FCC TEST REPORT

FCC ID: 2BQIE-KF58

Report No.	:	SSP25060151-3E
Applicant	:	Shenzhen Weichenshi Technology Co., Ltd
Product Name	:	Industrial AIO Computer
Model Name	:	KF58, KF28, KF38, KF78, KF88, KF218, KF238, KF248, KF278, KF328, KF26, KF36, KF56, KF76, KF86, KF216, KF236, KF246, KF276, KF326
Test Standard	:	FCC Part 15.247
Date of Issue	:	2025-07-15

Shenzhen CCUT Quality Technology Co., Ltd.
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This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen CCUT Quality Technology Co., Ltd.

Test Report Basic Information

Applicant.....:	Shenzhen Weichenshi Technology Co., Ltd
Address of Applicant.....:	Room 301, No.28, Lutianyuan Road, Dongfang Community, Songgang Street, Baoan District, Shenzhen China
Manufacturer.....:	Shenzhen Weichenshi Technology Co., Ltd
Address of Manufacturer.....:	Room 301, No.28, Lutianyuan Road, Dongfang Community, Songgang Street, Baoan District, Shenzhen China
Product Name.....:	Industrial AIO Computer
Brand Name.....:	
Main Model.....:	KF58
Series Models.....:	KF28, KF38, KF78, KF88, KF218, KF238, KF248, KF278, KF328, KF26, KF36, KF56, KF76, KF86, KF216, KF236, KF246, KF276, KF326
Test Standard.....:	FCC Part 15 Subpart C KDB 558074 D01 15.247 Meas Guidance v05r02 ANSI C63.10-2013
Date of Test .....:	2025-06-11 to 2025-07-15
Test Result.....:	PASS
Tested By .....:	Choco Qiu (Choco Qiu)
Reviewed By.....:	Lieber Ouyang (Lieber Ouyang)
Authorized Signatory.....:	Lahm Peng (Lahm Peng)

Shenzhen CCUT Quality Technology Co., Ltd. APPROVED

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Revision History

Revision	Issue Date	Description	Revised By
V1.0	2025-07-15	Initial Release	Lahm Peng

1. General Information

1.1 Product Information

Product Name:	Industrial AIO Computer
Trade Name:	
Main Model:	KF58
Series Models:	KF28, KF38, KF78, KF88, KF218, KF238, KF248, KF278, KF328, KF26, KF36, KF56, KF76, KF86, KF216, KF236, KF246, KF276, KF326
Rated Voltage:	DC 12V
Power Adapter:	Input: AC 100-240V/50-60Hz, Output: DC 12V/3A
Test Sample No:	N/A
Hardware Version:	V1.0
Software Version:	V1.0
Note 1: The test data is gathered from a production sample, provided by the manufacturer. Note 2: The listed series name is different from the main model, but the circuit and electronic structure are the same, as declared by the manufacturer.	

Wireless Specification	
Wireless Standard:	802.11b/g/n
Operating Frequency:	2412MHz ~ 2462MHz for 802.11b/g/n(HT20) 2422MHz ~ 2452MHz for 802.11n(HT40)
RF Output Power:	4.70dBm (Conducted)
Number of Channel:	11/7
Channel Separation:	5MHz
Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Antenna Gain:	2.32dBi
Type of Antenna:	Internal Antenna
Type of Device:	☐ Portable Device ☒ Mobile Device ☐ Modular Device

1.2 Test Setup Information

List of Test Modes		
Test Mode	Description	Remark
TM1	802.11b	2412MHz/2437MHz/2462MHz
TM2	802.11g	2412MHz/2437MHz/2462MHz
TM3	802.11n(H20)	2412MHz/2437MHz/2462MHz
TM4	802.11n(H40)	2422MHz/2437MHz/2452MHz

List and Details of Auxiliary Cable			
Description	Length (cm)	Shielded/Unshielded	With/Without Ferrite
-	-	-	-
-	-	-	-

List and Details of Auxiliary Equipment			
Description	Manufacturer	Model	Serial Number
AC/DC ADAPTER	Shenzhen Jiuzhou Power Technology Co., Ltd	J482-1203000DI	-
-	-	-	-

List of Channels							
No. of Channel	Frequency (MHz)	No. of Channel	Frequency (MHz)	No. of Channel	Frequency (MHz)	No. of Channel	Frequency (MHz)
01	2412	05	2432	09	2452	13	--
02	2417	06	2437	10	2457	14	--
03	2422	07	2442	11	2462	15	--
04	2427	08	2447	12	--	16	--

1.3 Compliance Standards

Compliance Standards	
FCC Part 15 Subpart C	FEDERAL COMMUNICATIONS COMMISSION, RADIO FREQUENCY DEVICES, Intentional Radiators
All measurements contained in this report were conducted with all above standards	
According to standards for test methodology	
FCC Part 15 Subpart C	FEDERAL COMMUNICATIONS COMMISSION, RADIO FREQUENCY DEVICES, Intentional Radiators
KDB 558074 D01 15.247 Meas Guidance v05r02	GUIDANCE FOR COMPLIANCE MEASUREMENTS ON DIGITAL TRANSMISSION SYSTEM, FREQUENCY HOPPING SPREAD SPECTRUM SYSTEM, AND HYBRID SYSTEM DEVICES OPERATING UNDER SECTION 15.247 OF THE FCC RULES
ANSI C63.10-2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
Maintenance of compliance is the responsibility of the manufacturer or applicant. Any modification of the product, which result is lowering the emission, should be checked to ensure compliance has been maintained.	

1.4 Test Facilities

Laboratory Name:	**Shenzhen CCUT Quality Technology Co., Ltd.** 1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China
CNAS Laboratory No.:	L18863
A2LA Certificate No.:	6893.01
FCC Registration No:	583813
FCC Designation No.:	CN1373
ISED Registration No.:	CN0164
All measurement facilities used to collect the measurement data are located at 1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China.	

1.5 List of Measurement Instruments

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Conducted Emissions					
AMN	ROHDE&SCHWARZ	ENV216	101097	2024-08-07	2025-08-06
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	100242	2024-08-07	2025-08-06
Test Cable	N/A	Cable 5	N/A	2024-08-07	2025-08-06
EMI Test Software	FARA	EZ-EMC	EMEC-3A1+	N/A	N/A
Radiated Emissions					
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	100154	2024-08-07	2025-08-06
Spectrum Analyzer	KEYSIGHT	N9020A	MY48030972	2024-08-07	2025-08-06
Spectrum Analyzer	ROHDE&SCHWARZ	FSV40-N	101692	2024-08-07	2025-08-06
Amplifier	SCHWARZBECK	BBV 9743B	00251	2024-08-07	2025-08-06
Amplifier	HUABO	YXL0518-2.5-45	--	2024-08-07	2025-08-06
Amplifier	COM-MW	DLAN-18G-4G-02	10229104	2024-08-07	2025-08-06
Loop Antenna	DAZE	ZN30900C	21104	2024-08-03	2025-08-02
Broadband Antenna	SCHWARZBECK	VULB 9168	01320	2024-08-03	2025-08-02
Horn Antenna	SCHWARZBECK	BBHA 9120D	02553	2024-08-03	2025-08-02
Horn Antenna	COM-MW	ZLB7-18-40G-950	12221225	2024-08-03	2025-08-02
Attenuator	QUANJUDA	6dB	220731	2024-08-07	2025-08-06
Test Cable	N/A	Cable 1	N/A	2024-08-07	2025-08-06
Test Cable	N/A	Cable 2	N/A	2024-08-07	2025-08-06
Test Cable	N/A	Cable 3	N/A	2024-08-07	2025-08-06
Test Cable	N/A	Cable 4	N/A	2024-08-07	2025-08-06
Test Cable	N/A	Cable 8	N/A	2024-08-07	2025-08-06
Test Cable	N/A	Cable 9	N/A	2024-08-07	2025-08-06
EMI Test Software	FARA	EZ-EMC	FA-03A2 RE+	N/A	N/A
Conducted RF Testing					
RF Test System	MWRFTest	MW100-RFCB	220418SQS-37	2024-08-07	2025-08-06
Spectrum Analyzer	KEYSIGHT	N9020A	ATO-90521	2024-08-07	2025-08-06
RF Test Software	MWRFTest	MTS 8310	N/A	N/A	N/A
Laptop	Lenovo	ThinkPad E15 Gen 3	SPPOZ22485	N/A	N/A

