Edge LOW	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5150.00	E	Average	39.31	7.54	46.85	54.00	-7.15
5150.00	E	Peak	55.43	7.54	62.97	74.00	-11.03

Operation Band	:802.11 a	Test Date	:2014-11-17
Fundamental Frequency	:5180 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:Band Edge LOW	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5150.00	Е	Average	41.41	7.54	48.95	54.00	-5.05
5150.00	Е	Peak	62.61	7.54	70.15	74.00	-3.85

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31080.00

36260.00

H H

#### FCC ID: PY7-PM0855

#### **Operation Band** :802.11 n20M Test Date :2014-11-18 **Fundamental Frequency** :5180 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :TX LOW Engineer :Curry EUT Pol. :E1 Plane Measurement Antenna Pol. :VERTICAL Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB) $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency. "E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency. "---": denotes Noise Floor. Freq. Note Detector Spectrum Factor Actual Limit Margin FS Mode Reading Level @3m dBµV/m PK/QP/AV dBµV dBµV/m MHz F/H/E/S dB dB 43.58 S Peak 42.95 -13.2729.68 40.00 -10.3287.23 S 42.58 24.08 40.00 -15.92 Peak -18.50 223.03 S Peak 35.55 -14.2421.31 46.00 -24.69S 412.18 Peak 27.83 -8.77 19.06 46.00 -26.94S 696.39 Peak 28.26 -3.86 24.4046.00 -21.60907.85 S Peak 27.54 -0.55 26.99 46.00 -19.01 10360.00 Η 34.24 15.30 49.54 68.30 -18.76 Peak 15540.00 Η 20720.00 Η \_\_\_ Η 25900.00

#### Radiated Spurious Emission Measurement Result 802.11n HT20, 5150~5250 MHz

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5180 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX LOW	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

36260.00

Η

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
107.60	S	Peak	31.79	-16.47	15.32	43.50	-28.18
252.13	S	Peak	28.17	-12.98	15.19	46.00	-30.81
420.91	S	Peak	27.27	-8.79	18.48	46.00	-27.52
584.84	S	Peak	28.21	-5.04	23.17	46.00	-22.83
779.81	S	Peak	27.48	-2.66	24.82	46.00	-21.18
903.00	S	Peak	28.22	-0.74	27.48	46.00	-18.52
10360.00	Н	Peak	34.77	15.30	50.07	68.30	-18.23
15540.00	Н						
20720.00	Н						
25900.00	Н						
31080.00	Н						

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5220 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX MID	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
42.61	S	Peak	42.60	-13.35	29.25	40.00	-10.75
155.13	S	Peak	35.15	-12.51	22.64	43.50	-20.86
384.05	S	Peak	27.16	-9.40	17.76	46.00	-28.24
593.57	S	Peak	29.19	-5.13	24.06	46.00	-21.94
745.86	S	Peak	27.87	-2.68	25.19	46.00	-20.81
858.38	S	Peak	28.15	-1.47	26.68	46.00	-19.32
10440.00	Н	Peak	34.27	15.05	49.32	68.30	-18.98
15660.00	Н						
20880.00	Н						
26100.00	Н						
31320.00	Н						
36540.00	Н						

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5220 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX MID	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

36540.00

Η

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
44.55	S	Peak	31.21	-13.21	18.00	40.00	-22.00
148.34	S	Peak	29.13	-12.77	16.36	43.50	-27.14
286.08	S	Peak	28.69	-11.51	17.18	46.00	-28.82
438.37	S	Peak	28.87	-8.67	20.20	46.00	-25.80
682.81	S	Peak	28.17	-3.63	24.54	46.00	-21.46
810.85	S	Peak	28.06	-2.03	26.03	46.00	-19.97
10440.00	Н	Peak	33.99	15.05	49.04	68.30	-19.26
15660.00	Н						
20880.00	Н						
26100.00	Н						
31320.00	Н						

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5240 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

36680.00

Η

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV∕m	dB
42.61	S	Peak	41.46	-13.35	28.11	40.00	-11.89
108.57	S	Peak	39.56	-16.28	23.28	43.50	-20.22
225.94	S	Peak	35.28	-14.14	21.14	46.00	-24.86
450.01	S	Peak	28.63	-8.22	20.41	46.00	-25.59
594.54	S	Peak	28.31	-5.18	23.13	46.00	-22.87
788.54	S	Peak	27.65	-2.42	25.23	46.00	-20.77
10480.00	Н	Peak	35.32	15.48	50.80	68.30	-17.50
15720.00	Н						
20960.00	Н						
26200.00	Н						
31440.00	Н						

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5240 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

36680.00

Η

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
52.31	S	Peak	28.81	-13.04	15.77	40.00	-24.23
162.89	S	Peak	27.10	-12.51	14.59	43.50	-28.91
362.71	S	Peak	27.65	-9.86	17.79	46.00	-28.21
646.92	S	Peak	28.27	-4.84	23.43	46.00	-22.57
815.70	S	Peak	27.85	-2.01	25.84	46.00	-20.16
935.01	S	Peak	27.78	0.03	27.81	46.00	-18.19
10480.00	Н	Peak	34.64	15.48	50.12	68.30	-18.18
15720.00	Н						
20960.00	Н						
26200.00	Н						
31440.00	Н						

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Operation Band :802	2.11 n20M Tes	est Date	:2014-11-17
Fundamental Frequency :518	80 MHz Ter	mp./Humi.	:23 deg_C / 58 RH
Operation Mode :Ban	and Edge LOW En	ngineer	:Tin
EUT Pol. :E1	Plane Me	easurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5150.00	Е	Average	39.27	7.54	46.81	54.00	-7.19
5150.00	Е	Peak	51.94	7.54	59.48	74.00	-14.52
Operation Ban Fundamental I		:802.11 n20M :5180 MHz		t Date np./Humi.		:2014-11-17 :23 deg_C / 5	8 RH

Fundamental Frequency	:5180 MHz	Temp./Humi.	$:23 \text{ deg}_C / 58 \text{ RH}$
Operation Mode	:Band Edge LOW	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

Factor(dB) = Antenna Factor( $dB\mu V/m$ ) + Cable Loss(dB) – Pre\_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5150.00	E	Average	41.39	7.54	48.93	54.00	-5.07
5150.00	E	Peak	59.63	7.54	67.17	74.00	-6.83

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25950.00

31140.00

36330.00

Η

H H

#### FCC ID: PY7-PM0855

#### :2014-11-18 **Fundamental Frequency** :5190 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :TX LOW Engineer :Curry EUT Pol. :E1 Plane Measurement Antenna Pol. :VERTICAL Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB) $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency. "E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency. "---": denotes Noise Floor. Freq. Note Detector Spectrum Factor Actual Limit Margin FS Mode Reading Level @3m dBµV/m PK/QP/AV dBµV dBµV/m MHz F/H/E/S dB dB 32.91 S Peak 49.38 -13.8835.50 40.00 -4.5099.84 S 34.79 -17.96 43.50 Peak 16.83 -26.67 286.08 S Peak 28.98 -11.51 17.47 46.00 -28.53443.22 S Peak 28.83 -8.50 20.33 46.00 -25.67 S 688.63 Peak 28.05 -3.64 24.41 46.00 -21.59942.77 S Peak 27.67 0.17 27.84 46.00 -18.16 10380.00 Η 34.54 15.16 49.70 68.30 -18.60 Peak 15570.00 Η 20760.00 Η \_\_\_

# Radiated Spurious Emission Measurement Result 802.11n HT40, 5150~5250 MHzOperation Band:802.11 n40MTest Date:2014

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Operation Band	:802.11 n40M	Test Date	:2014-11-18
Fundamental Frequency	:5190 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX LOW	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

36330.00

Η

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
32.91	S	Peak	35.12	-13.88	21.24	40.00	-18.76
114.39	S	Peak	32.56	-15.56	17.00	43.50	-26.50
286.08	S	Peak	28.80	-11.51	17.29	46.00	-28.71
459.71	S	Peak	28.37	-7.93	20.44	46.00	-25.56
686.69	S	Peak	28.41	-3.64	24.77	46.00	-21.23
953.44	S	Peak	27.45	0.30	27.75	46.00	-18.25
10380.00	Н	Peak	34.08	15.16	49.24	68.30	-19.06
15570.00	Н						
20760.00	Н						
25950.00	Н						
31140.00	Н						

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Operation Band	:802.11 n40M	Test Date	:2014-11-18
Fundamental Frequency	:5230 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
32.91	S	Peak	49.72	-13.88	35.84	40.00	-4.16
99.84	S	Peak	36.44	-17.96	18.48	43.50	-25.02
286.08	S	Peak	29.07	-11.51	17.56	46.00	-28.44
581.93	S	Peak	28.89	-5.08	23.81	46.00	-22.19
773.99	S	Peak	27.92	-2.66	25.26	46.00	-20.74
938.89	S	Peak	28.08	0.11	28.19	46.00	-17.81
10460.00	Н	Peak	34.19	15.25	49.44	68.30	-18.86
15690.00	Н						
20920.00	Н						
26150.00	Н						
31380.00	Н						
36610.00	Н						

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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Operation Band	:802.11 n40M	Test Date	:2014-11-18
Fundamental Frequency	:5230 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
32.91	S	Peak	35.38	-13.88	21.50	40.00	-18.50
110.51	S	Peak	32.79	-15.96	16.83	43.50	-26.67
286.08	S	Peak	29.14	-11.51	17.63	46.00	-28.37
503.36	S	Peak	27.97	-7.39	20.58	46.00	-25.42
674.08	S	Peak	28.35	-3.88	24.47	46.00	-21.53
930.16	S	Peak	28.75	-0.06	28.69	46.00	-17.31
10460.00	Н	Peak	34.22	15.25	49.47	68.30	-18.83
15690.00	Н						
20920.00	Н						
26150.00	Н						
31380.00	Н						
36610.00	Н						

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:HORIZONTAL

Operation Band	:802.11 n40M	Test Date	:2014-11-17
Fundamental Frequency	:5190 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:Band Edge LOW	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Lev	el	FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5150.00	Е	Average	39.29	7.54	46.83	54.00	-7.17
5150.00	E	Peak	56.20	7.54	63.74	74.00	-10.26
Fundamental Frequency :519		:802.11 n40N :5190 MHz :Band Edge I		Test Date Temp./Humi. Engineer		:2014-11-17 :23 deg_C / 5 :Tin	8 RH

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

:E1 Plane

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

EUT Pol.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Measurement Antenna Pol.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5150.00	E	Average	45.18	7.54	52.72	54.00	-1.28
5150.00	E	Peak	61.60	7.54	69.14	74.00	-4.86

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台灣檢驗科技股份有限公司	t (886-2) 2299-3279	f (886-2) 2298-0488	www.tw.sgs.com	



# Radiated Spurious Emission Measurement Result 802.11a, 5250MHz-5350MHz

Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5260 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX LOW	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

#### "---": denotes Noise Floor.

36820.00

Η

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
41.64	S	Peak	43.51	-13.42	30.09	40.00	-9.91
88.20	S	Peak	43.38	-18.68	24.70	43.50	-18.80
224.97	S	Peak	36.02	-14.17	21.85	46.00	-24.15
442.25	S	Peak	28.59	-8.54	20.05	46.00	-25.95
590.66	S	Peak	27.98	-5.02	22.96	46.00	-23.04
861.29	S	Peak	27.90	-1.44	26.46	46.00	-19.54
10520.00	Н	Peak	34.40	15.36	49.76	68.30	-18.54
15780.00	Н						
21040.00	Н						
26300.00	Н						
31560.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5260 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX LOW	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

36820.00

Η

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
43.58	S	Peak	28.59	-13.27	15.32	40.00	-24.68
155.13	S	Peak	28.47	-12.51	15.96	43.50	-27.54
286.08	S	Peak	28.24	-11.51	16.73	46.00	-29.27
465.53	S	Peak	27.56	-7.81	19.75	46.00	-26.25
682.81	S	Peak	27.75	-3.63	24.12	46.00	-21.88
929.19	S	Peak	27.35	-0.09	27.26	46.00	-18.74
10520.00	Н	Peak	34.79	15.36	50.15	68.30	-18.15
15780.00	Н						
21040.00	Н						
26300.00	Н						
31560.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5300 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX MID	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV∕m	dB
42.61	S	Peak	42.56	-13.35	29.21	40.00	-10.79
107.60	S	Peak	39.76	-16.47	23.29	43.50	-20.21
221.09	S	Peak	36.24	-14.30	21.94	46.00	-24.06
421.88	S	Peak	27.04	-8.79	18.25	46.00	-27.75
635.28	S	Peak	28.04	-5.35	22.69	46.00	-23.31
897.18	S	Peak	26.88	-0.97	25.91	46.00	-20.09
10600.00	Н	Average	22.32	15.63	37.95	54.00	-16.05
10600.00	Н	Peak	33.79	15.63	49.42	74.00	-24.58
15900.00	Н						
21200.00	Н						
26500.00	Н						
31800.00	Н						
37100.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5300 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX MID	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
41.64	S	Peak	29.68	-13.42	16.26	40.00	-23.74
149.31	S	Peak	30.09	-12.73	17.36	43.50	-26.14
286.08	S	Peak	29.21	-11.51	17.70	46.00	-28.30
446.13	S	Peak	27.90	-8.38	19.52	46.00	-26.48
677.96	S	Peak	27.81	-3.71	24.10	46.00	-21.90
898.15	S	Peak	27.09	-0.93	26.16	46.00	-19.84
10600.00	Н	Average	22.52	15.63	38.15	54.00	-15.85
10600.00	Н	Peak	34.60	15.63	50.23	74.00	-23.77
15900.00	Н						
21200.00	Н						
26500.00	Н						
31800.00	Н						
37100.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5320 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
42.61	S	Peak	42.41	-13.35	29.06	40.00	-10.94
155.13	S	Peak	35.85	-12.51	23.34	43.50	-20.16
383.08	S	Peak	29.15	-9.41	19.74	46.00	-26.26
528.58	S	Peak	28.26	-7.35	20.91	46.00	-25.09
759.44	S	Peak	27.33	-2.52	24.81	46.00	-21.19
935.98	S	Peak	27.83	0.06	27.89	46.00	-18.11
10640.00	Н	Average	22.52	15.64	38.16	54.00	-15.84
10640.00	Н	Peak	34.24	15.64	49.88	74.00	-24.12
15960.00	Н						
21280.00	Н						
26600.00	Н						
31920.00	Н						
37240.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5320 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV∕m	dB
106.63	S	Peak	32.06	-16.64	15.42	43.50	-28.08
286.08	S	Peak	27.96	-11.51	16.45	46.00	-29.55
454.86	S	Peak	27.13	-8.07	19.06	46.00	-26.94
667.29	S	Peak	28.16	-4.13	24.03	46.00	-21.97
770.11	S	Peak	27.71	-2.69	25.02	46.00	-20.98
910.76	S	Peak	27.40	-0.46	26.94	46.00	-19.06
10640.00	Н	Average	23.23	15.64	38.87	54.00	-15.13
10640.00	Н	Peak	34.65	15.64	50.29	74.00	-23.71
15960.00	Н						
21280.00	Н						
26600.00	Н						
31920.00	Н						
37240.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-17
Fundamental Frequency	:5320 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:Band Edge HIGH	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Leve	1	FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	Е	Average	39.59	7.79	47.38	54.00	-6.62
5350.00	E	Peak	51.67	7.79	59.46	74.00	-14.54
Operation Ban Fundamental F		:802.11 a :5320 MHz		Test Date Temp./Humi.		:2014-11-17 :23 deg_C / 5	8 RH

Operation Mode	:Band Edge HIGH	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

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The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	E	Average	40.85	7.79	48.64	54.00	-5.36
5350.00	E	Peak	53.70	7.79	61.49	74.00	-12.51

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<b>&gt; 灣檢驗科技股份有限公司</b>	t (886-2) 2299-3279	f (886-2) 2298-0488	www.tw.sgs.com	



Radiated Spurious Emission Measurement Result 802.11n HT20, 5250~5350 MHz

#### **Operation Band** :802.11 n20M Test Date :2014-11-18 **Fundamental Frequency** :5260 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :TX LOW Engineer :Curry EUT Pol. :E1 Plane Measurement Antenna Pol. :VERTICAL Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB) $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency. "E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency. "---": denotes Noise Floor. Freq. Note Detector Spectrum Factor Actual Limit Margin FS Mode Reading Level @3m dBµV/m PK/QP/AV dBµV dB dBµV/m MHz F/H/E/S dB 42.61 S Peak 40.24 -13.35 26.89 40.00 -13.11 108.57 S 40.73 43.50 -19.05 Peak -16.28 24.45 223.03 S Peak 35.96 -14.2421.72 46.00 -24.28S 341.37 Peak 29.47 -10.38 19.09 46.00 -26.91 S 680.87 Peak 28.69 -3.63 25.06 46.00 -20.94918.52 S Peak 27.96 -0.29 27.67 46.00 -18.33 10520.00 Η 33.97 15.36 49.33 68.30 -18.97 Peak 15780.00 Η 21040.00 Η \_\_\_ Η 26300.00 31560.00 Η

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5260 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX LOW	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

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Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
30.00	S	Peak	32.71	-13.90	18.81	40.00	-21.19
106.63	S	Peak	32.53	-16.64	15.89	43.50	-27.61
341.37	S	Peak	30.35	-10.38	19.97	46.00	-26.03
568.35	S	Peak	28.88	-5.86	23.02	46.00	-22.98
769.14	S	Peak	28.39	-2.67	25.72	46.00	-20.28
948.59	S	Peak	27.59	0.25	27.84	46.00	-18.16
10520.00	Н	Peak	34.33	15.36	49.69	68.30	-18.61
15780.00	Н						
21040.00	Н						
26300.00	Н						
31560.00	Н						

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5300 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX MID	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
42.61	S	Peak	41.62	-13.35	28.27	40.00	-11.73
107.60	S	Peak	40.23	-16.47	23.76	43.50	-19.74
227.88	S	Peak	35.35	-14.07	21.28	46.00	-24.72
425.76	S	Peak	29.00	-8.81	20.19	46.00	-25.81
577.08	S	Peak	28.22	-5.28	22.94	46.00	-23.06
771.08	S	Peak	28.55	-2.69	25.86	46.00	-20.14
10600.00	Н	Average	22.00	15.63	37.63	54.00	-16.37
10600.00	Н	Peak	34.64	15.63	50.27	74.00	-23.73
15900.00	Н						
21200.00	Н						
26500.00	Н						
31800.00	Н						
37100.00	Н						

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5300 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX MID	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
148.34	S	Peak	30.00	-12.77	17.23	43.50	-26.27
342.34	S	Peak	29.59	-10.35	19.24	46.00	-26.76
457.77	S	Peak	28.66	-7.99	20.67	46.00	-25.33
592.60	S	Peak	28.29	-5.10	23.19	46.00	-22.81
786.60	S	Peak	28.19	-2.47	25.72	46.00	-20.28
948.59	S	Peak	27.56	0.25	27.81	46.00	-18.19
10600.00	Н	Average	22.14	15.63	37.77	54.00	-16.23
10600.00	Н	Peak	33.72	15.63	49.35	74.00	-24.65
15900.00	Н						
21200.00	Н						
26500.00	Н						
31800.00	Н						
37100.00	Н						

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5320 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV∕m	dB
42.61	S	Peak	40.63	-13.35	27.28	40.00	-12.72
108.57	S	Peak	39.93	-16.28	23.65	43.50	-19.85
222.06	S	Peak	35.75	-14.27	21.48	46.00	-24.52
393.75	S	Peak	29.49	-9.20	20.29	46.00	-25.71
659.53	S	Peak	29.05	-4.39	24.66	46.00	-21.34
881.66	S	Peak	28.68	-1.45	27.23	46.00	-18.77
10640.00	Н	Average	21.99	15.64	37.63	54.00	-16.37
10640.00	Н	Peak	34.68	15.64	50.32	74.00	-23.68
15960.00	Н						
21280.00	Н						
26600.00	Н						
31920.00	Н						
37240.00	Н						

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5320 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV∕m	dB
149.31	S	Peak	28.67	-12.73	15.94	43.50	-27.56
344.28	S	Peak	28.96	-10.30	18.66	46.00	-27.34
439.34	S	Peak	28.80	-8.65	20.15	46.00	-25.85
564.47	S	Peak	29.04	-6.17	22.87	46.00	-23.13
751.68	S	Peak	28.29	-2.49	25.80	46.00	-20.20
903.00	S	Peak	27.42	-0.74	26.68	46.00	-19.32
10640.00	Н	Average	22.73	15.64	38.37	54.00	-15.63
10640.00	Н	Peak	33.87	15.64	49.51	74.00	-24.49
15960.00	Н						
21280.00	Н						
26600.00	Н						
31920.00	Н						
37240.00	Н						

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Operation Band	:802.11 n20M	Test Date	:2014-11-17
Fundamental Frequency	:5320 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:Band Edge HIGH	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level	l	FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	E	Average	39.46	7.79	47.25	54.00	-6.75
5350.00	E	Peak	51.26	7.79	59.05	74.00	-14.95
Operation Ban Fundamental F		:802.11 n20M :5320 MHz		èst Date èmp./Humi.		:2014-11-17 :23 deg_C / 58	8 RH

Operation Mode	:Band Edge HIGH	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	E	Average	40.44	7.79	48.23	54.00	-5.77
5350.00	E	Peak	52.08	7.79	59.87	74.00	-14.13

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# FCC ID: PY7-PM0855

Radiated Spurious Emission Measurement Result 802.11n HT40, 5250~5350 MHz

#### **Operation Band** :802.11 n40M Test Date :2014-11-18 **Fundamental Frequency** :5270 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :TX LOW Engineer :Curry EUT Pol. :E1 Plane Measurement Antenna Pol. :VERTICAL Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB) $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency. "E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency. "---": denotes Noise Floor. Freq. Note Detector Spectrum Factor Actual Limit Margin FS Mode Reading Level @3m dBµV/m PK/QP/AV dBµV dBµV/m MHz F/H/E/S dB dB 32.91 S Peak 49.84 -13.8835.96 40.00 -4.0499.84 S -17.96 43.50 Peak 35.18 17.22 -26.28 286.08 S Peak 28.84 -11.51 17.33 46.00 -28.67S 453.89 Peak 27.16 -8.10 19.06 46.00 -26.94 S 589.69 Peak 28.23 -5.0023.23 46.00 -22.77951.50 S Peak 28.98 0.29 29.27 46.00 -16.73 10540.00 Η 33.68 48.95 68.30 -19.35 Peak 15.27 15810.00 Η 21080.00 Η \_\_\_ Η 26350.00 31620.00 Η

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Operation Band	:802.11 n40M	Test Date	:2014-11-18
Fundamental Frequency	:5270 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX LOW	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

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Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
35.82	S	Peak	33.60	-13.81	19.79	40.00	-20.21
119.24	S	Peak	29.87	-15.10	14.77	43.50	-28.73
357.86	S	Peak	26.88	-9.96	16.92	46.00	-29.08
589.69	S	Peak	28.34	-5.00	23.34	46.00	-22.66
765.26	S	Peak	27.97	-2.61	25.36	46.00	-20.64
932.10	S	Peak	28.44	-0.03	28.41	46.00	-17.59
10540.00	Н	Peak	34.33	15.27	49.60	68.30	-18.70
15810.00	Н						
21080.00	Н						
26350.00	Н						
31620.00	Н						

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Operation Band	:802.11 n40M	Test Date	:2014-11-18
Fundamental Frequency	:5310 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
31.94	S	Peak	49.45	-13.88	35.57	40.00	-4.43
123.12	S	Peak	29.82	-14.75	15.07	43.50	-28.43
286.08	S	Peak	28.64	-11.51	17.13	46.00	-28.87
594.54	S	Peak	28.33	-5.18	23.15	46.00	-22.85
764.29	S	Peak	27.62	-2.59	25.03	46.00	-20.97
958.29	S	Peak	27.54	0.34	27.88	46.00	-18.12
10620.00	Н	Average	21.80	15.64	37.44	54.00	-16.56
10620.00	Н	Peak	34.65	15.64	50.29	74.00	-23.71
15930.00	Н						
21240.00	Н						
26550.00	Н						
31860.00	Н						
37170.00	Н						

