ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

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

OF

Product Name of Host:	**Tablet Computer**
Brand Name of Host:	acer
Model No. of Host:	**N15P1**
Marketing Name of Host:	**SW5-014, SW5-014P**
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.:	**E2/2015/90030**
Issue Date:	**Oct. 15, 2015**
FCC Rule Part:	**§15.407**
IC Rule Part:	**RSS-210 issue 8:2010, Annex 9**
Prepared for:	**HON HAI PRECISION IND. CO., LTD 5F-1, 5 Hsin-An Road, Hsinchu Science-Based Industrial Park, Taiwan, R.O.C.**
Prepared by:	**SGS Taiwan Ltd. Electronics & Communication Laboratory No.2, Keji 1st Rd., Guishan Dist., Taoyuan City, Taiwan 333**

ilac-MRA TAF Testing Laboratory 0513

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.
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Model No. of Host:	N15P1
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Model Difference:	N/A
FCC ID:	MCLT77H462
IC:	2878D-T77H462
File Number:	E2/2015/90030
Date of test:	Sep. 07, 2015 ~ Oct. 15, 2015
Date of EUT Received:	Sep. 07, 2015

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4:2009 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:	Aken Huang	***Date:***	Oct. 15, 2015
	Aken Huang / Engineer		
Prepared By:	Karen Huang	***Date:***	Oct. 15, 2015
	Karen Huang / Clerk		
Approved By:	Jim Chang	***Date:***	Oct. 15, 2015
	Jim Chang / Asst. Manager		

Revision History

Report Number	Revision	Description	Issue Date
E2/2015/90030	Rev.00	Initial creation of document	Oct. 15, 2015

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1. GENERAL INFORMATION

1.1. Product Description

Product Name:	Tablet Computer	
Brand Name:	acer	
Model No.:	N15P1	
Marketing Name of Host:	SW5-014, SW5-014P	
Hardware Version:	R1.4	
Software Version:	Win 10	
Model No. for Module:	T77H462	
Module FCC ID:	MCLT77H462	
Module IC:	2878D-T77H462	
Scope:	The test report covers the radiated emissions requirements of the standards referenced in the report to allow system level approval of the module in this specific host.	
Class II Permissive change:	802.11abgn+BT4.0 module (T77H462) card INSTALLED IN AN Tablet Computer	
Power Supply:	3.75Vdc from Rechargeable Li-ion Battery or 12V by AC/DC Power Adapter	
	Battery:	1. Model No.: AP15A3R, Supplier: Sanyo 2. Model No.: AP15A8R, Supplier: LGC
	Adapter:	Model No.: ADP-18TB C, Supplier: Delta

WLAN 5GHz:

Wi-Fi	Frequency Range	Channels	Rated Power (Avg.) / Average Rated Power(EIRP)	Modulation Technology	Type of Emission
11a	5150~5250	4	12.49dBm (Avg.) 14.24dBm (EIRP)	OFDM	16M7D1D
	5250~5350	4	12.49dBm (Avg.) 14.17dBm (EIRP)		30M5D1D
	5470~5600	5	11.95dBm (Avg.) 13.50dBm (EIRP)		30M8D1D
	5650~5725	3	11.75dBm (Avg.) 13.30dBm (EIRP)		16M6D1D
11n	HT20 5150~5250	4	Avg. Power: (MIMO Chain 0): 13.44dBm (MIMO Chain 1): 13.51dBm (MIMO Chain 0+1): 16.49dBm EIRP: (MIMO Chain 0+1): 21.25dBm	OFDM	17M5D1D
	HT20 5250~5350	4	Avg. Power: (MIMO Chain 0): 13.24dBm (MIMO Chain 1): 13.71dBm (MIMO Chain 0+1): 16.49dBm EIRP: (MIMO Chain 0+1): 20.98dBm		37M4D1D
	HT20 5470~5600	5	Avg. Power: HT 20:14.23dBm (MIMO Chain 0): 11.55dBm (MIMO Chain 1): 11.36dBm (MIMO Chain 0+1): 14.47dBm EIRP (MIMO Chain 0+1): 19.03dBm		34M2D1D
	HT20 5650~5725	3	Avg. Power: (MIMO Chain 0): 11.25dBm (MIMO Chain 1): 11.38dBm (MIMO Chain 0+1): 14.33dBm EIRP (MIMO Chain 0+1): 18.89dBm		17M5D1D

11n	HT40 5150-5250	2	Avg. Power: (MIMO Chain 0): 10.57dBm (MIMO Chain 1): 11.36dBm (MIMO Chain 0+1): 13.99dBm EIRP (MIMO Chain 0+1): 18.75dBm	OFDM	36M8D1D
	HT40 5250-5350	2	Avg. Power: (MIMO Chain 0): 14.47dBm (MIMO Chain 1): 11.38Bm (MIMO Chain 0+1): 13.96dBm EIRP (MIMO Chain 0+1): 18.45dBm		37M4D1D
	HT40 5470-5600	2	Avg. Power: (MIMO Chain 0):8.20dBm (MIMO Chain 1): 7.55dBm (MIMO Chain 0+1): 10.90dBm EIRP (MIMO Chain 0+1): 15.46dBm		70M4D1D
	HT40 5650-5725	1	Avg. Power: (MIMO Chain 0): 8.19dBm (MIMO Chain 1): 7.76dBm (MIMO Chain 0+1): 10.99dBm EIRP (MIMO Chain 0+1): 15.55dBm		37M2D1D

Antenna Designation	PIFA Antenna 1. Main: 5GHz Gain: 1.75dBi (5150MHz-5250MHz) 5GHz Gain: 1.68dBi (5250MHz-5350MHz) 5GHz Gain: 1.55Bi (5470MHz-5725MHz) 2. Aux: 5GHz Gain: -1.95dBi (5150MHz-5250MHz) 5GHz Gain: -1.0dBi (5250MHz-5350MHz) 5GHz Gain: 0.77dBi (5470MHz-5725MHz)
Modulation type	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.

IEEE 802.11n Spec:

MCS Index	Nss	Modulation	R	NBPSC	NCBPS		NDBPS		Datarate(Mbps)			
									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

MCS Index	Modulation	R	$N_{BPSCS(iSS)}$	N_{SD}	N_{SP}	N_{CBPS}	N_{DBPS}	Data rate (Mb/s)	
								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—The 400 ns GI rate values are rounded to 1 decimal place.									

802.11n_HT40 MCS8 -15

MCS Index	Modulation	R	$N_{BPSCS(i_{SS})}$	N_{SD}	N_{SP}	N_{CBPS}	N_{DBPS}	Data rate (Mb/s)	
								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 Dist., Taoyuan City, 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.

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,.