1.6 Measurement Uncertainty

Test Item	Conditions	Uncertainty
Conducted Emissions	9kHz ~ 30MHz	±1.64 dB
Radiated Emissions	9kHz ~ 30MHz	±2.88 dB
	30MHz ~ 1GHz	±3.32 dB
	1GHz ~ 18GHz	±3.50 dB
	18GHz ~ 40GHz	±3.66 dB
Conducted Output Power	9kHz ~ 26GHz	±0.50 dB
Occupied Bandwidth	9kHz ~ 26GHz	±4.0 %
Conducted Spurious Emission	9kHz ~ 26GHz	±1.32 dB
Power Spectrum Density	9kHz ~ 26GHz	±0.62 dB

2. Summary of Test Results

FCC Rule	Description of Test Item	Result
FCC Part 15.203	Antenna Requirement	Passed
FCC Part 15.247(i)	RF Exposure(see the RF exposure report)	Passed
FCC Part 15.207	Conducted Emissions	Passed
FCC Part 15.209, 15.247(d), 15.205	Radiated Emissions	Passed
FCC Part 15.209, 15.247(d), 15.205	Band-edge Emissions(Radiated)	Passed
FCC Part 15.247(b)(3)	Maximum Conducted Output Power	Passed
FCC Part 15.247(a)(2)	Occupied Bandwidth	Passed
FCC Part 15.247(e)	Maximum Power Spectral Density	Passed
FCC Part 15.209, 15.247(d), 15.205	Band-edge Emissions(Conducted)	Passed
FCC Part 15.209, 15.247(d), 15.205	Conducted RF Spurious Emissions	Passed
Passed: The EUT complies with the essential requirements in the standard Failed: The EUT does not comply with the essential requirements in the standard N/A: Not applicable		

3. Antenna Requirement

3.1 Standard and Limit

According to FCC Part 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. 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.

3.2 Test Result

This product has an internal antenna, fulfill the requirement of this section.

4. Conducted Emissions

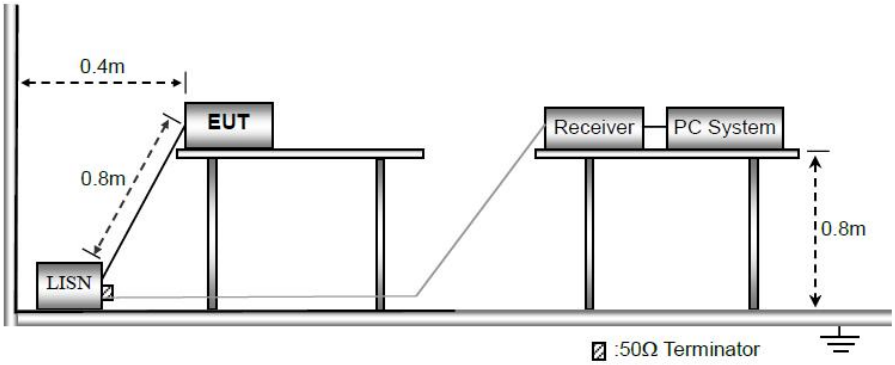
4.1 Standard and Limit

According to the rule FCC Part 15.207, Conducted emissions limit, the limit for a wireless device as below:

Frequency of Emission (MHz)	Conducted emissions (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50
Note 1: Decreases with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz Note 2: The lower limit applies at the band edges		

4.2 Test Procedure

Test is conducting under the description of ANSI C63.10 - 2013 section 6.2.



Test Setup Block Diagram

a) The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

b) The following is the setting of the receiver
Attenuation: 10dB
Start Frequency: 0.15MHz
Stop Frequency: 30MHz
IF Bandwidth: 9kHz

c) The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

d) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
e) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

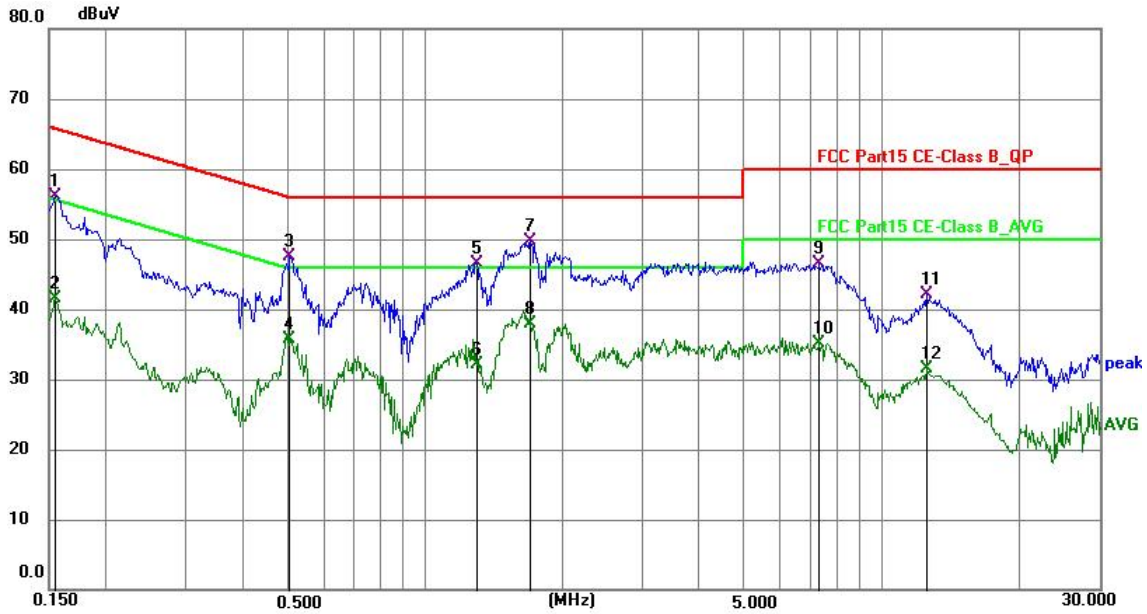
f) LISN is at least 80 cm from nearest part of EUT chassis.

g) For the actual test configuration, please refer to the related Item - photographs of the test setup.