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Operation Band	:802.11 n40M	Test Date	:2014-11-18
Fundamental Frequency	:5310 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

37170.00

Η

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV∕m	dB
35.82	S	Peak	33.33	-13.81	19.52	40.00	-20.48
114.39	S	Peak	30.55	-15.56	14.99	43.50	-28.51
286.08	S	Peak	28.18	-11.51	16.67	46.00	-29.33
525.67	S	Peak	28.15	-7.33	20.82	46.00	-25.18
753.62	S	Peak	27.53	-2.49	25.04	46.00	-20.96
961.20	S	Peak	27.36	0.36	27.72	54.00	-26.28
10620.00	Н	Average	22.65	15.64	38.29	54.00	-15.71
10620.00	Н	Peak	33.42	15.64	49.06	74.00	-24.94
15930.00	Н						
21240.00	Н						
26550.00	Н						
31860.00	Н						

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Operation Band :802	.11 n40M Test Da	ate :2014-11-17	
Fundamental Frequency :531	0 MHz Temp./	Humi. :23 deg_C /	58 RH
Operation Mode :Ban	d Edge HIGH Engine	er :Tin	
EUT Pol. :E1 H	Plane Measur	rement Antenna Pol. :VERTICAL	<u>.</u>

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	E	Average	39.60	7.79	47.39	54.00	-6.61
5350.00	Е	Peak	53.45	7.79	61.24	74.00	-12.76
Operation Ban Fundamental F		:802.11 n40M :5310 MHz		st Date mp./Humi.		:2014-11-17 :23 deg_C / 53	8 RH

Operation Mode :Ban		p./ 110/111.	$.25 \text{ ucg}_{-}$ $c \neq 50 \text{ m}$
operation mode .Dun	nd Edge HIGH Engi	neer	:Tin
EUT Pol. :E1 l	Plane Meas	surement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	E	Average	45.11	7.79	52.90	54.00	-1.10
5350.00	E	Peak	59.26	7.79	67.05	74.00	-6.95

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# Radiated Spurious Emission Measurement Result 802.11a, 5470~5725 MHz

Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5500 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX LOW	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

38500.00

Η

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
43.58	S	Peak	42.47	-13.27	29.20	40.00	-10.80
108.57	S	Peak	39.49	-16.28	23.21	43.50	-20.29
224.00	S	Peak	35.35	-14.20	21.15	46.00	-24.85
384.05	S	Peak	29.35	-9.40	19.95	46.00	-26.05
598.42	S	Peak	29.74	-5.33	24.41	46.00	-21.59
756.53	S	Peak	28.93	-2.51	26.42	46.00	-19.58
11000.00	Н	Average	22.03	16.50	38.53	54.00	-15.47
11000.00	Н	Peak	34.25	16.50	50.75	74.00	-23.25
16500.00	Н						
22000.00	Н						
27500.00	Н						
33000.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5500 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX LOW	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
107.60	S	Peak	31.71	-16.47	15.24	43.50	-28.26
286.08	S	Peak	28.94	-11.51	17.43	46.00	-28.57
479.11	S	Peak	29.75	-7.62	22.13	46.00	-23.87
593.57	S	Peak	28.34	-5.13	23.21	46.00	-22.79
775.93	S	Peak	28.15	-2.67	25.48	46.00	-20.52
918.52	S	Peak	27.99	-0.29	27.70	46.00	-18.30
11000.00	Н	Average	22.99	16.50	39.49	54.00	-14.51
11000.00	Н	Peak	34.90	16.50	51.40	74.00	-22.60
16500.00	Н						
22000.00	Н						
27500.00	Н						
33000.00	Н						
38500.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5580 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX MID	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
42.61	S	Peak	42.90	-13.35	29.55	40.00	-10.45
107.60	S	Peak	40.06	-16.47	23.59	43.50	-19.91
224.97	S	Peak	35.67	-14.17	21.50	46.00	-24.50
450.98	S	Peak	29.22	-8.19	21.03	46.00	-24.97
635.28	S	Peak	27.55	-5.35	22.20	46.00	-23.80
815.70	S	Peak	27.67	-2.01	25.66	46.00	-20.34
11160.00	Н	Average	21.61	16.87	38.48	54.00	-15.52
11160.00	Н	Peak	33.88	16.87	50.75	74.00	-23.25
16740.00	Н						
22320.00	Н						
27900.00	Н						
33480.00	Н						
39060.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5580 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX MID	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV∕m	dB
106.63	S	Peak	31.14	-16.64	14.50	43.50	-29.00
333.61	S	Peak	27.15	-10.64	16.51	46.00	-29.49
492.69	S	Peak	28.00	-7.53	20.47	46.00	-25.53
641.10	S	Peak	27.26	-5.04	22.22	46.00	-23.78
785.63	S	Peak	27.87	-2.50	25.37	46.00	-20.63
951.50	S	Peak	27.96	0.29	28.25	46.00	-17.75
11160.00	Н	Average	21.98	16.87	38.85	54.00	-15.15
11160.00	Н	Peak	34.15	16.87	51.02	74.00	-22.98
16740.00	Н						
22320.00	Н						
27900.00	Н						
33480.00	Н						
39060.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5700 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
42.61	S	Peak	43.08	-13.35	29.73	40.00	-10.27
108.57	S	Peak	39.11	-16.28	22.83	43.50	-20.67
224.97	S	Peak	35.72	-14.17	21.55	46.00	-24.45
410.24	S	Peak	27.95	-8.78	19.17	46.00	-26.83
585.81	S	Peak	27.73	-5.04	22.69	46.00	-23.31
856.44	S	Peak	27.51	-1.52	25.99	46.00	-20.01
11400.00	Н	Average	22.11	17.55	39.66	54.00	-14.34
11400.00	Н	Peak	34.57	17.55	52.12	74.00	-21.88
17100.00	Н						
22800.00	Н						
28500.00	Н						
34200.00	Н						
39900.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5700 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
106.63	S	Peak	31.40	-16.64	14.76	43.50	-28.74
286.08	S	Peak	27.84	-11.51	16.33	46.00	-29.67
508.21	S	Peak	27.53	-7.34	20.19	46.00	-25.81
720.64	S	Peak	29.02	-4.09	24.93	46.00	-21.07
867.11	S	Peak	27.77	-1.49	26.28	46.00	-19.72
940.83	S	Peak	27.59	0.14	27.73	46.00	-18.27
11400.00	Н	Average	21.92	17.55	39.47	54.00	-14.53
11400.00	Н	Peak	33.43	17.55	50.98	74.00	-23.02
17100.00	Н						
22800.00	Н						
28500.00	Н						
34200.00	Н						
39900.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-17
Fundamental Frequency	:5500 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:Band Edge LOW	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5460.00	Е	Average	39.57	7.87	47.44	54.00	-6.56
5460.00	E	Peak	51.29	7.87	59.16	74.00	-14.84
Operation Ban Fundamental F		:802.11 a :5500 MHz		t Date np./Humi.		:2014-11-17 :23 deg_C / 58	8 RH

Fundamental Frequency	13300 MHZ	Temp./Hum.	:25 deg_C / 38 KH
Operation Mode	:Band Edge LOW	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5460.00	E	Average	40.42	7.87	48.29	54.00	-5.71
5460.00	E	Peak	52.65	7.87	60.52	74.00	-13.48

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Operation Band	:802.11 a	Test Date	:2014-11-28
Fundamental Frequency	:5500 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:Band Wdge LOW	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5470.00	E	Peak	51.94	7.89	59.83	68.30	-8.47
Operation Ban Fundamental F		:802.11 a :5500 MHz		t Date np./Humi.		:2014-11-28 :23 deg_C / 5	8 RH

Engineer

Measurement Antenna Pol.

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

:Band Edge LOW

:E1 Plane

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

**Operation Mode** 

EUT Pol.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5470.00	Е	Peak	51.80	7.89	59.69	68.30	-8.61

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:Tin

:HORIZONTAL



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:HORIZONTAL

Operation Band	:802.11 a	Test Date	:2014-11-28
Fundamental Frequency	:5700 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:Band Wdge HIGH	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Leve	el	FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5725.00	E	Peak	52.46	8.20	60.66	68.30	-7.64
Operation Ban Fundamental F Operation Moo	Frequency	:802.11 a :5700 MHz :Band Wdge		Test Date Temp./Humi. Engineer		:2014-11-28 :23 deg_C / 5 :Tin	8 RH

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

:E1 Plan

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

台灣

EUT Pol.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Measurement Antenna Pol.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5725.00	Е	Peak	58.39	8.20	66.59	68.30	-1.71

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Η

# FCC ID: PY7-PM0855

Radiated Spurious Emission Measurement Result 802.11n HT20, 5470~5725 MHz

#### **Operation Band** :2014-11-18 :802.11 n20M Test Date **Fundamental Frequency** :5500 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :TX LOW Engineer :Curry EUT Pol. :E1 Plane Measurement Antenna Pol. :VERTICAL Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB) $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency. "E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency. "---": denotes Noise Floor. Freq. Note Detector Spectrum Factor Actual Limit Margin FS Mode Reading Level @3m dBµV/m PK/QP/AV dBµV dB dBµV/m MHz F/H/E/S dB 42.61 S Peak 41.64 -13.35 28.29 40.00 -11.71107.60 S 40.07 43.50 -19.90 Peak -16.47 23.60 156.10 S Peak 35.01 -12.4822.53 43.50 -20.97 S 340.40 Peak 29.49 -10.41 19.08 46.00 -26.92 S 692.51 Peak 28.74 -3.72 25.02 46.00 -20.98893.30 S Peak 28.93 -1.12 27.81 46.00 -18.19 11000.00 Η 21.89 16.50 38.39 54.00 -15.61 Average 11000.00 Η Peak 34.30 16.50 50.80 74.00 -23.2016500.00 Η \_\_\_ Η 22000.00 Η 27500.00 33000.00 Η

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5500 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX LOW	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
43.58	S	Peak	29.19	-13.27	15.92	40.00	-24.08
105.66	S	Peak	31.53	-16.83	14.70	43.50	-28.80
342.34	S	Peak	29.32	-10.35	18.97	46.00	-27.03
584.84	S	Peak	27.84	-5.04	22.80	46.00	-23.20
677.96	S	Peak	29.05	-3.71	25.34	46.00	-20.66
903.97	S	Peak	28.50	-0.70	27.80	46.00	-18.20
11000.00	Н	Average	22.87	16.50	39.37	54.00	-14.63
11000.00	Н	Peak	34.73	16.50	51.23	74.00	-22.77
16500.00	Н						
22000.00	Н						
27500.00	Н						
33000.00	Н						
38500.00	Н						

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5580 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX MID	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
42.61	S	Peak	41.51	-13.35	28.16	40.00	-11.84
107.60	S	Peak	40.50	-16.47	24.03	43.50	-19.47
224.00	S	Peak	35.11	-14.20	20.91	46.00	-25.09
449.04	S	Peak	29.54	-8.25	21.29	46.00	-24.71
685.72	S	Peak	28.26	-3.64	24.62	46.00	-21.38
917.55	S	Peak	27.66	-0.31	27.35	46.00	-18.65
11160.00	Н	Average	21.37	16.87	38.24	54.00	-15.76
11160.00	Н	Peak	33.38	16.87	50.25	74.00	-23.75
16740.00	Н						
22320.00	Н						
27900.00	Н						
33480.00	Н						
39060.00	Н						

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5580 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX MID	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual  $FS(dB\mu V/m) = SPA$ . Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
30.00	S	Peak	32.79	-13.90	18.89	40.00	-21.11
149.31	S	Peak	29.38	-12.73	16.65	43.50	-26.85
286.08	S	Peak	29.51	-11.51	18.00	46.00	-28.00
337.49	S	Peak	29.73	-10.50	19.23	46.00	-26.77
520.82	S	Peak	29.46	-7.30	22.16	46.00	-23.84
743.92	S	Peak	28.63	-2.77	25.86	46.00	-20.14
11160.00	Н	Average	21.52	16.87	38.39	54.00	-15.61
11160.00	Н	Peak	34.68	16.87	51.55	74.00	-22.45
16740.00	Н						
22320.00	Н						
27900.00	Н						
33480.00	Н						
39060.00	Н						

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5700 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
33.88	S	Peak	41.57	-13.87	27.70	40.00	-12.30
107.60	S	Peak	40.79	-16.47	24.32	43.50	-19.18
224.97	S	Peak	36.92	-14.17	22.75	46.00	-23.25
340.40	S	Peak	29.37	-10.41	18.96	46.00	-27.04
604.24	S	Peak	28.58	-5.58	23.00	46.00	-23.00
765.26	S	Peak	28.55	-2.61	25.94	46.00	-20.06
11400.00	Н	Average	21.90	17.55	39.45	54.00	-14.55
11400.00	Н	Peak	34.28	17.55	51.83	74.00	-22.17
17100.00	Н						
22800.00	Н						
28500.00	Н						
34200.00	Н						
39900.00	Н						

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5700 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
30.00	S	Peak	33.25	-13.90	19.35	40.00	-20.65
106.63	S	Peak	32.60	-16.64	15.96	43.50	-27.54
286.08	S	Peak	28.81	-11.51	17.30	46.00	-28.70
589.69	S	Peak	28.22	-5.00	23.22	46.00	-22.78
679.90	S	Peak	28.51	-3.65	24.86	46.00	-21.14
879.72	S	Peak	28.10	-1.49	26.61	46.00	-19.39
11400.00	Н	Average	21.95	17.55	39.50	54.00	-14.50
11400.00	Н	Peak	34.27	17.55	51.82	74.00	-22.18
17100.00	Н						
22800.00	Н						
28500.00	Н						
34200.00	Н						
39900.00	Н						

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0M Test Date	:2014-11-17
z Temp./Humi.	:23 deg_C / 58 RH
e LOW Engineer	:Tin
Measurement Antenna I	Pol. :VERTICAL
Ŀ	Iz Temp./Humi. ge LOW Engineer

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Lev	el	FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5460.00	E	Average	39.60	7.87	47.47	54.00	-6.53
5460.00	Е	Peak	50.85	7.87	58.72	74.00	-15.28
Fundamental Frequency :5500 MHz T		Test Date Temp./Humi. Engineer		:2014-11-17 :23 deg_C / 5 :Tin	8 RH		
EUT Pol.		:E1 Plane		Measurement Ar	ntenna Pol.	:HORIZONT	AL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5460.00	Е	Average	40.59	7.87	48.46	54.00	-5.54
5460.00	E	Peak	52.50	7.87	60.37	74.00	-13.63

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Operation Band	:802.11 n20M	Test Date	:2014-11-28
Fundamental Frequency	:5500 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode EUT Pol.	:Band Wdge LOW	Engineer	:Tin
	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Lev	el	FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5470.00	Е	Peak	51.04	7.89	58.93	68.30	-9.37
Operation Band Fundamental Frequency Operation Mode EUT Pol.		:802.11 n20M :5500 MHz :Band Wdge :E1 Plane	-	Test Date Temp./Humi. Engineer Measurement An	tenna Pol.	:2014-11-28 :23 deg_C / 58 :Tin :HORIZONTA	

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV∕m	dBµV/m	dB
5470.00	Е	Peak	52.48	7.89	60.37	68.30	-7.93

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台灣檢驗科技股份有限公司	t (886-2) 2299-3279	f (886-2) 2298-0488	www.tw.sgs.com	



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Operation Band	:802.11 n20M	Test Date	:2014-11-28
Fundamental Frequency	:5700 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:Band Wdge HIGH	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Lev	el	FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5725.00	Е	Peak	56.97	8.20	65.17	68.30	-3.13
Operation Band Fundamental Frequency Operation Mode EUT Pol.		:802.11 n20N :5700 MHz :Band Wdge :E1 Plane	HIGH	Test Date Temp./Humi. Engineer Measurement An	tenna Pol.	:2014-11-28 :23 deg_C / 58 :Tin :HORIZONTA	

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5725.00	E	Peak	59.01	8.20	67.21	68.30	-1.09

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S

S

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Peak

Peak

Average

Peak

\_\_\_

651.77

921.43

11020.00

11020.00

16530.00

22040.00

27550.00

33060.00 38570.00

#### FCC ID: PY7-PM0855

Radiated Spurious Emission Measurement Result 802.11n HT40, 5470~5725 MHz

#### **Operation Band** :802.11 n40M Test Date :2014-11-18 **Fundamental Frequency** :5510 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :TX LOW Engineer :Curry EUT Pol. :E1 Plane Measurement Antenna Pol. :VERTICAL Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB) $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency. "E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency. "---": denotes Noise Floor. Freq. Note Detector Spectrum Factor Actual Limit Margin FS Mode Reading Level @3m dBµV/m PK/QP/AV dBµV dBµV/m MHz F/H/E/S dB dB 32.91 S Peak 49.80 -13.8835.92 40.00 -4.0899.84 S 34.50 -17.96 16.54 43.50 Peak -26.96 286.08 S Peak 29.02 -11.51 17.51 46.00 -28.49S 446.13 Peak 29.02 -8.38 20.64 46.00 -25.36

27.80

27.16

22.59

34.74

-4.66

-0.23

16.52

16.52

23.14

26.93

39.11

51.26

46.00

46.00

54.00

74.00

-22.86

-19.07

-14.89

-22.74

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Operation Band	:802.11 n40M	Test Date	:2014-11-18
Fundamental Frequency	:5510 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX LOW	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
34.85	S	Peak	33.98	-13.86	20.12	40.00	-19.88
113.42	S	Peak	32.24	-15.66	16.58	43.50	-26.92
286.08	S	Peak	29.43	-11.51	17.92	46.00	-28.08
429.64	S	Peak	29.64	-8.83	20.81	46.00	-25.19
689.60	S	Peak	27.79	-3.64	24.15	46.00	-21.85
910.76	S	Peak	27.86	-0.46	27.40	46.00	-18.60
11020.00	Н	Average	21.99	16.52	38.51	54.00	-15.49
11020.00	Н	Peak	34.37	16.52	50.89	74.00	-23.11
16530.00	Н						
22040.00	Н						
27550.00	Н						
33060.00	Н						
38570.00	Н						

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Operation Band	:802.11 n40M	Test Date	:2014-11-18
Fundamental Frequency	:5550 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX MID	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
31.94	S	Peak	49.96	-13.88	36.08	40.00	-3.92
99.84	S	Peak	34.30	-17.96	16.34	43.50	-27.16
286.08	S	Peak	28.99	-11.51	17.48	46.00	-28.52
575.14	S	Peak	27.28	-5.40	21.88	46.00	-24.12
764.29	S	Peak	28.19	-2.59	25.60	46.00	-20.40
920.46	S	Peak	28.06	-0.25	27.81	46.00	-18.19
11100.00	Н	Average	21.20	16.66	37.86	54.00	-16.14
11100.00	Н	Peak	33.51	16.66	50.17	74.00	-23.83
16650.00	Н						
22200.00	Н						
27750.00	Н						
33300.00	Н						
38850.00	Н						

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Operation Band	:802.11 n40M	Test Date	:2014-11-18
Fundamental Frequency	:5550 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX MID	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
35.82	S	Peak	34.73	-13.81	20.92	40.00	-19.08
152.22	S	Peak	28.65	-12.62	16.03	43.50	-27.47
286.08	S	Peak	28.02	-11.51	16.51	46.00	-29.49
435.46	S	Peak	29.63	-8.72	20.91	46.00	-25.09
671.17	S	Peak	28.46	-4.00	24.46	46.00	-21.54
957.32	S	Peak	27.20	0.33	27.53	46.00	-18.47
11100.00	Н	Average	21.81	16.66	38.47	54.00	-15.53
11100.00	Н	Peak	33.40	16.66	50.06	74.00	-23.94
16650.00	Н						
22200.00	Н						
27750.00	Н						
33300.00	Н						
38850.00	Н						

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Operation Band	:802.11 n40M	Test Date	:2014-11-18
Fundamental Frequency	:5670 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV∕m	dBµV/m	dB
31.94	S	Peak	50.26	-13.88	36.38	40.00	-3.62
99.84	S	Peak	34.70	-17.96	16.74	43.50	-26.76
438.37	S	Peak	29.63	-8.67	20.96	46.00	-25.04
684.75	S	Peak	28.39	-3.63	24.76	46.00	-21.24
773.99	S	Peak	28.32	-2.66	25.66	46.00	-20.34
907.85	S	Peak	28.75	-0.55	28.20	46.00	-17.80
11340.00	Н	Average	21.57	17.33	38.90	54.00	-15.10
11340.00	Н	Peak	33.47	17.33	50.80	74.00	-23.20
17010.00	Н						
22680.00	Н						
28350.00	Н						
34020.00	Н						
39690.00	Н						

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Operation Band	:802.11 n40M	Test Date	:2014-11-18
Fundamental Frequency	:5670 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plan	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
35.82	S	Peak	35.83	-13.81	22.02	40.00	-17.98
138.64	S	Peak	29.33	-13.29	16.04	43.50	-27.46
286.08	S	Peak	28.80	-11.51	17.29	46.00	-28.71
444.19	S	Peak	27.76	-8.45	19.31	46.00	-26.69
570.29	S	Peak	28.44	-5.71	22.73	46.00	-23.27
948.59	S	Peak	27.34	0.25	27.59	46.00	-18.41
11340.00	Н	Average	21.75	17.33	39.08	54.00	-14.92
11340.00	Н	Peak	33.02	17.33	50.35	74.00	-23.65
17010.00	Н						
22680.00	Н						
28350.00	Н						
34020.00	Н						
39690.00	Н						

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Operation Band	:802.11 n40M	Test Date	:2014-11-17
Fundamental Frequency	:5510 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:Band Edge LOW	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL
LUTTOI.	.L1 I falle	Wiedstreinent / Interna 1 01.	. VERITCIAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Lev	el	FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5460.00	E	Average	34.28	7.87	42.15	54.00	-11.85
5460.00	E	Peak	49.10	7.87	56.97	74.00	-17.03
Operation Band:802.11 n40MFundamental Frequency:5510 MHzOperation Mode:Band Edge L		-	Test Date Temp./Humi. Engineer		:2014-11-17 :23 deg_C / 5 :Tin	8 RH	
EUT Pol.		:E1 Plane		Measurement Ar	ntenna Pol.	:HORIZONT	AL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5460.00	E	Average	38.47	7.87	46.34	54.00	-7.66
5460.00	E	Peak	53.92	7.87	61.79	74.00	-12.21

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Operation Band	:802.11 n40M P	Test Date	:2014-11-28
Fundamental Frequency	:5510 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:Band Edge LOW	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Lev	el	FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5470.00	Е	Peak	54.73	7.89	62.62	68.30	-5.68
Operation Band Fundamental F Operation Mod EUT Pol.	requency	:802.11 n40N :5510 MHz :Band Edge I :E1 Plane	LOW	Test Date Temp./Humi. Engineer Measurement An	tenna Pol.	:2014-11-28 :23 deg_C / 5 :Tin :HORIZONTA	

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

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The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5470.00		Peak	59.36	7.89	67.25	68.30	-1.05

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Operation Band	:802.11 n40M	Test Date	:2014-11-28
Fundamental Frequency	:5670 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:Band Edge HIGH	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5725.00	E	Peak	51.25	8.20	59.45	68.30	-8.85
Operation Ban Fundamental F		:802.11 n40N :5670 MHz		st Date mp./Humi.		:2014-11-28 :23 deg_C / 5	8 RH

Engineer

Measurement Antenna Pol.

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

:E1 Plane

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

:Band Edge HIGH

"---": denotes Noise Floor.

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Operation Mode

EUT Pol.

