

Test Report

FCC ID:2ARHS-W563-FL

Date of issue: Nov. 29, 2019

Report number: MTi19110301-5E4

Sample description: Smart Watch

Model(s): W563-FL

Applicant: Shanghai Hyco Genyong Technology Co., Ltd.

Address: Room 105, 1/F, Building B, No.999 of Huaxu Road, Qingpu District,
Shanghai, China

Date of test: Nov. 06, 2019 to Nov. 29, 2019

Shenzhen Microtest Co., Ltd.
<http://www.mtitest.com>

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Test Result Certification

Applicant's name: Shanghai Hyco Genyong Technology Co., Ltd.

Address: Room 105, 1/F, Building B, No.999 of Huaxu Road, Qingpu District, Shanghai, China

Manufacture's name: Shanghai Hyco Genyong Technology Co., Ltd.

Address: Room 105, 1/F, Building B, No.999 of Huaxu Road, Qingpu District, Shanghai, China

Product name: Smart Watch

Trademark: HYCO

Model name: W563-FL

Standards: FCC Part 15.407

Test procedure: ANSI C63.10-2013
KDB 789033 D02 General UNII Test Procedures New Rules v02r01

This device described above has been tested by Shenzhen Microtest Co., Ltd. and the test results show that the equipment under test (EUT) compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

Tested by:

Danny Xu

Nov. 29, 2019

Reviewed by:

Blue Zheng

Nov. 29, 2019

Approved by:

Smith Chen

Nov. 29, 2019

1 General information

1.1 Description of EUT

Equipment:	Smart Watch
Model name:	W563-FL
Serial model:	N/A
Model difference:	N/A
Frequency range:	U-NII-1: 5150 MHz to 5250 MHz, U-NII-2A: 5250 MHz to 5350 MHz, U-NII-2C: 5470 MHz to 5725 MHz, U-NII-3: 5725 MHz to 5850 MHz
Modulation type:	OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11a/n/ac;
Transfer rate:	802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n(HT20/HT40): MCS0-MCS15; 802.11ac(VHT20): NSS1, MCS0-MCS8 802.11ac(VHT40): NSS1, MCS0-MCS9 802.11ac(VHT80): NSS2,MCS0-MCS9;
Channel bandwidth:	802.11a: 20 MHz 802.11n: 20 MHz, 40 MHz 802.11ac: 20 MHz, 40 MHz, 80MHz
Antenna type:	FPC antenna
Antenna gain:	1.99dBi
Max. output power:	U-NII-1: 12.39 dBm U-NII-2A: 10.72 dBm U-NII-2C: 10.71 dBm U-NII-3: 11.18 dBm
Hardware version:	1.1
Software version:	20190923
Power supply:	DC 5V from adapter
Adapter information:	Model: A18A-050100U-US2 Input:AC100-240V 50/60Hz 0.2A Max Output: DC 5V 1A Max
Battery:	DC 3.8V 3600mAh



1.2 Operation channel list

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5150-5250 MHz Band 1 (U-NII-1)	36	5180	44	5220
	38	5190	46	5230
	40	5200	48	5240
	42	5210	50	5250

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5250-5350 MHz Band 2 (U-NII-2A)	52	5260	60	5300
	54	5270	62	5310
	56	5280	64	5320
	58	5290		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5470-5725 MHz Band 3 (U-NII-2C)	100	5500	122	5610
	102	5510	124	5620
	104	5520	126	5630
	106	5530	128	5640
	108	5540	130	5650
	110	5550	132	5660
	112	5560	134	5670
	114	5570	136	5680
	116	5580	138	5690
	118	5590	140	5700
	120	5600		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5825 MHz Band 4 (U-NII-3)	149	5745	157	5785
	151	5755	159	5795
	153	5765	161	5805
	155	5775	165	5825

1.3 Test channel list

Ch. #		Band I: 5150-5250 MHz	Band II: 5250-5350 MHz	Band III: 5470-5725MHz	Band IV : 5725-5850MHz
		802.11a	802.11a	802.11a	802.11a
L	Low	36	52	100	149
M	Middle	44	56	120	157
H	High	48	64	140	165

Ch. #		Band I: 5150-5250 MHz	Band II: 5250-5350 MHz	Band III: 5470-5725MHz	Band IV : 5725-5850MHz
		802.11n HT20/ ac VHT20	802.11n HT20/ ac VHT20	802.11n HT20/ ac VHT20	802.11n HT20/ ac VHT20
L	Low	36	52	100	149
M	Middle	44	56	120	157
H	High	48	64	140	165

Ch. #		Band I: 5150-5250 MHz	Band II: 5250-5350 MHz	Band III: 5470-5725MHz	Band IV : 5725-5850MHz
		802.11n HT40/ac VHT40	802.11n HT40/ac VHT40	802.11n HT40/ac VHT40	802.11n HT40/ac VHT40
L	Low	38	54	102	151
M	Middle	-	-	118	-
H	High	46	62	134	159

Ch. #		Band I: 5150-5250 MHz	Band II: 5250-5350 MHz	Band III: 5470-5725MHz	Band IV : 5725-5850MHz
		802.11ac VHT80	802.11ac VHT80	802.11ac VHT80	802.11ac VHT80
L	Low	-	-	-	-
M	Middle	42	58	106	155
H	High	-	-	-	-



1.4 Ancillary equipment list

Equipment	Model	S/N	Manufacturer	Certificate type
Adapter	A18A-050100U-US2	/	DongGuan AoHai Power Technology Co., Ltd	/

1.5 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Brand	Model/Type No.	Series No.	Note
/	/	/	/	/	/
/	/	/	/	/	/

Note:

- (1)The support equipment was authorized by Declaration of Confirmation.
- (2)For detachable type I/O cable should be specified the length in cm in 『Length』 column.

2 Summary of the Test Results

Test procedures according to the technical standards:

No.	Standard Section	Test Item	Result	Remark
1	15.203/15.407	Antenna Requirement	Pass	
2	15.407(a)	RF Output Power	Pass	
3	15.207	Power Line Conducted Emission	Pass	
4	15.407(a)	26dB Emission Bandwidth and Occupied bandwidth	Pass	
5	15.407(e)	6 dB bandwidth	Pass	
6	15.407(a)	Power Spectral Density	Pass	
7	15.407(b) 15.209	Radiation Spurious Emission	Pass	
8	15.407(b) 15.209	Conducted Spurious Emission	Pass	
9	15.407(g)	Frequency stability	Pass	

DFS

Band	Parameter	Limit	Result
UNII-2A	Channel Move Time	10 seconds	NT _{Note2}
	Channel Closing Transmission Time	200 ms + aggregate of 60 ms over remaining 10 second period	NT _{Note2}
	Non-occupancy Period	30 minutes	NT _{Note2}
UNII-2C	Channel Move Time	10 seconds	PASS
	Channel Closing Transmission Time	200 ms + aggregate of 60 ms over remaining 10 second period	PASS
	Non-occupancy Period	30 minutes	PASS

Note:

1. NT = Not Tested, NA = Not Applicable
2. The KDB905462 D02 v02: Each one channel selected between UNII-2A, UNII-2C is chosen for the testing. Therefore, we performed the only UNII-2C test
3. All Antenna Configuration of operation were investigated and the worst case configuration results are reported.



3 Test Facilities and Accreditations

3.1 Test laboratory

Test Laboratory	Shenzhen Microtest Co., Ltd
Location	No.102A & 302A, East Block, Hengfang Industrial Park, Xingye Road, Xixiang, Bao'an District, Shenzhen, Guangdong, China
FCC Registration No.:	448573

3.2 Environmental conditions

Temperature:	15°C~35°C
Humidity	20%~75%
Atmospheric pressure	98kPa~101kPa



3.3 Measurement uncertainty

The reported uncertainty of measurement $y \pm U$ where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$ providing a level of confidence of approximately 95 %

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 1.38\text{dB}$
2	RF power, conducted	$\pm 0.16\text{dB}$
3	Spurious emissions, conducted	$\pm 0.21\text{dB}$
4	All emissions, radiated(<1G)	$\pm 4.68\text{dB}$
5	All emissions, radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$

3.4 Test software

Software Name	Manufacturer	Model	Version
Bluetooth and WiFi Test System	Shenzhen JS tonskend co., ltd	JS1120-3	2.5.77.0418



4 Equipment list

Equipment No.	Equipment Name	Manufacturer	Model	Serial No.	Calibration date	Due date
MTI-E004	EMI Test Receiver	Rohde&schwarz	ESPI7	100314	2019/10/09	2020/10/08
MTI-E006	TRILOG Broadband Antenna	schwarzbeck	VULB 9163	9163-872	2019/10/15	2020/10/14
MTI-E014	amplifier	Hewlett-Packard	8447D	3113A06150	2019/10/09	2020/10/08
MTI-E036	Single path vehicle AMN(LISN)	Schwarzbeck	NNBM 8124	01175	2019/10/09	2020/10/08
MTI-E038	Low noise active vertical monopole antenna	Schwarzbeck	VAMP 9243	#565	2019/10/16	2020/10/15
MTI-E039	Biconical antenna	Schwarzbeck	BBA 9106	#164	2019/10/15	2020/10/14
MTI-E041	MXG Vector Signal Generator	Agilent	N5182A	MY49060455	2019/04/16	2020/04/15
MTI-E042	ESG Series Analog signal generator	Agilent	E4421B	GB40051240	2019/05/21	2020/05/20
MTI-E044	Thermometer clock humidity monitor	-	HTC-1	/	2019/04/17	2020/04/16
MTI-E062	Log Periodic Antenna	Schwarzbeck	VUSLP 9111B	#312	2018/04/11	2020/04/10
MTI-E063	Log Periodic Dipole Array Antenna	ETS-LINDGREN	3148B	00224524	2018/04/11	2020/04/10
MTI-E065	Amplifier	EMtrace	RP06A	00117	2019/04/29	2020/04/28
MTI-E071	PXA Signal Analyzer	Agilent	N9030A	MY51350296	2019/10/25	2020/10/24
MTI-E076	EMI Test Receiver	Rohde&schwarz	ESIB26	100273	2019/04/16	2020/04/15
MTI-E078	Synthesized Sweeper	Agilent	83752A	3610A01957	2019/04/16	2020/04/15
MTI-E079	DC Power Supply	Agilent	E3632A	MY40027695	2019/04/16	2020/04/15
MTI-E092	DC power source	shenzhen tongyuan	TY-500V 100A	201710190325689	2019/04/16	2020/04/15
MTI-E093	Artificial mains network	3ctest	LISN J50	ES3911805	2019/04/29	2020/04/28
MTI-E096	Power amplifier	Space-Dtronics	EWLNA0118G-P40	1852001	2019/04/17	2020/04/16
MTI-E097	Current Probe	SOLAR ELECTRONICS CO.	9207-1	220095-1	2019/04/21	2020/04/20
MTI-E098	Loop Sensor	SOLAR ELECTRONICS CO.	7334-1	220095-2	2019/04/16	2021/04/15
MTI-E0123	High and low temperature box	Heron	JHY-HT-80L	LGD-GDW-80	2019/10/09	2020/10/08
MTI-E081	MTI-E081	EPM Series Power Meter	Agilent	E4419B	2019/4/16	2021/4/15



MTI-E082	E-Series AVG Power Sensor	Agilent	E9304A H18	GB41290 699	2019/4/16	2021/4/15
Note: the calibration interval of the above test instruments is 12 or 24 months and the calibrations are traceable to international system unit (SI).						



5 Test Results

5.1 Antenna requirement

5.1.1 Standard requirement

15.203 requirement: For intentional device, according to 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.

5.1.2 EUT Antenna

The antenna is FPC antenna, which was permanently affixed to the device and un-replaced, complies with 15.203. In addition, the maximum antenna gain is 1.99dBi.



5.2 RF output power

5.2.1 Limit

For the 5.15-5.25 GHz band

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz band

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

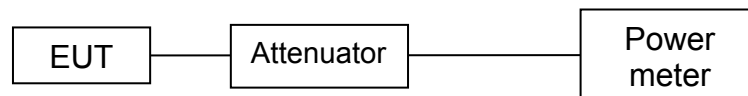
For the band 5.725-5.85 GHz

The maximum conducted output power over the frequency band of operation shall not exceed 1 W. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

5.2.2 Test procedure

The maximum peak conducted output power may be measured using a broadband Average RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the emission bandwidth and utilize a fast-responding diode detector.

5.2.3 Test setup



5.2.4 Test results

For U-NII-1

Modulation mode	Test Channel	Frequency(MHz)	Maximum Peak Conducted Power		Limit(mW)
			(dBm)	(mW)	
11a	CH36	5180	12.16	16.44	250
11a	CH40	5200	12.39	17.34	250
11a	CH48	5240	12.30	16.98	250
11n (HT20)	CH36	5180	10.05	10.12	250
11n (HT20)	CH40	5200	10.41	10.99	250
11n (HT20)	CH48	5240	10.40	10.96	250
11n (HT40)	CH38	5190	10.27	10.64	250
11n (HT40)	CH46	5230	10.62	11.53	250

Modulation mode	Test Channel	Frequency(MHz)	Maximum Peak Conducted Power		Limit(mW)
			(dBm)	(mW)	
11ac (VHT20)	CH36	5180	9.98	9.95	250
11ac (VHT20)	CH40	5200	10.56	11.38	250
11ac (VHT20)	CH48	5240	10.82	12.08	250
11ac (VHT40)	CH38	5190	10.02	10.05	250
11ac (VHT40)	CH46	5230	10.45	11.09	250
11ac (VHT80)	CH46	5210	10.68	11.69	250



For U-NII-2A

Modulation mode	Test Channel	Frequency(MHz)	Maximum Peak Conducted Power		Limit(mW)
			(dBm)	(mW)	
11a	CH52	5260	10.02	10.05	250
11a	CH56	5280	10.11	10.26	250
11a	CH64	5320	10.56	11.38	250
11n (HT20)	CH52	5260	10.12	10.28	250
11n (HT20)	CH56	5280	10.20	10.47	250
11n (HT20)	CH64	5320	10.67	11.67	250
11n (HT40)	CH54	5270	10.29	10.69	250
11n (HT40)	CH62	5310	10.59	11.46	250

Modulation mode	Test Channel	Frequency(MHz)	Maximum Peak Conducted Power		Limit(mW)
			(dBm)	(mW)	
11ac (VHT20)	CH52	5260	10.02	10.05	250
11ac (VHT20)	CH56	5280	10.24	10.57	250
11ac (VHT20)	CH64	5320	10.72	11.80	250
11ac (VHT40)	CH54	5270	10.36	10.86	250
11ac (VHT40)	CH62	5310	10.68	11.69	250
11ac (VHT80)	CH58	5290	10.63	11.56	250



For U-NII-2C

Modulation mode	Test Channel	Frequency(MHz)	Maximum Peak Conducted Power		Limit(mW)
			(dBm)	(mW)	
11a	CH100	5500	10.63	11.56	250
11a	CH120	5600	9.96	9.91	250
11a	CH140	5700	10.59	11.46	250
11n (HT20)	CH100	5500	10.47	11.14	250
11n (HT20)	CH120	5600	9.45	8.81	250
11n (HT20)	CH140	5700	10.68	11.69	250
11n (HT40)	CH102	5510	10.61	11.51	250
11n (HT40)	CH118	5590	9.84	9.64	250
11n (HT40)	CH134	5670	10.32	11.56	250

Modulation mode	Test Channel	Frequency(MHz)	Maximum Peak Conducted Power		Limit(mW)
			(dBm)	(mW)	
11ac (VHT20)	CH100	5500	10.82	12.08	250
11ac (VHT20)	CH120	5600	10.30	10.72	250
11ac (VHT20)	CH140	5700	10.55	11.35	250
11ac (VHT40)	CH102	5510	10.71	11.78	250
11ac (VHT40)	CH118	5590	10.30	10.72	250
11ac (VHT40)	CH134	5670	10.30	10.72	250
11ac (VHT80)	CH106	5530	10.64	11.59	250



