



FCC RF Test Report

APPLICANT : VERTU Corporation Limited
EQUIPMENT : GSM 4 Band/CDMA/EVDO 2 Band/TD-SCDMA
2Band/UMTS 5 Band/HSUPA/HSDPA/LTE 21
Band/WLAN/BT/NFC mobile phone
BRAND NAME : VERTU
MODEL NAME : CONSTELLATION X
TYPE NAME : VM-08
FCC ID : P7QVM-08
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Jul. 20, 2016 and testing was completed on Dec. 27, 2016. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (KUNSHAN) INC., the test report shall not be reproduced except in full.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR672003F	Rev. 01	Initial issue of report	Feb. 17, 2017



SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	RSS-247 Section 6	6dB, 26dB and 99% Occupied Bandwidth	> 500kHz	Pass	-
3.2	15.407(a)	RSS-247 Section 6	Maximum Conducted Output Power	≤ 30 dBm	Pass	-
3.3	15.407(a)	RSS-247 Section 6	Power Spectral Density	≤ 30 dBm/500kHz	Pass	-
3.4	15.407(b)	RSS-247 Section 6	Unwanted Emissions	15.407(b)(4)(i) &15.209(a)	Pass	Under limit 7.11 dB at 86.260 MHz
3.5	15.207	RSS-Gen 8.8	AC Conducted Emission	15.207(a)	Pass	Under limit 14.56 dB at 17.291 MHz
3.6	15.407(g)	-	Frequency Stability	Within Operation Band	Pass	-
3.7	15.407(c)	RSS-247 6.4(2)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.8	15.203 & 15.407(a)	N/A	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

VERTU Corporation Limited

Beacon Hill Road, Church Crookham, Hampshire GU52 8DY, United Kingdom.

1.2 Manufacturer

VERTU Corporation Limited

Beacon Hill Road, Church Crookham, Hampshire GU52 8DY, United Kingdom.

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	GSM 4 Band/CDMA/EVDO 2 Band/TD-SCDMA 2Band/UMTS 5 Band/HSUPA/HSDPA/LTE 21 Band/WLAN/BT/NFC mobile phone
Brand Name	VERTU
Model Name	CONSTELLATION X
Type Name	VM-08
FCC ID	P7QVM-08
GSM Operating Band(s)	GSM 850/900/1800/1900MHz
WCDMA Operating Band(s)	FDD Band I / II / IV / V /VIII
CDMA Operating Band(s)	CDMA2000 BC0/BC1
LTE Operating Band(s)	FDD Band 1/2/3/4/5/7/8/12/13/17/19/20/25/26/28/29/30 TDD Band 38/39/40/41
GPRS / EGPRS Multi Slot Class	GPRS Class 33, EGPRS Class 33
Wi-Fi Specification	2.4GHz 802.11b/g/n HT20 5GHz 802.11a/n HT20/HT40 5GHz 802.11ac VHT20/VHT40/VHT80
Bluetooth Version	Bluetooth v3.0 + EDR / Bluetooth v4.0 LE/ Bluetooth v4.2 LE
NFC Type	A, B, F, V
IMEI Code	Conducted: 004402550120731/004402550120749 Conduction: 004402550120376/004402550120384 Radiation: 004402550120376/004402550120384
HW Version	PIO2
SW Version	6.0.1_1.434.0.070
EUT Stage	Identical Prototype

Remark: 1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

2. Manufacturer's declaration LTE band 40 disabled by software.

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification												
Tx/Rx Channel Frequency Range		5745 MHz ~ 5825 MHz										
Maximum Output Power		<5745 MHz ~ 5825 MHz> <Ant. 1> 802.11a : 17.28 dBm / 0.0535 W 802.11n HT20 : 16.99 dBm / 0.0500 W 802.11n HT40 : 17.24 dBm / 0.0530 W 802.11ac VHT20: 16.97 dBm / 0.0498 W 802.11ac VHT40: 16.50 dBm / 0.0447 W 802.11ac VHT80: 16.03 dBm / 0.0401 W <Ant. 2> 802.11a : 17.99 dBm / 0.0630 W 802.11n HT20 : 17.80 dBm / 0.0603 W 802.11n HT40 : 17.23 dBm / 0.0528 W 802.11ac VHT20: 17.71 dBm / 0.0590 W 802.11ac VHT40: 16.55 dBm / 0.0452 W 802.11ac VHT80: 15.76 dBm / 0.0377 W MIMO <Ant. 1 + 2> 802.11n HT20 : 18.47 dBm / 0.0703 W 802.11n HT40 : 17.98 dBm / 0.0628 W 802.11ac VHT20: 18.36 dBm / 0.0685 W 802.11ac VHT40: 17.94 dBm / 0.0622 W 802.11ac VHT80: 17.66 dBm / 0.0583 W										
99% Occupied Bandwidth		802.11a : 16.93 MHz 802.11n HT20 : 17.93 MHz 802.11n HT40 : 36.26 MHz 802.11ac VHT80 : 75.16 MHz										
Type of Modulation		802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)										
Antenna Type / Gain		Ant. 1 : PIFA Antenna with gain -3.00 dBi Ant. 2 : PIFA Antenna with gain -3.00 dBi										
Antenna Function Description		<table><tr><td></td><td>Ant. 1</td><td>Ant. 2</td></tr><tr><td>802.11 a/n/ac</td><td>V</td><td>V</td></tr><tr><td>802.11 n/ac MIMO</td><td>V</td><td>V</td></tr></table>			Ant. 1	Ant. 2	802.11 a/n/ac	V	V	802.11 n/ac MIMO	V	V
	Ant. 1	Ant. 2										
802.11 a/n/ac	V	V										
802.11 n/ac MIMO	V	V										

Note: MIMO Ant. 1+2 is a calculated result from sum of the power MIMO Ant. 1 and MIMO Ant. 2.



1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Testing Location

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.			
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958			
Test Site No.	Sporton Site No.			FCC Registration No.
	TH01-KS	CO01-KS	03CH02-KS	418269

Note: The test site complies with ANSI C63.4 2014 requirement.

1.7 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart E
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ FCC KDB 644545 D03 Guidance for IEEE 802 11ac New Rules v01
- ♦ ANSI C63.10-2013
- ♦ IC RSS-247 Issue 1
- ♦ IC RSS-Gen Issue 4

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

1.8 Specification of Accessory

Specification of Accessory			
AC Adapter	Brand Name	VERTU	Model Name AC-32V
	Power Rating	I/P: 100-240Vac, 450mA, O/P: 5Vdc, 2000mA	
Battery	Brand Name	VERTU	Model Name VBL-04
	Power Rating	3.82Vdc, 3200mAh	
USB Cable	Brand Name	VERTU	Model Name VC-02
	Signal Line Type	1.20m shielded cable, without ferrite core	
Earphone 1	Brand Name	VERTU	Model Name WH5-V
	Signal Line Type	1.20m Unshielded cable, without ferrite core	
Earphone 2	Brand Name	VERTU	Model Name HP-1V
	Signal Line Type	1.57m Unshielded cable, without ferrite core	
Earphone 3	Brand Name	VERTU	Model Name HP-1V
	Signal Line Type	1.55m Unshielded cable, without ferrite core	
Wireless Charger Pad	Brand Name	VERTU	Model Name AC-35V
	Power Rating	I/P: 5Vac, 1800mA	
Car Charger	Brand Name	VERTU	Model Name DC-30V
	Power Rating	I/P: 12/24Vdc, 1.35A MAX, O/P: 5.15Vdc, 2.1AMAX	
Bluetooth Travel Speaker	Brand Name	VERTU	Model Name SP-1V
	Power Rating	I/P: 5Vdc, 2Ah	
Portable Battery Charger	Brand Name	VERTU	Model Name DC-10V
	Power Rating	I/P: 5Vdc, 2A, O/P: 5Vdc, 1.5/2.1A	

2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz) and radiated emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases were recorded in this report.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5745-5825 MHz Band 4 (U-NII-3)	149	5745	157	5785
	151*	5755	159*	5795
	153	5765	161	5805
	155 [#]	5775	165	5825

Note:

1. The above Frequency and Channel in "*" were 802.11n HT40 and 802.11ac VHT40.
2. The above Frequency and Channel in "[#]" were 802.11ac VHT80.

2.2 Test Mode

Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates as below table.

Single Antenna

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT80	MCS0

MIMO Antenna

Modulation	Data Rate
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT80	MCS0

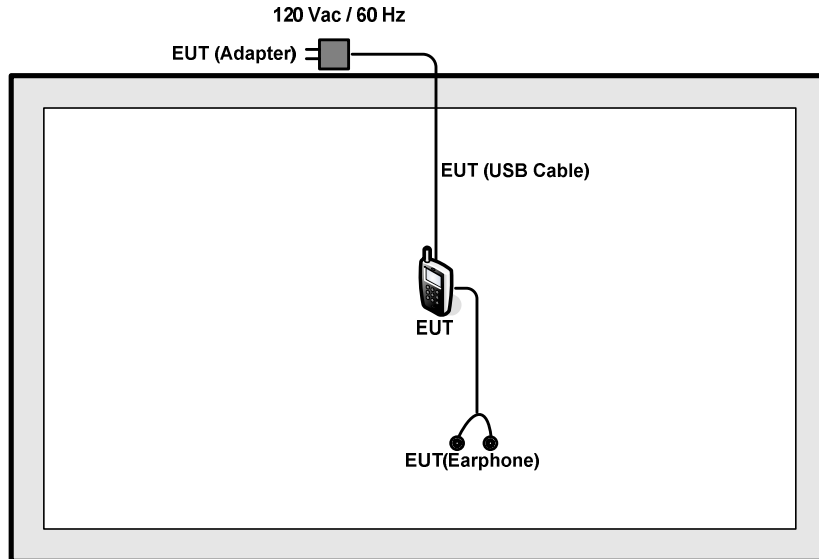
AC Conducted Emission	Mode 1 : GSM850 Idle + Bluetooth Link + WLAN Link (5G) + USB Cable (Charging from Adapter) + Earphone 1
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Ch. #		Band IV : 5725-5850 MHz	
		802.11a	802.11n HT20
L	Low	149	149
M	Middle	157	157
H	High	165	165