The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV∕m	dBµV/m	dB
5725.00	E	Peak	53.15	8.20	61.35	68.30	-6.95

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:Tin

:HORIZONTAL



#### Radiated Spurious Emission Measurement Result 802.11a, 5725~5850 MHz

Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5745 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX LOW	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

Factor(dB) = Antenna Factor( $dB\mu V/m$ ) + Cable Loss(dB) – Pre\_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

34470.00

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Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
43.58	S	Peak	42.62	-13.27	29.35	40.00	-10.65
87.23	S	Peak	43.09	-18.50	24.59	40.00	-15.41
224.97	S	Peak	35.27	-14.17	21.10	46.00	-24.90
395.69	S	Peak	27.05	-9.17	17.88	46.00	-28.12
579.99	S	Peak	28.09	-5.10	22.99	46.00	-23.01
809.88	S	Peak	27.40	-2.03	25.37	46.00	-20.63
11490.00	Н	Average	22.11	17.88	39.99	54.00	-14.01
11490.00	Н	Peak	34.52	17.88	52.40	74.00	-21.60
17235.00	Н						
22980.00	Н						
28725.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5745 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX LOW	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
112.45	S	Peak	30.39	-15.76	14.63	43.50	-28.87
286.08	S	Peak	29.31	-11.51	17.80	46.00	-28.20
451.95	S	Peak	27.27	-8.17	19.10	46.00	-26.90
644.98	S	Peak	28.23	-4.91	23.32	46.00	-22.68
778.84	S	Peak	28.25	-2.66	25.59	46.00	-20.41
913.67	S	Peak	27.81	-0.39	27.42	46.00	-18.58
11490.00	Н	Average	22.35	17.88	40.23	54.00	-13.77
11490.00	Н	Peak	35.55	17.88	53.43	74.00	-20.57
17235.00	Н						
22980.00	Н						
28725.00	Н						
34470.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5785 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX MID	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
43.58	S	Peak	42.79	-13.27	29.52	40.00	-10.48
224.00	S	Peak	34.89	-14.20	20.69	46.00	-25.31
358.83	S	Peak	27.73	-9.94	17.79	46.00	-28.21
584.84	S	Peak	28.29	-5.04	23.25	46.00	-22.75
742.95	S	Peak	27.43	-2.82	24.61	46.00	-21.39
906.88	S	Peak	26.63	-0.59	26.04	46.00	-19.96
11570.00	Н	Average	21.99	17.74	39.73	54.00	-14.27
11570.00	Н	Peak	34.75	17.74	52.49	74.00	-21.51
17355.00	Н						
23140.00	Н						
28925.00	Н						
34710.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5785 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX MID	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
43.58	S	Peak	30.63	-13.27	17.36	40.00	-22.64
142.52	S	Peak	29.28	-13.05	16.23	43.50	-27.27
286.08	S	Peak	29.39	-11.51	17.88	46.00	-28.12
462.62	S	Peak	27.95	-7.86	20.09	46.00	-25.91
625.58	S	Peak	28.74	-5.78	22.96	46.00	-23.04
857.41	S	Peak	27.75	-1.50	26.25	46.00	-19.75
11570.00	Н	Average	22.04	17.74	39.78	54.00	-14.22
11570.00	Н	Peak	35.44	17.74	53.18	74.00	-20.82
17355.00	Н						
23140.00	Н						
28925.00	Н						
34710.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5825 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
43.58	S	Peak	42.72	-13.27	29.45	40.00	-10.55
108.57	S	Peak	39.58	-16.28	23.30	43.50	-20.20
349.13	S	Peak	27.33	-10.15	17.18	46.00	-28.82
583.87	S	Peak	28.31	-5.05	23.26	46.00	-22.74
788.54	S	Peak	28.53	-2.42	26.11	46.00	-19.89
906.88	S	Peak	28.15	-0.59	27.56	46.00	-18.44
11650.00	Н	Average	21.75	17.94	39.69	54.00	-14.31
11650.00	Н	Peak	34.73	17.94	52.67	74.00	-21.33
17475.00	Н						
23300.00	Н						
29125.00	Н						
34950.00	Н						

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Operation Band	:802.11 a	Test Date	:2014-11-18
Fundamental Frequency	:5825 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
107.60	S	Peak	31.39	-16.47	14.92	43.50	-28.58
286.08	S	Peak	28.36	-11.51	16.85	46.00	-29.15
432.55	S	Peak	27.68	-8.79	18.89	46.00	-27.11
593.57	S	Peak	28.43	-5.13	23.30	46.00	-22.70
753.62	S	Peak	27.54	-2.49	25.05	46.00	-20.95
946.65	S	Peak	28.18	0.23	28.41	46.00	-17.59
11650.00	Н	Average	21.86	17.94	39.80	54.00	-14.20
11650.00	Н	Peak	34.35	17.94	52.29	74.00	-21.71
17475.00	Н						
23300.00	Н						
29125.00	Н						
34950.00	Н						

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### **Radiated Emission:**

Operation Band	:802.11 a	Test Date	:2014-11-17
Fundamental Frequency	:5745 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:Band Edge LOW	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Leve	el	FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5725.00	Е	Peak	65.23	8.20	73.43	78.20	-4.77
Operation Band Fundamental Frequency Operation Mode EUT Pol.		:802.11 a :5745 MHz :Band Edge I :E1 Plane	, LOW	Test Date Temp./Humi. Engineer Measurement An	tenna Pol.	:2014-11-17 :23 deg_C / 5 :Tin :HORIZONT	

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna \ Factor(dB\mu V/m) + Cable \ Loss(dB) - Pre\_Amplifier \ Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5725.00	E	Peak	69.16	8.20	77.36	78.20	-0.84

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Operation Band	:802.11 a	Test Date	:2014-11-17
Fundamental Frequency	:5825 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:Band Edge HIGH	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Note	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Leve	el	FS	@3m	
F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
Е	Peak	56.99	8.42	65.41	78.20	-12.79
Operation Band Fundamental Frequency Operation Mode EUT Pol.		, HIGH	Temp./Humi. Engineer	tenna Pol.	:2014-11-17 :23 deg_C / 58 :Tin :HORIZONTA	
	<u>F/H/E/S</u> E quency	Mode <u>F/H/E/S PK/QP/AV</u> <u>E</u> Peak :802.11 a :5825 MHz :Band Edge F :E1 Plane	Mode Reading Leve <u>F/H/E/S PK/QP/AV dBµV</u> E Peak 56.99 :802.11 a :802.11 a :Band Edge HIGH :E1 Plane	Mode     Reading Level       F/H/E/S     PK/QP/AV     dBµV     dB       E     Peak     56.99     8.42       quency     :802.11 a     Test Date       :5825 MHz     Temp./Humi.       :Band Edge HIGH     Engineer	Mode     Reading Level     FS       F/H/E/S     PK/QP/AV     dBµV     dB     dBµV/m       E     Peak     56.99     8.42     65.41       quency     :802.11 a     Test Date       :802.11 a     Test Date       :Band Edge HIGH     Engineer       :E1 Plane     Measurement Antenna Pol.	ModeReading LevelFS@ 3mF/H/E/SPK/QP/AVdBµVdBdBµV/mdBµV/mEPeak56.998.4265.4178.20quency:802.11 aTest Date:2014-11-17:5825 MHzTemp./Humi.:23 deg_C / 50:Band Edge HIGHEngineer:Tin:E1 PlaneMeasurement Antenna Pol.:HORIZONTA

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna \ Factor(dB\mu V/m) + Cable \ Loss(dB) - Pre\_Amplifier \ Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5850.00	E	Peak	63.04	8.42	71.46	78.20	-6.74

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#### Radiated Spurious Emission Measurement Result 802.11n HT20, 5725~5850 MHz **Operation Band** :802.11 n20M Test Date :2014-11-18 **Fundamental Frequency** :5745 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :TX LOW Engineer :Curry EUT Pol. :E1 Plane Measurement Antenna Pol. :VERTICAL Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB) Factor(dB) = Antenna Factor( $dB\mu V/m$ ) + Cable Loss(dB) – Pre\_Amplifier Gain(dB) Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency. "E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency. "---": denotes Noise Floor. Freq. Note Detector Spectrum Factor Actual Limit Margin FS Mode Reading Level @3m dBµV/m dBµV dBµV/m MHz F/H/E/S PK/QP/AV dB dB 35.82 S Peak 41.63 -13.81 27.82 40.00 -12.18107.60 S 43.50 Peak 40.67 -16.4724.20 -19.30 223.03 S Peak 35.31 -14.24 21.07 46.00 -24.93S 447.10 Peak 29.28 -8.34 20.94 46.00 -25.06 S 696.39 Peak 28.63 -3.86 24.77 46.00 -21.23 909.79 S Peak 28.34 -0.4827.86 46.00 -18.14 11490.00 Η 22.03 17.88 39.91 54.00 -14.09 Average 11490.00 Η Peak 34.84 17.88 52.72 74.00 -21.2817235.00 Η \_\_\_\_ 22980.00 Η 28725.00 Η \_\_\_ 34470.00 Η \_\_\_\_

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5745 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX LOW	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
30.00	S	Peak	32.66	-13.90	18.76	40.00	-21.24
107.60	S	Peak	31.83	-16.47	15.36	43.50	-28.14
346.22	S	Peak	29.32	-10.23	19.09	46.00	-26.91
595.51	S	Peak	28.90	-5.21	23.69	46.00	-22.31
752.65	S	Peak	29.16	-2.49	26.67	46.00	-19.33
954.41	S	Peak	28.12	0.31	28.43	46.00	-17.57
11490.00	Н	Average	22.22	17.88	40.10	54.00	-13.90
11490.00	Н	Peak	34.67	17.88	52.55	74.00	-21.45
17235.00	Н						
22980.00	Н						
28725.00	Н						
34470.00	Н						

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5785 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX MID	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
42.61	S	Peak	41.22	-13.35	27.87	40.00	-12.13
88.20	S	Peak	43.28	-18.68	24.60	43.50	-18.90
160.95	S	Peak	34.65	-12.39	22.26	43.50	-21.24
427.70	S	Peak	29.43	-8.83	20.60	46.00	-25.40
585.81	S	Peak	28.84	-5.04	23.80	46.00	-22.20
768.17	S	Peak	28.96	-2.65	26.31	46.00	-19.69
11570.00	Н	Average	21.84	17.74	39.58	54.00	-14.42
11570.00	Н	Peak	35.09	17.74	52.83	74.00	-21.17
17355.00	Н						
23140.00	Н						
28925.00	Н						
34710.00	Н						

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5785 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX MID	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
107.60	S	Peak	30.69	-16.47	14.22	43.50	-29.28
339.43	S	Peak	29.34	-10.44	18.90	46.00	-27.10
500.45	S	Peak	29.20	-7.42	21.78	46.00	-24.22
590.66	S	Peak	28.08	-5.02	23.06	46.00	-22.94
742.95	S	Peak	28.68	-2.82	25.86	46.00	-20.14
864.20	S	Peak	28.21	-1.46	26.75	46.00	-19.25
11570.00	Н	Average	21.94	17.74	39.68	54.00	-14.32
11570.00	Н	Peak	35.04	17.74	52.78	74.00	-21.22
17355.00	Н						
23140.00	Н						
28925.00	Н						
34710.00	Н						

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5825 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

34950.00

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_		_	_	_			
Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
42.61	S	Peak	40.98	-13.35	27.63	40.00	-12.37
108.57	S	Peak	40.10	-16.28	23.82	43.50	-19.68
158.04	S	Peak	35.23	-12.40	22.83	43.50	-20.67
223.03	S	Peak	35.39	-14.24	21.15	46.00	-24.85
589.69	S	Peak	28.89	-5.00	23.89	46.00	-22.11
836.07	S	Peak	29.28	-2.02	27.26	46.00	-18.74
11650.00	Н	Average	21.55	17.94	39.49	54.00	-14.51
11650.00	Н	Peak	33.79	17.94	51.73	74.00	-22.27
17475.00	Н						
23300.00	Н						
29125.00	Н						

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Operation Band	:802.11 n20M	Test Date	:2014-11-18
Fundamental Frequency	:5825 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
106.63	S	Peak	32.69	-16.64	16.05	43.50	-27.45
286.08	S	Peak	28.42	-11.51	16.91	46.00	-29.09
514.03	S	Peak	29.54	-7.31	22.23	46.00	-23.77
592.60	S	Peak	28.22	-5.10	23.12	46.00	-22.88
716.76	S	Peak	29.64	-4.15	25.49	46.00	-20.51
856.44	S	Peak	27.79	-1.52	26.27	46.00	-19.73
11650.00	Н	Average	21.64	17.94	39.58	54.00	-14.42
11650.00	Н	Peak	34.30	17.94	52.24	74.00	-21.76
17475.00	Н						
23300.00	Н						
29125.00	Н						
34950.00	Н						

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#### **Radiated Emission:**

n20M Test Date	:2014-11-17
IHz Temp./Humi.	:23 deg_C / 58 RH
dge LOW Engineer	:Tin
ne Measurement An	ntenna Pol. :VERTICAL
	IHzTemp./Humi.dge LOWEngineer

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Leve	el	FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5725.00	E	Peak	59.66	8.20	67.86	78.20	-10.34
Fundamental Frequency :57 Operation Mode :Ba		:802.11 n20N :5745 MHz :Band Edge I :E1 Plane	LOW	Test Date Temp./Humi. Engineer Measurement An	tenna Pol.	:2014-11-17 :23 deg_C / 5 :Tin :HORIZONT	

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna \ Factor(dB\mu V/m) + Cable \ Loss(dB) - Pre\_Amplifier \ Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5725.00	E	Peak	64.82	8.20	73.02	78.20	-5.18

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Operation Band	:802.11 n20M	Test Date	:2014-11-17
Fundamental Frequency	:5825 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:Band Edge HIGH	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Leve	el	FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5850.00	Е	Peak	56.08	8.42	64.50	78.20	-13.70
Fundamental Frequency:5825 MOperation Mode:Band Edited		:802.11 n20N :5825 MHz :Band Edge F :E1 Plane	HIGH	Test Date Temp./Humi. Engineer Measurement An	tenna Pol.	:2014-11-17 :23 deg_C / 5 :Tin :HORIZONT.	

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna \ Factor(dB\mu V/m) + Cable \ Loss(dB) - Pre\_Amplifier \ Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5850.00	E	Peak	61.25	8.42	69.67	78.20	-8.53

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#### Radiated Spurious Emission Measurement Result (802.11n (5GHz) 40M)

Operation Band	:802.11 n40M	Test Date	:2014-11-18
Fundamental Frequency	:5755 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX LOW	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

Factor(dB) = Antenna Factor( $dB\mu V/m$ ) + Cable Loss(dB) – Pre\_Amplifier Gain(dB)

"F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency. Note :

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
31.94	S	Peak	49.24	-13.88	35.36	40.00	-4.64
99.84	S	Peak	33.21	-17.96	15.25	43.50	-28.25
286.08	S	Peak	28.23	-11.51	16.72	46.00	-29.28
555.74	S	Peak	27.95	-6.79	21.16	46.00	-24.84
759.44	S	Peak	27.29	-2.52	24.77	46.00	-21.23
949.56	S	Peak	26.99	0.27	27.26	46.00	-18.74
11510.00	Н	Average	21.95	17.88	39.83	54.00	-14.17
11510.00	Н	Peak	35.18	17.88	53.06	74.00	-20.94
17265.00	Н						
23020.00	Н						
28775.00	Н						
34530.00	Н						

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Operation Band	:802.11 n40M	Test Date	:2014-11-18
Fundamental Frequency	:5755 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX LOW	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
35.82	S	Peak	32.78	-13.81	18.97	40.00	-21.03
139.61	S	Peak	27.51	-13.20	14.31	43.50	-29.19
286.08	S	Peak	28.18	-11.51	16.67	46.00	-29.33
436.43	S	Peak	27.68	-8.71	18.97	46.00	-27.03
652.74	S	Peak	28.82	-4.62	24.20	46.00	-21.80
921.43	S	Peak	27.60	-0.23	27.37	46.00	-18.63
11510.00	Н	Average	22.02	17.88	39.90	54.00	-14.10
11510.00	Н	Peak	34.81	17.88	52.69	74.00	-21.31
17265.00	Н						
23020.00	Н						
28775.00	Н						
34530.00	Н						

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Operation Band	:802.11 n40M	Test Date	:2014-11-18
Fundamental Frequency	:5795 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
31.94	S	Peak	48.91	-13.88	35.03	40.00	-4.97
99.84	S	Peak	34.45	-17.96	16.49	43.50	-27.01
286.08	S	Peak	27.40	-11.51	15.89	46.00	-30.11
558.65	S	Peak	27.50	-6.60	20.90	46.00	-25.10
768.17	S	Peak	28.19	-2.65	25.54	46.00	-20.46
943.74	S	Peak	27.09	0.19	27.28	46.00	-18.72
11590.00	Н	Average	21.79	17.82	39.61	54.00	-14.39
11590.00	Н	Peak	34.56	17.82	52.38	74.00	-21.62
17385.00	Н						
23180.00	Н						
28975.00	Н						
34770.00	Н						

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Operation Band	:802.11 n40M	Test Date	:2014-11-18
Fundamental Frequency	:5795 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:TX HIGH	Engineer	:Curry
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
42.61	S	Peak	32.72	-13.35	19.37	40.00	-20.63
157.07	S	Peak	28.16	-12.44	15.72	43.50	-27.78
286.08	S	Peak	28.82	-11.51	17.31	46.00	-28.69
448.07	S	Peak	29.32	-8.30	21.02	46.00	-24.98
743.92	S	Peak	27.39	-2.77	24.62	46.00	-21.38
955.38	S	Peak	26.99	0.32	27.31	46.00	-18.69
11590.00	Н	Average	21.98	17.82	39.80	54.00	-14.20
11590.00	Н	Peak	33.92	17.82	51.74	74.00	-22.26
17385.00	Н						
23180.00	Н						
28975.00	Н						
34770.00	Н						

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### **Radiated Emission:**

Operation Band	:802.11 n40M	Test Date	:2014-11-17
Fundamental Frequency	:5755 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:Band Edge LOW	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5719.00	E	Peak	64.62	8.19	72.81	78.20	-5.39
5725.00	E	Peak	63.13	8.20	71.33	78.20	-6.87

Operation Band	:802.11 n40M	Test Date	:2014-11-17
Fundamental Frequency	:5755 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:Band Edge LOW	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5718.90	E	Peak	67.29	8.19	75.48	78.20	-2.72
5725.00	E	Peak	65.99	8.20	74.19	78.20	-4.01

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Operation Band	:802.11 n40M	Test Date	:2014-11-17
Fundamental Frequency	:5795 MHz	Temp./Humi.	:23 deg_C / 58 RH
Operation Mode	:Band Edge HIGH	Engineer	:Tin
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin	
		Mode	Reading Leve	el	FS	@3m		
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
5850.00	Е	Peak	53.39	8.42	61.81	78.20	-16.39	
Fundamental Frequency :5795 MHz		:Band Edge H	HIGH	Test Date Temp./Humi. Engineer Measurement An	tenna Pol.	:2014-11-17 :23 deg_C / 5 :Tin :HORIZONTA		

Actual FS( $dB\mu V/m$ ) = SPA. Reading level( $dB\mu V$ ) + Factor(dB)

 $Factor(dB) = Antenna \ Factor(dB\mu V/m) + Cable \ Loss(dB) - Pre\_Amplifier \ Gain(dB)$ 

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5850.00	Е	Peak	57.32	8.42	65.74	78.20	-12.46

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# 11. TRANSMISSION IN THE ABSENCE OF DATA

# 11.1 Standard Applicable:

According to §15.407(c)

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

## 11.2 Result:

No non-compliance noted: Refer to the theory of operation.

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# **12. FREQUENCY STABILITY**

#### **Standard Applicable** 12.1

According to §15.407 (g) Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

#### 12.2 **Result:**

Refer to next page for plots.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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Operation Mode	802.11 a	Test Date	2014.11.13
Temperature	:25	Test By	Cooper
Humidity	:62 %		

Test Temp.	Test Voltage	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
		36	5180.0000	5,180.001680	-0.0017
		44	5220.0000	5,220.001920	-0.0019
		48	5240.0000	5,240.001800	-0.0018
		52	5260.0000	5,260.001880	-0.0019
25	3.8V	60	5300.0000	5,300.001920	-0.0019
		64	5320.0000	5,320.001950	-0.0019
		100	5500.0000	5,500.002000	-0.0020
		116	5580.0000	5,580.002000	-0.0020
		140	5700.0000	5,700.002120	-0.0021
		36	5180.0000	5,180.002030	-0.0020
		44	5220.0000	5,220.002110	-0.0021
		48	5240.0000	5,240.001940	-0.0019
		52	5260.0000	5,260.001960	-0.0020
-20	3.4V	60	5300.0000	5,300.002020	-0.0020
		64	5320.0000	5,320.002020	-0.0020
		100	5500.0000	5,500.002110	-0.0021
		116	5580.0000	5,580.002100	-0.0021
		140	5700.0000	5,700.002030	-0.0020
		36	5180.0000	5,180.002050	-0.0021
		44	5220.0000	5,220.002100	-0.0021
		48	5240.0000	5,240.001990	-0.0020
		52	5260.0000	5,260.001970	-0.0020
-20	4.35V	60	5300.0000	5,300.002100	-0.0021
		64	5320.0000	5,320.002060	-0.0021
		100	5500.0000	5,500.002040	-0.0020
		116	5580.0000	5,580.002130	-0.0021
		140	5700.0000	5,700.002070	-0.0021

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			-		
		36	5180.0000	5,180.001240	-0.0012
		44	5220.0000	5,220.001610	-0.0016
		48	5240.0000	5,240.001400	-0.0014
		52	5260.0000	5,260.001330	-0.0013
60	3.4V	60	5300.0000	5,300.001270	-0.0013
		64	5320.0000	5,320.001160	-0.0012
		100	5500.0000	5,500.001580	-0.0016
		116	5580.0000	5,580.001610	-0.0016
		140	5700.0000	5,700.001730	-0.0017
		36	5180.0000	5,180.001200	-0.0012
		44	5220.0000	5,220.001610	-0.0016
		48	5240.0000	5,240.001330	-0.0013
		52	5260.0000	5,260.001330	-0.0013
60	4.35V	60	5300.0000	5,300.001250	-0.0013
		64	5320.0000	5,320.001090	-0.0011
		100	5500.0000	5,500.001510	-0.0015
		116	5580.0000	5,580.001540	-0.0015
		140	5700.0000	5,700.001700	-0.0017

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Operation Mode	802.11n_HT20	Test Date	2014.11.13
Temperature	:25	Test By	Cooper
Humidity	:62 %		

Test Temp.	Test Voltage	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
		36	5180.0000	5,180.001670	-0.0017
		44	5220.0000	5,220.001820	-0.0018
		48	5240.0000	5,240.001870	-0.0019
		52	5260.0000	5,260.002030	-0.0020
25	3.8V	60	5300.0000	5,300.001930	-0.0019
		64	5320.0000	5,320.002020	-0.0020
		100	5500.0000	5,500.002120	-0.0021
		116	5580.0000	5,580.002120	-0.0021
		140	5700.0000	5,700.002200	-0.0022
		36	5180.0000	5,180.001940	-0.0019
		44	5220.0000	5,220.002030	-0.0020
		48	5240.0000	5,240.002060	-0.0021
		52	5260.0000	5,260.002110	-0.0021
-20	3.4V	60	5300.0000	5,300.002000	-0.0020
		64	5320.0000	5,320.002220	-0.0022
		100	5500.0000	5,500.002170	-0.0022
		116	5580.0000	5,580.002160	-0.0022
		140	5700.0000	5,700.002290	-0.0023
		36	5180.0000	5,180.001960	-0.0020
		44	5220.0000	5,220.002000	-0.0020
		48	5240.0000	5,240.002050	-0.0021
		52	5260.0000	5,260.002100	-0.0021
-20	4.35V	60	5300.0000	5,300.002000	-0.0020
		64	5320.0000	5,320.002200	-0.0022
		100	5500.0000	5,500.002110	-0.0021
		116	5580.0000	5,580.002090	-0.0021
		140	5700.0000	5,700.002200	-0.0022

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	-	-			
		36	5180.0000	5,180.001410	-0.0014
		44	5220.0000	5,220.001660	-0.0017
		48	5240.0000	5,240.001510	-0.0015
		52	5260.0000	5,260.001710	-0.0017
60	3.4V	60	5300.0000	5,300.001650	-0.0017
		64	5320.0000	5,320.001730	-0.0017
		100	5500.0000	5,500.001770	-0.0018
		116	5580.0000	5,580.001800	-0.0018
		140	5700.0000	5,700.001830	-0.0018
		36	5180.0000	5,180.001400	-0.0014
		44	5220.0000	5,220.001670	-0.0017
		48	5240.0000	5,240.001500	-0.0015
		52	5260.0000	5,260.001680	-0.0017
60	4.35V	60	5300.0000	5,300.001620	-0.0016
		64	5320.0000	5,320.001700	-0.0017
		100	5500.0000	5,500.001710	-0.0017
		116	5580.0000	5,580.001750	-0.0018
		140	5700.0000	5,700.001800	-0.0018

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Operation Mode	802.11 n_HT40	Test Date	2014,1,30
Temperature	:25	Test By	Cooper
Humidity	:62 %		

Test Temp.	Test Voltage	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
		38	5190.0000	5,190.001330	-0.0013
		46	5230.0000	5,230.001420	-0.0014
		54	5270.0000	5,270.001470	-0.0015
25	3.8V	62	5310.0000	5,310.001570	-0.0016
		102	5510.0000	5,510.001650	-0.0017
		110	5550.0000	5,550.001820	-0.0018
		134	5670.0000	5,670.001930	-0.0019
		38	5190.0000	5,190.001660	-0.0017
		46	5230.0000	5,230.001740	-0.0017
		54	5270.0000	5,270.001810	-0.0018
-20	3.4V	62	5310.0000	5,310.001880	-0.0019
		102	5510.0000	5,510.001910	-0.0019
		110	5550.0000	5,550.002010	-0.0020
		134	5670.0000	5,670.002130	-0.0021
		38	5190.0000	5,190.001680	-0.0017
		46	5230.0000	5,230.001760	-0.0018
		54	5270.0000	5,270.001830	-0.0018
-20	4.35V	62	5310.0000	5,310.001870	-0.0019
		102	5510.0000	5,510.001880	-0.0019
		110	5550.0000	5,550.001970	-0.0020
		134	5670.0000	5,670.002100	-0.0021

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



		38	5190.0000	5,190.001010	-0.0010
		46	5230.0000	5,230.001220	-0.0012
		54	5270.0000	5,270.001190	-0.0012
60	3.4V	62	5310.0000	5,310.001330	-0.0013
		102	5510.0000	5,510.001490	-0.0015
		110	5550.0000	5,550.001510	-0.0015
		134	5670.0000	5,670.001580	-0.0016
		38	5190.0000	5,190.001070	-0.0011
		46	5230.0000	5,230.001250	-0.0013
		54	5270.0000	5,270.001220	-0.0012
60	4.35V	62	5310.0000	5,310.001300	-0.0013
		102	5510.0000	5,510.001450	-0.0014
		110	5550.0000	5,550.001540	-0.0015
		134	5670.0000	5,670.001560	-0.0016

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



# **13. ANTENNA REQUIREMENT**

# 13.1 Standard Applicable

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than furnished by the responsible party shall be used with the device.

