

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

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INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART E REQUIREMENT AND INDUSTRY CANADA RSS 210 **CLASS II PC REPORT**

December of Name of Hands	Tablet Computer
Product Name of Host:	Tablet Computer
Brand Name of Host:	acer
Model No. of Host:	РОКСС
Marketing Name of Host:	SW3-013
Product Name of Module:	802.11abgn+BT4.0 module
Brand Name of Module:	FOXCONN
Model No. of Module:	T77H462
Model Difference:	N/A
FCC ID:	MCLT77H462
IC:	2878D-T77H462
Report No.:	E2/2015/10017
Issue Date:	Mar. 06, 2015
FCC Rule Part:	§15.407
IC Rule Part:	RSS-210 issue 8:2010, Annex 9
	HON HAI PRECISION IND. CO., LTD
Prepared for:	5F-1, 5 Hsin-An Road, Hsinchu Science-Based
	Industrial Park, Taiwan, R.O.C.
	SGS Taiwan Ltd.
Prepared by:	Electronics & Communication Laboratory
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Testing Laboratory	may be altered or revised by SGS Taiwan Ltd. personnel only,

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and shall be noted in the revision section of the document.



Report No.: E2/2015/10017 Issue Date: Mar. 06, 2015 Page 3 of 116

VERIFICATION OF COMPLIANCE

Applicant:	HON HAI PRECISION IND. CO., LTD 5F-1, 5 Hsin-An Road, Hsinchu Science-Based Industrial Park, Taiwan, R.O.C.
Product Name of Host:	Tablet Computer
Brand Name of Host:	acer
Model No. of Host:	P0KCC
Marketing Name of Host:	SW3-013
Product Name of Module:	802.11abgn+BT4.0 module
Brand Name of Module:	FOXCONN
Model No. of Module:	T77H462
Model Difference:	N/A
FCC ID:	MCLT77H462
IC:	2878D-T77H462
File Number:	E2/2015/10017
Date of test:	Jan. 15, 2015 ~ Mar. 03, 2015
Date of EUT Received:	Jan. 15, 2015

We hereby certify that:

Unless

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 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 and RSS-210 issue 8: 2010 Annex 9. The test results of this report relate only to the tested sample identified in this report.

Test By:	Jazz Huang	Date:	Mar. 06, 2015
	Jazz Huang / Sr. Engineer		
Prepared By:	Tiffany Kao	Date:	Mar. 06, 2015
Approved By:	Tiffany Kao / Clerk Tim Ch ang	Date:	Mar. 06, 2015
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Version No.	Date	Description
00	Mar. 06, 2015	Initial creation of document

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GENERAL INFORMATION 1.

1.1. Product Description

Product Name:	Tablet Comp	uter			
Brand Name:	acer				
Model No.:	РОКСС				
Marketing Name of Host:	SW3-013				
Hardware Version:	R1.1				
Software Version:	Win8.1				
Model No. for Module:	Т77Н462				
Module FCC ID:	MCLT77H462				
Module IC:	2878D-T77H462				
Scope:	The test report covers the radiated emissions requirements of the stand- ards referenced in the report to allow system level approval of the mod- ule in this specific host.				
Class II Permissive change:	802.11abgn+BT4.0 module (T77H462) card INSTALLED IN AN Tab- let Computer				
Data Cable:	Model No.: N/A, Supplier: N/A				
	3.75Vdc form	n Rechargeable Li-ion Battery or 5.35Vdc from adapter			
Power Supply:	Battery:	Model No.: AP15A3R, Supplier: SANYO			
	Adapter:1. Model No.:PA-1100-25, Supplier: LITEON 2. Model No.: ADP-10HW A, Supplier: DELTA				

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WLAN 5GHz:

Wi-Fi	Frequency Range	Channels	Rated Power (Avg.) / Average Rated Power(EIRP)	Modulation Technology	Type of Emission
	5150~5250	4	13.44dBm (Avg.) 15.06dBm (EIRP)		16M7D1D
11a	5250~5350	4	13.45dBm (Avg.) 14.95dBm (EIRP)		30M5D1D
11a	5470~5600	5	11.78dBm (Avg.) 11.64dBm (EIRP)	OFDM	30M8D1D
	5650~5725	3	11.74dBm (Avg.) 11.60dBm (EIRP)		16M6D1D
	HT20 5150~5250	4	Avg. Power: (MIMO Chain 0): 12.55dBm (MIMO Chain 1): 14.19dBm (MIMO Chain 0+1): 16.46dBm EIRP: (MIMO Chain 0+1): 21.21dBm		17M5D1D
	HT20 5250~5350	4	Avg. Power: (MIMO Chain 0): 12.37dBm (MIMO Chain 1): 14.40dBm (MIMO Chain 0+1): 16.49dBm EIRP: (MIMO Chain 0+1): 21.01dBm		37M4D1D
11n	HT20 5470~5600	5	Avg. Power: HT 20:14.23dBm (MIMO Chain 0): 10.80dBm (MIMO Chain 1): 11.89dBm (MIMO Chain 0+1): 14.35dBm EIRP (MIMO Chain 0+1): 17.22dBm	OFDM	34M2D1D
	HT20 5650~5725	3	Avg. Power: (MIMO Chain 0): 10.29dBm (MIMO Chain 1): 12.38dBm (MIMO Chain 0+1): 14.47dBm EIRP (MIMO Chain 0+1): 17.34dBm		17M5D1D

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	HT40 5150-5250	2	Avg. Power: (MIMO Chain 0): 9.61dBm (MIMO Chain 1): 11.95dBm (MIMO Chain 0+1): 13.95dBm EIRP (MIMO Chain 0+1): 18.70dBm		36M8D1D
	HT40 5250-5350	2	Avg. Power: (MIMO Chain 0): 9.42dBm (MIMO Chain 1): 12.12dBm (MIMO Chain 0+1): 13.92dBm EIRP (MIMO Chain 0+1): 18.44dBm		37M4D1D
11n	HT40 5470-5600	2	Avg. Power: (MIMO Chain 0):8.12dBm (MIMO Chain 1): 8.81dBm (MIMO Chain 0+1): 11.49dBm EIRP (MIMO Chain 0+1): 14.36dBm	OFDM	70M4D1D
	HT40 5650-5725	1	Avg. Power: (MIMO Chain 0):7.46dBm (MIMO Chain 1): 8.98dBm (MIMO Chain 0+1): 11.30dBm EIRP (MIMO Chain 0+1): 14.17dBm		37M2D1D

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Antenna Designation	PIFA Antenna 1. Main: 5GHz Gain: 1.74dBi (5150MHz-5250MHz) 5GHz Gain: 1.51dBi (5250MHz-5350MHz) 5GHz Gain: -0.38dBi (5470MHz-5725MHz) 2. Aux: 5GHz Gain: 1.40dBi (5150MHz-5250MHz) 5GHz Gain: 1.40dBi (5250MHz-5350MHz)
Modulation type	5GHz Gain: -0.14dBi (5470MHz-5725MHz) CCK, DQPSK, DBPSK for DSSS 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 – 144Mbps 802.11 n_40MHz: 13.5 – 300Mbps

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

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IEEE 802.11n Spec:

MCS	MCS Index Nss Modulation			NG	NORDA		Datarate(Mbps)					
Index		Modulation	R	R NBPSC	NCBPS NBPSC		NDBPS		800nsGI		400nsGI	
					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

802.11n HT20 MCS8 -15

100								Data ra	nte (Mb/s)
MCS Index	Modulation	R	N _{BPSCS} (i _{SS})	N _{SD}	N _{SP}	N _{CBPS}	N _{DBPS}	800 ns GI	400 ns GI (see NOTE)
8	BPSK	1/2	1	52	4	104	52	13.0	14.4
9	QPSK	1/2	2	52	4	208	104	26.0	28.9
10	QPSK	3/4	2	52	4	208	156	39.0	43.3
11	16-QAM	1/2	4	52	4	416	208	52.0	57.8
12	16-QAM	3/4	4	52	4	416	312	78.0	86.7
13	64-QAM	2/3	6	52	4	624	416	104.0	115.6
14	64-QAM	3/4	6	52	4	624	468	117.0	130.0
15	64-QAM	5/6	6	52	4	624	520	130.0	144.4
NOTE-T	The 400 ns GI rate	values	are rounded to 1	decima	l place.				

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802.11n HT40 MCS8 -15

MCS	Malalatian	dulation R	N G)	N	N	N	N	Data rate (Mb/s)	
Index	Modulation	ĸ	N _{BPSCS} (i _{SS})	N _{.SD}	N _{SP}	N _{CBPS}	N _{DBPS}	800 ns GI	400 ns GI
8	BPSK	1/2	1	108	6	216	108	27.0	30.0
9	QPSK	1/2	2	108	6	432	216	54.0	60.0
10	QPSK	3/4	2	108	6	432	324	81.0	90.0
11	16-QAM	1/2	4	108	6	864	432	108.0	120.0
12	16-QAM	3/4	4	108	6	864	648	162.0	180.0
13	64-QAM	2/3	6	108	6	1296	864	216.0	240.0
14	64-QAM	3/4	6	108	6	1296	972	243.0	270.0
15	64-QAM	5/6	6	108	6	1296	1080	270.0	300.0



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

This submittal(s) (test report) is intended for FCC ID: MCLT77H462 filing to comply with Section 15.407 of the FCC Part 15, Subpart C Rules. And IC: 2878D-T77H462 filing to comply with Industry Canada RSS-210 issue 8: 2010 Annex 9.

1.3. Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4:2009 & KDB 789033 D01published on 04, 08, 2013. Radiated testing was performed at an antenna to EUT distance 3 meters.

Tested in accordance with FCC KDB789033 D01 General UNII Test Procedures v01r03 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.2, Keji 1st Rd., Guishan Township, Taoyuan County, Taiwan 333 which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2009. FCC Registration Number is: 990257. Canada Registration Number: 4620A-4.

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.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, 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,.

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2.4. Configuration of Tested System

Fig. 2-1 Radiated Emission & Conducted (Antenna Port) Configuration

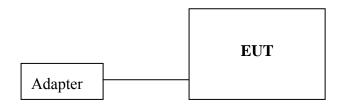


Table 2-1 Equipment Used in Tested System

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

3. SUMMARY OF TEST RESULT

FCC/IC Rules	Description Of Test	Result
§15.407(a) (1) (2)	The Maximum Output Pow-	Compliant
RSS 210 A9.2(1)(2)(3)	er Measurement	
§15.407(b) (1) (2) (3)(6) (7)	Undesirable Emission – Radiated	Compliant
RSS 210 A9.2 (1) (2)(3)	Measurement	
RSS-Gen 7.2.5		
§15.203	Antenna Requirement	Compliant
RSS-Gen 7.1.2		

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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.

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

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

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 $a/b/g/n_HT20/n_HT40$ 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 E2 position was reported.

Pre-scanned was done on Antenna Main and Antenna Aux, and Antenna Main results higher emission at 5GHz. And Aux results higher emission at 5GHz 5470-5725MHz. Therefore, the completed set of measurement was done on Antenna Main to be presented 5150-5250MHz and 5250-5350MHz, and Antenna Aux to be presented for 5470-5725MHz on this test repot.

For radiation spurious emission test relevant n_HT20&HT40, MIMO mode that generates the higher emission is chosen to be tested in comparison with transmission at SISO mode.

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5. **MEASUREMENT UNCERTAINTY**

Test Items	Uncertainty	
AC Power Line Conducted Emission	+/- 2.586 dB	
26 dB and 99% 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		
Transmission in case of Absence of Information	+/- 1.55 dB	
Frequency Stability	+/- 123.36 Hz	
TPC and DFS Measurement	+/- 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. The MAXIMUM OUTPUT POWER MEASUREMENT

6.1 Standard Applicable:

According to §15.407(a)

- 1. For the band 5.15-5.25 GHz, the maximum conducted power over the frequency of operation shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log B.
- 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 (24dBm) 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.

According to RSS-210 A9.2

- 1. For the band 5150-5250 MHz, the maximum equivalent isotropically radiated power (e.i.r.p.) shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.
- 2. For the bands 5250-5350 MHz and 5470-5725 MHz, the maximum conducted output power shall not exceed 250 mW or 11 + 10 log10 B, dBm, whichever power is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

In addition, devices with maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

In addition to the above requirements, devices operating in the band 5250-5350 MHz with maximum e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. elevation mask where θ is the angle above the local horizontal plane (of the earth) as shown below:

(i) -13 dB(W/MHz) for $0o \le \theta < 8o$ (ii) -13 - 0.716 (θ -8) dB(W/MHz) for 80 < θ < 400 (iii) -35.9 - 1.22 (0-40) dB(W/MHz) for 400 < θ < 450 (iv) -42 dB(W/MHz) for $\theta > 450$

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3. For the band 5725-5825 MHz, the maximum conducted output power shall not exceed 1.0 W or 17 + 10 log10 B, dBm, whichever power is less. The power spectral density shall not exceed 17 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 4.0 W or 23 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

Fixed point-to-point systems for this band are permitted to have an e.i.r.p. greater than 4 W, provided that the higher e.i.r.p. is achieved by employing higher gain antennas, but not higher transmitter output powers. Point-to-multipoint systems, omni-directional applications and multiple co-located transmitters transmitting the same information are prohibited from exceeding 4 W e.i.r.p. However, remote stations of point-to-multipoint systems shall be permitted to operate at greater than 4 W e.i.r.p, under the same conditions as for point-to-point systems.

where B is the 26dB emission bandwidth in MHz.

