TEST REPORT

of

FCC Part 15 Subpart C

☒ New Application; ☐ Class I PC; ☐ Class II PC

Product :	**ViewPort**
Brand:	**Live View Golf**
Model:	**WF-CAM-xxx**
Model Difference:	**N/A**
FCC ID:	**2AIFK-WFCAMXXX**
FCC Rule Part:	**§15.247, Cat: DTS**
Applicant:	**Live View Golf, Inc.**
Address:	**10061 Bubb Rd, #200, Cupertino, CA 95014**

Test Performed by:
International Standards Laboratory
<Lung-Tan LAB>
*Site Registration No.
BSMI: SL2-IN-E-0013; MRA TW1036; TAF: 0997; IC: IC4067B-3;
*Address:
No. 120, Lane 180, Hsin Ho Rd.
Lung-Tan Dist., Tao Yuan City 325, Taiwan
*Tel : 886-3-407-1718; Fax: 886-3-407-1738

Report No.: **ISL-16LR093FCDTS**
Issue Date : **2016/05/51**

Test results given in this report apply only to the specific sample(s) tested and are traceable to national or international standard through calibration of the equipment and evaluating measurement uncertainty herein.
This report MUST not be used to claim product endorsement by TAF, NVLAP or any agency of the Government.

VERIFICATION OF COMPLIANCE

Applicant:	Live View Golf, Inc.
Product Description:	ViewPort
Brand Name:	Live View Golf
Model No.:	WF-CAM-xxx
Model Difference:	N/A
FCC ID:	2AIFK-WFCAMXXX
Date of test:	2016/04/23 ~ 2016/05/30
Date of EUT Received:	2016/04/23

We hereby certify that:

All the tests in this report have been performed and recorded in accordance with the standards described above and performed by an independent electromagnetic compatibility consultant, International Standards Laboratory.

The test results contained in this report accurately represent the measurements of the characteristics and the energy generated by sample equipment under test at the time of the test. The sample equipment tested as described in this report is in compliance with the limits of above standards.

Test By:	Dino Chen	***Date:***	2016/05/31
	Dino Chen / Engineer		
Prepared By:	Gigi yeh	***Date:***	2016/05/31
	Gigi Yeh / Specialist		
Approved By:	Vincent Su	***Date:***	2016/05/31
	Vincent Su / Technical Manager		

Version

Version No.	Date	Description
00	2016/05/31	Initial creation of document

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1 GENERAL INFORMATION

General:

Product Name:	ViewPort
Brand:	Live View Golf
Model:	WF-CAM-xxx
Model different:	N/A
USB port:	one provided for battery charge
Power Supply:	3.7Vdc from Battery or 5V form USB Port

2.4GHz WLAN: 1TX/1RX

Wi-Fi	Frequency Range (MHz)	Channels	Peak / Average Rated Power	Modulation Technology
802.11b	2412 – 2462(DTS)	11	9.27dBm (PK) 6.21 dBm (AV)	DSSS
802.11g	2412 – 2462(DTS)	11	17.7dBm (PK) 9.13 dBm (AV)	OFDM
802.11n	HT20 2412 – 2462(DTS)	11	17.97dBm (PK) 8.96 dBm (AV)	
	HT40 2422 – 2452(DTS)	7	18.01dBm (PK) 8.66 dBm (AV)	
Tune-Up Power:		+/- 0.5 dBm		
Modulation type:		CCK, DQPSK, DBPSK for DSSS 256QAM.64QAM. 16QAM, QPSK, BPSK for OFDM		
Antenna Designation:		Dipole Antenna , IPEX type connector, gain : -3.9dBi		

The EUT is compliance with IEEE 802.11 b/g/n Standard.
This test report applies for IEEE 802.11 b/g/n transmitter.

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

1.1 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID: 2AIFK-WFCAMXXX** filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

1.2 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4: 2014, ANSI C63.10: 2013. Radiated testing was performed at an antenna to EUT distance 3 meters.

KDB Document: 558074 D01 DTS Meas Guidance v03r04

1.3 Test Facility

The measurement facilities used to collect the 3m Radiated Emission and AC power line conducted data are located on the address of **International Standards Laboratory** <Lung-Tan LAB> No. 120, Lane 180, Hsin Ho Rd., Lung-Tan Dist., Tao Yuan City 325, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2014, ANSI C63.10: 2013. FCC Registration Number is: 872200; Designation Number is: TW1036, Canada Registration Number: 4067B-3.

1.4 Special Accessories

Not available for this EUT intended for grant.

1.5 Equipment Modifications

Not available for this EUT intended for grant.

2 SYSTEM TEST CONFIGURATION

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The EUT (Transmitter) was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements.

2.3 Test Procedure

2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 5 and 7 of ANSI C63.4: 2014.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR 16-1-1 Quasi-Peak and Average detector mode.

2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m/1.5m(Frequency above 1GHz) above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 6 and 11 of ANSI C63.10: 2013.

2.4 Configuration of Tested System

Fig. 1 AC Power line and Radiated/Conducted Emission Configuration

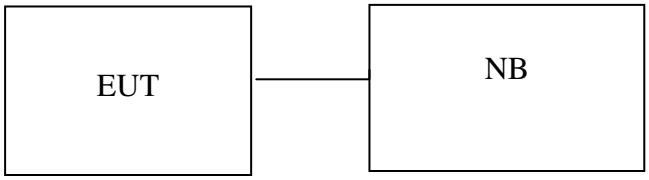


Table 1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1	Notebook	HP	440	N/A	Non-shield	Non-shield
2	kit	Non	Non	Non	Non-shield	Non-shield

3 SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.207(a)	AC Power Line Conducted Emission	Compliant
§15.247(b) (3),(4)	Peak Output Power	Compliant
§15.247(a)(2)	6dB Bandwidth & 99% Power Bandwidth	Compliant
§15.247(d)	100 KHz Bandwidth Of Frequency Band Edges	Compliant
§15.247(d)	Spurious Emission	Compliant
§15.247(e)	Peak Power Density	Compliant
§15.203	Antenna Requirement	Compliant

4 DESCRIPTION OF TEST MODES

The EUT has been tested under engineering operating condition.
Test program used to control the EUT for staying in continuous transmitting mode is programmed.

2.4GHz:
802.11 b mode: Channel low (2412MHz)

5 CONDUCTED EMISSION TEST

5.1 Standard Applicable:

According to §15.207 & RSS-Gen §7.2.4, frequency range within 150KHz to 30MHz shall not exceed the Limit table as below.

Frequency range MHz	Limits dB(uV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Note 1.The lower limit shall apply at the transition frequencies 2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

5.2 Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Conduction 04-3 Cable	WOKEN	CFD 300-NL	Conduction 04 -3	07/28/2015	07/27/2016
EMI Receiver 17	Rohde & Schwarz	ESCI 7	100887	09/08/2015	09/07/2016
LISN 18	ROHDE & SCHWARZ	ENV216	101424	02/11/2016	02/10/2017
LISN 19	ROHDE & SCHWARZ	ENV216	101425	03/12/2016	03/11/2017
Test Software	Farad	EZEMC Ver:ISL-03A2	N/A	N/A	N/A

5.3 EUT Setup:

1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.4: 2014.
2. The AC/DC Power adaptor of EUT was plug-in LISN. The EUT was placed flushed with the rear of the table.
3. The LISN was connected with 120Vac/60Hz power source.

5.4 Measurement Procedure:

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

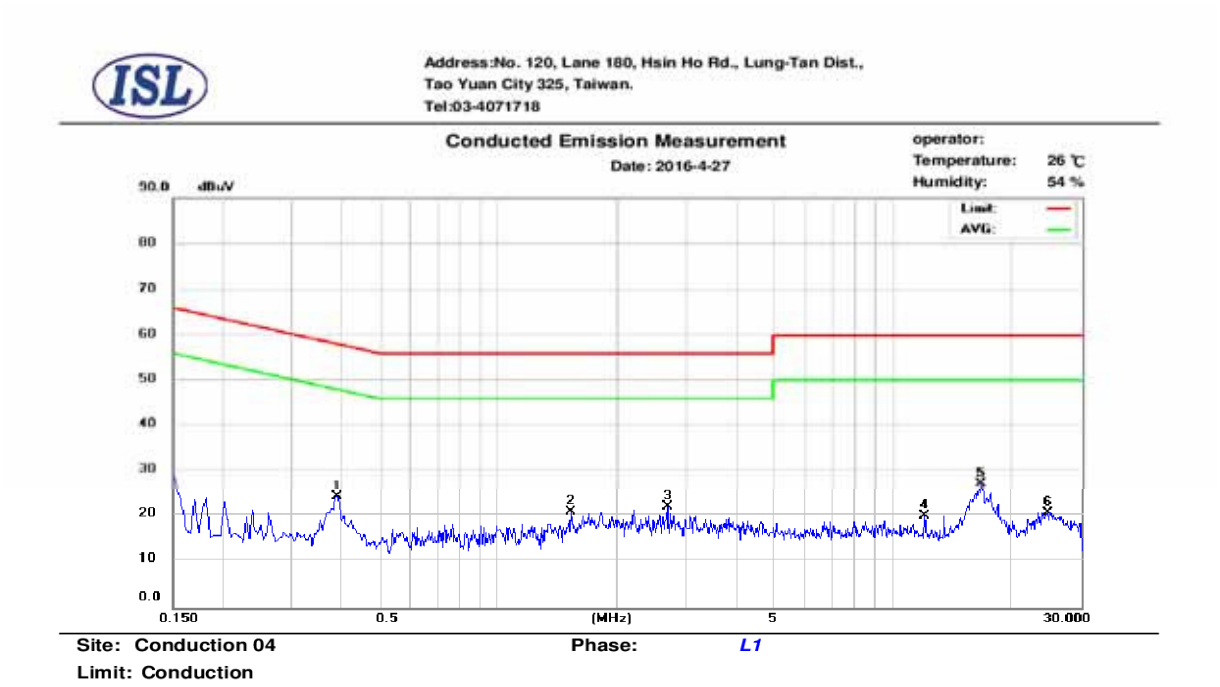
5.5 Measurement Result:

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

Note: Refer to next page for measurement data and plots.

