Microtest
微测检测

Test Report

FCC ID: 2AMKU-T9

Date of issue: Jul. 04, 2017

Report Number:	MTi170629E182
Sample Description:	Smart Watch
Model(s):	T9, T9 Plus, T9x series(X is arabic number)
Applicant:	Shenzhen Gomtel Science&Technology Co., Ltd.
Address:	501-503,5th Floor, Sector B, Fuhua Technology Building No.9116 eihuan Road, Nanshan, Shenzhen, China
Date of Test:	Jun. 18, 2017 to Jun. 27, 2017

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

TEST RESULT CERTIFICATION

Applicant's name ..... :	**Shenzhen Gomtel Science&Technology Co., Ltd.**
Address ..... :	501-503,5th Floor, Sector B, Fuhua Technology Building No.9116 eihuan Road, Nanshan, Shenzhen, China
Manufacture's Name ..... :	**Shenzhen Gomtel Science&Technology Co., Ltd.**
Address ..... :	501-503,5th Floor, Sector B, Fuhua Technology Building No.9116 eihuan Road, Nanshan, Shenzhen, China
Product description	
Product name ..... :	Smart Watch
Model and/or type reference :	T9
Serial Model ..... :	T9 Plus, T9x series(X is arabic number)
Standards ..... :	FCC Part15.247
Test procedure	ANSI C63.4-2014

Tested by: Ace Chai

Ace Chai Jul. 04, 2017

Reviewed by: Smith Chen

Smith Chen Jul. 04, 2017

Approved by: Tom Xue

Tom Xue Jul. 04, 2017

Table of Contents

Page

Table of Contents

Page

错误！未指定书签。. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.247 (a)(2)	6dB Bandwidth	PASS	
15.247 (b)	Peak Output Power	PASS	
15.247 (c)	Radiated Spurious Emission	PASS	
15.247 (d)	Power Spectral Density	PASS	
15.205	Band Edge Emission	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

(1)” N/A” denotes test is not applicable in this Test Report

错误！未指定书签。 **TEST FACILITY**

Shenzhen Toby Technology Co., Ltd.
Add.: 10/F.,A Block, Jiada R&D Bldg.,No.5 Songpingshan, Road, Science& Technology Park, Shenzhen, 518057
FCC Registration No.:811562

错误！未指定书签。 **MEASUREMENT UNCERTAINTY**

The reported uncertainty of measurement **y** ± **U**，where expended 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	±1.38dB
2	RF power, conducted	±0.16dB
3	Spurious emissions, conducted	±0.21dB
4	All emissions, radiated(<1G)	±4.68dB
5	All emissions, radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%

错误！未指定书签。. GENERAL INFORMATION

错误！未指定书签。 GENERAL DESCRIPTION OF EUT

<table>
<tr><td>Equipment</td><td>Smart Watch</td></tr>
<tr><td>Trade Name</td><td>duraMOBI</td></tr>
<tr><td>Model Name</td><td>T9</td></tr>
<tr><td>Serial Model</td><td>T9 Plus, T9x series(X is arabic number)</td></tr>
<tr><td>Model Difference</td><td>Color and packaging are different</td></tr>
<tr><td>Product Description</td><td>The EUT is a Smart Watch
<table>
<tr><td>Operation Frequency:</td><td>802.11b/g/n20:2412~2462 MHz
802.11n40:2422~2452 MHz</td></tr>
<tr><td>Modulation Type:</td><td>11n: BPSK, QPSK, 16QAM, 64QAM with OFDM
11g: BPSK, QPSK, 16QAM, 64QAM, OFDM
11b: DQPSK, DBPSK, DSSS, CCK</td></tr>
<tr><td>Bit Rate of Transmitter</td><td>802.11b:11/5.5/2/1 Mbps
802.11g:54/48/36/24/18/12/9/6Mbps
802.11n:65/52/6.5Mbps</td></tr>
<tr><td>Number Of Channel</td><td>802.11b/g/n20:11CH
802.11n40:7 CH</td></tr>
<tr><td>Antenna Designation:</td><td>Please see Note 3.</td></tr>
<tr><td>Output Power(Conducted):</td><td>802.11b: 15.61 dBm (Max.)</td></tr>
<tr><td>Antenna Gain (dBi)</td><td>2.49dbi</td></tr>
</table>
Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.</td></tr>
<tr><td>Channel List</td><td>Please refer to the Note 2.</td></tr>
<tr><td>Battery</td><td>DC 3.7V by rechargeable Li-polymer battery</td></tr>
<tr><td>Connecting I/O Port(s)</td><td>Please refer to the User's Manual</td></tr>
</table>

Note:

1. For a more detailed features description, please refer to the manufacturer’s specifications or the User's Manual.

2.

Channel List for 802.11b/g/n(20)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

Channel List for 802.11n(40)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
/	/	04	2427	07	2442	/	/
/	/	05	2432	08	2447	/	/
03	2422	06	2437	09	2452		

3.

Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
A	N/A	N/A	Integrated antenna	/	0	Wifi Antenna

错误！未指定书签。 **DESCRIPTION OF TEST MODES**

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	802.11b CH1/ CH6/ CH11
Mode 2	802.11g CH1/ CH6/ CH11
Mode 3	802.11n CH1/ CH6/ CH11
Mode 4	802.11n CH3/ CH6/ CH9
Mode 5	Link Mode

For Conducted Emission	
Final Test Mode	Description
Mode 4	Link Mode

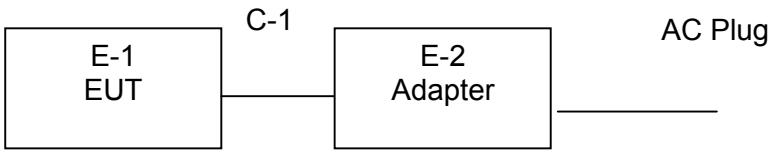
For Radiated Emission	
Final Test Mode	Description
Mode 1	802.11b CH1/ CH6/ CH11
Mode 2	802.11g CH1/ CH6/ CH11
Mode 3	802.11n CH1/ CH6/ CH11
Mode 4	802.11n CH3/ CH6/ CH9

Note:

(1) The measurements are performed at the highest, middle, lowest available channels.

(2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

错误！未指定书签。 **BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED**



错误！未指定书签。 **DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)**

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
E-1	Smart Watch	duraMOBI	T9	N/A	EUT
E-2	Adapter	N/A	UT-133E-5200Z	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	1.0m	
C-2	NO	NO	0.8m	

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.

错误！未指定书签。 **EQUIPMENTS LIST FOR ALL TEST ITEMS**

For RF conducted test:

Equipment	Manufacturer	Model	Serial No.	Calibration Due
Signal Analyzer	Agilent	N9010A	MY48030494	2017/11/4
4 Ch. Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	TW54063513	2017/11/4
X-series USB Peak and Average Power Sensor	Agilent	U2021XA	MY54080019	2017/11/4
vector Signal Generator	Agilent	E4438C	US44271917	2017/11/4
vector Signal Generator	Agilent	E4438C	MY49070163	2017/11/4
Dc Power Supply	GW	GPR-6030D	/	2017/11/4
Temperature & Humitidy Chamber	GIANT FORCE	GTH-056P	GF-94454-1	2017/11/4
Wideband Radio Communication Tester	ROHDE&SCHWARZ	CMW500	120909	2017/11/4

For Radiated test:

Equipment	Manufacturer	Model	Serial No.	Calibration Due
Broadband TRILOG Antenna	Schwarabeck	VULB9163	9163-872	2017/11/14
Horn Antenna	Schwarzbeck	BBHA 9120 D	9120D-1145	2017/11/14
Amplifier	HP	8447D	3113A06150	2017/11/4
Amplifier	Agilent	8449B	3008A02400	2017/7/4
Test Receiver	Schwarabeck	ESPI	100314	2017/11/4
Spectrum analyzer	Agilent	E4407B	MY41441082	2017/11/4
Signal Generator	R&S	SMT 06	832080/007	2017/11/4

Note: the calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

错误！未指定书签。**. EMC EMISSION TEST**

错误！未指定书签。 **CONDUCTED EMISSION MEASUREMENT**

错误！未指定书签。 **POWER LINE CONDUCTED (Frequency Range 150KHz-30MHz)**
EMISSION Limits

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

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.

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

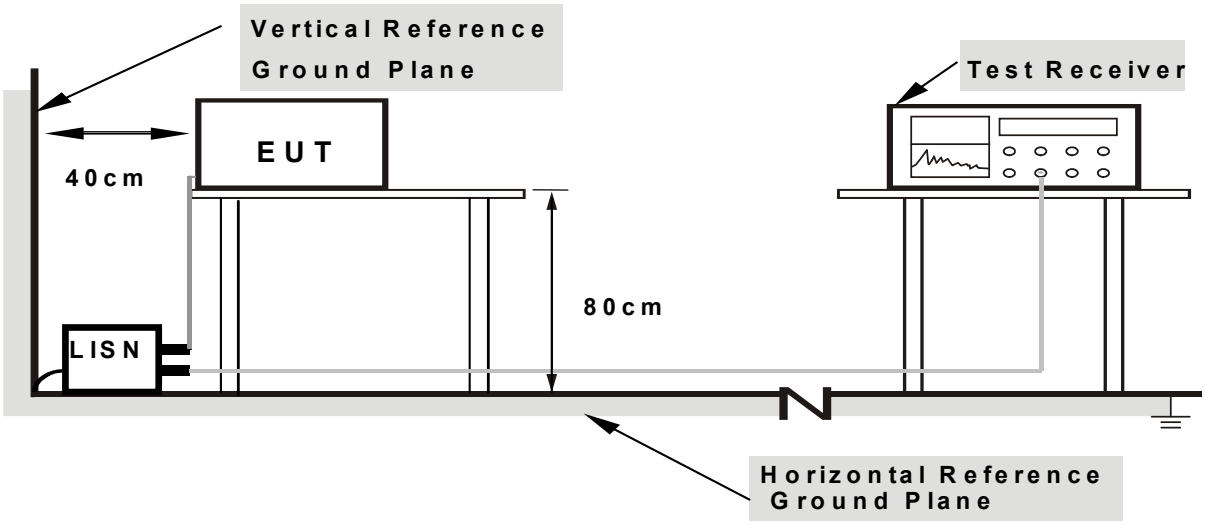
错误！未指定书签。 **TEST PROCEDURE**

a. 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.
b. 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.
c. 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.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

错误！未指定书签。 **DEVIATION FROM TEST STANDARD**

No deviation

错误！未指定书签。 **TEST SETUP**



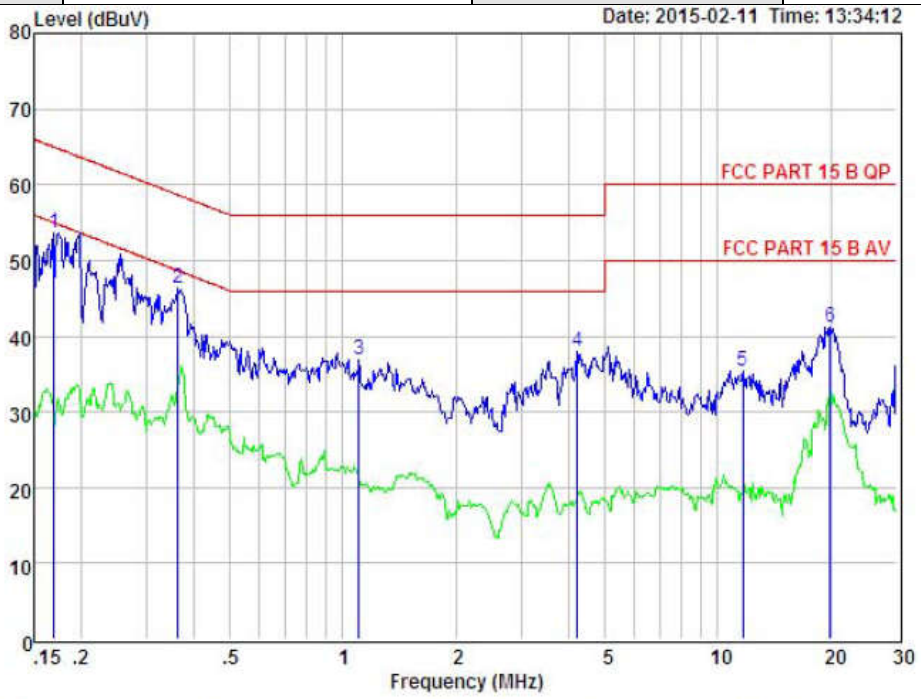
Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

错误！未指定书签。 **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.

