

FCC Test Report

Product Name	OTT BOX
Model No	SB520
FCC ID.	JCK-SB5204KOTTBK

Applicant	Giga Byte Technology Co Ltd.
Address	No.6, Bau Chiang Road, Hsin-Tien, Taipei Hsien, Taiwan

Date of Receipt	Aug. 04, 2015	
Issue Date	Sep. 01, 2015	
Report No.	1580191R-RFUSP26V00	
Report Version	V1.0	
Testing Laboratory 3023		

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

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Test Report

Issue Date: Sep. 01, 2015 Report No.: 1580191R-RFUSP26V00



Product Name	OTT BOX		
Applicant	Giga Byte Technology Co Ltd.		
Address	No.6, Bau Chiang Road, Hsin-Tien, Taipei Hsien, Taiwan		
Manufacturer	GIGA-BYTE TECHNOLOGY CO., LTD		
Model No.	SB520		
FCC ID.	JCK-SB5204KOTTBK		
EUT Rated Voltage	AC 100-240V, 50-60Hz		
EUT Test Voltage	AC 120V/60Hz		
Trade Name	GIGABYTE		
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2014		
	ANSI C63.4: 2014, ANSI C63.10: 2013		
	KDB 558074 D01 DTS Meas Guidance v03r03		
Test Result	Complied		
Documented By	Joanne lin		
	(Senior Adm. Specialist / Joanne Lin)		
Tested By	Ivan Chuang		
	(Assistant Engineer / Ivan Chuang)		

Approved By :

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(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	OTT BOX	
Trade Name	GIGABYTE	
Model No.	SB520	
FCC ID.	JCK-SB5204KOTTBK	
Frequency Range	2412-2462MHz for 802.11b/g/n-20BW	
Number of Channels	802.11b/g/n-20MHz: 11	
Data Speed	802.11b: 1-11Mbps, 802.11g: 6-54Mbps	
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK)	
	802.11g/n:OFDM (BPSK, QPSK, 16QAM, 64QAM)	
Antenna Type	PIFA Antenna	
Antenna Gain	Refer to the table "Antenna List"	
Channel Control	Auto	
Remote control	1 set	
HDMI Cable	Shielded, 1.2m	
IR Cable	Non-Shielded, 1.8m	
Power Adapter	MFR: APD, M/N: WB-18D12R	
	Input: AC 100-240V~50-60Hz, 0.5A Max	
	Output: 12V==1.5A	
	Cable Out: Non-Shielded, 1.5m, with one ferrite core bonded.	

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	ACON	APP6P-701316	PIFA	-0.54dBi for 2.4 GHz

Note: The antenna of EUT conforms to FCC 15.203.

802.11b/g/n-20MHz Center Frequency of Each Channel:

U		1 2					
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz		

- 1. The EUT is a OTT BOX with a built-in WLAN and Bluetooth transceiver, this report for 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. (802.11b is 1Mbps \$ 802.11g is 6Mbps and 802.11n(20M-BW) is 7.2Mbps)
- 5. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11b/g/n transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.

Test Mode:	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

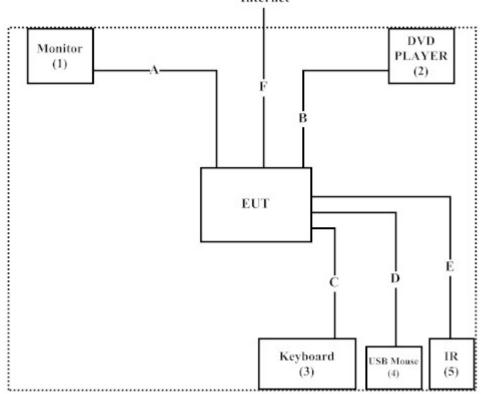
1.3. Tested System Details

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

Prod	uct	Manufacturer	Model No.	Serial No.	Power Cord
1	Monitor	Dell	2407WFPb	CN-0FC255-46633-67T-047S	Non-Shielded, 1.8m
2	DVD PLAYER	Panasonic	DVD-S97	VC6GG001022R	Non-Shielded, 1.8m
3	Keyboard	DELL	SK-8115	MY-0DJ325-71619-6A3-1911	N/A
4	USB Mouse	DELL	M056U0A	F0Y01YEQ	N/A
5	IR	Always Tai Lai	Y001-0572	N/A	N/A
3		CO.,LTD.			

Signa	l Cable Type	Signal cable Description
A HDMI Cable Shielded, 1.2m		Shielded, 1.2m
В	OPTICAL Cable	Non-Shielded, 1.8m
С	USB Cable	Shielded, 1.8m, with one ferrite core bonded.
D	USB Cable	Shielded, 1.8m
Е	IR Cable	Non-Shielded, 1.8m
F	RJ-45 Cable	Non-Shielded, 3m

1.4. Configuration of Tested System



Internet

1.5. EUT Exercise Software

- 1. Setup the EUT as shown in Section 1.4.
- 2. Execute "Ampak RF Test Tool V5.2" program on the EUT.
- 3. Configure the test mode, the test channel, and the data rate.
- 4. Start the continuous transmission.
- 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

QuieTek Corporation's Web Site: <u>http://www.quietek.com/chinese/about/certificates.aspx?bval=5</u> The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site: <u>http://www.quietek.com/</u>

Site Description:	File on
	Federal Communications Commission
	FCC Engineering Laboratory
	7435 Oakland Mills Road
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FCC Accreditation Number: TW1014

2. Conducted Emission

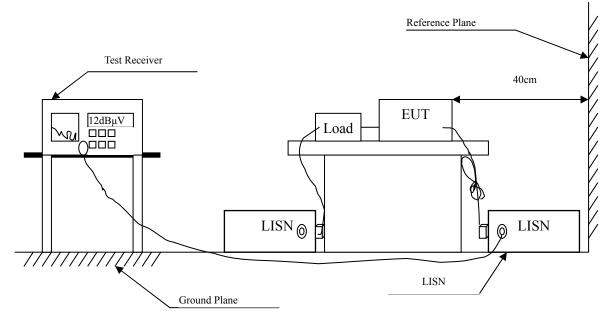
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
Х	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2015	
Х	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2015	Peripherals
Х	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2015	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar., 2015	EUT
Х	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2015	
	No.1 Shielded Room				

Note:

- 1. All equipments are calibrated every one year.
- 2. The test instruments marked by "X" are used to measure the final test results.

2.2. Test Setup



2.3. Limits

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

2.4. 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.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product	:	OTT BOX
Test Item	:	Conducted Emission Test
Power Line	:	Line 1
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV	dB	dBµV
Line 1					
Quasi-Peak					
0.158	9.658	35.910	45.568	-20.203	65.771
0.220	9.652	29.330	38.982	-25.018	64.000
0.556	9.670	22.110	31.780	-24.220	56.000
0.650	9.675	18.580	28.255	-27.745	56.000
0.865	9.687	18.590	28.277	-27.723	56.000
10.494	9.995	26.380	36.375	-23.625	60.000
Average					
0.158	9.658	22.420	32.078	-23.693	55.771
0.220	9.652	18.580	28.232	-25.768	54.000
0.556	9.670	9.790	19.460	-26.540	46.000
0.650	9.675	5.610	15.285	-30.715	46.000
0.865	9.687	10.140	19.827	-26.173	46.000
10.494	9.995	20.580	30.575	-19.425	50.000

- 1. All Reading Levels are Quasi-Peak and average value.
- 2. "means the worst emission level.
- 3. Measurement Level = Reading Level + Correct Factor

Product	:	OTT BOX
Test Item	:	Conducted Emission Test
Power Line	:	Line 2
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV	dB	dBµV
Line 2					
Quasi-Peak					
0.166	9.659	33.240	42.899	-22.644	65.543
0.197	9.660	28.960	38.620	-26.037	64.657
0.275	9.665	18.960	28.625	-33.804	62.429
0.318	9.657	14.640	24.297	-36.903	61.200
0.377	9.660	17.220	26.880	-32.634	59.514
0.576	9.671	16.670	26.341	-29.659	56.000
Average					
0.166	9.659	16.800	26.459	-29.084	55.543
0.197	9.660	14.520	24.180	-30.477	54.657
0.275	9.665	4.800	14.465	-37.964	52.429
0.318	9.657	2.590	12.247	-38.953	51.200
0.377	9.660	10.050	19.710	-29.804	49.514
0.576	9.671	11.380	21.051	-24.949	46.000

- 1. All Reading Levels are Quasi-Peak and average value.
- 2. "means the worst emission level.
- 3. Measurement Level = Reading Level + Correct Factor

3. Peak Power Output

3.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.		
Х	Power Meter	Anritsu	ML2495A/6K00003357	May, 2015		
Х	Power Sensor	Anritsu	MA2411B/0738448	Jun., 2015		
Note:						
1.	All equipments are calibrated with traceable calibrations. Each calibration is traceable to the					
	national or international standards.					

2. The test instruments marked with "X" are used to measure the final test results.

3.2. Test Setup



3.3. Limits

The maximum peak power shall be less 1 Watt.