AC POWER LINE CONDUCTED EMISSION TEST DATA

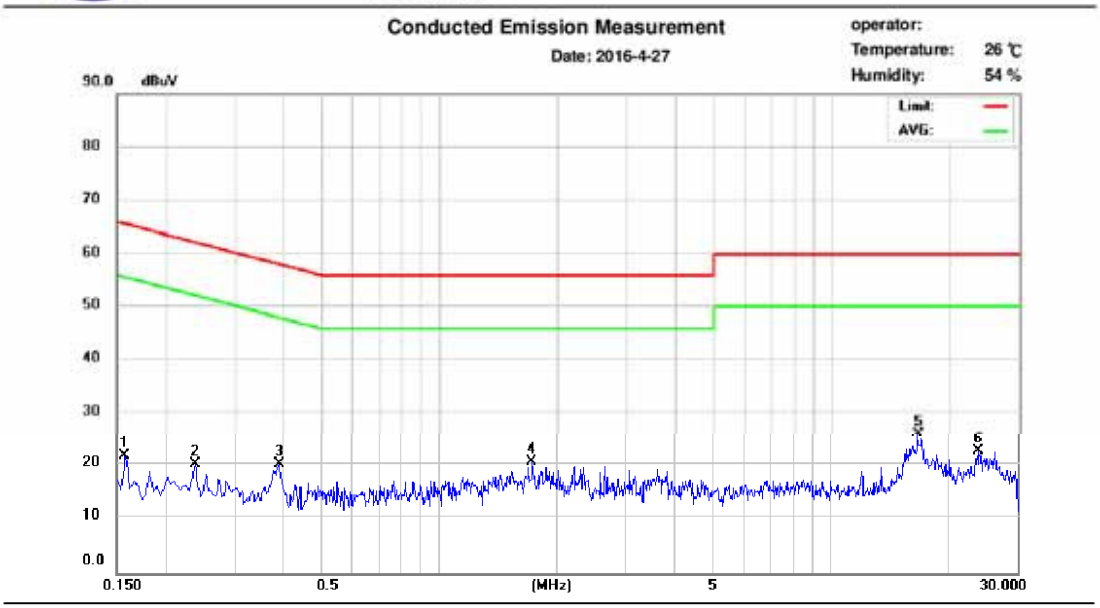
Operation Mode:	Operation Mode	Test Date:	2016/04/27
Test By:	Dino		



No.	Frequency (MHz)	QP_R (dBuV)	AVG_R (dBuV)	Correct Factor (dB)	QP Emission (dBuV)	QP Limit (dBuV)	QP Margin (dB)	AVG Emission (dBuV)	AVG Limit (dBuV)	AVG Margin (dB)
1	0.390	6.51	4.16	9.66	16.17	58.06	-41.89	13.82	48.06	-34.24
2	1.534	5.48	2.40	9.68	15.16	56.00	-40.84	12.08	46.00	-33.92
3	2.686	7.23	3.80	9.70	16.93	56.00	-39.07	13.50	46.00	-32.50
4	11.998	8.37	6.31	9.83	18.20	60.00	-41.80	16.14	50.00	-33.86
5	16.674	10.40	5.72	9.91	20.31	60.00	-39.69	15.63	50.00	-34.37
6	24.766	5.70	0.35	9.92	15.62	60.00	-44.38	10.27	50.00	-39.73

.

Address:No. 120, Lane 180, Hsin Ho Rd., Lung-Tan Dist.,
Tao Yuan City 325, Taiwan.
Tel:03-4071718



Site: Conduction 04 Phase: *N*

Limit: Conduction

No.	Frequency (MHz)	QP_R (dBuV)	AVG_R (dBuV)	Correct Factor (dB)	QP Emission (dBuV)	QP Limit (dBuV)	QP Margin (dB)	AVG Emission (dBuV)	AVG Limit (dBuV)	AVG Margin (dB)
1	0.158	11.87	-0.88	9.66	21.53	65.57	-44.04	8.78	55.57	-46.79
2	0.238	2.85	-1.18	9.66	12.51	62.17	-49.66	8.48	52.17	-43.69
3	0.390	7.89	5.59	9.65	17.54	58.06	-40.52	15.24	48.06	-32.82
4	1.730	6.44	1.14	9.67	16.11	56.00	-39.89	10.81	46.00	-35.19
5	16.670	9.98	4.89	9.99	19.97	60.00	-40.03	14.88	50.00	-35.12
6	24.002	9.23	4.95	10.05	19.28	60.00	-40.72	15.00	50.00	-35.00

6 PEAK /AVERAGE OUTPUT POWER MEASUREMENT

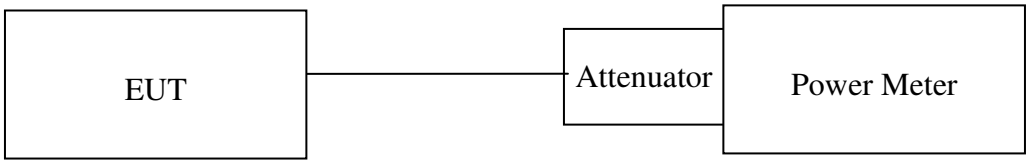
6.1 Standard Applicable:

According to

6.2 Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Power Meter 05	Anritsu	ML2495A	1116010	07/29/2015	07/28/2016
Power Sensor 05	Anritsu	MA2411B	34NKF50	07/29/2015	07/28/2016
Power Sensor 06	DARE	RPR3006W	13I00030SNO33	11/03/2015	11/02/2016
Power Sensor 07	DARE	RPR3006W	13I00030SNO34	11/03/2015	11/02/2016
Temperature Chamber	KSON	THS-B4H100	2287	06/05/2015	06/04/2016
DC Power supply	ABM	8185D	N/A	09/05/2015	09/04/2016
AC Power supply	EXTECH	CFC105W	NA	12/26/2015	12/25/2016
Attenuator	Woken	Watt-65m3502	11051601	NA	NA
Splitter	MCLI	PS4-199	12465	12/26/2015	12/25/2017
Spectrum analyzer	Agilent	N9030A	MY51360021	10/02/2015	10/01/2016
Test Sofware	DARE	Radimation Ver:2013.1.23	NA	N/A	N/A

6.3 Test Set-up:



6.4 Measurement Procedure:

Refer to section 9.1.3 and 9.2.3 Peak and Average Conducted Output Power Measurement Procedure of KDB Document: 558074 D01 DTS Meas Guidance v03r04

6.5 Measurement Result:

802.11b

Cable loss = 0	Output Power		Limit
CH	Detector		(dBm)
	PK	AV	

7 6dB Bandwidth

7.1 Standard Applicable:

According to

7.5 Measurement Result:

802.11b

CH	Bandwidth (MHz)	Bandwidth (KHz)	Result
Low	10.15	> 500	PASS
Mid	10.15	> 500	PASS
High	10.14	> 500	PASS

802.11g

CH	Bandwidth (MHz)	Bandwidth (KHz)	Result
Low	15.55	> 500	PASS
Mid	15.53	> 500	PASS
High	15.55	> 500	PASS

802.11n HT20

CH	Bandwidth (MHz)	Bandwidth (KHz)	Result
Low	15.33	> 500	PASS
Mid	15.33	> 500	PASS
High	15.33	> 500	PASS

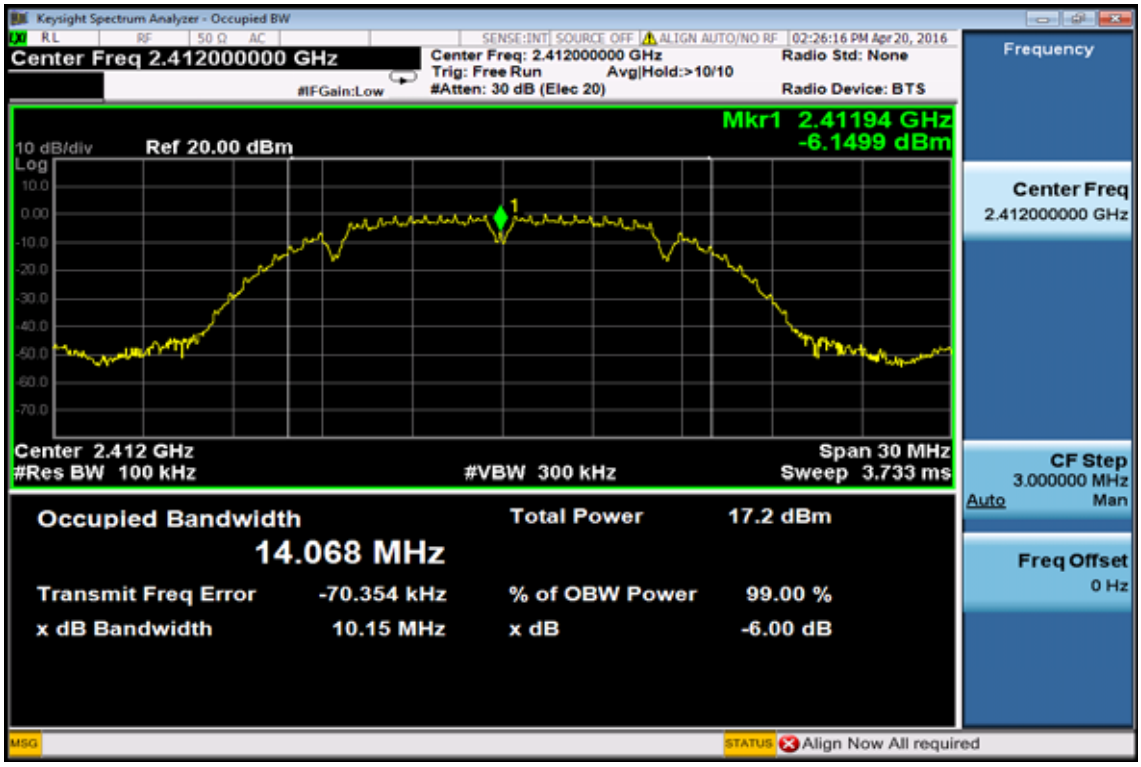
802.11n HT40

CH	Bandwidth (MHz)	Bandwidth (KHz)	Result
Low	35.01	> 500	PASS
Mid	33.8	> 500	PASS
High	33.81	> 500	PASS

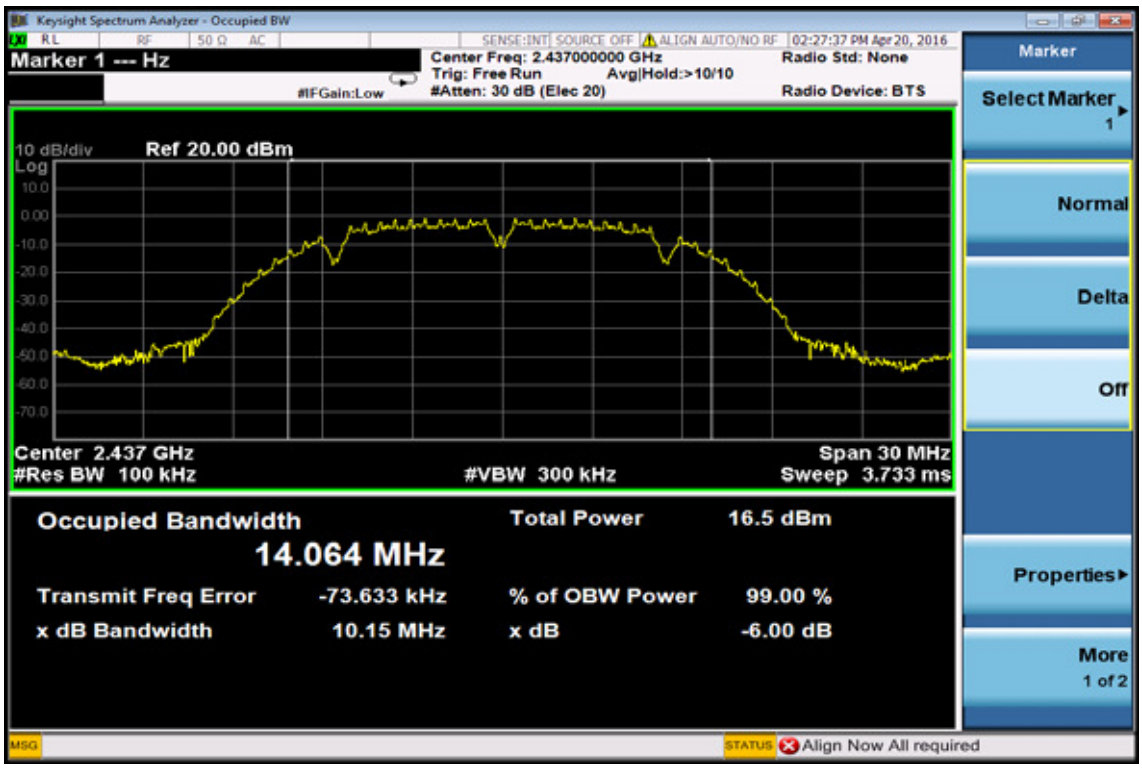
Note: Refer to next page for plots.