2.4. Configuration of Tested System

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

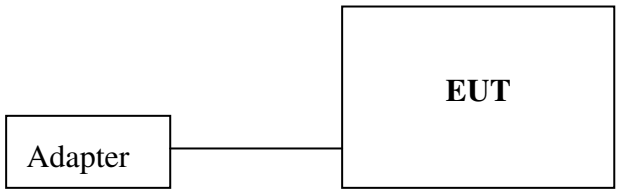


Table 2-1 Equipment Used in Tested System

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) RSS 210 A9.2(1)(2)(3)	The Maximum Output Power Measurement	Compliant
§15.407(b) (1) (2) (3)(6) (7) RSS 210 A9.2 (1) (2)(3) RSS-Gen 7.2.5	Undesirable Emission – Radiated Measurement	Compliant
§15.203 RSS-Gen 7.1.2	Antenna Requirement	Compliant

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. Therefore, the completed set of measurement was done on Antenna Main to be presented 5150-5250MHz and 5250-5350MHz, and 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.

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 – Conducted Measurement	+/- 1.55 dB
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:

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

Measurement uncertainty (Polarization : **Horizontal**)	30MHz - 167MHz: +/- 4.22dB
	167MHz -500MHz: +/- 3.44dB
	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.

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 ≤ θ < 8o
   (ii) -13 – 0.716 (θ-8) dB(W/MHz) for 8o ≤ θ < 40o
   (iii) -35.9 – 1.22 (θ-40) dB(W/MHz) for 40o ≤ θ ≤ 45o
   (iv) -42 dB(W/MHz) for θ > 45o

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 = 1.75+3.01=4.76dBi (5150MHz-5250MHz)

Effective Legacy Gain = 1.68+3.01=4.49dBi (5250MHz-5350MHz)

Effective Legacy Gain = 1.55+3.01=4.56dBi (5470MHz-5725MHz)

6.2 Measurement Procedure

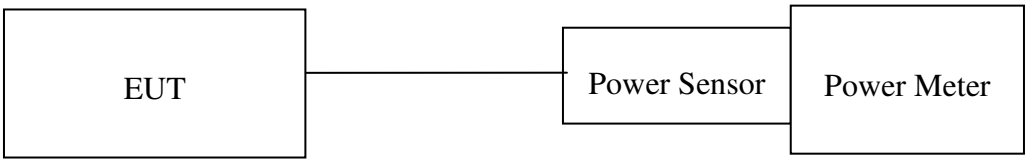
1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter
3. Set the offset 10*log(1/x), n_HT20=0.10, n_HT40=0.12
4. Record the max. reading.
5. Repeat above procedures until all frequency (low, middle, and high channel) measured were complete.
6. Employing step 1 to4 obtaining per-chain basis in MIMO operation, and sum the power in linear to result the output of MIMO operation at frequency of interest (, where MIMO is applicable).

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 TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	KEYSIGHT	N9010A	MY54510568	04/14/2015	04/13/2016
Power Meter	Anritsu	ML2496A	1326001	06/23/2015	06/22/2016
Power Sensor	Anritsu	MA2411B	1315048	06/23/2015	06/22/2016
Power Sensor	Anritsu	MA2411B	1315049	06/23/2015	06/22/2016
Coaxial Cable 30cm	WOKEN	00100A1F1A195C	RF01	12/19/2014	12/18/2015
DC Block	PASTERNACK	PE8210	RF29	12/19/2014	12/18/2015
Splitter	RF-LAMBAD	RFLT2W1G18G	RF35	12/19/2014	12/18/2015
Attenuator	WOKEN	218FS-10	RF23	12/19/2014	12/18/2015
DC Power Supply	Agilent	E3640A	MY53140006	05/04/2015	05/03/2016

6.4 Test Set-up:



6.5 Measurement Result

802.11a (Antenna Main)

CH	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	12.48	17.701	16.99 or 4+10log(B)=18.64	PASS
44	5220	12.48	17.701	16.99 or 4+10log(B)=19.01	PASS
48	5240	**12.49**	**17.742**	16.99 or 4+10log(B)=18.15	PASS
52	5260	12.47	17.660	23.98 or 11+10log(B) =27.63	PASS
60	5300	12.49	17.742	23.98 or 11+10log(B) =26.54	PASS
64	5320	**12.49**	**17.742**	23.98 or 11+10log(B) =24.59	PASS
100	5500	11.82	15.205	23.98 or 11+10log(B) =26.75	PASS
116	5580	**11.95**	**15.668**	23.98 or 11+10log(B) =27.60	PASS
140	5700	11.75	14.962	23.98 or 11+10log(B) =24.61	PASS

Note: Limit is re-adjusted in terms of dBm
*10*log(50mW) = 16.99dBm for the limit on the band of 5150~5250MHz*
*10*log(250mW)=23.98dBm for the limit on the band of 5260~5320Mz, &5470~5725MHz*
Note: Cable loss is 12.17dB is set as the offset on the spectrum to compensate the loss causing by cable

802.11n HT20 – SISO (Antenna Main)

CH	Frequency (MHz)	Avg. Output Power		REQUIRED LIMIT (dBm)	RESULT
		TOTAL POWER (dBm)	TOTAL POWER (dBm)		
36	5180	**13.49**	**22.336**	16.99 or 4+10log(B) = 17.45	PASS
44	5220	13.49	22.336	16.99 or 4+10log(B) = 17.30	PASS
48	5240	13.49	22.336	16.99 or 4+10log(B) = 17.49	PASS
52	5260	13.48	22.284	23.98 or 11+10log(B) = 28.38	PASS
60	5300	13.49	22.336	23.98 or 11+10log(B) = 25.94	PASS
64	5320	**13.49**	**22.336**	23.98 or 11+10log(B) = 24.59	PASS
100	5500	**11.48**	**14.060**	23.98 or 11+10log(B) = 26.84	PASS
116	5580	11.48	14.060	23.98 or 11+10log(B) = 27.78	PASS
140	5700	11.45	13.964	23.98 or 11+10log(B) = 25.14	PASS

802.11n HT40 – SISO (Antenna Main)

CH	Frequency (MHz)	Avg. Output Power		REQUIRED LIMIT (dBm)	RESULT
		TOTAL POWER (dBm)	TOTAL POWER (dBm)		
38	5190	**10.99**	**12.560**	16.99 or 4+10log(B) = 20.85	PASS
46	5230	10.99	12.560	16.99 or 4+10log(B) = 21.57	PASS
54	5270	10.98	12.531	23.98 or 11+10log(B) = 30.33	PASS
62	5310	**10.99**	**12.560**	23.98 or 11+10log(B) = 27.73	PASS
102	5510	7.85	6.095	23.98 or 11+10log(B) = 30.27	PASS
110	5550	**7.94**	**6.223**	23.98 or 11+10log(B) = 31.41	PASS
134	5670	7.91	6.180	23.98 or 11+10log(B) = 30.44	PASS

Note: Offset 12.17dB

802.11a (Antenna Aux)

CH	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	12.44	17.539	16.99 or 4+10log(B)=18.64	PASS
44	5220	12.45	17.579	16.99 or 4+10log(B)=19.01	PASS
48	5240	**12.46**	**17.620**	16.99 or 4+10log(B)=18.15	PASS
52	5260	**12.46**	**17.620**	23.98 or 11+10log(B) =27.63	PASS
60	5300	12.44	17.539	23.98 or 11+10log(B) =26.54	PASS
64	5320	12.42	17.458	23.98 or 11+10log(B) =24.59	PASS
100	5500	11.74	14.928	23.98 or 11+10log(B) =26.75	PASS
116	5580	**11.91**	**15.524**	23.98 or 11+10log(B) =27.60	PASS
140	5700	11.71	14.825	23.98 or 11+10log(B) =24.61	PASS

