Prüfbericht - Produkte
Test Report - Products

TÜVRheinland®

Prüfbericht-Nr.: *Test report no.:*	**CN229LOE 001**	**Auftrags-Nr.:** *Order no.:*	**168384094**	**Seite 1 von 21** *Page 1 of 21*
Kunden-Referenz-Nr.: *Client reference no.:*	N/A	**Auftragsdatum:** *Order date:*	2022-08-14	
Auftraggeber: *Client:*	**Globics Technology Limited** 11/F, Shing Dao Industrial Building, Aberdeen Main Rd, Hong Kong			
Prüfgegenstand: *Test item:*	Hybrid Watch			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	PMH01A (Trademark: Pininfarina)			
Auftrags-Inhalt: *Order content:*	FCC and IC approval			
Prüfgrundlage: *Test specification:*	CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209 CFR47 FCC Part 2.1093		RSS-247 Issue 2 February 2017 RSS-Gen Issue 5 February 2021 RSS-102 Issue 5 February 2021	

Wareneingangsdatum: *Date of receipt:*	2022-08-11	Please refer to photo documents
Prüfmuster-Nr.: *Test sample No.:*	A003316967	
Prüfzeitraum: *Testing period:*	2022-08-22 – 2022-08-31	
Ort der Prüfung: *Place of testing:*	TÜV Rheinland (Shenzhen) Co., Ltd.	
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.	
Prüfergebnis*: *Test result*:*	Pass	

geprüft von: *tested by:*	x Alex Lan Signed by: Alex Lan	***genehmigt von:*** *authorized by:*	x Winnie Hou Signed by: Winnie Hou
Datum: *Date:* 2022-11-11		**Ausstellungsdatum:** *Issue date:* 2022-11-14	
Stellung / Position	Assistant Project Manager	**Stellung** / Position	Department Manager

Sonstiges / *Other:* FCC ID: 2A74W-PMH01A
IC: 28848-PMH01A HVIN: PMH01A

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged:*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhalt
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specifications(s)		*F(ail) = failed a.m. test specifications(s)*	*N/A = not applicable*	*N/T = not tested*

TÜV Rheinland (Shenzhen) Co., Ltd. 1601 R&D Room, 1602-1604, 17-18F, Building 7 Site C, Vanke Cloud City Phase I, Xingke First Street, Xili Street, Xili Community, Nanshan District, Shenzhen 518052, P.R. China
Mail: service@de.tuv.com · Web: www.tuv.com

Test Summary

5.1.1 ANTENNA REQUIREMENT
RESULT: Pass

5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER
RESULT: Pass

5.1.3 CONDUCTED POWER SPECTRAL DENSITY
RESULT: Pass

5.1.4 99%DB BANDWIDTH
RESULT: Pass

5.1.5 6DB BANDWIDTH
RESULT: Pass

5.1.6 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHZ BANDWIDTH
RESULT: Pass

5.1.7 RADIATED SPURIOUS EMISSION
RESULT: Pass

5.1.8 CONDUCTED EMISSION ON AC MAINS
RESULT: Pass

6.1.1 ELECTROMAGNETIC FIELDS
RESULT: Pass

Contents

1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-up

Appendix B: Test Results of Conducted & Radiated Testing

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, People's Republic of China

FCC Registration No.: 694916

IC Registration No.: 25069 and the CAB identifier is CN0078.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing (SRD-Tonscend)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. until**
Wireless Connectivity Tester	R&S	CMW270	101375	2023-08-02
Signal Analyzer	R&S	FSV 40	101441	2023-08-01
Vector Signal Generator	R&S	SMBV100A	263301	2023-08-01
Signal Generator	R&S	SMB100A	115186	2023-08-01
OSP	R&S	OSP 150	101017	2022-12-02
Control PC	DELL	OptiPlex 7050	FTJZ9P2	N/A
Test Software	R&S	WMS32 (V11.00.00)	N/A	N/A
Power Meter	R&S	NRP2	107105	2022-12-02
Power Sensor	R&S	NRP-Z81	105677	2023-08-01
Humid & Temp Programmable Tester	BOST	NTH090-60	19040801	02.04.2023
Shielding Room 8#	Albatross	SR8	APC17151-SR8	2024-06-22
Unwanted Emission Testing (TS9975)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. until**
EMI Test Receiver	R&S	ESR 7	102021	2024-08-02
Signal Analyzer	R&S	FSV 40	101439	2024-08-01
System Controller Interface	R&S	SCI-100	S10010038	N/A
Filterbank	R&S	Wlan	100759	2024-08-01
OSP	R&S	OSP 120	102040	N/A
Pre-amplifier	R&S	SCU08F1	08320031	2024-08-02
Amplifier	R&S	SCU-18F	180070	2024-08-02
Amplifier	R&S	SCU40A	100475	2024-08-02
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	2024-08-06
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	2024-08-06
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	2022-09-08
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2024-08-06
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	2024-06-22

Conducted Emissions				
Equipment	**Manufacturer**	**M/N**	**S/N**	**Calibrated until**
EMI Test Receiver	R&S	ESR3	102680	2023-02-27
Artificial Mains Network	R&S	ENV216	101445	2023-02-27
Artificial Mains Network	R&S	ENV432	101546	2023-02-27

EMC32 test software	R&S	EMC32(Ver.10.50.00)	N/A	N/A

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Parameter	**Uncertainty (k=2)**
Occupied Channel Bandwidth	± 2.08 %
RF output power, conducted	± 0.99 dB
RF power density, conducted	± 0.99 dB
Unwanted Emissions, conducted	± 0.89 dB
All emissions, radiated	± 4.17 dB
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	± 3.70 dB / ± 3.30 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, People's Republic of China. is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a smart watch which supports Bluetooth Low Energy technology.

For details refer to the User Manual and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment	Hybrid Watch
Type Designation	PMH01A
Trademark	Pininfarina
FCC ID	2A74W-PMH01A
IC	28848-PMH01A
HVIN	PMH01A
Operating Voltage	DC 3.7V via built-in Battery DC 5V via power cable for charging
Technical Specification of Bluetooth Low Energy	
Bluetooth Core Version	Bluetooth 5.0
Operating Frequency band	2402 ~ 2480 MHz
Channel Number	40 channels
Channel separation	2MHz
Data rate	1Mbps
Modulation	GFSK
Antenna Type	Ceramic antenna
Antenna Gain	5.54 dBi

Table 3: RF Channel and Frequency of Bluetooth Low Energy

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
00	**2402.00**	10	2422.00	20	2442.00	30	2462.00
01	2404.00	11	2424.00	21	2444.00	31	2464.00
02	2406.00	12	2426.00	22	2446.00	32	2466.00
03	2408.00	13	2428.00	23	2448.00	33	2468.00
04	2410.00	14	2430.00	24	2450.00	34	2470.00
05	2412.00	15	2432.00	25	2452.00	35	2472.00
06	2414.00	16	2434.00	26	2454.00	36	2474.00
07	2416.00	17	2436.00	27	2456.00	37	2476.00
08	2418.00	18	2438.00	28	2458.00	38	2478.00
09	2420.00	**19**	**2440.00**	29	2460.00	**39**	**2480.00**

3.3 Independent Operation Modes

The basic operation modes are:

A. On, Bluetooth LE transmitting mode
    1. Low channel
    2. Middle channel
    3. High channel

B. On, Charging with normal operating

C. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- Block Diagram
- FCC/IC Label and Location Info
- Operation Description
- Photo Document
- Schematics
- User Manual

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.10: 2013.

4.3 Special Accessories and Auxiliary Equipment

Table 4: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N
Laptop	Lenovo	T480	PF-16A6N8

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 30MHz)

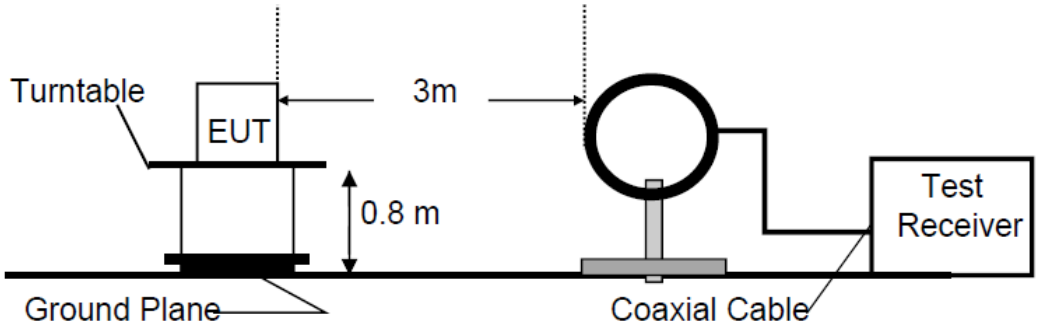


Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

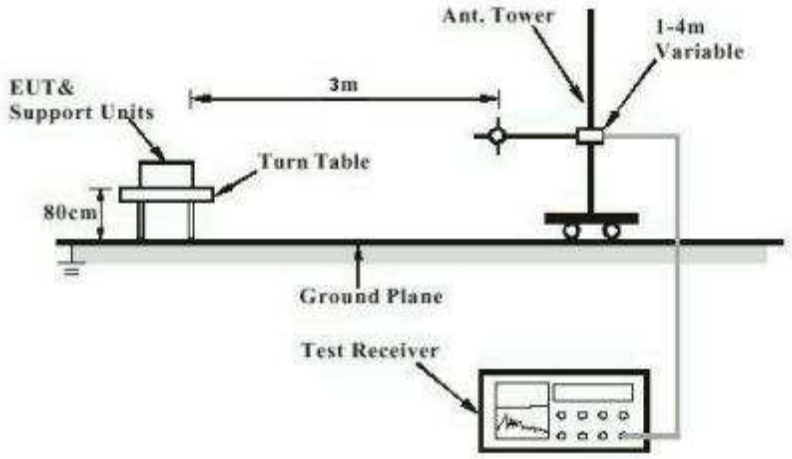


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

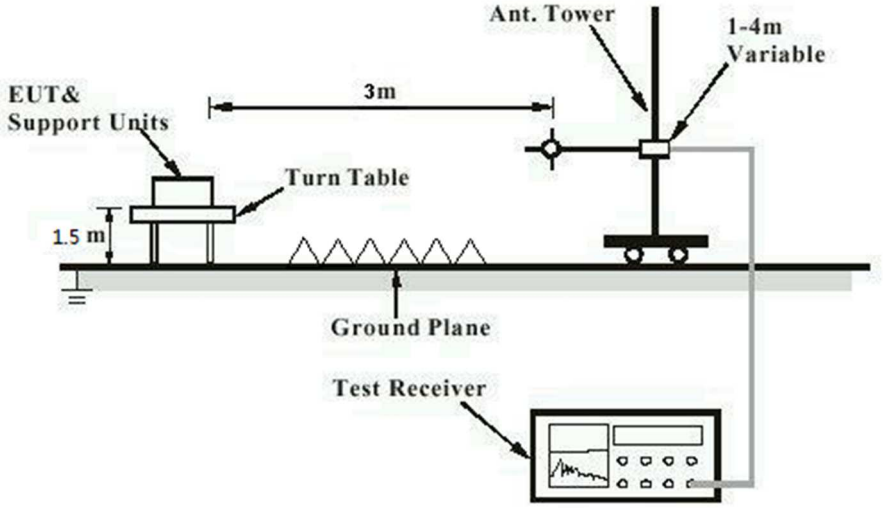


Diagram of Measurement Configuration for Mains Conduction Measurement

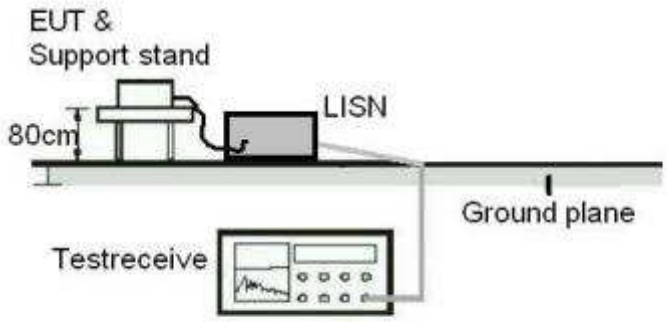
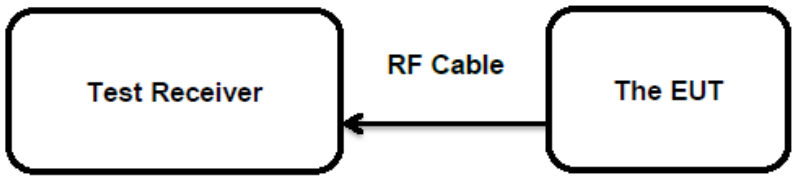


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(b)(4) and Part 15.203 RSS-Gen Clause 6.7
Limit	:	the use of antennas with directional gains that do not exceed 6 dBi

According to the manufacturer declared, the EUT has one integral antenna, the directional gain of antennas are 5.54 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Maximum Peak Conducted Output Power

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(b)(3) RSS-247 Clause 5.4(d)
Basic standard	:	ANSI C63.10: 2013
Limits	:	< 1 Watt (Maximum Conducted Peak Power) e.i.r.p. <4W
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-08-31
Input voltage	:	DC 5V by USB cable
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25.1 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101 kPa

For details refer to following test result.