错误！未指定书签。 **TEST RESULTS**

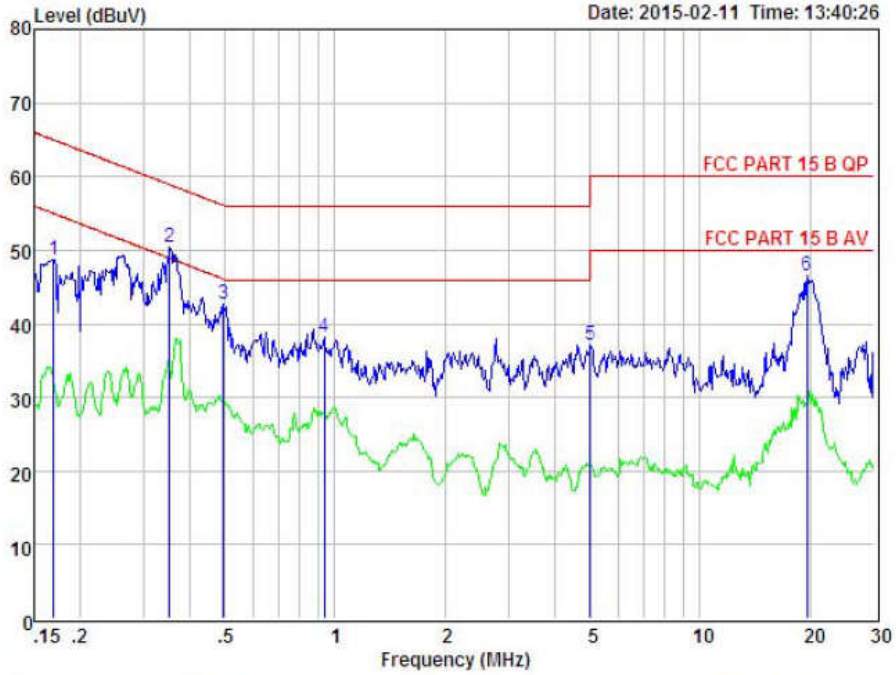
EUT：	Smart Watch	Model Name. ：	T9
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	DC 5Vfrom adapter AC 120V/60Hz	Test Mode：	Mode 5



Item	Freq	Read	LISN Factor	Preamp Factor	Cable Lose	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	0.169	43.87	0.03	-9.72	0.10	53.72	64.99	-11.27	Peak
2	0.363	36.40	0.03	-9.72	0.10	46.25	58.65	-12.40	Peak
3	1.106	27.04	0.04	-9.71	0.10	36.89	56.00	-19.11	Peak
4	4.224	28.13	0.08	-9.69	0.12	38.02	56.00	-17.98	Peak
5	11.683	25.40	0.25	-9.47	0.22	35.34	60.00	-24.66	Peak
6	19.950	31.01	0.31	-9.49	0.35	41.16	60.00	-18.84	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss

EUT：	Smart Watch	Model Name. ：	T9
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase：	N
Test Voltage ：	DC 5Vfrom adapter AC 120V/60Hz	Test Mode：	Mode 5



Item	Freq	Read	LISN Factor	Preamp Factor	Cable Lose	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	0.169	38.88	0.03	-9.72	0.10	48.73	64.99	-16.26	Peak
2	0.352	40.50	0.03	-9.72	0.10	50.35	58.91	-8.56	Peak
3	0.494	32.90	0.03	-9.72	0.10	42.75	56.10	-13.35	Peak
4	0.933	28.27	0.04	-9.71	0.10	38.12	56.00	-17.88	Peak
5	5.005	27.21	0.10	-9.68	0.12	37.11	60.00	-22.89	Peak
6	19.635	36.39	0.31	-9.48	0.34	46.52	60.00	-13.48	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss

错误！未指定书签。 **RADIATED EMISSION MEASUREMENT**

错误！未指定书签。 **RADIATED (Frequency Range 9kHz-1000MHz)**

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 (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

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (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

错误！未指定书签。 **TEST PROCEDURE**

a. 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.
b. 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.
c. 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.
d. 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.

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

Note:

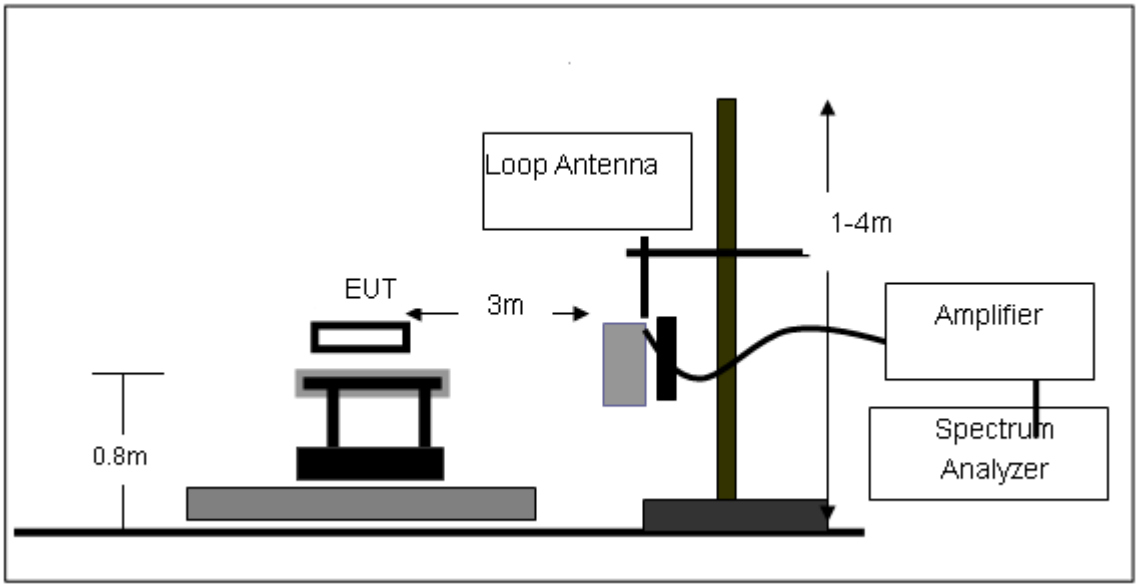
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

错误！未指定书签。 **DEVIATION FROM TEST STANDARD**

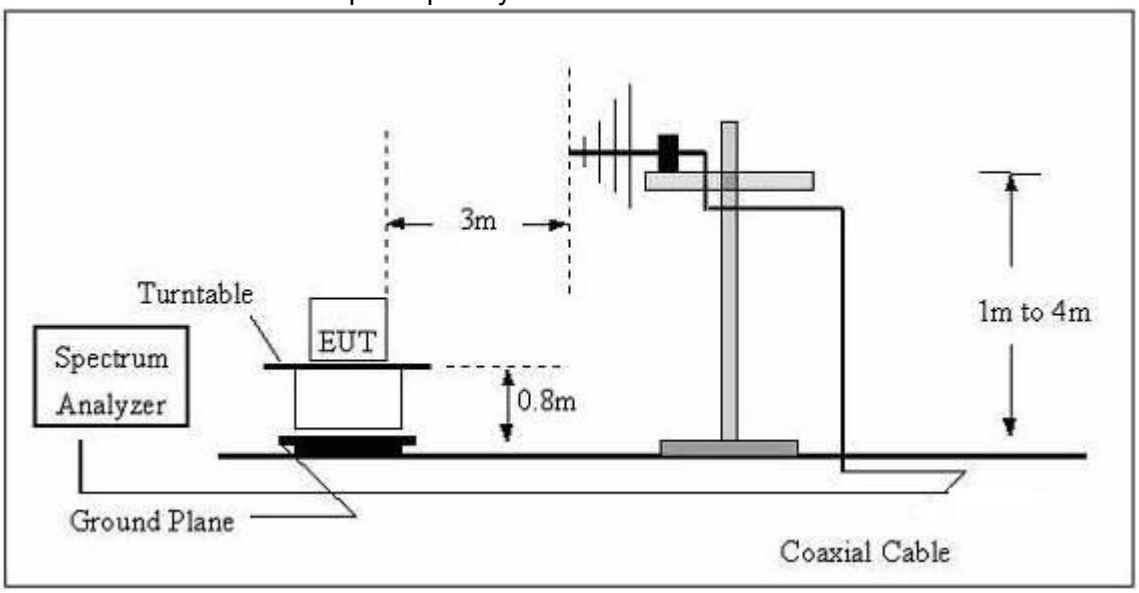
No deviation

错误！未指定书签。 **TEST SETUP**

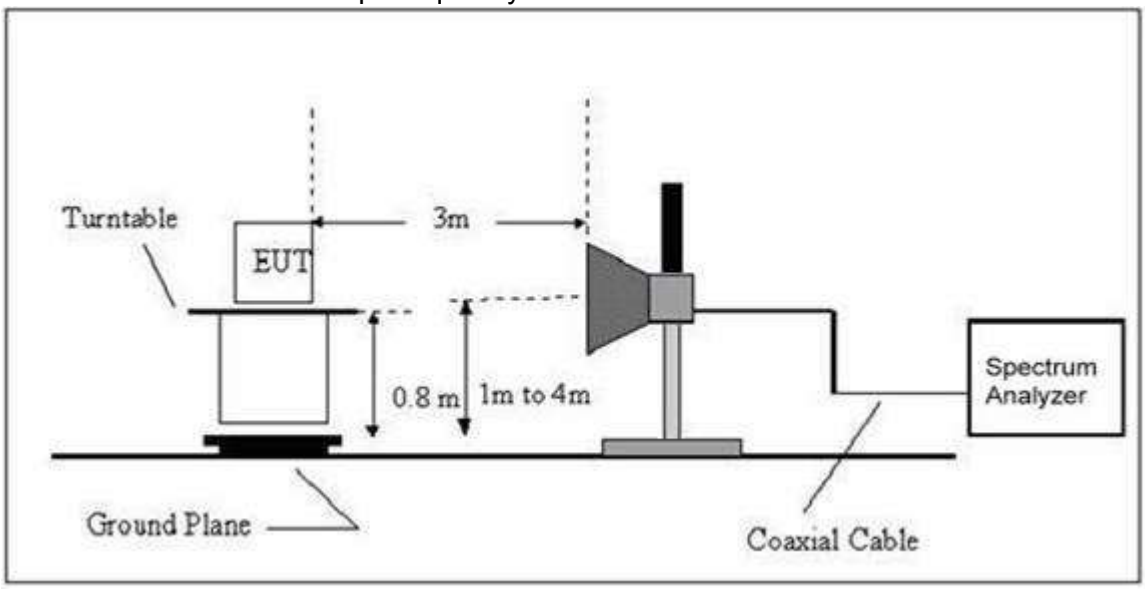
（A）Radiated Emission Test-Up Frequency Below 30MHz



