FCC Test Report

Report No.: AGC02235150901FE03

FCC ID	:	SLRBP7S
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Wireless Blood Pressure Wrist Monitor
BRAND NAME	:	iHealth
MODEL NAME	:	BP7S
CLIENT	:	iHealth Lab Inc.
DATE OF ISSUE	:	Oct.17,2015
STANDARD(S) **TEST PROCEDURE(S)**	:	FCC Part 15 Rules
REPORT VERSION	:	V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

CAUTION:
This report shall not be reproduced except in full without the written permission of the test laboratory and shall not be quoted out of context.

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Oct.17,2015	Valid	Original Report

TABLE OF CONTENTS

1. VERIFICATION OF CONFORMITY 4
2. GENERAL INFORMATION 5
2.1. PRODUCT DESCRIPTION 5
2.2. TABLE OF CARRIER FREQUENCYS 5
3. MEASUREMENT UNCERTAINTY 7
4. DESCRIPTION OF TEST MODES 7
5. SYSTEM TEST CONFIGURATION 8
5.1. CONFIGURATION OF EUT SYSTEM 8
5.2. EQUIPMENT USED IN EUT SYSTEM 8
5.3. SUMMARY OF TEST RESULTS 8
6. TEST FACILITY 9
7 ALL TEST EQUIPMENT LIST 9
8. RADIATED EMISSION 10
8.1TEST LIMIT 10
8.2. MEASUREMENT PROCEDURE 11
8.3. TEST SETUP 13
8.4. TEST RESULT 15
9. BAND EDGE EMISSION 41
9.1. MEASUREMENT PROCEDURE 41
9.2 TEST SETUP 41
9.3 RADIATED TEST RESULT 42
10. 20DB BANDWIDTH 50
10.1. MEASUREMENT PROCEDURE 50
10.2. TEST SET-UP 50
10.3. LIMITS AND MEASUREMENT RESULTS 50
11. FCC LINE CONDUCTED EMISSION TEST 60
11.1. LIMITS OF LINE CONDUCTED EMISSION TEST 60
11.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST 60
11.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST 61
11.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST 61
11.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST 62
APPENDIX A: PHOTOGRAPHS OF TEST SETUP 66
APPENDIX B: PHOTOGRAPHS OF EUT 68

1. VERIFICATION OF CONFORMITY

Applicant	iHealth Lab Inc.
Address	719N.Shoreline Blvd,Mountain View,CA94043,USA
Manufacturer	Andon Health Co.Ltd.
Address	No.3 JinPing Street YaAn Road Nankai District Tianjin,China
Product Designation	Wireless Blood Pressure Wrist Monitor
Brand Name	iHealth
Test Model	BP7S
Date of test	Oct.13,2015 to Oct.15,2016
Deviation	None
Condition of Test Sample	Normal
Report Template	AGCRT-US-BR/RF

We hereby certify that:

The above equipment was tested by Dongguan Precise Testing Service Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2009) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rules Part 15.249.

Tested By	Time Huang(Huang Nanhui)	Oct.17,2015
Reviewed By	Forrest Lei(Lei Yonggang)	Oct.17,2015
Approved By	Solger Zhang(Zhang Hongyi) Authorized Officer	Oct.17,2015

2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

A major technical description of EUT is described as following

Operation Frequency	2.402 GHz to 2.480GHz
RF Output Power	-1.55dBm(Max)
Bluetooth Version	V4.0
Modulation	GFSK, π /4-DQPSK, 8DPSK
Number of channels	79 for BR/EDR 40 for BLE
Hardware Version	BP7S-MFMP01 V2.0
Software Version	BPM-MB9AFB44N-V0.001-20150728
Antenna Designation	Ceramic Antenna (Met 15.203 Antenna requirement)
Antenna Gain	2.45dBi
Power Supply	DC 3.7V by battery
Note: The USB port only used for charging and can't be used to transfer data with PC.	

2.2. TABLE OF CARRIER FREQUENCYS

BR/EDR Bluetooth channel List

Frequency Band	Channel Number	Frequency
2400~2483.5MHZ	0	2402MHZ
	1	2403MHZ
	:	:
	38	2440 MHZ
	39	2441 MHZ
	40	2442 MHZ
	:	:
	77	2479 MHZ
	78	2480 MHZ

BLE Channel List

Frequency Band	Channel Number	Frequency
2400~2483.5MHZ	0	2402MHZ
	1	2404MHZ
	:	:
	38	2478 MHZ
	39	2480 MHZ

3. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ±U，where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2，providing a level of confidence of approximately 95 %。

No.	Item	Uncertainty
1	Conducted Emission Test	±3.18dB
2	All emissions,radiated	±3.91dB
3	Temperature	±0.5°C
4	Humidity	±2%

4. DESCRIPTION OF TEST MODES

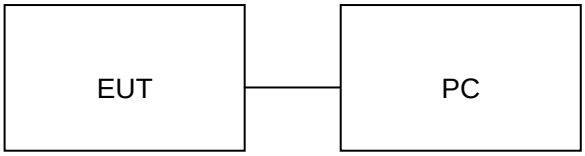
NO.	TEST MODE DESCRIPTION
1	Low channel GFSK
2	Middle channel GFSK
3	High channel GFSK
4	Low channel π /4-DQPSK
5	Middle channel π /4-DQPSK
6	High channel π /4-DQPSK
7	Low channel 8DPSK
8	Middle channel 8DPSK
9	High channel 8DPSK
10	BT Link with Charging

Note:
1. All the test modes can be supply by battery, only the result of the worst case was recorded in the report, if no other cases.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.
3.The EUT used fully-charged battery when tested.

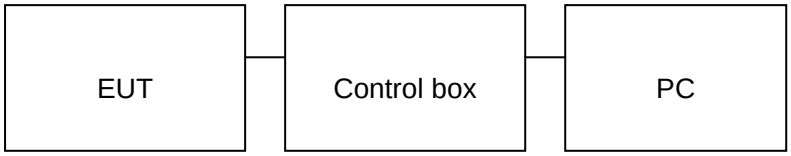
5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM

Configure 1: (Normal hopping)



Configure 2: (Control continuous TX)



5.2. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	Wireless Blood Pressure Wrist	iHealth	BP7S	EUT
2	PC	DELL	INSPIRON	A.E
3	Control box	N/A	N/A	A.E
4	USB Cable	N/A	0.8m, unshielded	A.E

5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.249	Radiated Emission	Compliant
§15.249	Band Edges	Compliant
§15.207	Conduction Emission	Compliant
N/A	BANDWIDTH	Compliant

6. TEST FACILITY

Site	Dongguan Precise Testing Service Co., Ltd.
Location	Building D,Baoding Technology Park,Guangming Road2,Dongcheng District, Dongguan, Guangdong, China,
FCC Registration No.	371540
Description	The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2009.