Table 5: Test Result of Maximum Peak Conducted Output Power

Test Mode	Data Rate	Test Channel (MHz)	Measured Peak Power		Limit (W)
			(dBm)	(W)	
Bluetooth (Low Energy)	1 Mbps	2402	1.3	0.0013	< 1.0
		2440	1.1	0.0013	
		2480	1.0	0.0013	
Maximum Measured Value			1.30	0.0013	

Note: The cable loss is taken into account in results and the maximum e.i.r.p. is 6.84 dBm less than 4W (36 dBm).

5.1.3 Conducted Power Spectral Density

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(e) RSS-247 Clause 5.2(b)
Basic standard	:	ANSI C63.10: 2013
Limits	:	8 dBm / 3kHz
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-08-31
Input voltage	:	DC 5V by USB cable
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25.1 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B.

5.1.4 99%dB Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	RSS-Gen clause 6.7
Basic standard	:	ANSI C63.10: 2013
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-08-31
Input voltage	:	DC 5V by USB cable
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25.1 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B.

5.1.5 6dB Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a)(2) RSS-247 Clause 5.2(a)
Basic standard	:	ANSI C63.10: 2013
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-08-31
Input voltage	:	DC 5V by USB cable
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25.1 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B.

5.1.6 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(d) RSS-247 Clause 5.5
Basic standard	:	ANSI C63.10: 2013
Limits	:	20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-08-31
Input voltage	:	DC 5V by USB cable
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25.1 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101 kPa

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

For the measurement records, refer to the appendix B.

5.1.7 Radiated Spurious Emission

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(d) & FCC Part 15.205 RSS-247 Clause 3.3 & 5.5
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to 15.209(a) of FCC part 15.247(d) RSS-Gen Table 4 & Table 5
Kind of test site	:	3m Semi-anechoic Chamber

Test Setup

Date of testing	:	2022-08-22
Input voltage	:	DC 5V by USB cable
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	Refer to test result
Relative humidity	:	Refer to test result
Atmospheric pressure	:	101 kPa

Remark:
Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix B.

5.1.8 Conducted Emission on AC Mains

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.207(a) RSS-Gen Clause 8.8
Basic standard	:	ANSI C63.10: 2013
Frequency range	:	0.15 – 30MHz
Limits	:	FCC Part 15.207(a) RSS-Gen Table 4
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-08-23
Input voltage	:	AC 120V, 60Hz
Operation mode	:	B
Earthing	:	Not connected
Ambient temperature	:	23.7℃
Relative humidity	:	52.4%
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B.

6 Safety Human Exposure

6.1 Radio Frequency Exposure Compliance

6.1.1 Electromagnetic Fields

RESULT: **Pass**

Test Specification

Test standard	:	FCC KDB Publication 447498 v06
		CFR47 FCC Part 2: Section 2.1093
		CFR47 FCC Part 1: Section 1.1310
		RSS-102 Issue 5 March 2015

This product is a wristwatch, hence the specified use distance is 10mm for head (voice).

The measured maximum conducted output power of the EUT is 1.3dBm ≈ 1.35mW, which is far below the SAR exclusion threshold level 19mW (SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm), hence the EUT is excluded from SAR evaluation according to FCC KDB publication 447498 D01: Mobile and Portable RF Exposure. Guidance v06.

The measured maximum specified e.i.r.p of the EUT is 6.84dBm ≈ 4.83mW, which is below the SAR exclusion threshold level 7mW (Voice) and 10mW (Limbs), hence the EUT is excluded from SAR evaluation according to RSS-102 Issue 5 section 2.5.1.

7 Photographs of the Test Set-Up

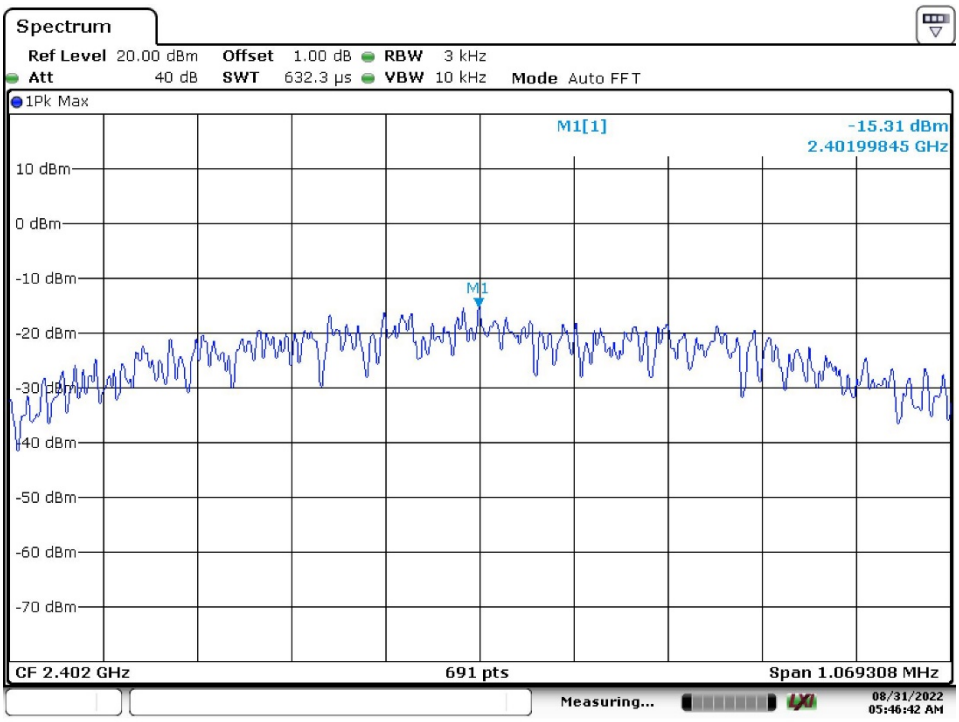
For photographs of the test set-up, refer to the appendix A.

8 List of Tables

Appendix B: Test Results

Appendix B.1: Test Results of Conducted Power Spectral Density

TestMode	Antenna	Channel [MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1Mbps	Ant1	2402	-15.31	≤8.00	PASS
		2440	-15.31	≤8.00	PASS
		2480	-15.33	≤8.00	PASS



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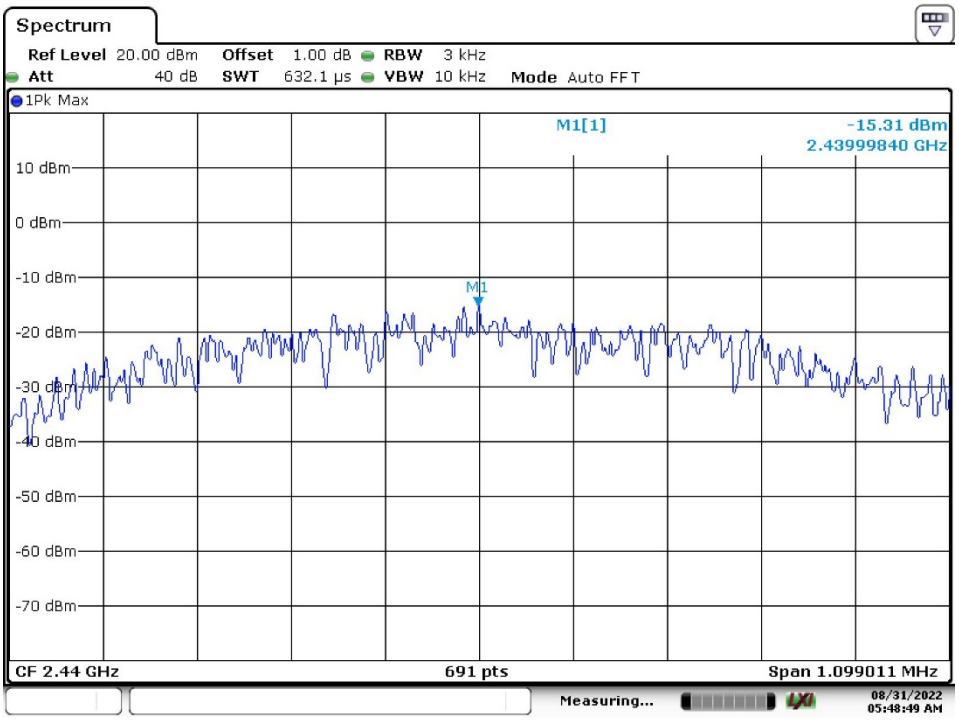

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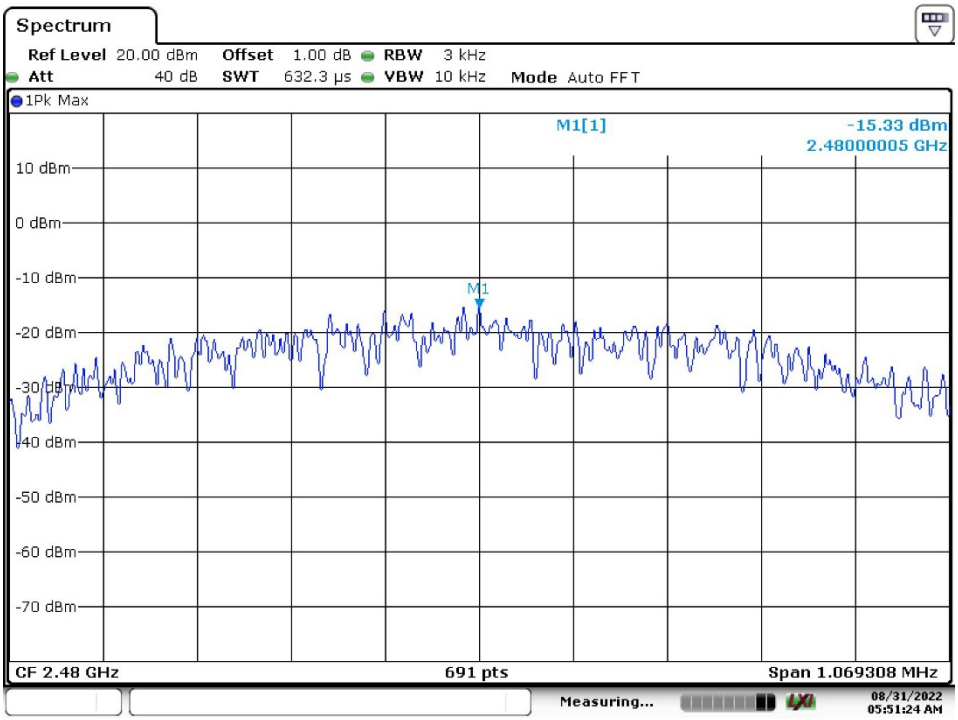

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Appendix B.2: Test Results of 6dB Bandwidth

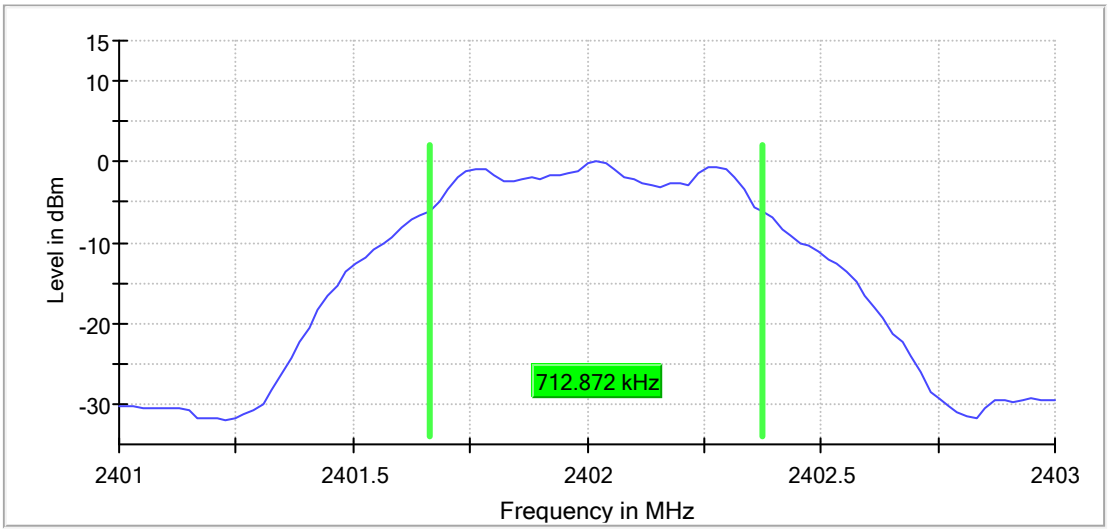
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	0.712872	0.500000	---	2401.663366	2402.376238

