



FCC TEST REPORT

According to **CFR47 §15.247**

Applicant : EGROUP COMPUTER SYSTEMS CO., LTD.

Address : No.239, Sec. 2, Tiding Blvd., Neihu Dist, Taipei City 14, Taiwan (R.O.C)

Equipment : Tablet PC

Model No. : TF10EA2

- The test result refers exclusively to the test presented test model / sample.
- Without written approval of **Cerpass Technology Corp.** the test report shall not be reproduced except in full.
- The test report must not be used by the clients to claim product certification approval by **NVLAP** or any agency of the Government.

I HEREBY CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.10- 2013** and the energy emitted by this equipment was **passed**.
CISPR PUB. 22 and FCC Part 15 in both radiated and conducted emission class B limits. Testing was carried out on Jul 25, 2015 at **Cerpass Technology Corp.**

Prepared By: _____

Leo Chen

Laboratory accreditation

Approved By: _____

Miro Chueh





Release History

Attachment No.	Date	Description
SECR1507008	2015-07-25	Initial release



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1. Report of Measurements and Examinations

1.1 List of Measurements and Examinations

Performed Test Item	Normative References	Test Performed	Deviation	Result
Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2014 Section 15.207	Yes	N/A	Pass
Radiated Emission	FCC CFR Title 47 Part 15 Subpart C: 2014 Section 15.209	Yes	No	Pass
RF Antenna Conducted Spurious	FCC CFR Title 47 Part 15 Subpart C: 2014 Section 15.247(d)	Yes	No	Pass
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2014 15.247(d)	Yes	No	Pass
Operation Frequency Range of 20dB Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2014 15.215(c)	Yes	No	Pass
Occupied Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2014 Section 15.247(a)(2)	Yes	No	Pass
Output Power	FCC CFR Title 47 Part 15 Subpart C: 2014 Section 15.247(b)(3)	Yes	No	Pass
Power Spectral Density	FCC CFR Title 47 Part 15 Subpart C: 2014 Section 15.247(e)	Yes	No	Pass



2. Test Configuration of Equipment under Test

2.1 Feature of Equipment under Test

Product Name:	Tablet PC	
Model Name:	TF10EA2	
GPS	Class of SRD	Class 3
	Antenna Gain	PCB -3.052dBi
Wi-Fi	Modulation Mode	802.11b: CCK, DQPSK, DBPSK 802.11g/802.11n: 64 QAM, 16 QAM, QPSK, BPSK
	Frequency Range	802.11b/g/n(20MHz): 2412-2472MHz 802.11n(40MHz): 2422-2462MHz
	Number of Channels	802.11b/g/n (20MHz):13 802.11n (40MHz):9
	Antenna Gain	PCB -2.89dBi
Adapter	Model No.:	WB-10E05FU
	Input	100-240V~50-60Hz 0.4A max.
	Output:	5V, 2A
LCD Panel	Model No.:KD101N12-40NC-B7	Manufacturer.: K&D
	Model No.:CLAA101WH12 LE	Manufacturer.: CPT
Battery	Model No.: TR10RS1	Manufacturer.: SUNWODA
	Model No.:TR10RS-1S6300-S4L8	Manufacturer.: SUNWODA
	Model No.: TR10RS1-1S6300-T1T2	Manufacturer.: TCL
	Model No.: TF10EA2	Manufacturer.: TCL
	Model No.: TR10RS-1S6300-T1T2	Manufacturer.: TCL

Remark: for more details, please refer to the User's manual of the EUT.

The test worse mode: Full System for Andrews.



2.2 Carrier Frequency of Channels

For 2.4G 802.11b, 802.11g, 802.11n (20MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
01	2412	07	2442
02	2417	08	2447
03	2422	09	2452
04	2427	10	2457
05	2432	11	2462
06	2437	---	---

For 2.4G 802.11n (40MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
03	2422	07	2442
04	2423	08	2447
05	2432	09	2452
06	2437	---	---

2.3 Power Setting Levels

Mode	Frequency (MHz)	Power setting
802.11b	2412	59
	2437	63
	2462	58
802.11g	2412	63
	2437	63
	2462	59
802.11n20	2412	62
	2437	63
	2462	59
802.11n40	2422	61
	2437	63
	2452	59

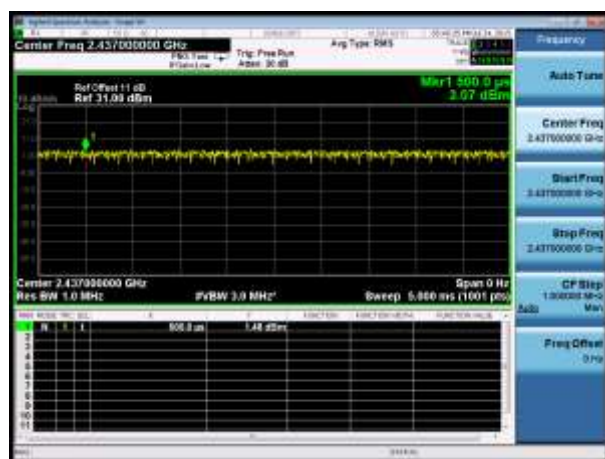


2.4 Duty cycle

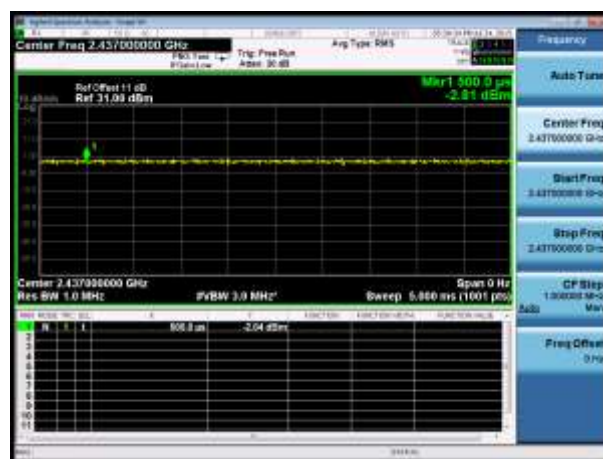
Test Item	Duty cycle
Test Date	2015-07-24

Mode	Frequency (MHz)	Measurement (%)
802.11b	2437	99
802.11g	2437	99
802.11n(20MHz)	2437	99
802.11n(40MHz)	2437	99

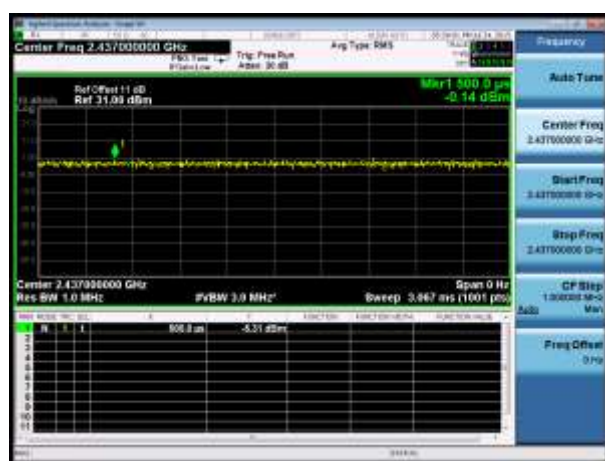
Transmit at channel 6 by 802.11b



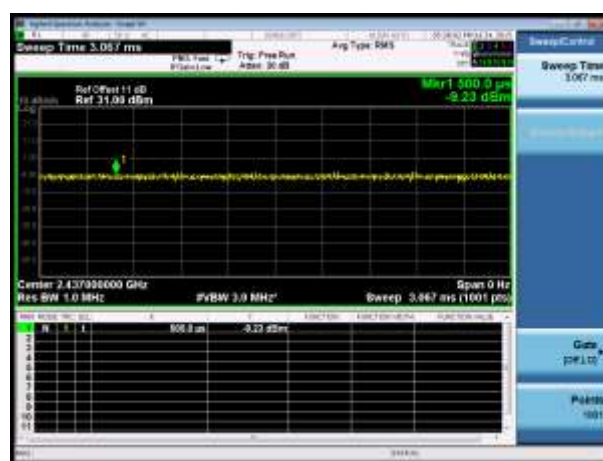
Transmit at channel 6 by 802.11g



Transmit at channel 6 by 802.11n(20MHz)



Transmit at channel 6 by 802.11n(40MHz)





2.5 Test Manner

Test Manner	
1	During testing, the interface cables and equipment positions were varied according to FCC-15.247
2	Connect the HUB, Notebook, IP Express and EUT.
3	Adjust the EUT at the test mode and the test channel. Then test.
Test mode	
1	Transmit by 802.11b
2	Transmit by 802.11g
3	Transmit by 802.11n (20MHz)
4	Transmit by 802.11n (40MHz)

2.6 Description of Test System

No	Device	Manufacturer	Model No.	Description
1	HUB	D-Link	DI-504	N/A
2	IP Express	ASKEY	N/A	N/A
3	Notebook	ASUS	W6A	Power by adaptor

2.7 General Information of Test

Test Site:	Cerpass Technology Corp.
Performand Location :	No.66,Tangzhuang Road, Suzhou Industrial Park, Jiangsu 215006, China
NVLAP LAB Code :	200814-0
FCC Registration Number :	916572, 331395
IC Registration Number :	7290A-1, 7290A-2



2.8 Measurement Uncertainty

Measurement Item	Measurement Frequency	Polarization	Uncertainty
Conducted Emission	9 kHz ~ 30 MHz	LINE/NEUTRAL	±2.71 dB
Radiated Emission	30 MHz ~ 25GHz	Vertical	±4.11 dB
		Horizontal	±4.10 dB
Occupied Bandwidth	---	---	±7500 Hz
Maximum Peak Output Power	---	---	±1.4 dB
Band Edges	---	---	±2.2 dB
Power Spectral Density	---	---	±2.2 dB



3. Antenna Requirements

3.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

3.2 Antenna Construction and Directional Gain

Antenna	Antenna 1 PCB (-2.89 dBi)
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4. Test of Conducted Emission

4.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.10-2013 Section 6.2. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 6.2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

Frequency (MHz)	Quasi Peak (dB μ V)	AVG (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

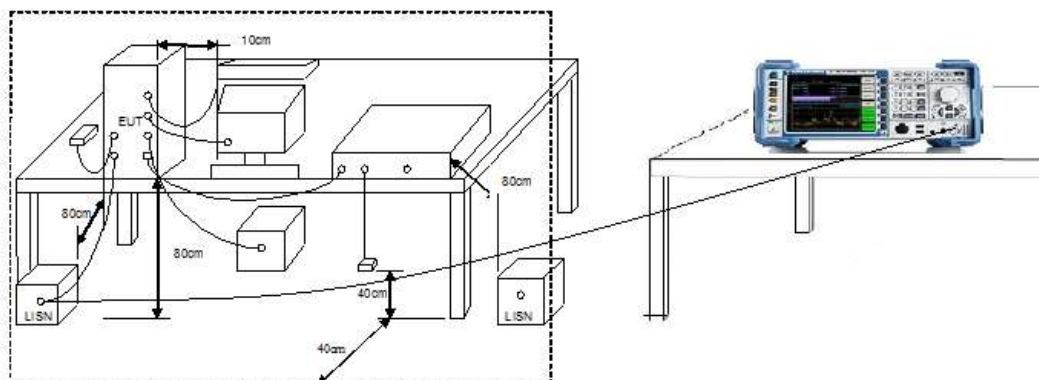
*Decreases with the logarithm of the frequency.

4.2 Test Procedures

The EUT was setup according to ANSI C63.10, 2013 and tested according to DTS test procedure of Oct 2014 KDB558074 for compliance to FCC 47CFR 15.247 requirements. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs) Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.



4.3 Typical Test Setup



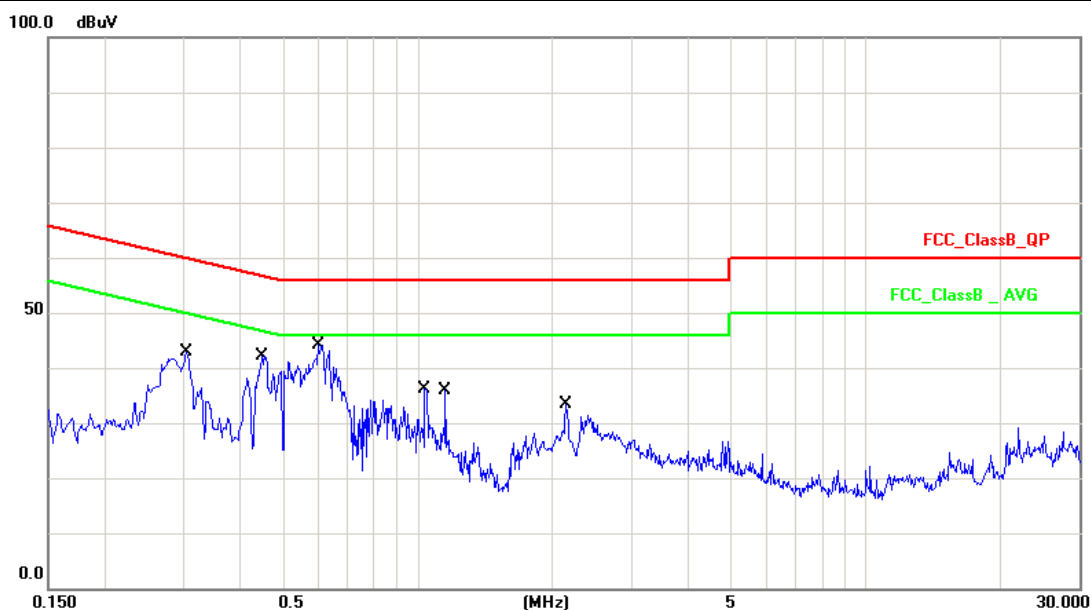
4.4 Measurement Equipment

Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
Test Receiver	R&S	ESCI	100565	2015.03.24	2016.03.23
AMN	R&S	ESH2-Z5	100182	2014.09.04	2015.09.03
Two-Line V-Network	R&S	ENV216	100325	2014.12.04	2015.12.03
ISN	FCC	FCC-TLISN-T2 -02	20379	2015.03.24	2016.03.23
ISN	FCC	FCC-TLISN-T4 -02	20380	2015.03.24	2016.03.23
ISN	FCC	FCC-TLISN-T8 -02	20381	2015.03.24	2016.03.23
ISN	TESEQ	ISN ST08	30175	2015.03.24	2016.03.23
Current Probe	R&S	EZ-17	100303	2015.04.04	2016.04.03
Passive Voltage Probe	R&S	ESH2-Z3	100026	2015.03.29	2016.03.28
Pulse Limiter	R&S	ESH3-Z2	100529	2015.03.29	2016.03.28
Temperature/ Humidity Meter	Zhicheng	ZC1-11	CEP-TH-004	2015.03.31	2016.03.30



4.5 Test Result and Data

Test Mode :	Mode 1: Normal Operation with wifi on		
AC Power :	AC 120V/60Hz	Phase :	LINE
Temperature :	22°C	Humidity :	50%
Pressure(mbar) :	1002	Date:	2015/07/25