3.4. Test Procedure

The EUT was tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements. The maximum peak conducted output power using KDB 558074 D01 DTS Meas Guidance v03r02 section 9.1.2 PKPM1 Peak power meter method.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product	:	OTT BOX
Test Item	:	Peak Power Output Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps)

Channel No. Frequency		Average Power For different Data Rate (Mbps)			Peak Power	Required	Result	
Channel No	(MHz)	1	2	5.5	11	1	Limit	Kesun
			Measur	ement Lev	vel (dBm)			
01	2412	14.23				17.61	<30dBm	Pass
06	2437	15.13	15.08	15.03	14.98	18.18	<30dBm	Pass
11	2462	15.25				18.45	<30dBm	Pass

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



Product	:	OTT BOX
Test Item	:	Peak Power Output Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps)

	Fraguanay	For different I				rage Power t Data Rate (Mbps)			Peak Power	Required		
Channel No	Frequency (MHz)	6	9	12	18	24	36	48	54	6	Limit	Result
				Ν	Measure	ement L	level (d	Bm)				
01	2412	14.24								21.36	<30dBm	Pass
06	2437	14.71	14.64	14.59	14.57	14.51	14.48	14.43	14.39	21.84	<30dBm	Pass
11	2462	15.02								22.04	<30dBm	Pass

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



Product	:	OTT BOX
Test Item	:	Peak Power Output Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

	Fraguanay		Average PowerPeakFor different Data Rate (Mbps)Power						Required			
Channel No	Frequency (MHz)	7.2	14.4	21.7	28.9	43.3	57.8	65	72.2	7.2	Limit	Result
				Ν	Aeasure	ement I	level (d	Bm)				
01	2412	14.18							-	21.25	<30dBm	Pass
06	2437	14.59	14.54	14.47	14.44	14.38	14.42	14.33	14.31	21.86	<30dBm	Pass
11	2462	14.98								22.01	<30dBm	Pass

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

4. Radiated Emission

4.1. Test Equipment

The following test equipments are used during the radiated emission test:

Test Site		Equipment	Manufacturer Model No./Serial No.		Last Cal.
Site # 3	Х	Magnetic Loop Antenna	Teseq	HLA6121/ 37133	Sep., 2015
	Х	Bilog Antenna	Schaffner Chase	CBL6112B/ 2707	Jun., 2015
	Х	EMI Test Receiver	R&S	ESCS 30/838251/ 001	Jun., 2015
	Х	Coaxial Cable	QTK(Arnist)	RG 214/ LC003-RG	Jun., 2015
	Х	Coaxial signal switch	Arnist	MP59B/ 6200798682	Jun., 2015

Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
CB # 8	Х	Spectrum Analyzer	R&S	FSP40/ 100339	Oct., 2014
	Х	Horn Antenna	ETS-Lindgren	3117/ 35205	Mar., 2015
	Х	Horn Antenna	Schwarzbeck	BBHA9170/209	Jan., 2015
	Х	Horn Antenna	TRC	AH-0801/95051	Aug., 2015
	Х	Pre-Amplifier	EMCI	EMC012630SE/980210	Jan., 2015
	Х	Pre-Amplifier	MITEQ	JS41-001040000-58-5P/153945	Jul., 2015
	Х	Pre-Amplifier	NARDA	DBL-1840N506/013	Jul., 2015

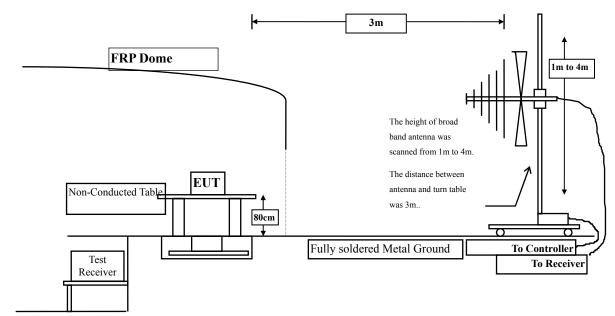
Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

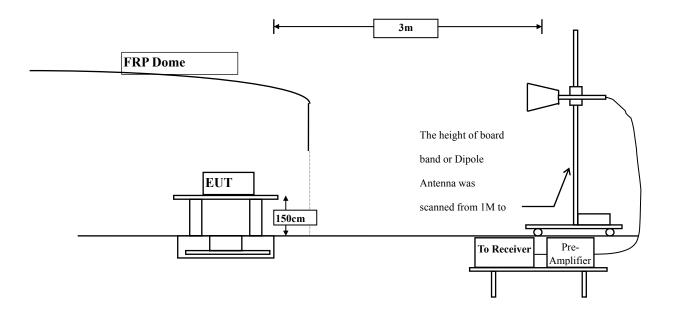


4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.3. 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	Measurement distance					
	(microvolts/meter)	(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 $(dB\mu V/m) = 20 \log E$ field strength (uV/m)

4.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 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.

4.5. Uncertainty

- ± 3.9 dB above 1GHz
- ± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product	:	OTT BOX
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
4824.000	2.428	52.310	54.739	-19.261	74.000
7236.000	9.177	39.540	48.717	-25.283	74.000
9648.000	10.019	40.220	50.240	-23.760	74.000
Average Detector:					
4824.000	2.428	47.640	50.069	-3.931	54.000
Vertical					
Peak Detector:					
4824.000	2.836	51.430	54.267	-19.733	74.000
7236.000	9.676	40.270	49.946	-24.054	74.000
9648.000	10.556	39.930	50.487	-23.513	74.000
Average Detector:					
4824.000	2.836	47.570	50.407	-3.593	54.000

- 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 = 10 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	: OTT BO	X					
Test Item	: Harmonic Radiated Emission Data						
Test Site	: No.3 OATS						
Test Mode	: Mode 1:	Transmit (802.11	b 1Mbps) (2437 MH	z)			
Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m		
	цБ	ασμν	ασμ ν/111	UD	αδμν/Π		
Horizontal							
Peak Detector:							
4874.000	2.076	50.090	52.167	-21.833	74.000		
7311.000	9.512	42.720	52.232	-21.768	74.000		
9748.000	9.630	39.010	48.640	-25.360	74.000		
Average Detector:							
Vertical							
Peak Detector:							
4874.000	2.532	50.460	52.992	-21.008	74.000		
7311.000	10.089	40.850	50.939	-23.061	74.000		
9748.000	10.266	39.100	49.367	-24.633	74.000		

Average Detector:

- 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 = 10 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	: OTT BOX						
Test Item	: Harmonic Radiated Emission Data						
Test Site	: No.3 OATS						
Test Mode	: Mode 1:	Transmit (802.11	b 1Mbps) (2462 MH	z)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m		
Horizontal							
Peak Detector:							
4924.000	2.191	46.620	48.811	-25.189	74.000		
7386.000	10.373	40.550	50.924	-23.076	74.000		
9848.000	9.964	38.870	48.834	-25.166	74.000		
Average Detector:							
Vertical							
Peak Detector:							
4924.000	2.805	46.740	49.545	-24.455	74.000		
7386.000	11.180	39.060	50.240	-23.760	74.000		
9848.000	10.801	39.060	49.861	-24.139	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 = 10 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 Test Item Test Site Test Mode	: No.3 OA	ic Radiated Emiss	sion Data g 6Mbps) (2412MHz	:)	
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
4824.000	2.428	51.530	53.959	-20.041	74.000
7236.000	9.676	39.490	49.166	-24.834	74.000
9648.000	10.556	39.110	49.667	-24.333	74.000
Average Detector:					
Vertical					
Peak Detector:					
4824.000	2.836	51.640	54.477	-19.523	74.000
7236.000	9.676	39.240	48.916	-25.084	74.000
9648.000	10.556	38.890	49.447	-24.553	74.000
Average Detector:					
4824.000	2.836	36.870	39.707	-14.293	54.000

- 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 = 10 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 Test Item Test Site Test Mode	: No.3 OA	ic Radiated Emiss	ion Data g 6Mbps) (2437 MH	z)	
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$
Horizontal					
Peak Detector:					
4874.000	2.076	50.210	52.287	-21.713	74.000
7311.000	9.512	42.620	52.132	-21.868	74.000
9748.000	9.630	38.690	48.320	-25.680	74.000
Average Detector:					
 Vertical					
Peak Detector:					
4874.000	2.532	50.820	53.352	-20.648	74.000
7311.000	10.089	40.480	50.569	-23.431	74.000
9748.000	10.266	38.360	48.627	-25.373	74.000

Average Detector:

- 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 = 10 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 Test Item Test Site Test Mode	: No.3 OA	c Radiated Emiss TS	sion Data g 6Mbps) (2462 MH	z)	
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
4924.000	2.191	47.390	49.581	-24.419	74.000
7386.000	10.373	39.760	50.134	-23.866	74.000
9848.000	9.964	38.720	48.684	-25.316	74.000
Average Detector:					
Vertical					
Peak Detector:					
4924.000	2.805	47.310	50.115	-23.885	74.000
7386.000	11.180	39.210	50.390	-23.610	74.000
9848.000	10.801	38.730	49.531	-24.469	74.000

Average Detector:

--

- 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 = 10 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	:	OTT BOX
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2412MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$
Horizontal					
Peak Detector:					
4824.000	2.428	52.370	54.799	-19.201	74.000
7236.000	9.177	40.910	50.087	-23.913	74.000
9648.000	10.019	39.330	49.350	-24.650	74.000
Average Detector:					
4824.000	2.428	36.630	39.059	-14.941	54.000
Vertical					
Peak Detector:					
4824.000	2.836	51.920	54.757	-19.243	74.000
7236.000	9.676	38.870	48.546	-25.454	74.000
9648.000	10.556	38.950	49.507	-24.493	74.000
Average Detector:					
4824.000	2.836	36.670	39.507	-14.493	54.000

- 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 = 10 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	:	OTT BOX
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
4874.000	2.076	50.680	52.757	-21.243	74.000
7311.000	9.512	41.270	50.782	-23.218	74.000
9748.000	9.630	39.480	49.110	-24.890	74.000
Average Detector:					
Vertical					
Peak Detector:					
4874.000	2.532	50.280	52.812	-21.188	74.000
7311.000	10.089	39.520	49.609	-24.391	74.000
9748.000	10.266	39.370	49.637	-24.363	74.000

Average Detector:

- 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 = 10 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	:	OTT BOX
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
4924.000	2.191	47.810	50.001	-23.999	74.000
7386.000	10.373	40.230	50.604	-23.396	74.000
9848.000	9.964	39.340	49.304	-24.696	74.000
Average Detector:					
Vertical					
Peak Detector:					
4924.000	2.805	45.660	48.465	-25.535	74.000
7386.000	11.180	38.510	49.690	-24.310	74.000
9848.000	10.801	38.800	49.601	-24.399	74.000

Average Detector:

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- 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 = 10 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	:	OTT BOX
Test Item	:	General Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$
Horizontal					
308.348	-3.510	32.114	28.603	-17.397	46.000
371.609	-1.104	31.012	29.908	-16.092	46.000
427.841	-2.637	33.548	30.911	-15.089	46.000
604.971	4.781	23.964	28.744	-17.256	46.000
791.942	5.212	26.423	31.635	-14.365	46.000
890.348	6.136	25.217	31.352	-14.648	46.000
Vertical					
105.913	-0.261	30.294	30.033	-13.467	43.500
382.855	-2.110	26.078	23.968	-22.032	46.000
503.754	-0.852	25.118	24.266	-21.734	46.000
690.725	2.504	23.658	26.162	-19.838	46.000
791.942	2.897	31.066	33.963	-12.037	46.000
929.710	6.434	23.203	29.637	-16.363	46.000

- 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 = 10 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	:	OTT BOX
Test Item	:	General Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps)(2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
306.942	-3.194	29.450	26.257	-19.743	46.000
375.826	-1.187	29.433	28.246	-17.754	46.000
427.841	-2.637	30.201	27.564	-18.436	46.000
544.522	3.597	25.671	29.268	-16.732	46.000
745.551	3.310	27.113	30.424	-15.576	46.000
791.942	5.212	26.483	31.695	-14.305	46.000
Vertical					
105.913	-0.261	31.641	31.380	-12.120	43.500
301.319	-6.787	30.344	23.557	-22.443	46.000
380.043	-1.440	26.051	24.611	-21.389	46.000
529.058	-0.475	24.799	24.324	-21.676	46.000
690.725	2.504	23.948	26.452	-19.548	46.000
791.942	2.897	29.106	32.003	-13.997	46.000

- 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 = 10 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	:	OTT BOX
Test Item	:	General Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$
Horizontal					
305.536	-2.939	31.008	28.070	-17.930	46.000
380.043	-0.966	28.504	27.538	-18.462	46.000
426.435	-2.968	30.961	27.994	-18.006	46.000
544.522	3.597	24.304	27.901	-18.099	46.000
604.971	4.781	23.015	27.795	-18.205	46.000
753.986	4.113	27.234	31.347	-14.653	46.000
Vertical					
305.536	-6.810	30.184	23.374	-22.626	46.000
381.449	-1.656	26.557	24.901	-21.099	46.000
507.971	-0.350	23.944	23.593	-22.407	46.000
689.319	2.525	23.287	25.812	-20.188	46.000
755.391	3.286	23.927	27.213	-18.787	46.000
791.942	2.897	29.284	32.181	-13.819	46.000

- 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 = 10 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.

5. RF antenna conducted test

5.1. Test Equipment

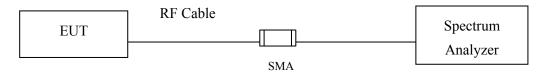
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2015
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

5.2. Test Setup

RF antenna Conducted Measurement:



5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.4. Test Procedure

The EUT was tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements. Set RBW = 100 kHz, Set VBW> RBW, scan up through 10th harmonic.

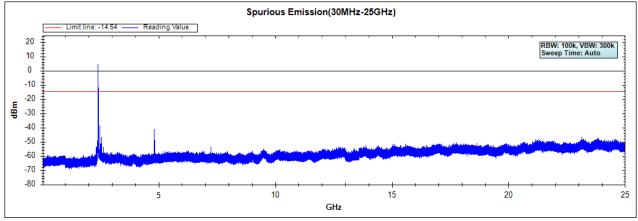
5.5. Uncertainty

The measurement uncertainty Conducted is defined as ± 1.27 dB

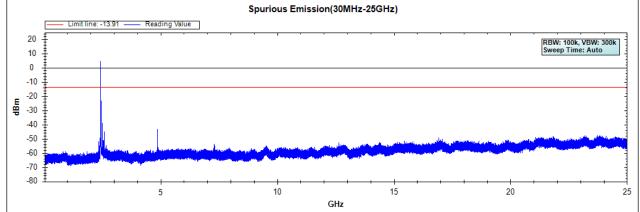
5.6. Test Result of RF antenna conducted test

Product	:	OTT BOX
Test Item	:	RF antenna conducted test
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps)

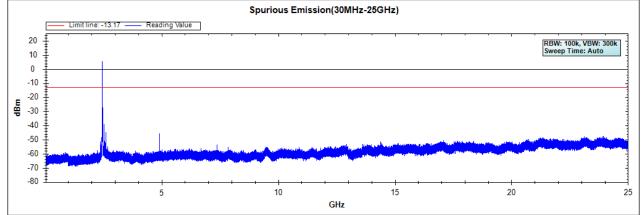
Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)

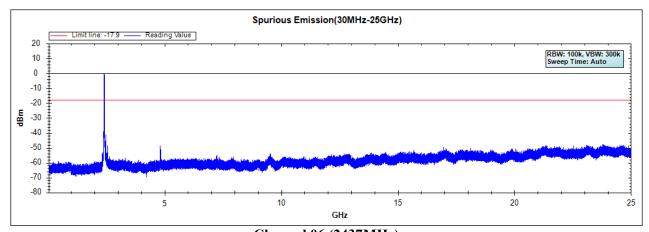


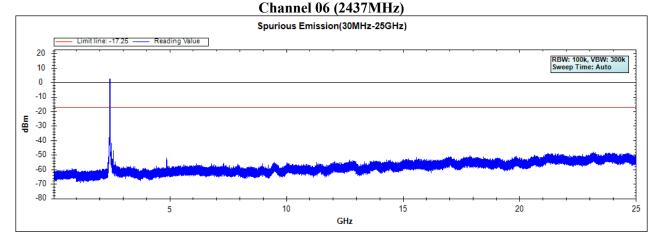
Note: The above test pattern is synthesized by multiple of the frequency range.



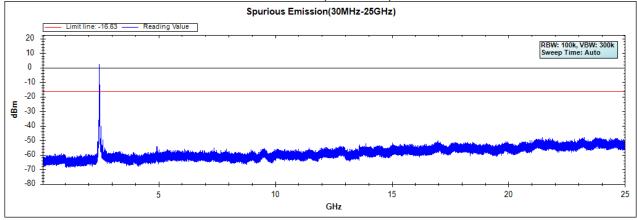
Product	:	OTT BOX
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps)

Channel 01 (2412MHz)





Channel 11 (2462MHz)

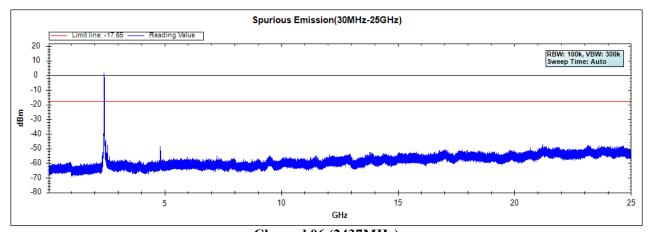


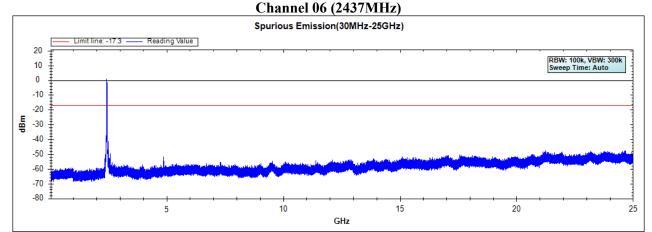
Note: The above test pattern is synthesized by multiple of the frequency range.