7 ALL TEST EQUIPMENT LIST

FOR RADIATED EMISSION TEST (BELOW 1GHZ)

Radiated Emission Test Site					
Name of Equipment	**Manufacturer**	**Model Number**	**Serial Number**	**Last Calibration**	**Due Calibration**
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 4, 2015	July 3, 2016
Trilog Broadband Antenna (25M-1GHz)	SCHWARZBECK	VULB9160	9160-3355	July 4, 2015	July 3, 2016
Signal Amplifier	SCHWARZBECK	BBV 9475	9745-0013	July 4, 2015	July 3, 2016
RF Cable	SCHWARZBECK	AK9515E	96221	July 4, 2015	July 3, 2016
3m Anechoic Chamber	CHENGYU	966	PTS-001	June 6, 2015	June 5, 2016
MULTI-DEVICE Positioning Controller	Max-Full	MF-7802	MF780208339	N/A	N/A
Active loop antenna (9K-30MHz)	Schwarzbeck	FMZB1519	1519-038	June 6, 2015	June 5, 2016
Spectrum analyzer	Agilent	E4407B	MY46185649	June 6, 2015	June 5, 2016

FOR RADIATED EMISSION TEST (1GHZ ABOVE)

Radiated Emission Test Site					
Name of Equipment	**Manufacturer**	**Model Number**	**Serial Number**	**Last Calibration**	**Due Calibration**
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 4, 2015	July 3, 2016
Horn Antenna (1G-18GHz)	SCHWARZBECK	BBHA9120D	9120D-1246	July 11, 2015	July 10, 2016
Spectrum Analyzer	Agilent	E4411B	MY4511453	July 4, 2015	July 3, 2016
Signal Amplifier	SCHWARZBECK	BBV 9718	9718-269	July 7, 2015	July 6, 2016
RF Cable	SCHWARZBECK	AK9515H	96220	July 8, 2015	July 7, 2016
3m Anechoic Chamber	CHENGYU	966	PTS-001	June 6, 2015	June 5, 2016
MULTI-DEVICE Positioning Controller	Max-Full	MF-7802	MF780208339	N/A	N/A
Horn Ant (18G-40GHz)	Schwarzbeck	BBHA 9170	9170-181	June 6, 2015	June 5, 2016

8. RADIATED EMISSION

8.1TEST LIMIT

Standard FCC15.249

Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Field Strength of Harmonics (microvolts/meter)
900-928MHz	50	500
2400-2483.5MHz	50	500
5725-5875MHz	50	500
24.0-24.25GHz	250	2500

Standard FCC 15.209

Frequency (MHz)	Distance Meters	Field Strengths Limit	
		μ V/m	dB(μV)/m
0.009 ~ 0.490	300	2400/F(kHz)	---
0.490 ~ 1.705	30	24000/F(kHz)	---
1.705 ~ 30	30	30	---
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	Other:74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

Remark: (1) Emission level dBμ V = 20 log Emission level μ V/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

8.2. MEASUREMENT PROCEDURE

1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1.5MHz VBW and RBW for peak reading. Then 1.5MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

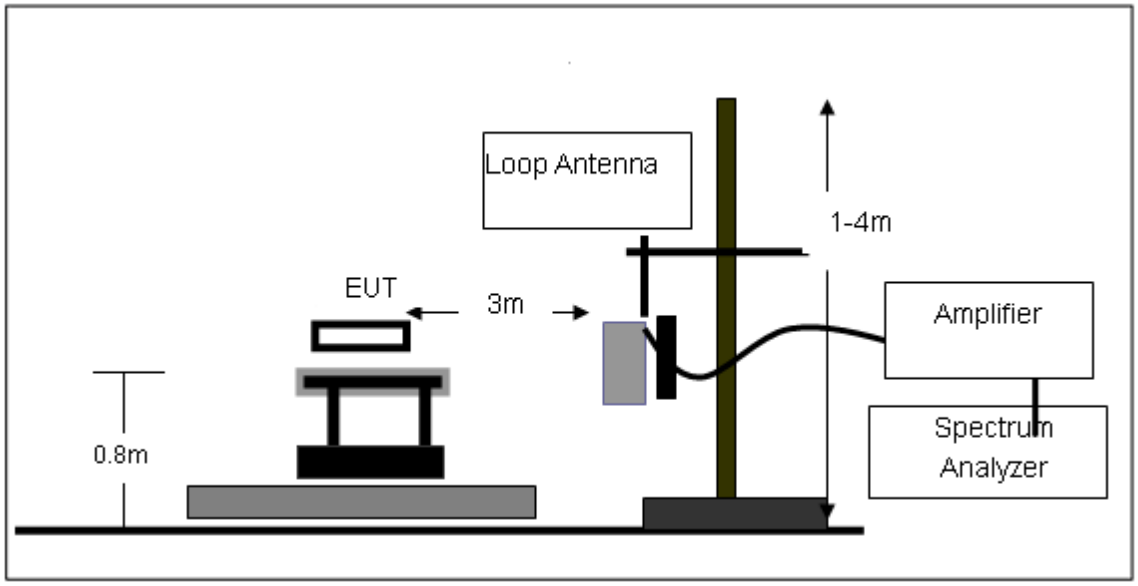
The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP
Start ~Stop Frequency	1GHz~26.5GHz 1.5MHz/1.5MHz for Peak, 1.5MHz/10Hz for Average