For U-NII-3

Modulation mode	Test Channel	Frequency(MHz)	Maximum Peak Conducted Power		Limit(mW)
			(dBm)	(mW)	
11a	CH149	5745	10.97	12.50	1000
11a	CH157	5785	10.59	11.46	1000
11a	CH165	5825	11.00	12.59	1000
11n (HT20)	CH149	5745	10.71	11.78	1000
11n (HT20)	CH157	5785	10.02	10.05	1000
11n (HT20)	CH165	5825	10.56	11.38	1000
11n (HT40)	CH151	5755	10.62	11.53	1000
11n (HT40)	CH159	5795	10.47	11.14	1000

Modulation mode	Test Channel	Frequency(MHz)	Maximum Peak Conducted Power		Limit(mW)
			(dBm)	(mW)	
11ac (VHT20)	CH149	5745	10.61	11.51	1000
11ac (VHT20)	CH157	5785	10.21	10.50	1000
11ac (VHT20)	CH165	5825	11.02	12.65	1000
11ac (VHT40)	CH151	5755	11.18	13.12	1000
11ac (VHT40)	CH159	5795	10.97	12.50	1000
11ac (VHT80)	CH155	5775	11.17	13.09	1000



5.3 Power line conducted emission

5.3.1 Limits

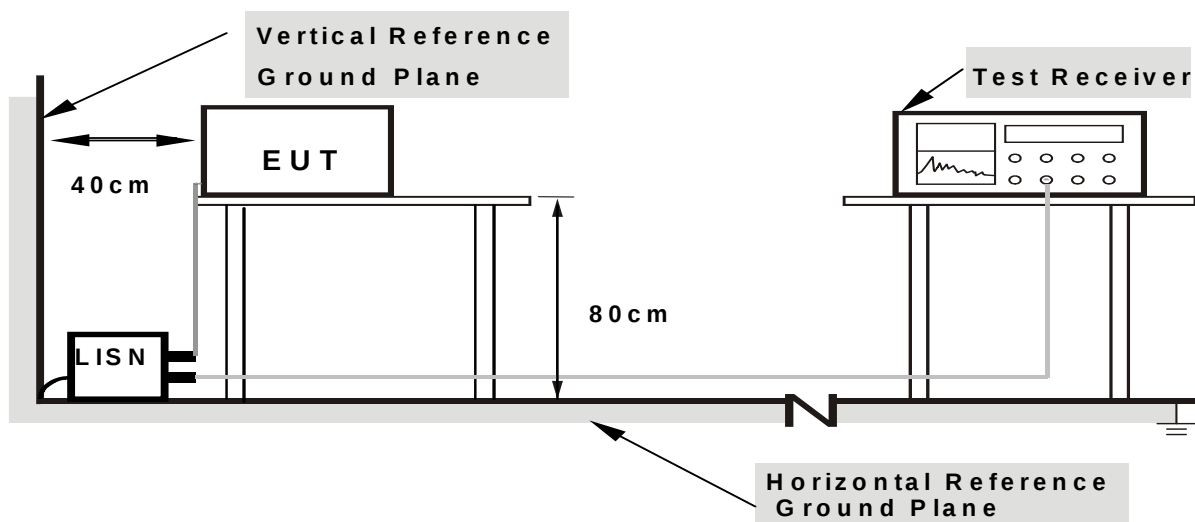
FREQUENCY (MHz)	Class B (dBuV)	
	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note

(1)The tighter limit applies at the band edges.

(2)The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

5.3.2 Test setup



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes



5.3.3 Test procedure

a. EUT Operating Conditions

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 table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

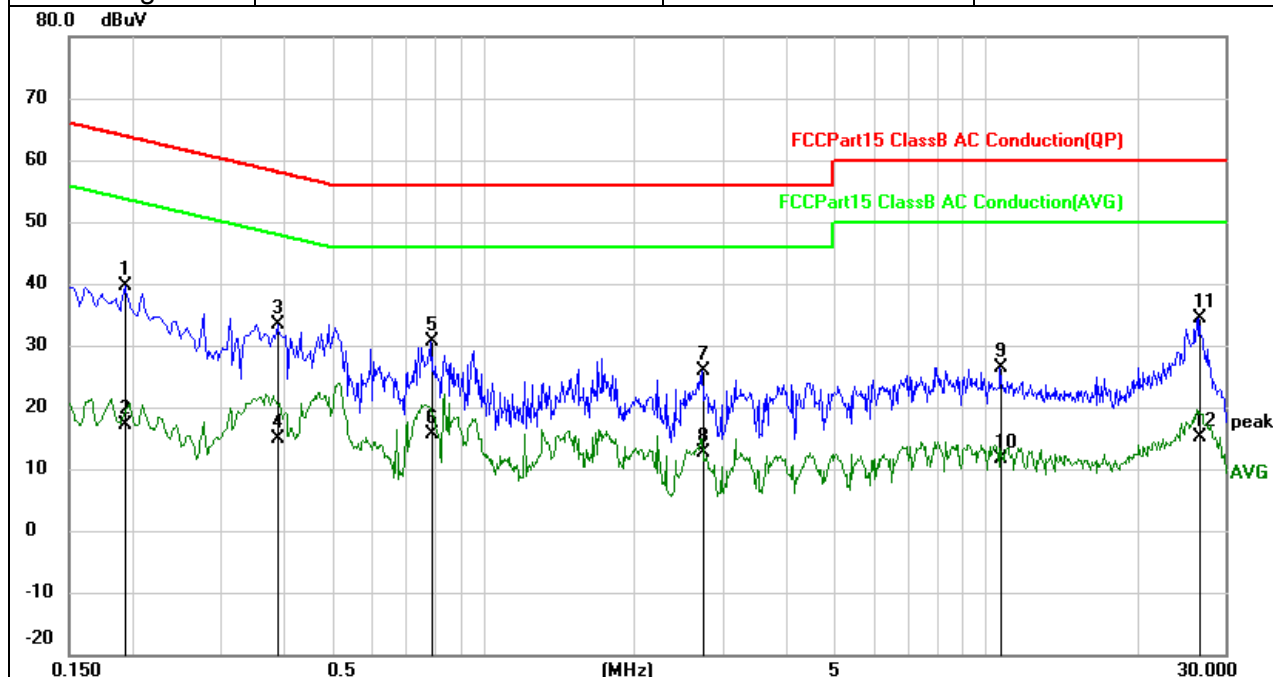
- c. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- 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 at least 80 cm from nearest part of EUT chassis.

For the actual test configuration, please refer to the related Item –EUT Test Photos.

5.3.4 Test results

Note1: Emission Level = Reading Level + Factor, Margin = Emission Level - Limit, Factor = LISN modulus + Cable Loss

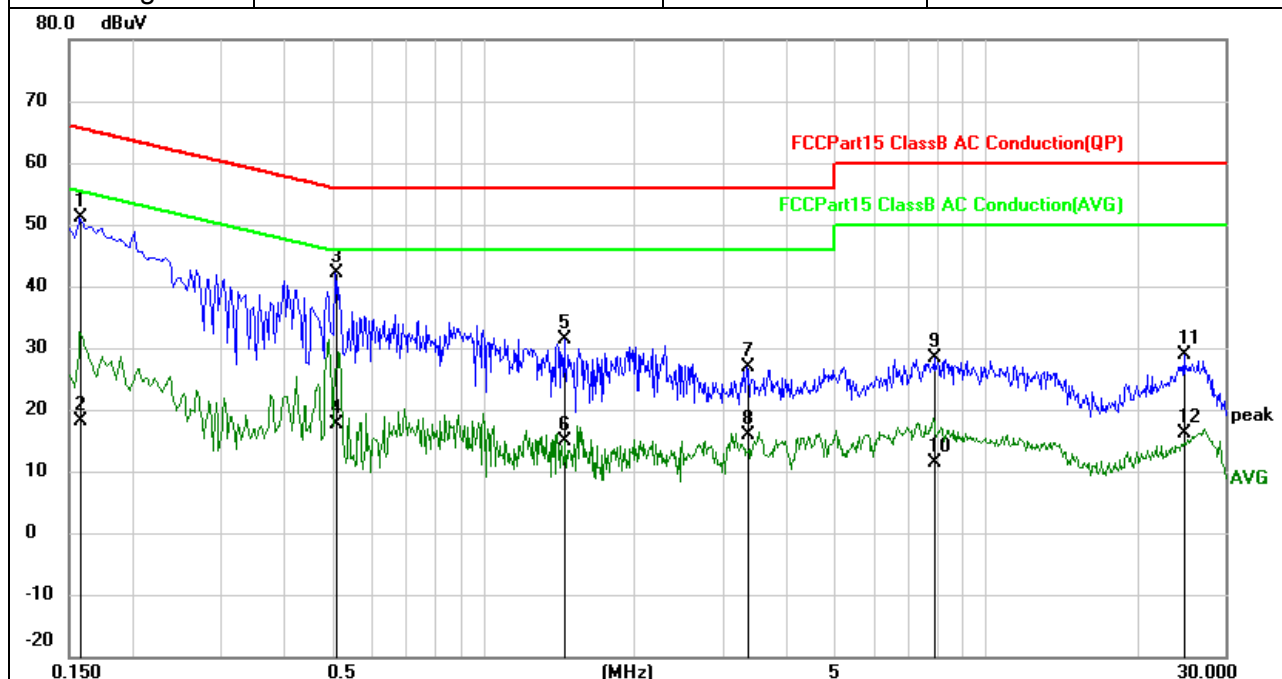
EUT:	Smart Watch	Model Name:	W563-FL
Pressure:	1010hPa	Phase:	L
Test Voltage:	AC 120V/60Hz	Test Mode:	Normal link



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1	*	0.1940	29.83	9.73	39.56	63.86	-24.30	QP
2		0.1940	7.33	9.73	17.06	53.86	-36.80	AVG
3		0.3899	23.44	9.84	33.28	58.07	-24.79	QP
4		0.3899	5.16	9.84	15.00	48.07	-33.07	AVG
5		0.7900	20.59	9.95	30.54	56.00	-25.46	QP
6		0.7900	5.69	9.95	15.64	46.00	-30.36	AVG
7		2.7220	15.79	10.02	25.81	56.00	-30.19	QP
8		2.7220	2.66	10.02	12.68	46.00	-33.32	AVG
9		10.7140	16.17	10.32	26.49	60.00	-33.51	QP
10		10.7140	1.25	10.32	11.57	50.00	-38.43	AVG
11		26.5700	23.97	10.39	34.36	60.00	-25.64	QP
12		26.5700	4.83	10.39	15.22	50.00	-34.78	AVG



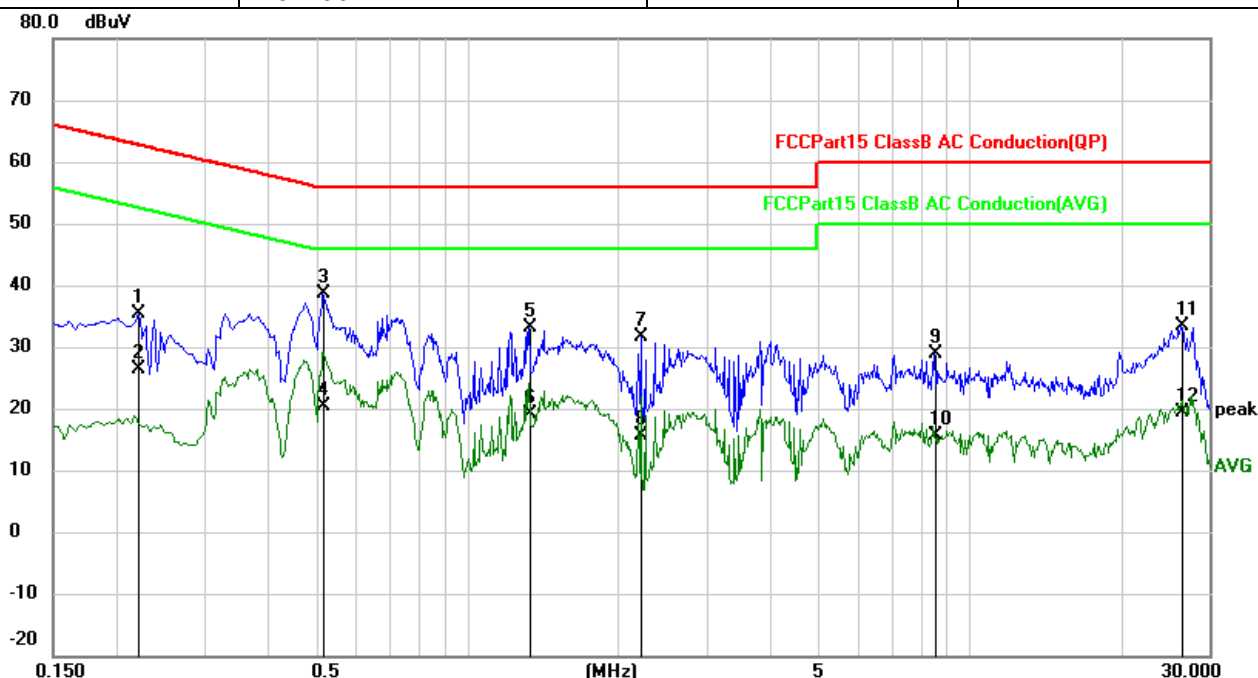
EUT:	Smart Watch	Model Name:	W563-FL
Pressure:	1010hPa	Phase:	N
Test Voltage:	AC 120V/60Hz	Test Mode:	Normal link



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1580	41.41	9.73	51.14	65.57	-14.43	QP
2		0.1580	8.36	9.73	18.09	55.57	-37.48	AVG
3	*	0.5100	32.10	9.92	42.02	56.00	-13.98	QP
4		0.5100	7.63	9.92	17.55	46.00	-28.45	AVG
5		1.4500	21.42	9.99	31.41	56.00	-24.59	QP
6		1.4500	4.80	9.99	14.79	46.00	-31.21	AVG
7		3.3460	16.89	10.03	26.92	56.00	-29.08	QP
8		3.3460	5.87	10.03	15.90	46.00	-30.10	AVG
9		7.9060	18.24	10.22	28.46	60.00	-31.54	QP
10		7.9060	1.09	10.22	11.31	50.00	-38.69	AVG
11		24.8380	18.59	10.34	28.93	60.00	-31.07	QP
12		24.8380	5.84	10.34	16.18	50.00	-33.82	AVG



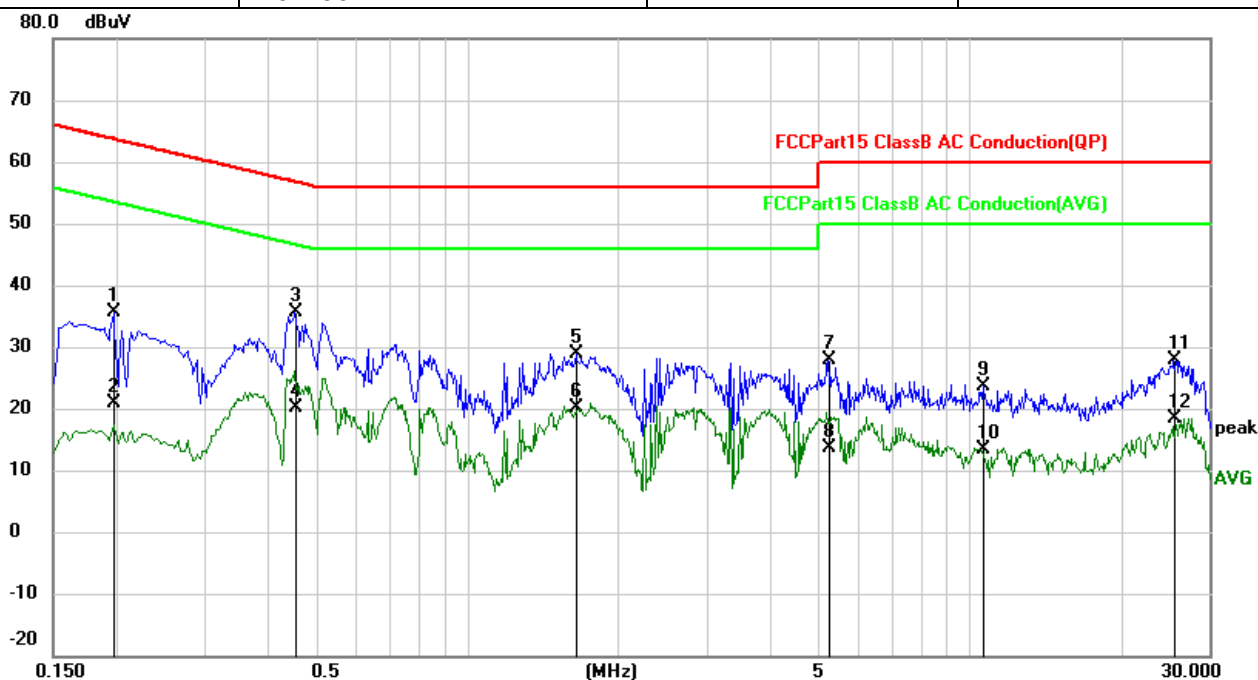
EUT:	Smart Watch	Model Name:	W563-FL
Pressure:	1010hPa	Phase:	L
Test Voltage:	DC 5V from adapter AC 240V/60Hz	Test Mode:	Normal link



