TEST REPORT

Report No..... :	**ATA2604241E**
FCC ID·····:	**2BVTY-FITZAP-3**
Applicant..... :	**Luo He Qing Bo Dian Zi Ke Ji You Xian Gong Si**
Address.....:	Room 3W, Unit 2, Bldg E, Hongan Garden, Songjiang Rd, Yancheng Dist, Luohe, Henan, China
Manufacturer.....:	**Luo He Qing Bo Dian Zi Ke Ji You Xian Gong Si**
Address.....:	Room 3W, Unit 2, Bldg E, Hongan Garden, Songjiang Rd, Yancheng Dist, Luohe, Henan, China
Product Name ..... :	**Smartwatch**
Trade Mark..... :	FITZAP
Test Model..... :	FITZAP-3
Series Model(s)..... :	N/A
Standard..... :	**FCC CFR Title 47 Part 15 Subpart C Section 15.247**
Test procedure ..... :	**IEEE/ANSI C63.10-2020** **KDB 558074 D01 15.247 Meas Guidance v05r02**
Date of Receipt ..... :	Apr. 22, 2026
Date of Test Date ..... :	Apr. 23, 2026~ Apr. 24, 2026
Date of issue..... :	Apr. 27, 2026
Test result ..... :	**Pass**

Compiled by: (Printed name+signature)	Lily Zheng	Lily Zheng
Supervised by: (Printed name+signature)	Travis Young	Travis Young
Approved by: (Printed name+signature)	Jason chen	Jason chen

Testing Laboratory Name..... :	**Shenzhen ATA Testing Lab. Inc**
Address..... :	4th Floor, Building 10, No. 60 Nanchang Road, Nanchang Community,Xixiang Street, Bao'an District, Shenzhen City, China

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1. TEST SUMMARY

1.1. Test Standards

The tests were performed according to following standards:

FCC Rules Part 15.247: Operation within the bands of 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz.

IEEE/ANSI C63.10-2020: American National Standard for Testing Unlicensed Wireless Devices.

1.2. Report version

Revised No.	Date of issue	Description
01	Apr. 27, 2026	Original

1.3. Test Description

FCC Part 15 Subpart C(15.247)			
Test Item	Standard Section	Result	Remark
	FCC		
Antenna Requirement	15.203	Pass	
Conducted Emission	15.207	Pass	
Restricted Bands	15.205	Pass	
Peak Output Power	15.247(b)	Pass	
Band Edge Emissions	15.247(d)	Pass	
Power Spectral Density	15.247(e)	Pass	
Radiated Emission	15.205&15.209	Pass	
6dB Bandwidth	15.247(a)(1)(i)(2)	Pass	
Spurious RF Conducted Emission	15.247(d)	Pass	

Note:(1) "N/A" denotes test is not applicable to this device.

1.4. Test Facility

Test Site	**Shenzhen ATA Testing Lab. Inc**
Test Site Location	4th Floor, Building 10, No. 60 Nanchang Road, Nanchang Community, Xixiang Street, Bao'an District, Shenzhen City, China
Telephone:	+86 0755-2783-0095
Fax:	+86 0755-2783-0095

The test facility isrecognized,certified, oraccredited by the seorganizations:	A2LA Accreditation LabCertificate Number:839205
	FCC Accredlied Lad Designation Numbe：CN1455

1.5. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the Shenzhen ATA Testing Lab. Inc. system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device. Below is the best measurement capability for Shenzhen ATA Testing Lab. Inc.

Test Items	Measurement Uncertainty	U(k=2)
Radiated Emissions 9K-30MHz	±2.70 dB	1.96
Radiated Emissions 30~1000MHz	±5.432 dB	1.96
Radiated Emissions 1~18GHz	±3.88 dB	1.96
Radiated Emissions 18~40GHz	±5.32 dB	1.96
Conducted Emissions 9kHz~150KHz	±3.90 dB	1.96
Conducted Emissions 150Hz~30MHz	±3.52 dB	1.96
Conducted spurious emissions	±1.60 dB	1.96
RF Output Ppwer Conducted	±0.58 dB	1.96
Power Specral Density Conducted	±1.52 dB	1.96
Occupied Bandwidth	±0.463%	1.96
Humidty uncertainty	±2.0%RH	1.96
Temperature uncertainty	±0.6℃	1.96
Barometric pressure uncertainty	0.5hPa	1.96

Note (1): This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

1.6. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35°C
Relative Humidity:	30~60 %
Air Pressure:	950~1050mba

2. GENERAL INFORMATION

2.1. General Description of EUT

Product Name:	Smartwatch
Trade Mark:	FITZAP
Test Model:	FITZAP-3
Series Model(s):	N/A
Model Difference:	N/A
Power Source:	DC 5V
Battery:	DC 3.7V
Hardware version:	V1.0
Software version:	V1.0
Bluetooth 5.0+BLE	
Modulation type:	GFSK
Operation frequency:	2402MHz~2480MHz
Max Peak Output Power:	-0.21dBm
Channel number:	40
Bit Rate of transmitter:	1 Mbps
Antenna type:	Ceramic Antenna
Antenna gain:	2.0 dBi
Note:(1)All antenna information is provided by the manufacturer, test laboratory will not be responsible if any error. (2) The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity. (3) “N/A” Indicates inapplicability	

2.2. DESCRIPTION OF THE TEST MODES

Operation Frequency List: The EUT has been tested under typical operating condition. The Applicant provides communication tools software to control the EUT for staying in continuous transmitting and receiving mode for testing. BT BLE, 40 channels are provided to the EUT. Channels 00/19/39 were selected for testing.

Operation Frequency List:

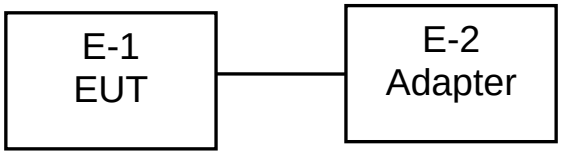
Channel	Frequency (MHz)
00	**2402**
01	2404
⋮	⋮
19	**2440**
20	2442
21	2444
⋮	⋮
38	2478
39	**2480**

Following channel(s) was (were) selected for the test as listed below.

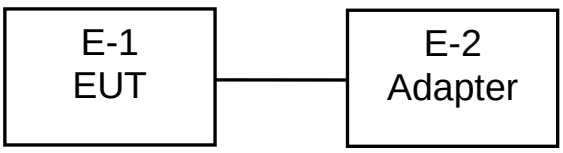
TESTED CHANNEL	TESTED FREQUENCY
Low	2402
Middle	2440
High	2480

2.3. BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

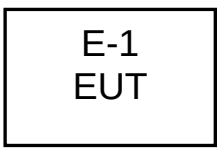
Radiated Spurious Emission Test



AC Conducted Emission Test



RF Conducted Test



2.4. DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

The EUT has been tested asan independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configurationduringthetests.

Item	Equipment	Mfr/Brand	Mode/Type	Note
E-2	Adapter	San gu	SG-0502000AU	

Item	Equipment	Mfr/Brand	Length	Note

Note：(1) For detachable type VO cableshould be specifed the length in cm in Lengtha column.

(2)"YES" is means"with core";"NO″ is means ″without core".

2.5. Measurement Instruments List

Radiation emission							
Item	Equipment No.	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	ATA-E-001	966 chamber	CRT	9*6*6M	CRTNDCR966	2025-03-21	2028-03-20
2	ATA-E-011	AC Power Source	XINOUHUA	APW-1300N	202504292663	2025-05-08	2026-05-07
3	ATA-E-013	DC Power Source	XINOUHUA	ADC250-32D	202504292667	2025-05-08	2026-05-07
4	ATA-E-033	Receiver	R&S	ESPI7	100092	2025-05-08	2026-05-07
5	ATA-E-034	Broadband antenna	Schwarzbeck	VULB9168	01839	2025-07-17	2026-07-17
6	ATA-E-035	High Frequency Horn Antenna	Schwarzbeck	BBHA 9120D	03169	2025-07-17	2026-07-17
7	ATA-E-038	Cable	Times	0-18GHz	/	2025-05-08	2026-05-07
9	ATA-E-040	6dB attenuator	Zhengchang Liubo	6dB	/	2025-05-08	2026-05-07
10	ATA-E-039	Cable	Times	0-1GHz	/	2025-05-08	2026-05-07
11	ATA-E-041	Preamplifier	COM MV	DLNA8-1-18G-2705	10241234	2025-05-08	2026-05-07
12	ATA-E-042	Preamplifier	COM MV	DLNA8-0.009-1000-1034	5252881	2025-05-08	2026-05-07
13	ATA-E-044	Filter	MWRFTest	ZHPF6-C3000-18000-3129	08252098	2025-05-08	2026-05-07
14	ATA-E-045	Filter	MWRFTest	ZHPF6-C6500-18000-175	08252097	2025-05-08	2026-05-07
15	ATA-E-046	Filter	MWRFTest	ZBSF6-C2400-2483.5-543	08252096	2025-05-08	2026-05-07
16	ATA-E-047	Filter	MWRFTest	ZBSF6-C5100-5900-5713	08252095	2025-05-08	2026-05-07
17	ATA-E-051	Spectrum Analyzer	R&S	FSV40-N	101779	2025-07-29	2026-07-28
18	ATA-E-052	Cable	HELPLIGHT	2.92J/2.92J 10M	/	2026-01-19	2027-01-18
19	ATA-E-054	Cable	HELPLIGHT	2.92J/2.92J 0.8M	/	2026-01-19	2027-01-18
20	ATA-E-059	Antenna Tower	CRT	AT-1	/	/	/
21	ATA-E-005	Temperature and humidity meter	deli	LE502-WH	/	2025-05-08	2026-05-07
22	ATA-E-064	Barometer	Qingping	CGP23W	/	2026-01-28	2027-01-27
23	ATA-E-048	Loop Antenna	ZHINA	ZN30900C	21104CCUTSE019	2025-05-08	2026-05-07
24	ATA-E-049	Horn Antenna	ECHO MICrowave.,Ltd.	OBH100400	12221225	2025-05-08	2026-05-07
25	ATA-E-051	Spectrum Analyzer	R&S	FSV40-N	101779	2025-05-08	2026-05-07