802.11b

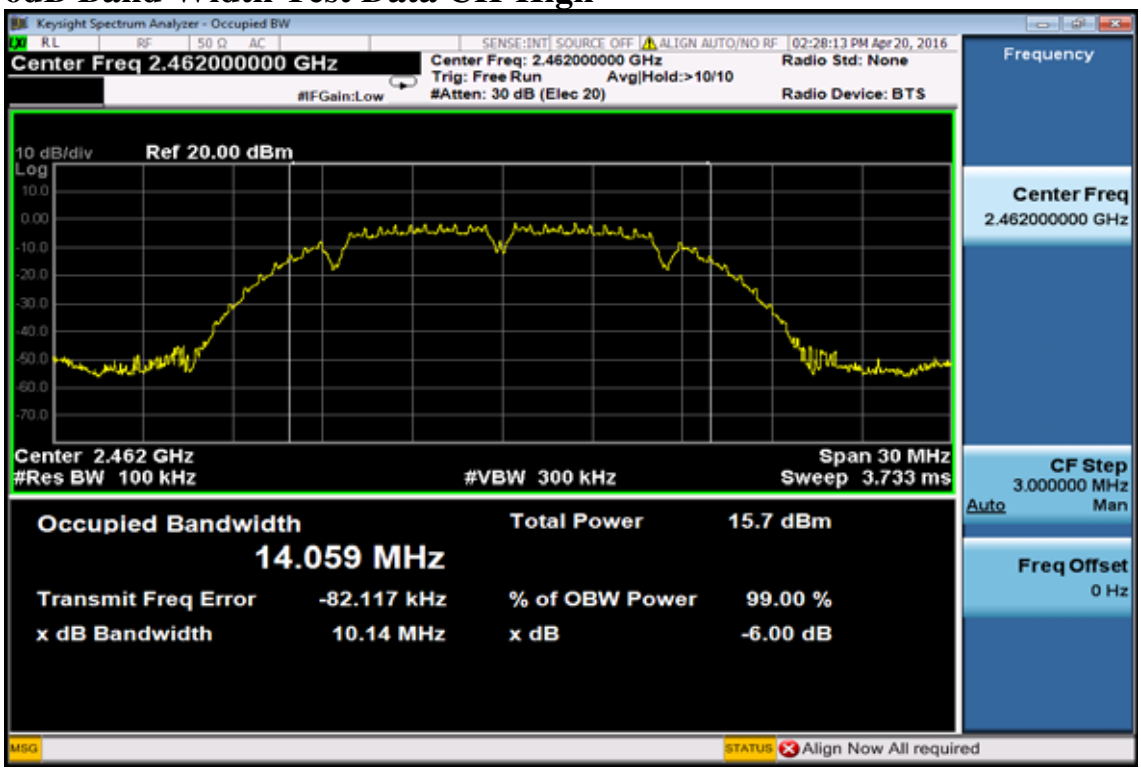
6dB Band Width Test Data CH-Low



6dB Band Width Test Data CH-Mid

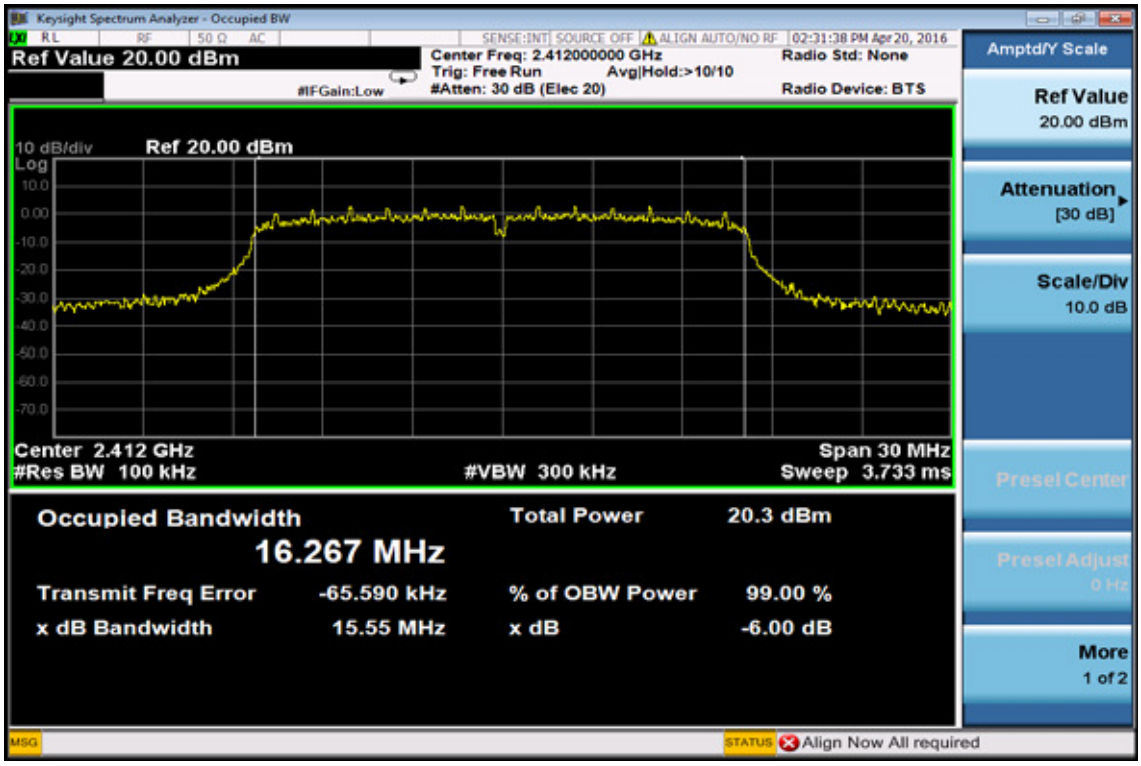


6dB Band Width Test Data CH-High

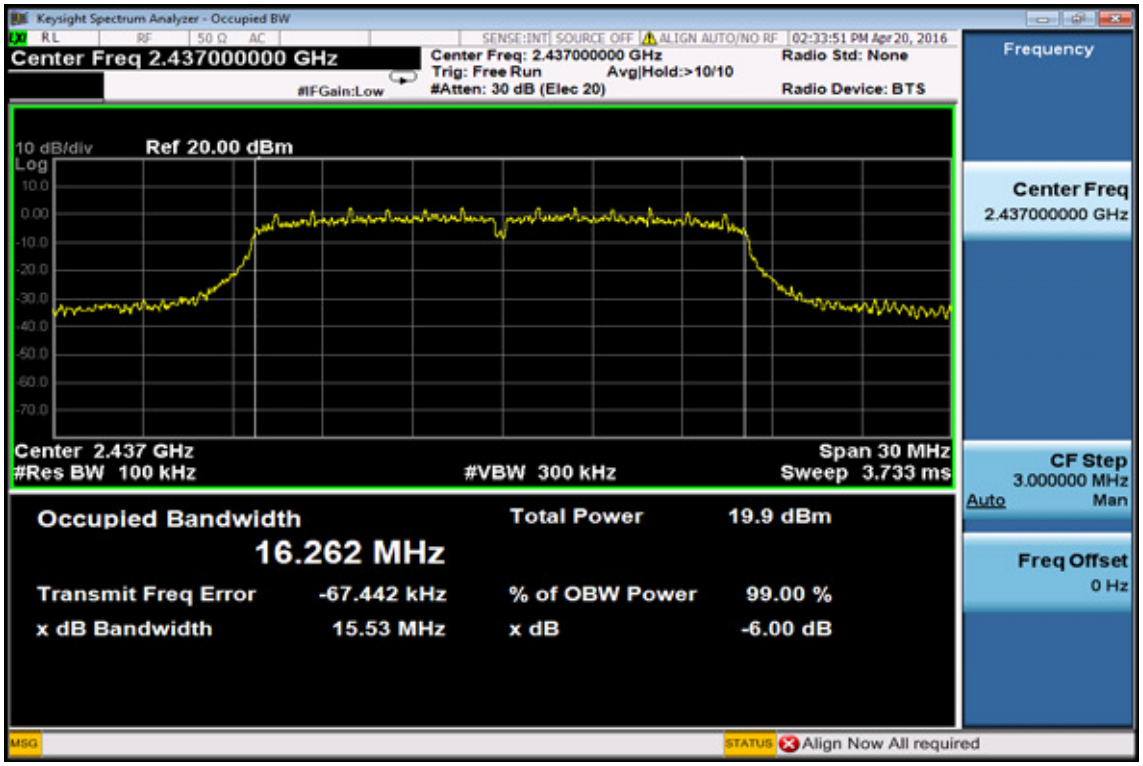


802.11g

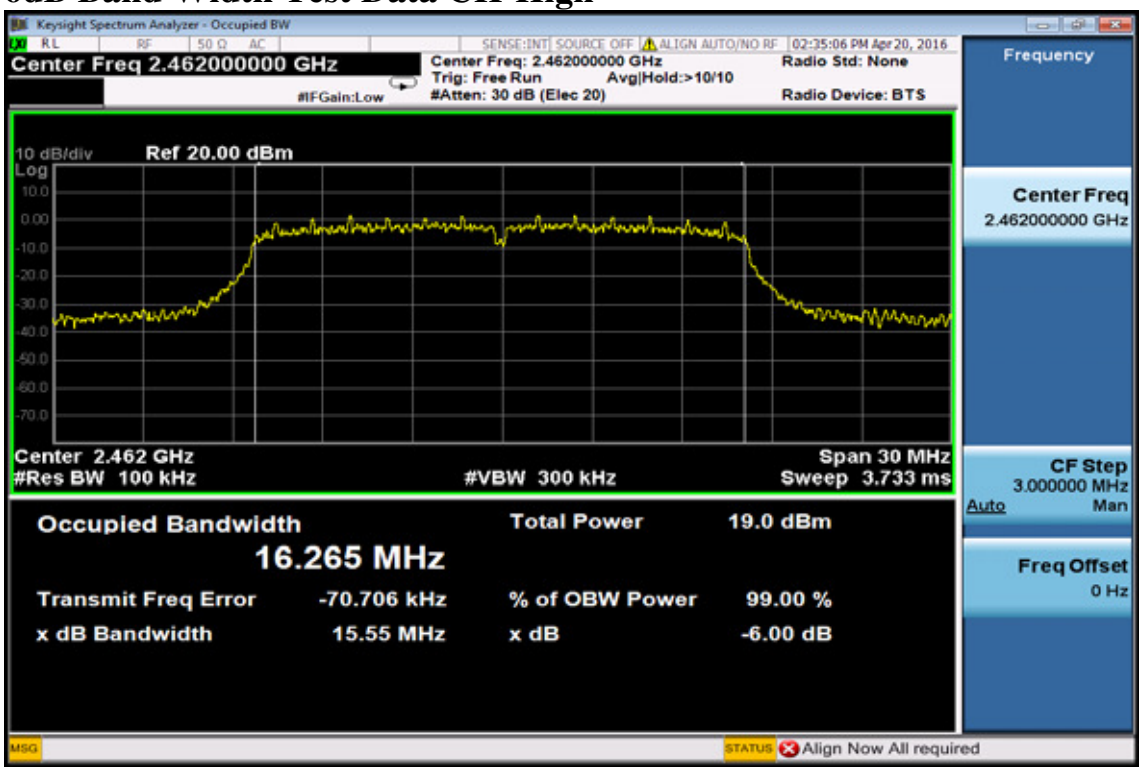
6dB Band Width Test Data CH-Low



6dB Band Width Test Data CH-Mid

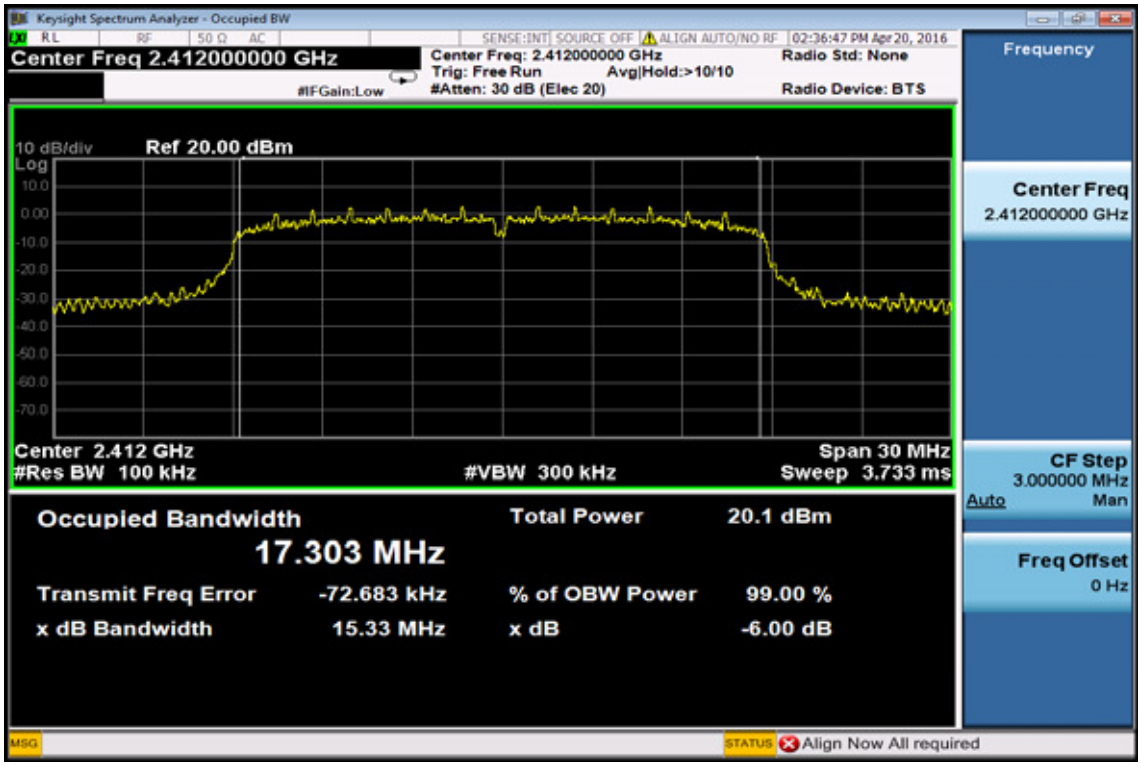


6dB Band Width Test Data CH-High

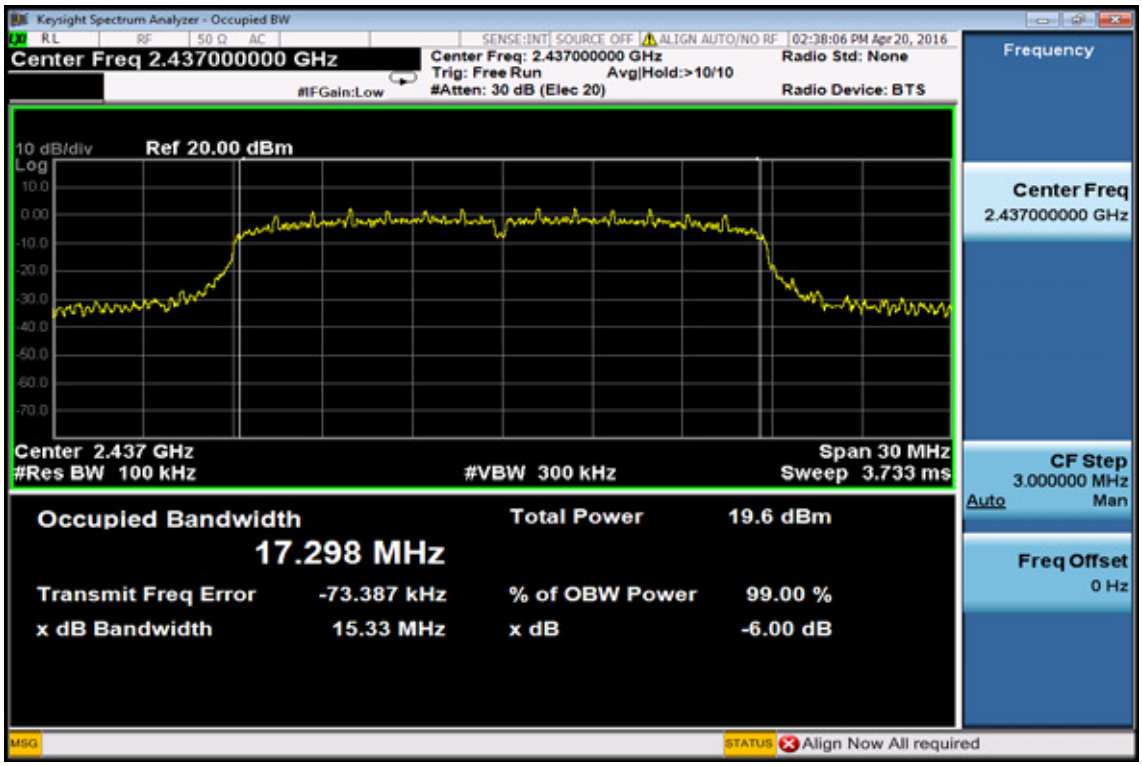


802.11n_20M

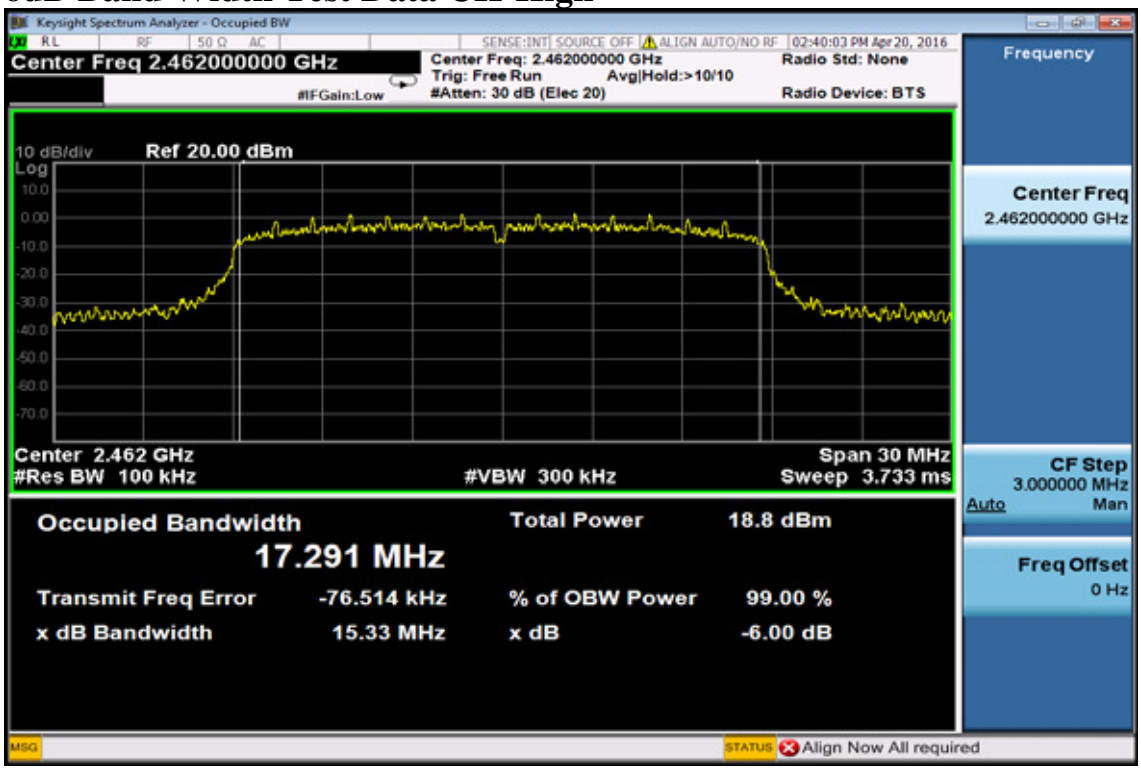
6dB Band Width Test Data CH-Low



6dB Band Width Test Data CH-Mid

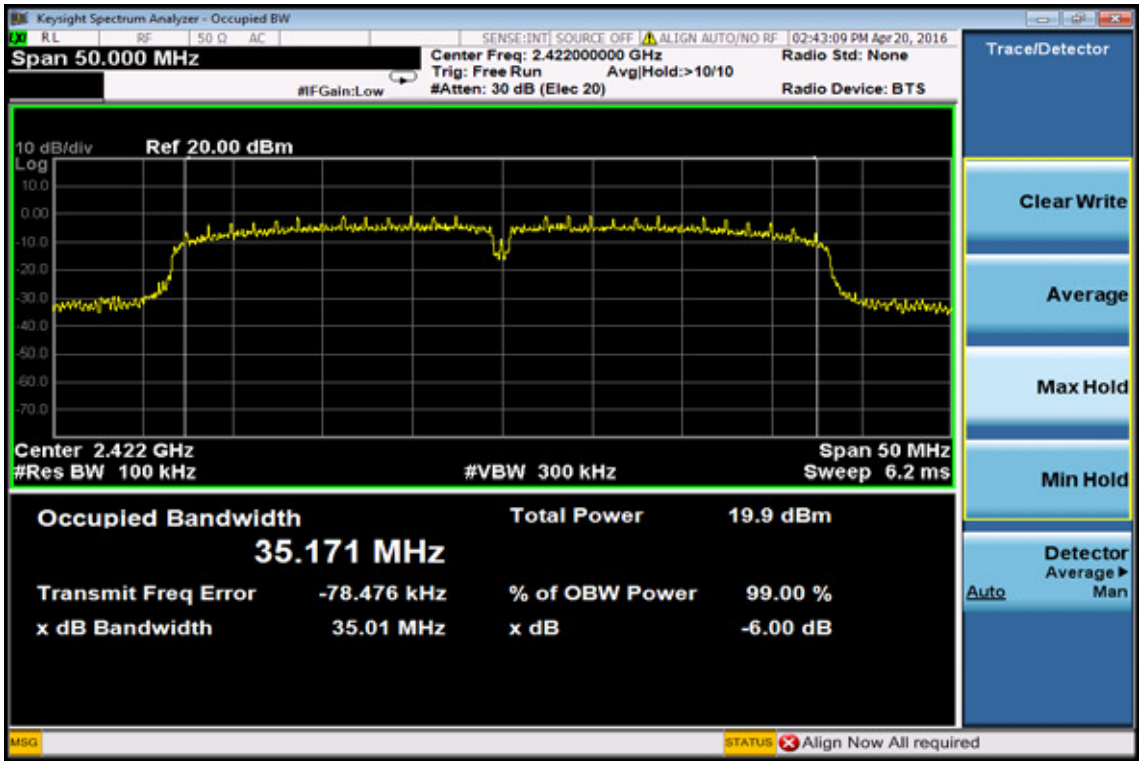


6dB Band Width Test Data CH-High

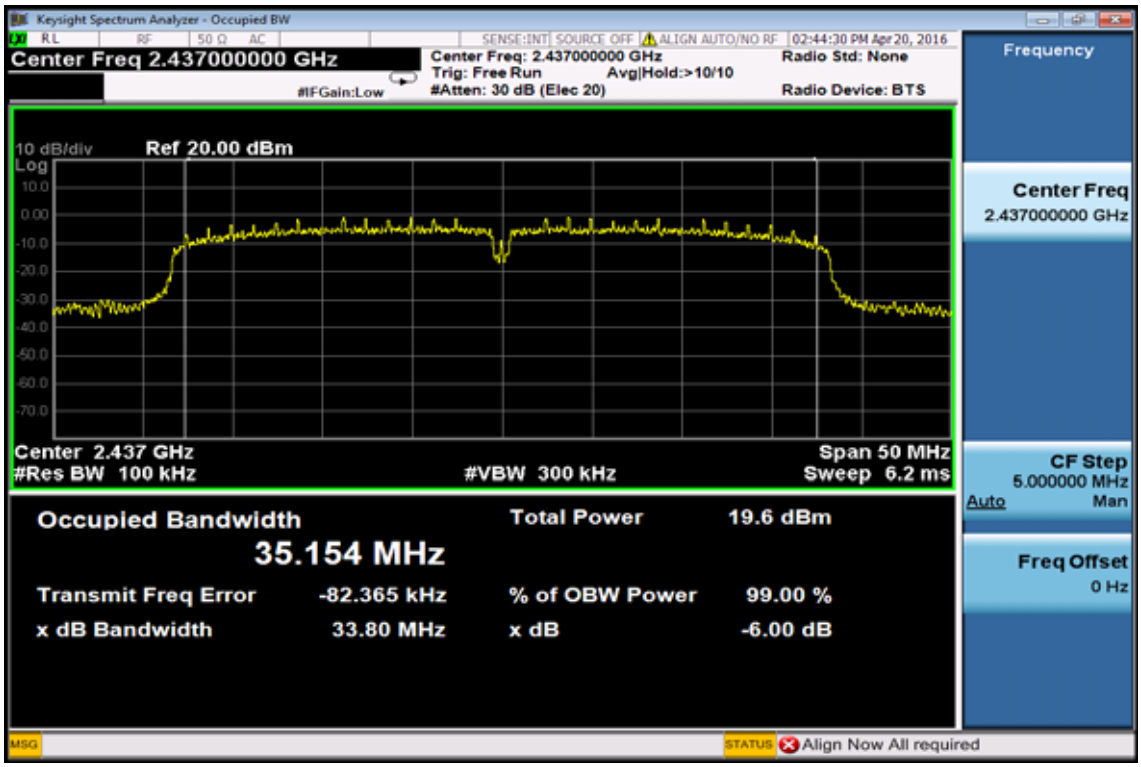


802.11n_40M

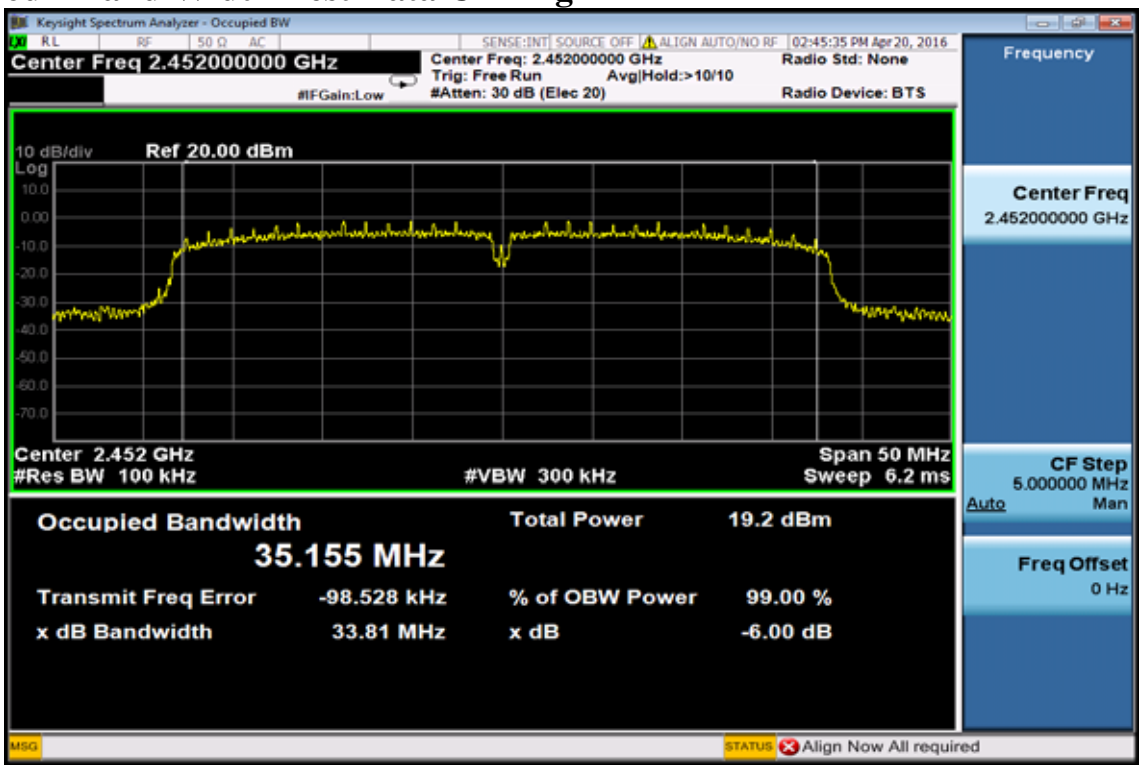
6dB Band Width Test Data CH-Low