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.2220	25.57	9.73	35.30	62.74	-27.44	QP
2		0.2220	16.68	9.73	26.41	52.74	-26.33	AVG
3	*	0.5180	28.62	9.92	38.54	56.00	-17.46	QP
4		0.5180	10.55	9.92	20.47	46.00	-25.53	AVG
5		1.3300	23.24	9.99	33.23	56.00	-22.77	QP
6		1.3300	9.24	9.99	19.23	46.00	-26.77	AVG
7		2.2220	21.64	10.01	31.65	56.00	-24.35	QP
8		2.2220	5.74	10.01	15.75	46.00	-30.25	AVG
9		8.5340	18.59	10.25	28.84	60.00	-31.16	QP
10		8.5340	5.37	10.25	15.62	50.00	-34.38	AVG
11		26.3740	23.00	10.38	33.38	60.00	-26.62	QP
12		26.3740	9.10	10.38	19.48	50.00	-30.52	AVG



EUT:	Smart Watch	Model Name:	W563-FL
Pressure:	1010hPa	Phase:	N
Test Voltage:	DC 5V from adapter AC 240V/60Hz	Test Mode:	Normal link



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1980	25.96	9.73	35.69	63.69	-28.00	QP
2		0.1980	11.10	9.73	20.83	53.69	-32.86	AVG
3	*	0.4540	25.78	9.89	35.67	56.80	-21.13	QP
4		0.4540	10.30	9.89	20.19	46.80	-26.61	AVG
5		1.6460	18.94	9.99	28.93	56.00	-27.07	QP
6		1.6460	10.08	9.99	20.07	46.00	-25.93	AVG
7		5.2220	17.80	10.08	27.88	60.00	-32.12	QP
8		5.2220	3.52	10.08	13.60	50.00	-36.40	AVG
9		10.6300	13.33	10.32	23.65	60.00	-36.35	QP
10		10.6300	3.01	10.32	13.33	50.00	-36.67	AVG
11		25.5860	17.51	10.36	27.87	60.00	-32.13	QP
12		25.5860	8.10	10.36	18.46	50.00	-31.54	AVG



5.4 26dB Emission Bandwidth and Occupied bandwidth

5.4.1 Limit

For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier

5.4.2 Test procedure

26d Emission bandwidth

Set RBW = approximately 1% of the emission bandwidth.

Set VBW $\geq 3 \times \text{RBW}$

Detector = Peak.

Trace mode = Max hold.

Measure the maximum width of the emission that is 26 dB down from the peak of the emission.

Occupied Bandwidth

Set Span = 1.5 times to 5.0 times the OBW

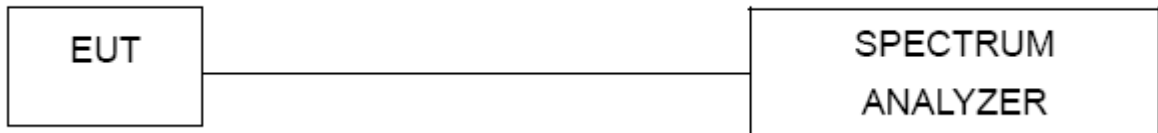
Set RBW = 1% to 5% of the OBW.

Set VBW $\geq 3 \times \text{RBW}$, Detector = Peak.

Trace mode = Max hold.

Use the 99% power bandwidth function of the instrument.

5.4.3 Test setup



5.4.4 Test results

For U-NII-1

Channel	Test Channel	Frequency(MHz)	26dB bandwidth(MHz)	99% bandwidth	Limit(kHz)	Result
11a	CH36	5180	19.21	16.360	/	Pass
11a	CH40	5200	32.61	17.679	/	Pass
11a	CH48	5240	19.12	16.332	/	Pass
11n (HT20)	CH36	5180	19.78	17.536	/	Pass
11n (HT20)	CH40	5200	27.60	17.615	/	Pass
11n (HT20)	CH48	5240	19.64	17.521	/	Pass
11n (HT40)	CH38	5190	38.32	35.821	/	Pass
11n (HT40)	CH46	5230	38.41	35.783	/	Pass

Channel	Test Channel	Frequency(MHz)	26dB bandwidth(MHz)	99% bandwidth	Limit(kHz)	Result
11ac (VHT20)	CH36	5180	19.65	17.526	/	Pass
11ac (VHT20)	CH40	5200	19.58	17.513	/	Pass
11ac (VHT20)	CH48	5240	19.75	17.517	/	Pass
11ac (VHT40)	CH38	5190	38.73	35.790	/	Pass
11ac (VHT40)	CH46	5230	38.41	35.789	/	Pass
11ac (VHT80)	CH42	5210	77.93	75.136	/	Pass

For U-NII-2A

Channel	Test Channel	Frequency(MHz)	26dB bandwidth(MHz)	99% bandwidth	Limit(kHz)	Result
11a	CH52	5260	20.35	16.911	/	Pass
11a	CH56	5280	20.23	16.897	/	Pass
11a	CH64	5320	20.13	16.846	/	Pass
11n (HT20)	CH52	5260	20.73	17.894	/	Pass
11n (HT20)	CH56	5280	20.72	17.841	/	Pass
11n (HT20)	CH64	5320	20.50	17.841	/	Pass
11n (HT40)	CH54	5270	41.33	36.366	/	Pass
11n (HT40)	CH62	5310	41.19	36.312	/	Pass

Channel	Test Channel	Frequency(MHz)	26dB bandwidth(MHz)	99% bandwidth h	Limit(kHz)	Result
11ac (VHT20)	CH52	5260	20.61	17.872	/	Pass
11ac (VHT20)	CH56	5280	20.48	17.841	/	Pass
11ac (VHT20)	CH64	5320	20.56	17.861	/	Pass
11ac (VHT40)	CH54	5270	41.29	36.285	/	Pass
11ac (VHT40)	CH62	5310	41.17	36.232	/	Pass
11ac (VHT80)	CH58	5290	81.69	75.318	/	Pass

For U-NII-2C

Channel	Test Channel	Frequency(MHz)	26dB bandwidth(MHz)	99% bandwidth	Limit(kHz)	Result
11a	CH100	5500	20.28	16.911	/	Pass
11a	CH120	5600	20.21	16.893	/	Pass
11a	CH140	5700	20.34	16.852	/	Pass
11n (HT20)	CH100	5500	20.78	17.820	/	Pass
11n (HT20)	CH120	5600	20.47	17.849	/	Pass
11n (HT20)	CH140	5700	20.69	17.906	/	Pass
11n (HT40)	CH102	5510	41.25	36.301	/	Pass
11n (HT40)	CH118	5590	41.38	36.273	/	Pass
11n (HT40)	CH134	5670	41.28	36.314	/	Pass

Channel	Test Channel	Frequency(MHz)	26dB bandwidth(MHz)	99% bandwidth	Limit(kHz)	Result
11ac (VHT20)	CH100	5500	20.62	17.810	/	Pass
11ac (VHT20)	CH120	5600	20.64	17.848	/	Pass
11ac (VHT20)	CH140	5700	20.70	17.813	/	Pass
11n (VHT40)	CH102	5510	41.11	36.237	/	Pass
11n (VHT40)	CH118	5590	41.25	36.270	/	Pass
11n (VHT40)	CH134	5670	40.86	36.293	/	Pass
11ac (VHT80)	CH106	5530	81.82	75.439	/	Pass

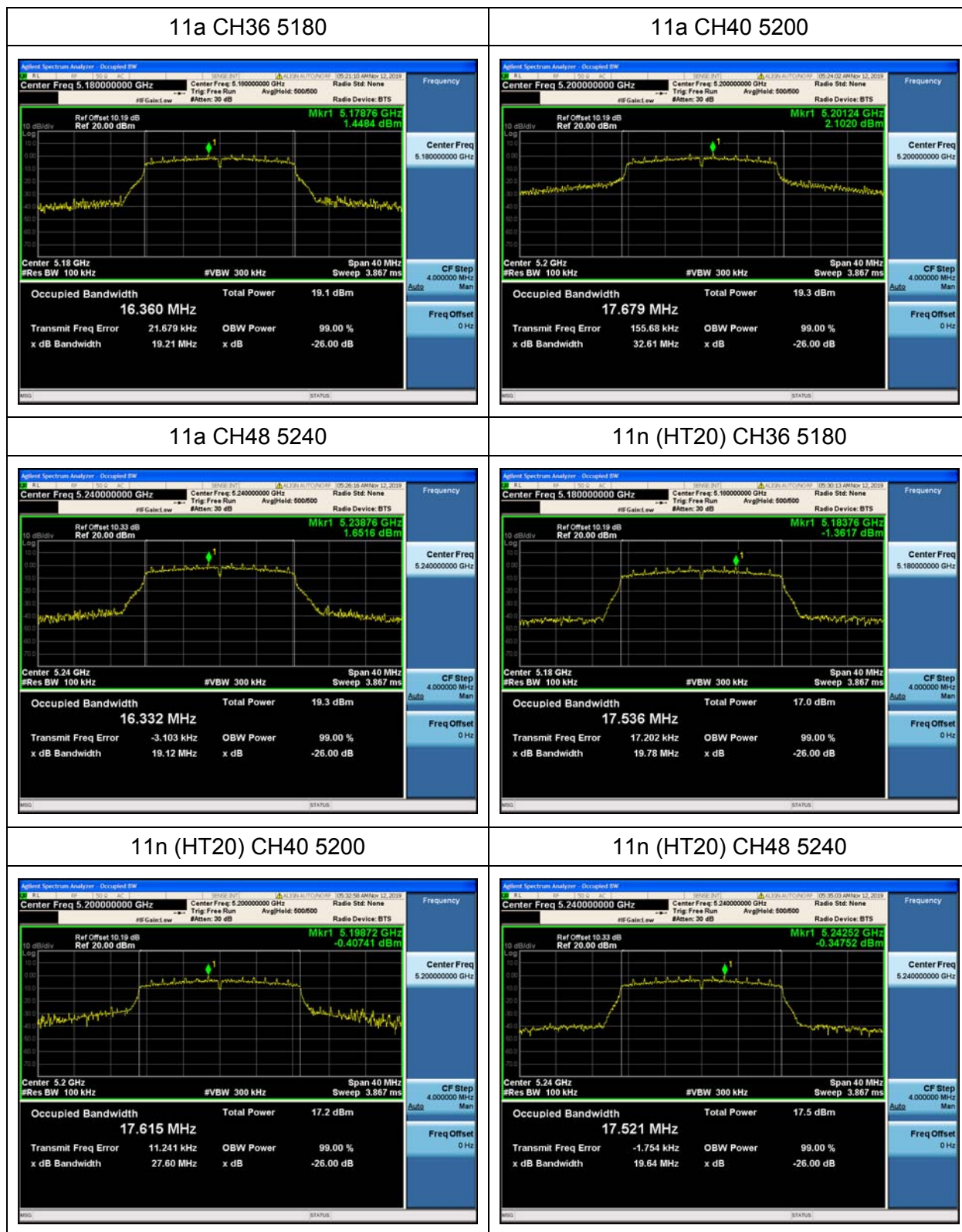
For U-NII-3

Channel	Test Channel	Frequency(MHz)	99% bandwidth	Limit(kHz)	Result
11a	CH149	5745	18.360	/	Pass
11a	CH157	5785	16.937	/	Pass
11a	CH165	5825	16.957	/	Pass
11n (HT20)	CH149	5745	18.463	/	Pass
11n (HT20)	CH157	5785	17.888	/	Pass
11n (HT20)	CH165	5825	17.851	/	Pass
11n (HT40)	CH151	5755	36.304	/	Pass
11n (HT40)	CH159	5795	36.455	/	Pass

Channel	Test Channel	Frequency(MHz)	99% bandwidth	Limit(kHz)	Result
11ac (VHT20)	CH149	5745	17.870	/	Pass
11ac (VHT20)	CH157	5785	17.850	/	Pass
11ac (VHT20)	CH165	5825	17.856	/	Pass
11ac (VHT40)	CH151	5755	36.195	/	Pass
11ac (VHT40)	CH159	5795	36.315	/	Pass
11ac (VHT80)	CH155	5775	75.381	/	Pass