Conduction emission							
Item	Equipment No.	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	ATA-E-032	EMI TEST RECEIVER	Schwarzbeck	ESCI3	1009300	2025-05-08	2026-05-08
2	ATA-E-037	Pulse Limiter	Schwarzbeck	VTSD 9561 F-N	/	2025-05-08	2026-05-08
3	ATA-E-069	Conductive test cable	Schwarzbeck	2.5m	N/A	2026-01-28	2027-01-27
4	ATA-E-036	LISN	Schwarzbeck	NSLK 8127	01169	2025-05-08	2026-05-08
5	ATA-E-072	Three-Line V-Network	ZHINAN	2N33770A	13003	2026-01-26	2026-01-27
6	ATA-E-009	Temperature and humidity meter	deli	LE502-WH	/	2025-05-08	2026-05-08
7	ATA-E-010	Barometer	Qingping	CGP23W	/	2025-05-08	2026-05-08

RF Conducted Test							
Item	Equipment No.	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
	ATA-E-029	Spectrum Analyzer	Keysight	N9020A	MY50530404	2025-05-08	2026-05-07
1	ATA-E-030	MXG Anaiog Signal Generator	Agilent	N5181A	MY47420598	2025-05-08	2026-05-07
2	ATA-E-031	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW500	161163	2025-05-08	2026-05-07
3	ATA-E-043	Radio Control Unit	MWRFTest	MW100-RFCB	MW250428ATA-55	2025-05-08	2026-05-07

Note:
1)The Cal. Interval was one year.
2)The cable loss has calculated in test result which connection between each test instruments.

2.5. Test Software

Software name	Model	Version
Conducted emission Measurement Software	EZ-EMC	FARAD-3A1.1+
Radiated emission Measurement Software	EZ-EMC	FARAD-3A1.1+
Bluetooth and WIFI Test System	MWRF8310	2.0.0.0

3. TEST ITEM AND RESULTS

3.1. Antenna requirement

Requirement

FCC CFR Title 47 Part 15 Subpart C Section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

FCC CFR Title 47 Part 15 Subpart C Section 15.247(c) (1)(i):

(i) Systems operating in the 2400~2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

Antenna Information

The maximum gain of antenna was 2.0dBi.

Note: The antenna gain is provided by the customer , if the data provided by the customer is not accurate, SHENZHEN ATA TESTING LAB. INC. does not assume any responsibility.

3.2. Conducted Emission

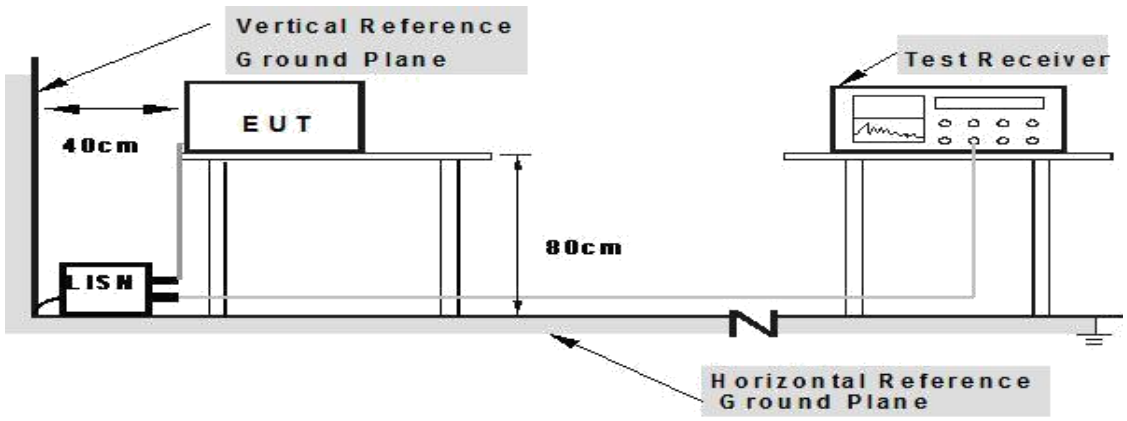
Limit

Conducted Emission Test Limit

Frequency	Maximum RF Line Voltage (dBμV)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Notes:
(1) *Decreasing linearly with logarithm of the frequency.
(2) The lower limit shall apply at the transition frequencies.
(3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

Test Configuration



Test Procedure

1. The EUT was setup according to ANSI C63.10:2020 requirements.
2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 0.8m above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 0.8m from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedances stabilization network (LISN). The LISN provides a 50ohm /50uH coupling impedance for the measuring equipment.
   The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
4. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
5. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
6. Conducted Emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
7. During the above scans, the emissions were maximized by cable manipulation.

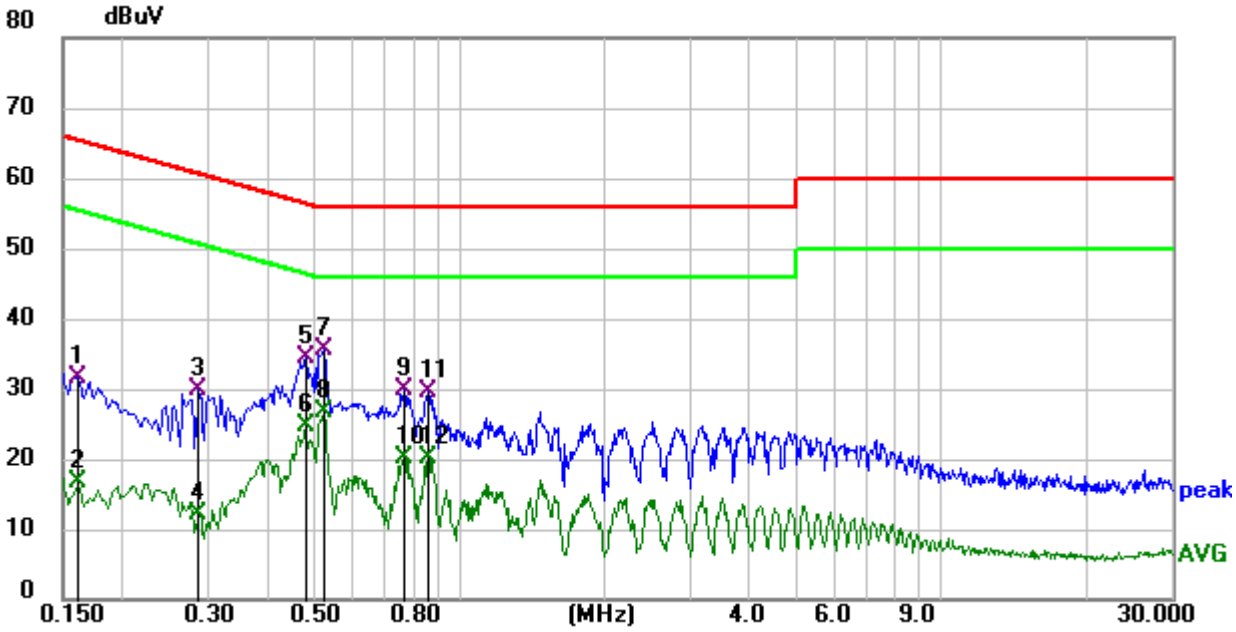
Test Mode:

Please refer to the clause 2.3.

Test Results

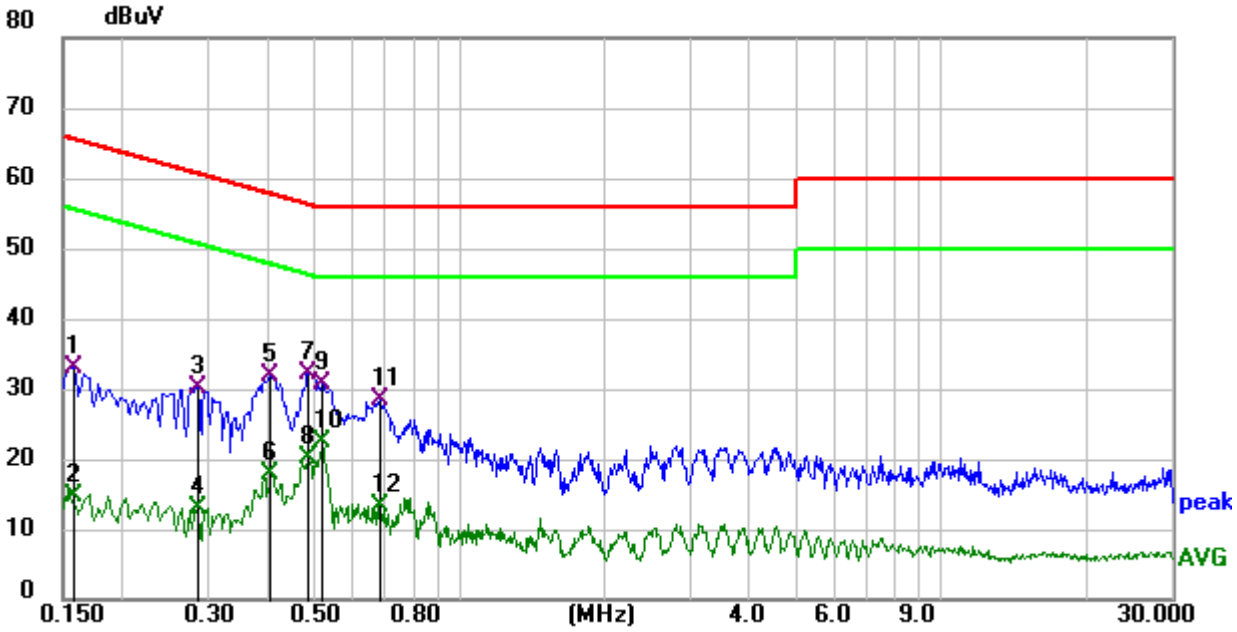
Pre-scan CH00, CH19 and CH39 channel, and found CH39 channel which it is worse case, so only show the test data for worse case.

