FCC Test Report

Product Name	MOBILE DATA TERMINAL
Model No	MT7010
FCC ID	2ABTU-MT7010

Applicant	RuggON Corporation
Address	4F, No. 298, Yang Guang St. Neihu Dist., Taipei City, Taiwan

Date of Receipt	Aug. 29, 2017
Issued Date	Oct. 23, 2017
Report No.	1780508R-RFUSP12V00-A
Report Version	V1.0

Test Report

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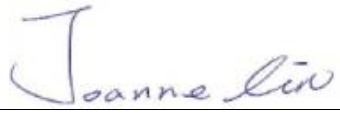
Product Name	MOBILE DATA TERMINAL
Applicant	RuggON Corporation
Address	4F, No. 298, Yang Guang St. Neihu Dist., Taipei City, Taiwan
Manufacturer	RuggON Corporation
Model No.	MT7010
FCC ID.	2ABTU-MT7010
EUT Rated Voltage	DC 9-36V
EUT Test Voltage	DC 12V
Trade Name	RuggON
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E: 2016 ANSI C63.4: 2014, ANSI C63.10: 2013 789033 D02 General UNII Test Procedures New Rules v01 r04
Test Result	Complied

Documented By : 

(Senior Adm. Specialist / Joanne Lin)

Tested By : 

(Engineer / Anson Lu)

Approved By : 

(Director / Vincent Lin)

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Attachment 1: EUT Test Photographs
Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	MOBILE DATA TERMINAL
Trade Name	RuggON
FCC ID.	2ABTU-MT7010
Model No.	MT7010
Frequency Range	802.11a/n-20MHz: 5180-5320MHz, 5500-5700MHz, 5745-5825MHz 802.11n-40MHz: 5190-5310MHz, 5510-5670MHz, 5755-5795MHz
Number of Channels	802.11a/n-20MHz: 24 802.11n-40MHz: 11
Data Rate	802.11a: 6 - 54Mbps 802.11n: up to 150Mbps
Channel Control	Auto
Type of Modulation	802.11a/n: OFDM, BPSK, QPSK, 16QAM, 64QAM
Antenna type	PIFA Antenna
Antenna Gain	Refer to the table “Antenna List”

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	Anjie	MT7010	PIFA Antenna	3.85dBi For 5.15~5.25GHz 3.85dBi For 5.25~5.35GHz 3.39dBi For 5.47~5.725GHz 4.18dBi For 5.725~5.825GHz

Note:

1. The antenna of EUT is conform to FCC 15.203.
2. Only the higher gain antenna was tested and recorded in this report

802.11a/n-20MHz Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 36:	5180 MHz	Channel 40:	5200 MHz	Channel 44:	5220 MHz	Channel 48:	5240 MHz
Channel 52:	5260 MHz	Channel 56:	5280 MHz	Channel 60:	5300 MHz	Channel 64:	5320 MHz
Channel 100:	5500 MHz	Channel 104:	5520 MHz	Channel 108:	5540 MHz	Channel 112:	5560 MHz
Channel 116:	5580 MHz	Channel 120:	5600 MHz	Channel 124:	5620 MHz	Channel 128:	5640 MHz
Channel 132:	5660 MHz	Channel 136:	5680 MHz	Channel 140:	5700 MHz	Channel 149:	5745 MHz
Channel 153:	5765 MHz	Channel 157:	5785 MHz	Channel 161:	5805 MHz	Channel 165:	5825 MHz

802.11n-40MHz Center Working Frequency of Each Channel:

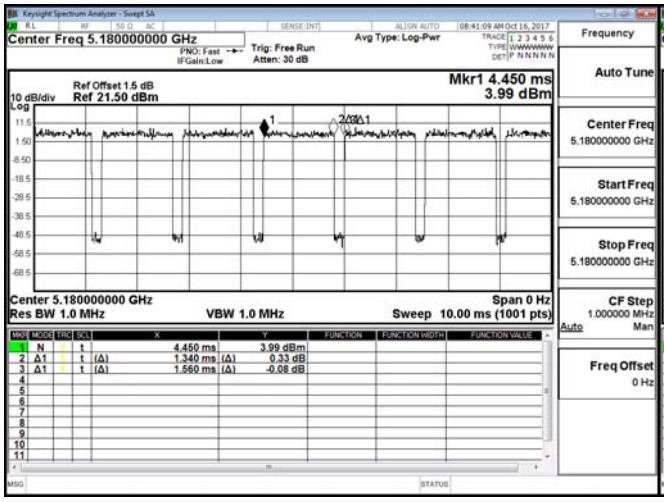
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 38:	5190 MHz	Channel 46:	5230 MHz	Channel 54:	5270 MHz	Channel 62:	5310 MHz
Channel 102:	5510 MHz	Channel 110:	5550 MHz	Channel 118:	5590 MHz	Channel 126:	5630 MHz
Channel 134:	5670 MHz	Channel 151:	5755 MHz	Channel 159:	5795 MHz		

Duty Cycle:

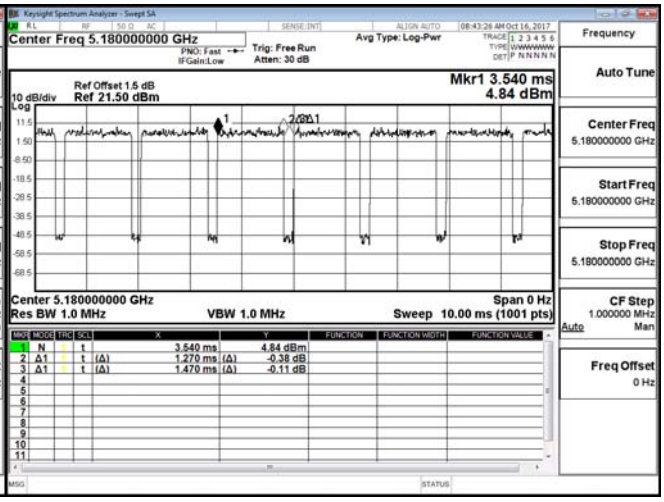
802.11a	0.8590
802.11n-20	0.8639
802.11n-40	0.7108

*Duty cycle = Ton / (Ton + Toff)

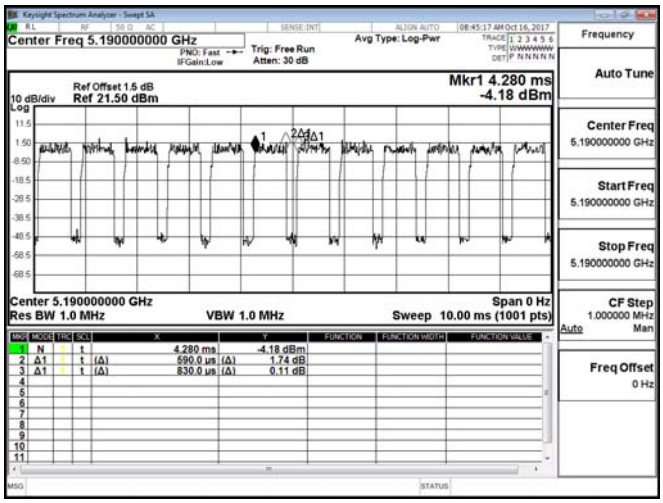
802.11a:



802.11n-20:



802.11n-40:



Note:

1. This device is a MOBILE DATA TERMINAL with a built-in 802.11a/b/g/n WLAN、Bluetooth V4.1, V2.1+EDR transceiver, this report for 5GHz WLAN.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. At result of pretests, module supports dual-channel transmission, only the worst case is shown in the report.
4. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report.
5. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart E for Unlicensed National Information Infrastructure devices.
6. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

Test Mode	Mode 1: Transmit (802.11a-6Mbps) Mode 2: Transmit (802.11n-20BW 7.2Mbps) Mode 3: Transmit (802.11n-40BW 15Mbps)

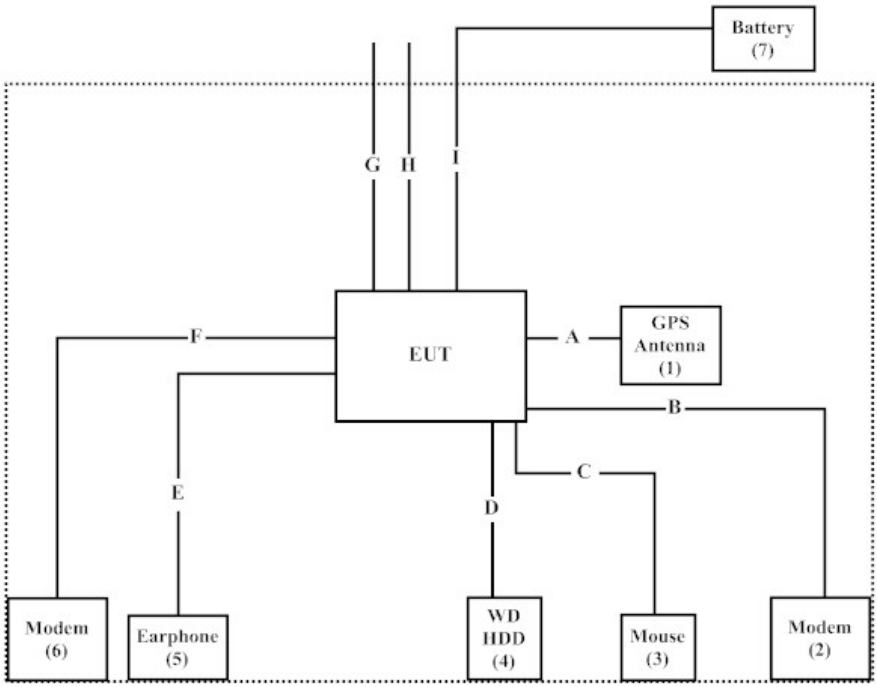
1.3. Tested System Datails

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	GPS Antenna	N/A	N/A	N/A	N/A
2	Modem	ACEEX	DM-1414	0102027550	Non-Shielded, 1.8m
3	Mouse	Logitech	M-SBM96B	810-000439	N/A
4	WD HDD 2.5	Western Digital	WD1200BEVS	WXE108L30036	Non-Shielded, 1.8m With Core*1
5	Earphone	Dr.AV	CD-806B	N/A	N/A
6	Modem	ACEEX	DM-1414	0102027533	Non-Shielded, 1.8m
7	DC 12V Battery	TRANE	12B50PE	N/A	N/A

Signal Cable Type		Signal cable Description
A	Signal Cable	Non-Shielded, 1.3m
B	Signal Cable	Non-Shielded, 1.2m
C	Signal Cable	Non-Shielded, 1.8m
D	USB Cable	Non-Shielded, 0.4m
E	Signal Cable	Non-Shielded, 1.8m
F	Signal Cable	Non-Shielded, 1.2m
G	Signal Cable	Non-Shielded, 0.7m
H	Network Cable	Non-Shielded, 1.8m
I	Signal Cable	Non-Shielded, 1.5m

1.4. Configuration of tested System



1.5. EUT Exercise Software

1. Setup the EUT as shown in Section 1.4.
2. Execute software “RF Test V3.10.49” on the EUT.
3. Configure the test mode, the test channel, and the data rate.
4. Press “OK” to start the continuous Transmit.
5. Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from DEKRA Testing and Certification Co., Ltd. Web Site:
http://www.dekra.com.tw/english/about/certificates.aspx?bval=5
The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site: http://www.dekra.com.tw/index_en.aspx

Site Description: Accredited by TAF
Accredited Number: 3023

Site Name: DEKRA Testing and Certification Co., Ltd
Site Address: No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan, R.O.C.
TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : info.tw@dekra.com

FCC Accreditation Number: TW3023

1.7. List of Test Equipment

For Conducted measurements / CB3 / SR8

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Date	Due. Date
	Temperature Chamber	WIT GROUP	TH-1S-B	EQ-201-00146	2016/11/28	2017/11/27
X	Spectrum Analyzer	Agilent	N9010A	MY48030495	2017/7/22	2018/7/21
X	Power Meter	Anritsu	ML2495A	6K00003357	2017/6/23	2018/6/22
X	Pulse power sensor	Anritsu	MA2411B	0846193	2017/6/23	2018/6/22
X	EMI Test Receiver	R&S	ESCS 30	100369	2017/10/13	2018/10/12
X	LISN	R&S	ESH3-Z5	836679/017	2017/1/7	2018/1/6
X	LISN	R&S	ENV216	100097	2017/1/7	2018/1/6
X	Coaxial Cable	QTK(Arnist)	RG 400	LC018-RG	2017/6/25	2018/6/24

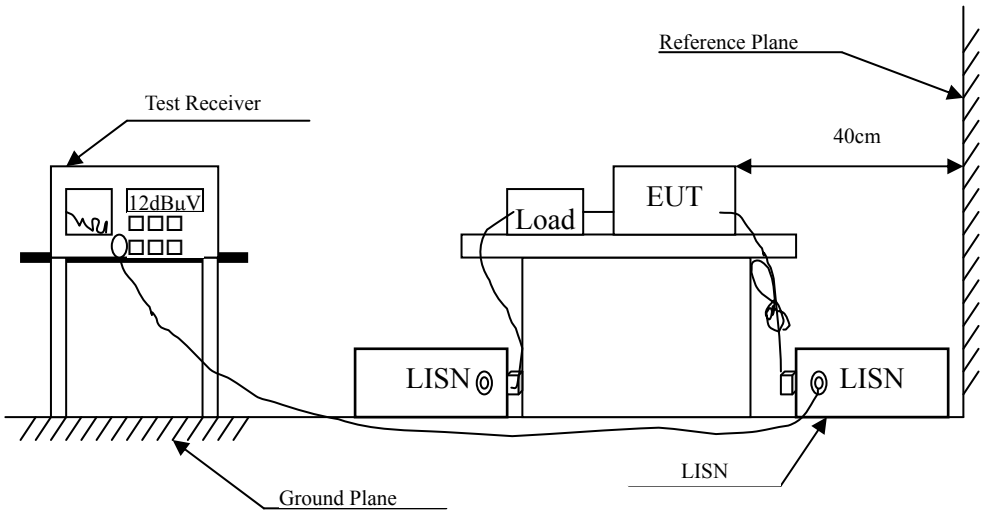
For Radiated measurements / Site3 / CB8

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Date	Due. Date
X	Spectrum Analyzer	R&S	FSP40	100170	2017/1/5	2018/1/4
X	Loop Antenna	Teseq	HLA6121	37133	2017/3/18	2018/3/17
X	Bi-Log Antenna	Schaffner Chase	CBL6112B	2707	2017/6/11	2018/6/10
X	Horn Antenna	ETS-Lindgren	3117	00135205	2017/4/6	2018/4/5
X	Horn Antenna	Schwarzbeck	BBHA9170	9170430	2017/1/11	2018/1/10
X	Pre-Amplifier	QTK	AP/0100A	CHM/0901069	2017/6/23	2018/6/22
X	Pre-Amplifier	EMCI	EMC012630SE	980210	2017/1/26	2018/1/24
X	Pre-Amplifier	NARDA WE	DBL-1840N506	013	2017/9/30	2018/9/29
X	Filter	MicroTRON	BRM50701	019	2016/11/2	2017/11/1
X	Filter	Microwave Circuits	N0257881	36681	2016/12/7	2017/12/6
X	EMI Test Receiver	R&S	ESR26	101385	2017/9/29	2018/9/28
X	Coaxial Cable	QTK(Arnist)	SUCOFLEX 106	L1606-015C	2017/6/23	2018/6/22
X	EMI Test Receiver	R&S	ESCS 30	838251/001	2017/7/21	2018/7/20
X	Coaxial Cable	QTK(Arnist)	RG 214	LC003-RG	2017/6/16	2018/6/15
X	Coaxial signal switch	Anritsu	MP59B	6201415889	2017/6/16	2018/6/15

Note:
1. All equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version :QuieTek EMI 2.0 V2.1.113.

2. Conducted Emission

2.1. Test Setup



2.2. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBµV) Limit		
Frequency MHz	Limits	
	QP	AV
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks : In the above table, the tighter limit applies at the band edges.

2.3. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4:2014 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

The EUT was setup to ANSI C63.4, 2014; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

2.4. Uncertainty

± 2.26 dB

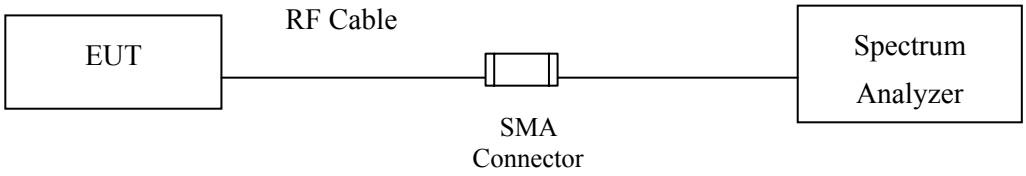
2.5. Test Result of Conducted Emission

Owing to the DC operation of EUT, this test item is not performed.

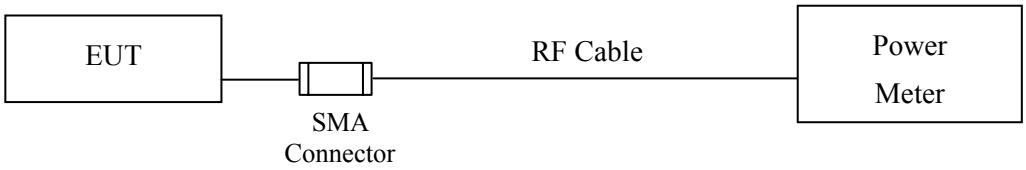
3. Maximun conducted output power

3.1. Test Setup

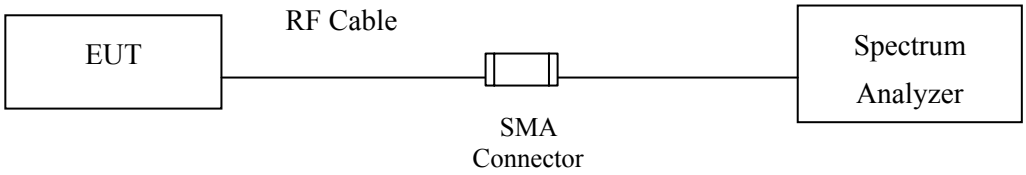
99% Occupied Bandwidth



Conduction Power Measurement (for 802.11an)



Conduction Power Measurement (for 802.11ac)



3.2. Limits

3.2.1. For the band 5.15-5.25 GHz,

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-topoint U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.2.2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.2.3. For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point UNII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

3.3. Test Procedure

As an alternative to FCC KDB-789033, the EUT maximum conducted output power was measured with an average power meter employing a video bandwidth greater the 6dB BW of the emission under test. Maximum conducted output power was read directly from the meter across all data rates, and across three channels within each sub-band. Special care was used to make sure that the EUT was transmitting in continuous mode. This method exceeds the limitations of FCC KDB-789033, and provides more accurate measurements.

802.11an (BW≦40MHz) Maximum conducted output power using KDB 789033 section E)3)b) Method PM-G (Measurement using a gated RF average power meter)
Note: the power meter have a video bandwidth that is greater than or equal to the measurement bandwidth, (Anritsu/ MA2411B video bandwidth: 65MHz)

802.11ac (BW=80MHz) Maximum conducted output power using KDB 789033 section E)2)b) Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep).

When transmitted signals consist of two or more non-contiguous spectrum segments (e.g., 80+80 MHz mode) or when a single spectrum segment of a transmission crosses the boundary between two adjacent U-NII bands, KDB 644545 D03 section D) procedure is used for measurements.

3.4. Uncertainty

± 1.62 dB

3.5. Test Result of Maximum conducted output power

Product : MOBILE DATA TERMINAL
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps)

Cable loss=1dB		Maximum conducted output power							
Channel No.	Frequency (MHz)	Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
		Measurement Level (dBm)							
36	5180	13.15	--	--	--	--	--	--	--
44	5220	13.16	13.08	13.01	12.93	12.86	12.78	12.72	12.65
48	5240	13.27	--	--	--	--	--	--	--
52	5260	13.35	--	--	--	--	--	--	--
60	5300	12.67	12.59	12.52	12.45	12.38	12.31	12.24	12.17
64	5320	12.89	--	--	--	--	--	--	--
100	5500	10.92	--	--	--	--	--	--	--
116	5580	13.01	12.93	12.85	12.79	12.72	12.63	12.55	12.47
140	5700	8.83	--	--	--	--	--	--	--
149	5745	13.16	--	--	--	--	--	--	--
157	5785	12.99	12.91	12.85	12.77	12.68	12.62	12.55	12.49
165	5825	13.35	--	--	--	--	--	--	--

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

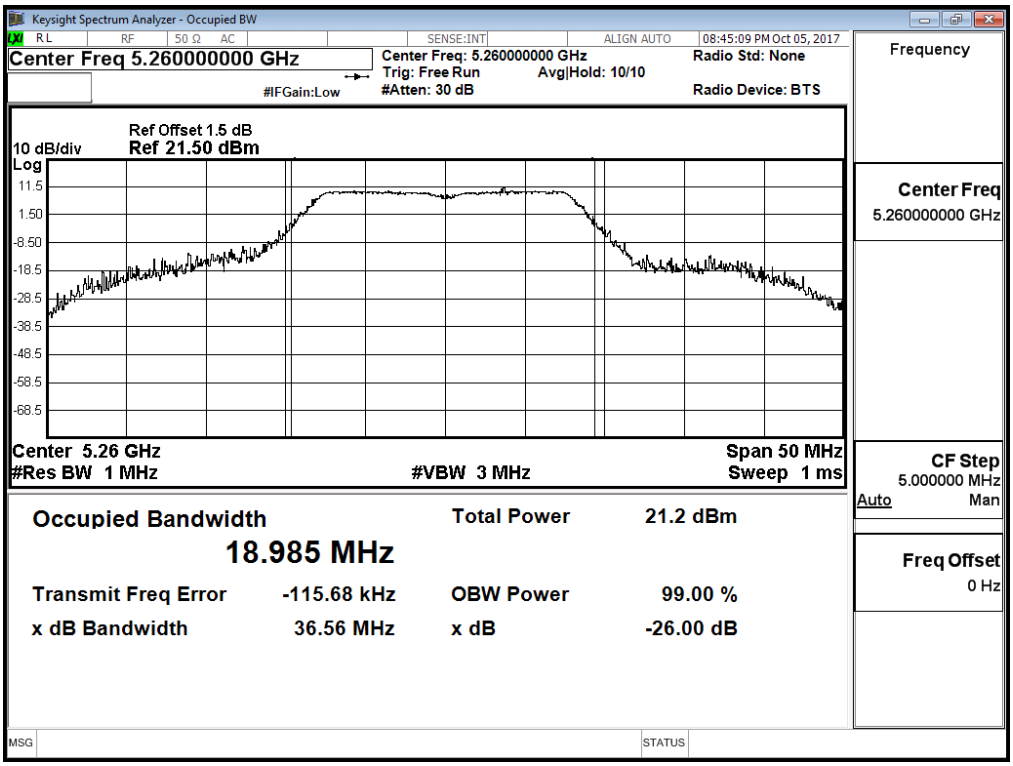
Maximum conducted output power Measurement:

Channel No	Frequency Range (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
36	5180	--	13.15	24	--
44	5220	--	13.16	24	--
48	5240	--	13.27	24	--
52	5260	18.985	13.35	24	23.78
60	5300	18.924	12.67	24	23.77
64	5320	18.876	12.89	24	23.76
100	5500	18.890	10.92	24	23.76
116	5580	19.691	13.01	24	23.94
140	5700	18.807	8.83	24	23.74
149	5745	--	13.16	30	--
157	5785	--	12.99	30	--
165	5825	--	13.35	30	--

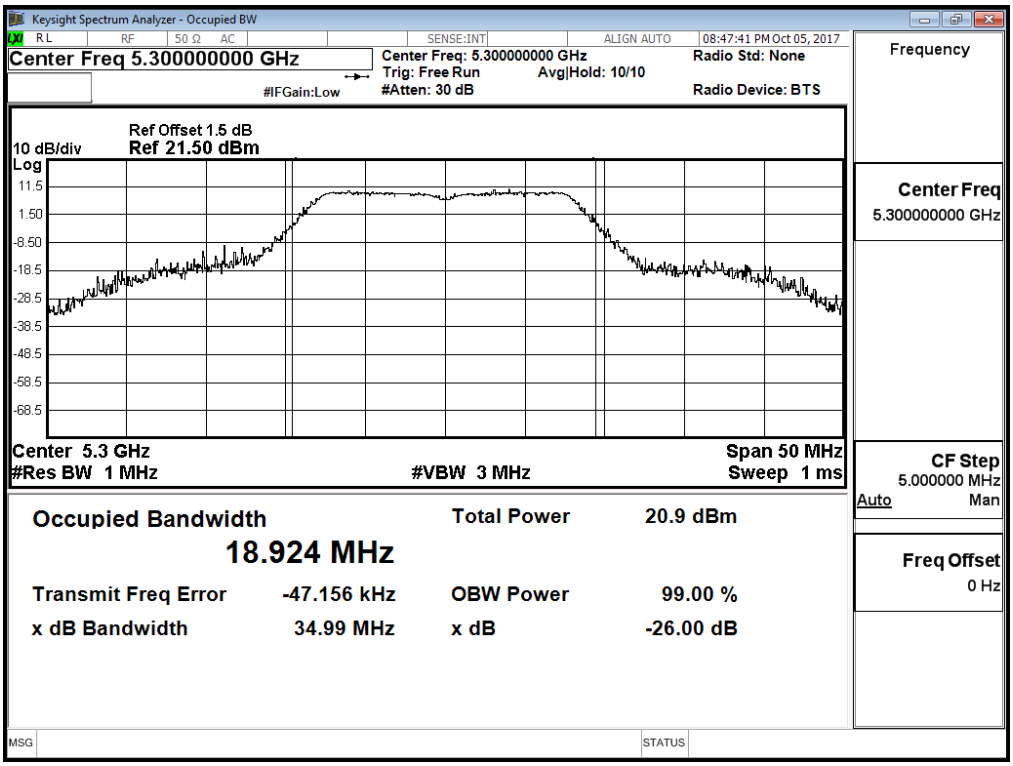
Note: Power Output Value =Reading value on average power meter + cable loss

99% Occupied Bandwidth:

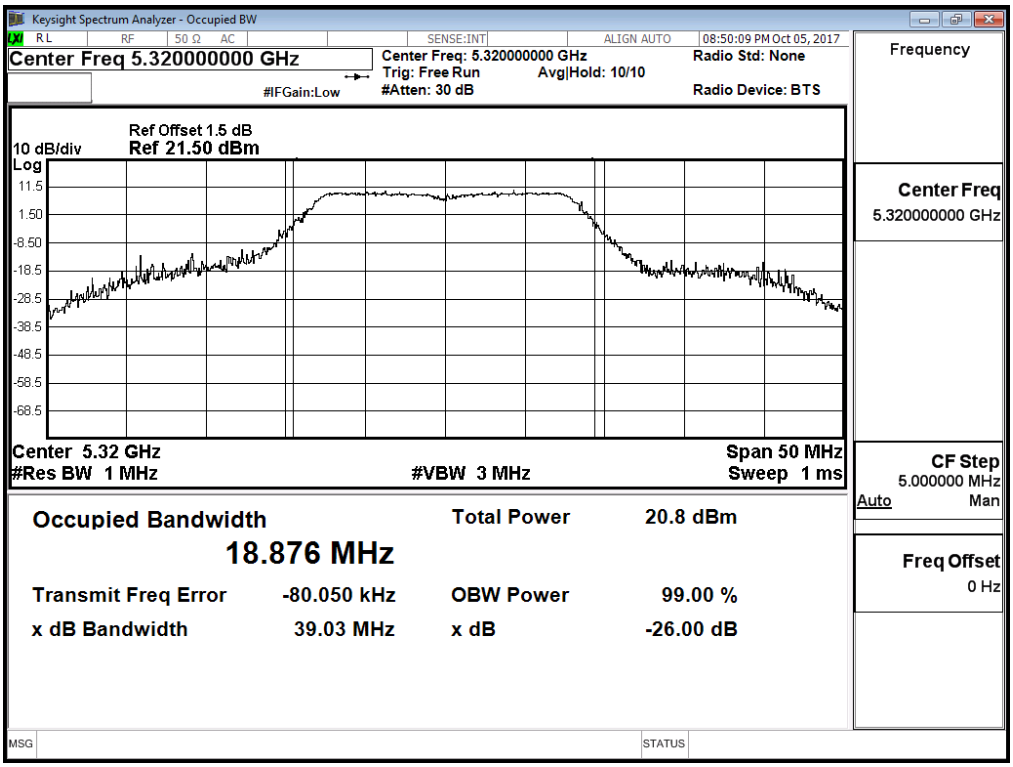
Channel 52:



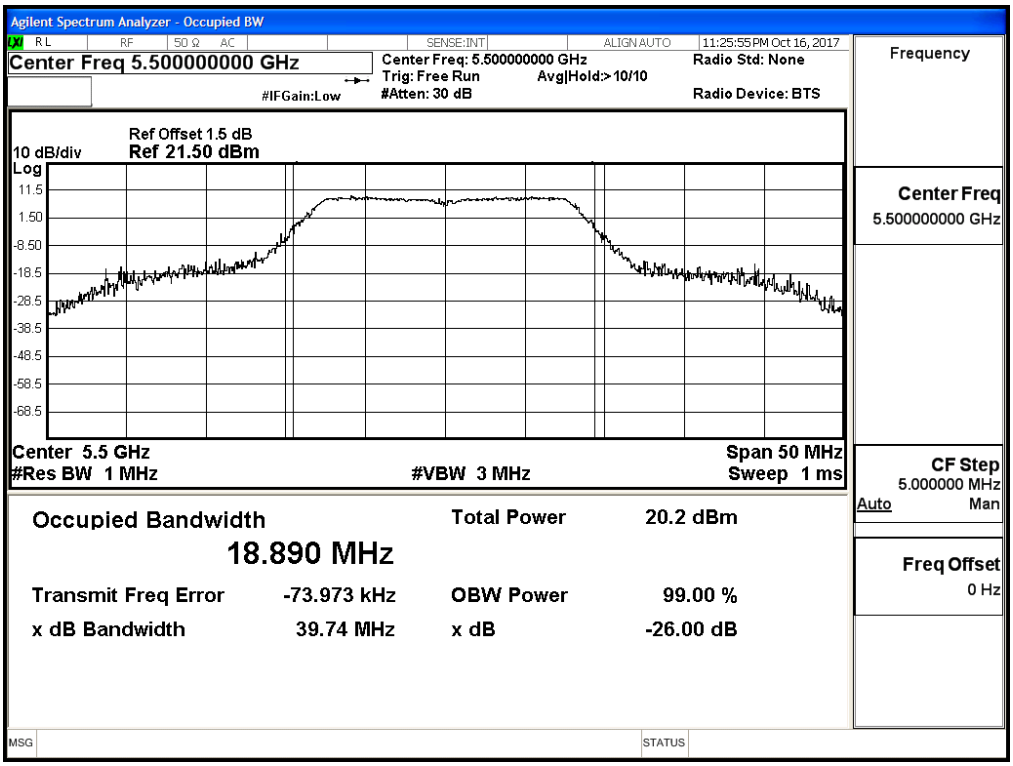
Channel 60:



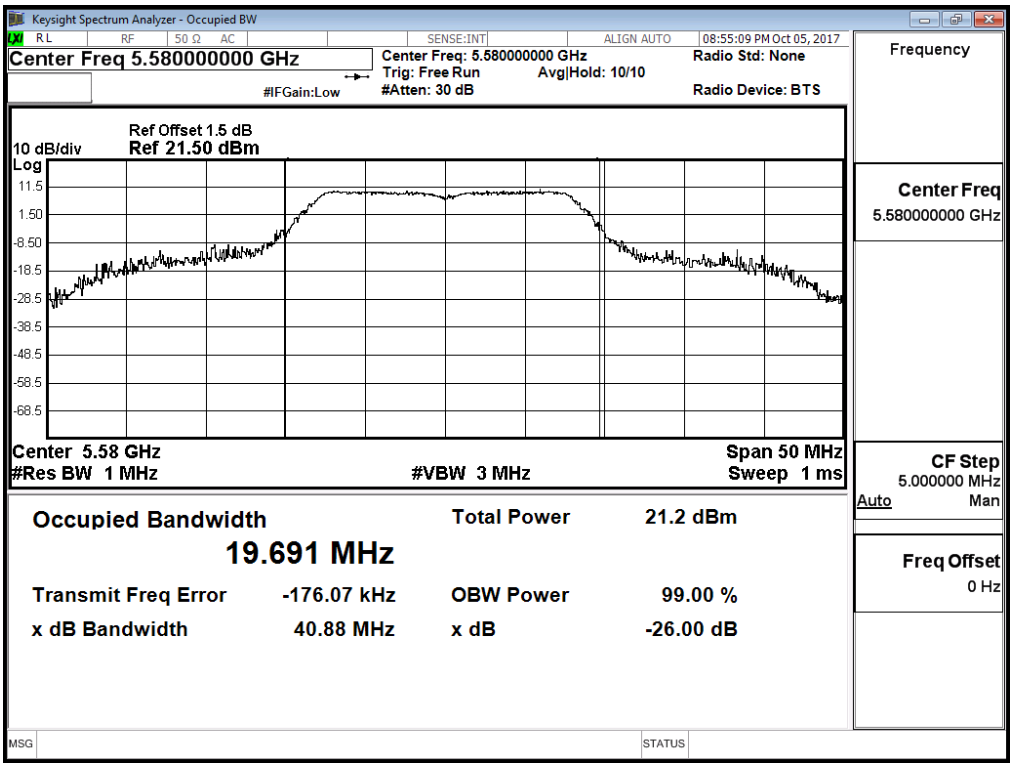
Channel 64:



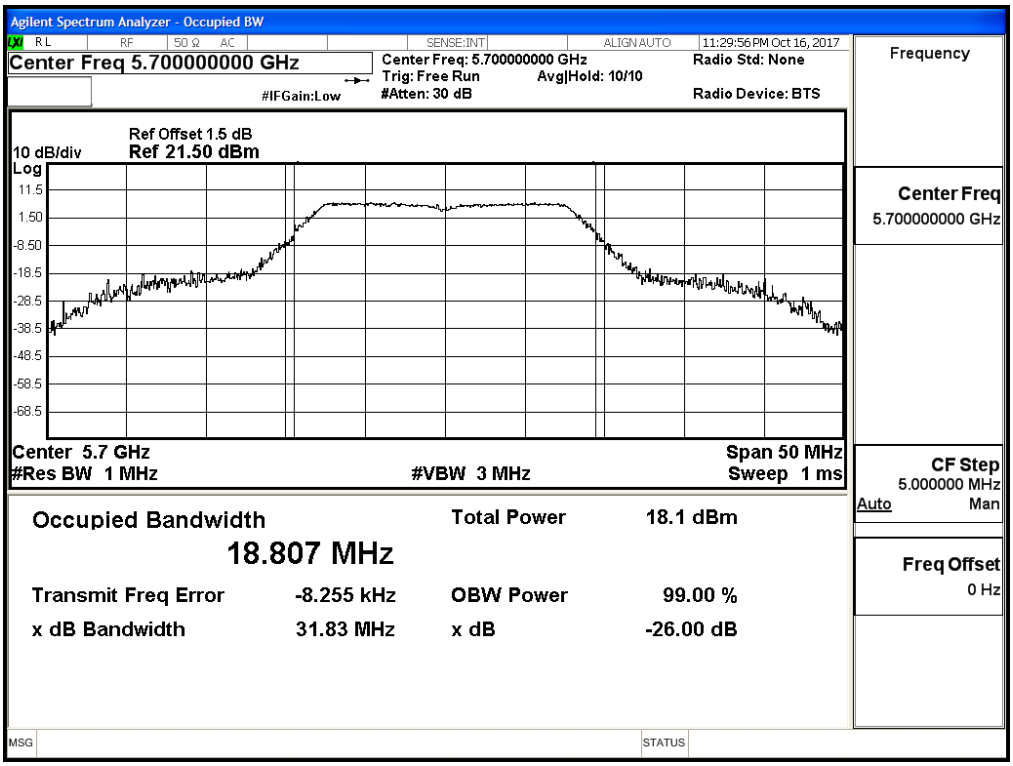
Channel 100:



Channel 116:



Channel 140:



Product : MOBILE DATA TERMINAL
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)

Cable loss=1dB		Maximum conducted output power							
Channel No.	Frequency (MHz)	Data Rate (Mbps)							
		7.2	14.4	21.7	28.9	43.3	57.8	65	72.2
		Measurement Level (dBm)							
36	5180	12.78	--	--	--	--	--	--	--
44	5220	12.74	12.66	12.59	12.51	12.45	12.36	12.29	12.22
48	5240	12.76	--	--	--	--	--	--	--
52	5260	12.82	--	--	--	--	--	--	--
60	5300	12.51	12.45	12.36	12.28	12.21	12.15	12.08	12.01
64	5320	13.33	--	--	--	--	--	--	--
100	5500	10.91	--	--	--	--	--	--	--
116	5580	12.96	12.88	12.81	12.73	12.65	12.58	12.49	12.42
140	5700	8.82	--	--	--	--	--	--	--
149	5745	13.13	--	--	--	--	--	--	--
157	5785	12.95	12.87	12.81	12.73	12.66	12.58	12.49	12.43
165	5825	13.21	--	--	--	--	--	--	--

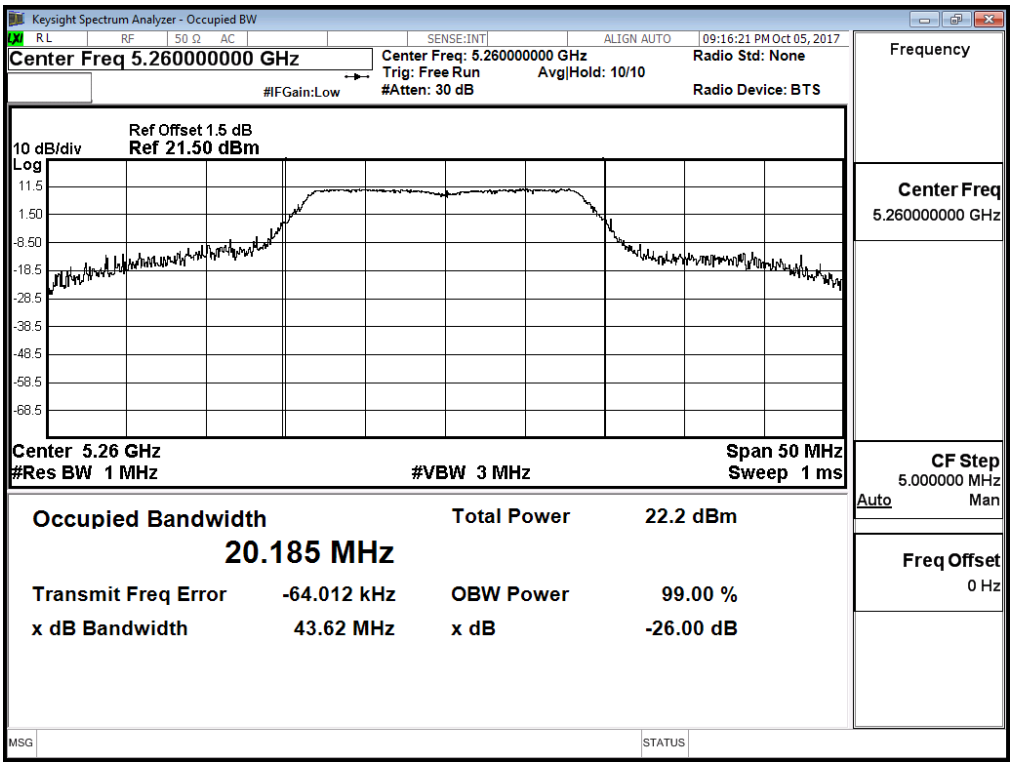
Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

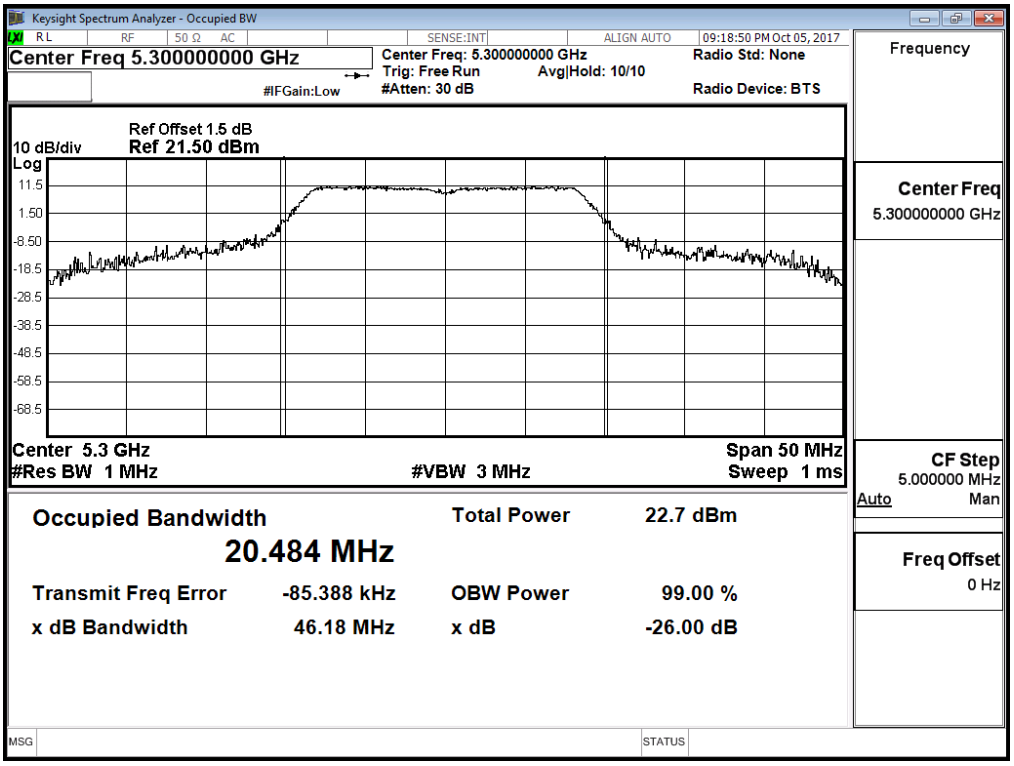
Channel No	Frequency Range (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
36	5180	--	12.78	24	--
44	5220	--	12.74	24	--
48	5240	--	12.76	24	--
52	5260	20.185	12.82	24	24.05
60	5300	20.484	12.51	24	24.11
64	5320	20.481	13.33	24	24.11
100	5500	19.770	10.91	24	23.96
116	5580	20.330	12.96	24	24.08
140	5700	19.493	8.82	24	23.90
149	5745	--	13.13	30	--
157	5785	--	12.95	30	--
165	5825	--	13.21	30	--

