



Test Report No. 7112314414

Applicant: ChroniSense Medical ltd.

Equipment Under Test: Polso Watch

Model: Polso

Issued by:

The Standards Institution of Israel

Industry Division

Electrical & Electronics Laboratory

EMC Branch





Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 2 of 33 Pages
Model: 099-900-0002

Applicant: ChroniSense Medical Ltd.
Address: 2 Hacarmel st., P.O.B 399, Yokneam Illit,
Israel 2066724
Sample for test selected by: The customer
The date of test: October & November 2021

**Description of Equipment
under Test (EUT):**

Model: Polso Watch
Software version : 099-900-0002
Hardware version: 5.7
Manufactured by: 5.7
ChroniSense Medical Ltd.

Reference Documents:

- ❖ CFR 47 FCC (2020) Rules and Regulations: Part 15. Radio frequency devices,
Subpart C: Intentional radiators.
Section 15.247: Operation within the bands 902 - 928 MHz,
2400 - 2483.5 MHz, 5725 - 5875 MHz

Test Results

The EUT was found to be in compliance with the following standard:
CFR 47 Part 15 Subpart C
sections: 15.203, 15.205, 15.207, 15.209 and 15.247.

This Test Report contains 33 pages
and may be used only in its entirety.

This Test Report applies only to the specimen tested and may not
be applied to other specimens of the same product.



Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 3 of 33 Pages
Model: 099-900-0002

Table of Contents

1. Summary of Test Results	4
2. EUT Description	5
2.1. General description:	5
2.2. Transmitter description:	6
2.3. Test setup:	6
2.4. System test configuration:	8
3. Test specification, methods and procedures	9
4. Testing Facility:	9
5. Measurement uncertainty	9
6. Transmitter characteristics - test results	10
6.1. Duty Cycle	10
6.2. 6dB and Occupied Bandwidth	11
6.3. Maximum Peak Conducted Output Power	13
6.4. Power Spectral Density	15
6.5. Radiated Emissions in Restricted and non-Restricted bands	17
6.6. Band-edge measurements	24
6.7. AC power line conducted emission measurement	26
7. Antenna requirements	28
8. Appendix 1: Test equipment used	29
9. Appendix 2: Antenna Factor and Cable Loss	30
10. Appendix 3: Test illustrations	32



Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 4 of 33 Pages
Model: 099-900-0002

1. Summary of Test Results

Transmitter characteristic	Ref. Section
6dB and occupied bandwidth	15.247 (a) (2)
Maximum peak conducted output power	15.247 (b) (3)
Power spectral density	15.247 (e)
Radiated emission in restricted and non-restricted bands	15.247 (d), 15.209, 15.205
Band-edge compliance of RF conducted emission	15.247 (d)
AC power line conducted emission measurements	15.207
Antenna requirement	15. 203

Name: Eng. Yuri Rozenberg
Position: Head of Branch

Electrical & Electronics
Laboratory
16 December 2021

Tested by: Alexander Konkov
Position: Testing Technician

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 5 of 33 Pages
Model: 099-900-0002

2. EUT Description

Note: All information in this section was provided by the customer.

2.1. General description:

The EUT (Equipment Under Test) is Polso Watch for indoor use, that includes charging/standby and monitoring states. The device includes docking station for charging, during the charging states the device cannot be used. Embedded sensors and analytics enable monitoring of several vital signs critical for management of common chronic diseases. Record and display bio-signals measured by the device at the wrist. Connection to external devices via BLE. Enhanced display of information and upload to cloud database. Manage health with new insights from vital signs tracking and trending.

The test data contained in this report pertains only to the emissions due to the EUT's BLE transmitter.

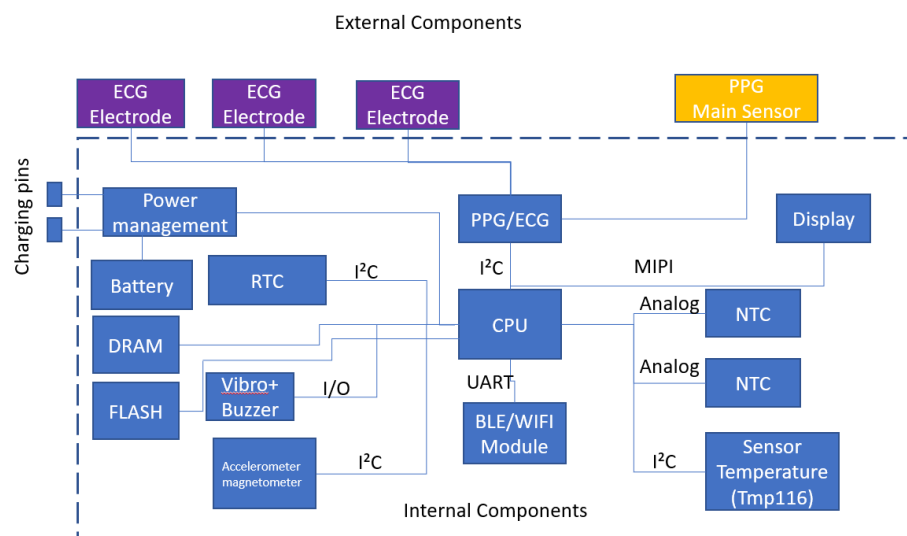


Figure 1. Block diagram



Figure 2. Polso Watch

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 6 of 33 Pages
Model: 099-900-0002

2.2. Transmitter description:

Type of equipment
Combined equipment (Equipment where the radio part is fully integrated within another type of equipment)

BLE standards	BLE 4.2
---------------	---------

Assigned frequency range	from 2400MHz to 2483.5MHz	
Operating frequency range	from 2402MHz to 2480MHz (BLE transmitter)	
RF channel spacing	20MHz (BLE transmitter)	
Maximum rated output power	Effective radiated power (for equipment with no RF connector)	17dBm = 50mW
Declare temperature range:	0°C - 40°C	Normal indoor use

Antenna information
Antenna with RF connector inside case box
Manufacturer: Taoglas Limited, Type: RF ANT 2.4GHZ FLAT IPEX 45MM
Antenna gain = 2.5 dBi

Transmitter 99% power bandwidth	
Type of modulation	QPSK, PSK,
Modulating test signal (baseband)	PRBS

Transmitter power source
Nominal rated voltage 3.7 VDC

2.3. Test setup:

The EUT was tested per the guidance ANSI C63.10: 2013.

The test setup is shown in Figure 2 and 3. EUT gets 3.7 V DC power from battery.

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 7 of 33 Pages
Model: 099-900-0002

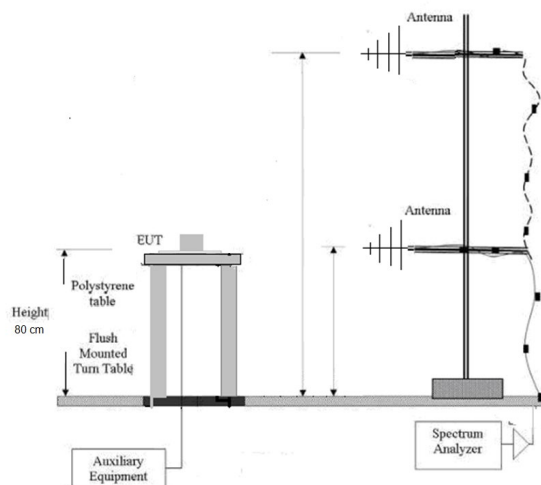


Figure 3. EUT test setup

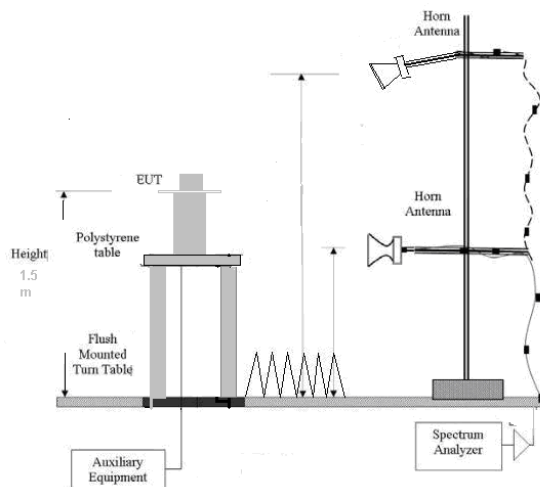


Figure 4. RE test setup above 1 GHz.