EUT:	Smartwatch	Model Name:	FITZAP-3
Pressure:	1010 hPa	Phase:	L
Temperature	24.8℃	Humidity	52.1%
Test Mode:	Charging+TX	Test Voltage:	DC 5V



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1620	21.53	10.11	31.64	65.36	-33.72	QP
2	0.1620	6.59	10.11	16.70	55.36	-38.66	AVG
3	0.2860	19.66	10.11	29.77	60.64	-30.87	QP
4	0.2860	1.90	10.11	12.01	50.64	-38.63	AVG
5	0.4780	24.43	10.13	34.56	56.37	-21.81	QP
6	0.4780	14.46	10.13	24.59	46.37	-21.78	AVG
7	0.5220	25.48	10.13	35.61	56.00	-20.39	QP
8 *	0.5220	16.72	10.13	26.85	46.00	-19.15	AVG
9	0.7660	19.64	10.15	29.79	56.00	-26.21	QP
10	0.7660	10.06	10.15	20.21	46.00	-25.79	AVG
11	0.8620	19.51	10.15	29.66	56.00	-26.34	QP
12	0.8620	9.99	10.15	20.14	46.00	-25.86	AVG

EUT:	Smartwatch	Model Name:	FITZAP-3
Pressure:	1010 hPa	Phase:	N
Temperature	24.8℃	Humidity	52.1%
Test Mode:	Charging+TX	Test Voltage:	DC 5V



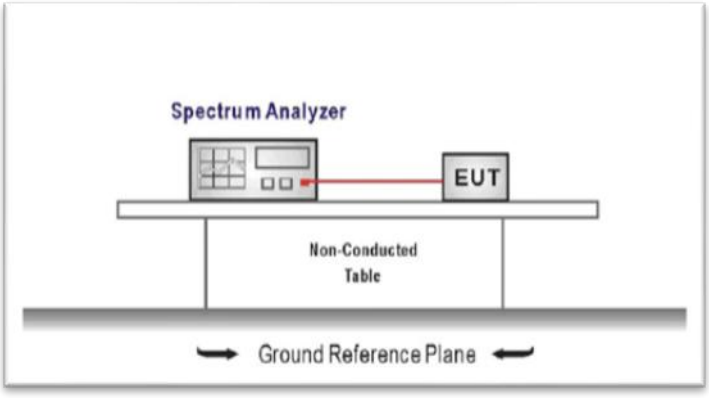
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1580	22.89	10.11	33.00	65.57	-32.57	QP
2	0.1580	4.71	10.11	14.82	55.57	-40.75	AVG
3	0.2860	20.01	10.11	30.12	60.64	-30.52	QP
4	0.2860	2.77	10.11	12.88	50.64	-37.76	AVG
5	0.4020	21.81	10.12	31.93	57.81	-25.88	QP
6	0.4020	7.81	10.12	17.93	47.81	-29.88	AVG
7	0.4860	22.05	10.13	32.18	56.24	-24.06	QP
8	0.4860	10.03	10.13	20.16	46.24	-26.08	AVG
9	0.5180	20.54	10.13	30.67	56.00	-25.33	QP
10 *	0.5180	12.18	10.13	22.31	46.00	-23.69	AVG
11	0.6860	18.30	10.16	28.46	56.00	-27.54	QP
12	0.6860	3.09	10.16	13.25	46.00	-32.75	AVG

3.3. Band edge and Spurious Emission (conducted)

Limit

FCC CFR Title 47 Part 15 Subpart C Section15.247 (d):
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.

Test Configuration



Test Procedure

1. Connect the antenna port(s) to the spectrum analyzer input.
2. Establish a reference level by using the following procedure
   Center frequency=DTS channel center frequency
   The span = 1.5 times the DTS bandwidth.
   RBW = 100 kHz, VBW ≥ 3 x RBW
   Detector = peak, Sweep time = auto couple, Trace mode = max hold
   Allow trace to fully stabilize
   Use the peak marker function to determine the maximum PSD level

   Note: the channel found to contain the maximum PSD level can be used to establish the reference level.
3. Emission level measurement
   Set the center frequency and span to encompass frequency range to be measured
   RBW = 100 kHz, VBW ≥ 3 x RBW
   Detector = peak, Sweep time = auto couple, Trace mode = max hold
   Allow trace to fully stabilize
   Use the peak marker function to determine the maximum amplitude level.
4. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter waveform on the spectrum analyzer.
5. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band excluding restricted frequency bands) are attenuated by at least the minimum requirements specified (at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz). Report the three highest emissions relative to the limit.

Test Mode

Please refer to the clause 2.3.

Test Results

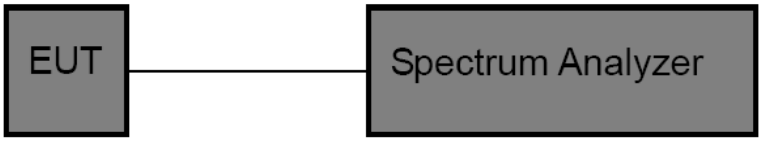
Please refer to the appendix.

3.4. 6dB Bandwidth

Limit

Test Item	Limit	Frequency Range(MHz)
Bandwidth	>=500 KHz (6dB bandwidth)	2400~2483.5

Test Configuration



Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.
3. The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.
4. Spectrum Setting:
   6dB bandwidth:
   (1) Set RBW = 100 kHz.
   (2) Set the video bandwidth (VBW) ≥ 3 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 frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

NOTE: The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

Test Mode

Please refer to the clause 2.3.

Test Results

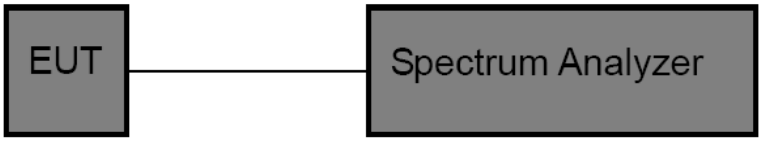
Please refer to the appendix.

3.5. Peak Output Power

Limit

Test Item	Limit	Frequency Range(MHz)
Peak Output Power	1 Watt or 30 dBm	2400~2483.5

Test Configuration



Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. Spectrum Setting:
   Peak Detector: RBW≥DTS Bandwidth, VBW≥3*RBW.
   Sweep time=Auto.
   Detector= Peak.
   Trace mode= Maxhold.
   Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

Test Mode

Please refer to the clause 2.3.

Test Result

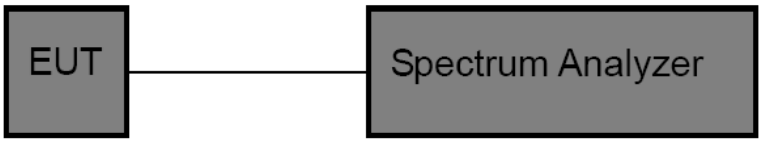
Please refer to the appendix.

3.6. Power Spectral Density

Limit

FCC Part 15 Subpart C(15.247)		
Test Item	**Limit**	**Frequency Range(MHz)**
Power Spectral Density	8dBm(in any 3 kHz)	2400~2483.5

Test Configuration



Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v04.
3. Spectrum Setting:
   Set analyser center frequency to DTS channel center frequency.
   Set the span to 1.5 times the DTS bandwidth.
   Set the RBW to: 10 kHz
   Set the VBW to: 30 kHz
   Detector: peak
   Sweep time: auto
   Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

Test Mode

Please refer to the clause 2.3.

Test Result

Please refer to the appendix.

Note:

Power Density(dBm/3kHz)=Power Density(dBm/10kHz)-10*Log(10/3)

3.7. Duty Cycle

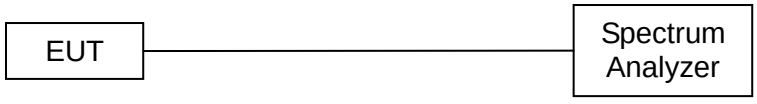
Limit

No limit requirement.