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



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



错误！未指定书签。 **EUT OPERATING CONDITIONS**

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

错误！未指定书签。 **TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)**

EUT：	Smart Watch	Model Name. ：	T9
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 5Vfrom adapter AC 120V/60Hz
Test Mode ：	TX	Polarization :	--

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

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =40 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

错误！未指定书签。 **TEST RESULTS (BETWEEN 30MHZ – 1GHZ)**

EUT：	Smart Watch	Model Name ：	T9
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 5Vfrom adapter
Test Mode ：	TX		

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
V	119.4360	15.68	12.08	27.76	43.5	15.74	QP
V	128.1129	15.97	12.2	28.17	43.5	15.33	QP
V	170.7926	20.52	10.35	30.87	43.5	12.63	QP
V	341.9786	12.86	16.19	29.05	46	16.95	QP
V	468.8761	17.94	19.69	37.63	46	8.37	QP
V	935.5462	9.75	29.42	39.17	46	6.83	QP
H	170.7923	27.52	10.35	37.87	43.5	5.63	QP
H	341.9786	24.96	16.19	41.15	46	4.85	QP
H	468.8761	20.52	19.69	40.21	46	5.79	QP
H	726.8052	14.49	26	40.49	46	5.51	QP
H	813.1114	16.62	26.35	42.97	46	3.03	QP
H	854.0247	12.56	27.51	40.07	46	5.93	QP

Remark:

Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level- Limit

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Factor added by measurement software automatically

错误！未指定书签。 **TEST RESULTS**
(1G-25GHZ)

802.11b

Normal Voltage

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (2412 MHz)							
Vertical	2491.777	60.17	-11.65	48.52	74	25.48	Pk
Horizontal	2498.247	57.07	-12.73	44.34	74	29.66	Pk
Vertical	4824.184	57.17	-3.53	53.64	74	20.36	Pk
Horizontal	4824.184	55.26	-3.53	51.73	74	22.27	Pk
Vertical	1485.838	60.87	-17.1	43.77	74	30.23	Pk
Vertical	1636.784	60.56	-16.06	44.5	74	29.5	Pk
Vertical	2095.928	59.37	-11.88	47.49	74	26.51	Pk
Horizontal	1074.301	61.1	-19.69	41.41	74	32.59	Pk
Horizontal	1483.178	60.09	-17.09	43	74	31	Pk
Horizontal	1895.832	57.11	-14.25	42.86	74	31.14	Pk
Mid Channel (2437 MHz)							
Vertical	2474.777	56.79	-11.65	45.14	74	28.86	Pk
Horizontal	2474.144	57.48	-9.37	48.11	74	25.89	Pk
Vertical	4874.425	56.86	-3.64	53.22	74	20.78	Pk
Horizontal	4874.979	53.48	-3.64	49.84	74	24.16	Pk
Vertical	1433.535	63.85	-17.12	46.73	74	27.27	Pk
Vertical	1636.784	61.18	-16.06	45.12	74	28.88	Pk
Vertical	2284.166	54.92	-12.83	42.09	74	31.91	Pk
Horizontal	1280.515	60.58	-17.82	42.76	74	31.24	Pk
Horizontal	1636.784	59.41	-16.06	43.35	74	30.65	Pk
Horizontal	1892.438	59.53	-14.28	45.25	74	28.75	Pk
High Channel (2462 MHz)							
Vertical	2453.883	57.45	-12.91	44.54	74	29.46	Pk
Horizontal	2453.839	57.45	-11.59	45.86	74	28.14	Pk
Vertical	4926.325	53.96	-3.75	50.21	74	23.79	Pk
Horizontal	4926.683	51.24	-3.75	47.49	74	26.51	Pk
Vertical	1187.688	58.48	-18.27	40.21	74	33.79	Pk
Vertical	1636.784	57.29	-16.06	41.23	74	32.77	Pk
Vertical	2084.693	54.88	-11.99	42.89	74	31.11	Pk
Horizontal	1534.540	57.54	-16.94	40.6	74	33.4	Pk
Horizontal	1786.985	57.25	-15.04	42.21	74	31.79	Pk
Horizontal	1892.438	57.13	-14.28	42.85	74	31.15	Pk

802.11g

Normal Voltage

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2412							
V	4824.428	52.77	-3.53	49.24	74	24.76	Pk
V	4824.428	32.86	-3.53	29.33	54	24.67	AV
H	4824.529	54.68	-3.54	51.14	74	22.86	Pk
H	4824.529	32.95	-3.54	29.41	54	24.59	AV
operation frequency:2437							
V	4873.548	52.96	-3.64	49.32	74	24.68	Pk
V	4873.548	34.69	-3.64	31.05	54	22.95	AV
H	4875.279	54.16	-3.64	50.52	74	23.48	Pk
H	4875.279	33.71	-3.64	30.07	54	23.93	AV
operation frequency:2462							
V	4924.358	55.18	-3.75	51.43	74	22.57	pk
V	4924.358	34.85	-3.75	31.1	54	22.9	AV
H	4924.591	51.36	-3.74	47.62	74	26.38	pk
H	4924.591	35	-3.74	31.26	54	22.74	pk

Remark:

Absolute Level= Reading Level+ Factor, Margin= Absolute Level - Limit

802.11n(20)

Normal Voltage

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2412							
V	4824.428	51.13	-3.53	47.6	74	26.4	Pk
H	4824.529	54.18	-3.54	50.64	74	23.36	Pk
operation frequency:2437							
V	4873.548	51.53	-3.53	48	74	26	Pk
H	4875.279	53.82	-3.54	50.28	74	23.72	Pk
operation frequency:2462							
V	4924.358	52.59	-3.75	48.84	74	25.16	pk
H	4924.591	51.45	-3.74	47.71	74	26.29	pk
Remark: Absolute Level= Reading Level+ Factor, Margin= Absolute Level - Limit							

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

802.11n(40)

Normal Voltage

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2422							
V	4844.537	50.73	-3.56	47.17	74	26.83	Pk
H	4824.614	52.07	-3.56	48.51	74	25.49	Pk
operation frequency:2437							
V	4873.548	50.86	-3.64	47.22	74	26.78	Pk
H	4875.279	53.64	-3.64	50	74	24	Pk
operation frequency:2452							
V	4904.158	51.93	-3.71	48.22	74	25.78	pk
H	4904.476	51.07	-3.71	47.36	74	26.64	pk
Remark: Absolute Level= Reading Level+ Factor, Margin= Absolute Level - Limit							

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

BAND EDGE(Radiated)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type	Comment
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		
802.11b							
2390	56.08	-13.06	43.02	74	30.98	peak	Vertical
2390	57.18	-13.06	44.12	74	29.88	peak	Horizontal
2483.5	56.51	-12.78	43.73	74	30.27	peak	Vertical
2483.5	53.64	-12.78	40.86	74	33.14	peak	Horizontal
802.11g							
2390	56.25	-13.06	43.19	74	30.81	peak	Vertical
2390	56.7	-13.06	43.64	74	30.36	peak	Horizontal
2483.5	57.34	-12.78	44.56	74	29.44	peak	Vertical
2483.5	57.6	-12.78	44.82	74	29.18	peak	Horizontal
802.11n20							
2390	57.19	-13.06	44.13	74	29.87	peak	Vertical
2390	57.5	-13.06	44.44	74	29.56	peak	Horizontal
2483.5	57.22	-12.78	44.44	74	29.56	peak	Vertical
2483.5	55.65	-12.78	42.87	74	31.13	peak	Horizontal
802.11n40							
2390	57.51	-13.06	44.45	74	29.55	peak	Vertical
2390	57.97	-13.06	44.91	74	29.09	peak	Horizontal
2483.5	57.19	-12.78	44.41	74	29.59	peak	Vertical
2483.5	55.55	-12.78	42.77	74	31.23	peak	Horizontal

NOTE:The PK value is less than the AV value, AV value is not required.

错误！未指定书签。. POWER SPECTRAL DENSITY TEST

错误！未指定书签。 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

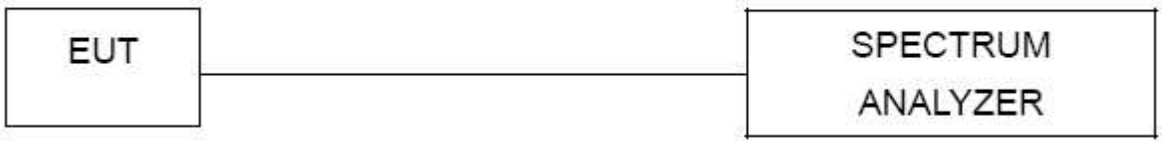
错误！未指定书签。 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW ≥ 3 kHz.
4. Set the VBW ≥ 3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

错误！未指定书签。 DEVIATION FROM STANDARD

No deviation.