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	0.0	PASS

6 dB Bandwidth



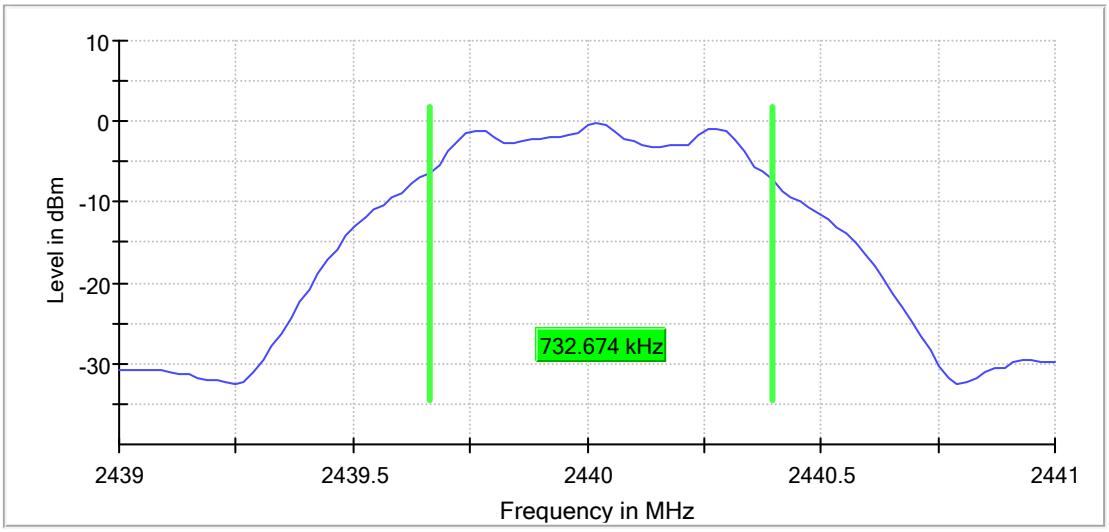
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2440.000000	0.732674	0.500000	---	2439.663366	2440.396040

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2440.000000	-0.3	PASS

6 dB Bandwidth



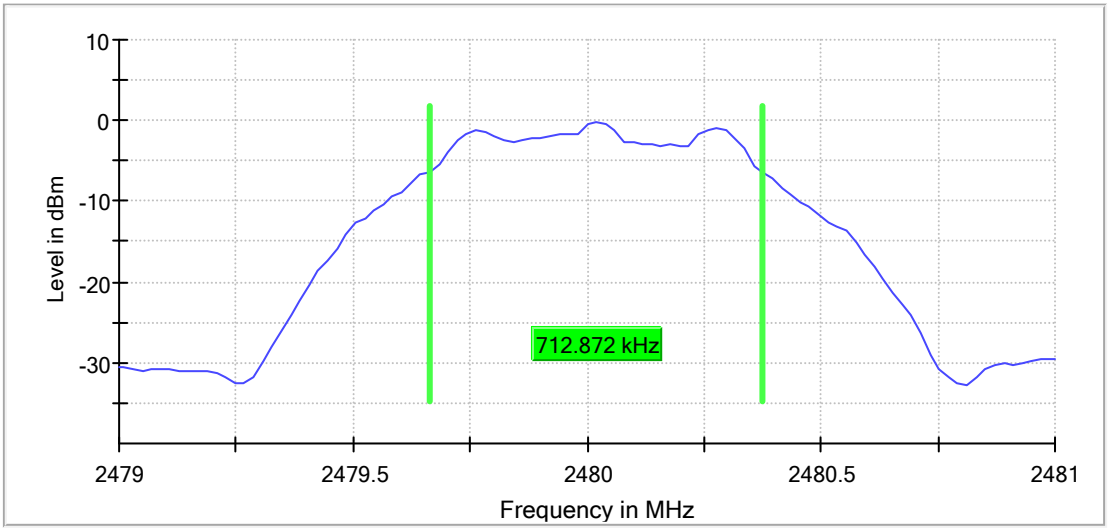
6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	0.712872	0.500000	---	2479.663366	2480.376238

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-0.3	PASS

6 dB Bandwidth



Appendix B.3: Test Results of 99% Bandwidth

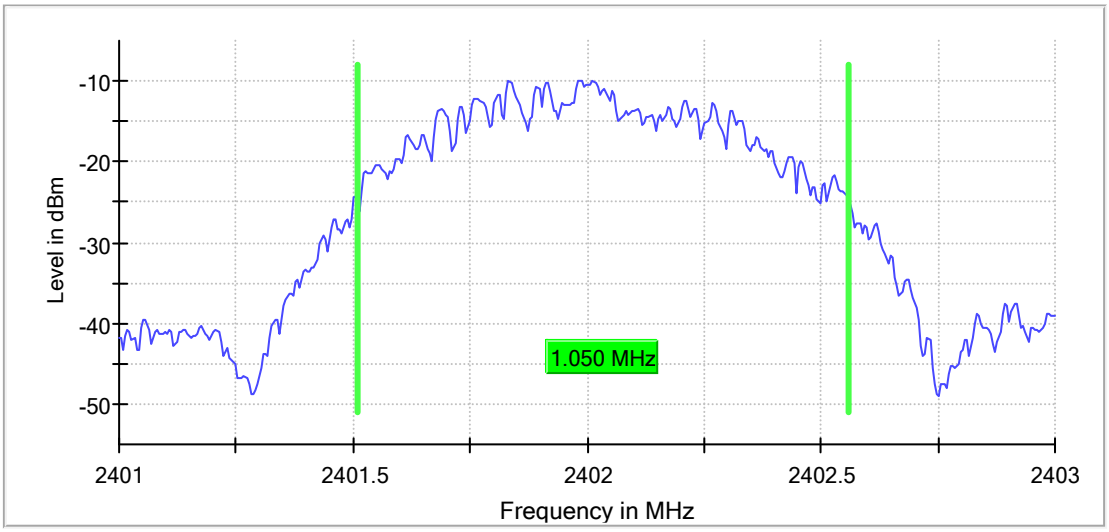
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.050000	---	---	2401.507500	2402.557500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2402.000000	PASS

99 % Bandwidth



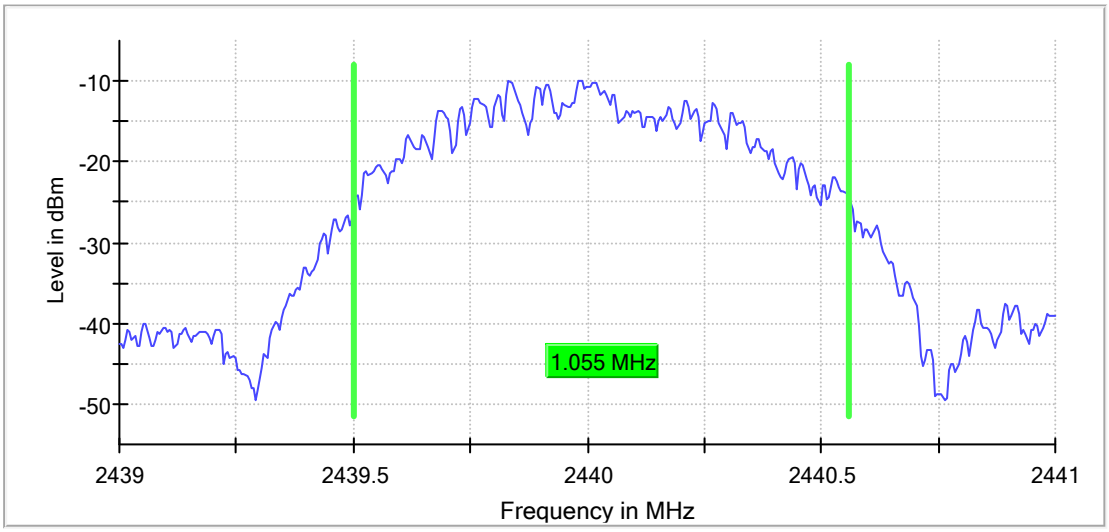
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2440.000000	1.055000	---	---	2439.502500	2440.557500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2440.000000	PASS

99 % Bandwidth



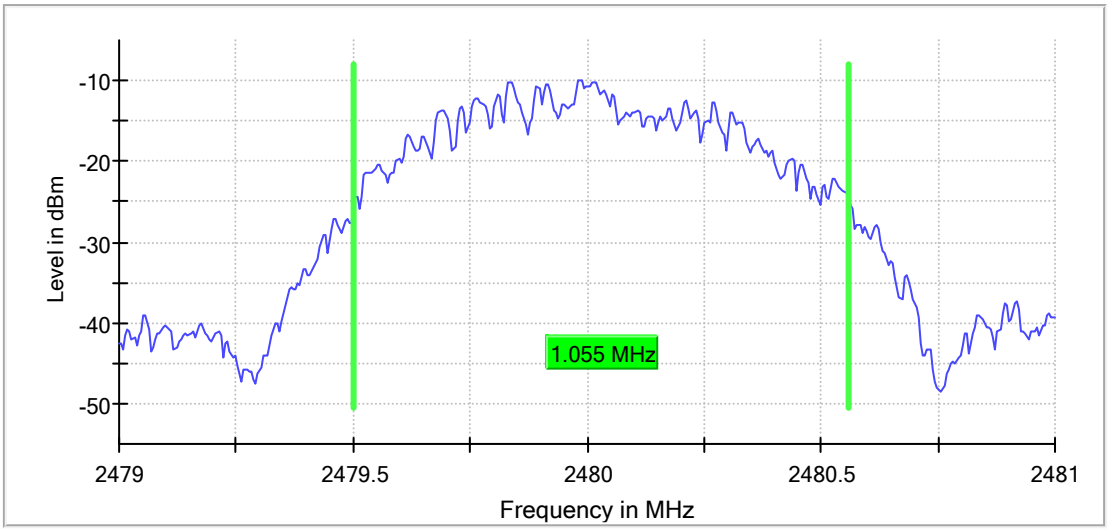
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.055000	---	---	2479.502500	2480.557500

(continuation of the "99 % Bandwidth" table from column 6 ...)