Test Procedure

1. The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set RBW ≥ OBW if possible; otherwise, set RBW to the largest available value. Set VBW ≥ RBW. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if T ≤ 16.7 microseconds.)
2. The transmitter output is connected to the Spectrum Analyzer. We tested according to the zero-span measurement method, 6.0(b) in KDB 558074 D01 DTS Meas Guidance v05r02.
3. The largest availble value of RBW is 8 MHz and VBW is 50 MHz. The zero-span method of measuring duty cycle shall not be used if T ≤ 6.25 microseconds. (50/6.25 = 8)
4. The zero-span method was used because all measured T data are > 6.25 microseconds and both RBW and VBW are > 50/T.
5. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.
   The path loss was compensated to the results for each measurement.
   Set to the maximum power setting and enable the EUT transmit continuously.
   The EUT was operating in controlled its channel.
   Use the following spectrum analyzer settings:
   Span = Zero Span
   RBW = 1MHz (the largest available value)
   VBW = 3MHz (≥ RBW)
   Number of points in Sweep >100
   Detector function = peak
   Trace = Clear write
   Measure Total and Ton
   Calculate Duty Cycle = Ton / Total

Test Setup



Test Results

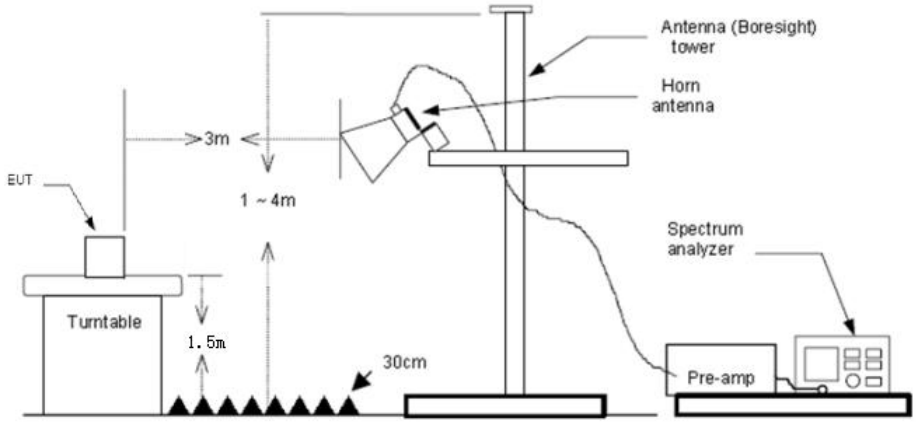
Please refer to the appendix.

3.8. Band Edge Emissions(Radiated)

Limit

Restricted Frequency Band (MHz)	(dBuV/m)(at 3m)	
	Peak	Average
2310 ~2390	74	54
2483.5 ~2500	74	54
Note: All restriction bands have been tested, only the worst case is reported.		

Test Configuration



Test Procedure

1. The EUT was setup and tested according to ANSI C63.10:2020 requirements.
2. The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2020 on radiated measurement.
5. The receiver set as follow:
   RBW=1MHz, VBW=3MHz PEAK detector for Peak value.
   RBW=1MHz, VBW=10Hz with PEAK Detector for Average Value.

Test Mode

Please refer to the clause 2.3.

Test Results

Note:

Measurement = Reading level + Correct Factor

Correct Factor=Antenna Factor + Cable Loss -Preamplifier Factor

EUT:	Smartwatch	Model Name:	FITZAP-3
Pressure:	1010 hPa	Phase:	L
Temperature	24.8℃	Humidity	52.1%
Test Mode:	TX	Test Voltage:	DC 5V

Frequency (MHz)	Meter Reading (dBμV)	Cable Loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
GFSK									
2310.00	63.54	2.40	27.70	40.40	53.24	74	-20.76	Pk	Horizontal
2310.00	44.14	2.40	27.70	40.40	33.84	54	-20.16	AV	Horizontal
2310.00	63.95	2.40	27.70	40.40	53.65	74	-20.35	Pk	Vertical
2310.00	42.50	2.40	27.70	40.40	32.2	54	-21.80	AV	Vertical
2390.00	65.76	2.44	28.30	40.10	56.4	74	-17.60	Pk	Vertical
2390.00	43.58	2.44	28.30	40.10	34.22	54	-19.78	AV	Vertical
2390.00	64.37	2.44	28.30	40.10	55.01	74	-18.99	Pk	Horizontal
2390.00	43.67	2.44	28.30	40.10	34.31	54	-19.69	AV	Horizontal
2483.50	63.40	2.48	28.70	39.80	54.78	74	-19.22	Pk	Vertical
2483.50	45.53	2.48	28.70	39.80	36.91	54	-17.09	AV	Vertical
2483.50	66.60	2.48	28.70	39.80	57.98	74	-16.02	Pk	Horizontal
2483.50	43.99	2.48	28.70	39.80	35.37	54	-18.63	AV	Horizontal
2500.00	46.27	3.49	29.20	32.66	46.3	74	-27.70	Pk	Vertical
2500.00	33.68	3.49	29.20	32.66	33.71	54	-20.29	AV	Vertical
2500.00	45.90	3.49	29.20	32.66	45.93	74	-28.07	Pk	Horizontal
2500.00	34.61	3.49	29.20	32.66	34.64	54	-19.36	AV	Horizontal

3.9. Spurious Emission (Radiated)

Limit

Radiated Emission Limits (9 kHz~1000 MHz)

Frequency (MHz)	Field Strength (microvolt/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

Radiated Emission Limit (Above 1000MHz)

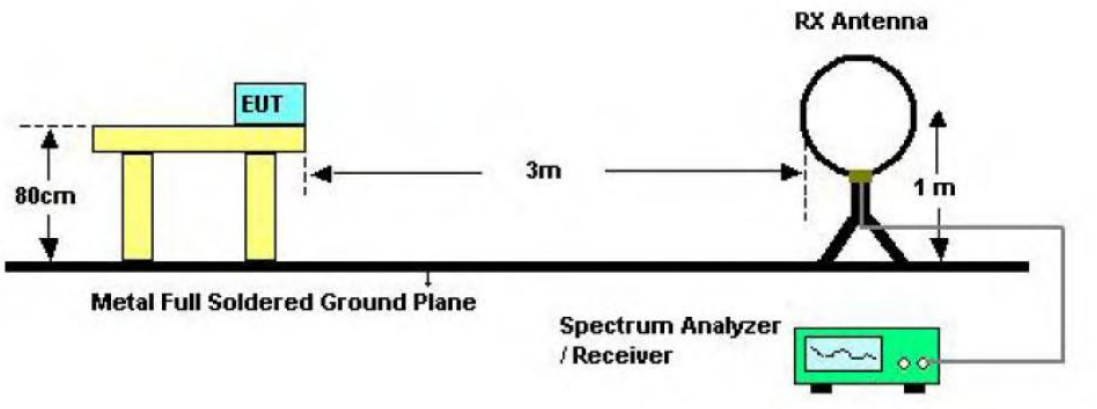
Frequency (MHz)	Distance Meters(at 3m)	
	Peak	Average
Above 1000	74	54

Note:

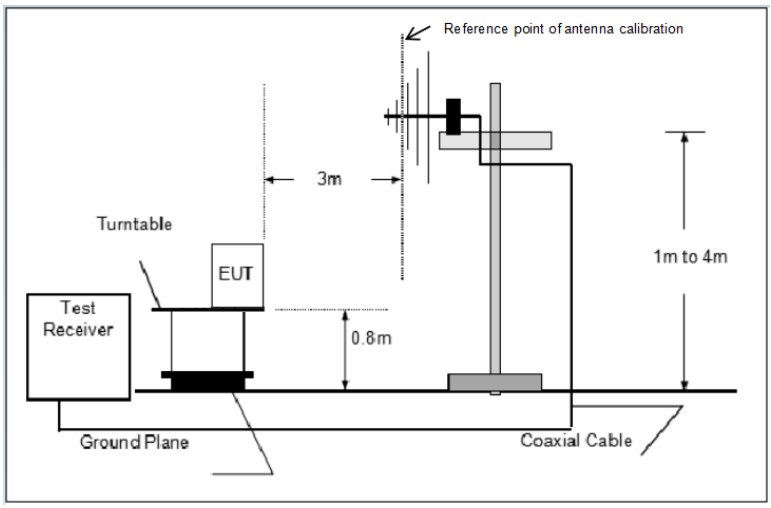
(1) The tighter limit applies at the band edges.

(2) Emission Level (dBuV/m)=20log Emission Level (uV/m).

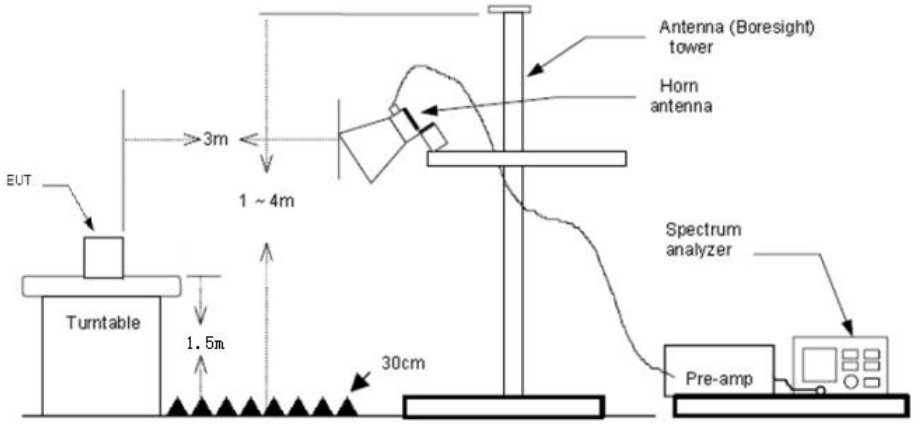
Test Configuration



Below 30MHz Test Setup



Below 1000MHz Test Setup



Above 1GHz Test Setup

Test Procedure

1. The EUT was setup and tested according to ANSI C63.10:2020
2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
5. Set to the maximum power setting and enable the EUT transmit continuously.
6. Use the following spectrum analyzer settings
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Below 1 GHz:
   RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold;
   If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
   (3) From 1 GHz to 10th harmonic:
   RBW=1MHz, VBW=3MHz Peak detector for Peak value.
   RBW=1MHz, VBW=10Hz RMS detector for Average value.