Note: Directional gain = gain of antenna element + 10 log (# of TX antenna elements) Effective Legacy Gain = 1.74+3.01=4.75*dBi* (5150*MHz*-5250*MHz*) *Effective Legacy Gain* = 1.51+3.01=4.52*dBi* (5250*MHz*-5350*MHz*) *Effective Legacy Gain* = -0.14+3.01=2.87*dBi* (5470*MHz*-5725*MHz*)

6.2 Measurement Procedure

- Place the EUT on the table and set it in transmitting mode. 1.
- 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), n HT20=0.10, n HT40=0.12
- 4. Record the max. reading.
- Repeat above procedures until all frequency (low, middle, and high channel) measured were com-5. plete.
- Employing step 1 to4 obtaining per-chain basis in MIMO operation, and sum the power in linear to 6. result the output of MIMO operation at frequency of interest (, where MIMO is applicable).

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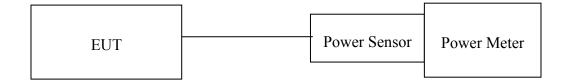


Note: For EIRP/ERP measurement complying with RSS-210 9.2, the formula as deduced in 1.3.2 of KDB 412172 D01 is used to calculate. ERP/EIRP = Pt + Gt - Lc, where Pt= transmitter output power measured directly at antenna port, expressing in dBm, and Gt = gain of the transmitting antenna in dBi that can be referred in antenna spec provided by the manufacturer in section 1.1, Lc = signal attenuation in the cable between the transmitting port and antenna.

6.3 Measurement Equipment Used:

	SGS Conducted Room						
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.		
TYPE		NUMBER	NUMBER	CAL.			
Spectrum Analyzer	Agilent	N9010A	MY53400256	10/15/2014	10/14/2015		
Power Meter	Anritsu	ML2496A	1326001	06/21/2014	06/20/2015		
Power Sensor	Anritsu	MA2411B	1315048	06/21/2014	06/20/2015		
Power Sensor	Anritsu	MA2411B	1315049	06/21/2014	06/20/2015		
Coaxial Cable 30cm	WOKEN	00100A1F1A19 5C	RF01	12/19/2014	12/18/2015		
DC Block	PASTERNACK	PE8210	RF29	12/19/2014	12/18/2015		
Splitter	RF-LAMBAD	RFLT2W1G18 G	RF35	12/19/2014	12/18/2015		
Attenuator	WOKEN	218FS-10	RF23	12/19/2014	12/18/2015		
DC Power Supply	Agilent	E3640A	MY53140006	05/31/2014	05/30/2015		

6.4 Test Set-up:



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6.5 Measurement Result

802.11a (Antenna Main)

Cał	ble loss = 0	The Maximum (Output Power
СН	Frequency (MHz)	Data Rate	Required Limit
	, , ,	6	
			16.99dBm or
36	5180	13.25	4+10log(B) = 18.64dBm
			16.99dBm or
44	5220	13.28	4+10log(B) = 19.01dBm
			16.99dBm or
48	5240	13.32	$4+10\log(B) =$
			18.15dBm
52	5260	13.31	23.98dBm or 11+10log(B) =
52	5200	15.51	27.63dBm
			23.98dBm or
60	5300	13.44	$11+10\log(B) =$
			26.54dBm 23.98dBm or
64	5320	13.25	$11+10\log(B) =$
04	5520	15.25	24.59dBm
			23.98dBm or
100	5500	11.76	$11+10\log(B) =$
			26.75dBm
117	5500	11.77	23.98dBm or 11+10log(B) =
116	5580	11.66	11+100g(B) = 27.60dBm
			23.98dBm or
140	5700	11.63	11+10log(B) =
			24.61dBm

Note: Limit is re-adjusted in terms of dBm

10*log(50mW) = 16.99dBm for the limit on the band of $5150\sim5250MHz$ 10*log(250mW)=23.98dBm for the limit on the band of 5260~5320Mz, &5470~5725MHz Note: Cable loss is 11.7dB is set as the offset on the spectrum to compensate the loss causing by cable

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802.11n HT20 - SISO (Antenna Main)

	ble loss = 0	The Maximum Output Power		
СН	Frequency (MHz)	Data Rate	Required Limit	
	(11112)	MCS0	Required Emili	
			16.99dBm or	
36	5180	13.44	$4 + 10 \log(B) =$	
			17.45dBm	
			16.99dBm or	
44	5220	13.12	$4+10\log(B) =$	
			17.30dBm	
			16.99dBm or	
48	5240	13.24	$4+10\log(B) =$	
			17.49dBm	
	5260	10.05	23.98dBm or	
52		13.25	11+10log(B) = 28.38dBm	
			23.98dBm or	
60	5200	13.32	$11+10\log(B) =$	
00	5300		25.94dBm	
<u> </u>			23.98dBm or	
64	4 5320	13.30	$11+10\log(B) =$	
04	5520	15.50	24.59dBm	
			23.98dBm or	
100	5500	11.18	$11+10\log(B) =$	
			26.84dBm	
			23.98dBm or	
116	5580	11.18	11+10log(B) =	
			27.78dBm	
			23.98dBm or	
140	5700	11.08	11+10log(B) =	
			25.14dBm	

Note: Offset 11.7dB

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802.11n HT40 - SISO (Antenna Main)

Cał	ble loss = 0 The Maximum Output Powe		Output Power
СН	Frequency (MHz)	Data Rate	Required Limit
	(11112)	MCS0	Required Linit
			16.99dBm or
38	5190	10.91	$4+10\log(B) =$
			20.85dBm
			16.99dBm or
46	5230	10.81	$4 + 10 \log(B) =$
			21.57dBm
			23.98dBm or
54	5270	10.95	$11+10\log(B) =$
			30.33dBm
			23.98dBm or
62	5310	10.82	$11+10\log(B) =$
			27.73dBm
			23.98dBm or
102	5510	8.20	$11+10\log(B) =$
			30.27dBm
			23.98dBm or
110	5550	8.18	$11+10\log(B) =$
			31.41dBm
			23.98dBm or
134	5670	8.12	11+10log(B) =
			30.44dBm

Note: Offset 14.5dB

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802.11a (Antenna Aux)

Cal	Cable loss = 0The Maximum		Output Power				
СН	Frequency (MHz)	Data Rate	Required Limit				
	(11111)	6	noquir cu Linit				
			16.99dBm or				
36	5180	13.31	$4 + 10 \log(B) =$				
			18.64dBm				
			16.99dBm or				
44	5220	13.44	$4 + 10 \log(B) =$				
			19.01dBm				
			16.99dBm or				
48	5240	13.41	$4+10\log(B) =$				
			18.15dBm				
	5260	50(0)	10.00	23.98dBm or			
52		13.33	11+10log(B) = 27.63dBm				
			27.050Bm 23.98dBm or				
60	5300	12 45	$11+10\log(B) =$				
00	5500	13.45	26.54dBm				
			23.98dBm or				
64	5320	13.44	$11+10\log(B) =$				
01	5520	5520	5520	5520	5520	15.11	24.59dBm
			23.98dBm or				
100	5500	11.78	$11+10\log(B) =$				
			26.75dBm				
			23.98dBm or				
116	5580	11.72	11+10log(B) =				
			27.60dBm				
			23.98dBm or				
140	5700	11.74	$11+10\log(B) =$				
			24.61dBm				

Note: Limit is re-adjusted in terms of dBm

10*log(50mW) = 16.99dBm for the limit on the band of $5150\sim5250MHz$

10*log(250mW)=23.98dBm for the limit on the band of 5260~5320Mz, &5470~5725MHz

Note: Cable loss is 11.7dB is set as the offset on the spectrum to compensate the loss causing by cable

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802.11n HT20 - SISO (Antenna Aux)

Cable loss = 0		The Maximum (Output Power
СН	Frequency (MHz)	Data Rate	Required Limit
	(101112)	MCS0	Kequireu Emine
			16.99dBm or
36	5180	13.49	$4 + 10 \log(B) =$
			17.45dBm
			16.99dBm or
44	5220	13.34	$4 + 10 \log(B) =$
			17.30dBm
			16.99dBm or
48	5240	13.35	$4+10\log(B) =$
			17.49dBm
			23.98dBm or
52	5260	13.40	$11+10\log(B) =$
			28.38dBm
			23.98dBm or
60	5300	13.45	$11+10\log(B) =$
			25.94dBm
		23.98dBm or	
64	5320	13.49	$11+10\log(B) = 24.59dBm$
100	5500	11.26	23.98dBm or
100	5500	11.36	$11+10\log(B) = 26.84dBm$
			20.84dBm 23.98dBm or
117	5500	11 40	23.980Bm or 11+10log(B) =
116	5580	11.48	11+100g(B) = 27.78dBm
<u> </u>			23.98dBm or
1.40		11 30	23.980Bm or 11+10log(B) =
140	5700	11.30	11+100g(B) = 25.14dBm
			25.14dBm

Note: Offset 11.7dB

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802.11n HT40 - SISO (Antenna Aux)

Cable loss $= 0$		The Maximum O	utput Power
СН	Frequency (MHz)	Data Rate	Required Limit
	(11112)	MCS0	Kequireu Emit
			16.99dBm or
38	5190	10.99	$4 + 10 \log(B) =$
			20.85dBm
			16.99dBm or
46	5230	10.86	$4+10\log(B) =$
			21.57dBm
			23.98dBm or
54	5270	10.98	$11+10\log(B) =$
			30.33dBm
	5310		23.98dBm or
62		10.90	$11+10\log(B) =$
			27.73dBm
			23.98dBm or
102	5510	8.21	$11+10\log(B) =$
			30.27dBm
			23.98dBm or
110	5550	8.25	$11+10\log(B) =$
			31.41dBm
			23.98dBm or
134	5670	8.35	$11+10\log(B) =$
_			30.44dBm

Note: Offset 11.7dB

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802.11n HT20 MIMO operation CH0

Cable loss $= 0$		The Maximum (Output Power CH 0
СН	Frequency (MHz)	Data Rate	Required Limit
	(11112)	MCS8	Kequireu Ellint
			16.99dBm or
36	5180	12.54	$4 + 10 \log(B) =$
			17.45dBm
			16.99dBm or
44	5220	12.55	4+10log(B) =
			17.30dBm
			16.99dBm or
48	5240	12.38	$4+10\log(B) =$
			17.49dBm
			23.98dBm or
52	5260	12.37	11+10log(B) =
			28.38dBm
			23.98dBm or
60	5300	12.32	11+10log(B) =
			25.94dBm
			23.98dBm or
64	5320	11.91	11+10log(B) =
			24.59dBm
			23.98dBm or
100	5500	10.80	11+10log(B) =
			26.84dBm
			23.98dBm or
116	5580	10.72	$11+10\log(B) =$
			27.78dBm
			23.98dBm or
140	5700	10.29	$11+10\log(B) =$
			25.14dBm

Note: Offset 11.7dB

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802.11n HT20 MIMO operation CH 1

Cable loss $= 0$		Cable loss = 0The Maximum Output Power CH	
СН	Frequency (MHz)	Data Rate	Required Limit
	(19112)	MCS8	Required Emili
			16.99dBm or
36	5180	14.14	4+10log(B) =
			17.45dBm
			16.99dBm or
44	5220	14.19	$4+10\log(B) =$
			17.30dBm
			16.99dBm or
48	5240	14.13	$4+10\log(B) =$
			17.49dBm
		14.27	23.98dBm or
52	5260		$11+10\log(B) = 28.38dBm$
			23.98dBm or
60	5300 14.40	$11+10\log(B) =$	
00		5500 14.40	25.94dBm
			23.98dBm or
64	5320	5320 14.29	$11+10\log(B) =$
04	5520	17.27	24.59dBm
			23.98dBm or
100	5500	11.66	$11+10\log(B) =$
			26.84dBm
			23.98dBm or
116	5580	11.89	11+10log(B) =
			27.78dBm
			23.98dBm or
140	5700	12.38	11+10log(B) =
			25.14dBm

Note: Offset 11.7dB

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802.11n HT20 MIMO operation CH 0 + CH 1

Cable loss $= 0$			Im Output Power 0 +CH 1
СН	Frequency (MHz)	Data Rate	Required Limit
		MCS8	
			16.99dBm or
36	5180	16.42	$4+10\log(B) =$
			17.45dBm
			16.99dBm or
44	5220	16.46	$4+10\log(B) =$
			17.30dBm
			16.99dBm or
48	5240	16.35	$4 + 10 \log(B) =$
			17.49dBm
		5260 16.43	23.98dBm or
52	5260		$11+10\log(B) =$
			28.38dBm
		5300 16.49	23.98dBm or
60	5300		$11+10\log(B) =$
			25.94dBm
			23.98dBm or
64	5320	16.27	$11+10\log(B) =$
			24.59dBm
			23.98dBm or
100	5500	14.26	$11+10\log(B) =$
			26.84dBm
			23.98dBm or
116	5580	14.35	$11+10\log(B) =$
			27.78dBm
			23.98dBm or
140	5700	14.47	$11+10\log(B) =$
			25.14dBm

Note: Offset 11.7dB

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802.11n HT40 MIMO operation CH 0

Cable loss $= 0$		The Maximum O	Output Power CH 0
СН	Frequency (MHz)	Data Rate	Required Limit
	(101112)	MCS8	Required Linit
			16.99dBm or
38	5190	9.61	$4 + 10 \log(B) =$
			20.85dBm
			16.99dBm or
46	5230	9.44	$4 + 10 \log(B) =$
	0200		21.57dBm
			23.98dBm or
54	5270	9.42	$11 + 10 \log(B) =$
			30.33dBm
	5310	9.15	23.98dBm or
62			$11+10\log(B) =$
			27.73dBm
			23.98dBm or
102	5510	8.07	$11+10\log(B) =$
			30.27dBm
			23.98dBm or
110	5550	8.12	11+10log(B) =
			31.41dBm
			23.98dBm or
134	5670	7.46	$11+10\log(B) =$
			30.44dBm

Note: Offset 11.7dB

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802.11n HT40 MIMO operation CH 1