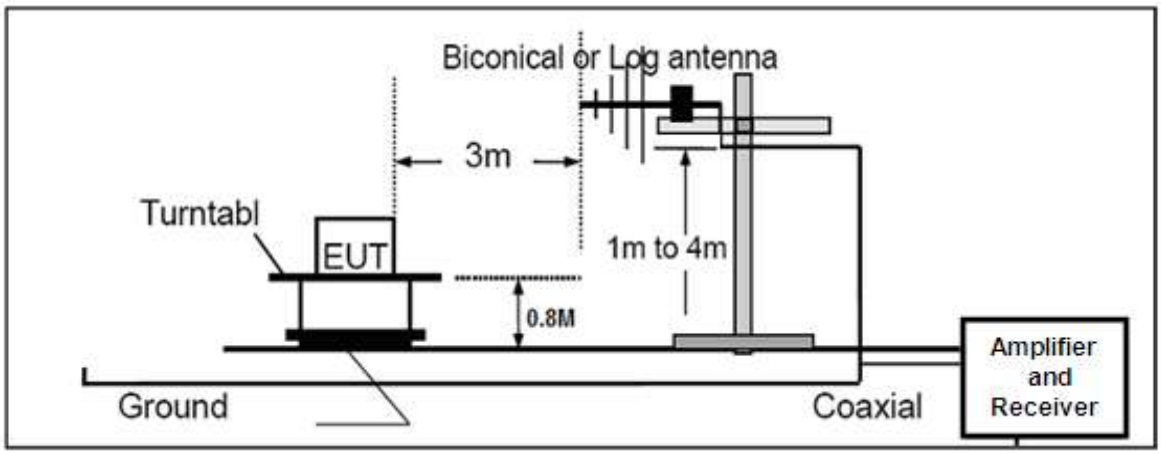
Receiver Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP

8.3. TEST SETUP

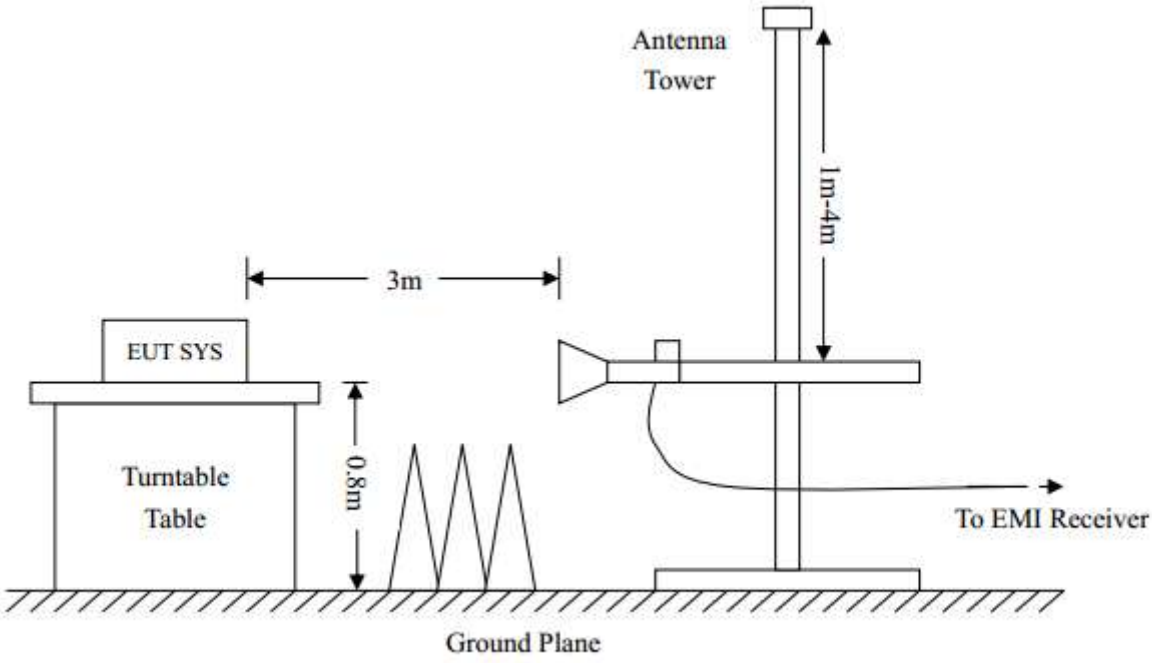
Radiated Emission Test-Setup Frequency Below 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



8.4. TEST RESULT

(Worst modulation: GFSK)

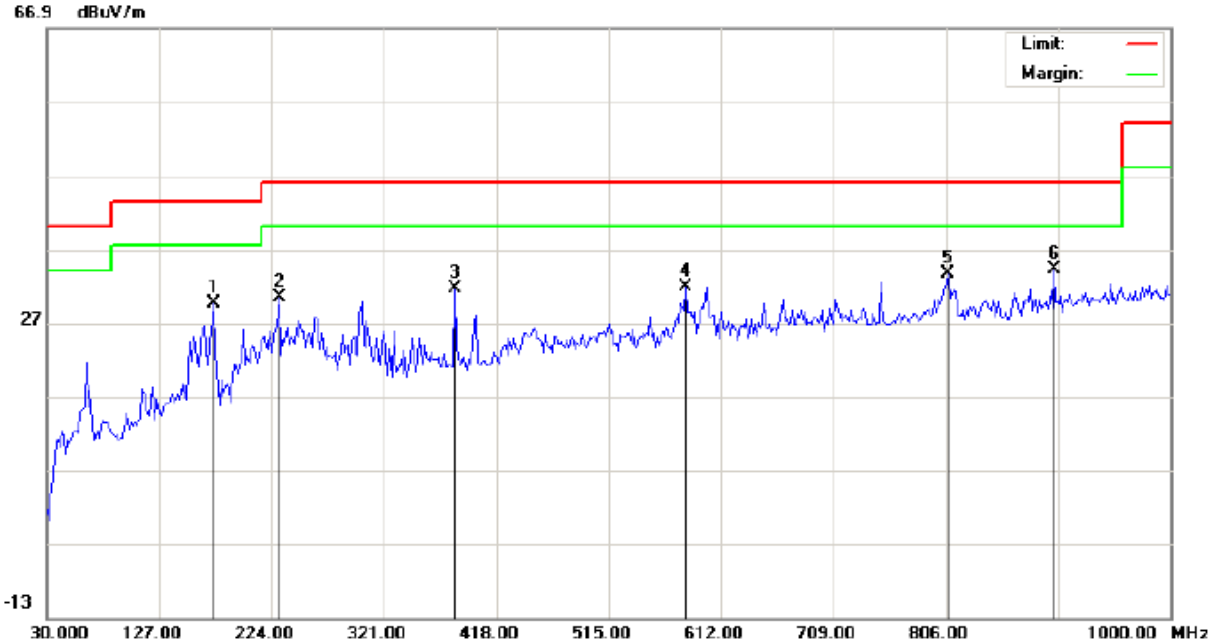
FOR BR/EDR BLUETOOTH

RADIATED EMISSION BELOW 30MHZ

No emission found between lowest internal used/generated frequencies to 30MHz.