# 13.2 Antenna Connected Construction

The directional gains of antenna used for transmitting is -0.54dBi (5150MHz– 5250MHz), -0.89dBi (5250MHz– 5350MHz), -0.34dBi (5470MHz– 5725MHz), -0.19dBi (5725MHz- 5850MHz) and the antenna connector is designed with unique type RF connector and no consideration of replacement. Please see EUT photo and antenna spec. for details.

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# **APPENDIX 1 MEASUREMENT PLOT OF RADIATED SPURIOUS EMISSION**

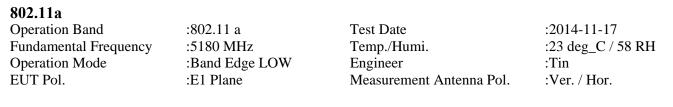
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

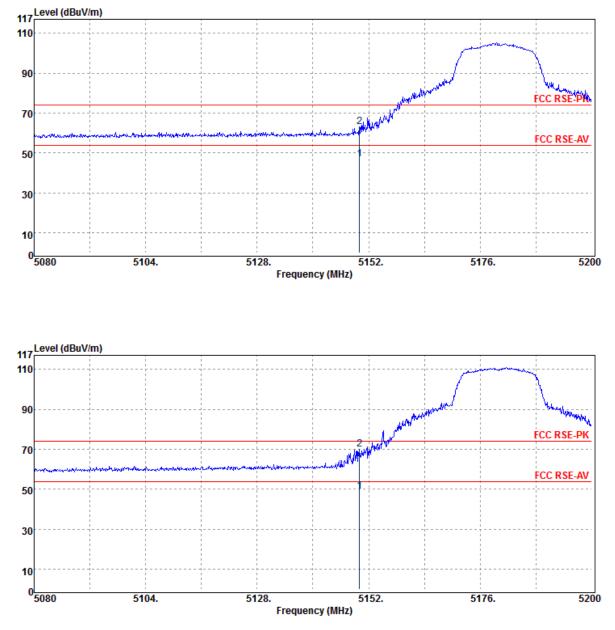


號

# **Band Edges Radiated Emission:**

# Note: The emission that surpasses the limit of peak represents the fundamental emission of the operation that does not account to be conformed to the limit of the interest.





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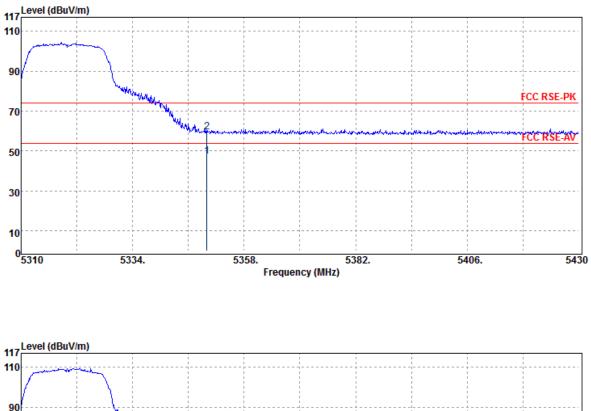


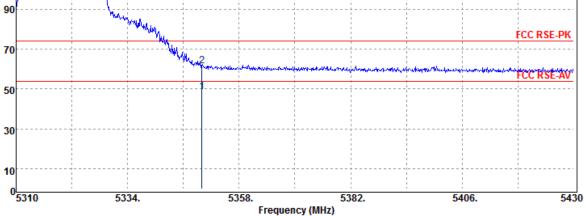
Report No.: ER/2014/B0055 Issue Date: Jan. 19, 2015 Page 190 of 275

**Operation Band Fundamental Frequency Operation Mode** EUT Pol.

:802.11 a :5320 MHz :Band Edge HIGH :E1 Plane

Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-17 :23 deg\_C / 58 RH :Tin :Ver. / Hor.





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:802.11 a

## **FCC ID: PY7-PM0855**

Test Date

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:2014-11-17

**Operation Band Fundamental Frequency** :5500 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :Band Wdge LOW Engineer :Tin EUT Pol. :E1 Plane Measurement Antenna Pol. : Ver. / Hor 117 Level (dBuV/m) 110 90 FCC RSE-P 70 FCC RSE-AV 50 30 10 0 5390 5438. 5414. 5462. 5486 5510 Frequency (MHz) Level (dBuV/m) 117 110 90 FCC RSE 70 FCC RSE-AV 50 30 10 0 5390 5414. 5438. 5462. 5486. 5510

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Frequency (MHz)

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**Operation Band** :802.11 a Test Date :2014-11-28 **Fundamental Frequency** :5500 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :Band Wdge LOW Engineer :Tin EUT Pol. :E1 Plane Measurement Antenna Pol. : Ver. / Hor 117 Level (dBuV/m) 110 90 ECC RSE PEAK15 70 50 30 10 0 5390 5414. 5438. 5462. 5486 5510 Frequency (MHz) Level (dBuV/m) 117 110 90 ECC RSE PEAK15 .407 70 50 30 10 0 5390 5414. 5438. 5462. 5486. 5510 Frequency (MHz)

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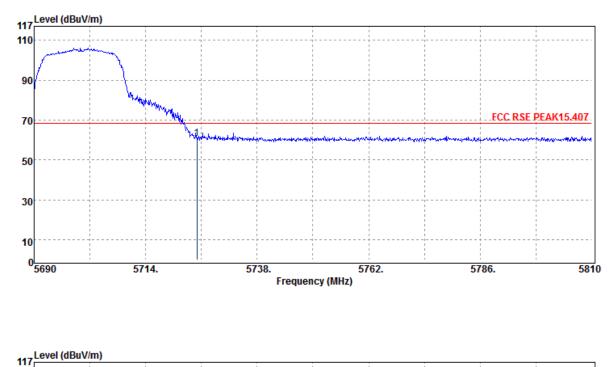
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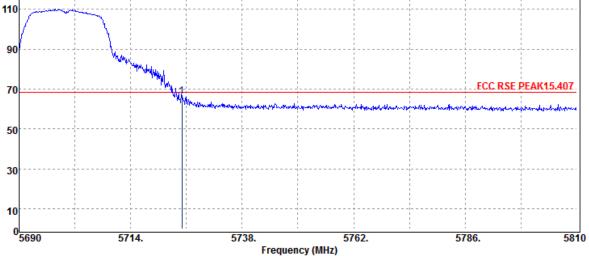


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Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11 a :5700 MHz :Band Wdge HIGH :E1 Plane Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-28 :23 deg\_C / 58 RH :Tin : Ver. / Hor.





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**Operation Band** :802.11 a Test Date :2014-11-17 **Fundamental Frequency** :5745 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :Band Edge LOW Engineer :Tin EUT Pol. : E1 Plane Measurement Antenna Pol. : Ver. / Hor. 117 Level (dBuV/m) 110 90 70 50 30 10 0 5655 5675. 5695. 5715. 5735. 5755 Frequency (MHz) Level (dBuV/m) 117 110 90 70 50 30 10 0 5655 5675. 5695. 5715. 5735. 5755 Frequency (MHz)

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

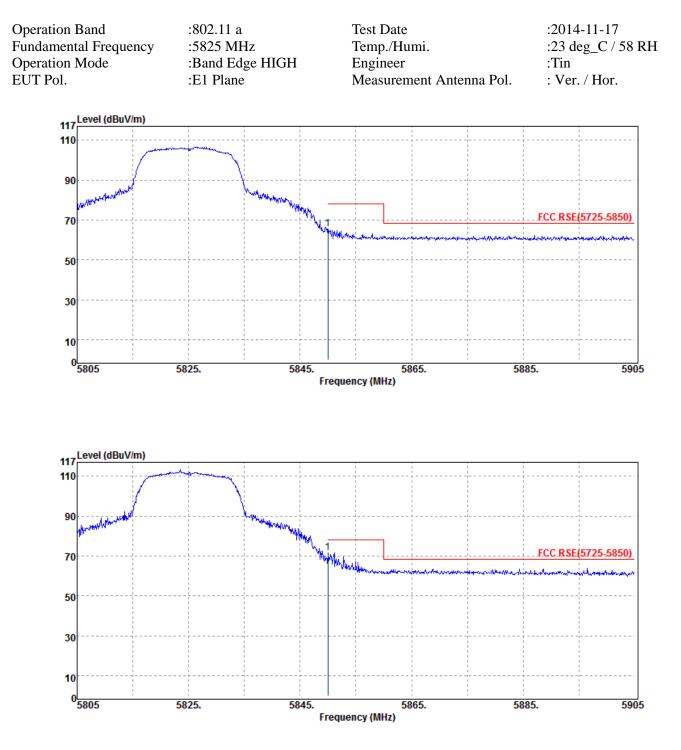
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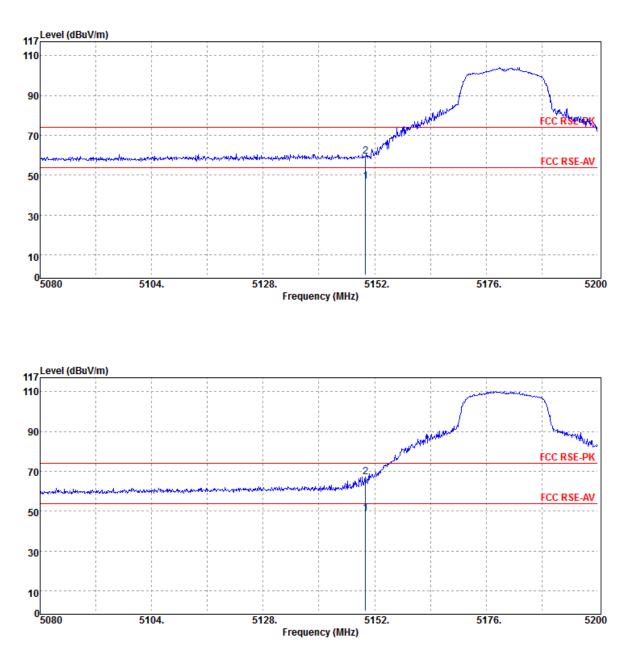
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# 802.11n\_20M

Operation Band Fundamental Frequency Operation Mode EUT Pol. :802.11 n20M :5180 MHz :Band Edge LOW :E1 Plane Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-17 :23 deg\_C / 58 RH :Tin :Ver. / Hor.



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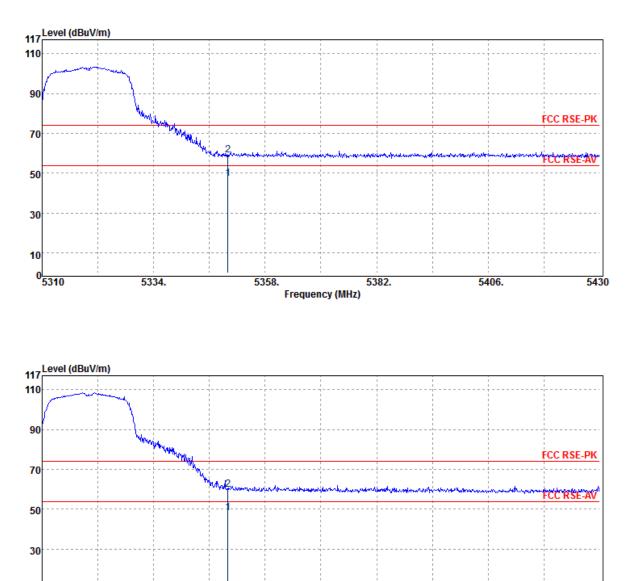


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Operation Band Fundamental Frequency Operation Mode EUT Pol.

10

0 5310 :802.11 n20M :5320 MHz :Band Edge HIGH :E1 Plane Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-17 :23 deg\_C / 58 RH :Tin :Ver. / Hor.



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5382.

5406.

5430



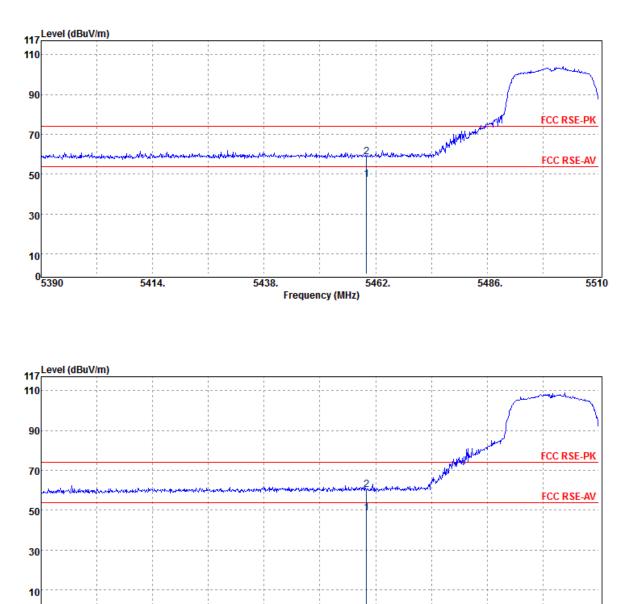
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Operation Band Fundamental Frequency Operation Mode EUT Pol.

> 0 5390

> > 台灣

:802.11 n20M :5500 MHz :Band Wdge LOW :E1 Plane Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-17 :23 deg\_C / 58 RH :Tin :Ver. / Hor.



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Frequency (MHz)

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5462.

5486.

5510



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**Operation Band** :802.11 n20M Test Date :2014-11-28 **Fundamental Frequency** :5500 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :Band Wdge LOW Engineer :Tin EUT Pol. :E1 Plane : Ver. / Hor. Measurement Antenna Pol. 117 Level (dBuV/m) 110 90 70 50 30 10 0 5390 5414. 5438. 5462. 5486 5510 Frequency (MHz) Level (dBuV/m) 117 110 90 CC RSE PEAK15.407 70 50 30 10 0 5390 5414. 5438. 5462. 5486. 5510 Frequency (MHz)

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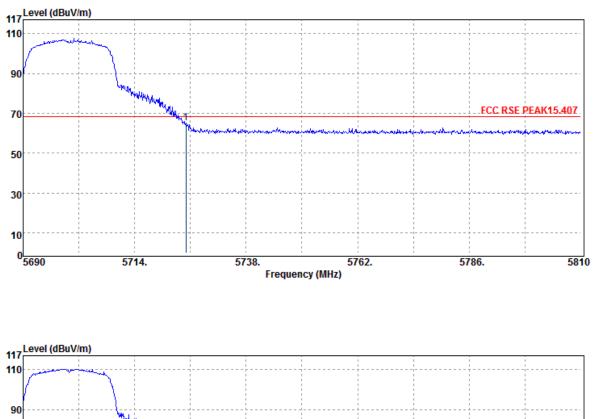


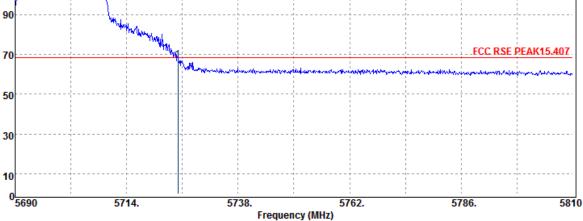
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**Operation Band Fundamental Frequency Operation Mode** EUT Pol.

:802.11 n20M :5700 MHz :Band Wdge HIGH :E1 Plane

Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-28 :23 deg\_C / 58 RH :Tin : Ver. / Hor.





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**Operation Band** :802.11 n20M Test Date :2014-11-17 **Fundamental Frequency** :5745 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :Band Edge LOW Engineer :Tin Measurement Antenna Pol. EUT Pol. : E1 Plane : Ver. / Hor. 117 Level (dBuV/m) 110 90 70 50 30 10 0 5655 5675. 5695 5715. 5735. 5755 Frequency (MHz) Level (dBuV/m) 117 110 90 70 50 30 10 0 5655 5755 5675. 5695. 5715. 5735. Frequency (MHz)

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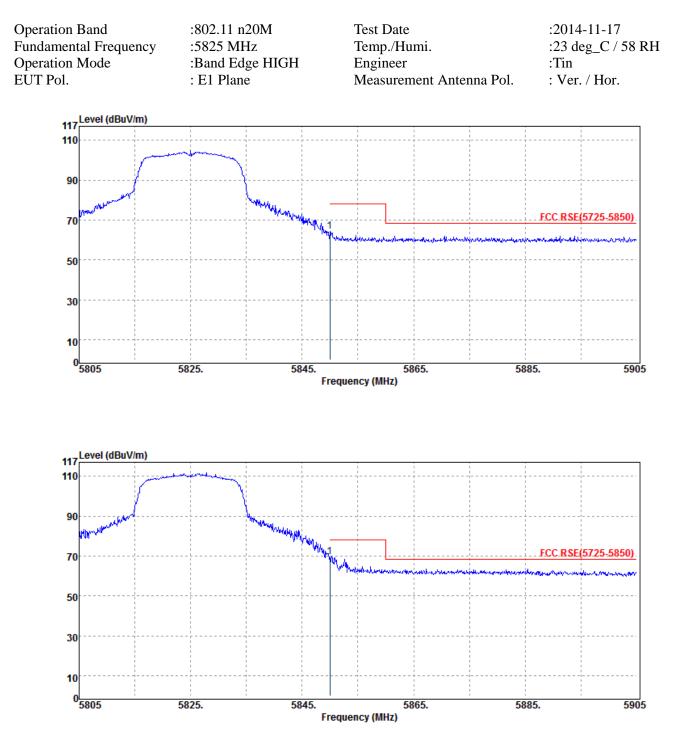
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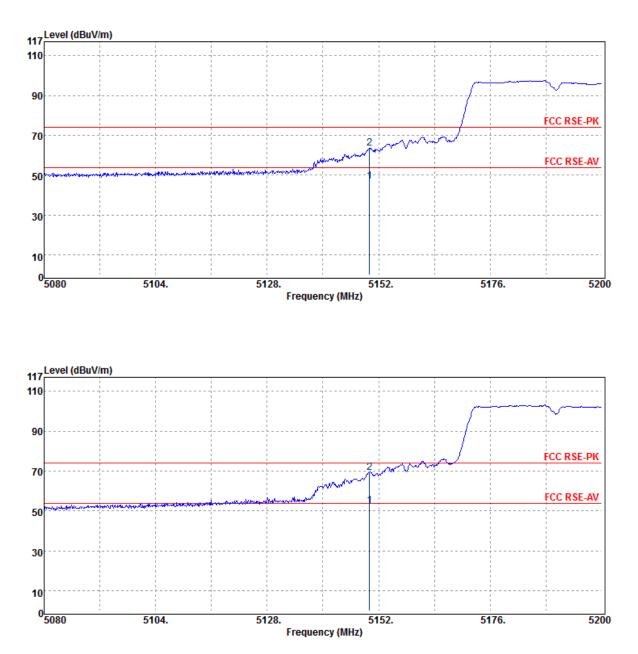
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# 802.11n\_40M

Operation Band Fundamental Frequency Operation Mode EUT Pol. :802.11 n40M :5190 MHz :Band Edge LOW :E1 Plane Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-17 :23 deg\_C / 58 RH :Tin :Ver. / Hor.



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10

0 5300

# FCC ID: PY7-PM0855

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:2014-11-17

:Ver. / Hor.

:Tin

5396.

:23 deg\_C / 58 RH

FCC RSE-PK

FCC RSE-AV

5420

**Operation Band** :802.11 n40M Test Date **Fundamental Frequency** :5310 MHz Temp./Humi. **Operation Mode** :Band Edge HIGH Engineer Measurement Antenna Pol. EUT Pol. :E1 Plane 117 Level (dBuV/m) 110 90 70 50 30

5324.

Level (dBuV/m) 117 110 90 FCC RSE-PK 70 2 FCC RSE-AV 50 30 10 0 5300 5324. 5348. 5372. 5396. 5420 Frequency (MHz)

Frequency (MHz)

5372.

5348.