Note: Limit is re-adjusted in terms of dBm
*10*log(50mW) = 16.99dBm for the limit on the band of 5150~5250MHz*
*10*log(250mW)=23.98dBm for the limit on the band of 5260~5320Mz, &5470~5725MHz*
Note: Cable loss is 12.17dB is set as the offset on the spectrum to compensate the loss causing by cable

802.11n HT20 – SISO (Antenna Aux)

CH	Frequency (MHz)	Avg. Output Power		REQUIRED LIMIT (dBm)	RESULT
		TOTAL POWER (dBm)	TOTAL POWER (dBm)		
36	5180	13.45	22.131	16.99 or 4+10log(B) = 17.45	PASS
44	5220	13.44	22.080	16.99 or 4+10log(B) = 17.30	PASS
48	5240	**13.46**	**22.182**	16.99 or 4+10log(B) = 17.49	PASS
52	5260	13.45	22.131	23.98 or 11+10log(B) = 28.38	PASS
60	5300	13.42	21.979	23.98 or 11+10log(B) = 25.94	PASS
64	5320	**13.47**	**22.233**	23.98 or 11+10log(B) = 24.59	PASS
100	5500	11.46	**13.996**	23.98 or 11+10log(B) = 26.84	PASS
116	5580	11.45	13.964	23.98 or 11+10log(B) = 27.78	PASS
140	5700	11.42	13.868	23.98 or 11+10log(B) = 25.14	PASS

802.11n HT40 – SISO (Antenna Aux)

CH	Frequency (MHz)	Avg. Output Power		REQUIRED LIMIT (dBm)	RESULT
		TOTAL POWER (dBm)	TOTAL POWER (dBm)		
38	5190	**10.98**	**12.531**	16.99 or 4+10log(B) = 20.85	PASS
46	5230	10.96	12.474	16.99 or 4+10log(B) = 21.57	PASS
54	5270	**10.97**	**12.503**	23.98 or 11+10log(B) = 30.33	PASS
62	5310	10.96	12.474	23.98 or 11+10log(B) = 27.73	PASS
102	5510	7.79	6.012	23.98 or 11+10log(B) = 30.27	PASS
110	5550	**7.90**	**6.166**	23.98 or 11+10log(B) = 31.41	PASS
134	5670	7.89	6.152	23.98 or 11+10log(B) = 30.44	PASS

Note: Offset 12.17dB

802.11n HT20 MIMO operation (CH0+1)

CH	Frequency (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
		CHAIN 0	CHAIN 1				
36	5180	13.48	13.29	16.40	43.615	16.99 or 4+10log(B) = 17.45	PASS
44	5220	13.44	13.51	**16.49**	**44.519**	16.99 or 4+10log(B) = 17.30	PASS
48	5240	13.25	13.58	16.43	43.938	16.99 or 4+10log(B) = 17.49	PASS
52	5260	13.38	13.55	16.48	44.424	23.98 or 11+10log(B) = 28.38	PASS
60	5300	13.24	13.71	**16.49**	**44.583**	23.98 or 11+10log(B) = 25.94	PASS
64	5320	13.11	13.59	16.37	43.320	23.98 or 11+10log(B) = 24.59	PASS
100	5500	11.39	11.21	14.31	26.985	23.98 or 11+10log(B) = 26.84	PASS
116	5580	11.55	11.36	**14.47**	**27.966**	23.98 or 11+10log(B) = 27.78	PASS
140	5700	11.25	11.38	14.33	27.076	23.98 or 11+10log(B) = 25.14	PASS

802.11n HT40 MIMO operation (CH 0+1)

CH	Frequency (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
		CHAIN 0	CHAIN 1				
38	5190	10.61	10.97	13.80	24.011	16.99 or 4+10log(B) = 20.85	PASS
46	5230	10.57	11.36	**13.99**	**25.080**	16.99 or 4+10log(B) = 21.57	PASS
54	5270	10.47	11.38	**13.96**	**24.883**	23.98 or 11+10log(B) = 30.33	PASS
62	5310	9.99	11.38	13.75	23.717	23.98 or 11+10log(B) = 27.73	PASS
102	5510	8.2	7.55	10.90	12.295	23.98 or 11+10log(B) = 30.27	PASS
110	5550	8.12	7.49	10.83	12.097	23.98 or 11+10log(B) = 31.41	PASS
134	5670	8.19	7.76	**10.99**	**12.562**	23.98 or 11+10log(B) = 30.44	PASS

Note: Offset 12.17dB

ERP/EIRP Measurement:

802.11a (Antenna Main)

CH	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	GAIN (dBi)	EIRP	REQUIRED LIMIT (dBm)	RESULT
36	5180	12.48	17.701	1.75	14.23	23.01 or 10+10log(B) =22.22	PASS
44	5220	12.48	17.701		14.23	23.01 or 10+10log(B) =22.22	PASS
48	5240	**12.49**	**17.742**		**14.24**	23.01 or 10+10log(B) =22.19	PASS
52	5260	12.47	17.660	1.68	14.15	30 or 17+10log(B) =31.84	PASS
60	5300	12.49	17.742		14.17	30 or 17+10log(B) =29.31	PASS
64	5320	**12.49**	**17.742**		**14.17**	30 or 17+10log(B) =29.19	PASS
100	5500	11.82	15.205	1.55	13.37	30 or 17+10log(B) =29.58	PASS
116	5580	**11.95**	**15.668**		**13.50**	30 or 17+10log(B) =31.89	PASS
140	5700	11.75	14.962		13.30	30 or 17+10log(B) =29.19	PASS

Note: Limit is re-adjusted in terms of dBm
*10*log(50mW) = 16.99dBm for the limit on the band of 5150~5250MHz*
*10*log(250mW)=23.98dBm for the limit on the band of 5260~5320Mz, &5470~5725MHz*
Note: Cable loss is 12.17dB is set as the offset on the spectrum to compensate the loss causing by cable

802.11n HT20 – SISO (Antenna Main)

CH	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	GAIN (dBi)	EIRP	REQUIRED LIMIT (dBm)	RESULT
36	5180	13.49	22.336	1.75	15.24	23.01 or 10+10log(B) =22.43	PASS
44	5220	**13.49**	**22.336**		**15.24**	23.01 or 10+10log(B) =22.43	PASS
48	5240	13.49	22.336		15.24	23.01 or 10+10log(B) =22.43	PASS
52	5260	13.48	22.284	1.68	15.16	30 or 17+10log(B) =31.53	PASS
60	5300	**13.49**	**22.336**		**15.17**	30 or 17+10log(B) =29.46	PASS
64	5320	13.49	22.336		15.17	30 or 17+10log(B) =29.43	PASS
100	5500	**11.48**	**14.060**	1.55	**13.03**	30 or 17+10log(B) =29.83	PASS
116	5580	11.48	14.060		13.03	30 or 17+10log(B) =32.23	PASS
140	5700	11.45	13.964		13.00	30 or 17+10log(B) =29.43	PASS