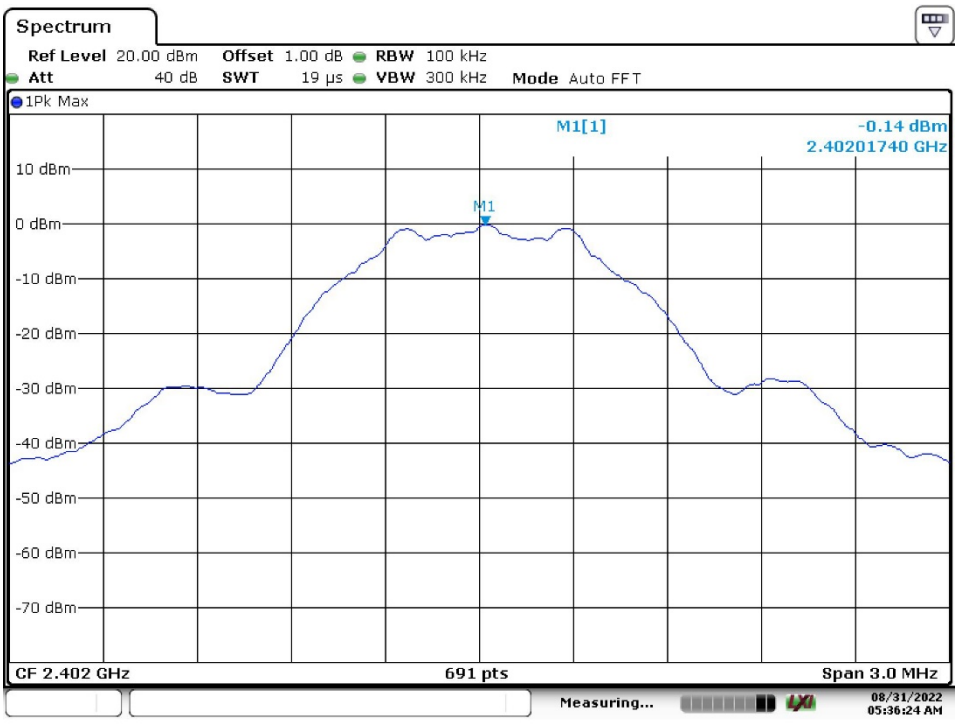
DUT Frequency (MHz)	Result
2480.000000	PASS