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 8 of 33 Pages
Model: 099-900-0002

2.4. System test configuration:

Table 1. BLE channels / frequencies

Channel	Frequency MHz	Channel	Frequency MHz
37	2402	18	2442
0	2404	19	2444
1	2406	20	2446
2	2408	21	2448
2	2410	22	2450
4	2412	23	2452
5	2414	24	2454
6	2416	25	2456
7	2418	26	2458
8	2420	27	2460
9	2422	28	2462
10	2424	29	2464
38	2426	30	2466
11	2428	31	2468
12	2430	32	2470
13	2432	33	2472
14	2434	34	2474
15	2436	35	2476
16	2438	36	2478
17	2440	39	2480

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 9 of 33 Pages
Model: 099-900-0002

3. Test specification, methods and procedures

- ❖ CFR 47 FCC Rules and Regulations: Part 15. Radio frequency devices, Subpart C: Intentional radiators (2020)
- ❖ ANSI C63.4:2014 American National Standard for Method of Measurement of Radio Noise Emissions from Low Voltage Electrical and Electronic Equipment in the Range 9 kHz to 40 GHz.
- ❖ ANSI C63.10: 2013 American National Standard for Testing of Unlicensed Wireless Devices

4. Testing Facility:

Laboratory Name: Standards Institution of Israel (SII)
 Test site location: 42 Haim Levanon st., Tel-Aviv Israel
 FCC Designation Number: IL1003

5. Measurement uncertainty

The test equipment has been calibrated according to its recommended procedures and is within the manufacturer's published limit of error.
 The laboratory calibrates its standards by a third party (traceable to NIST, USA) on a regular basis according to equipment manufacturer requirements.

Test description	Calculated uncertainty U_{LAB}
Conducted measurements	
Frequency error	37.6 Hz
Spurious emission	± 2.98 dB
Radiated measurements	
Electric field strength in a SAR at 3 m distance 30 MHz – 1.0 GHz	± 4.32 dB
Electric field strength in a FAR at 3 m distance 1.0 GHz – 18 GHz	± 4.47
Substitution measurements	
In a FAR at 3 m distance 1.0 GHz – 18 GHz	± 3.41 dB

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 10 of 33 Pages
Model: 099-900-0002

6. Transmitter characteristics - test results

6.1. Duty Cycle

Limits & methods:

FCC requirements		15.247			
Test procedure		ANSI 63.10 --- 11.6 Duty cycle Radiated Measurement			
Operating mode		BLE, Hight Mid and Low			
Ambient Temperature	22°C	Relative Humidity	46%	Air Pressure	1006hPa

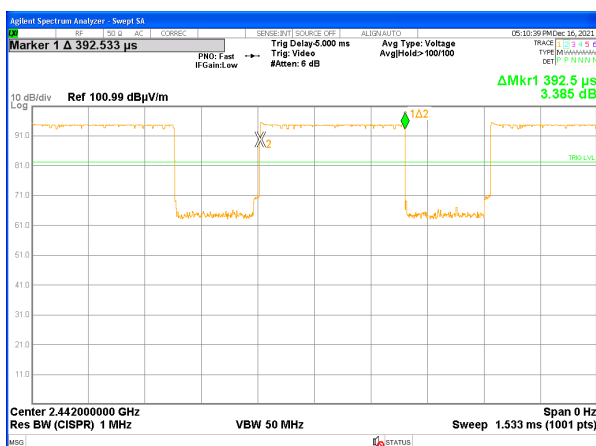
Results:

Table 2. Transmitter characteristics - result parameters

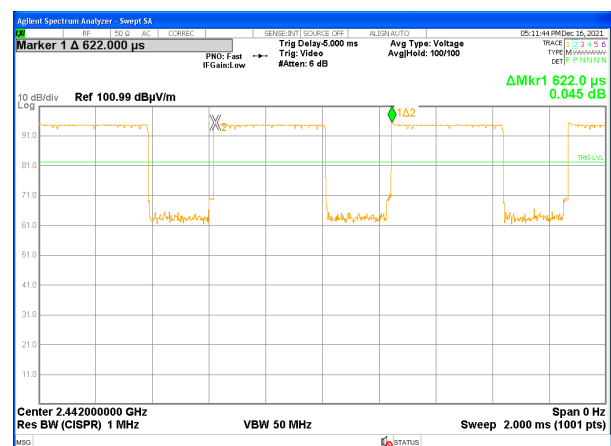
Tx On	395.5	uS
Tx Off	226.5	uS
Period	622	uS
DT	63.585	%

Note: duty cycle correction = $[10 \log (1 / D)] = 2\text{dB}$

The results are presented in Plots 1 -2.



Plot 1



Plot 2

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 11 of 33 Pages
Model: 099-900-0002

6.2. 6dB and Occupied Bandwidth

Limits & methods:

FCC requirements	15.247(a)(2)		
Test procedure	ANSI 63.10 --- 11.8.2 Option 2 Radiated Measurement		
Operating mode	BLE, Hight Mid and Low		
Ambient Temperature 22°C	Relative Humidity 46%	Air Pressure	1006hPa

Limit:

The minimum 6dB bandwidth shall be at least 500 kHz.

Test procedure

The measurements were performed in hopping transmission mode of operation for carrier (channel) frequency at bottom, middle and at the top of 2402MHz to 2480MHz frequency band and maximum transmitting data rate.

Results:

Table 3. 6dB Bandwidth & Occupied Bandwidth Results

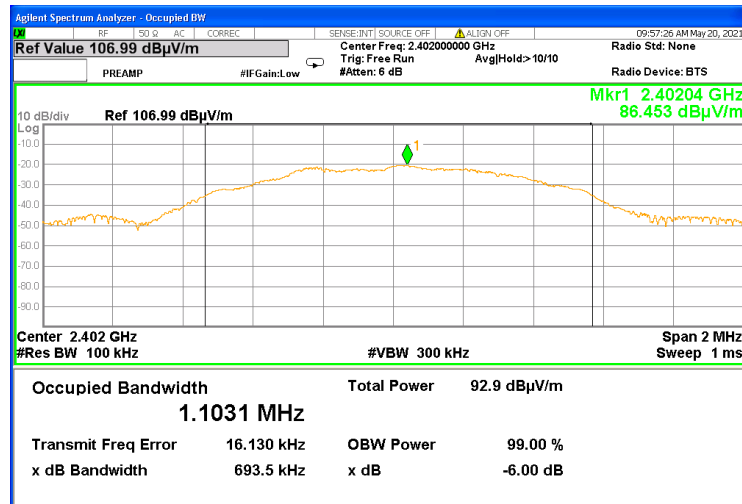
Frequency MHz	6dB Bandwidth kHz	Limit kHz	Verdict	Ref. Plot
2402	693.5	500	Pass	3
2442	693.8	500	Pass	4
2480	666.2	500	Pass	5



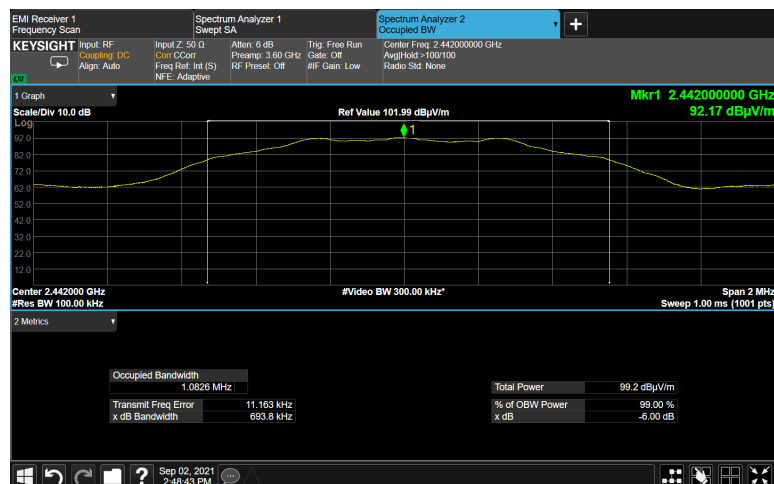
Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 12 of 33 Pages
Model: 099-900-0002

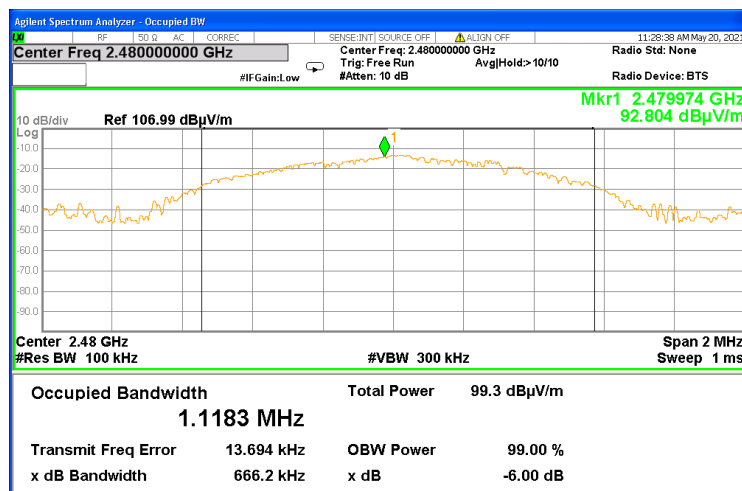
BLE



Plot 3



Plot 4



Plot 5

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 13 of 33 Pages
Model: 099-900-0002

6.3. Maximum Peak Conducted Output Power

Limits & methods:

FCC requirements	15.247(b)(3)		
Test procedure	ANSI 63.10 11.9.2.2.4 Method AVGSA-2 Radiated Measurement		
Operating mode	BLE, Hight Mid and Low		
Ambient Temperature 22°C	Relative Humidity 46%	Air Pressure	1006hPa

Limit

The maximum peak conducted output power shall not exceed 1 watt.