Ch. #		Band IV : 5725-5850 MHz	
		802.11n HT40	802.11ac VHT80
L	Low	151	-
M	Middle	-	155
H	High	159	-

2.3 Connection Diagram of Test System

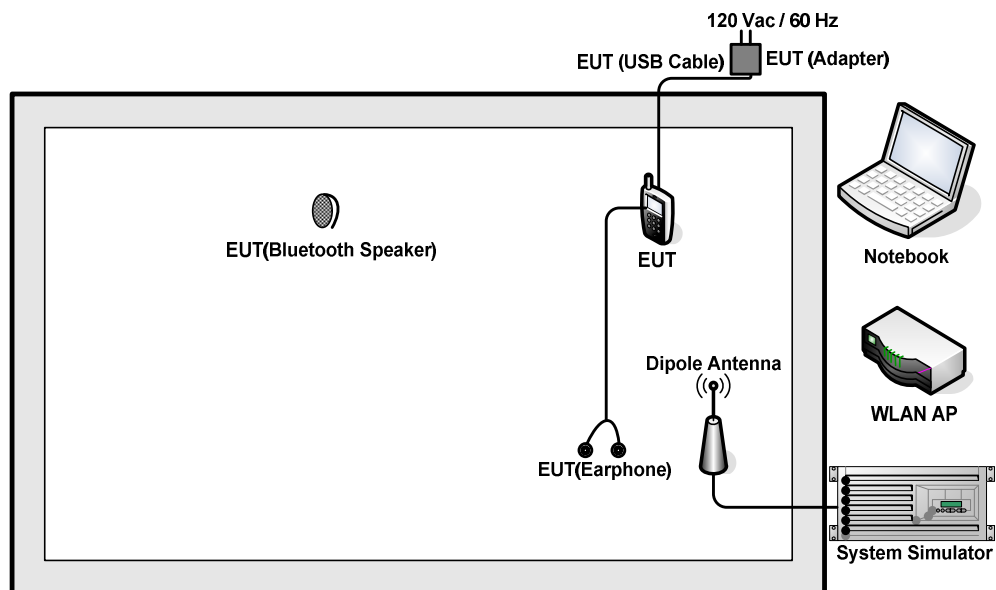
<WLAN5GHz 802.11a Tx Mode>



<WLAN5GHz 802.11n HT20 Ant. 1+2/802.11n HT40 Ant. 1+2/802.11ac VHT80 Ant. 1+2 Tx Mode>



<AC Conducted Emission Mode>



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
3.	Notebook	Lenovo	G480	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m

2.5 EUT Operation Test Setup

For WLAN RF test items, an engineering test program was provided and enabled to make EUT continuously transmit/receive.

For AC power line conducted emissions, the EUT was set to connect with the Notebook under large package sizes transmission.

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 6.9dB.

$$\begin{aligned} \text{Offset(dB)} &= \text{RF cable loss(dB)}. \\ &= 6.9 \text{ (dB)} \end{aligned}$$

3 Test Result

3.1 6dB and 26dB and 99% Occupied Bandwidth Measurement

3.1.1 Description of 6dB and 26dB and 99% Occupied Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

26dB and 99% Occupied bandwidth are reporting only.

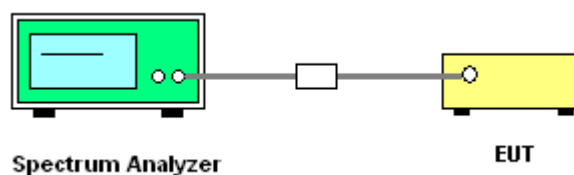
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03.
Section C) Emission bandwidth for the band 5.725-5.85GHz
2. Set RBW = 100kHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.
7. Measure and record the results in the test report.

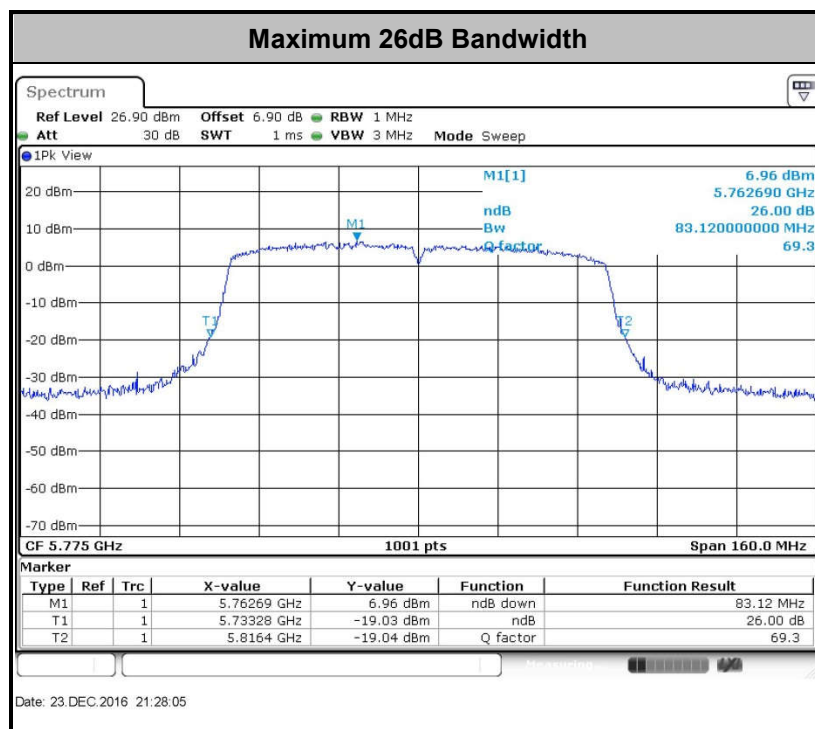
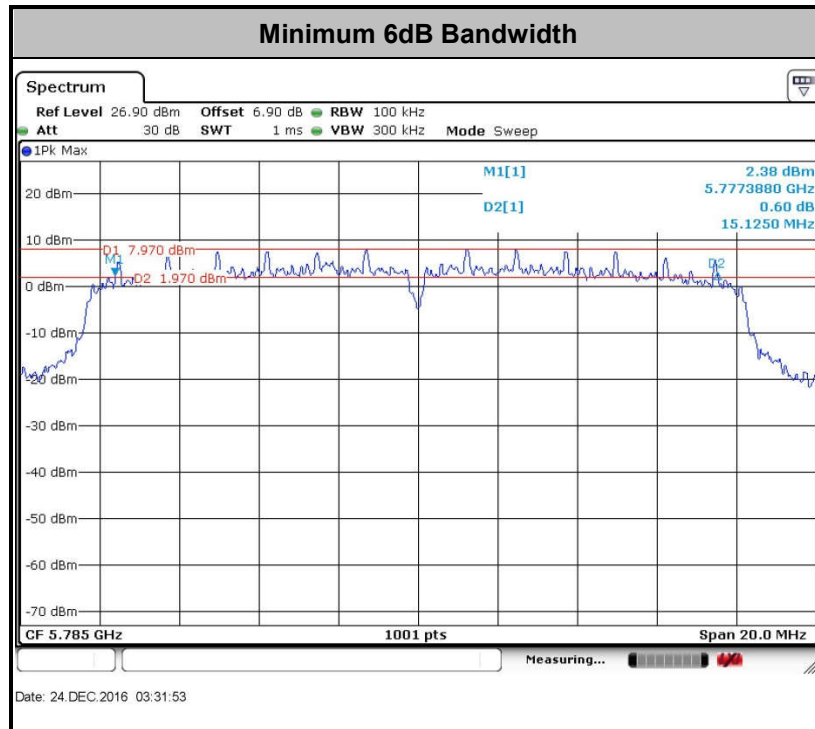
3.1.4 Test Setup

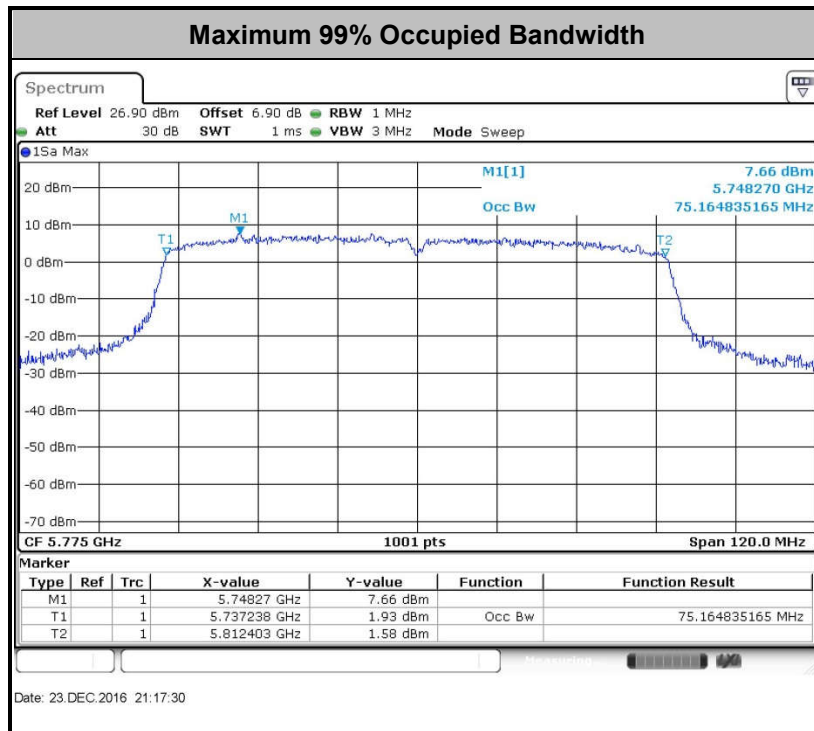




3.1.5 Test Result of 6dB Bandwidth

Please refer to Appendix A.





Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

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

3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

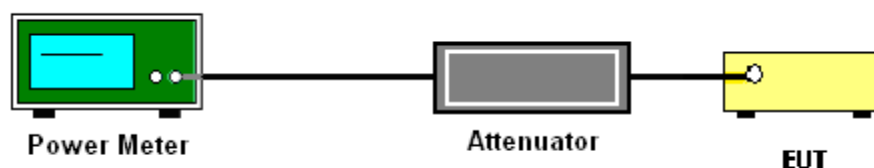
3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03.

Method PM (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, $10 \log(1/x)$, where x is the duty cycle.

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

For the band 5.725–5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

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

3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03.
Section F) Maximum power spectral density.

Method SA-2

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

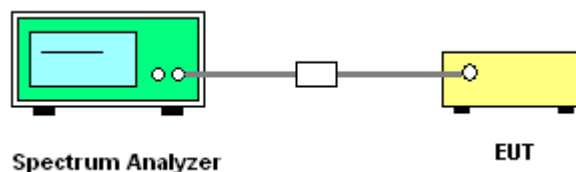
- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz.
- Set VBW $\geq$ 1 MHz.
- Number of points in sweep $\geq$ 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.
- Add $10 \log(500\text{kHz}/\text{RBW})$ to the test result.
- Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add $10 \log(1/0.25) = 6$ dB if the duty cycle is 25 percent.

1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.
3. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Method (c): Measure and add $10 \log(N_{\text{ANT}})$ dB.

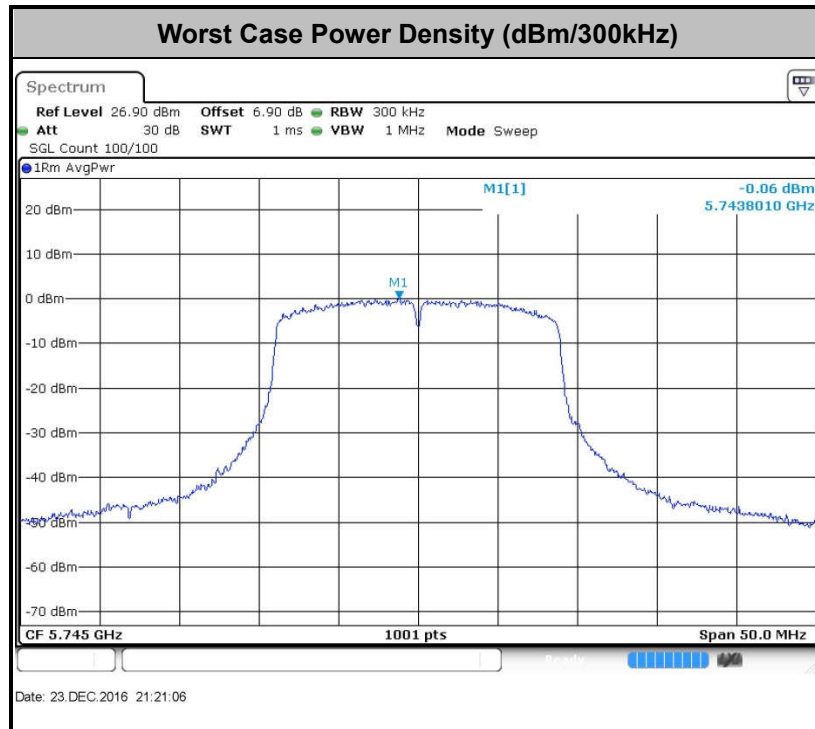
With this technique, spectrum measurements are performed at each output of the device, but rather than summing the spectra or the spectral peaks across the outputs, the quantity $10 \log(N_{\text{ANT}})$ dB is added to each spectrum value before comparing to the emission limit. The addition of $10 \log(N_{\text{ANT}})$ dB serves to apportion the emission limit among the N_{ANT} outputs so that each output is permitted to contribute no more than $1/N_{\text{ANT}}^{\text{th}}$ of the PSD limit.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



3.4 Unwanted Emissions Measurement

This section as specified in FCC Part 15.407(b) is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement. The unwanted emissions shall comply with 15.407(b)(1) to (6), and restricted bands per FCC Part15.205.

3.4.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5.725-5.85 GHz band:

15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

- (2) Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table,

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

Note: The following formula is used to convert the EIRP to field strength.

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

EIRP (dBm)	Field Strength at 3m (dBμV/m)
-17	78.3
- 27	68.3

- (3) KDB 789033 D02 General UNII Test Procedures New Rules v01r03 G)2)c) As specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit.

3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

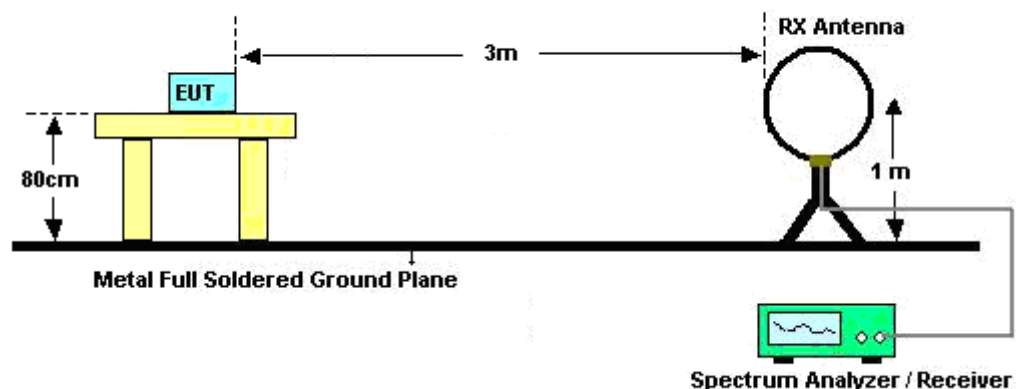
3.4.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03. Section G) Unwanted emissions measurement.
 - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW $\geq$ 3 MHz
 - Detector = Peak
 - Sweep time = auto
 - Trace mode = max hold
 - (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
 - RBW = 1 MHz
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq$ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

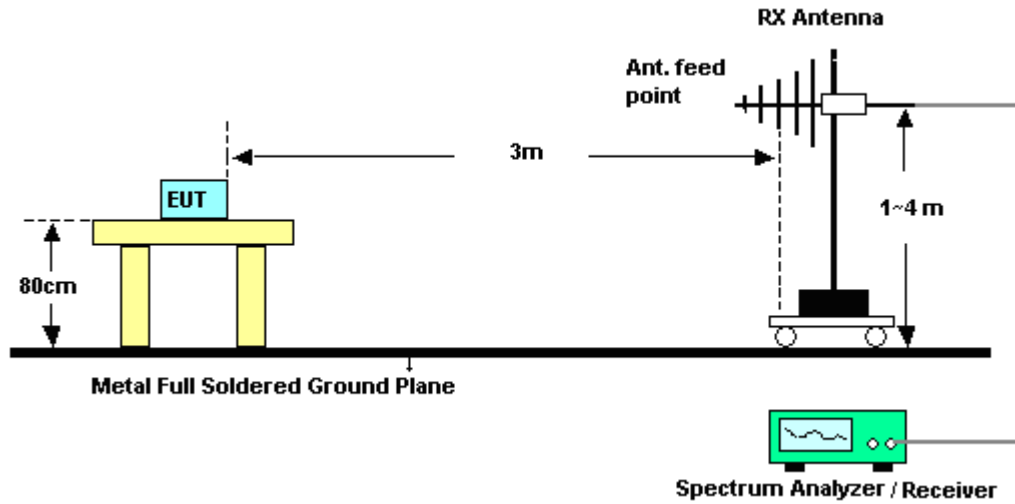
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.4.4 Test Setup

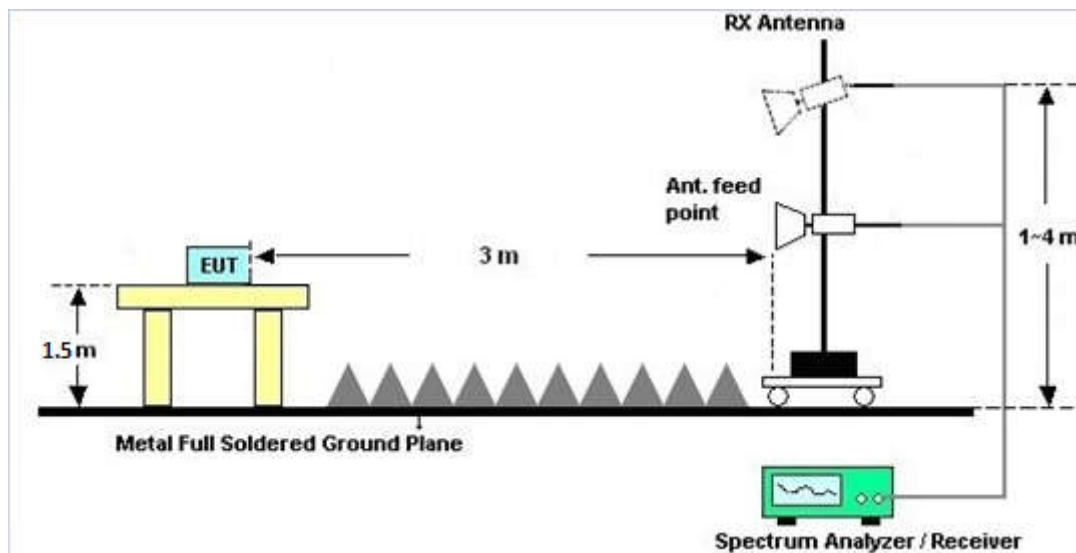
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz





3.4.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

3.4.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix B.