Note: Power Output Value =Reading value on average power meter + cable loss

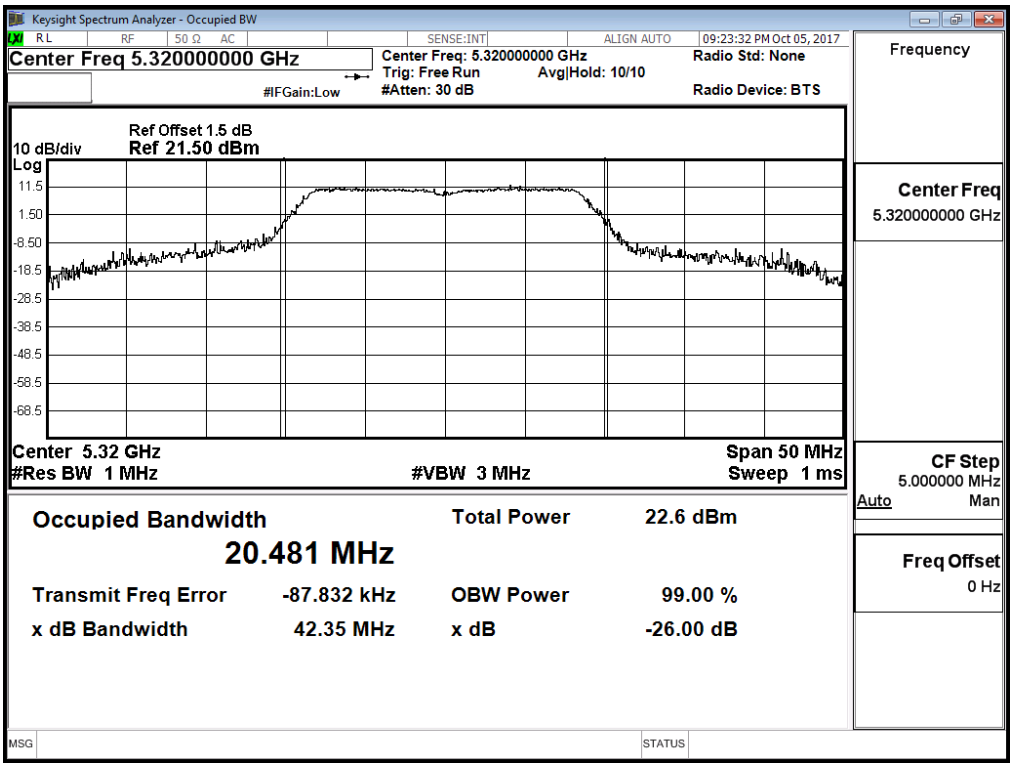
99% Occupied Bandwidth:
Channel 52



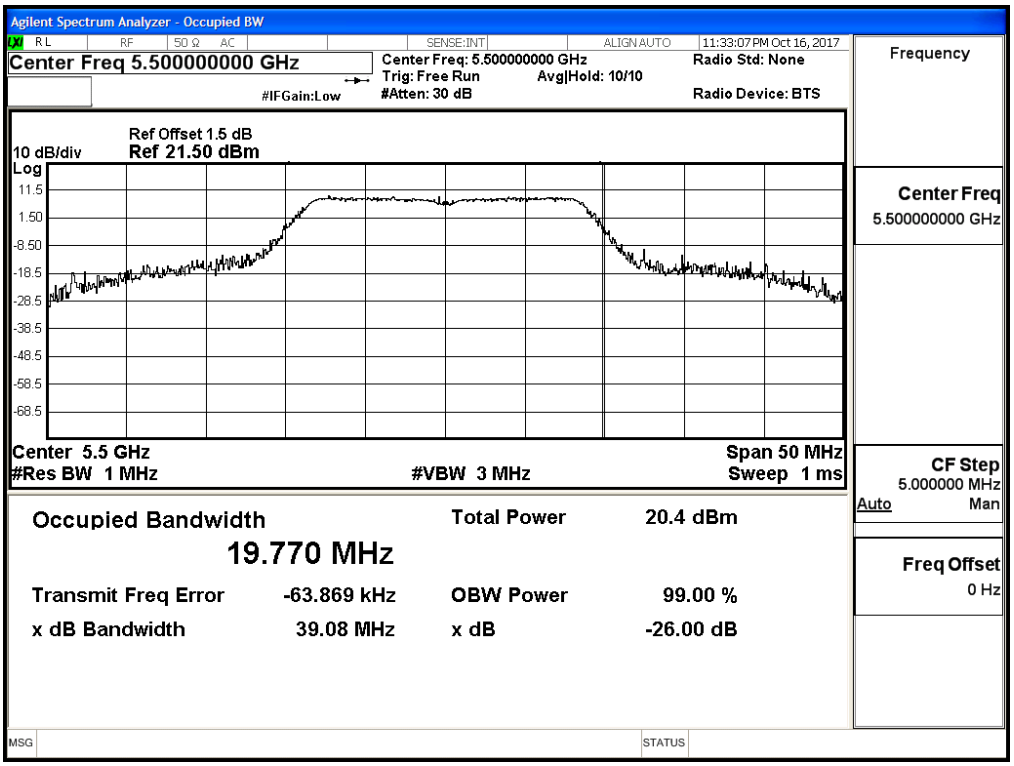
Channel 60



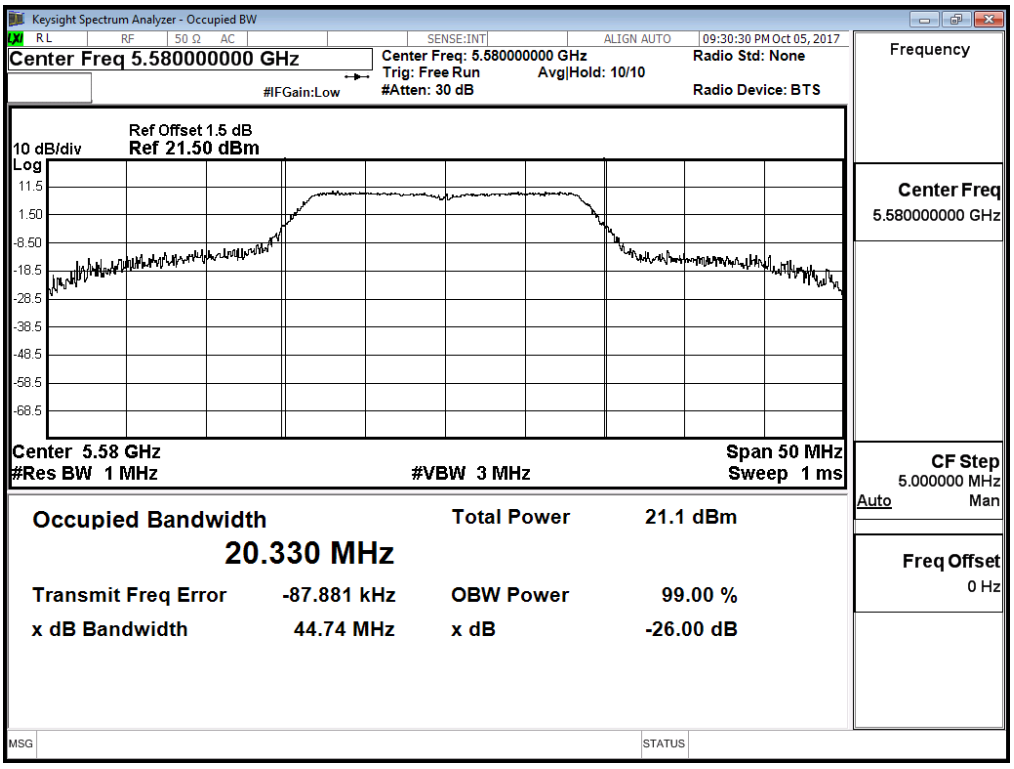
Channel 64



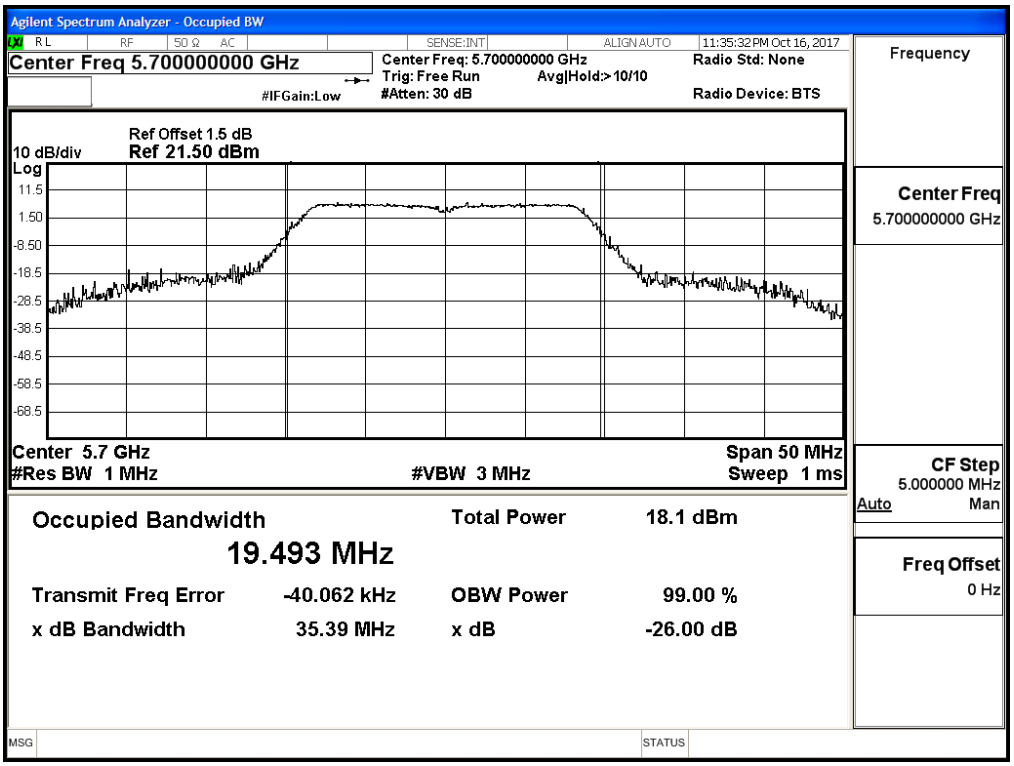
Channel 100



Channel 116



Channel 140



Product : MOBILE DATA TERMINAL
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)

Cable loss=1dB		Maximum conducted output power							
Channel No.	Frequency (MHz)	Data Rate (Mbps)							
		15	30	45	60	90	120	135	150
		Measurement Level (dBm)							
38	5190	7.75	--	--	--	--	--	--	--
46	5230	13.17	13.11	13.03	12.95	12.87	12.78	12.71	12.64
54	5270	12.71	--	--	--	--	--	--	--
62	5310	7.71	7.63	7.55	7.46	7.38	7.32	7.25	7.18
102	5510	5.48	--	--	--	--	--	--	--
110	5550	12.98	12.92	12.83	12.77	12.71	12.63	12.55	12.47
134	5670	11.76	--	--	--	--	--	--	--
151	5755	13.41	--	--	--	--	--	--	--
159	5795	12.81	12.73	12.66	12.58	12.51	12.42	12.36	12.28

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

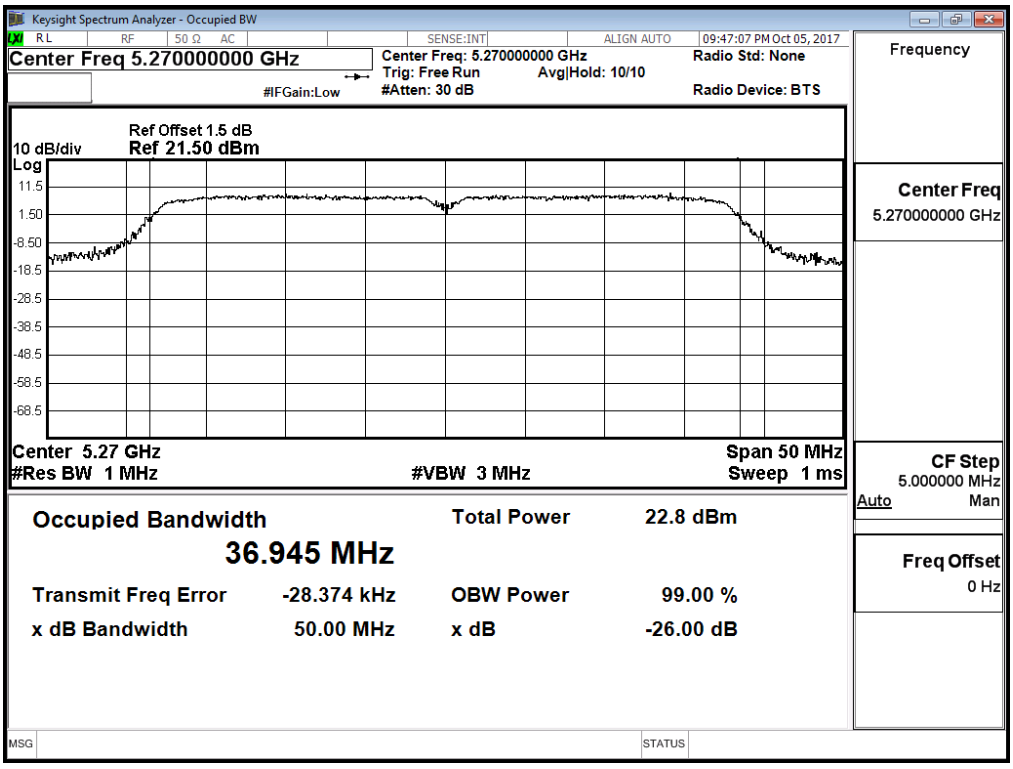
Maximum conducted output power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
38	5190	--	7.75	24	--
46	5230	--	13.17	24	--
54	5270	36.945	12.71	24	26.68
62	5310	36.611	7.71	24	26.64
102	5510	36.754	5.48	24	26.65
110	5550	38.390	12.98	24	26.84
134	5670	38.425	11.76	24	26.85
151	5755	--	13.41	30	--
159	5795	--	12.81	30	--

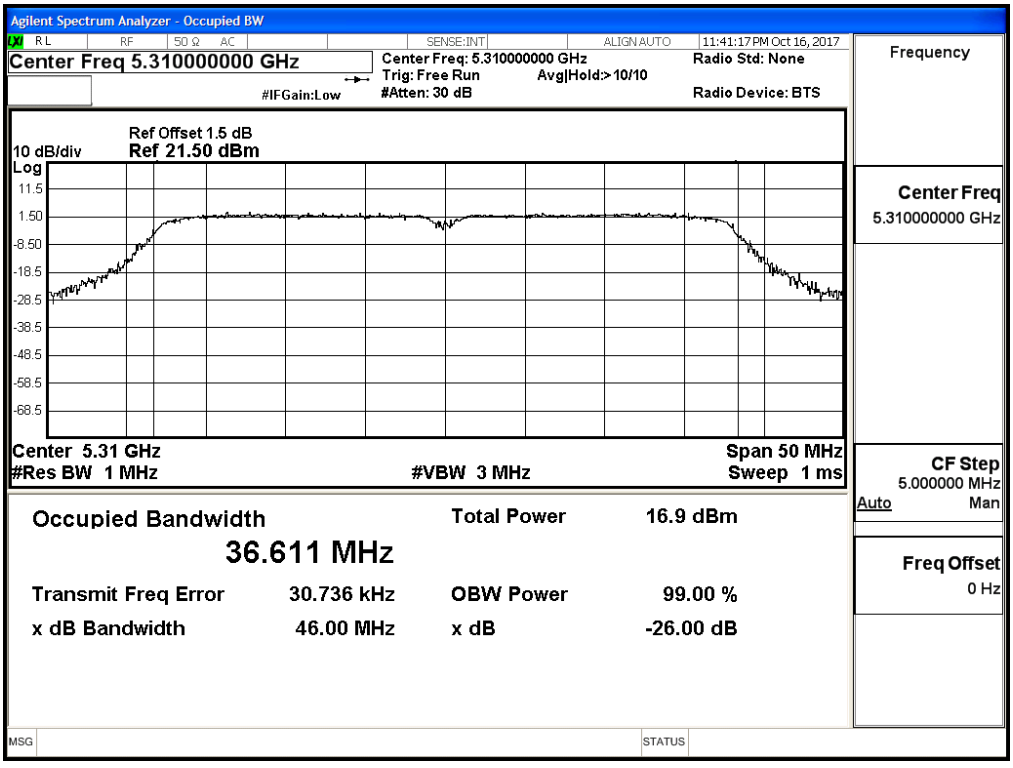
Note: Power Output Value =Reading value on average power meter + cable loss

26dB Occupied Bandwidth:

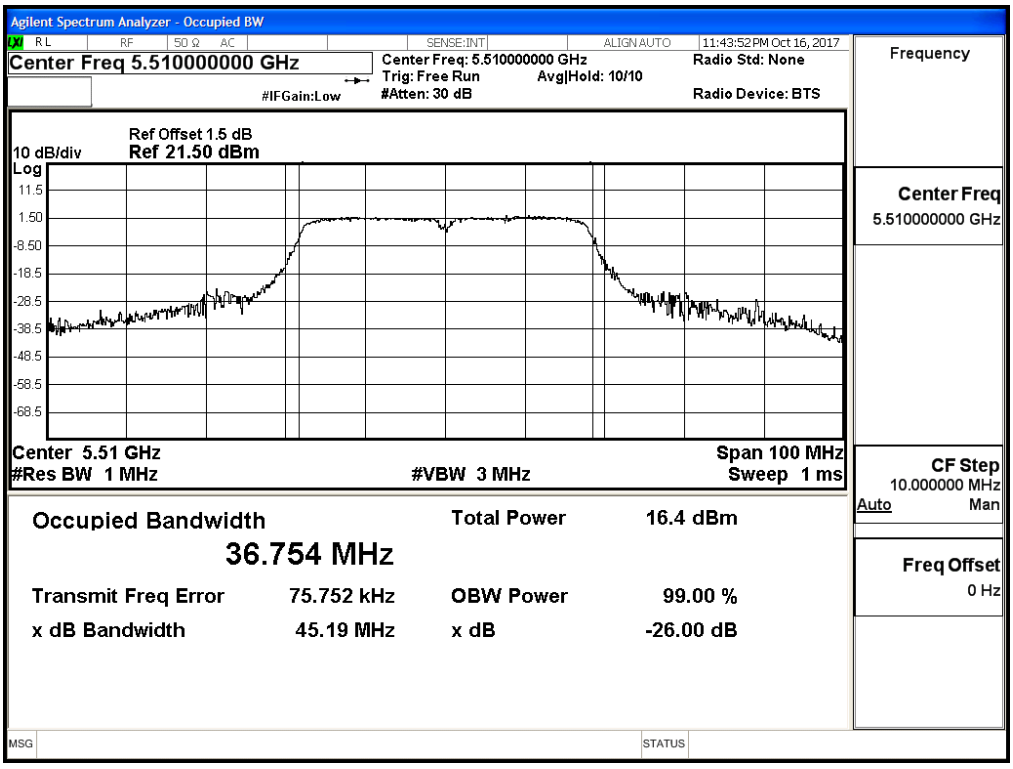
Channel 54



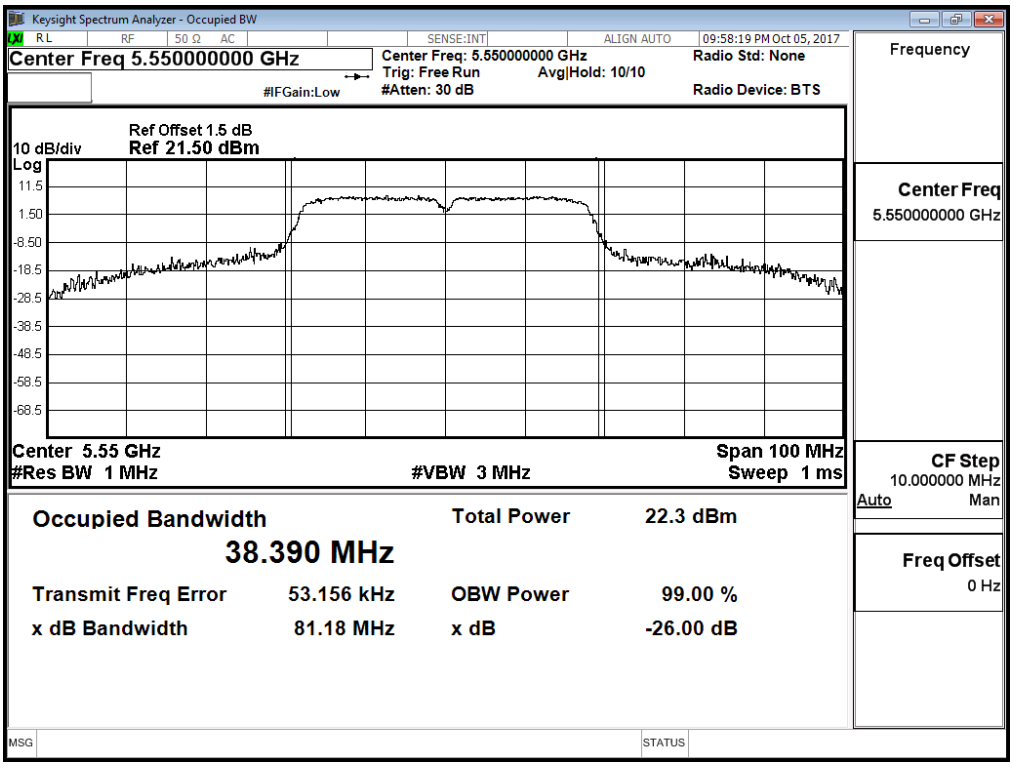
Channel 62



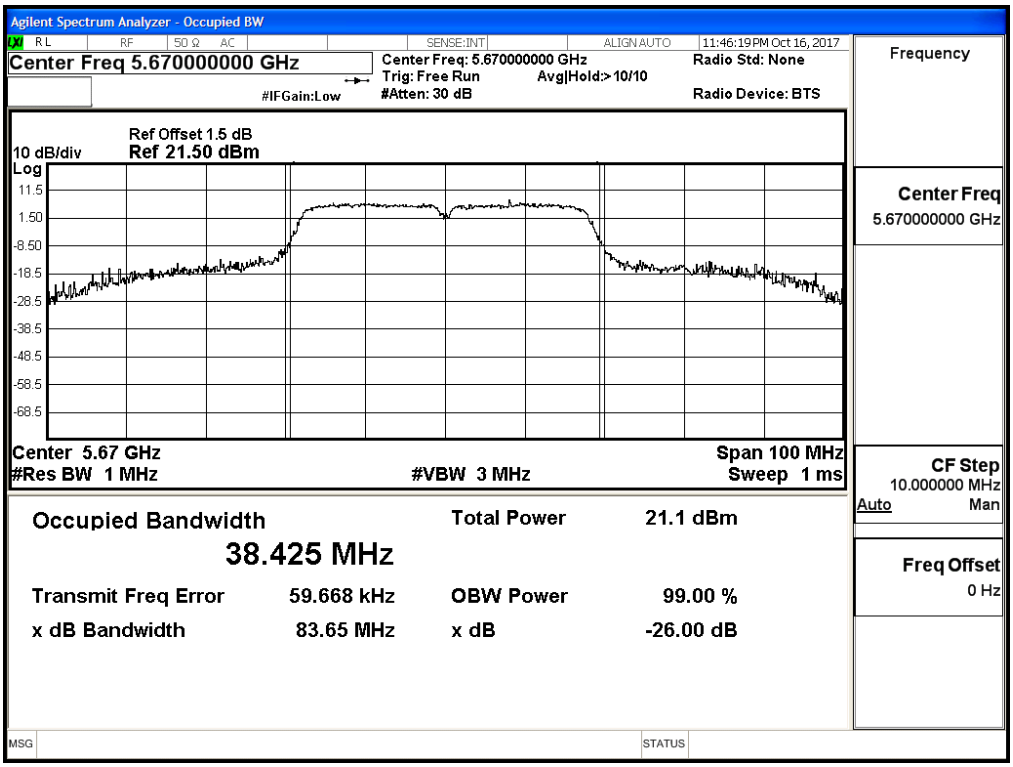
Channel 102



Channel 110

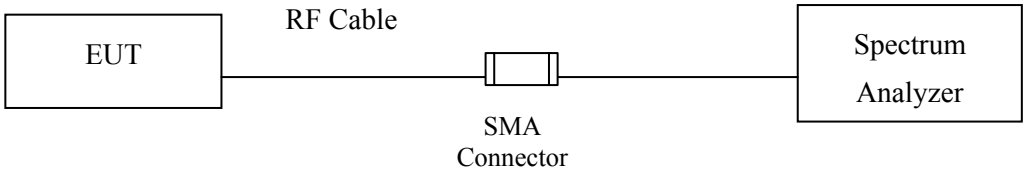


Channel 134


Agilent Spectrum Analyzer - Occupied BW
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:46:19 PM Oct 16, 2017
Center Freq 5.670000000 GHz
Center Freq: 5.670000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 1.5 dB
10 dB/div
Ref 21.50 dBm
Log
11.5
1.50
-8.50
-18.5
-28.5
-38.5
-48.5
-58.5
-68.5
Center Freq
5.670000000 GHz
Center 5.67 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 100 MHz
Sweep 1 ms
CF Step
10.000000 MHz
Auto
Man
Occupied Bandwidth
38.425 MHz
Total Power
21.1 dBm
Freq Offset
0 Hz
Transmit Freq Error
59.668 kHz
OBW Power
99.00 %
x dB Bandwidth
83.65 MHz
x dB
-26.00 dB
MSG
STATUS

4. Peak Power Spectral Density

4.1. Test Setup



4.2. Limits

(1) For the band 5.15-5.25 GHz,

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-topoint U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) 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 maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point UNII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

4.3. Test Procedure

The EUT was setup to ANSI C63.10, 2009; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

The Peak Power Spectral Density using KDB 789033 section F) procedure, Create an average power spectrum for the EUT operating mode being tested by following the instructions in section E)2) for measuring maximum conducted output power using a spectrum analyzer.

SA-1 method is selected to run the test.

For the band 5.725-5.85 GHz, Scale the observed power level to an equivalent value in 500 kHz by adjusting (increase) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log (500 kHz/100 kHz) = 6.98 dB.

4.4. Uncertainty

± 1.62 dB

4.5. Test Result of Peak Power Spectral Density

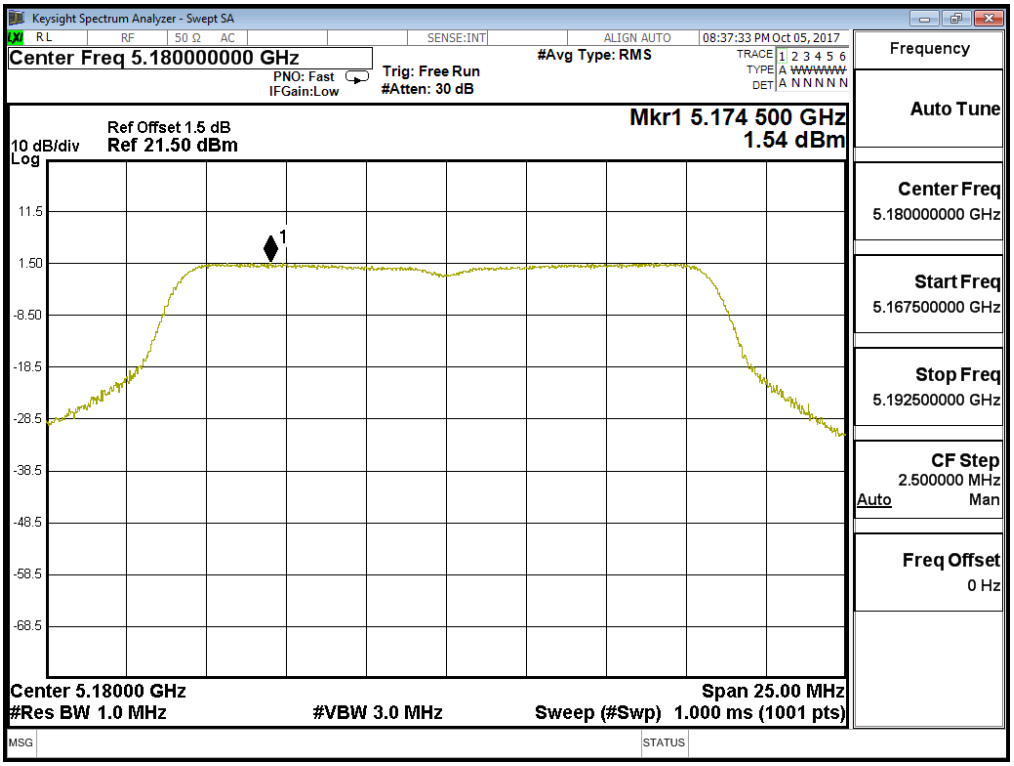
Product : MOBILE DATA TERMINAL
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps)

Channel Number	Frequency (MHz)	Data Rata (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	6	1.540	11	Pass
44	5220	6	1.640	11	Pass
48	5240	6	1.610	11	Pass
52	5260	6	1.670	11	Pass
60	5300	6	1.320	11	Pass
64	5320	6	1.250	11	Pass
100	5500	6	0.700	11	Pass
116	5580	6	1.630	11	Pass
140	5700	6	-1.550	11	Pass

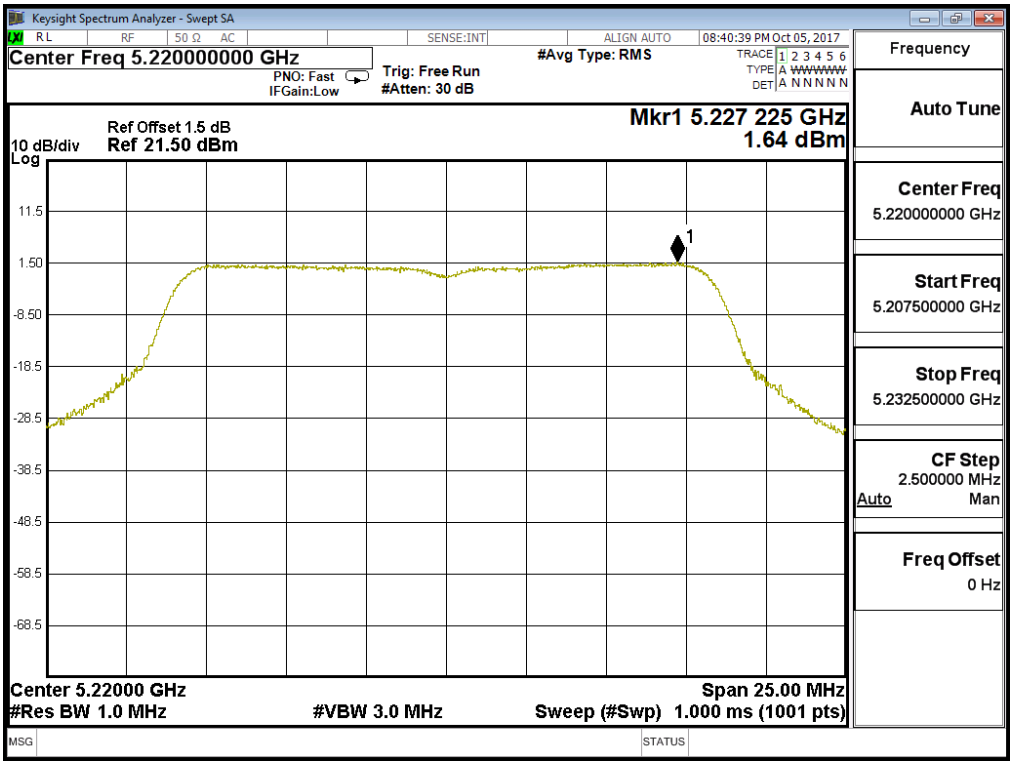
Channel Number	Frequency (MHz)	Data Rata (Mbps)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
149	5745	6	-5.730	6.980	1.250	<30	Pass
157	5785	6	-5.980	6.980	1.000	<30	Pass
165	5825	6	-6.120	6.980	0.860	<30	Pass

Note: Total PPSD Value = PPSD value + BWCF.

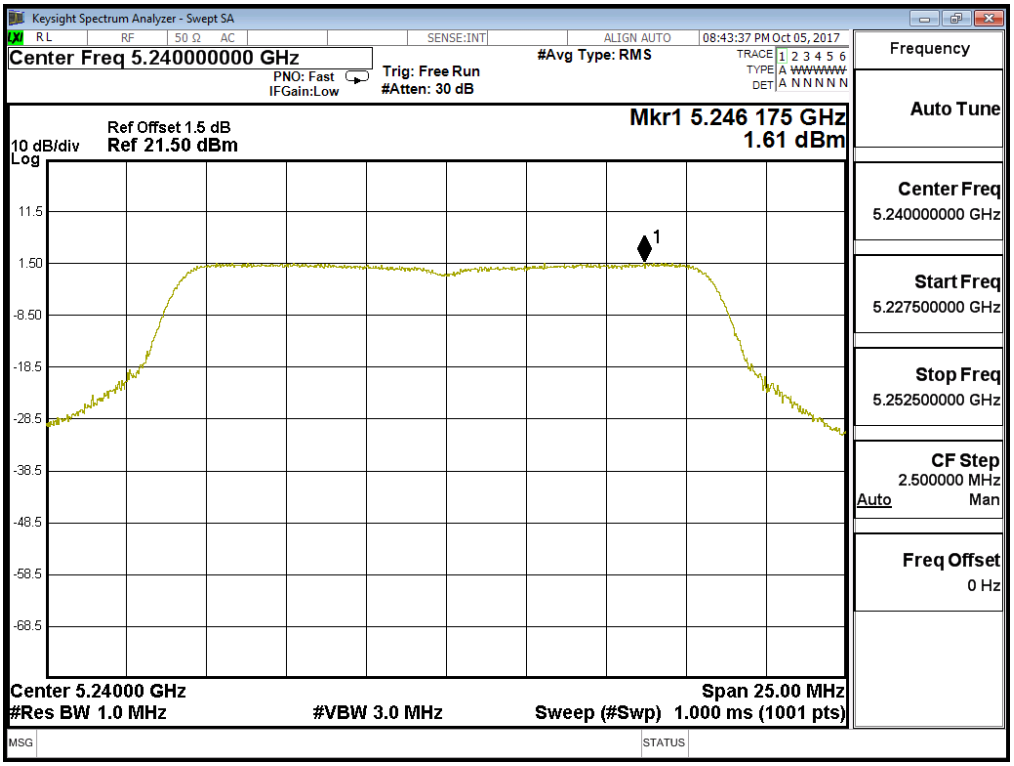
Channel 36:



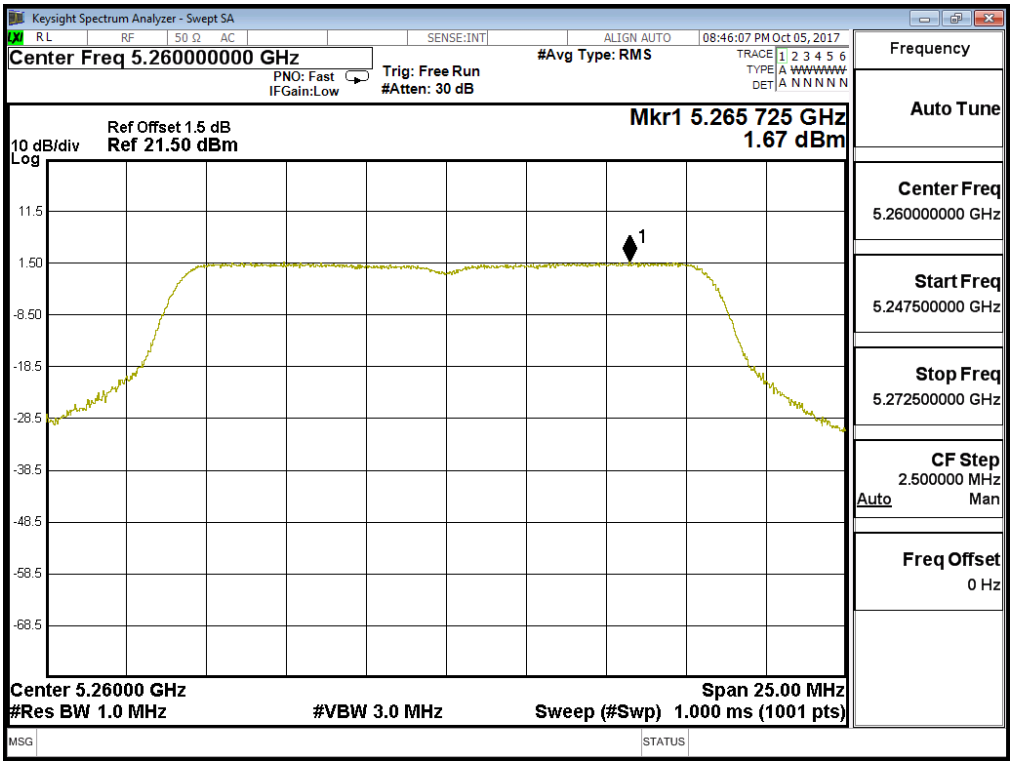
Channel 44:



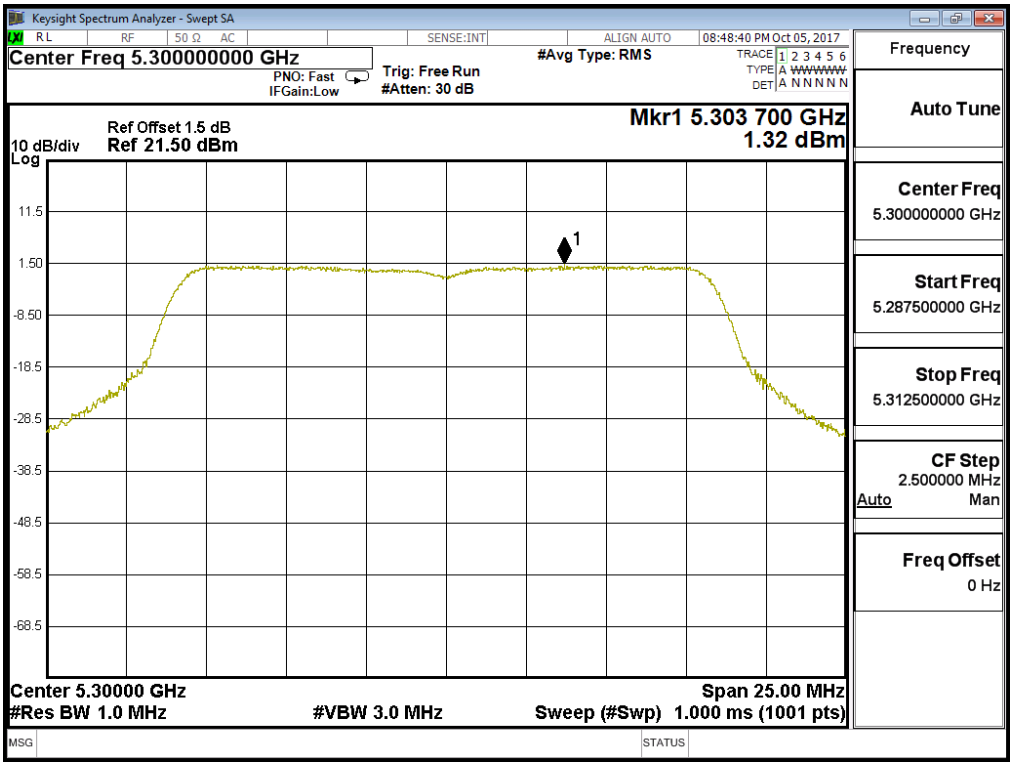
Channel 48:



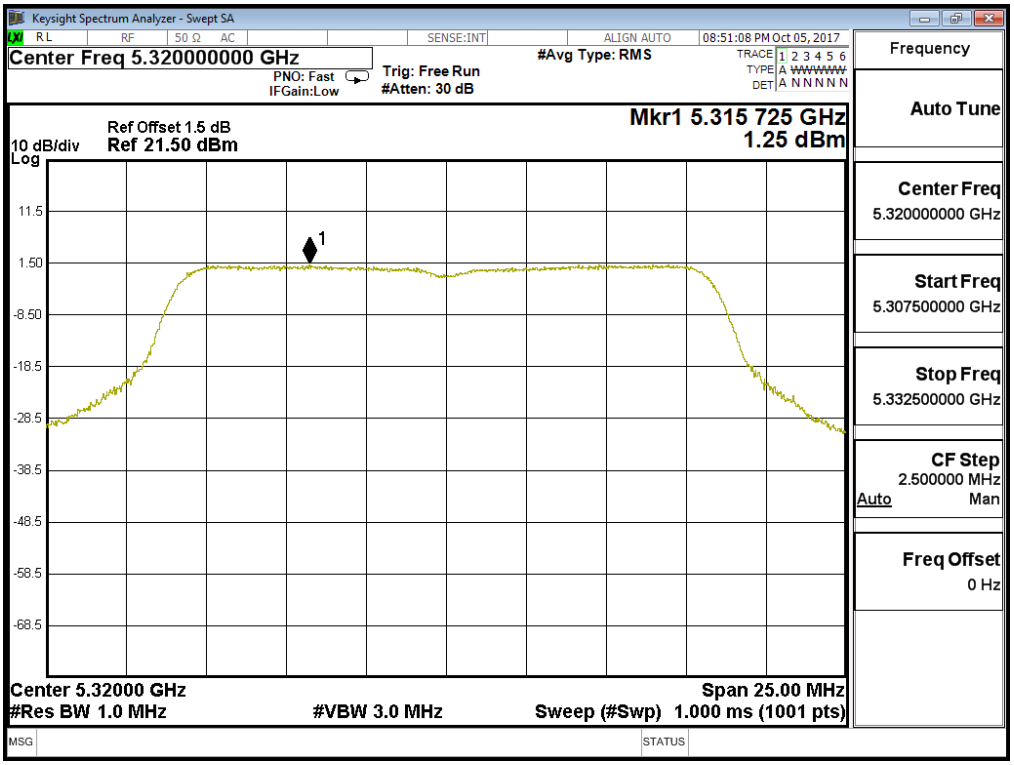
Channel 52:



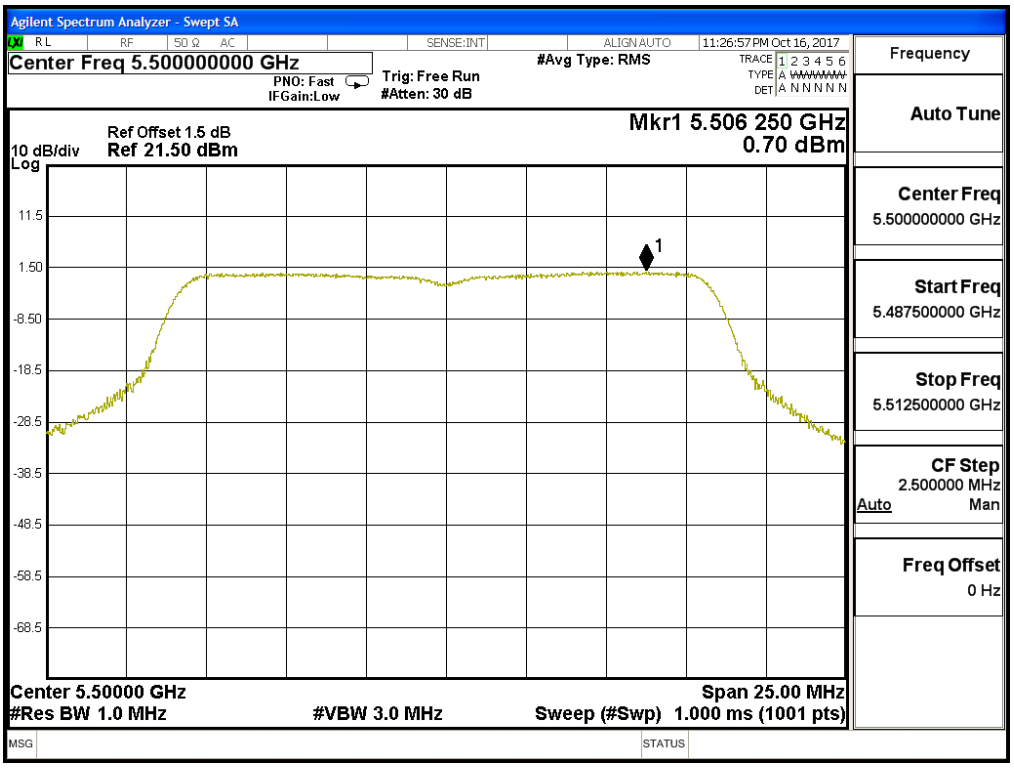
Channel 60:



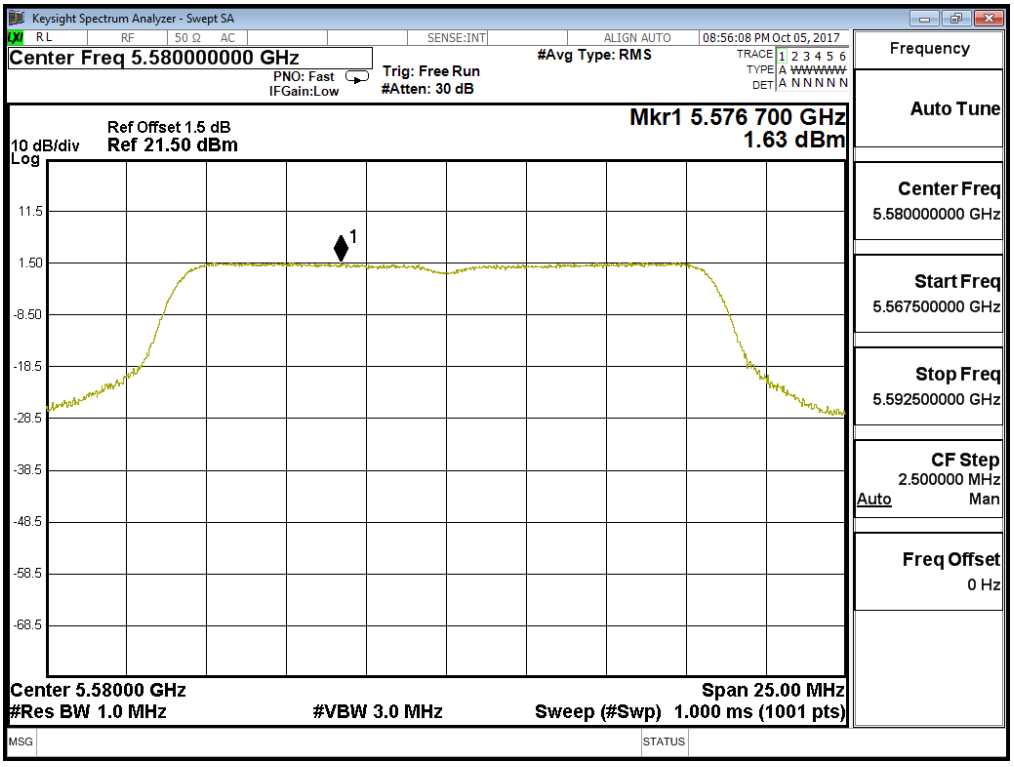
Channel 64:



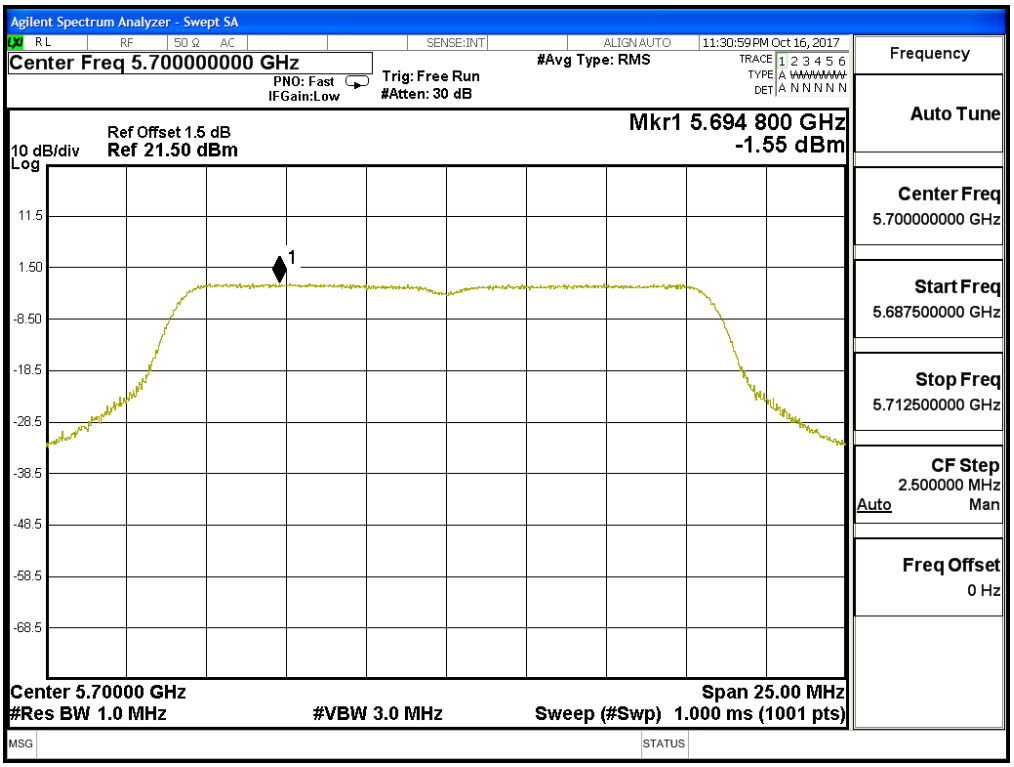
Channel 100:



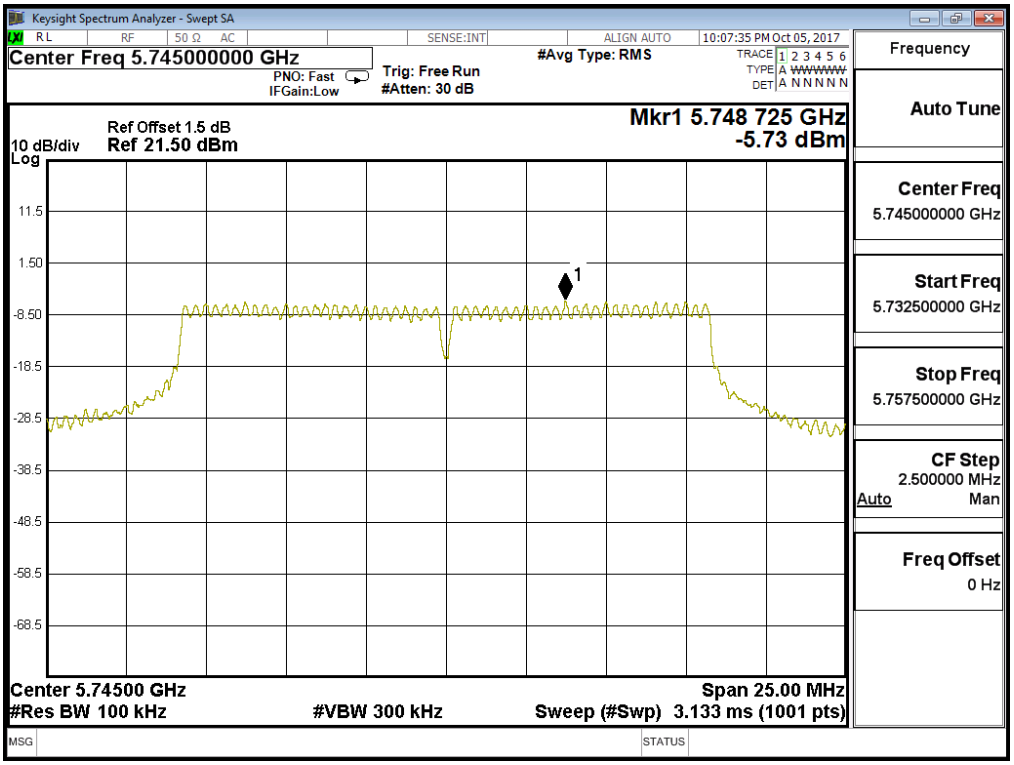
Channel 116:



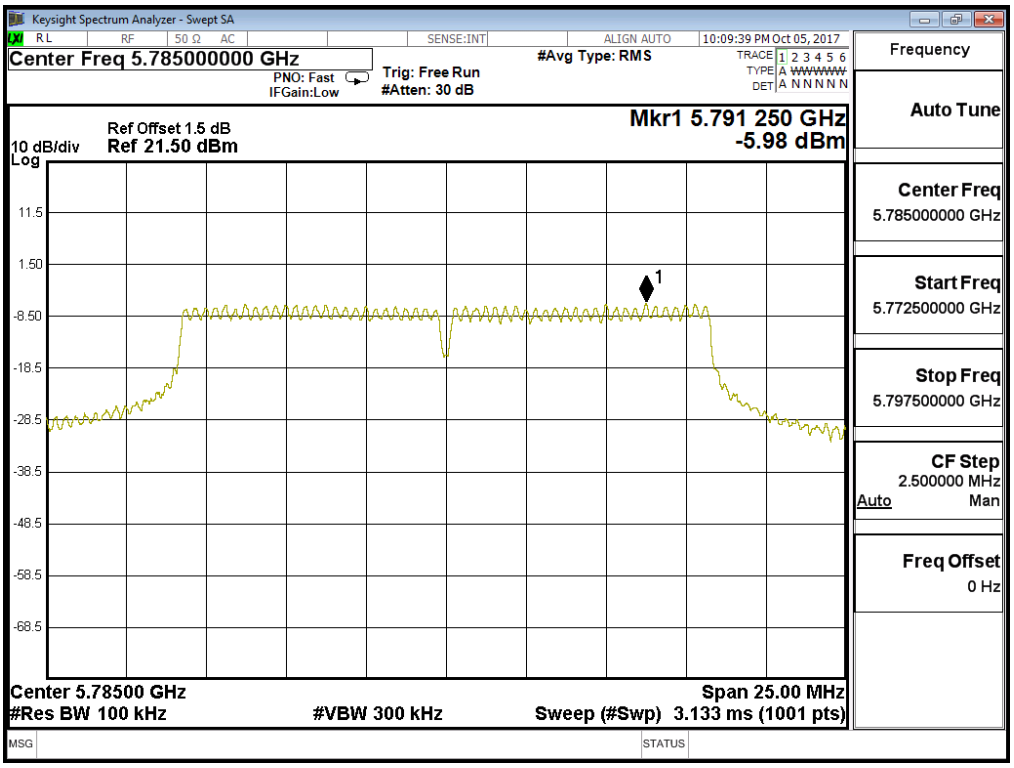
Channel 140:



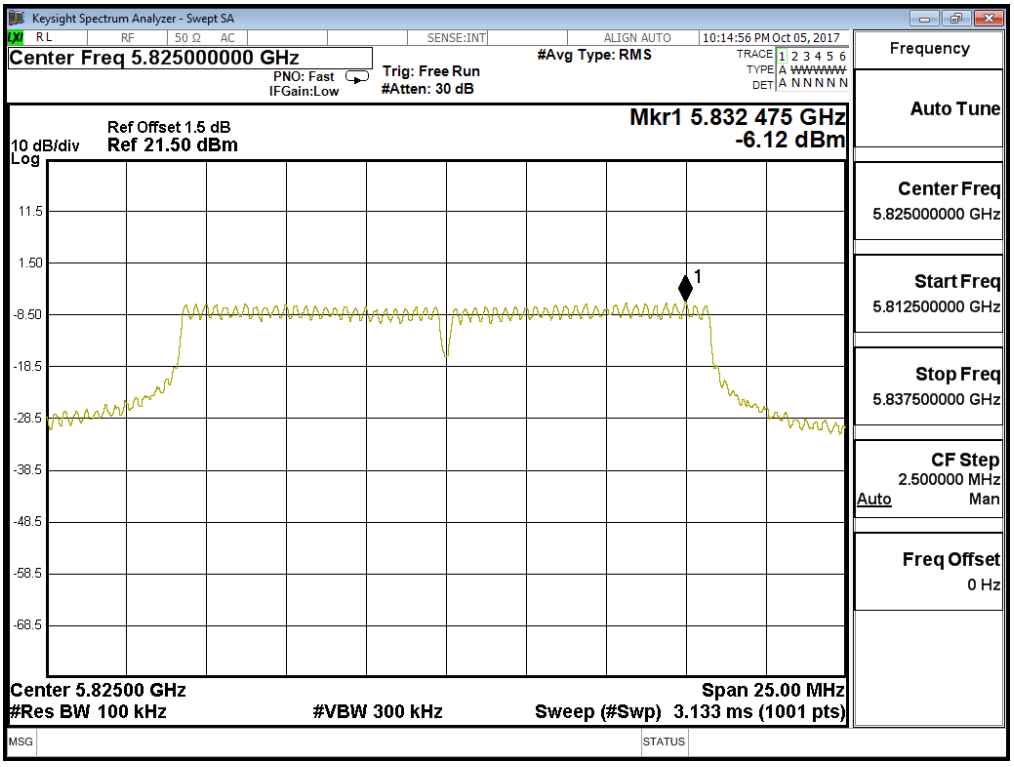
Channel 149



Channel 157



Channel 165



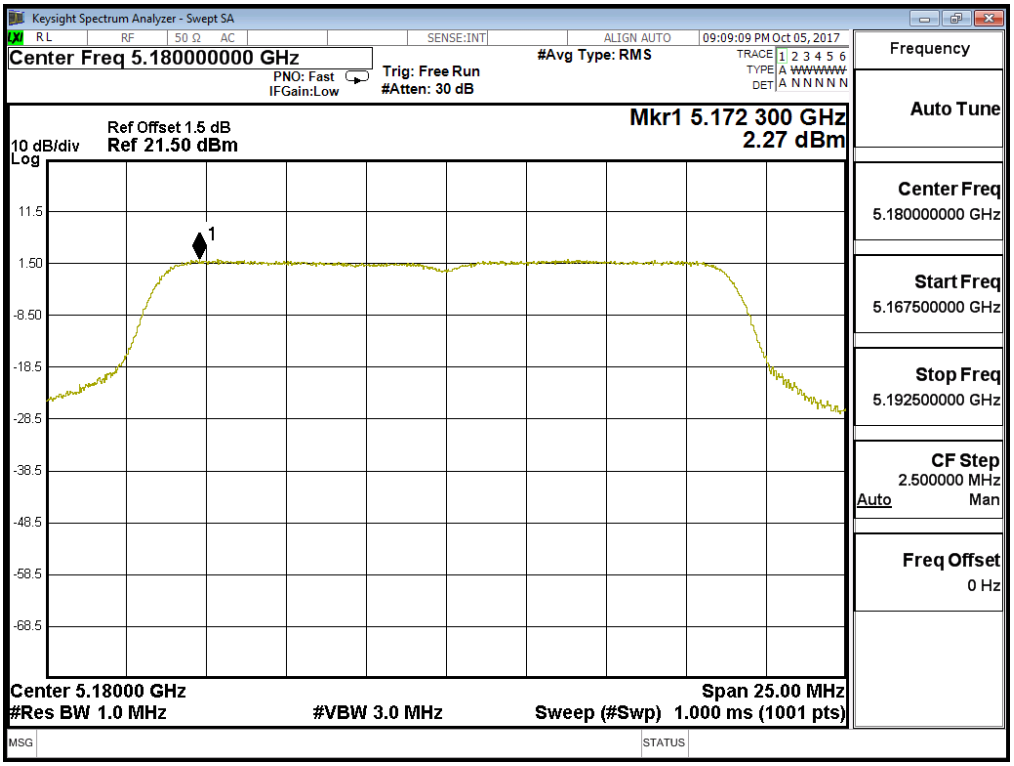
Product : MOBILE DATA TERMINAL
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)

Channel Number	Frequency (MHz)	Data Rata (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	6	2.270	11	Pass
44	5220	6	1.880	11	Pass
48	5240	6	0.840	11	Pass
52	5260	6	2.310	11	Pass
60	5300	6	2.670	11	Pass
64	5320	6	2.460	11	Pass
100	5500	6	0.490	11	Pass
116	5580	6	1.180	11	Pass
140	5700	6	-1.770	11	Pass

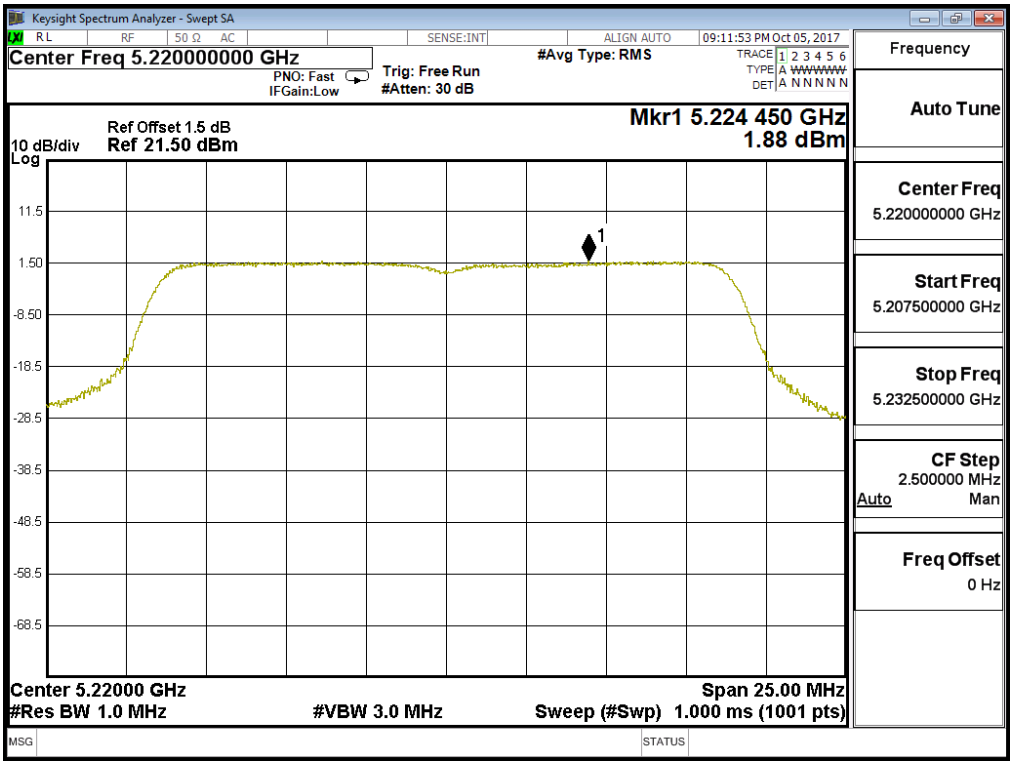
Channel Number	Frequency (MHz)	Data Rata (Mbps)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
149	5745	6	-6.790	6.980	0.190	<30	Pass
157	5785	6	-6.920	6.980	0.060	<30	Pass
165	5825	6	-6.950	6.980	0.030	<30	Pass

Note: Total PPSD Value = PPSD value + BWCF.

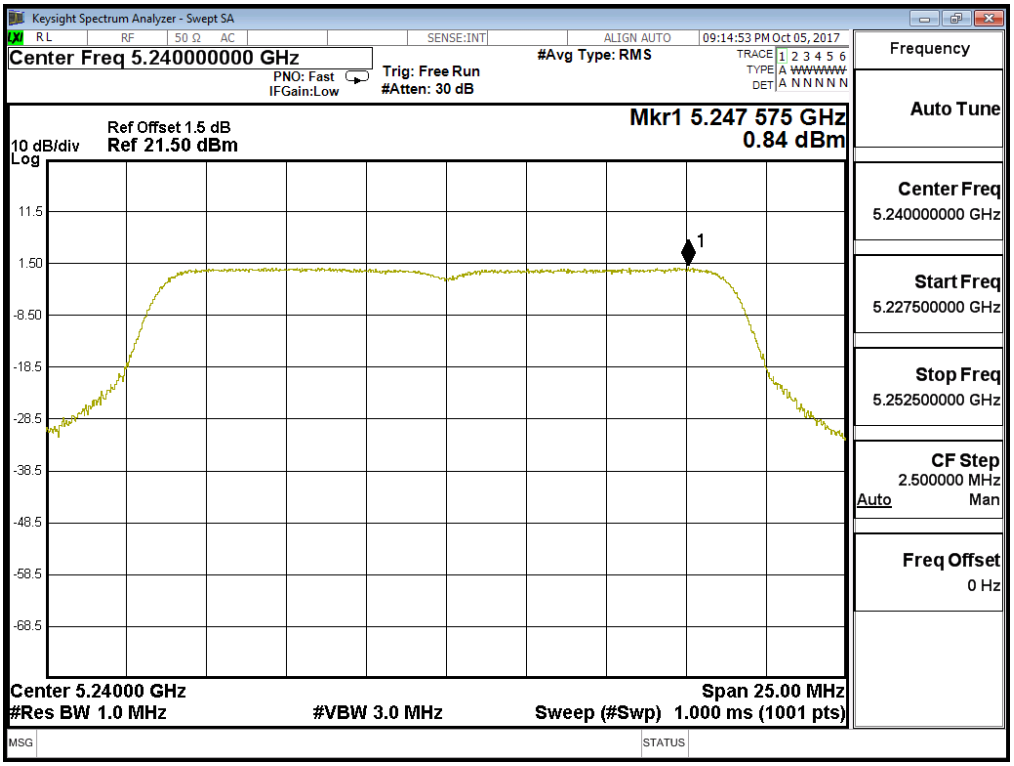
Channel 36:



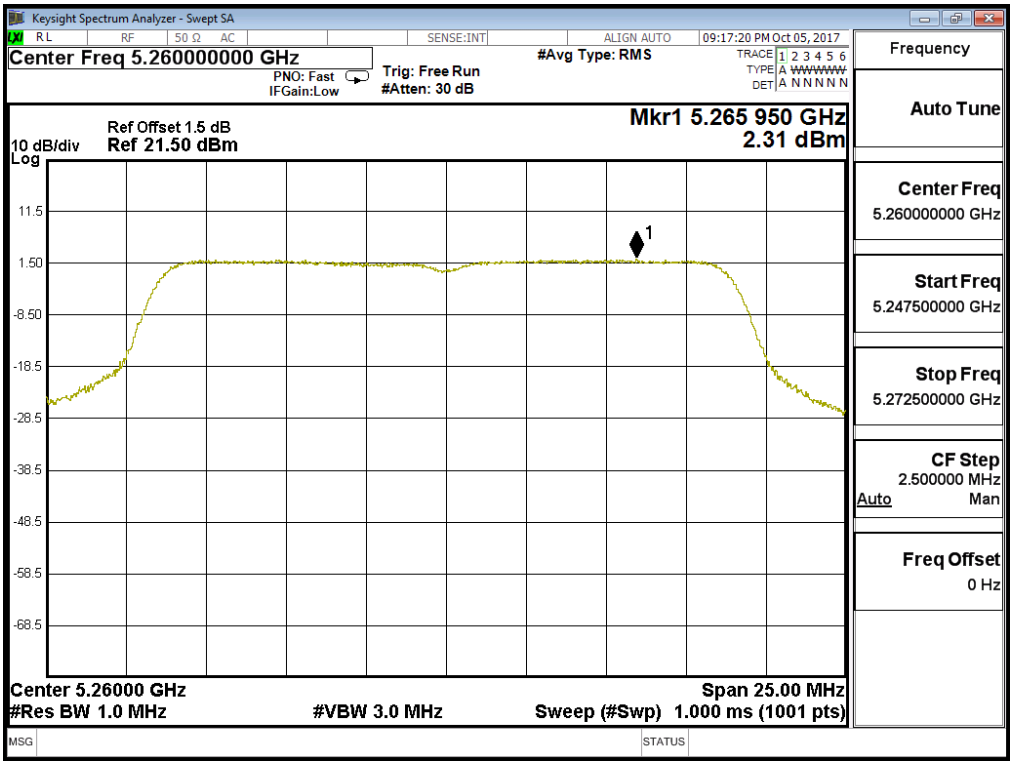
Channel 44:



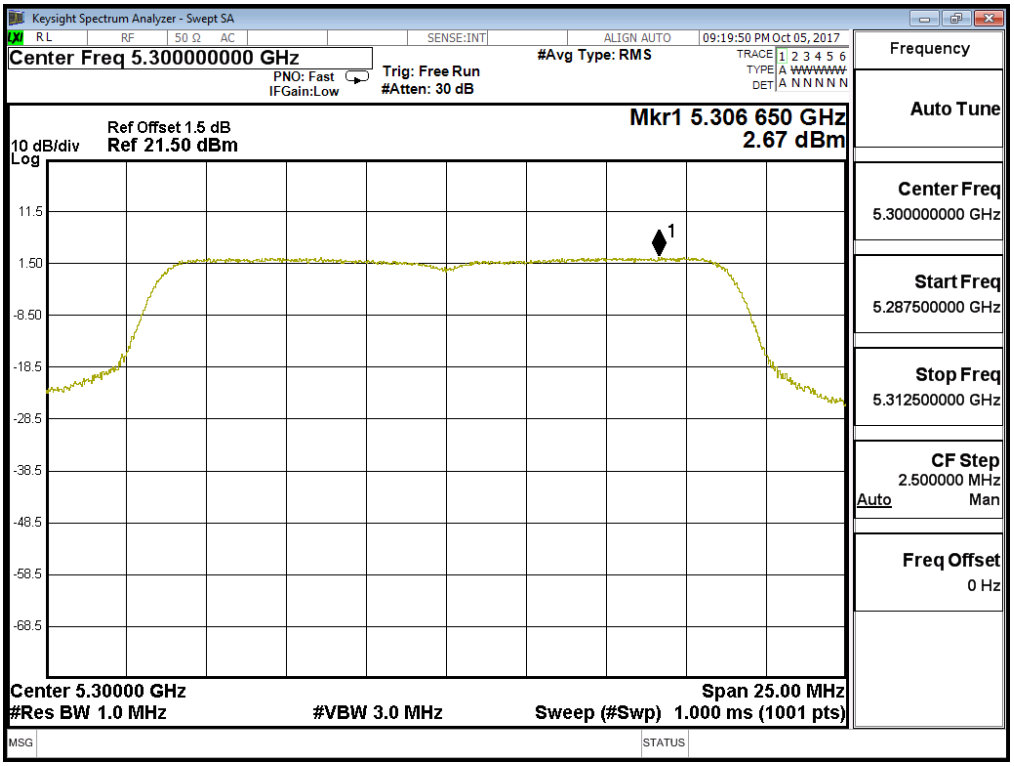
Channel 48:



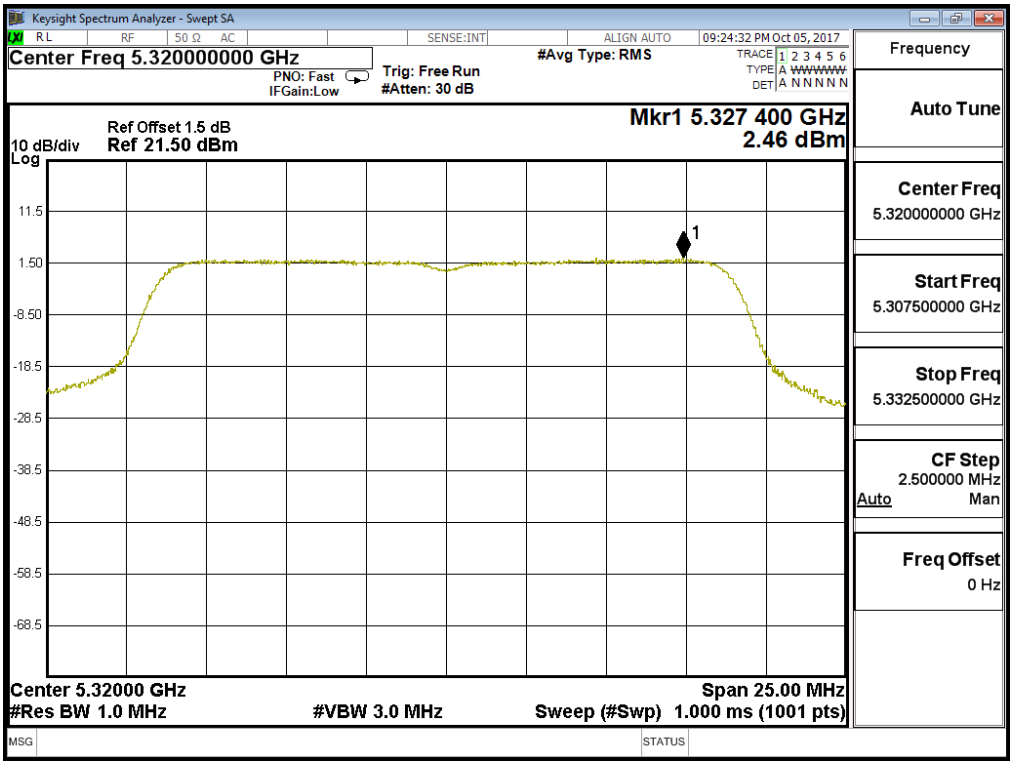
Channel 52:



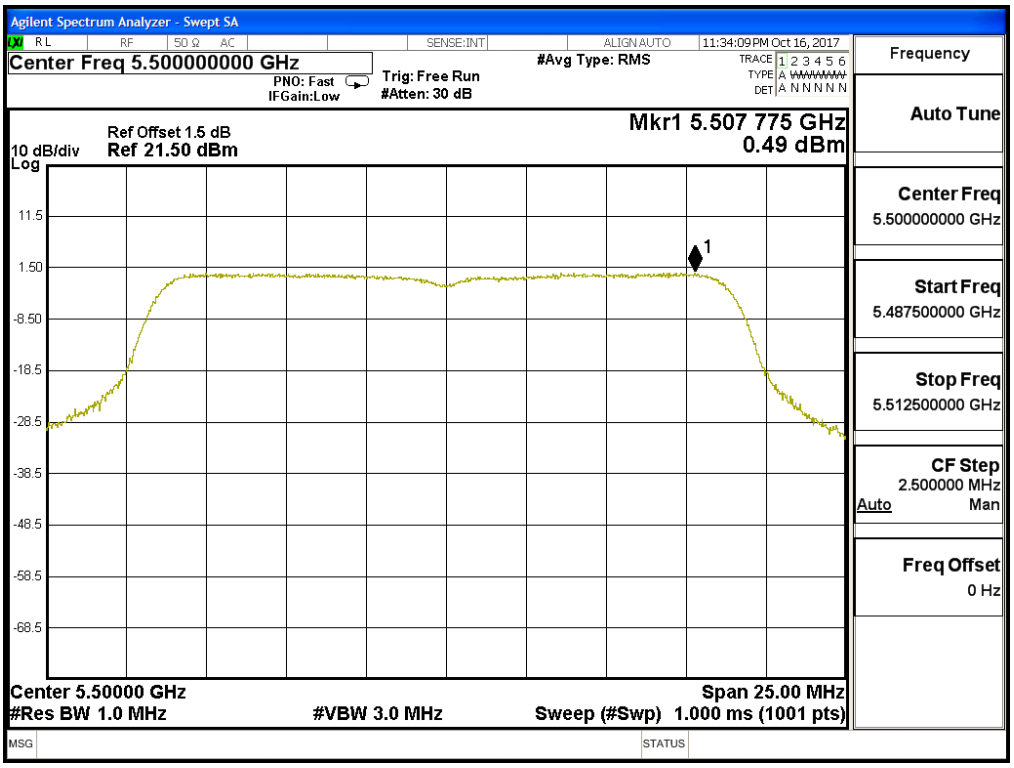
Channel 60:



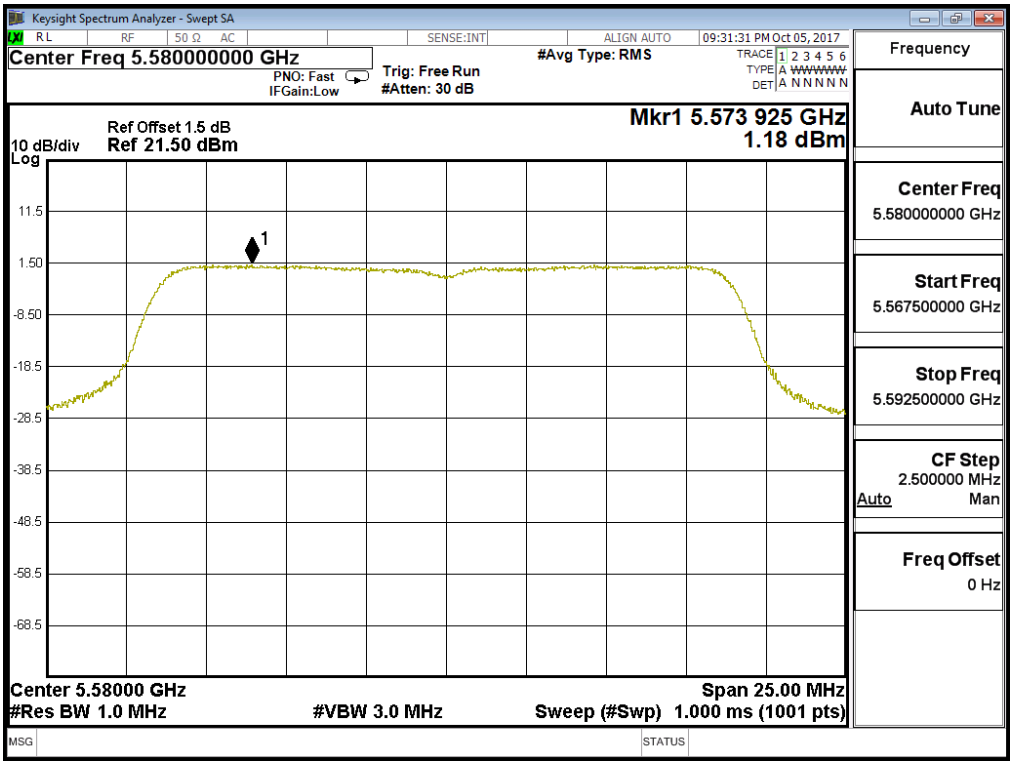
Channel 64:



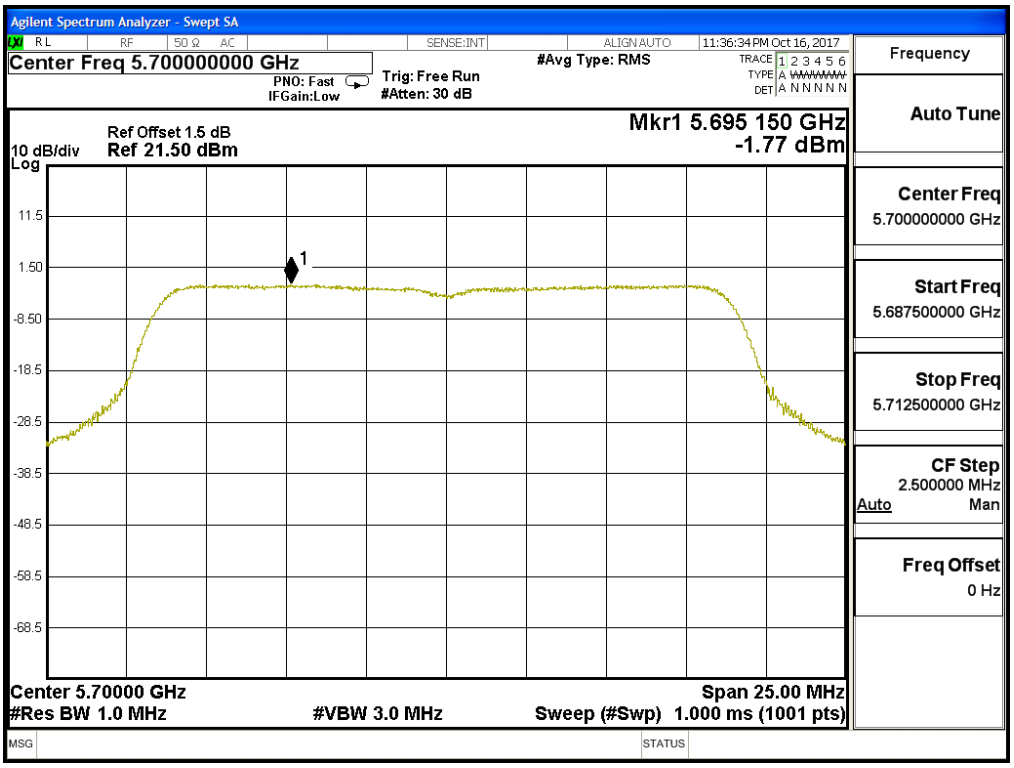
Channel 100:



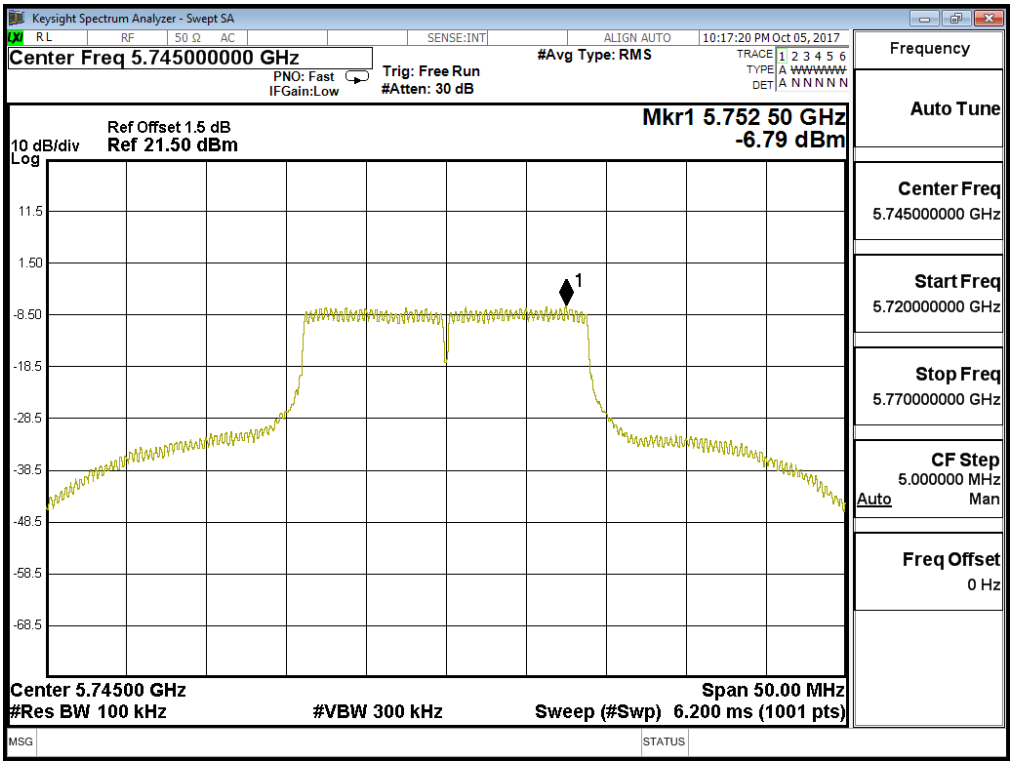
Channel 116:



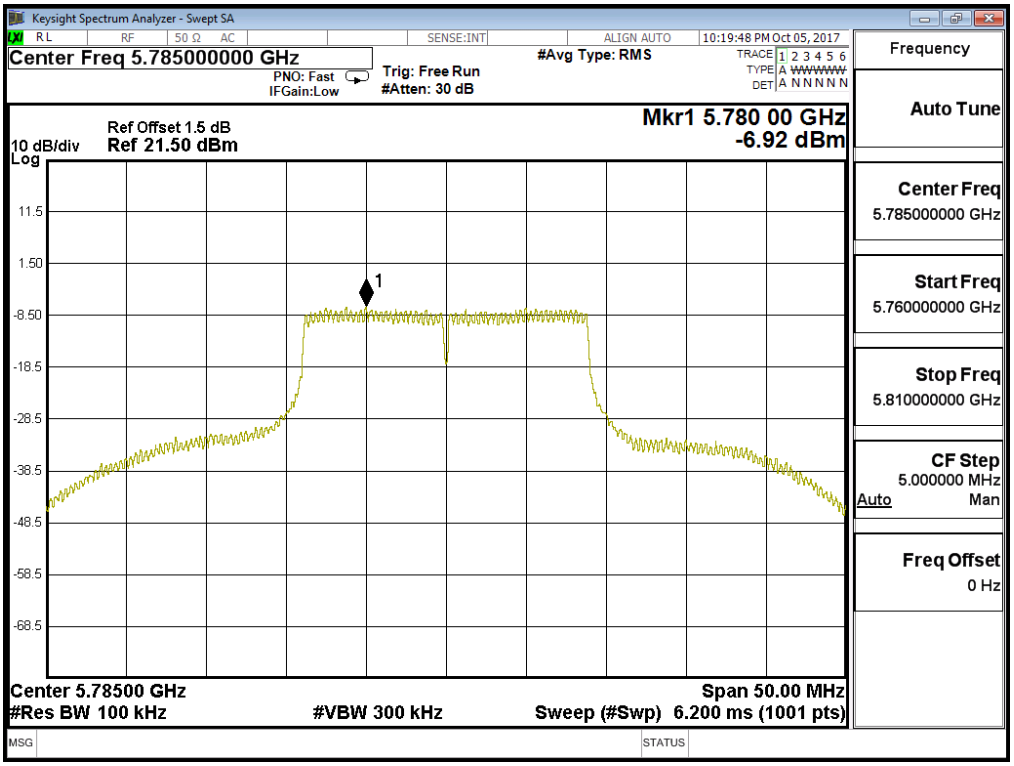
Channel 140:



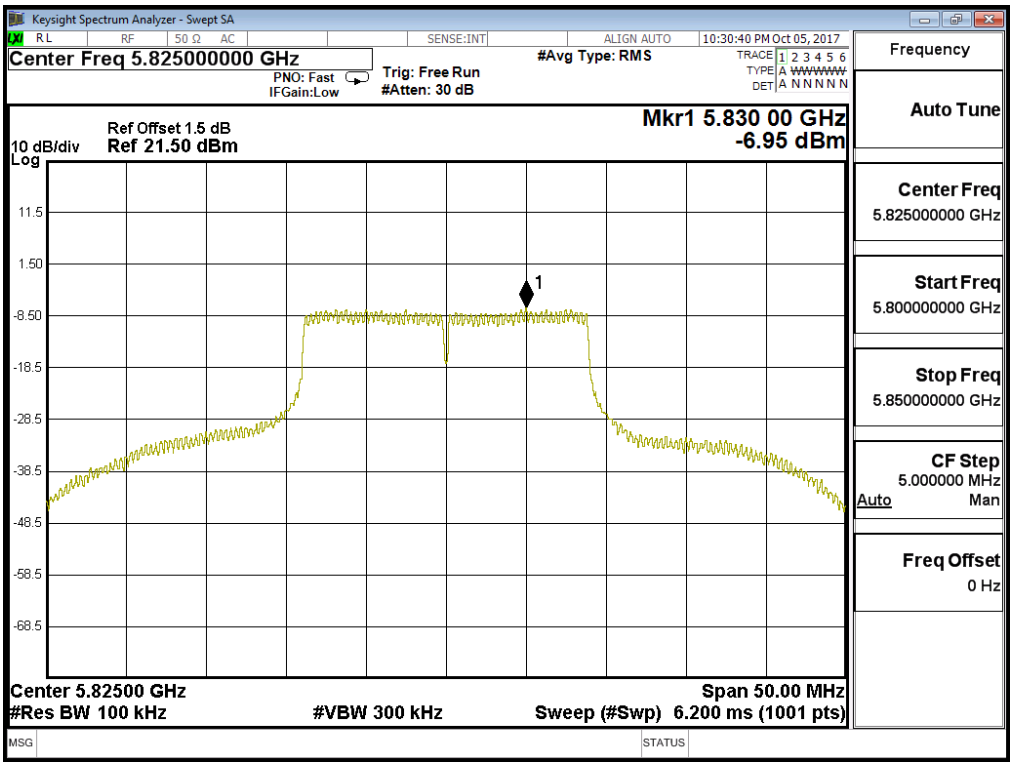
Channel 149



Channel 157



Channel 165



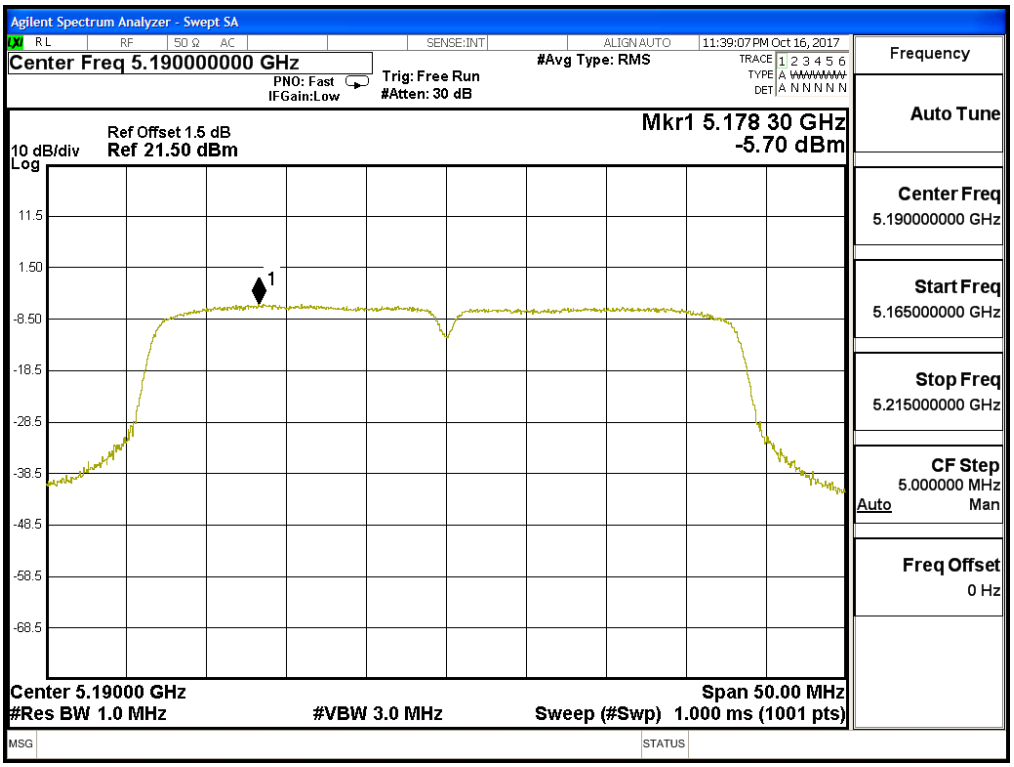
Product : MOBILE DATA TERMINAL
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)

Channel Number	Frequency (MHz)	Data Rata (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
38	5190	6	-5.700	11	Pass
46	5230	6	-0.540	11	Pass
54	5270	6	-0.200	11	Pass
62	5310	6	-6.320	11	Pass
102	5510	6	-6.660	11	Pass
110	5550	6	-0.620	11	Pass
134	5670	6	-1.930	11	Pass

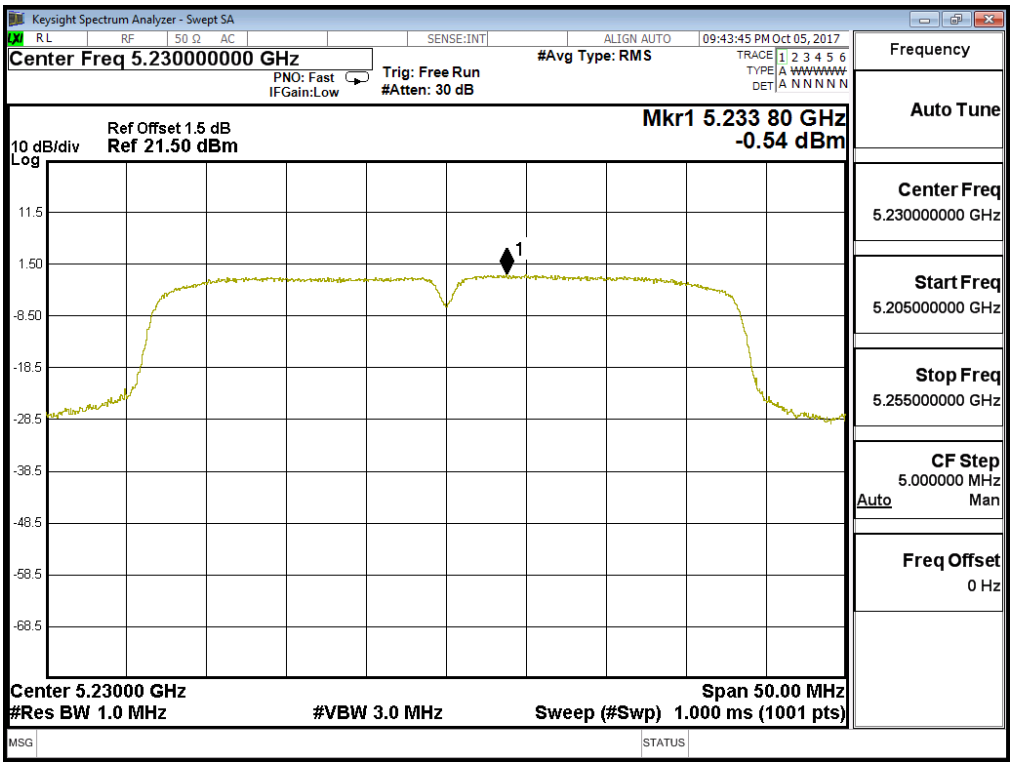
Channel Number	Frequency (MHz)	Data Rata (Mbps)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
151	5755	6	-9.230	6.980	-2.250	<30	Pass
159	5795	6	-10.270	6.980	-3.290	<30	Pass

Note: Total PPSD Value = PPSD value + BWCF.

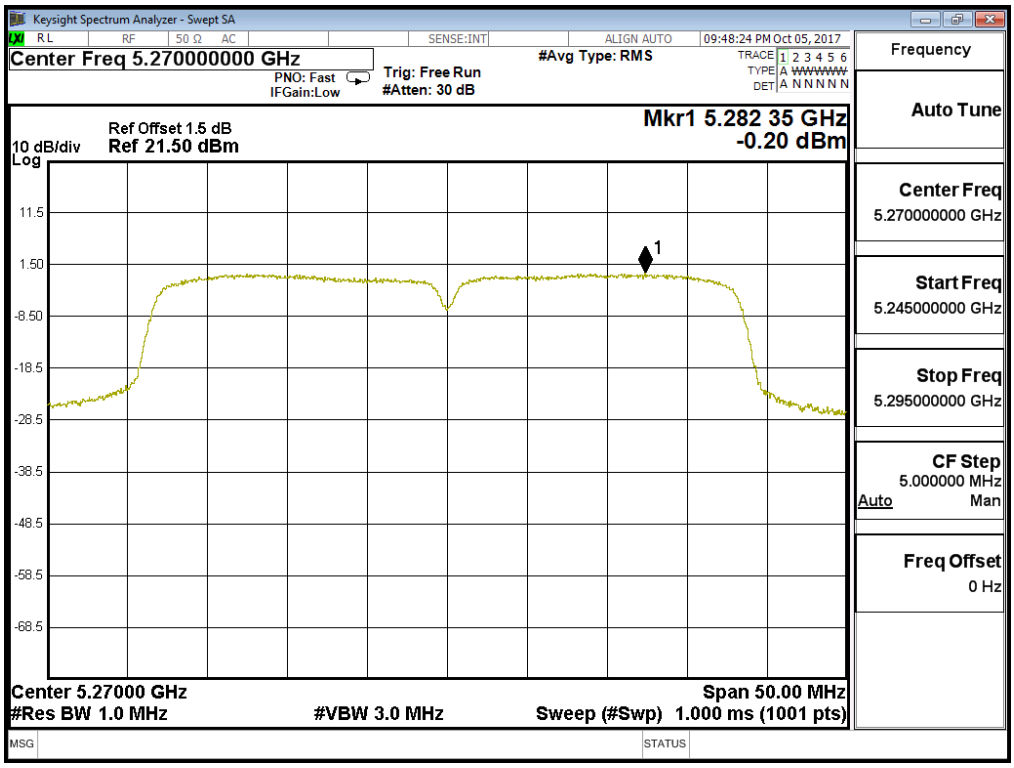
Channel 38



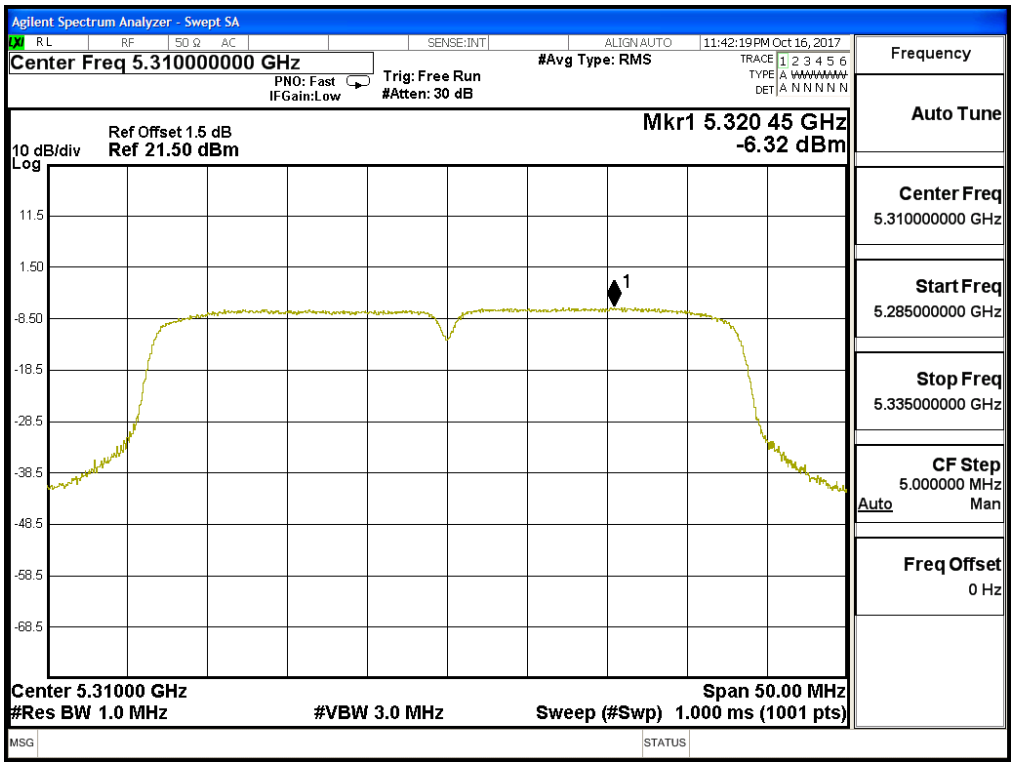
Channel 46



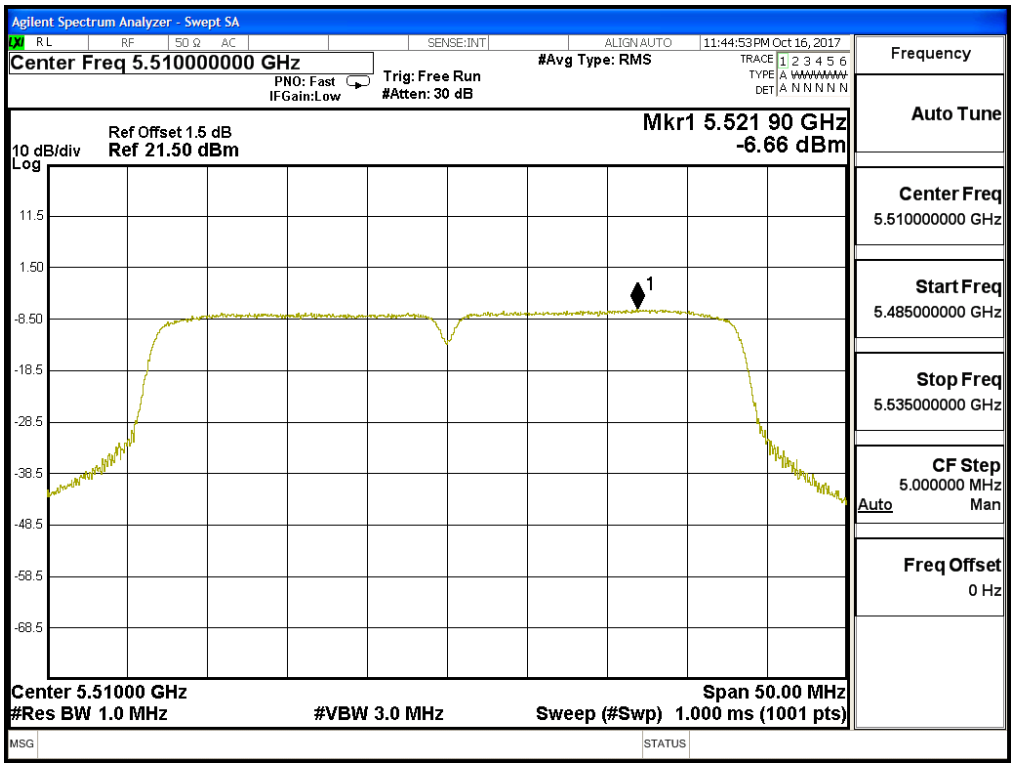
Channel 54



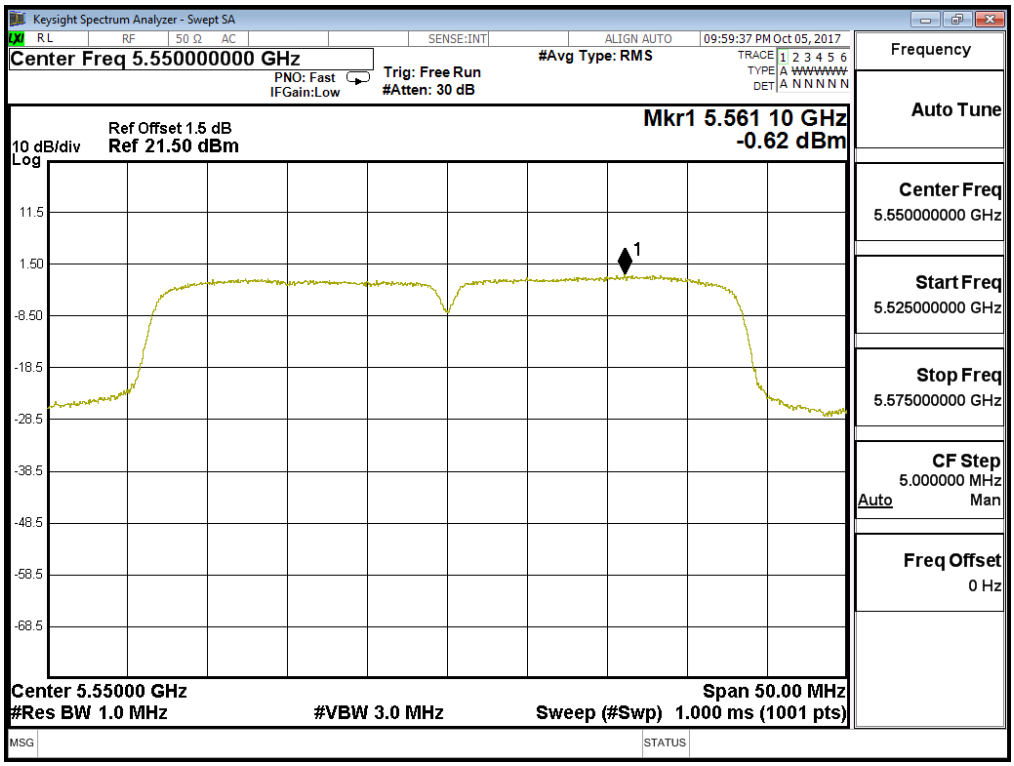
Channel 62



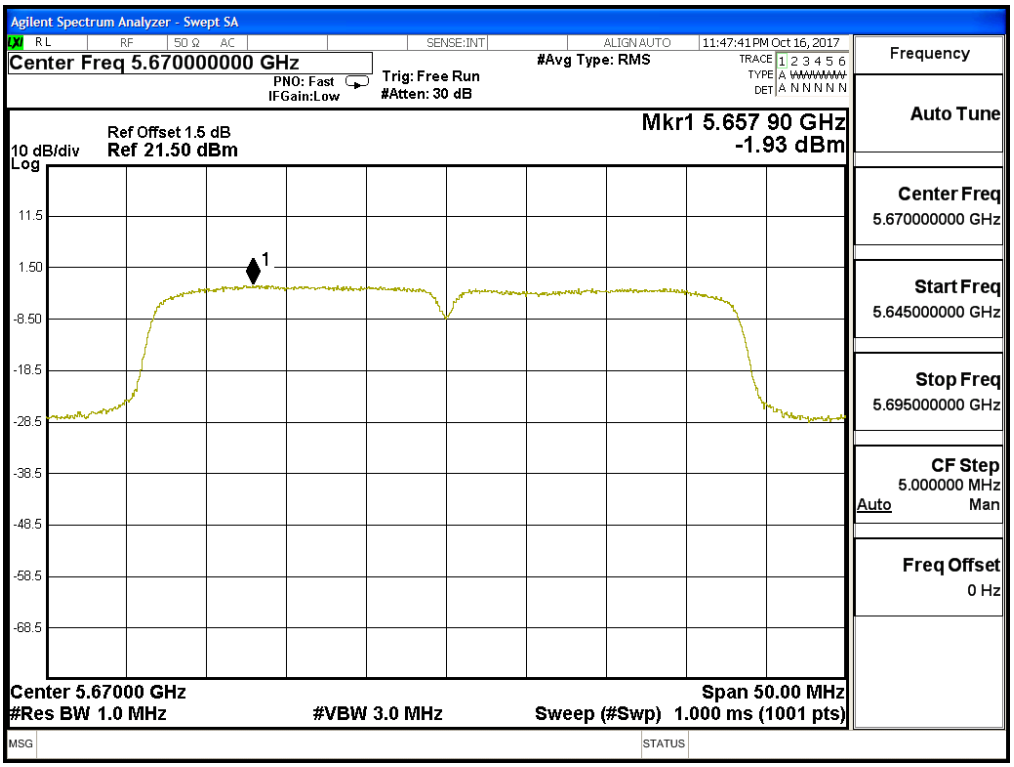
Channel 102



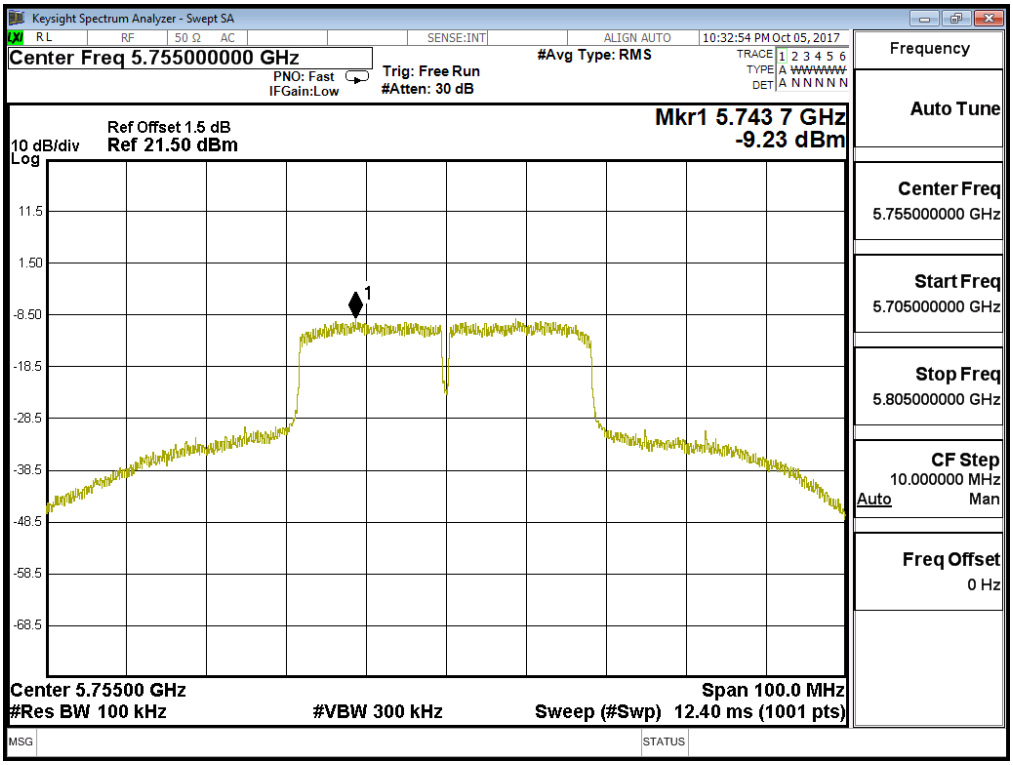
Channel 110



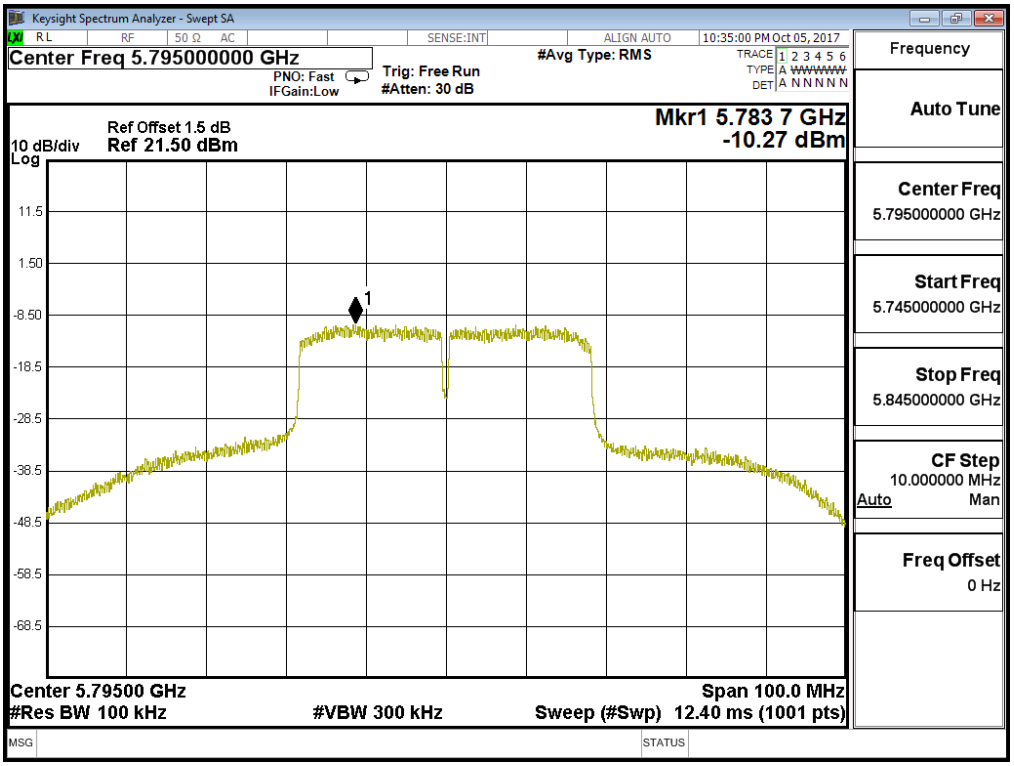
Channel 134



Channel 151



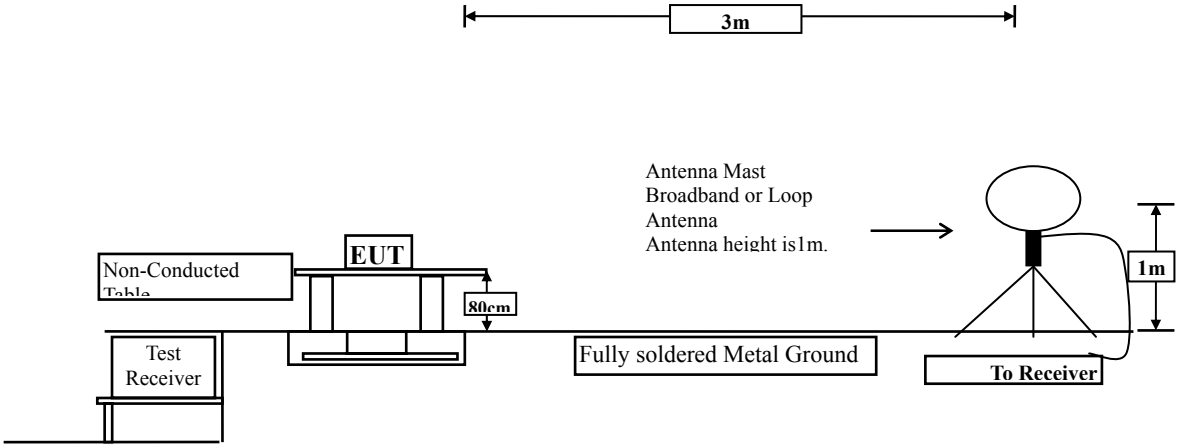
Channel 159


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:35:00 PM Oct 05, 2017
Center Freq 5.795000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 1.5 dB
10 dB/div
Log
Ref 21.50 dBm
Mkr1 5.783 7 GHz
-10.27 dBm
11.5
1.50
-8.50
-18.5
-28.5
-38.5
-48.5
-58.5
-68.5
1
Center 5.79500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 100.0 MHz
Sweep (#Swp) 12.40 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
5.795000000 GHz
Start Freq
5.745000000 GHz
Stop Freq
5.845000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz

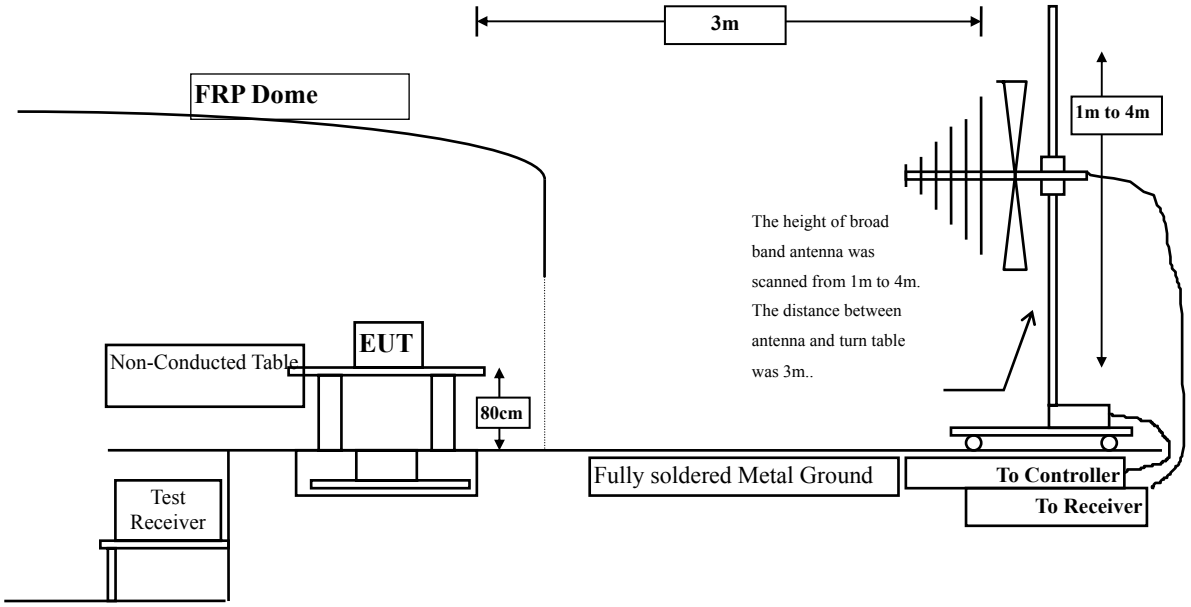
5. Radiated Emission

5.1. Test Setup

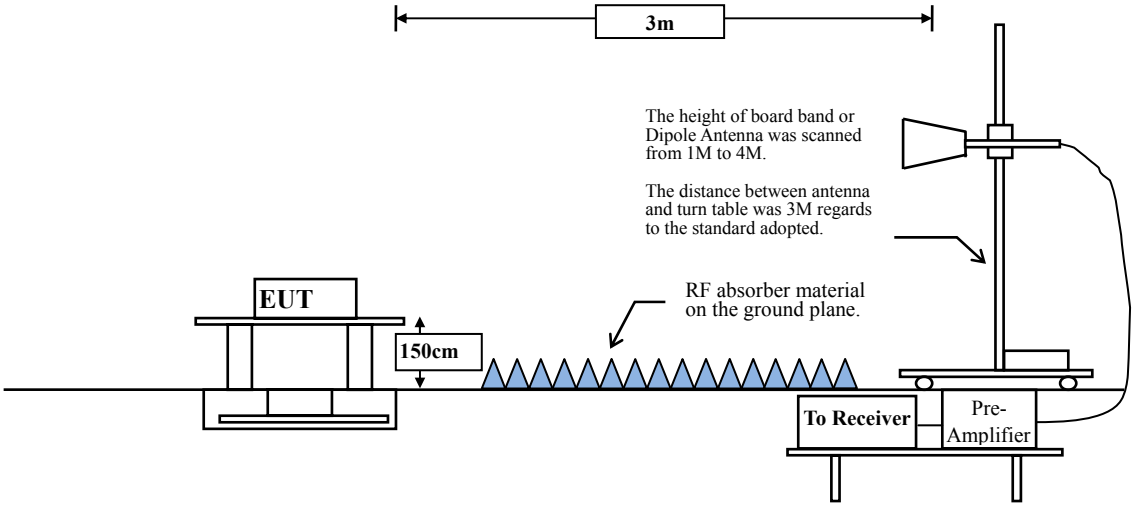
Radiated Emission Under 30MHz



Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



5.2. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remarks: E field strength (dBμV/m) = 20 log E field strength (uV/m)

5.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to FCC KDB-789033 test procedure for compliance to FCC 47CFR 15. 407 requirements.

Measuring the frequency range below 1GHz, the EUT is placed on a turn table which is 0.8 meter above ground,when measuring the frequency range above 1GHz, the EUT is placed on a turn table which is 1.5 meter above ground.

The turn table is rotated 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

The measurement frequency range form 9kHz - 10th Harmonic of fundamental was investigated.

The average measurement tested according to KDB 789033 section H)6)d) Method VB (Averaging using reduced video bandwidth).

VBW ≥ 1/T:

Mode	Duty Cycle	T	1/T	VBW Setting
802.11a	0.8590	1.3400 ms	746 Hz	1k Hz
802.11n-20	0.8639	1.2700 ms	787 Hz	1k Hz
802.11n-40	0.7108	0.5900 ms	1695 Hz	1.6k Hz