Test Mode

Please refer to the clause 2.2.

Test Result

9 KHz~30 MHz and 18GHz~25GHz

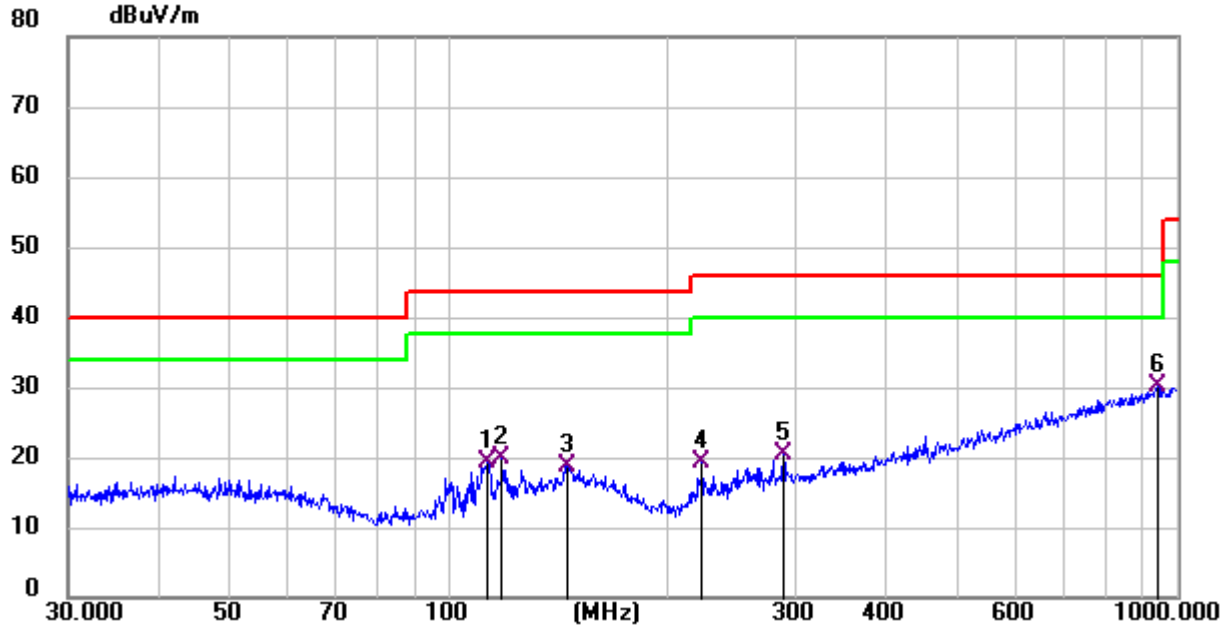
From 9 KHz~30 MHz and 18GHz~25GHz: Conclusion: PASS

Note:

1) Measurement = Reading level + Correct Factor
   Correct Factor=Antenna Factor + Cable Loss -Preamplifier Factor
2) The peak level is lower than average limit(54 dBuV/m), this data is the too weak instrument of signal is unable to test.
3) The emission levels of other frequencies are very lower than the limit and not show in test report.
4) The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
5) Pre-scan CH00, CH19 and CH39 modulation, and found the CH39 which it is worse case for 30MHz-1GHz , so only show the test data for worse case.

Results of Radiated Emissions (30MHz~ 1000MHz)

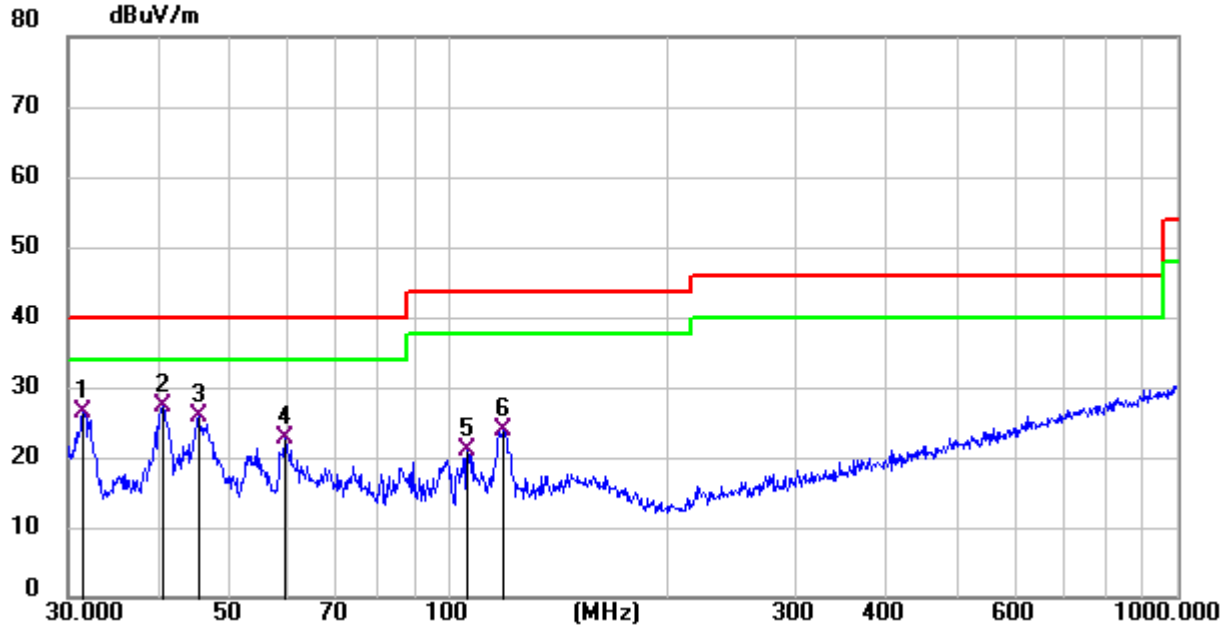
EUT:	Smartwatch	Model Name:	FITZAP-3
Pressure:	1010 hPa	Phase:	Horizontal
Temperature	24.8℃	Humidity	52.1%
Test Mode:	TX	Test Voltage:	DC 5V



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	112.9196	33.65	-14.45	19.20	43.50	-24.30	QP
2	118.1862	33.71	-13.81	19.90	43.50	-23.60	QP
3	145.3505	30.63	-11.83	18.80	43.50	-24.70	QP
4	222.9502	33.50	-14.15	19.35	46.00	-26.65	QP
5	289.0020	32.26	-11.93	20.33	46.00	-25.67	QP
6 *	938.8326	29.66	0.51	30.17	46.00	-15.83	QP

Emission Level= Read Level+ Correct Factor

EUT:	Smartwatch	Model Name:	FITZAP-3
Pressure:	1010 hPa	Phase:	Vertical
Temperature	24.8℃	Humidity	52.1%
Test Mode:	TX	Test Voltage:	DC 5V



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	31.3992	39.89	-13.41	26.48	40.00	-13.52	QP
2 *	40.5591	39.79	-12.63	27.16	40.00	-12.84	QP
3	45.3754	38.89	-12.99	25.90	40.00	-14.10	QP
4	59.4405	36.32	-13.69	22.63	40.00	-17.37	QP
5	106.3850	36.25	-15.12	21.13	43.50	-22.37	QP
6	118.6013	37.55	-13.77	23.78	43.50	-19.72	QP

Emission Level= Read Level+ Correct Factor

Results of Radiated Emissions (Above 1GHz)

Frequency (MHz)	Reading Level (dBμV)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Low Channel (2402 MHz)(GFSK)--Above 1G									
4804.138	63.92	4.36	32.92	45.53	55.67	74.00	-18.33	Pk	Vertical
4804.138	42.30	4.36	32.92	45.53	34.05	54.00	-19.95	AV	Vertical
7206.304	62.63	5.02	37.63	45.56	59.72	74.00	-14.28	Pk	Horizontal
7206.304	41.46	5.02	37.63	45.56	38.55	54.00	-15.45	AV	Horizontal
4804.267	63.42	4.36	32.92	45.53	55.17	74.00	-18.83	Pk	Vertical
4804.267	43.41	4.36	32.92	45.53	35.16	54.00	-18.84	AV	Vertical
7206.311	62.93	5.02	37.63	45.56	60.02	74.00	-13.98	Pk	Horizontal
7206.311	41.99	5.02	37.63	45.56	39.08	54.00	-14.92	AV	Horizontal
Mid Channel (2440 MHz)(GFSK)--Above 1G									
4880.162	64.27	4.41	33.01	45.76	55.93	74.00	-18.07	Pk	Vertical
4880.162	43.89	4.41	33.01	45.76	35.55	54.00	-18.45	AV	Vertical
7320.328	65.15	5.02	37.68	45.59	62.26	74.00	-11.74	Pk	Horizontal
7320.328	41.54	5.02	37.68	45.59	38.65	54.00	-15.35	AV	Horizontal
4880.216	63.64	4.41	33.01	45.76	55.30	74.00	-18.70	Pk	Vertical
4880.216	41.25	4.41	33.01	45.76	32.91	54.00	-21.09	AV	Vertical
7320.402	61.71	5.02	37.68	45.59	58.82	74.00	-15.18	Pk	Horizontal
7320.402	44.97	5.02	37.68	45.59	42.08	54.00	-11.92	AV	Horizontal
High Channel (2480 MHz)(GFSK)-- Above 1G									
4960.319	64.58	4.50	33.26	46.07	56.27	74.00	-17.73	Pk	Vertical
4960.319	42.62	4.50	33.26	46.07	34.31	54.00	-19.69	AV	Vertical
7440.153	65.54	5.02	37.78	45.77	62.57	74.00	-11.43	Pk	Horizontal
7440.153	48.78	5.02	37.78	45.77	45.81	54.00	-8.19	AV	Horizontal
4960.401	63.68	4.50	33.26	46.07	55.37	74.00	-18.63	Pk	Vertical
4960.401	45.88	4.50	33.26	46.07	37.57	54.00	-16.43	AV	Vertical
7440.237	65.91	5.02	37.78	45.77	62.94	74.00	-11.06	Pk	Horizontal
7440.237	46.34	5.02	37.78	45.77	43.37	54.00	-10.63	AV	Horizontal

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
4. All the modulation modes have been tested, and only the worst results are reflected in the report.