802.11n HT40 – SISO (Antenna Main)

CH	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	GAIN (dBi)	EIRP	REQUIRED LIMIT (dBm)	RESULT
38	5190	**10.99**	**12.560**	1.75	**12.74**	23.01 or 10+10log(B) =25.65	PASS
46	5230	10.99	12.560		10.99	23.01 or 10+10log(B) =25.63	PASS
54	5270	**10.98**	**12.531**	1.68	**12.66**	30 or 17+10log(B) =32.68	PASS
62	5310	10.99	12.560		10.99	30 or 17+10log(B) =32.65	PASS
102	5510	7.85	6.095	1.55	9.40	30 or 17+10log(B) =32.68	PASS
110	5550	**7.94**	**6.223**		**9.49**	30 or 17+10log(B) =32.36	PASS
134	5670	7.91	6.180		9.46	30 or 17+10log(B) =32.68	PASS

Note: Offset 12.17dB

802.11a (Antenna Aux)

CH	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	GAIN (dBi)	EIRP	REQUIRED LIMIT (dBm)	RESULT
36	5180	12.44	17.539	-1.95	10.49	23.01 or 10+10log(B) =22.22	PASS
44	5220	12.45	17.579		10.50	23.01 or 10+10log(B) =22.22	PASS
48	5240	**12.46**	**17.620**		**10.51**	23.01 or 10+10log(B) =22.19	PASS
52	5260	**12.46**	**17.620**	-1.00	**11.46**	30 or 17+10log(B) =31.84	PASS
60	5300	12.44	17.539		11.44	30 or 17+10log(B) =29.31	PASS
64	5320	12.42	17.458		11.42	30 or 17+10log(B) =29.19	PASS
100	5500	11.74	14.928	0.77	12.51	30 or 17+10log(B) =29.58	PASS
116	5580	**11.91**	**15.524**		**12.68**	30 or 17+10log(B) =31.89	PASS
140	5700	11.71	14.825		12.48	30 or 17+10log(B) =29.19	PASS

Note: Limit is re-adjusted in terms of dBm
*10*log(50mW) = 16.99dBm for the limit on the band of 5150~5250MHz*
*10*log(250mW)=23.98dBm for the limit on the band of 5260~5320Mz, &5470~5725MHz*
Note: Cable loss is 12.17dB is set as the offset on the spectrum to compensate the loss causing by cable

802.11n HT20 – SISO (Antenna Aux)

CH	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	GAIN (dBi)	EIRP	REQUIRED LIMIT (dBm)	RESULT
36	5180	13.45	22.131	-1.95	11.50	23.01 or 10+10log(B) =22.43	PASS
44	5220	13.44	22.080		11.49	23.01 or 10+10log(B) =22.43	PASS
48	5240	**13.46**	**22.182**		**11.51**	23.01 or 10+10log(B) =22.43	PASS
52	5260	13.45	22.131	-1.00	12.45	30 or 17+10log(B) =31.53	PASS
60	5300	13.42	21.979		12.42	30 or 17+10log(B) =29.46	PASS
64	5320	**13.47**	**22.233**		**12.47**	30 or 17+10log(B) =29.43	PASS
100	5500	**11.46**	**13.996**	0.77	**12.23**	30 or 17+10log(B) =29.83	PASS
116	5580	11.45	13.964		12.22	30 or 17+10log(B) =32.23	PASS
140	5700	11.42	13.868		12.19	30 or 17+10log(B) =29.43	PASS

802.11n HT40 – SISO (Antenna Aux)

CH	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	GAIN (dBi)	EIRP	REQUIRED LIMIT (dBm)	RESULT
38	5190	**10.98**	**12.531**	-1.95	**9.03**	23.01 or 10+10log(B) =25.65	PASS
46	5230	10.96	12.474		9.01	23.01 or 10+10log(B) =25.63	PASS
54	5270	**10.97**	**12.503**	-1.00	**9.97**	30 or 17+10log(B) =32.68	PASS
62	5310	10.96	12.474		9.96	30 or 17+10log(B) =32.65	PASS
102	5510	7.79	6.012	0.77	8.56	30 or 17+10log(B) =32.68	PASS
110	5550	**7.90**	**6.166**		**8.67**	30 or 17+10log(B) =32.36	PASS
134	5670	7.89	6.152		8.66	30 or 17+10log(B) =32.68	PASS

Note: Offset 12.17dB

802.11n HT20 MIMO operation (CH0+1)

CH	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	GAIN (dBi)	EIRP	REQUIRED LIMIT (dBm)	RESULT
36	5180	16.40	43.615	4.76	21.16	23.01 or 10+10log(B) =22.43	PASS
44	5220	**16.49**	**44.519**		**21.25**	23.01 or 10+10log(B) =22.43	PASS
48	5240	16.43	43.938		21.19	23.01 or 10+10log(B) =22.43	PASS
52	5260	16.48	44.424	4.49	20.97	30 or 17+10log(B) =31.53	PASS
60	5300	**16.49**	**44.583**		**20.98**	30 or 17+10log(B) =29.46	PASS
64	5320	16.37	43.320		20.86	30 or 17+10log(B) =29.43	PASS
100	5500	14.31	26.985	4.56	18.87	30 or 17+10log(B) =29.83	PASS
116	5580	**14.47**	**27.966**		**19.03**	30 or 17+10log(B) =32.23	PASS
140	5700	14.33	27.076		18.89	30 or 17+10log(B) =29.43	PASS

Note: Offset 12.17dB

802.11n HT40 MIMO operation (CH 0+1)

CH	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)	GAIN (dBi)	EIRP	REQUIRED LIMIT (dBm)	RESULT
38	5190	13.80	24.011	4.76	18.56	23.01 or 10+10log(B) =25.65	PASS
46	5230	**13.99**	**25.080**		**18.75**	23.01 or 10+10log(B) =25.63	PASS
54	5270	**13.96**	**24.883**	4.49	**18.45**	30 or 17+10log(B) =32.68	PASS
62	5310	13.75	23.717		18.24	30 or 17+10log(B) =32.65	PASS
102	5510	10.90	12.295	4.56	15.46	30 or 17+10log(B) =32.68	PASS
110	5550	10.83	12.097		15.39	30 or 17+10log(B) =32.36	PASS
134	5670	**10.99**	**12.562**		**15.55**	30 or 17+10log(B) =32.68	PASS

Note: Offset 12.17dB

* Note: EIRP = Average Power + Gain, where the nominal gain of the antenna:
1.75dBi for 5150-5250MHz for Antenna Main, -1.95dBi for 5150-5250MHz for Antenna Aux,
1.68dBi for 5250-5350MHz for Antenna Main, -1.0dBi for 5250-5350MHz for Antenna Aux,
1.55dBi for 5470-5725MHz for Antenna Main, 0.77dBi for 5740-5725MHz for Antenna Aux
4.76dBi for 5150-5250MHz (MIMO), 4.49dBi for 5250-5350MHz(MIMO) and 4.56Bi for 5470-5725MHz (MIMO) where MIMO gain = directive gain + nominal gain.