错误！未指定书签。 TEST SETUP



错误！未指定书签。 EUT OPERATION CONDITIONS

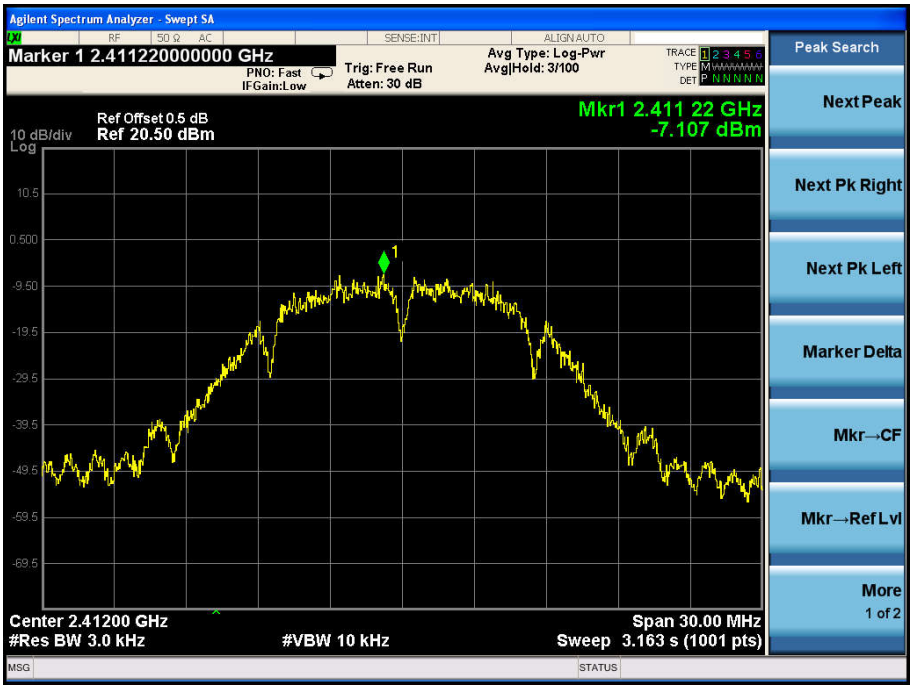
The EUT tested system was configured as the statements of 2.1 Unless otherwise a special operating condition is specified in the follows during the testing.

错误！未指定书签。 **TEST RESULTS**

EUT：	Smart Watch	Model Name ：	T9
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1015 hPa	Test Voltage ：	DC 5Vfrom adapter
Test Mode ：	TX b Mode /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-7.107	8	PASS
2437 MHz	-5.899	8	PASS
2462 MHz	-5.068	8	PASS

TX CH01



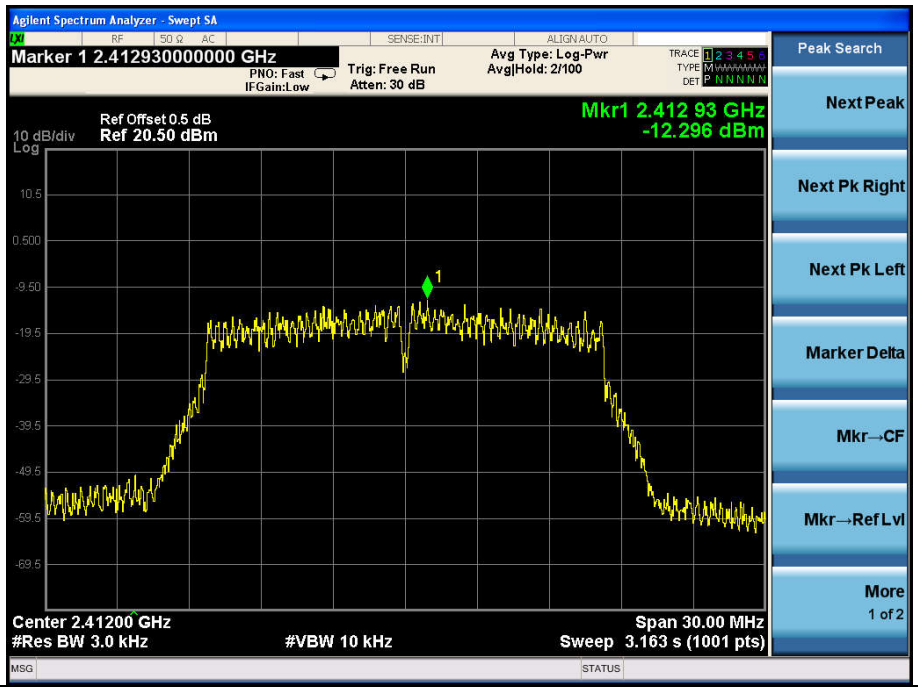
TX CH06

TX CH11

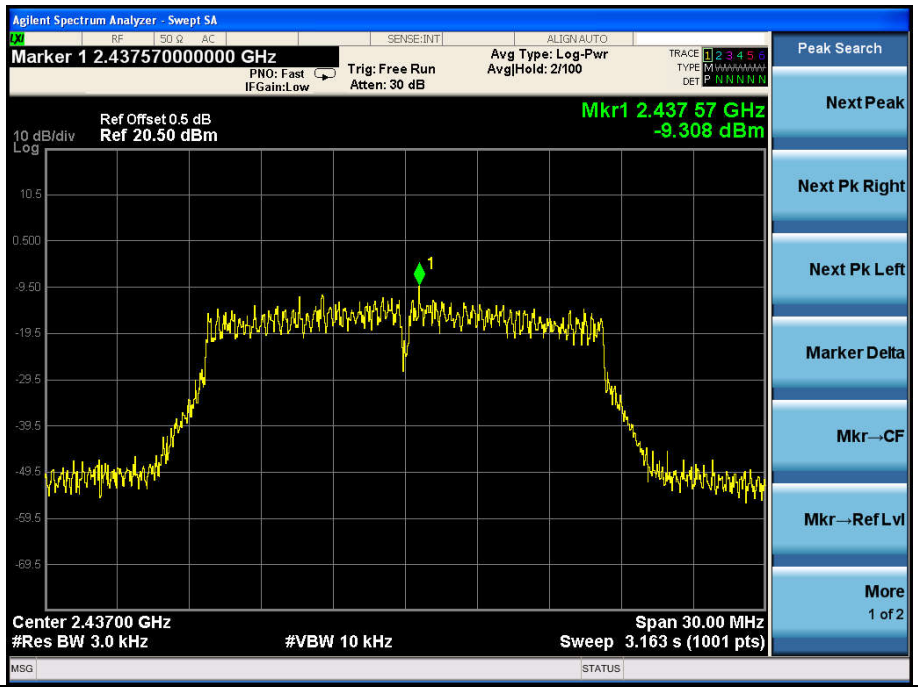
EUT：	Smart Watch	Model Name ：	T9
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1015 hPa	Test Voltage ：	DC 5Vfrom adapter
Test Mode ：	TX g Mode /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-12.296	8	PASS
2437 MHz	-9.308	8	PASS
2462 MHz	-11.712	8	PASS

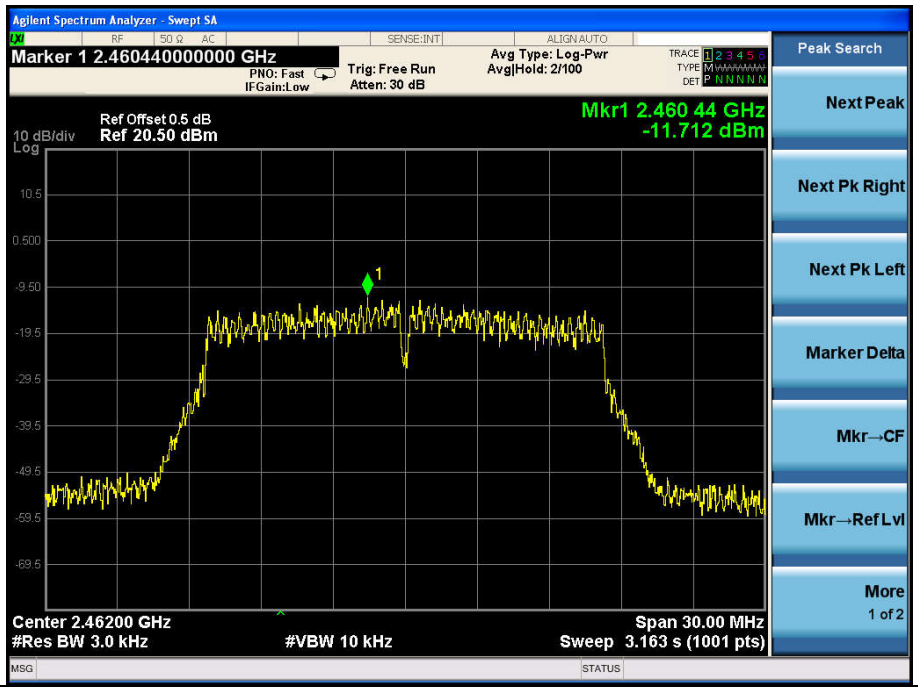
TX CH01



TX CH06



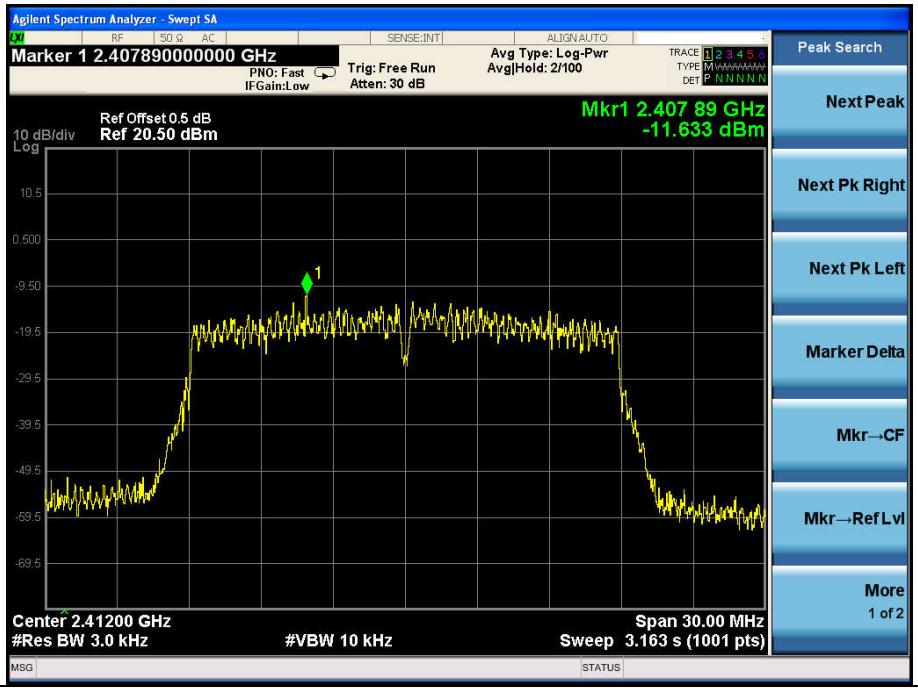
TX CH11



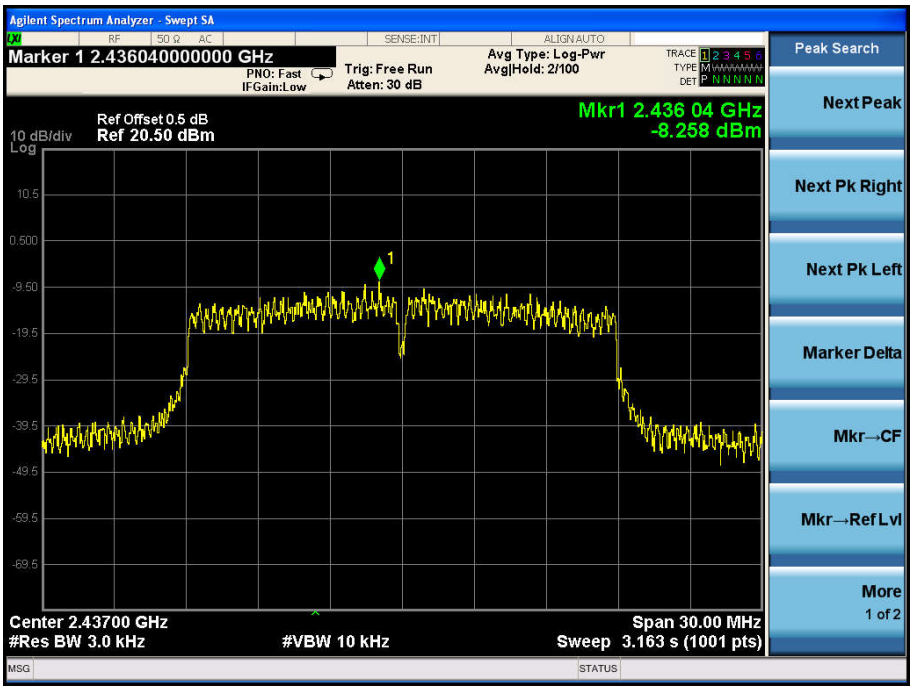
EUT：	Smart Watch	Model Name ：	T9
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1015 hPa	Test Voltage ：	DC 5Vfrom adapter
Test Mode ：	TX n20 Mode /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-11.633	8	PASS
2437 MHz	-8.258	8	PASS
2462 MHz	-11.908	8	PASS