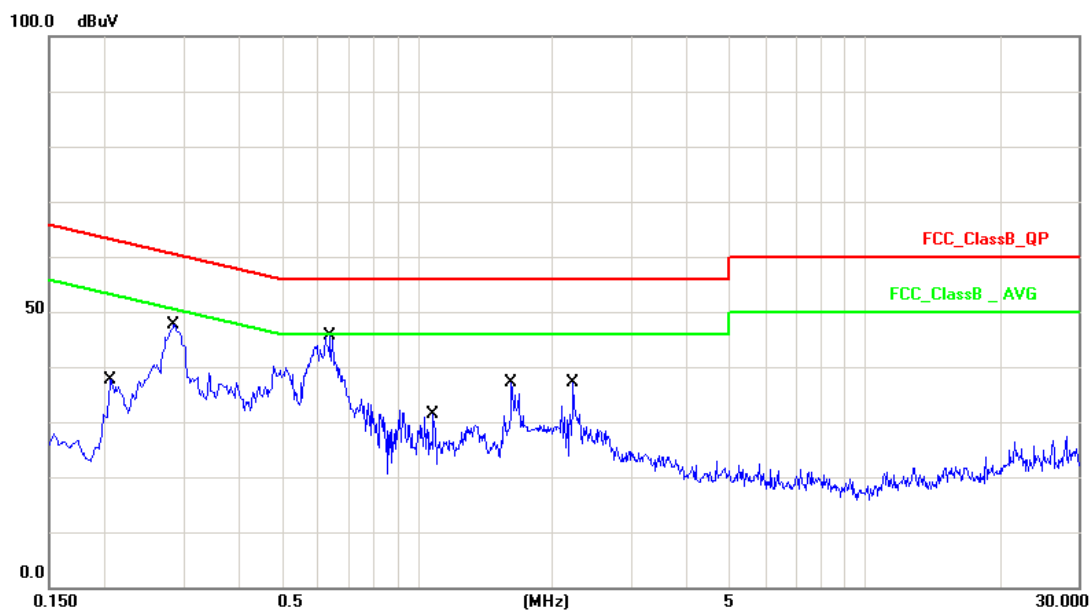


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.3060	10.14	33.38	43.52	60.08	-16.56	QP
2	0.3060	10.14	22.55	32.69	50.08	-17.39	AVG
3	0.4500	10.16	32.87	43.03	56.87	-13.84	QP
4	0.4500	10.16	19.76	29.92	46.87	-16.95	AVG
5	0.6020	10.15	42.88	53.03	56.00	-2.97	QP
6	0.6020	10.15	27.40	37.55	46.00	-8.45	AVG
7	1.0380	10.16	29.68	39.84	56.00	-16.16	QP
8	1.0380	10.16	21.39	31.55	46.00	-14.45	AVG
9	1.1539	10.16	28.52	38.68	56.00	-17.32	QP
10	1.1539	10.16	20.69	30.85	46.00	-15.15	AVG
11	2.1500	10.17	21.68	31.85	56.00	-24.15	QP
12	2.1500	10.17	9.60	19.77	46.00	-26.23	AVG

Note: Measurement Level = Reading Level + Correct Factor



Test Mode :	Mode 1: Normal Operation with wifi on		
AC Power :	AC 120V/60Hz	Phase :	NEUTRAL
Temperature :	22°C	Humidity :	50%
Pressure(mbar) :	1002	Date:	2015/07/25



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2060	10.13	19.43	29.56	63.36	0.2060	QP
2	0.2060	10.13	12.41	22.54	53.36	0.2060	AVG
3	0.2860	10.14	39.37	49.51	60.64	0.2860	QP
4	0.2860	10.14	31.56	41.70	50.64	0.2860	AVG
5	0.6380	10.16	41.37	51.53	56.00	0.6380	QP
6	0.6380	10.16	28.93	39.09	46.00	0.6380	AVG
7	1.0859	10.18	29.06	39.24	56.00	1.0859	QP
8	1.0859	10.18	20.40	30.58	46.00	1.0859	AVG
9	1.6260	10.18	22.52	32.70	56.00	1.6260	QP
10	1.6260	10.18	15.82	26.00	46.00	1.6260	AVG
11	2.2300	10.18	13.20	23.38	56.00	2.2300	QP
12	2.2300	10.18	8.11	18.29	46.00	2.2300	AVG

Note: Measurement Level = Reading Level + Correct Factor



5. Test of Radiated Emission

5.1 Test Limit

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter measurement is based on the maximum conducted output power, the attenuation required under this paragraph shall be 30dB instead of 20dB. In addition, radiated emissions which fall in section 15.205(a) the restricted bands must also comply with the radiated emission limit specified in section 15.209(a).

FREQUENCIES(MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE(meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

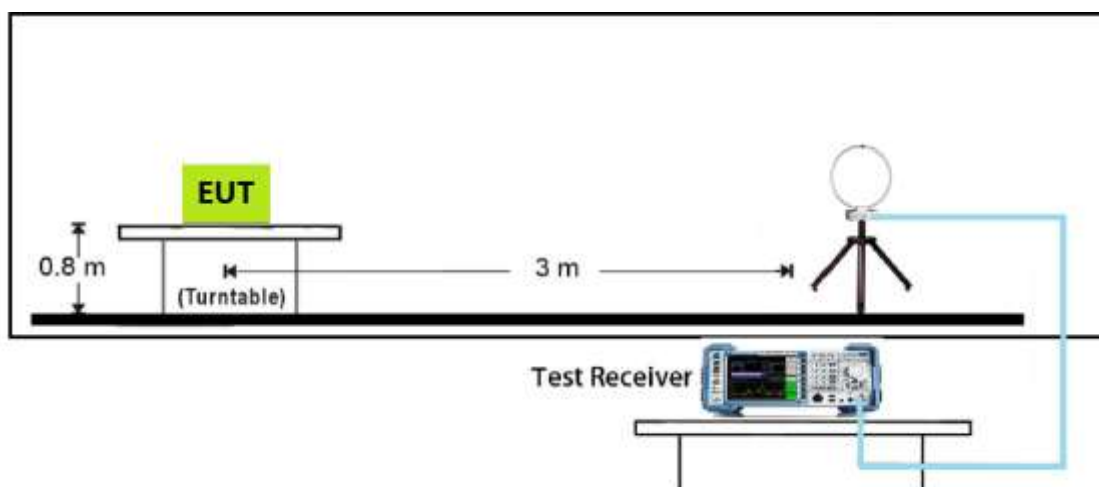
5.2 Test Procedures

- The EUT was placed on a rotatable table top 0.8 meter for frequency below 1GHz and 1.5meter for frequency above 1GHz above ground.
- The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- The table was rotated 360 degrees to determine the position of the highest radiation.
- The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
- For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than AVG limit (that means the emission level in peak mode also complies with the limit in AVG mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in AVG mode again and reported.

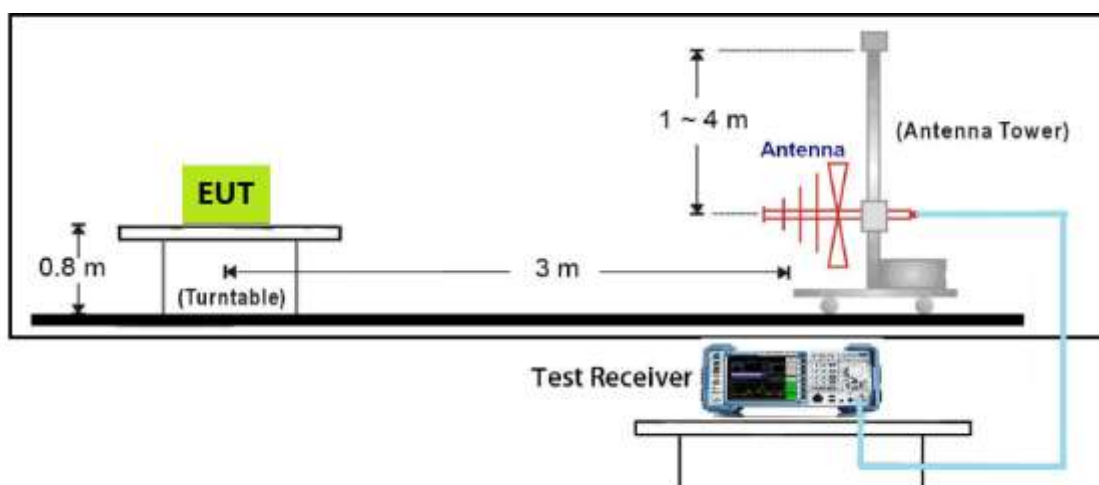


5.3 Typical Test Setup

9kHz~30MHz Test Setup

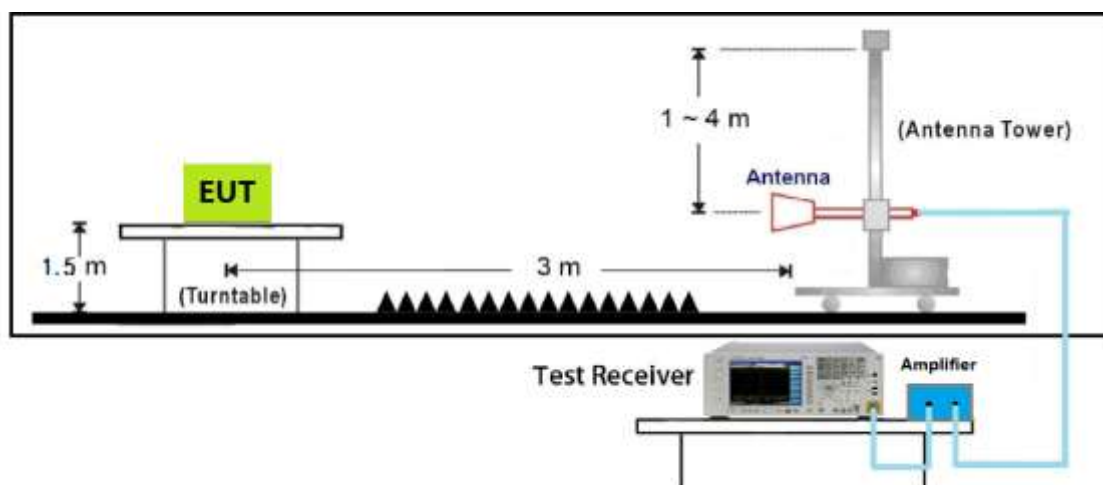


Below 1GHz Test Setup

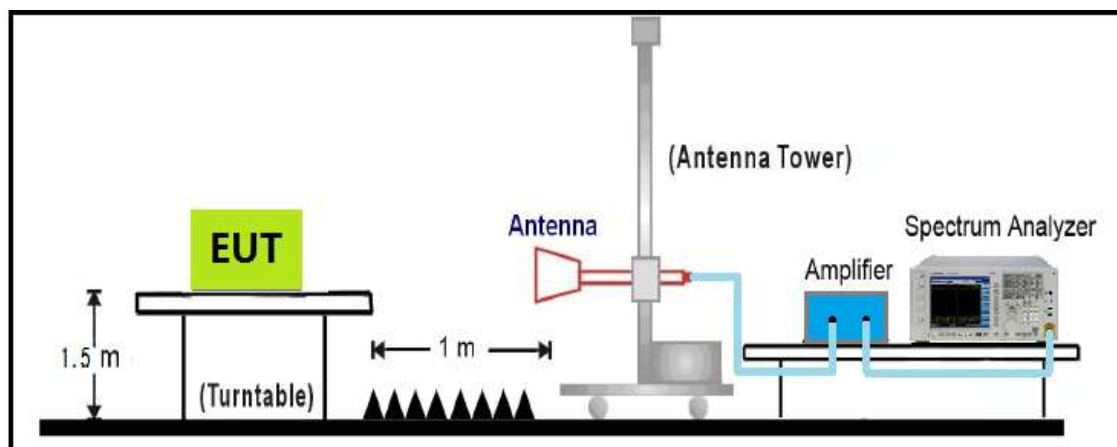




1GHz~18GHz Test Setup



18GHz~40GHz Test Setup



**5.4 Measurement Equipment**

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
EMI Test Receiver	R&S	ESCI	100563	2015.02.10	2016.02.09
H64 Preamplifier	HP	8447F	3113A05582	2015.03.24	2016.03.23
Preamplifier	Agilent	8449B	3008A02342	2015.03.24	2016.03.23
Ultra Broadband Antenna	R&S	HL562	100362	2015.05.24	2016.05.23
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	9120D-619	2015.05.24	2016.05.23
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	9170-348	2015.05.24	2016.05.23
Spectrum Analyzer	R&S	FSP40	100324	2015.03.23	2016.03.24
Temperature/ Humidity Meter	Zhicheng	ZC1-11	CEP-TH-002	2015.03.31	2016.03.30



5.5 Test Result and Data

The 9kHz-30MHz spurious emission is under limit 20dB more.

5.5.1 Test Result and Data of Transmitter

Under 1G:

Engineer :Wind	
Site : EMC Lab AC 102	Time : 2015-07-24
Limit : FCC_CLASS_B_03M_QP	Margin : 6
EUT : TF10EA2	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Normal Link

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	36.7899	-7.68	35.69	28.01	40.00	-11.99	QP	H
2	155.1299	-13.57	41.80	28.23	40.00	-11.77	QP	H
3	339.4300	-9.11	35.12	26.01	47.00	-20.99	QP	H
4	576.1100	-7.68	33.70	26.02	47.00	-20.98	QP	H
5	693.4800	-6.18	28.96	22.78	47.00	-24.22	QP	H
6	799.2100	-4.72	29.01	24.29	47.00	-22.71	QP	H

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	36.7899	-7.68	35.69	28.01	40.00	-11.99	QP	V
2	155.1299	-13.57	41.80	28.23	40.00	-11.77	QP	V
3	339.4300	-9.11	35.12	26.01	47.00	-20.99	QP	V
4	576.1100	-7.68	33.70	26.02	47.00	-20.98	QP	V
5	693.4800	-6.18	28.96	22.78	47.00	-24.22	QP	V
6	799.2100	-4.72	29.01	24.29	47.00	-22.71	QP	V

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Above 1G:

Engineer : Wind	
Site : EMC Lab AC 102	Time : 2015-07-24
Limit : FCC_15_03M_PK	Margin : 6
EUT : TF10EA2	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit by 802.11b

CH1 2412								
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4824.000	4.24	39.31	43.55	74.00	-30.45	peak	H
2	4824.000	4.24	39.77	44.01	54.00	-9.99	AVG	H
3	7236.000	8.74	40.49	49.23	74.00	-24.77	peak	H
4	7236.000	8.74	35.22	43.96	54.00	-10.04	AVG	H
5	4824.000	4.24	39.42	43.66	74.00	-30.34	peak	V
6	4824.000	4.24	39.26	43.50	54.00	-10.50	AVG	V
7	7236.000	8.74	40.53	49.27	74.00	-24.73	peak	V
8	7236.000	8.74	34.11	42.85	54.00	-11.15	AVG	V
CH6 2437								
1	4874.000	4.09	41.11	45.20	74.00	-28.80	peak	H
2	4874.000	4.09	37.13	41.22	54.00	-12.78	AVG	H
3	7311.000	8.96	39.67	48.63	74.00	-25.37	peak	H
4	7311.000	8.96	33.61	42.57	54.00	-11.43	AVG	H
5	4874.000	4.09	39.39	43.48	74.00	-30.52	peak	V
6	4874.000	4.09	36.29	40.38	54.00	-13.62	AVG	V
7	7311.000	8.96	39.60	48.56	74.00	-25.44	peak	V
8	7311.000	8.96	32.58	41.54	54.00	-12.46	AVG	V
CH11 2462								
1	4924.000	4.18	38.49	42.67	74.00	-31.33	peak	H
2	4924.000	4.18	38.48	42.66	54.00	-11.34	AVG	H
3	7386.000	9.07	38.58	47.65	74.00	-26.35	peak	H
4	7386.000	9.07	32.27	41.34	54.00	-12.66	AVG	H
5	4924.000	4.18	38.01	42.19	74.00	-31.81	peak	V
6	4924.000	4.18	38.15	42.33	54.00	-11.67	AVG	V
7	7386.000	9.07	40.38	49.45	74.00	-24.55	peak	V
8	7386.000	9.07	32.89	41.96	54.00	-12.04	AVG	V



Engineer : Wind	
Site : EMC Lab AC 102	Time : 2015-07-24
Limit : FCC_15_03M_PK	Margin : 6
EUT : TF10EA2	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit by 802.11g