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:

(1) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in Section 15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in Section 15.207.

(2) The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

(3) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency block edges as the design of the equipment permits.

Procedure H1) a) b) c) are adopted, KDB 789033 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.

§15.205- RESTRICTED BANDS OF OPERATIONS

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

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

§15.209- RADIATED EMISSION LIMITS: GENERAL REQUIREMENTS

FCC PART 15.209

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

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.

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.

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.

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

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

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

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

7.2 EUT Setup

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

7.3 Measurement Procedure

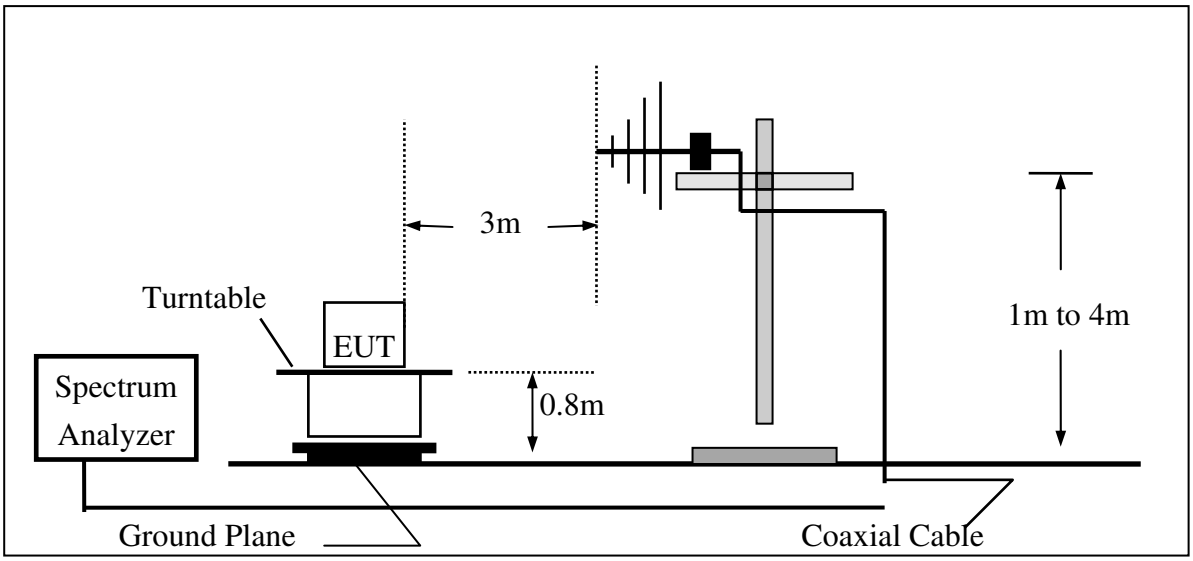
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was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

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

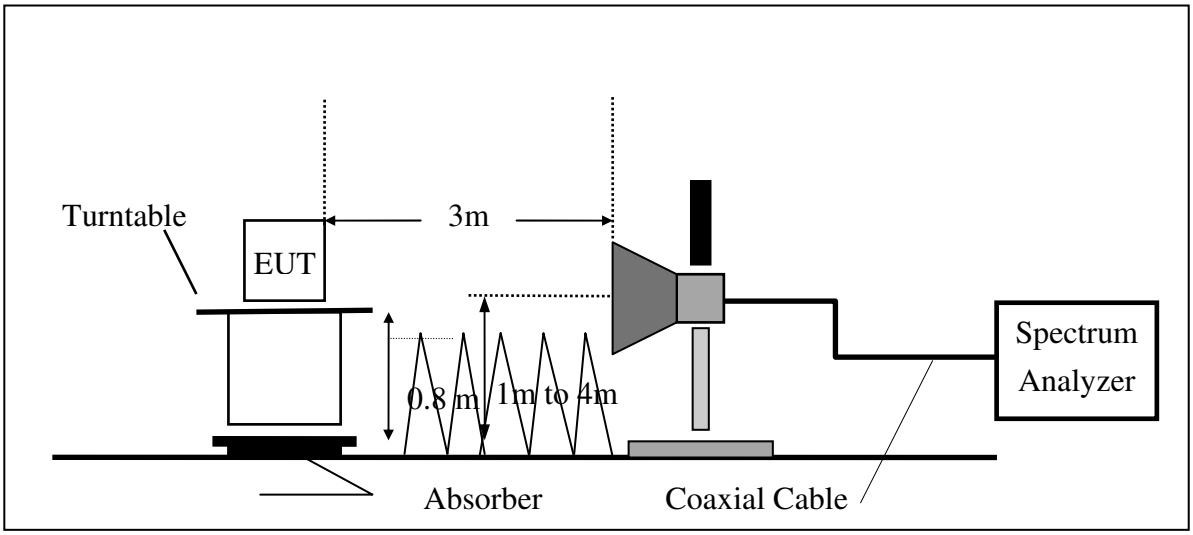
For Measurement above 1GHz, for peak unwanted emission measurements follow the KDB 789033 D01 requirements in section H)5) b), for average unwanted emission measurements follow the KDB 789033 D01 requirements in section H)6) c) or d).

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



7.5 Measurement Equipment Used:

SGS 966 Chamber No.C					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMI Test Receiver	R&S	ESU 40	100363	04/09/2015	04/08/2016
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	05/04/2015	05/03/2016
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.

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 = RA + AF + CL - 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.

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

Frequency < 1GHz

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5220 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
49.40	S	Peak	62.36	-25.16	37.20	40	-2.80
145.43	S	Peak	48.47	-22.29	26.18	43.5	-17.32
203.63	S	Peak	53.65	-23.10	30.55	43.5	-12.95
287.05	S	Peak	48.88	-19.48	29.41	46	-16.60
600.36	S	Peak	42.12	-12.45	29.67	46	-16.33
730.34	S	Peak	46.46	-10.64	35.82	46	-10.18

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5220 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
33.88	S	Peak	48.68	-15.22	33.46	40	-6.54
211.39	S	Peak	53.93	-22.91	31.02	43.5	-12.48
333.61	S	Peak	47.71	-18.12	29.59	46	-16.41
533.43	S	Peak	42.12	-13.22	28.90	46	-17.10
730.34	S	Peak	43.04	-10.64	32.40	46	-13.60
746.83	S	Peak	43.40	-9.95	33.45	46	-12.55

Radiated Spurious Emission Measurement Result 802.11a, 5250~5350 MHz

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5300 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
33.88	S	Peak	51.03	-15.22	35.81	40	-4.19
205.57	S	Peak	52.82	-23.03	29.79	43.5	-13.71
278.32	S	Peak	47.94	-19.72	28.22	46	-17.78
384.05	S	Peak	40.46	-16.37	24.08	46	-21.92
454.86	S	Peak	36.51	-14.77	21.74	46	-24.26
600.36	S	Peak	40.99	-12.45	28.54	46	-17.46