4.3 Test Data and Results

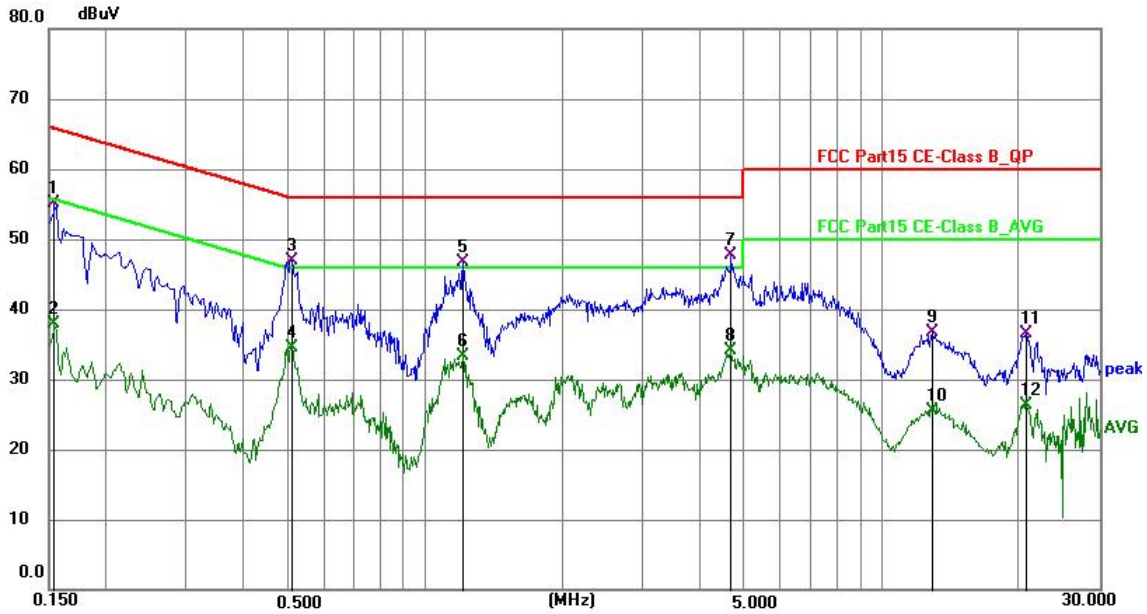
All of the 802.11b, 802.11g and 802.11n modes have been tested, the EUT complied with the FCC Part 15.207 standard limit for a wireless device, and with the worst case 802.11b_2412MHz as below:
Remark: Level = Reading + Factor, Margin = Level - Limit

Test Plots and Data of Conducted Emissions	
Tested Mode:	TM1
Test Voltage:	AC 120V/60Hz
Test Power Line:	Neutral
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1544	46.39	9.68	56.07	65.76	-9.69	QP	P
2	0.1544	31.91	9.68	41.59	55.76	-14.17	AVG	P
3	0.5050	37.81	9.70	47.51	56.00	-8.49	QP	P
4	0.5050	26.07	9.70	35.77	46.00	-10.23	AVG	P
5	1.3020	36.82	9.68	46.50	56.00	-9.50	QP	P
6	1.3020	22.37	9.68	32.05	46.00	-13.95	AVG	P
7 *	1.7070	39.94	9.69	49.63	56.00	-6.37	QP	P
8	1.7070	28.15	9.69	37.84	46.00	-8.16	AVG	P
9	7.2915	36.74	9.71	46.45	60.00	-13.55	QP	P
10	7.2915	25.38	9.71	35.09	50.00	-14.91	AVG	P
11	12.5295	32.47	9.70	42.17	60.00	-17.83	QP	P
12	12.5295	21.77	9.70	31.47	50.00	-18.53	AVG	P

Test Plots and Data of Conducted Emissions	
Tested Mode:	TM1
Test Voltage:	AC 120V/60Hz
Test Power Line:	Live
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1539	45.27	9.76	55.03	65.79	-10.76	QP	P
2	0.1539	28.21	9.76	37.97	55.79	-17.82	AVG	P
3	0.5100	37.23	9.77	47.00	56.00	-9.00	QP	P
4	0.5100	24.83	9.77	34.60	46.00	-11.40	AVG	P
5	1.2116	36.98	9.74	46.72	56.00	-9.28	QP	P
6	1.2116	23.64	9.74	33.38	46.00	-12.62	AVG	P
7 *	4.6725	37.94	9.80	47.74	56.00	-8.26	QP	P
8	4.6725	24.21	9.80	34.01	46.00	-11.99	AVG	P
9	12.9702	27.05	9.74	36.79	60.00	-23.21	QP	P
10	12.9702	15.71	9.74	25.45	50.00	-24.55	AVG	P
11	20.7149	26.77	9.82	36.59	60.00	-23.41	QP	P
12	20.7149	16.50	9.82	26.32	50.00	-23.68	AVG	P

5. Radiated Emissions

5.1 Standard and Limit

According to §15.247(d), In any 100 kHz 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 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

According to the rule FCC Part 15.209, Radiated emission limit for a wireless device as below:

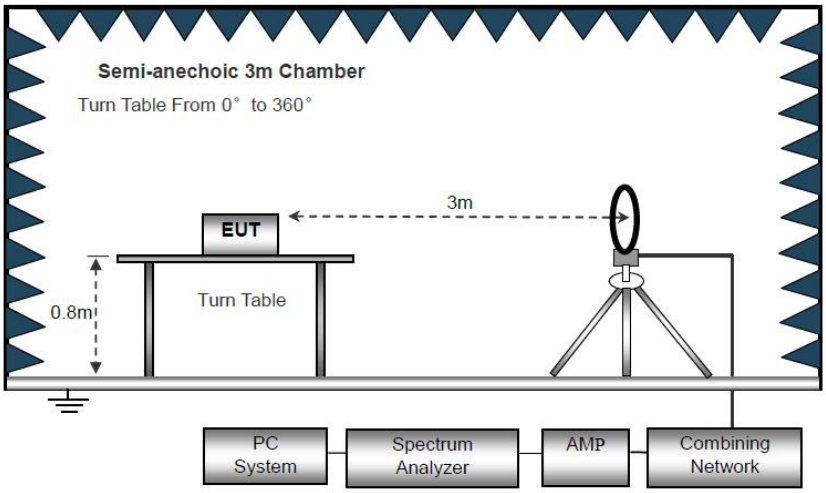
Frequency of Emission (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3
Note: The more stringent limit applies at transition frequencies.		

The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

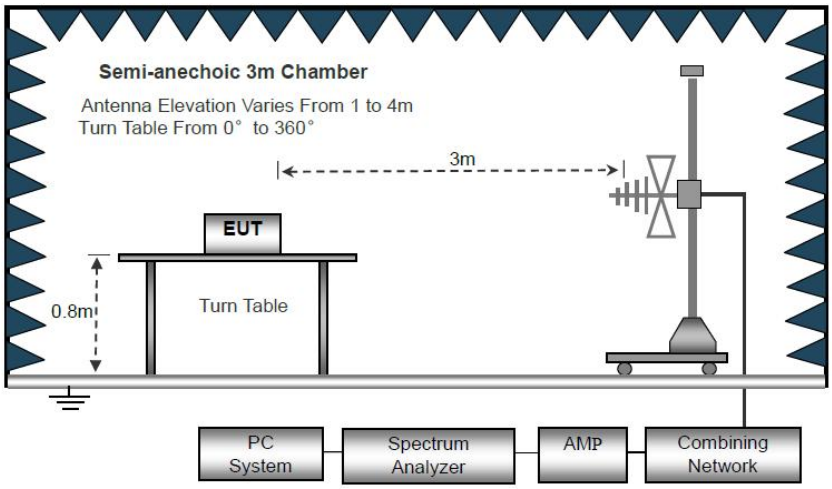
Note: Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