3.4.7 Duty Cycle

Please refer to Appendix C.

3.4.8 Test Result of Radiated Spurious Emissions (30MHz ~ 10th Harmonic)

Please refer to Appendix B.

3.5 AC Conducted Emission Measurement

3.5.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

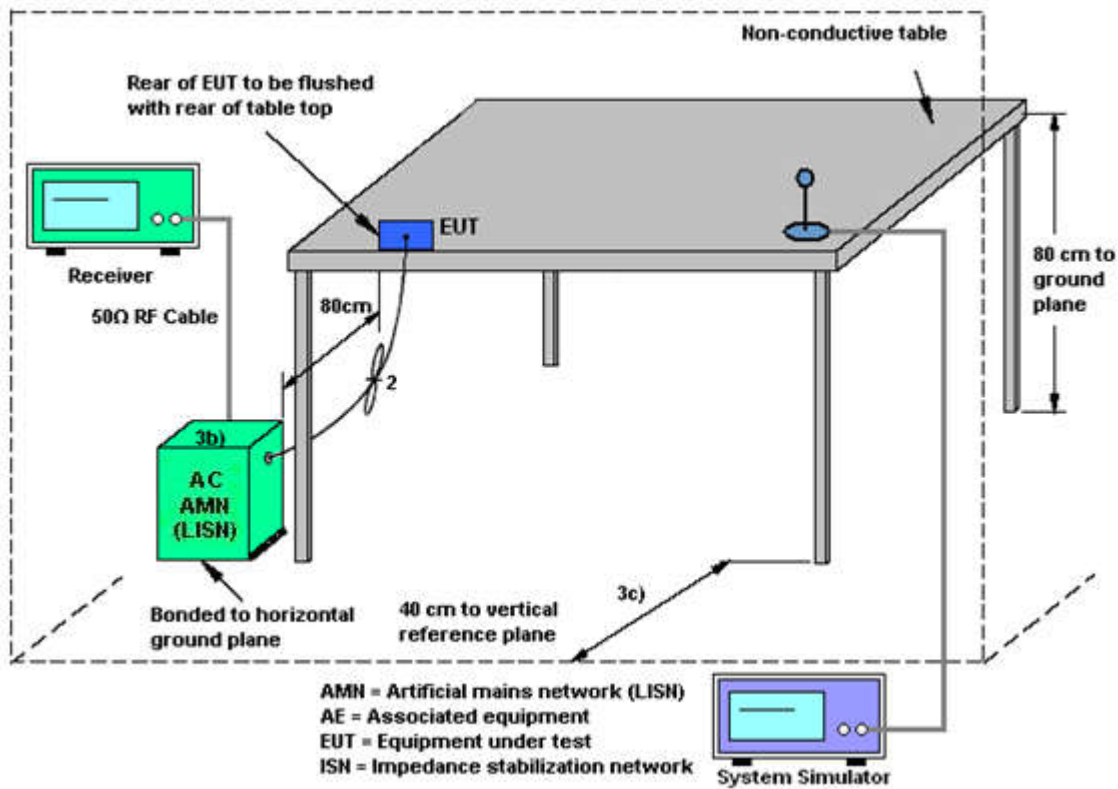
3.5.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

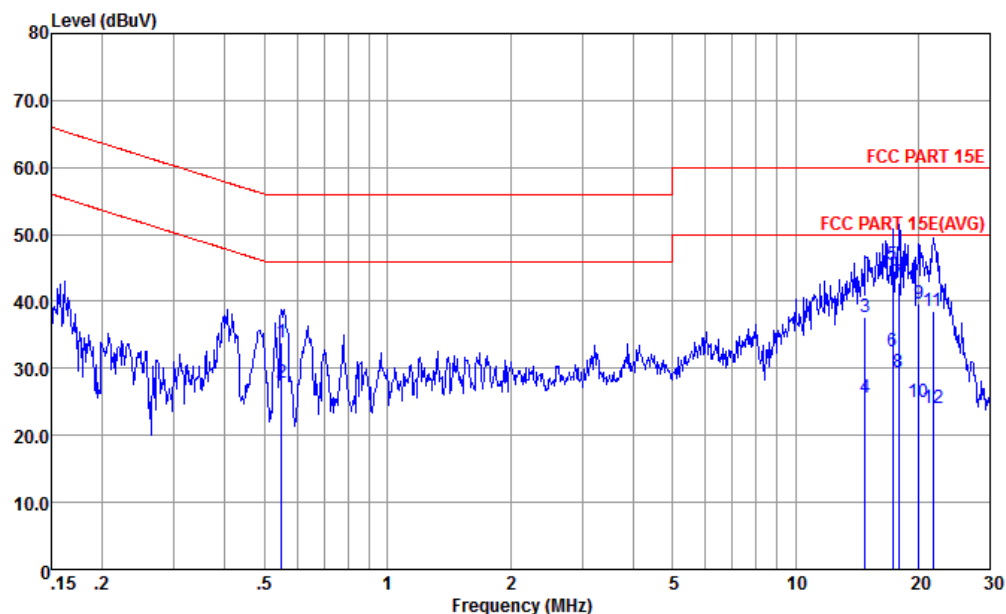
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.5.4 Test Setup



**3.5.5 Test Result of AC Conducted Emission**

Test Mode :	Mode 1	Temperature :	22~24℃
Test Engineer :	Peter Wei	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link (5G) + USB Cable (Charging from Adapter) + Earphone 1		

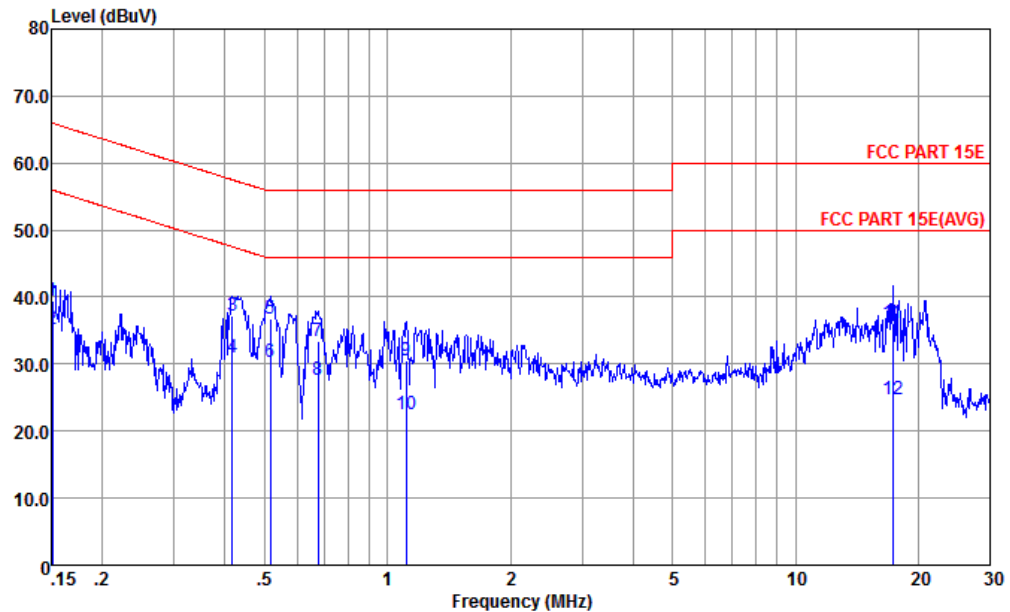


Site : CO01-KS
Condition : FCC PART 15E LISN-L-20151024 LINE
mode : Mode 1
: 004402550120376/004402550120384

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.549	33.82	-22.18	56.00	23.41	0.23	10.18	QP
2	0.549	27.92	-18.08	46.00	17.51	0.23	10.18	Average
3	14.828	37.61	-22.39	60.00	26.90	0.26	10.45	QP
4	14.828	25.71	-24.29	50.00	15.00	0.26	10.45	Average
5 *	17.291	45.44	-14.56	60.00	34.50	0.26	10.68	QP
6	17.291	32.44	-17.56	50.00	21.50	0.26	10.68	Average
7	17.944	42.80	-17.20	60.00	31.80	0.27	10.73	QP
8	17.944	29.50	-20.50	50.00	18.50	0.27	10.73	Average
9	20.056	39.57	-20.43	60.00	28.40	0.27	10.90	QP
10	20.056	25.07	-24.93	50.00	13.90	0.27	10.90	Average
11	21.715	38.49	-21.51	60.00	27.40	0.25	10.84	QP
12	21.715	24.09	-25.91	50.00	13.00	0.25	10.84	Average



Test Mode :	Mode 1	Temperature :	22~24℃
Test Engineer :	Peter Wei	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link (5G) + USB Cable (Charging from Adapter) + Earphone 1		



Site : CO01-KS
Condition : FCC PART 15E LISN-N-20151024 NEUTRAL
mode : Mode 1
: 004402550120376/004402550120384

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.151	39.49	-26.47	65.96	28.80	0.30	10.39	QP
2	0.151	35.29	-20.67	55.96	24.60	0.30	10.39	Average
3	0.417	37.31	-20.20	57.51	26.79	0.32	10.20	QP
4	0.417	31.01	-16.50	47.51	20.49	0.32	10.20	Average
5	0.516	36.81	-19.19	56.00	26.30	0.32	10.19	QP
6 *	0.516	30.21	-15.79	46.00	19.70	0.32	10.19	Average
7	0.675	33.52	-22.48	56.00	23.00	0.34	10.18	QP
8	0.675	27.62	-18.38	46.00	17.10	0.34	10.18	Average
9	1.111	30.56	-25.44	56.00	20.00	0.37	10.19	QP
10	1.111	22.46	-23.54	46.00	11.90	0.37	10.19	Average
11	17.291	36.04	-23.96	60.00	25.10	0.26	10.68	QP
12	17.291	24.84	-25.16	50.00	13.90	0.26	10.68	Average

3.6 Frequency Stability Measurement

3.6.1 Limit of Frequency Stability

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

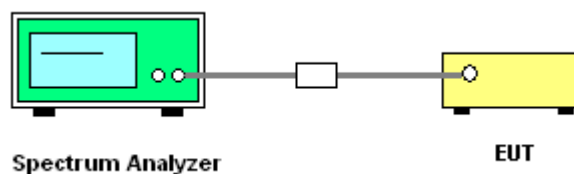
3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

1. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
2. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
3. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

3.6.4 Test Setup



3.6.5 Test Result of Frequency Stability

Please refer to Appendix A.