RADIATED EMISSION BELOW 1GHZ

RADIATED EMISSION TEST- (30MHZ-1GHZ)-LOW CHANNEL-HORIZONTAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT:
M/N: FP7S
Mode: Low Channel TX
Note:

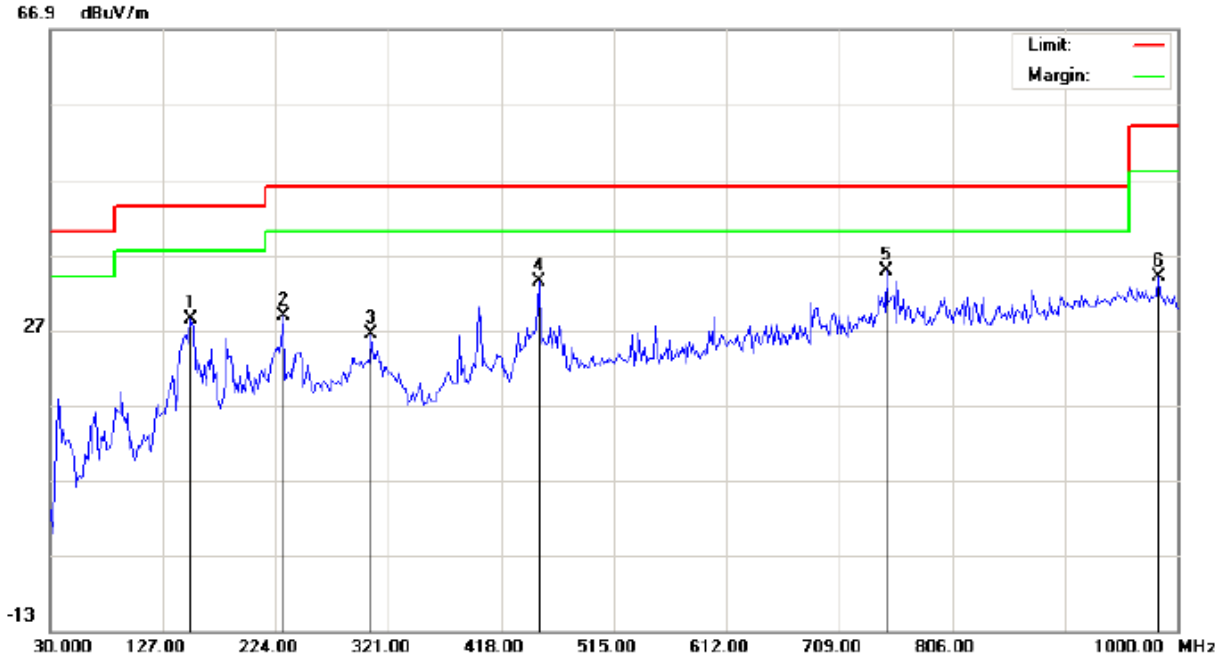
Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 22.5
Humidity: 53.1 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		173.8831	17.21	12.37	29.58	43.50	-13.92	peak			
2		230.4667	17.32	13.16	30.48	46.00	-15.52	peak			
3		382.4331	12.61	18.95	31.56	46.00	-14.44	peak			
4		581.2833	8.54	23.26	31.80	46.00	-14.20	peak			
5		807.6167	6.24	27.32	33.56	46.00	-12.44	peak			
6	*	899.7667	5.60	28.60	34.20	46.00	-11.80	peak			

RESULT: PASS

RADIATED EMISSION TEST- (30MHZ-1GHZ)-LOW CHANNEL -VERTICAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT:
M/N: FP7S
Mode: Low Channel TX
Note:

Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 22.5
Humidity: 53.1 %

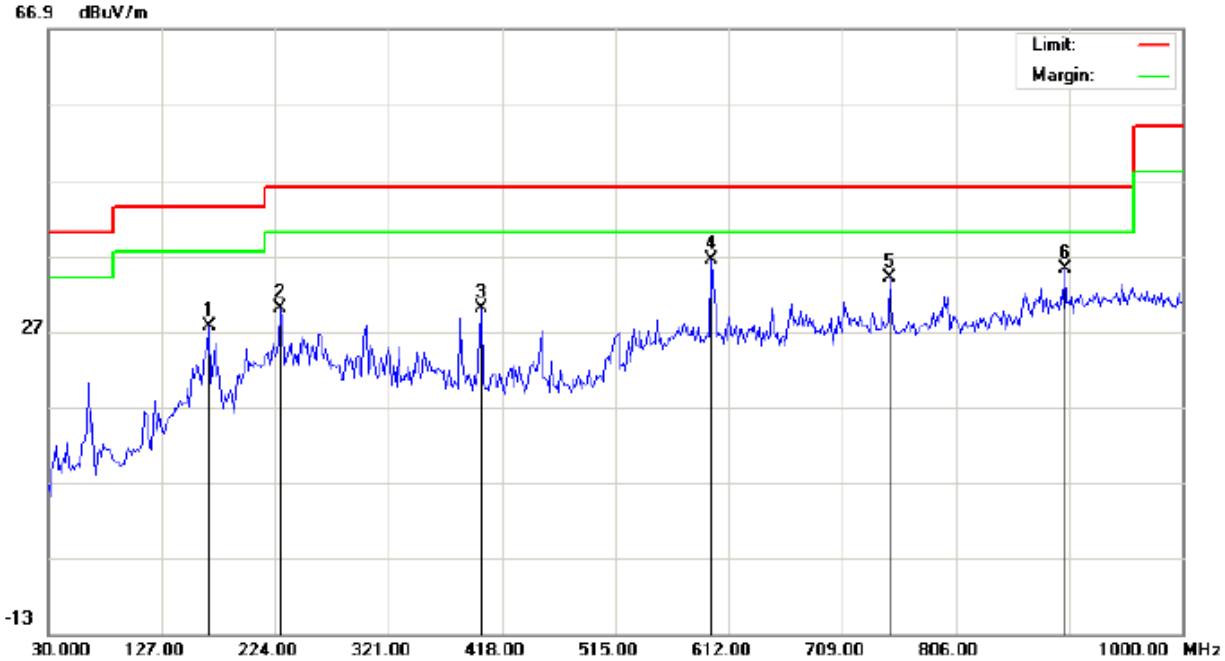
No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	.	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		151.2500	13.04	15.27	28.31	43.50	-15.19	peak			
2		230.4667	16.78	11.99	28.77	46.00	-17.23	peak			
3		306.4499	10.53	15.84	26.37	46.00	-19.63	peak			
4		450.3333	12.82	20.59	33.41	46.00	-12.59	peak			
5	*	749.4166	8.18	26.61	34.79	46.00	-11.21	peak			
6		983.8333	4.26	29.68	33.94	54.00	-20.06	peak			

RESULT: PASS

Note: 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. The “Factor” value can be calculated automatically by software of measurement system.