6dB Band Width Test Data CH-Mid



6dB Band Width Test Data CH-High



8 100KHz BANDWIDTH OF BAND EDGES MEASUREMENT

8.1 Standard Applicable:

According to

8.2.2 Radiated emission:

Chamber 14(966)					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer 21(26.5GHz)	Agilent	N9010A	MY49060537	07/30/2015	07/29/2016
Spectrum Analyzer 20(6.5GHz)	Agilent	E4443A	MY48250315	05/20/2016	05/19/2017
Spectrum Analyzer 22(43GHz)	R&S	FSU43	100143	05/22/2016	05/21/2017
Dipole antenna	SCHWARZBECK	VHAP,30-300	919	12/28/2015	12/27/2017
Dipole antenna	SCHWARZBECK	UHAP,300-1000	1195	12/28/2015	12/27/2017
Loop Antenna9K-30M	A.H.SYSTEM	SAS-564	294	06/17/2015	06/16/2017
Bilog Antenna30-1G	Schaffner	CBL 6112D	37873	06/16/2015	06/15/2016
Horn antenna1-18G	ETS	3117	00066665	11/30/2015	11/29/2016
Horn antenna26-40G(05)	Com-power	AH-640	100A	01/21/2015	01/20/2017
Horn antenna18-26G(04)	Com-power	AH-826	081001	07/24/2015	07/23/2017
Preamplifier9-1000M	HP	8447D	NA	03/11/2016	03/10/2017
Preamplifier1-18G	MITEQ	AFS44-00101800-25-10P-44	1329256	07/28/2015	07/27/2016
Preamplifier1-26G	EM	EM01M26G	NA	03/10/2016	03/09/2017
Preamplifier26-40G	MITEQ	JS-26004000-27-5A	818471	07/23/2015	07/22/2017
Cable1-18G	HUBER SUHNER	Sucoflex 106	NA	11/25/2015	11/24/2016
Cable UP to 1G	HUBER SUHNER	RG 214/U	NA	10/02/2015	10/01/2016
SUCOFLEX 1GHz~40GHz cable	HUBER SUHNER	Sucoflex 102	27963/2&374211/2	11/03/2015	11/02/2017
Signal Generator	R&S	SMU200A	102330	03/28/2016	03/27/2017
Signal Generator	Anritsu	MG3692A	20311	11/04/2015	11/03/2016
2.4G Filter	Micro-Tronics	Brm50702	76	12/26/2015	12/25/2016
Test Software	Audix	E3 Ver:6.12023	N/A	N/A	N/A