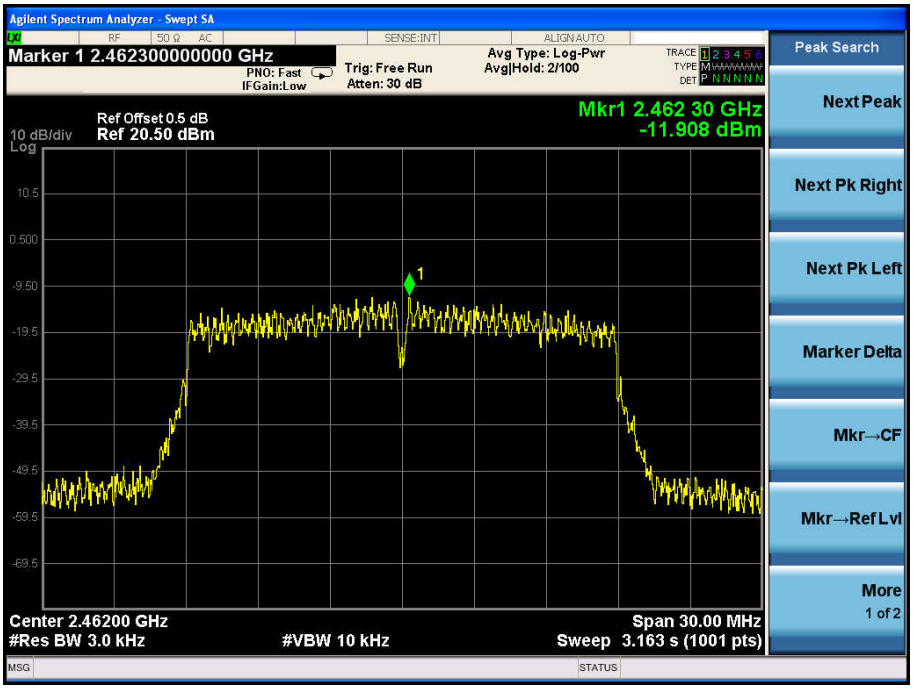
TX CH01



TX CH06



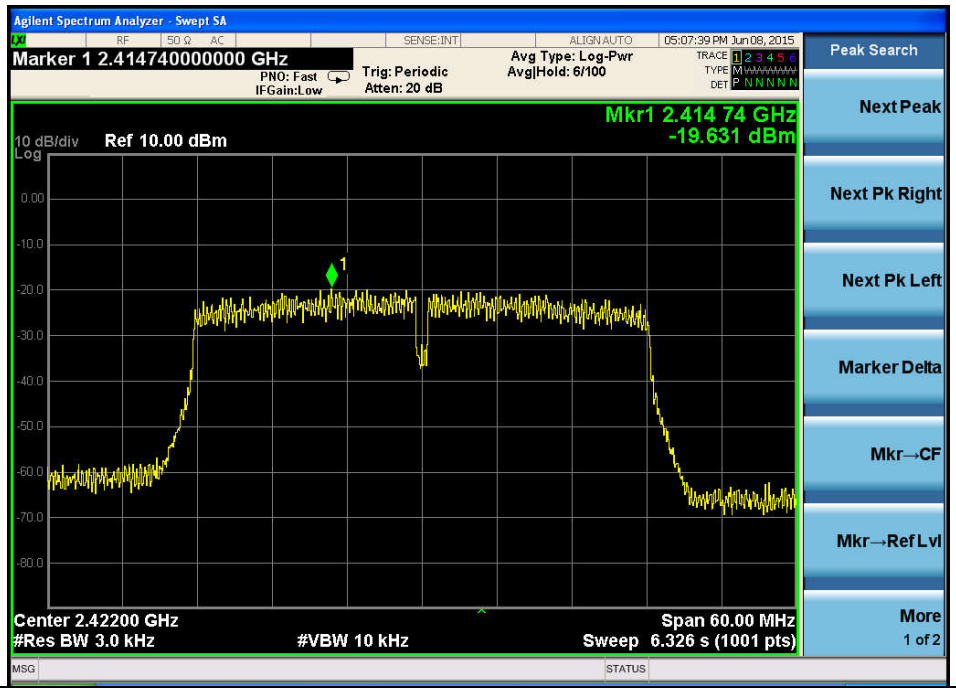
TX CH11



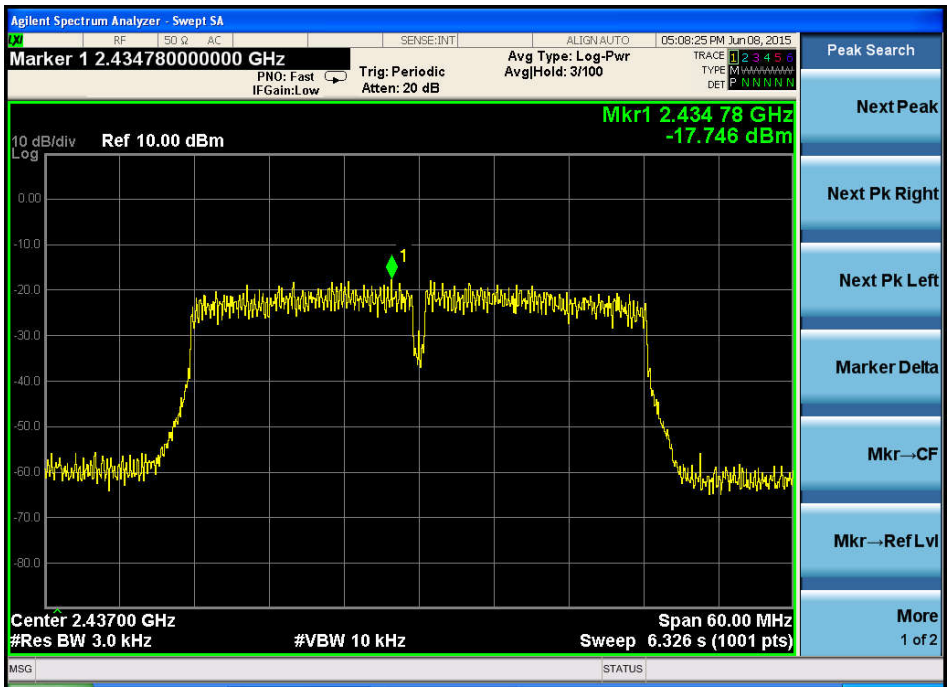
EUT：	Smart Watch	Model Name ：	T9
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1015 hPa	Test Voltage ：	DC 5Vfrom adapter
Test Mode ：	TX n40 Mode /CH03, CH06, CH09		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2422 MHz	-19.631	8	PASS
2437 MHz	-17.746	8	PASS
2452 MHz	-18.415	8	PASS

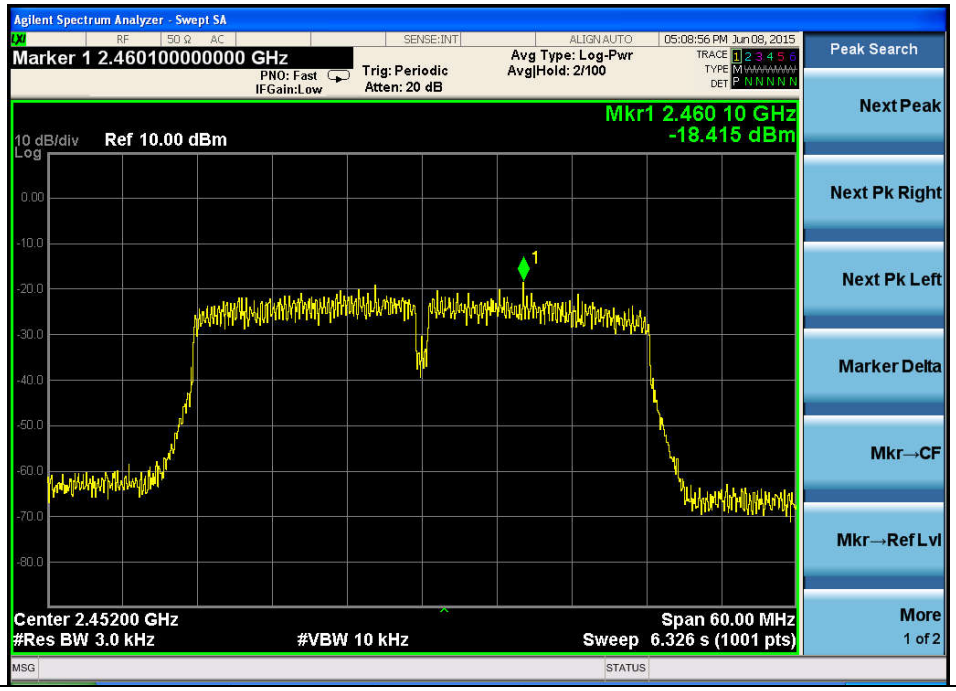
TX CH03



TX CH06



TX CH09



错误！未指定书签。**. BANDWIDTH TEST**

错误！未指定书签。 **APPLIED PROCEDURES / LIMIT**

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	>= 500KHz (6dB bandwidth)	2400-2483.5	PASS

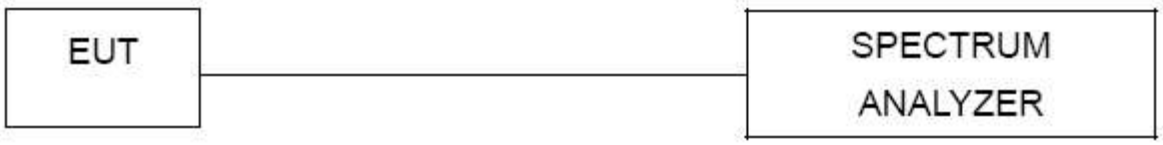
错误！未指定书签。 **TEST PROCEDURE**

1. Set RBW= 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 x 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.

错误！未指定书签。 **DEVIATION FROM STANDARD**

No deviation.