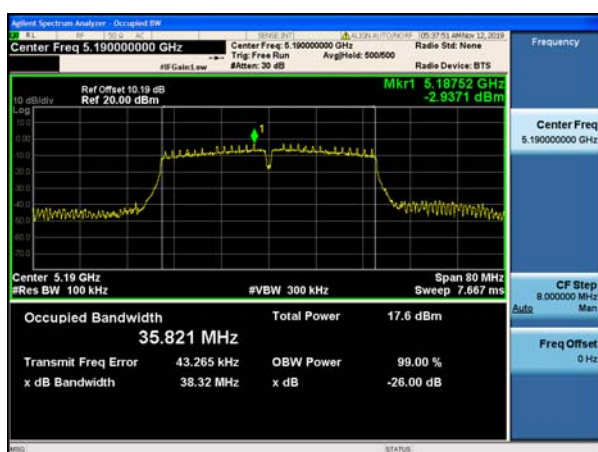


Test plots:
For U-NII-1

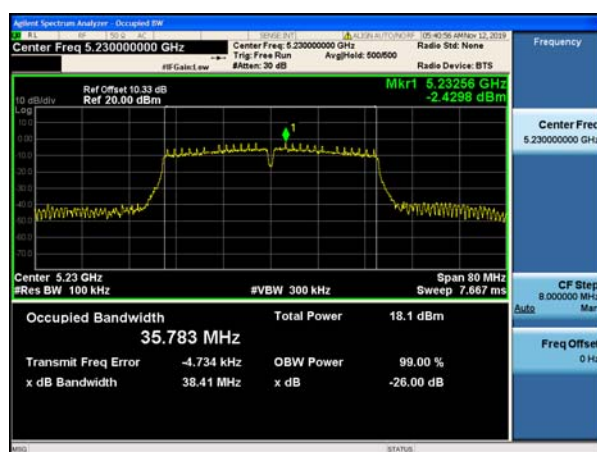




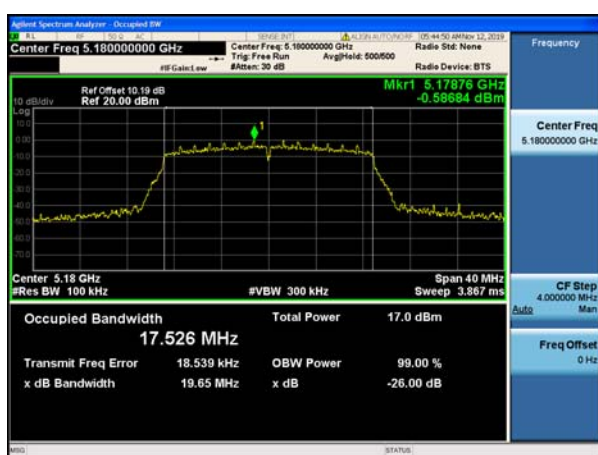
11n (HT40) CH38 5190



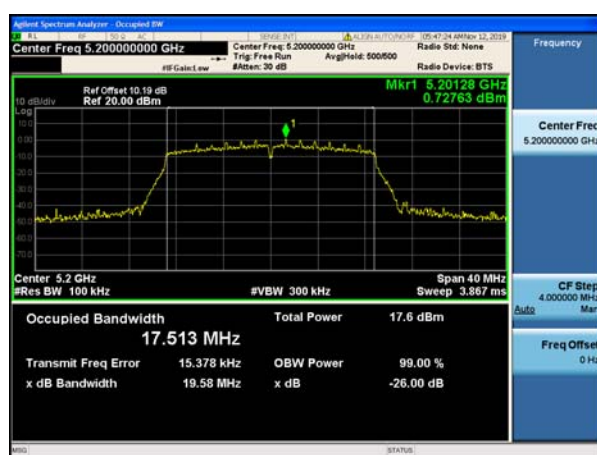
11n (HT40) CH46 5230



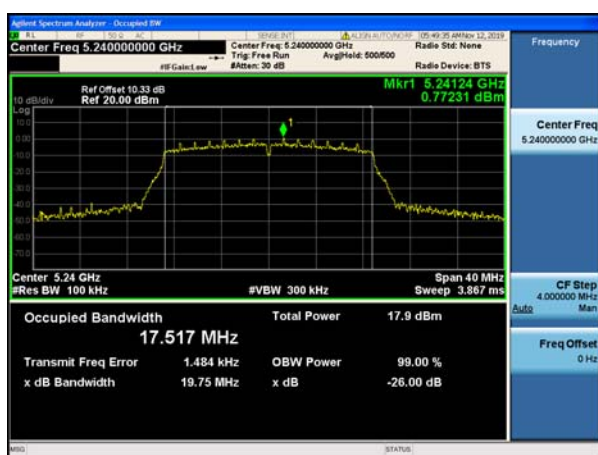
11ac (VHT20) CH36 5180



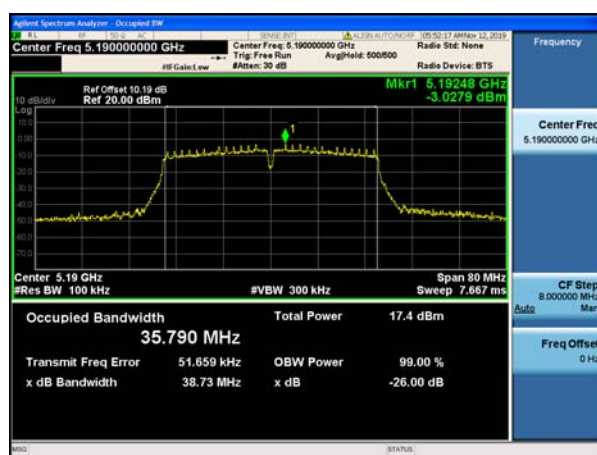
11ac (VHT20) CH40 5200

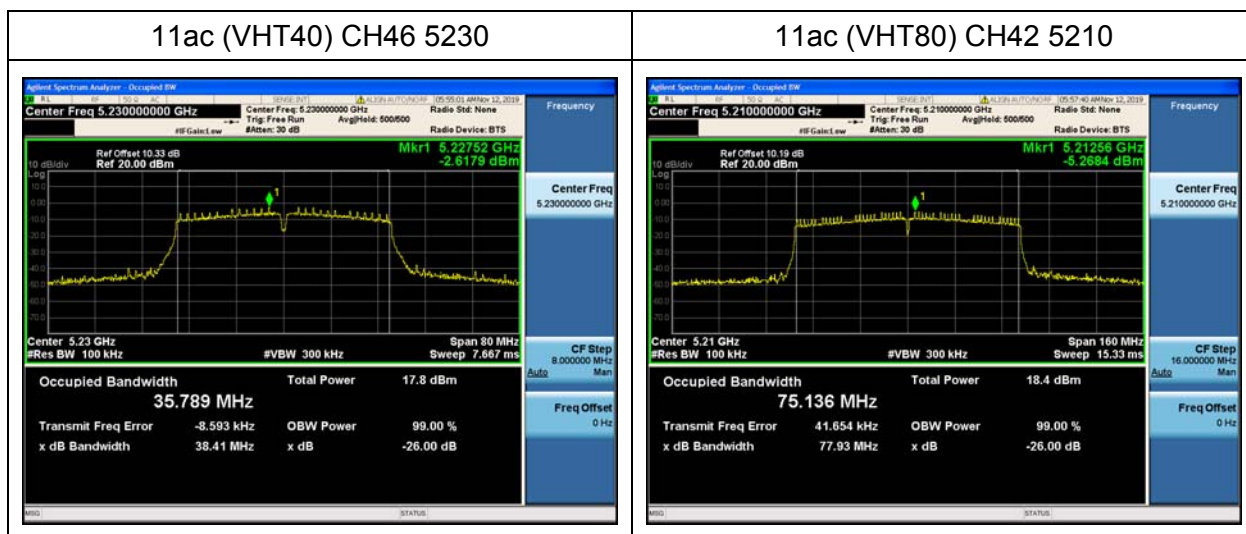


11ac (VHT20) CH48 5240

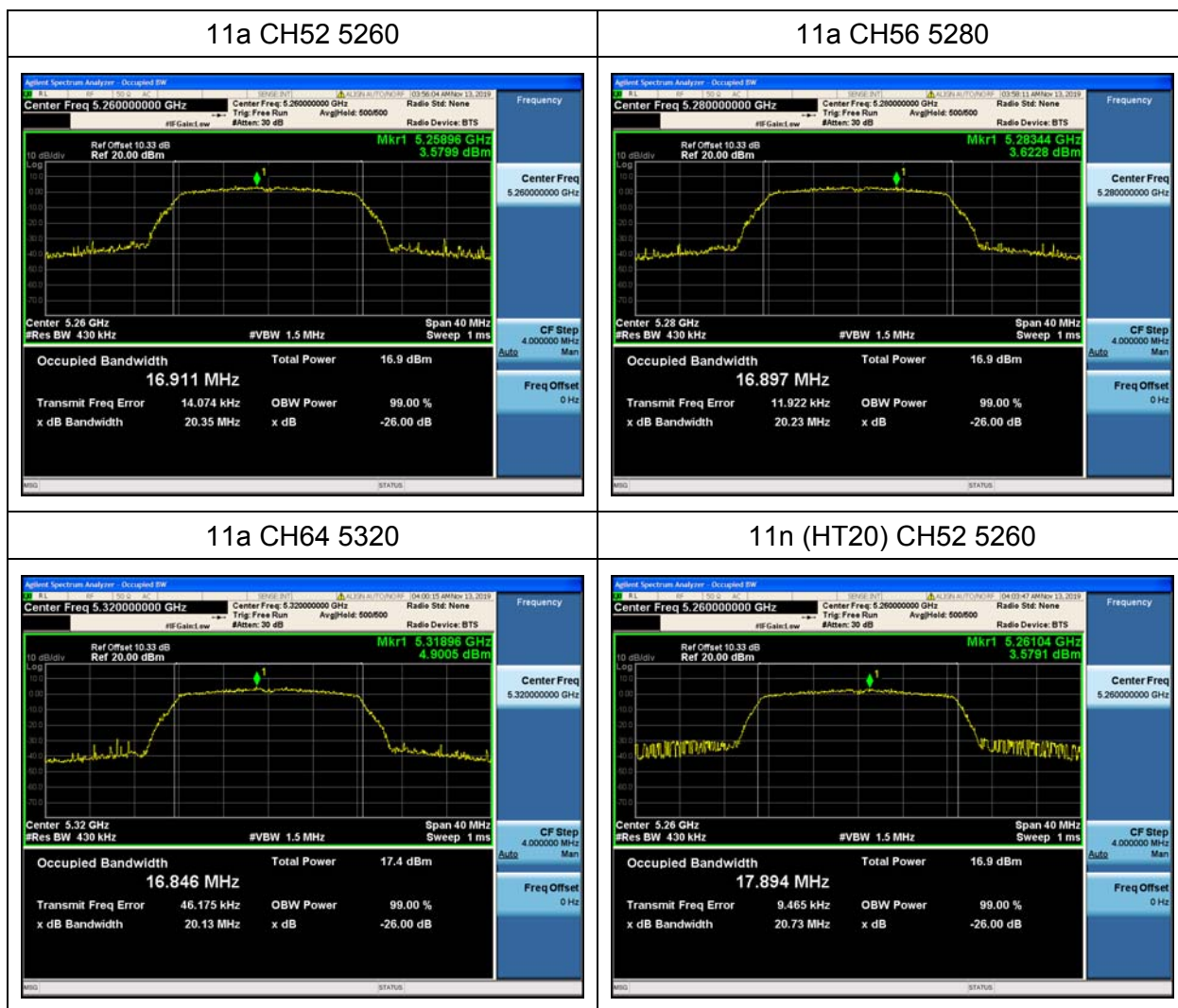


11ac (VHT40) CH38 5190



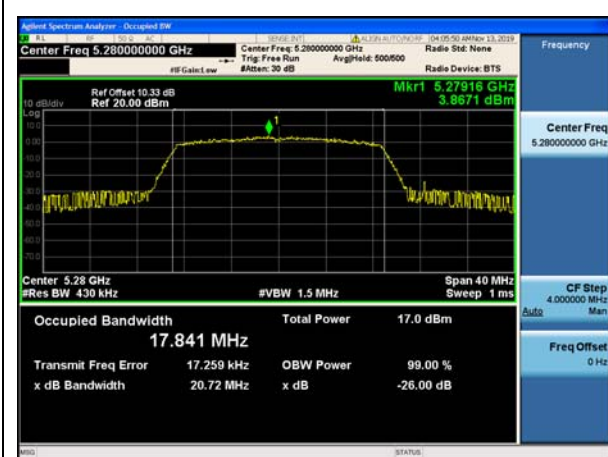


For U-NII-2

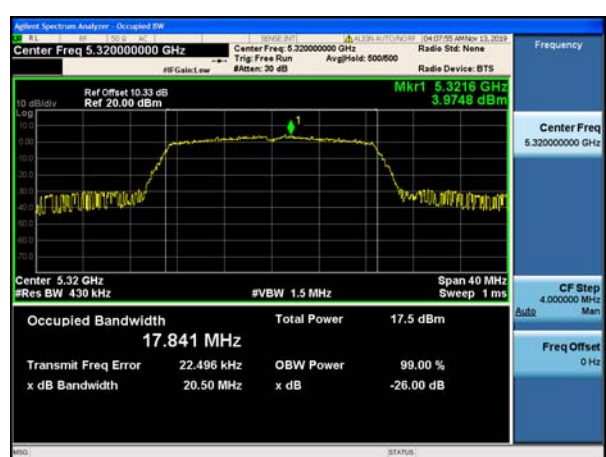




11n (HT20) CH56 5280



11n (HT20) CH64 5320



11n (HT40) CH54 5270



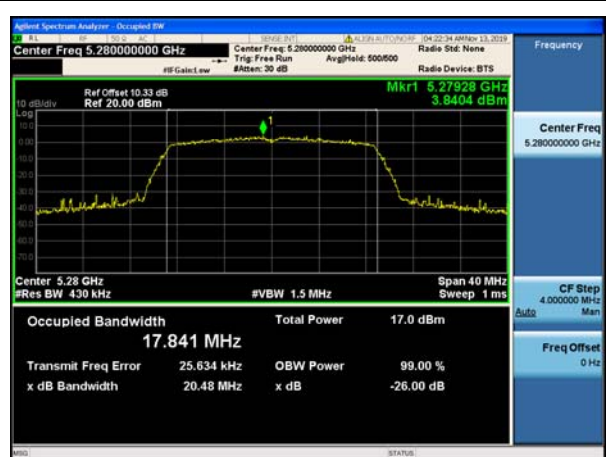
11n (HT40) CH62 5310



11ac (VHT20) CH52 5260

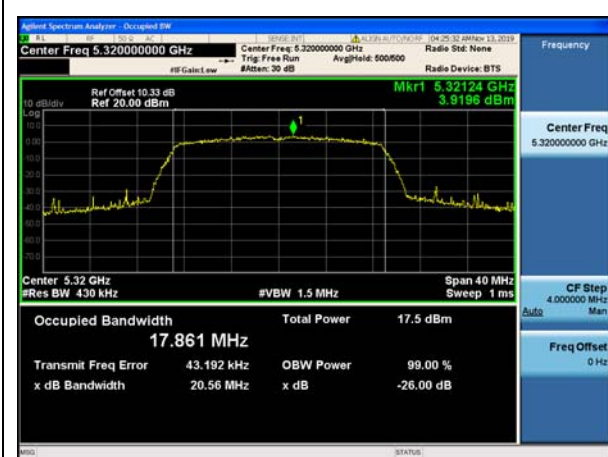


11ac (VHT20) CH56 5280

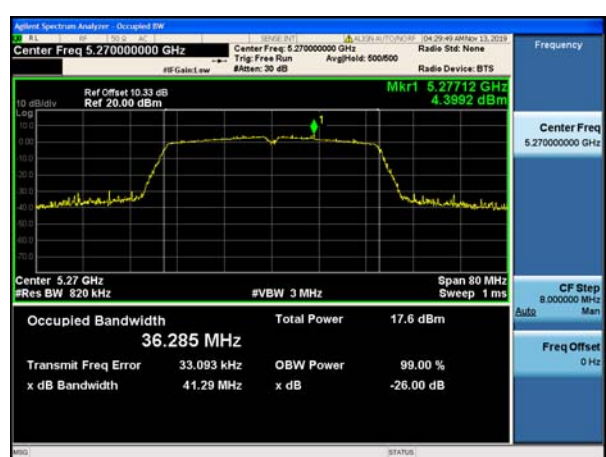




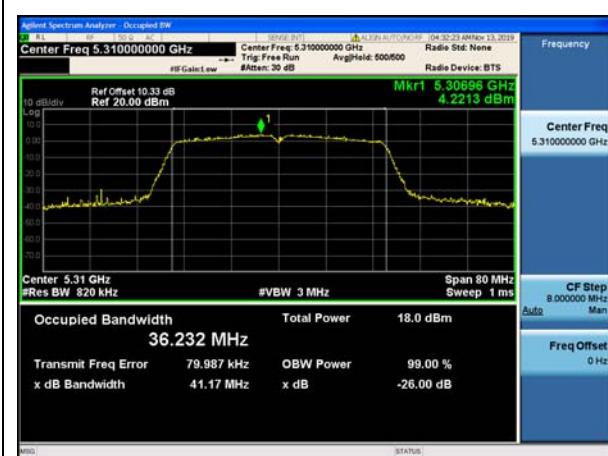
11ac (VHT20) CH64 5320



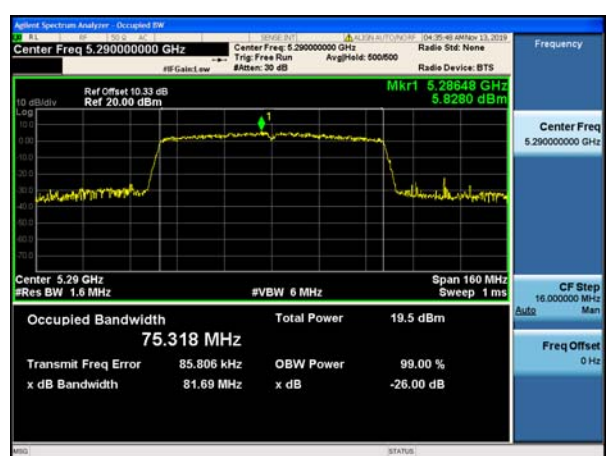
11ac (VHT40) CH54 5270



11ac (VHT40) CH62 5310

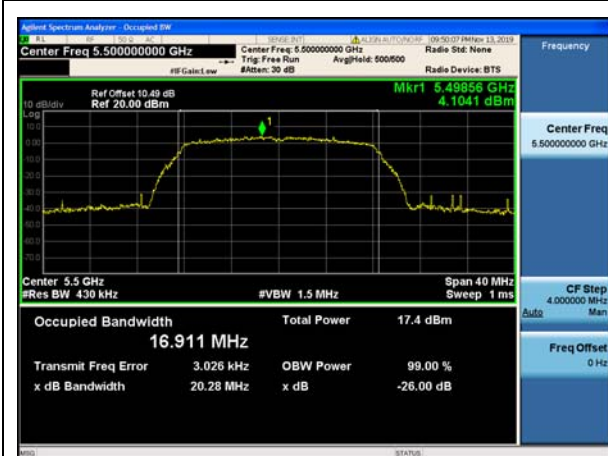


11ac (VHT80) CH58 5290



For U-NII-3

11a CH100 5500

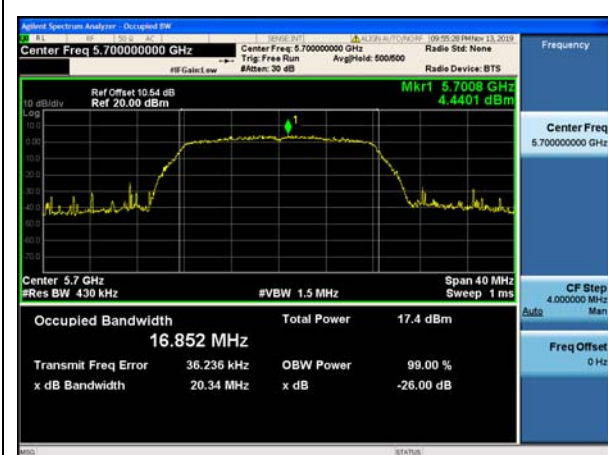


11a CH120 5600





11a CH140 5700



11n (HT20) CH100 5500



11n (HT20) CH120 5600



11n (HT20) CH140 5700



11n (HT40) CH102 5510