CH1 2412								
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4824.000	4.24	39.30	43.54	74.00	-30.46	peak	H
2	4824.000	4.24	40.11	44.35	54.00	-9.65	AVG	H
3	7236.000	8.74	39.09	47.83	74.00	-26.17	peak	H
4	7236.000	8.74	34.41	43.15	54.00	-10.85	AVG	H
5	4824.000	4.24	39.29	43.53	74.00	-30.47	peak	V
6	4824.000	4.24	40.32	44.56	54.00	-9.44	AVG	V
7	7236.000	8.74	40.26	49.00	74.00	-25.00	peak	V
8	7236.000	8.74	34.93	43.67	54.00	-10.33	AVG	V
CH6 2437								
1	4874.000	4.09	39.81	43.90	74.00	-30.10	peak	H
2	7311.000	8.96	39.03	47.99	74.00	-26.01	peak	H
3	4874.000	4.09	38.00	42.09	54.00	-11.91	AVG	H
4	7311.000	8.96	32.86	41.82	54.00	-12.18	AVG	H
5	4874.000	4.09	40.30	44.39	74.00	-29.61	peak	V
6	4874.000	4.09	35.58	39.67	54.00	-14.33	AVG	V
7	7311.000	8.96	39.26	48.22	74.00	-25.78	peak	V
8	7311.000	8.96	31.36	40.32	54.00	-13.68	AVG	V
CH11 2462								
1	4924.000	4.18	39.20	43.38	74.00	-30.62	peak	H
2	4924.000	4.18	37.17	41.35	54.00	-12.65	AVG	H
3	7386.000	9.07	39.94	49.01	74.00	-24.99	peak	H
4	7386.000	9.07	33.50	42.57	54.00	-11.43	AVG	H
5	4874.000	4.09	39.80	43.89	74.00	-30.11	peak	V
6	4874.000	4.09	39.56	43.65	54.00	-10.35	AVG	V
7	7386.000	9.07	38.50	47.57	74.00	-26.43	peak	V
8	7386.000	9.07	33.79	42.86	54.00	-11.14	AVG	V



Engineer : Wind	
Site : EMC Lab AC 102	Time : 2015-07-24
Limit : FCC_15_03M_PK	Margin : 6
EUT : TF10EA2	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit by 802.11n20

CH1 2412								
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	4824.000	4.24	39.30	43.54	74.00	-30.46	peak	H
2	4824.000	4.24	38.37	42.61	54.00	-11.39	AVG	H
3	7236.000	8.74	39.09	47.83	74.00	-26.17	peak	H
4	7236.000	8.74	34.51	43.25	54.00	-10.75	AVG	H
5	4824.000	4.24	39.29	43.53	74.00	-30.47	peak	V
6	4824.000	4.24	38.34	42.58	54.00	-11.42	AVG	V
7	7236.000	8.74	41.26	50.00	74.00	-24.00	peak	V
8	7236.000	8.74	32.28	41.02	54.00	-12.98	AVG	V
CH6 2437								
1	4874.000	4.09	39.81	43.90	74.00	-30.10	peak	H
2	4874.000	4.09	40.23	44.32	54.00	-9.68	AVG	H
3	7311.000	8.96	39.03	47.99	74.00	-26.01	peak	H
4	7311.000	8.96	34.92	43.88	54.00	-10.12	AVG	H
5	4874.000	4.09	39.80	43.89	74.00	-30.11	peak	V
6	4874.000	4.09	38.06	42.15	54.00	-11.85	AVG	V
7	7311.000	8.96	41.76	50.72	74.00	-23.28	peak	V
8	7311.000	8.96	34.56	43.52	54.00	-10.48	AVG	V
CH11 2462								
1	4924.000	4.18	38.70	42.88	74.00	-31.12	peak	H
2	4924.000	4.18	40.17	44.35	54.00	-9.65	AVG	H
3	7386.000	9.07	39.94	49.01	74.00	-24.99	peak	H
4	7386.000	9.07	34.67	43.74	54.00	-10.26	AVG	H
5	4924.000	4.18	39.87	44.05	74.00	-29.95	peak	V
6	4924.000	4.18	38.43	42.61	54.00	-11.39	AVG	V
7	7386.000	9.07	38.50	47.57	74.00	-26.43	peak	V
8	7386.000	9.07	34.47	43.54	54.00	-10.46	AVG	V



Engineer : Wind	
Site : EMC Lab AC 102	Time : 2015-07-24
Limit : FCC_15_03M_PK	Margin : 6
EUT : TF10EA2	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit by 802.11n40

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
CH03 2422								
1	4844.000	6.46	40.32	46.78	74.00	-27.22	peak	H
2	4844.000	6.46	37.42	43.88	54.00	-10.12	AVG	H
3	7236.000	12.54	39.33	51.87	74.00	-22.13	peak	H
4	7236.000	12.54	34.21	46.75	54.00	-7.25	AVG	H
5	4844.000	6.46	39.34	45.8	74.00	-28.2	peak	V
6	4844.000	6.46	32.09	38.55	54.00	-15.45	AVG	V
7	7236.000	12.54	38.22	50.76	74.00	-23.24	peak	V
8	7236.000	12.54	35.32	47.86	54.00	-6.14	AVG	V
CH6 2437								
1	4874.000	6.54	39.43	45.97	74.00	-28.03	peak	H
2	4874.000	6.54	35.32	41.86	54.00	-12.14	AVG	H
3	7311.000	12.72	40.43	53.15	74.00	-20.85	peak	H
4	7311.000	12.72	30.94	43.66	54.00	-10.34	AVG	H
5	4874.000	6.54	41.03	47.57	74.00	-26.43	peak	V
6	4874.000	6.54	30.42	36.96	54.00	-17.04	AVG	V
7	7311.000	12.72	40.44	53.16	74.00	-20.84	peak	V
8	7311.000	12.72	31.23	43.95	54.00	-10.05	AVG	V
CH09 2452								
1	4904.000	6.61	39.21	45.82	74.00	-28.18	peak	H
2	4904.000	6.61	33.69	40.3	54.00	-13.7	AVG	H
3	7356.000	12.83	38.49	51.32	74.00	-22.68	peak	H
4	7356.000	12.83	32.3	45.13	54.00	-8.87	AVG	H
5	4904.000	6.61	40.89	47.5	74.00	-26.50	peak	V
6	4904.000	6.61	32.05	38.66	54.00	-15.34	AVG	V
7	7356.000	12.83	40.08	52.91	74.00	-21.09	peak	V
8	7356.000	12.83	29.33	42.16	54.00	-16.56	AVG	V



Test Result of Radiated Emissions for Co-located

Engineer : Wind	
Site : EMC Lab AC 102	Time : 2015-09-22
Limit : FCC_15_03M_PK	Margin : 6
EUT : TF10EA2	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : BT + Wifi Transmit

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	1357.200	-1.394	38.642	37.248	74.00	-36.752	peak	H
2	1357.230	-1.394	26.546	25.152	54.00	-28.848	AVG	H
3	2087.800	-1.903	43.657	41.754	74.00	-32.246	peak	H
4	2088.023	-1.904	31.325	29.421	54.00	-24.579	AVG	H
5	3218.420	3.483	44.768	48.251	74.00	-25.749	peak	H
6	3218.543	3.483	42.542	46.025	54.00	-7.975	AVG	H
7	1864.200	0.703	38.653	39.356	74.00	-34.644	peak	V
8	1864.342	0.704	25.987	26.691	54.00	-27.309	AVG	V
9	2736.652	3.245	40.435	43.68	74.00	-30.32	peak	V
10	2735.984	3.252	28.552	31.804	54.00	-22.196	AVG	V
11	4849.341	6.473	44.343	50.816	74.00	-23.184	peak	V
12	4849.784	6.474	32.421	38.895	54.00	-15.105	AVG	V



6. Occupied Bandwidth

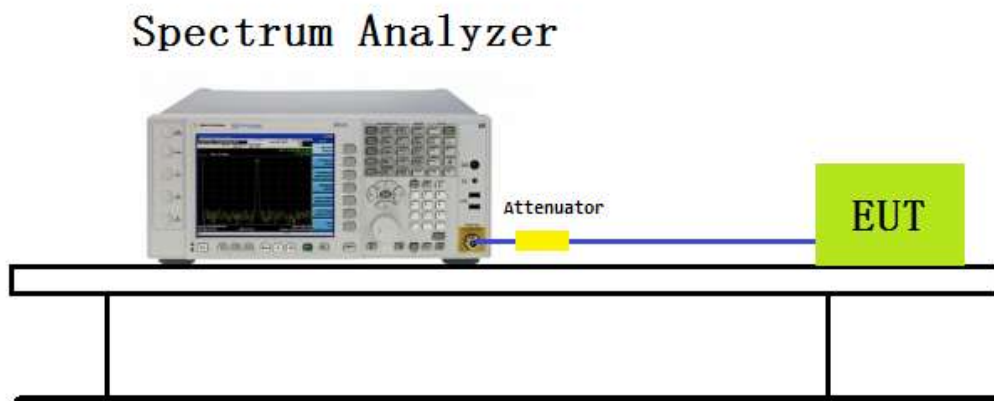
6.1 Test Limit

Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725- 5850 MHz band. The minimum 6 dB bandwidth shall be at least 500 kHz.

6.2 Test Procedures

- The transmitter output was connected to the spectrum analyzer.
- Set RBW of spectrum analyzer to 100KHz and VBW $\geq 3 \times$ RBW.
- The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.
- The 6dB Bandwidth was measured and recorded.

6.3 Test Setup Layout



6.4 Measurement Equipment

Instrument/Ancillary	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	N9010A	Agilent	MY54200207	2014/10/9	2015/10/8

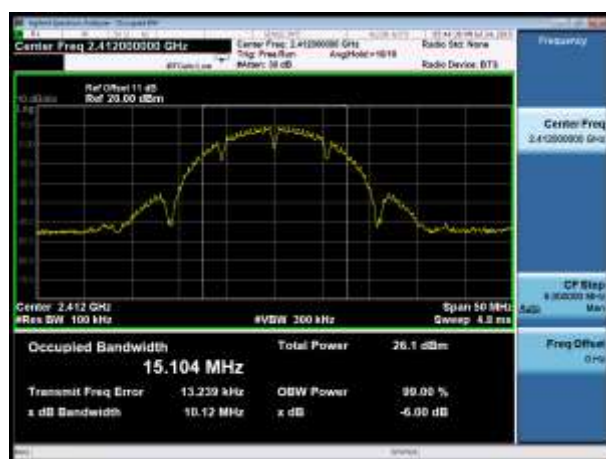


6.5 Test Result and Data

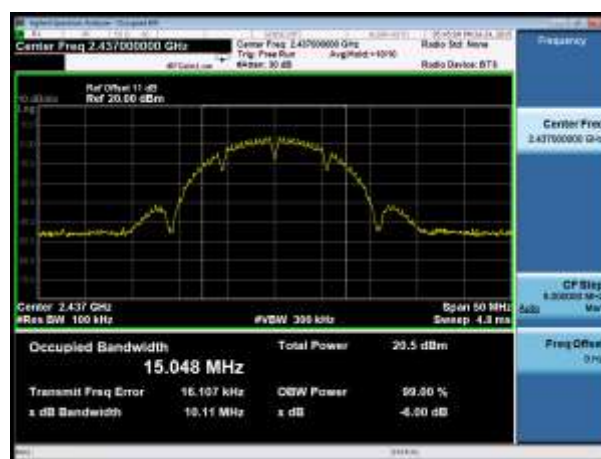
Test Item	Occupied Bandwidth
Test Mode	Transmit by 802.11b
Test Date	2015-07-24

Channel No.	Frequency (MHz)	Measurement Level (MHz)	99% Occupied Bandwidth (kHz)	Result
01	2412	10.12	15104	Pass
06	2437	10.11	15048	Pass
11	2462	10.11	16968	Pass

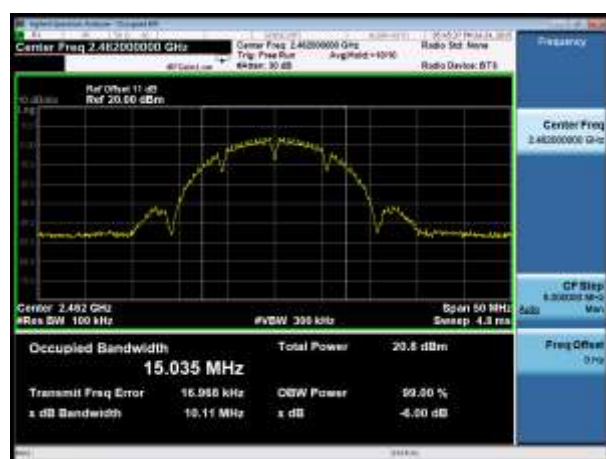
Channel 01 (2412MHz)



Channel 06 (2437MHz)



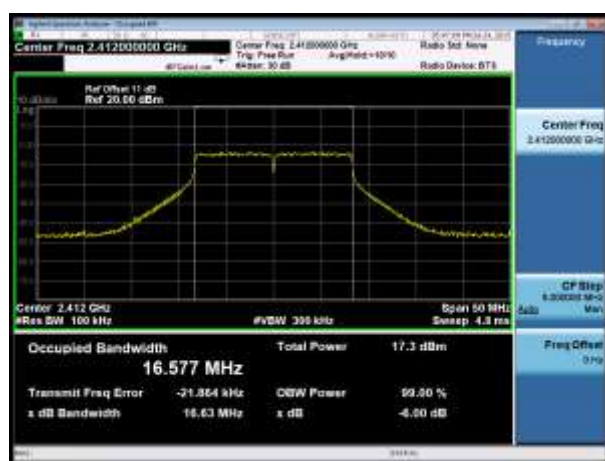
Channel11(2462MHz)



Test Item	Occupied Bandwidth
Test Mode	Transmit by 802.11g
Test Date	2015-07-24

Channel No.	Frequency (MHz)	Measurement Level (MHz)	99% Occupied Bandwidth (kHz)	Result
01	2412	16.63	16577	Pass
06	2437	16.63	16574	Pass
11	2462	16.63	16574	Pass

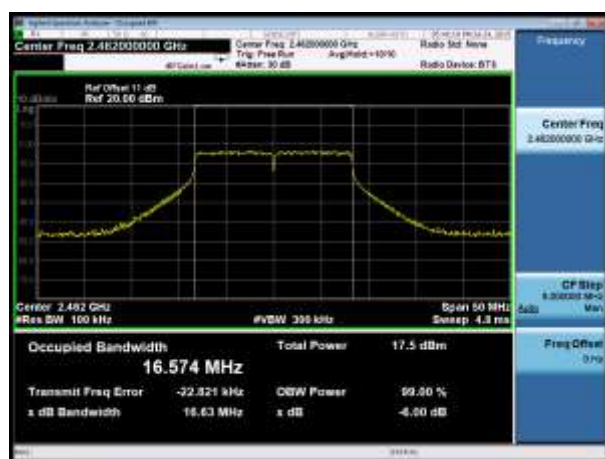
Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel11(2462MHz)

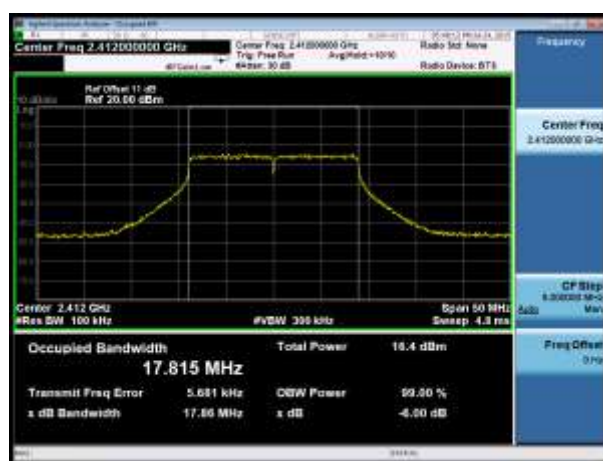




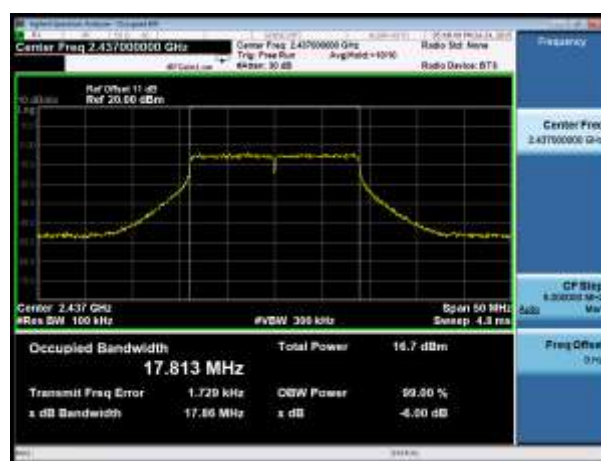
Test Item	Occupied Bandwidth
Test Mode	Transmit by 802.11n (20MHz)
Test Date	2015-07-24

Channel No.	Frequency (MHz)	Measurement Level (MHz)	99% Occupied Bandwidth (kHz)	Result
01	2412	17.86	17815	Pass
06	2437	17.86	17813	Pass
11	2462	17.87	17811	Pass

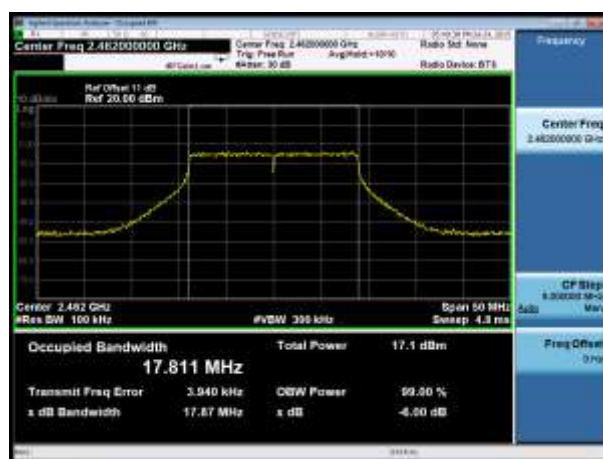
Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel11(2462MHz)





Test Item	Occupied Bandwidth
Test Mode	Transmit by 802.11n (40MHz)
Test Date	2015-07-24

Channel No.	Frequency (MHz)	Measurement Level (MHz)	99% Occupied Bandwidth (kHz)	Result
03	2422	36.52	36138	Pass
06	2437	36.52	36122	Pass
09	2452	36.53	36137	Pass

Channel 03 (2422MHz)



Channel 06 (2437MHz)



Channel 09 (2452MHz)





7. Maximum Output Power

7.1 Test Limit

The maximum power shall be less 1Watt (30dBm).