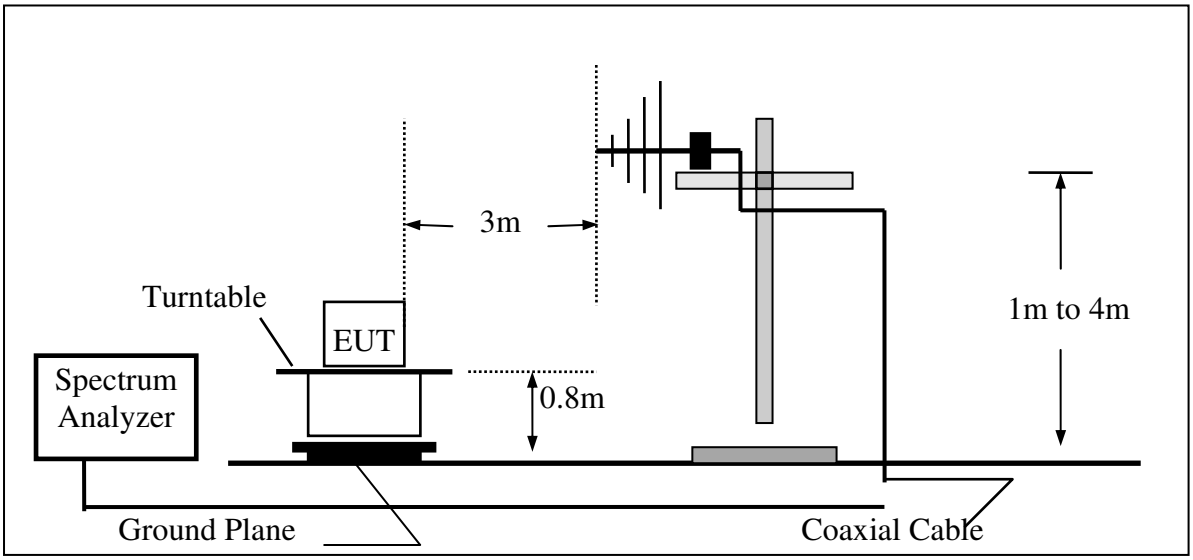
8.3 Test SET-UP:

8.3.1 Conducted Emission at antenna port:

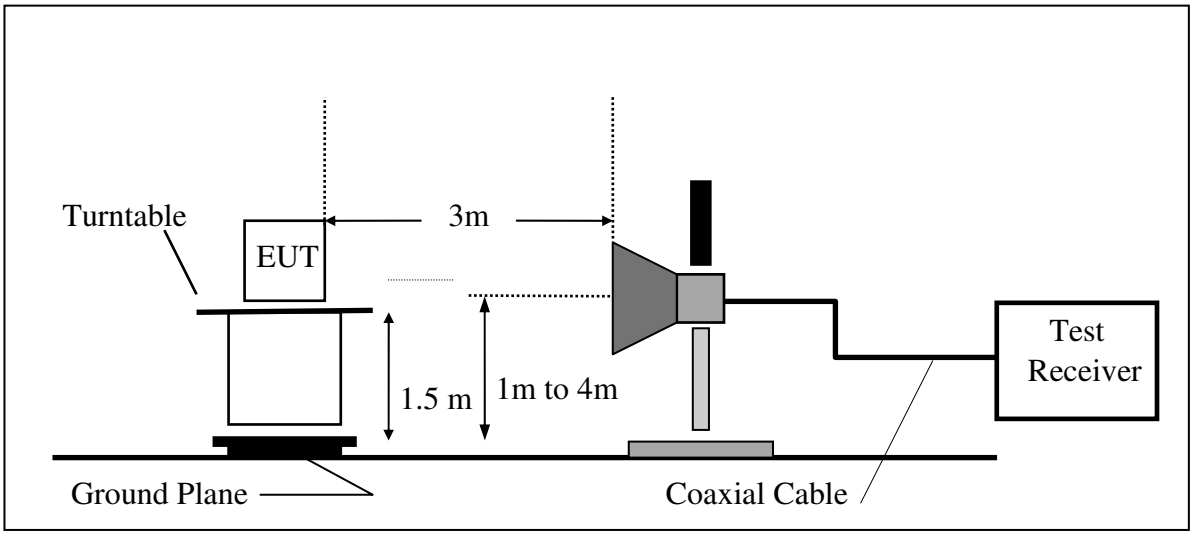
Refer to section 6.3 for details.

8.3.2 Radiated emission:

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Emission Test Set-UP Frequency Over 1 GHz



8.4 Measurement Procedure:

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set center frequency of spectrum analyzer = operating frequency.
4. Set the spectrum analyzer as RBW=100kHz, VBW=3* RBW, Span=25MHz, Sweep = auto
5. Mark Peak, 2.390GHz and 2.4835GHz and record the max. level.
6. Repeat above procedures until all frequency measured were complete.

Refer to section 11 and 12 emissions in restricted and non-restricted frequency bands Measurement Procedure of KDB Document: 558074 D01 DTS Meas Guidance v03r04

The measurement of unwanted emissions at the edge of the authorized frequency bands can be complicated by the leakage of RF energy from the fundamental emission into the RBW pass band. Thus, for measurements at the band edges, a narrower resolution bandwidth (no less than 10 kHz) can be used within the first 1 MHz beyond the fundamental emission, provided that that measured energy is subsequently integrated over the appropriate reference bandwidth (i.e., 100 kHz or 1 MHz). This integration can be performed using the band power function of the spectrum analyzer or by summing the spectral levels (in linear power units) over the appropriate reference bandwidth.

8.5 Field Strength Calculation:

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

8.6 Measurement Result:

Note: Refer to next page spectrum analyzer data chart and tabular data sheets.

Band Edges:

Radiated Emission: 802.11 b mode

Operation Mode	TX CH Low	Test Date	2016/05/06
Fundamental Frequency	2412 MHz	Test By	Dino
Temperature	25		

Operation Mode	TX CH High	Test Date	2016/05/06
Fundamental Frequency	2462 MHz	Test By	Dino
Temperature	25		

Radiated Emission: 802.11 g mode

Operation Mode	TX CH Low	Test Date	2016/05/06
Fundamental Frequency	2412 MHz	Test By	Dino
Temperature	25		

Operation Mode	TX CH High	Test Date	2016/05/06
Fundamental Frequency	2462 MHz	Test By	Dino
Temperature	25		

Radiated Emission: 802.11 n_20M mode

Operation Mode	TX CH Low	Test Date	2016/05/06
Fundamental Frequency	2412 MHz	Test By	Dino
Temperature	25		

Operation Mode	TX CH High	Test Date	2016/05/06
Fundamental Frequency	2462 MHz	Test By	Dino
Temperature	25		

Radiated Emission: 802.11n_40M mode

Operation Mode	TX CH Low	Test Date	2016/05/06
Fundamental Frequency	2422 MHz	Test By	Dino
Temperature	25		

Operation Mode	TX CH High	Test Date	2016/05/06
Fundamental Frequency	2452 MHz	Test By	Dino
Temperature	25		

9 SPURIOUS RADIATED EMISSION TEST

9.1 Standard Applicable

According to

9.5 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

9.6 Measurement Result:

Note: Refer to next page spectrum analyzer data chart and tabular data sheets.

Radiated Spurious Emission Measurement Result (below 1GHz) (worst case)

Operation Mode	802.11 n _40MHz TX	Test Date	2016/05/06
Channel Number	CH Low	Test By	Dino
Temperature	25		

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	802.11 n _40MHz TX	Test Date	2016/05/06
Channel Number	CH Mid	Test By	Dino
Temperature	25		

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	802.11 n _40MHz TX	Test Date	2016/05/06
Channel Number	CH High	Test By	Dino
Temperature	25		

Radiated Spurious Emission Measurement Result (above 1GHz) (worst case)

Operation Mode	802.11 n _40MHz TX	Test Date	2016/05/06
Channel Number	CH Low	Test By	Dino
Temperature	25		

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11 n _40MHz TX	Test Date	2016/05/06
Channel Number	CH Mid	Test By	Dino
Temperature	25		

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	802.11 n _40MHz TX	Test Date	2016/05/06
Channel Number	CH High	Test By	Dino
Temperature	25		

10 Peak Power Spectral Density

10.1 Standard Applicable:

According to

10.5 Measurement Result:

802.11b Mode

CH	Power Density Level dBm/3KHz	Maximum Limit (dBm)
Low	-12.12	8
Mid	-12.151	8
High	-13.29	8

802.11b

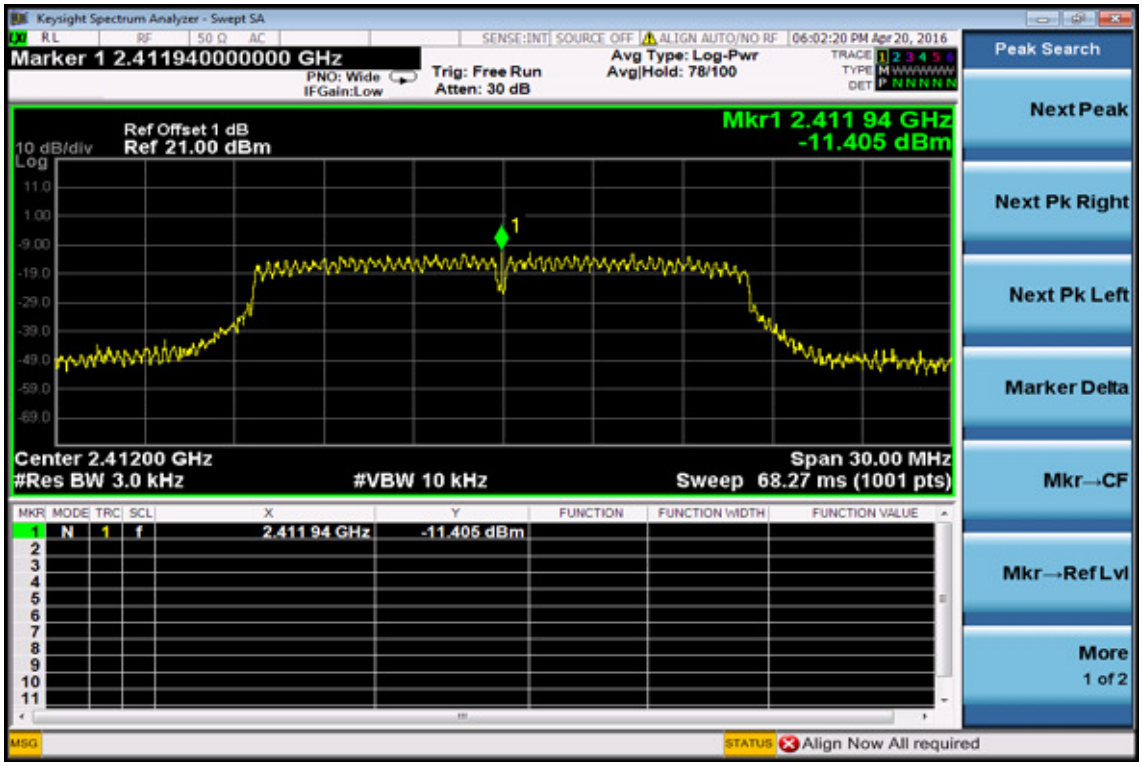
Power Spectral Density Test Plot (CH-Low)

Power Spectral Density Test Plot (CH-Mid)