Test procedure

The measurements were performed in hopping transmission mode of operation for carrier (channel) frequency at bottom, middle and at the top of 2402 MHz to 2480 MHz frequency band and maximum transmitting data rate.

Results:

Table 4. Maximum Peak Conducted Output Power Results

Freq. MHz	Measure dBm	Calculated mWatt	Limit Watt	Verdict	Plot
2402	-0.65	0.861	1	Pass	6
2442	5.4	3.467	1	Pass	7
2480	5	3.162	1	Pass	8

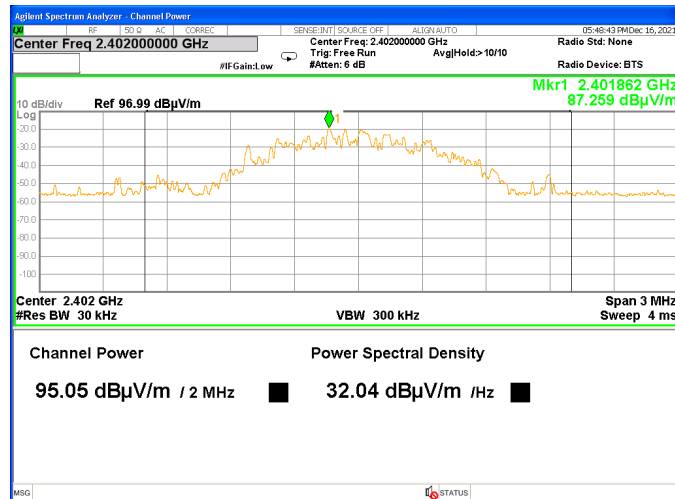
Note:

Total power(dBm) = P Measure(dBuV/m) – 95.2 – Antenna Gain(dBi) + DC. Correction
In our case the Antenna Gain(dBi) = 2.5 (dBi)

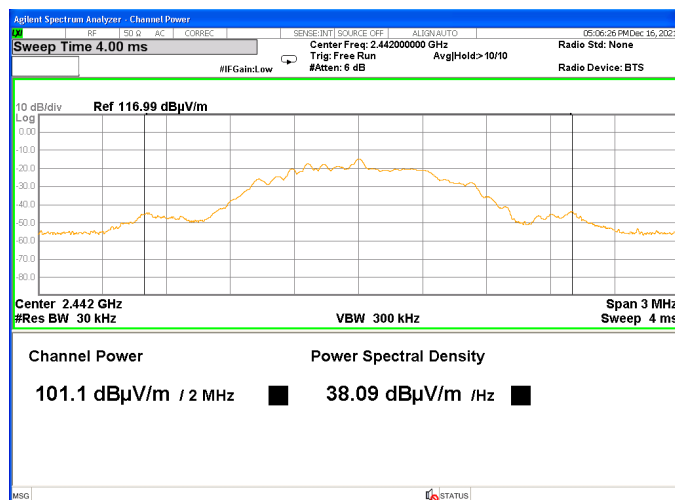
Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 14 of 33 Pages
Model: 099-900-0002

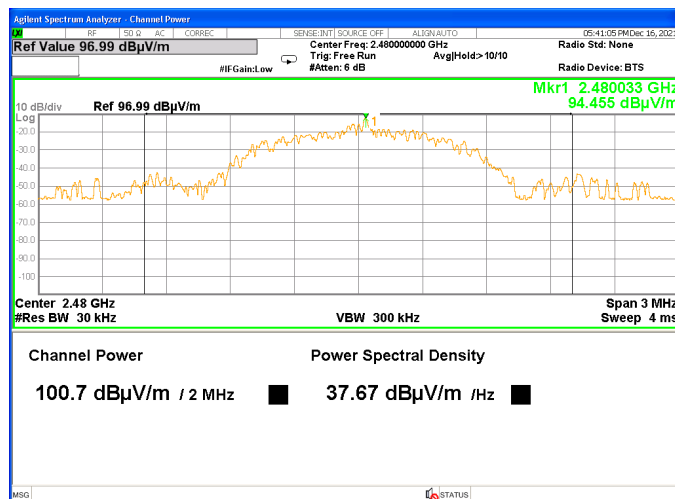
BLE



Plot 6



Plot 7



Plot 8

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 15 of 33 Pages
Model: 099-900-0002

6.4. Power Spectral Density

Limits & methods:

FCC requirements	15.247(e)		
Test procedure	ANSI 63.10 11.10.5 Method AVGPS-2 Radiated Measurement		
Operating mode	BLE, Hight Mid and Low		
Ambient Temperature 22°C	Relative Humidity 46%	Air Pressure	1006hPa

Limit

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission

Test procedure

The measurements were performed in hopping transmission mode of operation for carrier (channel) frequency at bottom, middle and at the top of 2402MHz to 2480MHz frequency band and maximum transmitting data rate.

Results:

Table 5. Power Spectral Density Test Results

Freq. MHz	Measure dBm/3kHz	Limit dBm/3kHz	Verdict	Plot
2402	0.836	8	Pass	9
2442	1.431	8	Pass	10
2480	3.21	8	Pass	11

Note:

$PSD (dBm/3kHz) = PSD \text{ Measure}(dBuV/m) - 95.2 - \text{Antenna Gain}(dBi) + DC. \text{ Correction}$

In our case the Antenna Gain(dBi) = 2.5(dBi)

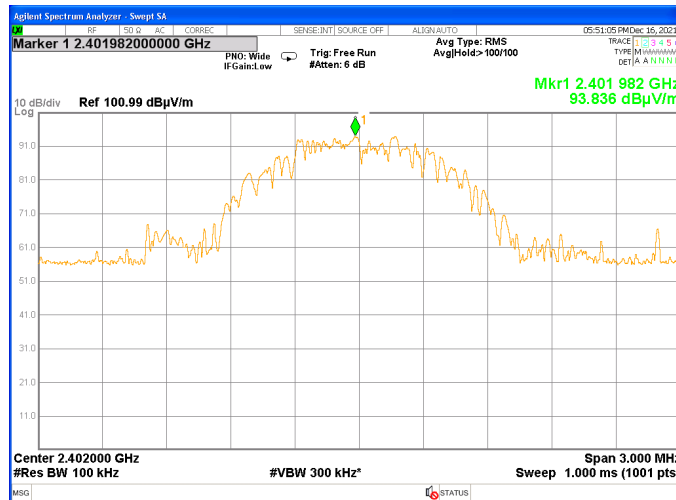
Worst case RBW=100 kHz maximum.



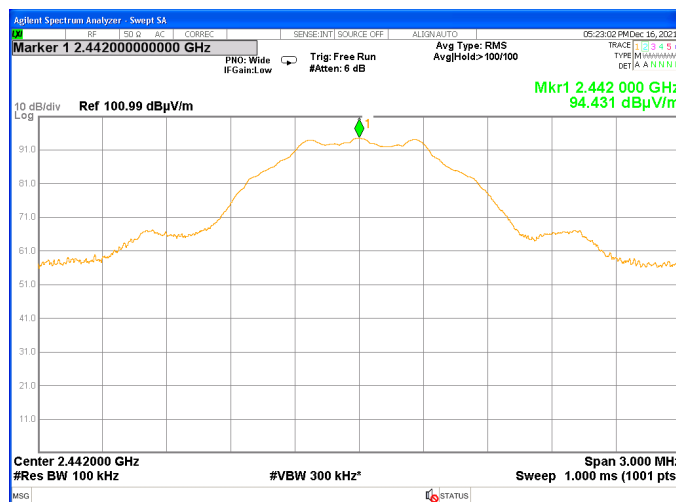
Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 16 of 33 Pages
Model: 099-900-0002

BLE



Plot 9



Plot 10



Plot 11

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 17 of 33 Pages
Model: 099-900-0002

6.5. Radiated Emissions in Restricted and non-Restricted bands

Limits & methods:

FCC requirements	15.247(d), 15.209, 15.205		
Test procedure	ANSI 63.10 Sections 6.5, 6.6, 11.11, 11.12 Radiated Measurement		
Operating mode	BLE, Hight Mid and Low		
Ambient Temperature	22°C	Relative Humidity	46% Air Pressure 1006hPa

Limit

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.

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see below)

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

Test procedure

The frequency spectrum was investigated from the lowest radio frequency signal generated in the equipment and up to ten harmonics. The measurements were performed in hopping transmission mode of operation for carrier (channel) frequency at bottom, middle and at the top 2402MHz to 2480MHz frequency band and maximum transmitting data rate.