4. APPENDIX (RF TEST RESULTS)

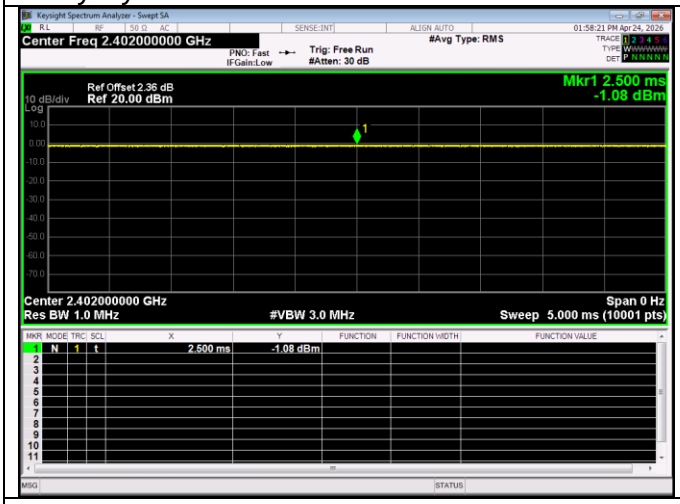
4.1. Duty Cycle

EUT:	Smartwatch	Model Name:	FITZAP-3
Pressure:	1010 hPa	Phase:	L
Temperature	24.8℃	Humidity	52.1%
Test Mode:	TX	Test Voltage:	DC 3.7V

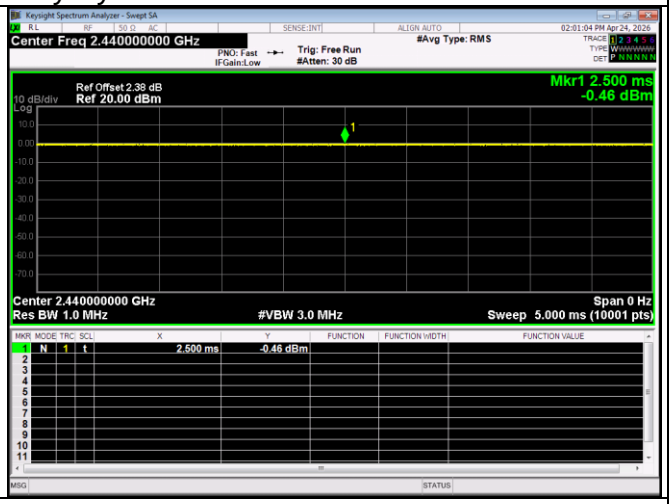
Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE	2402	100	0	0
NVNT	BLE	2440	100	0	0
NVNT	BLE	2480	100	0	0

Test Graphs
:

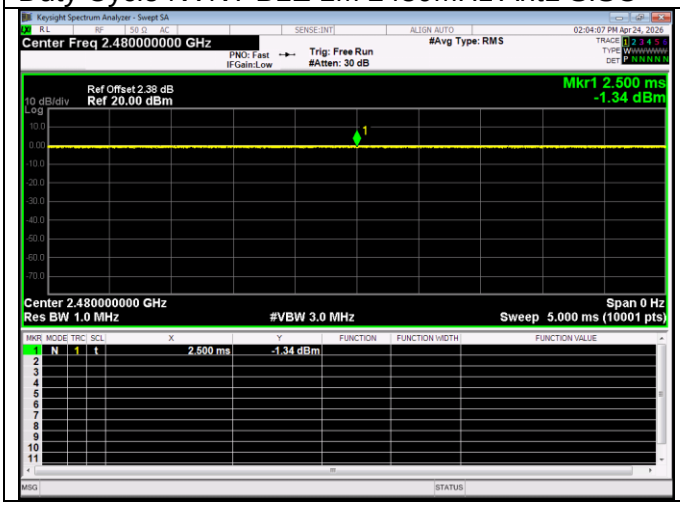
Duty Cycle NVNT BLE 1M 2402MHz Ant1 SISO



Duty Cycle NVNT BLE 1M 2440MHz Ant1 SISO



Duty Cycle NVNT BLE 1M 2480MHz Ant1 SISO



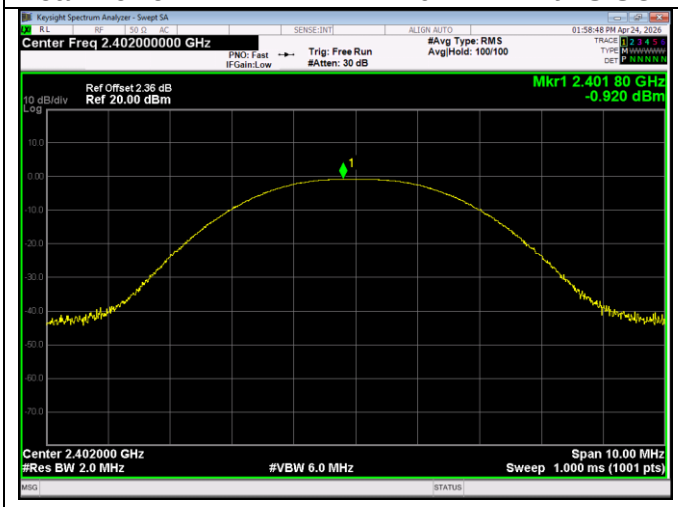
4.2. Maximum Peak Conducted Output Power

EUT:	Smartwatch	Model Name:	FITZAP-3
Pressure:	1010 hPa	Phase:	L
Temperature	24.8℃	Humidity	52.1%
Test Mode:	TX	Test Voltage:	DC 3.7V

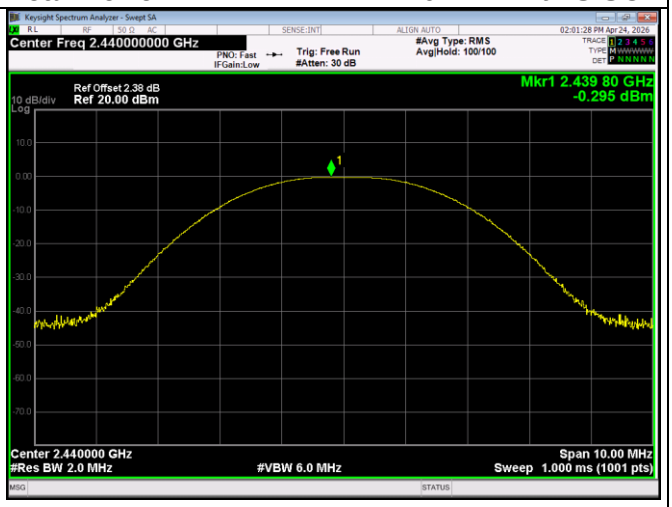
Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Total Conducted Power (dBm)	Total Conducted Power (W)	Limit Conducted(dBm)	Verdict
NVNT	BLE	2402	-0.92	-0.92	0.00081	30	Pass
NVNT	BLE	2440	-0.3	-0.3	0.00093	30	Pass
NVNT	BLE	2480	-0.21	-0.21	0.00095	30	Pass

Test Graphs:

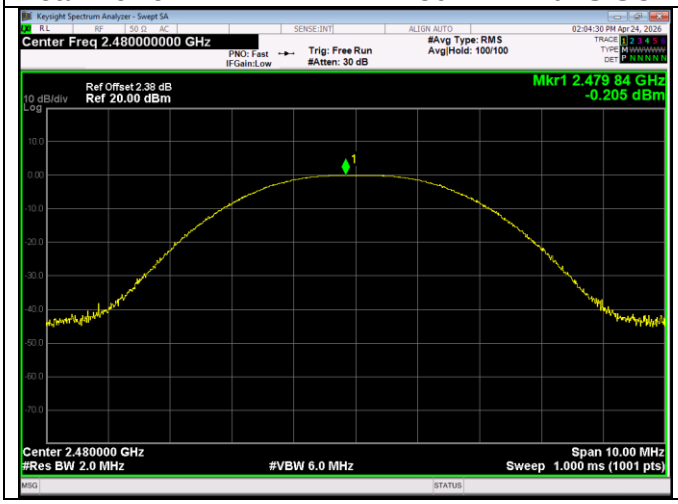
Peak Power NVNT BLE 1M 2402MHz Ant1 SISO