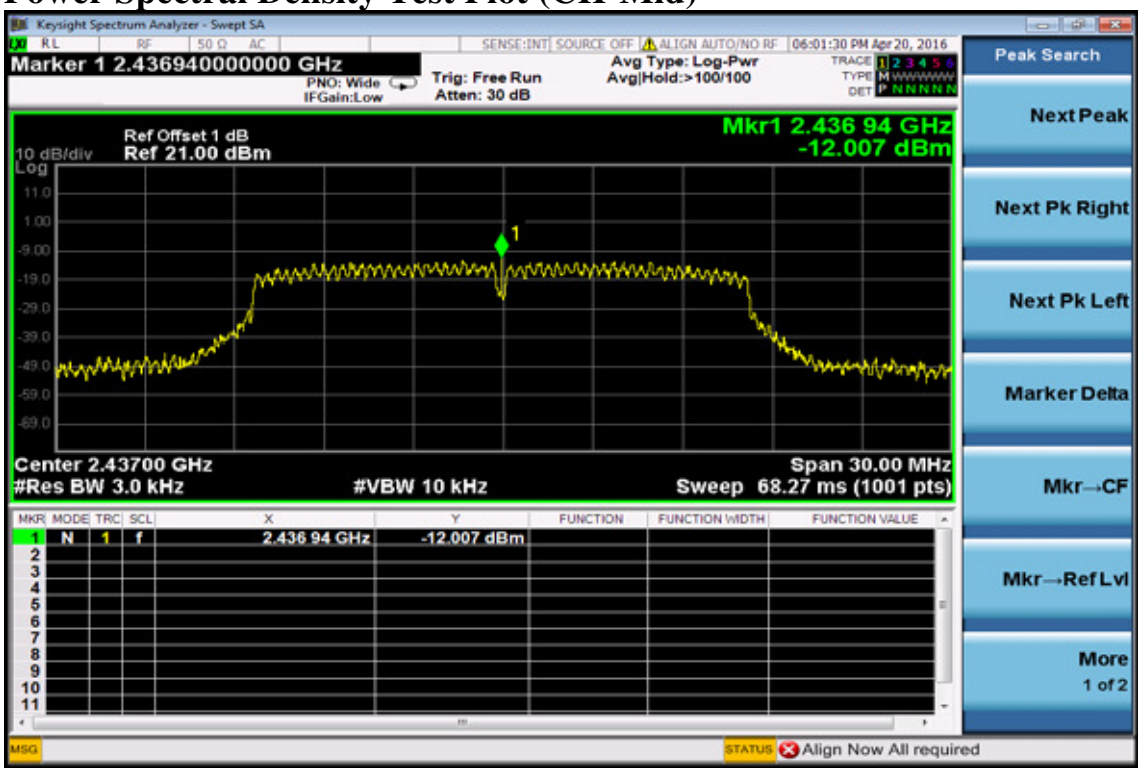
Power Spectral Density Test Plot (CH-High)

802.11g

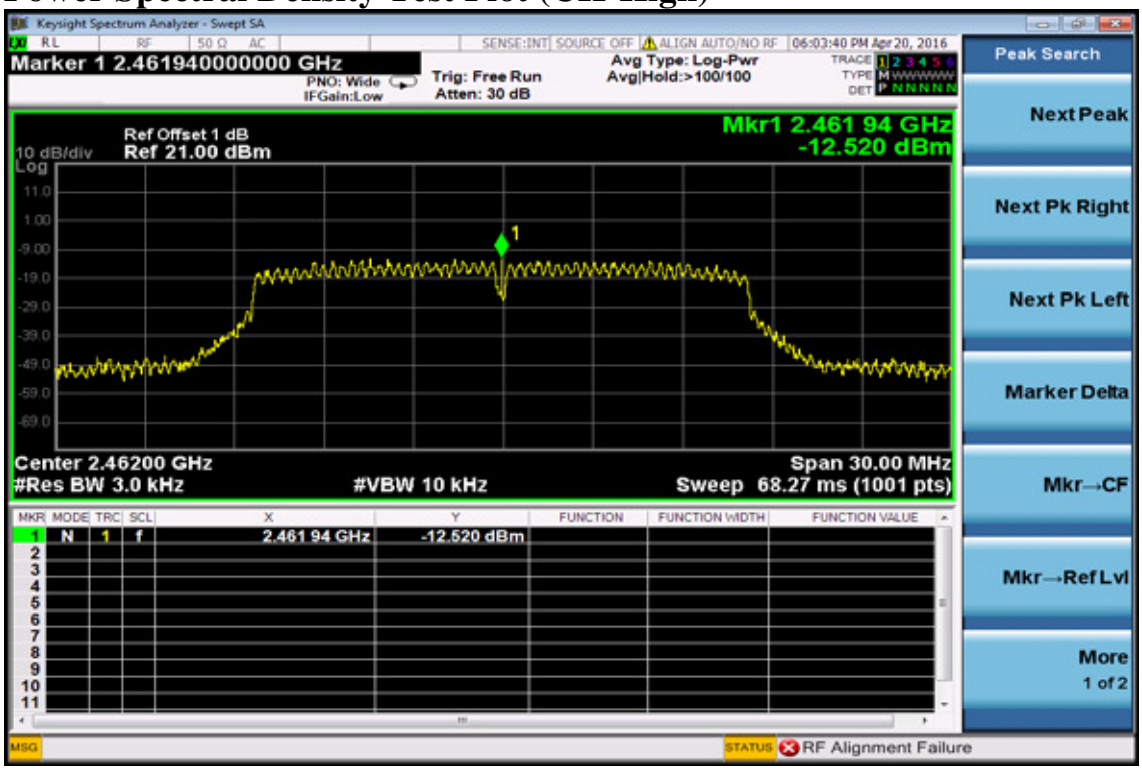
Power Spectral Density Test Plot (CH-Low)



Power Spectral Density Test Plot (CH-Mid)

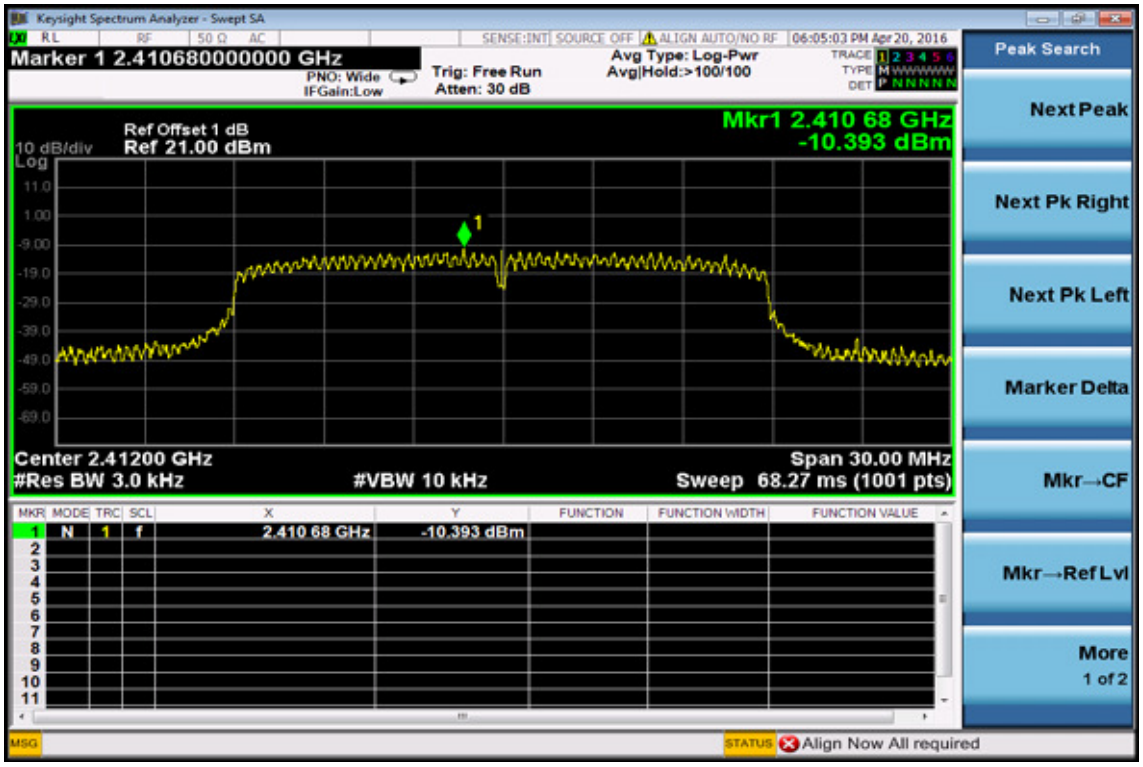


Power Spectral Density Test Plot (CH-High)