错误！未指定书签。 **TEST SETUP**



错误！未指定书签。 **EUT OPERATION CONDITIONS**

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

错误！未指定书签。 **TEST RESULTS**

EUT：	Smart Watch	Model Name ：	T9
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 5Vfrom adapter
Test Mode ：	TX b Mode /CH01, CH06, CH11		

Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	2412	10.05	500	Pass
Middle	2437	10.07	500	Pass
High	2462	10.06	500	Pass

TX CH 01

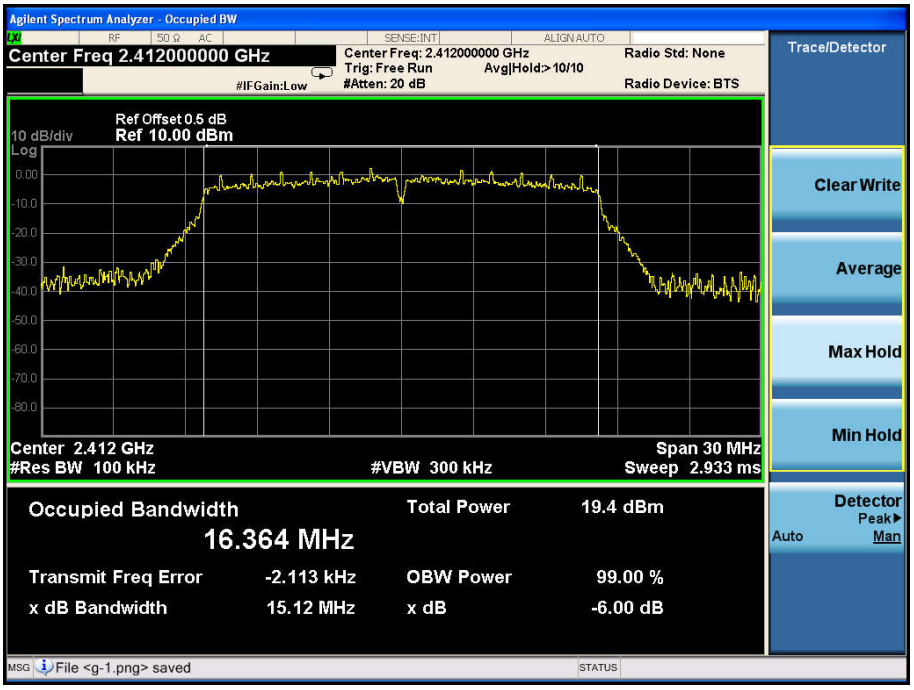
TX CH 06

TX CH 11

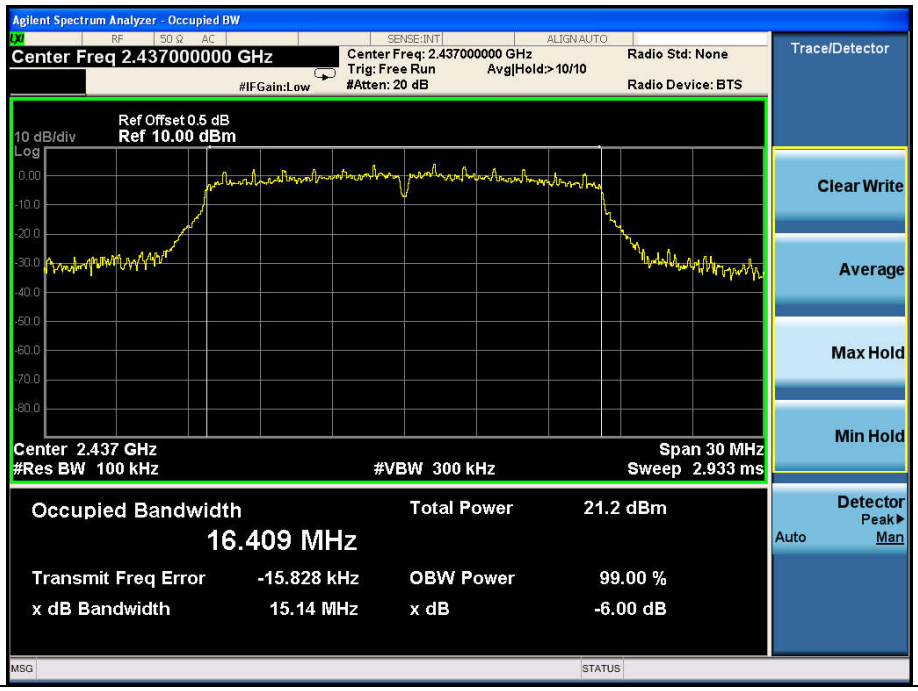
EUT：	Smart Watch	Model Name ：	T9
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 5Vfrom adapter
Test Mode ：	TX g Mode /CH01, CH06, CH11		

Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	2412	15.12	500	Pass
Middle	2437	15.14	500	Pass
High	2462	15.64	500	Pass

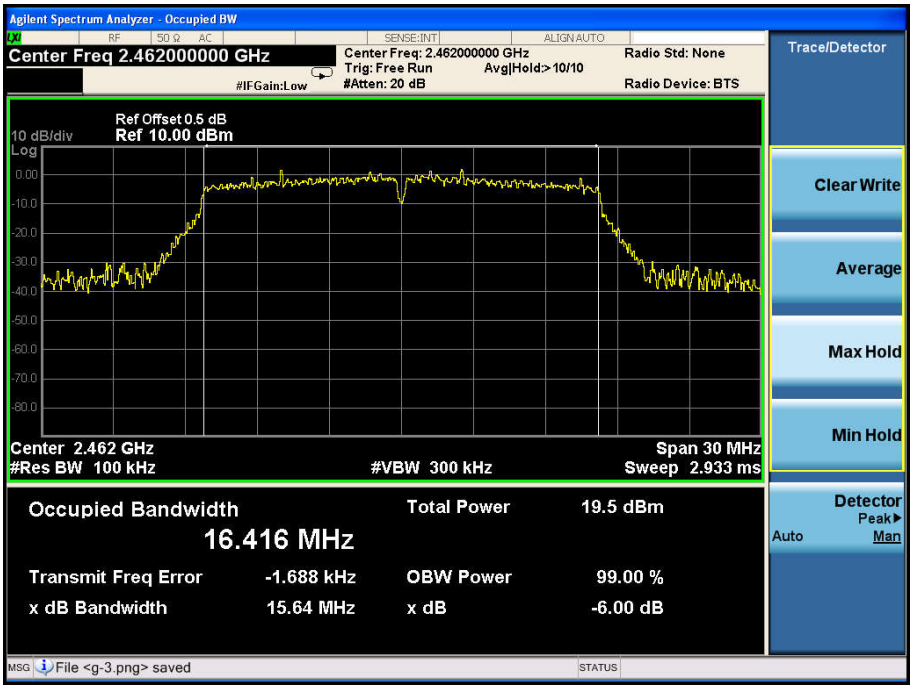
TX CH 01



TX CH 06



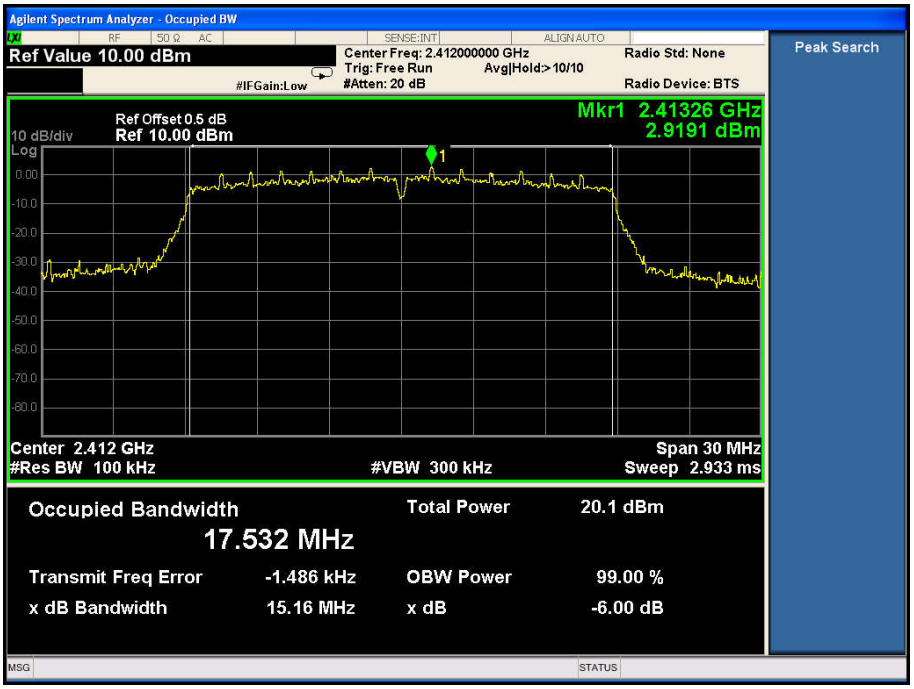
TX CH 11



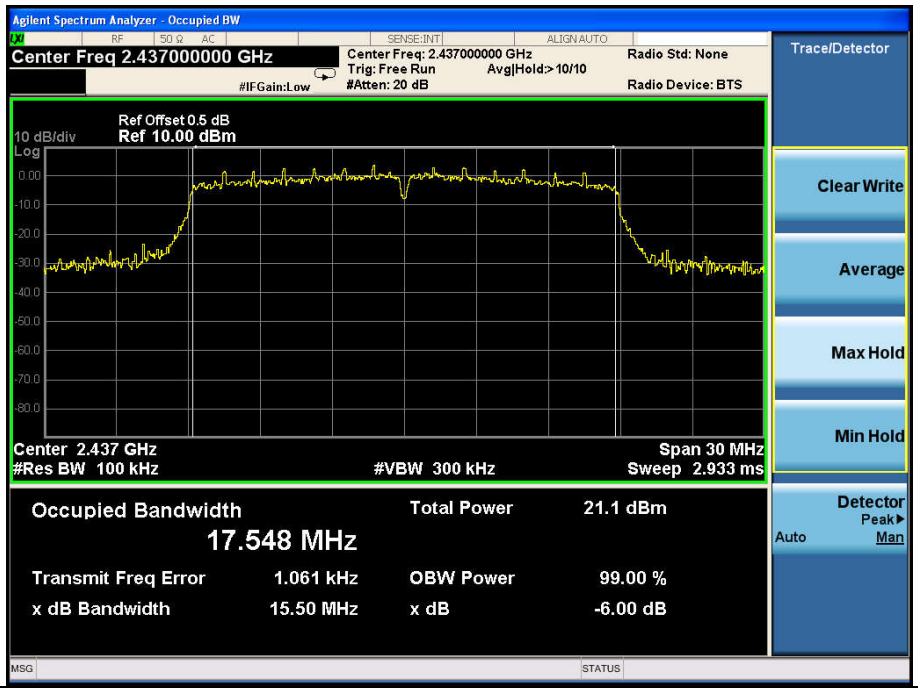
EUT：	Smart Watch	Model Name ：	T9
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 5Vfrom adapter
Test Mode ：	TX n20 Mode /CH01, CH06, CH11		

Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	2412	15.16	500	Pass
Middle	2437	15.50	500	Pass
High	2462	16.09	500	Pass

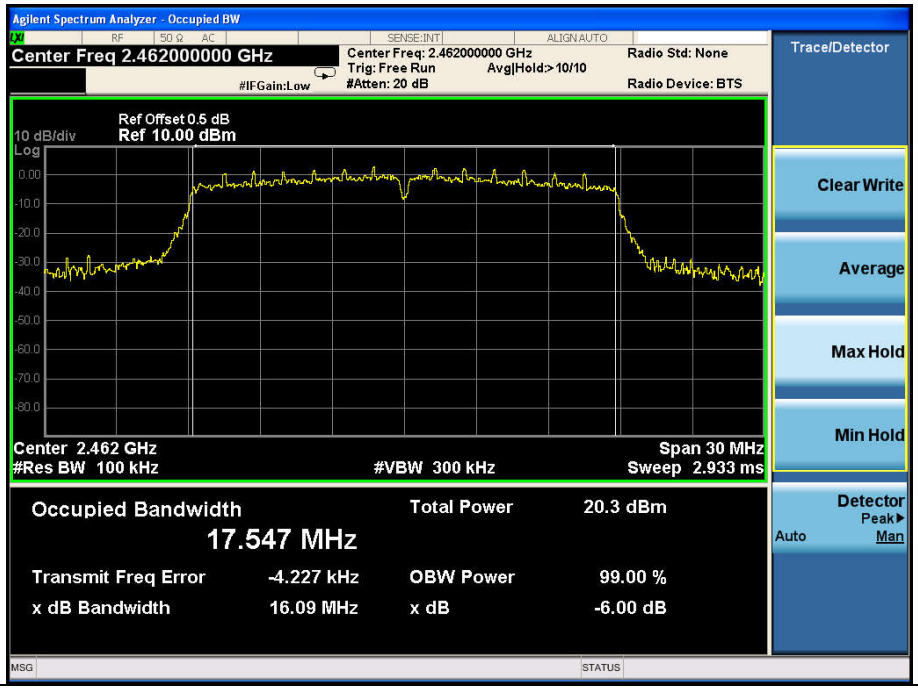
TX CH 01



TX CH 06



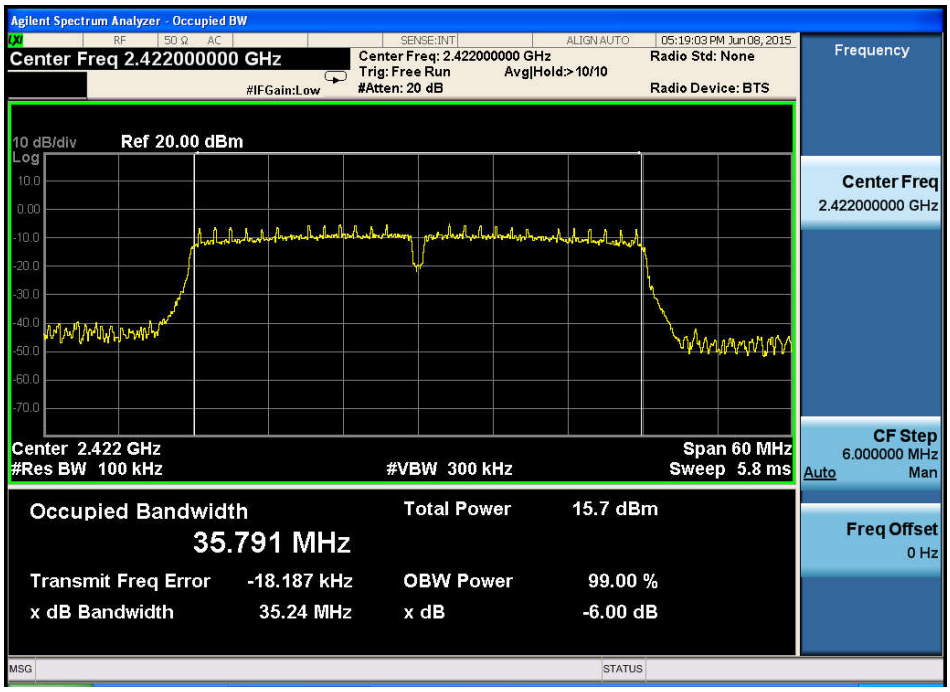
TX CH 11



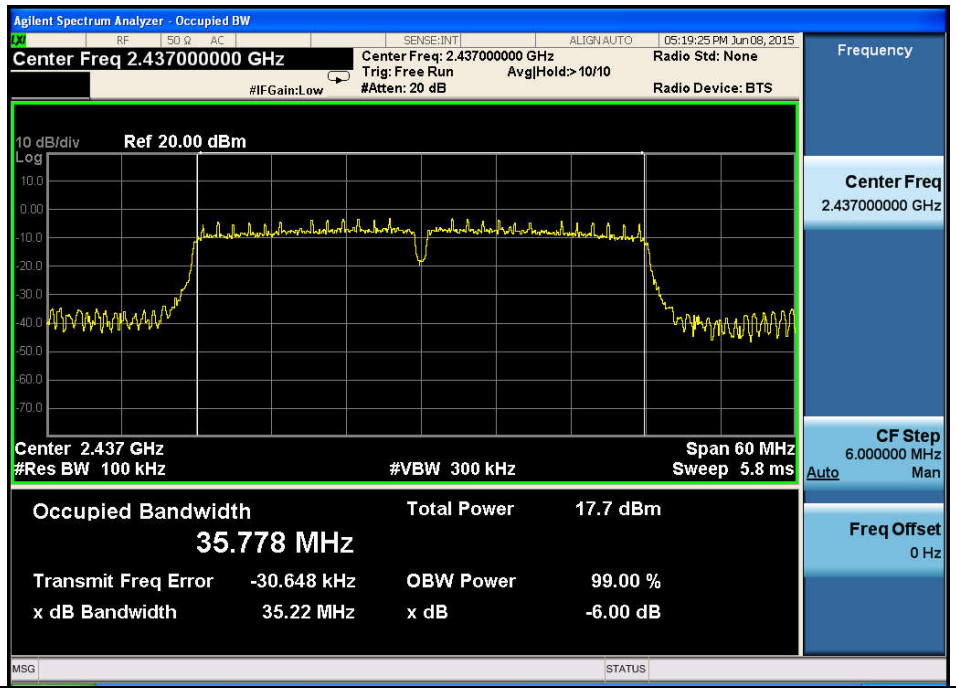
EUT :	Smart Watch	Model Name :	T9
Temperature :	25 ℃	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5Vfrom adapter
Test Mode :	TX n40 Mode /CH01, CH06, CH11		

Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	2422	35.24	500	Pass
Middle	2437	35.22	500	Pass
High	2452	35.24	500	Pass

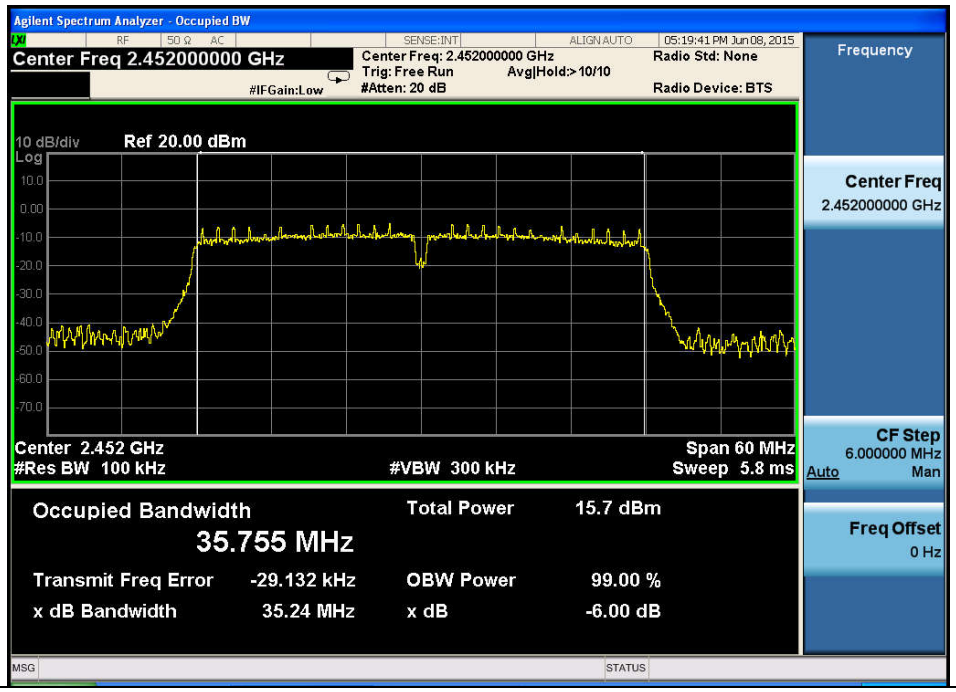
TX CH 03



TX CH 06



TX CH 09



错误！未指定书签。**. PEAK OUTPUT POWER TEST**

错误！未指定书签。 **APPLIED PROCEDURES / LIMIT**

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

错误！未指定书签。 **TEST PROCEDURE**

a. The EUT was directly connected to the Power meter

错误！未指定书签。 **DEVIATION FROM STANDARD**

No deviation.

错误！未指定书签。 **TEST SETUP**

错误！未指定书签。 **EUT OPERATION CONDITIONS**

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

错误！未指定书签。 **TEST RESULTS**

EUT：	Smart Watch	Model Name ：	T9
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 5Vfrom adapter
Test Mode ：	TX b/g/n Mode /CH01, CH06, CH11		

TX 802.11b Mode			
Test Channe	Frequency	Maximum Conducted Output Power(PK)	LIMIT
	(MHz)	(dBm)	dBm
CH01	2412	15.46	30
CH06	2437	15.61	30
CH11	2462	15.28	30
TX 802.11g Mode			
CH01	2412	14.22	30
CH06	2437	14.65	30
CH11	2462	14.57	30
TX 802.11n20 Mode			
CH01	2412	13.24	30
CH06	2437	13.32	30
CH11	2462	13.65	30
TX 802.11n40 Mode			
CH03	2422	13.25	30
CH06	2437	13.19	30
CH09	2452	13.11	30

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错误！未指定书签。. 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE

APPLICABLE STANDARD

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)).

TEST PROCEDURE

a) Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
b) Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
c) Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
d) Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
e) Repeat above procedures until all measured frequencies were complete.

错误！未指定书签。 **DEVIATION FROM STANDARD**

No deviation.