5.4. Uncertainty

± 4.08 dB above 1GHz

± 4.22 dB below 1GHz

5.5. Test Result of Radiated Emission

Product : MOBILE DATA TERMINAL
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/10/18
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5180MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10360.000	10.540	37.308	47.848	-26.152	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10360.000	12.044	37.228	49.271	-24.729	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : MOBILE DATA TERMINAL
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/10/18
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5220MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10440.000	9.649	38.966	48.614	-25.386	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10440.000	11.429	39.511	50.939	-23.061	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : MOBILE DATA TERMINAL
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/10/18
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5240MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10480.000	10.166	39.443	49.609	-24.391	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10480.000	12.101	39.512	51.613	-22.387	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : MOBILE DATA TERMINAL
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/10/18
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5260MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10520.000	11.021	39.865	50.886	-23.114	74.000
15780.000	*	*	*	*	74.000
21040.000	*	*	*	*	74.000
26300.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10520.000	12.931	39.960	52.891	-21.109	74.000
15780.000	*	*	*	*	74.000
21040.000	*	*	*	*	74.000
26300.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	MOBILE DATA TERMINAL
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Date	:	2017/10/18
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5300MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10600.000	11.868	39.518	51.386	-22.614	74.000
15900.000	*	*	*	*	74.000
21200.000	*	*	*	*	74.000
26500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10600.000	13.403	39.715	53.118	-20.882	74.000
15900.000	*	*	*	*	74.000
21200.000	*	*	*	*	74.000
26500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : MOBILE DATA TERMINAL
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/10/18
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5320MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10640.000	11.844	38.819	50.663	-23.337	74.000
15960.000	*	*	*	*	74.000
21280.000	*	*	*	*	74.000
26600.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10640.000	13.517	39.174	52.691	-21.309	74.000
15960.000	*	*	*	*	74.000
21280.000	*	*	*	*	74.000
26600.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : MOBILE DATA TERMINAL
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/10/18
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5500MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11000.000	12.392	35.319	47.711	-26.289	74.000
16500.000	*	*	*	*	74.000
22000.000	*	*	*	*	74.000
27500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11000.000	14.514	35.404	49.918	-24.082	74.000
16500.000	*	*	*	*	74.000
22000.000	*	*	*	*	74.000
27500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	MOBILE DATA TERMINAL
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Date	:	2017/10/18
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5580MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11160.000	44.893	38.135	50.336	-23.664	74.000
16800.000	*	*	*	*	74.000
22400.000	*	*	*	*	74.000
28000.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11160.000	14.445	38.757	53.202	-20.798	74.000
16800.000	*	*	*	*	74.000
22400.000	*	*	*	*	74.000
28000.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	MOBILE DATA TERMINAL
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Date	:	2017/10/18
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5700MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11400.000	13.372	38.988	52.360	-21.640	74.000
17100.000	*	*	*	*	74.000
22800.000	*	*	*	*	74.000
28500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11400.000	14.922	39.358	54.280	-19.720	74.000
17100.000	*	*	*	*	74.000
22800.000	*	*	*	*	74.000
28500.000	*	*	*	*	74.000
Average Detector:					
11400.000	14.922	28.823	43.745	-10.255	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	MOBILE DATA TERMINAL
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Date	:	2017/10/18
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5745MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal Peak Detector:					
11490.000	14.326	36.311	50.636	-23.364	74.000
17235.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical Peak Detector:					
11490.000	15.842	37.159	53.000	-21.000	74.000
17235.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : MOBILE DATA TERMINAL
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/10/18
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5785MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11570.000	14.849	35.124	49.973	-24.027	74.000
17355.000	*	*	*	*	74.000
20800.000	*	*	*	*	74.000
26000.000	*	*	*	*	74.000
31200.000	*	*	*	*	74.000
36400.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11570.000	16.215	34.761	50.975	-23.025	74.000
17355.000	*	*	*	*	74.000
20800.000	*	*	*	*	74.000
26000.000	*	*	*	*	74.000
31200.000	*	*	*	*	74.000
36400.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : MOBILE DATA TERMINAL
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/10/18
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5825MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal Peak Detector:					
11650.000	13.179	34.410	47.589	-26.411	74.000
17475.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440000	*	*	*	*	74.000
*	*	*	*	*	*
Average Detector:					
*	*	*	*	*	54.000
Vertical Peak Detector:					
11650.000	14.634	34.945	49.579	-24.421	74.000
17475.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	MOBILE DATA TERMINAL
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Date	:	2017/10/18
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5180MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10360.000	10.540	37.123	47.663	-26.337	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10360.000	12.044	36.742	48.785	-25.215	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : MOBILE DATA TERMINAL
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/10/18
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5220MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10440.000	9.649	38.674	48.322	-25.678	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10440.000	11.429	38.531	49.959	-24.041	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	MOBILE DATA TERMINAL
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Date	:	2017/10/18
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5240MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10480.000	10.166	38.924	49.090	-24.910	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10480.000	12.101	39.956	52.057	-21.943	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : MOBILE DATA TERMINAL
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/10/18
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5260MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10520.000	11.021	39.888	50.909	-23.091	74.000
15780.000	*	*	*	*	74.000
21040.000	*	*	*	*	74.000
26300.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10520.000	12.931	40.506	53.437	-20.563	74.000
15780.000	*	*	*	*	74.000
21040.000	*	*	*	*	74.000
26300.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : MOBILE DATA TERMINAL
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/10/18
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5300MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10600.000	11.868	39.608	51.476	-22.524	74.000
15900.000	*	*	*	*	74.000
21200.000	*	*	*	*	74.000
26500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10600.000	13.403	39.860	53.263	-20.737	74.000
15900.000	*	*	*	*	74.000
21200.000	*	*	*	*	74.000
26500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	MOBILE DATA TERMINAL
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Date	:	2017/10/18
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5320MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10640.000	11.844	38.732	50.576	-23.424	74.000
15960.000	*	*	*	*	74.000
21280.000	*	*	*	*	74.000
26600.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10640.000	13.517	39.230	52.747	-21.253	74.000
15960.000	*	*	*	*	74.000
21280.000	*	*	*	*	74.000
26600.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	MOBILE DATA TERMINAL
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Date	:	2017/10/18
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11000.000	12.392	35.544	47.936	-26.064	74.000
16500.000	*	*	*	*	74.000
22000.000	*	*	*	*	74.000
27500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11000.000	14.514	35.559	50.073	-23.927	74.000
16500.000	*	*	*	*	74.000
22000.000	*	*	*	*	74.000
27500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	MOBILE DATA TERMINAL
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Date	:	2017/10/18
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5580MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11160.000	12.201	37.960	50.161	-23.839	74.000
16800.000	*	*	*	*	74.000
22400.000	*	*	*	*	74.000
28000.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11160.000	14.445	38.301	52.746	-21.254	74.000
16800.000	*	*	*	*	74.000
22400.000	*	*	*	*	74.000
28000.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : MOBILE DATA TERMINAL
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/10/18
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5700MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11400.000	13.372	38.677	52.049	-21.951	74.000
17100.000	*	*	*	*	74.000
22800.000	*	*	*	*	74.000
28500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11400.000	14.922	39.133	54.055	-19.945	74.000
17100.000	*	*	*	*	74.000
22800.000	*	*	*	*	74.000
28500.000	*	*	*	*	74.000
Average Detector:					
11400.000	14.922	29.256	44.178	-9.822	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	MOBILE DATA TERMINAL
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Date	:	2017/10/18
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5745MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11490.000	14.326	36.451	50.776	-23.224	74.000
17235.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11490.000	15.842	36.890	52.731	-21.269	74.000
17235.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	MOBILE DATA TERMINAL
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Date	:	2017/10/18
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5785MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11570.000	14.849	35.570	50.419	-23.581	74.000
17355.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
31320.000	*	*	*	*	74.000
36540.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11570.000	16.215	34.844	51.058	-22.942	74.000
17355.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
31320.000	*	*	*	*	74.000
36540.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	MOBILE DATA TERMINAL
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Date	:	2017/10/18
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5825MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal Peak Detector:					
11650.000	13.179	34.306	47.485	-26.515	74.000
17475.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440.000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical Peak Detector:					
11650.000	14.634	34.271	48.905	-25.095	74.000
17475.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440.000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	MOBILE DATA TERMINAL
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Date	:	2017/10/18
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10380.000	10.164	37.212	47.376	-26.624	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10380.000	11.729	37.397	49.127	-24.873	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	MOBILE DATA TERMINAL
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Date	:	2017/10/18
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5230MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10460.000	9.786	39.149	48.935	-25.065	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10460.000	44.138	39.817	51.461	-22.539	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : MOBILE DATA TERMINAL
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/10/18
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5270MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10540.000	11.479	40.290	51.769	-22.231	74.000
15810.000	*	*	*	*	74.000
21080.000	*	*	*	*	74.000
26350.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10540.000	13.289	40.874	54.163	-19.837	74.000
15810.000	*	*	*	*	74.000
21080.000	*	*	*	*	74.000
26350.000	*	*	*	*	74.000
Average Detector:					
10540.000	13.289	30.155	43.444	-10.556	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : MOBILE DATA TERMINAL
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/10/18
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5310MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10620.000	11.862	39.585	51.447	-22.553	74.000
15930.000	*	*	*	*	74.000
21240.000	*	*	*	*	74.000
26550.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10620.000	13.449	39.505	52.954	-21.046	74.000
15930.000	*	*	*	*	74.000
21240.000	*	*	*	*	74.000
26550.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : MOBILE DATA TERMINAL
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/10/18
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11020.000	12.632	36.054	48.686	-25.314	74.000
15930.000	*	*	*	*	74.000
21240.000	*	*	*	*	74.000
26550.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11020.000	14.778	36.388	51.166	-22.834	74.000
15930.000	*	*	*	*	74.000
21240.000	*	*	*	*	74.000
26550.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : MOBILE DATA TERMINAL
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/10/18
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5550MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11100.000	12.305	36.280	48.585	-25.415	74.000
16770.000	*	*	*	*	74.000
22360.000	*	*	*	*	74.000
27950.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11100.000	14.559	36.903	51.462	-22.538	74.000
16770.000	*	*	*	*	74.000
22360.000	*	*	*	*	74.000
27950.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	MOBILE DATA TERMINAL
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Date	:	2017/10/18
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5670MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11340.000	12.852	40.060	52.911	-21.089	74.000
17010.000	*	*	*	*	74.000
22680.000	*	*	*	*	74.000
28350.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11340.000	14.594	40.663	55.257	-18.743	74.000
17010.000	*	*	*	*	74.000
22680.000	*	*	*	*	74.000
28350.000	*	*	*	*	74.000
Average Detector:					
11340.000	14.594	30.247	44.841	-9.159	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	MOBILE DATA TERMINAL
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Date	:	2017/10/18
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11510.000	14.402	35.731	50.133	-23.867	74.000
17265.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
31140.000	*	*	*	*	74.000
36330.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11510.000	15.894	35.809	51.703	-22.297	74.000
17265.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
31140.000	*	*	*	*	74.000
36330.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : MOBILE DATA TERMINAL
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/10/18
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5795MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal Peak Detector:					
11590.000	15.138	34.366	49.504	-24.496	74.000
17385.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
31380.000	*	*	*	*	74.000
36610.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical Peak Detector:					
11590.000	16.461	34.979	51.440	-22.560	74.000
17385.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
31380.000	*	*	*	*	74.000
36610.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	MOBILE DATA TERMINAL
Test Item	:	General Radiated Emission
Test Site	:	No.3 OATS
Test Date	:	2017/10/14
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps) (5220MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
120.210	-7.275	40.706	33.431	-10.069	43.500
307.420	-4.120	45.597	41.477	-4.523	46.000
409.270	0.046	36.158	36.204	-9.796	46.000
614.910	2.991	35.763	38.754	-7.246	46.000
819.580	6.961	35.057	42.018	-3.982	46.000
921.430	6.730	30.154	36.884	-9.116	46.000
Vertical					
Peak Detector					
120.210	-3.535	34.643	31.108	-12.392	43.500
307.420	-4.030	45.601	41.571	-4.429	46.000
512.090	0.604	40.800	41.404	-4.596	46.000
716.760	-1.321	34.260	32.939	-13.061	46.000
819.580	3.001	32.831	35.832	-10.168	46.000
921.430	3.240	28.044	31.284	-14.716	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : MOBILE DATA TERMINAL
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/10/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5300MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
120.210	-7.275	39.139	31.864	-11.636	43.500
304.510	-3.897	43.055	39.158	-6.842	46.000
512.090	3.184	33.968	37.152	-8.848	46.000
614.910	2.991	35.912	38.903	-7.097	46.000
819.580	6.961	34.335	41.296	-4.704	46.000
921.430	6.730	28.566	35.296	-10.704	46.000
Vertical					
Peak Detector					
120.210	-3.535	33.953	30.418	-13.082	43.500
305.480	-4.016	44.535	40.519	-5.481	46.000
512.090	0.604	35.350	35.954	-10.046	46.000
716.760	-1.321	34.357	33.036	-12.964	46.000
819.580	3.001	31.511	34.512	-11.488	46.000
921.430	3.240	27.290	30.530	-15.470	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : MOBILE DATA TERMINAL
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/10/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5580MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
120.210	-7.275	40.007	32.732	-10.768	43.500
305.480	-3.836	43.995	40.159	-5.841	46.000
512.090	3.184	33.302	36.486	-9.514	46.000
614.910	2.991	35.275	38.266	-7.734	46.000
819.580	6.961	33.866	40.827	-5.173	46.000
921.430	6.730	29.292	36.022	-9.978	46.000
Vertical					
Peak Detector					
104.690	-4.842	33.983	29.142	-14.358	43.500
307.420	-4.030	45.149	41.119	-4.881	46.000
512.090	0.604	40.498	41.102	-4.898	46.000
716.760	-1.321	33.356	32.035	-13.965	46.000
819.580	3.001	32.934	35.935	-10.065	46.000
921.430	3.240	27.189	30.429	-15.571	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : MOBILE DATA TERMINAL
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/10/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5785MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
120.210	-7.275	39.272	31.997	-11.503	43.500
307.420	-4.120	43.969	39.849	-6.151	46.000
512.090	3.184	35.304	38.488	-7.512	46.000
614.910	2.991	36.156	39.147	-6.853	46.000
819.580	6.961	34.187	41.148	-4.852	46.000
921.430	6.730	28.185	34.915	-11.085	46.000
Vertical					
Peak Detector					
120.210	-3.535	32.613	29.078	-14.422	43.500
307.420	-4.030	45.383	41.353	-4.647	46.000
512.090	0.604	41.385	41.989	-4.011	46.000
716.760	-1.321	34.305	32.984	-13.016	46.000
819.580	3.001	32.259	35.260	-10.740	46.000
921.430	3.240	28.239	31.479	-14.521	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product	:	MOBILE DATA TERMINAL
Test Item	:	General Radiated Emission
Test Site	:	No.3 OATS
Test Date	:	2017/10/14
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5220MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
120.210	-7.275	40.107	32.832	-10.668	43.500
309.360	-4.463	43.257	38.794	-7.206	46.000
409.270	0.046	35.191	35.237	-10.763	46.000
614.910	2.991	36.238	39.229	-6.771	46.000
819.580	6.961	34.710	41.671	-4.329	46.000
921.430	6.730	29.285	36.015	-9.985	46.000
Vertical					
Peak Detector					
157.070	-5.195	38.360	33.165	-10.335	43.500
307.420	-4.030	44.521	40.491	-5.509	46.000
512.090	0.604	41.118	41.722	-4.278	46.000
614.910	1.701	30.665	32.366	-13.634	46.000
716.760	-1.321	33.665	32.344	-13.656	46.000
819.580	3.001	32.538	35.539	-10.461	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product	:	MOBILE DATA TERMINAL
Test Item	:	General Radiated Emission
Test Site	:	No.3 OATS
Test Date	:	2017/10/14
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5300MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
120.210	-7.275	39.325	32.050	-11.450	43.500
305.480	-3.836	43.053	39.217	-6.783	46.000
512.090	3.184	34.001	37.185	-8.815	46.000
614.910	2.991	36.204	39.195	-6.805	46.000
819.580	6.961	34.192	41.153	-4.847	46.000
921.430	6.730	28.699	35.429	-10.571	46.000
Vertical					
Peak Detector					
110.510	-3.383	33.186	29.803	-13.697	43.500
305.480	-4.016	45.035	41.019	-4.981	46.000
512.090	0.604	40.525	41.129	-4.871	46.000
600.360	1.302	34.191	35.493	-10.507	46.000
819.580	3.001	32.478	35.479	-10.521	46.000
921.430	3.240	29.094	32.334	-13.666	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : MOBILE DATA TERMINAL
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/10/14
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5580MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
120.210	-7.275	40.530	33.255	-10.245	43.500
305.480	-3.836	43.692	39.856	-6.144	46.000
409.270	0.046	35.552	35.598	-10.402	46.000
614.910	2.991	36.024	39.015	-6.985	46.000
819.580	6.961	34.648	41.609	-4.391	46.000
921.430	6.730	28.958	35.688	-10.312	46.000
Vertical					
Peak Detector					
120.210	-3.535	33.188	29.653	-13.847	43.500
307.420	-4.030	44.722	40.692	-5.308	46.000
512.090	0.604	40.848	41.452	-4.548	46.000
614.910	1.701	28.442	30.143	-15.857	46.000
716.760	-1.321	33.449	32.128	-13.872	46.000
819.580	3.001	32.649	35.650	-10.350	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product	:	MOBILE DATA TERMINAL
Test Item	:	General Radiated Emission
Test Site	:	No.3 OATS
Test Date	:	2017/10/14
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5785MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
120.210	-7.275	39.605	32.330	-11.170	43.500
307.420	-4.120	44.107	39.987	-6.013	46.000
409.270	0.046	35.086	35.132	-10.868	46.000
614.910	2.991	36.352	39.343	-6.657	46.000
819.580	6.961	34.132	41.093	-4.907	46.000
921.430	6.730	28.686	35.416	-10.584	46.000
Vertical					
Peak Detector					
153.190	-5.284	35.624	30.340	-13.160	43.500
304.510	-4.007	44.019	40.012	-5.988	46.000
512.090	0.604	40.864	41.468	-4.532	46.000
614.910	1.701	29.452	31.153	-14.847	46.000
819.580	3.001	32.696	35.697	-10.303	46.000
921.430	3.240	28.610	31.850	-14.150	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product	:	MOBILE DATA TERMINAL
Test Item	:	General Radiated Emission
Test Site	:	No.3 OATS
Test Date	:	2017/10/14
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5230MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
120.210	-7.275	39.423	32.148	-11.352	43.500
305.480	-3.836	43.077	39.241	-6.759	46.000
409.270	0.046	35.140	35.186	-10.814	46.000
614.910	2.991	35.822	38.813	-7.187	46.000
819.580	6.961	33.735	40.696	-5.304	46.000
921.430	6.730	28.593	35.323	-10.677	46.000
Vertical					
Peak Detector					
103.720	-5.090	33.698	28.607	-14.893	43.500
306.450	-4.024	44.995	40.971	-5.029	46.000
512.090	0.604	39.706	40.310	-5.690	46.000
716.760	-1.321	33.302	31.981	-14.019	46.000
819.580	3.001	32.263	35.264	-10.736	46.000
921.430	3.240	28.590	31.830	-14.170	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : MOBILE DATA TERMINAL
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/10/14
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5310MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
120.210	-7.275	40.902	33.627	-9.873	43.500
307.420	-4.120	43.959	39.839	-6.161	46.000
409.270	0.046	35.188	35.234	-10.766	46.000
614.910	2.991	36.007	38.998	-7.002	46.000
819.580	6.961	33.843	40.804	-5.196	46.000
921.430	6.730	29.138	35.868	-10.132	46.000
Vertical					
Peak Detector					
120.210	-3.535	33.760	30.225	-13.275	43.500
307.420	-4.030	45.111	41.081	-4.919	46.000
512.090	0.604	40.376	40.980	-5.020	46.000
716.760	-1.321	33.617	32.296	-13.704	46.000
819.580	3.001	32.261	35.262	-10.738	46.000
921.430	3.240	28.835	32.075	-13.925	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : MOBILE DATA TERMINAL
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/10/14
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5550MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
120.210	-7.275	39.793	32.518	-10.982	43.500
307.420	-4.120	43.941	39.821	-6.179	46.000
512.090	3.184	32.031	35.215	-10.785	46.000
614.910	2.991	35.667	38.658	-7.342	46.000
819.580	6.961	33.410	40.371	-5.629	46.000
921.430	6.730	28.415	35.145	-10.855	46.000
Vertical					
Peak Detector					
120.210	-3.535	32.522	28.987	-14.513	43.500
306.450	-4.024	44.478	40.454	-5.546	46.000
512.090	0.604	40.636	41.240	-4.760	46.000
716.760	-1.321	33.333	32.012	-13.988	46.000
819.580	3.001	32.019	35.020	-10.980	46.000
921.430	3.240	28.959	32.199	-13.801	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : MOBILE DATA TERMINAL
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/10/14
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
120.210	-7.275	39.781	32.506	-10.994	43.500
305.480	-3.836	43.167	39.331	-6.669	46.000
409.270	0.046	35.475	35.521	-10.479	46.000
614.910	2.991	36.123	39.114	-6.886	46.000
819.580	6.961	33.874	40.835	-5.165	46.000
921.430	6.730	28.606	35.336	-10.664	46.000
Vertical					
Peak Detector					
99.840	-6.063	36.538	30.475	-13.025	43.500
305.480	-4.016	44.240	40.224	-5.776	46.000
512.090	0.604	40.873	41.477	-4.523	46.000
716.760	-1.321	33.255	31.934	-14.066	46.000
819.580	3.001	32.180	35.181	-10.819	46.000
921.430	3.240	29.556	32.796	-13.204	46.000

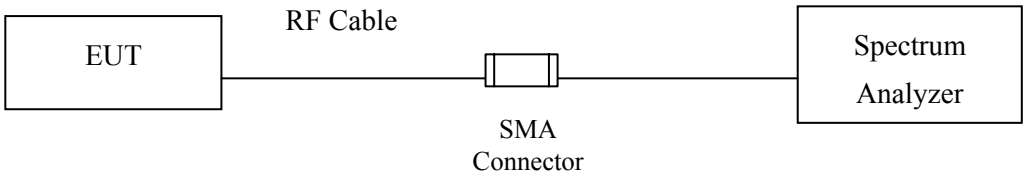
Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

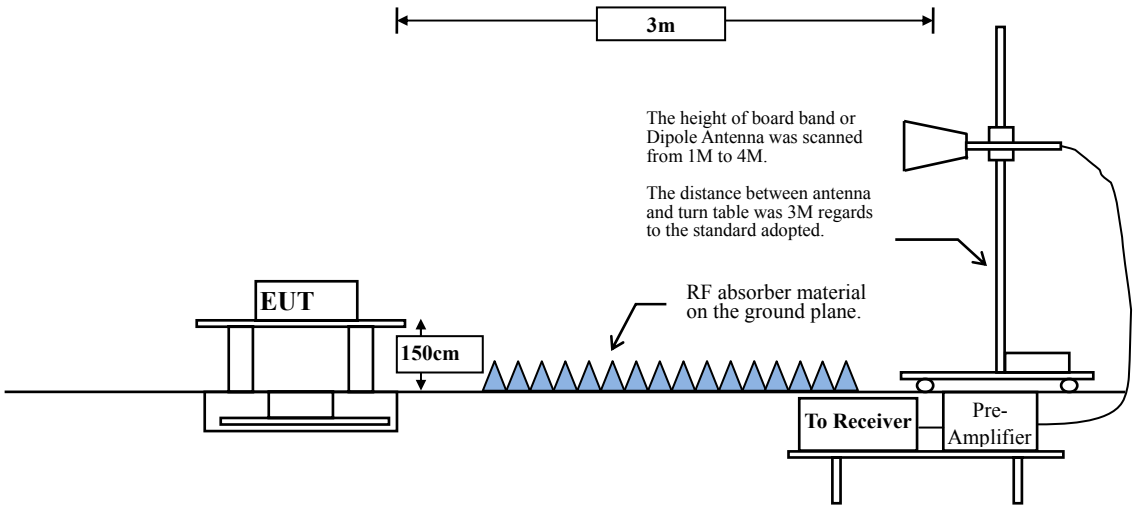
6. Band Edge

6.1. Test Setup

RF Conducted Measurement:



RF Radiated Measurement:



6.2. Limits

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

Radiated emissions which fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209:

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	uV/m @3m	dBμV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remarks : 1. RF Voltage (dBμV) = 20 log RF Voltage (uV)

2. In the Above Table, the tighter limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

6.3. Test Procedure

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10:2013 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz.

The EUT was setup to ANSI C63.10, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

The average measurement tested according to KDB 789033 section H)6)d) Method VB (Averaging using reduced video bandwidth).

VBW ≥ 1/T:

Mode	Duty Cycle	T	1/T	VBW Setting
802.11a	0.8590	1.3400 ms	746 Hz	1 kHz
802.11n-20	0.8639	1.2700 ms	787 Hz	1 kHz
802.11n-40	0.7108	0.5900 ms	1695 Hz	1.6 kHz

6.4. Uncertainty

± 4.08 dB above 1GHz

± 4.22 dB below 1GHz

6.5. Test Result of Band Edge

Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5180MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
36 (Peak)	5144.348	10.484	47.719	58.204	74.00	54.00	Pass
36 (Peak)	5150.000	10.470	47.258	57.729	74.00	54.00	Pass
36 (Peak)	5184.638	10.382	89.140	99.522	--	--	--
36 (Average)	5150.000	10.470	29.142	39.613	74.00	54.00	Pass
36 (Average)	5176.377	10.404	78.336	88.739	--	--	--

Figure Channel 36: Horizontal (Peak)

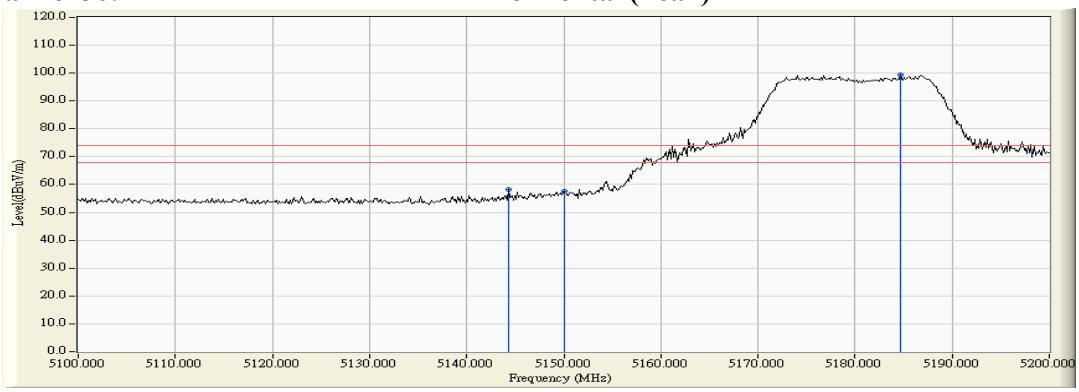
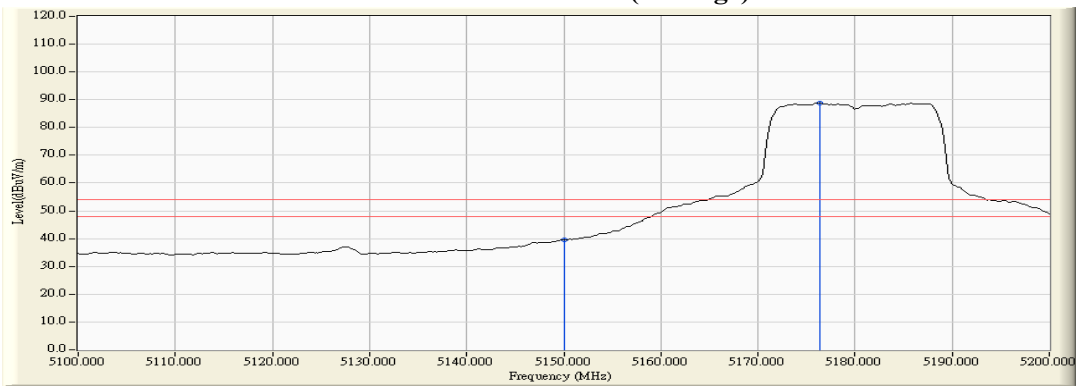


Figure Channel 36: Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5180MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
36 (Peak)	5149.275	12.388	53.884	66.272	74.00	54.00	Pass
36 (Peak)	5150.000	12.390	53.600	65.990	74.00	54.00	Pass
36 (Peak)	5175.652	12.485	95.821	108.307	--	--	--
36 (Average)	5150.000	12.390	34.318	46.708	74.00	54.00	Pass
36 (Average)	5186.812	12.527	84.970	97.497	--	--	--

Figure Channel 36: Vertical (Peak)

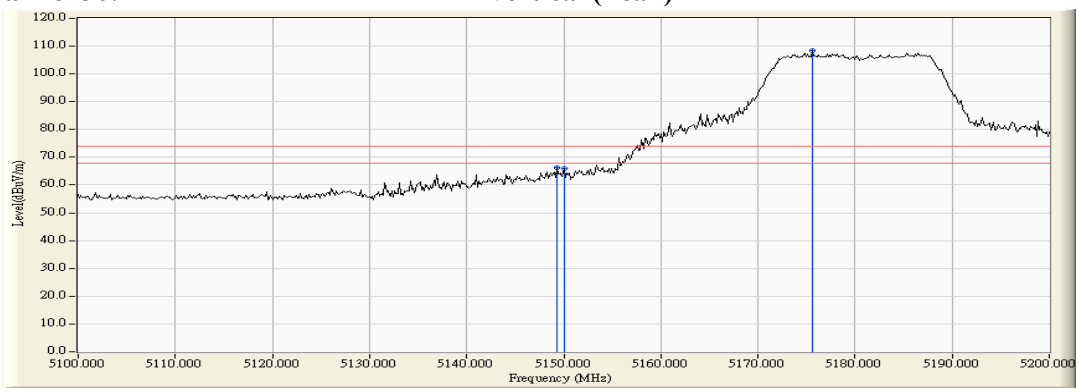
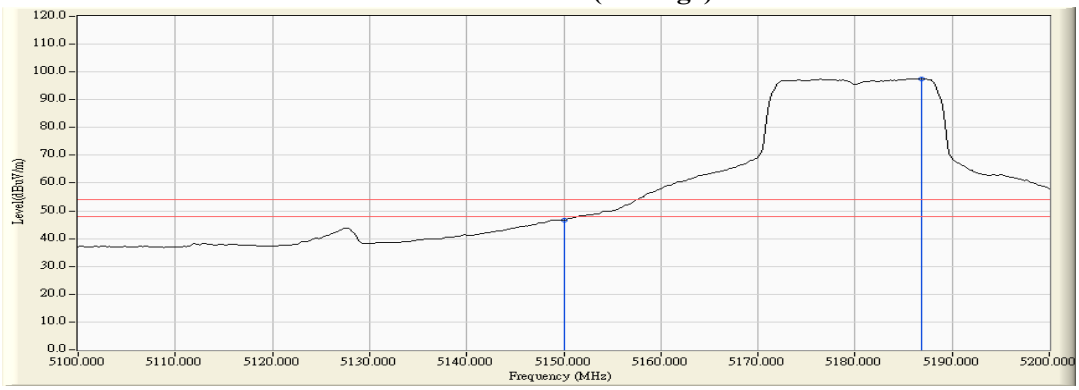


Figure Channel 36: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5320MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
64 (Peak)	5323.333	11.092	91.108	102.200	--	--	--
64 (Peak)	5350.000	11.024	44.297	55.321	74.00	54.00	Pass
64 (Peak)	5371.594	10.966	47.334	58.301	74.00	54.00	Pass
64 (Average)	5313.043	11.119	81.772	92.890	--	--	--
64 (Average)	5350.000	11.024	29.232	40.256	74.00	54.00	Pass

Figure Channel 64: Horizontal (Peak)

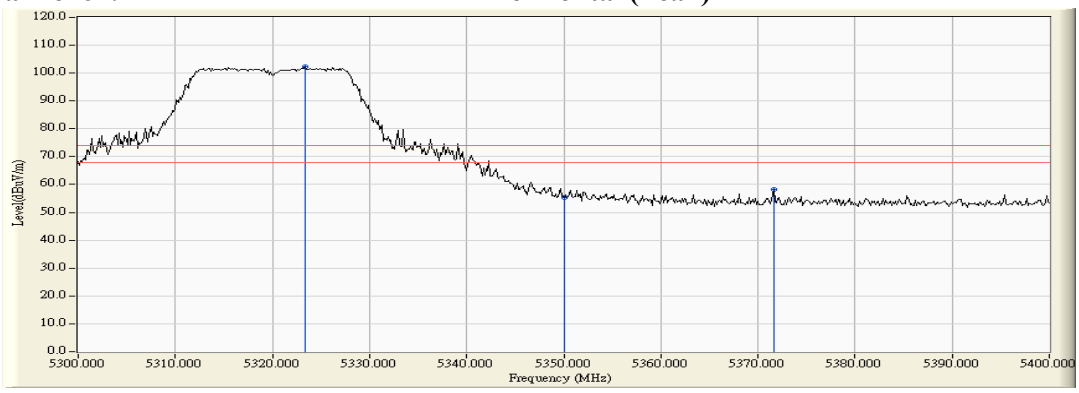
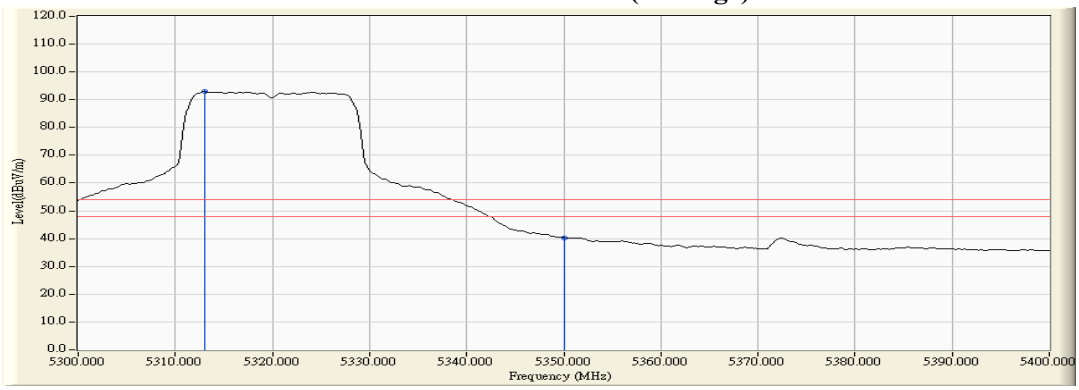


Figure Channel 64: Horizontal (Average)



Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5320MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
64 (Peak)	5324.783	13.014	95.600	108.614	--	--	--
64 (Peak)	5350.000	12.999	51.954	64.953	74.00	54.00	Pass
64 (Peak)	5352.029	12.998	52.315	65.313	74.00	54.00	Pass
64 (Average)	5315.507	13.020	85.626	98.646	--	--	--
64 (Average)	5350.000	12.999	32.532	45.531	74.00	54.00	Pass

Figure Channel 64: Vertical (Peak)

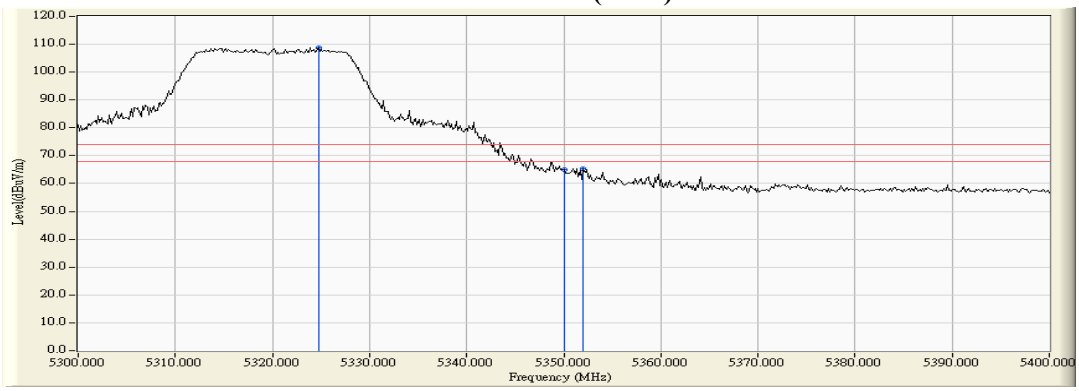
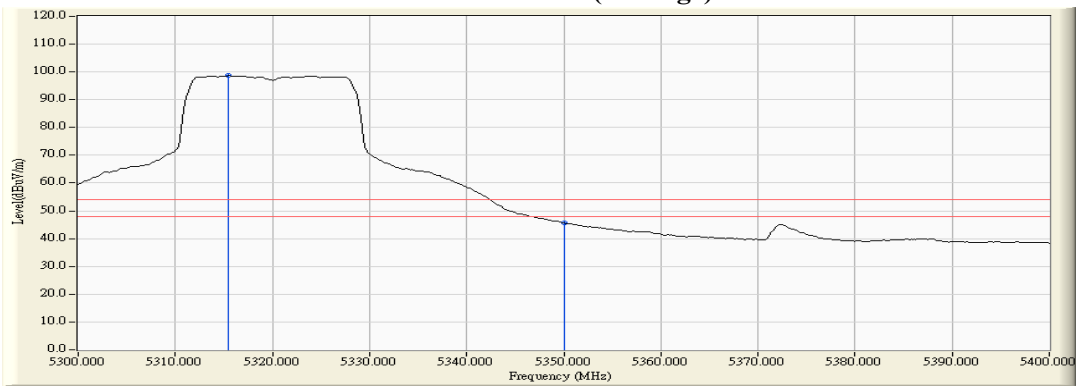


Figure Channel 64: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/16
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5500MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
100 (Peak)	5458.986	11.689	45.619	57.308	74.00	54.00	Pass
100 (Peak)	5460.000	11.703	44.721	56.424	74.00	54.00	Pass
100 (Peak)	5505.362	12.201	90.039	102.240	--	--	--
100 (Average)	5447.391	11.533	27.241	38.774	74.00	54.00	Pass
100 (Average)	5460.000	11.703	26.143	37.846	74.00	54.00	Pass
100 (Average)	5495.507	12.137	80.211	92.348	--	--	--

Figure Channel 100: Horizontal (Peak)

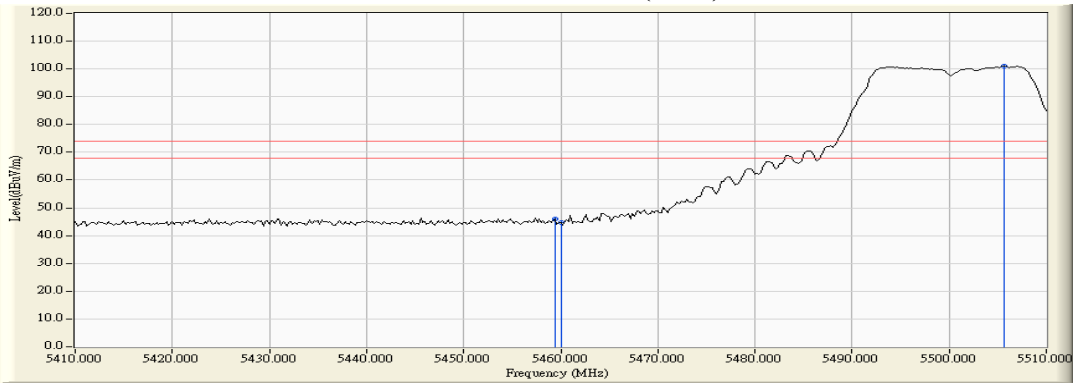
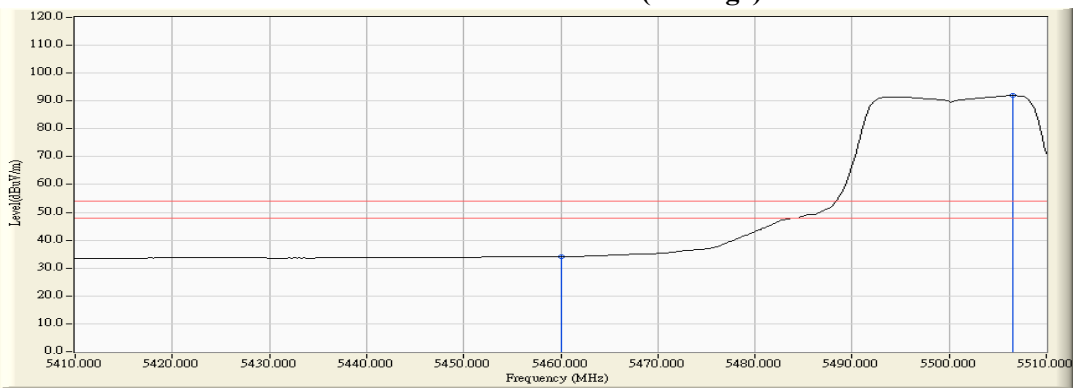


Figure Channel 100: Horizontal (Average)



Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/16
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5500MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
100 (Peak)	5456.522	13.365	52.881	66.246	74.00	54.00	Pass
100 (Peak)	5460.000	13.390	48.311	61.701	74.00	54.00	Pass
100 (Peak)	5506.232	13.636	94.253	107.890	--	--	--
100 (Average)	5447.971	13.305	29.795	43.100	74.00	54.00	Pass
100 (Average)	5460.000	13.390	28.781	42.171	74.00	54.00	Pass
100 (Average)	5507.101	13.631	83.862	97.493	--	--	--

Figure Channel 100: Vertical (Peak)

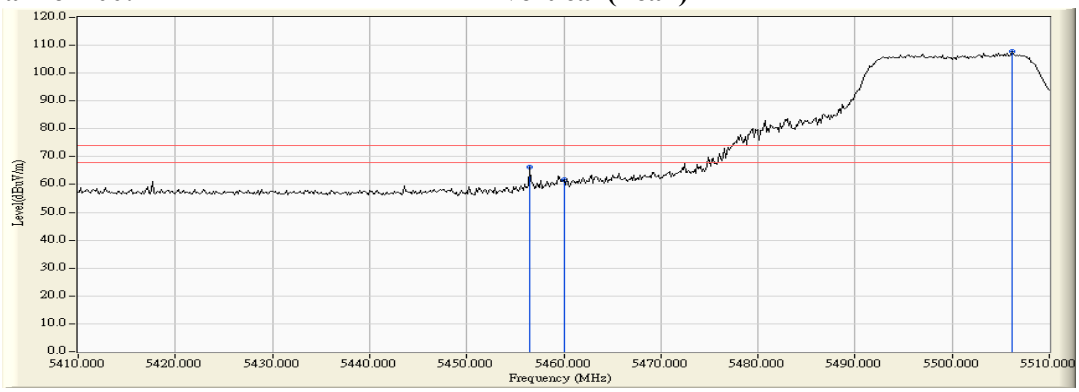
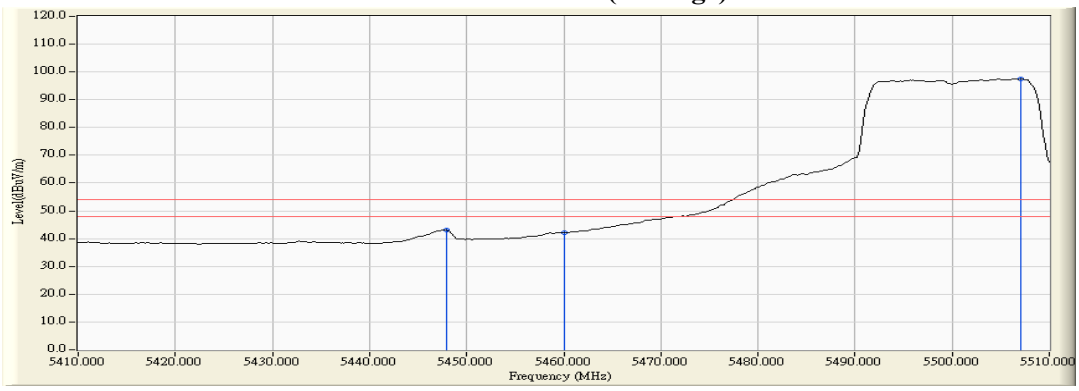


Figure Channel 100: Vertical (Average)



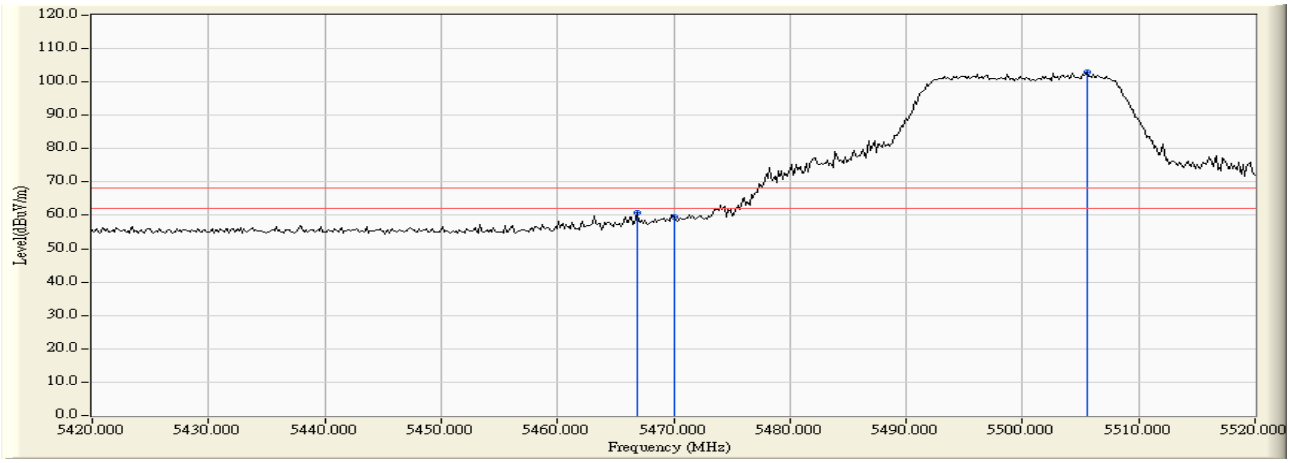
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

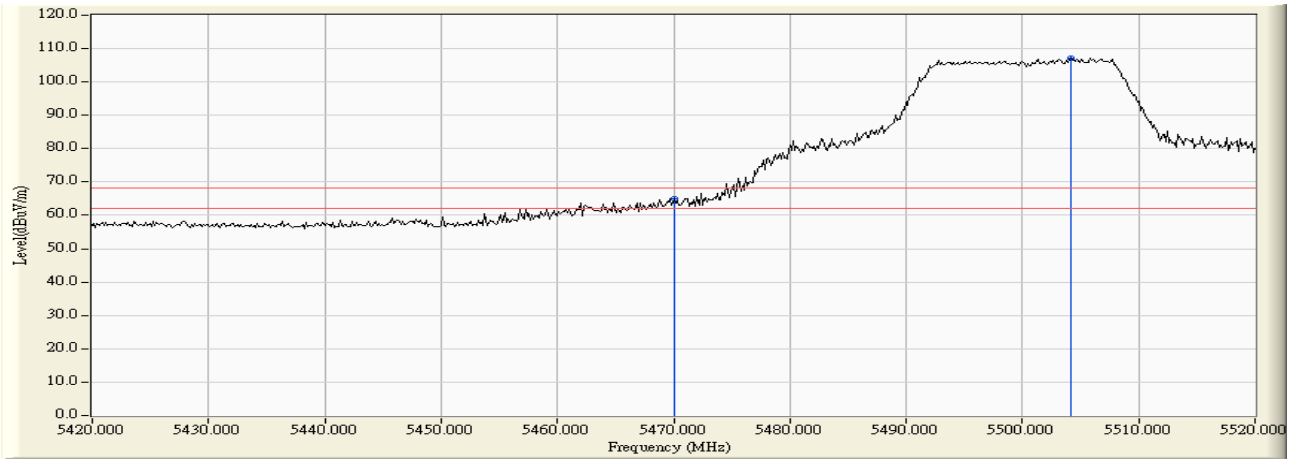
Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/16
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5500MHz)

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5466.812	11.795	48.859	60.654	-7.566	68.220	Pass
Horizontal	5470.000	11.838	47.675	59.513	-8.707	68.220	Pass
Horizontal	5505.507	12.200	90.839	103.039	--	--	--



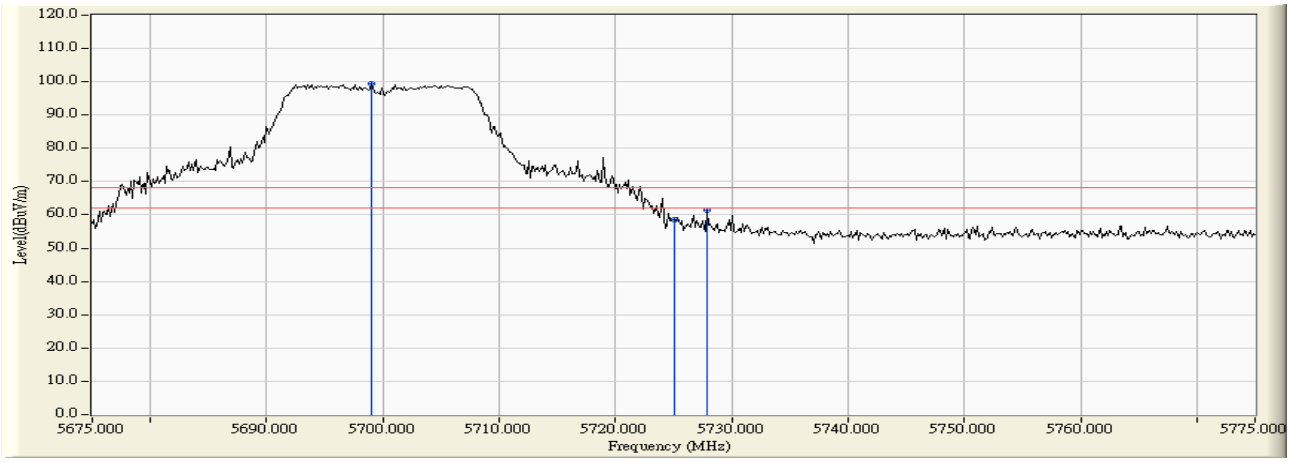
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5470.000	13.462	51.623	65.085	-3.135	68.220	Pass
Vertical	5504.203	13.642	93.616	107.258	--	--	--