Peak Power NVNT BLE 1M 2440MHz Ant1 SISO



Peak Power NVNT BLE 1M 2480MHz Ant1 SISO



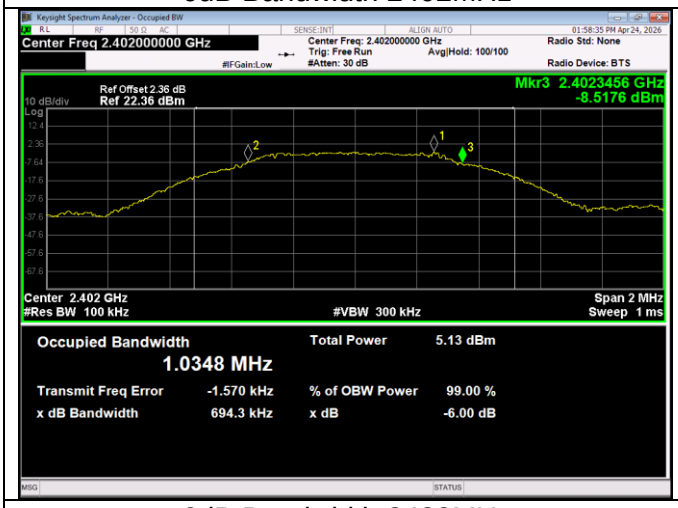
4.3. -6dB Bandwidth

EUT:	Smartwatch	Model Name:	FITZAP-3
Pressure:	1010 hPa	Phase:	L
Temperature	24.8℃	Humidity	52.1%
Test Mode:	TX	Test Voltage:	DC 3.7V

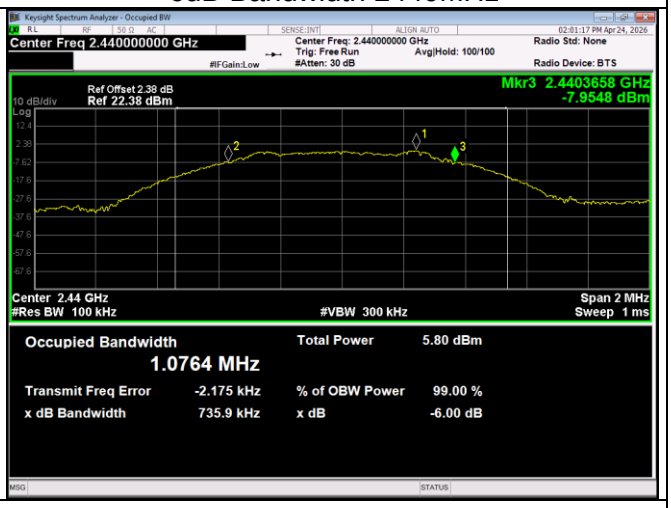
Condition	Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE	2402	0.6943	0.5	Pass
NVNT	BLE	2440	0.7359	0.5	Pass
NVNT	BLE	2480	0.8006	0.5	Pass

Test Graphs:

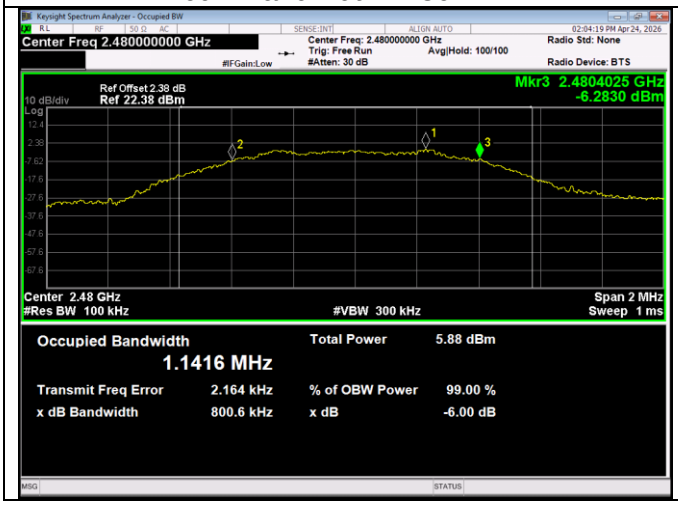
-6dB Bandwidth 2402MHz



-6dB Bandwidth 2440MHz



-6dB Bandwidth 2480MHz



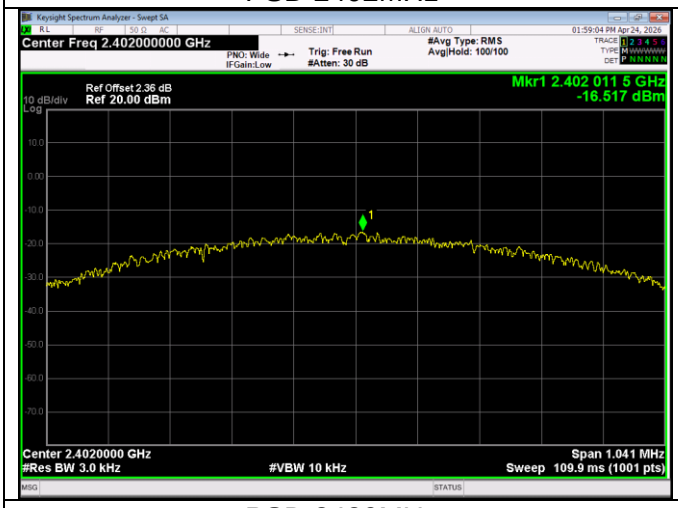
4.4. Maximum Power Spectral Density Level

EUT:	Smartwatch	Model Name:	FITZAP-3
Pressure:	1010 hPa	Phase:	L
Temperature	24.8℃	Humidity	52.1%
Test Mode:	TX	Test Voltage:	DC 3.7V

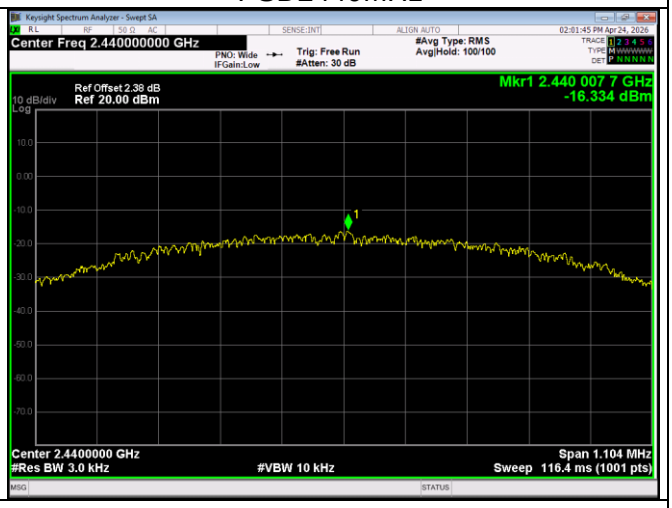
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE	2402	Ant1	-16.52	-16.52	8	Pass
NVNT	BLE	2440	Ant1	-16.33	-16.33	8	Pass
NVNT	BLE	2480	Ant1	-15.41	-15.41	8	Pass

Test Graphs:

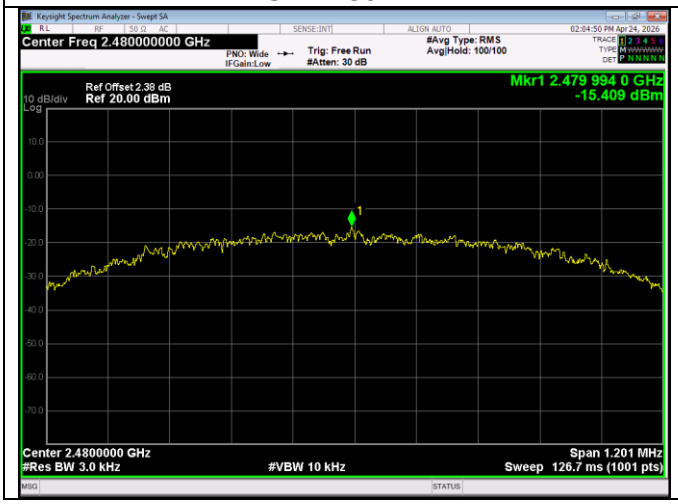
PSD 2402MHz



PSD2440MHz



PSD 2480MHz



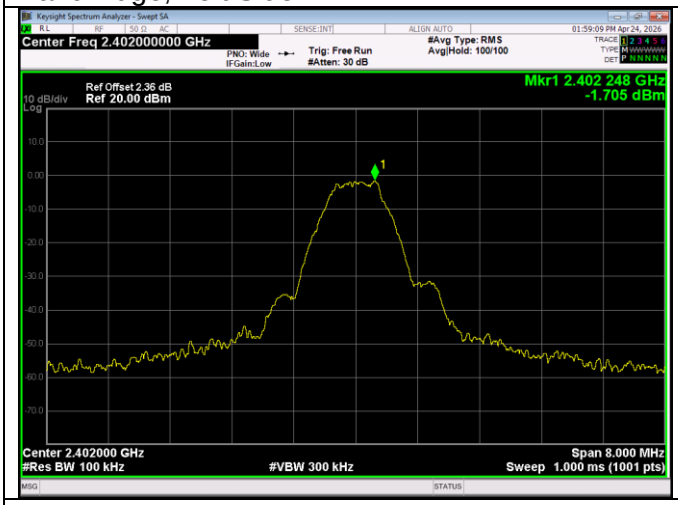
4.5. Band Edge

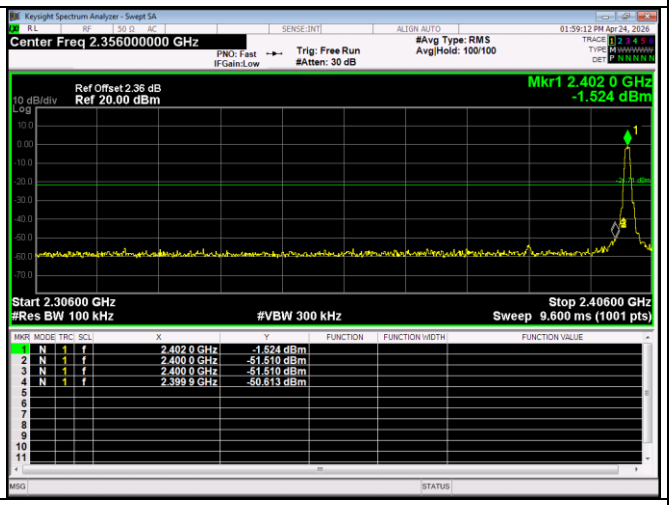
EUT:	Smartwatch	Model Name:	FITZAP-3
Pressure:	1010 hPa	Phase:	L
Temperature	24.8℃	Humidity	52.1%
Test Mode:	TX	Test Voltage:	DC 3.7V