3.7 Automatically Discontinue Transmission

3.7.1 Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

3.7.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.7.3 Test Result of Automatically Discontinue Transmission

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

3.8 Antenna Requirements

3.8.1 Standard Applicable

According to FCC 47 CFR Section 15.407(a)(1)(2) ,if transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.8.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.8.3 Antenna Gain

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = $10 \log(N_{ANT}/N_{SS}=1)$ dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

For power, the directional gain G_{ANT} is set equal to the antenna having the highest gain, i.e., F)2)f)i).

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain "DG" is calculated as following table.

			DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
	Ant 1 (dBi)	Ant 2 (dBi)				
Band IV	-3.00	-3.00	-3.00	0.01	0.00	0.00

Power limit reduction = Composite gain – 6dBi, (min = 0)

PSD limit reduction = Composite gain + PSD Array gain – 6dBi, (min = 0)



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Aug. 09, 2016	Dec. 05, 2016~ Dec. 24, 2016	Aug. 08, 2017	Conducted (TH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Oct. 13, 2016	Dec. 05, 2016~ Dec. 24, 2016	Oct. 12, 2017	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 20, 2016	Dec. 05, 2016~ Dec. 24, 2016	Jan. 19, 2017	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 20, 2016	Dec. 05, 2016~ Dec. 24, 2016	Jan. 19, 2017	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	-40~+150°C	Oct. 13, 2016	Dec. 05, 2016~ Dec. 24, 2016	Oct. 12, 2017	Conducted (TH01-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz	Apr. 29, 2016	Dec. 20, 2016	Apr. 28, 2017	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 13, 2016	Dec. 20, 2016	Oct. 12, 2017	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Oct. 13, 2016	Dec. 20, 2016	Oct. 12, 2017	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP0000008 11	AC 0V~300V, 45Hz~1000Hz	Oct. 13, 2016	Dec. 20, 2016	Oct. 12, 2017	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz; Max 30dBm	Aug. 09, 2016	Dec. 05, 2016~ Dec. 27, 2016	Aug. 08, 2017	Radiation (03CH02-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150208	10Hz~44GHz, MAX 30dB	Apr. 22, 2016	Dec. 05, 2016~ Dec. 27, 2016	Apr. 21, 2017	Radiation (03CH02-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Nov. 23, 2016	Dec. 05, 2016~ Dec. 27, 2016	Nov. 22, 2017	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6112D	37879	30MHz~2GHz	Aug. 20, 2016	Dec. 05, 2016~ Dec. 27, 2016	Aug. 19, 2017	Radiation (03CH02-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Oct. 22, 2016	Dec. 05, 2016~ Dec. 27, 2016	Oct. 21, 2017	Radiation (03CH02-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Mar. 03, 2016	Dec. 05, 2016~ Dec. 27, 2016	Mar. 02, 2017	Radiation (03CH02-KS)
Amplifier	com-power	PA-103A	161069	1kHz~1000MHz / 32 dB	Apr. 22, 2016	Dec. 05, 2016~ Dec. 27, 2016	Apr. 21, 2017	Radiation (03CH02-KS)
HF Amplifier	Agilent	8449B	3008A02384	1GHz~26.5GHz	Oct. 13, 2016	Dec. 05, 2016~ Dec. 27, 2016	Oct. 12, 2017	Radiation (03CH02-KS)
Amplifier	MITEQ	TTA1840-35-H G	1887435	18GHz~40GHz	Jan. 20, 2016	Dec. 05, 2016~ Dec. 27, 2016	Jan. 19, 2017	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	6160100024 73	N/A	NCR	Dec. 05, 2016~ Dec. 27, 2016	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Dec. 05, 2016~ Dec. 27, 2016	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Dec. 05, 2016~ Dec. 27, 2016	NCR	Radiation (03CH02-KS)

NCR: No Calibration Required

5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.3 dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.1 dB
--	--------

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.5 dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.1 dB
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Appendix A. Conducted Test Results

Test Engineer:	Silent Hai	Temperature:	21~25	°C
Test Date:	2016/12/5~2016/12/24	Relative Humidity:	51~55	%

TEST RESULTS DATA
6dB and 26dB EBW and 99% OBW

Band IV													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26dB Bandwidth (MHz)		6 dB Bandwidth (MHz)		6 dB Bandwidth Min. Limit (MHz)		Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	149	5745		16.83		20.63		15.33	0.5	0.5	Pass
11a	6Mbps	1	157	5785		16.88		21.23		15.13	0.5	0.5	Pass
11a	6Mbps	1	165	5825		16.93		21.28		15.31	0.5	0.5	Pass
HT20	MCS0	1	149	5745		17.78		21.73		15.13	0.5	0.5	Pass
HT20	MCS0	1	157	5785		17.93		22.68		15.13	0.5	0.5	Pass
HT20	MCS0	1	165	5825		17.88		22.68		15.13	0.5	0.5	Pass
HT40	MCS0	1	151	5755	36.16		44.96		35.05		0.5	0.5	Pass
HT40	MCS0	1	159	5795	36.26		44.42		35.09		0.5	0.5	Pass
VHT80	MCS0	1	155	5775	75.16		82.96		75.05		0.5	0.5	Pass
HT20	MCS0	2	149	5745	17.73	17.78	21.63	21.48	15.13	15.13	0.5		Pass
HT20	MCS0	2	157	5785	17.73	17.73	21.58	21.48	15.13	15.13	0.5		Pass
HT20	MCS0	2	165	5825	17.73	17.78	21.18	21.28	15.13	15.13	0.5		Pass
HT40	MCS0	2	151	5755	35.96	35.96	41.63	41.81	35.09	35.09	0.5		Pass
HT40	MCS0	2	159	5795	36.06	35.76	41.63	41.36	35.13	35.09	0.5		Pass
VHT80	MCS0	2	155	5775	75.04	74.81	83.12	81.36	75.05	75.05	0.5		Pass

TEST RESULTS DATA
Average Power Table

Band IV														
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	149	5745	0.30	0.32	17.28	17.60		30.00	30.00	-3.00	-3.00	Pass
11a	6Mbps	1	157	5785	0.30	0.32	16.54	17.99		30.00	30.00	-3.00	-3.00	Pass
11a	6Mbps	1	165	5825	0.30	0.32	16.92	17.04		30.00	30.00	-3.00	-3.00	Pass
HT20	MCS0	1	149	5745	0.34	0.35	16.99	17.09		30.00	30.00	-3.00	-3.00	Pass
HT20	MCS0	1	157	5785	0.34	0.35	16.36	17.80		30.00	30.00	-3.00	-3.00	Pass
HT20	MCS0	1	165	5825	0.34	0.35	16.69	16.86		30.00	30.00	-3.00	-3.00	Pass
HT40	MCS0	1	151	5755	0.62	0.62	17.24	16.67		30.00	30.00	-3.00	-3.00	Pass
HT40	MCS0	1	159	5795	0.62	0.62	16.73	17.23		30.00	30.00	-3.00	-3.00	Pass
VHT80	MCS0	1	155	5775	1.17	1.14	16.03	15.76		30.00	30.00	-3.00	-3.00	Pass
HT20	MCS0	2	149	5745	0.29	0.28	16.12	14.67	18.47	30.00		-3.00		Pass
HT20	MCS0	2	157	5785	0.29	0.28	15.45	15.03	18.26	30.00		-3.00		Pass
HT20	MCS0	2	165	5825	0.29	0.28	15.88	14.23	18.14	30.00		-3.00		Pass
HT40	MCS0	2	151	5755	0.62	0.62	15.54	14.07	17.88	30.00		-3.00		Pass
HT40	MCS0	2	159	5795	0.62	0.62	15.14	14.80	17.98	30.00		-3.00		Pass
VHT80	MCS0	2	155	5775	1.82	1.85	15.13	14.10	17.66	30.00		-3.00		Pass

TEST RESULTS DATA
Power Spectral Density

Band IV																
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)		10log (500kHz /RBW) Factor (dB)		Average Power Density (dBm/500kHz)			Average PSD Limit (dBm/500kHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	149	5745	0.30	0.32	2.22	2.22		4.18		30.00	30.00	-3.00	-3.00	Pass
11a	6Mbps	1	157	5785	0.30	0.32	2.22	2.22		5.03		30.00	30.00	-3.00	-3.00	Pass
11a	6Mbps	1	165	5825	0.30	0.32	2.22	2.22		4.07		30.00	30.00	-3.00	-3.00	Pass
HT20	MCS0	1	149	5745	0.34	0.35	2.22	2.22		3.66		30.00	30.00	-3.00	-3.00	Pass
HT20	MCS0	1	157	5785	0.34	0.35	2.22	2.22		4.22		30.00	30.00	-3.00	-3.00	Pass
HT20	MCS0	1	165	5825	0.34	0.35	2.22	2.22		3.26		30.00	30.00	-3.00	-3.00	Pass
HT40	MCS0	1	151	5755	0.62	0.62	2.22	2.22	1.16			30.00	30.00	-3.00	-3.00	Pass
HT40	MCS0	1	159	5795	0.62	0.62	2.22	2.22	-0.01			30.00	30.00	-3.00	-3.00	Pass
VHT80	MCS0	1	155	5775	1.17	1.14	2.22	2.22	-3.48			30.00	30.00	-3.00	-3.00	Pass
HT20	MCS0	2	149	5745	0.29	0.28	2.22				5.46	30.00		0.01		Pass
HT20	MCS0	2	157	5785	0.29	0.28	2.22				4.81	30.00		0.01		Pass
HT20	MCS0	2	165	5825	0.29	0.28	2.22				5.10	30.00		0.01		Pass
HT40	MCS0	2	151	5755	0.62	0.62	2.22				1.65	30.00		0.01		Pass
HT40	MCS0	2	159	5795	0.62	0.62	2.22				1.21	30.00		0.01		Pass
VHT80	MCS0	2	155	5775	1.82	1.85	2.22				-1.16	30.00		0.01		Pass