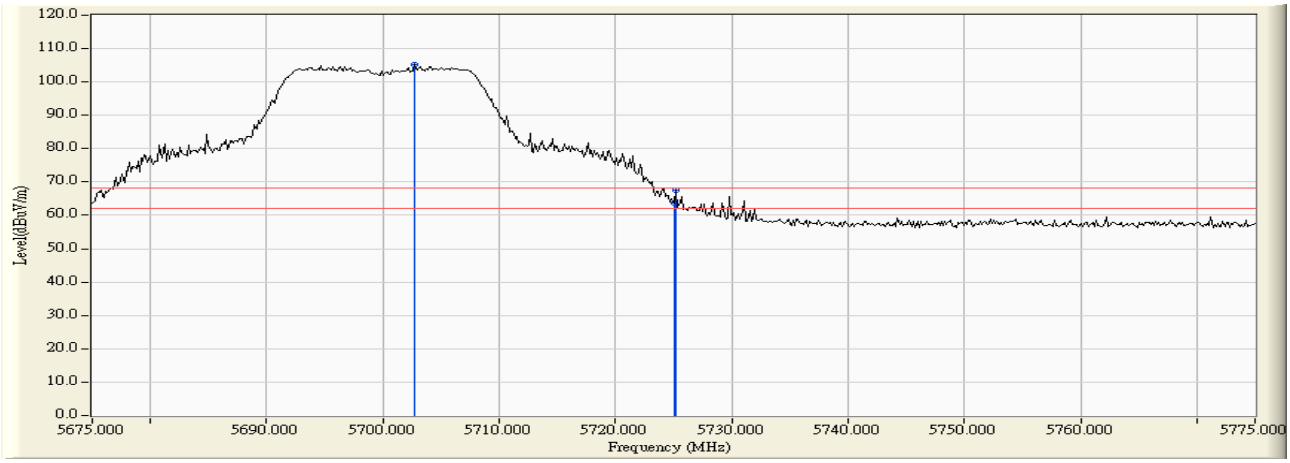
Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5700MHz)

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5699.058	11.648	87.610	99.258	--	--	--
Horizontal	5725.000	11.592	46.811	58.403	-9.817	68.220	Pass
Horizontal	5727.899	11.583	49.867	61.450	-6.770	68.220	Pass



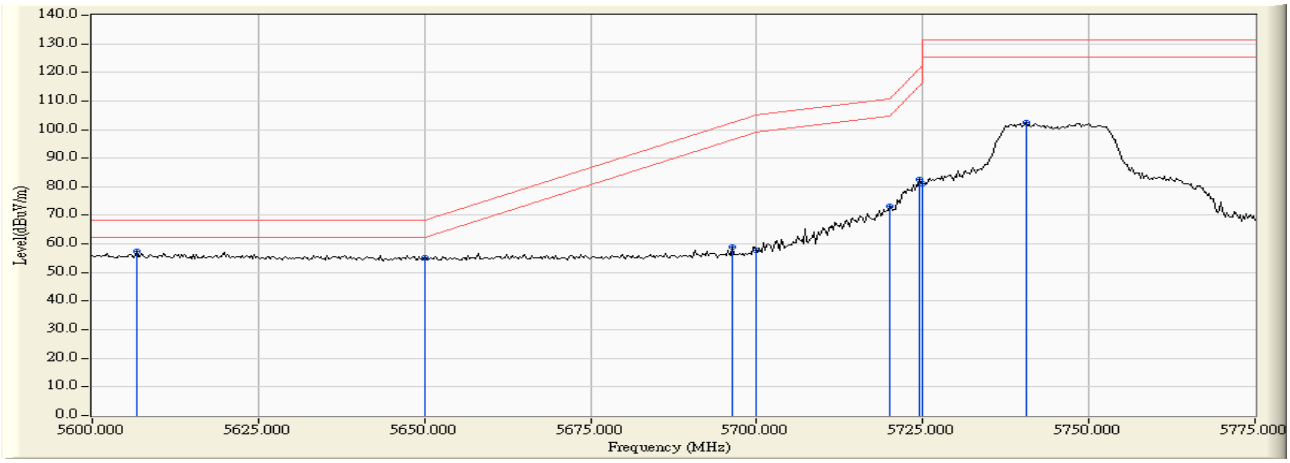
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5702.681	12.998	92.250	105.248	--	--	--
Vertical	5725.000	12.930	50.683	63.613	-4.607	68.220	Pass
Vertical	5725.145	12.929	54.721	67.651	-0.569	68.220	Pass



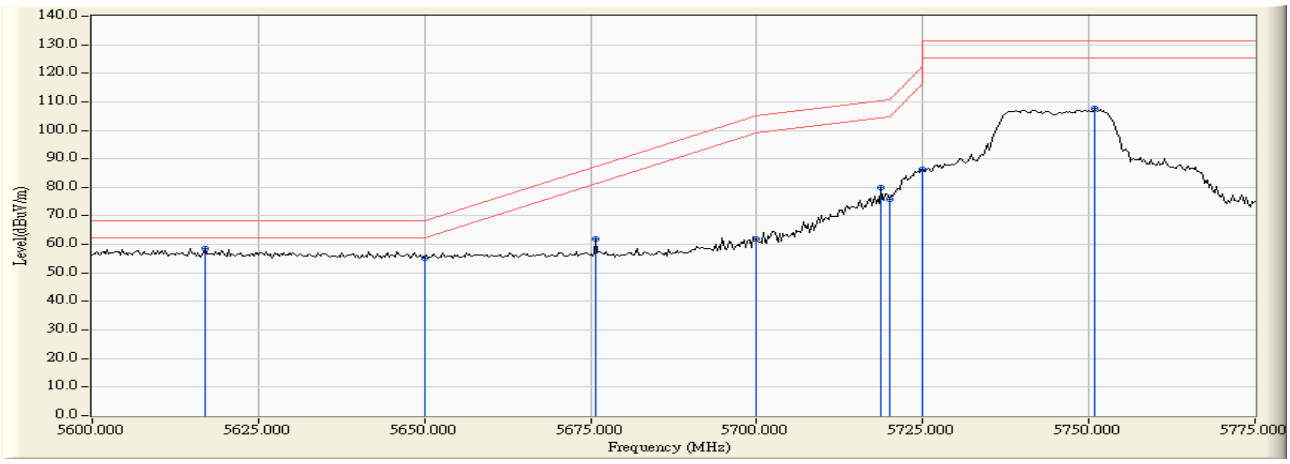
Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5745MHz)

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5606.594	11.453	45.956	57.410	--	--	--
Horizontal	5650.000	11.554	43.794	55.349	-12.871	68.220	Pass
Horizontal	5696.377	11.649	47.092	58.742	-43.778	102.520	Pass
Horizontal	5700.000	11.647	46.281	57.928	-47.272	105.200	Pass
Horizontal	5720.000	11.607	61.416	73.023	-37.777	110.800	Pass
Horizontal	5724.529	11.594	70.987	82.580	-38.546	121.126	Pass
Horizontal	5725.000	11.592	69.518	81.110	-41.090	122.200	Pass
Horizontal	5740.507	11.543	90.785	102.328	-28.872	131.200	Pass



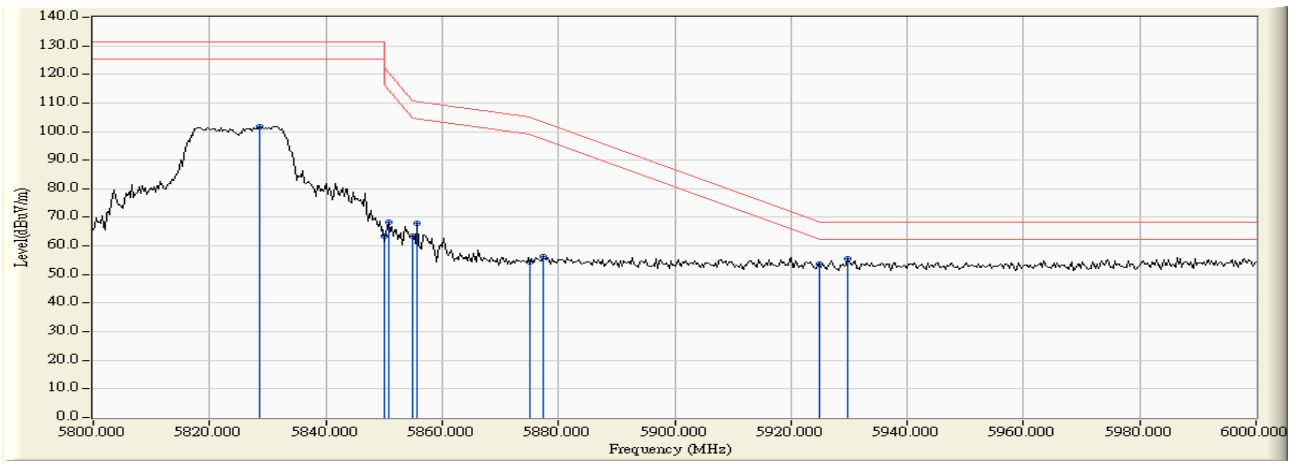
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5616.993	13.038	45.556	58.593	--	--	--
Vertical	5650.000	13.029	42.279	55.308	-12.912	68.220	Pass
Vertical	5675.833	13.023	49.068	62.091	-25.235	87.326	Pass
Vertical	5700.000	13.003	48.740	61.743	-43.457	105.200	Pass
Vertical	5718.696	12.951	66.901	79.853	-30.582	110.435	Pass
Vertical	5720.000	12.947	62.914	75.861	-34.939	110.800	Pass
Vertical	5725.000	12.930	73.466	86.396	-35.804	122.200	Pass
Vertical	5750.906	12.839	94.834	107.673	-23.527	131.200	Pass



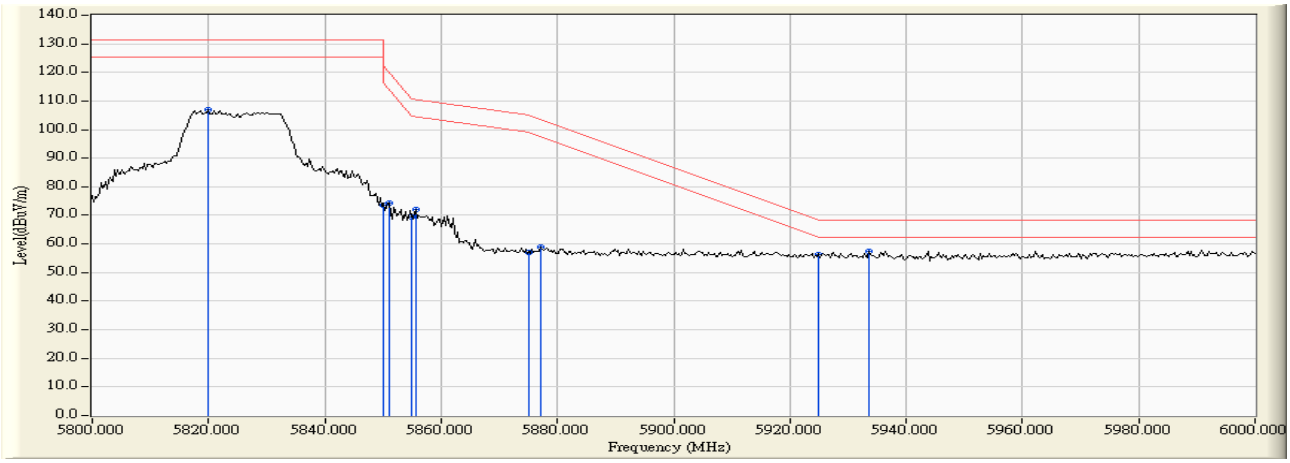
Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5825MHz)

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5828.696	11.553	90.281	101.834	-29.366	131.200	Pass
Horizontal	5850.000	11.701	51.856	63.557	-58.643	122.200	Pass
Horizontal	5850.725	11.706	56.699	68.405	-52.142	120.547	Pass
Horizontal	5855.000	11.735	51.569	63.304	-47.496	110.800	Pass
Horizontal	5855.652	11.740	56.328	68.068	-42.549	110.617	Pass
Horizontal	5875.000	11.873	42.475	54.348	-50.852	105.200	Pass
Horizontal	5877.391	11.890	44.300	56.190	-47.241	103.431	Pass
Horizontal	5925.000	12.068	41.678	53.747	-14.453	68.200	Pass
Horizontal	5929.855	12.073	43.616	55.689	--	--	--



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5820.000	12.711	94.281	106.992	-24.208	131.200	Pass
Vertical	5850.000	12.774	60.886	73.660	-48.540	122.200	Pass
Vertical	5851.014	12.775	61.493	74.269	-45.619	119.888	Pass
Vertical	5855.000	12.784	56.515	69.299	-41.501	110.800	Pass
Vertical	5855.652	12.786	59.146	71.931	-38.686	110.617	Pass
Vertical	5875.000	12.825	44.355	57.180	-48.020	105.200	Pass
Vertical	5877.101	12.829	45.981	58.811	-44.834	103.645	Pass
Vertical	5925.000	12.911	43.369	56.280	-11.920	68.200	Pass
Vertical	5933.623	12.923	44.551	57.474	--	--	--



Product	:	MOBILE DATA TERMINAL
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Date	:	2017/10/17
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5180MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
36 (Peak)	5149.275	10.473	49.657	60.130	74.00	54.00	Pass
36 (Peak)	5150.000	10.470	47.506	57.977	74.00	54.00	Pass
36 (Peak)	5186.667	10.378	90.898	101.275	--	--	--
36 (Average)	5149.130	10.473	32.637	43.110	74.00	54.00	Pass
36 (Average)	5150.000	10.470	32.113	42.584	74.00	54.00	Pass
36 (Average)	5187.391	10.375	80.372	90.747	--	--	--

Figure Channel 36: Horizontal (Peak)

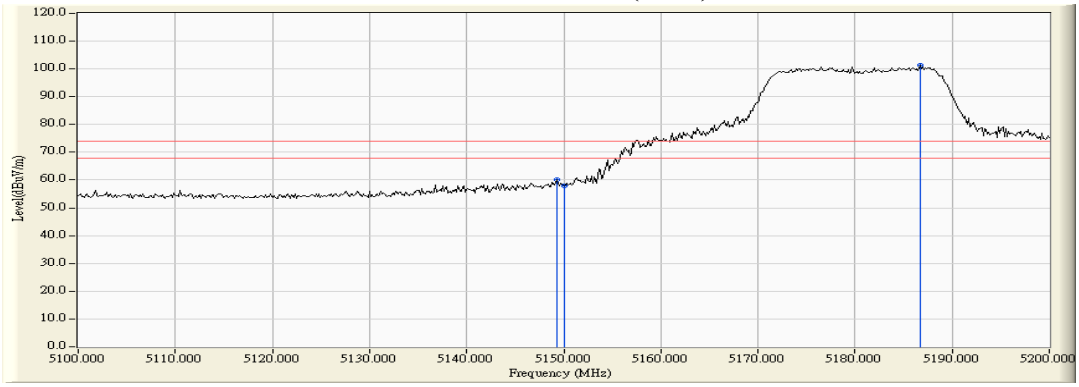
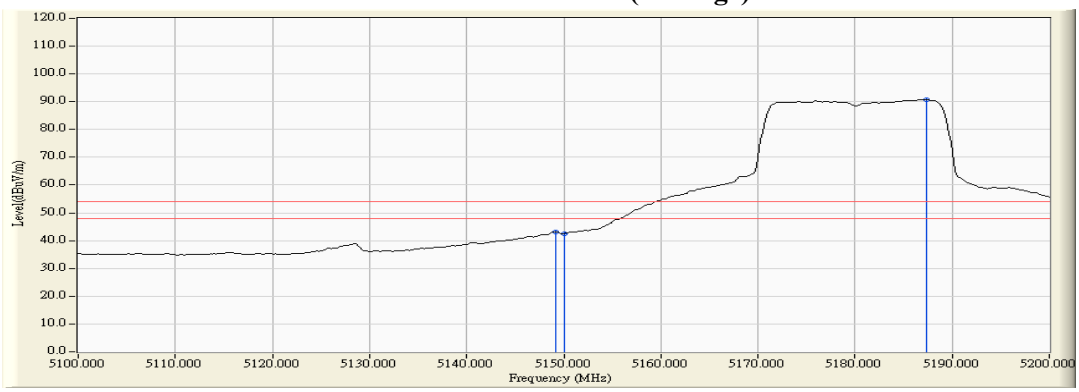


Figure Channel 36: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5180MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
36 (Peak)	5149.710	12.390	57.097	69.486	74.00	54.00	Pass
36 (Peak)	5150.000	12.390	53.369	65.759	74.00	54.00	Pass
36 (Peak)	5178.406	12.494	96.639	109.134	--	--	--
36 (Average)	5150.000	12.390	38.846	51.236	74.00	54.00	Pass
36 (Average)	5186.957	12.528	86.246	98.774	--	--	--

Figure Channel 36: Vertical (Peak)

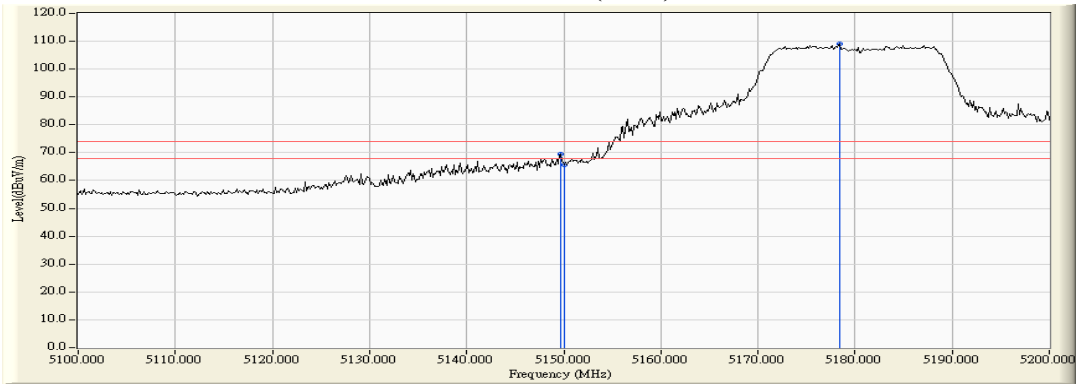
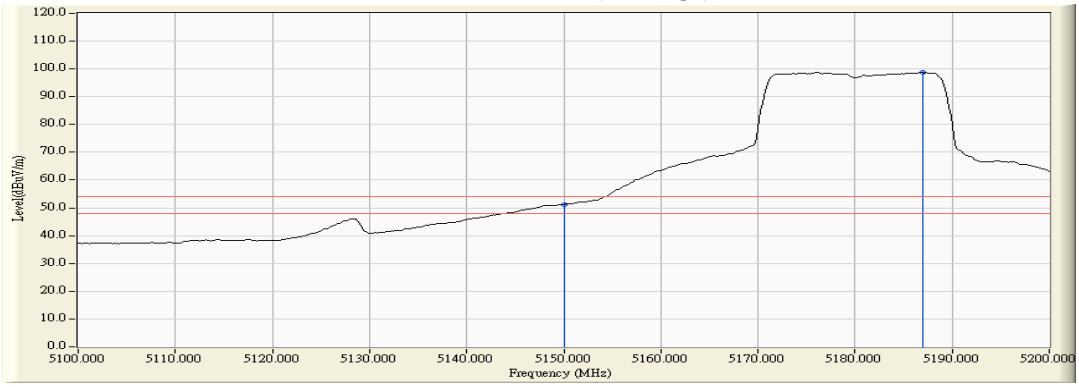


Figure Channel 36: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5320MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
64 (Peak)	5315.362	11.113	93.665	104.778	--	--	--
64 (Peak)	5350.000	11.024	53.055	64.079	74.00	54.00	Pass
64 (Peak)	5351.159	11.022	55.212	66.233	74.00	54.00	Pass
64 (Average)	5316.522	11.110	83.126	94.236	--	--	--
64 (Average)	5350.000	11.024	35.137	46.161	74.00	54.00	Pass

Figure Channel 64: Horizontal (Peak)

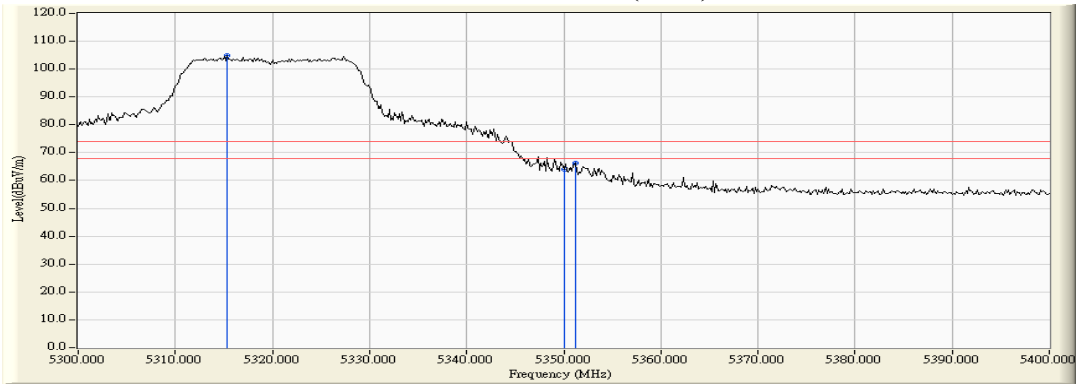
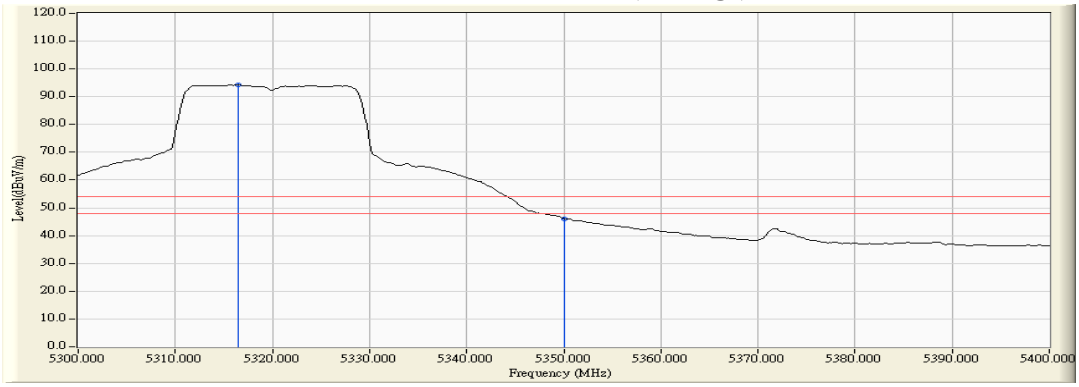


Figure Channel 64: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5320MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
64 (Peak)	5314.058	13.021	97.620	110.641	--	--	--
64 (Peak)	5350.000	12.999	59.761	72.760	74.00	54.00	Pass
64 (Average)	5313.623	13.021	87.428	100.449	--	--	--
64 (Average)	5350.000	12.999	39.673	52.672	74.00	54.00	Pass

Figure Channel 64: Vertical (Peak)

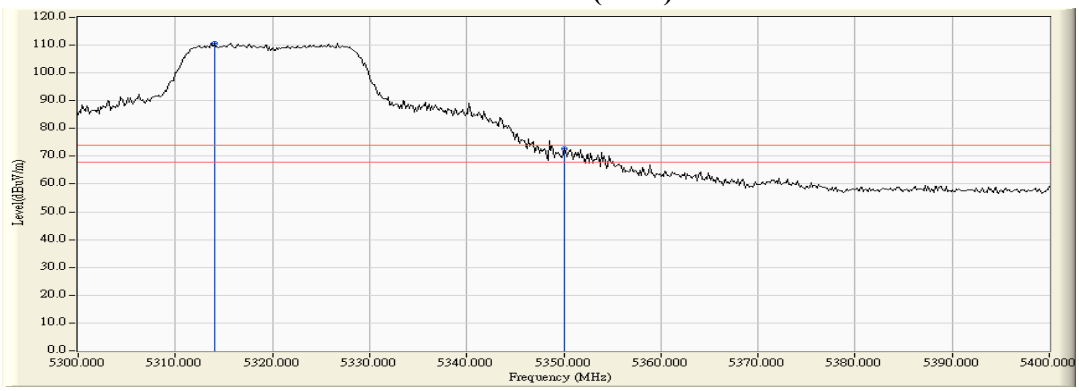
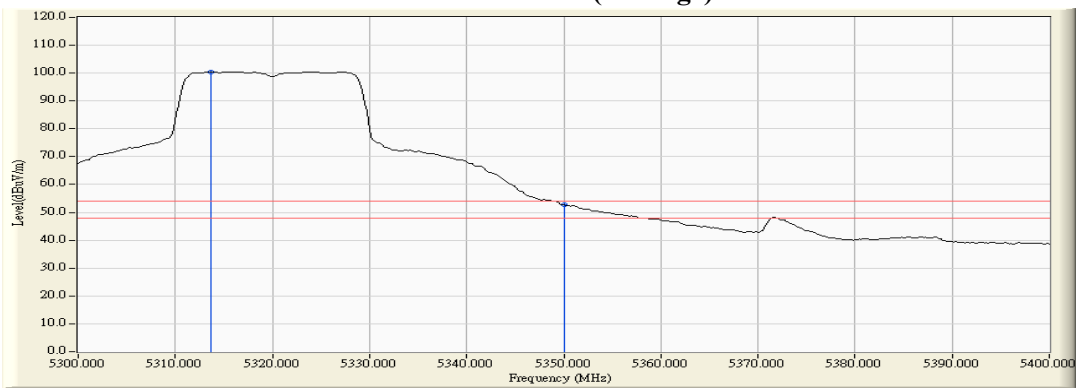


Figure Channel 64: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/16
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
100 (Peak)	5459.855	11.702	48.367	60.068	74.00	54.00	Pass
100 (Peak)	5460.000	11.703	45.812	57.515	74.00	54.00	Pass
100 (Peak)	5504.203	12.198	90.609	102.807	--	--	--
100 (Average)	5448.261	11.545	28.829	40.374	74.00	54.00	Pass
100 (Average)	5460.000	11.703	27.770	39.473	74.00	54.00	Pass
100 (Average)	5505.072	12.204	80.672	92.875	--	--	--

Figure Channel 100: Horizontal (Peak)

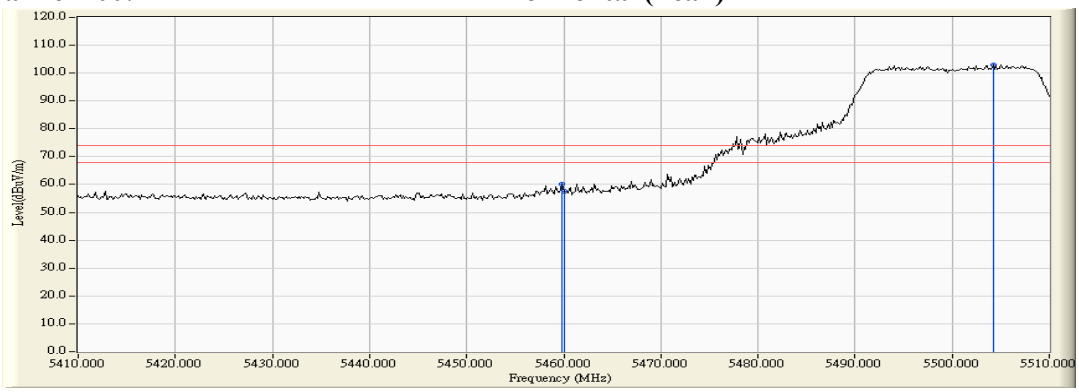
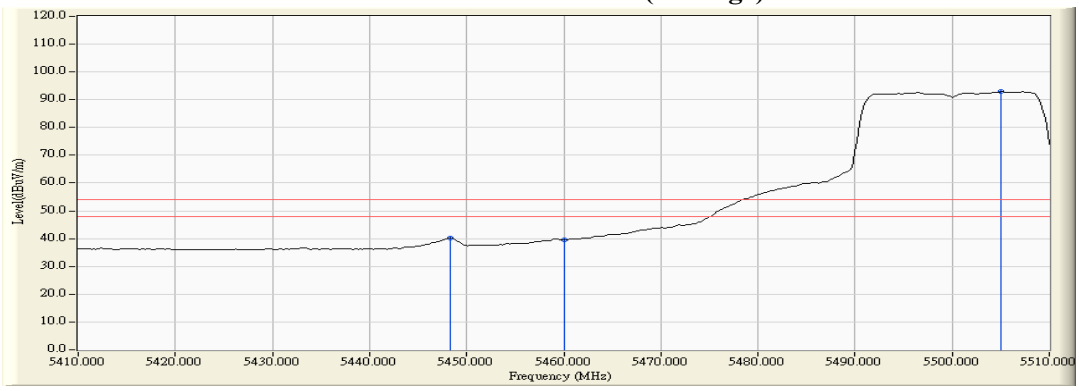


Figure Channel 100: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/16
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
100 (Peak)	5458.986	13.383	53.495	66.877	74.00	54.00	Pass
100 (Peak)	5460.000	13.390	46.566	59.956	74.00	54.00	Pass
100 (Peak)	5498.261	13.623	93.750	107.374	--	--	--
100 (Average)	5448.406	13.307	30.847	44.155	74.00	54.00	Pass
100 (Average)	5460.000	13.390	29.612	43.002	74.00	54.00	Pass
100 (Average)	5506.667	13.633	83.329	96.963	--	--	--

Figure Channel 100: Vertical (Peak)

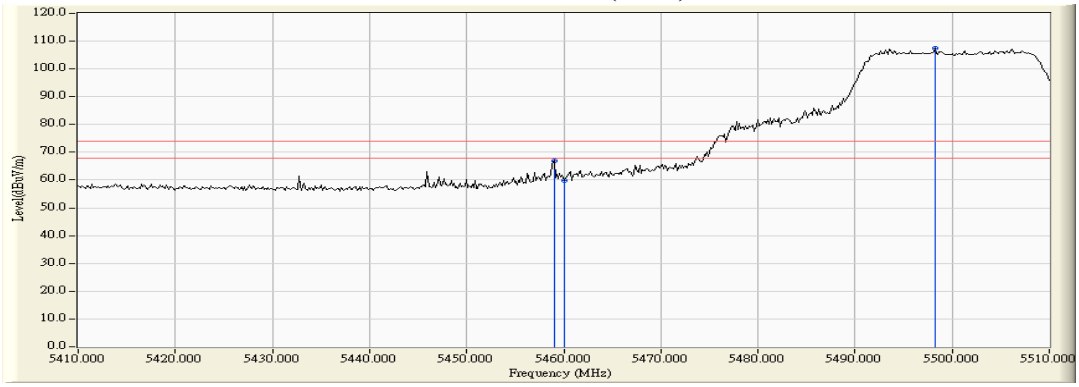
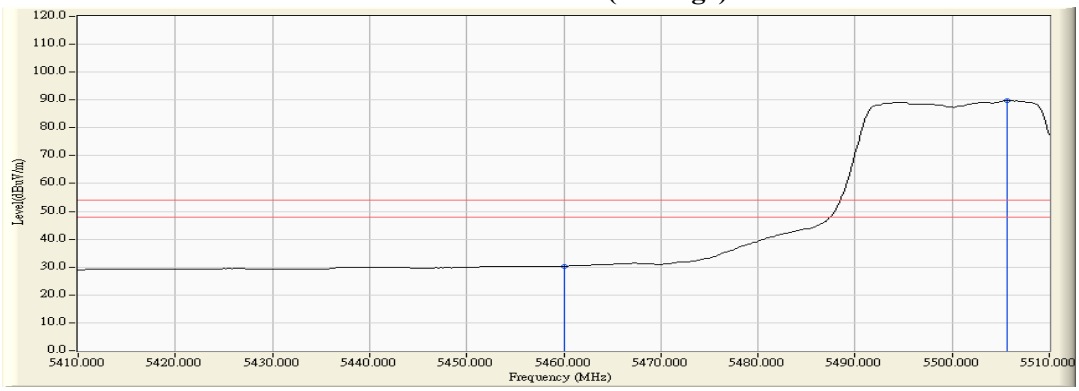


Figure Channel 100: Vertical (Average)



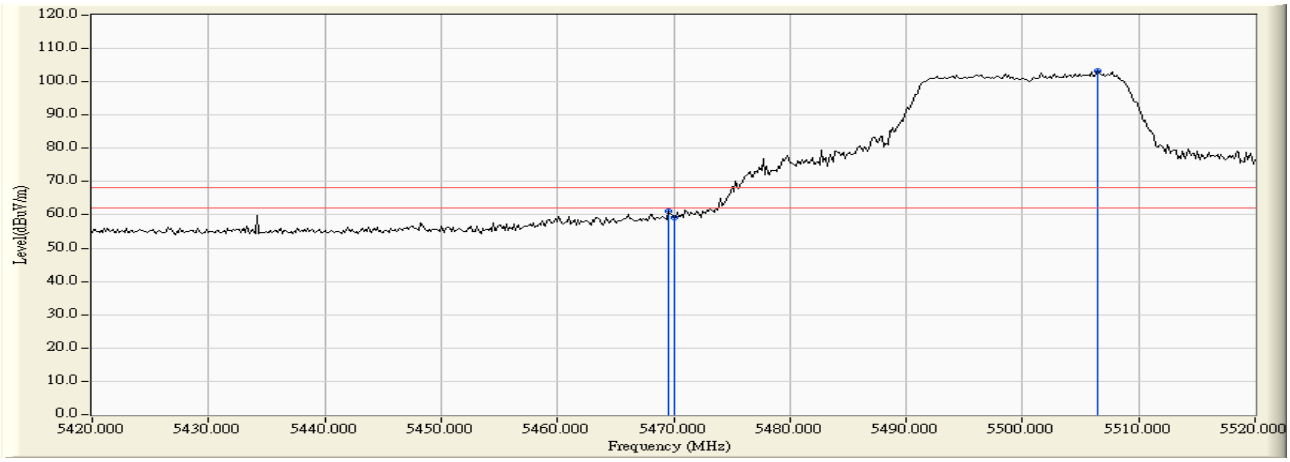
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1k Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

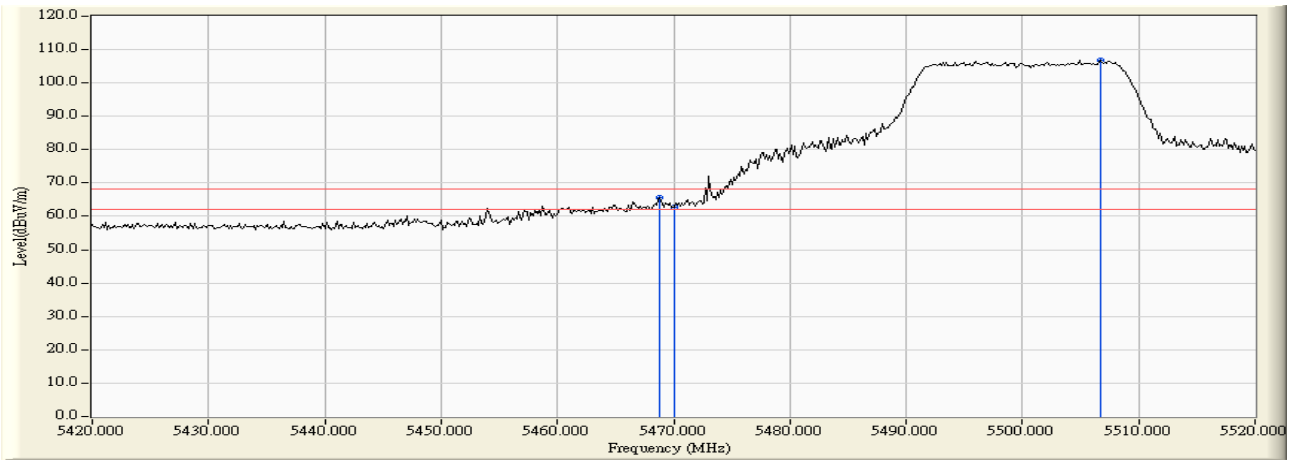
Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/16
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5469.565	11.833	49.238	61.071	-7.149	68.220	Pass
Horizontal	5470.000	11.838	47.239	59.077	-9.143	68.220	Pass
Horizontal	5506.522	12.191	91.080	103.271	--	--	--



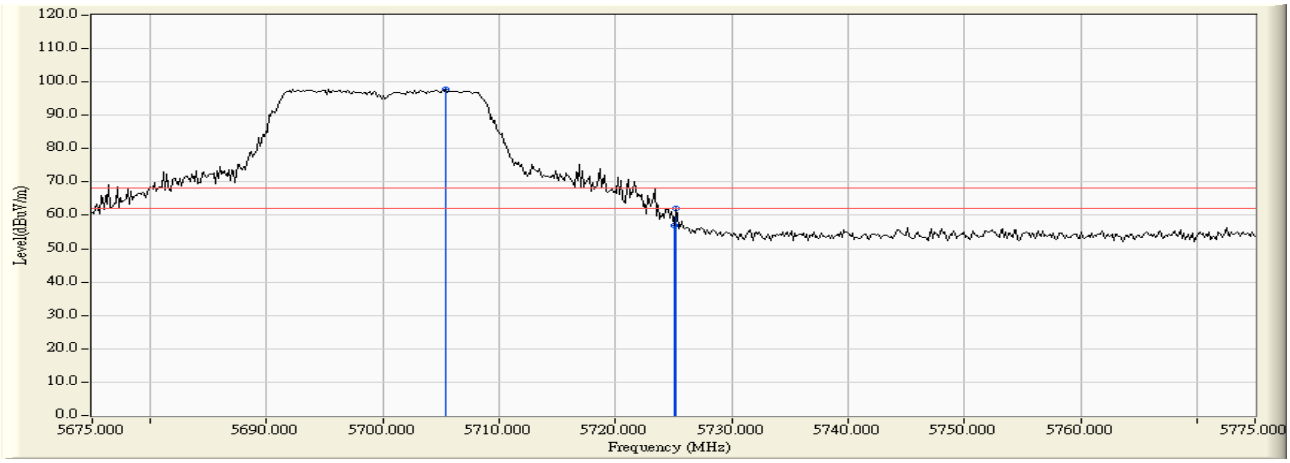
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5468.841	13.454	52.126	65.580	-2.640	68.220	Pass
Vertical	5470.000	13.462	49.425	62.887	-5.333	68.220	Pass
Vertical	5506.667	13.633	93.246	106.880	--	--	--



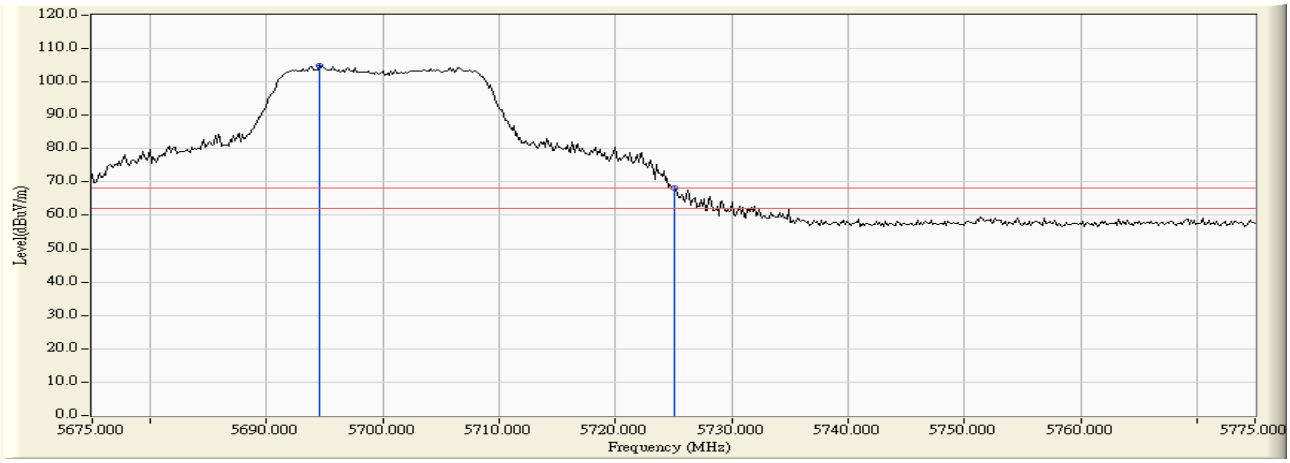
Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/16
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5700MHz)

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5705.435	11.643	86.196	97.840	--	--	--
Horizontal	5725.000	11.592	45.233	56.825	-11.395	68.220	Pass
Horizontal	5725.145	11.591	50.640	62.231	-5.989	68.220	Pass