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5300 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
115.36	S	Peak	44.47	-21.86	22.61	43.5	-20.89
204.60	S	Peak	49.80	-23.06	26.74	43.5	-16.76
276.38	S	Peak	56.58	-19.73	36.85	46	-9.15
384.05	S	Peak	47.99	-16.37	31.61	46	-14.39
533.43	S	Peak	40.24	-13.22	27.02	46	-18.98
600.36	S	Peak	38.15	-12.45	25.70	46	-20.30

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

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5580 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
34.85	S	Peak	51.21	-15.75	35.46	40	-4.54
204.60	S	Peak	52.84	-23.06	29.78	43.5	-13.72
384.05	S	Peak	40.97	-16.37	24.60	46	-21.40
433.52	S	Peak	38.67	-15.45	23.22	46	-22.78
523.73	S	Peak	35.74	-13.39	22.36	46	-23.64
600.36	S	Peak	40.83	-12.45	28.38	46	-17.62

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5580 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
33.88	S	Peak	48.83	-15.22	33.61	40	-6.39
113.42	S	Peak	44.47	-22.04	22.44	43.5	-21.06
205.57	S	Peak	49.15	-23.03	26.12	43.5	-17.38
275.41	S	Peak	56.92	-19.71	37.21	46	-8.79
384.05	S	Peak	48.18	-16.37	31.81	46	-14.19
422.85	S	Peak	42.32	-15.40	26.93	46	-19.07

Radiated Spurious Emission Measurement Result 802.11n40, 5150~5250 MHz

Frequency < 1GHz

Operation Band	:802.11 n40	Test Date	:2015-10-14
Fundamental Frequency	:5190 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
32.91	S	Peak	50.12	-14.69	35.42	40	-4.58
202.66	S	Peak	52.69	-23.14	29.54	43.5	-13.96
271.53	S	Peak	48.27	-19.69	28.58	46	-17.42
384.05	S	Peak	40.36	-16.37	23.99	46	-22.01
600.36	S	Peak	41.02	-12.45	28.56	46	-17.44
812.79	S	Peak	34.22	-9.02	25.20	46	-20.80

Operation Band	:802.11 n40	Test Date	:2015-10-14
Fundamental Frequency	:5190 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
38.73	S	Peak	50.07	-18.19	31.88	40	-8.12
111.48	S	Peak	48.77	-22.19	26.59	43.5	-16.91
204.60	S	Peak	49.15	-23.06	26.08	43.5	-17.42
274.44	S	Peak	57.15	-19.69	37.46	46	-8.54
384.05	S	Peak	48.00	-16.37	31.63	46	-14.37
533.43	S	Peak	38.90	-13.22	25.69	46	-20.31

Radiated Spurious Emission Measurement Result 802.11n40, 5250~5350 MHz

Operation Band	:802.11 n40	Test Date	:2015-10-14
Fundamental Frequency	:5270 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
33.88	S	Peak	51.50	-15.22	36.27	40	-3.73
113.42	S	Peak	46.01	-22.04	23.98	43.5	-19.52
203.63	S	Peak	52.61	-23.10	29.50	43.5	-14.00
272.50	S	Peak	48.66	-19.68	28.98	46	-17.02
533.43	S	Peak	36.91	-13.22	23.69	46	-22.31
600.36	S	Peak	39.41	-12.45	26.95	46	-19.05

Operation Band	:802.11 n40	Test Date	:2015-10-14
Fundamental Frequency	:5270 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
30.97	S	Peak	34.27	-13.64	20.63	40	-19.37
113.42	S	Peak	39.95	-22.04	17.92	43.5	-25.58
209.45	S	Peak	45.92	-22.92	23.00	43.5	-20.50
276.38	S	Peak	56.96	-19.73	37.23	46	-8.77
384.05	S	Peak	47.91	-16.37	31.53	46	-14.47
533.43	S	Peak	38.09	-13.22	24.88	46	-21.12

Radiated Spurious Emission Measurement Result 802.11n40, 5470~5725 MHz

Operation Band	:802.11 n40	Test Date	:2015-10-14
Fundamental Frequency	:5550 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
36.79	S	Peak	52.36	-16.96	35.40	40	-4.60
113.42	S	Peak	45.51	-22.04	23.48	43.5	-20.02
203.63	S	Peak	52.78	-23.10	29.67	43.5	-13.83
273.47	S	Peak	49.01	-19.67	29.34	46	-16.66
384.05	S	Peak	39.53	-16.37	23.16	46	-22.84
600.36	S	Peak	38.64	-12.45	26.19	46	-19.81

Operation Band	:802.11 n40	Test Date	:2015-10-14
Fundamental Frequency	:5550 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
63.95	S	Peak	51.06	-28.21	22.85	40	-17.15
207.51	S	Peak	48.78	-22.98	25.80	43.5	-17.70
271.53	S	Peak	57.68	-19.69	37.99	46	-8.01
384.05	S	Peak	48.26	-16.37	31.88	46	-14.12
533.43	S	Peak	38.96	-13.22	25.74	46	-20.26
600.36	S	Peak	37.74	-12.45	25.29	46	-20.71

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

Frequency > 1GHz

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5180 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10360.00	H	Peak	33.81	18.94	52.75	68.3	-15.55

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5180 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10360.00	H	Peak	31.65	18.94	50.59	68.3	-17.71

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5220 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10440.00	H	Peak	34.05	19.03	53.08	68.3	-15.22

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5220 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10440.00	H	Peak	31.58	19.03	50.61	68.3	-17.69

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5240 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10480.00	H	Peak	32.98	19.13	52.11	68.3	-16.19

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5240 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10480.00	H	Peak	31.70	19.13	50.83	68.3	-17.47

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5180 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5150.00	E	Peak	53.38	11.14	64.52	74	-9.48
5150.00	E	Average	34.72	11.14	45.86	54	-8.14

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5180 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5150.00	E	Peak	58.42	11.14	69.56	74	-4.44
5150.00	E	Average	36.67	11.14	47.81	54	-6.19

Radiated Spurious Emission Measurement Result 802.11n HT20, 5150~5250 MHz (MIMO)

Frequency > 1GHz

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5180 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10360.00	H	Peak	36.14	18.94	55.08	68.3	-13.22
15540.00	H	Peak	34.08	25.80	59.88	74	-14.12
15540.00	H	Average	23.91	25.80	49.71	54	-4.29

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5180 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10360.00	H	Peak	32.11	18.94	51.04	68.3	-17.26
15540.00	H	Peak	33.95	25.80	59.75	74	-14.25
15540.00	H	Average	23.36	25.80	49.16	54	-4.84

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5220 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10440.00	H	Peak	39.69	19.03	58.72	68.3	-9.58
15660.00	H	Peak	35.27	26.06	61.34	74	-12.66
15660.00	H	Average	23.85	26.06	49.91	54	-4.09

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5220 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10440.00	H	Peak	34.43	19.03	53.45	68.3	-14.85
15660.00	H	Peak	35.41	26.06	61.47	74	-12.53
15660.00	H	Average	22.41	26.06	48.47	54	-5.53