5.2 Test Procedure

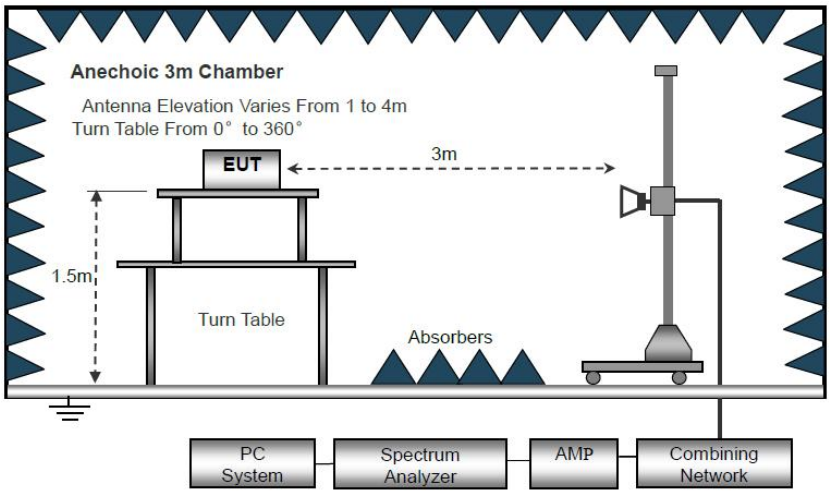
Test is conducting under the description of ANSI C63.10 - 2013 section 6.3 to 6.6.



Block Diagram of Radiated Emission Below 30MHz



Block Diagram of Radiated Emission From 30MHz to 1GHz



Block Diagram of Radiated Emission Above 1GHz

a) The EUT is placed on a turntable, which is 0.8m above ground plane for test frequency range blew 1GHz, and 1.5m above ground plane for test frequency range above 1GHz.

b) EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.

c) Use the following spectrum analyzer settings:
Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 1GHz, 100 kHz for f < 1 GHz, 10kHz for f < 30MHz
VBW ≥ RBW, Sweep = auto
Detector function = peak
Trace = max hold

d) The peak level, once corrected, must comply with the limit specified in Section 15.209. Set the RBW = 1MHz, VBW = 10Hz, Detector = PK for AV value, while maintaining all of the other instrument settings.

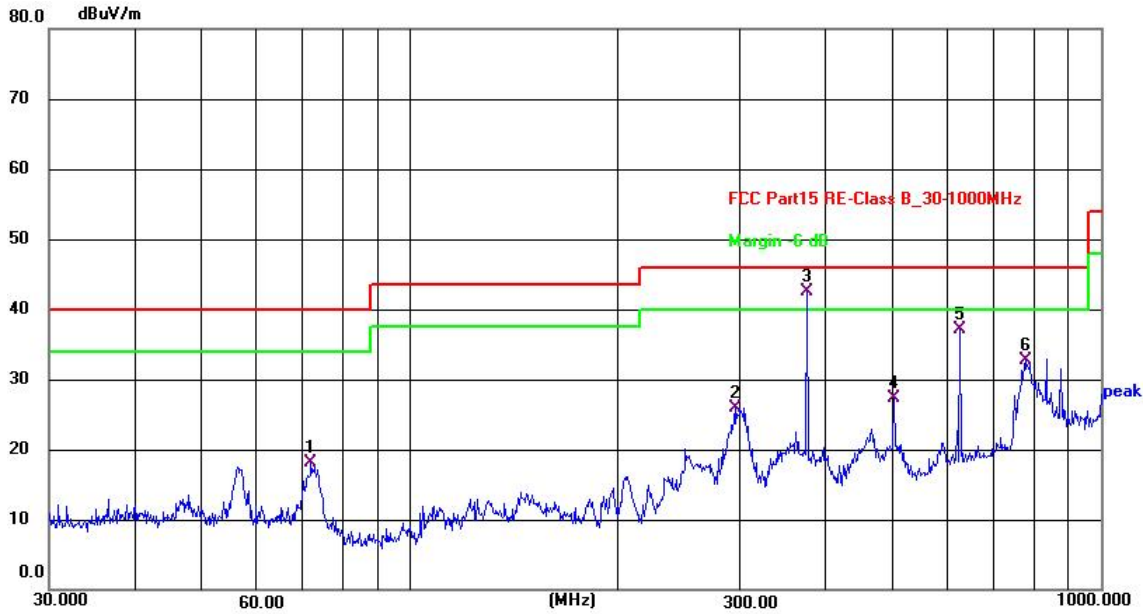
e) For the actual test configuration, please refer to the related item - EUT test photos.

5.3 Test Data and Results

All of the 802.11b, 802.11g and 802.11n modes have been tested, the EUT complied with the FCC Part 15.247 standard limit for a wireless device, and with the worst case 802.11b_2412MHz as below:

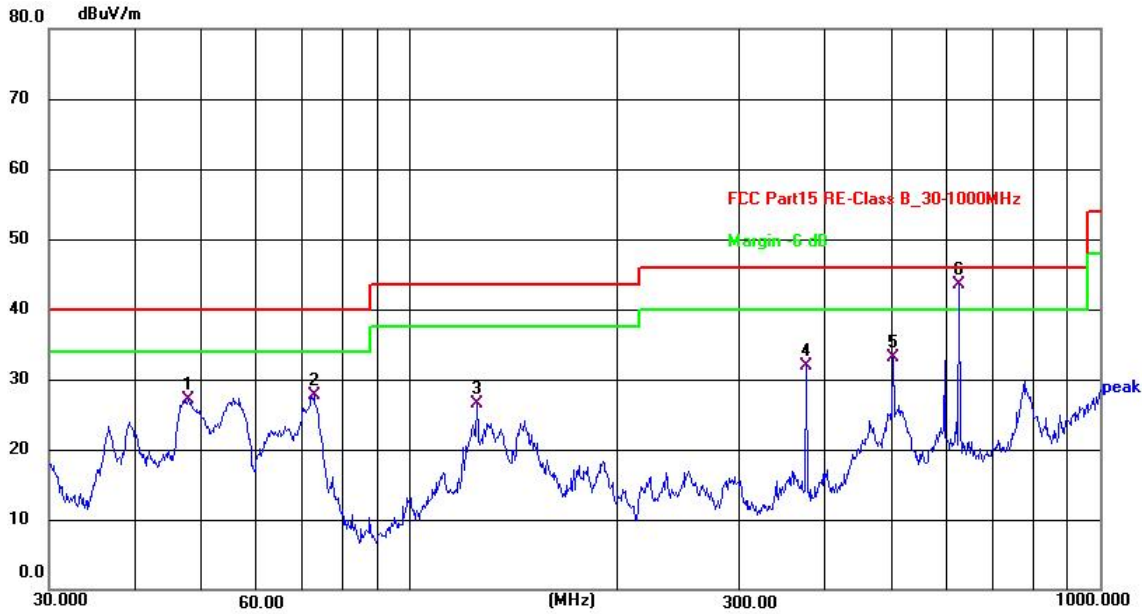
Remark: Level = Reading + Factor, Margin = Level - Limit

Radiated Emission Test Data (30MHz to 1GHz)	
Tested Mode:	TM1
Test Voltage:	AC 120V/60Hz
Test Antenna Polarization:	Horizontal
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	71.8320	37.75	-19.69	18.06	40.00	-21.94	QP
2	295.1467	42.97	-17.05	25.92	46.00	-20.08	QP
3 *	375.9384	57.80	-15.23	42.57	46.00	-3.43	QP
4	501.1790	40.12	-12.88	27.24	46.00	-18.76	QP
5	625.0780	47.48	-10.32	37.16	46.00	-8.84	QP
6	776.8777	41.00	-8.25	32.75	46.00	-13.25	QP