TEST RESULTS DATA
Frequency Stability

Band IV										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	149	5745	5744.925	-0.075	-13.05	50	3.82	
11a	6Mbps	1	149	5745	5745.025	0.025	4.35	-30	3.82	
11a	6Mbps	1	149	5745	5744.950	-0.050	-8.70	20	4.35	
11a	6Mbps	1	149	5745	5744.950	-0.050	-8.70	20	3.5	
11a	6Mbps	1	149	5745	5744.950	-0.050	-8.70	20	3.82	



Appendix B. Radiated Spurious Emission

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		5693.1	52.62	-47.59	100.21	43.45	32.2	7.47	30.5	185	20	P	H
		5719.9	59.65	-51.22	110.87	50.31	32.27	7.52	30.45	185	20	P	H
		5722.8	63.18	-54.1	117.28	53.84	32.27	7.52	30.45	185	20	P	H
	*	5746	104.86	-	-	95.45	32.3	7.54	30.43	185	20	P	H
	*	5746	96.84	-	-	87.43	32.3	7.54	30.43	185	20	A	H
		5698.9	51.92	-52.57	104.49	42.75	32.2	7.47	30.5	100	358	P	V
		5711.4	57.24	-51.25	108.49	48	32.23	7.49	30.48	100	358	P	V
		5722.8	61.8	-55.48	117.28	52.46	32.27	7.52	30.45	100	358	P	V
	*	5746	104.01	-	-	94.6	32.3	7.54	30.43	100	358	P	V
	*	5746	95.62	-	-	86.21	32.3	7.54	30.43	100	358	A	V
802.11a CH 157 5785MHz	*	5782	104.69	-	-	95.13	32.37	7.58	30.39	174	18	P	H
	*	5782	96.85	-	-	87.29	32.37	7.58	30.39	174	18	A	H
		5697.1	51.18	-51.98	103.16	42.01	32.2	7.47	30.5	174	18	P	H
		5709.5	51	-56.96	107.96	41.76	32.23	7.49	30.48	174	18	P	H
		5721.2	50.35	-63.29	113.64	41.01	32.27	7.52	30.45	174	18	P	H
		5853.52	49.83	-64.44	114.27	40.21	32.53	7.62	30.53	174	18	P	H
		5861.31	50.95	-58.18	109.13	41.33	32.53	7.62	30.53	174	18	P	H
		5883.92	50.23	-48.45	98.68	40.61	32.56	7.63	30.57	174	18	P	H
	*	5786	103.24	-	-	93.6	32.4	7.6	30.36	205	360	P	V
	*	5786	95.52	-	-	85.88	32.4	7.6	30.36	205	360	A	V
		5695.3	49.64	-52.2	101.84	40.47	32.2	7.47	30.5	205	360	P	V
		5717.6	50.28	-59.95	110.23	40.94	32.27	7.52	30.45	205	360	P	V
		5722	50.09	-65.37	115.46	40.75	32.27	7.52	30.45	205	360	P	V
		5851.05	49.78	-70.13	119.91	40.15	32.5	7.62	30.49	205	360	P	V
		5859.6	50.98	-58.63	109.61	41.36	32.53	7.62	30.53	205	360	P	V
		5886.96	50.5	-45.92	96.42	40.88	32.56	7.63	30.57	205	360	P	V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 165 5825MHz	*	5826	104.29	-	-	94.67	32.46	7.61	30.45	182	16	P	H
	*	5826	97.12	-	-	87.5	32.46	7.61	30.45	182	16	A	H
		5850.48	56.08	-65.13	121.21	46.45	32.5	7.62	30.49	182	16	P	H
		5855.8	55.4	-55.28	110.68	45.78	32.53	7.62	30.53	182	16	P	H
		5888.86	51.43	-43.58	95.01	41.82	32.59	7.63	30.61	182	16	P	H
	*	5828	103.03	-	-	93.41	32.46	7.61	30.45	167	360	P	V
	*	5828	96.53	-	-	86.91	32.46	7.61	30.45	167	360	A	V
		5852.57	55.69	-60.75	116.44	46.06	32.5	7.62	30.49	167	360	P	V
		5855.99	54.03	-56.59	110.62	44.41	32.53	7.62	30.53	167	360	P	V
		5878.41	51.02	-51.75	102.77	41.4	32.56	7.63	30.57	167	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 149 5745MHz		11490	43.97	-30.03	74	51.1	39.22	10.63	56.98	100	360	P	H
		11490	44.03	-29.97	74	51.16	39.22	10.63	56.98	100	194	P	V
802.11a CH 157 5785MHz		11570	44.43	-29.57	74	51.77	39.13	10.68	57.15	100	360	P	H
		11570	43.95	-30.05	74	51.29	39.13	10.68	57.15	100	360	P	V
802.11a CH 165 5825MHz		11650	44.17	-29.83	74	51.69	39.05	10.72	57.29	100	360	P	H
		11650	43.96	-30.04	74	51.48	39.05	10.72	57.29	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		5695.4	57.76	-44.15	101.91	48.59	32.2	7.47	30.5	308	274	P	H
		5717.7	69.61	-40.65	110.26	60.27	32.27	7.52	30.45	308	274	P	H
		5724.2	76.77	-43.71	120.48	67.43	32.27	7.52	30.45	308	274	P	H
		5748	105.45	-	-	96.04	32.3	7.54	30.43	308	274	P	H
		5748	98.58	-	-	89.17	32.3	7.54	30.43	308	274	A	H
		5700	60.24	-45.06	105.3	51.07	32.2	7.47	30.5	109	26	P	V
		5717.2	75.13	-34.99	110.12	65.89	32.23	7.49	30.48	109	26	P	V
		5724.8	81	-40.84	121.84	71.66	32.27	7.52	30.45	109	26	P	V
		5744	110.57	-	-	101.16	32.3	7.54	30.43	109	26	P	V
		5744	102.61	-	-	93.2	32.3	7.54	30.43	109	26	A	V
802.11a CH 157 5785MHz		5695	50.43	-51.18	101.61	41.26	32.2	7.47	30.5	288	279	P	H
		5719.7	55.38	-55.44	110.82	46.04	32.27	7.52	30.45	288	279	P	H
		5721.8	59.09	-55.91	115	49.75	32.27	7.52	30.45	288	279	P	H
		5851.81	51.61	-66.56	118.17	41.98	32.5	7.62	30.49	288	279	P	H
		5863.21	51.34	-57.26	108.6	41.72	32.53	7.62	30.53	288	279	P	H
		5881.83	50.03	-50.2	100.23	40.41	32.56	7.63	30.57	288	279	P	H
		5782	106.94	-	-	97.38	32.37	7.58	30.39	288	279	P	H
		5782	99.06	-	-	89.5	32.37	7.58	30.39	288	279	A	H
		5697.3	53.16	-50.15	103.31	43.99	32.2	7.47	30.5	112	25	P	V
		5718.8	59.4	-51.16	110.56	50.06	32.27	7.52	30.45	112	25	P	V
		5720.3	61.29	-50.29	111.58	51.95	32.27	7.52	30.45	112	25	P	V
		5851.81	53.93	-64.24	118.17	44.3	32.5	7.62	30.49	112	25	P	V
		5864.35	52.64	-55.64	108.28	43.02	32.53	7.62	30.53	112	25	P	V
		5886.2	49.96	-47.02	96.98	40.34	32.56	7.63	30.57	112	25	P	V
		5788	110.61	-	-	100.97	32.4	7.6	30.36	112	25	P	V
		5788	103.3	-	-	93.66	32.4	7.6	30.36	112	25	A	V



WIFI Ant. 2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 165 5825MHz		5853.33	62.67	-52.04	114.71	53.04	32.5	7.62	30.49	315	275	P	H
		5856.56	61.39	-49.07	110.46	51.77	32.53	7.62	30.53	315	275	P	H
		5876.13	53.83	-50.63	104.46	44.21	32.56	7.63	30.57	315	275	P	H
		5826	107.09	-	-	97.47	32.46	7.61	30.45	315	275	P	H
		5826	98.96	-	-	89.34	32.46	7.61	30.45	315	275	A	H
		5852.19	66.95	-50.36	117.31	57.32	32.5	7.62	30.49	106	31	P	V
		5855.8	64.87	-45.81	110.68	55.25	32.53	7.62	30.53	106	31	P	V
		5874.99	54.85	-50.45	105.3	45.23	32.56	7.63	30.57	106	31	P	V
		5820	111.01	-	-	101.39	32.46	7.61	30.45	106	31	P	V
		5820	102.72	-	-	93.1	32.46	7.61	30.45	106	31	A	V
Remark	3. No other spurious found. 4. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a		11490	44.22	-29.78	74	51.35	39.22	10.63	56.98	100	360	P	H
CH 149		11490	44.2	-29.8	74	51.33	39.22	10.63	56.98	100	360	P	V
5745MHz													
802.11a		11570	44.16	-29.84	74	51.5	39.13	10.68	57.15	100	360	P	H
CH 157		11570	44.41	-29.59	74	51.75	39.13	10.68	57.15	100	360	P	V
5785MHz													
802.11a		11650	43.89	-30.11	74	51.41	39.05	10.72	57.29	100	360	P	H
CH 165		11650	43.61	-30.39	74	51.13	39.05	10.72	57.29	100	360	P	V
5825MHz													
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