99 % Bandwidth

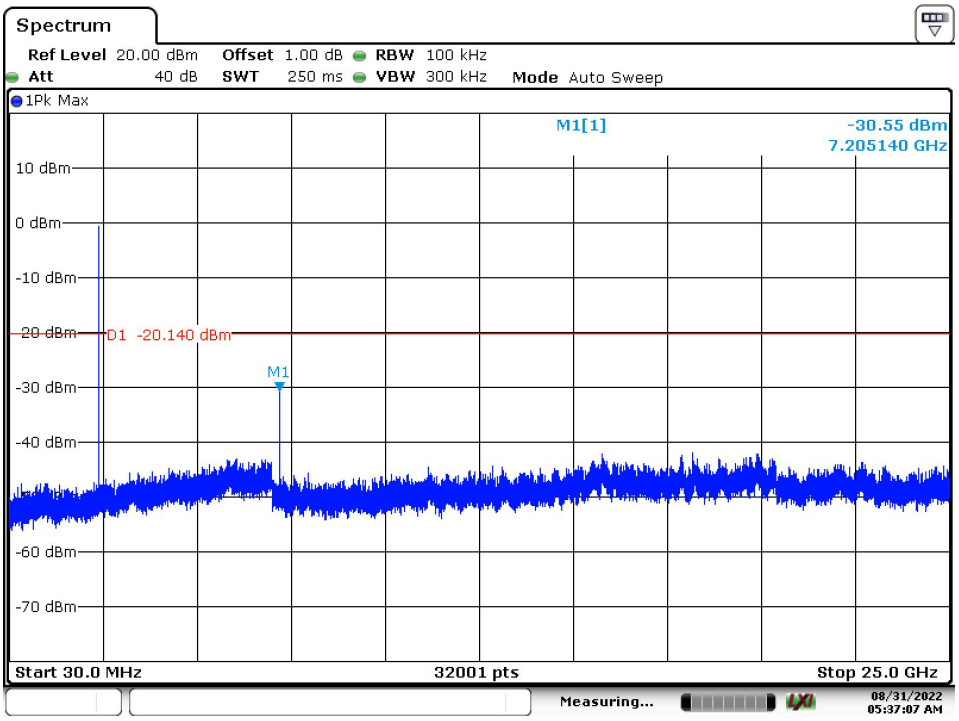


Appendix B.4: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

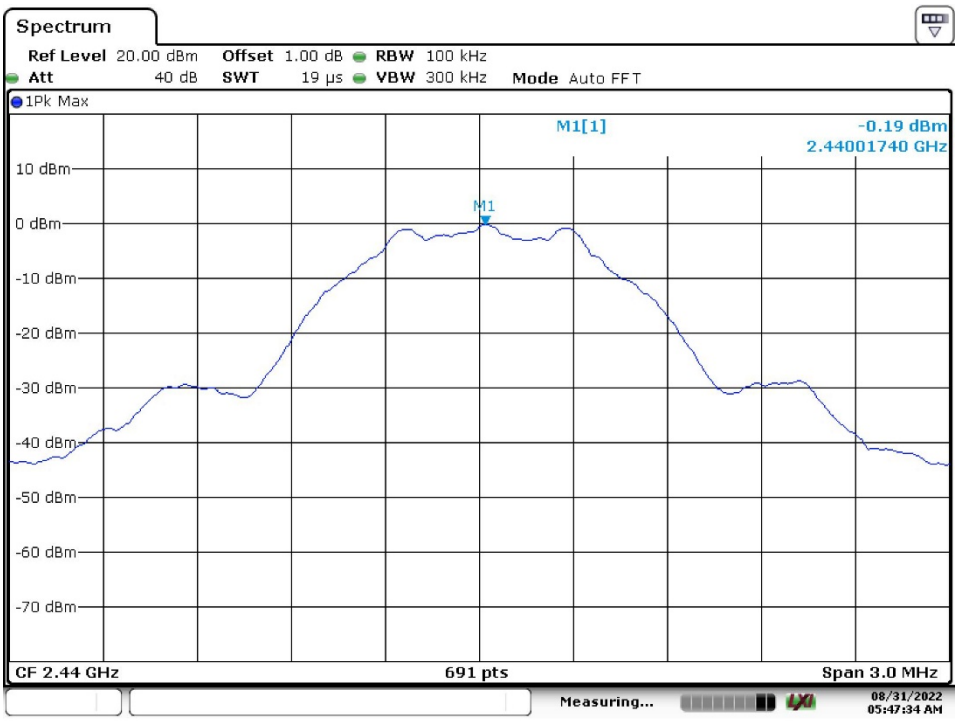
Conducted Spurious Emission



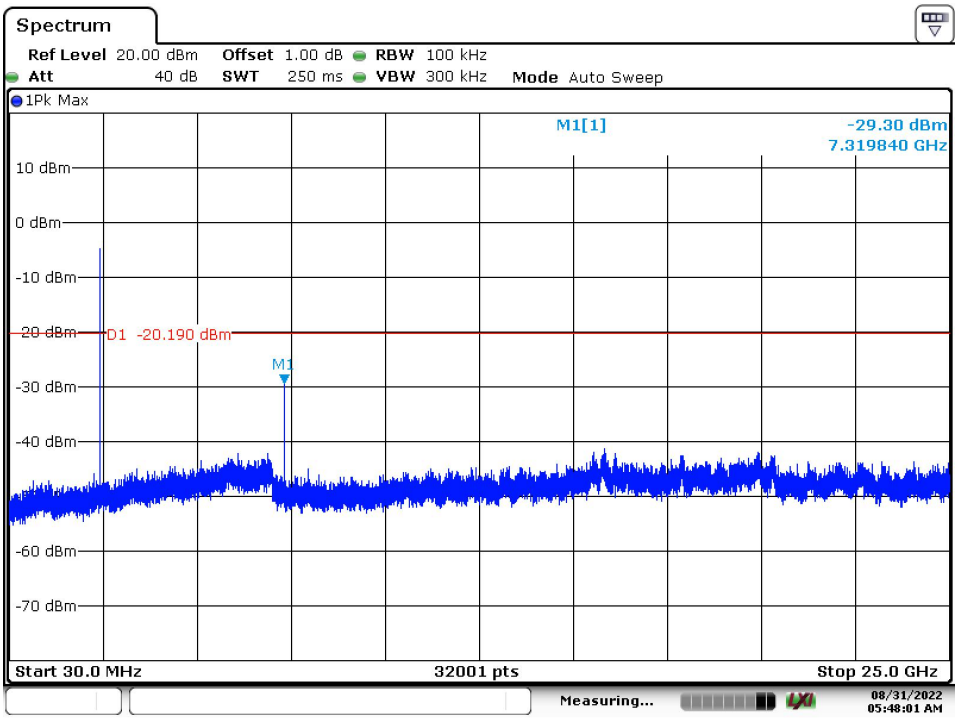
Date: 31.AUG.2022 05:36:24



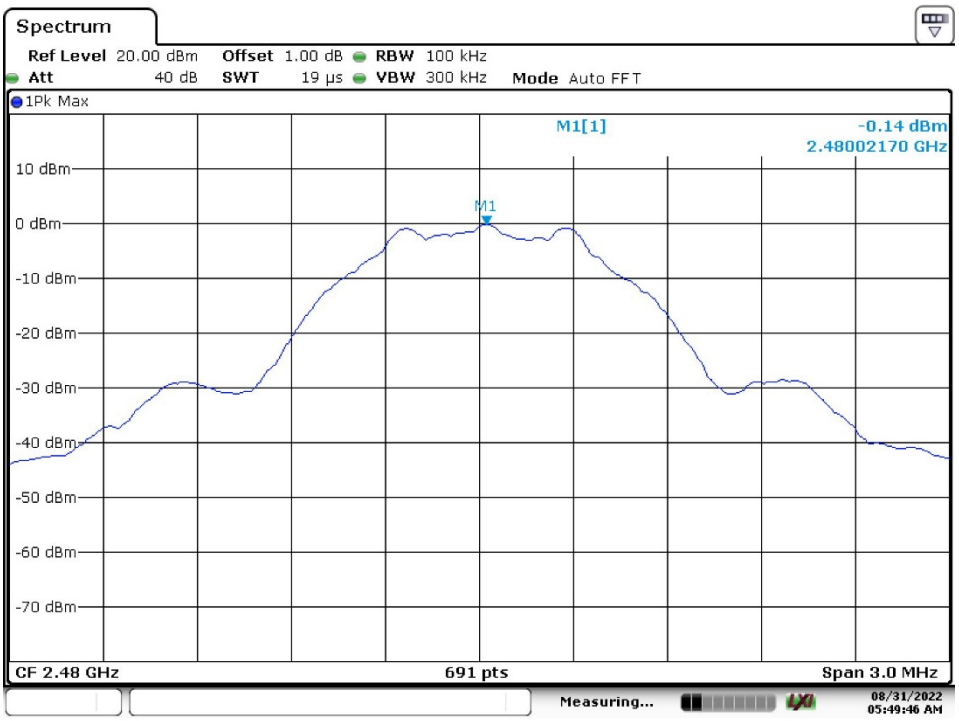
Date: 31.AUG.2022 05:37:07



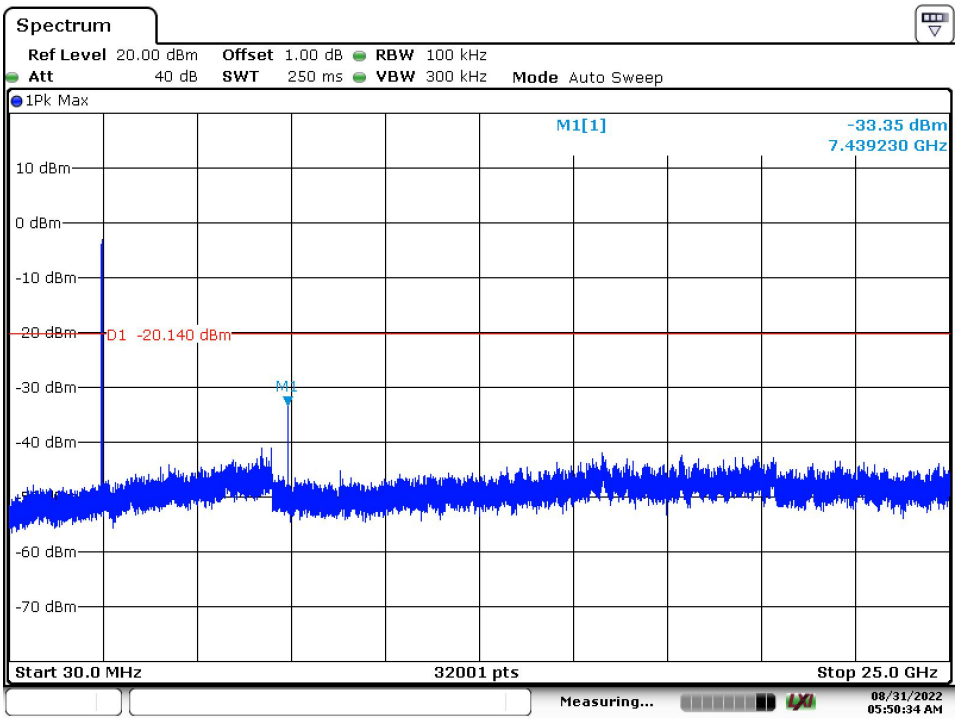
Date: 31.AUG.2022 05:47:35



Date: 31.AUG.2022 05:48:02

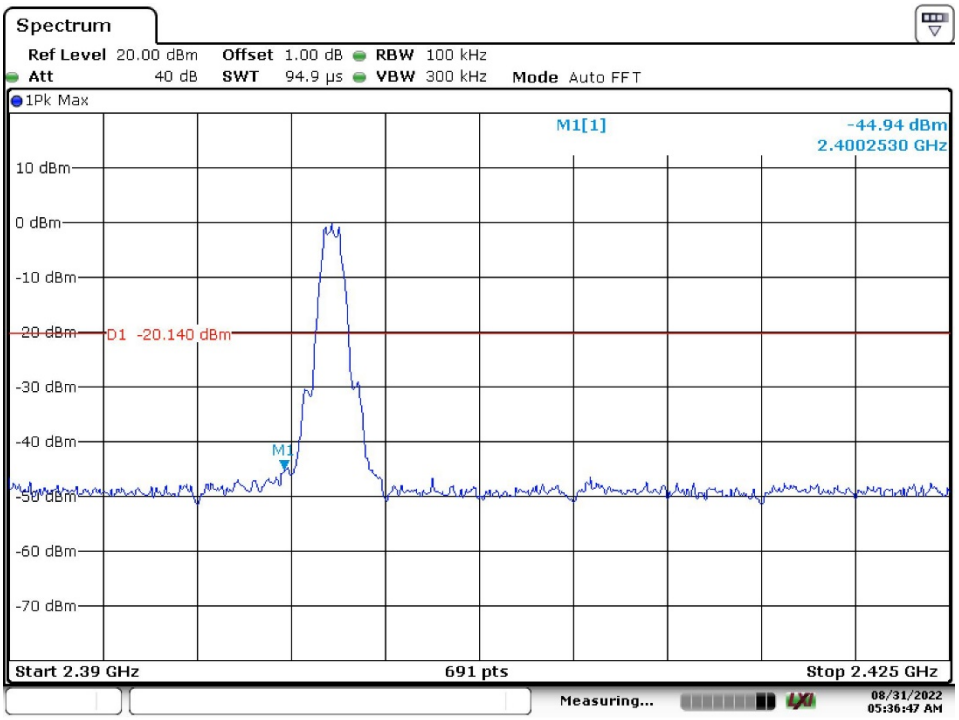


Date: 31.AUG.2022 05:49:46

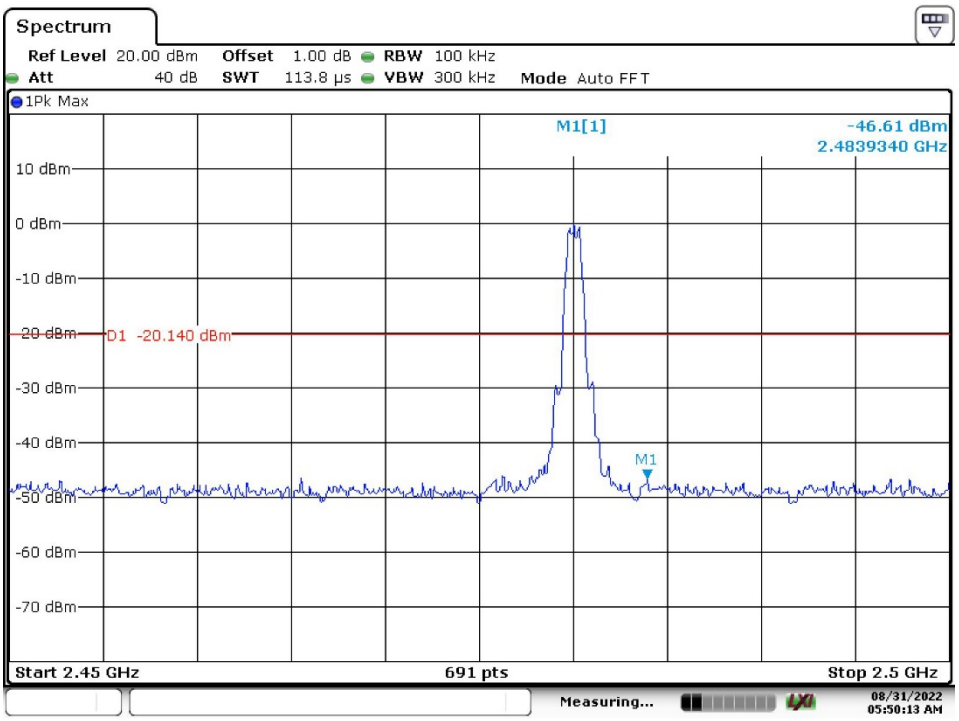


Date: 31.AUG.2022 05:50:35

Band Edge



Date: 31.AUG.2022 05:36:48



Date: 31.AUG.2022 05:50:13

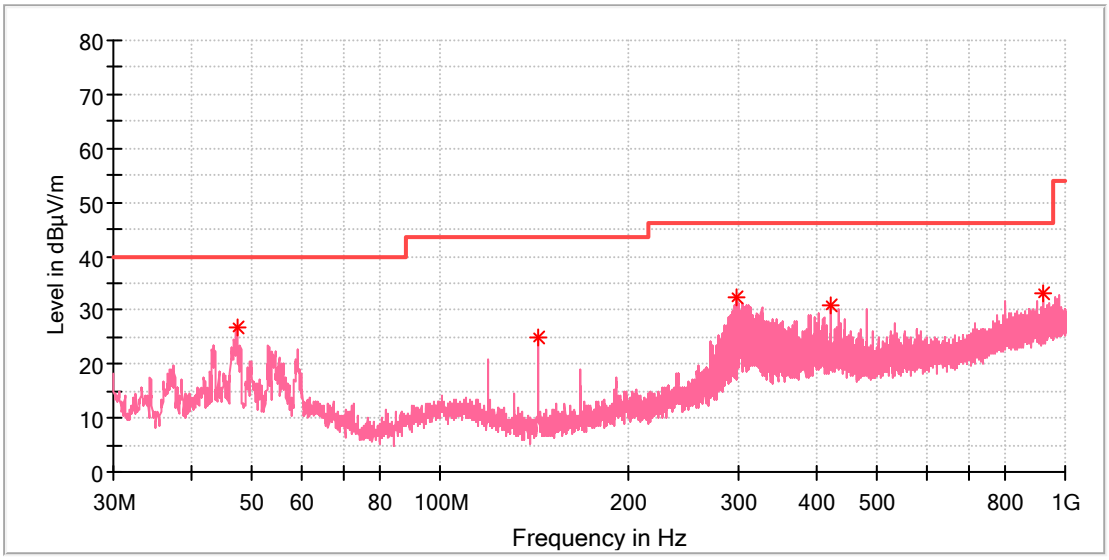
Appendix B.5: Test Results of Radiated Spurious Emissions

Note:
1) This testing was carried out on different modulations, but only the worst case was presented in this report.
2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz - 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

30 MHz to 1GHz

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	168384094/A003316967-004
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

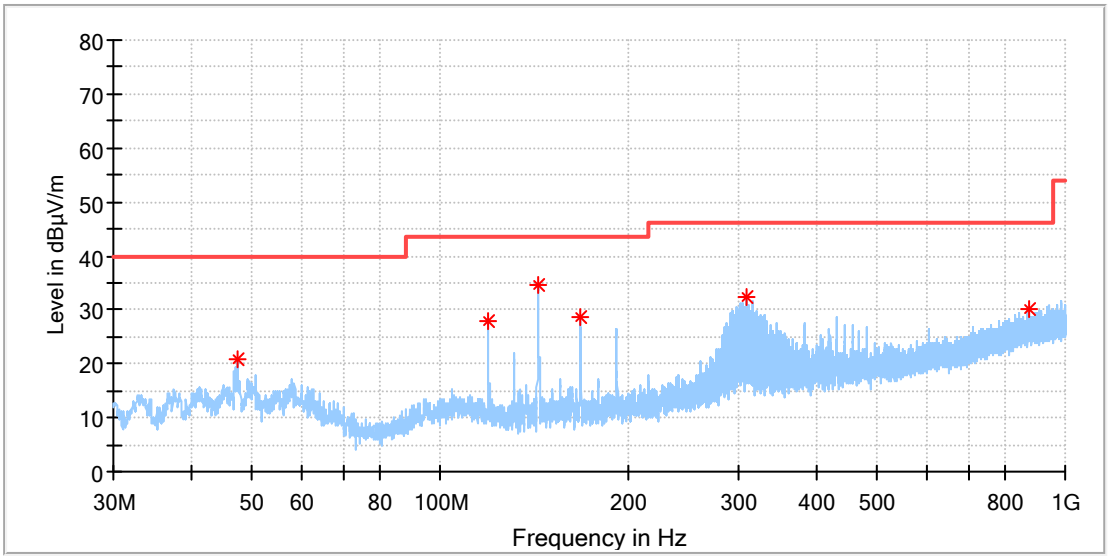


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
47.266000	26.62	40.00	13.38	100.0	V	262.0	-18.5
143.296000	24.80	43.50	18.70	100.0	V	282.0	-22.2
297.914000	32.52	46.00	13.48	100.0	V	295.0	-16.4
422.753000	30.99	46.00	15.01	100.0	V	35.0	-13.4
920.945000	33.14	46.00	12.86	100.0	V	254.0	-4.8

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	168384094/A003316967-004
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

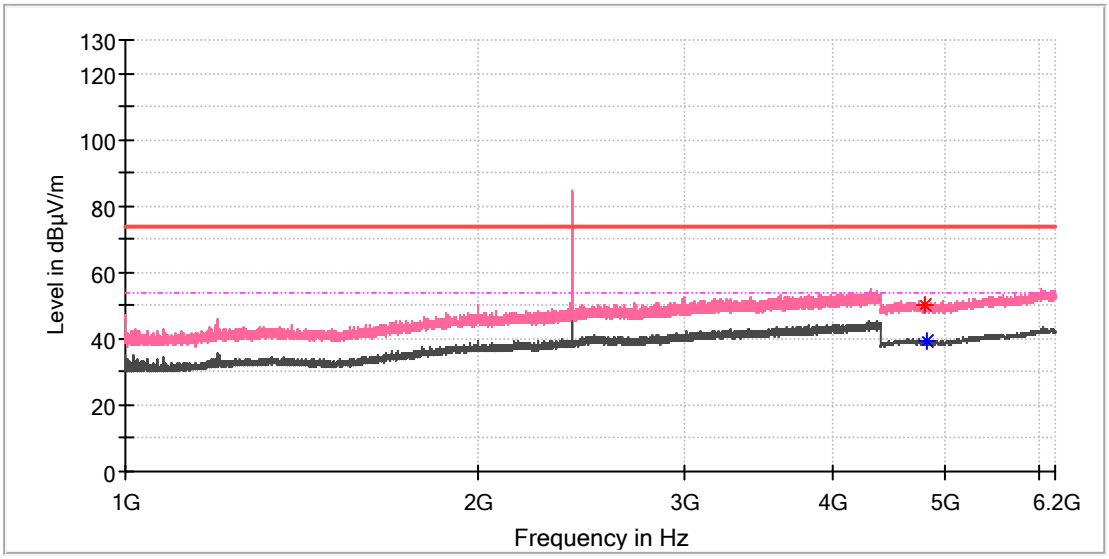
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
47.363000	20.85	40.00	19.15	100.0	H	297.0	-18.5
119.434000	27.85	43.50	15.65	100.0	H	320.0	-20.7
143.538500	34.60	43.50	8.90	100.0	H	333.0	-22.2
168.031000	28.70	43.50	14.80	100.0	H	197.0	-21.3
309.845000	32.56	46.00	13.44	100.0	H	211.0	-16.0
874.239500	29.99	46.00	16.01	100.0	H	211.0	-5.2

1GHz-18GHz

Note: The highest waveform in the figure is Bluetooth Fundamental.