RADIATED EMISSION TEST- (30MHZ-1GHZ)-MIDDLE CHANNEL-HORIZONTAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT:
M/N: FP7S
Mode: Middle Channel TX
Note:

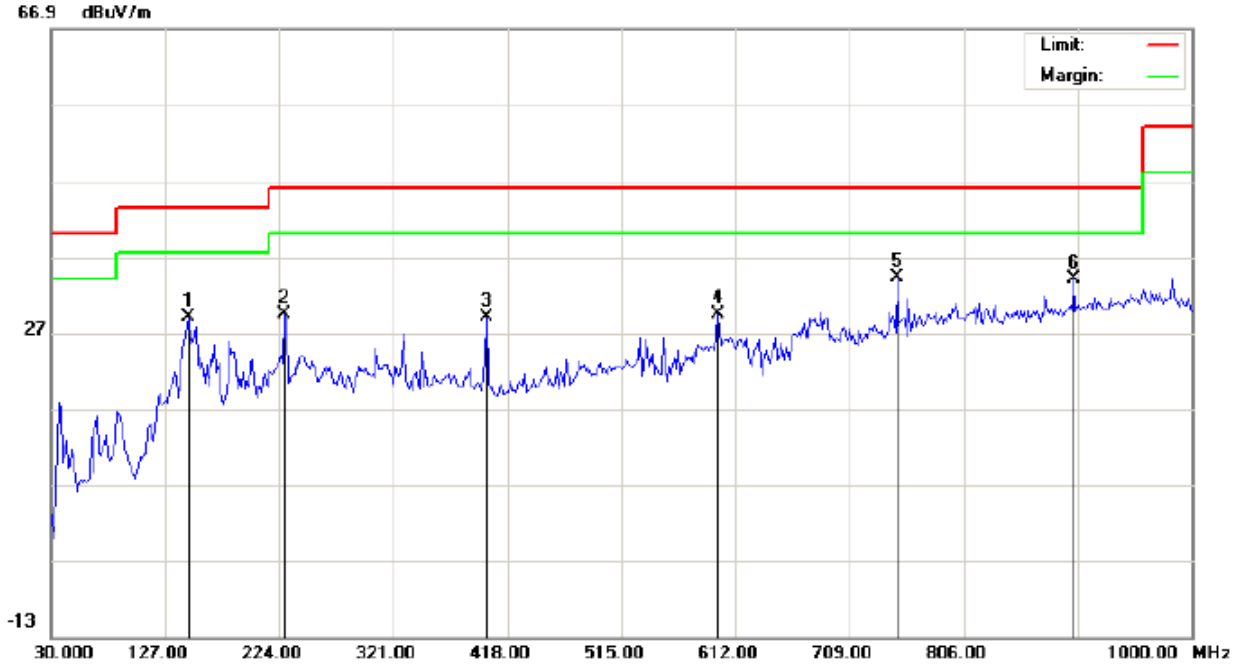
Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 22.5
Humidity: 53.1 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		167.4165	13.93	13.75	27.68	43.50	-15.82	peak			
2		228.8497	16.86	13.10	29.96	46.00	-16.04	peak			
3		400.2167	11.00	19.08	30.08	46.00	-15.92	peak			
4	*	597.4500	12.81	23.67	36.48	46.00	-9.52	peak			
5		749.4166	7.31	26.61	33.92	46.00	-12.08	peak			
6		899.7667	6.60	28.60	35.20	46.00	-10.80	peak			

RESULT: PASS

RADIATED EMISSION TEST- (30MHZ-1GHZ)- MIDDLE CHANNEL -VERTICAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT:
M/N: FP7S
Mode: Middle Channel TX
Note:

Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 22.5
Humidity: 53.1 %

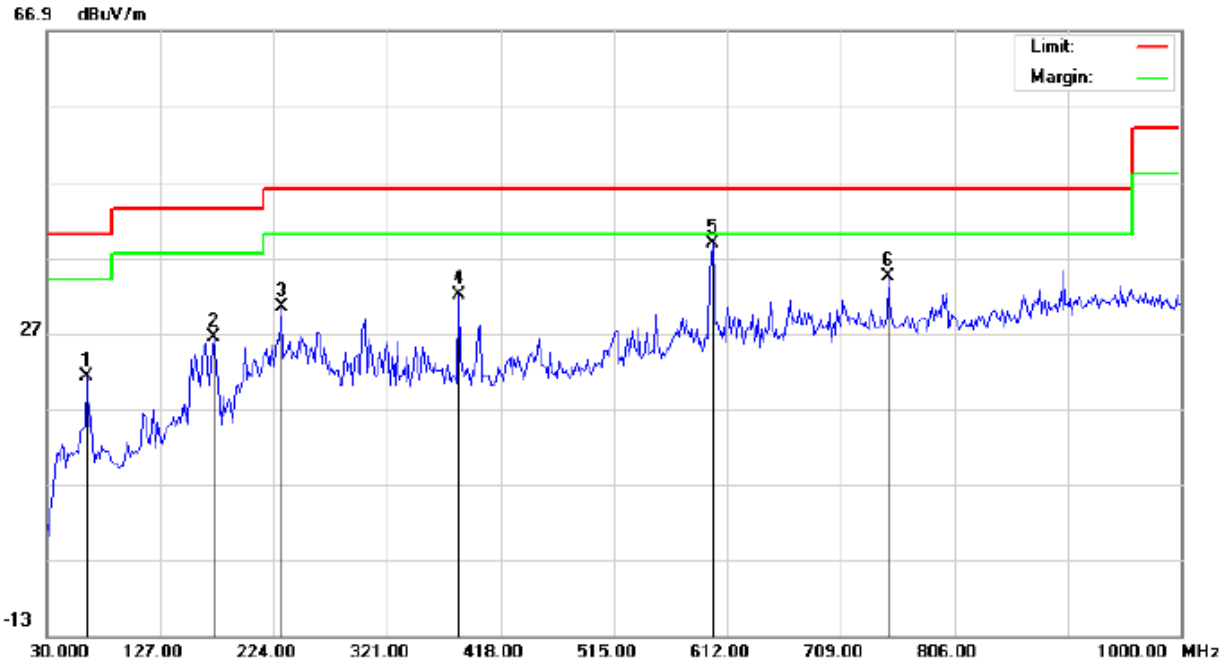
No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		146.4000	13.71	15.24	28.95	43.50	-14.55	peak			
2		228.8497	17.53	11.83	29.36	46.00	-16.64	peak			
3		400.2167	10.00	19.08	29.08	46.00	-16.92	peak			
4		597.4500	6.59	22.72	29.31	46.00	-16.69	peak			
5	*	749.4166	7.68	26.61	34.29	46.00	-11.71	peak			
6		899.7667	5.35	28.60	33.95	46.00	-12.05	peak			