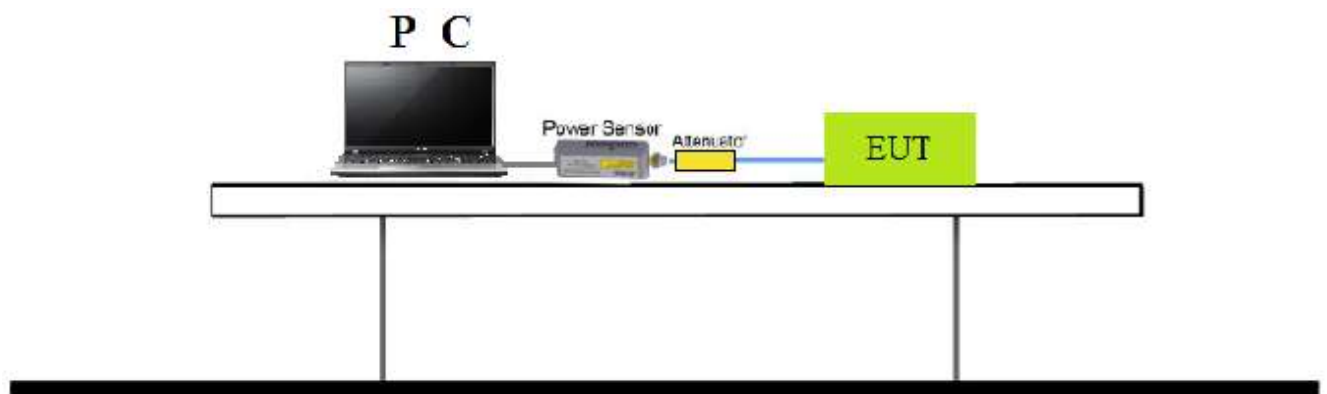
The conducted output power limits specified in §15.247(b) are based on the use of transmit antennae with directional gains that do not exceed 6 dBi. If transmit antennae with an effective directional gain greater than 6 dBi are used, then the conducted output power from the EUT shall be reduced as specified in §15.247(b) and (c).

Per RSS247 Issue 1 Section 5.4(4), for DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum conducted output power shall not exceed 1W.

7.2 Test Procedure

The EUT was tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements. The maximum conducted AVG output power using KDB 558074 D01v03r03 - Section 9.2.3.2 AVGPM-G Average Power Method.

7.3 Test Setup Layout



7.4 Measurement Equipment

Instrument	Manufacturer	Type No.	Serial No.	Calibration Date	Valid Date.
PC	Lenovo	E40-70	MP078UQV	N/A	N/A
POWER SENSOR	Agilent	U2021XA	MY53260020	2015/03/27	2016/03/26
Temperature/Humidity Meter	Zhicheng	ZC1-11	CEP-TH-003	2015.03.31	2016.03.30



7.5 Test Result and Data

Power output test was verified over all data rates of each mode shown as below, and then choose the maximum power output (blue marker) for final test of each channel.

MCS Index for 802.11n	Spatial Streams	Data Rate(Mbps)					
		802.11b	802.11g	20MHz Bandwidth		40MHz Bandwidth	
				800ns GI	400ns GI	800ns GI	400ns GI
0	1	1	6	6.5	7.2	13.5	15.0
1	1	2	9	13.0	14.4	27.0	30.0
2	1	5.5	12	19.5	21.7	40.5	45.0
3	1	11	18	26.0	28.9	54.0	60.0
4	1	--	24	39.0	43.3	81.0	90.0
5	1	--	36	52.0	57.8	108.0	120.0
6	1	--	48	58.5	65.0	121.5	135.0
7	1	--	54	65.0	72.2	135.0	150.0
8	2	--	--	13.0	14.4	27.0	30.0
9	2	--	--	26.0	28.9	54.0	60.0
10	2	--	--	39.0	43.3	81.0	90.0
11	2	--	--	52.0	57.8	108.0	120.0
12	2	--	--	78.0	86.7	162.0	180.0
13	2	--	--	104.0	115.6	216.0	240.0
14	2	--	--	117.0	130.0	243.0	270.0
15	2	--	--	130.0	144.0	270.0	300.0



Test Item	Maximum Average Output Power
Test Mode	Transmit by 802.11b
Test Date	2015-07-24

Channel No.	Frequency (MHz)	Average Power (dBm)	Required Limit (dBm)	Result
01	2412	21.07	30	Pass
06	2437	22.46	30	Pass
11	2462	22.52	30	Pass

Test Item	Maximum Average Output Power
Test Mode	Transmit by 802.11g
Test Date	2015-07-24

Channel No.	Frequency (MHz)	Average Power (dBm)	Required Limit (dBm)	Result
01	2412	18.25	30	Pass
06	2437	18.40	30	Pass
11	2462	17.32	30	Pass

Test Item	Maximum Average Output Power
Test Mode	Transmit by 802.11n (20MHz)
Test Date	2015-07-24

Channel No.	Frequency (MHz)	Average Power (dBm)	Required Limit (dBm)	Result
01	2412	17.67	30	Pass
06	2437	18.25	30	Pass
11	2462	17.18	30	Pass



Test Item	Maximum Average Output Power
Test Mode	Transmit by 802.11n (40MHz)
Test Date	2015-07-24

Channel No.	Frequency (MHz)	Average Power (dBm)	Required Limit (dBm)	Result
03	2422	16.83	30	Pass
06	2437	17.65	30	Pass
09	2452	16.28	30	Pass



8. Band Edges Measurement

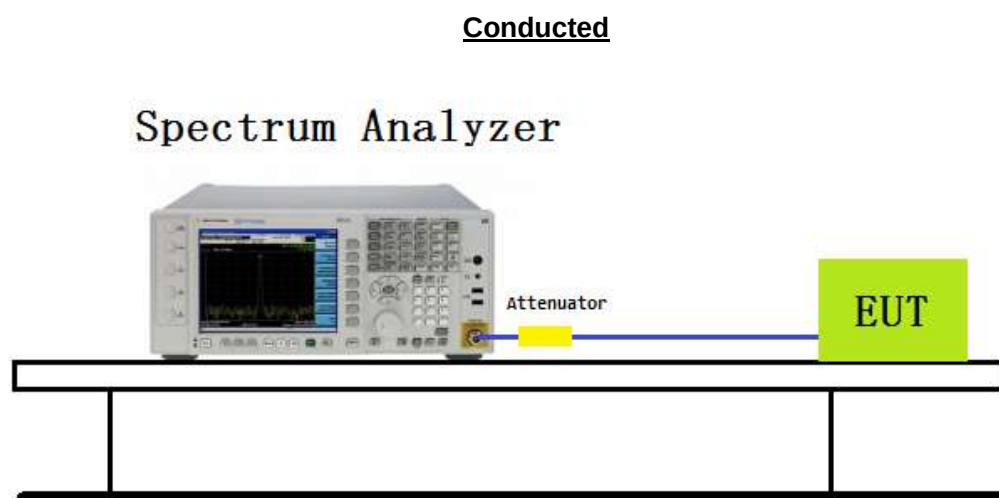
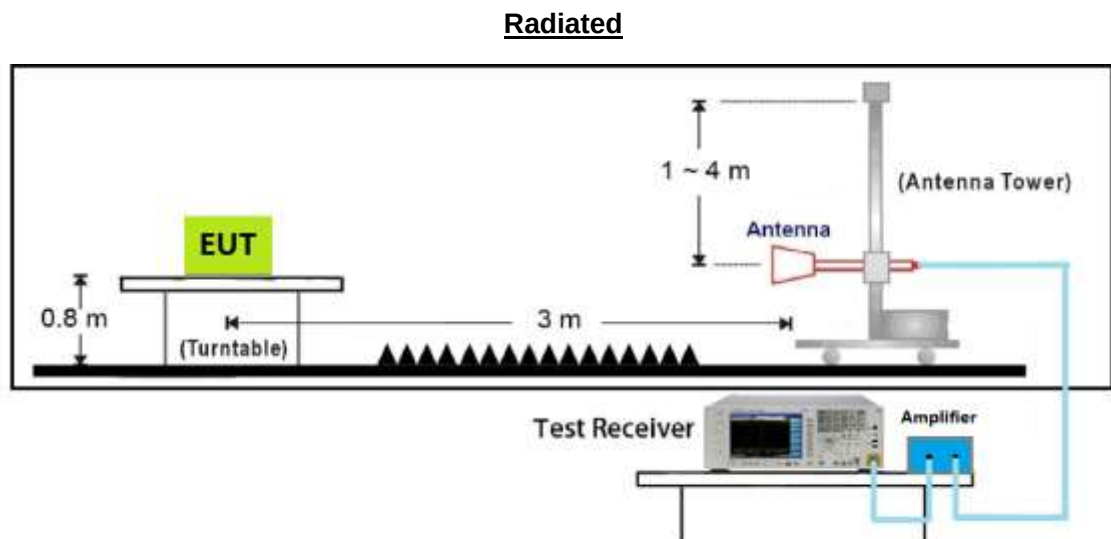
8.1 Test Limit

Below -20dB of the highest emission level of operating band (In 100 kHz Resolution Bandwidth)

8.2 Test Procedure

- The transmitter output was connected to the spectrum analyzer via a low lose cable.
- Set RBW of spectrum analyzer to 100 KHz and VBW of spectrum analyzer to 300 KHz with convenient frequency span including 100 KHz bandwidth from band edge.
- The band edges was measured and recorded.

8.3 Test Setup Layout



**8.4 Measurement Equipment**

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
EMI Test Receiver	R&S	ESCI	100563	2015.02.10	2016.02.09
H64 Preamplifier	HP	8447F	3113A05582	2015.03.24	2016.03.23
Preamplifier	Agilent	8449B	3008A02342	2015.03.24	2016.03.23
Ultra Broadband Antenna	R&S	HL562	100362	2015.05.24	2016.05.23
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	9120D-619	2015.05.24	2016.05.23
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	9170-348	2015.05.24	2016.05.23
Spectrum Analyzer	R&S	FSP40	100324	2015.03.23	2016.03.24
Spectrum Analyzer	N9010A	Agilent	MY54200207	2014.10.9	2015.10.8
Temperature/Humidity Meter	Zhicheng	ZC1-11	CEP-TH-002	2015.03.31	2016.03.30

**Test Result and Data****Radiated**

Site: AC102					Time: 2015/07/24 - 11:11			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Horizontal			
EUT: TF10EA2					Power:			
Note: Note: Mode1: Transmit at channel 2412 MHz by 802.11b								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2386.272	63.836	32.046	-10.164	74.000	31.790	PK
2		2390.000	62.024	30.220	-11.976	74.000	31.804	PK
3	*	2411.133	111.23	79.35	N/A	N/A	31.880	PK



Site: AC102					Time: 2015/07/24 - 11:19			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Horizontal			
EUT: TF10EA2					Power:			
Note: Note: Mode1: Transmit at channel 2412 MHz by 802.11b								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2386.160	52.913	21.123	-1.087	54.000	31.790	AV
2		2390.000	49.208	17.404	-4.792	54.000	31.804	AV
3	*	2411.136	102.271	70.391	N/A	N/A	31.880	AV



Site: AC102					Time: 2015/07/24 - 11:24			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Vertical			
EUT: TF10EA2					Power:			
Note: Note: Mode1: Transmit at channel 2412 MHz by 802.11b								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2387.056	63.645	31.852	-10.355	74.000	31.793	PK
2		2390.000	61.173	29.369	-12.827	74.000	31.804	PK
3	*	2412.144	106.047	74.163	N/A	N/A	31.884	PK



Site: AC102					Time: 2015/07/24 - 14:44			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Vertical			
EUT: TF10EA2					Power:			
Note: Note: Mode1: Transmit at channel 2412 MHz by 802.11b								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2386.944	51.176	19.383	-2.824	54.000	31.793	AV
2		2390.000	48.516	16.712	-5.484	54.000	31.804	AV
3	*	2412.816	99.683	67.796	N/A	N/A	31.887	AV



Site: AC102					Time: 2015/07/24 - 11:26			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Horizontal			
EUT: TF10EA2					Power:			
Note: Note: Mode1: Transmit at channel 2462 MHz by 802.11b								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.128	112.37	80.307	N/A	N/A	32.063	PK
2		2483.500	61.415	29.275	-12.585	74.000	32.140	PK



Site: AC102					Time: 2015/07/24 - 11:37			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Horizontal			
EUT: TF10EA2					Power:			
Note: Note: Mode1: Transmit at channel 2462 MHz by 802.11b								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.216	101.212	69.152	N/A	N/A	32.060	AV
2		2487.520	51.218	19.063	-2.782	54.000	32.155	AV



Site: AC102					Time: 2015/07/24 - 11:43			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Vertical			
EUT: TF10EA2					Power:			
Note: Note: Mode1: Transmit at channel 2462 MHz by 802.11b								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.984	106.986	74.923	N/A	N/A	32.063	PK
2		2483.500	62.234	30.094	-11.766	74.000	32.140	PK



Site: AC102					Time: 2015/07/24 - 11:46			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Vertical			
EUT: TF10EA2					Power:			
Note: Note: Mode1: Transmit at channel 2462 MHz by 802.11b								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.800	103.106	71.040	N/A	N/A	32.066	AV
2		2483.500	50.266	18.126	-3.734	54.000	32.140	AV
3		2487.531	52.656	20.501	-1.344	54.000	32.155	AV



Site: AC102					Time: 2015/07/24 - 11:50			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Vertical			
EUT: TF10EA2					Power:			
Note: Note: Mode1: Transmit at channel 2412 MHz by 802.11g								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	69.793	37.989	-4.207	74.000	31.804	PK
2	*	2409.568	105.778	73.903	N/A	N/A	31.875	PK



Site: AC102					Time: 2015/07/24 - 11:51			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Vertical			
EUT: TF10EA2					Power:			
Note: Note: Mode1: Transmit at channel 2412 MHz by 802.11g								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	53.529	21.725	-0.471	54.000	31.804	AV
2	*	2409.680	95.587	63.712	N/A	N/A	31.875	AV



Site: AC102					Time: 2015/07/24 - 11:55			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Horizontal			
EUT: TF10EA2					Power:			
Note: Note: Mode1: Transmit at channel 2412 MHz by 802.11g								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2389.072	68.929	37.129	-5.071	74.000	31.800	PK
2		2390.000	68.571	36.767	-5.429	74.000	31.804	PK
3	*	2409.680	108.19	76.315	N/A	N/A	31.875	PK



Site: AC102					Time: 2015/07/24 - 11:58			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Horizontal			
EUT: TF10EA2					Power:			
Note: Note: Mode1: Transmit at channel 2412 MHz by 802.11g								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.200	20.396	-1.800	54.000	31.804	AV
2	*	2409.680	95.085	63.210	N/A	N/A	31.875	AV