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 18 of 33 Pages
Model: 099-900-0002

Results:

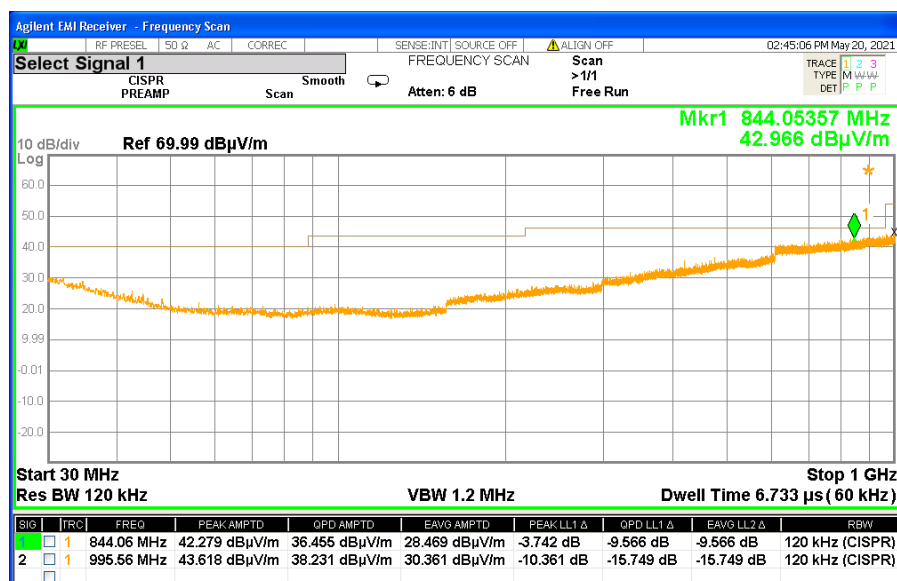
Range: 9 kHz-30 MHz

All detected emissions in this range meet the -20dBc requirement.

Range: 30 MHz – 40 GHz:

Table 6. CH1 2402 MHz – modulation PRBS - Results

Frequency MHz	Meas Freq. MHz	Pk Det. dbuV/m	QPk Det. dbuV/m	Limit Pk dbuV/m	Limit QPk dbuV/m	Verdict	Ref. Plot
CH 37 2402	844.06	42.279	36.455	-	46	Pass	12
	978.04	43.618	38.231	-	54	Pass	12
			AVG Det. dbuV/m		Limit AVG Det. dbuV/m		
	2205.4	44.347		74	-	Pass	13
	3598.0	-	37.176	-	54	Pass	13
	2399.760	49.793	-	74	-	Pass	14
	2397.70	-	32.456	-	54	Pass	14
	3563.0	48.78		74	-	Pass	15
	3598.0	-	37.17	-	54	Pass	15
	10650	53.39	-	74	-	Pass	16
	11976	-	42.246	-	54	Pass	16
	14592	45.29	-	74	-	Pass	17
	14601	-	33.83	-	54	Pass	17
	18245	47.13	-	74	-	Pass	18
	17992	-	35.59	-	54	Pass	18



Plot 12

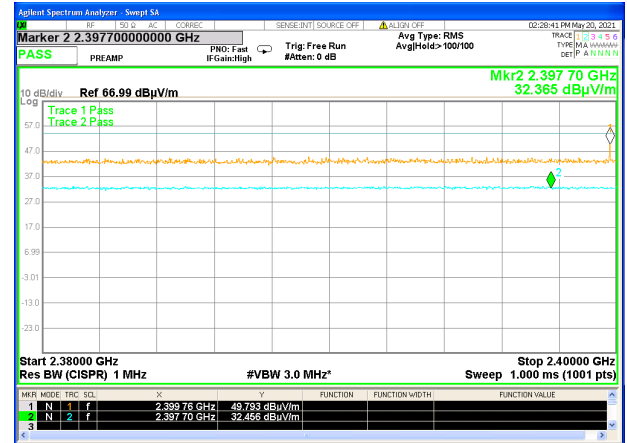


Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 19 of 33 Pages
Model: 099-900-0002



Plot 13



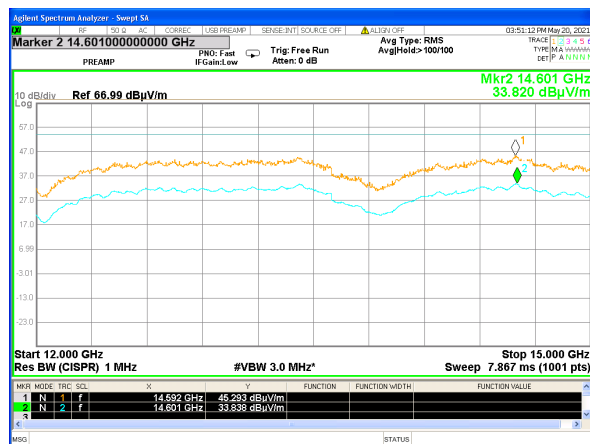
Plot 14



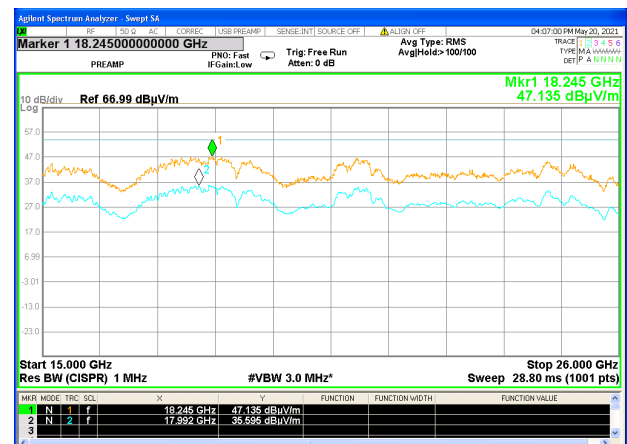
Plot 15



Plot 16



Plot 17



Plot 18



Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 20 of 33 Pages
Model: 099-900-0002

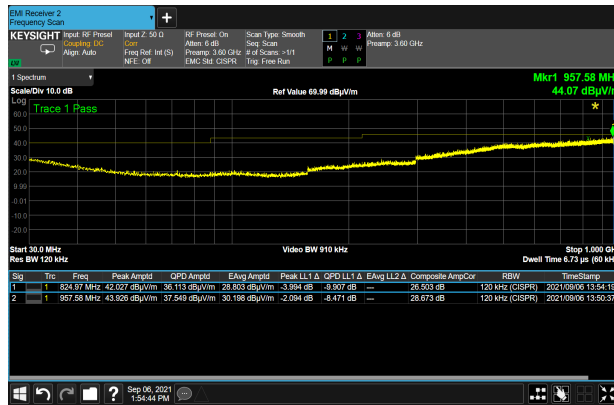
Table 7. CH6 2442 MHz – modulation PRBS - Results

Frequency MHz	Meas Freq. MHz	Pk Det. dbuV/m	QPk Det. dbuV/m	Limit Pk dbuV/m	Limit QPk dbuV/m	Verdict	Ref. Plot
CH 18 2442	824.97	42027	36.113	-	46.02	Pass	19
	957.58	43.926	37.549	-	46.02	Pass	19
			AVG Det. dbuV/m		Limit AVG Det. dbuV/m		
	2370.6	49.74	38.67	74	54	Pass	20
	5785	50.68	39.71	74	54	Pass	21
	11748	53.66	42.74	74	54	Pass	22
	19947	33.36	22.24	74	54	Pass	23
	25538	36.55	25.15	74	54	Pass	24

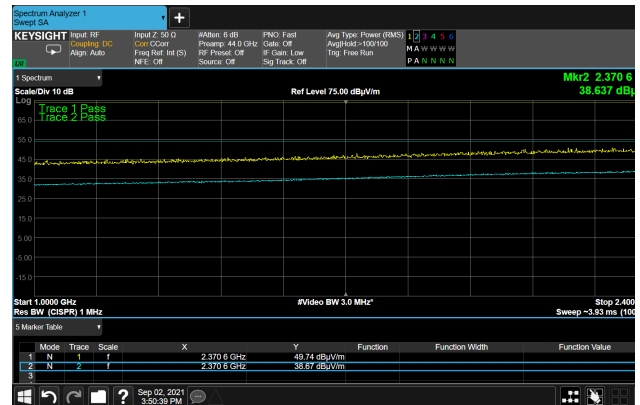


Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 21 of 33 Pages
Model: 099-900-0002