RESULT: PASS

Note: 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. The “Factor” value can be calculated automatically by software of measurement system.

RADIATED EMISSION TEST- (30MHZ-1GHZ)-HIGH CHANNEL-HORIZONTAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT:
M/N: FP7S
Mode: High Channel TX
Note:

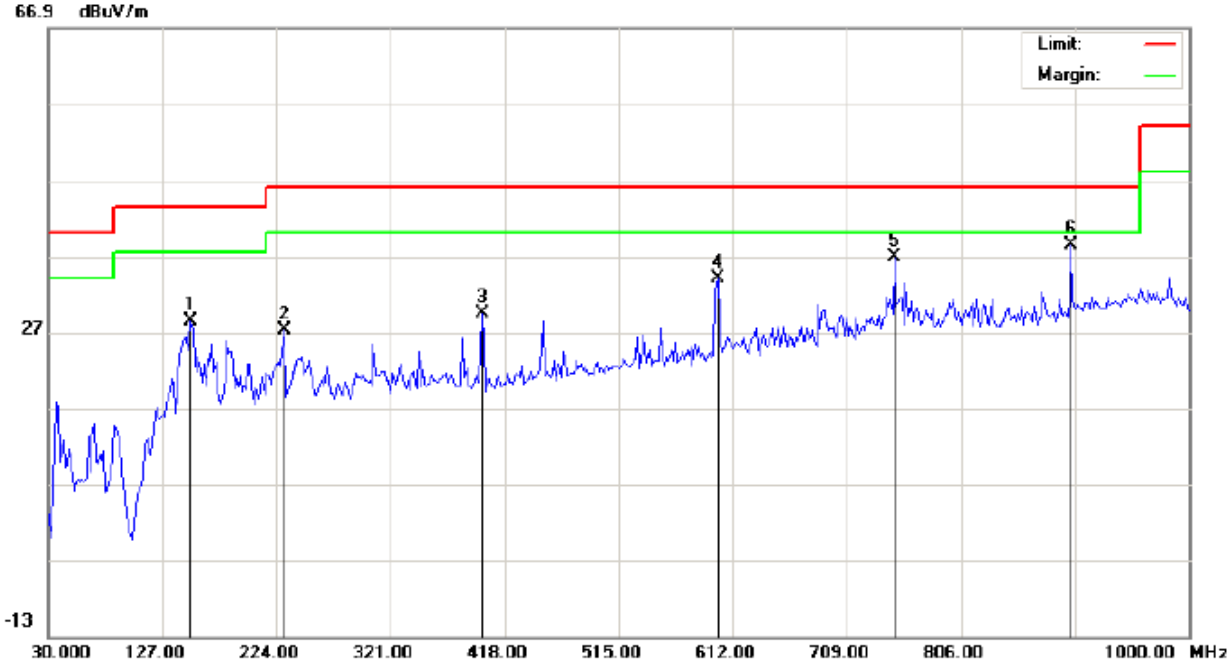
Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 22.5
Humidity: 53.1 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		63.9500	10.38	10.80	21.18	40.00	-18.82	peak			
2		172.2667	13.60	12.72	26.32	43.50	-17.18	peak			
3		230.4667	17.32	13.16	30.48	46.00	-15.52	peak			
4		382.4333	13.11	18.95	32.06	46.00	-13.94	peak			
5	*	599.0667	15.04	23.71	38.75	46.00	-7.25	peak			
6		749.4167	7.81	26.61	34.42	46.00	-11.58	peak			

RESULT: PASS

RADIATED EMISSION TEST- (30MHZ-1GHZ)-HIGH CHANNEL -VERTICAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT:
M/N: FP7S
Mode: High Channel TX
Note:

Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 22.5
Humidity: 53.1 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		151.2500	13.04	15.27	28.31	43.50	-15.19	peak			
2		230.4667	15.28	11.99	27.27	46.00	-18.73	peak			
3		398.6000	10.36	19.06	29.42	46.00	-16.58	peak			
4		599.0667	11.18	22.73	33.91	46.00	-12.09	peak			
5		749.4167	10.18	26.61	36.79	46.00	-9.21	peak			
6	*	899.7667	9.85	28.60	38.45	46.00	-7.55	peak			

RESULT: PASS

Note: 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. The “Factor” value can be calculated automatically by software of measurement system.