Cal	ble loss = 0	The Maximum C	Output Power CH 1	
СН	Frequency (MHz)	Data Rate	Required Limit	
	(191112)	MCS8		
			16.99dBm or	
38	5190	11.95	$4 + 10 \log(B) =$	
			20.85dBm	
			16.99dBm or	
46	5230	11.79	$4 + 10 \log(B) =$	
	0200		21.57dBm	
			23.98dBm or	
54	5270	12.01	$11+10\log(B) =$	
			30.33dBm	
	5310		23.98dBm or	
62		5310	12.12	$11+10\log(B) =$
				27.73dBm
			23.98dBm or	
102	5510	8.78	$11+10\log(B) =$	
				30.27dBm
			23.98dBm or	
110	5550	8.81	11+10log(B) =	
			31.41dBm	
			23.98dBm or	
134	5670	8.98	11+10log(B) =	
			30.44dBm	

Note: Offset 11.7dB

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802.11n HT40 MIMO operation CH 0 + CH 1

Cable loss $= 0$			n Output Power) +CH1
СН	Frequency (MHz)	Data Rate	Required Limit
	× ,	MCS8	
38	5190	13.95	16.99dBm or 4+10log(B) = 20.85dBm
46	5230	13.78	16.99dBm or 4+10log(B) = 21.57dBm
54	5270	13.92	23.98dBm or 11+10log(B) = 30.33dBm
62	5310	13.89	23.98dBm or 11+10log(B) = 27.73dBm
102	5510	11.45	23.98dBm or 11+10log(B) = 30.27dBm
110	5550	11.49	23.98dBm or 11+10log(B) = 31.41dBm
134	5670	11.30	23.98dBm or 11+10log(B) = 30.44dBm

Note: Offset 11.7dB

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ERP/EIRP Measurement:

802.11a (Antenna Main)

Cat	Cable loss = 0 EIRP		RP
СН	Frequency (MHz)	Data Rate	Required Limit
	· · · ·	6	
36	5180	14.99	23.01dBm or 10+10log(B) = 22.22dBm
44	5220	15.02	23.01dBm or 10+10log(B) = 22.22dBm
48	5240	15.06	23.01dBm or 10+10log(B) = 22.19dBm
52	5260	14.82	30.00dBm or 17+10log(B) = 31.84dBm
60	5300	14.95	30.00dBm or 17+10log(B) = 29.31dBm
64	5320	14.76	30.00dBm or 17+10log(B) = 29.19dBm
100	5500	11.38	30.00dBm or 17+10log(B) = 29.58dBm
116	5580	11.28	30.00dBm or 17+10log(B) = 31.89dBm
140	5700	11.25	30.00dBm or 17+10log(B) = 29.19dBm

Note: Limit is re-adjusted in terms of dBm

10*log(50mW) = 16.99dBm for the limit on the band of 5150-5250MHz10*log(250mW)=23.98dBm for the limit on the band of 5260-5320Mz, &5470-5725MHzNote: Cable loss is 11.7dB is set as the offset on the spectrum to compensate the loss causing by cable

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802.11n HT20 - SISO (Antenna Main)

Cable loss = 0		Cable loss = 0EIRP		RP
CH	Frequency (MHz)	Data Rate	Required Limit	
		MCS0		
36	5180	15.18	23.01dBm or 10+10log(B) = 22.43dBm	
44	5220	14.86	23.01dBm or 10+10log(B) = 22.43dBm	
48	5240	14.98	23.01dBm or 10+10log(B) = 22.43dBm	
52	5260	14.76	30.00dBm or 17+10log(B) = 31.53dBm	
60	5300	14.83	30.00dBm or 17+10log(B) = 29.46dBm	
64	5320	14.81	30.00dBm or 17+10log(B) = 29.43dBm	
100	5500	10.80	30.00dBm or 17+10log(B) = 29.83dBm	
116	5580	10.80	30.00dBm or 17+10log(B) = 32.23dBm	
140	5700	10.70	30.00dBm or 17+10log(B) = 29.43dBm	

Note: Offset 11.7dB

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802.11n HT40 - SISO (Antenna Main)

Cable loss $= 0$		EI	RP
СН	I Frequency (MHz)	Data Rate	Required Limit
	(17112)	MCS0	Required Limit
			23.01dBm or
38	5190	12.65	$10+10\log(B) =$
			25.65dBm
			23.01dBm or
46	5230	12.55	$10+10\log(B) =$
			25.63dBm
			30.00dBm or
54	5270	12.46	$17+10\log(B) =$
			32.68dBm
	5310		30.00dBm or
62		12.33	$17+10\log(B) =$
			32.65dBm
			30.00dBm or
102	5510	7.82	$17 + 10 \log(B) =$
			32.68dBm
			30.00dBm or
110	5550	7.80	$17+10\log(B) =$
			32.36dBm
			30.00dBm or
134	5670	7.74	$17+10\log(B) =$
			32.68dBm

Note: Offset 11.7dB

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802.11a (Antenna Aux)

Cat	ble loss = 0	Ι	EIRP
СН	Frequency (MHz)	Data Rate	Required Limit
		6	-
			23.01dBm or
36	5180	14.71	$10+10\log(B) =$
			22.22dBm
			23.01dBm or
44	5220	14.84	$10+10\log(B) =$
			22.22dBm
			23.01dBm or
48	5240	14.81	$10+10\log(B) =$
			22.19dBm 30.00dBm or
50	5260	14.72	$17+10\log(B) =$
52		14.73	31.84dBm
			30.00dBm or
60	5300	5300 14.85	$17+10\log(B) =$
00		14.03	29.31dBm
			30.00dBm or
64	5320	14.84	$17+10\log(B) =$
0.	0020	1	29.19dBm
			30.00dBm or
100	5500	11.64	$17+10\log(B) =$
			29.58dBm
			30.00dBm or
116	5580	11.58	$17+10\log(B) =$
			31.89dBm
			30.00dBm or
140	5700	11.60	$17+10\log(B) =$
			29.19dBm

Note: Limit is re-adjusted in terms of dBm

10*log(50mW) = 16.99dBm for the limit on the band of $5150\sim5250MHz$

10*log(250mW)=23.98dBm for the limit on the band of 5260~5320Mz, &5470~5725MHz

Note: Cable loss is 11.7dB is set as the offset on the spectrum to compensate the loss causing by cable

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802.11n HT20 – SISO (Antenna Aux)

Cable loss = 0		EIRP	
СН	Frequency (MHz)	Data Rate MCS0	Required Limit
44	5220	14.74	23.01dBm or 10+10log(B) = 22.43dBm
48	5240	14.75	23.01dBm or 10+10log(B) = 22.43dBm
52	5260	14.80	30.00dBm or 17+10log(B) = 31.53dBm
60	5300	14.85	30.00dBm or 17+10log(B) = 29.46dBm
64	5320	14.89	30.00dBm or 17+10log(B) = 29.43dBm
100	5500	11.22	30.00dBm or 17+10log(B) = 29.83dBm
116	5580	11.34	30.00dBm or 17+10log(B) = 32.23dBm
140	5700	11.16	30.00dBm or 17+10log(B) = 29.43dBm

Note: Offset 11.7dB

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802.11n HT40 – SISO (Antenna Aux)

Cable loss = 0		EIRP	
СН	Frequency (MHz)	Data Rate	Required Limit
		MCS0	
38	5190		23.01dBm or
		12.39	$10+10\log(B) =$
			25.65dBm
46	5230	12.26	23.01dBm or
			$10+10\log(B) =$
			25.63dBm
54	5270	12.38	30.00dBm or
			$17+10\log(B) =$
			32.68dBm
62	5310	12.30	30.00dBm or
			$17+10\log(B) =$
			32.65dBm
102	5510	8.07	30.00dBm or
			$17+10\log(B) =$
			32.68dBm
110	5550	8.11	30.00dBm or
			$17+10\log(B) =$
			32.36dBm
134	5670	8.21	30.00dBm or
			$17+10\log(B) =$
			32.68dBm

Note: Offset 11.7dB

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802.11n HT20 MIMO operation CH0

Cable loss $= 0$		EIRP CH 0	
СН	Frequency (MHz)	Data Rate	Required Limit
	(11222)	MCS8	Incquir cu Linne
36	5180	17.29	23.01dBm or 10+10log(B) = 22.43dBm
44	5220	17.30	23.01dBm or 10+10log(B) = 22.43dBm
48	5240	17.13	23.01dBm or 10+10log(B) = 22.43dBm
52	5260	16.89	30.00dBm or 17+10log(B) = 31.53dBm
60	5300	16.84	30.00dBm or 17+10log(B) = 29.46dBm
64	5320	16.43	30.00dBm or 17+10log(B) = 29.43dBm
100	5500	13.67	30.00dBm or 17+10log(B) = 29.83dBm
116	5580	13.59	30.00dBm or 17+10log(B) = 32.23dBm
140	5700	13.16	30.00dBm or 17+10log(B) = 29.43dBm

Note: Offset 11.7dB

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802.11n HT20 MIMO operation CH 1

Cable loss = 0		EIR	P CH 1
СН	Frequency (MHz)	Data Rate	Required Limit
	、 <i>,</i>	MCS8	1
			23.01dBm or
36	5180	18.89	$10+10\log(B) =$
			22.43dBm
			23.01dBm or
44	5220	18.94	$10+10\log(B) =$
			22.43dBm
			23.01dBm or
48	5240	18.88	$10+10\log(B) =$
			22.43dBm
			30.00dBm or
52	5260	18.79	$17+10\log(B) =$ 31.53dBm
			30.00dBm or
60	5300	10.03	$17+10\log(B) =$
60	5500	18.92	29.46dBm
			30.00dBm or
64	5320	18.81	$17+10\log(B) =$
04	5520	10.01	29.43dBm
			30.00dBm or
100	5500	14.53	$17+10\log(B) =$
			29.83dBm
			30.00dBm or
116	5580	14.76	$17+10\log(B) =$
			32.23dBm
			30.00dBm or
140	5700	15.25	$17+10\log(B) =$
			29.43dBm

Note: Offset 11.7dB

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802.11n HT20 MIMO operation CH 0 + CH 1

Cable loss $= 0$		EIRP CH 0 +CH 1	
CH	Frequency (MHz)	Data Rate	Required Limit
		MCS8	
36	5180	21.17	23.01dBm or 10+10log(B) = 22.43dBm
44	5220	21.21	23.01dBm or 10+10log(B) = 22.43dBm
48	5240	21.10	23.01dBm or 10+10log(B) = 22.43dBm
52	5260	20.95	30.00dBm or 17+10log(B) = 31.53dBm
60	5300	21.01	30.00dBm or 17+10log(B) = 29.46dBm
64	5320	20.79	30.00dBm or 17+10log(B) = 29.43dBm
100	5500	17.13	30.00dBm or 17+10log(B) = 29.83dBm
116	5580	17.22	30.00dBm or 17+10log(B) = 32.23dBm
140	5700	17.34	30.00dBm or 17+10log(B) = 29.43dBm

Note: Offset 11.7dB

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802.11n HT40 MIMO operation CH 0

Cable loss $= 0$		EIR	P CH 0
СН	Frequency (MHz)	Data Rate	Required Limit
	(101112)	MCS8	Kequireu Emine
			23.01dBm or
38	5190	14.36	$10+10\log(B) =$
			25.65dBm
			23.01dBm or
46	5230	14.19	$10+10\log(B) =$
			25.63dBm
			30.00dBm or
54	5270	13.94	17+10log(B) =
			32.68dBm
			30.00dBm or
62	5310	13.67	17+10log(B) =
			32.65dBm
			30.00dBm or
102	5510	10.94	17+10log(B) =
			32.68dBm
		30.00dBm or	
110	5550	10.99	$17+10\log(B) =$
			32.36dBm
			30.00dBm or
134	5670	10.33	$17+10\log(B) =$
			32.68dBm

Note: Offset 11.7dB

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802.11n HT40 MIMO operation CH 1

Cable loss $= 0$		EIRP CH 1	
СН	Frequency (MHz)	Data Rate	Required Limit
	(11112)	MCS8	Kequireu Linin
			23.01dBm or
38	5190	16.70	$10+10\log(B) =$
			25.65dBm
			23.01dBm or
46	5230	16.54	$10+10\log(B) =$
			25.63dBm
			30.00dBm or
54	5270	16.53	$17+10\log(B) =$
			32.68dBm
			30.00dBm or
62	5310	16.64	$17+10\log(B) =$
			32.65dBm
			30.00dBm or
102	5510	11.65	$17+10\log(B) =$
			32.68dBm
			30.00dBm or
110	5550	11.68	$17+10\log(B) =$
			32.36dBm
			30.00dBm or
134	5670	11.85	$17+10\log(B) =$
			32.68dBm

Note: Offset 11.7dB

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802.11n HT40 MIMO operation CH 0 + CH 1

Cable loss $= 0$		EIRP CH 0 +CH1	
СН	Frequency (MHz)	Data Rate	Required Limit
	(141112)	MCS8	Kequireu Ellint
			23.01dBm or
38	5190	18.70	$10+10\log(B) =$
			25.65dBm
			23.01dBm or
46	5230	18.53	$10+10\log(B) =$
			25.63dBm
			30.00dBm or
54	5270	18.44	$17+10\log(B) =$
			32.68dBm
			30.00dBm or
62	5310	18.41	$17+10\log(B) =$
			32.65dBm
			30.00dBm or
102	5510	14.32	$17+10\log(B) =$
			32.68dBm
			30.00dBm or
110	5550	14.36	$17+10\log(B) =$
			32.36dBm
			30.00dBm or
134	5670	14.17	$17+10\log(B) =$
			32.68dBm

Note: Offset 14.50dB

* Note: EIRP = Average Power + Gain, where the nominal gain of the antenna:

1.74dBi for 5150-5250MHz for Antenna Main, 1.40dBi for 5150-5250MHz for Antenna Aux,

1.51dBi for 5250-5350MHz for Antenna Main, 1.40dBi for 5250-5350MHz for Antenna Aux,

-0.38dBi for 5470-5725MHz for Antenna Main, -0.14dBi for 5740-5725MHz for Antenna Aux

4.75dBi for 5150-5250MHz (MIMO), 4.52dBi for 5250-5350MHz(MIMO) and 2.87Bi for 5470-5725MHz (MIMO) where MIMO gain = directive gain + nominal gain.