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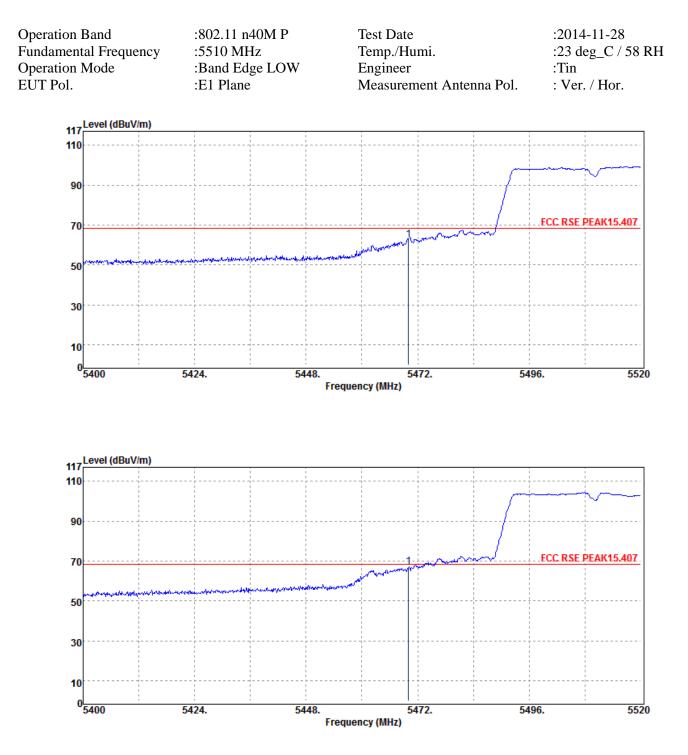
**Operation Band** :802.11 n40M Test Date :2014-11-17 **Fundamental Frequency** :5510 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :Band Edge LOW Engineer :Tin EUT Pol. :E1 Plane :Ver. / Hor. Measurement Antenna Pol. 117 Level (dBuV/m) 110 90 FCC RSE-PK 70 FCC RSE-AV 50 30 10 0 5400 5448. 5424. 5472. 5496. 5520 Frequency (MHz) Level (dBuV/m) 117 110 90 FCC RSE-PH 70 FCC RSE-AV 50 30 10 0 5400 5424. 5448. 5472. 5496. 5520 Frequency (MHz)

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**Operation Band** 

30

10

0 5660

## FCC ID: PY7-PM0855

Test Date

:802.11 n40M

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:2014-11-28

**Fundamental Frequency** :5670 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :Band Edge HIGH Engineer :Tin EUT Pol. :E1 Plane Measurement Antenna Pol. : Ver. / Hor. 117 Level (dBuV/m) 110 90 FCC RSE PEAK15.407 70 50 30 10 0 5660 5684. 5708. 5732. 5756. 5780 Frequency (MHz) Level (dBuV/m) 117 110 90 FCC RSE PEAK15.407 70 50

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5708.

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5684.

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Frequency (MHz)

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5732.

5756.

5780



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**Operation Band** :802.11 n40M Test Date :2014-11-17 **Fundamental Frequency** :5755 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :Band Edge LOW Engineer :Tin EUT Pol. : E1 Plane Measurement Antenna Pol. : Ver. / Hor. 117 Level (dBuV/m) 110 90 70 50 30 10 0 5665 5685. 5705. 5725. 5745. 5765 Frequency (MHz) Level (dBuV/m) 117 110 90 70 50 30 10 0 5665 5685. 5705. 5745. 5765 5725. Frequency (MHz)

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**Operation Band** :802.11 n40M Test Date :2014-11-17 **Fundamental Frequency** :5795 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :Band Edge HIGH Engineer :Tin EUT Pol. : E1 Plane Measurement Antenna Pol. : Ver. / Hor. 117 Level (dBuV/m) 110 90 FCC RSE(5725-5850) 70 50 30 10 0 5785 5805. 5825 5845. 5865 5885 Frequency (MHz) Level (dBuV/m) 117 110 90 FCC RSF(5725 70 50 30 10 0 5785 5805. 5825. 5845. 5865. 5885 Frequency (MHz)

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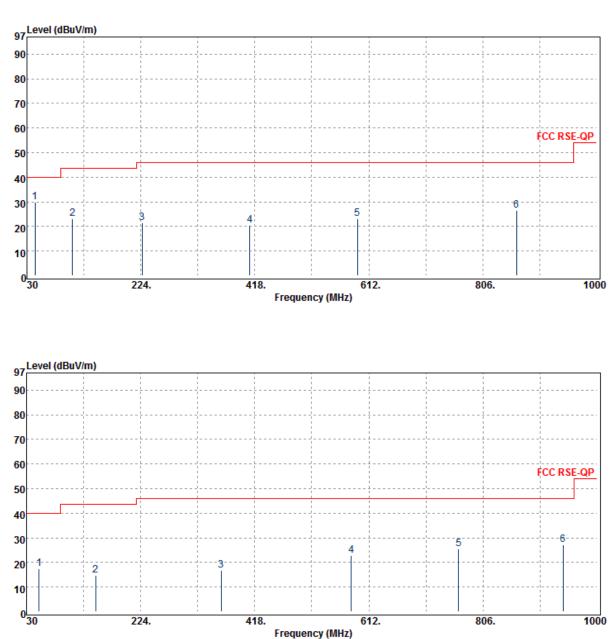


# Radiated Spurious Emission Measurement photos Result (below 1GHz)

#### 802.11a 5150-5250MHz

Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11 a :5180 MHz :TX LOW :E1 Plane Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-18 :23 deg\_C / 58 RH :Curry :Ver. / Hor.



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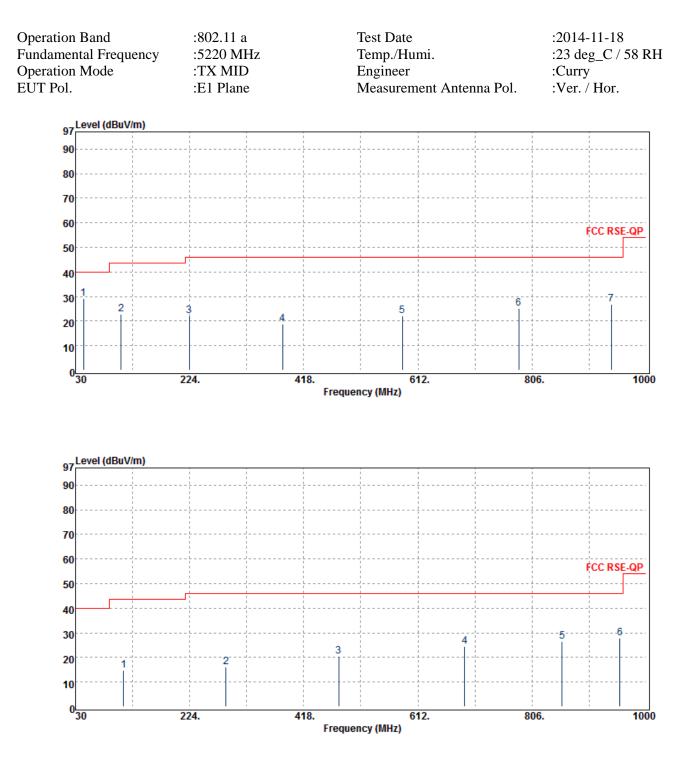
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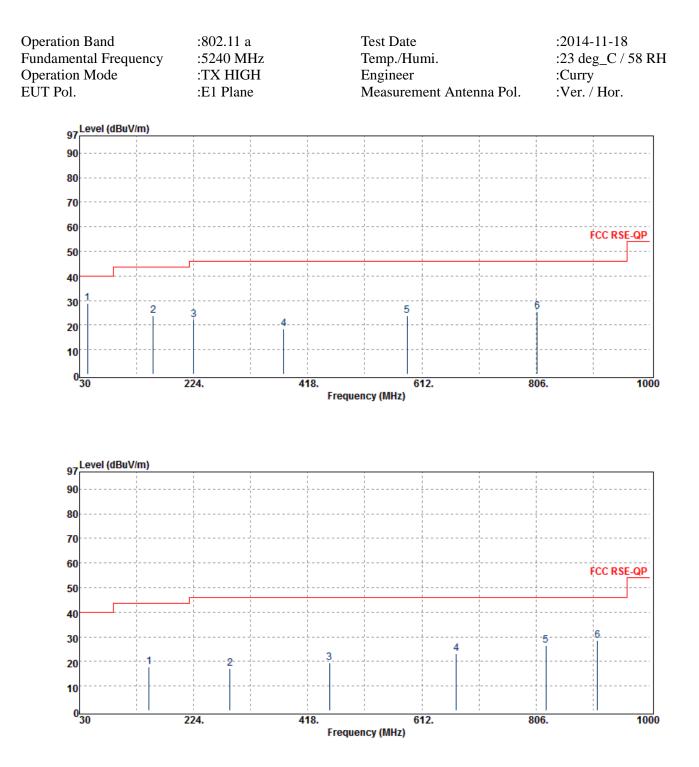


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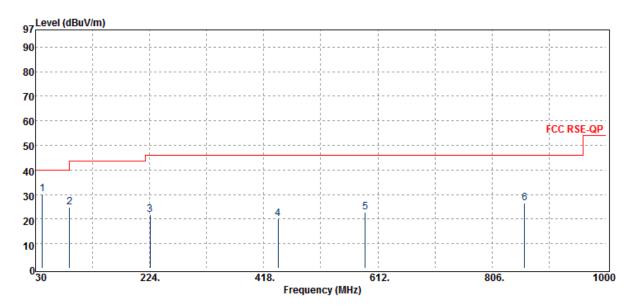


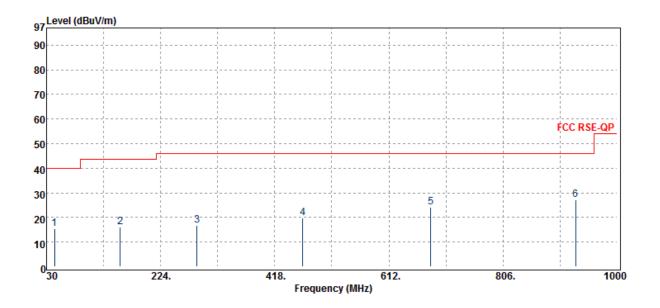
#### 802.11a 5250-5350MHz

**Operation Band Fundamental Frequency Operation Mode** EUT Pol.

:802.11 a :5260 MHz :TX LOW :E1 Plane

Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-18 :23 deg\_C / 58 RH :Curry :Ver. / Hor.



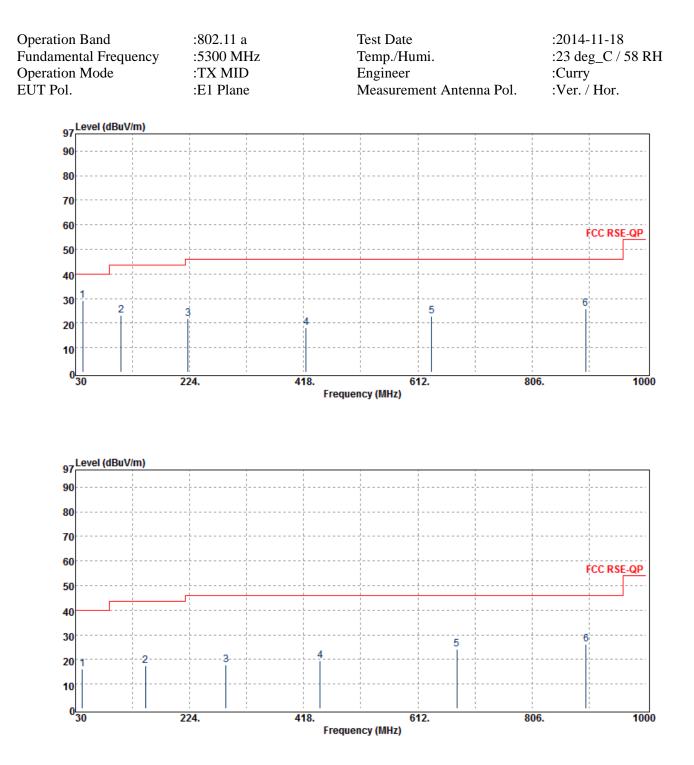


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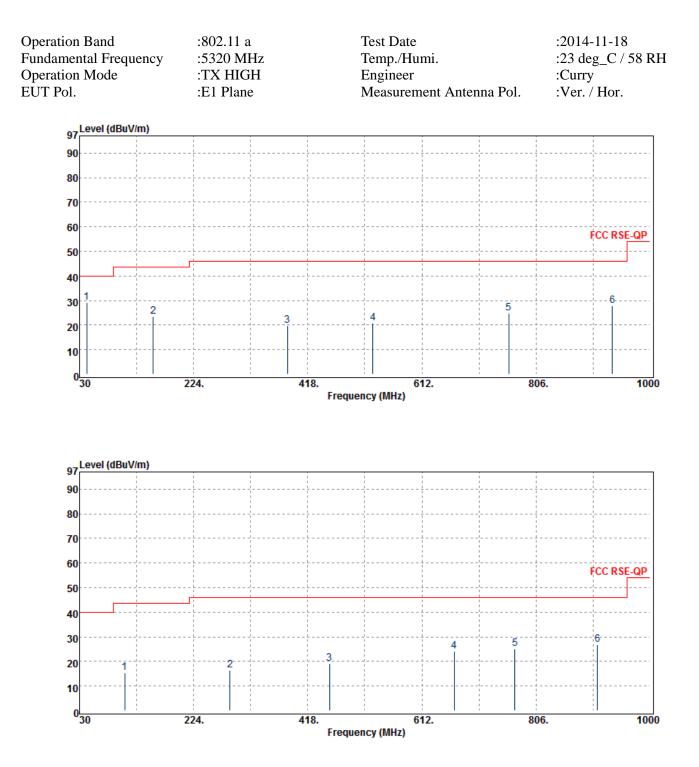


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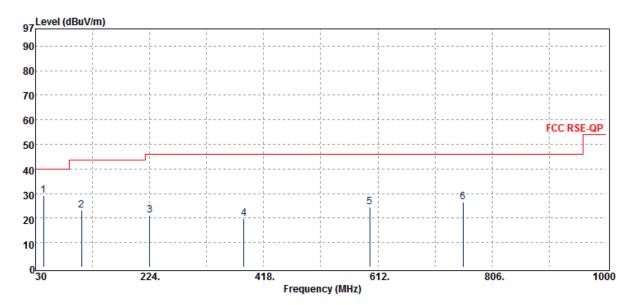


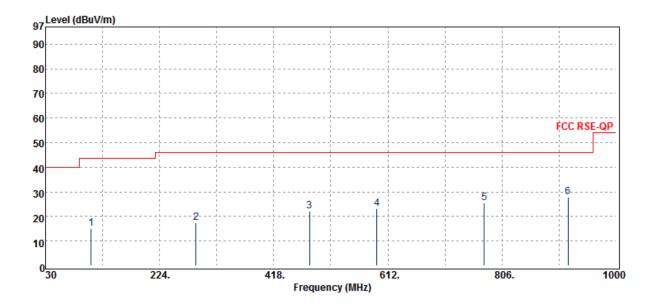
#### 802.11a 5470-5725MHz

Operation Band	:802
Fundamental Frequency	:550
Operation Mode	:TX
EUT Pol.	:E1
EUT Pol.	:E

2.11 a 00 MHz LOW Plane

Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-18 :23 deg\_C / 58 RH :Curry :Ver. / Hor.



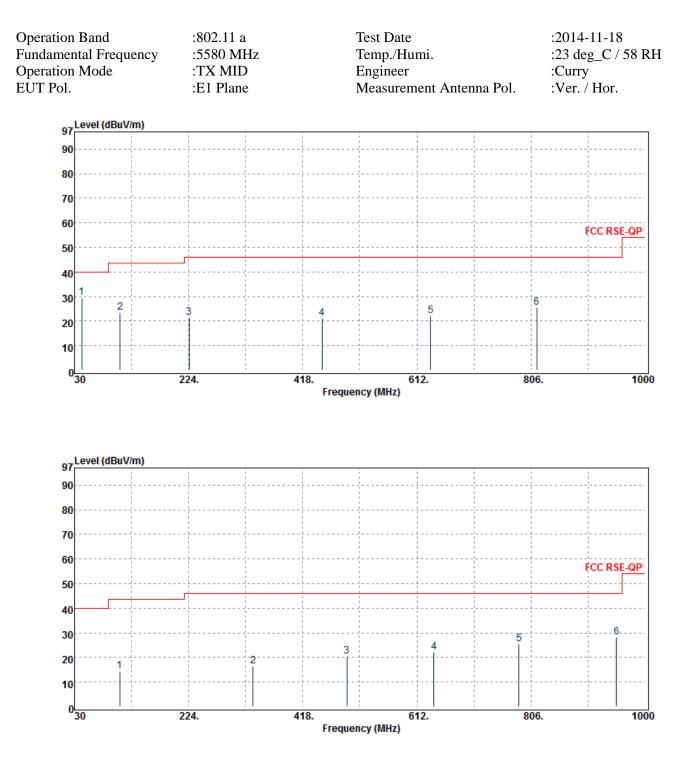


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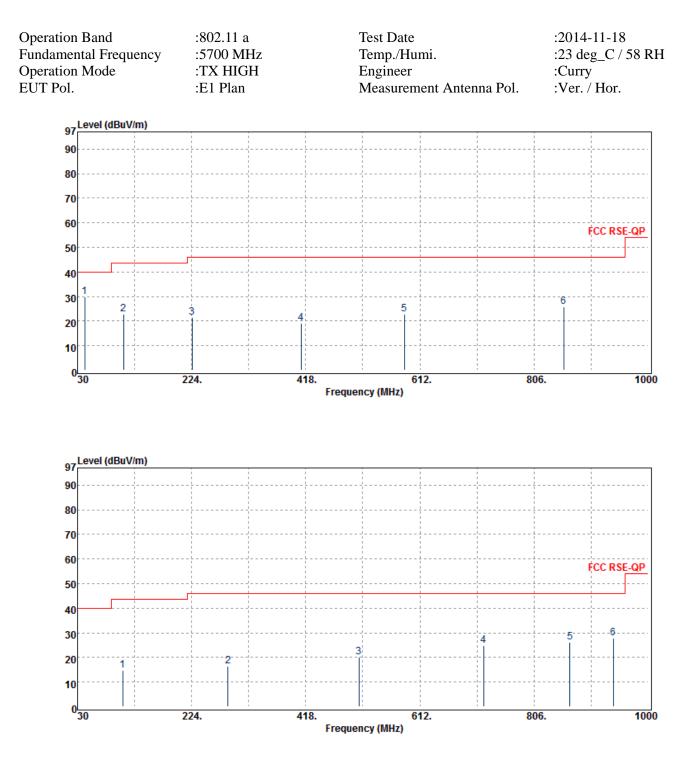


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SGS Taiwan Ltd.	No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號			
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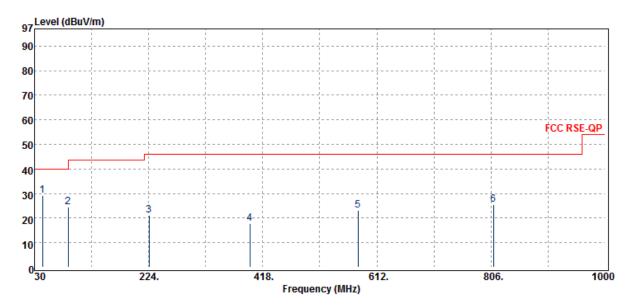


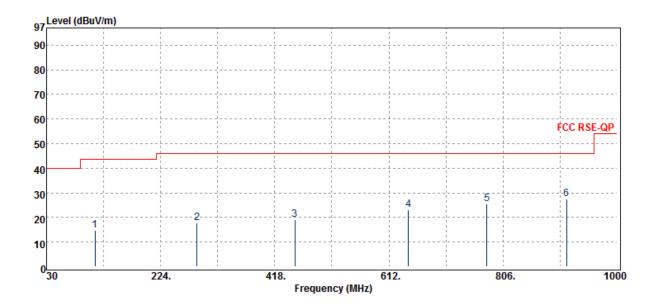
#### 802.11a 5725-5850MHz

**Operation Band Fundamental Frequency Operation Mode** EUT Pol.

:802.11 a :5745 MHz :TX LOW :E1 Plane

Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-18 :23 deg\_C / 58 RH :Curry :Ver. / Hor.



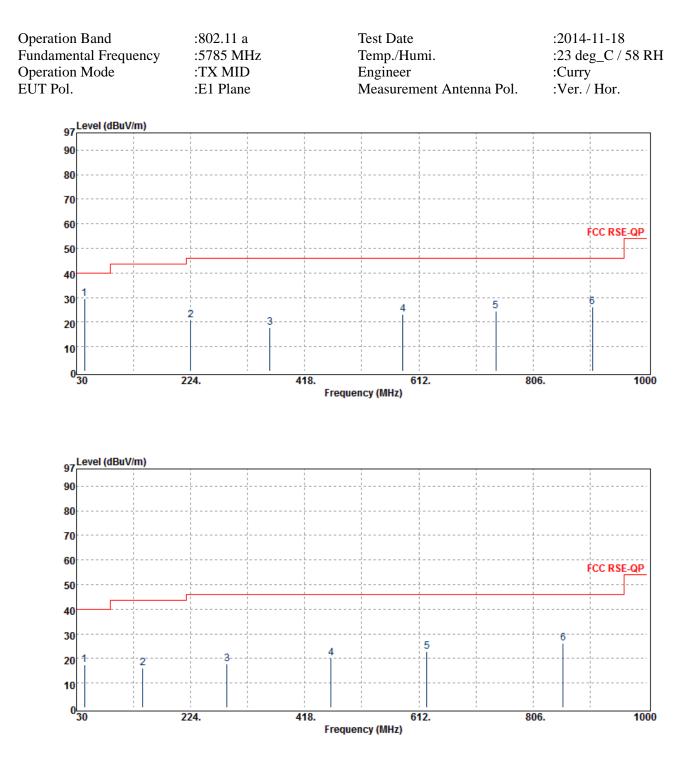


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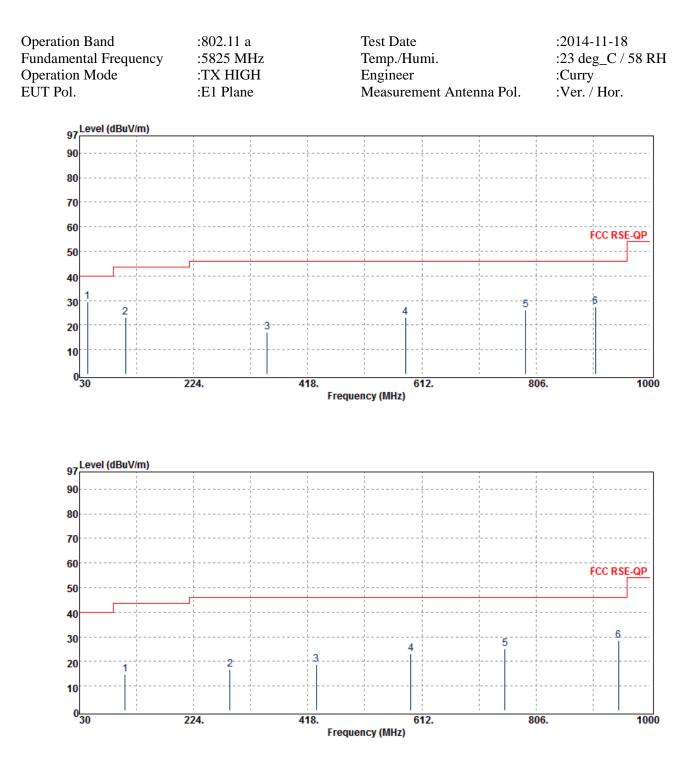


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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

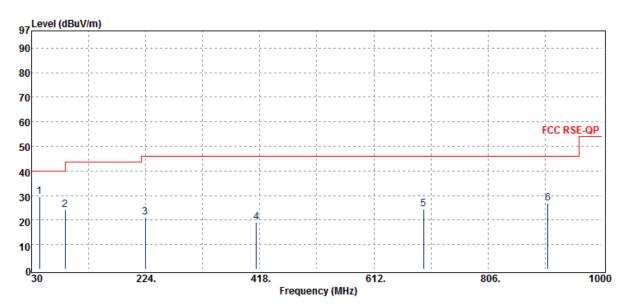
SGS Taiwan Ltd.	No.134,WuKungRoad,NewTaipeiIndu	ustrialPark,WukuDistrict,NewTaipeiCity	r,Taiwan24803/新北市五股區新北產業園區五工路 134 號
台灣檢驗科技股份有限公司	t (886-2) 2299-3279	f (886-2) 2298-0488	www.tw.sgs.com
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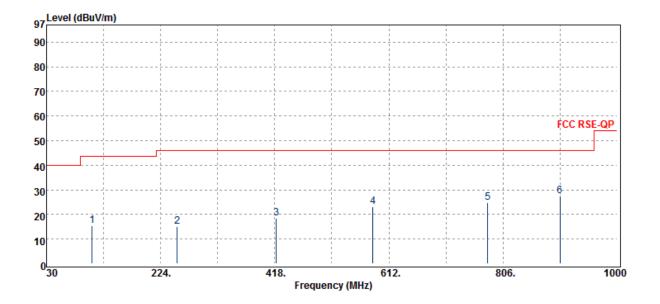


#### 802.11n 20M 5150-5250MHz

Operation Band :802.11 n20M Fundamental Frequency :5180 MHz **Operation Mode** :TX LOW EUT Pol. :E1 Plane

Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-18 :23 deg\_C / 58 RH :Curry :Ver. / Hor.