Emission below 1GHz

5GHz WIFI 802.11a (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
5GHz 802.11a LF		32.91	26.16	-13.84	40	29.78	26.22	0.65	30.49	-	-	P	H
		86.26	32.89	-7.11	40	44.78	16.82	1	29.71	100	277	P	H
		117.3	28.08	-15.42	43.5	36.66	19.52	1.16	29.26	-	-	P	H
		208.48	33.03	-10.47	43.5	42.67	17.1	1.55	28.29	-	-	P	H
		439.34	32.48	-13.52	46	32.29	25.07	2.19	27.07	-	-	P	H
		942.77	34.13	-11.87	46	26.45	29.62	3.21	25.15	-	-	P	H
		32.91	32.74	-7.26	40	36.36	26.22	0.65	30.49	103	51	P	V
		55.22	29.26	-10.74	40	43.3	15.3	0.8	30.14	-	-	P	V
		86.26	24.71	-15.29	40	36.6	16.82	1	29.71	-	-	P	V
		204.6	30.39	-13.11	43.5	40.1	17.06	1.54	28.31	-	-	P	V
		402.48	26.83	-19.17	46	27.62	24.26	2.11	27.16	-	-	P	V
		932.1	32.92	-13.08	46	25.53	29.34	3.21	25.16	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Band 4 - 5725~5850MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 149 5745MHz		5699.9	52.52	-52.71	105.23	43.35	32.2	7.47	30.5	281	65	P	H
		5720	61.57	-49.33	110.9	52.23	32.27	7.52	30.45	281	65	P	H
		5723	63.69	-54.05	117.74	54.35	32.27	7.52	30.45	281	65	P	H
		5744	106.16	-	-	96.75	32.3	7.54	30.43	281	65	P	H
		5744	100.26	-	-	90.85	32.3	7.54	30.43	281	65	A	H
		5698.9	55.74	-48.75	104.49	46.57	32.2	7.47	30.5	114	351	P	V
		5718.9	63.11	-47.48	110.59	53.77	32.27	7.52	30.45	114	351	P	V
		5724.6	68.63	-52.76	121.39	59.29	32.27	7.52	30.45	114	351	P	V
		5744	109.3	-	-	99.89	32.3	7.54	30.43	114	351	P	V
		5744	102.53	-	-	93.12	32.3	7.54	30.43	114	351	A	V
802.11n HT20 CH 157 5785MHz		5693.8	50.55	-50.18	100.73	41.38	32.2	7.47	30.5	267	308	P	H
		5714.6	50.85	-58.54	109.39	41.61	32.23	7.49	30.48	267	308	P	H
		5723	50.73	-67.01	117.74	41.39	32.27	7.52	30.45	267	308	P	H
		5853.14	49.43	-65.71	115.14	39.8	32.5	7.62	30.49	267	308	P	H
		5874.61	50.72	-54.69	105.41	41.1	32.56	7.63	30.57	267	308	P	H
		5879.55	50.28	-51.64	101.92	40.66	32.56	7.63	30.57	267	308	P	H
		5782	109.08	-	-	99.52	32.37	7.58	30.39	267	308	P	H
		5782	100.1	-	-	90.54	32.37	7.58	30.39	267	308	A	H
		5697.6	52.39	-51.14	103.53	43.22	32.2	7.47	30.5	107	2	P	V
		5719.5	51.57	-59.19	110.76	42.23	32.27	7.52	30.45	107	2	P	V
		5724.6	52.47	-68.92	121.39	43.13	32.27	7.52	30.45	107	2	P	V
		5854.66	50.55	-61.12	111.67	40.93	32.53	7.62	30.53	107	2	P	V
		5855.42	51.88	-58.9	110.78	42.26	32.53	7.62	30.53	107	2	P	V
		5884.3	51.94	-46.45	98.39	42.32	32.56	7.63	30.57	107	2	P	V
		5784	110.9	-	-	101.34	32.37	7.58	30.39	107	2	P	V
		5784	102.94	-	-	93.38	32.37	7.58	30.39	107	2	A	V



WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 165 5825MHz		5852.95	59.08	-56.49	115.57	49.45	32.5	7.62	30.49	300	65	P	H
		5856.75	55.86	-54.55	110.41	46.24	32.53	7.62	30.53	300	65	P	H
		5883.16	51.31	-47.93	99.24	41.69	32.56	7.63	30.57	300	65	P	H
		5822	107.94	-	-	98.32	32.46	7.61	30.45	300	65	P	H
		5822	100.42	-	-	90.8	32.46	7.61	30.45	300	65	A	H
		5851.81	64.45	-53.72	118.17	54.82	32.5	7.62	30.49	259	360	P	V
		5856.18	60.07	-50.5	110.57	50.45	32.53	7.62	30.53	259	360	P	V
		5880.31	53.38	-47.98	101.36	43.76	32.56	7.63	30.57	259	360	P	V
		5822	111.47	-	-	101.85	32.46	7.61	30.45	259	360	P	V
		5822	104.15	-	-	94.53	32.46	7.61	30.45	259	360	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 149 5745MHz		11490	43.21	-30.79	74	50.34	39.22	10.63	56.98	160	360	P	H
		11490	43.8	-30.2	74	50.93	39.22	10.63	56.98	160	360	P	V
802.11n HT20 CH 157 5785MHz		11570	44.22	-29.78	74	51.56	39.13	10.68	57.15	160	360	P	H
		11570	42.89	-31.11	74	50.23	39.13	10.68	57.15	160	360	P	V
802.11n HT20 CH 165 5825MHz		11650	42.76	-31.24	74	50.28	39.05	10.72	57.29	160	360	P	H
		11650	43.98	-30.02	74	51.5	39.05	10.72	57.29	160	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 151 5755MHz		5696.2	67.22	-35.28	102.5	58.05	32.2	7.47	30.5	151	16	P	H
		5706.9	67.02	-40.21	107.23	57.78	32.23	7.49	30.48	151	16	P	H
		5725	70.55	-51.75	122.3	61.21	32.27	7.52	30.45	151	16	P	H
		5851.24	58.2	-61.27	119.47	48.57	32.5	7.62	30.49	151	16	P	H
		5868.91	53.63	-53.37	107	44.01	32.53	7.62	30.53	151	16	P	H
		5875.18	51.39	-53.78	105.17	41.77	32.56	7.63	30.57	151	16	P	H
		5752	108.46	-	-	98.98	32.33	7.56	30.41	151	16	P	H
		5752	100.56	-	-	91.08	32.33	7.56	30.41	151	16	A	H
		5689.3	58	-39.41	97.41	48.83	32.2	7.47	30.5	302	21	P	V
		5718.6	61.03	-49.48	110.51	51.69	32.27	7.52	30.45	302	21	P	V
		5722.5	61.57	-55.03	116.6	52.23	32.27	7.52	30.45	302	21	P	V
		5854.28	50.1	-62.44	112.54	40.48	32.53	7.62	30.53	302	21	P	V
		5861.5	54.46	-54.62	109.08	44.84	32.53	7.62	30.53	302	21	P	V
		5879.36	50.14	-51.92	102.06	40.52	32.56	7.63	30.57	302	21	P	V
		5750	102.85	-	-	93.44	32.3	7.54	30.43	302	21	P	V
		5750	95.22	-	-	85.81	32.3	7.54	30.43	302	21	A	V



WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 159 5795MHz		5700	60.58	-44.72	105.3	51.41	32.2	7.47	30.5	198	360	P	H
		5715.7	62.3	-47.4	109.7	53.06	32.23	7.49	30.48	198	360	P	H
		5721.8	61.71	-53.29	115	52.37	32.27	7.52	30.45	198	360	P	H
		5854.66	63.42	-48.25	111.67	53.8	32.53	7.62	30.53	198	360	P	H
		5855.61	57.59	-53.14	110.73	47.97	32.53	7.62	30.53	198	360	P	H
		5878.41	52.9	-49.87	102.77	43.28	32.56	7.63	30.57	198	360	P	H
		5792	107.51	-	-	97.87	32.4	7.6	30.36	198	360	P	H
		5792	100.01	-	-	90.37	32.4	7.6	30.36	198	360	A	H
		5699.3	51.28	-53.5	104.78	42.11	32.2	7.47	30.5	311	29	P	V
		5716.3	57.82	-52.05	109.87	48.58	32.23	7.49	30.48	311	29	P	V
		5720.7	58.55	-53.95	112.5	49.21	32.27	7.52	30.45	311	29	P	V
		5852.76	56.15	-59.86	116.01	46.52	32.5	7.62	30.49	311	29	P	V
		5856.37	53.7	-56.82	110.52	44.08	32.53	7.62	30.53	311	29	P	V
		5881.64	55.86	-44.51	100.37	46.24	32.56	7.63	30.57	311	29	P	V
		5798	102.77	-	-	93.13	32.4	7.6	30.36	311	29	P	V
		5798	95.13	-	-	85.49	32.4	7.6	30.36	311	29	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 151 5755MHz		11510	43.18	-30.82	74	50.35	39.21	10.64	57.02	100	360	P	H
		11510	43.86	-30.14	74	51.03	39.21	10.64	57.02	100	360	P	V
802.11n HT40 CH 159 5795MHz		11590	45.24	-28.76	74	52.63	39.11	10.69	57.19	100	360	P	H
		11590	45.07	-28.93	74	52.46	39.11	10.69	57.19	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 155 5775MHz		5695.1	59.01	-42.68	101.69	49.84	32.2	7.47	30.5	294	299	P	H
		5719.3	62.3	-48.4	110.7	52.96	32.27	7.52	30.45	294	299	P	H
		5724.1	64.55	-55.7	120.25	55.21	32.27	7.52	30.45	294	299	P	H
		5852.38	59.36	-57.51	116.87	49.73	32.5	7.62	30.49	294	299	P	H
		5857.13	56.72	-53.58	110.3	47.1	32.53	7.62	30.53	294	299	P	H
		5884.11	54.01	-44.53	98.54	44.39	32.56	7.63	30.57	294	299	P	H
		5764	100.17	-	-	90.69	32.33	7.56	30.41	294	299	P	H
		5764	93.24	-	-	83.76	32.33	7.56	30.41	294	299	A	H
		5695	62.99	-38.62	101.61	53.82	32.2	7.47	30.5	243	360	P	V
		5713.4	66.12	-42.93	109.05	56.88	32.23	7.49	30.48	243	360	P	V
		5720.4	66.78	-45.03	111.81	57.44	32.27	7.52	30.45	243	360	P	V
		5850.29	62.6	-59.04	121.64	52.97	32.5	7.62	30.49	243	360	P	V
		5859.22	61.46	-48.26	109.72	51.84	32.53	7.62	30.53	243	360	P	V
		5878.79	57.33	-45.15	102.48	47.71	32.56	7.63	30.57	243	360	P	V
		5768	103.01	-	-	93.53	32.33	7.56	30.41	243	360	P	V
		5768	95.85	-	-	86.37	32.33	7.56	30.41	243	360	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 4 5725~5850MHz****WIFI 802.11ac VHT80 (Harmonic @ 3m)**