Site: AC102					Time: 2015/07/24 - 13:20			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Vertical			
EUT: TF10EA2					Power:			
Note: Note: Mode2: Transmit at channel 2462 MHz by 802.11g								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2460.928	104.322	72.263	N/A	N/A	32.059	PK
2		2483.500	69.477	37.337	-4.523	74.000	32.140	PK



Site: AC102					Time: 2015/07/24 - 13:26			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Vertical			
EUT: TF10EA2					Power:			
Note: Note: Mode2: Transmit at channel 2462 MHz by 802.11g								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2460.832	93.987	61.928	N/A	N/A	32.059	AV
2		2483.500	52.538	20.398	-1.462	54.000	32.140	AV



Site: AC102					Time: 2015/07/24 - 13:33			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Horizontal			
EUT: TF10EA2					Power:			
Note: Note: Mode2: Transmit at channel 2462 MHz by 802.11g								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2455.216	107.46	75.421	N/A	N/A	32.039	PK
2		2483.500	68.035	35.895	-5.965	74.000	32.140	PK
3		2484.832	68.347	36.202	-5.653	74.000	32.145	PK



Site: AC102					Time: 2015/07/24 - 13:36			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Horizontal			
EUT: TF10EA2					Power:			
Note: Note: Mode2: Transmit at channel 2462 MHz by 802.11g								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2455.312	93.174	61.135	N/A	N/A	32.039	AV
2		2483.500	50.759	18.619	-3.241	54.000	32.140	AV



Site: AC102					Time: 2015/07/24 - 13:39			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Vertical			
EUT: TF10EA2					Power:			
Note: Note: Mode3: Transmit at channel 2412 MHz by 802.11n20								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	73.581	41.777	-0.419	74.000	31.804	PK
2	*	2409.120	104.938	73.065	N/A	N/A	31.873	PK



Site: AC102					Time: 2015/07/24 - 13:45			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Vertical			
EUT: TF10EA2					Power:			
Note: Note: Mode3: Transmit at channel 2412 MHz by 802.11n20								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.729	20.925	-1.271	54.000	31.804	AV
2	*	2409.344	94.571	62.697	N/A	N/A	31.874	AV



Site: AC102					Time: 2015/07/24 - 13:51			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Horizontal			
EUT: TF10EA2					Power:			
Note: Note: Mode3: Transmit at channel 2412 MHz by 802.11n20								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	73.337	41.533	-0.663	74.000	31.804	PK
2	*	2410.016	107.28	75.404	N/A	N/A	31.876	PK



Site: AC102					Time: 2015/07/24 - 13:53			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Horizontal			
EUT: TF10EA2					Power:			
Note: Note: Mode3: Transmit at channel 2412 MHz by 802.11n20								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.009	20.205	-1.991	54.000	31.804	AV
2	*	2409.680	94.415	62.540	N/A	N/A	31.875	AV



Site: AC102					Time: 2015/07/24 - 13:55			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Vertical			
EUT: TF10EA2					Power:			
Note: Note: Mode3: Transmit at channel 2462 MHz by 802.11n20								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2458.816	104.914	72.862	N/A	N/A	32.052	PK
2		2483.500	71.709	39.569	-2.291	74.000	32.140	PK



Site: AC102					Time: 2015/07/24 - 14:00			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Vertical			
EUT: TF10EA2					Power:			
Note: Note: Mode3: Transmit at channel 2462 MHz by 802.11n20								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2465.056	93.509	61.435	N/A	N/A	32.074	AV
2		2483.500	52.970	20.830	-1.030	54.000	32.140	AV



Site: AC102					Time: 2015/07/24 - 14:05			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Horizontal			
EUT: TF10EA2					Power:			
Note: Note: Mode3: Transmit at channel 2462 MHz by 802.11n20								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2458.816	107.24	75.188	N/A	N/A	32.052	PK
2		2483.500	69.226	37.086	-4.774	74.000	32.140	PK



Site: AC102					Time: 2015/07/24 - 14:06			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Horizontal			
EUT: TF10EA2					Power:			
Note: Note: Mode3: Transmit at channel 2462 MHz by 802.11n20								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2456.512	92.646	60.603	N/A	N/A	32.043	AV
2		2483.500	51.016	18.876	-2.984	54.000	32.140	AV



Site: AC102					Time: 2015/07/24 - 14:08			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Vertical			
EUT: TF10EA2					Power:			
Note: Note: Mode4: Transmit at channel 2422 MHz by 802.11n40								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2385.768	70.842	39.054	-3.158	74.000	31.788	PK
2		2390.000	69.502	37.698	-4.498	74.000	31.804	PK
3	*	2419.692	100.919	69.008	N/A	N/A	31.911	PK



Site: AC102					Time: 2015/07/24 - 14:20			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Vertical			
EUT: TF10EA2					Power:			
Note: Note: Mode4: Transmit at channel 2422 MHz by 802.11n40								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2386.164	52.950	21.160	-1.050	54.000	31.790	AV
2		2390.000	52.590	20.786	-1.410	54.000	31.804	AV
3	*	2424.048	90.877	58.950	N/A	N/A	31.927	AV



Site: AC102					Time: 2015/07/24 - 14:22			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Horizontal			
EUT: TF10EA2					Power:			
Note: Note: Mode4: Transmit at channel 2422 MHz by 802.11n40								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2388.012	69.263	37.466	-4.737	74.000	31.797	PK
2		2390.000	67.369	35.565	-6.631	74.000	31.804	PK
3	*	2424.180	106.63	74.703	N/A	N/A	31.927	PK



Site: AC102					Time: 2015/07/24 - 14:27			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Horizontal			
EUT: TF10EA2					Power:			
Note: Note: Mode4: Transmit at channel 2422 MHz by 802.11n40								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	51.747	19.943	-2.253	54.000	31.804	AV
2	*	2423.388	89.193	57.269	N/A	N/A	31.924	AV



Site: AC102					Time: 2015/07/24 - 14:33			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Vertical			
EUT: TF10EA2					Power:			
Note: Note: Mode4: Transmit at channel 2452 MHz by 802.11n40								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.260	101.232	69.168	N/A	N/A	32.064	PK
2		2483.500	70.203	38.063	-3.797	74.000	32.140	PK
3		2488.168	72.024	39.867	-1.976	74.000	32.157	PK



Site: AC102					Time: 2015/07/24 - 14:36			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Vertical			
EUT: TF10EA2					Power:			
Note: Note: Mode4: Transmit at channel 2452 MHz by 802.11n40								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2457.704	89.537	57.489	N/A	N/A	32.048	AV
2		2483.500	52.313	20.173	-1.687	54.000	32.140	AV



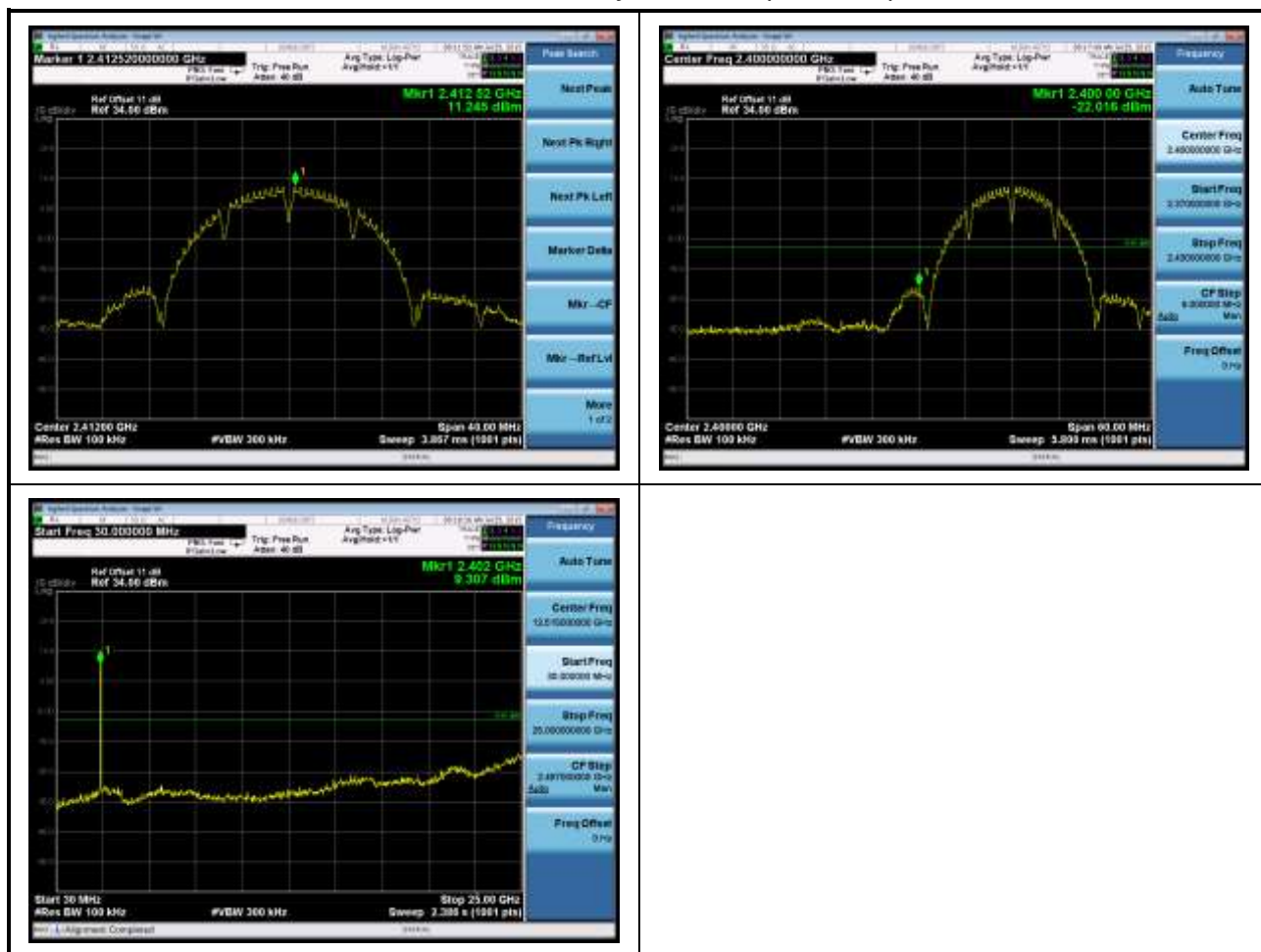
Site: AC102					Time: 2015/07/24 - 14:37			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Horizontal			
EUT: TF10EA2					Power:			
Note: Note: Mode4: Transmit at channel 2452 MHz by 802.11n40								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.580	106.44	74.379	N/A	N/A	32.061	PK
2		2483.500	69.548	37.408	-4.452	74.000	32.140	PK
3		2487.964	72.349	40.192	-1.651	74.000	32.157	PK



Site: AC102					Time: 2015/07/24 - 14:40			
Limit: FCC_Part15.209_RE(3m)					Margin: 0			
Probe: Horn_3117_00167055(1-18GHz)					Polarity: Horizontal			
EUT: TF10EA2					Power:			
Note: Note: Mode4: Transmit at channel 2452 MHz by 802.11n40								
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2441.452	87.380	55.391	N/A	N/A	31.989	AV
2		2483.500	52.734	20.594	-1.266	54.000	32.140	AV

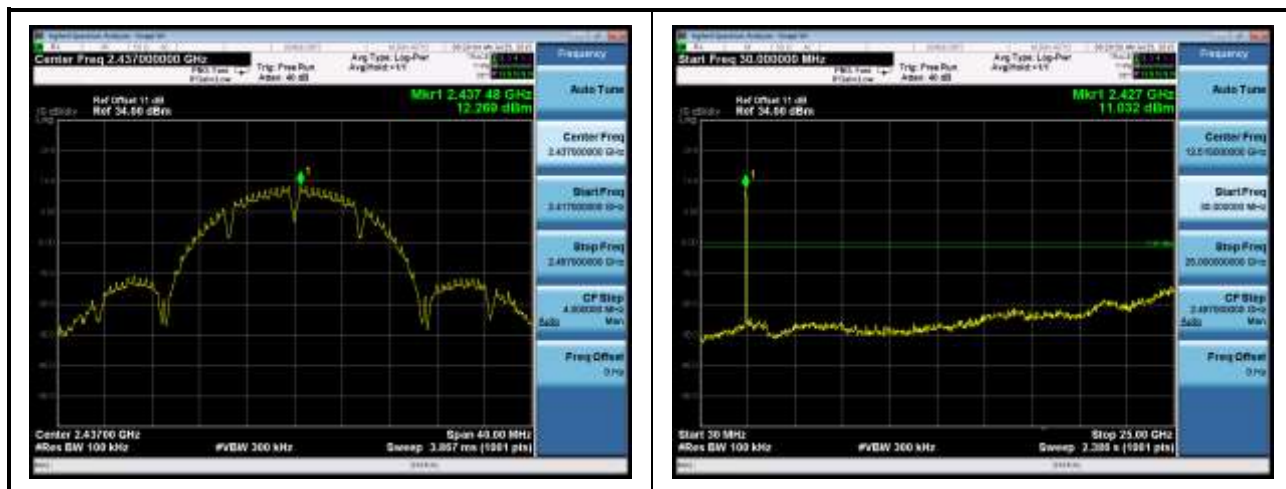
**Band Edge (20dBc RF Conducted Measurement)**

Mode 1: Transmit by 802.11b (2412MHz)

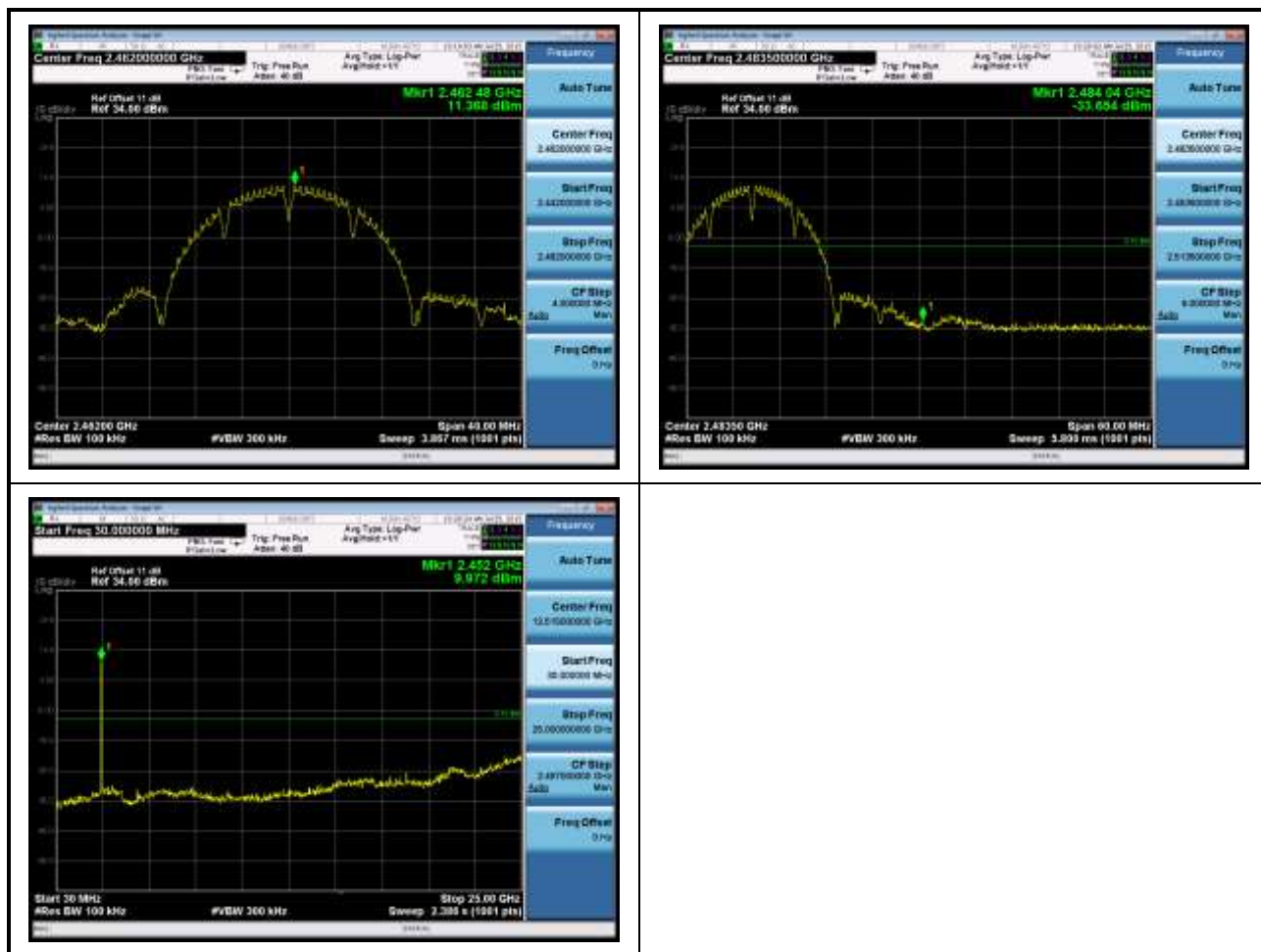




Mode 1: Transmit by 802.11b (2437MHz)