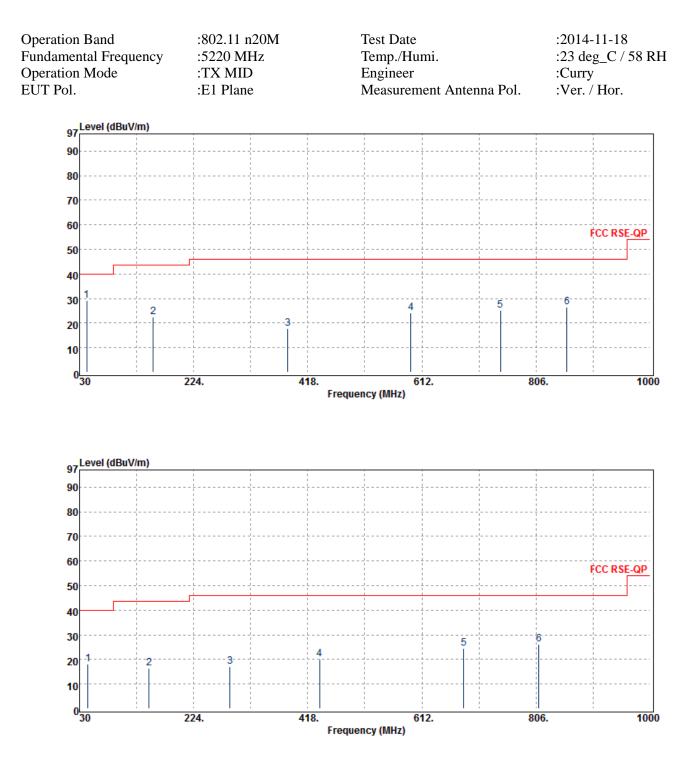


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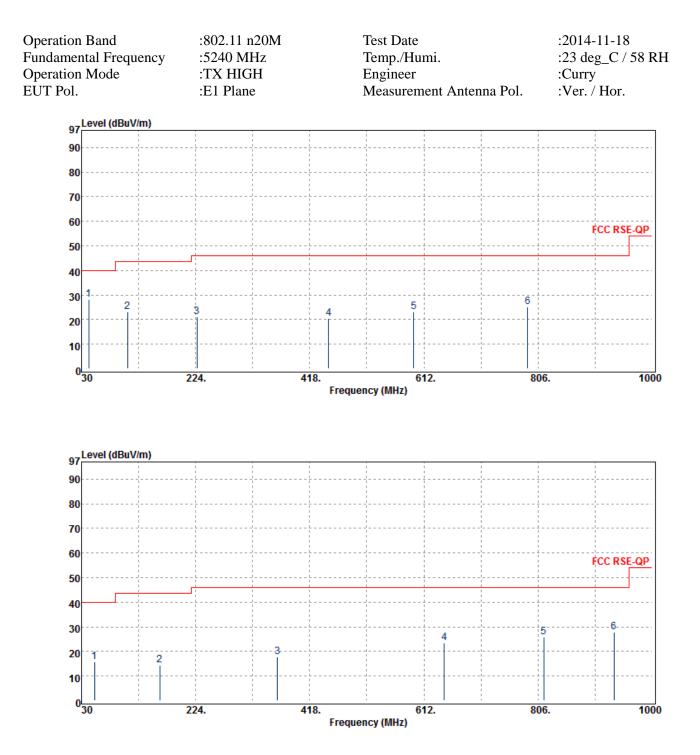


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台灣

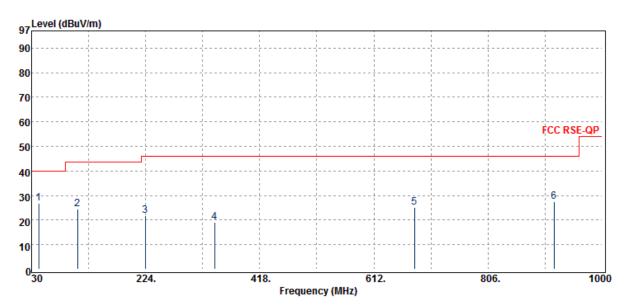
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SGS Taiwan Ltd.	No.134,WuKungRoad,NewTaipe	iIndustrialPark,WukuDistrict,NewTaipeiCit	ty,Taiwan24803/新北市五股區新北處	盖業園區五工路 134 號
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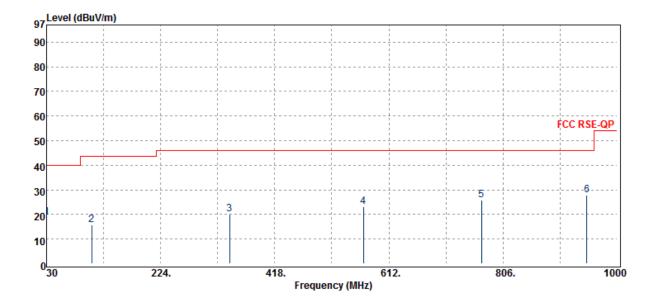


#### 802.11n 20M 5250-5350MHz

Operation Band :802.11 n20M Fundamental Frequency :5260 MHz **Operation Mode** :TX LOW EUT Pol. :E1 Plan

Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-18 :23 deg\_C / 58 RH :Curry :Ver. / Hor.



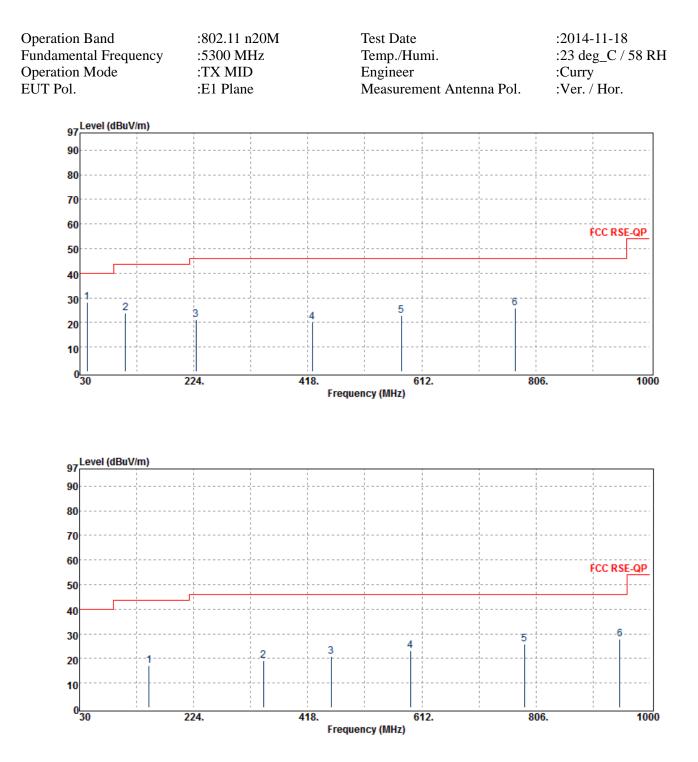


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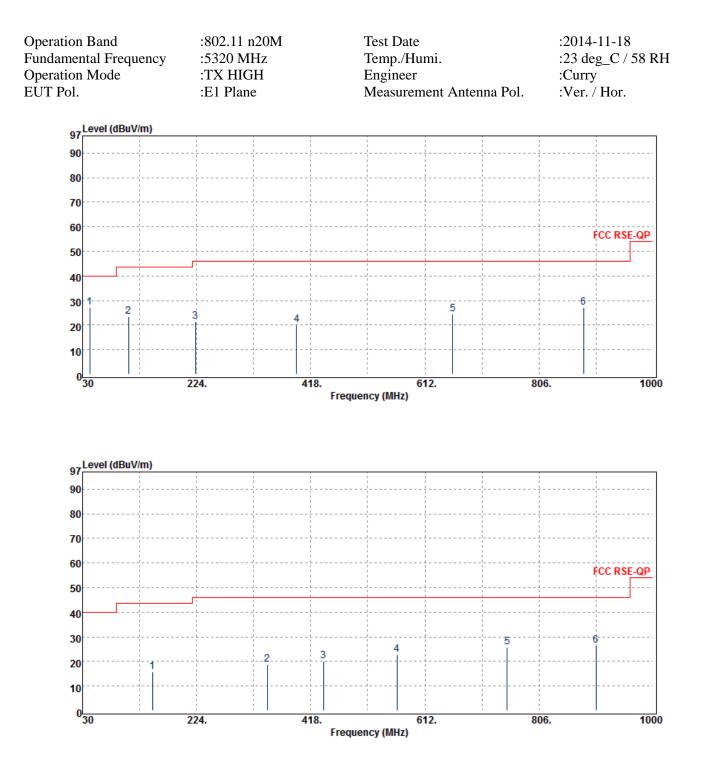


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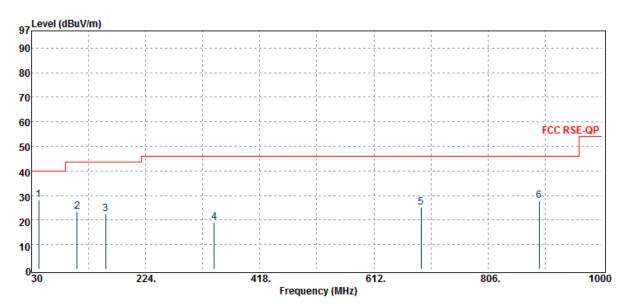
SGS Taiwan Ltd.	No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號			
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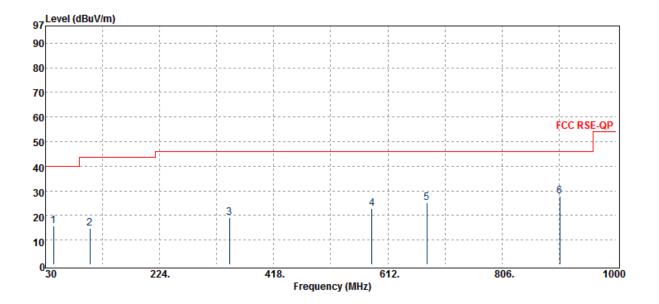


#### 802.11n 20M 5470-5725MHz

Operation Band :802.11 n20M Fundamental Frequency :5500 MHz **Operation Mode** :TX LOW EUT Pol. :E1 Plane

Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-18 :23 deg\_C / 58 RH :Curry :Ver. / Hor.



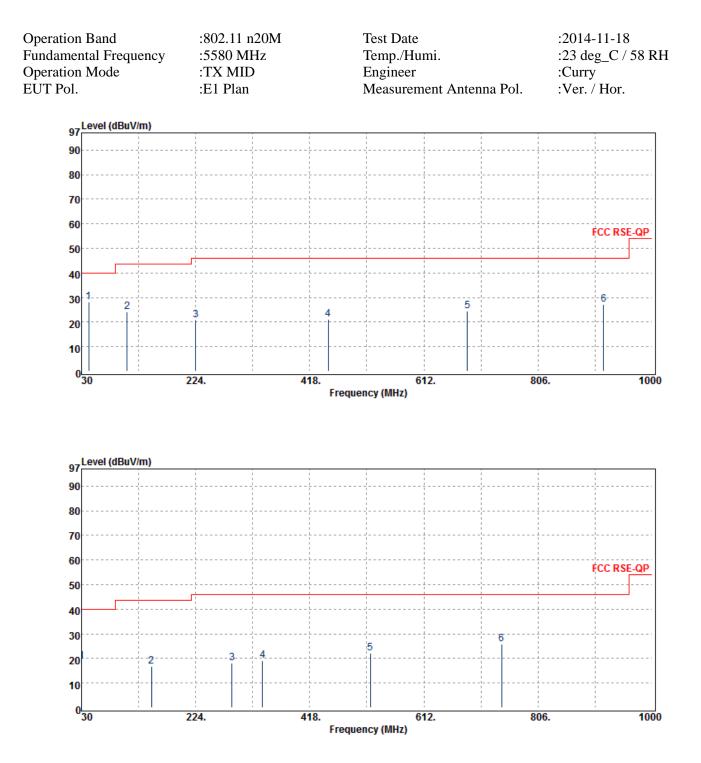


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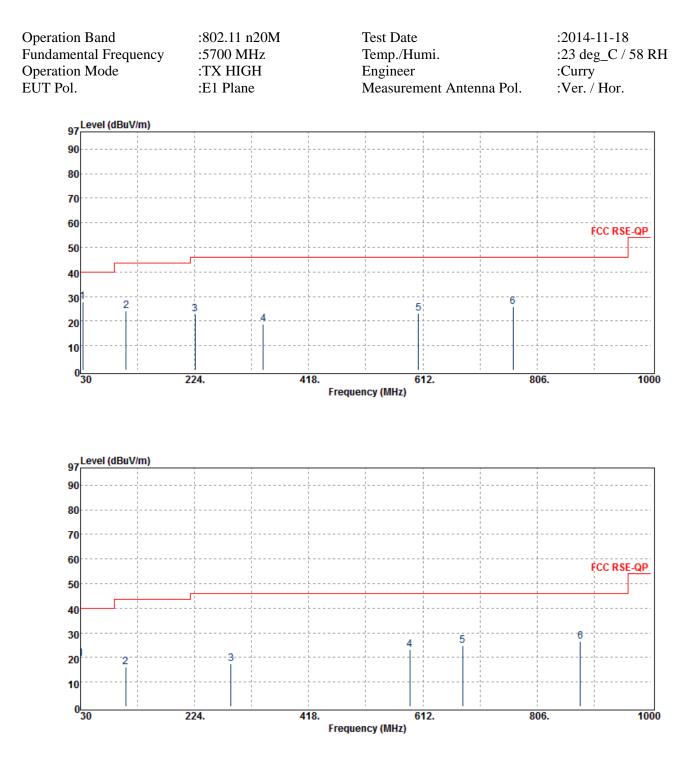


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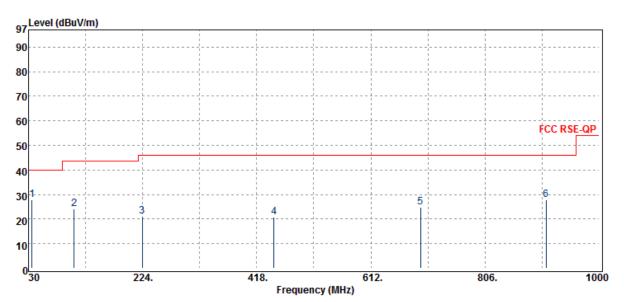
SGS Taiwan Ltd.	No.134,WuKungRoad,NewTaipeiIndu	ustrialPark,WukuDistrict,NewTaipeiCity	r,Taiwan24803/新北市五股區新北產業園區五工路 134 號
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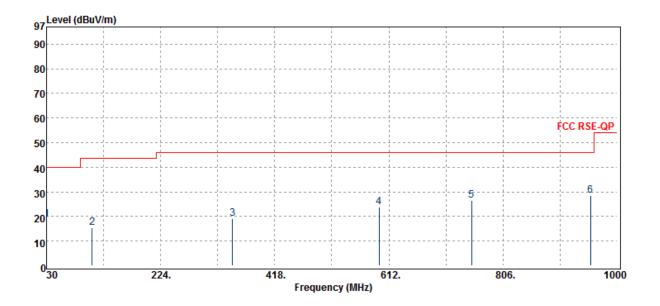


#### 802.11n 20M 5725-5850MHz

Operation Band :802.11 n20M Fundamental Frequency :5745 MHz **Operation Mode** :TX LOW EUT Pol. :E1 Plane

Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-18 :23 deg\_C / 58 RH :Curry :Ver. / Hor.



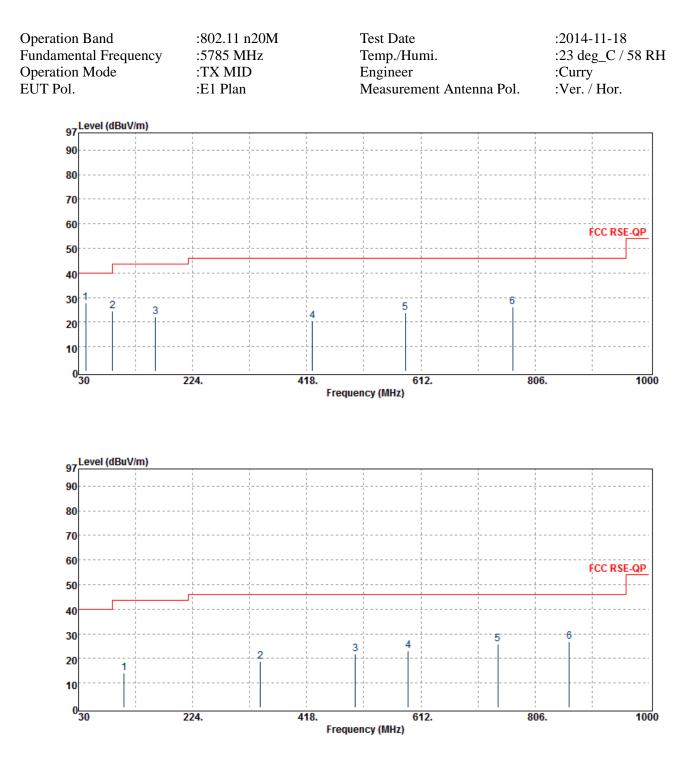


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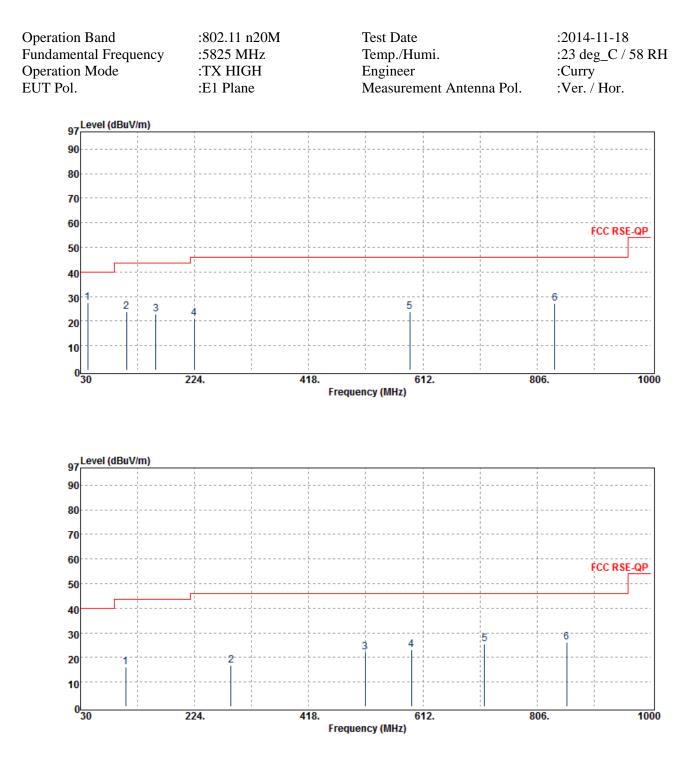


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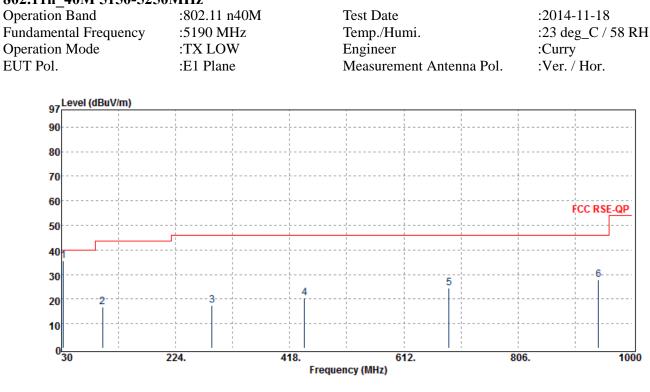
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

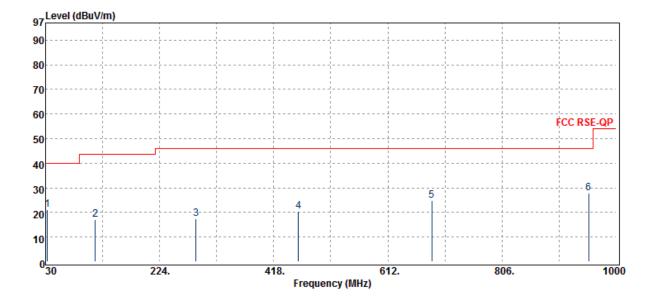
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1000

#### 802.11n 40M 5150-5250MHz





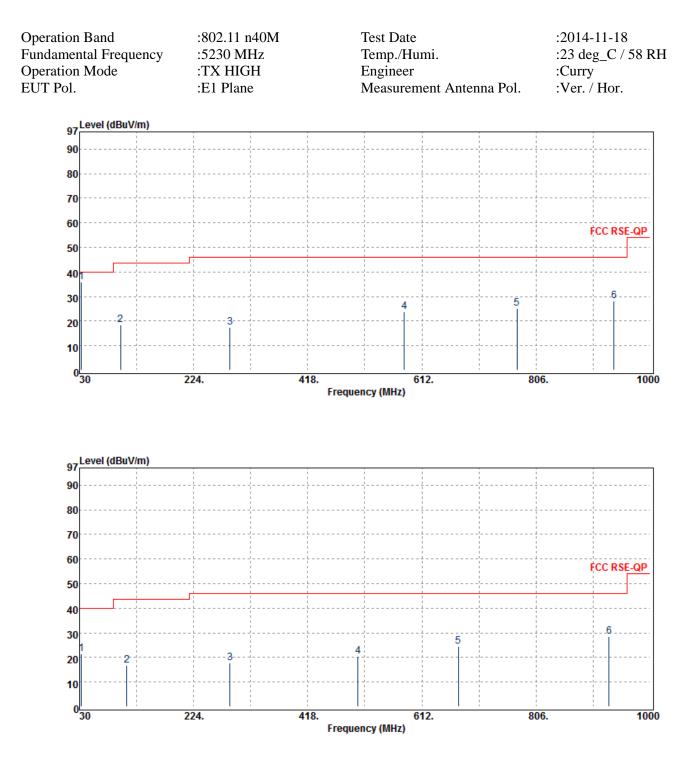
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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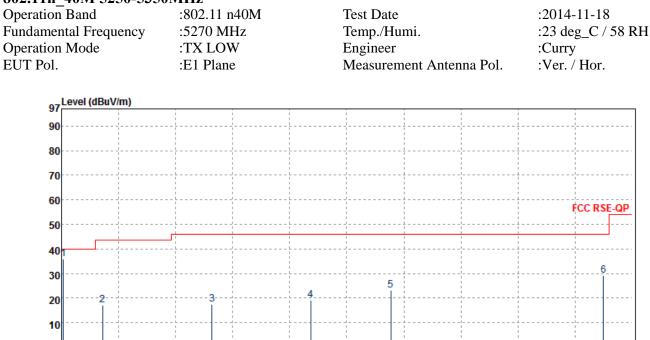
1000

806.

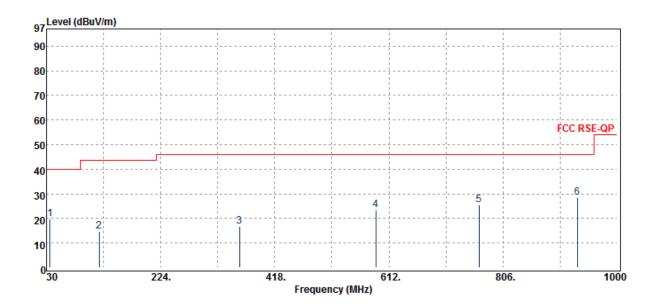
#### 802.11n 40M 5250-5350MHz

0<u>''</u> 30

224.