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7. UNDESIRABLE EMISSION - RADIATED MEASUREMENT

7.1 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:

- 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 D01, where the conducted measurement is being used to comply with out of emission requirement as per FCC 15.407 b) 6) 7), and RSS-Gen 7.2.2.

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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	0.090 - 0.110 16.42 - 16.423		4.5 - 5.15	
¹ 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	(²)	
13.36 - 13.41	322 - 335.4			

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

² 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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1001/101/15.20)					
MEASURING DISTANCE OF 3 METER					
FREQUENCY RANGE FIELD STRENGTH FIELD STRENGTH					
(MHz)	(Microvolts/m)	(dBuV/m)			
30-88	100	40			
88-216	150	43.5			
216-960	200	46			
Above 960	500	54			

FCC PART 15 209

§15.209- RADIATED EMISSION LIMITS: GENERAL REQUIREMENTS

According to RSS-Gen section 4.9 Transmitter Unwanted Emissions

The measurement method shall be described in the test report. When the applicable unwanted emissions limits are defined in relative terms, the same parameter, peak power or average power, used for the transmitter output power measurement, shall be used for unwanted emission measurements.

In measuring unwanted emissions, the spectrum shall be investigated from 30 MHz or the lowest radio frequency signal generated in the equipment, whichever is lower, without going below 9 kHz, up to at least the frequency given in (a) and (b):

(a) If the equipment operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

(b) If the equipment operates at or above 10 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.

Particular attention should be paid to harmonics and sub-harmonics of the carrier frequency, as well as to those frequencies removed from the carrier by multiples of the oscillator frequency. Radiation at the frequencies of multiplier stages should also be checked.

The amplitude of spurious emissions attenuated more than 20 dB below the permissible value need not be reported.

When limits are expressed in absolute terms, compliance with the emission limits shall be demonstrated using a CISPR quasi-peak detector and the related measurement bandwidth for emissions below1000MHz. As an alternative to CISPR quasi-peak measurement, compliance with the emission limits can be demonstrated using measuring equipment employing a peak detector function properly adjusted for factors such as pulse desensitization as required, with an equal or greater measurement bandwidth relative to the applicable CISPR quasi-peak bandwidth.

Above 1000 MHz, compliance with the emission limits shall be demonstrated using an average detector with a minimum resolution bandwidth of 1 MHz.

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According to RSS-Gen section 7.2.2 Emissions Falling Within Restricted Frequency Bands

Restricted bands, identified in Table 1, are designated primarily for safety-of-life services (distress calling and certain aeronautical bands), certain satellite downlinks, radio astronomy and some government uses. Except where otherwise indicated, the following restrictions apply:

(a) Fundamental components of modulation of licence-exempt radio apparatus shall not fall within the restricted bands of Table 1;

(b) Unwanted emissions falling into restricted bands of Table 1 shall comply with the limits specified in RSS-Gen;

(c) Unwanted emissions not falling within restricted frequency bands shall either comply with the limits specified in the applicable RSS, or with those specified in RSS-Gen.

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Table 3: Restricted Frequency Bands (Note)

MHz
0.090-0.110
2.1735-2.1905
3.020-3.026
4.125-4.128
4.17725-4.17775
4.20725-4.20775
5.677-5.683
6.215-6.218
6.26775-6.26825
6.31175-6.31225
8.291-8.294
8.362-8.366
8.37625-8.38675
8.41425-8.41475
12.29-12.293
12.51975-12.52025
12.57675-12.57725
13.36-13.41
16.42-16.423
16.69475-16.69525
16.80425-16.80475
25.5-25.67
37.5-38.25
73-74.6
74.8-75.2
108-138
156.52475-156.52525
156.7-156.9

MHz
240-285
322-335.4
399.9-410
608-614
960-1427
1435-1626.5
1645.5-1646.5
1660-1710
1718.8-1722.2
2200-2300
2310-2390
2655-2900
3260-3267
3332-3339
3345.8-3358
3500-4400
4500-5150
5350-5460
7250-7750
8025-8500

GHz
9.0-9.2
9.3-9.5
10.6-12.7
13.25-13.4
14.47-14.5
15.35-16.2
17.7-21.4
22.01-23.12
23.6-24.0
31.2-31.8
36.43-36.5
Above 38.6

Note: Certain frequency bands listed in Table 1 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to the devices are set out in the 200- and 300- series RSSs, such as RSS-210 and RSS-310, which contain the requirements that apply to licence-exempt radio apparatus.

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7.1.1 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: 0	General Fie	ld Strength	Limits for 7	Fransmitters	at Frequenci	ies Above 30 Ml	Hz

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).

7.1.2 Unwanted Emission that complies with the undesirable emission ruling by 15.407 (b) (1) (2) (3), RSS-210 A9.2 (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

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

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7.2 EUT Setup

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

7.3 Measurement Procedure

- The EUT was placed on a turn table which is 0.8m above ground plane. 1.
- 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.
- And also, each emission was to be maximized by changing the polarization of receiving antenna 5. both horizontal and vertical.
- Repeat above procedures until all frequency measured were complete. 6.

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 D01 requirements in section H)5) b), for average unwanted emission measurements follow the KDB 789033 D01 requirements in section H)6) c) or d).

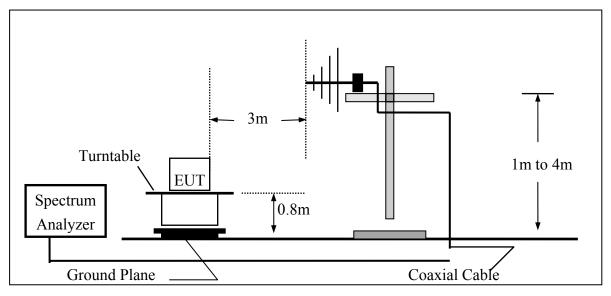
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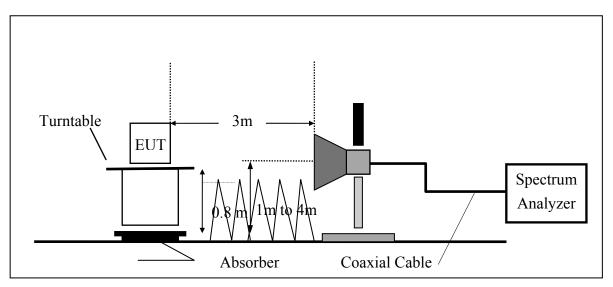


7.4 **Test SET-UP (Block Diagram of Configuration)**

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



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



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7.5 Measurement Equipment Used:

SGS 966 Chamber No.C							
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.		
ТҮРЕ		NUMBER	NUMBER	CAL.			
EMI Test Receiver	R&S	ESU 40	100363	04/12/2014	04/11/2015		
Loop Antenna	ETS-Lindgren	6502	00143303	12/09/2014	12/08/2015		
Broadband Antenna	TESEQ	CBL 6112D	35240	12/05/2014	12/04/2015		
Horn Antenna	ETS-Lindgren	3117	00143272	12/08/2014	12/07/2015		
Horn Antenna	ETS-Lindgren	3160-09	00117911	11/13/2014	11/12/2015		
Horn Antenna	ETS-Lindgren	3160-10	00117783	11/13/2014	11/12/2015		
Pre Amplifier	EMC Instruments	EMC330	980096	12/19/2014	12/18/2015		
Pre Amplifier	EMC Instruments	EMC0011830	980199	12/19/2014	12/18/2015		
Pre Amplifier	R&S	SCU-18	10204	12/19/2014	12/18/2015		
Pre Amplifier	R&S	SCU-26	100780	12/19/2014	12/18/2015		
Pre Amplifier	R&S	SCU-40	100356	12/19/2014	12/18/2015		
Pre Amplifier	EMC Instruments	EMC184045B	980135	12/19/2014	12/18/2015		
Coaxial Cable	Huber+Suhner	RG 214/U	966Rx 9K-30M	12/19/2014	12/18/2015		
Coaxial Cable	Huber+Suhner	RG 214/U SUCOFLEX 104	966Rx 30M-3G	12/19/2014	12/18/2015		
Coaxial Cable	Huber+Suhner	SUCOFLEX 104	966Rx 1G-18G	12/19/2014	12/18/2015		
Coaxial Cable	Huber+Suhner	mini 141-12 SUCOFLEX 104	966Rx 18G-40G	12/19/2014	12/18/2015		
Coaxial Cable	Huber+Suhner	SUCOFLEX 104	966Tx 30M-18G	12/19/2014	12/18/2015		
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	966Tx 18G-40G	12/19/2014	12/18/2015		
Attenuator	WOKEN	218FS-10	RF27	12/19/2014	12/18/2015		
Site NSA	SGS	966 Chamber C	SAC-C	03/04/2015	03/03/2016		
Site VSWR	SGS	966 Chamber C	SAC-C	03/04/2015	03/03/2016		
DC Power Supply	HOLA	DP-3003	D7070035	05/31/2014	05/30/2015		
Controller	MF	MF-7802	N/A	N.C.R.	N.C.R.		
Antenna Master	MF	N/A	N/A	N.C.R.	N.C.R.		
Turn Table	MF	N/A	N/A	N.C.R.	N.C.R.		
Test Software	World-Pallas	Dr. E	V 3.0 Lite	N.C.R.	N.C.R.		

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7.6 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: FS = PA + AF + CI

	$\mathbf{FS} = \mathbf{KA} + \mathbf{AF} + \mathbf{CL} - \mathbf{AG}$	
Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

7.7 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 (Main)								
Operation Ba				Test Date		:2015-02-24		
Fundamental		:5180 MHz		Temp./Humi.		:22.7 deg_C / 57 RH		
Operation Mo	ode	:TX LOW		Igineer		:Vito		
EUT Pol.		:E2 Plane		easurement An	tenna Pol.	:VERTICAL		
•	·	-	$B\mu V$) + Factor(dB)					
		•	ble Loss(dB) – Pre_	-	·			
Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.								
"Е"	': denotes Band H	Edge Frequency.	; "S" : denotes Spu	rious Frequency				
دد	-" : denotes Noise	e Floor.						
Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB	_
40.67	Peak	S	49.24	-19.43	29.81	40.00	-10.19	
56.19	Peak	S	54.63	-27.33	27.30	40.00	-12.70	
142.52	Peak	S	58.19	-21.92	36.27	43.50	-7.23	
267.65	Peak	S	43.07	-19.58	23.49	46.00	-22.51	
329.73	Peak	S	41.63	-18.30	23.32	46.00	-22.68	
667.29	Peak	S	36.33	-11.68	24.65	46.00	-21.35	
10360.00	Peak	Н	31.85	18.94	50.78	68.30	-17.52	
15540.00	Peak	Н						
20720.00	Peak	Н						
25900.00	Peak	Н						
31080.00	Peak	Н						
36260.00	Peak	Н						

Padiated Spurious Emission Massurement Posult 802 11a 5150, 5250 MHz (Main)

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Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5180 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
69.77	Peak	S	53.48	-27.80	25.68	40.00	-14.32
155.13	Peak	S	45.92	-22.82	23.10	43.50	-20.40
190.05	Peak	S	49.29	-24.16	25.12	43.50	-18.38
226.91	Peak	S	51.78	-22.53	29.25	46.00	-16.75
667.29	Peak	S	34.57	-11.68	22.89	46.00	-23.11
834.13	Peak	S	36.96	-9.14	27.82	46.00	-18.18
10360.00	Peak	Н	30.64	18.94	49.58	68.30	-18.72
15540.00	Peak	Н					
20720.00	Peak	Н					
25900.00	Peak	Н					
31080.00	Peak	Н					
36260.00	Peak	Н					

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Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5220 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
44.55	Peak	S	56.16	-22.12	34.04	40.00	-5.96
82.38	Peak	S	61.04	-26.58	34.46	40.00	-5.54
95.96	Peak	S	51.61	-24.54	27.07	43.50	-16.43
155.13	Peak	S	52.03	-22.82	29.21	43.50	-14.29
346.22	Peak	S	46.08	-17.50	28.58	46.00	-17.42
667.29	Peak	S	35.96	-11.68	24.28	46.00	-21.72
10440.00	Peak	Н	31.77	19.03	50.80	68.30	-17.50
15660.00	Peak	Н					
20880.00	Peak	Н					
26100.00	Peak	Н					
31320.00	Peak	Н					
36540.00	Peak	Н					

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Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5220 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
69.77	Peak	S	54.46	-27.80	26.66	40.00	-13.34
155.13	Peak	S	47.55	-22.82	24.73	43.50	-18.77
224.97	Peak	S	52.30	-22.67	29.63	46.00	-16.37
535.37	Peak	S	31.31	-13.16	18.15	46.00	-27.85
667.29	Peak	S	33.67	-11.68	21.99	46.00	-24.01
834.13	Peak	S	35.15	-9.14	26.01	46.00	-19.99
10440.00	Peak	Н	31.46	19.03	50.49	68.30	-17.81
15660.00	Peak	Н					
20880.00	Peak	Н					
26100.00	Peak	Н					
31320.00	Peak	Н					
36540.00	Peak	Н					

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Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5240 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
39.70	Peak	S	48.62	-18.79	29.83	40.00	-10.17
55.22	Peak	S	54.94	-27.06	27.88	40.00	-12.12
102.75	Peak	S	46.47	-23.39	23.08	43.50	-20.42
155.13	Peak	S	52.98	-22.82	30.16	43.50	-13.34
190.05	Peak	S	48.48	-24.16	24.32	43.50	-19.18
745.86	Peak	S	41.69	-9.93	31.76	46.00	-14.24
10480.00	Peak	Н	33.09	19.13	52.22	68.30	-16.08
15720.00	Peak	Н					
20960.00	Peak	Н					
26200.00	Peak	Н					
31440.00	Peak	Н					
36680.00	Peak	Н					

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Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5240 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
68.80	Peak	S	51.12	-27.88	23.25	40.00	-16.75
151.25	Peak	S	45.61	-22.79	22.82	43.50	-20.68
224.97	Peak	S	51.77	-22.67	29.10	46.00	-16.90
298.69	Peak	S	40.30	-19.27	21.03	46.00	-24.97
746.83	Peak	S	35.76	-9.95	25.81	46.00	-20.19
834.13	Peak	S	37.11	-9.14	27.98	46.00	-18.03
10480.00	Peak	Н	31.39	19.13	50.52	68.30	-17.78
15720.00	Peak	Н					
20960.00	Peak	Н					
26200.00	Peak	Н					
31440.00	Peak	Н					
36680.00	Peak	Н					

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Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5180 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL
Actual FS($dB\mu V/m$) = SPA. R	eading level($dB\mu V$) + Factor(d	IB)	

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.