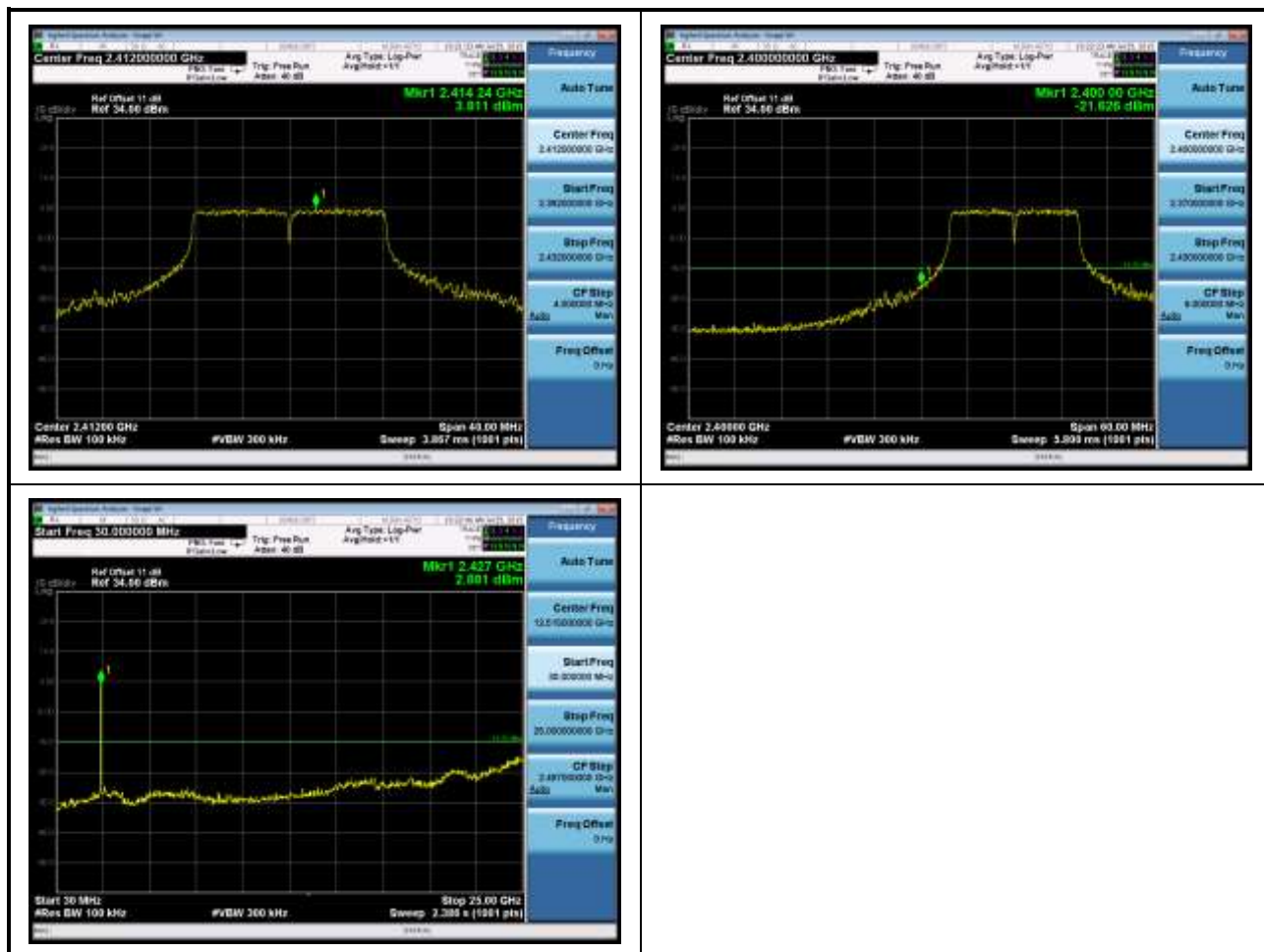


Mode 1: Transmit by 802.11b (2462MHz)



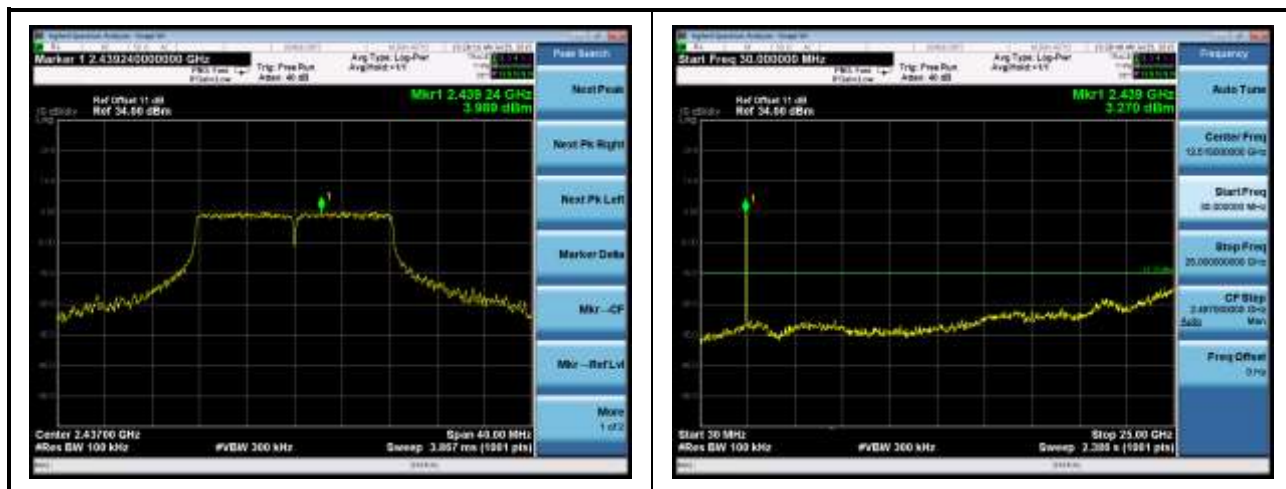


Mode 2: Transmit by 802.11g (2412MHz)

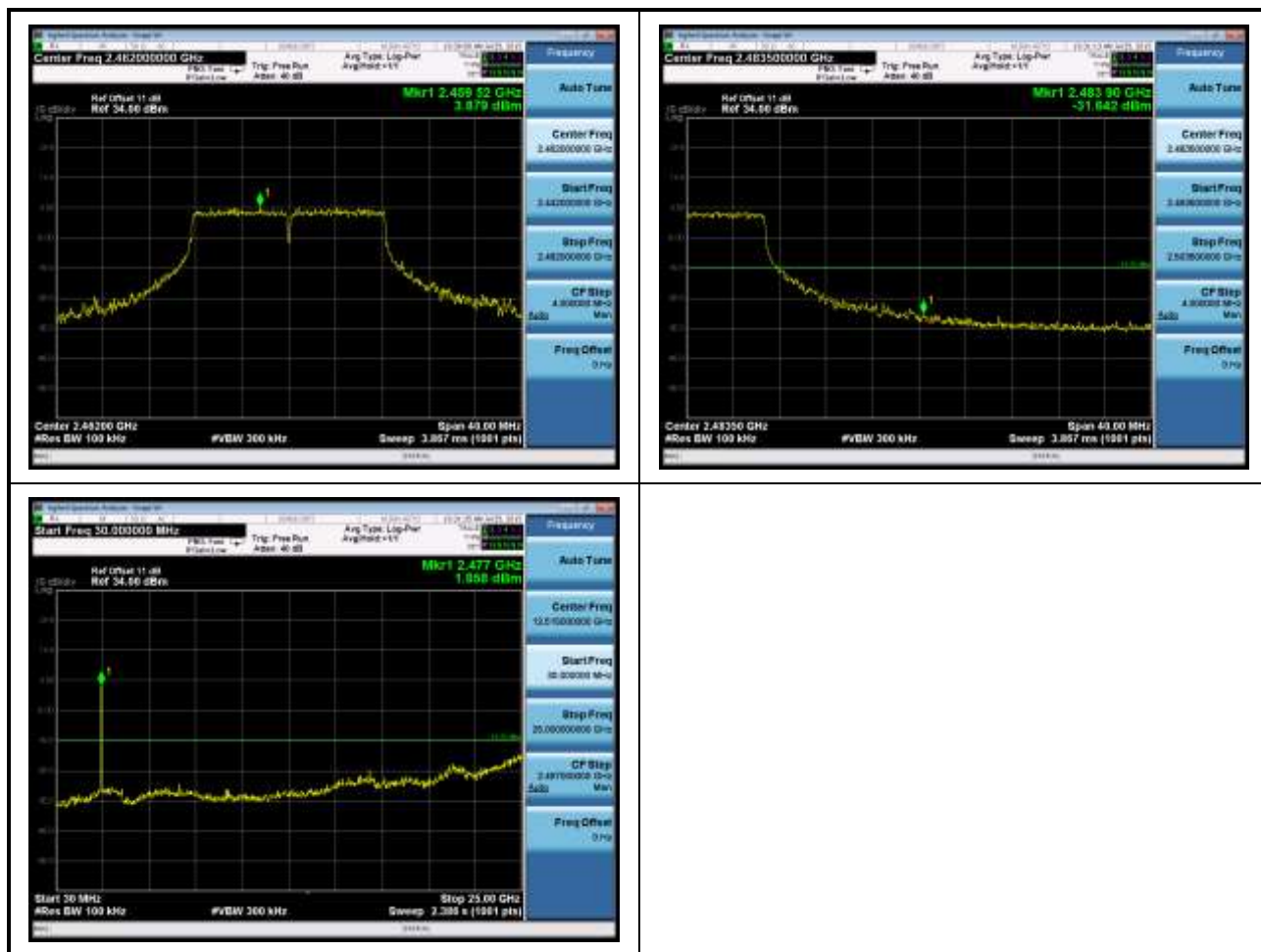




Mode 2: Transmit by 802.11g (2437MHz)

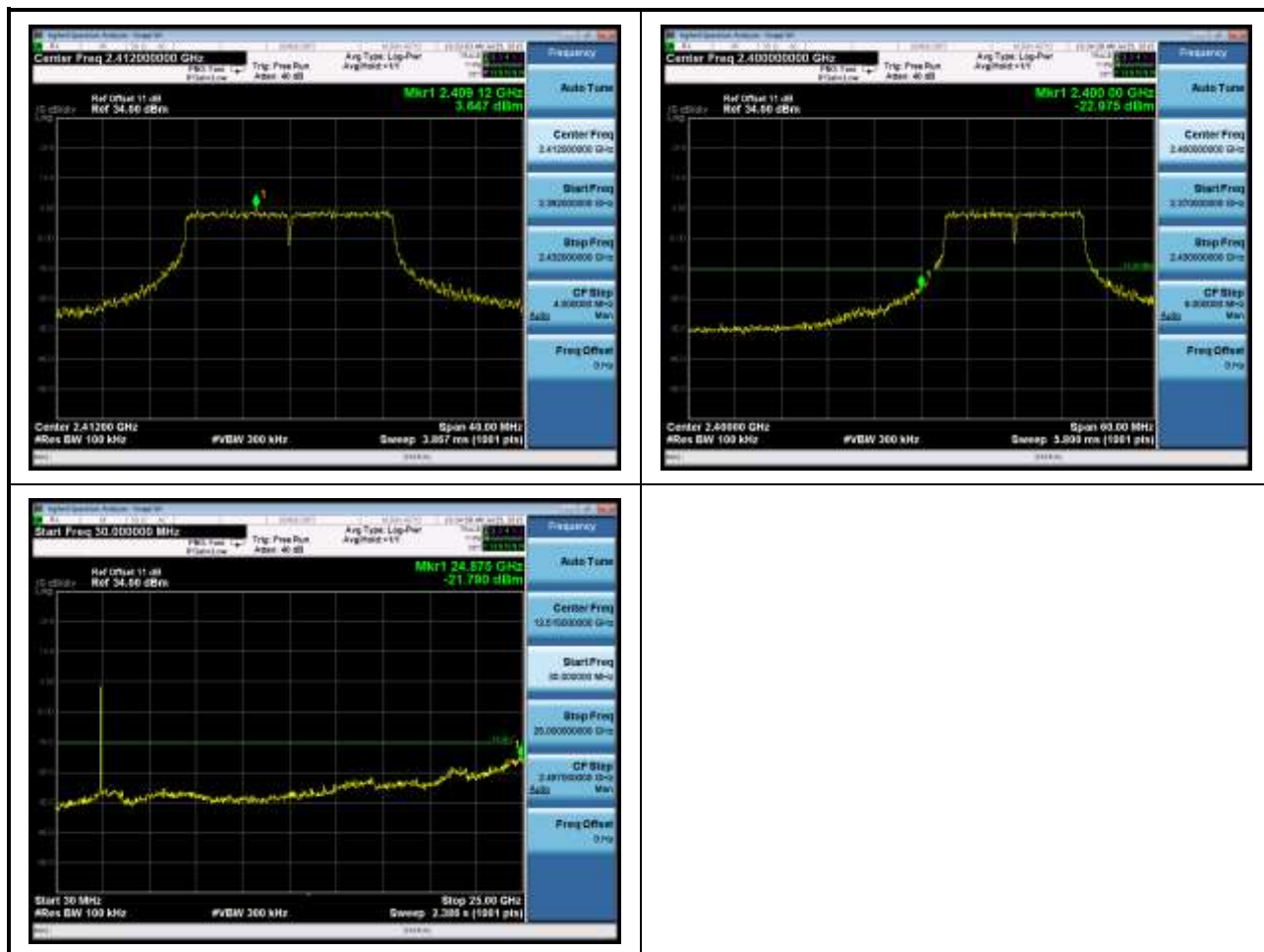


Mode 2: Transmit by 802.11g (2462MHz)



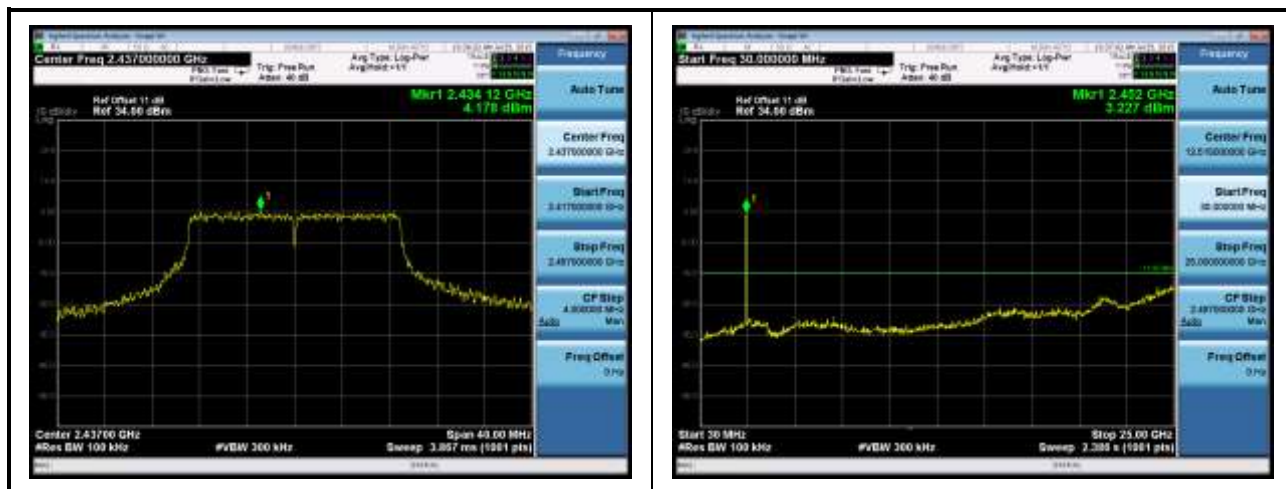


Mode 3: Transmit by 802.11n20 (2412MHz)