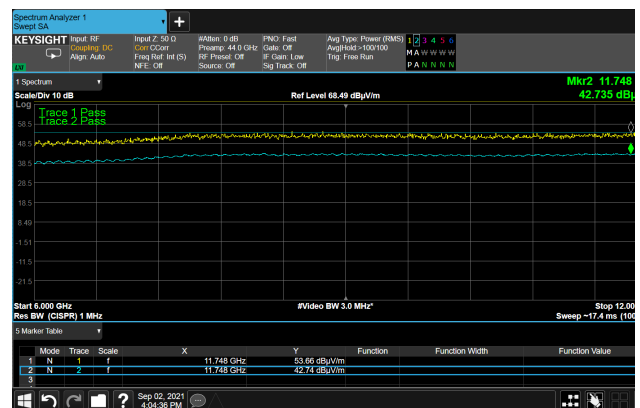
Plot 19



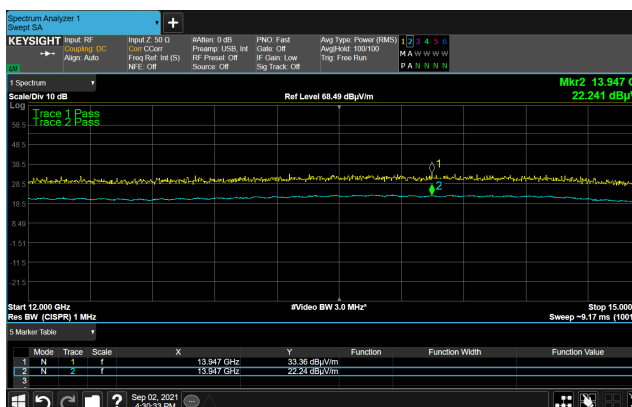
Plot 20



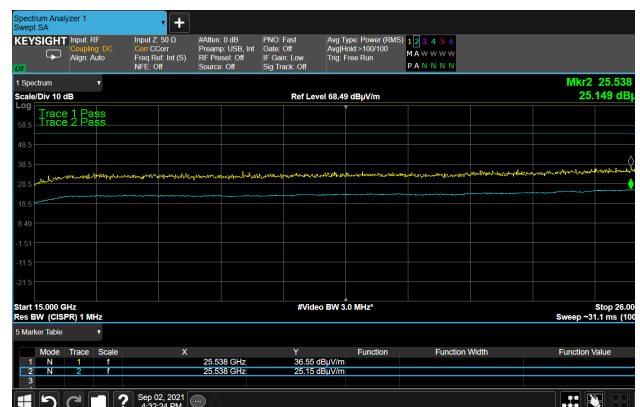
Plot 21



Plot 22



Plot 23



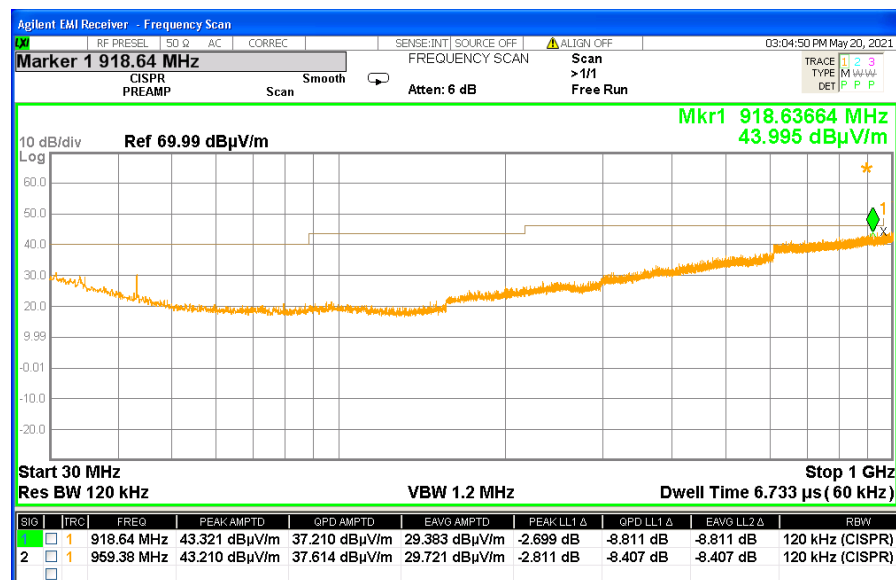
Plot 24

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 22 of 33 Pages
Model: 099-900-0002

Table 8. CH11 24802 MHz – modulation PRBS - Results

Frequency MHz	Meas Freq. MHz	Pk Det. dbuV/m	QPk Det. dbuV/m	Limit Pk dbuV/m	Limit QPk dbuV/m	Verdict	Ref. Plot
CH 39 2480	918.64	43.321	37.210	-	46.02	Pass	25
	959.38	43.210	37.614	-	46.02	Pass	25
			AVG Det. dbuV/m		Limit AVG Det. dbuV/m		
	2320.2	45.556	-	74	-	Pass	26
	2355.6	-	32.478	-	54	Pass	26
	2484.325	51.859	-	74	-	Pass	27
	2489.489	-	32.421	-	54	Pass	27
	3553	49.803	-	74	-	Pass	28
	3598	-	37.192	-	54	Pass	28
	11592	53.876	-	74	-	Pass	29
	11988	-	42.212	-	54	Pass	29
	14598	45.163	33.655	74	54	Pass	30
	18256	47.049	35.578	74	54	Pass	31