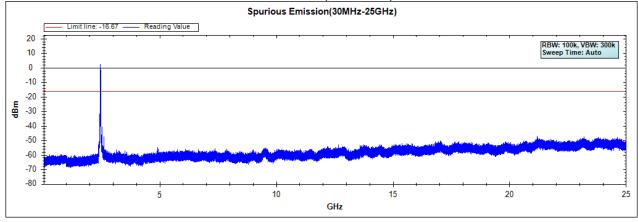
BOX
ntenna Conducted Spurious
OATS
e 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

Channel 01 (2412MHz)









Note: The above test pattern is synthesized by multiple of the frequency range.

6. Band Edge

6.1. Test Equipment

RF Radiated Measurement:

The following test equipments are used during the band edge tests:

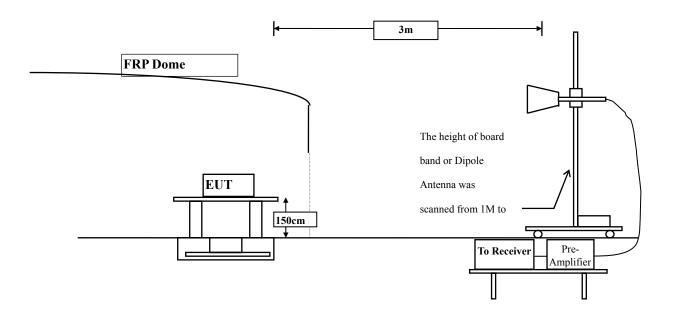
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
⊠CB # 8	Х	Spectrum Analyzer	R&S	FSP40/ 100339	Oct., 2014
	Х	Horn Antenna	ETS-Lindgren	3117/ 35205	Mar., 2015
	Х	Horn Antenna	Schwarzbeck	BBHA9170/209	Jan., 2015
	Х	Horn Antenna	TRC	AH-0801/95051	Aug., 2015
	Х	Pre-Amplifier	EMCI	EMC012630SE/980210	Jan., 2015
	Х	Pre-Amplifier	MITEQ	JS41-001040000-58-5P/153945	Jul., 2015
	Х	Pre-Amplifier	NARDA	DBL-1840N506/013	Jul., 2015

Note: 1. All instruments are calibrated every one year.

2. The test instruments marked by "X" are used to measure the final test results.

6.2. Test Setup

RF Radiated Measurement:



6.3. 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.

6.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

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 from 1 meter to 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.

6.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz



6.6. Test Result of Band Edge

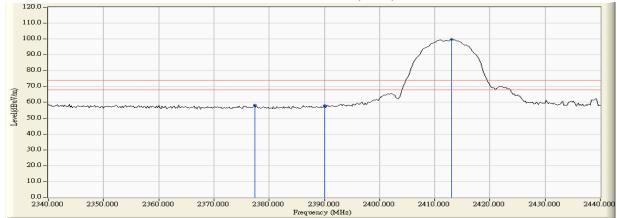
Product	:	OTT BOX
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

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
01 (Peak)	2377.400	33.729	24.578	58.307	74.00	54.00	Pass
01 (Peak)	2390.000	33.739	24.144	57.883	74.00	54.00	Pass
01 (Peak)	2413.000	33.775	65.918	99.692			
01 (Average)	2390.000	33.739	13.243	46.982	74.00	54.00	Pass
01 (Average)	2412.800	33.775	62.164	95.938			

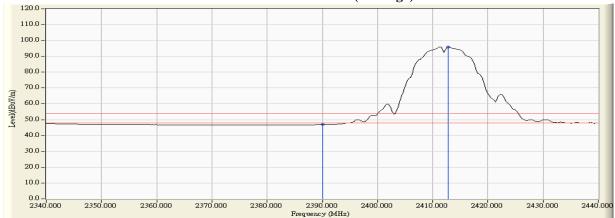
Figure Channel 01:

Horizontal (Peak)





Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 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.



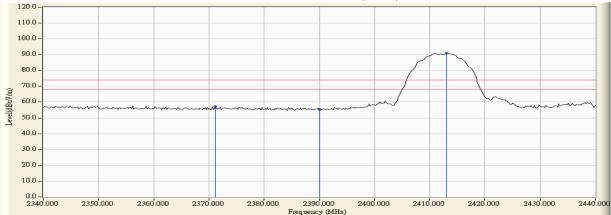
Product	:	OTT BOX
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

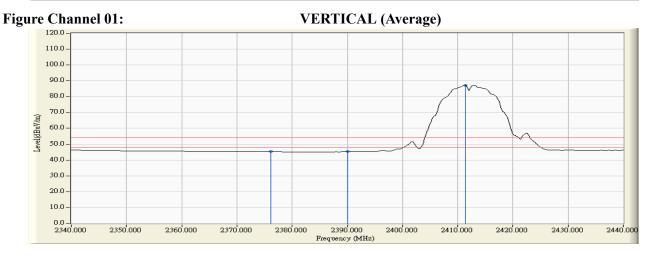
RF Radiated Measurement (VERTICAL):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Result
Channel No.	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	Result
01 (Peak)	2371.200	32.399	24.793	57.192	74.00	54.00	Pass
01 (Peak)	2390.000	32.267	23.188	55.455	74.00	54.00	Pass
01 (Peak)	2413.000	32.254	58.745	90.998			
01 (Average)	2376.200	32.363	12.998	45.361	74.00	54.00	Pass
01 (Average)	2390.000	32.267	12.935	45.202	74.00	54.00	Pass
01 (Average)	2411.400	32.247	54.933	87.179			

Figure Channel 01:

VERTICAL (Peak)





Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 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.

:	OTT BOX
:	Band Edge Data
:	No.3 OATS
:	Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
	:

RF Radiated Measurement (Horizontal):

Channel No.	1 2	Correct Factor	•	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Average Limit (dBµV/m)	Result
	(MHz)	(dB)	(dBµV)		(ubµv/m)	(ubµv/m)	
11 (Peak)	2460.900	33.890	69.285	103.175			
11 (Peak)	2483.500	33.951	24.384	58.334	74.00	54.00	Pass
11 (Peak)	2485.700	33.956	25.455	59.411	74.00	54.00	Pass
11 (Average)	2461.100	33.890	65.716	99.606			
11 (Average)	2483.500	33.951	13.692	47.642	74.00	54.00	Pass

Figure Channel 11:

Horizontal (Peak)

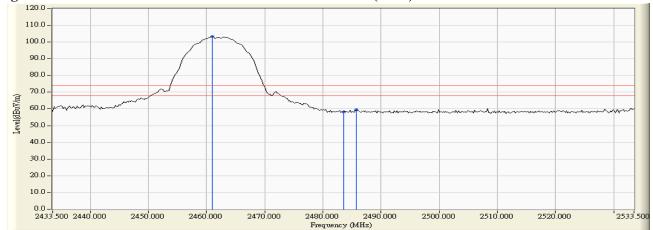


Figure Channel 11:

Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

- 3. Average measurements: RBW = 1MHz, VBW = 10 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	:	OTT BOX
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBµV/m)	Peak Limit (dBuV/m)	Average Limit (dBµV/m)	Result
11 (Peak)	2460.900	32.476	64.548	97.023			
11 (Peak)	2483.500	32.586	23.840	56.425	74.00	54.00	Pass
11 (Peak)	2506.900	32.698	25.578	58.276	74.00	54.00	Pass
11 (Average)	2461.100	32.476	61.038	93.514			
11 (Average)	2483.500	32.586	13.404	45.989	74.00	54.00	Pass

Figure Channel 11:

VERTICAL (Peak)

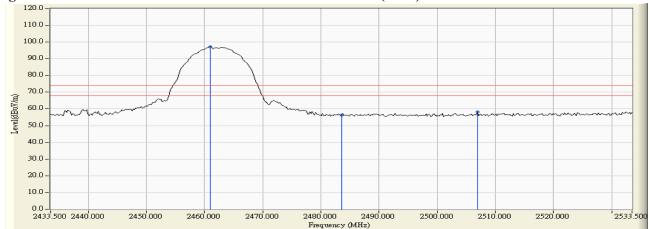
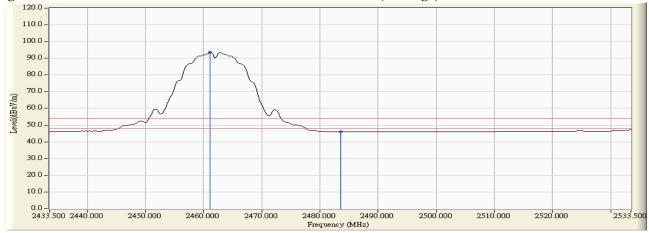


Figure Channel 11:

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 = 10 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.