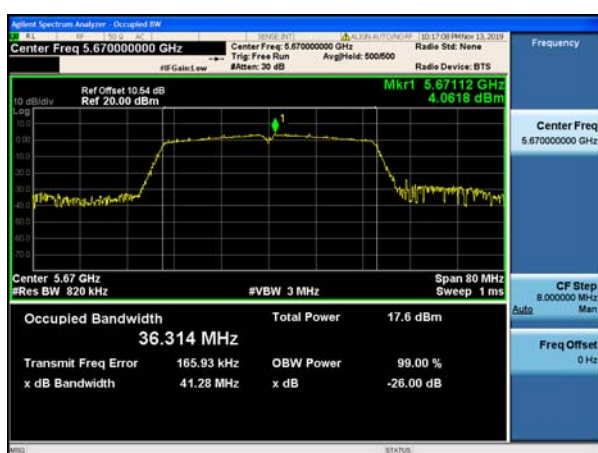


11n (HT40) CH118 5590

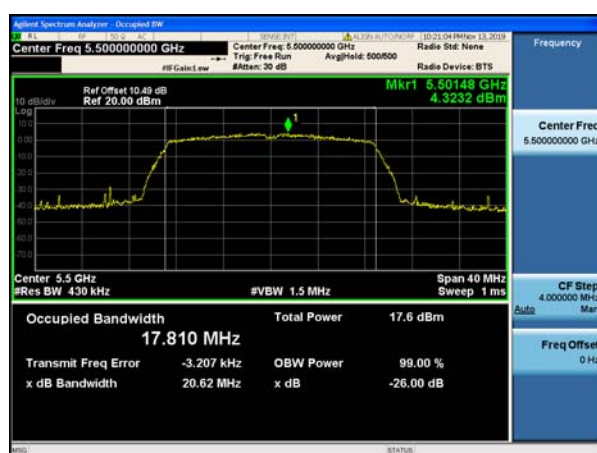




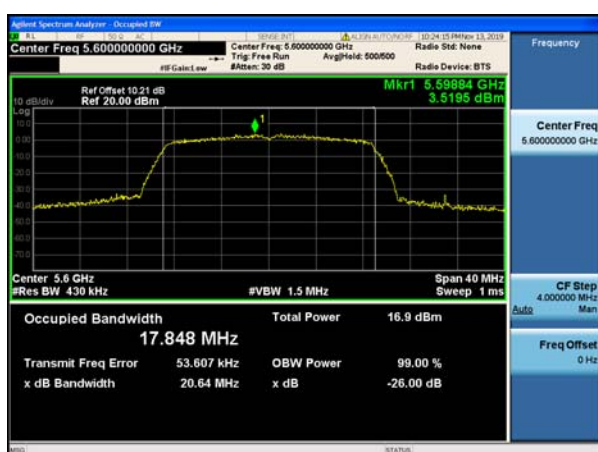
11n (HT40) CH134 5670



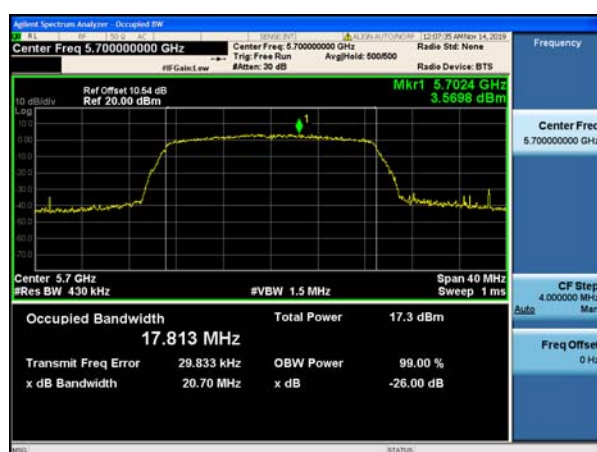
11ac (VHT20) CH100 5500



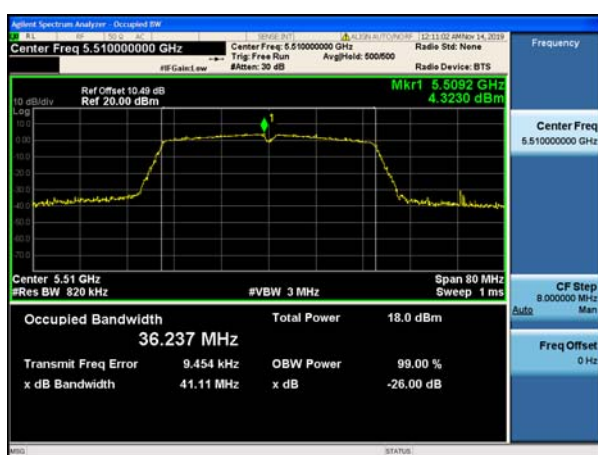
11ac (VHT20) CH120 5600



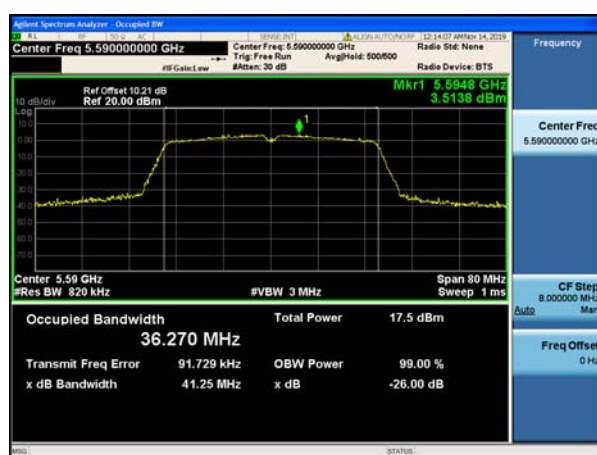
11ac (VHT20) CH140 5700

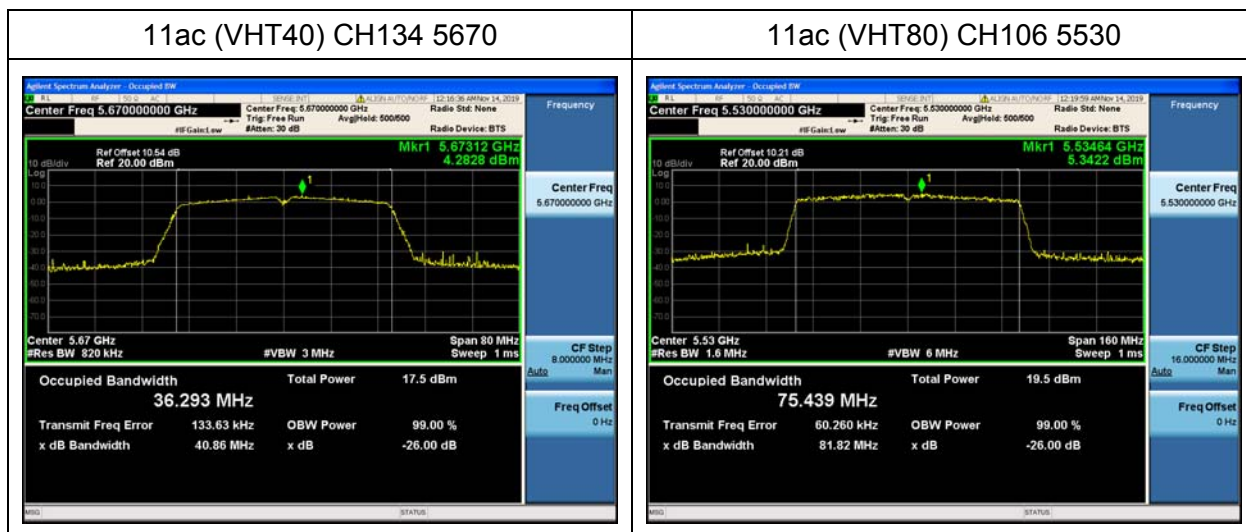


11ac (VHT40) CH102 5510

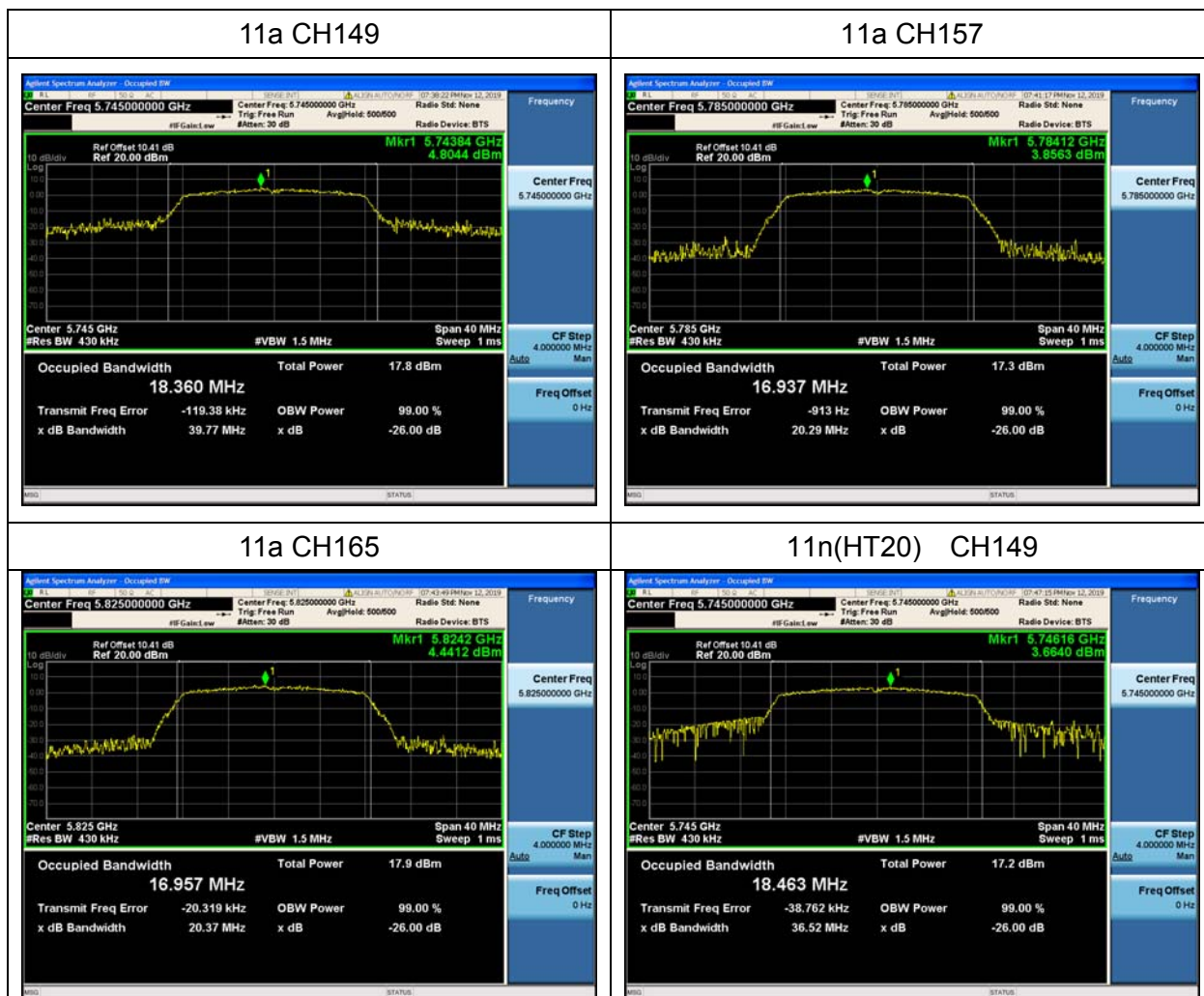


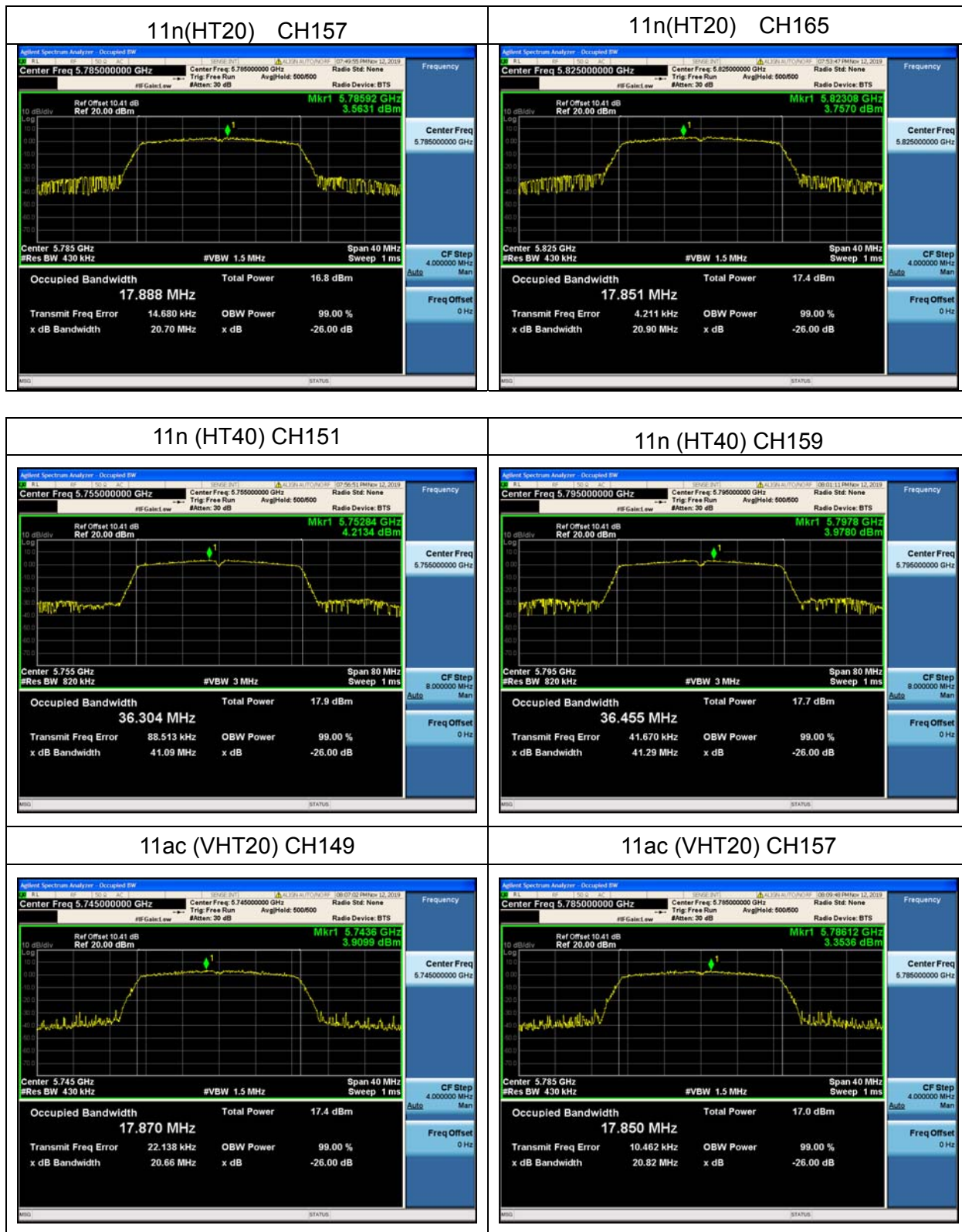
11ac (VHT40) CH118 5590





For U-NII-4







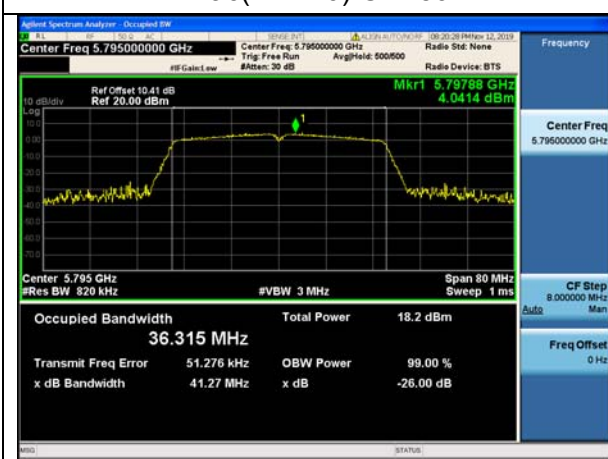
11ac(VHT20) CH165



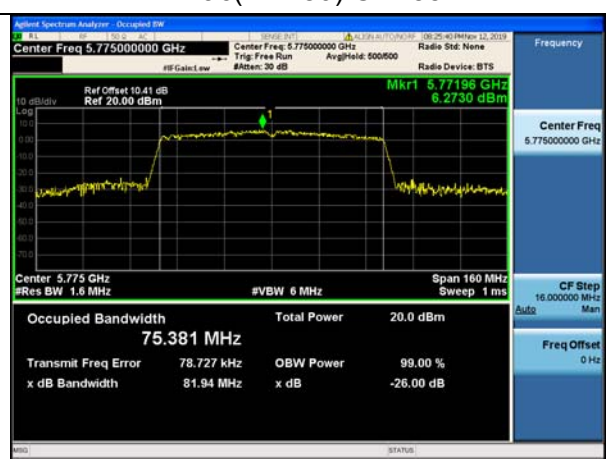
11ac(VHT40) CH151



11ac(VHT40) CH159



11ac(VHT80) CH155



5.5 6dB Bandwidth

5.5.1 Limit

For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 6 dB down relative to the maximum level of the modulated carrier

5.5.2 Test procedure

1. Set RBW= 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

5.5.3 Test setup



5.5.4 Test results

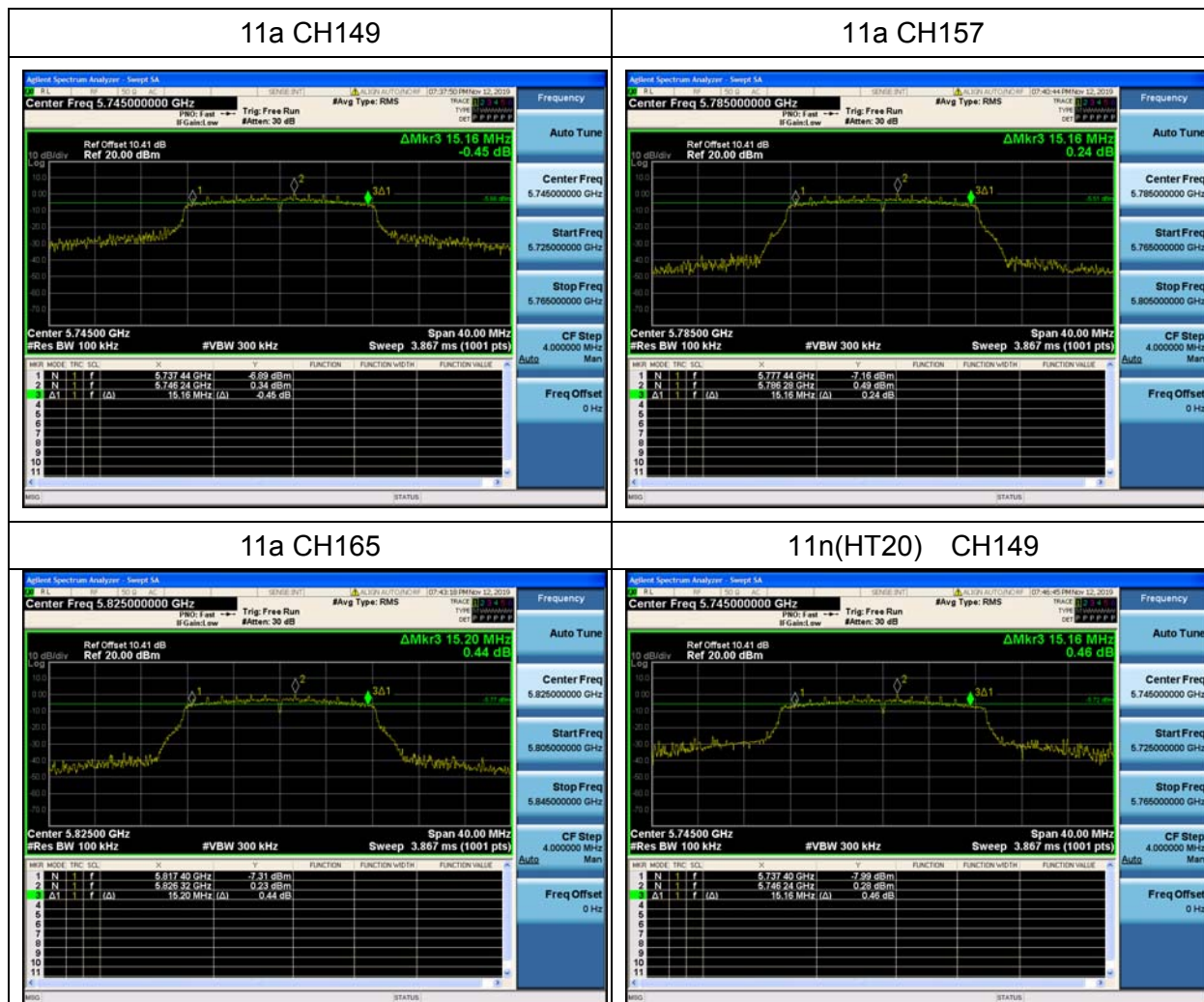
For U-NII-3

Channel	Test Channel	Frequency(MHz)	6dB bandwidth(MHz)	Limit(kHz)	Result
11a	CH149	5745	15.160	500	Pass
11a	CH157	5785	15.160	500	Pass
11a	CH165	5825	15.200	500	Pass
11n (HT20)	CH149	5745	15.160	500	Pass
11n (HT20)	CH157	5785	15.200	500	Pass