Radiated Emission Test Data (30MHz to 1GHz)	
Tested Mode:	TM1
Test Voltage:	AC 120V/60Hz
Test Antenna Polarization:	Vertical
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.8260	43.73	-16.62	27.11	40.00	-12.89	QP
2	72.5913	47.53	-19.83	27.70	40.00	-12.30	QP
3	125.0065	44.33	-17.75	26.58	43.50	-16.92	QP
4	375.9384	47.07	-15.23	31.84	46.00	-14.16	QP
5	501.1790	45.97	-12.88	33.09	46.00	-12.91	QP
6 *	625.0780	53.80	-10.32	43.48	46.00	-2.52	QP

Radiated Emission Test Data (Above 1GHz)							
Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
MHz	dBuV/m	dB/m	dBuV/m	dBuV/m	dB	H/V	PK/AV
Lowest Channel (802.11b_2412MHz)							
4824	76.51	-14.72	61.79	74	-12.21	H	PK
4824	60.49	-14.72	45.77	54	-8.23	H	AV
7236	63.83	-8.41	55.42	74	-18.58	H	PK
7236	46.93	-8.41	38.52	54	-15.48	H	AV
4824	77.62	-14.72	62.9	74	-11.1	V	PK
4824	58.17	-14.72	43.45	54	-10.55	V	AV
7236	65.3	-8.41	56.89	74	-17.11	V	PK
7236	47.09	-8.41	38.68	54	-15.32	V	AV
Middle Channel (802.11b_2437MHz)							
4874	78.87	-14.64	64.23	74	-9.77	H	PK
4874	62.7	-14.64	48.06	54	-5.94	H	AV
7311	65.87	-8.28	57.59	74	-16.41	H	PK
7311	47.47	-8.28	39.19	54	-14.81	H	AV
4874	76.41	-14.64	61.77	74	-12.23	V	PK
4874	57.33	-14.64	42.69	54	-11.31	V	AV
7311	62.48	-8.28	54.2	74	-19.8	V	PK
7311	45.54	-8.28	37.26	54	-16.74	V	AV
Highest Channel (802.11b_2462MHz)							
4924	77.83	-14.53	63.3	74	-10.7	H	PK
4924	61.91	-14.53	47.38	54	-6.62	H	AV
7386	63.9	-8.13	55.77	74	-18.23	H	PK
7386	45.11	-8.13	36.98	54	-17.02	H	AV
4924	73.63	-14.53	59.1	74	-14.9	V	PK
4924	57.8	-14.53	43.27	54	-10.73	V	AV
7386	63.05	-8.13	54.92	74	-19.08	V	PK
7386	49.58	-8.13	41.45	54	-12.55	V	AV

Note 1: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

Note 2: Testing is carried out with frequency rang 9kHz to the tenth harmonics. The measurements greater than 20dB below the limit from 9kHz to 30MHz.

Note 3: From 9kHz to 30MHz, 18 GHz to 26.5 GHz, no recording is required when the amplitude of stray radiation attenuates by more than 20 dB below the allowable value.

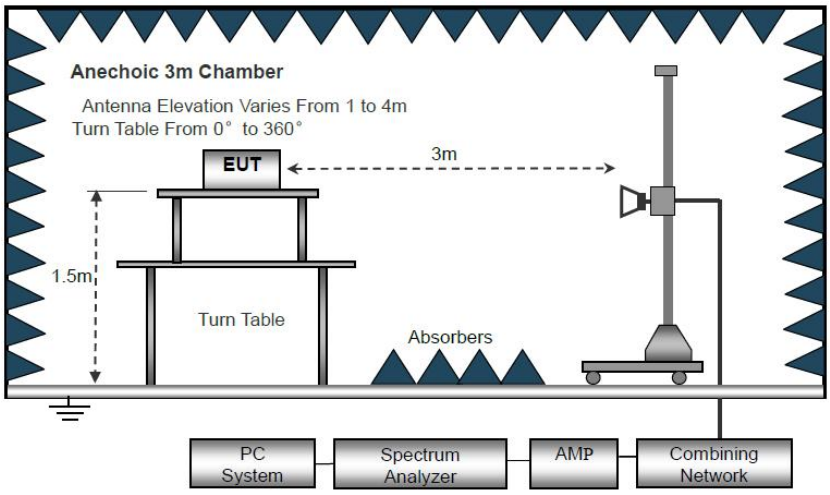
6. Band-edge Emissions(Radiated)

6.1 Standard and Limit

According to §15.247(d), In any 100 kHz 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 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

6.2 Test Procedure

Test is conducting under the description of ANSI C63.10 - 2013 section 6.3 to 6.6 and section 6.10.



Test Setup Block Diagram

As the radiated emissions testing, set the Lowest and Highest Transmitting Channel, observed the outside band of 2310MHz to 2400MHz and 2483.5MHz to 2500MHz, than mark the higher-level emission for comparing with the FCC rules.

6.3 Test Data and Results

Based on all tested data, the EUT complied with the FCC Part 15.247 standard limit, and with the worst case as below:

Radiated Emission Test Data (Band edge emissions)							
Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
MHz	dBuV/m	dB/m	dBuV/m	dBuV/m	dB	H/V	PK/AV
Lowest Channel (802.11n_2412MHz)							
2310	65.96	-21.34	44.62	74	-29.38	H	PK
2310	50.13	-21.34	28.79	54	-25.21	H	AV
2390	67.16	-20.96	46.2	74	-27.8	H	PK
2390	52.61	-20.96	31.65	54	-22.35	H	AV
2400	67.45	-20.91	46.54	74	-27.46	H	PK
2400	53.88	-20.91	32.97	54	-21.03	H	AV
2310	64.14	-21.34	42.8	74	-31.2	V	PK
2310	52.69	-21.34	31.35	54	-22.65	V	AV
2390	67.41	-20.96	46.45	74	-27.55	V	PK
2390	51.64	-20.96	30.68	54	-23.32	V	AV
2400	74.74	-20.91	53.83	74	-20.17	V	PK
2400	56.85	-20.91	35.94	54	-18.06	V	AV
Highest Channel (802.11n_2462MHz)							
2483.50	70.51	-20.51	50	74	-24	H	PK
2483.50	55.31	-20.51	34.8	54	-19.2	H	AV
2500	65.42	-20.43	44.99	74	-29.01	H	PK
2500	51.01	-20.43	30.58	54	-23.42	H	AV
2483.50	71.79	-20.51	51.28	74	-22.72	V	PK
2483.50	56.07	-20.51	35.56	54	-18.44	V	AV
2500	69.49	-20.43	49.06	74	-24.94	V	PK
2500	52.82	-20.43	32.39	54	-21.61	V	AV

Remark: Level = Reading + Factor, Margin = Level - Limit

7. Maximum Conducted Output Power

7.1 Standard and Limit

According to 15.247(b)(3). For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the *maximum conducted output power* is the highest total transmit power occurring in any mode.