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5150.00) Peak	Е	50.21	11.14	61.35	74.00	-12.65
5150.00) Average	Е	37.60	11.14	48.74	54.00	-5.26

Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5180 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5150.00	Peak	Е	54.74	11.14	65.88	74.00	-8.12
5150.00	Average	Е	38.97	11.14	50.11	54.00	-3.89

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FCC ID: MCLT77H462 IC: 2878D-T77H462

Radiated Spurious Emission Measurement Result 802.11n HT20, 5150~5250 WHz (MIMO)Operation Band:802.11 n20MTest Date:2015-02-24Fundamental Frequency:5180 MHzTemp./Humi.:22.7 deg_C / 57 RHOperation Mode:TX LOWEngineer:VitoEUT Pol.:E2 PlaneMeasurement Antenna Pol.:VERTICALActual FS(dB μ V/m) = SPA. Reading level(dB μ V) + Factor(dB):VERTICAL:VERTICAL							
Factor(dB) = Anter	na Factor(dBµV)	/m) + Cable I	Loss(dB) – Pre_Amp	lifier Gain(dE	3)		
Note : "F" : den	otes Fundamental	Frequency.;	"H" : denotes Harmor	ic Frequency.			
"E" : de	notes Band Edge l	Frequency. ; "S	": denotes Spurious	Frequency.			
"" : C	lenotes Noise Floc	or.					
Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
39.70	Peak	S	48.40	-18.79	29.60	40.00	-10.40
55.22	Peak	S	54.20	-27.06	27.14	40.00	-12.86
155.13	Peak	S	50.43	-22.82	27.61	43.50	-15.89
241.46	Peak	S	43.78	-20.97	22.81	46.00	-23.19
534.40	Peak	S	31.53	-13.16	18.37	46.00	-27.63
701.24	Peak	S	31.27	-11.07	20.20	46.00	-25.80
10360.00	Peak	Н	34.35	18.94	53.28	68.30	-15.02
15540.00	Peak	Н					
20720.00	Peak	Н					
25900.00	Peak	Н					
31080.00	Peak	Н					
36260.00	Peak	Н					

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Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency	:5180 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
68.80	Peak	S	55.08	-27.88	27.20	40.00	-12.80
155.13	Peak	S	47.06	-22.82	24.24	43.50	-19.26
190.05	Peak	S	50.49	-24.16	26.33	43.50	-17.17
225.94	Peak	S	52.57	-22.60	29.97	46.00	-16.03
667.29	Peak	S	33.50	-11.68	21.82	46.00	-24.18
834.13	Peak	S	35.73	-9.14	26.59	46.00	-19.41
10360.00	Peak	Н	29.77	18.94	48.71	68.30	-19.59
15540.00	Peak	Н					
20720.00	Peak	Н					
25900.00	Peak	Н					
31080.00	Peak	Н					
36260.00	Peak	Н					

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Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency	:5220 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV∕m	dB
32.91	Peak	S	45.20	-14.69	30.50	40.00	-9.50
39.70	Peak	S	48.50	-18.79	29.70	40.00	-10.30
55.22	Peak	S	54.82	-27.06	27.76	40.00	-12.24
155.13	Peak	S	51.52	-22.82	28.70	43.50	-14.80
343.31	Peak	S	40.92	-17.68	23.23	46.00	-22.77
667.29	Peak	S	36.26	-11.68	24.58	46.00	-21.42
10440.00	Peak	Н	39.16	19.06	58.22	68.30	-10.08
15660.00	Peak	Н					
20880.00	Peak	Н					
26100.00	Peak	Н					
31320.00	Peak	Н					
36540.00	Peak	Н					

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Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency	:5220 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
41.64	Peak	S	44.77	-20.09	24.68	40.00	-15.32
61.04	Peak	S	53.33	-28.42	24.91	40.00	-15.09
68.80	Peak	S	54.35	-27.88	26.48	40.00	-13.52
155.13	Peak	S	47.61	-22.82	24.79	43.50	-18.71
218.18	Peak	S	52.80	-22.97	29.83	46.00	-16.17
834.13	Peak	S	35.50	-9.14	26.36	46.00	-19.64
10440.00	Peak	Н	32.53	19.03	51.56	68.30	-16.74
15660.00	Peak	Н					
20880.00	Peak	Н					
26100.00	Peak	Н					
31320.00	Peak	Н					
36540.00	Peak	Н					

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Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency	:5240 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
39.70	Peak	S	49.14	-18.79	30.35	40.00	-9.65
56.19	Peak	S	54.05	-27.33	26.73	40.00	-13.27
102.75	Peak	S	44.27	-23.39	20.88	43.50	-22.62
155.13	Peak	S	48.27	-22.82	25.45	43.50	-18.05
243.40	Peak	S	43.30	-20.91	22.39	46.00	-23.61
667.29	Peak	S	35.14	-11.68	23.45	46.00	-22.55
10480.00	Peak	Н	36.46	19.13	55.59	68.30	-12.71
15720.00	Peak	Н					
20960.00	Peak	Н					
26200.00	Peak	Н					
31440.00	Peak	Н					
36680.00	Peak	Н					

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Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency	:5240 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
69.77	Peak	S	54.26	-27.80	26.45	40.00	-13.55
151.25	Peak	S	46.01	-22.79	23.22	43.50	-20.28
190.05	Peak	S	50.03	-24.16	25.87	43.50	-17.63
224.97	Peak	S	52.75	-22.67	30.08	46.00	-15.92
667.29	Peak	S	34.27	-11.68	22.59	46.00	-23.41
834.13	Peak	S	35.69	-9.14	26.55	46.00	-19.45
10480.00	Peak	Н	32.68	19.13	51.80	68.30	-16.50
15720.00	Peak	Н					
20960.00	Peak	Н					
26200.00	Peak	Н					
31440.00	Peak	Н					
36680.00	Peak	Н					

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Operation Band	:802.11 n20M	Test Date	:2015-02-24				
Fundamental Frequency	:5180 MHz	Temp./Humi.	:22.7 deg_C / 57 RH				
Operation Mode	:Bandedge LOW	Engineer	:Vito				
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL				
Actual $FS(dBuV/m) = SPA$ Reading level($dBuV$) + Factor(dB)							

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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB	-
5150.0	0 Peak	Е	52.56	11.14	63.70	74.00	-10.30	
5150.0	0 Average	Е	31.84	11.14	42.98	54.00	-11.02	

Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency	:5180 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5150.00	Peak	Е	60.36	11.14	71.51	74.00	-2.49
5150.00	Average	Е	39.29	11.14	50.43	54.00	-3.57

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FCC ID: MCLT77H462 IC: 2878D-T77H462

Radiated Spurious Emission Measurement Result 802.11 n HT40, 5150~5250 WHz (MIMO)Operation Band:802.11 n40MTest Date:2015-02-24Fundamental Frequency:5190 MHzTemp./Humi.:22.7 deg_C / 57 RHOperation Mode:TX LOWEngineer:VitoEUT Pol.:E2 PlaneMeasurement Antenna Pol.:VERTICALActual FS(dB μ V/m) = SPA.Evel(dB μ V) + Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)State State							
Note : "F" : den	otes Fundamental	Frequency.;	"H" : denotes Harmor	nic Frequency.			
"E" : de	notes Band Edge I	Frequency. ; "S	": denotes Spurious	Frequency.			
"" : č	lenotes Noise Floc	or.					
Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
33.88	Peak	S	46.09	-15.22	30.86	40.00	-9.14
56.19	Peak	S	54.10	-27.33	26.78	40.00	-13.22
102.75	Peak	S	46.05	-23.39	22.65	43.50	-20.85
155.13	Peak	S	49.19	-22.82	26.37	43.50	-17.13
247.28	Peak	S	42.95	-20.64	22.31	46.00	-23.69
667.29	Peak	S	36.20	-11.68	24.51	46.00	-21.49
10380.00	Peak	Н	30.01	19.01	49.03	68.30	-19.27
15570.00	Peak	Н					
20760.00	Peak	Н					
25950.00	Peak	Н					
31140.00	Peak	Н					
36330.00	Peak	Н					

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Operation Band	:802.11 n40M	Test Date	:2015-02-24
Fundamental Frequency	:5190 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
68.80	Peak	S	54.22	-27.88	26.34	40.00	-13.66
155.13	Peak	S	46.86	-22.82	24.04	43.50	-19.46
225.94	Peak	S	53.33	-22.60	30.74	46.00	-15.27
308.39	Peak	S	42.27	-18.88	23.39	46.00	-22.61
667.29	Peak	S	34.49	-11.68	22.81	46.00	-23.19
834.13	Peak	S	36.29	-9.14	27.16	46.00	-18.84
10380.00	Peak	Н	29.75	19.01	48.76	68.30	-19.54
15570.00	Peak	Н					
20760.00	Peak	Н					
25950.00	Peak	Н					
31140.00	Peak	Н					
36330.00	Peak	Н					

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Operation Band	:802.11 n40M	Test Date	:2015-02-24
Fundamental Frequency	:5230 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
30.97	Peak	S	46.29	-13.64	32.65	40.00	-7.35
40.67	Peak	S	48.36	-19.43	28.93	40.00	-11.07
56.19	Peak	S	54.57	-27.33	27.24	40.00	-12.76
155.13	Peak	S	52.21	-22.82	29.39	43.50	-14.11
247.28	Peak	S	43.88	-20.64	23.24	46.00	-22.76
667.29	Peak	S	35.76	-11.68	24.08	46.00	-21.92
10460.00	Peak	Н	30.01	19.11	49.13	68.30	-19.17
15690.00	Peak	Н					
20920.00	Peak	Н					
26150.00	Peak	Н					
31380.00	Peak	Н					
36610.00	Peak	Н					

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Operation Band	:802.11 n40M	Test Date	:2015-02-24
Fundamental Frequency	:5230 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
69.77	Peak	S	54.97	-27.80	27.17	40.00	-12.83
155.13	Peak	S	46.78	-22.82	23.96	43.50	-19.54
226.91	Peak	S	52.39	-22.53	29.87	46.00	-16.13
474.26	Peak	S	35.34	-14.18	21.17	46.00	-24.83
667.29	Peak	S	33.48	-11.68	21.79	46.00	-24.21
834.13	Peak	S	38.33	-9.14	29.19	46.00	-16.81
10460.00	Peak	Н	30.44	19.11	49.55	68.30	-18.75
15690.00	Peak	Н					
20920.00	Peak	Н					
26150.00	Peak	Н					
31380.00	Peak	Н					
36610.00	Peak	Н					

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Operation Band Fundamental Frequency	:802.11 n40M :5190 MHz		:2015-02-24 :22.7 deg C / 57 RH			
Operation Mode EUT Pol.	:Bandedge LOW :E2 Plane	Engineer	:Vito :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.

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5150.00	Peak	Е	58.76	11.14	69.90	74.00	-4.10
5150.00	Average	Е	39.45	11.14	50.59	54.00	-3.41

Operation Band	:802.11 n40M	Test Date	:2015-02-24
Fundamental Frequency	:5190 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5150.00	Peak	E	61.19	11.14	72.33	74.00	-1.67
5150.00	Average	Е	42.08	11.14	53.22	54.00	-0.78

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Radiated Spurious Emission Measurement Result 802.11a, 5250MHz-5350MHz (Main)							
Operation Band	peration Band :802.11 a Test Date			:2015-02-24			
Fundamental Free		60 MHz	Temp./			:22.7 deg_C / :	57 RH
Operation Mode EUT Pol.		X LOW Plane	Engine	er ement Ante	nno Dol	:Vito :VERTICAL	
				ement Ante	nna Pol.	.VEKTICAL	
Actual FS(dBµV/n			· · · ·				
Factor(dB) = Anter	nna Factor(dBµV)	/m) + Cable I	Loss(dB) – Pre_Amp	lifier Gain(dH	3)		
Note : "F" : den	otes Fundamental	Frequency.;	"H" : denotes Harmon	ic Frequency.			
"E" : de	enotes Band Edge	Frequency. ; "S	": denotes Spurious	Frequency.			
···· : (denotes Noise Floo	or.					
Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
39.70	Peak	S	55.31	-18.79	36.52	40.00	-3.48
84.32	Peak	S	62.38	-26.34	36.05	40.00	-3.95
107.60	Peak	S	58.31	-22.68	35.63	43.50	-7.87
155.13	Peak	S	51.68	-22.82	28.86	43.50	-14.64
224.97	Peak	S	45.57	-22.67	22.90	46.00	-23.10
667.29	Peak	S	35.17	-11.68	23.49	46.00	-22.52
10520.00	Peak	Н	33.17	19.25	52.42	68.30	-15.88
15780.00	Peak	Н					
21040.00	Peak	Н					
26300.00	Peak	Н					
31560.00	Peak	Н					
36820.00	Peak	Н					

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Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5260 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 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.