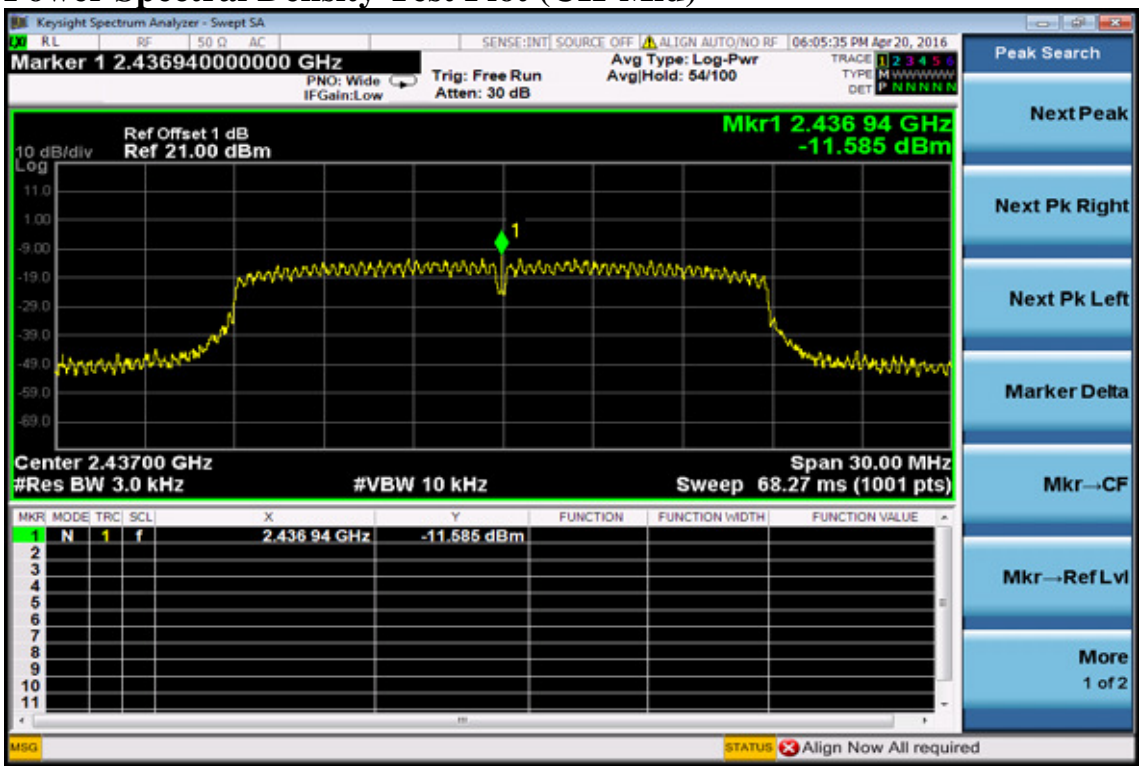


802.11n_20M

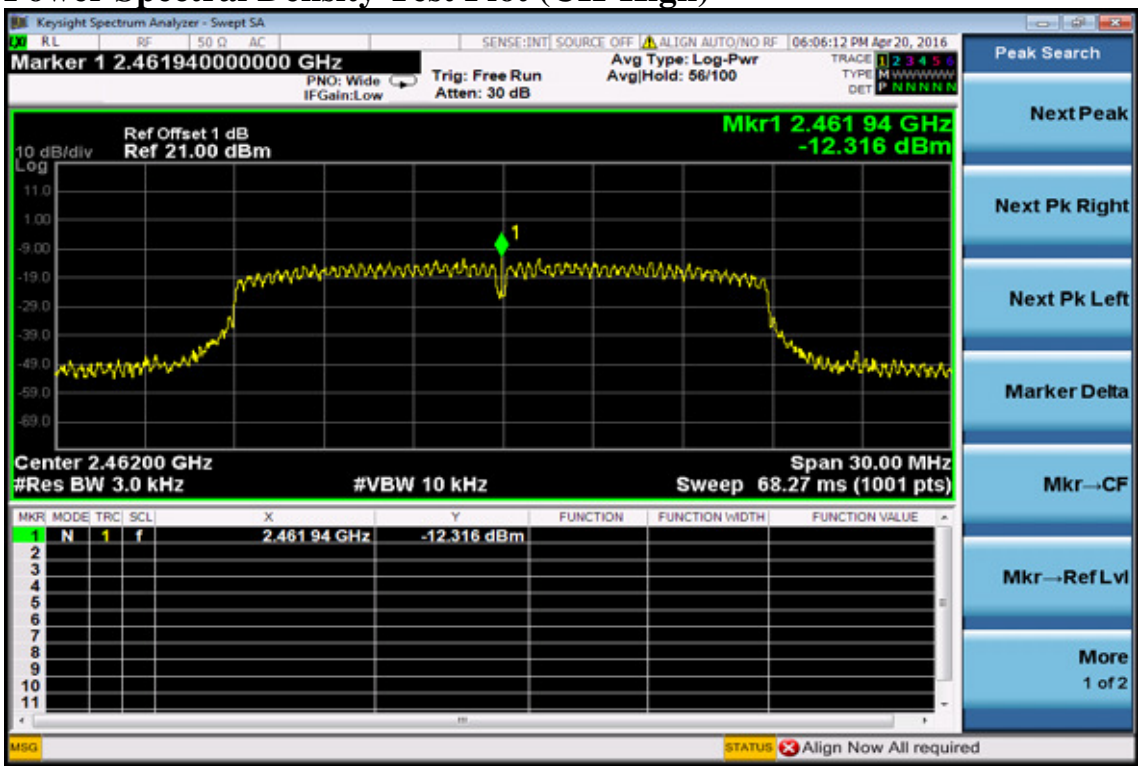
Power Spectral Density Test Plot (CH-Low)



Power Spectral Density Test Plot (CH-Mid)

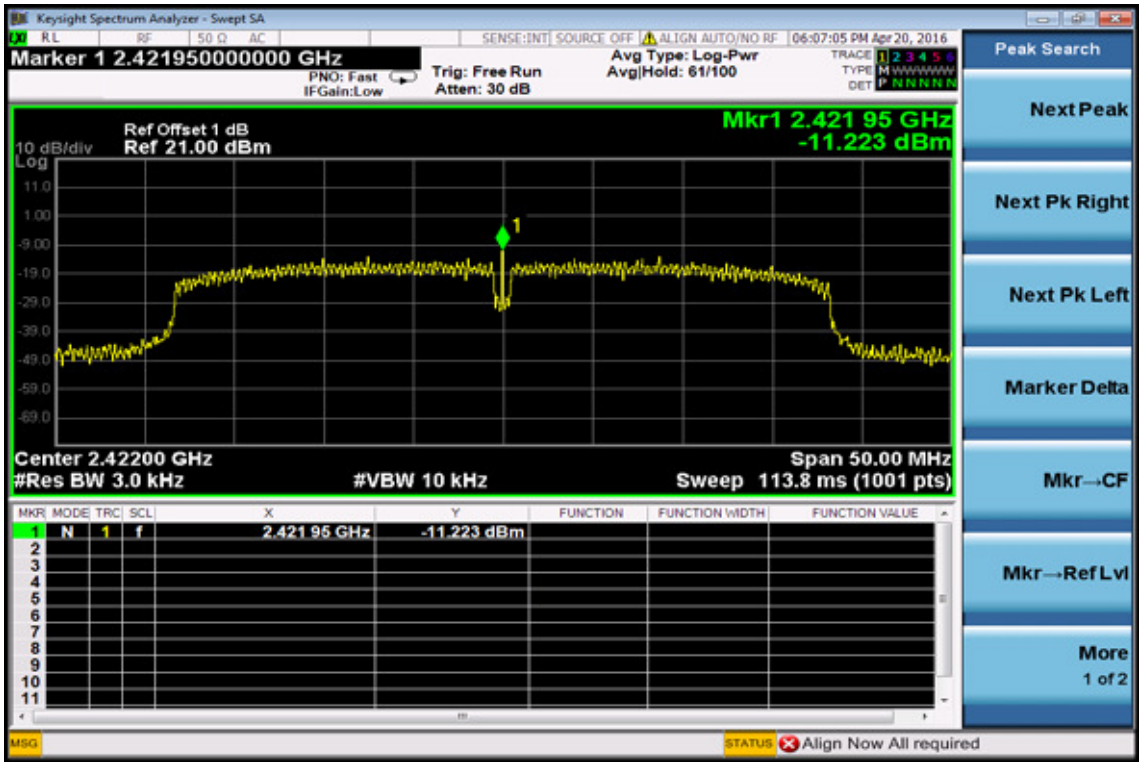


Power Spectral Density Test Plot (CH-High)



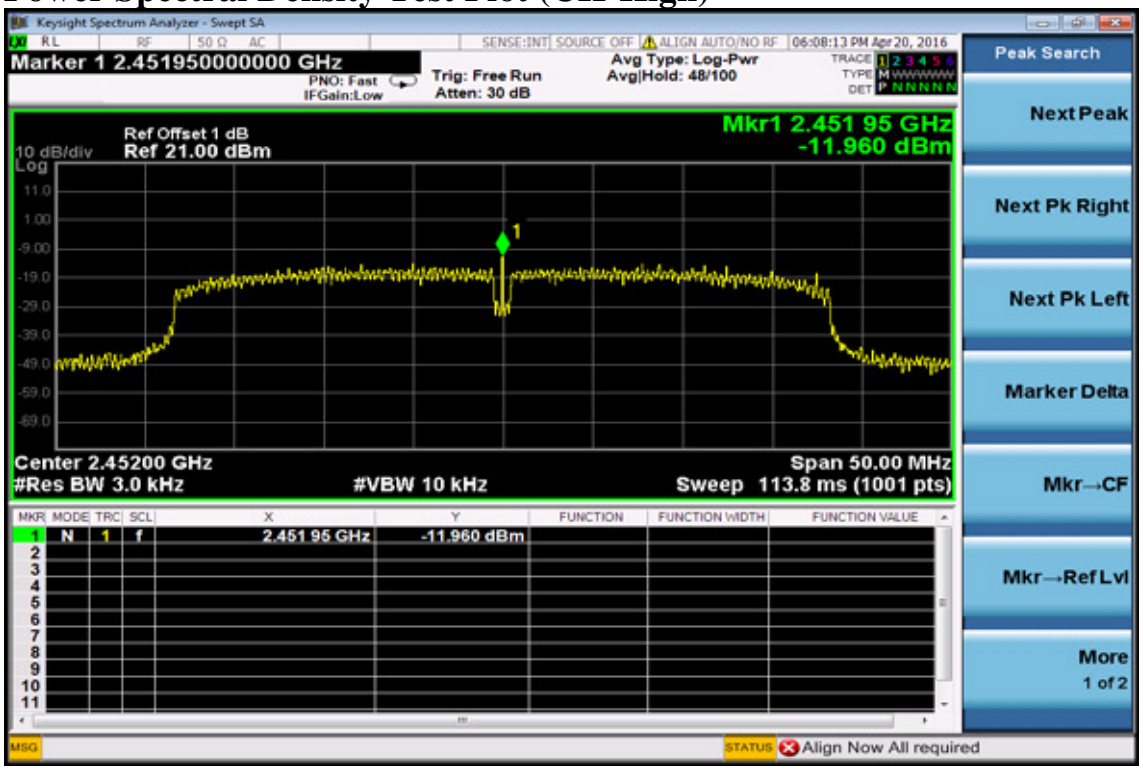
802.11n_40M

Power Spectral Density Test Plot (CH-Low)



Power Spectral Density Test Plot (CH-Mid)

Power Spectral Density Test Plot (CH-High)



11 ANTENNA REQUIREMENT

11.1 Standard Applicable

According to §15.203, Antenna requirement.

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

According to RSS-GEN 7.1.2, a transmitter can only be sold or operated with antennas with which it was certified. A transmitter may be certified with multiple antenna types. An antenna type comprises antennas having similar in-band and out-of-band radiation patterns. Testing shall be performed using the highest-gain antenna of each combination of transmitter and antenna type for which certification is being sought, with the transmitter output power set at the maximum level. Any antenna of the same type and having equal or lesser gain as an antenna that had been successfully tested for certification with the transmitter, will also be considered certified with the transmitter, and may be used and marketed with the transmitter. The manufacturer shall include with the application for certification a list of acceptable antenna types to be used with the transmitter.

When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on measurement or on data from the antenna manufacturer. Any antenna gain in excess of 6 dBi (6 dB above isotropic gain) shall be added to the measured RF output power before using the power limits specified in RSS-210 or RSS-310 for devices of RF output powers of 10 milliwatts or less. For devices of output powers greater than 10 milliwatts, except devices subject to RSS-210 Annex 8 (Frequency Hopping and Digital Modulation Systems Operating in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz Bands) or RSS-210 Annex 9 (Local Area Network Devices), the total antenna gain shall be added to the measured RF output power before using the specified power limits. For devices subject to RSS-210 Annex 8 or Annex 9, the antenna gain shall not be added.

11.2 Antenna Connected Construction

The directional gins of antenna used for transmitting is below table, and the antenna connector is designed with unique(IPEX) type RF connector and no consideration of replacement. Please see EUT photo and antenna spec. for details.

Antenna Designation:

	Manufacturer	Type	Gain (2.4GHz)
Ant	Shenzhen Tianyiyuan Elec&Technology CO., Ltd	Dipole Antenna	-3.9dBi