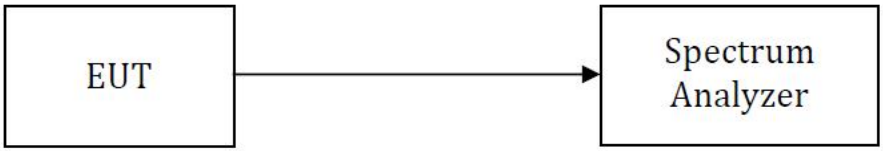
7.2 Test Procedure

A spectrum analyzer or similar device shall be used to observe a sample of the modulated transmitter's radio frequency power output.

1) A measurement instrument with an integrated channel bandwidth function may be used to automate the test process.

2) Connect the EUT to the RF input of the spectrum analyzer via a low loss RF cable

3) Set the spectrum analyzer: Set span to >1.5 times the OBW, RBW = 1% to 5% of the OBW, but do not exceed 1 MHz, VBW ≥ [3 × RBW], Sweep = auto; Detector Function = power averaging (rms),. Trace = Max hold.



Test Setup Block Diagram

7.3 Test Data and Results

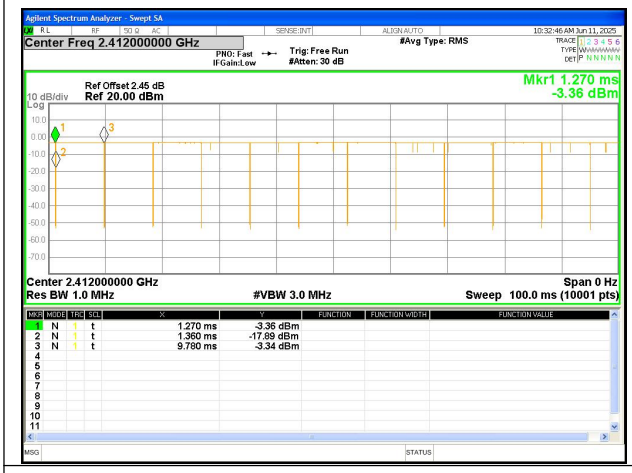
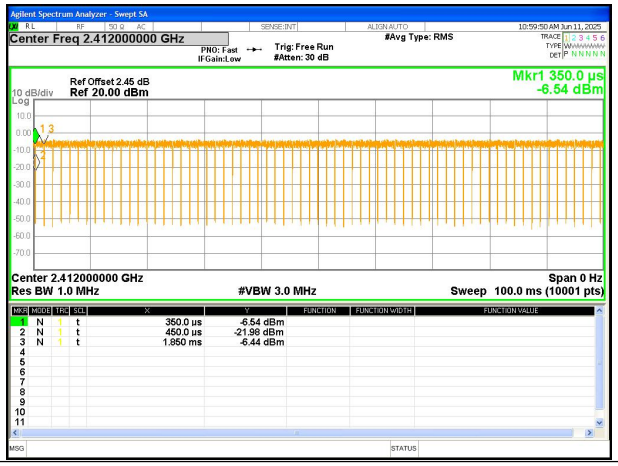
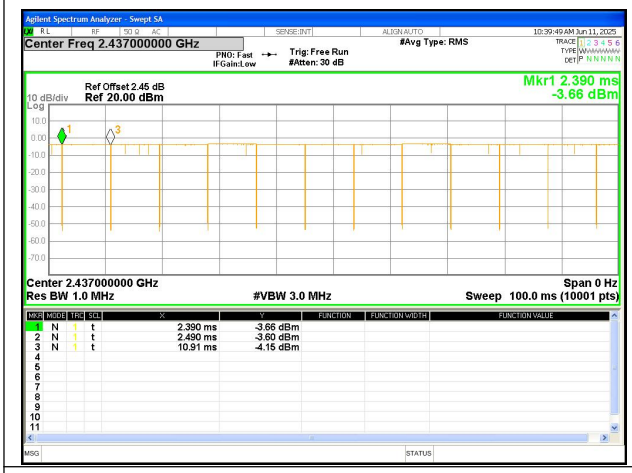
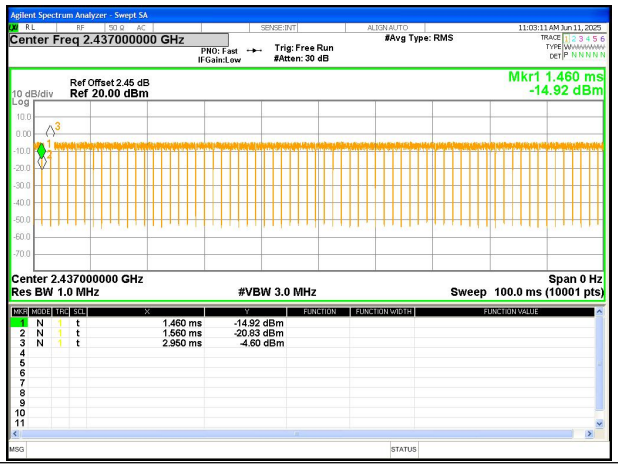
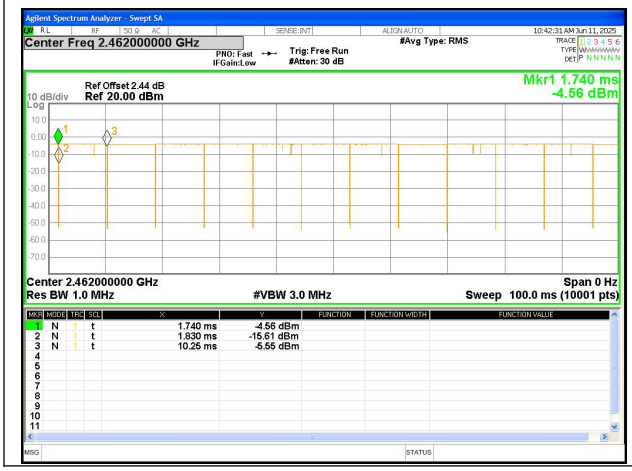
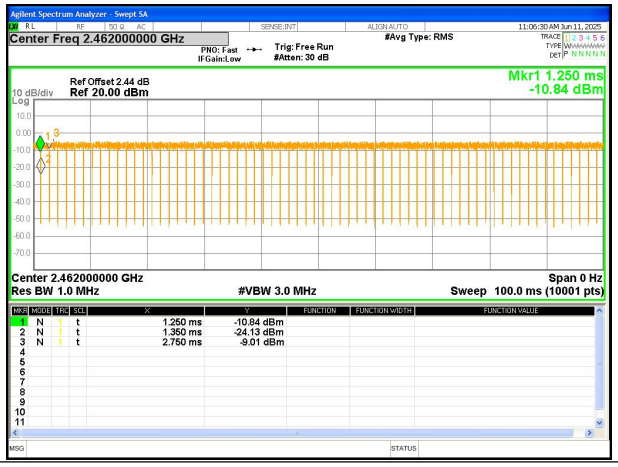
Duty Cycle