错误！未指定书签。 **TEST SETUP**

错误！未指定书签。 **EUT OPERATION CONDITIONS**

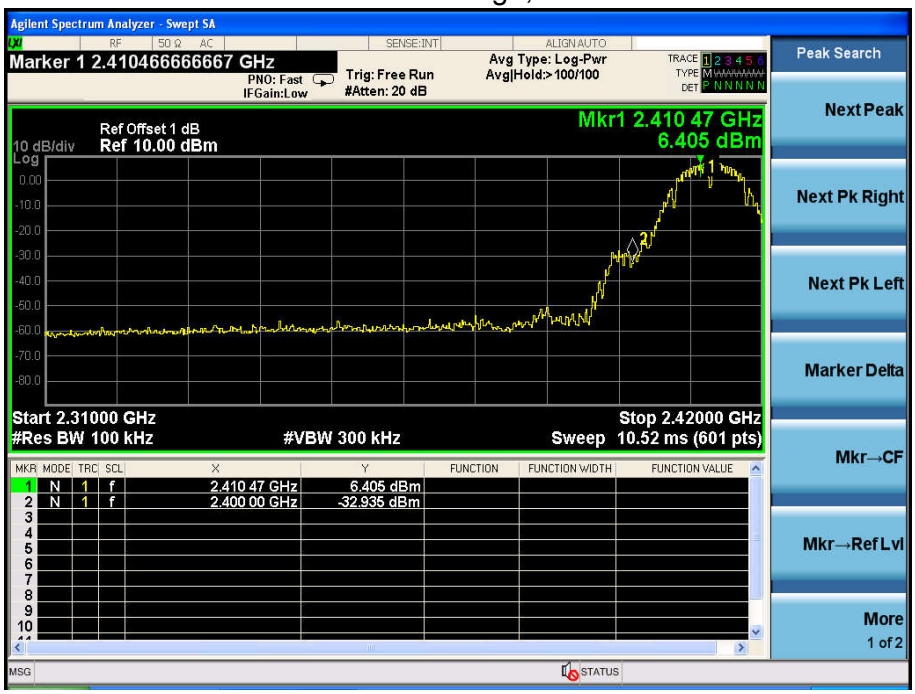
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

错误！未指定书签。 **TEST RESULTS**

EUT：	Smart Watch	Model Name ：	T9
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 5Vfrom adapter

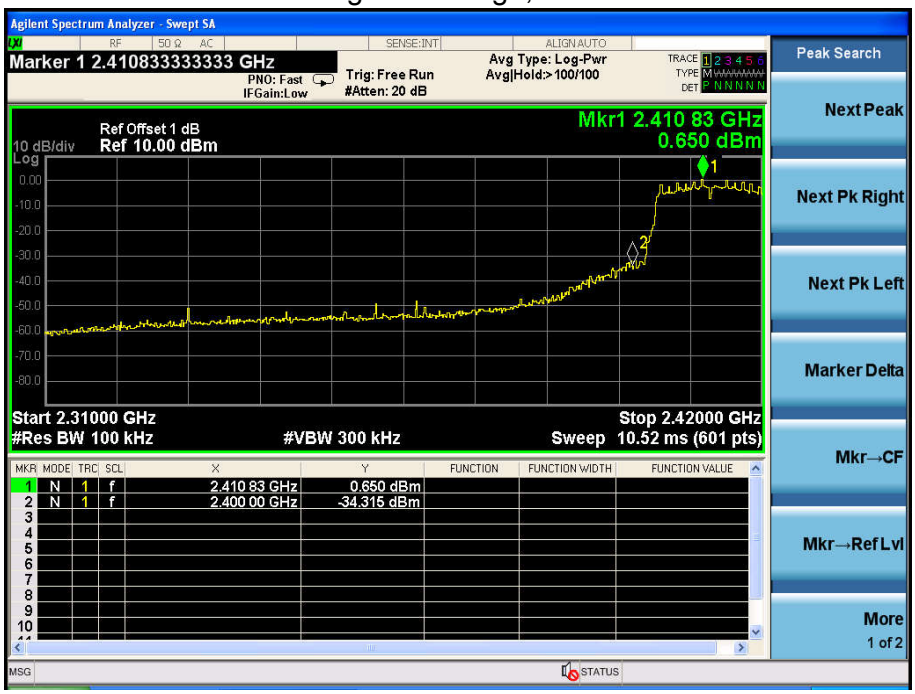
Frequency Band	Delta Peak to band emission (dBc)	> Limit (dBc)	Result
802.11b mode			
Left-band	39.34	20	Pass
Right-band	57.166	20	Pass
802.11g mode			
Left-band	34.975	20	Pass
Right-band	42.348	20	Pass
802.11n20 mode			
Left-band	33.788	20	Pass
Right-band	43.662	20	Pass
802.11n40 mode			
Left-band	35.966	20	Pass
Right-band	43.055	20	Pass

802.11b: Band Edge, Left Side



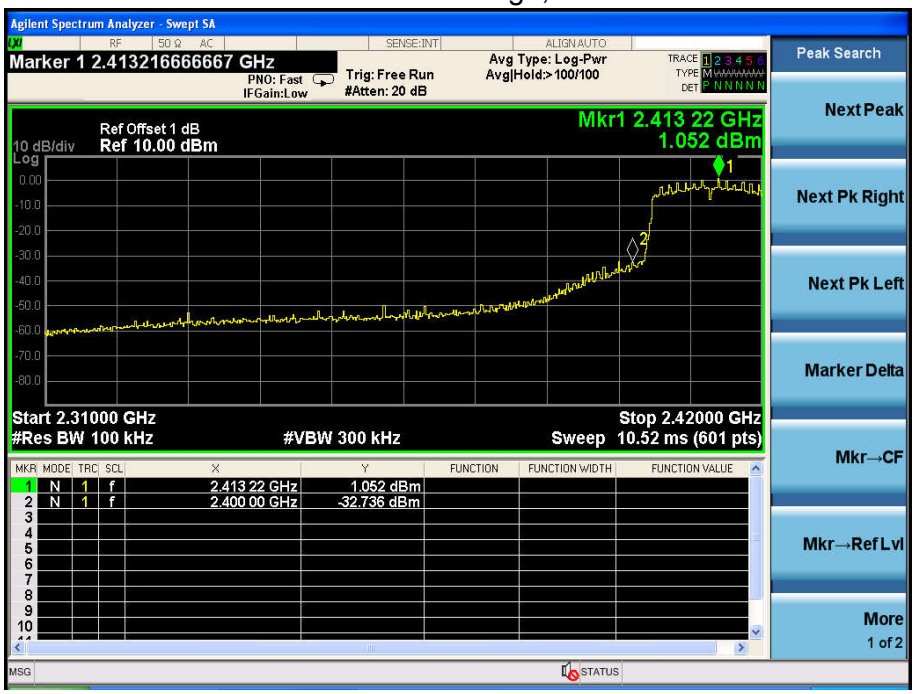
802.11b: Band Edge, Right Side

802.11g: Band Edge, Left Side



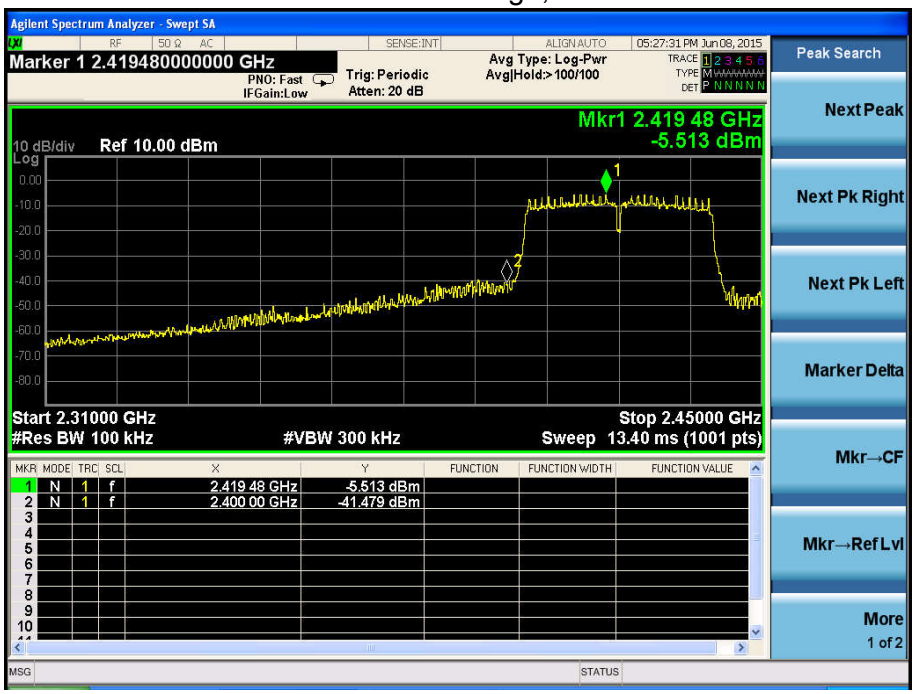
802.11g: Band Edge, Right Side

802.11n20: Band Edge, Left Side

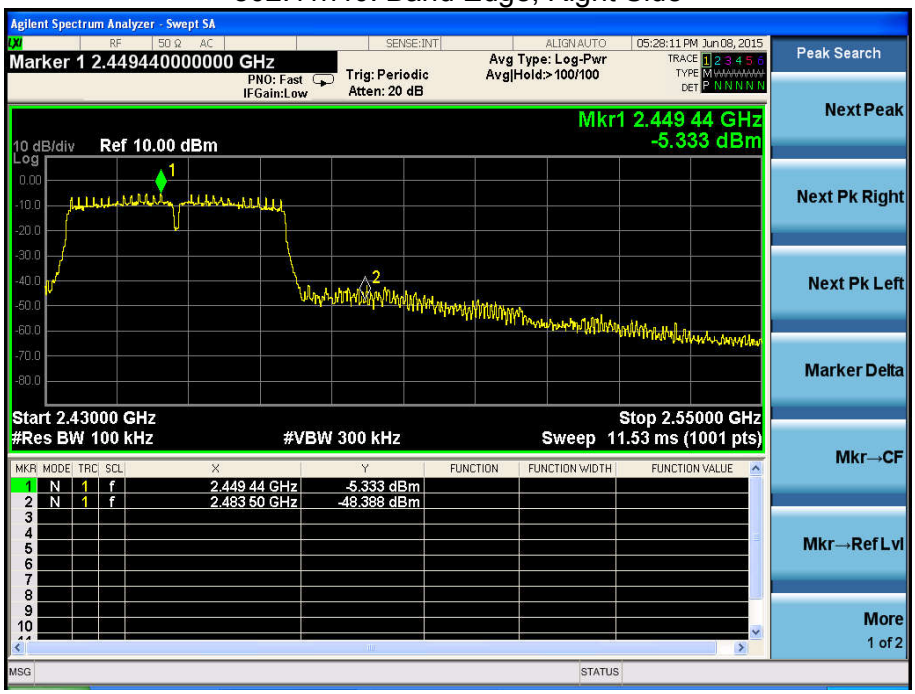


802.11n20: Band Edge, Right Side

802.11n40: Band Edge, Left Side



802.11n40: Band Edge, Right Side



错误！未指定书签。. ANTENNA REQUIREMENT

错误！未指定书签。 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.

错误！未指定书签。 EUT ANTENNA

The EUT antenna is integrated antenna. It comply with the standard requirement. In case of replacement of broken antenna the same antenna type must be used.

End of Report