11n (HT20)	CH165	5825	15.200	500	Pass
11n (HT40)	CH151	5755	35.200	500	Pass
11n (HT40)	CH159	5795	35.200	500	Pass

Channel	Test Channel	Frequency(MHz)	6dB bandwidth(MHz)	Limit(kHz)	Result
11ac (VHT20)	CH149	5745	15.200	500	Pass
11ac (VHT20)	CH157	5785	15.080	500	Pass
11ac (VHT20)	CH165	5825	15.160	500	Pass
11ac (VHT40)	CH151	5755	35.200	500	Pass
11ac (VHT40)	CH159	5795	35.200	500	Pass
11ac (VHT80)	CH155	5775	75.520	500	Pass

Test plots:

For U-NII-3

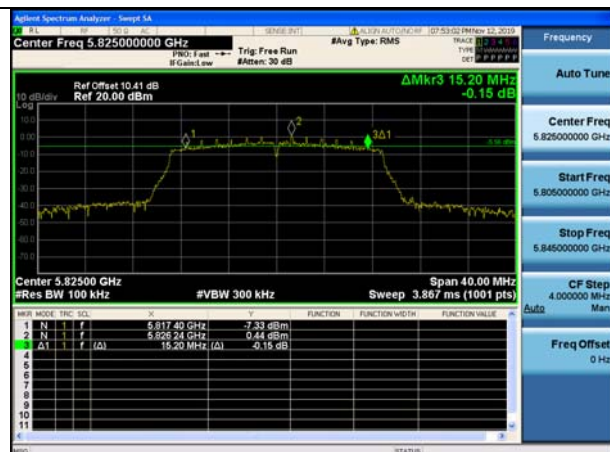




11n(HT20) CH157



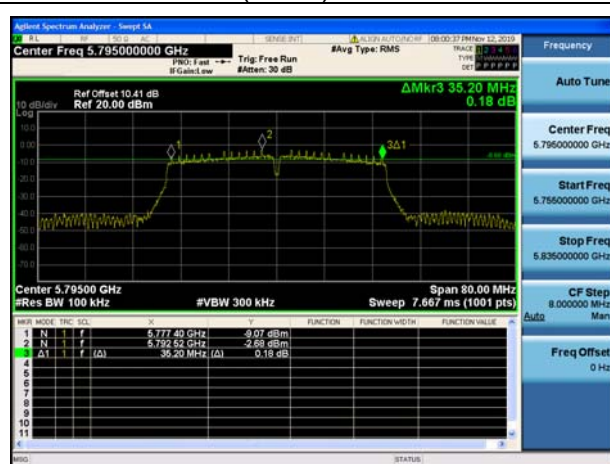
11n(HT20) CH165



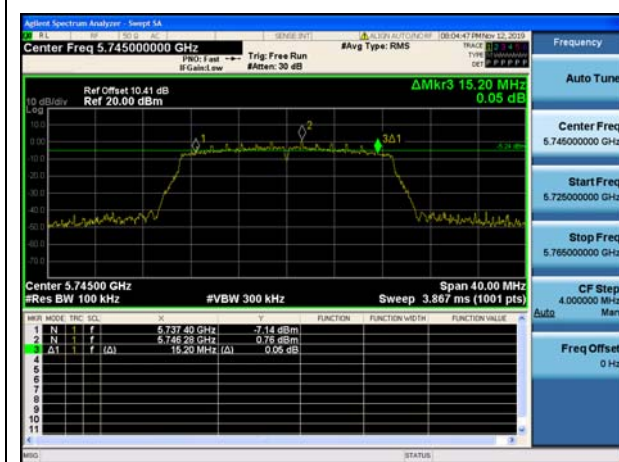
11n (HT40) CH151



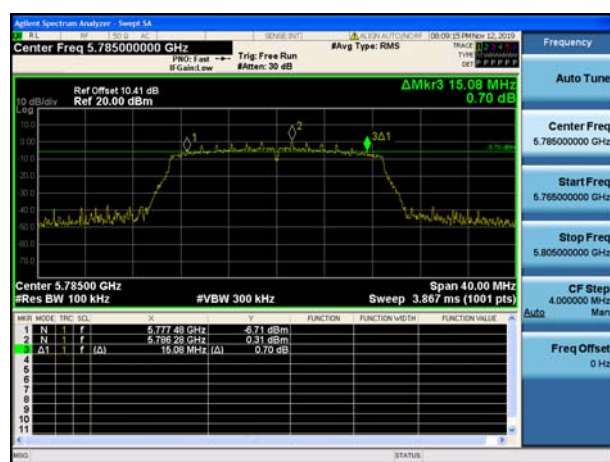
11n (HT40) CH159



11ac (VHT20) CH149

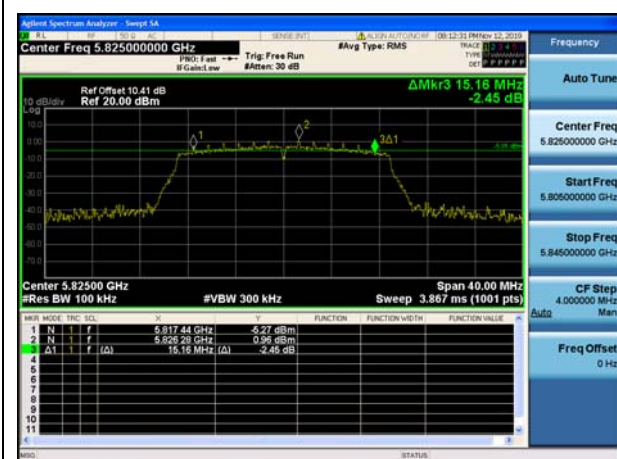


11ac (VHT20) CH157

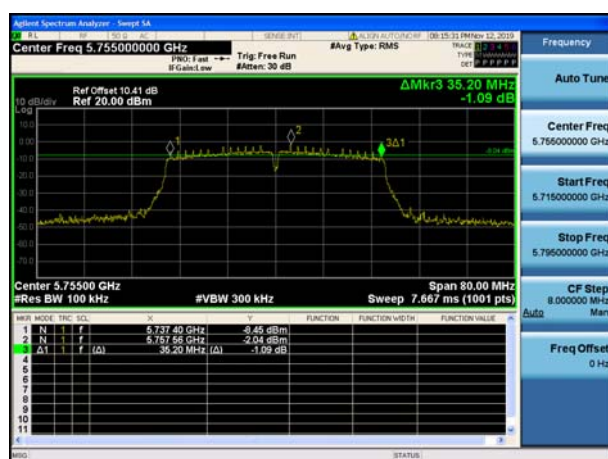




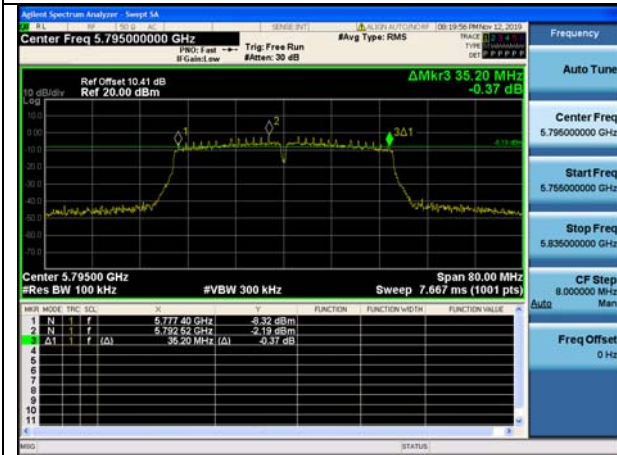
11ac(VHT20) CH165



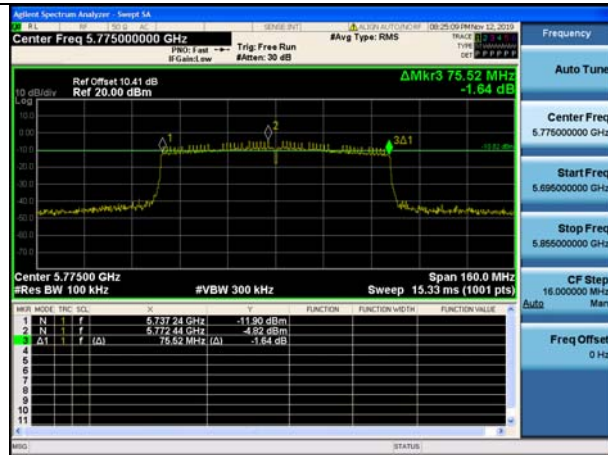
11ac(VHT40) CH151



11ac(VHT40) CH159



11ac(VHT80) CH155



5.6 Radiated spurious emission

5.6.1 Radiated Emission Limits

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

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

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

5.6.2 Test procedure

The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.