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168384094/A003316967-004
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

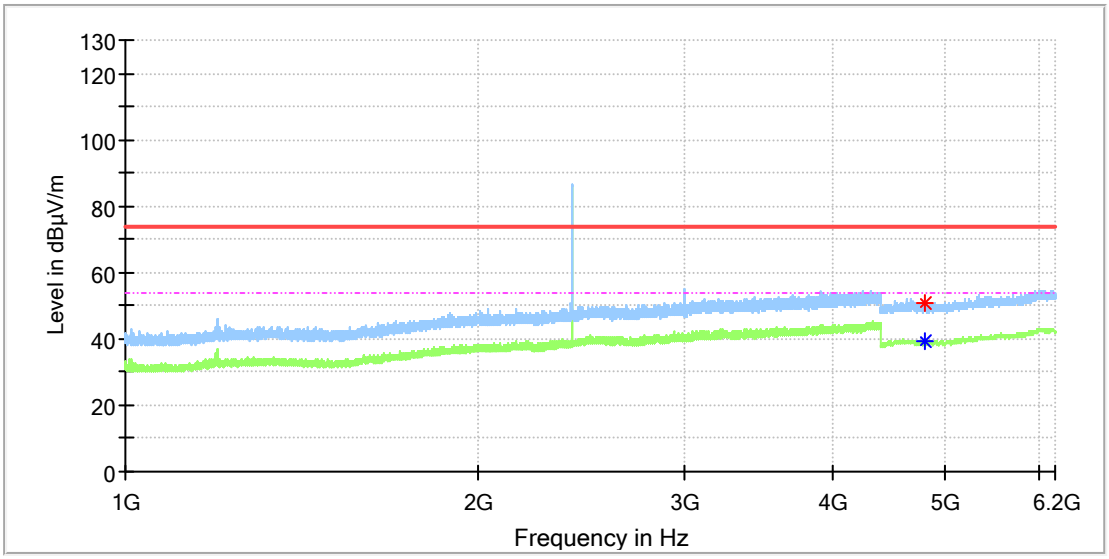


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4807.000000	50.22	---	74.00	23.78	100.0	V	113.0	11.8
4816.500000	---	39.37	54.00	14.63	100.0	V	241.0	11.8

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168384094/A003316967-004
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

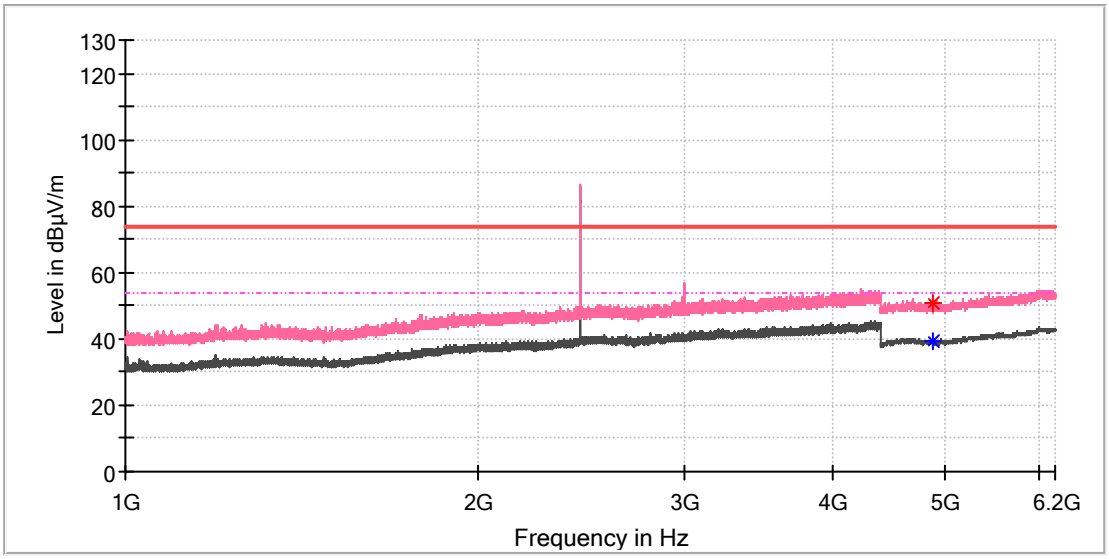


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4800.500000	---	39.27	54.00	14.73	100.0	H	209.0	11.8
4808.500000	50.69	---	74.00	23.31	100.0	H	323.0	11.8

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	168384094/A003316967-004
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

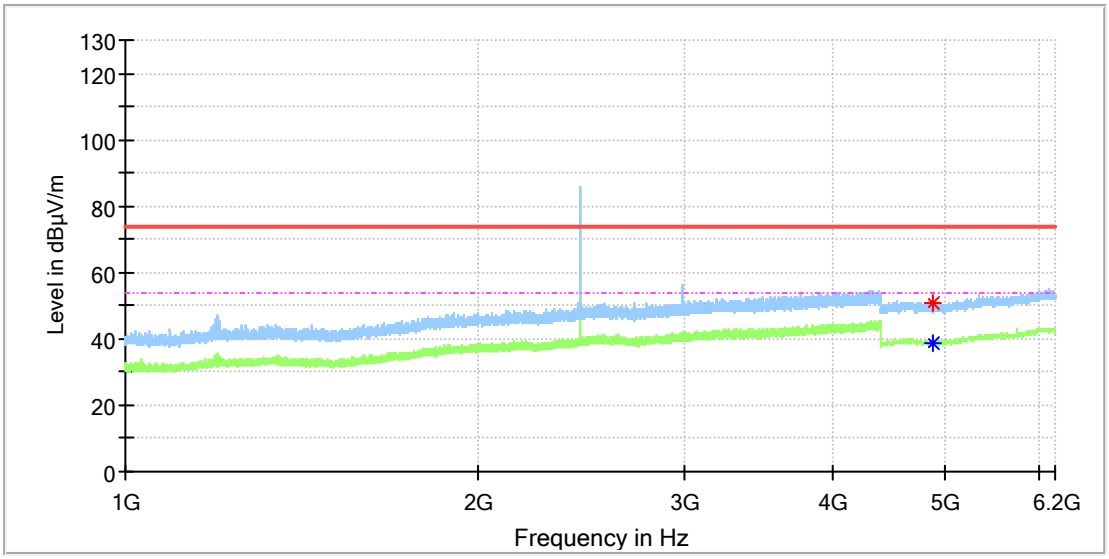


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4871.500000	---	39.51	54.00	14.49	100.0	V	104.0	11.8
4882.500000	50.57	---	74.00	23.43	100.0	V	288.0	11.8

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	168384094/A003316967-004
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

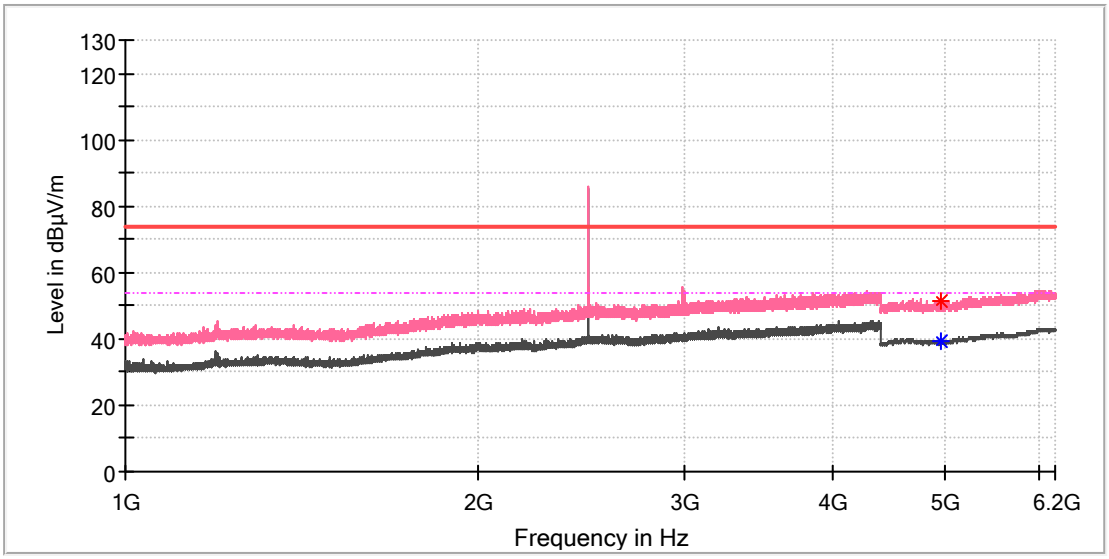


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4880.000000	50.74	---	74.00	23.26	100.0	H	175.0	11.8
4883.500000	---	38.97	54.00	15.03	100.0	H	314.0	11.8

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test Mode:	BLE 1M_High channel
Order No/Sample No:	168384094/A003316967-004
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

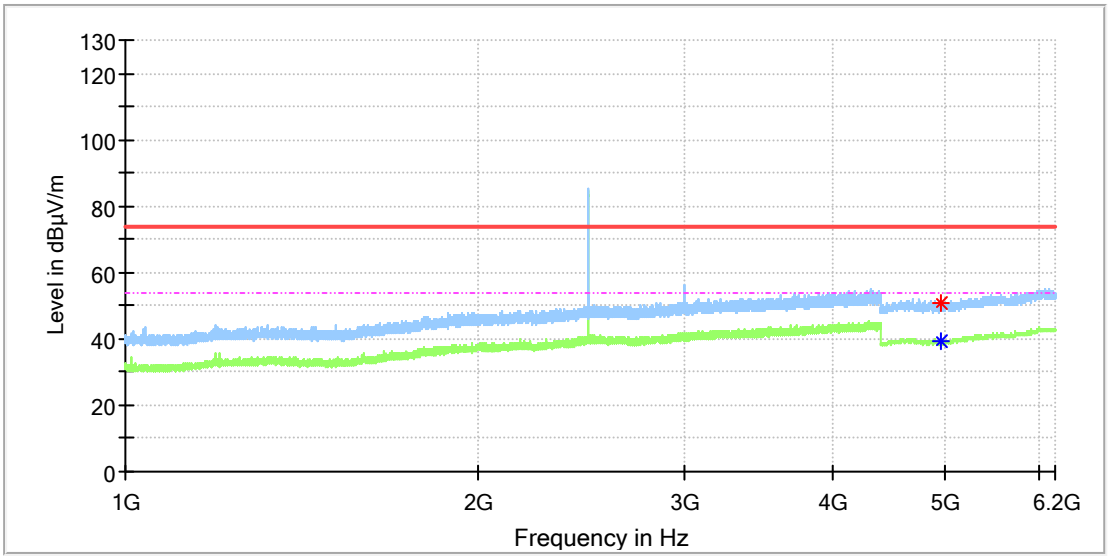


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4948.000000	51.17	---	74.00	22.83	100.0	V	333.0	11.8
4957.500000	---	39.53	54.00	14.47	100.0	V	299.0	11.8

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test Mode:	BLE 1M_High channel
Order No/Sample No:	168384094/A003316967-004
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

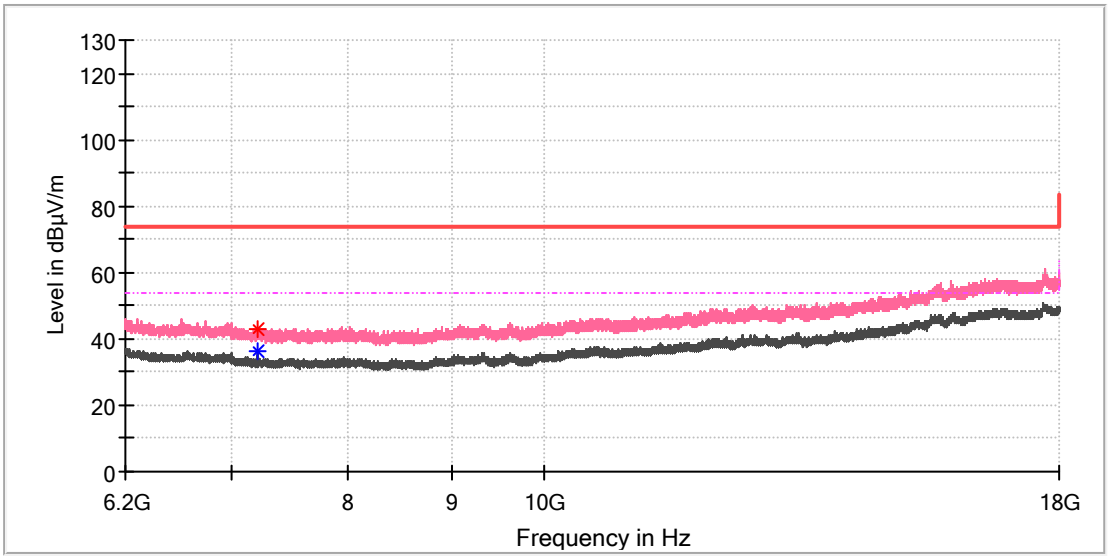


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4948.000000	---	39.45	54.00	14.55	100.0	H	318.0	11.8
4952.000000	50.73	---	74.00	23.27	100.0	H	92.0	11.8

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168384094/A003316967-004
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