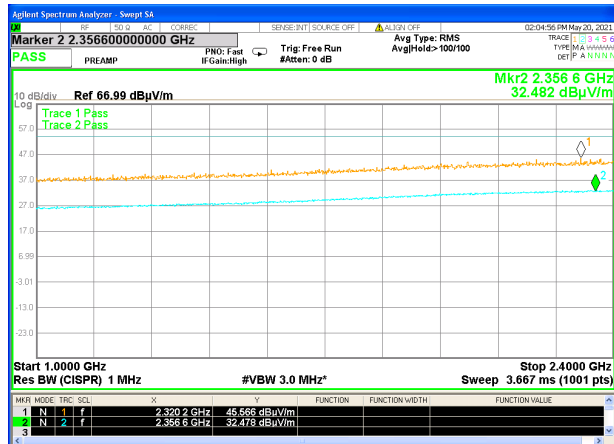


Plot 25

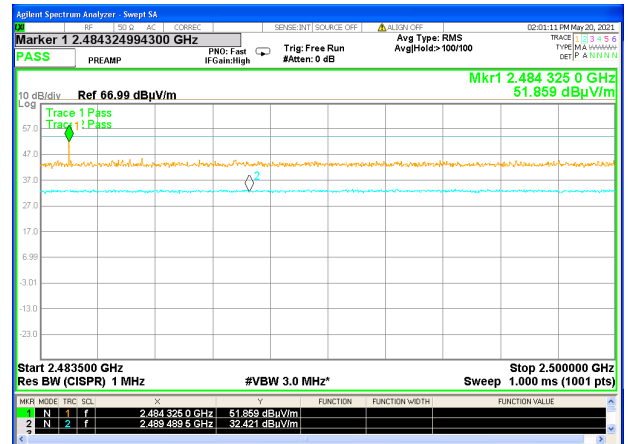


Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

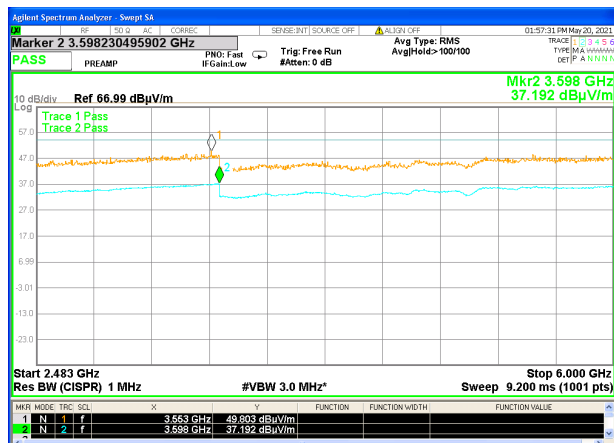
Page 23 of 33 Pages
Model: 099-900-0002



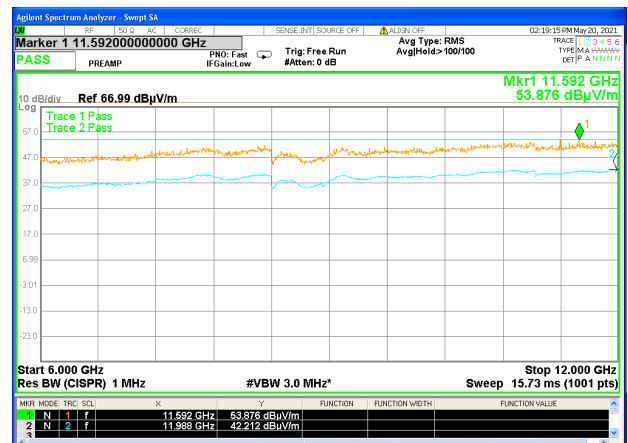
Plot 26



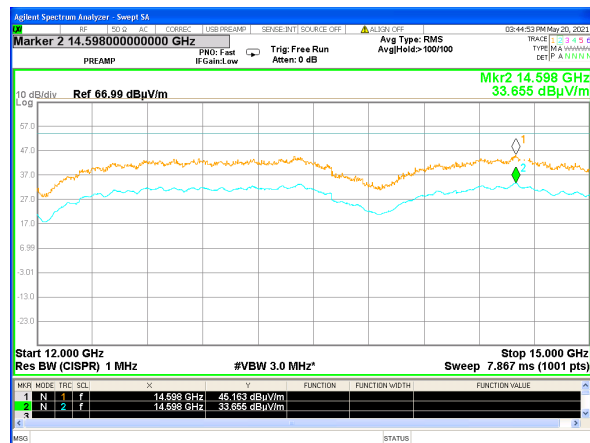
Plot 27



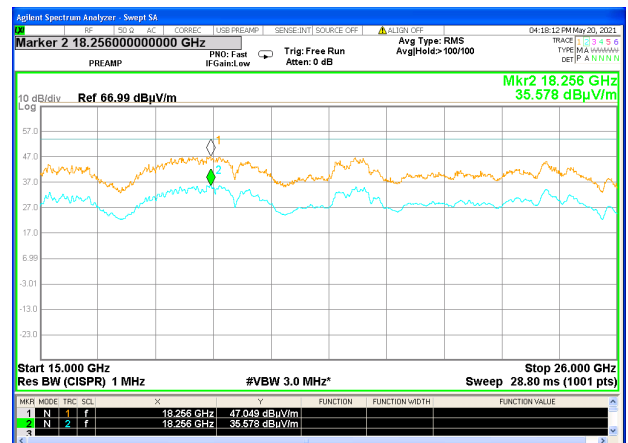
Plot 28



Plot 29



Plot 30



Plot 31

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 24 of 33 Pages
Model: 099-900-0002

6.6. Band-edge measurements

Limits & methods:

FCC requirements	15.247(d)		
Test procedure	ANSI 63.10 Section 11.13 Radiated Measurement		
Operating mode	BLE, Hight Mid and Low		
Ambient Temperature	22°C	Relative Humidity	46% Air Pressure 1006hPa

Limit

In any 100 kHz bandwidth outside the frequency band the radio frequency power shall be at least 20 dB below that in the 100 kHz bandwidth within the band

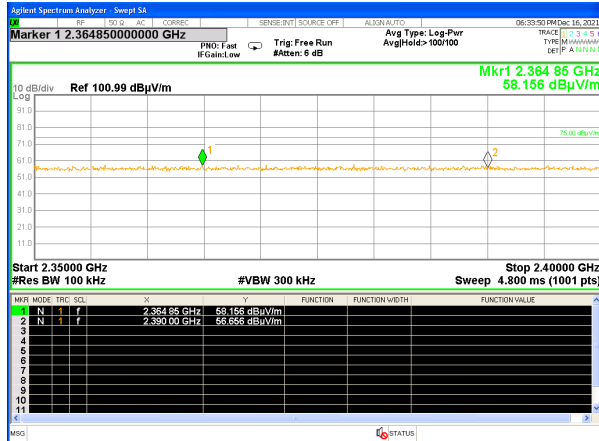
Results:

Table 9. Band-edge Results

Channel	Freq MHz	Peak, dBμV/m	Limit 20dBc dBμV/m	Verdict	Plot
CH 37 2402 MHz	2.64.850	58.15	75	Pass	32
	2488.829	57.74	75	Pass	33
CH 18 2442 MHz	2361.850	58.56	80	Pass	34
	2486.750	58.40	80	Pass	35
CH 39 2480 MHz	2388.300	57.25	80	Pass	36
	2483.599	60.52	80	Pass	37

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

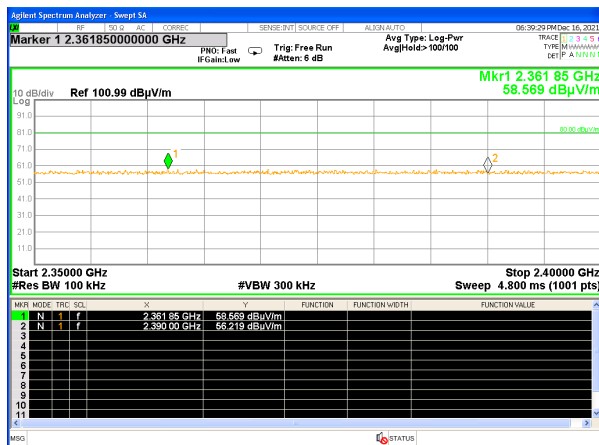
Page 25 of 33 Pages
Model: 099-900-0002



Plot 32



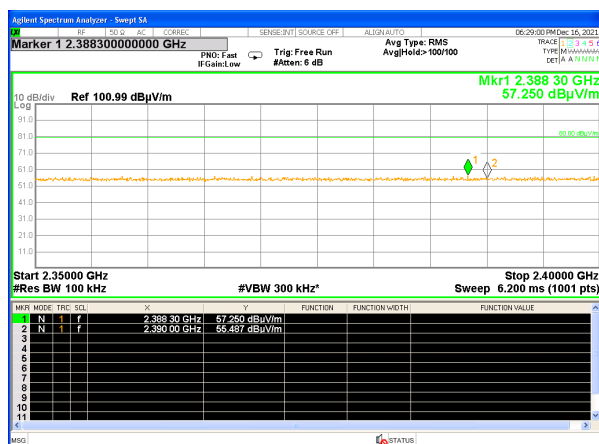
Plot 33



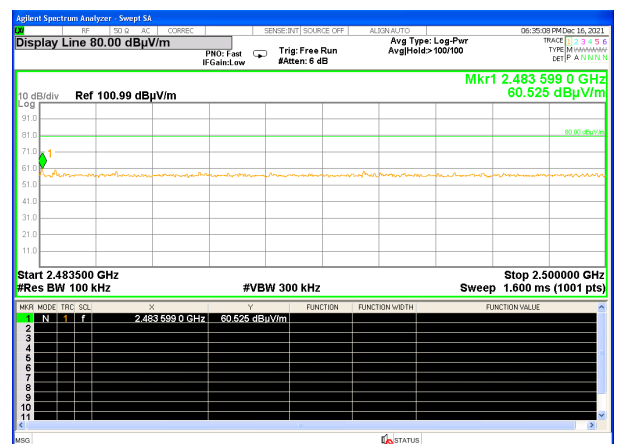
Plot 34



Plot 35



Plot 36



Plot 37

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 26 of 33 Pages
Model: 099-900-0002

6.7. AC power line conducted emission measurement

Limits & methods:

FCC requirements	15.207
Test procedure	ANSI 63.10 Section 6.2
Ambient Temperature 22°C	Relative Humidity 46% Air Pressure 1006hPa

Limit:

Frequency, MHz	Class B equipment, dB (μV)	
	QP	AVRG
0.15 - 0.5	66 - 56*	56 - 46*
0.5 - 5	56	46
5 - 30	60	50

* Decreases linearly with the logarithm of the frequency.

Test Procedure:

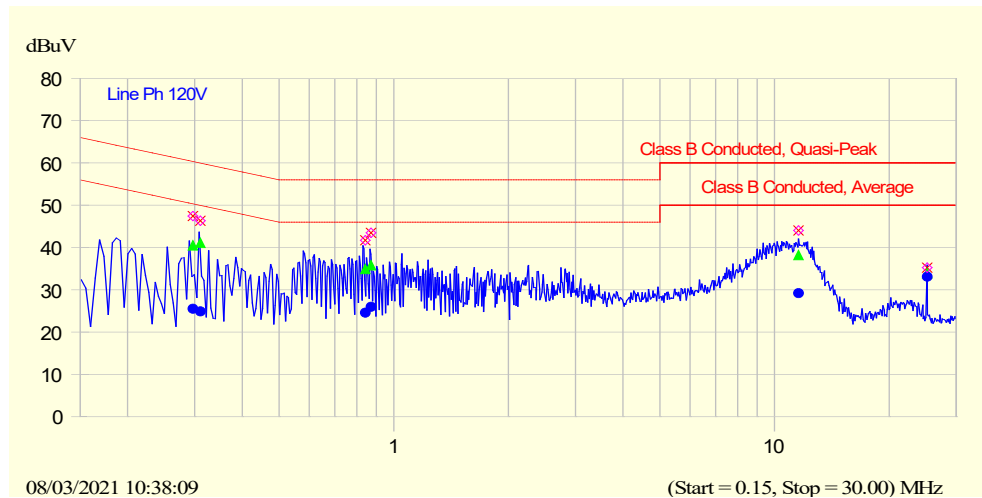
EUT was connected to 120VAC main via auxiliary power supply.
The EUT was placed on a table in shielded room at a height 80 cm from floor and 40 cm from the vertical reference plane and at more than 80 cm from any other metal surfaces. The measurements were performed at mains terminals by means of LISN, connected to spectrum analyzer in the frequency range as referred to in the table above. The measurements were made with quasi-peak(CISPR) and average detectors. The position of the EUT cables was varied to determine maximum emission level.