2440.000

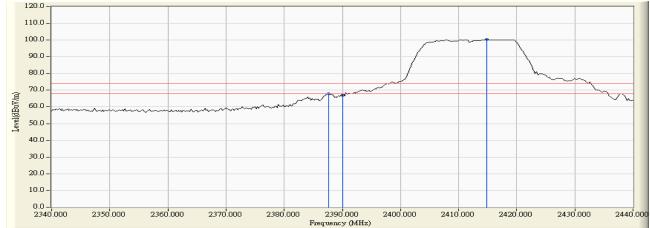
Product	:	OTT BOX
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

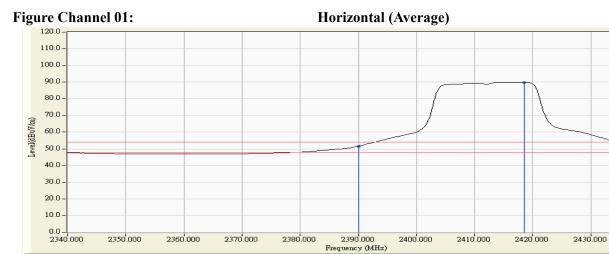
RF Radiated Measurement (Horizontal):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Result
Channel NO.	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	Result
01 (Peak)	2387.600	33.737	34.073	67.810	74.00	54.00	Pass
01 (Peak)	2390.000	33.739	33.060	66.799	74.00	54.00	Pass
01 (Peak)	2414.800	33.778	66.679	100.458			
01 (Average)	2390.000	33.739	17.894	51.633	74.00	54.00	Pass
01 (Average)	2418.600	33.788	56.106	89.894			

Figure Channel 01:

Horizontal (Peak)





Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

- 3. Average measurements: RBW = 1MHz, VBW = 10 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.



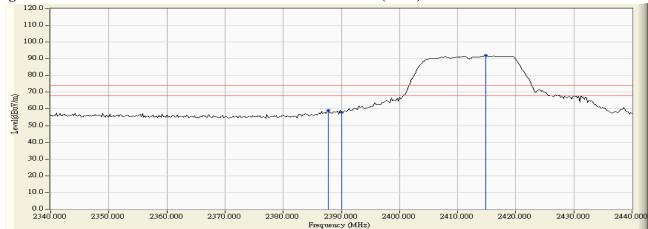
Product	:	OTT BOX
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

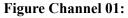
RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Average Limit (dBµV/m)	Result
01 (Peak)	2387.800	32.282	26.884	59.166	74.00	54.00	Pass
01 (Peak)	2390.000	32.267	25.751	58.018	74.00	54.00	Pass
01 (Peak)	2414.800	32.261	59.627	91.889			
01 (Average)	2390.000	32.267	14.130	46.397	74.00	54.00	Pass
01 (Average)	2418.800	32.279	49.329	81.609			

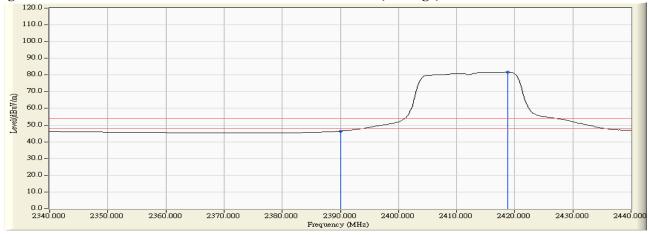
Figure Channel 01:

VERTICAL (Peak)





VERTICAL (Average)



- Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
 - 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, Sweep: Auto.
 - 3. Average measurements: RBW = 1MHz, VBW = 10 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	:	OTT BOX
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

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
11 (Peak)	2460.300	33.888	70.317	104.205			
11 (Peak)	2483.500	33.951	35.333	69.283	74.00	54.00	Pass
11 (Average)	2458.700	33.884	59.341	93.225			
11 (Average)	2483.500	33.951	17.260	51.210	74.00	54.00	Pass

Figure Channel 11:

Horizontal (Peak)

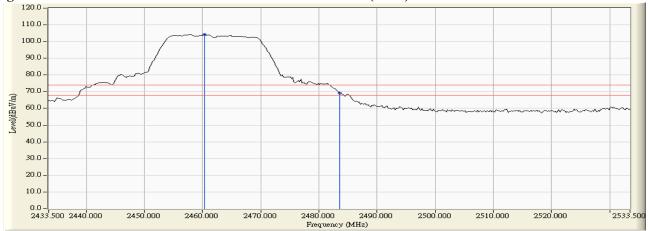


Figure Channel 11:

Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

- 3. Average measurements: RBW = 1MHz, VBW = 10 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	:	OTT BOX
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

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
11 (Peak)	2460.300	32.472	65.579	98.051			
11 (Peak)	2483.500	32.586	30.614	63.199	74.00	54.00	Pass
11 (Average)	2459.100	32.467	54.767	87.233			
11 (Average)	2483.500	32.586	15.427	48.012	74.00	54.00	Pass

Figure Channel 11:

VERTICAL (Peak)

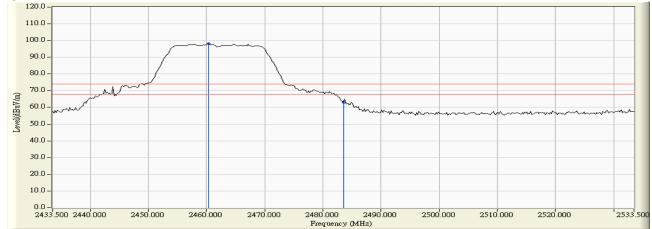


Figure Channel 11:

VERTICAL (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

- 3. Average measurements: RBW = 1MHz, VBW = 10 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.



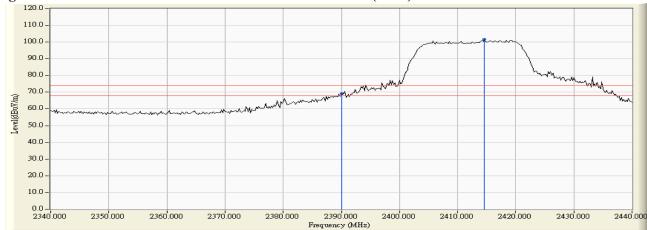
Product	:	OTT BOX
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	33.739	35.486	69.225	74.00	54.00	Pass
01 (Peak)	2414.600	33.778	67.975	101.753			
01 (Average)	2390.000	33.739	18.469	52.208	74.00	54.00	Pass
01 (Average)	2417.400	33.784	55.830	89.615			

Figure Channel 01:

Horizontal (Peak)





Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

- 3. Average measurements: RBW = 1MHz, VBW = 10 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.



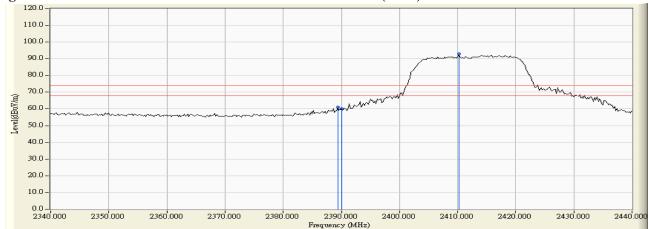
Product	:	OTT BOX
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

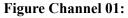
RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Average Limit (dBµV/m)	Result
01 (Peak)	2389.400	32.271	29.013	61.284	74.00	54.00	Pass
01 (Peak)	2390.000	32.267	27.899	60.166	74.00	54.00	Pass
01 (Peak)	2410.200	32.244	60.692	92.936			
01 (Average)	2390.000	32.267	14.319	46.586	74.00	54.00	Pass
01 (Average)	2417.000	32.271	48.452	80.723			

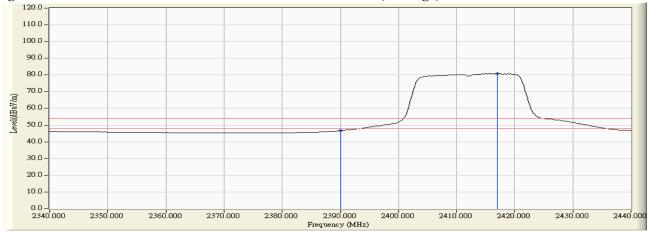
Figure Channel 01:

VERTICAL (Peak)





VERTICAL (Average)



- Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
 - 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, Sweep: Auto.
 - 3. Average measurements: RBW = 1MHz, VBW = 10 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	:	OTT BOX
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)

RF Radiated Measurement (Horizontal):

Channel No.	· ·		•	Emission Level			Result
	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	1000010
11 (Peak)	2460.300	33.888	71.411	105.299			
11 (Peak)	2483.500	33.951	39.087	73.037	74.00	54.00	Pass
11 (Average)	2456.700	33.879	59.081	92.960			
11 (Average)	2483.500	33.951	18.246	52.196	74.00	54.00	Pass

Figure Channel 11:

Horizontal (Peak)

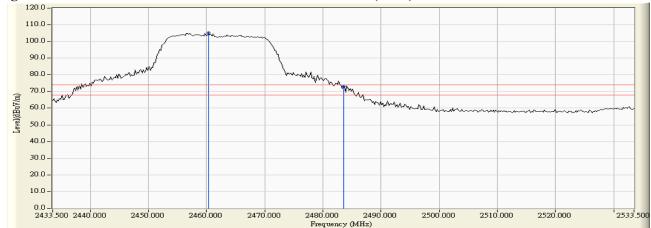


Figure Channel 11:

Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

- 3. Average measurements: RBW = 1MHz, VBW = 10 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	:	OTT BOX
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBµV/m)	Result
11 (Peak)	2464.100	32.491	65.612	98.103			
11 (Peak)	2483.500	32.586	34.721	67.306	74.00	54.00	Pass
11 (Average)	2458.300	32.462	53.840	86.303			
11 (Average)	2483.500	32.586	15.890	48.475	74.00	54.00	Pass

Figure Channel 11:

VERTICAL (Peak)

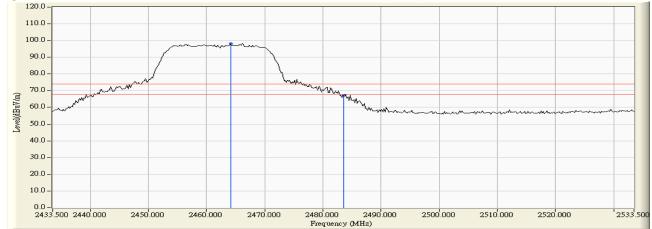


Figure Channel 11:

VERTICAL (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

- 3. Average measurements: RBW = 1MHz, VBW = 10 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	:	OTT BOX
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps)

Test Frequency	Measurement Level	Limit	Result
(MHz)	Δ (dB)	Δ (dB)	
2412	48.44	>20	PASS
2462	54.28	>20	PASS

E	08:04:18 PM Aug 25, 2015	ALIGN AUTO		/SE:INT	SEN		AC AC	50 1	RF	L	KU R
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2.440000000 GH									-		69.5
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Stop Fre 2.533500000 GH	ungerung von einen seinen voll seinen s	u orani da sao da k	ndamenalarri	~~~	1 W W V			η · ι ·	~~^~ ⁰	~~~	-49.5 -59.5 -69.5
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Freq Offse 0 H					6.603 dl -47.677 di		2.462 (N N	1 2 3 4 5 6
	×				п						7 8 9 10 11 <
		STATUS									MSG



Product	:	OTT BOX
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps)

Test Frequency	Measurement Level	Limit	Result
(MHz)	Δ (dB)	Δ (dB)	
2412	33.85	>20	PASS
2462	38.02	>20	PASS

	DR AC	SENSE:INT	ALIGN AUTO	08:03:52 PM Aug 25, 2015	Frequency
enter Freq 2.390	000000 GHz IFGain:Low	Trig: Free Run Atten: 30 dB	Avg Type: Log-Pwr Avg Hold: 36/100	TYPE MWWWWWW DET P N N N N N	Frequency
Ref Offset			Mk	r1 2.414 5 GHz 2.023 dBm	Auto Tur
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9.5			n Z		Start Fre 2.340000000 G
9.5 9.5 9.5	and and a second s				Stop Fro 2.440000000 G
enter 2.39000 GHz Res BW 100 kHz		W 300 kHz	· · ·	Span 100.0 MHz 00.0 ms (1001 pts)	CF Ste 10.000000 MI Auto M
MODE TRC SCL 1 N 1 f 2 N 1 f 3	× 2.414 5 GHz 2.400 0 GHz	2.023 dBm -31.822 dBm	FUNCTION WIDTH	FUNCTION VALUE	Freq Offs
6 7 8 9 0					

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MSG														STATUS	5			



Product	:	OTT BOX
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

Test Frequency	Measurement Level	Limit	Result
(MHz)	Δ (dB)	Δ (dB)	
2412	33.49	>20	PASS
2462	35.94	>20	PASS

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10.5 0.500		•	1							Center Fre 2.483500000 GH
-9.50 -19.5 -29.5	ngainfluenghi yégyelek			hupponetical	2					Start Fre 2.433500000 GH
-49.5				hupp-show-call		the man for market		anternational states	للط-ليليم كوانسيانين	Stop Fre 2.533500000 GH
Center 2.4 #Res BW		×	#VBW	V 300 kHz	EIN		Sweep 5			CF Ste 10.000000 MH Auto Ma
1 N 1 2 N 1 3 4 5 6	f	2.464 5 G 2.483 5 G		2.847 dB -33.090 dB	m					Freq Offs 0 H
7 8 9 10 11										
ISG							STATUS	•	>	

7. Occupied Bandwidth

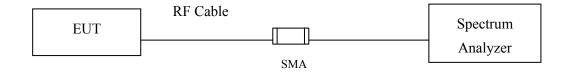
7.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2015
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

- 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
- 2. The test instruments marked with "X" are used to measure the final test results.

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.4: 2014; tested according to DTS test procedure of Jan KDB558074 for compliance to FCC 47CFR 15.247 requirements.

7.5. Uncertainty

 \pm 150Hz

7.6. Test Result of Occupied Bandwidth

Product	:	OTT BOX
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	8150	>500	Pass
06	2437	7650	>500	Pass
11	2462	8150	>500	Pass

Figure Channel 01:

RL RF 50 Ω	AC	SENSE:INT	ALIGN AUTO	11:20:07 AM Dec 02, 2014	-
enter Freq 2.41200	0000 GHz PNO: Fast G IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N	Frequency
Ref Offset 0.5 dB/div Ref 20.00 d			Mkr	2 2.407 95 GHz -1.15 dBm	Auto Tur
9		2 1 marine	3	-0.39 dBm	Center Fr 2.412000000 G
.0	and the second		- My - My	www.www.	Start Fr 2.387000000 G
1.0 1.0				WW Soop Son me	Stop Fr 2.437000000 G
enter 2.41200 GHz tes BW 100 kHz	#VBM	/ 300 kHz	Sweep 4	Span 50.00 MHz 4.80 ms (1001 pts)	CF Sto 5.000000 M
R MODE TRC SCL N 1 f N 1 f	× 2.412 50 GHz 2.407 95 GHz	5.61 dBm -1.15 dBm	UNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> M
3 N 1 f	2.416 10 GHz	-2.26 dBm			Freq Offs 0
7 3 9 0 1					
		1			



RL	RF 50 Ω	AC	SE	NSE:INT		ALIGN AUTO	11:27:53 AM	4 Dec 02, 2014	F
enter Fr	req 2.43700	0000 GHz PNO: Fa IFGain:Lu		e Run	Avg Type	: Log-Pwr	TYP	E 1 2 3 4 5 6 E MWWWWW T P N N N N N	Frequency
dB/div	Ref Offset 0.5 Ref 20.00 d					Mkr		40 GHz 55 dBm	Auto Tur
0.0			€ ² mm	All 3				0.20 dBm	Center Fre
00			A	V	٨.				2.437000000 G
0.0			NOT V		Jag	4			Start Fr
).0	a month and	www.			VHV	WW	~. n. p. h.		2.412000000 G
1.0 May Marin	ren white y							and Marine	Stop Fr
0.0									2.462000000 G
	13700 GHz 100 kHz	#	VBW 300 kHz			Sweep 4		0.00 MHz 1001 pts)	CF St 5.000000 M
R MODE TR	f	× 2.437 50 GH:			DN FU	NCTION WIDTH	FUNCTIO	N VALUE	<u>Auto</u> M
N 1 N 1	f	2.433 40 GH: 2.441 05 GH:							Freq Offs
i									0

Figure Channel 06:

Figure Channel 11:

		8			
gilent Spectrum Analyzer - Sw	rept SA				
RL RF 50 Ω	AC	SENSE:IN	ALIGNAUTO	11:38:14 AM Dec 02, 2014	_
enter Freg 2.4620	00000 GHz		Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6	Frequency
	PNO: Fast	Trig: Free Run		TYPE MWWWWW DET P N N N N N	
	IFGain:Low	#Atten: 30 dB			A
Ref Offset 0.	e Jo		Mkr	2 2.457 95 GHz	Auto Tu
0 dB/div Ref 20.00				0.21 dBm	8
0.0		^'			Center Fr
		Frank Mar	Ly O	0.50 dBm	
		AND A	- ou		2.462000000 G
0.0		X	14.		
0.0	N	* V	1		
	1		The As		Start Fr
0.0	a Martin S		any my		2.437000000 G
0.0	have the the		K Lag	h	
0.0 0.0 Marken			Vv	non a	
and there are				munure	Stop Fr
0.0					
0.0	6			6	2.487000000 G
enter 2.46200 GHz				Span 50.00 MHz	CF St
Res BW 100 kHz	#VE	300 kHz	Sweep	4.80 ms (1001 pts)	5.000000 N
KR MODE TRC SCL	×	Y	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	Auto N
1 N 1 f	2.461 50 GHz	6.50 dBm			
2 N 1 f	2.457 95 GHz	0.21 dBm			
3 N 1 f	2.466 10 GHz	-1.52 dBm			Freq Offs
5					0
6					0
7					
8	0				
9					
1				<u> </u>	
2					
G					1

Product	:	OTT BOX
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	16450	>500	Pass
06	2437	16450	>500	Pass
11	2462	16450	>500	Pass

Figure Channel 01:

Agilent Spectrum An								
Center Freq 2	2.412000000 GH		SENSE:INT		LIGNAUTO	TRACE	1 2 3 4 5 6 MWWWWW	Frequency
10 dB/div Ref			n: 30 dB		Mkr	DE 2 2.403		Auto Tune
Log 10.0 0.00 -10.0		2 Junional marker	Muy almeter	3			-3.82 dBm	Center Freq 2.412000000 GHz
-20.0 -30.0 -40.0 ppmphatrach	Murral Marsher				they also your off	Maller will have	Manning	Start Fred 2.387000000 GHz
-50.0 -60.0 -70.0								Stop Free 2.437000000 GH;
Center 2.4120 #Res BW 100	kHz	#VBW 300 k		CTION FUR	Sweep 4	Span 50 1.80 ms (1	<u> </u>	CF Step 5.000000 MH Auto Mar
1 N 1 f 2 N 1 f 3 N 1 f 4 5 6	2,413 25 2,403 80 2,420 25	GHz 2.1 GHz -4.5	8 dBm 6 dBm 4 dBm					Freq Offse
7 8 9 10 11 12								
MSG					K STATUS			



		I iguite Ci			
Agilent Spectrum Analyze	r - Swept SA				
RL RF	50 Ω AC	SENSE:INT	ALIGN AUTO	12:17:41 PMDec 02, 2014	Frequency
Center Freq 2.43	37000000 GHz PNO: Fast IFGain:Low	→ Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N	
0 dB/div Ref 20	set 0.5 dB .00 dBm		Mkr	2 2.428 80 GHz -3.65 dBm	Auto Tun
-og 10.0 0.00 10.0	2 trad		Providenci na Ala		Center Fre 2.437000000 G⊦
	walkin work for the former		and the second second	and many property and and and	Start Fre 2.412000000 GH
50.0 50.0 70.0					Stop Fre 2.462000000 GF
enter 2.43700 G Res BW 100 kHz		W 300 kHz	Sweep 4	Span 50.00 MHz 4.80 ms (1001 pts)	CF Ste 5.000000 MH
IKR MODE TRC SCL 1 N 1 f 2 N 1 f	× 2.438 25 GHz 2.428 80 GHz	2.81 dBm -3.65 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Ma
3 N 1 f 4 5 6 6	2.445 25 GHz	-3.77 dBm			Freq Offs 0 F
7 8 9 0					
12 SG			STATUS		

Figure Channel 06:

Figure Channel 11:

		8			
Agilent Spectrum Analyzer - Sw	rept SA				
	AC	SENSE:INT	ALIGN AUTO	12:40:38 PM Dec 02, 2014	Frequency
Center Freq 2.46200		Trig: Free Run	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE MWWWWWW	Frequency
	PNO: Fast G	#Atten: 30 dB		DET P N N N N N	
	IFGamiLuw	WAtten. 00 db			Auto Tur
Ref Offset 0.	5 dB		MKC	2 2.453 80 GHz	Autoru
10 dB/div Ref 20.00				-3.21 dBm	
Log		. 1			
10.0	¢2		∧3		Center Fre
0.00	Junton	And marken han for Andrews		-2.68 dBm	2.462000000 GH
10.0					
0	and the second second		have a second se		
20.0	Ja		1. A.	and the second sec	Start Fr
-30.0	www.		V-vnuenda	and the second second second	2.437000000 GI
-30.0 -40.0 mar hap-mar William	N 19 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			worth and the second	2.437000000 G
50.0					
12.578					
-60.0					Stop Fr
-70.0	-				2.487000000 GI
Center 2.46200 GHz				Span 50.00 MHz	
Res BW 100 kHz	#VBV	/ 300 kHz	Sweep 4	4.80 ms (1001 pts)	CF Ste 5.000000 M
MKR MODE TRC SCL	×	V	NCTION FUNCTION WIDTH	FUNCTION VALUE	Auto M
	2.463 30 GHz	3.32 dBm	NCTION FUNCTION WIDTH	FUNCTION VALUE	Auto Mi
2 N 1 f	2.453 80 GHz	-3.21 dBm			
3 N 1 f	2.470 25 GHz	-3.17 dBm			Freq Offs
4 5					
6					0
7					
8					
9					
11					
12					
ISG			In STATUS		
			SIAIOS		

Product	:	OTT BOX
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	17700	>500	Pass
06	2437	17650	>500	Pass
11	2462	17700	>500	Pass

Figure Channel 01:

Agilent Spectrum Analyzer - Sw						
M RL RF 50 Ω Center Freq 2.41200	00000 GHz	SENSE:INT		ALIGNAUTO	12:53:55 PM Dec 02, 201 TRACE 1 2 3 4 5 TYPE MWWWW	6 Frequency
Ref Offset 0. 10 dB/div Ref 20.00		#Atten: 30 dB		Mkr2	2.403 15 GH: -4.81 dBn	Auto Tune
10.0 0.00 -10.0	2 anihority	and the second	And the Aug		-3:58 dB	Center Freq 2.412000000 GHz
-20.0 -30.0 -40.0 wallihawarthappil.thipmallphr	igs where			Marken Marken	an water and the second second	Start Fred 2.387000000 GHz
-50.0 -60.0 -70.0						Stop Free 2.437000000 GH:
Center 2.41200 GHz #Res BW 100 kHz	#VBV	V 300 kHz	FUNCTION FUR	Sweep 4	Span 50.00 MH .80 ms (1001 pts cunction value	
1 N 1 f 2 N 1 f 3 N 1 f 4 5 6 6	2.414 50 GHz 2.403 15 GHz 2.420 85 GHz	2.42 dBm -4.81 dBm -3.71 dBm				Freq Offset
7 8 9 10 11 12						
MSG				I STATUS		



		IIgui	e Channe			
Agilent Spectrum Ana	lyzer - Swept SA					
KIRL RF	50 Ω AC	SEN	ISE:INT	ALIGN AUTO	01:12:55 PM Dec 02, 2014	Frequency
Center Freq 2	2.437000000 GHz PNO: IFGain	Fast Trig: Free Low #Atten: 30	Run	Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N	
0 dB/div Ref	Offset 0.5 dB 20.00 dBm			Mkr	2 2.428 20 GHz -3.54 dBm	Auto Tun
.og 10.0		2	1	∧3		Center Fre
0.00	7	abalanturkerterhay	when have hard and have been dered by	Ŷ	-3.20 dDm	2.437000000 GH
0.0	- A Mark			N.		Start Fre
30.0 40.0 (2014)////////////////////////////////////	North Martin Barnet			- HANNA	becall when All Wingdon	2.412000000 GH
0.0						Stop Fre
0.0						2.462000000 GH
enter 2.43700 Res BW 100 I		#VBW 300 kHz		Sweep 4	Span 50.00 MHz I.80 ms (1001 pts)	CF Ste 5.000000 MI
KR MODE TRC SCL	× 2.438 30 G	Y Hz 2.72 dB	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Ma
2 N 1 f 3 N 1 f	2.428 20 G 2.445 85 G					Freq Offs
4 5 6						01
7						
9						
1						
G						

Figure Channel 06:

Figure Channel 11:

Agilent Spectrum Analyzer - Swept SA				
XI RL RF 50 Ω AC	SENSE:INT	ALIGN AUTO	02:07:47 PMDec 02, 2014	
Center Freg 2.462000000 GHz		Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6	Frequency
PNO: Fast G IFGain:Low	Trig: Free Run #Atten: 30 dB		TYPE MWWWWW DET PNNNNN	
Ref Offset 0.5 dB 10 dB/div Ref 20.00 dBm		Mkr	2 2.453 15 GHz -3.96 dBm	Auto Tun
10.0				Center Fre
0.00	and want have been from the produce of the section	- And	2.55 dBm	2.462000000 GH
20.0		horas and		Start Fre
30.0 40.0		และกรณ์นะไม่การกรณ์	minade and monthly and	2.437000000 GH
50.0				Otan En
50.0				Stop Fr 2.487000000 GI
enter 2.46200 GHz Res BW 100 kHz #VB	₩ 300 kHz	Sweep 4	Span 50.00 MHz 4.80 ms (1001 pts)	CF Ste 5.000000 M
IKR MODE TRC SCL X 1 N 1 f 2.464 50 GHz	Y FL 3.45 dBm	NCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> M
2 N 1 f 2.453 15 GHz 3 N 1 f 2.470 85 GHz	-3.96 dBm -3.01 dBm			Freq Offs
4 5 6				01
8				
9 0 0				
11				
SG				

8. **Power Density**

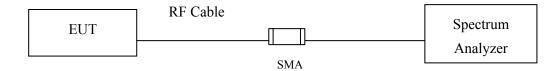
8.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2015
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

- 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
- 2. The test instruments marked with "X" are used to measure the final test results.

8.2. Test Setup



8.3. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

8.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2013; tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements. The maximum power spectral density using KDB 558074 section 10.2 PKPSD (peak PSD) method.