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M SISO	2402	Ant1	-48.91	-20	Pass
NVNT	BLE 1M SISO	2480	Ant1	-51.55	-20	Pass

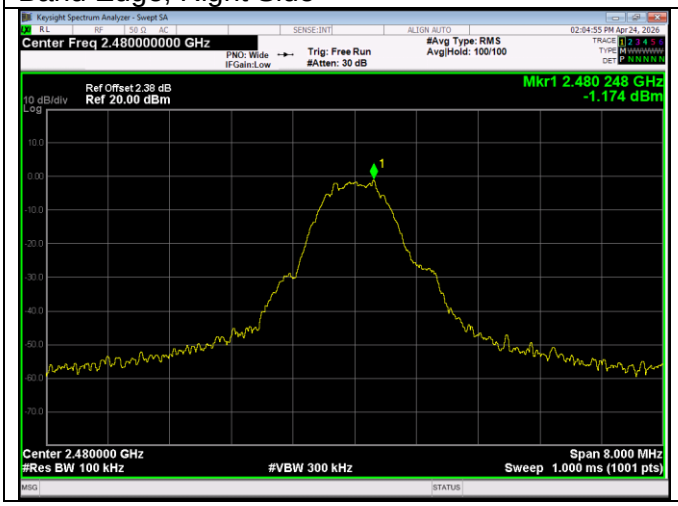
Test Graphs:

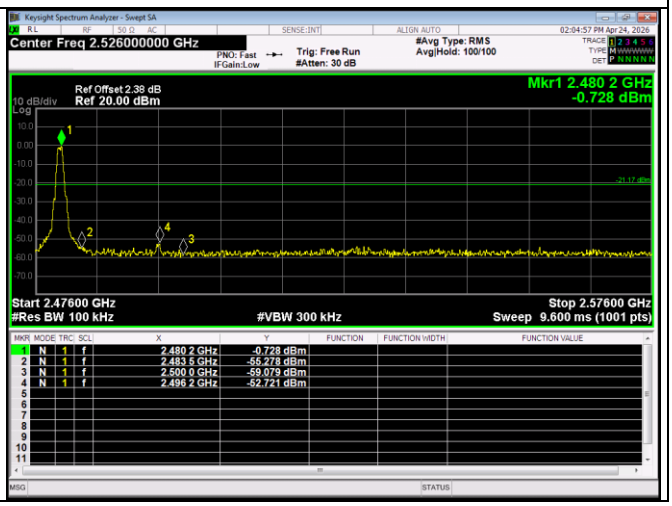
Band Edge, Left Side





Band Edge, Right Side





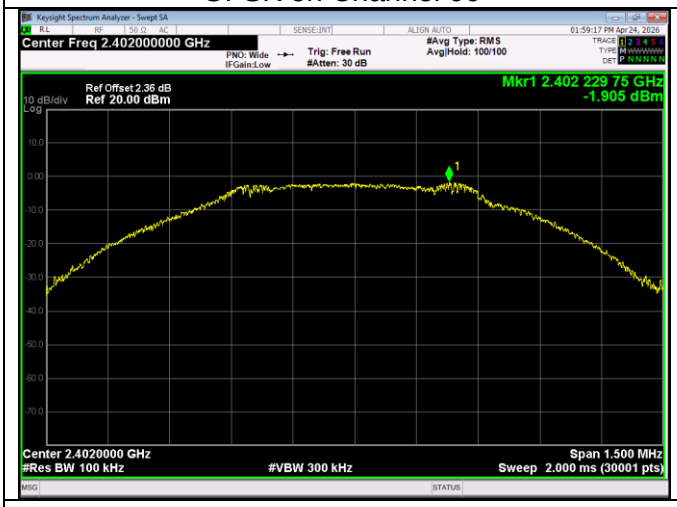
4.6. Conducted RF Spurious Emission

EUT:	Smartwatch	Model Name:	FITZAP-3
Pressure:	1010 hPa	Phase:	L
Temperature	24.8℃	Humidity	52.1%
Test Mode:	TX	Test Voltage:	DC 3.7V

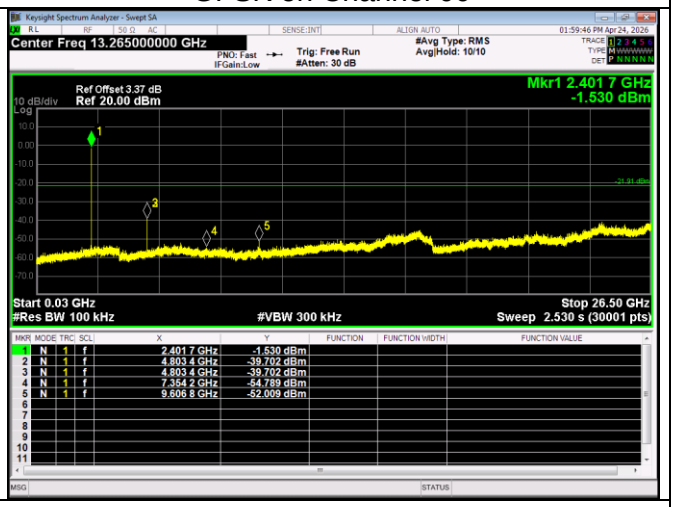
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M SISO	2402	Ant1	-37.8	-20	Pass
NVNT	BLE 1M SISO	2440	Ant1	-39.78	-20	Pass
NVNT	BLE 1M SISO	2480	Ant1	-40.21	-20	Pass

Test Graphs:

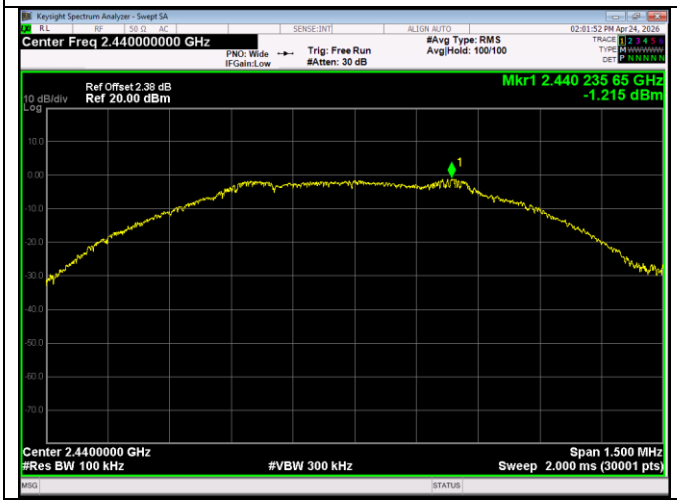
GFSK on Channel 00



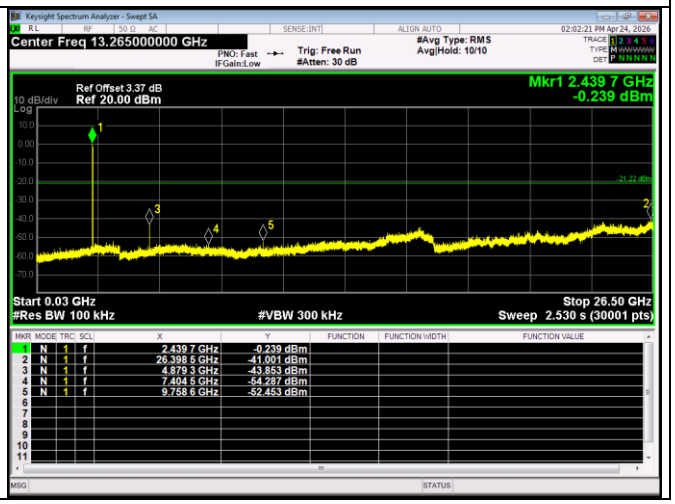
GFSK on Channel 00

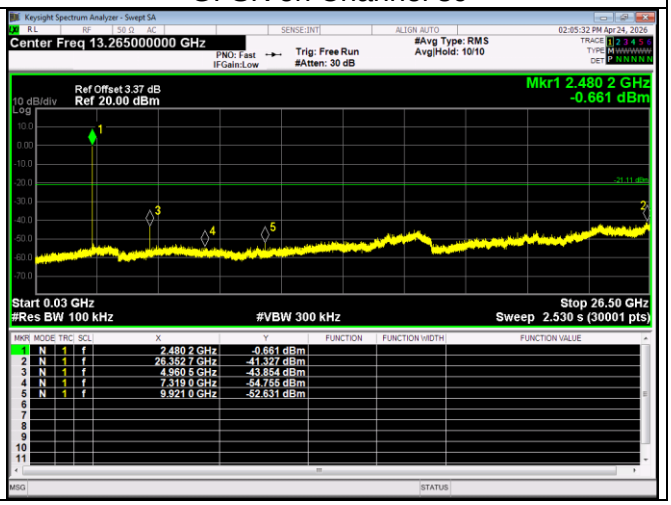


GFSK on Channel 19



GFSK on Channel 19



GFSK on Channel 39	GFSK on Channel 39
	

5. EUT TEST PHOTOS

Note: Refer to the attached test photos

6. PHOTOGRAPHS OF EUT CONSTRUCTIONAL

Note: Refer to the attached exterior and interior photos

**********THE END**********