Results:

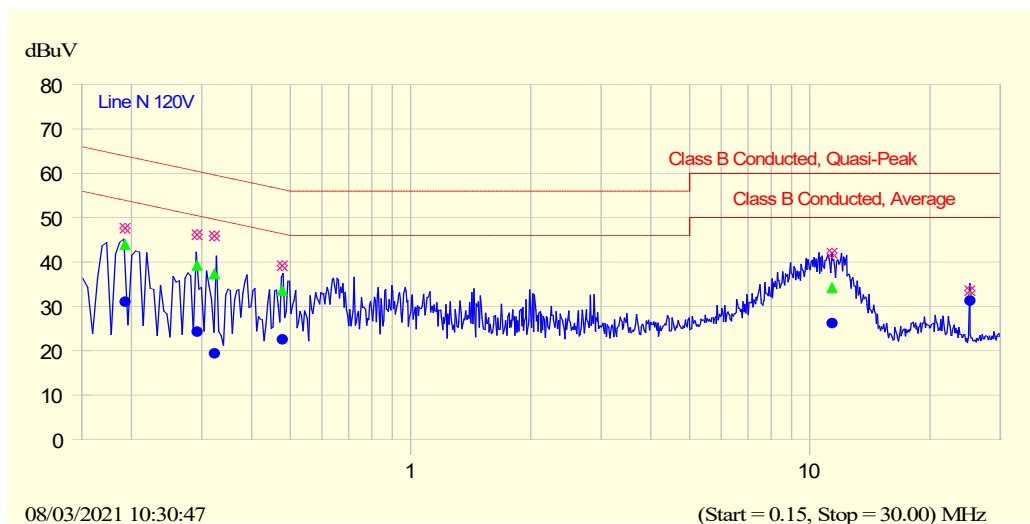
The results are presented in Plots # 32-33.

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 27 of 33 Pages
Model: 099-900-0002



Frequency	Peak	QP	QP Limit	QP-QP Limit	Avg	Avg Limit	Avg-Avg Limit
MHz	dBuV	dBuV	dB	dB	dBuV	dB	dB
0.297	47.4	40.5	60.3	-19.9	25.5	50.3	-24.8
0.310	46.3	41.0	60.0	-18.9	24.9	50.0	-25.1
0.842	41.7	34.9	56.0	-21.1	24.6	46.0	-21.4
0.871	43.5	35.8	56.0	-20.2	26.0	46.0	-20.0
11.561	44.0	38.2	60.0	-21.8	29.2	50.0	-20.8
25.173	35.2	33.8	60.0	-26.2	33.1	50.0	-16.9



Frequency	Peak	QP	QP Limit	QP-QP Limit	Avg	Avg Limit	Avg-Avg Limit
MHz	dBuV	dBuV	dB	dB	dBuV	dB	dB
0.193	47.6	43.9	63.9	-20.0	31.1	53.9	-22.8
0.292	46.1	39.2	60.5	-21.2	24.3	50.5	-26.2
0.323	45.9	37.3	59.6	-22.4	19.4	49.6	-30.2
0.477	39.1	33.6	56.4	-22.8	22.6	46.4	-23.8
11.361	42.0	34.2	60.0	-25.8	26.2	50.0	-23.8
25.174	33.6	32.1	60.0	-27.9	31.3	50.0	-18.7

Plot 38- Plot 39
Conducted emission on 120VAC mains. Phase & Neutral

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 28 of 33 Pages
Model: 099-900-0002

7. Antenna requirements

Excerpt from §15.203 of the FCC Rules/Regulations:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

The antenna of the device is - inside case box and non-detachable antenna.
 There are no provisions for connection to an external antenna.

Conclusion: The unit complies with the requirement of §15.203.



Figure 5. Antenna of Polso Watch

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 29 of 33 Pages
Model: 099-900-0002

8. Appendix 1: Test equipment used

All measurements equipment is on SII calibration schedule with a recalibration interval not exceeding one year.

Instrument	Manufacturer	Model	SII No.	Last calibration date	Next calibration date
EMI Analyzer 10 kHz - 26.5 GHz	HP	E7405A	4944	09/21	09/22
EMI RECEIVER-MXE 3Hz-44GHz	Agilent	N9038B	6505208	04/21	04/22
LISN 9 kHz – 30 MHz	FCC	LISN- 50/250-32-4-16	5023	03/21	03/23
Active Receiving Loop Antenna	ETS-Lindgren	6507	00144641	11/20	04/22
Bigonilog Antenna 20 MHz - 6000 MHz	ETS-Lindgren	3142D	146490	10/21	10/23
Double Ridged Waveguide Antenna 1-18 GHz	EMCO	3115	0143138	07/21	07/23
Antenna Broad-Band Horn, 14 GHz - 40 GHz	SCHWARBEC K MESS- ELEKTRONIK	BBHA 9170	5854	07/21	07/23
Data +Power splitter	-	-	-	N/A	N/A
Semi Anechoic Chamber	ETS-Lindgren	RFSD-F/A-100	5002	N/A	N/A
Multi-Device Positioning Controller	ETS-Lindgren	2090	5002	N/A	N/A
Antenna Tower	ETS-Lindgren	2175	5002	N/A	N/A
Boresight Antenna Tower	ETS-Lindgren	2171B	5002	N/A	N/A
Turntable	ETS-Lindgren	2188	5002	N/A	N/A
Cable RF 1 m	SUCOFLEX	104PE	21325	04/21	04/22
Cable RF 3 m	VPO 2930	K30K30-5003- 300cm5VI	005	04/21	04/22
Cable RF 3 m	VPO 2930	K30K30-5003- 300cm6VI	006	04/21	04/22
Cable RF 3 m	VPO 2930	K30K30-5003- 300cm7VI	007	04/21	04/22
Cable RF 3 m	VPO 2930	K30K30-5003- 300cm8VI	008	04/21	04/22
Attenuator 10dB 5W	-	5W	6502987	04/20	04/22
Attenuator 20dB 5W	-	5W	6502992	04/20	04/22
USB preamplifier 2 GHz – 50 GHz	Keysight	U7227F	MY 55380004	04/21	04/22
Transient limiter 0.009-200 MHz	HP	11947A	3107105	10/20	10/21
Cable	EIM	RG 214/U	8 & 10	01/21	01/22

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 30 of 33 Pages
Model: 099-900-0002

9. Appendix 2: Antenna Factor and Cable Loss

Cable Loss (RG214 (6 m) + 5005 (3.8 m) + 5005 (3 m))