418.



Frequency (MHz)

612.

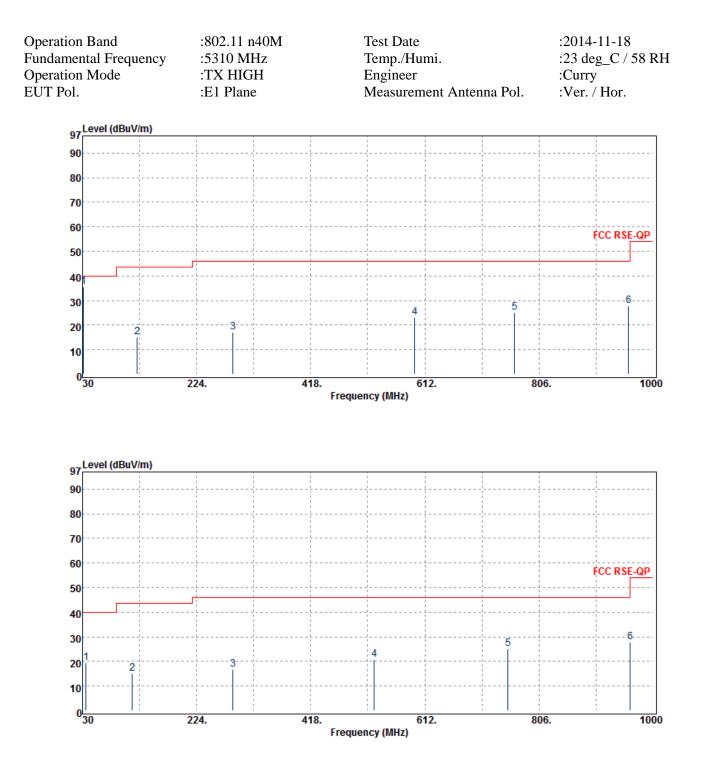
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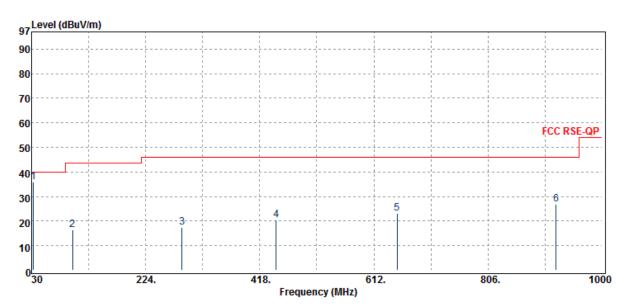
SGS Taiwan Ltd.	No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號			
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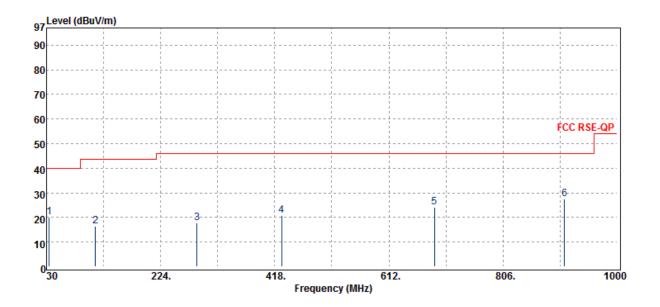


#### 802.11n 40M 5470-5725MHz

Operation Band :802.11 n40M Fundamental Frequency :5510 MHz **Operation Mode** :TX LOW EUT Pol. :E1 Plane

Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-18 :23 deg\_C / 58 RH :Curry :Ver. / Hor.



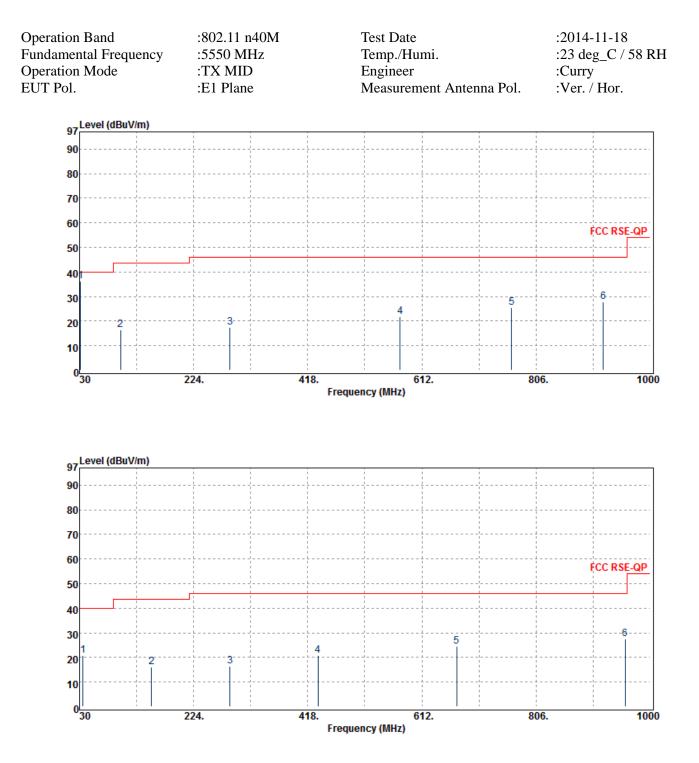


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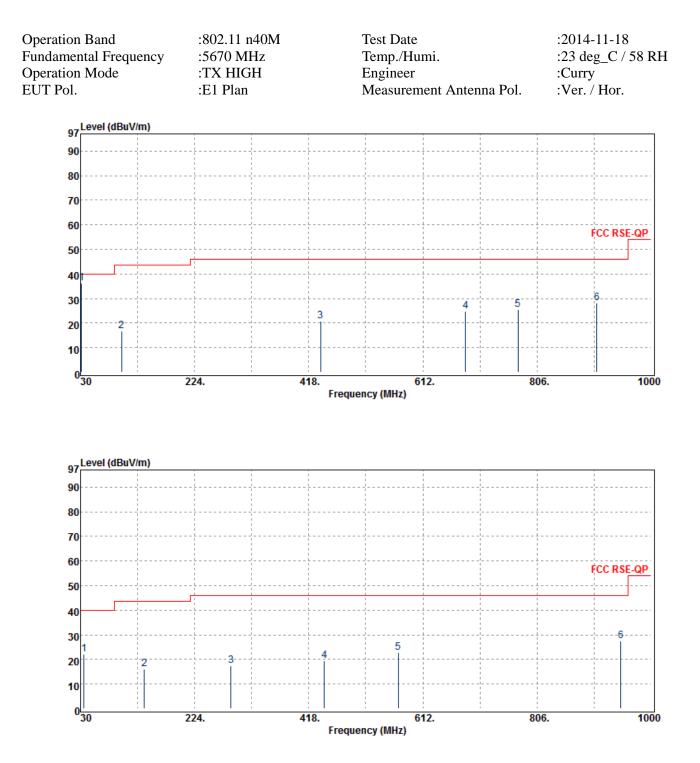


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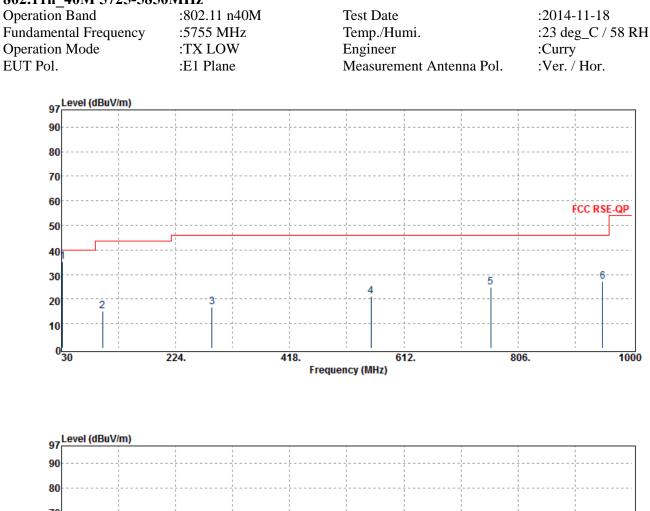


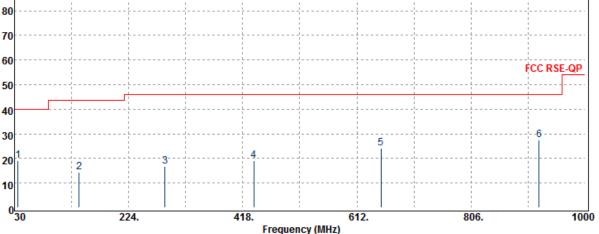
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#### 802.11n 40M 5725-5850MHz



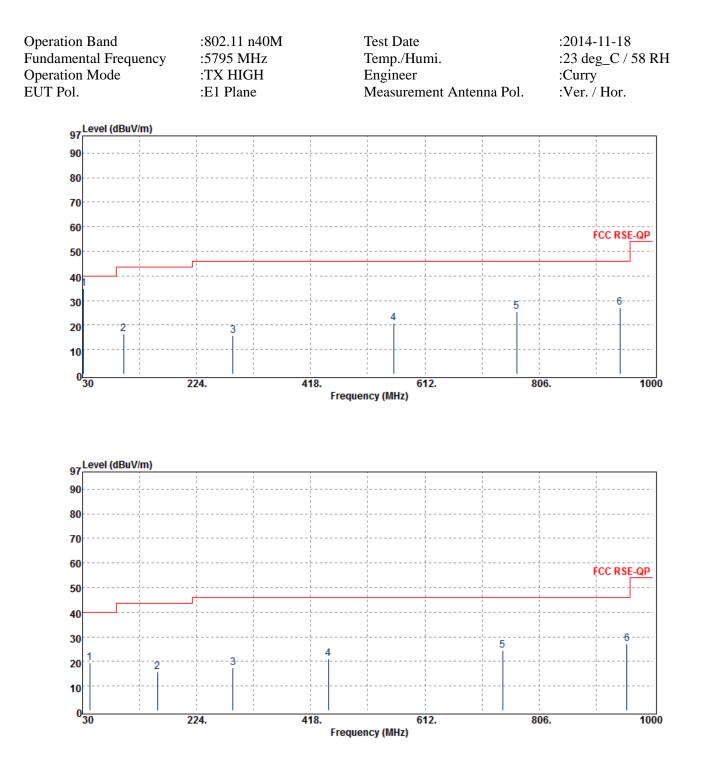


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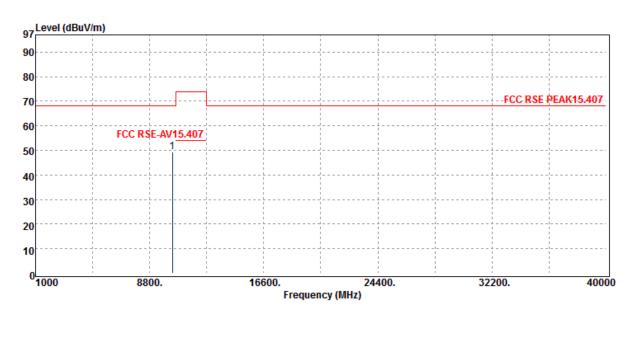
# Radiated Spurious Emission Measurement photos Result (above 1GHz)

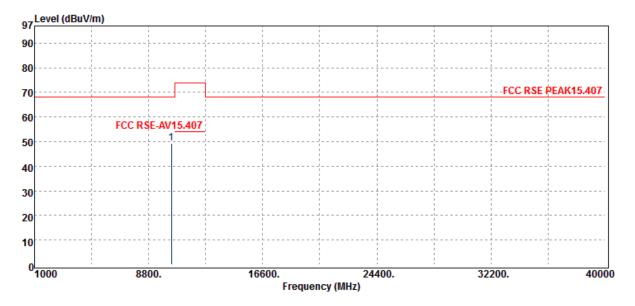
#### 802.11a 5150-5250MHz

**Operation Band** Fundamental Frequency **Operation Mode** EUT Pol.

:802.11 a :5180 MHz :TX LOW :E1 Plane

Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-18 :23 deg C / 58 RH :Curry :Ver. / Hor.





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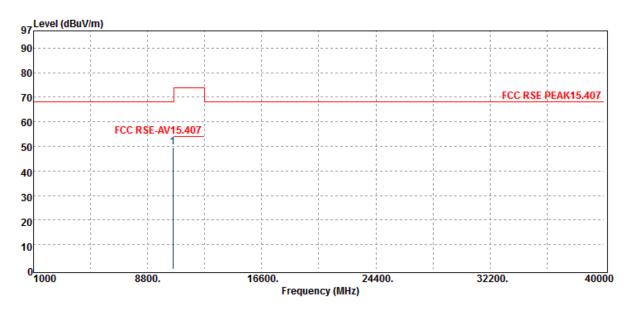
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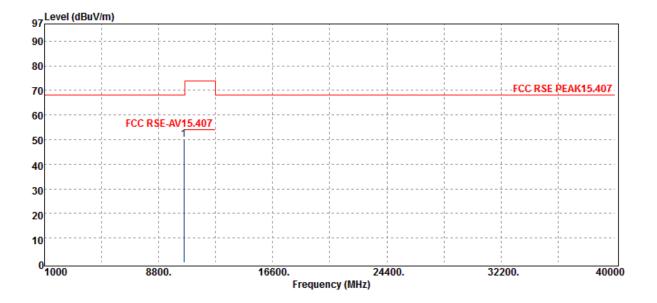


#### 802.11a 5250-5350MHz

Operation Band:802.11 aFundamental Frequency:5260 MHzOperation Mode:TX LOWEUT Pol.:E1 Plane

Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-18 :23 deg\_C / 58 RH :Curry :Ver, / Hor.





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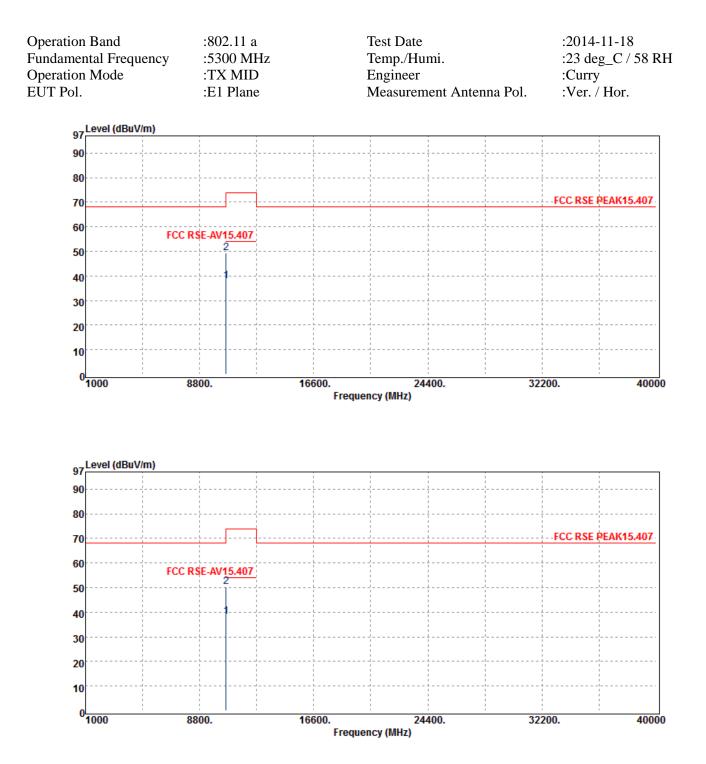
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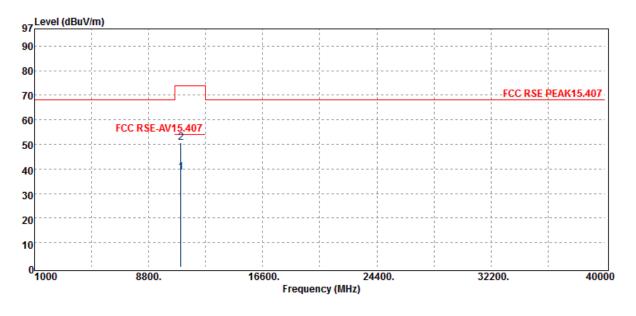


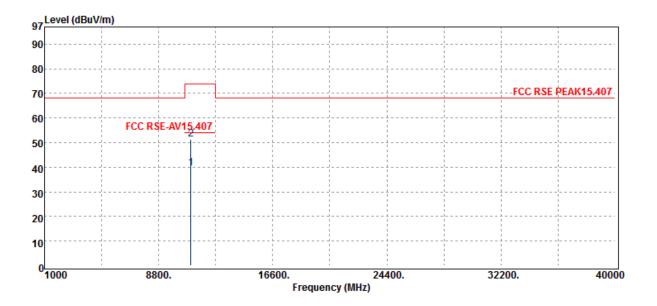
#### 802.11a 5470-5725MHz

Operation Band	:802.
Fundamental Frequency	:550
Operation Mode	:TX
EUT Pol.	:E1 I

.11 a 0 MHz LOW Plane

Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-18 :23 deg\_C / 58 RH :Curry :Ver. / Hor.





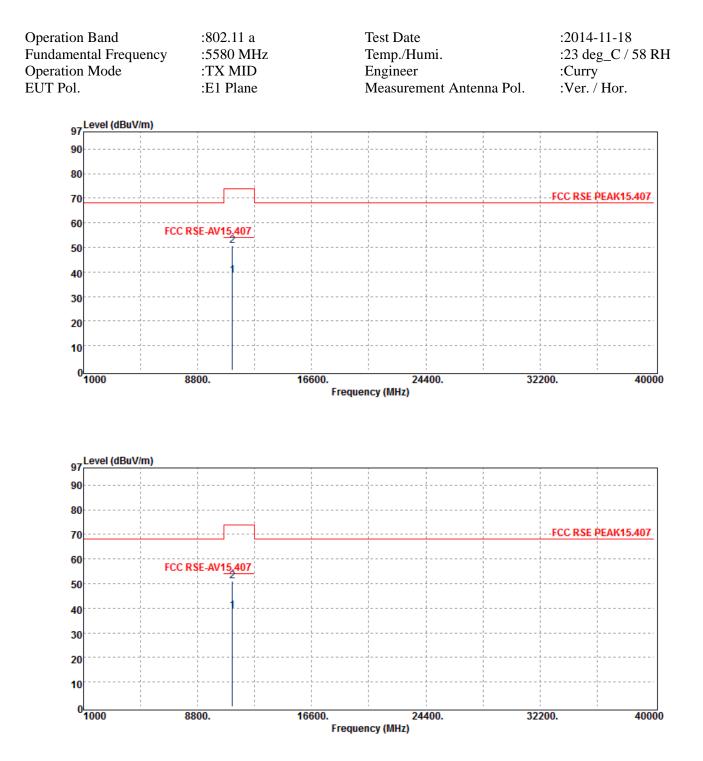
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**Operation Band** :802.11 a Test Date :2014-11-18 **Fundamental Frequency** :5700 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :TX HIGH Engineer :Curry EUT Pol. :E1 Plan Measurement Antenna Pol. :Ver. / Hor. 97 Level (dBuV/m) 90 80 FCC RSF PFAK15.407 70 60 FCC RSE-AV15.407 50 40 30 20 10 0<mark>1000</mark> 8800. 16600. 32200. 40000 24400. Frequency (MHz) Level (dBuV/m) 97 90 80 FCC RSE PEAK15.407 70 60 FCC RSE-AV15,407 50 40 30 20 10 0 1000 8800. 16600. 24400. 32200. 40000 Frequency (MHz)

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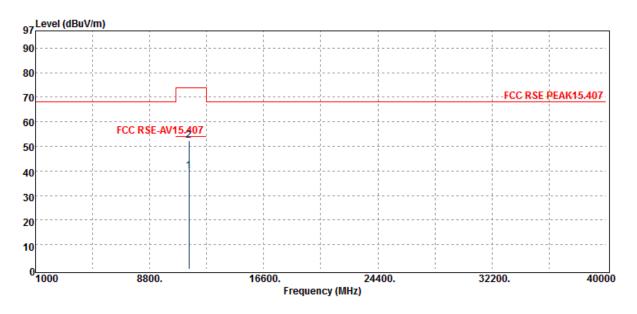
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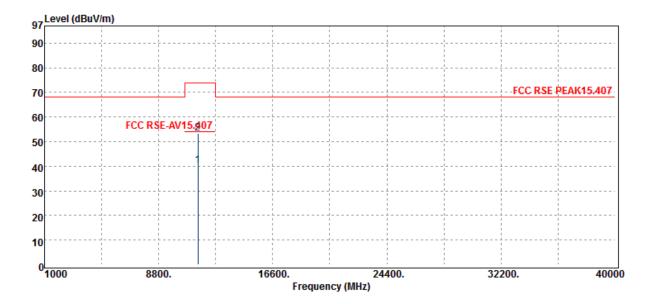


#### 802.11a 5725-5850MHz

**Operation Band** :802.11 a **Fundamental Frequency** :5745 MHz **Operation Mode** :TX LOW EUT Pol. :E1 Plane

Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-18 :23 deg\_C / 58 RH :Curry :Ver. / Hor.





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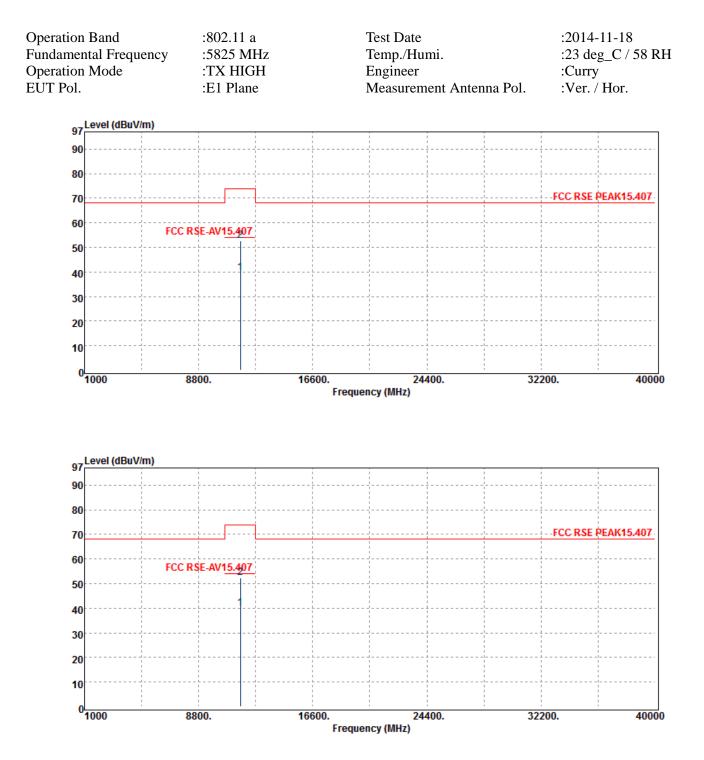


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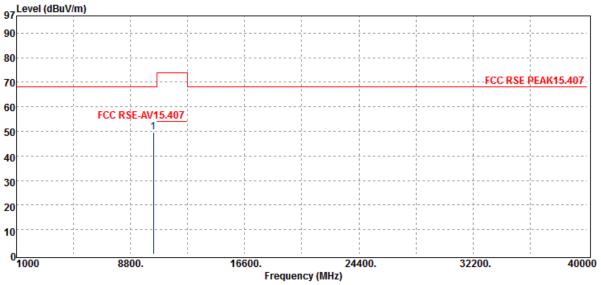
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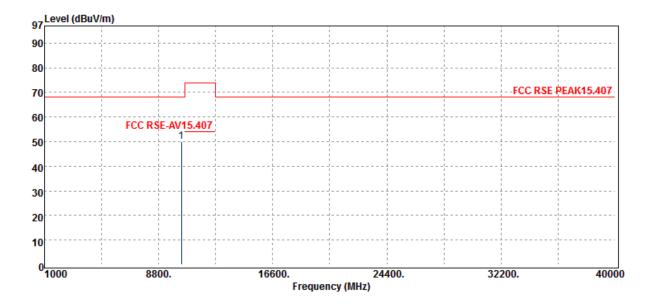


#### 802.11n 20M 5150-5250MHz

Operation Band	:802.11 n20M	Test Date
Fundamental Frequency	:5180 MHz	Temp./Humi.
Operation Mode	:TX LOW	Engineer
EUT Pol.	:E1 Plane	Measurement Antenna Pol.
97 Level (dBuV/m)		
90		

:2014-11-18 :23 deg\_C / 58 RH :Curry :Ver. / Hor.