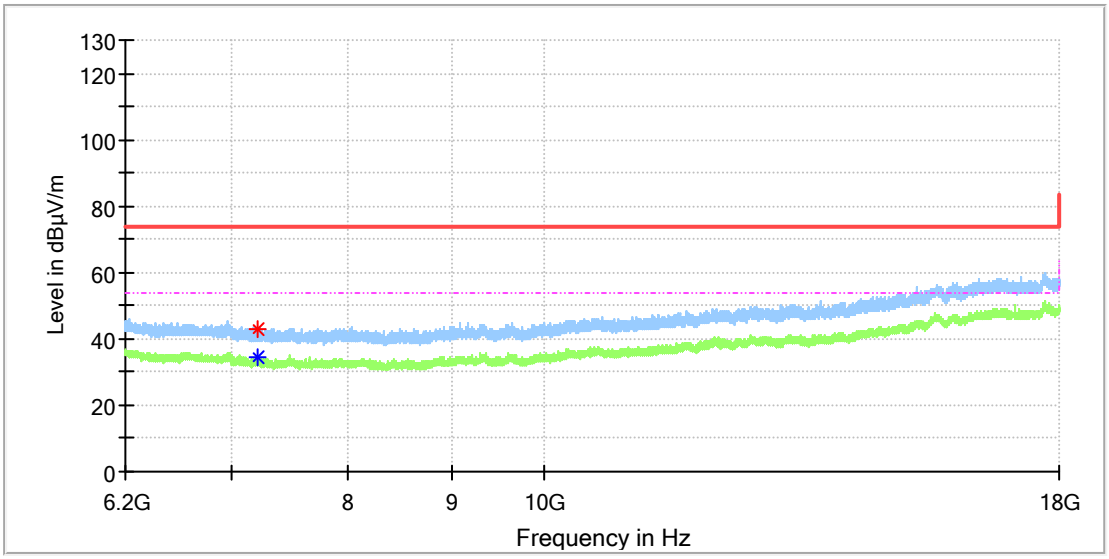


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7205.458333	43.18	---	74.00	30.82	100.0	V	328.0	8.8
7205.458333	---	36.49	54.00	17.51	100.0	V	328.0	8.8

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168384094/A003316967-004
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

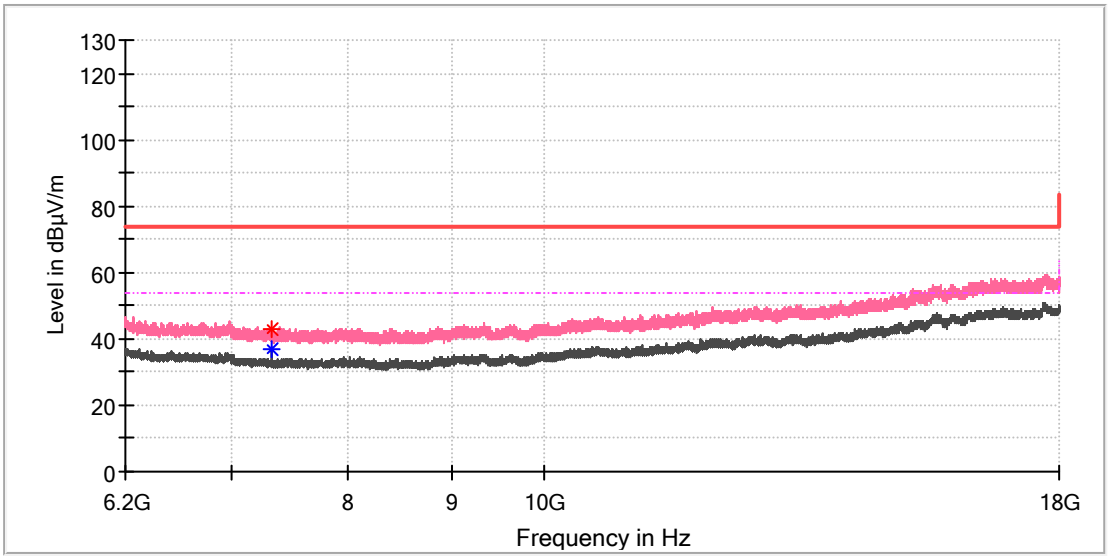


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7205.458333	43.18	---	74.00	30.82	100.0	H	341.0	8.8
7205.950000	---	34.49	54.00	19.51	100.0	H	341.0	8.8

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	168384094/A003316967-004
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

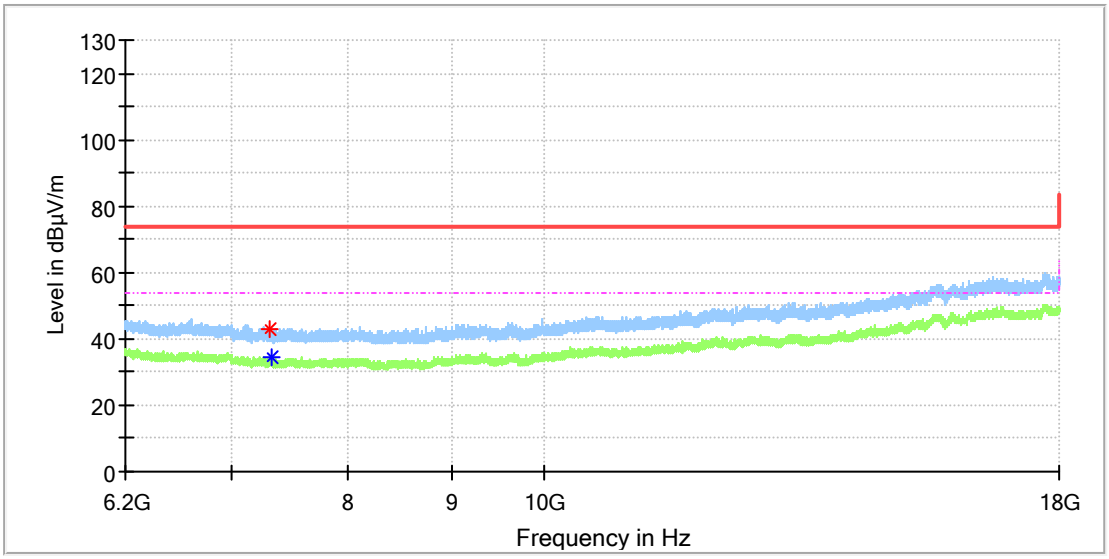


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7319.525000	43.10	---	74.00	30.90	100.0	V	345.0	8.2
7319.525000	---	36.82	54.00	17.18	100.0	V	345.0	8.2

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	168384094/A003316967-004
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

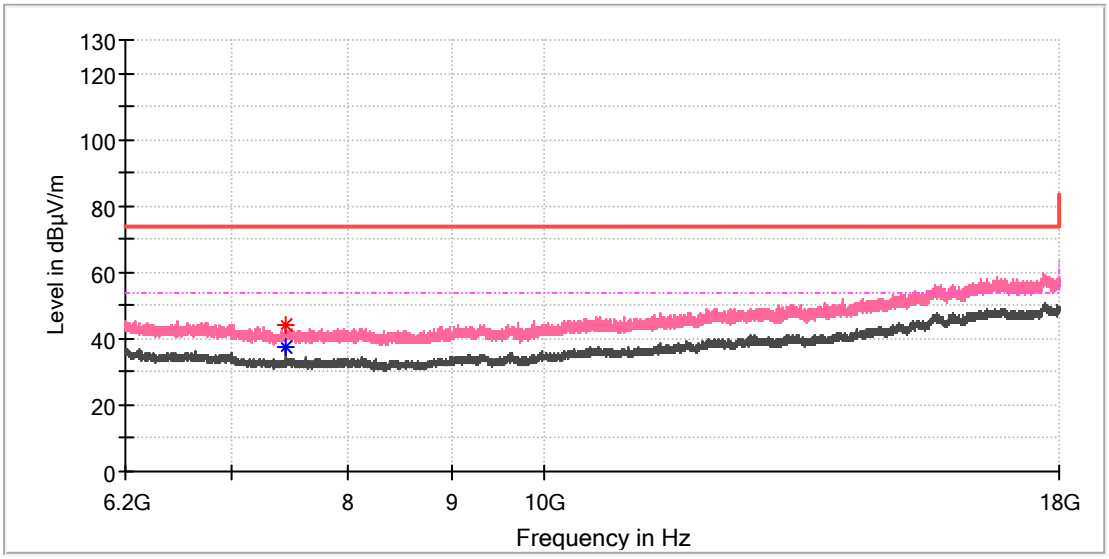


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7315.591667	42.65	---	74.00	31.35	100.0	H	91.0	8.2
7325.425000	---	34.50	54.00	19.50	100.0	H	0.0	8.2

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test Mode:	BLE 1M_High channel
Order No/Sample No:	168384094/A003316967-004
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

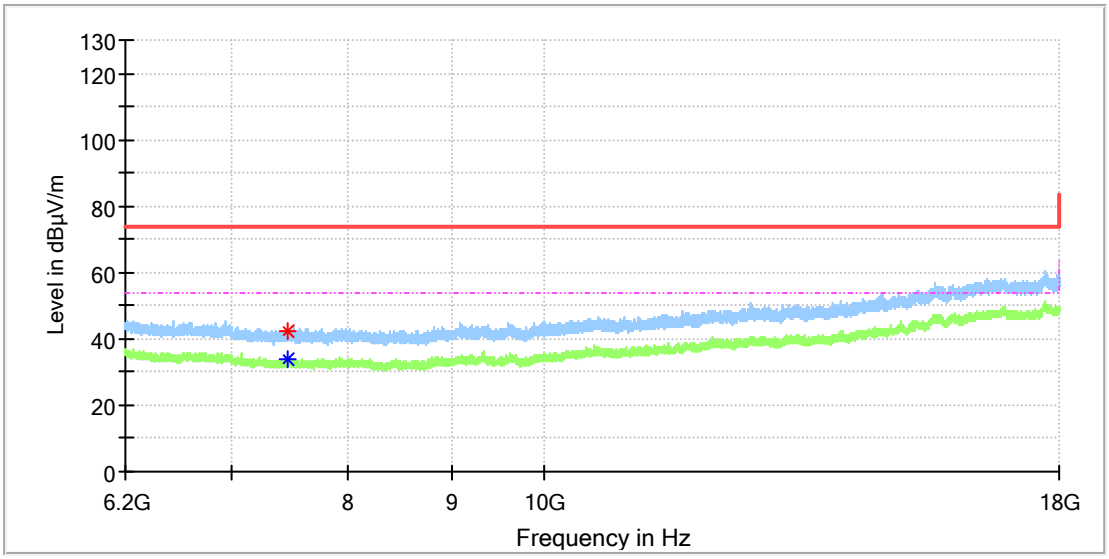


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7439.491667	---	37.71	54.00	16.29	100.0	V	327.0	8.4
7440.475000	43.94	---	74.00	30.06	100.0	V	327.0	8.4

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test Mode:	BLE 1M_High channel
Order No/Sample No:	168384094/A003316967-004
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



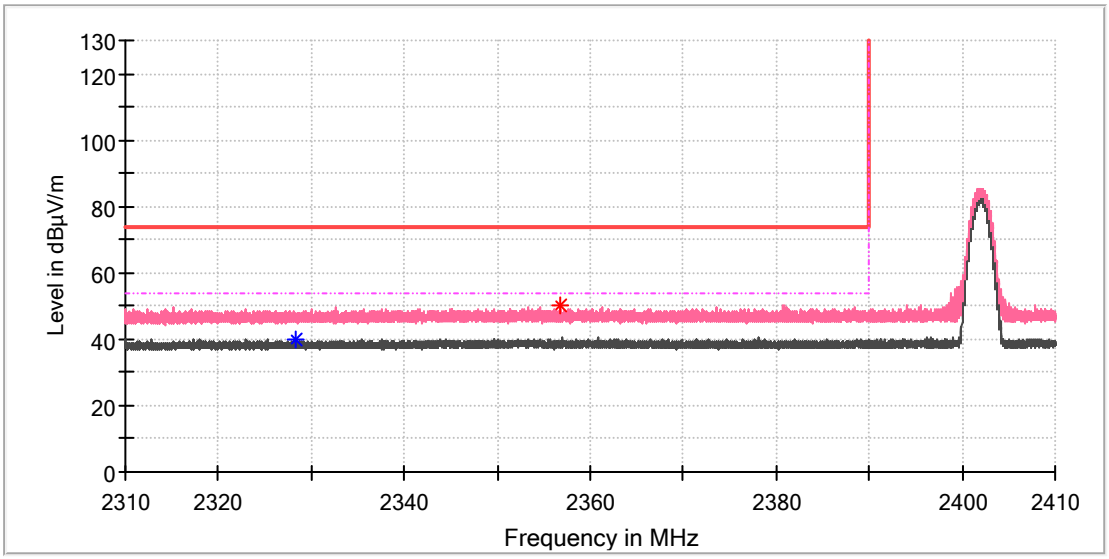
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7455.225000	42.17	---	74.00	31.83	100.0	H	147.0	8.5
7455.225000	---	33.92	54.00	20.08	100.0	H	147.0	8.5

Appendix B.6: Test Results of Radiated Emissions in Restricted Bands

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168384094/A003316967-004
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