No.	Frequency (MHz)	Attenuation (dB)	Frequency (MHz)	Attenuation (dB)	Frequency (MHz)	Attenuation (dB)	Frequency (MHz)	Attenuation (dB)
1	0.00	0.0	2.16	0.1	40.76	0.6	1011.06	3.0
2	0.11	0.0	2.27	0.1	49.10	0.7	1061.61	3.1
3	0.11	0.0	2.38	0.1	51.55	0.7	1114.70	3.1
4	0.12	0.0	2.50	0.1	54.13	0.7	1170.43	3.4
5	0.12	0.0	2.63	0.1	56.83	0.7	1228.95	3.5
6	0.13	0.0	2.76	0.1	59.66	0.8	1290.40	3.9
7	0.13	0.0	2.90	0.1	62.66	0.8	1354.92	4.2
8	0.14	0.0	3.04	0.1	65.79	0.8	1422.66	4.3
9	0.15	0.0	3.19	0.2	69.06	0.8	1493.80	4.4
10	0.16	0.0	3.35	0.2	72.54	0.9	1568.49	4.5
11	0.16	0.0	3.52	0.2	76.16	0.9	1646.91	4.6
12	0.17	0.0	3.70	0.2	79.97	0.9	1729.26	4.7
13	0.18	0.0	3.88	0.2	83.97	1.0	1815.72	4.8
14	0.19	0.0	4.08	0.2	88.17	1.0	1906.51	5.0
15	0.20	0.0	4.28	0.2	92.58	1.0	2001.83	5.1
16	0.21	0.0	4.50	0.2	97.21	1.0	2101.92	5.2
17	0.22	0.1	4.72	0.2	102.07	1.0	2207.02	5.4
18	0.23	0.1	4.96	0.2	107.17	1.1	2317.97	5.5
19	0.24	0.1	5.20	0.2	112.53	1.1	2433.24	5.6
20	0.25	0.1	5.46	0.2	118.15	1.1	2554.90	5.8
21	0.27	0.1	5.74	0.2	124.06	1.2	2682.65	5.7
22	0.28	0.1	6.02	0.2	130.26	1.2	2816.78	5.8
23	0.29	0.1	6.33	0.2	136.76	1.2	2957.62	5.9
24	0.31	0.1	6.64	0.2	143.62	1.3	3105.50	5.9
25	0.32	0.1	6.97	0.2	150.86	1.3	3260.77	6.0
26	0.34	0.1	7.32	0.2	158.34	1.3	3433.81	6.0
27	0.36	0.1	7.69	0.3	166.35	1.3	3595.00	6.2
28	0.37	0.1	8.07	0.2	174.57	1.4	3774.75	6.4
29	0.39	0.1	8.48	0.2	183.00	1.4	3963.49	6.6
30	0.41	0.1	8.90	0.2	192.46	1.5	4161.67	6.8
31	0.43	0.1	9.35	0.3	202.06	1.5	4368.75	6.8
32	0.45	0.1	9.81	0.3	212.19	1.6	4586.24	6.5
33	0.48	0.1	10.30	0.3	222.80	1.6	4814.65	7.0
34	0.50	0.1	10.82	0.3	233.94	1.6	5054.53	6.8
35	0.53	0.1	11.36	0.3	245.63	1.7	5311.46	7.2
36	0.55	0.1	11.92	0.3	257.92	1.7	5577.02	7.6
37	0.58	0.1	12.52	0.4	270.81	1.8	5853.88	8.1
38	0.61	0.1	13.15	0.3	284.35	1.8	6143.68	7.9
39	0.64	0.1	13.81	0.4	298.57	1.9	6456.11	8.2
40	0.67	0.1	14.50	0.4	313.50	1.9	6779.91	8.1
41	0.70	0.1	15.22	0.4	329.17	1.9	7117.86	8.4
42	0.74	0.1	15.96	0.4	345.63	2.0	7473.75	8.8
43	0.78	0.1	16.73	0.4	362.91	2.0	7847.44	8.7
44	0.81	0.1	17.62	0.4	381.00	2.0	8239.81	9.6
45	0.86	0.1	18.50	0.4	400.11	1.9	8651.80	9.7
46	0.90	0.1	19.43	0.4	420.12	1.9	9084.28	10.4
47	0.94	0.1	20.40	0.4	441.12	1.9	9538.61	11.0
48	0.99	0.1	21.42	0.4	463.18	1.9	10015.54	11.8
49	1.04	0.1	22.49	0.5	486.34	1.9	10516.32	11.9
50	1.09	0.1	23.62	0.4	510.65	2.2	11042.14	13.4
51	1.15	0.1	24.80	0.5	536.19	2.1	11594.25	13.9
52	1.20	0.1	26.04	0.5	563.00	2.3	12173.86	13.9
53	1.26	0.1	27.34	0.5	591.15	2.5	12782.66	14.0
54	1.33	0.1	28.71	0.4	620.70	2.4	13421.79	13.9
55	1.39	0.1	30.14	0.5	651.74	2.4	14092.88	15.7
56	1.46	0.1	31.65	0.5	684.33	2.7	14797.52	15.7
57	1.54	0.1	33.23	0.5	718.54	2.7	15537.40	16.6
58	1.61	0.1	34.88	0.5	754.47	2.6	16314.27	17.5
59	1.69	0.1	36.61	0.5	792.19	2.7	17129.98	17.7
60	1.78	0.1	38.47	0.6	831.80	2.7	17986.48	18.7
61	1.87	0.1	40.38	0.6	873.39	2.9	18880.00	18.3
62	1.96	0.1	42.41	0.6	917.06	2.8		
63	2.06	0.1	44.53	0.6	962.92	2.9		

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 31 of 33 Pages
Model: 099-900-0002

Antenna Factor
Biconilog Antenna Model No: 3142D Ser.No: 146490. 3 m distance

No.	f / MHz	ACF / dB/m	f / MHz	AF / dB/m
1	30	24.163	200	16.944
2	35	21.253	250	19.108
3	40	18.627	300	20.008
4	45	16.523	400	22.244
5	50	15.030	500	24.997
6	60	13.445	600	26.581
7	70	13.336	700	27.633
8	80	12.720	800	28.829
9	90	13.742	900	30.078
10	100	14.609	1000	30.820
11	120	13.716	1250	33.670
12	140	14.187	1500	36.896
13	160	14.964	1750	34.459
14	180	16.537	2000	35.148

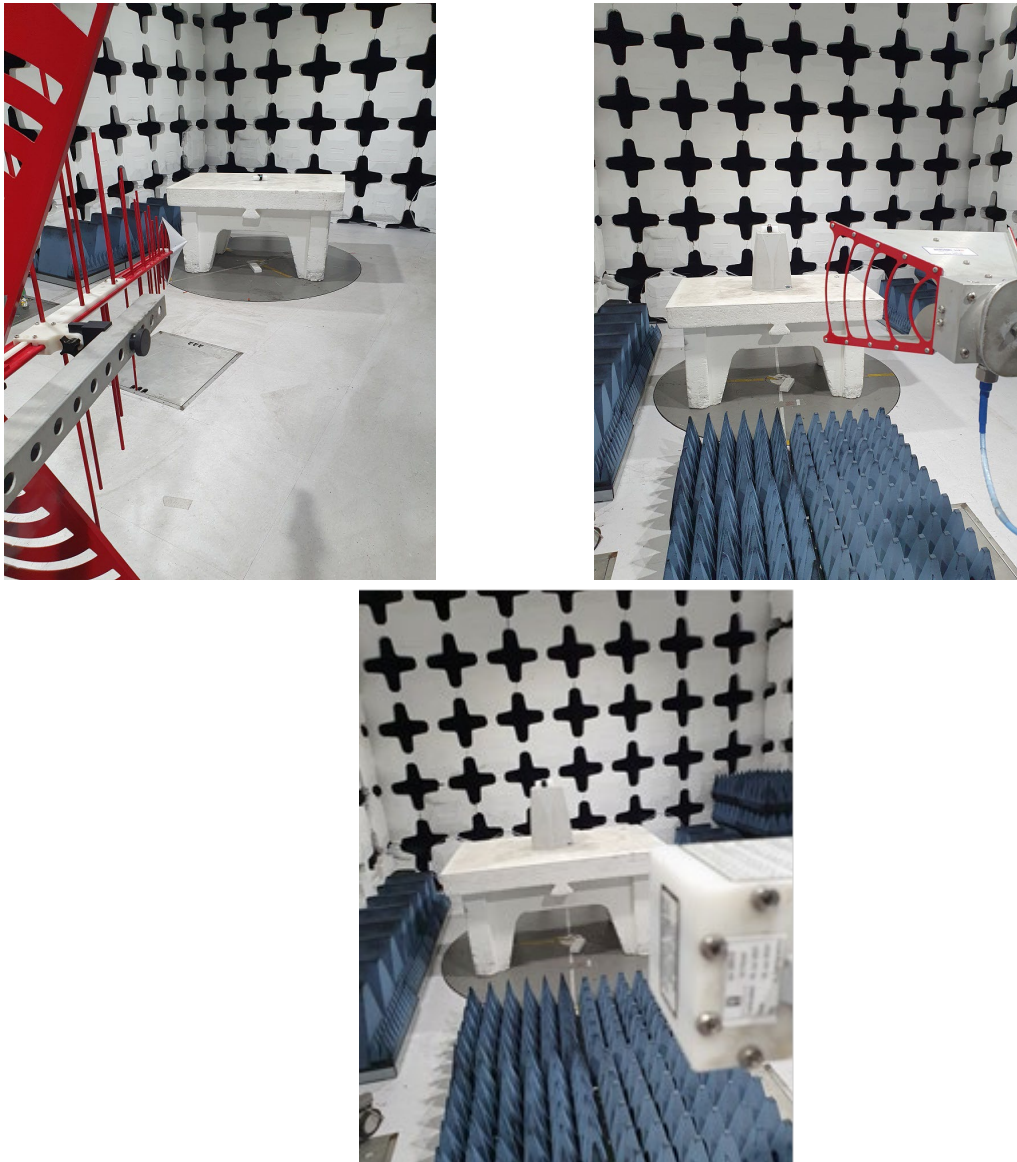
Antenna Factor
Double Ridged Waveguide Horn Antenna manufacturer EMCO Type 3115
1 GHz to 18 GHz. 3 m distance

No.	f / MHz	AF / dB/m	f / MHz	AF / dB/m	f / MHz	AF / dB/m
1	1000	23.6	7000	36.6	13000	39.7
2	1500	25.5	7500	37.3	13500	40.3
3	2000	28.2	8000	37.0	14000	41.0
4	2500	27.6	8500	37.4	14500	40.8
5	3000	29.2	9000	37.7	15000	39.4
6	3500	30.5	9500	38.0	15500	38.8
7	4000	31.7	10000	38.2	16000	39.0
8	4500	31.9	10500	38.5	16500	40.1
9	5000	32.7	11000	38.6	17000	40.8
10	5500	33.8	11500	38.9	17500	42.2
11	6000	35.2	12000	38.8	18000	42.3
12	6500	35.7	12500	39.0		

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 32 of 33 Pages
Model: 099-900-0002

10. Appendix 3: Test illustrations



Picture 1
Radiated spurious emission test setup.

Test Report No.: 7112314414
Title: Test on Polso Watch
FCC ID: 2A32P-PWK0999000002

Page 33 of 33 Pages
Model: 099-900-0002



Picture 2. Watch Charger Stand

END OF THE DOCUMENT