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5240 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10480.00	H	Peak	39.95	19.13	59.08	68.3	-9.22
15720.00	H	Peak	35.40	26.13	61.53	74	-12.47
15720.00	H	Average	24.11	26.13	50.24	54	-3.76

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5240 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10480.00	H	Peak	33.45	19.13	52.58	68.3	-15.72
15720.00	H	Peak	37.26	26.13	63.39	74	-10.61
15720.00	H	Average	25.51	26.13	51.64	54	-2.36

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5180 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency. "---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5146.36	S	Peak	61.48	11.16	72.64	74	-1.36
5146.36	S	Average	37.89	11.16	49.05	54	-4.95
5150.00	E	Peak	60.88	11.14	72.02	74	-1.98
5150.00	E	Average	38.81	11.14	49.95	54	-4.05

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5180 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency. "---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5146.72	S	Peak	58.18	11.16	69.34	74	-4.66
5146.72	S	Average	35.97	11.16	47.13	54	-6.87
5150.00	E	Peak	56.52	11.14	67.66	74	-6.34
5150.00	E	Average	36.63	11.14	47.77	54	-6.23

Radiated Spurious Emission Measurement Result 802.11n HT40, 5150~5250 MHz (MIMO)

Frequency > 1GHz

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5190 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10380.00	H	Peak	32.61	19.01	51.62	68.3	-16.68

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5190 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10380.00	H	Peak	30.97	19.01	49.99	68.3	-18.31

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5230 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10460.00	H	Peak	32.94	19.11	52.05	68.3	-16.25

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5230 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10460.00	H	Peak	30.97	19.11	50.09	68.3	-18.21

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5190 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5150.00	E	Peak	58.04	11.14	69.19	74	-4.81
5150.00	E	Average	37.43	11.14	48.57	54	-5.43

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5190 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5149.48	S	Peak	59.39	11.14	70.53	74	-3.47
5149.48	S	Average	38.40	11.14	49.54	54	-4.46
5150.00	E	Peak	56.70	11.14	67.84	74	-6.16
5150.00	E	Average	38.46	11.14	49.60	54	-4.40

Radiated Spurious Emission Measurement Result 802.11a, 5250MHz-5350MHz (Main)

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5260 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10520.00	H	Peak	34.70	19.25	53.95	68.3	-14.35

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5260 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10520.00	H	Peak	31.28	19.25	50.53	68.3	-17.77

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5300 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10600.00	H	Peak	34.01	19.38	53.38	74	-20.62
10600.00	H	Average	22.80	19.38	42.18	54	-11.82

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5300 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10600.00	H	Peak	30.82	19.38	50.20	74	-23.80
10600.00	H	Average	21.45	19.38	40.83	54	-13.17

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5320 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10640.00	H	Peak	33.90	19.28	53.18	74	-20.82
10640.00	H	Average	23.22	19.28	42.50	54	-11.50

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5320 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10640.00	H	Peak	32.47	19.28	51.75	74	-22.25
10640.00	H	Average	21.45	19.28	40.73	54	-13.27

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5320 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5350.00	E	Peak	49.64	11.30	60.94	74	-13.06
5350.00	E	Average	34.56	11.30	45.86	54	-8.14

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5320 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5350.00	E	Peak	52.45	11.30	63.75	74	-10.25
5350.00	E	Average	36.45	11.30	47.75	54	-6.25

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

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5260 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10520.00	H	Peak	41.19	19.25	60.44	68.3	-7.86
15780.00	H	Peak	33.63	26.25	59.88	74	-14.12
15780.00	H	Average	24.21	26.25	50.46	54	-3.54

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5260 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10520.00	H	Peak	35.91	19.25	55.16	68.3	-13.14
15780.00	H	Peak	34.88	26.25	61.13	74	-12.87
15780.00	H	Average	25.52	26.25	51.77	54	-2.23

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5300 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10600.00	H	Peak	39.62	19.38	59.00	74	-15.00
10600.00	H	Average	27.38	19.38	46.76	54	-7.24
15900.00	H	Peak	36.60	26.39	62.99	74	-11.01

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5300 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10600.00	H	Peak	35.39	19.38	54.77	74	-19.23
10600.00	H	Average	24.18	19.38	43.56	54	-10.44
15900.00	H	Peak	37.87	26.39	64.26	74	-9.74
15900.00	H	Average	23.67	26.39	50.06	54	-3.94

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5320 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10640.00	H	Peak	36.38	19.28	55.66	74	-18.34
10640.00	H	Average	24.57	19.28	43.85	54	-10.15
15960.00	H	Peak	33.64	26.48	60.12	74	-13.88

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5320 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10640.00	H	Peak	33.55	19.28	52.83	74	-21.18
10640.00	H	Average	23.68	19.28	42.96	54	-11.04
15960.00	H	Peak	35.07	26.48	61.55	74	-12.45

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5320 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5350.00	E	Peak	55.03	11.30	66.33	74	-7.67
5350.00	E	Average	36.07	11.30	47.37	54	-6.63
5351.04	S	Peak	55.89	11.31	67.20	74	-6.80
5351.04	S	Average	35.62	11.31	46.93	54	-7.07

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5320 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5350.00	E	Peak	57.43	11.30	68.73	74	-5.27
5350.00	E	Average	37.99	11.30	49.29	54	-4.71

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

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5270 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10540.00	H	Peak	34.26	19.13	53.39	68.3	-14.91

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5270 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10540.00	H	Peak	31.41	19.13	50.54	68.3	-17.76

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5310 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10620.00	H	Peak	32.43	19.38	51.81	74	-22.19
10620.00	H	Average	22.80	19.38	42.18	54	-11.82

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5310 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
10620.00	H	Peak	31.28	19.38	50.66	74	-23.34
10620.00	H	Average	22.54	19.38	41.92	54	-12.08

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5310 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5350.00	E	Peak	57.39	11.30	68.70	74	-5.30
5350.00	E	Average	37.34	11.30	48.64	54	-5.36

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5310 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5350.00	S	Peak	59.05	11.30	70.35	74	-3.65
5350.00	S	Average	36.58	11.30	47.88	54	-6.12

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

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5500 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
11000.00	H	Peak	31.31	20.02	51.32	74	-22.68
11000.00	H	Average	21.67	20.02	41.69	54	-12.31

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5500 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
11000.00	H	Peak	31.06	20.02	51.08	74	-22.92
11000.00	H	Average	21.36	20.02	41.38	54	-12.62

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5580 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
11160.00	H	Peak	31.30	20.38	51.68	74	-22.32
11160.00	H	Average	21.53	20.38	41.91	54	-12.09

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5580 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
11160.00	H	Peak	29.21	20.38	49.59	74	-24.41
11160.00	H	Average	21.52	20.38	41.90	54	-12.10

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5700 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
11400.00	H	Peak	32.26	20.81	53.07	74	-20.93
11400.00	H	Average	22.17	20.81	42.98	54	-11.02
17100.00	S	Peak	38.38	28.26	66.63	68.3	-1.67