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 155 5775MHz		11550	45.09	-28.91	74	52.39	39.15	10.67	57.12	100	360	P	H
		11550	44.36	-29.64	74	51.66	39.15	10.67	57.12	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 4 5725~5850MHz****Note symbol**

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	P eak or A verage
H/V	H orizontal or V ertical



A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Level(dBμV/m) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

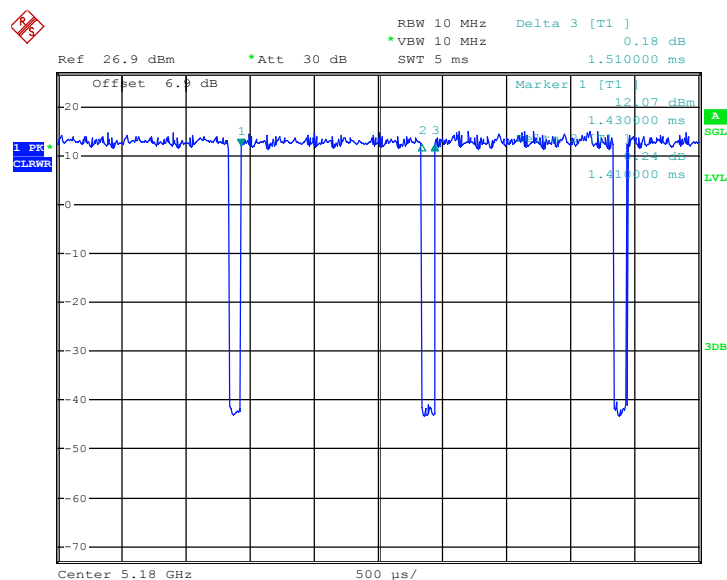
Both peak and average measured complies with the limit line, so test result is “PASS”.

Appendix C. Duty Cycle Plots

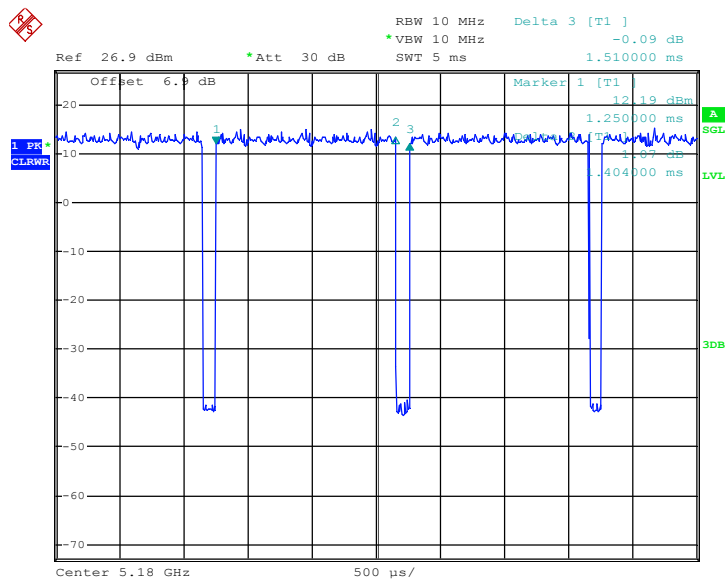
Antenna	Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
1	802.11a	93.38	1.41	0.71	1kHz
2	802.11a	92.98	1.40	0.71	1kHz
1+2	802.11n HT20	93.48	1.32	0.76	1kHz
1+2	802.11n HT40	86.67	0.65	1.54	3kHz
1+2	802.11ac VHT80	65.73	0.19	5.32	10kHz

<Ant.1>

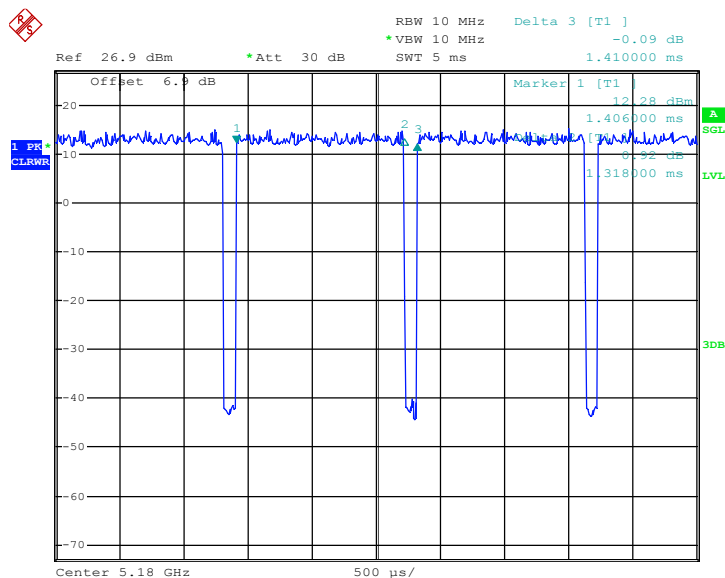
802.11a



Date: 5.DEC.2016 21:25:19

<Ant.2>
802.11a


Date: 5.DEC.2016 21:40:08

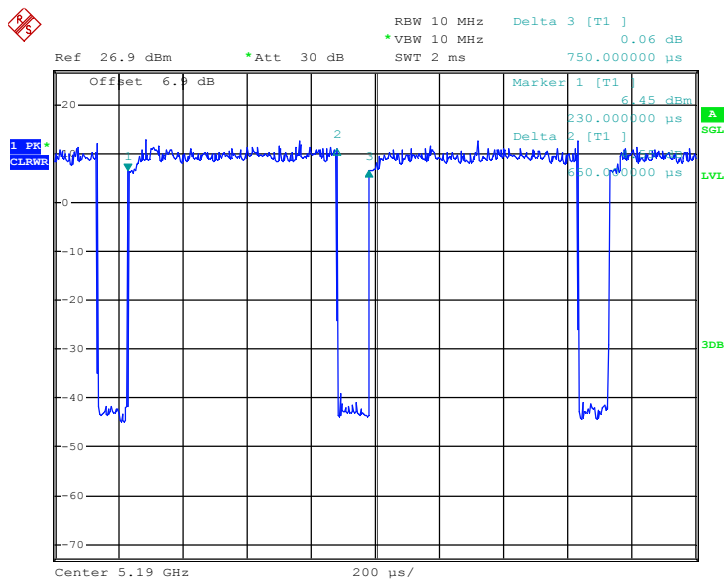
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802.11n HT20


Date: 6.DEC.2016 00:25:43



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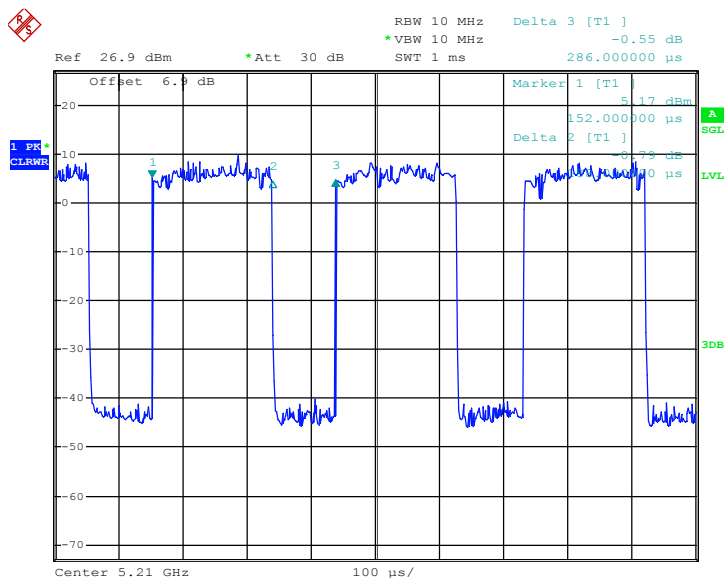
802.11n HT40



Date: 6.DEC.2016 00:26:55

<Ant.1+2>

802.11ac VHT80



Date: 6.DEC.2016 00:20:57