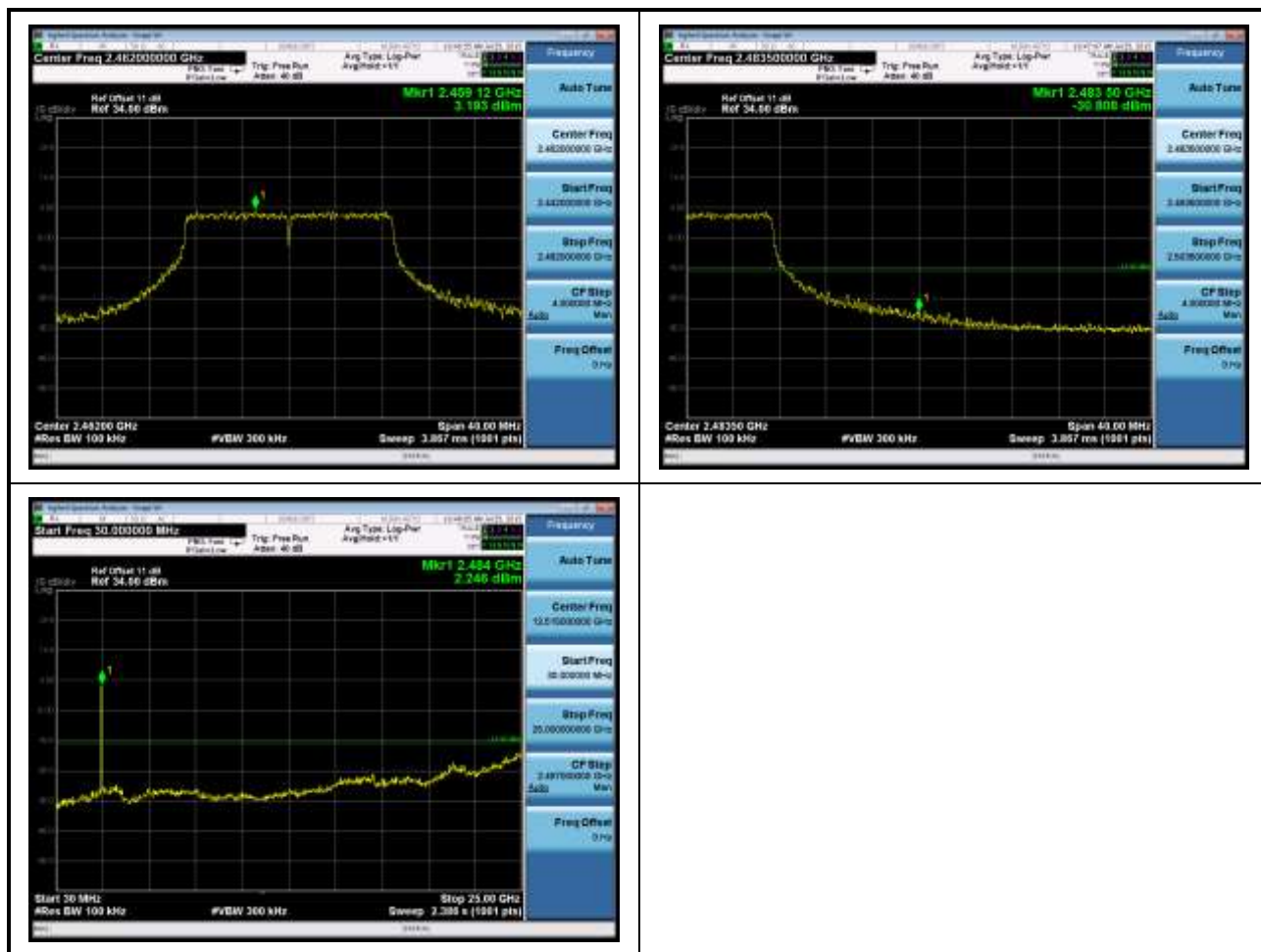




Mode 3: Transmit by 802.11n20 (2437MHz)

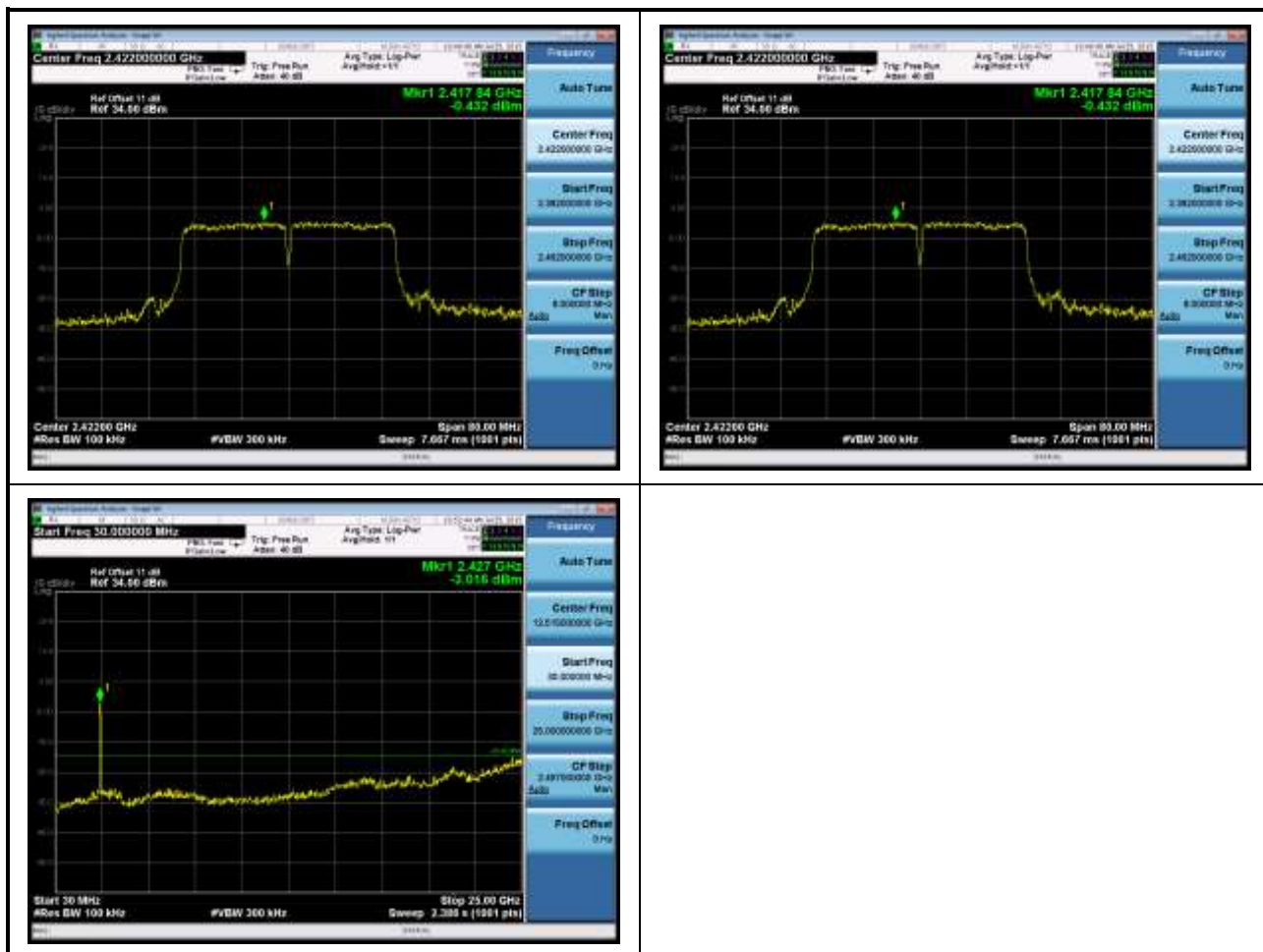


Mode 3: Transmit by 802.11n20 (2462MHz)



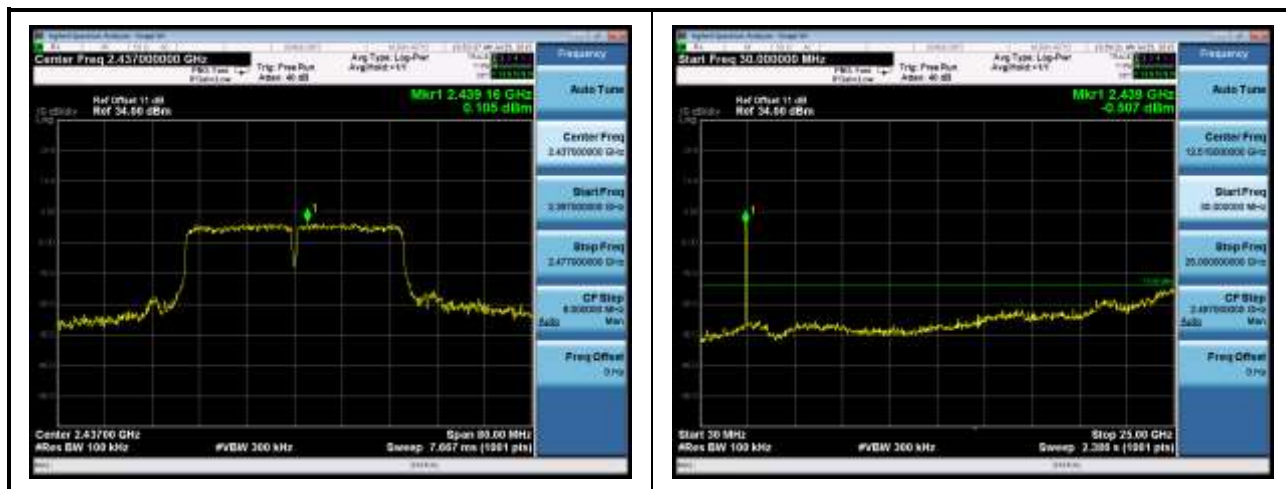


Mode 4: Transmit by 802.11n40 (2422MHz)

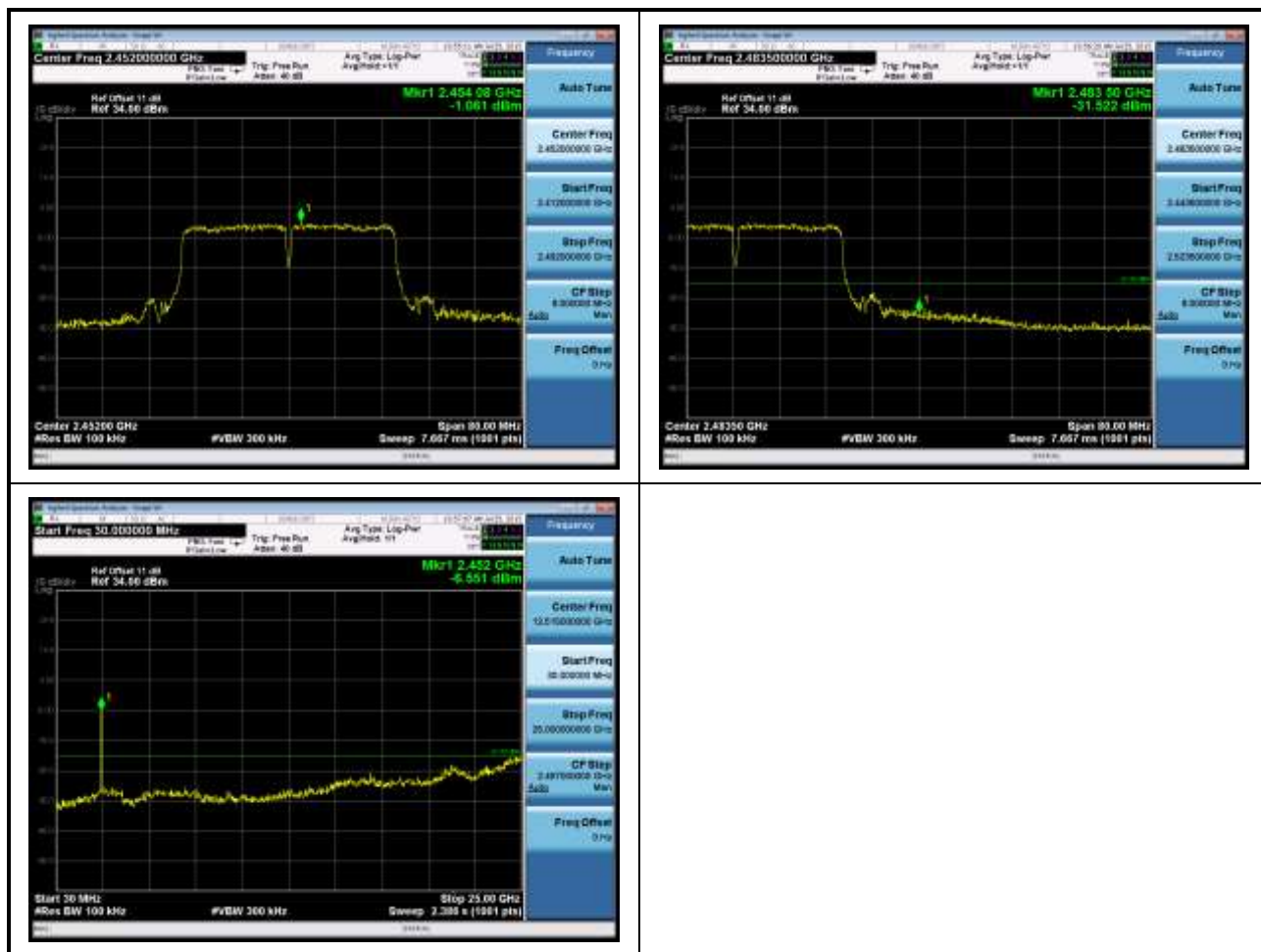




Mode 4: Transmit by 802.11n40 (2437MHz)



Mode 4: Transmit by 802.11n40 (2452MHz)





9. Power Spectral Density

9.1 Test Limit

The Maximum of Power Spectral Density Measurement is 8dBm.

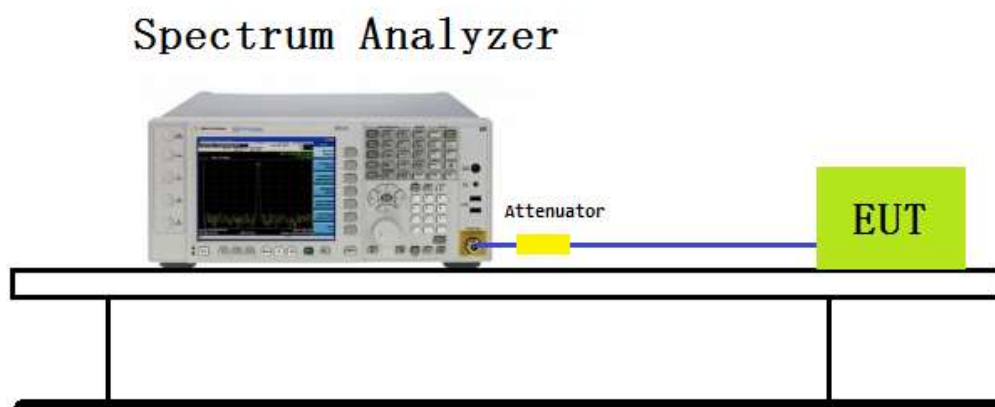
9.2 Test Procedure

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.