The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

For emission measurements above 1 GHz, the EUT shall be placed at a height of 1.5 m above the floor on a support that is RF transparent for the frequencies of interest. Final measurements for the EUT require a measurement antenna height scan of 1 m to 4 m.

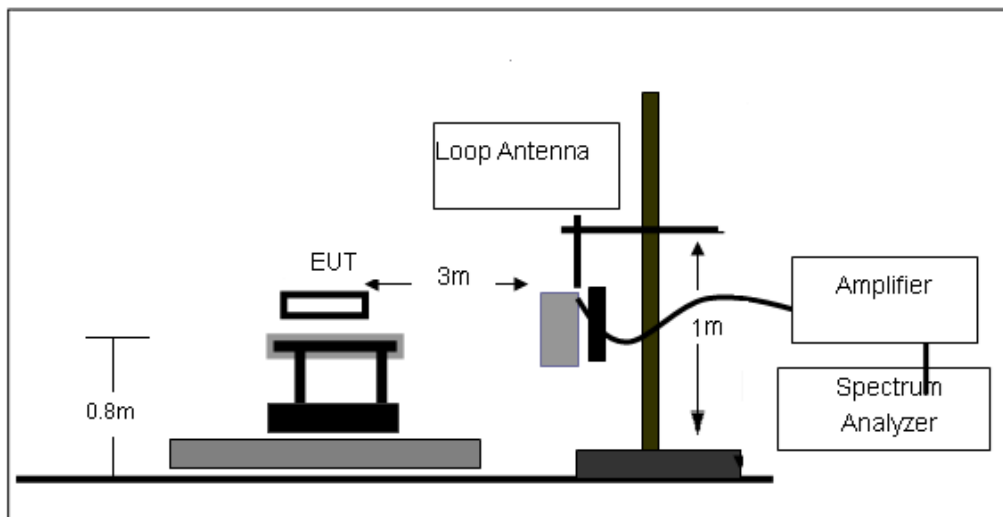
The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. For the actual test configuration, please refer to the related Item –EUT Test Photos.

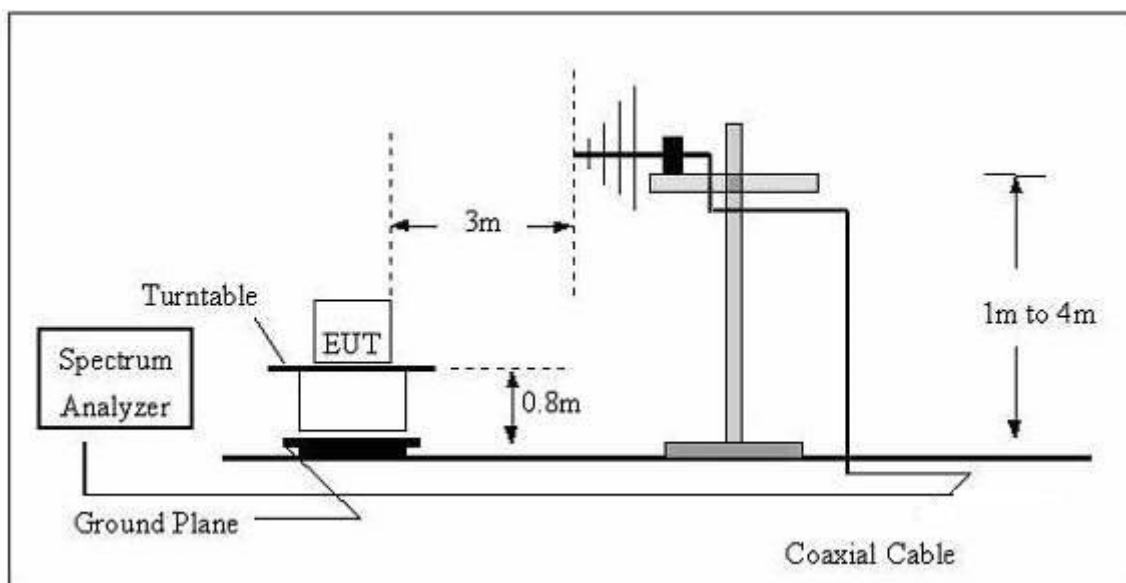
Note: Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

5.6.3 Test setup

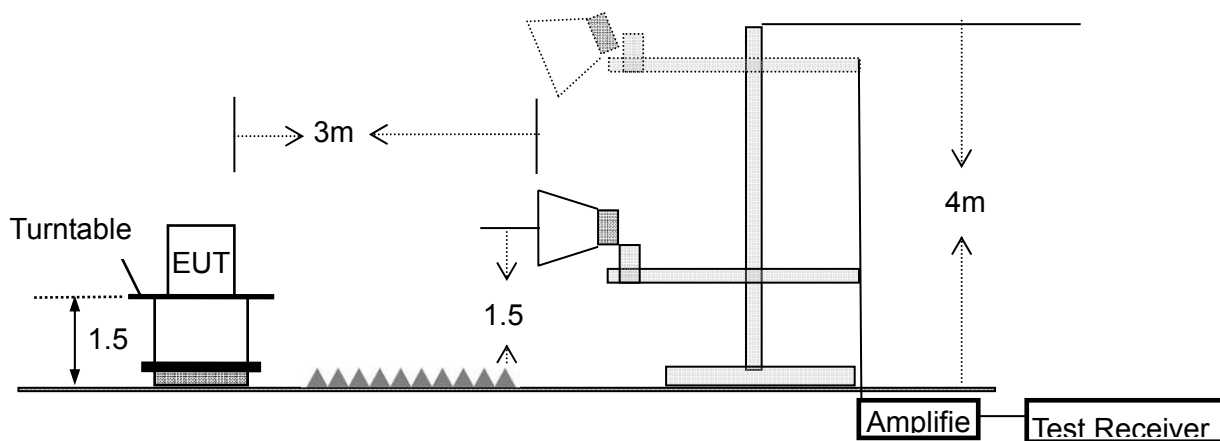
(A) Radiated Emission test-up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz





5.6.4 Test results

EUT:	Smart Watch	Model Name:	W563-FL
Pressure:	1010 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	TX	Polarization:	--

Below 30MHz

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	Pass
--	--	--	--	Pass

Note1: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

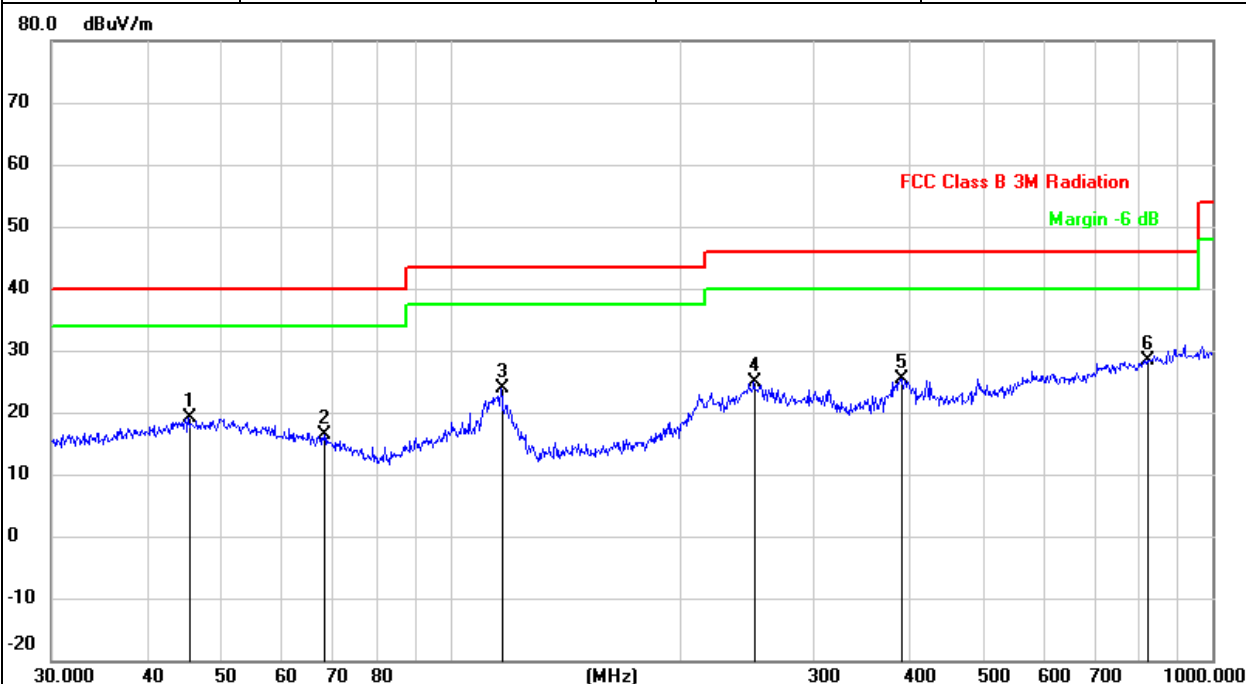
Note2: Distance extrapolation factor = $40 \log (\text{specific distance}/\text{test distance})$ (dB); Limit line = specific limits (dBuV) + distance extrapolation factor.

Between 30MHz – 1GHz

Note 1 : Emission Level = Meter Reading + Factor, Margin= Emission Level- Limit, Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Note 2 : The peak value is less than the AV value, AV value is not required Factor added by measurement software automatically.

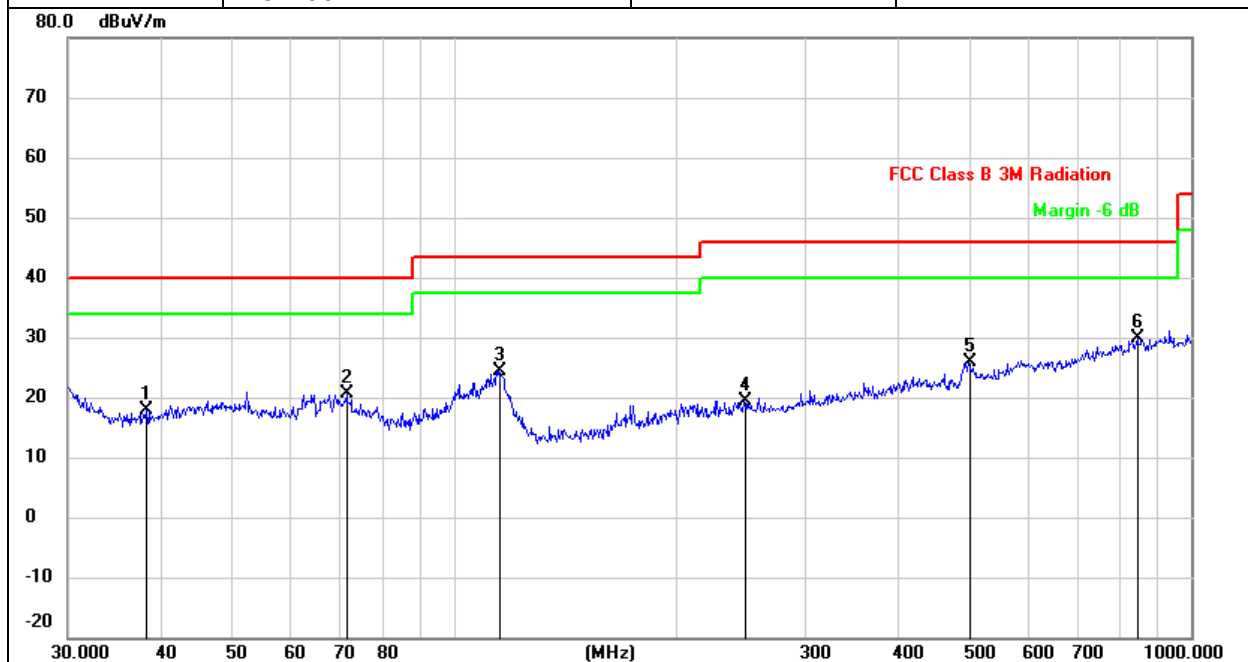
EUT:	Smart Watch	Model Name:	W563-FL
Pressure:	1010 hPa	Phase:	H
Test Voltage:	DC 12V from adapter AC 120V/60Hz	Mode:	Charging+TX



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB	Detector
1		45.3755	25.59	-6.58	19.01	40.00	-20.99	QP
2		68.3908	25.94	-9.52	16.42	40.00	-23.58	QP
3		116.5401	32.08	-8.30	23.78	43.50	-19.72	QP
4		250.3012	30.69	-5.73	24.96	46.00	-21.04	QP
5		390.7226	29.27	-3.93	25.34	46.00	-20.66	QP
6	*	821.7103	26.03	2.43	28.46	46.00	-17.54	QP



EUT:	Smart Watch	Model Name:	W563-FL
Pressure:	1010 hPa	Phase:	V
Test Voltage:	DC 12V from adapter AC 120V/60Hz	Mode:	Charging+TX



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dBuV/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		38.3462	25.67	-7.85	17.82	40.00	-22.18	QP
2		71.5806	30.79	-10.09	20.70	40.00	-19.30	QP
3		114.9169	32.59	-8.19	24.40	43.50	-19.10	QP
4		247.6819	25.28	-5.84	19.44	46.00	-26.56	QP
5		499.4247	28.28	-2.33	25.95	46.00	-20.05	QP
6	*	845.0878	27.08	2.69	29.77	46.00	-16.23	QP

1G-40GHz:

Note1: Emission Level = Meter Reading + Factor, Margin= Emission Level- Limit, Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Note2: The peak value is less than the AV value, AV value is not required Factor added by measurement software automatically.

Note3: The spurious emission of 25GHz – 40GHz band which the margin is lower more than 20dB, So that it is not reported in this test report.