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5700 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
11400.00	H	Peak	31.31	20.81	52.12	74	-21.88
11400.00	H	Average	21.60	20.81	42.41	54	-11.59
17100.00	S	Peak	38.60	28.26	66.86	68.3	-1.44

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5500 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency. "---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5458.52	S	Peak	52.86	11.46	64.32	74	-9.68
5458.52	S	Average	33.95	11.46	45.41	54	-8.59
5460.00	E	Peak	50.76	11.46	62.23	74	-11.77
5460.00	E	Average	34.31	11.46	45.77	54	-8.23
5469.68	S	Peak	54.09	11.46	65.55	68.3	-2.75
5470.00	E	Peak	50.99	11.46	62.45	68.3	-5.85

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5500 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency. "---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5456.00	S	Peak	51.75	11.46	63.21	74	-10.79
5456.00	S	Average	35.45	11.46	46.91	54	-7.09
5460.00	E	Peak	49.44	11.46	60.90	74	-13.10
5460.00	E	Average	35.81	11.46	47.27	54	-6.73
5469.92	S	Peak	54.30	11.46	65.76	68.3	-2.54
5470.00	E	Peak	52.73	11.46	64.18	68.3	-4.12

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5700 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5725.00	E	Peak	53.46	12.27	65.73	68.3	-2.57

Operation Band	:802.11 a	Test Date	:2015-10-14
Fundamental Frequency	:5700 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5725.00	E	Peak	53.03	12.27	65.30	68.3	-3.00
5726.36	S	Peak	53.59	12.27	65.86	68.3	-2.44

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

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5500 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
11000.00	H	Peak	31.96	20.02	51.98	74	-22.02
11000.00	H	Average	23.83	20.02	43.85	54	-10.15
16500.00	H	Peak	34.22	27.16	61.39	68.3	-6.91

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5500 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
11000.00	H	Peak	30.80	20.02	50.82	74	-23.18
11000.00	H	Average	23.35	20.02	43.37	54	-10.63
16500.00	H	Peak	34.52	27.16	61.68	68.3	-6.62

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5580 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
11160.00	H	Peak	33.26	20.38	53.64	74	-20.36
11160.00	H	Average	23.52	20.38	43.90	54	-10.10
16740.00	H	Peak	34.53	27.79	62.32	68.3	-5.98

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5580 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
11160.00	H	Peak	31.00	20.38	51.38	74	-22.62
11160.00	H	Average	23.56	20.38	43.94	54	-10.06
16740.00	H	Peak	37.66	27.79	65.45	68.3	-2.85

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5700 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
11400.00	H	Peak	32.40	20.81	53.21	74	-20.79
11400.00	H	Average	24.28	20.81	45.09	54	-8.91
17100.00	H	Peak	34.77	28.26	63.03	68.3	-5.27

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5700 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
11400.00	S	Peak	31.46	20.81	52.27	74	-21.73
11400.00	S	Average	23.57	20.81	44.38	54	-9.62
17100.00	S	Peak	37.50	28.26	65.76	68.3	-2.54

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5500 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency. "---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5459.48	S	Peak	52.96	11.46	64.42	74	-9.58
5459.48	S	Average	34.92	11.46	46.38	54	-7.62
5460.00	E	Peak	50.70	11.46	62.16	74	-11.84
5460.00	E	Average	34.89	11.46	46.35	54	-7.65
5466.08	S	Peak	55.24	11.46	66.70	68.3	-1.60
5470.00	E	Peak	52.60	11.46	64.05	68.3	-4.25

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5500 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency. "---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5460.00	E	Peak	49.92	11.46	61.38	74	-12.62
5460.00	E	Average	35.22	11.46	46.68	54	-7.32
5468.96	S	Peak	56.06	11.46	67.52	68.3	-0.78
5470.00	E	Peak	54.01	11.46	65.47	68.3	-2.83

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5700 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5725.00	E	Peak	50.92	12.27	63.19	68.3	-5.11
5725.16	S	Peak	52.43	12.27	64.69	68.3	-3.61

Operation Band	:802.11 n20M	Test Date	:2015-10-14
Fundamental Frequency	:5700 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5725.00	E	Peak	54.72	12.27	66.99	68.3	-1.31
5726.48	S	Peak	55.43	12.27	67.70	68.3	-0.60

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

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5510 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
-11.52	-11.52	-11.52	-11.52	-11.52	-11.52	-11.52	-11.52
-11.52	-11.52	-11.52	-11.52	-11.52	-11.52	-11.52	-11.52

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5510 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
11020.00	H	Peak	32.80	20.04	52.84	74	-21.16
11020.00	H	Average	22.32	20.04	42.36	54	-11.64

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5550 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
11100.00	H	Peak	31.03	20.21	51.24	74	-22.76
11100.00	H	Average	22.49	20.21	42.70	54	-11.30

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5550 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX MID	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
11100.00	H	Peak	30.56	20.21	50.77	74	-23.23
11100.00	H	Average	22.35	20.21	42.56	54	-11.44

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5670 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
11340.00	H	Peak	32.07	20.61	52.68	74	-21.32
11340.00	H	Average	22.70	20.61	43.31	54	-10.69

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5670 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:TX HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
11340.00	H	Peak	31.06	20.61	51.66	74	-22.34
11340.00	H	Average	22.44	20.61	43.05	54	-10.95
17010.00	H	Peak	32.91	28.28	61.18	68.3	-7.12

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5510 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5459.28	S	Peak	51.27	11.46	62.73	74	-11.27
5459.28	S	Average	34.49	11.46	45.95	54	-8.05
5460.00	E	Peak	49.61	11.46	61.07	74	-12.93
5460.00	E	Average	34.46	11.46	45.92	54	-8.08
5469.36	S	Peak	55.35	11.46	66.80	68.3	-1.50
5470.00	E	Peak	54.62	11.46	66.07	68.3	-2.23

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5510 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge LOW	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5460.00	E	Peak	50.38	11.46	61.85	74	-12.16
5460.00	E	Average	34.07	11.46	45.53	54	-8.47
5465.76	S	Peak	55.75	11.46	67.21	68.3	-1.09
5470.00	E	Peak	55.74	11.46	67.20	68.3	-1.10

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5670 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5725.00	E	Peak	43.92	12.27	56.19	68.3	-12.11
5726.60	S	Peak	45.73	12.27	58.00	68.3	-10.30

Operation Band	:802.11 n40M	Test Date	:2015-10-14
Fundamental Frequency	:5670 MHz	Temp./Humi.	:21.3 deg_C / 67 RH
Operation Mode	:Bandedge HIGH	Engineer	:Vito
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

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

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

"---" : denotes Noise Floor.

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

Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
5725.00	E	Peak	44.36	12.27	56.63	68.3	-11.67

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

An embedded-in antenna design is used.

The antenna connector is designed with unique type RF connector and no consideration of replacement. Please see EUT photo and antenna spec. for details.

The antenna gain is less than 6dBi. Therefore, it is not necessary to reduce maximum output power limit.

~ End of Report ~