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV∕m	dB
69.77	Peak	S	53.79	-27.80	25.98	40.00	-14.02
155.13	Peak	S	47.52	-22.82	24.70	43.50	-18.81
224.97	Peak	S	52.73	-22.67	30.06	46.00	-15.94
314.21	Peak	S	41.78	-18.62	23.15	46.00	-22.85
667.29	Peak	S	34.19	-11.68	22.50	46.00	-23.50
834.13	Peak	S	36.53	-9.14	27.39	46.00	-18.61
10520.00	Peak	Н	30.39	19.25	49.64	68.30	-18.66
15780.00	Peak	Н					
21040.00	Peak	Н					
26300.00	Peak	Н					
31560.00	Peak	Н					
36820.00	Peak	Н					

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Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5300 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
40.67	Peak	S	49.06	-19.43	29.62	40.00	-10.38
59.10	Peak	S	53.67	-28.23	25.44	40.00	-14.56
69.77	Peak	S	51.97	-27.80	24.16	40.00	-15.84
155.13	Peak	S	52.01	-22.82	29.19	43.50	-14.31
314.21	Peak	S	42.42	-18.62	23.79	46.00	-22.21
667.29	Peak	S	35.35	-11.68	23.67	46.00	-22.33
10600.00	Peak	Н	30.76	19.38	50.14	74.00	-23.86
10600.00	Average	Н	20.18	19.38	39.56	54.00	-14.44
15900.00	Peak	Н					
21200.00	Peak	Н					
26500.00	Peak	Н					
31800.00	Peak	Н					

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Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5300 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 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.	Detector Mode	Note	Spectrum Reading Level	Factor	Actual FS	Limit	Margin
			Reading Level			@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV∕m	dB
69.77	Peak	S	54.20	-27.80	26.39	40.00	-13.61
119.24	Peak	S	40.69	-21.51	19.18	43.50	-24.32
151.25	Peak	S	45.67	-22.79	22.88	43.50	-20.62
221.09	Peak	S	52.58	-22.91	29.66	46.00	-16.34
311.30	Peak	S	42.46	-18.71	23.75	46.00	-22.25
834.13	Peak	S	37.66	-9.14	28.52	46.00	-17.48
10600.00	Peak	Н	30.28	19.38	49.66	74.00	-24.34
10600.00	Average	Н	18.55	19.38	37.93	54.00	-16.07
15900.00	Peak	Н					
21200.00	Peak	Н					
26500.00	Peak	Н					
31800.00	Peak	Н					

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Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5320 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 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.

Freq.	Detector Mode	Note	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
	<u> </u>		·		•	•	
37.76	Peak	S	51.76	-17.57	34.18	40.00	-5.82
76.56	Peak	S	62.26	-27.18	35.08	40.00	-4.92
104.69	Peak	S	60.60	-23.10	37.50	43.50	-6.00
155.13	Peak	S	53.48	-22.82	30.66	43.50	-12.84
667.29	Peak	S	35.64	-11.68	23.96	46.00	-22.04
780.78	Peak	S	34.15	-10.25	23.89	46.00	-22.11
10640.00	Peak	Н	31.61	19.28	50.89	74.00	-23.11
10640.00	Average	Н	20.24	19.28	39.52	54.00	-14.48
15960.00	Peak	Н					
21280.00	Peak	Н					
26600.00	Peak	Н					
31920.00	Peak	Н					

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Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5320 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 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)

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

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

"---": denotes Noise Floor.

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
64.92	Peak	S	57.26	-28.16	29.11	40.00	-10.89
151.25	Peak	S	46.27	-22.79	23.48	43.50	-20.02
226.91	Peak	S	52.30	-22.53	29.78	46.00	-16.22
305.48	Peak	S	42.50	-19.02	23.48	46.00	-22.52
744.89	Peak	S	41.07	-10.02	31.04	46.00	-14.96
834.13	Peak	S	35.53	-9.14	26.39	46.00	-19.61
10640.00	Peak	Н	28.94	19.28	48.22	74.00	-25.78
10640.00	Average	Н	18.63	19.28	37.91	54.00	-16.09
15960.00	Peak	Н					
21280.00	Peak	Н					
26600.00	Peak	Н					
31920.00	Peak	Н					

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Operation Band	:802.11 a	Test Date	:2015-02-24					
Fundamental Frequency	:5320 MHz	Temp./Humi.	:22.7 deg_C / 57 RH					
Operation Mode	:Bandedge HIGH	Engineer	:Vito					
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL					
Actual FS($dB\mu V/m$) = SPA. R	eading level($dB\mu V$) + Factor($dB\mu V$)	1B)						
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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	Peak	Е	51.21	11.30	62.51	74.00	-11.49
5350.00	Average	Е	38.80	11.30	50.10	54.00	-3.90

Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5320 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:Bandedge HIGH	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	Peak	Е	55.37	11.30	66.67	74.00	-7.33
5350.00	Average	Е	39.30	11.30	50.60	54.00	-3.40

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Operation Band	indamental Frequency :5260 MHz Temp./Humi. peration Mode :TX LOW Engineer				Hz (MIMO) :2015-02-24 :22.7 deg_C / : :Vito :VERTICAL		
Actual FS(dBµV/1	<i>,</i>	•	, , ,				
Factor(dB) = Anter	nna Factor(dBµV)	/m) + Cable I	Loss(dB) – Pre_Amp	olifier Gain(dH	3)		
Note : "F" : den	otes Fundamental	Frequency.;	"H" : denotes Harmon	nic Frequency.			
"E" : de	enotes Band Edge	Frequency. ; "S	": denotes Spurious	Frequency.			
"" : (denotes Noise Floo	or.					
Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
39.70	Peak	S	48.44	-18.79	29.65	40.00	-10.35
83.35	Peak	S	61.02	-26.46	34.56	40.00	-5.44
155.13	Peak	S	52.74	-22.82	29.91	43.50	-13.59
190.05	Peak	S	48.56	-24.16	24.40	43.50	-19.10
445.16	Peak	S	34.92	-15.18	19.74	46.00	-26.26
667.29	Peak	S	36.68	-11.68	25.00	46.00	-21.00
10520.00	Peak	Н	37.10	19.25	56.35	68.30	-11.95
15780.00	Peak	Н					
21040.00	Peak	Н					
26300.00	Peak	Н					
31560.00	Peak	Н					
36820.00	Peak	Н					

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Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency	:5260 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 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.

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
68.80	Peak	S	54.73	-27.88	26.86	40.00	-13.14
155.13	Peak	S	46.25	-22.82	23.43	43.50	-20.07
190.05	Peak	S	51.28	-24.16	27.12	43.50	-16.38
224.97	Peak	S	52.51	-22.67	29.84	46.00	-16.16
667.29	Peak	S	34.15	-11.68	22.46	46.00	-23.54
712.88	Peak	S	34.44	-10.70	23.75	46.00	-22.25
10520.00	Peak	Н	30.76	19.25	50.01	68.30	-18.29
15780.00	Peak	Н					
21040.00	Peak	Н					
26300.00	Peak	Н					
31560.00	Peak	Н					
36820.00	Peak	Н					

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Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency	:5300 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
30.00	Peak	S	43.55	-13.11	30.44	40.00	-9.56
59.10	Peak	S	58.07	-28.23	29.84	40.00	-10.16
77.53	Peak	S	53.03	-27.08	25.95	40.00	-14.05
102.75	Peak	S	46.35	-23.39	22.96	43.50	-20.54
155.13	Peak	S	52.62	-22.82	29.80	43.50	-13.70
667.29	Peak	S	35.36	-11.68	23.68	46.00	-22.32
10600.00	Peak	Н	35.28	19.38	54.66	74.00	-19.34
10600.00	Average	Н	23.91	19.38	43.29	54.00	-10.71
15900.00	Peak	Н					
21200.00	Peak	Н					
26500.00	Peak	Н					
31800.00	Peak	Н					
37100.00	Peak	Н					

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Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency	:5300 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 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)

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

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

Freq.	Detector Mode	Note	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
			e	ID		Ŭ	10
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
68.80	Peak	S	54.50	-27.88	26.63	40.00	-13.37
155.13	Peak	S	47.04	-22.82	24.22	43.50	-19.28
226.91	Peak	S	52.49	-22.53	29.96	46.00	-16.04
307.42	Peak	S	42.25	-18.94	23.31	46.00	-22.69
667.29	Peak	S	34.14	-11.68	22.46	46.00	-23.54
834.13	Peak	S	32.73	-9.14	23.59	46.00	-22.41
10600.00	Peak	Н	30.89	19.38	50.27	74.00	-23.73
10600.00	Average	Н	20.04	19.38	39.42	54.00	-14.58
15900.00	Peak	Н					
21200.00	Peak	Н					
26500.00	Peak	Н					
31800.00	Peak	Н					
37100.00	Peak	Н					

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Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency	:5320 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 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.

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
34.85	Peak	S	46.81	-15.75	31.06	40.00	-8.94
58.13	Peak	S	54.51	-27.92	26.60	40.00	-13.40
69.77	Peak	S	52.43	-27.80	24.62	40.00	-15.38
155.13	Peak	S	51.78	-22.82	28.96	43.50	-14.54
667.29	Peak	S	35.26	-11.68	23.57	46.00	-22.43
752.65	Peak	S	31.37	-9.81	21.56	46.00	-24.44
10640.00	Peak	Н	33.69	19.28	52.97	74.00	-21.03
10640.00	Average	Н	23.46	19.28	42.74	54.00	-11.26
15960.00	Peak	Н					
21280.00	Peak	Н					
26600.00	Peak	Н					
31920.00	Peak	Н					
37240.00	Peak	Н					

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Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency	:5320 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 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)

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

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

Freq.	Detector Mode	Note	Spectrum Reading Level	Factor	Actual FS	Limit	Margin
			e			@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
69.77	Peak	S	54.04	-27.80	26.24	40.00	-13.76
155.13	Peak	S	46.62	-22.82	23.80	43.50	-19.70
224.97	Peak	S	52.26	-22.67	29.59	46.00	-16.41
306.45	Peak	S	42.16	-18.99	23.16	46.00	-22.84
460.68	Peak	S	36.20	-14.59	21.61	46.00	-24.39
834.13	Peak	S	34.14	-9.14	25.00	46.00	-21.00
10640.00	Peak	Н	31.05	19.28	50.33	74.00	-23.67
10640.00	Average	Н	19.41	19.28	38.69	54.00	-15.31
15960.00	Peak	Н					
21280.00	Peak	Н					
26600.00	Peak	Н					
31920.00	Peak	Н					
37240.00	Peak	Н					

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Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency	:5320 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:Bandedge HIGH	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	r Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/A	V F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	Peak	Е	56.36	11.30	67.67	74.00	-6.33
5350.00	Average	e E	38.18	11.30	49.48	54.00	-4.52
5353.08	Peak	S	57.97	11.32	69.29	74.00	-4.71
5353.08	Average	e S	38.12	11.32	49.44	54.00	-4.56
Operation Band Fundamental Fr Operation Mode EUT Pol.	equency	:802.11 n20M :5320 MHz :Bandedge HIGH :E2 Plane	Test Date Temp./Hum Engineer Measureme	ii. nt Antenna Po	:Vito	02-24 leg_C / 57 RH IZONTAL	

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.

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	Peak	Е	61.03	11.30	72.33	74.00	-1.67
5350.00	Average	Е	40.39	11.30	51.69	54.00	-2.31
5351.40	Peak	S	61.56	11.32	72.88	74.00	-1.12
5351.40	Average	S	40.24	11.32	51.56	54.00	-2.44

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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 802.11n HT40, 5250~5350Operation Band:802.11 n40MTest DateFundamental Frequency:5270 MHzTemp./Humi.Operation Mode:TX LOWEngineerEUT Pol.:E2 PlaneMeasurement Antenna Pol.						Hz (MIMO) :2015-02-24 :22.7 deg_C / : :Vito :VERTICAL	
Actual FS(dBµV/1	m) = SPA. Readir	ng level(dBµV	(dB) + Factor(dB)				
Factor(dB) = Anter	nna Factor(dBµV)	(m) + Cable I	Loss(dB) – Pre_Amp	olifier Gain(dE	8)		
Note : "F" : den	otes Fundamental	Frequency.;	"H" : denotes Harmon	nic Frequency.			
"E" : de	enotes Band Edge	Frequency. ; "S	": denotes Spurious	s Frequency.			
··":C	denotes Noise Floo	or.					
Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
39.70	Peak	S	48.88	-18.79	30.08	40.00	-9.92
55.22	Peak	S	57.05	-27.06	29.99	40.00	-10.01
102.75	Peak	S	47.90	-23.39	24.50	43.50	-19.00
155.13	Peak	S	51.06	-22.82	28.24	43.50	-15.26
190.05	Peak	S	50.04	-24.16	25.88	43.50	-17.62
667.29	Peak	S	35.99	-11.68	24.31	46.00	-21.69
10540.00	Peak	Н	31.24	19.13	50.38	68.30	-17.92
15810.00	Peak	Н					
21080.00	Peak	Н					
26350.00	Peak	Н					
31620.00	Peak	Н					
36890.00	Peak	Н					

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Operation Band	:802.11 n40M	Test Date	:2015-02-24
Fundamental Frequency	:5270 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV∕m	dB
69.77	Peak	S	54.13	-27.80	26.33	40.00	-13.67
99.84	Peak	S	43.58	-23.84	19.75	43.50	-23.75
155.13	Peak	S	47.27	-22.82	24.45	43.50	-19.05
227.88	Peak	S	52.40	-22.45	29.95	46.00	-16.05
667.29	Peak	S	34.26	-11.68	22.58	46.00	-23.42
834.13	Peak	S	38.64	-9.14	29.50	46.00	-16.50
10540.00	Peak	Н	29.27	19.13	48.41	68.30	-19.89
15810.00	Peak	Н					
21080.00	Peak	Н					
26350.00	Peak	Н					
31620.00	Peak	Н					
36890.00	Peak	Н					