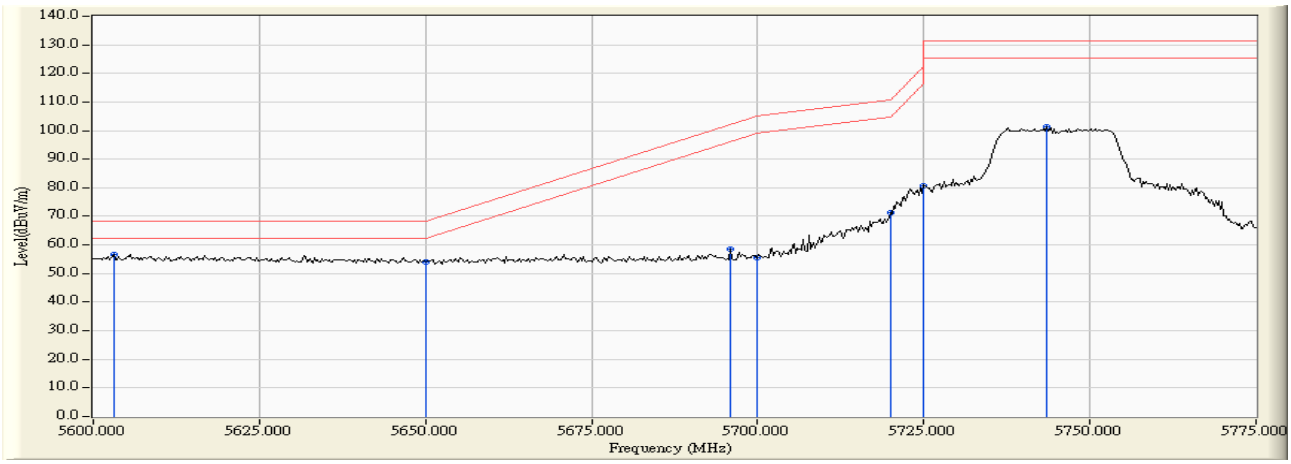
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5694.565	13.013	91.710	104.724	--	--	--
Vertical	5725.000	12.930	55.251	68.181	-0.039	68.220	Pass



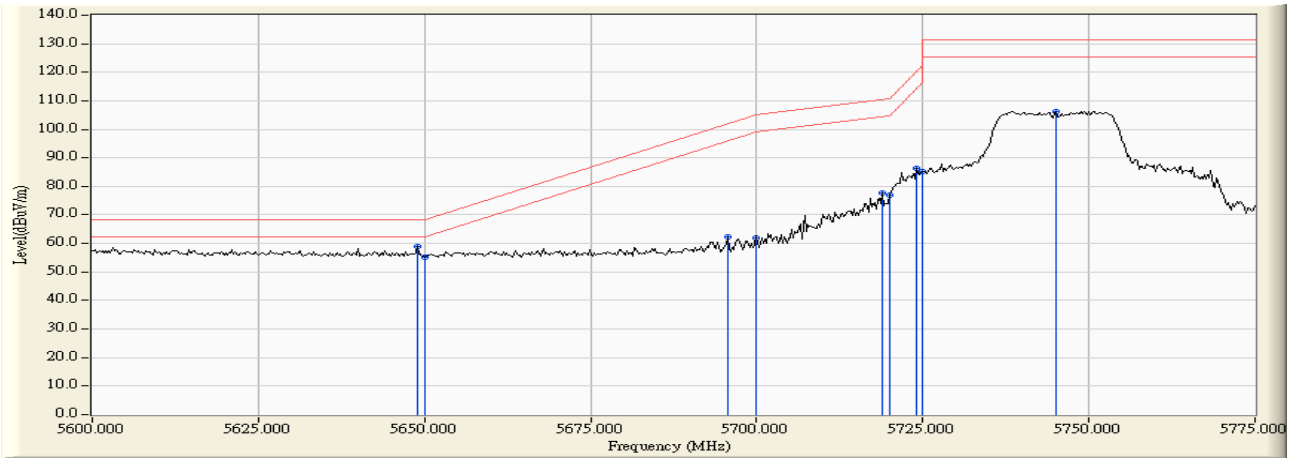
Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5745MHz)

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5603.043	11.460	45.332	56.792	--	--	--
Horizontal	5650.000	11.554	42.391	53.946	-14.274	68.220	Pass
Horizontal	5695.870	11.651	46.717	58.367	-43.778	102.145	Pass
Horizontal	5700.000	11.647	44.082	55.729	-49.471	105.200	Pass
Horizontal	5720.000	11.607	59.813	71.420	-39.380	110.800	Pass
Horizontal	5725.000	11.592	69.011	80.603	-41.597	122.200	Pass
Horizontal	5743.551	11.533	89.706	101.239	-29.961	131.200	Pass



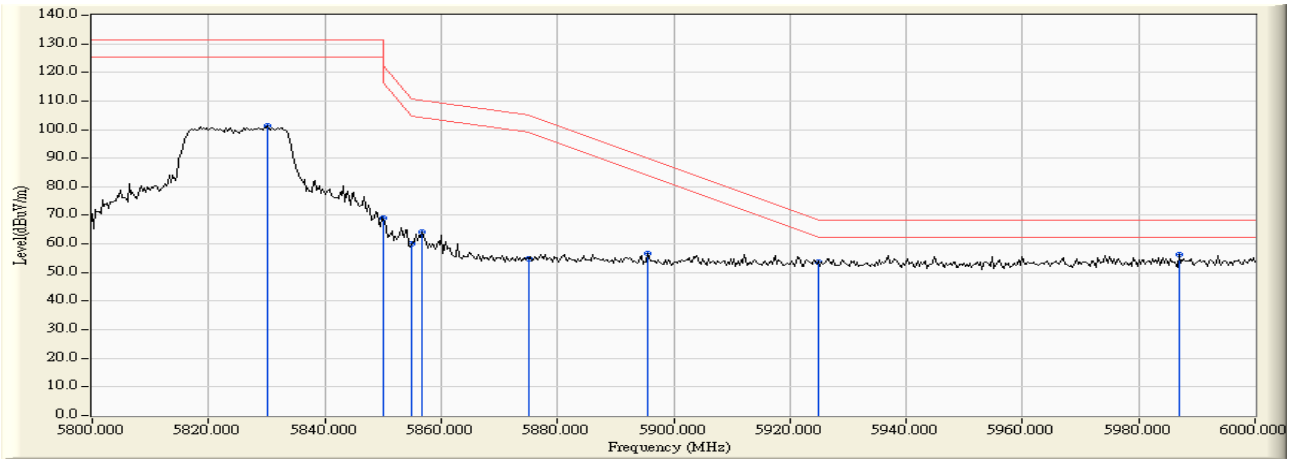
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5648.949	13.029	46.030	59.060	--	--	--
Vertical	5650.000	13.029	42.258	55.287	-12.933	68.220	Pass
Vertical	5695.616	13.011	49.208	62.220	-39.738	101.958	Pass
Vertical	5700.000	13.003	48.926	61.929	-43.271	105.200	Pass
Vertical	5718.949	12.950	64.576	77.527	-32.979	110.506	Pass
Vertical	5720.000	12.947	64.129	77.076	-33.724	110.800	Pass
Vertical	5724.022	12.934	73.298	86.232	-33.738	119.970	Pass
Vertical	5725.000	12.930	72.163	85.093	-37.107	122.200	Pass
Vertical	5745.072	12.860	93.537	106.397	-24.803	131.200	Pass



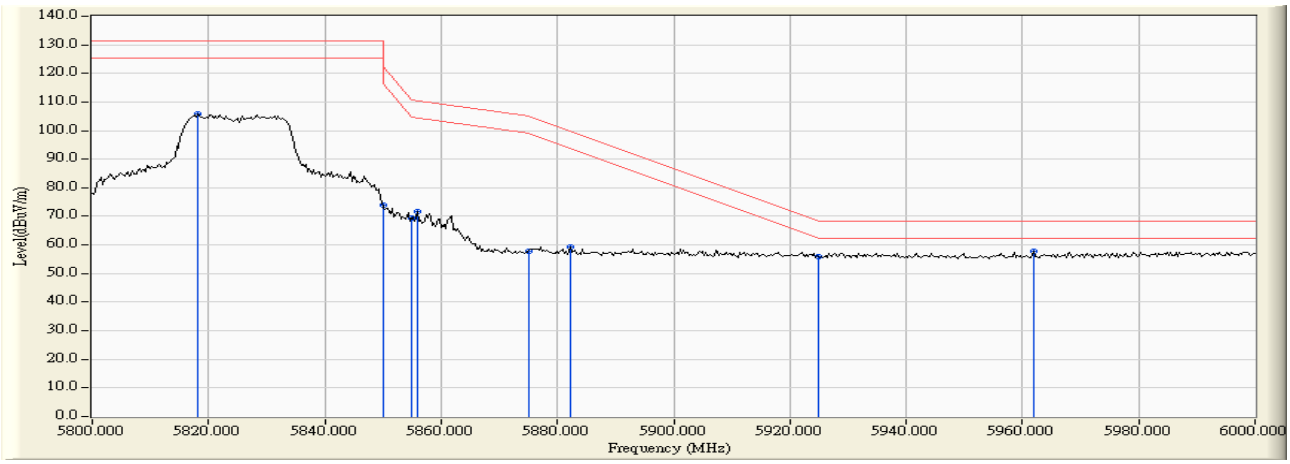
Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5825MHz)

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5830.145	11.563	89.908	101.471	-29.729	131.200	Pass
Horizontal	5850.000	11.701	57.399	69.100	-53.100	122.200	Pass
Horizontal	5855.000	11.735	48.426	60.161	-50.639	110.800	Pass
Horizontal	5856.812	11.747	52.294	64.042	-46.251	110.293	Pass
Horizontal	5875.000	11.873	42.922	54.795	-50.405	105.200	Pass
Horizontal	5895.652	12.019	44.492	56.510	-33.408	89.918	Pass
Horizontal	5925.000	12.068	41.496	53.565	-14.635	68.200	Pass
Horizontal	5986.957	12.121	44.068	56.189	--	--	--



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5818.261	12.707	93.197	105.904	-25.296	131.200	Pass
Vertical	5850.000	12.774	61.310	74.084	-48.116	122.200	Pass
Vertical	5855.000	12.784	56.825	69.609	-41.191	110.800	Pass
Vertical	5855.942	12.786	58.957	71.743	-38.793	110.536	Pass
Vertical	5875.000	12.825	45.111	57.936	-47.264	105.200	Pass
Vertical	5882.319	12.842	46.372	59.213	-40.571	99.784	Pass
Vertical	5925.000	12.911	43.027	55.938	-12.262	68.200	Pass
Vertical	5962.029	12.960	45.010	57.970	--	--	--



Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
38 (Peak)	5145.797	10.482	50.145	60.626	74.00	54.00	Pass
38 (Peak)	5150.000	10.470	49.101	59.572	74.00	54.00	Pass
38 (Peak)	5197.971	10.338	86.183	96.522	--	--	--
38 (Average)	5150.000	10.470	34.768	45.239	74.00	54.00	Pass
38 (Average)	5198.841	10.335	75.530	85.866	--	--	--

Figure Channel 38: Horizontal (Peak)

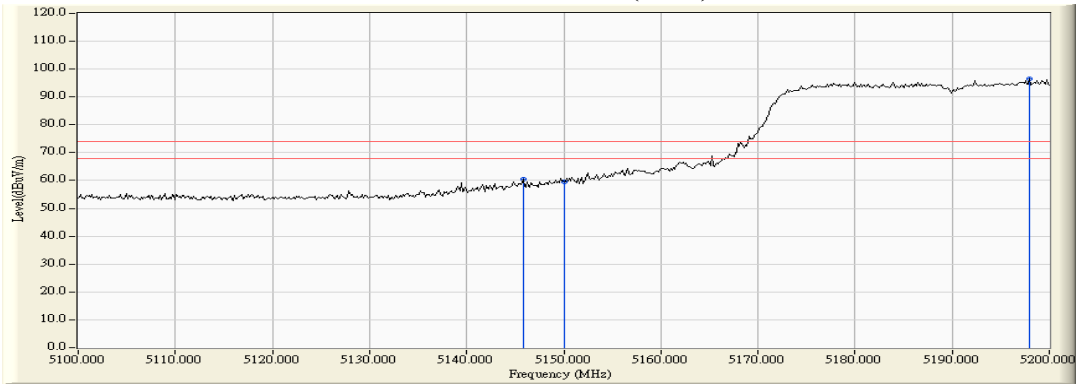
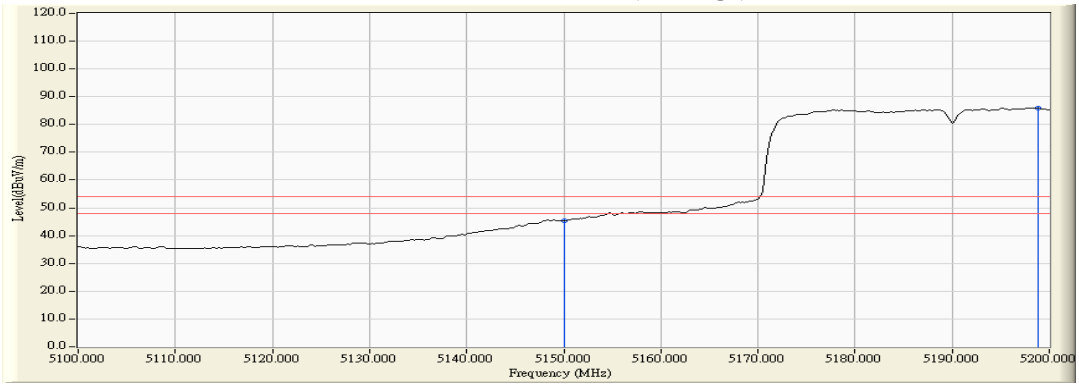


Figure Channel 38: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
38 (Peak)	5148.551	12.385	56.862	69.247	74.00	54.00	Pass
38 (Peak)	5150.000	12.390	55.759	68.149	74.00	54.00	Pass
38 (Peak)	5197.536	12.558	90.971	103.529	--	--	--
38 (Average)	5149.130	12.387	41.357	53.744	74.00	54.00	Pass
38 (Average)	5150.000	12.390	40.898	53.288	74.00	54.00	Pass
38 (Average)	5198.261	12.560	80.882	93.442	--	--	--

Figure Channel 38: Vertical (Peak)

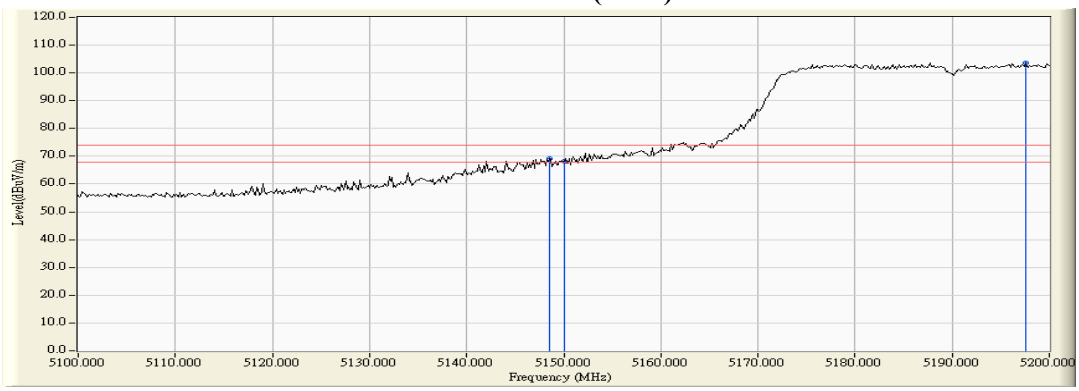
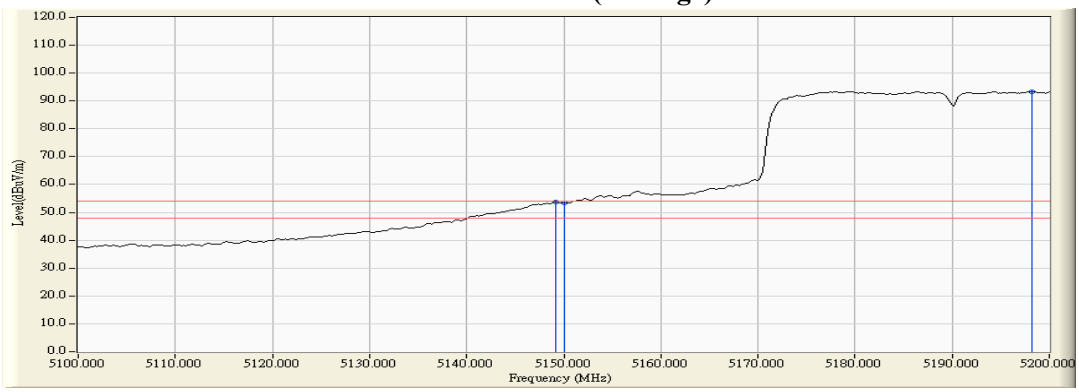


Figure Channel 38: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5310MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
62 (Peak)	5317.246	11.108	87.574	98.682	--	--	--
62 (Peak)	5350.000	11.024	52.944	63.968	74.00	54.00	Pass
62 (Peak)	5350.870	11.023	57.358	68.380	74.00	54.00	Pass
62 (Average)	5315.507	11.112	77.403	88.515	--	--	--
62 (Average)	5350.000	11.024	37.528	48.552	74.00	54.00	Pass

Figure Channel 62: Horizontal (Peak)

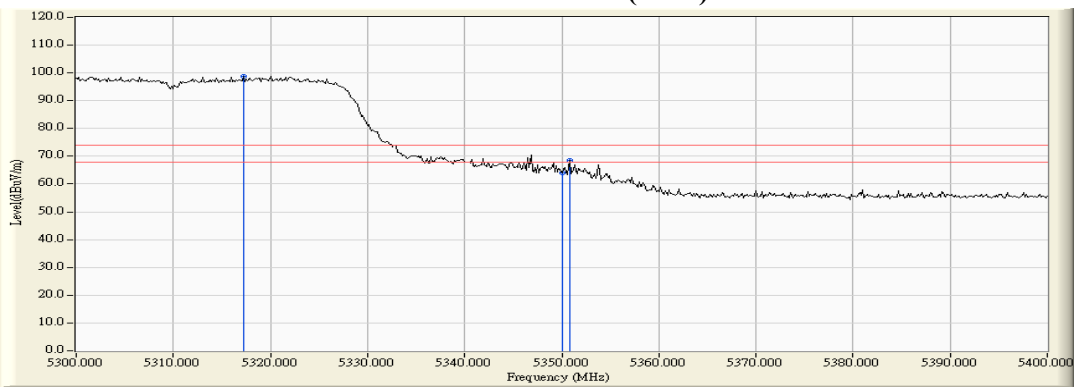
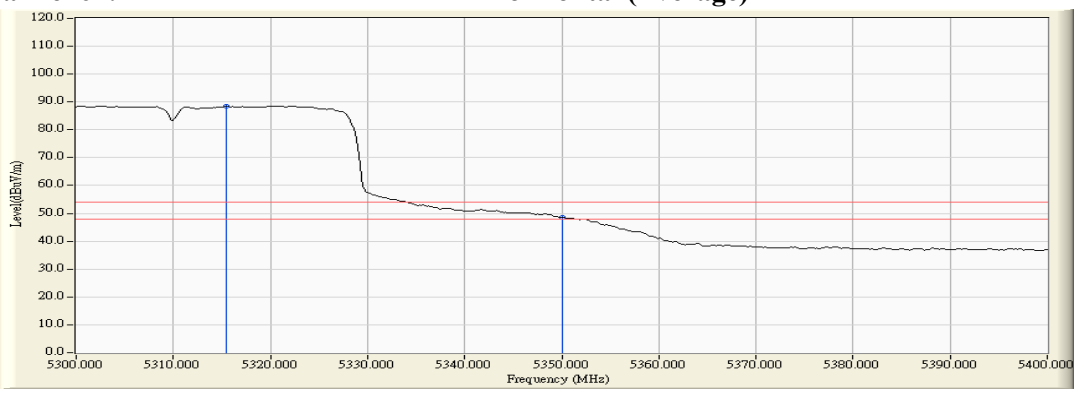


Figure Channel 62: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5310MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
62 (Peak)	5322.319	13.016	90.035	103.051	--	--	--
62 (Peak)	5350.000	12.999	55.808	68.807	74.00	54.00	Pass
62 (Peak)	5352.174	12.998	57.479	70.477	74.00	54.00	Pass
62 (Average)	5300.145	13.026	79.715	92.740	--	--	--
62 (Average)	5350.000	12.999	38.694	51.693	74.00	54.00	Pass

Figure Channel 62: Vertical (Peak)

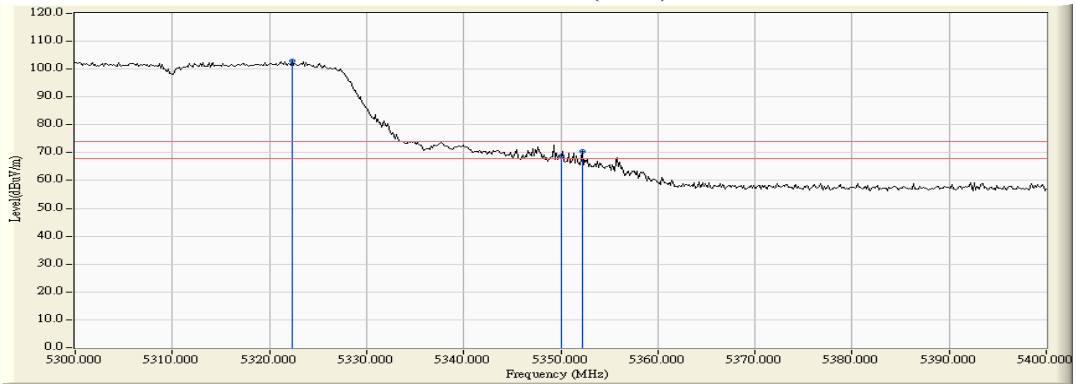
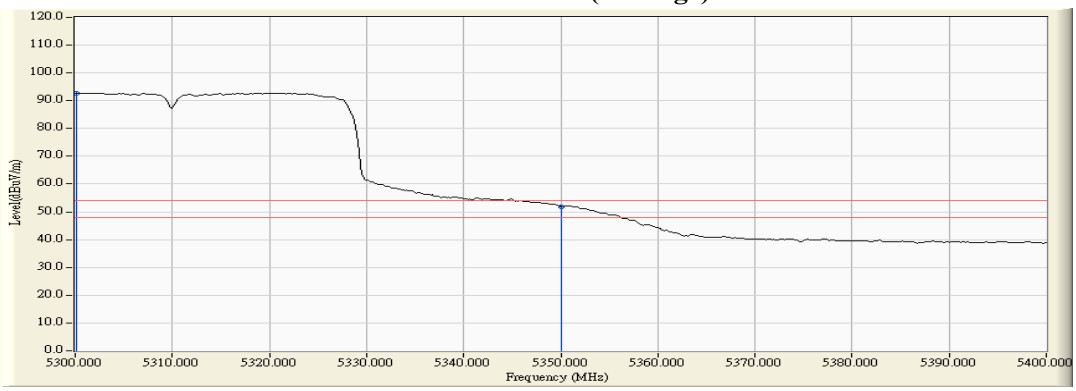


Figure Channel 62: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/16
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
102 (Peak)	5459.710	11.699	49.072	60.771	74.00	54.00	Pass
102 (Peak)	5460.000	11.703	47.125	58.828	74.00	54.00	Pass
102 (Peak)	5500.145	12.170	84.671	96.841	--	--	--
102 (Average)	5460.000	11.703	28.660	40.363	74.00	54.00	Pass
102 (Average)	5499.710	12.166	73.650	85.817	--	--	--

Figure Channel 102: Horizontal (Peak)

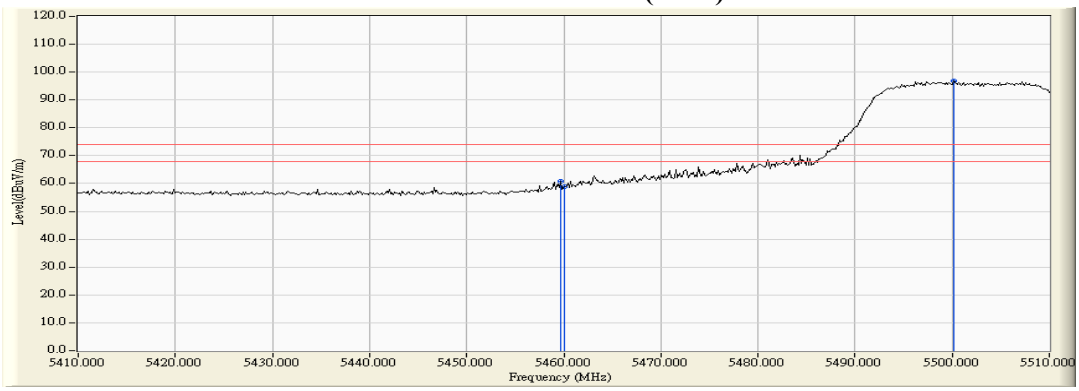
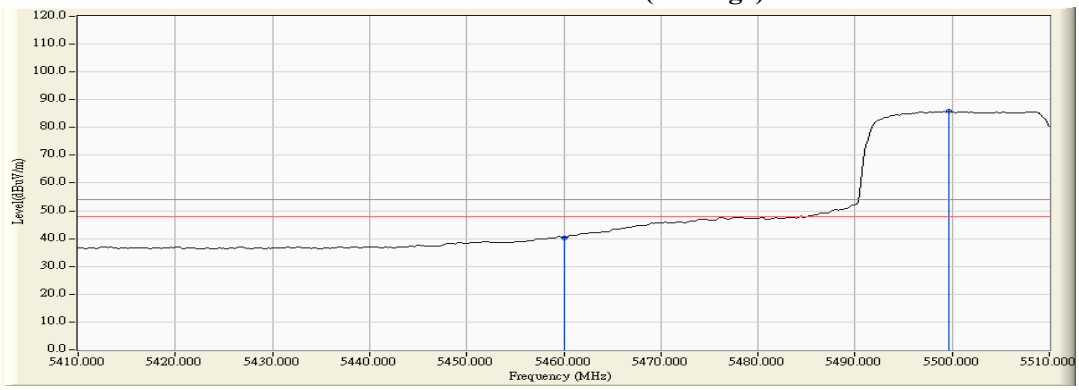


Figure Channel 102: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/16
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
102 (Peak)	5460.000	13.390	48.661	62.051	74.00	54.00	Pass
102 (Peak)	5500.290	13.631	87.237	100.867	--	--	--
102 (Average)	5460.000	13.390	31.096	44.486	74.00	54.00	Pass
102 (Average)	5499.275	13.627	77.250	90.877	--	--	--

Figure Channel 102: Vertical (Peak)

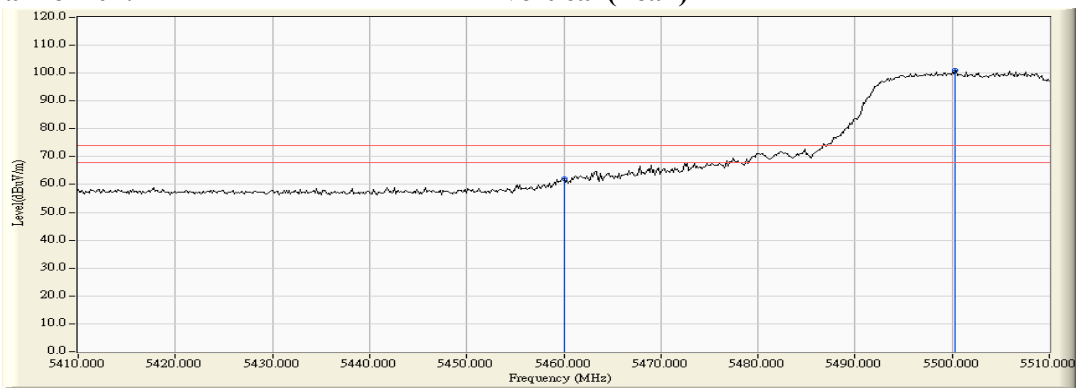
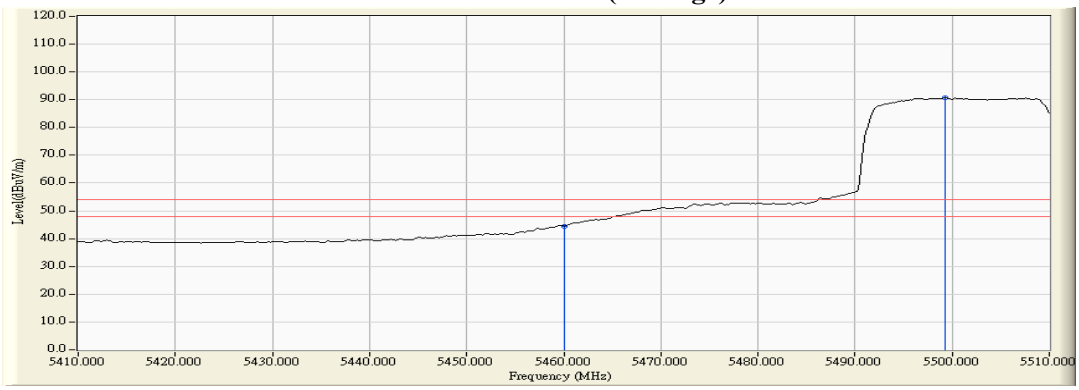


Figure Channel 102: Vertical (Average)



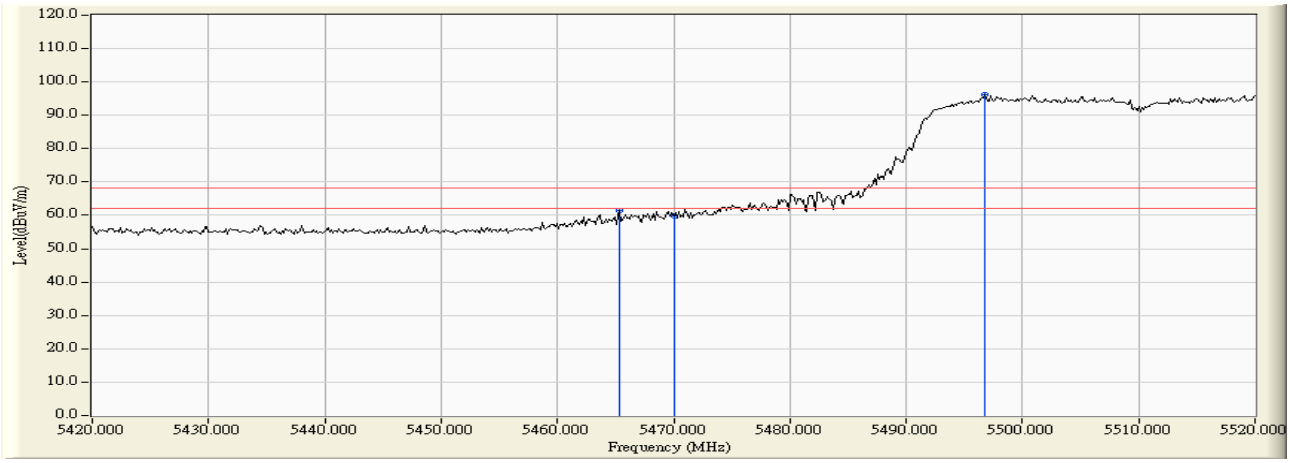
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 1.6k Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

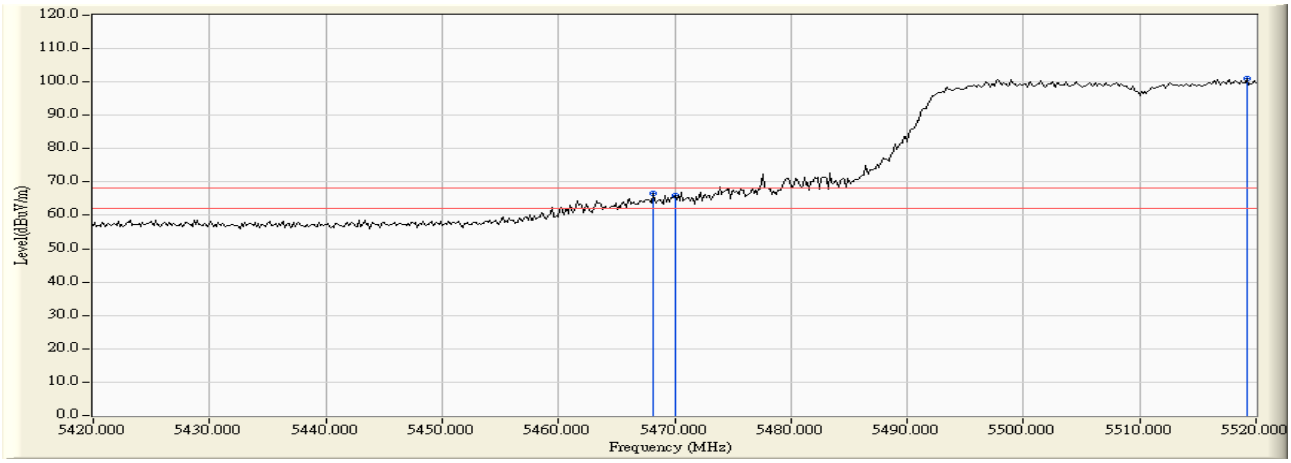
Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/16
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5465.362	11.776	49.682	61.458	-6.762	68.220	Pass
Horizontal	5470.000	11.838	47.908	59.746	-8.474	68.220	Pass
Horizontal	5496.812	12.147	83.938	96.084	--	--	--



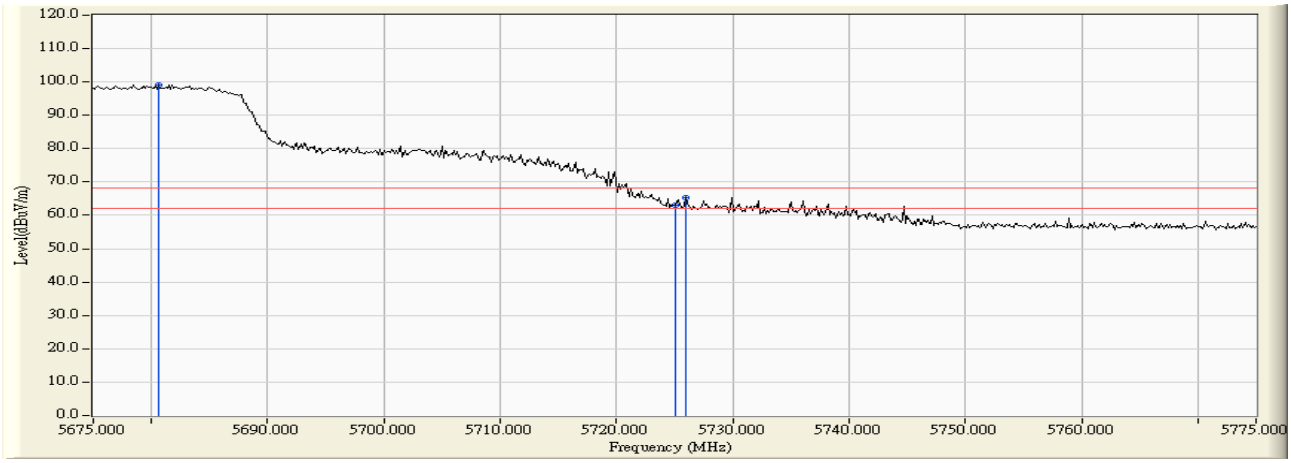
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5468.116	13.448	53.058	66.506	-1.714	68.220	Pass
Vertical	5470.000	13.462	52.377	65.839	-2.381	68.220	Pass
Vertical	5519.275	13.553	87.312	100.865	--	--	--



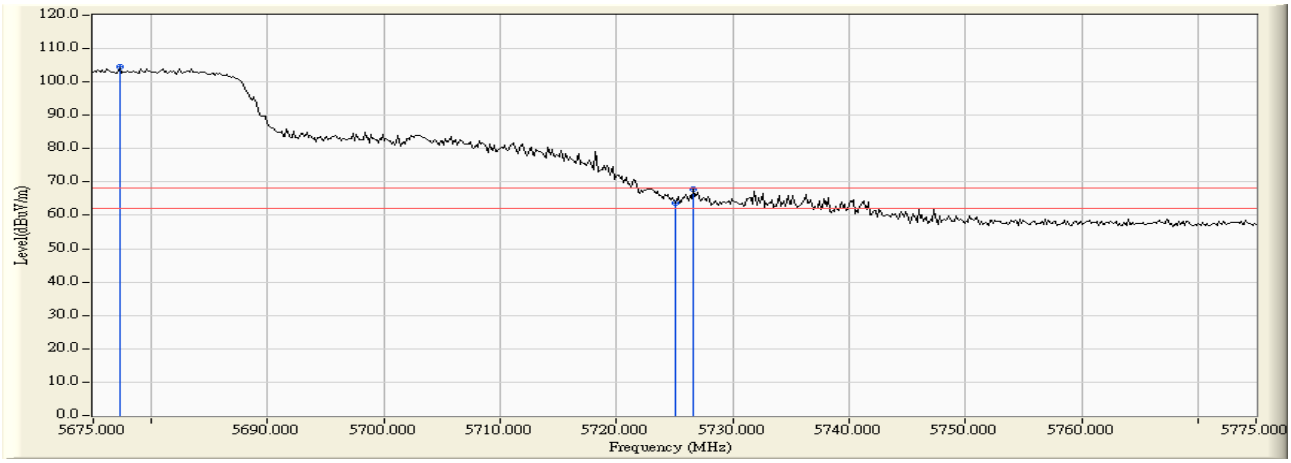
Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5670MHz)

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5680.652	11.626	87.615	99.241	--	--	--
Horizontal	5725.000	11.592	51.314	62.906	-5.314	68.220	Pass
Horizontal	5726.014	11.588	53.725	65.314	-2.906	68.220	Pass



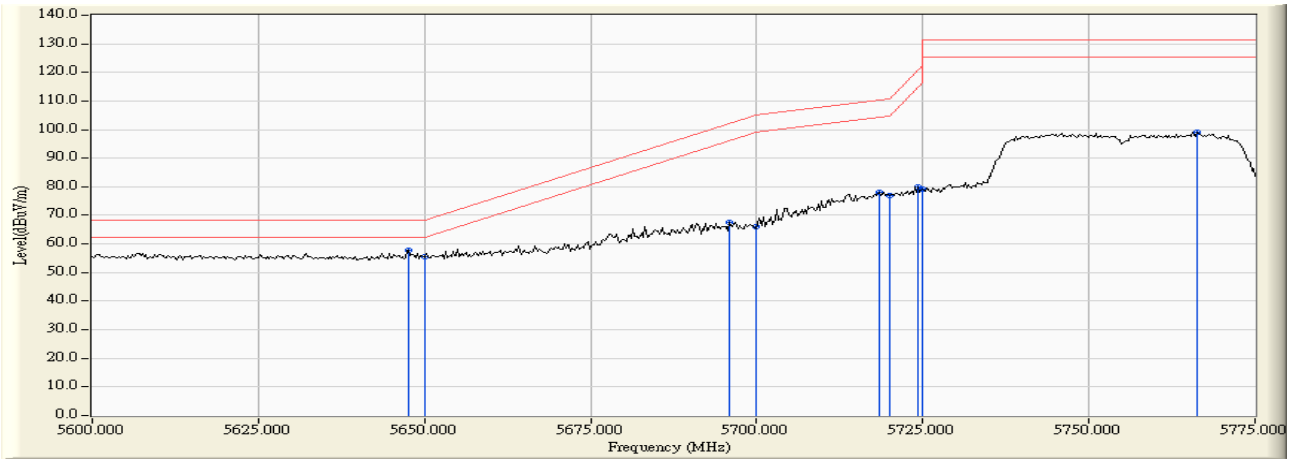
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5677.319	13.024	91.374	104.397	--	--	--
Vertical	5725.000	12.930	50.785	63.715	-4.505	68.220	Pass
Vertical	5726.594	12.925	54.805	67.730	-0.490	68.220	Pass



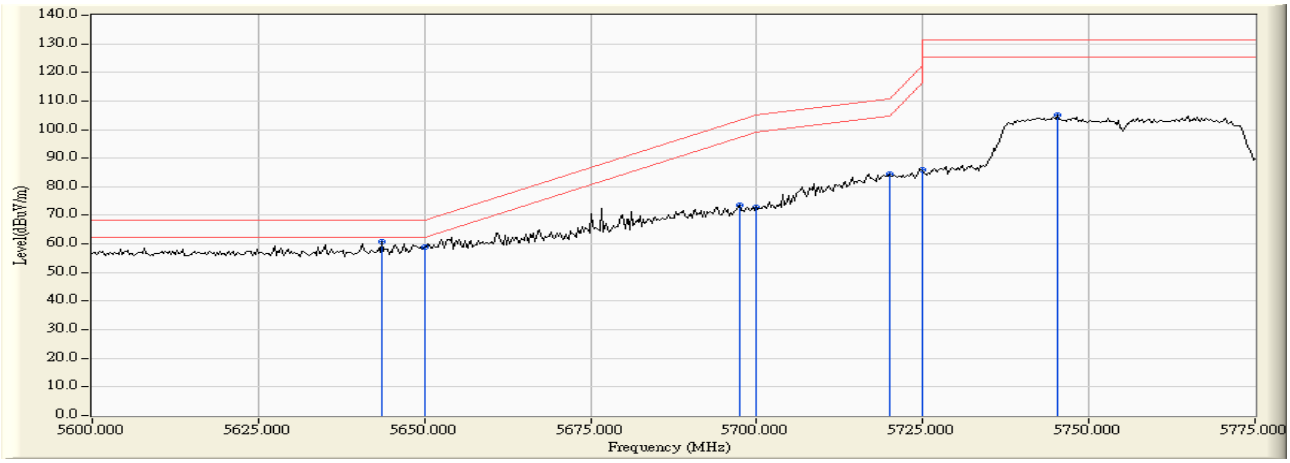
Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5755MHz)

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5647.681	11.550	46.184	57.733	--	--	--
Horizontal	5650.000	11.554	43.870	55.425	-12.795	68.220	Pass
Horizontal	5695.870	11.651	56.063	67.713	-34.432	102.145	Pass
Horizontal	5700.000	11.647	54.232	65.879	-39.321	105.200	Pass
Horizontal	5718.442	11.612	66.584	78.196	-32.168	110.364	Pass
Horizontal	5720.000	11.607	65.363	76.970	-33.830	110.800	Pass
Horizontal	5724.275	11.594	68.322	79.916	-40.631	120.547	Pass
Horizontal	5725.000	11.592	67.444	79.036	-43.164	122.200	Pass
Horizontal	5766.377	11.461	87.783	99.244	-31.956	131.200	Pass