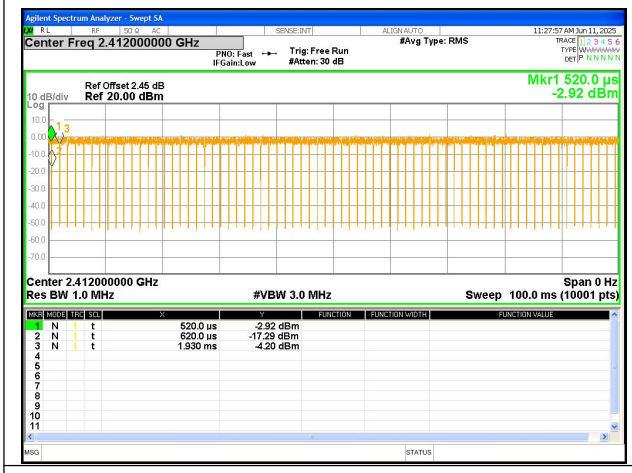
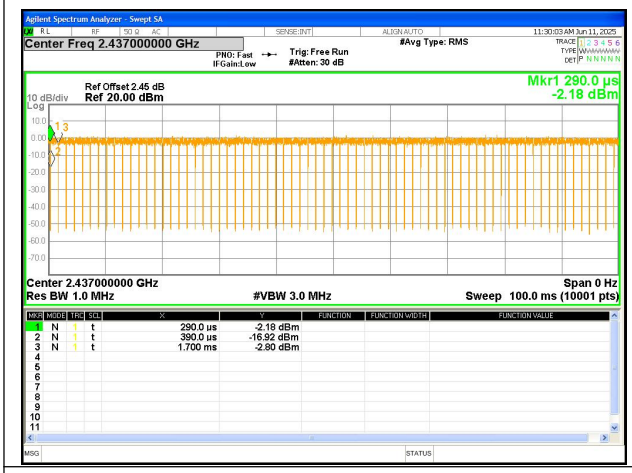
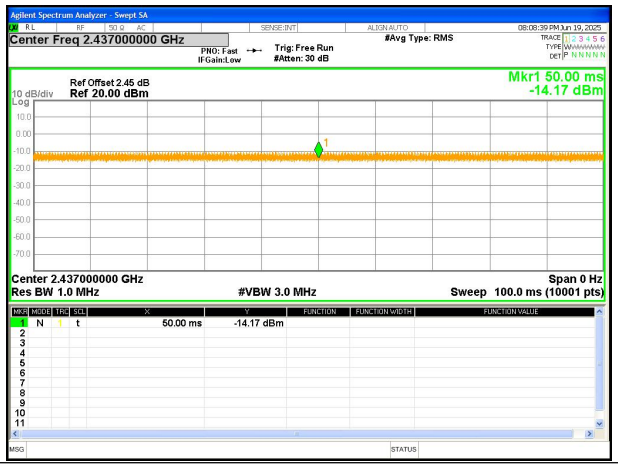
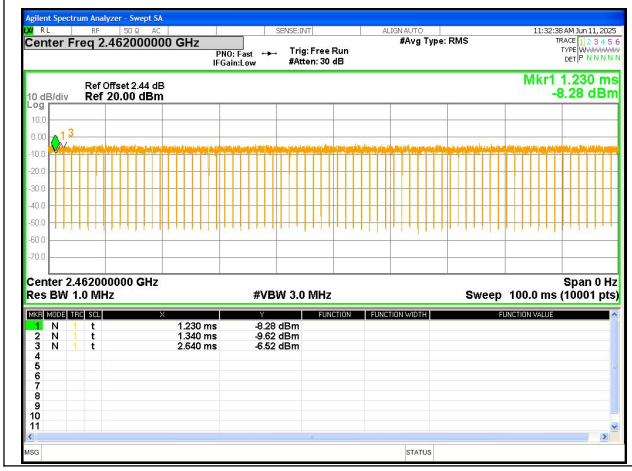
Test Mode	Test Channel MHz	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
802.11b	2412	98.94	0	0.12
	2437	98.83	0	0.12
	2462	98.94	0	0.12
802.11g	2412	93.33	0.3	0.71
	2437	93.29	0.3	0.72
	2462	93.33	0.3	0.71
802.11n(HT20)	2412	92.91	0.32	0.76
	2437	92.91	0.32	0.76
	2462	92.2	0.35	0.77
802.11n(HT40)	2422	100	0	0
	2437	100	0	0
	2452	100	0	0

Test Mode	Test Channel (MHz)	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Test Result
802.11b	2412	2.56	0	2.56	30	Pass
	2437	2.17	0	2.17	30	Pass
	2462	1.69	0	1.69	30	Pass
802.11g	2412	-0.31	0.3	-0.01	30	Pass
	2437	-0.86	0.3	-0.56	30	Pass
	2462	3.23	0.3	3.53	30	Pass
802.11n(HT20)	2412	3.89	0.32	4.21	30	Pass
	2437	4.38	0.32	4.70	30	Pass
	2462	-0.05	0.35	0.30	30	Pass
802.11n(HT40)	2422	3.61	0	3.61	30	Pass
	2437	3.23	0	3.23	30	Pass
	2452	3.17	0	3.17	30	Pass

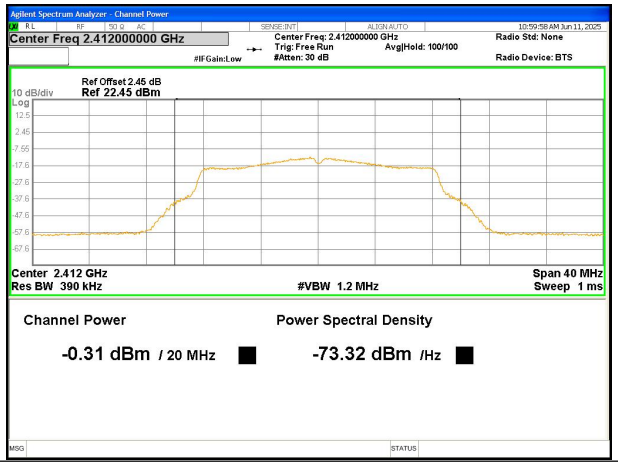
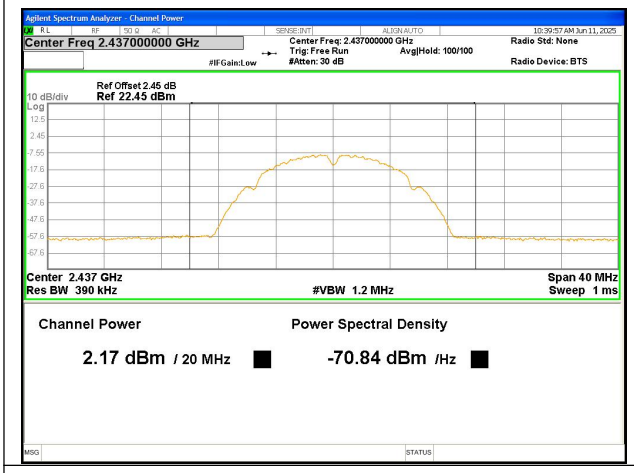
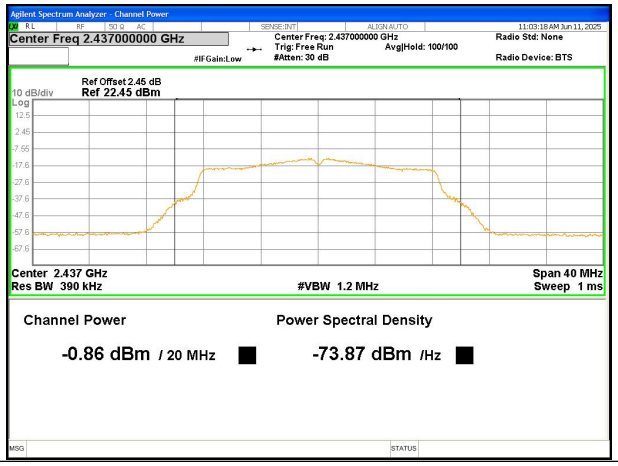
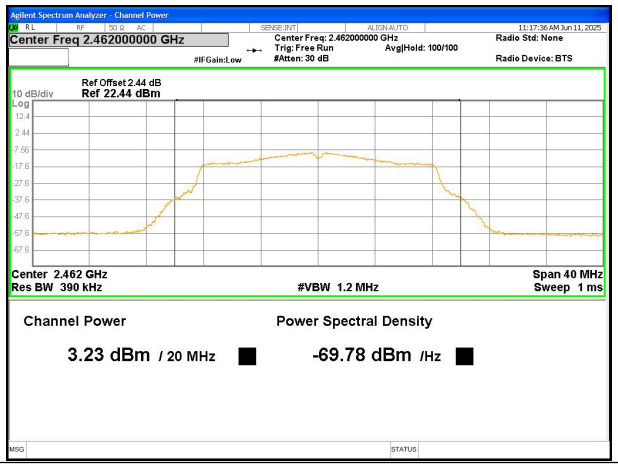
Note: Total Power = Conducted Power + Duty Factor