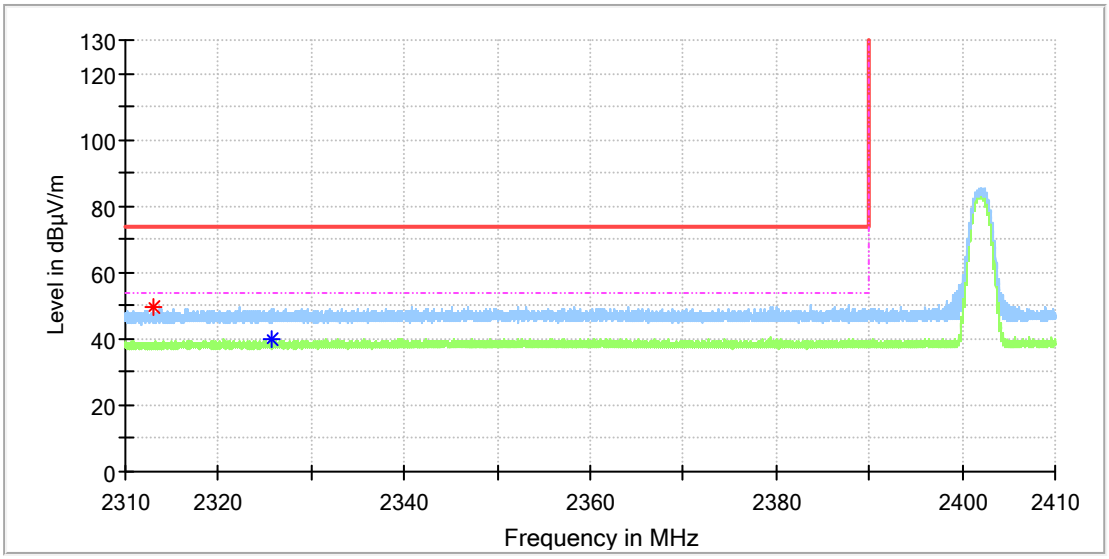


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2328.415000	---	40.07	54.00	13.93	100.0	V	223.0	6.7
2356.815000	50.32	---	74.00	23.68	100.0	V	316.0	6.9

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168384094/A003316967-004
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

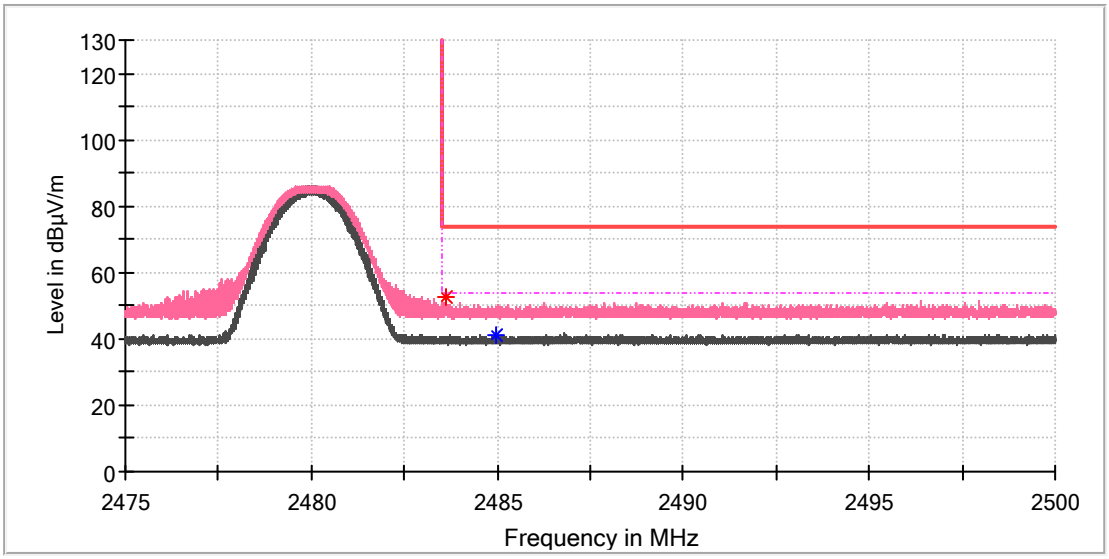


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2313.055000	49.51	---	74.00	24.49	100.0	H	330.0	6.5
2325.705000	---	39.87	54.00	14.13	100.0	H	28.0	6.7

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test Mode:	BLE 1M_High channel
Order No/Sample No:	168384094/A003316967-004
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

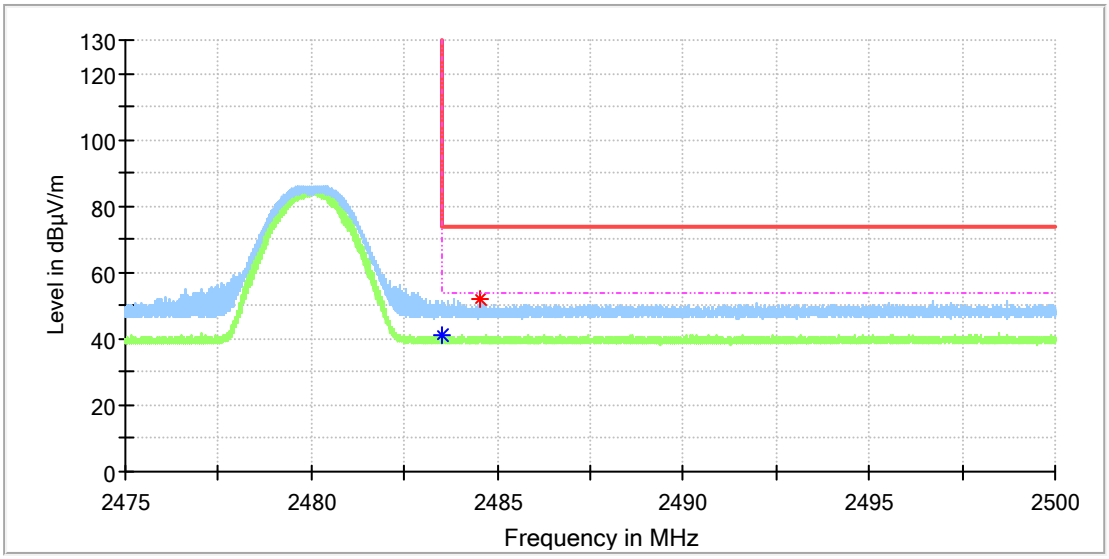


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.598750	52.33	---	74.00	21.67	100.0	V	5.0	7.4
2484.978750	---	41.35	54.00	12.65	100.0	V	105.0	7.4

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test Mode:	BLE 1M_High channel
Order No/Sample No:	168384094/A003316967-004
Test Voltage::	DC 5V From USB
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



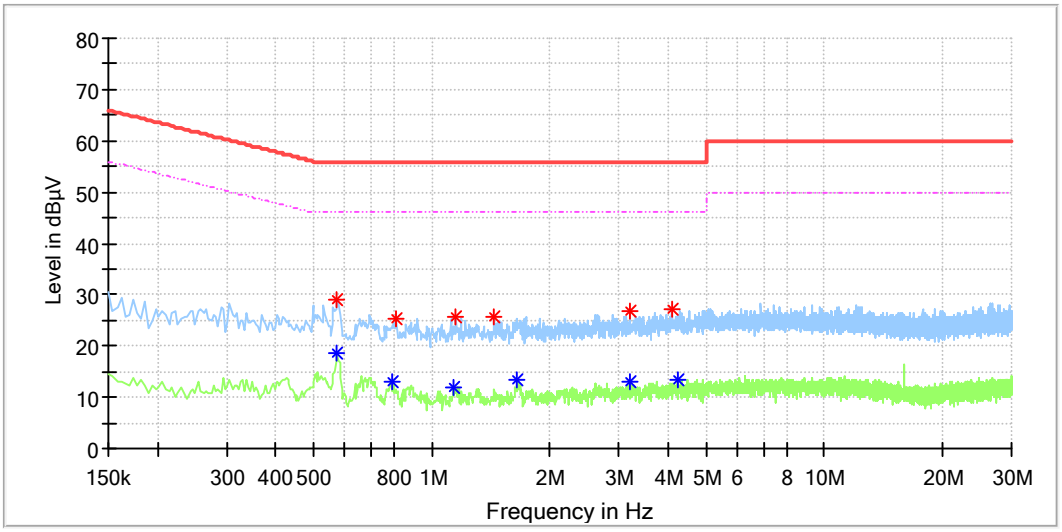
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.533750	---	40.98	54.00	13.02	100.0	H	15.0	7.4
2484.523750	52.28	---	74.00	21.72	100.0	H	50.0	7.4

Appendix B.7: Test Results of Conducted Emission on AC Mains

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test mode:	Charging
Test Voltage:	DC 5V
Test By:/Review By:	Charlie Zha/Gary Chen
Test Standard:	FCC Part 15
Tem./Hum./Pressure:	23.7°C/52.4%//101kPa
Remark:	SR2

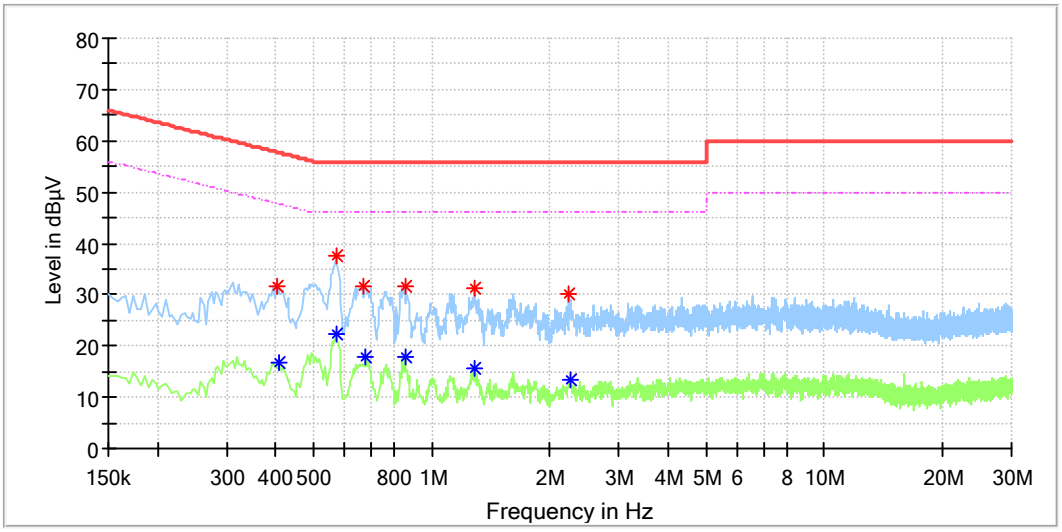


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.574000	28.89	---	56.00	27.11	L1	10.0
0.574000	---	18.79	46.00	27.21	L1	10.0
0.790000	---	13.06	46.00	32.94	L1	10.0
0.814000	25.20	---	56.00	30.80	L1	10.0
1.142000	---	11.82	46.00	34.18	L1	10.1
1.154000	25.72	---	56.00	30.28	L1	10.1
1.446000	25.70	---	56.00	30.30	L1	10.1
1.654000	---	13.52	46.00	32.48	L1	10.1
3.198000	---	12.85	46.00	33.15	L1	10.2
3.198000	26.79	---	56.00	29.21	L1	10.2
4.074000	26.98	---	56.00	29.02	L1	10.2
4.214000	---	13.36	46.00	32.64	L1	10.2

EUT Information

EUT Name:	Hybrid Watch
Model:	PMH01A
Test mode:	Charging
Test Voltage:	DC 5V
Test By:/Review By:	Charlie Zha/Gary Chen
Test Standard:	FCC Part 15
Tem./Hum./Pressure:	23.7°C/52.4%//101kPa
Remark:	SR2



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.402000	31.56	---	57.81	26.26	N	9.8
0.410000	---	16.61	47.65	31.04	N	9.8
0.570000	---	22.35	46.00	23.65	N	9.8
0.570000	37.58	---	56.00	18.42	N	9.8
0.666000	31.67	---	56.00	24.33	N	9.8
0.678000	---	17.90	46.00	28.10	N	9.8
0.854000	---	17.70	46.00	28.30	N	9.8
0.854000	31.78	---	56.00	24.22	N	9.8
1.286000	31.24	---	56.00	24.76	N	9.8
1.286000	---	15.45	46.00	30.55	N	9.8
2.234000	30.11	---	56.00	25.89	N	9.9
2.250000	---	13.55	46.00	32.45	N	9.9