8.5. Uncertainty

 \pm 1.27 dB

8.6. Test Result of Power Density

Product	:	OTT BOX
Test Item	:	Power Density Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	5.460	< 8dBm	Pass
06	2437	6.090	< 8dBm	Pass
11	2462	6.820	< 8dBm	Pass

Agilent Spectrum Analyzer - Swept SA	
Center Freq 2 412000000 GHz Avg Type: Log-Pwr TRACE	1 2 3 4 5 6 MWWWWW
Mkr1 2.411 4	99 GHz 6 dBm
	Center Freq 2.412000000 GHz
-10.0 100 100 100 100 100 100 100 100 100	Start Freq 2.405887500 GHz
-20.0	Stop Freq 2.418112500 GHz
-40.0	CF Step 1.222500 MHz <u>Auto</u> Mar
60.0	Freq Offse
-70.0	
Center 2.412000 GHz Span 12 #Res BW 100 kHz #VBW 300 kHz Sweep 1.20 ms (1	2.23 MHz 1001 pts)
MSG	

Figure Channel 01:



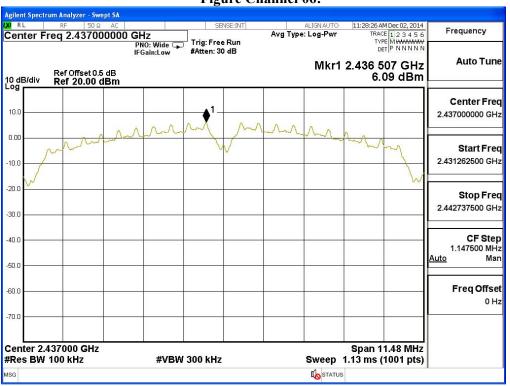
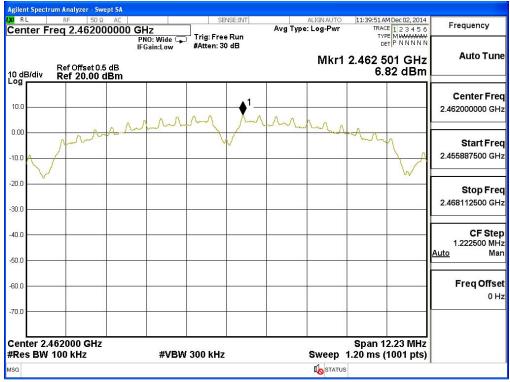


Figure Channel 06:

Figure Channel 11:





Product	:	OTT BOX
Test Item	:	Power Density Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	2.100	< 8dBm	Pass
06	2437	2.750	< 8dBm	Pass
11	2462	3.370	< 8dBm	Pass

Figure Channel 01:

	um Analyzer - Sw	ept SA							
XI RL Center F	RF 50 Ω req 2.41200			SENSE:INT	Avg Type	ALIGNAUTO	11:53:41 AM Dec 0 TRACE 1 2	3456	Frequency
10 dB/div	Ref Offset 0.6 Ref 20.00 (PNO: IFGain 5 dB		rig: Free Run Atten: 30 dB		Mkr1	TYPE M ₩ DET P N 2.413 258 0 2.10 0	GHz	Auto Tune
10.0				•	1				Center Fre 2.412000000 GH
0.00	nt	mandersont	mante	when word	andressam	handpoor	Am -		Start Fre 2.399662500 GF
20.0	and the second of the second o						M M M	my	Stop Fre 2.424337500 GF
10.0									CF Ste 2.467500 MI <u>Auto</u> M
60.0									Freq Offs
70.0									
Center 2.4 #Res BW	41200 GHz 100 kHz		#VBW 30	0 kHz		Sweep	Span 24.68 2.40 ms (1001		
MSG							5		



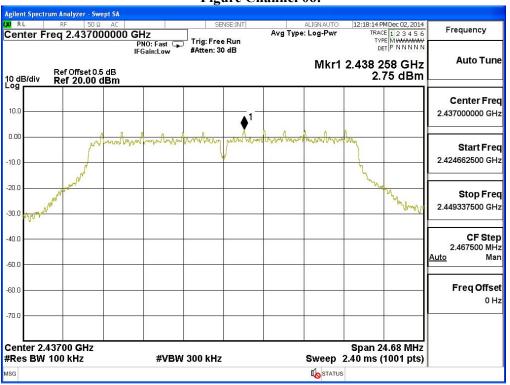


Figure Channel 06:

Figure Channel 11:

Agilent Spectrum Analyzer - Swep	rt SA	8			
RL RF 50 Ω Center Freq 2.462000	AC 0000 GHz PN0: Fast	SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	12:42:17 PM Dec 02, 2014 TRACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency
Ref Offset 0.5 o 10 dB/div Ref 20.00 dB	IFGain:Low	#Atten: 30 dB	Mkr1	2.463 258 GHz 3.37 dBm	Auto Tun
10.0		1-			Center Fre 2.462000000 GH
0.00 M	nalandansalan	contact montage	odbyorlowerdwyo	long long	Start Fre 2.449662500 GH
20.0				Mark when we want	Stop Fre 2.474337500 GF
50.0					CF Ste 2.467500 M <u>Auto</u> M
50.0					Freq Offs 0
70.0					
Center 2.46200 GHz Res BW 100 kHz	#VBW	300 kHz	Sweep	Span 24.68 MHz 2.40 ms (1001 pts)	
ISG				3	

Product	:	OTT BOX
Test Item	:	Power Density Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	2.350	< 8dBm	Pass
06	2437	2.700	< 8dBm	Pass
11	2462	3.330	< 8dBm	Pass

Figure Channel 01:

Agilent Spectrum Analyzer - Swep							
RE RF 50 Ω Center Freq 2.41200(SENSE:INT	Avg Type	ALIGN AUTO : Log-Pwr	TRAC	MDec 02, 2014	Frequency
Ref Offset 0.5 (10 dB/div Ref 20.00 di		#Atten: 30 dB		Mkr1	2.413 2	74 GHz 35 dBm	Auto Tune
10.0							Center Fred 2.412000000 GHz
10.00	hundundun	marthun marturn	Anntrat	erend baining b	bry h		Start Free 2.398725000 GH:
-20.0					- North Carlo	hundhavladay!	Stop Fre 2.425275000 GH
40.0							CF Ste 2.655000 MH <u>Auto</u> Ma
60.0							Freq Offse 0 H
70.0							
Center 2.41200 GHz #Res BW 100 kHz	#VBW	300 kHz			2.60 ms (6.55 MHz 1001 pts)	
ISG				K STATUS			



		Ingui	e Channe	.1 00.			
Agilent Spectrum Analyzer - Sv	vept SA						
RL RF 503 Center Freq 2.4370	2 AC 00000 GHz	SENSE	Avg T	ALIGNAUTO ype: Log-Pwr	TRACE	123456	Frequency
Ref Offset 0		J Trig: Free Ri #Atten: 30 di		Mkr1	DET 2.438 27	^M MMAN P NNNNN 1 GHz 0 dBm	Auto Tune
10.0			♦ 1				Center Freq 2.437000000 GHz
10.0	where to the set the set	monthern	Mandhardba	othentwort	h.		Start Fred 2.423762500 GHz
20.0					- AND	Wyrmn	Stop Fred 2.450237500 GHz
50.0							CF Step 2.647500 MH: <u>Auto</u> Mar
60.0							Freq Offse
70.0							
Center 2.43700 GHz Res BW 100 kHz	#VBW	300 kHz		Sweep	Span 26. 2.53 ms (1	48 MHz 001 pts)	
ISG					s		

Figure Channel 06:

Figure Channel 11:

	and the second			0						
	1 Analyzer - Swept									
X/ RL	RF 50 Ω			SEI	VSE:INT		ALIGN AUTO		MDec 02, 2014	Frequency
Center Fre	q 2.462000	000 GH	z		-	Avg Type	: Log-Pwr	TRAC	E 1 2 3 4 5 6 E MWW/W/W/W	Frequency
			10: Fast 🖵	⁴ Trig: Free #Atten: 30				DE	TPNNNNN	
		IFC	iain:Low	#Atten. St	uD				coatre screene	Auto Tun
							Mkr1	2.464 4	96 GHz	Auto Tun
	Ref Offset 0.5 d Ref 20.00 dB							3.3	33 dBm	
	Rei 20.00 ub	SIII			-					
1467										Contor Ero
40.0										Center Fre
10.0						1				2.462000000 GH
		121			1.1		5.7 54			
0.00	_	A A.	A A	A	- Andrews	1 Annal	And			
	Wind	man lina	h wethink marks a		100 00 10	a at a log to	AL. LA MILLE	and the		Start Fre
-10.0	1							7		2.448725000 GH
	. h.N							N		
-20.0	M							Jun -		
20.0	1							1	met .	Stop Fre
MAR. A.	n l							S	Mana	2.475275000 GH
-30.0 Adjaly/M										2.470270000 011
40.0										CF Ste
40.0										2.655000 MH
										Auto Ma
-50.0										Addo Mic
										Freq Offs
-60.0										DEF DUPERTON DUPERTON SPEC
										0 H
-70.0						-				
10000										
Center 2.46	200 CH2							Chap 2	6.55 MHz	
			#\/D\M	200 64-			Oween	3 60 mc (1001 nt-	
#Res BW 1			#VBW	300 kHz				s porte de la companya de la company	1001 pts)	
ASG							STATUS			
							-			



9. EMI Reduction Method During Compliance Testing

No modification was made during testing.



Attachment 1: EUT Test Photographs



Attachment 2: EUT Detailed Photographs