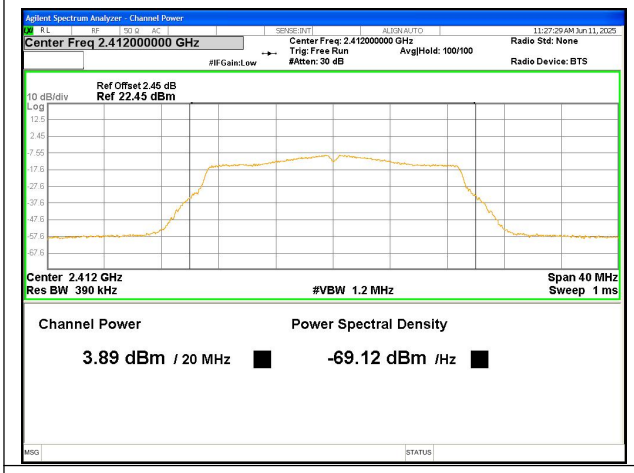
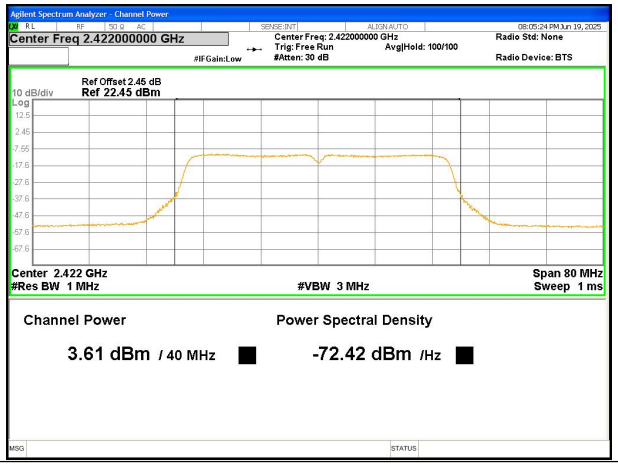
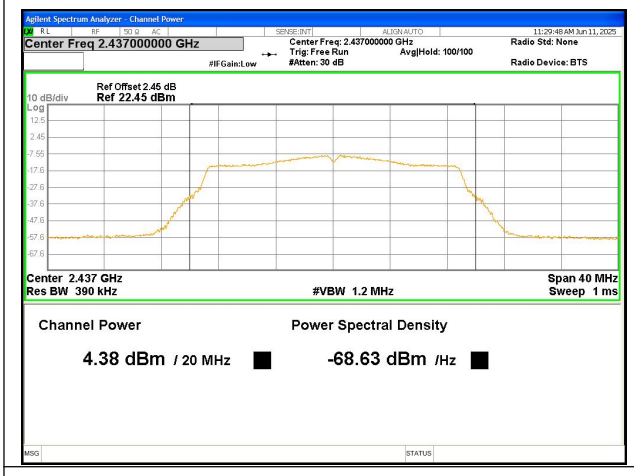
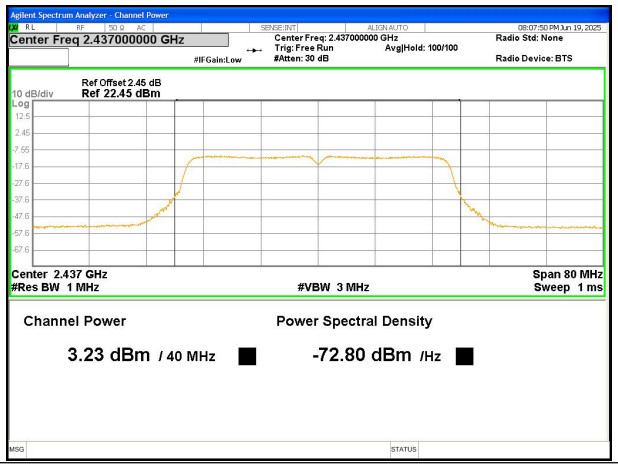
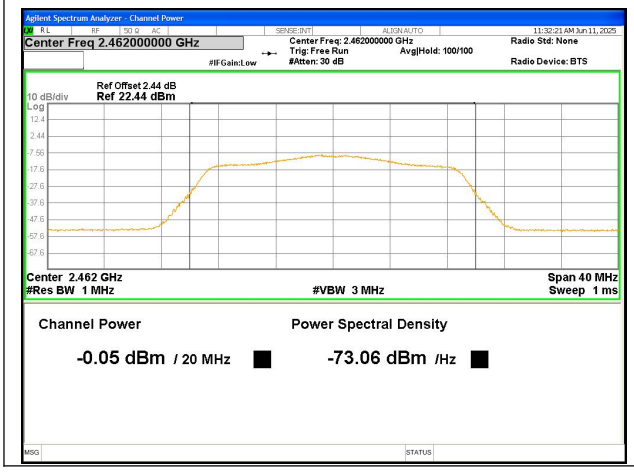
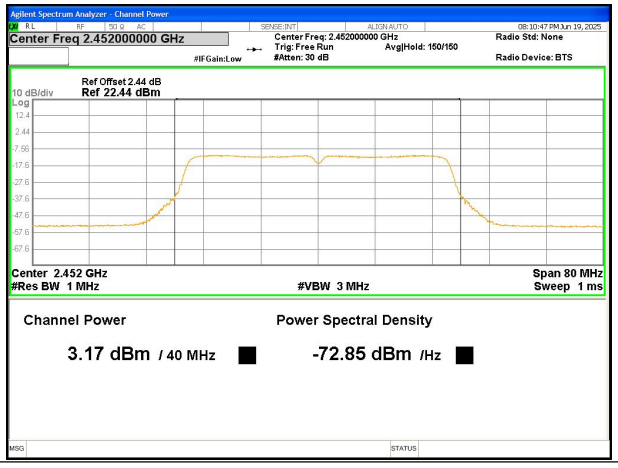
Duty Cycle

802.11b	802.11g
2412MHz	2412MHz
	
2437MHz	2437MHz
	
2462MHz	2462MHz
	

802.11n(HT20)	802.11n(HT40)
2412MHz	2422MHz
	
2437MHz	2437MHz
	
2462MHz	2452MHz
	

Conducted Output Power

802.11b	802.11g
2412MHz	2412MHz
	
2437MHz	2437MHz
	
2462MHz	2462MHz
	

802.11n(HT20)	802.11n(HT40)
2412MHz	2422MHz
	
2437MHz	2437MHz
	
2462MHz	2452MHz