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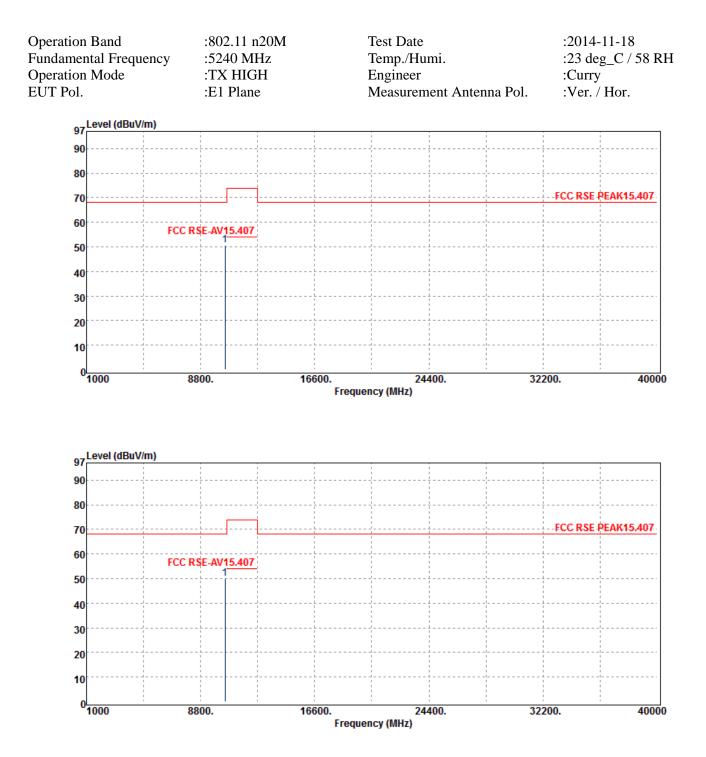
**Operation Band** :802.11 n20M Test Date :2014-11-18 **Fundamental Frequency** :5220 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :TX MID Engineer :Curry EUT Pol. :E1 Plane Measurement Antenna Pol. :Ver. / Hor. Level (dBuV/m) 97 90 80 FCC RSF PFAK15.407 70 60 FCC RSE-AV15.407 50 40 30 20 10 0<mark>1000</mark> 8800. 16600. 32200. 40000 24400. Frequency (MHz) Level (dBuV/m) 97 90 80 FCC RSE PEAK15.407 70 60 FCC RSE-AV15.407 50 40 30 20 10 0 1000 8800. 16600. 24400. 32200. 40000 Frequency (MHz)

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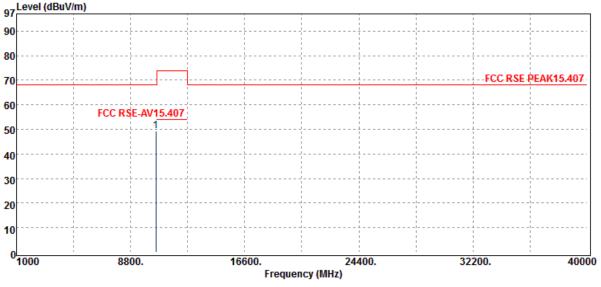


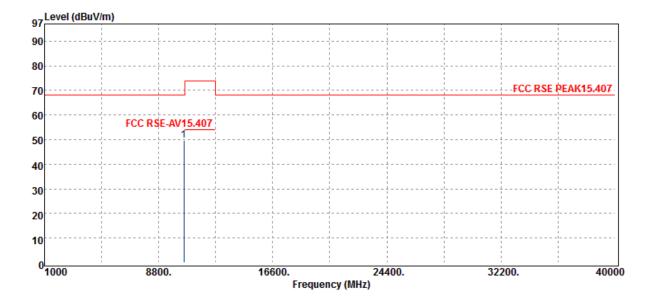
#### 802.11n 20M 5250-5350MHz

Operation Band Fundamental Frequency Operation Mode EUT Pol.	:802.11 n20M :5260 MHz :TX LOW :E1 Plan	Test Date Temp./Humi. Engineer Measurement Antenr
97Level (dBuV/m)		
90		

na Pol.

:2014-11-18 :23 deg\_C / 58 RH :Curry :Ver. / Hor.





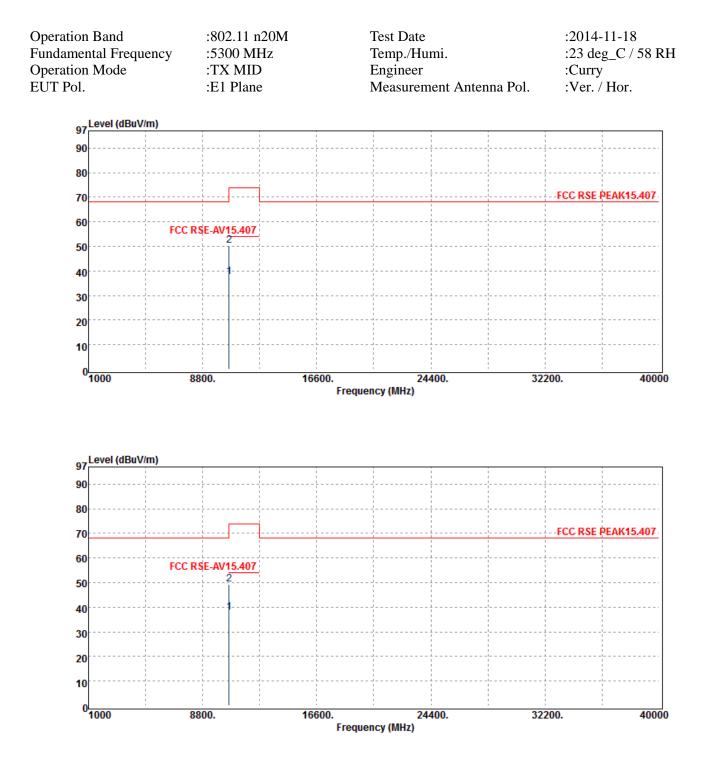
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**Operation Band** :802.11 n20M Test Date :2014-11-18 **Fundamental Frequency** :5320 MHz Temp./Humi. :23 deg\_C / 58 RH Operation Mode :TX HIGH Engineer :Curry EUT Pol. :E1 Plane Measurement Antenna Pol. :Ver. / Hor. 97 Level (dBuV/m) 90 80 FCC RSF PFAK15.407 70 60 FCC RSE-AV15.407 50 40 30 20 10 0<mark>1000</mark> 8800. 16600. 40000 24400. 32200. Frequency (MHz) Level (dBuV/m) 97 90 80 FCC RSE PEAK15.407 70 60 FCC RSE-AV15.407 50 40 30 20 10 0 1000 8800. 16600. 24400. 32200. 40000

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Frequency (MHz)

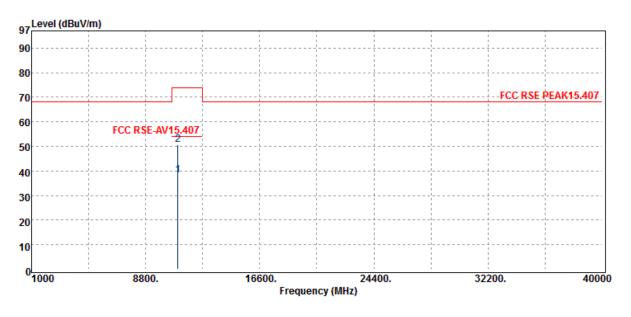
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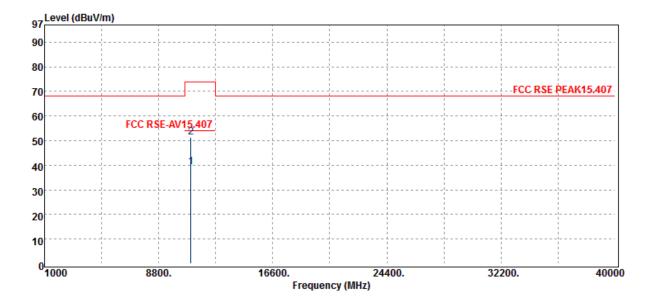


#### 802.11n 20M 5470-5725MHz

Operation Band	:802.11 n20M
Fundamental Frequency	:5500 MHz
Operation Mode	:TX LOW
EUT Pol.	:E1 Plane

Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-18 :23 deg\_C / 58 RH :Curry :Ver. / Hor.





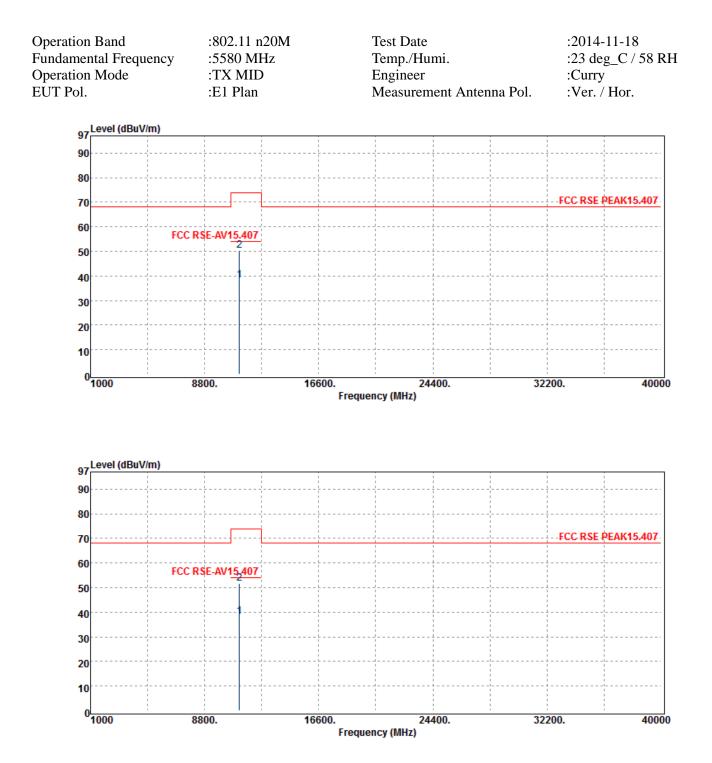
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**Operation Band** :802.11 n20M Test Date :2014-11-18 **Fundamental Frequency** :5700 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :TX HIGH Engineer :Curry EUT Pol. :E1 Plane Measurement Antenna Pol. :Ver. / Hor. Level (dBuV/m) 97 90 80 FCC RSF PFAK15.407 70 60 FCC RSE-AV15,407 50 40 30 20 10 0<mark>1000</mark> 8800. 16600. 32200. 40000 24400. Frequency (MHz) Level (dBuV/m) 97 90 80 FCC RSE PEAK15.407 70 60 FCC RSE-AV15.407 50 40 30 20 10 0 1000 8800. 16600. 24400. 32200. 40000 Frequency (MHz)

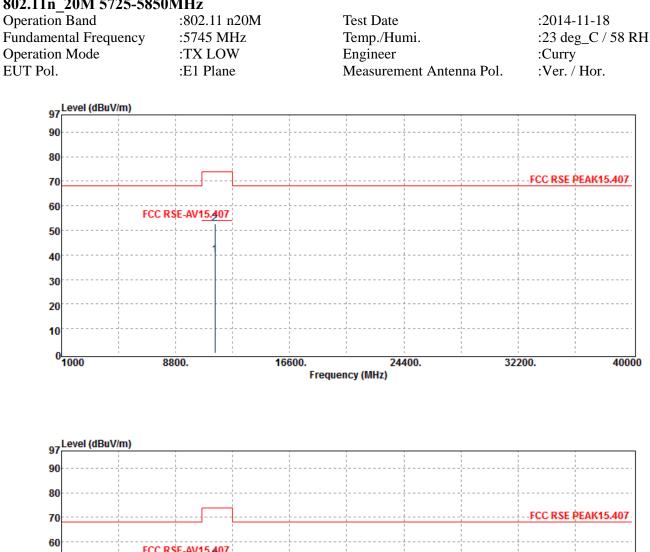
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#### 802.11n 20M 5725-5850MHz

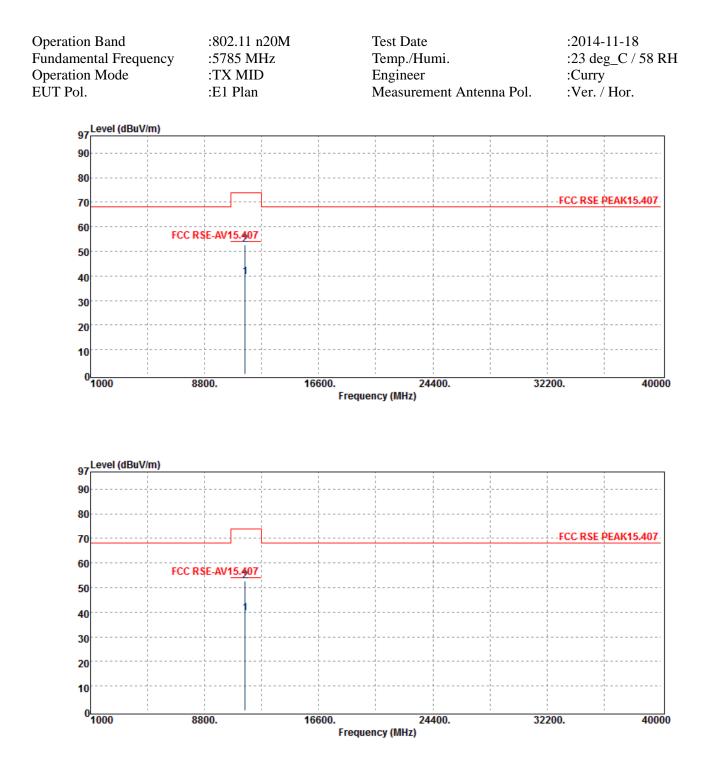


FCC RSE-AV15.407 50 40 30 20 10 0 1000 8800. 16600. 24400. 32200. 40000 Frequency (MHz)

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Report No.: ER/2014/B0055 Issue Date: Jan. 19, 2015 Page 265 of 275



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**Operation Band** :802.11 n20M Test Date :2014-11-18 **Fundamental Frequency** :5825 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :TX HIGH Engineer :Curry EUT Pol. :E1 Plane Measurement Antenna Pol. :Ver. / Hor. Level (dBuV/m) 97 90 80 FCC RSF PFAK15.407 70 60 FCC RSE-AV15.407 50 40 30 20 10 0<mark>1000</mark> 8800. 16600. 32200. 40000 24400. Frequency (MHz) Level (dBuV/m) 97 90 80 FCC RSE PEAK15.407 70 60 FCC RSE-AV15.407 50 40 30 20 10 0 1000 8800. 16600. 24400. 32200. 40000 Frequency (MHz)

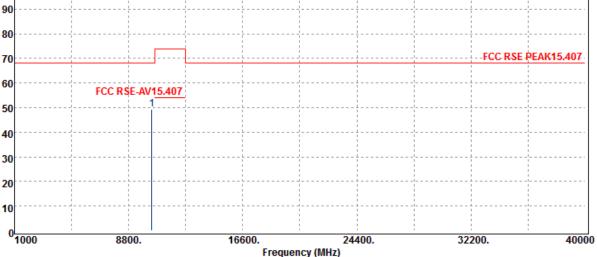
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#### 1.1 E1 E0 8

2.11n_40M 5150-525 eration Band	:802.11 n40M		Test Date		:2014-11	-18
damental Frequency			Temp./Humi.		:23 deg_	
eration Mode	:TX LOW		Engineer		:Curry	
Γ Pol.	:E1 Plane		Measurement Anteni	na Pol.		
						011
97						
90				1		
90					1	
80						
70		     			FCC RSE PEA	K15.407
60			· · · · · · · · · · · · · · · · · · ·			
FC	C RSE-AV1 <u>5.407</u>					
50						
40						
30						
20	·····					
10				1		
0 <sup>L</sup> 1000	8800.	16600.	24400.	3220	)0.	400
		Freque	icy (MHZ)			
1000	0000.		ncy (MHz)	5220		



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**Operation Band** :802.11 n40M Test Date :2014-11-18 **Fundamental Frequency** :5230 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :TX HIGH Engineer :Curry EUT Pol. :E1 Plane Measurement Antenna Pol. :Ver. / Hor. Level (dBuV/m) 97 90 80 FCC RSF PFAK15.407 70 60 FCC RSE-AV15.407 50 40 30 20 10 0<mark>1000</mark> 8800. 16600. 32200. 40000 24400. Frequency (MHz) Level (dBuV/m) 97 90 80 FCC RSE PEAK15.407 70 60 FCC RSE-AV15.407 50 40 30 20 10 0 1000 8800. 16600. 24400. 32200. 40000

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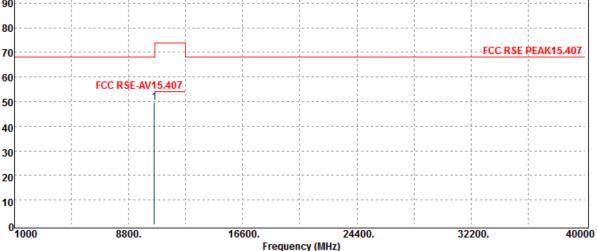
Frequency (MHz)

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#### 802.11n 40M 5250-5350MHz





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**Operation Band** :802.11 n40M Test Date :2014-11-18 **Fundamental Frequency** :5310 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :TX HIGH Engineer :Curry EUT Pol. :E1 Plane Measurement Antenna Pol. :Ver. / Hor. Level (dBuV/m) 97 90 80 FCC RSF PFAK15.407 70 60 FCC RSE-AV15.407 50 40 30 20 10 0<mark>1000</mark> 8800. 16600. 40000 24400. 32200. Frequency (MHz) Level (dBuV/m) 97 90 80 FCC RSE PEAK15.407 70 60 FCC RSE-AV15.407 50 40 30 20 10 0 1000 8800. 16600. 24400. 32200. 40000 Frequency (MHz)

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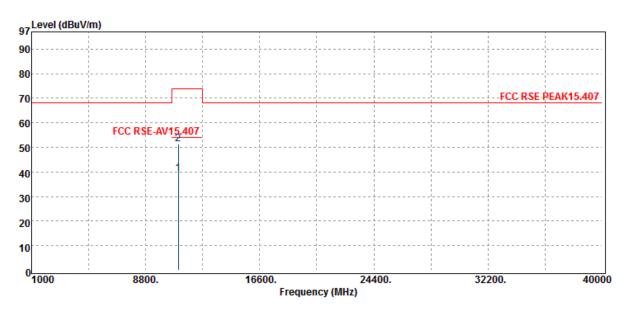
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#### 802.11n 40M 5470-5725MHz

Operation Band	:802.11 n40M
Fundamental Frequency	:5510 MHz
Operation Mode	:TX LOW
EUT Pol.	:E1 Plane

Test Date Temp./Humi. Engineer Measurement Antenna Pol. :2014-11-18 :23 deg\_C / 58 RH :Curry :Ver. / Hor.





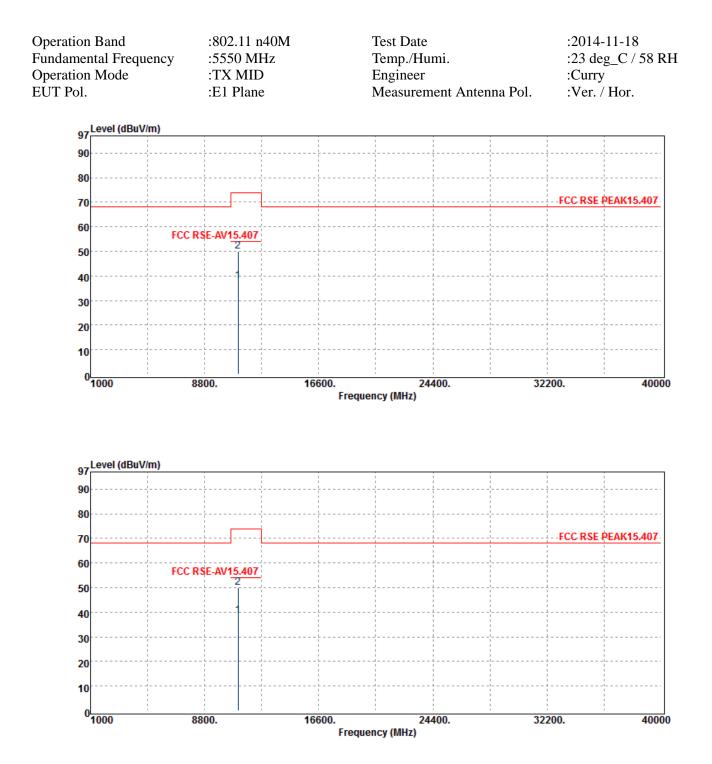
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**Operation Band** :802.11 n40M Test Date :2014-11-18 **Fundamental Frequency** :5670 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :TX HIGH Engineer :Curry EUT Pol. :E1 Plan Measurement Antenna Pol. :Ver. / Hor. Level (dBuV/m) 97 90 80 FCC RSF PFAK15.407 70 60 FCC RSE-AV15.407 50 40 30 20 10 0<mark>1000</mark> 8800. 16600. 40000 24400. 32200. Frequency (MHz) Level (dBuV/m) 97 90 80 FCC RSE PEAK15.407 70 60 FCC RSE-AV15.407 50 40 30 20 10 0 1000 8800. 16600. 24400. 32200. 40000 Frequency (MHz)

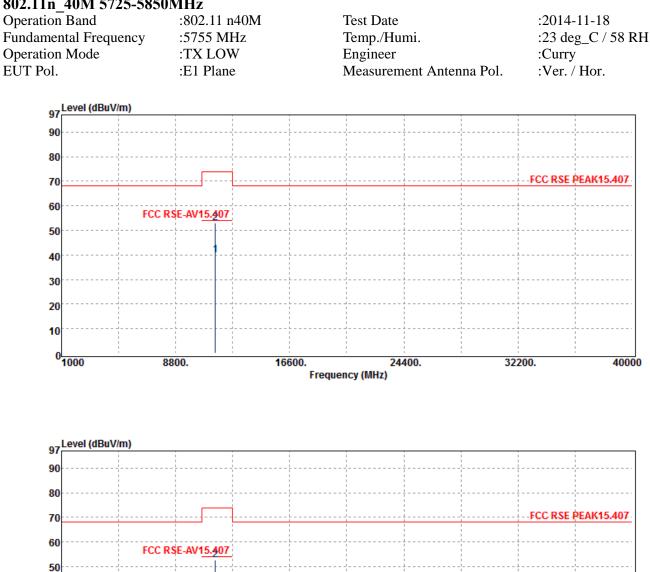
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#### 802.11n 40M 5725-5850MHz

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24400.

32200.

40000



**Operation Band** :802.11 n40M Test Date :2014-11-18 **Fundamental Frequency** :5795 MHz Temp./Humi. :23 deg\_C / 58 RH **Operation Mode** :TX HIGH Engineer :Curry EUT Pol. :E1 Plane Measurement Antenna Pol. :Ver. / Hor. 97 Level (dBuV/m) 90 80 FCC RSF PFAK15.407 70 60 FCC RSE-AV15.407 50 40 30 20 10 0<mark>1000</mark> 8800. 16600. 40000 24400. 32200. Frequency (MHz) Level (dBuV/m) 97 90 80 FCC RSE PEAK15.407 70 60 FCC RSE-AV15.407 50 40 30 20 10 0 1000 8800. 16600. 24400. 32200. 40000

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Frequency (MHz)

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