For U-NII-1

Polar	Frequency	Meter Reading	Cable loss	Antenna Factor	Preamplifier Factor	Emission Level	Limits	Margin	Detector Type
(H/V)	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5180 MHz)-Above 1G									
Vertical	4434.212	55.12	5.94	35.40	44.00	52.46	74.00	-21.54	Pk
Vertical	4434.212	44.18	5.94	35.40	44.00	41.52	54.00	-12.48	AV
Vertical	10360.154	61.95	8.46	39.75	44.50	65.66	74.00	-8.34	Pk
Vertical	10360.154	44.05	8.46	39.75	44.50	47.76	54.00	-6.24	AV
Vertical	15540.126	56.40	10.12	38.80	44.10	61.22	74.00	-12.78	Pk
Vertical	15540.126	43.63	10.12	38.80	42.70	49.85	54.00	-4.15	AV
Horizontal	4434.242	58.49	5.94	35.18	44.00	55.61	74.00	-18.39	Pk
Horizontal	4434.242	42.43	5.94	35.18	44.00	39.55	54.00	-14.45	AV
Horizontal	10360.121	60.52	8.46	38.71	44.50	63.19	74.00	-10.81	Pk
Horizontal	10360.121	45.91	8.46	38.71	44.50	48.58	54.00	-5.42	AV
Horizontal	15540.115	56.22	10.12	38.38	44.10	60.62	74.00	-13.38	Pk
Horizontal	15540.115	42.28	10.12	38.38	44.10	46.68	54.00	-7.32	AV
middle Channel (5200 MHz)-Above 1G									
Vertical	4592.142	56.48	6.48	36.35	44.05	55.26	74.00	-18.74	Pk
Vertical	4592.142	43.00	6.48	36.35	44.05	41.78	54.00	-12.22	AV
Vertical	10401.205	61.08	8.47	37.88	44.51	62.92	74.00	-11.08	Pk
Vertical	10401.205	46.71	8.47	37.88	44.51	48.55	54.00	-5.45	AV
Vertical	15600.176	58.15	10.12	38.8	44.10	62.97	74.00	-11.03	Pk
Vertical	15600.176	40.87	10.12	38.8	42.70	47.09	54.00	-6.91	AV
Horizontal	4592.313	58.66	6.48	36.37	44.05	57.46	74.00	-16.54	Pk
Horizontal	4592.313	41.21	6.48	36.37	44.05	40.01	54.00	-13.99	AV
Horizontal	10400.215	61.60	8.47	38.64	44.50	64.21	74.00	-9.79	Pk
Horizontal	10400.215	47.00	8.47	38.64	44.50	49.61	54.00	-4.39	AV
Horizontal	15600.175	59.47	10.12	38.38	44.10	63.87	74.00	-10.13	Pk
Horizontal	15600.175	42.79	10.12	38.38	44.10	47.19	54.00	-6.81	AV

High Channel (5240 MHz)-Above 1G									
Vertical	4739.216	59.77	7.10	37.24	43.50	60.61	74.00	-13.39	Pk
Vertical	4739.216	47.01	7.10	37.24	43.50	47.85	54.00	-6.15	AV
Vertical	10480.274	60.40	8.46	37.68	44.50	62.04	74.00	-11.96	Pk
Vertical	10480.274	46.96	8.46	37.68	44.50	48.60	54.00	-5.40	AV
Vertical	15720.189	59.18	10.12	38.8	44.10	64.00	74.00	-10.00	Pk
Vertical	15720.189	43.25	10.12	38.8	42.70	49.47	54.00	-4.53	AV
Horizontal	4739.116	59.17	7.10	37.24	43.50	60.01	74.00	-13.99	Pk
Horizontal	4739.116	44.52	7.10	37.24	43.50	45.36	54.00	-8.64	AV
Horizontal	10481.402	59.31	8.46	38.57	44.50	61.84	74.00	-12.16	Pk
Horizontal	10481.402	43.48	8.46	38.57	44.50	46.01	54.00	-7.99	AV
Horizontal	15720.263	56.36	10.12	38.38	44.10	60.76	74.00	-13.24	Pk
Horizontal	15720.263	43.24	10.12	38.38	44.10	47.64	54.00	-6.36	AV

Note: Both horizontal and vertical antenna polarities were tested and only the worst case (horizontal) emissions were reported.

For U-NII-2A

Polar	Frequency	Meter Reading	Cable loss	Antenna Factor	Preamplifier Factor	Emission Level	Limits	Margin	Detector Type
(H/V)	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5260 MHz)-Above 1G									
Vertical	4437.286	55.66	5.94	35.40	44.00	53.00	74.00	-21.00	Pk
Vertical	4437.286	44.19	5.94	35.40	44.00	41.53	54.00	-12.47	AV
Vertical	10520.149	63.44	8.46	39.75	44.50	67.15	74.00	-6.85	Pk
Vertical	10520.149	42.91	8.46	39.75	44.50	46.62	54.00	-7.38	AV
Vertical	15786.179	56.03	10.12	38.80	44.10	60.85	74.00	-13.15	Pk
Vertical	15786.179	42.16	10.12	38.80	42.70	48.38	54.00	-5.62	AV
Horizontal	4437.289	58.66	5.94	35.18	44.00	55.78	74.00	-18.22	Pk
Horizontal	4437.289	43.83	5.94	35.18	44.00	40.95	54.00	-13.05	AV
Horizontal	10521.148	61.67	8.46	38.71	44.50	64.34	74.00	-9.66	Pk
Horizontal	10521.148	46.17	8.46	38.71	44.50	48.84	54.00	-5.16	AV
Horizontal	15787.169	57.79	10.12	38.38	44.10	62.19	74.00	-11.81	Pk
Horizontal	15787.169	42.27	10.12	38.38	44.10	46.67	54.00	-7.33	AV
middle Channel (5280 MHz)-Above 1G									
Vertical	4595.149	57.74	6.48	36.35	44.05	56.52	74.00	-17.48	Pk
Vertical	4595.149	41.97	6.48	36.35	44.05	40.75	54.00	-13.25	AV
Vertical	10560.235	61.95	8.47	37.88	44.51	63.79	74.00	-10.21	Pk
Vertical	10560.235	47.26	8.47	37.88	44.51	49.10	54.00	-4.90	AV
Vertical	15840.153	56.99	10.12	38.8	44.10	61.81	74.00	-12.19	Pk
Vertical	15840.153	41.88	10.12	38.8	42.70	48.10	54.00	-5.90	AV
Horizontal	4595.153	59.61	6.48	36.37	44.05	58.41	74.00	-15.59	Pk
Horizontal	4595.153	41.48	6.48	36.37	44.05	40.28	54.00	-13.72	AV
Horizontal	10561.239	60.74	8.47	38.64	44.50	63.35	74.00	-10.65	Pk
Horizontal	10561.239	46.20	8.47	38.64	44.50	48.81	54.00	-5.19	AV
Horizontal	15840.189	58.79	10.12	38.38	44.10	63.19	74.00	-10.81	Pk
Horizontal	15840.189	42.88	10.12	38.38	44.10	47.28	54.00	-6.72	AV



High Channel (5320 MHz)-Above 1G									
Vertical	4736.259	59.59	7.10	37.24	43.50	60.43	74.00	-13.57	Pk
Vertical	4736.259	45.64	7.10	37.24	43.50	46.48	54.00	-7.52	AV
Vertical	10640.298	62.06	8.46	37.68	44.50	63.70	74.00	-10.30	Pk
Vertical	10640.298	46.11	8.46	37.68	44.50	47.75	54.00	-6.25	AV
Vertical	15960.487	58.43	10.12	38.8	44.10	63.25	74.00	-10.75	Pk
Vertical	15960.487	44.11	10.12	38.8	42.70	50.33	54.00	-3.67	AV
Horizontal	4736.289	59.31	7.10	37.24	43.50	60.15	74.00	-13.85	Pk
Horizontal	4736.289	44.28	7.10	37.24	43.50	45.12	54.00	-8.88	AV
Horizontal	10640.281	59.14	8.46	38.57	44.50	61.67	74.00	-12.33	Pk
Horizontal	10640.281	44.26	8.46	38.57	44.50	46.79	54.00	-7.21	AV
Horizontal	15960.698	58.14	10.12	38.38	44.10	62.54	74.00	-11.46	Pk
Horizontal	15960.698	41.94	10.12	38.38	44.10	46.34	54.00	-7.66	AV

Note: Both horizontal and vertical antenna polarities were tested and only the worst case (horizontal) emissions were reported.

For U-NII-2C

Polar	Frequency	Meter Reading	Cable loss	Antenna Factor	Preamplifier Factor	Emission Level	Limits	Margin	Detector Type
(H/V)	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5500 MHz)-Above 1G									
Vertical	4435.464	55.79	5.94	35.40	44.00	53.13	74.00	-20.87	Pk
Vertical	4435.464	43.35	5.94	35.40	44.00	40.69	54.00	-13.31	AV
Vertical	11000.231	63.21	8.46	39.75	44.50	66.92	74.00	-7.08	Pk
Vertical	11000.231	43.32	8.46	39.75	44.50	47.03	54.00	-6.97	AV
Vertical	15786.989	56.40	10.12	38.80	44.10	61.22	74.00	-12.78	Pk
Vertical	15786.989	43.51	10.12	38.80	42.70	49.73	54.00	-4.27	AV
Horizontal	4435.376	59.34	5.94	35.18	44.00	56.46	74.00	-17.54	Pk
Horizontal	4435.376	42.52	5.94	35.18	44.00	39.64	54.00	-14.36	AV
Horizontal	11000.297	61.43	8.46	38.71	44.50	64.10	74.00	-9.90	Pk
Horizontal	11000.297	44.89	8.46	38.71	44.50	47.56	54.00	-6.44	AV
Horizontal	15786.946	57.04	10.12	38.38	44.10	61.44	74.00	-12.56	Pk
Horizontal	15786.946	42.70	10.12	38.38	44.10	47.10	54.00	-6.90	AV
middle Channel (5600 MHz)-Above 1G									
Vertical	4594.171	56.58	6.48	36.35	44.05	55.36	74.00	-18.64	Pk
Vertical	4594.171	41.91	6.48	36.35	44.05	40.69	54.00	-13.31	AV
Vertical	11204.481	60.97	8.47	37.88	44.51	62.81	74.00	-11.19	Pk
Vertical	11204.481	45.60	8.47	37.88	44.51	47.44	54.00	-6.56	AV
Vertical	16800.694	56.23	10.12	38.8	44.10	61.05	74.00	-12.95	Pk
Vertical	16800.694	41.80	10.12	38.8	42.70	48.02	54.00	-5.98	AV
Horizontal	4594.174	58.66	6.48	36.37	44.05	57.46	74.00	-16.54	Pk
Horizontal	4594.174	43.09	6.48	36.37	44.05	41.89	54.00	-12.11	AV
Horizontal	11204.613	61.14	8.47	38.64	44.50	63.75	74.00	-10.25	Pk
Horizontal	11204.613	48.21	8.47	38.64	44.50	50.82	54.00	-3.18	AV
Horizontal	16800.943	57.55	10.12	38.38	44.10	61.95	74.00	-12.05	Pk
Horizontal	16800.943	43.83	10.12	38.38	44.10	48.23	54.00	-5.77	AV

High Channel (5700 MHz)-Above 1G									
Vertical	4738.013	58.76	7.10	37.24	43.50	59.60	74.00	-14.40	Pk
Vertical	4738.013	47.15	7.10	37.24	43.50	47.99	54.00	-6.01	AV
Vertical	11400.798	61.80	8.46	37.68	44.50	63.44	74.00	-10.56	Pk
Vertical	11400.798	46.83	8.46	37.68	44.50	48.47	54.00	-5.53	AV
Vertical	17100.694	57.11	10.12	38.8	44.10	61.93	74.00	-12.07	Pk
Vertical	17100.694	43.82	10.12	38.8	42.70	50.04	54.00	-3.96	AV
Horizontal	4738.016	59.23	7.10	37.24	43.50	60.07	74.00	-13.93	Pk
Horizontal	4738.016	44.42	7.10	37.24	43.50	45.26	54.00	-8.74	AV
Horizontal	11400.799	59.93	8.46	38.57	44.50	62.46	74.00	-11.54	Pk
Horizontal	11400.799	44.09	8.46	38.57	44.50	46.62	54.00	-7.38	AV
Horizontal	17101.006	57.00	10.12	38.38	44.10	61.40	74.00	-12.60	Pk
Horizontal	17101.001	43.38	10.12	38.38	44.10	47.78	54.00	-6.22	AV

Note: Both horizontal and vertical antenna polarities were tested and only the worst case (horizontal) emissions were reported.

For U-NII-3

Polar	Frequency	Meter Reading	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Margin	Detector Type
(H/V)	(MHz)	(dBUV)	(dB)	dB/m	(dB)	(dBUV/m)	(dBUV/m)	(dB)	
Low Channel (5745 MHz)-Above 1G									
Vertical	4435.986	55.08	5.94	35.40	44.00	52.42	74.00	-21.58	Pk
Vertical	4435.986	43.25	5.94	35.40	44.00	40.59	54.00	-13.41	AV
Vertical	11490.462	61.95	8.46	39.75	44.50	65.66	74.00	-8.34	Pk
Vertical	11490.462	44.23	8.46	39.75	44.50	47.94	54.00	-6.06	AV
Vertical	17235.746	56.75	10.12	38.80	44.10	61.57	74.00	-12.43	Pk
Vertical	17235.746	43.70	10.12	38.80	42.70	49.92	54.00	-4.08	AV
Horizontal	4435.991	59.64	5.94	35.18	44.00	56.76	74.00	-17.24	Pk
Horizontal	4435.991	43.71	5.94	35.18	44.00	40.83	54.00	-13.17	AV
Horizontal	11491.469	62.14	8.46	38.71	44.50	64.81	74.00	-9.19	Pk
Horizontal	11491.469	46.26	8.46	38.71	44.50	48.93	54.00	-5.07	AV
Horizontal	17235.986	57.34	10.12	38.38	44.10	61.74	74.00	-12.26	Pk
Horizontal	17235.986	42.78	10.12	38.38	44.10	47.18	54.00	-6.82	AV
middle Channel (5785 MHz)-Above 1G									
Vertical	4594.764	56.70	6.48	36.35	44.05	55.48	74.00	-18.52	Pk
Vertical	4594.764	42.27	6.48	36.35	44.05	41.05	54.00	-12.95	AV
Vertical	11570.964	62.31	8.47	37.88	44.51	64.15	74.00	-9.85	Pk
Vertical	11570.964	46.01	8.47	37.88	44.51	47.85	54.00	-6.15	AV
Vertical	17355.461	57.73	10.12	38.8	44.10	62.55	74.00	-11.45	Pk
Vertical	17355.461	40.88	10.12	38.8	42.70	47.10	54.00	-6.90	AV
Horizontal	4594.894	59.06	6.48	36.37	44.05	57.86	74.00	-16.14	Pk
Horizontal	4594.894	41.34	6.48	36.37	44.05	40.14	54.00	-13.86	AV
Horizontal	11571.034	62.32	8.47	38.64	44.50	64.93	74.00	-9.07	Pk
Horizontal	11571.034	47.04	8.47	38.64	44.50	49.65	54.00	-4.35	AV
Horizontal	17356.264	59.41	10.12	38.38	44.10	63.81	74.00	-10.19	Pk
Horizontal	17356.264	43.29	10.12	38.38	44.10	47.69	54.00	-6.31	AV

High Channel (5825 MHz)-Above 1G									
Vertical	4738.179	59.40	7.10	37.24	43.50	60.24	74.00	-13.76	Pk
Vertical	4738.179	45.37	7.10	37.24	43.50	46.21	54.00	-7.79	AV
Vertical	11650.894	60.79	8.46	37.68	44.50	62.43	74.00	-11.57	Pk
Vertical	11650.894	46.00	8.46	37.68	44.50	47.64	54.00	-6.36	AV
Vertical	17475.031	59.11	10.12	38.8	44.10	63.93	74.00	-10.07	Pk
Vertical	17475.031	42.34	10.12	38.8	42.70	48.56	54.00	-5.44	AV
Horizontal	4738.694	60.43	7.10	37.24	43.50	61.27	74.00	-12.73	Pk
Horizontal	4738.694	43.71	7.10	37.24	43.50	44.55	54.00	-9.45	AV
Horizontal	11650.994	59.95	8.46	38.57	44.50	62.48	74.00	-11.52	Pk
Horizontal	11650.994	43.69	8.46	38.57	44.50	46.22	54.00	-7.78	AV
Horizontal	17475.511	58.00	10.12	38.38	44.10	62.40	74.00	-11.60	Pk
Horizontal	17475.511	41.31	10.12	38.38	44.10	45.71	54.00	-8.29	AV

Note: Both horizontal and vertical antenna polarities were tested and only the worst case (horizontal) emissions were reported.

5.7 Conduction spurious emission

5.7.1 Limits

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

Frequency Band (MHz)	Limit
5150 - 5250	Outside of the 5.15-5.35 GHz band: e.i.r.p. -27 dBm
5250 - 5350	Outside of the 5.15-5.35 GHz band: e.i.r.p. -27 dBm
5470 - 5725	Outside of the 5.47-5.725 GHz band: e.i.r.p. -27 dBm
5725 - 5850	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

5.7.2 Test setup



5.7.3 Test procedure

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.

RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

Allow the trace to stabilize