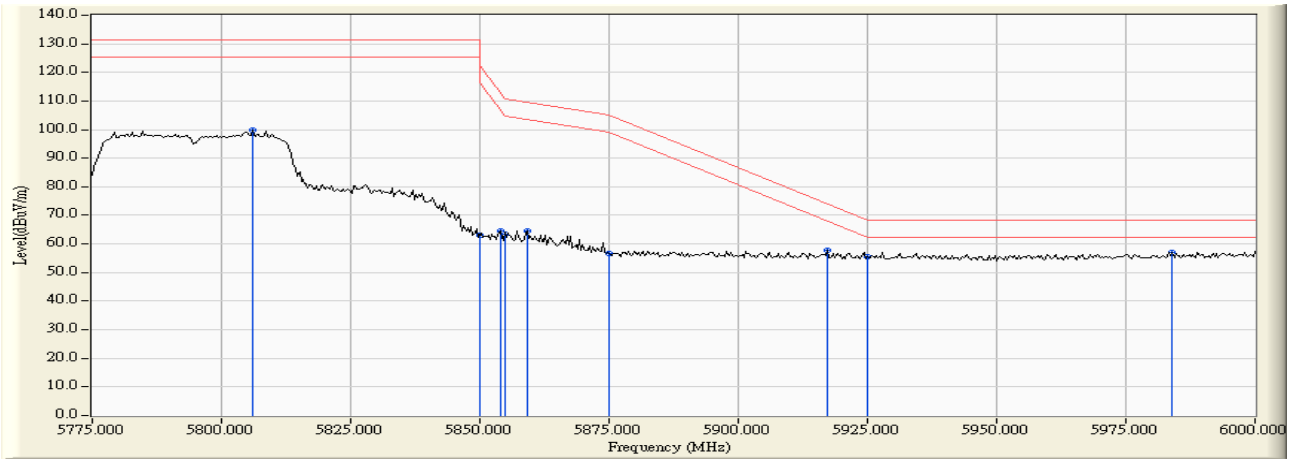
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5643.623	13.030	47.779	60.809	--	--	--
Vertical	5650.000	13.029	45.799	58.828	-9.392	68.220	Pass
Vertical	5697.391	13.008	60.579	73.587	-29.683	103.270	Pass
Vertical	5700.000	13.003	59.816	72.819	-32.381	105.200	Pass
Vertical	5720.000	12.947	71.345	84.292	-26.508	110.800	Pass
Vertical	5725.000	12.930	72.837	85.767	-36.433	122.200	Pass
Vertical	5745.326	12.859	92.288	105.147	-26.053	131.200	Pass



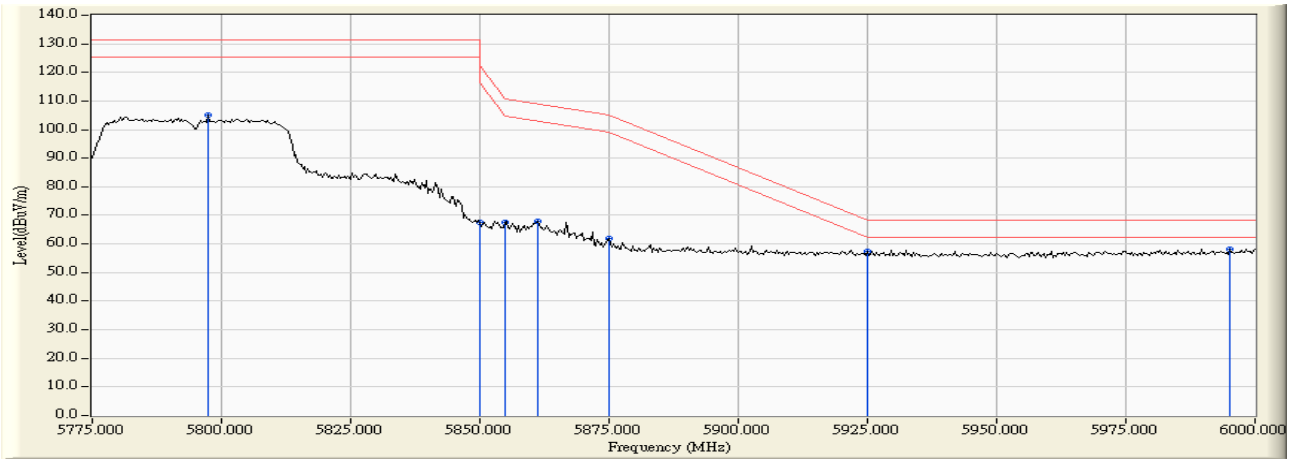
Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/10/17
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5795MHz)

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5805.978	11.413	88.242	99.655	-31.545	131.200	Pass
Horizontal	5850.000	11.701	51.440	63.141	-59.059	122.200	Pass
Horizontal	5853.913	11.728	52.980	64.708	-48.570	113.278	Pass
Horizontal	5855.000	11.735	51.859	63.594	-47.206	110.800	Pass
Horizontal	5859.130	11.763	52.843	64.607	-45.037	109.644	Pass
Horizontal	5875.000	11.873	44.806	56.679	-48.521	105.200	Pass
Horizontal	5917.174	12.061	45.870	57.932	-16.059	73.991	Pass
Horizontal	5925.000	12.068	43.464	55.533	-12.667	68.200	Pass
Horizontal	5984.022	12.118	45.038	57.156	--	--	--

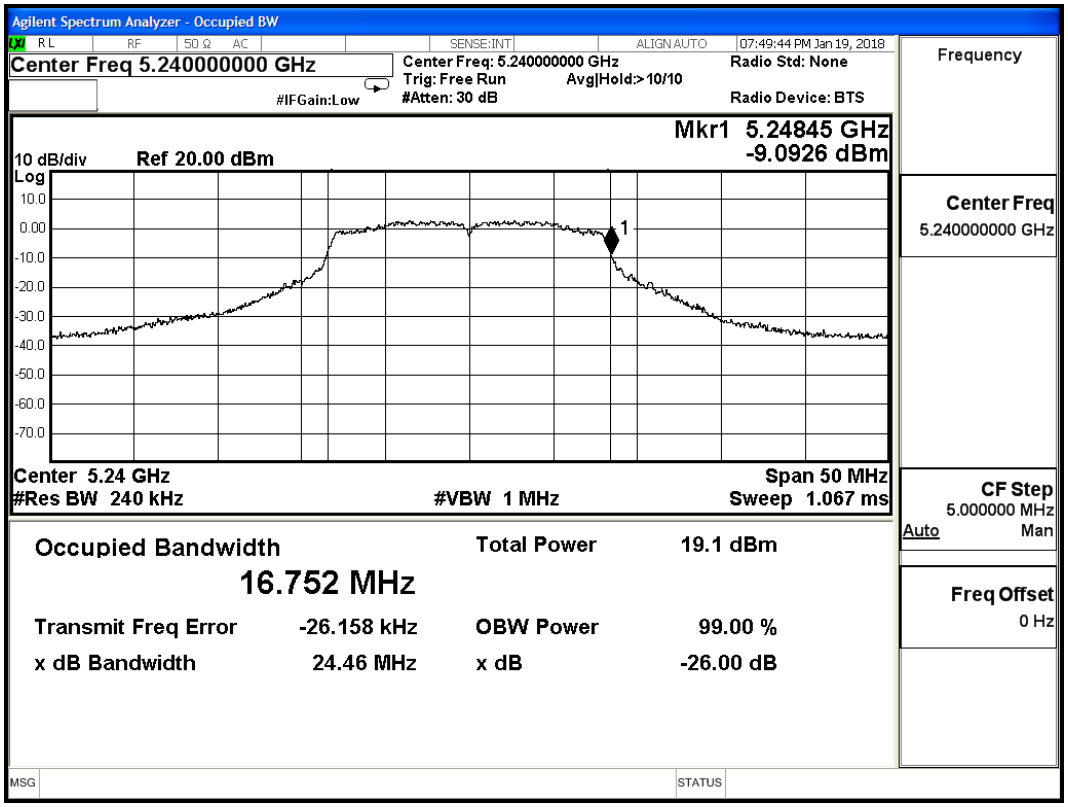


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5797.500	12.685	92.242	104.926	-26.274	131.200	Pass
Vertical	5850.000	12.774	54.724	67.498	-54.702	122.200	Pass
Vertical	5855.000	12.784	54.720	67.504	-43.296	110.800	Pass
Vertical	5861.087	12.796	55.322	68.118	-40.978	109.096	Pass
Vertical	5875.000	12.825	48.940	61.765	-43.435	105.200	Pass
Vertical	5925.000	12.911	44.580	57.491	-10.709	68.200	Pass
Vertical	5995.109	13.004	45.182	58.186	--	--	--



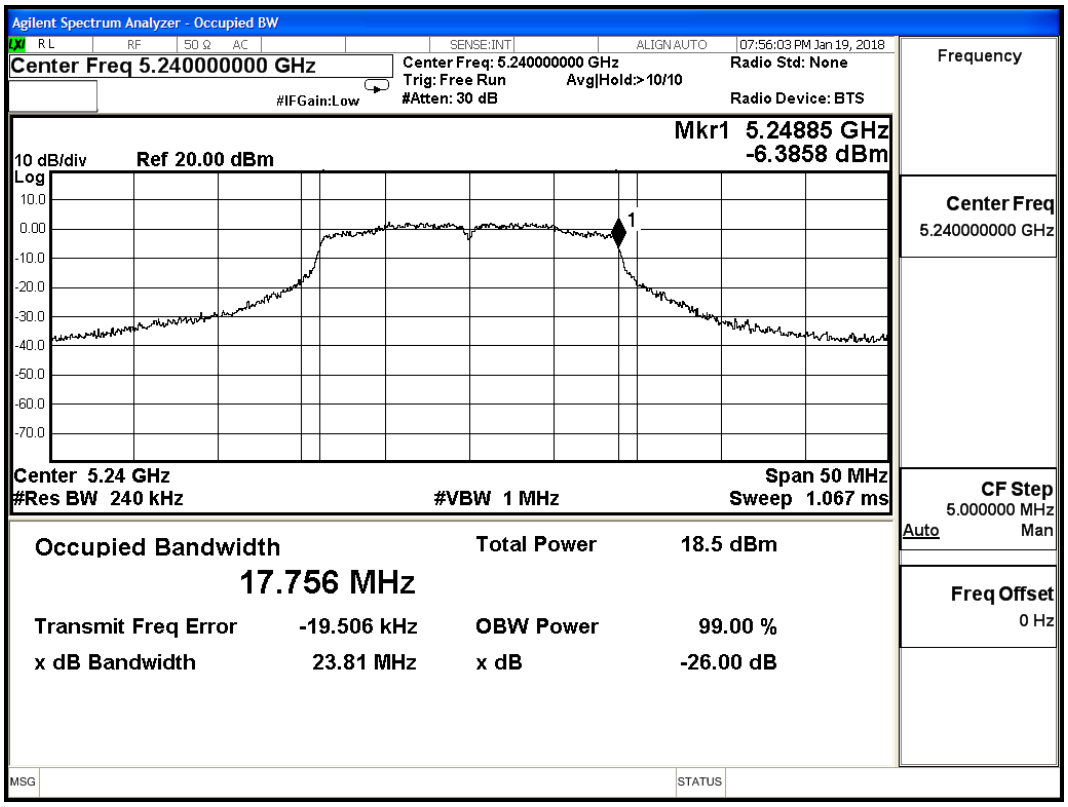
Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5240MHz)

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5248.45	<5250	PASS



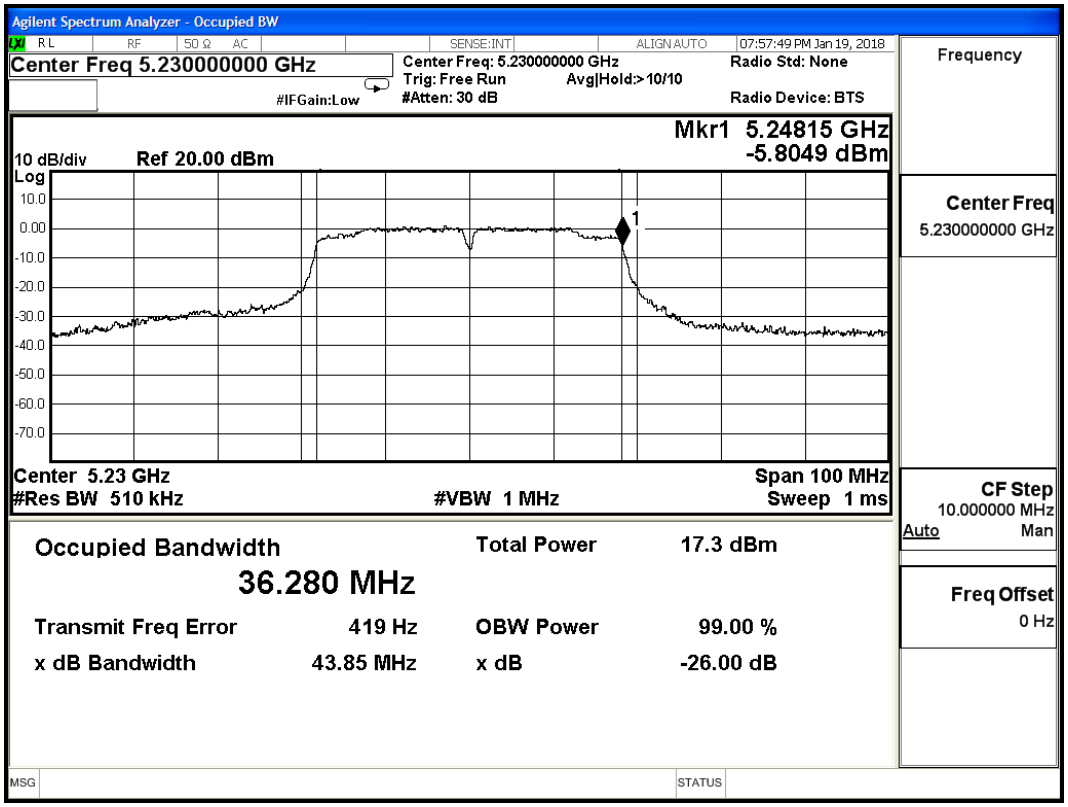
Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5240MHz)

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5248.85	<5250	PASS



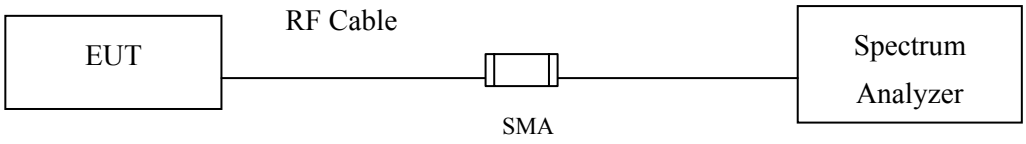
Product : MOBILE DATA TERMINAL
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5230MHz)

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5230	5248.15	<5250	PASS



7. Occupied Bandwidth

7.1. Test Setup



7.2. Limits

For the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz

7.3. Test Procedure

The EUT was setup to ANSI C63.10, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

7.4. Uncertainty

± 681.6Hz

7.5. Test Result of Occupied Bandwidth

Product : MOBILE DATA TERMINAL
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	16450	>500	Pass
157	5785	16450	>500	Pass
165	5825	16400	>500	Pass

Figure Channel 149:

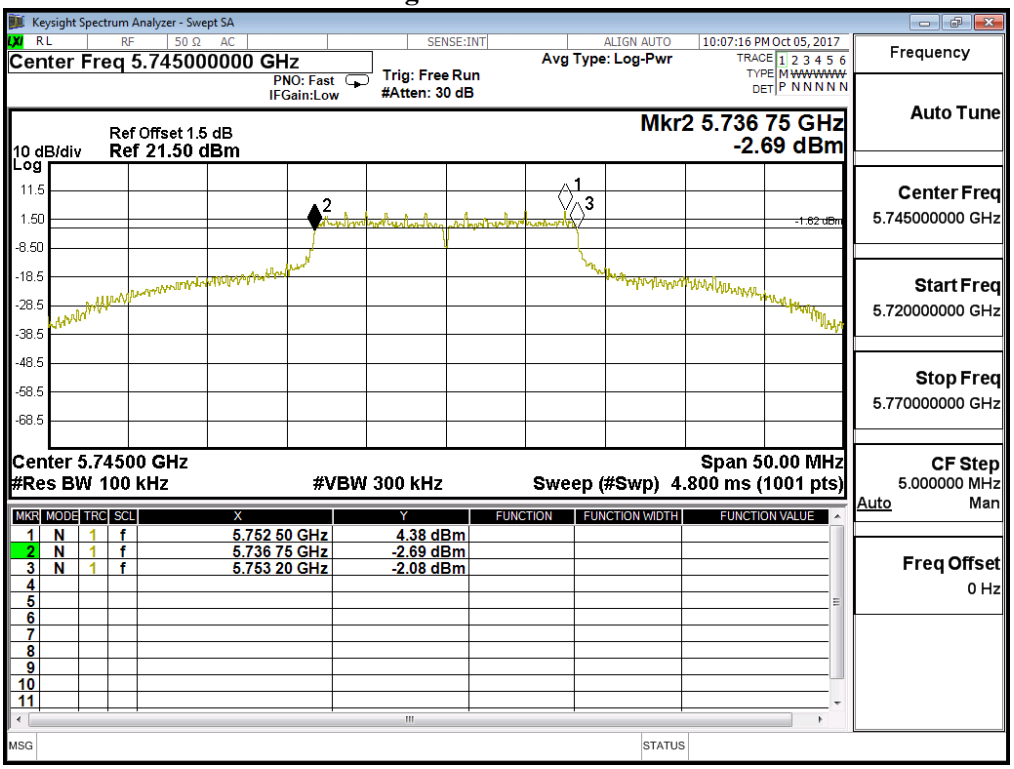


Figure Channel 157:

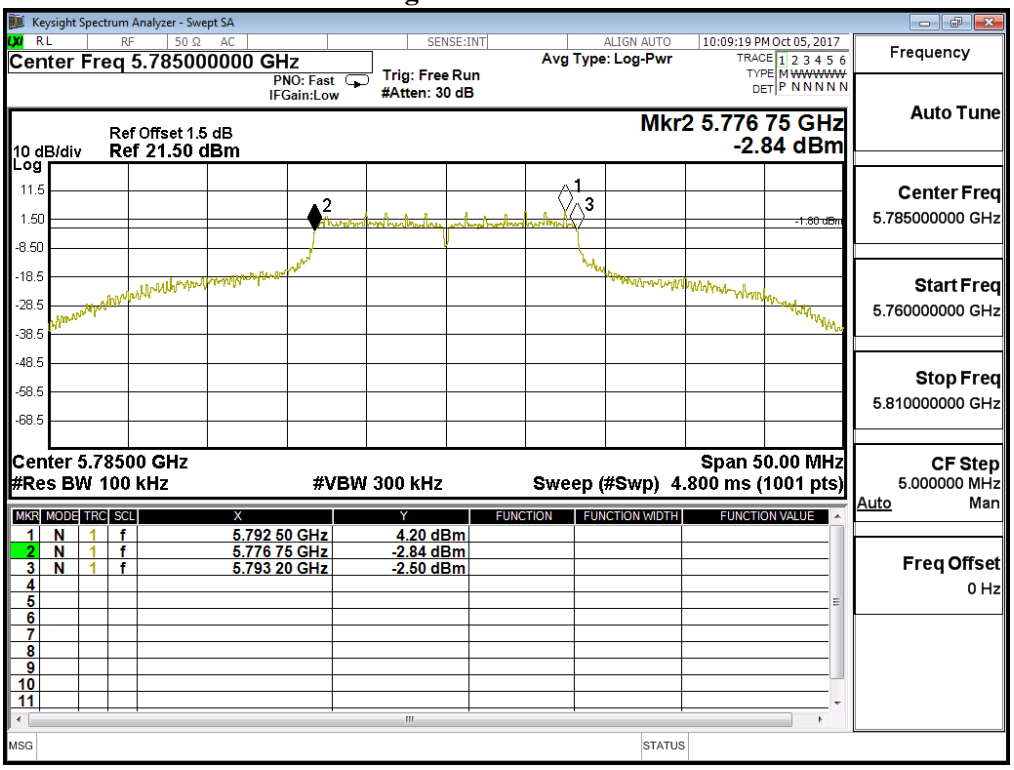
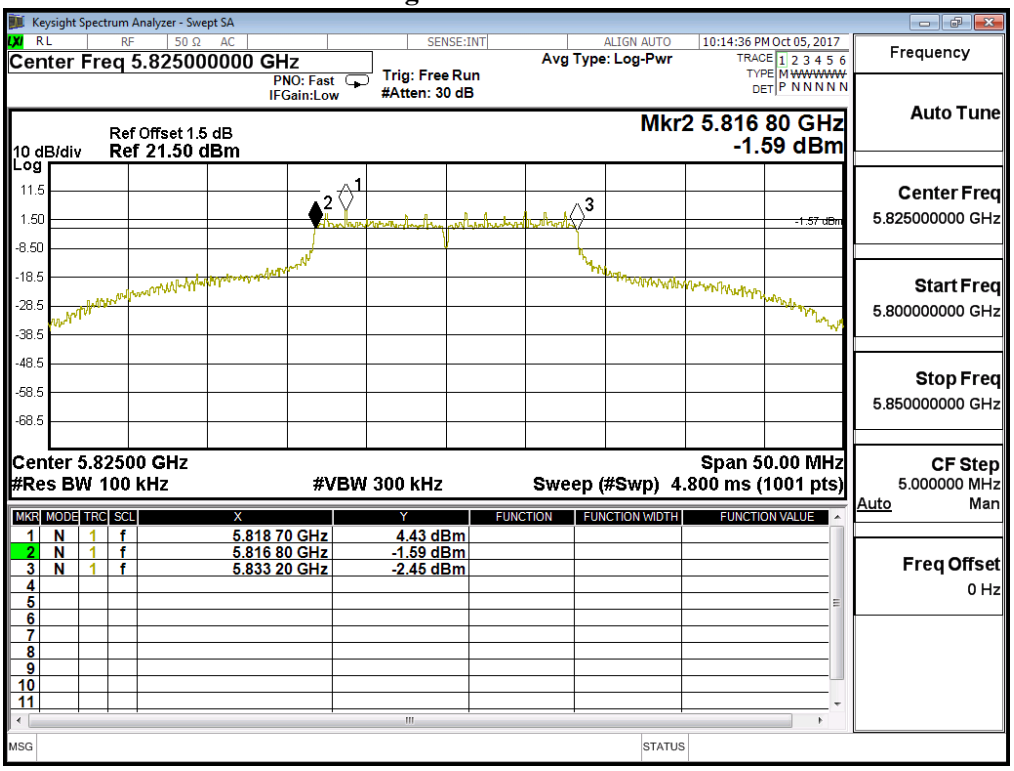


Figure Channel 165:



Product : MOBILE DATA TERMINAL
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	17700	>500	Pass
157	5785	14650	>500	Pass
165	5825	17700	>500	Pass

Figure Channel 149:

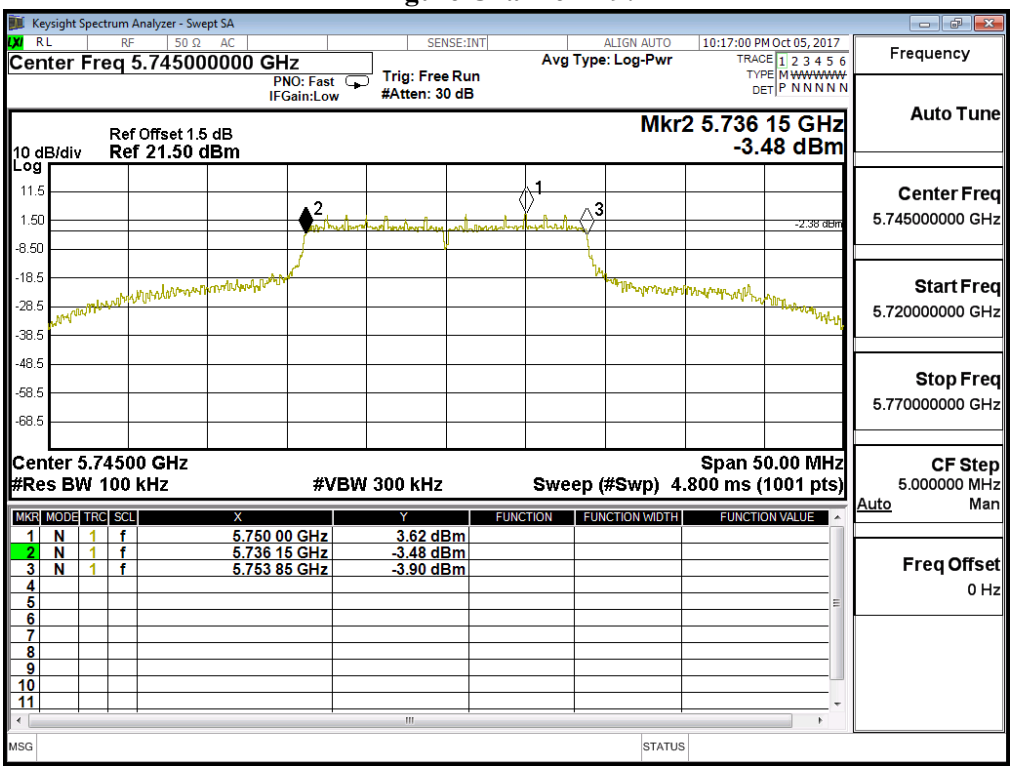


Figure Channel 157:

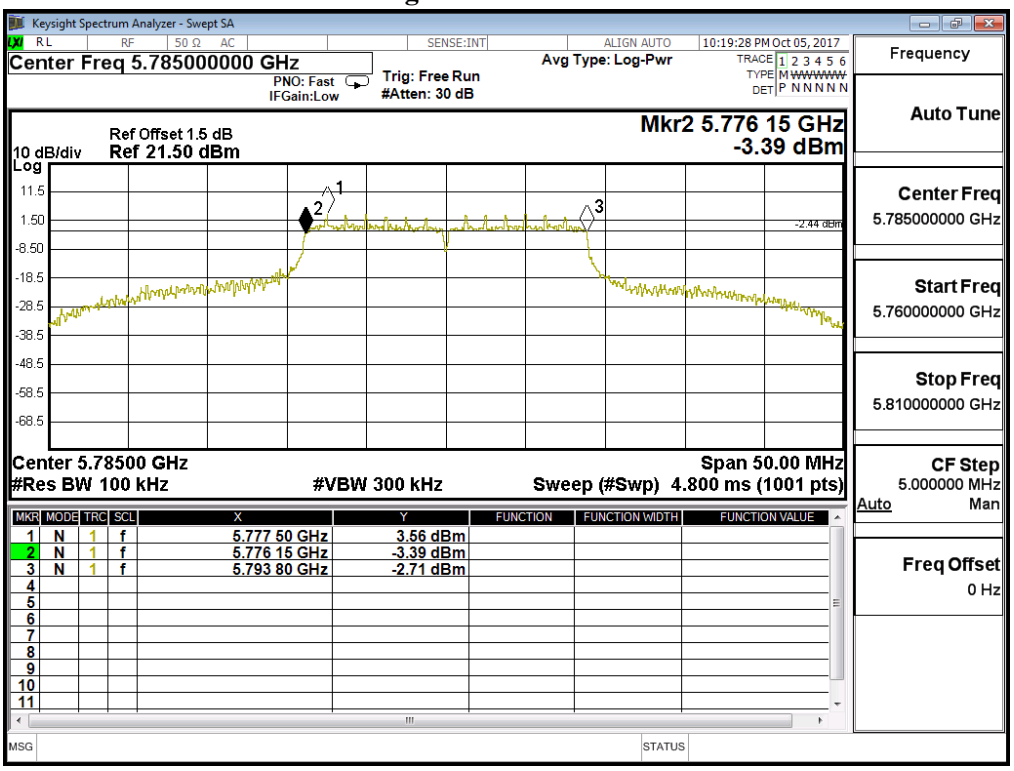
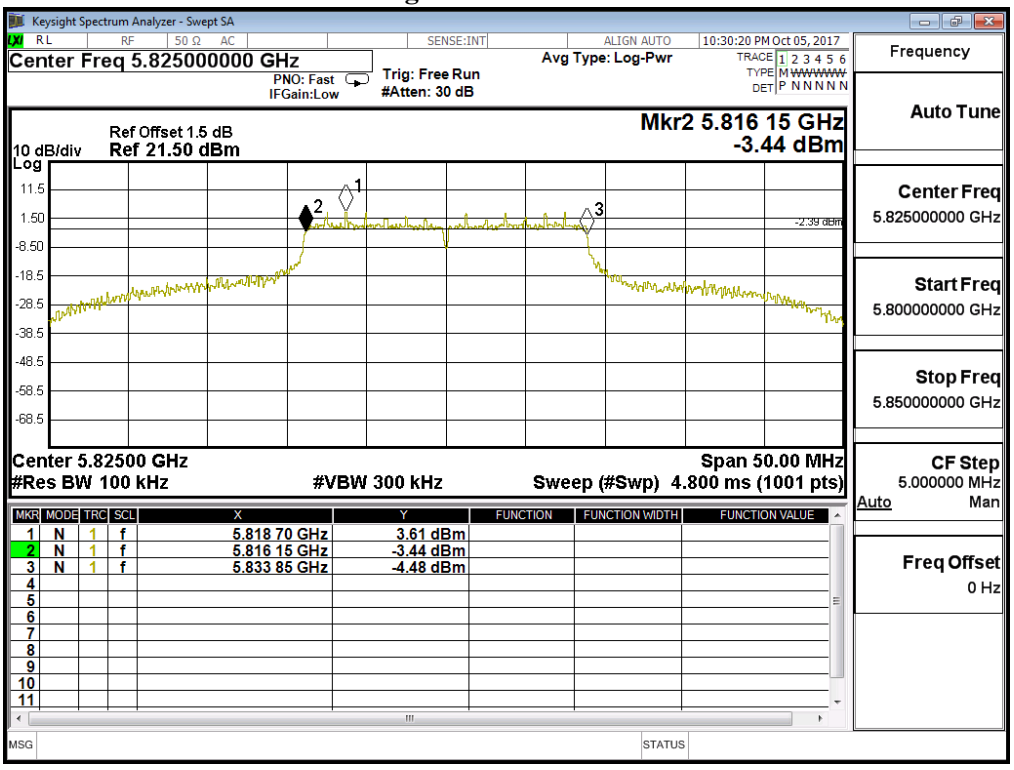


Figure Channel 165:



Product : MOBILE DATA TERMINAL
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
151	5755	35400	>500	Pass
159	5795	35700	>500	Pass

Figure Channel 151:

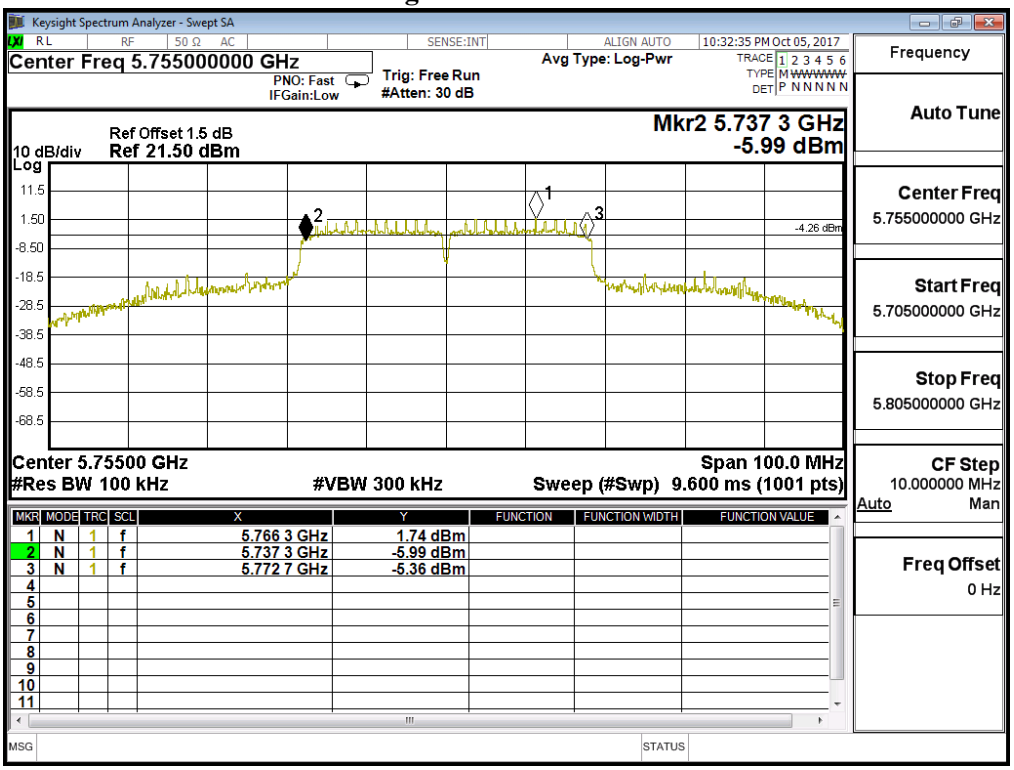
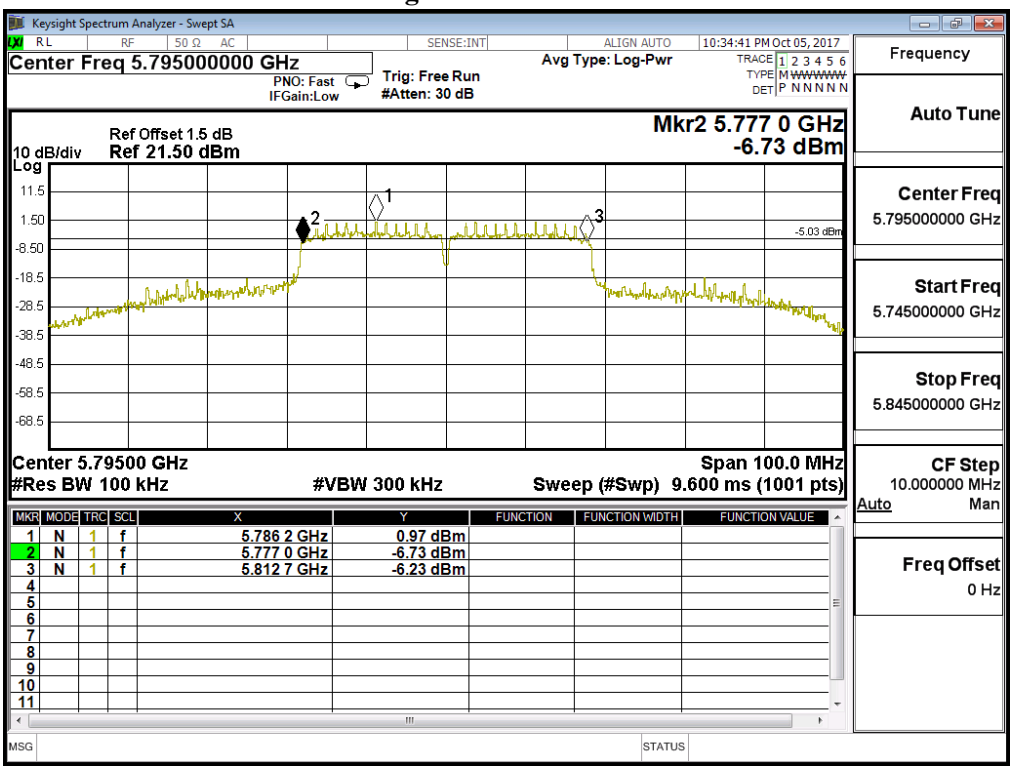
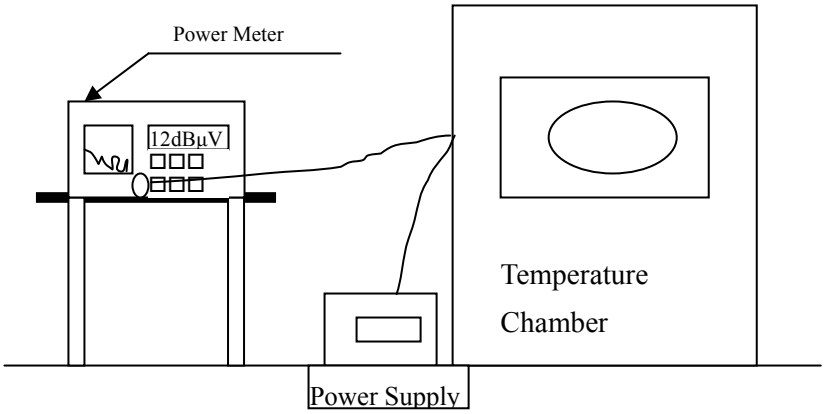


Figure Channel 159:



8. Frequency Stability

8.1. Test Setup



8.2. Limits

Manufactures 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

8.3. Test Procedure

The EUT was setup to ANSI C63.10, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

8.4. Uncertainty

± 681.6 Hz

8.5. Test Result of Frequency Stability

Product : MOBILE DATA TERMINAL
Test Item : Frequency Stability
Test Site : Temperature Chamber
Test Date : 2016/09/01
Test Mode : Carrier Wave

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tnom (25)℃	Vnom (120)V	36	5180.0000	5180.0072	-0.0072
		38	5190.0000	5190.0078	-0.0078
		44	5220.0000	5220.0028	-0.0028
		46	5230.0000	5230.0001	-0.0001
		48	5240.0000	5240.0066	-0.0066
		52	5260.0000	5260.0078	-0.0078
		54	5270.0000	5270.0106	-0.0106
		60	5300.0000	5300.0080	-0.0080
		62	5310.0000	5310.0059	-0.0059
		64	5320.0000	5320.0026	-0.0026
		100	5500.0000	5500.0105	-0.0105
		102	5510.0000	5510.0107	-0.0107
		110	5550.0000	5550.0042	-0.0042
		116	5580.0000	5580.0063	-0.0063
		134	5670.0000	5670.0087	-0.0087
		140	5700.0000	5700.0109	-0.0109
		149	5745.0000	5745.0055	-0.0055
		151	5755.0000	5755.0048	-0.0048
		157	5785.0000	5785.0077	-0.0077
		159	5795.0000	5795.0066	-0.0066
		165	5825.0000	5825.0015	-0.0015

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tmax (50)℃	Vmax (138)V	36	5180.0000	5180.0104	-0.0104
		38	5190.0000	5190.0041	-0.0041
		44	5220.0000	5220.0060	-0.0060
		46	5230.0000	5230.0109	-0.0109
		48	5240.0000	5240.0066	-0.0066
		52	5260.0000	5260.0104	-0.0104
		54	5270.0000	5270.0102	-0.0102
		60	5300.0000	5300.0051	-0.0051
		62	5310.0000	5310.0096	-0.0096
		64	5320.0000	5320.0107	-0.0107
		100	5500.0000	5500.0061	-0.0061
		102	5510.0000	5510.0064	-0.0064
		110	5550.0000	5550.0048	-0.0048
		116	5580.0000	5580.0035	-0.0035
		134	5670.0000	5670.0041	-0.0041
		140	5700.0000	5700.0033	-0.0033
		149	5745.0000	5745.0025	-0.0025
		151	5755.0000	5755.0056	-0.0056
		157	5785.0000	5785.0049	-0.0049
		159	5795.0000	5795.0064	-0.0064
		165	5825.0000	5825.0034	-0.0034

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tmax (50)℃	Vmin (102)V	36	5180.0000	5180.0042	-0.0042
		38	5190.0000	5190.0074	-0.0074
		44	5220.0000	5220.0062	-0.0062
		46	5230.0000	5230.0100	-0.0100
		48	5240.0000	5240.0033	-0.0033
		52	5260.0000	5260.0062	-0.0062
		54	5270.0000	5270.0123	-0.0123
		60	5300.0000	5300.0057	-0.0057
		62	5310.0000	5310.0128	-0.0128
		64	5320.0000	5320.0061	-0.0061
		100	5500.0000	5500.0103	-0.0103
		102	5510.0000	5510.0073	-0.0073
		110	5550.0000	5550.0063	-0.0063
		116	5580.0000	5580.0029	-0.0029
		134	5670.0000	5670.0092	-0.0092
		140	5700.0000	5700.0123	-0.0123
		149	5745.0000	5745.0013	-0.0013
		151	5755.0000	5755.0048	-0.0048
		157	5785.0000	5785.0085	-0.0085
		159	5795.0000	5795.0068	-0.0068
		165	5825.0000	5825.0100	-0.0100

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tmin (-20)℃	Vmax (138)V	36	5180.0000	5180.0010	-0.0010
		38	5190.0000	5190.0044	-0.0044
		44	5220.0000	5220.0044	-0.0044
		46	5230.0000	5230.0044	-0.0044
		48	5240.0000	5240.0101	-0.0101
		52	5260.0000	5260.0028	-0.0028
		54	5270.0000	5270.0068	-0.0068
		60	5300.0000	5300.0040	-0.0040
		62	5310.0000	5310.0010	-0.0010
		64	5320.0000	5320.0105	-0.0105
		100	5500.0000	5500.0084	-0.0084
		102	5510.0000	5510.0062	-0.0062
		110	5550.0000	5550.0072	-0.0072
		116	5580.0000	5580.0021	-0.0021
		134	5670.0000	5670.0102	-0.0102
		140	5700.0000	5700.0076	-0.0076
		149	5745.0000	5745.0029	-0.0029
		151	5755.0000	5755.0061	-0.0061
		157	5785.0000	5785.0062	-0.0062
		159	5795.0000	5795.0020	-0.0020
		165	5825.0000	5825.0094	-0.0094

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tmin (-20)℃	Vmin (102)V	36	5180.0000	5180.0010	-0.0010
		38	5190.0000	5190.0044	-0.0044
		44	5220.0000	5220.0044	-0.0044
		46	5230.0000	5230.0044	-0.0044
		48	5240.0000	5240.0101	-0.0101
		52	5260.0000	5260.0028	-0.0028
		54	5270.0000	5270.0068	-0.0068
		60	5300.0000	5300.0040	-0.0040
		62	5310.0000	5310.0010	-0.0010
		64	5320.0000	5320.0105	-0.0105
		100	5500.0000	5500.0084	-0.0084
		102	5510.0000	5510.0062	-0.0062
		110	5550.0000	5550.0072	-0.0072
		116	5580.0000	5580.0021	-0.0021
		134	5670.0000	5670.0102	-0.0102
		140	5700.0000	5700.0076	-0.0076
		149	5745.0000	5745.0029	-0.0029
		151	5755.0000	5755.0061	-0.0061
		157	5785.0000	5785.0062	-0.0062
		159	5795.0000	5795.0020	-0.0020
		165	5825.0000	5825.0094	-0.0094

9. EMI Reduction Method During Compliance Testing

No modification was made during testing.