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Operation Band	:802.11 n40M	Test Date	:2015-02-24
Fundamental Frequency	:5310 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 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.	Detector Mode	Note	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV∕m	dB
			·		·	·	
61.04	Peak	S	62.55	-28.42	34.13	40.00	-5.87
155.13	Peak	S	52.61	-22.82	29.79	43.50	-13.71
190.05	Peak	S	48.17	-24.16	24.01	43.50	-19.49
240.49	Peak	S	44.18	-21.03	23.15	46.00	-22.85
667.29	Peak	S	35.55	-11.68	23.87	46.00	-22.13
775.93	Peak	S	32.44	-10.37	22.07	46.00	-23.93
10620.00	Peak	Н	29.34	19.38	48.71	74.00	-25.29
10620.00	Average	Н	19.61	19.38	38.99	54.00	-15.01
159300.00	Peak	Н					
212400.00	Peak	Н					
265500.00	Peak	Н					
318600.00	Peak	Н					
371700.00	Peak	Н					

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Operation Band	:802.11 n40M	Test Date	:2015-02-24
Fundamental Frequency	:5310 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 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)

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

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
69.77	Peak	S	54.06	-27.80	26.26	40.00	-13.74
155.13	Peak	S	46.59	-22.82	23.77	43.50	-19.73
190.05	Peak	S	49.94	-24.16	25.78	43.50	-17.72
226.91	Peak	S	52.30	-22.53	29.78	46.00	-16.22
667.29	Peak	S	34.92	-11.68	23.23	46.00	-22.77
834.13	Peak	S	37.68	-9.14	28.54	46.00	-17.46
10620.00	Peak	Н	28.58	19.38	47.96	74.00	-26.04
10620.00	Average	Н	19.57	19.38	38.95	54.00	-15.05
159300.00	Peak	Н					
212400.00	Peak	Н					
265500.00	Peak	Н					
318600.00	Peak	Н					
371700.00	Peak	Н					

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Operation Band	:802.11 n40M	Test Date	:2015-02-24
Fundamental Frequency	:5310 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:Bandedge HIGH	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/A	V F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	Peak	Е	58.28	11.30	69.59	74.00	-4.41
5350.00	Average	E	38.86	11.30	50.16	54.00	-3.84
5356.28	Peak	S	59.18	11.31	70.49	74.00	-3.51
5356.28	Average	S	38.44	11.31	49.75	54.00	-4.25
Operation Band Fundamental Fr Operation Mode	requency	:802.11 n40M :5310 MHz :Bandedge HIGH	Test Date Temp./Hum Engineer	ii.	:2015- :22.7 c :Vito	02-24 leg_C / 57 RH	[

Operation Mode	:Bandedge HIGH	Engineer	: Vito
EUT Pol.	:E2 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)

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

"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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	Peak	Е	61.72	11.30	73.02	74.00	-0.98
5350.00	Average	Е	40.14	11.30	51.44	54.00	-2.56
5356.28	Peak	S	61.83	11.31	73.14	74.00	-0.86
5356.28	Average	S	39.74	11.31	51.05	54.00	-2.95

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Radiated Spurious Emission Measurement Result 802.11a, 5470~5725 MHz (Aux)

Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5500 MHz	Temp./Humi.	:22.7 deg C / 57 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 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.

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
48.43	Peak	S	58.36	-24.55	33.80	40.00	-6.20
54.25	Peak	S	59.41	-26.79	32.61	40.00	-7.39
159.98	Peak	S	54.97	-23.14	31.83	43.50	-11.67
231.76	Peak	S	45.06	-22.08	22.98	46.00	-23.02
667.29	Peak	S	35.65	-11.68	23.96	46.00	-22.04
745.86	Peak	S	38.99	-9.93	29.06	46.00	-16.94
11000.00	Peak	Н	29.96	20.02	49.98	74.00	-24.02
11000.00	Average	Н	19.74	20.02	39.76	54.00	-14.24
16500.00	Peak	Н					
22000.00	Peak	Н					
27500.00	Peak	Н					
33000.00	Peak	Н					
38500.00	Peak	Н					

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Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5500 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 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)

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

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
68.80	Peak	S	54.28	-27.88	26.40	40.00	-13.60
155.13	Peak	S	45.59	-22.82	22.77	43.50	-20.73
189.08	Peak	S	53.75	-24.19	29.55	43.50	-13.95
219.15	Peak	S	52.44	-22.97	29.47	46.00	-16.53
737.13	Peak	S	37.76	-10.38	27.38	46.00	-18.62
834.13	Peak	S	34.30	-9.14	25.16	46.00	-20.84
11000.00	Peak	Н	29.00	20.02	49.01	74.00	-24.99
11000.00	Average	Н	20.12	20.02	40.14	54.00	-13.86
16500.00	Peak	Н					
22000.00	Peak	Н					
27500.00	Peak	Н					
33000.00	Peak	Н					
38500.00	Peak	Н					

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Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5580 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 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.

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV∕m	dB
43.58	Peak	S	55.63	-21.44	34.19	40.00	-5.81
50.37	Peak	S	58.52	-25.65	32.88	40.00	-7.12
155.13	Peak	S	52.07	-22.82	29.25	43.50	-14.25
190.05	Peak	S	48.46	-24.16	24.30	43.50	-19.20
226.91	Peak	S	45.51	-22.53	22.98	46.00	-23.02
741.01	Peak	S	40.72	-10.19	30.53	46.00	-15.47
11160.00	Peak	Н	29.10	20.38	49.48	74.00	-24.52
11160.00	Average	Н	20.53	20.38	40.91	54.00	-13.09
16740.00	Peak	Н					
22320.00	Peak	Н					
27900.00	Peak	Н					
33480.00	Peak	Н					
39060.00	Peak	Н					

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Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5580 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 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)

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

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
68.80	Peak	S	54.07	-27.88	26.20	40.00	-13.80
155.13	Peak	S	46.08	-22.82	23.26	43.50	-20.24
225.94	Peak	S	52.58	-22.60	29.99	46.00	-16.01
296.75	Peak	S	42.53	-19.29	23.24	46.00	-22.76
667.29	Peak	S	34.84	-11.68	23.16	46.00	-22.84
834.13	Peak	S	34.24	-9.14	25.10	46.00	-20.90
11160.00	Peak	Н	28.66	20.38	49.04	74.00	-24.96
11160.00	Average	Н	19.25	20.38	39.63	54.00	-14.37
16740.00	Peak	Н					
22320.00	Peak	Н					
27900.00	Peak	Н					
33480.00	Peak	Н					
39060.00	Peak	Н					

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Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5700 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 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.

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
39.70	Peak	S	48.69	-18.79	29.89	40.00	-10.11
56.19	Peak	S	53.91	-27.33	26.59	40.00	-13.41
87.23	Peak	S	55.52	-25.98	29.54	40.00	-10.46
155.13	Peak	S	52.22	-22.82	29.40	43.50	-14.10
190.05	Peak	S	49.09	-24.16	24.93	43.50	-18.57
667.29	Peak	S	35.71	-11.68	24.03	46.00	-21.97
11400.00	Peak	Н	30.12	20.81	50.93	74.00	-23.07
11400.00	Average	Н	21.89	20.81	42.70	54.00	-11.30
17100.00	Peak	Н					
22800.00	Peak	Н					
28500.00	Peak	Н					
34200.00	Peak	Н					
39900.00	Peak	Н					

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Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5700 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 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)

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

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV∕m	dBµV/m	dB
68.80	Peak	S	54.62	-27.88	26.74	40.00	-13.26
155.13	Peak	S	47.42	-22.82	24.60	43.50	-18.90
220.12	Peak	S	52.89	-22.96	29.92	46.00	-16.08
309.36	Peak	S	42.91	-18.82	24.09	46.00	-21.91
667.29	Peak	S	33.98	-11.68	22.29	46.00	-23.71
834.13	Peak	S	37.74	-9.14	28.60	46.00	-17.40
11400.00	Peak	Н	29.49	20.81	50.30	74.00	-23.70
11400.00	Average	Н	19.30	20.81	40.11	54.00	-13.89
17100.00	Peak	Н					
22800.00	Peak	Н					
28500.00	Peak	Н					
34200.00	Peak	Н					
39900.00	Peak	Н					

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Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5500 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/A	V F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5460.00	Peak	Е	50.31	11.46	61.77	74.00	-12.23
5460.00	Average	Е	37.65	11.46	49.11	54.00	-4.89
5470.00	Peak	Е	52.04	11.46	63.49	74.00	-10.51
5470.00	Average	E	37.81	11.46	49.27	54.00	-4.73
Operation Band Fundamental Fr Operation Mode EUT Pol.	equency e	:802.11 a :5500 MHz :Bandedge LOW :E2 Plane	Test Date Temp./Hum Engineer Measureme	ni. ent Antenna Po	:Vito	02-24 leg_C / 57 RH IZONTAL	[

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.

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode Reading Level		FS	@3m			
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5460.00	Peak	Е	50.74	11.46	62.20	74.00	-11.80
5460.00	Average	Ε	38.14	11.46	49.60	54.00	-4.40
5470.00	Peak	Е	57.70	11.46	69.16	74.00	-4.84
5470.00	Average	Е	38.48	11.46	49.94	54.00	-4.06

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Operation Band Fundamental Frequency Operation Mode EUT Pol.	:802.11 a :5700 MHz :Bandedge HIGH :E2 Plane	Test Date Temp./Humi. Engineer Measurement Anten	na Pol.	:2015-02-24 :22.7 deg_C / 5 :Vito :VERTICAL	7 RH
Actual FS($dB\mu V/m$) = SPA.	Reading level($dB\mu V$) + Factor(d	IB)			
Factor(dB) = Antenna Factor	$(dB\mu V/m) + Cable Loss(dB) - P$	Pre_Amplifier Gain(dB)			
Note : "F" : denotes Funda	umental Frequency. ; "H" : denotes	Harmonic Frequency.			
"E" : denotes Ba	nd Edge Frequency. ; "S" : denotes	Spurious Frequency.			
"" : denotes Noise Floor.					
The trace on RE (ra	diation emission) plot is as colore	ed blue, and the detection manne	r we've employ	ed is peak detector.	
Frag Data	ctor Note Sn	ectrum Eactor	Actual	Limit	Margin

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin	
	Mode		Reading Level		FS	@3m		
 MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB	_
5725.00	Peak	Е	50.03	12.27	62.30	74.00	-11.70	
5725.00	Average	Е	37.57	12.27	49.84	54.00	-4.16	

Operation Band	:802.11 a	Test Date	:2015-02-24
Fundamental Frequency	:5700 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:Bandedge HIGH	Engineer	:Vito
EUT Pol.	:E2 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)

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

"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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5725.00	Peak	Е	51.60	12.27	63.87	74.00	-10.13
5725.00	Average	Е	37.50	12.27	49.77	54.00	-4.23
5725.64	Peak	Е	52.65	12.27	64.92	74.00	-9.08
5725.64	Average	Е	37.67	12.27	49.94	54.00	-4.06

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38500.00

Peak

FCC ID: MCLT77H462 IC: 2878D-T77H462

Radiated Spurious Emission Measurement Result 802.11n HT20, 5470~5725 MHz (MIMO) **Operation Band** :802.11 n20M Test Date :2015-02-24 **Fundamental Frequency** :5500 MHz Temp./Humi. :22.7 deg C / 57 RH **Operation Mode** :TX LOW Engineer :Vito EUT Pol. :E2 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. Detector Note Spectrum Factor Actual Limit Margin FS Mode Reading Level @3m dBµV/m dBµV/m PK/QP/AV dBµV dB dB MHz F/H/E/S 30.97 Peak S 46.67 -13.64 33.03 40.00 -6.9761.04 S 63.63 40.00 Peak -28.42 35.21 -4.79 155.13 Peak S 51.92 -22.82 29.10 43.50 -14.40S 190.05 Peak 48.92 -24.16 24.75 43.50 -18.75 S 447.10 Peak 34.45 -15.12 19.33 46.00 -26.67 667.29 Peak S 35.98 -11.68 24.30 46.00 -21.70 11000.00 Peak Η 30.21 20.02 50.22 74.00 -23.78 11000.00 Average Η 20.62 20.02 40.64 54.00 -13.3616500.00 Peak Η ___ 22000.00 Peak Η 27500.00 Peak Η 33000.00 Peak Η

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	:2015-02-24
Fundamental Frequency	:5500 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 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)

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

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV∕m	dBµV∕m	dB
36.79	Peak	S	49.10	-16.96	32.14	40.00	-7.86
69.77	Peak	S	54.98	-27.80	27.17	40.00	-12.83
155.13	Peak	S	47.16	-22.82	24.34	43.50	-19.16
226.91	Peak	S	52.47	-22.53	29.95	46.00	-16.05
667.29	Peak	S	34.15	-11.68	22.46	46.00	-23.54
834.13	Peak	S	33.74	-9.14	24.61	46.00	-21.39
11000.00	Peak	Н	31.12	20.02	51.13	74.00	-22.87
11000.00	Average	Н	19.52	20.02	39.54	54.00	-14.46
16500.00	Peak	Н					
22000.00	Peak	Н					
27500.00	Peak	Н					
33000.00	Peak	Н					
38500.00	Peak	Н					

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Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency	:5580 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV∕m	dB
39.70	Peak	S	47.76	-18.79	28.96	40.00	-11.04
56.19	Peak	S	52.00	-27.33	24.68	40.00	-15.32
102.75	Peak	S	44.14	-23.39	20.75	43.50	-22.75
155.13	Peak	S	47.91	-22.82	25.09	43.50	-18.41
249.22	Peak	S	43.41	-20.52	22.89	46.00	-23.11
667.29	Peak	S	34.31	-11.68	22.63	46.00	-23.37
11160.00	Peak	Н	30.66	20.38	51.04	74.00	-22.96
11160.00	Average	Н	20.44	20.38	40.82	54.00	-13.18
16740.00	Peak	Н					
22320.00	Peak	Н					
27900.00	Peak	Н					
33480.00	Peak	Н					
39060.00	Peak	Н					