- Set analyzer center frequency to DTS channel center frequency.
- Set the span to 1.5 times the DTS bandwidth.
- Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$. (Actually we use 3kHz RBW)
- Set the VBW $\geq 3 \times \text{RBW}$.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the band.
- If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

9.3 Test Setup Layout



9.4 Measurement Equipment

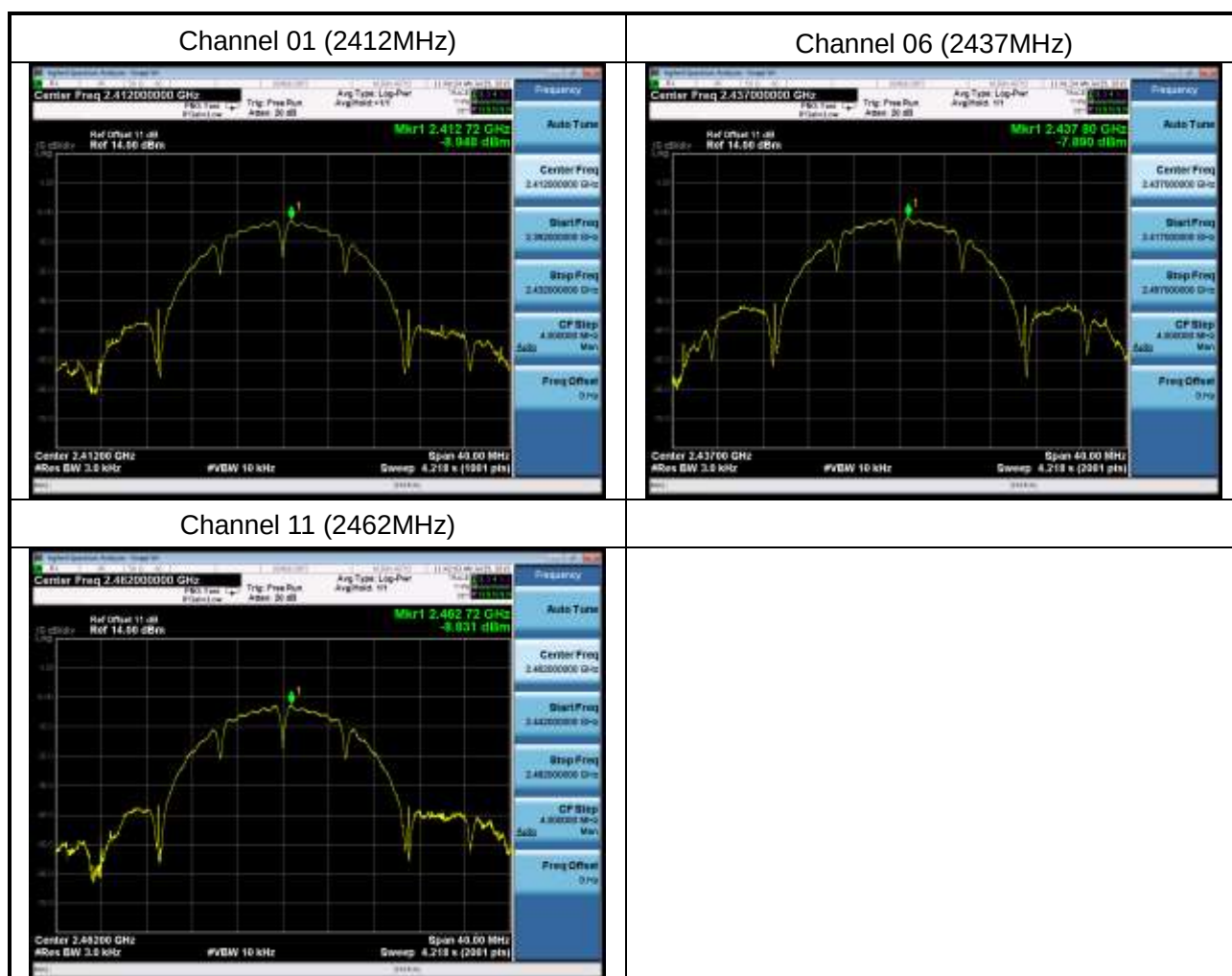
Instrument/Ancillary	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	N9010A	Agilent	MY54200207	2014/10/9	2015/10/8



9.5 Test Result and Data

Test Item	Power Spectral Density
Test Mode	Transmit by 802.11b
Test Date	2015-07-25

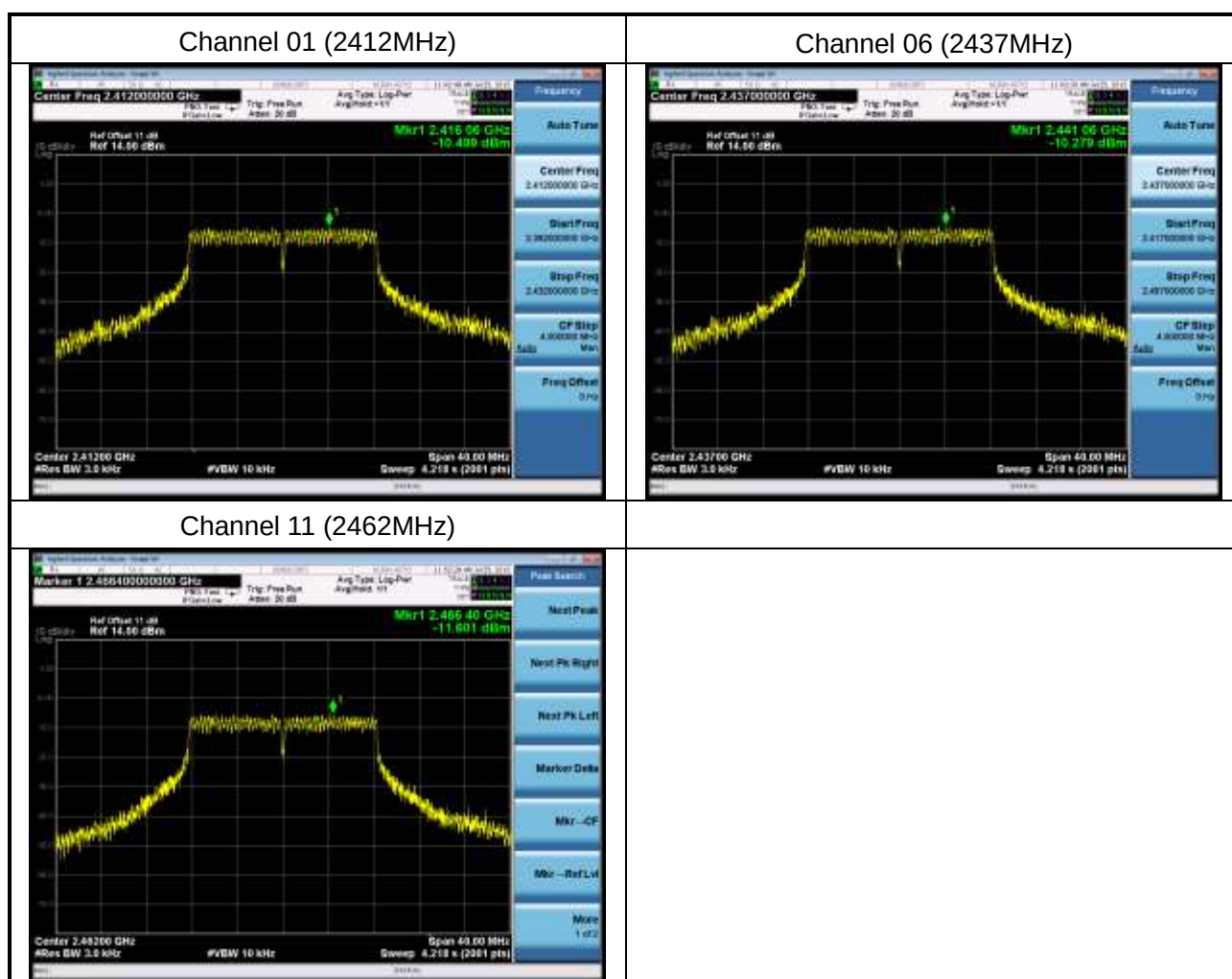
Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
01	2412	-8.948	8	Pass
06	2437	-7.890	8	Pass
11	2462	-8.831	8	Pass





Test Item	Power Spectral Density
Test Mode	Transmit by 802.11g
Test Date	2015-07-25

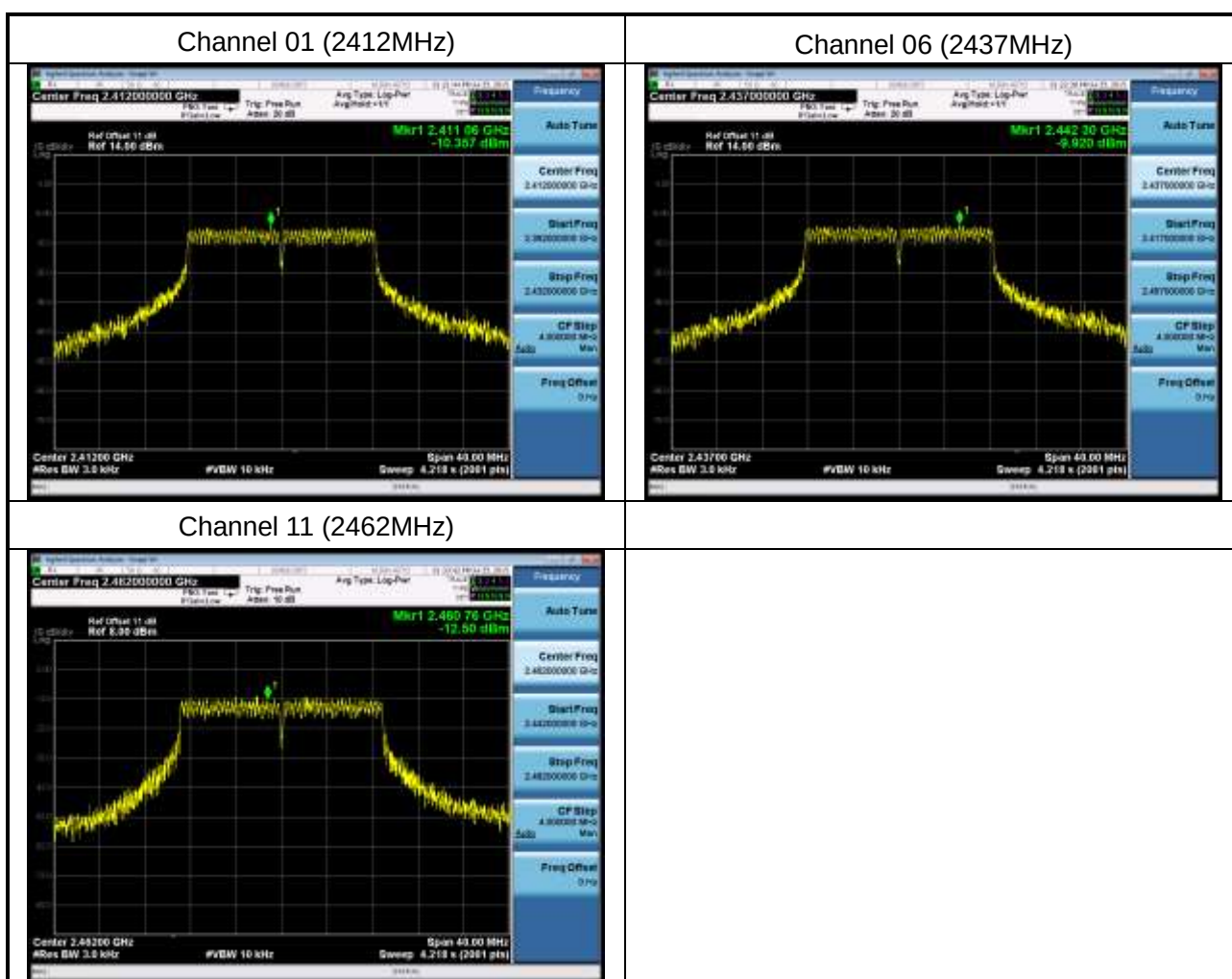
Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
01	2412	-10.499	8	Pass
06	2437	-10.279	8	Pass
11	2462	-11.601	8	Pass





Test Item	Power Spectral Density
Test Mode	Transmit by 802.11n (20MHz)
Test Date	2015-07-25

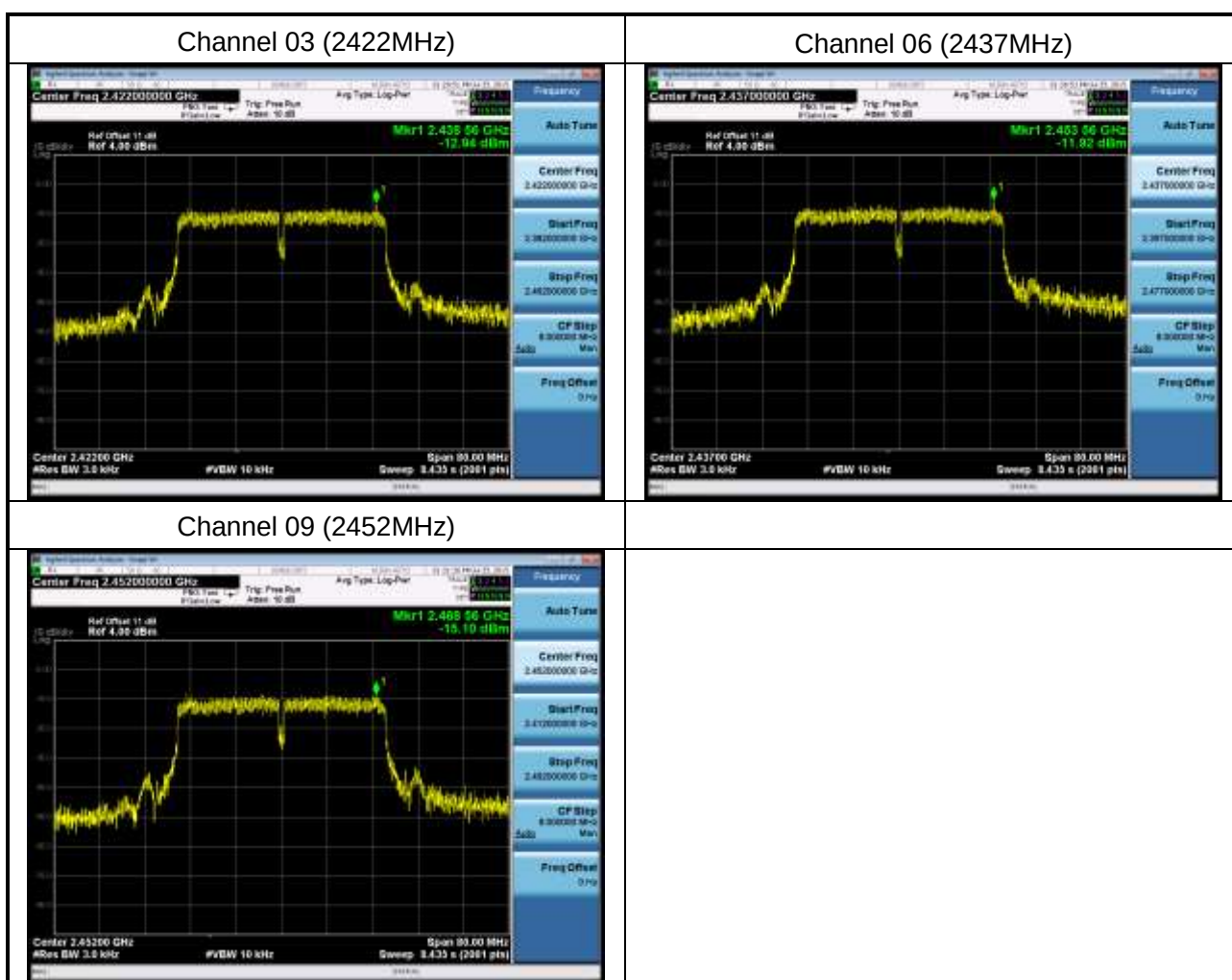
Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
01	2412	-10.357	8	Pass
06	2437	-9.920	8	Pass
11	2462	-12.500	8	Pass





Test Item	Power Spectral Density
Test Mode	Transmit by 802.11n (40MHz)
Test Date	2015-07-25

Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
03	2422	-12.94	8	Pass
06	2437	-11.92	8	Pass
09	2452	-15.10	8	Pass





10. Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.250
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

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

10.1 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.