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Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency	:5580 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 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)

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

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV∕m	dBµV/m	dB
69.77	Peak	S	54.49	-27.80	26.68	40.00	-13.32
155.13	Peak	S	46.73	-22.82	23.91	43.50	-19.59
226.91	Peak	S	52.05	-22.53	29.52	46.00	-16.48
301.60	Peak	S	43.09	-19.18	23.91	46.00	-22.09
667.29	Peak	S	34.20	-11.68	22.52	46.00	-23.48
834.13	Peak	S	35.95	-9.14	26.81	46.00	-19.19
11160.00	Peak	Н	28.67	20.38	49.05	74.00	-24.95
11160.00	Average	Н	19.02	20.38	39.40	54.00	-14.60
16740.00	Peak	Н					
22320.00	Peak	Н					
27900.00	Peak	Н					
33480.00	Peak	Н					
39060.00	Peak	Н					

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Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency	:5700 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
39.70	Peak	S	48.77	-18.79	29.97	40.00	-10.03
55.22	Peak	S	53.35	-27.06	26.29	40.00	-13.71
102.75	Peak	S	44.25	-23.39	20.86	43.50	-22.64
159.01	Peak	S	46.84	-23.10	23.75	43.50	-19.75
209.45	Peak	S	45.99	-22.92	23.07	43.50	-20.43
667.29	Peak	S	34.68	-11.68	23.00	46.00	-23.00
11400.00	Peak	Н	30.23	20.81	51.04	74.00	-22.96
11400.00	Average	Н	20.71	20.81	41.52	54.00	-12.48
17100.00	Peak	Н					
22800.00	Peak	Н					
28500.00	Peak	Н					
34200.00	Peak	Н					
39900.00	Peak	Н					

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Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency	:5700 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 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)

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

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV∕m	dBµV/m	dB
68.80	Peak	S	53.74	-27.88	25.87	40.00	-14.13
155.13	Peak	S	46.55	-22.82	23.73	43.50	-19.77
225.94	Peak	S	52.43	-22.60	29.83	46.00	-16.17
475.23	Peak	S	34.58	-14.12	20.46	46.00	-25.54
667.29	Peak	S	35.08	-11.68	23.40	46.00	-22.60
834.13	Peak	S	32.46	-9.14	23.32	46.00	-22.68
11400.00	Peak	Н	29.37	20.81	50.18	74.00	-23.82
11400.00	Average	Н	18.78	20.81	39.59	54.00	-14.41
17100.00	Peak	Н					
22800.00	Peak	Н					
28500.00	Peak	Н					
34200.00	Peak	Н					
39900.00	Peak	Н					

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Operation Band Fundamental Frequency	:802.11 n20M :5500 MHz	Test Date Temp./Humi.	:2015-02-24 :22.7 deg C / 57 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 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.

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
 MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5460.00	Peak	Е	56.93	11.46	68.39	74.00	-5.61
5460.00	Average	Е	38.67	11.46	50.13	54.00	-3.87
5467.04	Peak	S	60.87	11.46	72.33	74.00	-1.67
5467.04	Average	S	38.85	11.46	50.31	54.00	-3.69
5470.00	Peak	Е	60.48	11.46	71.94	74.00	-2.06
5470.00	Average	Е	39.09	11.46	50.55	54.00	-3.45

Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency	:5500 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5460.00	Peak	E	58.31	11.46	69.77	74.00	-4.23
5460.00	Average	Е	39.11	11.46	50.57	54.00	-3.43
5470.00	Peak	Е	60.33	11.46	71.79	74.00	-2.21
5470.00	Average	E	39.91	11.46	51.37	54.00	-2.63

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Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency Operation Mode	:5700 MHz :Bandedge HIGH	Temp./Humi. Engineer	:22.7 deg_C / 57 RH :Vito
EUT Pol.	:E2 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.

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5725.00	Peak	Е	60.98	12.27	73.25	74.00	-0.75
5725.00	Average	Е	39.60	12.27	51.87	54.00	-2.13

Operation Band	:802.11 n20M	Test Date	:2015-02-24
Fundamental Frequency	:5700 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:Bandedge HIGH	Engineer	:Vito
EUT Pol.	:E2 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)

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

"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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV∕m	dBµV/m	dB
5725.00	Peak	Е	60.41	12.27	72.68	74.00	-1.32
5725.00	Average	Е	39.26	12.27	51.53	54.00	-2.47

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38570.00

Peak

FCC ID: MCLT77H462 IC: 2878D-T77H462

Radiated Spurious Emission Measurement Result 802.11n HT40, 5470~5725 MHz (MIMO) **Operation Band** :802.11 n40M Test Date :2015-02-24 **Fundamental Frequency** :5510 MHz Temp./Humi. :22.7 deg C / 57 RH **Operation Mode** :TX LOW Engineer :Vito EUT Pol. :E2 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. Detector Note Spectrum Factor Actual Limit Margin FS Mode Reading Level @3m dBµV/m dBµV/m PK/QP/AV dBµV dB dB MHz F/H/E/S 37.76 Peak S 52.55 -17.57 34.97 40.00 -5.0355.22 S 40.00 Peak 53.44 -27.06 26.38 -13.62 102.75 Peak S 45.69 -23.39 22.29 43.50 -21.21 S 155.13 Peak 51.33 -22.82 28.51 43.50 -14.99 S 22.24 361.74 Peak 39.37 -17.13 46.00 -23.76 667.29 Peak S 34.74 -11.68 23.06 46.00 -22.94 11020.00 Peak Η 29.34 20.04 49.39 74.00 -24.61 11020.00 Average Η 19.43 20.04 39.47 54.00 -14.53 16530.00 Peak Η --Peak Η 22040.00 Peak 27550.00 Η Peak Η 33060.00

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	:2015-02-24
Fundamental Frequency	:5510 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 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)

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

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
69.77	Peak	S	51.45	-27.80	23.64	40.00	-16.36
155.13	Peak	S	43.85	-22.82	21.03	43.50	-22.47
190.05	Peak	S	48.60	-24.16	24.44	43.50	-19.06
226.91	Peak	S	51.78	-22.53	29.26	46.00	-16.74
667.29	Peak	S	34.69	-11.68	23.01	46.00	-22.99
834.13	Peak	S	37.34	-9.14	28.20	46.00	-17.80
11020.00	Peak	Н	28.86	20.04	48.90	74.00	-25.10
11020.00	Average	Н	19.46	20.04	39.50	54.00	-14.50
16530.00	Peak	Н					
22040.00	Peak	Н					
27550.00	Peak	Н					
33060.00	Peak	Н					
38570.00	Peak	Н					

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Operation Band	:802.11 n40M	Test Date	:2015-02-24
Fundamental Frequency	:5550 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 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.

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
39.70	Peak	S	48.33	-18.79	29.54	40.00	-10.46
56.19	Peak	S	53.52	-27.33	26.20	40.00	-13.80
102.75	Peak	S	47.18	-23.39	23.79	43.50	-19.71
155.13	Peak	S	51.04	-22.82	28.22	43.50	-15.28
344.28	Peak	S	42.32	-17.60	24.72	46.00	-21.28
667.29	Peak	S	35.96	-11.68	24.28	46.00	-21.72
11100.00	Peak	Н	28.94	20.21	49.15	74.00	-24.85
11100.00	Average	Н	19.20	20.21	39.41	54.00	-14.59
16650.00	Peak	Н					
22200.00	Peak	Н					
27750.00	Peak	Н					
33300.00	Peak	Н					
38850.00	Peak	Н					

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Operation Band	:802.11 n40M	Test Date	:2015-02-24
Fundamental Frequency	:5550 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 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)

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

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV∕m	dBµV/m	dB
68.80	Peak	S	54.45	-27.88	26.58	40.00	-13.42
151.25	Peak	S	45.82	-22.79	23.03	43.50	-20.47
190.05	Peak	S	49.62	-24.16	25.46	43.50	-18.04
225.94	Peak	S	52.65	-22.60	30.05	46.00	-15.95
667.29	Peak	S	33.68	-11.68	22.00	46.00	-24.00
834.13	Peak	S	37.41	-9.14	28.27	46.00	-17.73
11100.00	Peak	Н	28.66	20.21	48.86	74.00	-25.14
11100.00	Average	Н	19.26	20.21	39.47	54.00	-14.53
16650.00	Peak	Н					
22200.00	Peak	Н					
27750.00	Peak	Н					
33300.00	Peak	Н					
38850.00	Peak	Н					

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Operation Band	:802.11 n40M	Test Date	:2015-02-24
Fundamental Frequency	:5670 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
39.70	Peak	S	49.31	-18.79	30.52	40.00	-9.48
102.75	Peak	S	48.11	-23.39	24.72	43.50	-18.78
155.13	Peak	S	52.19	-22.82	29.37	43.50	-14.13
190.05	Peak	S	48.66	-24.16	24.50	43.50	-19.00
241.46	Peak	S	43.90	-20.97	22.93	46.00	-23.07
667.29	Peak	S	35.54	-11.68	23.85	46.00	-22.15
11340.00	Peak	Н	28.64	20.61	49.25	74.00	-24.75
11340.00	Average	Н	19.65	20.61	40.26	54.00	-13.74
170100.00	Peak	Н					
226800.00	Peak	Н					
283500.00	Peak	Н					
340200.00	Peak	Н					
396900.00	Peak	Н					

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Operation Band	:802.11 n40M	Test Date	:2015-02-24
Fundamental Frequency	:5670 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 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)

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

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
68.80	Peak	S	54.17	-27.88	26.29	40.00	-13.71
155.13	Peak	S	45.98	-22.82	23.16	43.50	-20.34
190.05	Peak	S	50.73	-24.16	26.56	43.50	-16.94
224.97	Peak	S	52.63	-22.67	29.96	46.00	-16.04
312.27	Peak	S	43.34	-18.66	24.68	46.00	-21.32
469.41	Peak	S	35.66	-14.13	21.52	46.00	-24.48
11340.00	Peak	Н	28.18	20.61	48.78	74.00	-25.22
11340.00	Average	Н	18.75	20.61	39.36	54.00	-14.64
170100.00	Peak	Н					
226800.00	Peak	Н					
283500.00	Peak	Н					
340200.00	Peak	Н					
396900.00	Peak	Н					

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Operation Band	:802.11 n40M	Test Date	:2015-02-24
Fundamental Frequency	:5510 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/A	V F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5460.00	Peak	E	50.47	11.46	61.93	74.00	-12.07
5460.00	Average	E	37.58	11.46	49.04	54.00	-4.96
5470.00	Peak	Е	52.05	11.46	63.51	74.00	-10.49
5470.00	Average	E	37.90	11.46	49.36	54.00	-4.64
Operation Band Fundamental Fr Operation Mode EUT Pol.	requency	:802.11 n40M :5510 MHz :Bandedge LOW :E2 Plane	Test Date Temp./Hum Engineer Measureme	i. nt Antenna Po	:Vito	02-24 leg_C / 57 RH IZONTAL	

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.

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5460.00	Peak	Е	52.27	11.46	63.73	74.00	-10.27
5460.00	Average	Е	38.66	11.46	50.12	54.00	-3.88
5470.00	Peak	Е	56.53	11.46	67.98	74.00	-6.02
5470.00	Average	Е	39.55	11.46	51.01	54.00	-2.99

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Operation Band	:802.11 n40M	Test Date	:2015-02-24
Fundamental Frequency Operation Mode	:5670 MHz :Bandedge HIGH	Temp./Humi. Engineer	:22.7 deg_C / 57 RH :Vito
EUT Pol.	:E2 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.

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

Freq.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV/m	dBµV/m	dB
5725.00	Peak	Е	50.33	12.27	62.59	74.00	-11.41
5725.00	Average	E	37.36	12.27	49.63	54.00	-4.37

Operation Band	:802.11 n40M	Test Date	:2015-02-24
Fundamental Frequency	:5670 MHz	Temp./Humi.	:22.7 deg_C / 57 RH
Operation Mode	:Bandedge HIGH	Engineer	:Vito
EUT Pol.	:E2 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)

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

"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.	Detector	Note	Spectrum	Factor	Actual	Limit	Margin
	Mode		Reading Level		FS	@3m	
MHz	PK/QP/AV	F/H/E/S	dBµV	dB	dBµV∕m	dBµV/m	dB
5725.00	Peak	Е	50.68	12.27	62.95	74.00	-11.05
5725.00	Average	Е	37.22	12.27	49.49	54.00	-4.51

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8. ANTENNA REQUIREMENT

8.1 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.

According to RSS-GEN 7.1.2, a transmitter can only be sold or operated with antennas with which it was certified. A transmitter may be certified with multiple antenna types. An antenna type comprises antennas having similar in-band and out-of-band radiation patterns. Testing shall be performed using the highest-gain antenna of each combination of transmitter and antenna type for which certification is being sought, with the transmitter output power set at the maximum level. Any antenna of the same type and having equal or lesser gain as an antenna that had been successfully tested for certification with the transmitter, will also be considered certified with the transmitter, and may be used and marketed with the transmitter. The manufacturer shall include with the application for certification a list of acceptable antenna types to be used with the transmitter.

8.2 Antenna Connected Construction

The directional gains of antenna used for transmitting is 1.74dBi for frequency band of 5150~5250MHz, 4.75dBi for 5150~5250MHz_MIMO gain; 1.51dBi for frequency band of 5250~5350MHz, 4.52dBi for 5250~5350MHz_MIMO gain; -0.14dBi for frequency band of 5470~5725MHz, 2.87dBi for 5470~5725MHz_MIMO gain; 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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