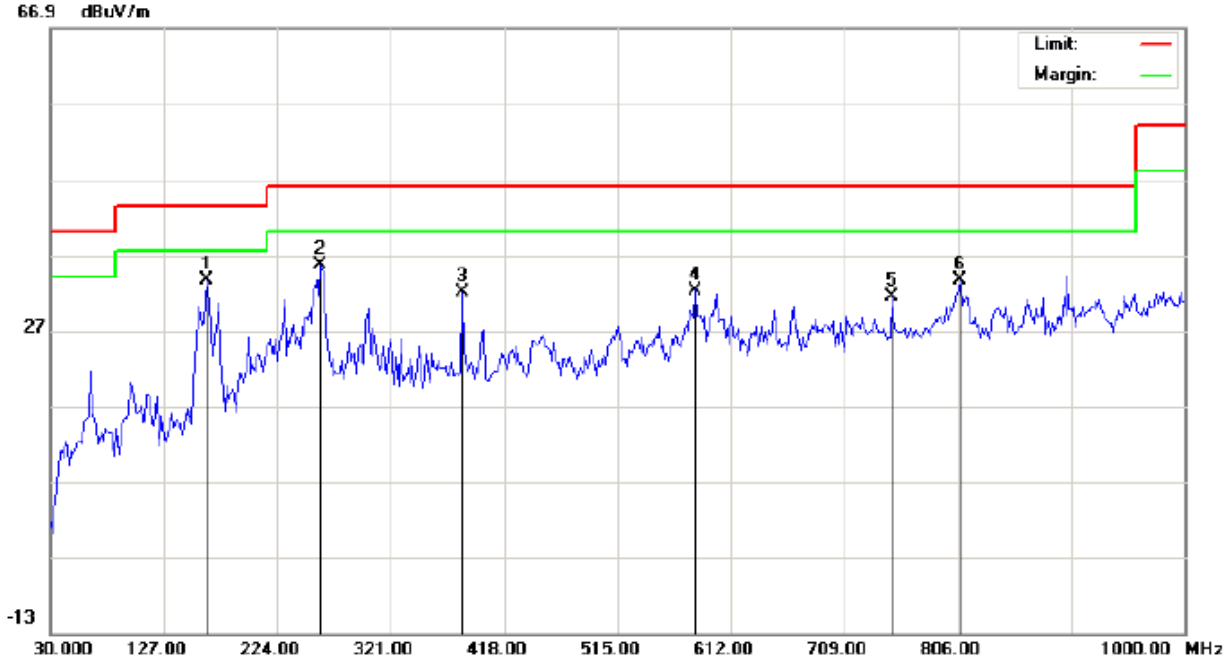
FOR BLE

RADIATED EMISSION BELOW 30MHZ

No emission found between lowest internal used/generated frequencies to 30MHz.

RADIATED EMISSION BELOW 1GHZ

RADIATED EMISSION TEST- (30MHZ-1GHZ)-LOW CHANNEL-HORIZONTAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Wireless Blood Pressure Wrist Monitor
M/N: FP7S
Mode: Low Channel TX
Note:

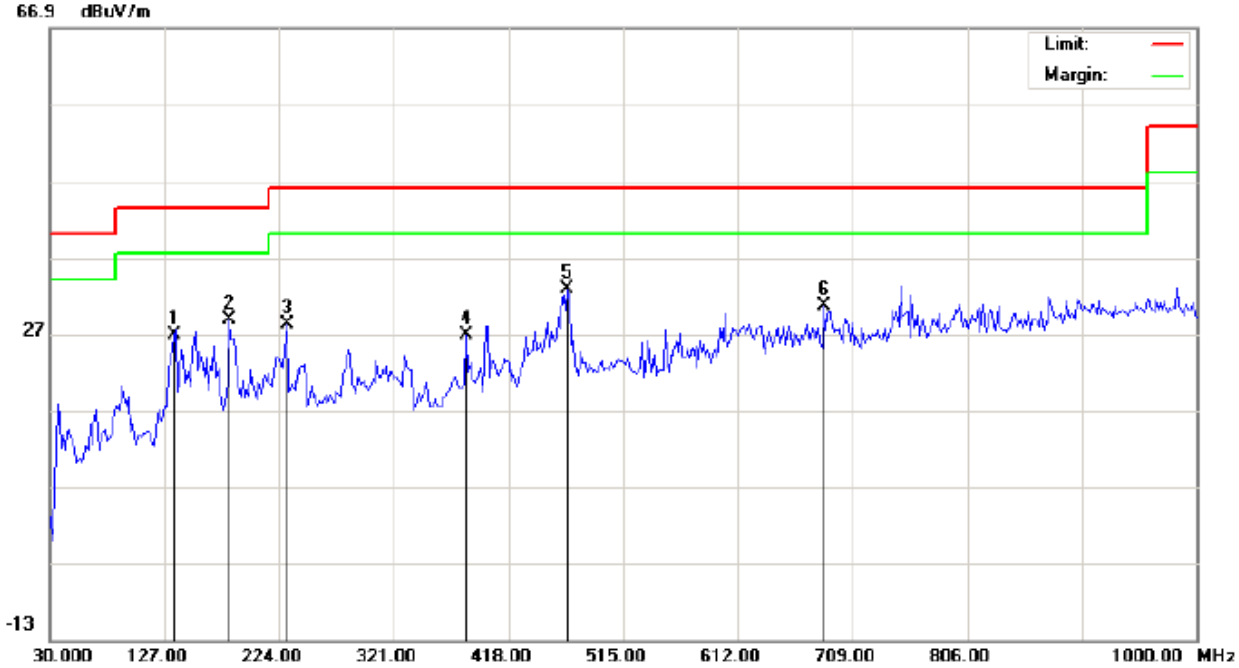
Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 22.5
Humidity: 53.1 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	.	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	164.1833	19.23	14.44	33.67	43.50	-9.83	peak			
2		261.1831	21.35	14.24	35.59	46.00	-10.41	peak			
3		382.4331	13.11	18.95	32.06	46.00	-13.94	peak			
4		581.2833	9.04	23.26	32.30	46.00	-13.70	peak			
5		749.4166	4.81	26.61	31.42	46.00	-14.58	peak			
6		807.6167	6.24	27.32	33.56	46.00	-12.44	peak			

RESULT: PASS

RADIATED EMISSION TEST- (30MHZ-1GHZ)-LOW CHANNEL -VERTICAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Wireless Blood Pressure Wrist Monitor
M/N: FP7S
Mode: Low Channel TX
Note:

Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 22.5
Humidity: 53.1 %

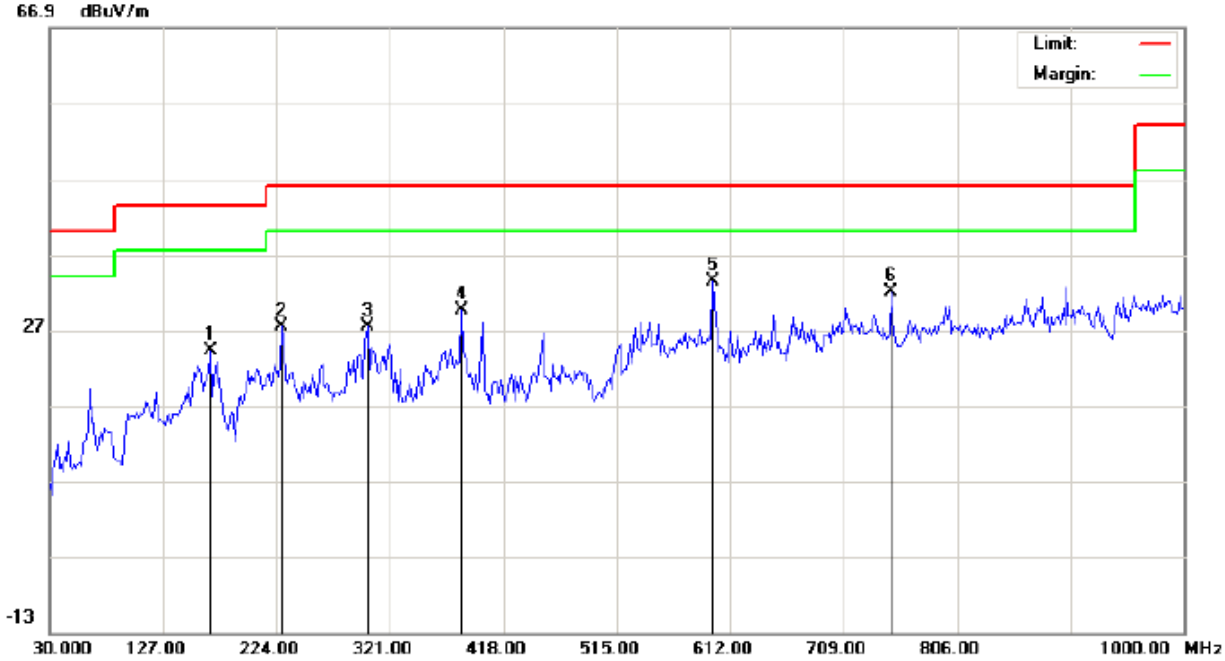
No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		135.0833	13.74	13.15	26.89	43.50	-16.61	peak			
2		181.9667	15.26	13.57	28.83	43.50	-14.67	peak			
3		230.4667	16.28	11.99	28.27	46.00	-17.73	peak			
4		382.4331	7.82	18.95	26.77	46.00	-19.23	peak			
5	*	468.1166	12.05	20.79	32.84	46.00	-13.16	peak			
6		684.7500	5.74	24.78	30.52	46.00	-15.48	peak			

RESULT: PASS

Note: 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. The “Factor” value can be calculated automatically by software of measurement system.

RADIATED EMISSION TEST- (30MHZ-1GHZ)-MIDDLE CHANNEL-HORIZONTAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Wireless Blood Pressure Wrist Monitor
M/N: FP7S
Mode: Middle Channel TX
Note:

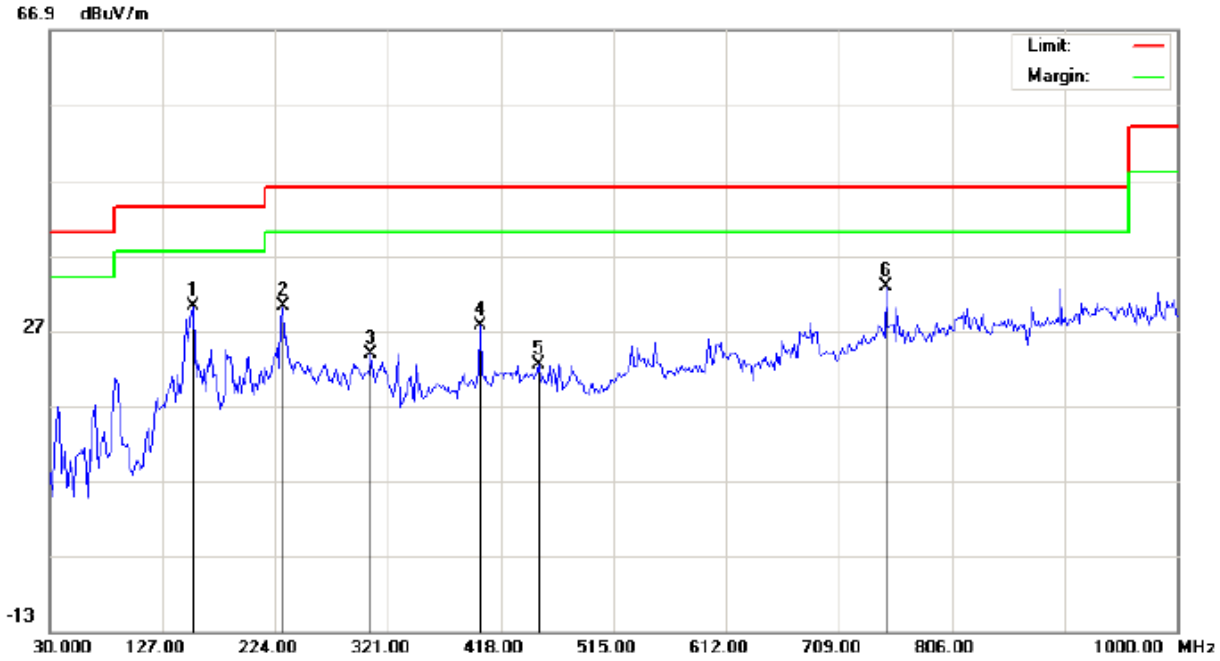
Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 22.5
Humidity: 53.1 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		167.4165	10.43	13.75	24.18	43.50	-19.32	peak			
2		228.8497	14.36	13.10	27.46	46.00	-18.54	peak			
3		301.6000	11.82	15.52	27.34	46.00	-18.66	peak			
4		382.4331	10.61	18.95	29.56	46.00	-16.44	peak			
5	*	597.4500	9.81	23.67	33.48	46.00	-12.52	peak			
6		749.4166	5.31	26.61	31.92	46.00	-14.08	peak			

RESULT: PASS

RADIATED EMISSION TEST- (30MHZ-1GHZ)- MIDDLE CHANNEL -VERTICAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Wireless Blood Pressure Wrist Monitor
M/N: FP7S
Mode: Middle Channel TX
Note:

Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 22.5
Humidity: 53.1 %

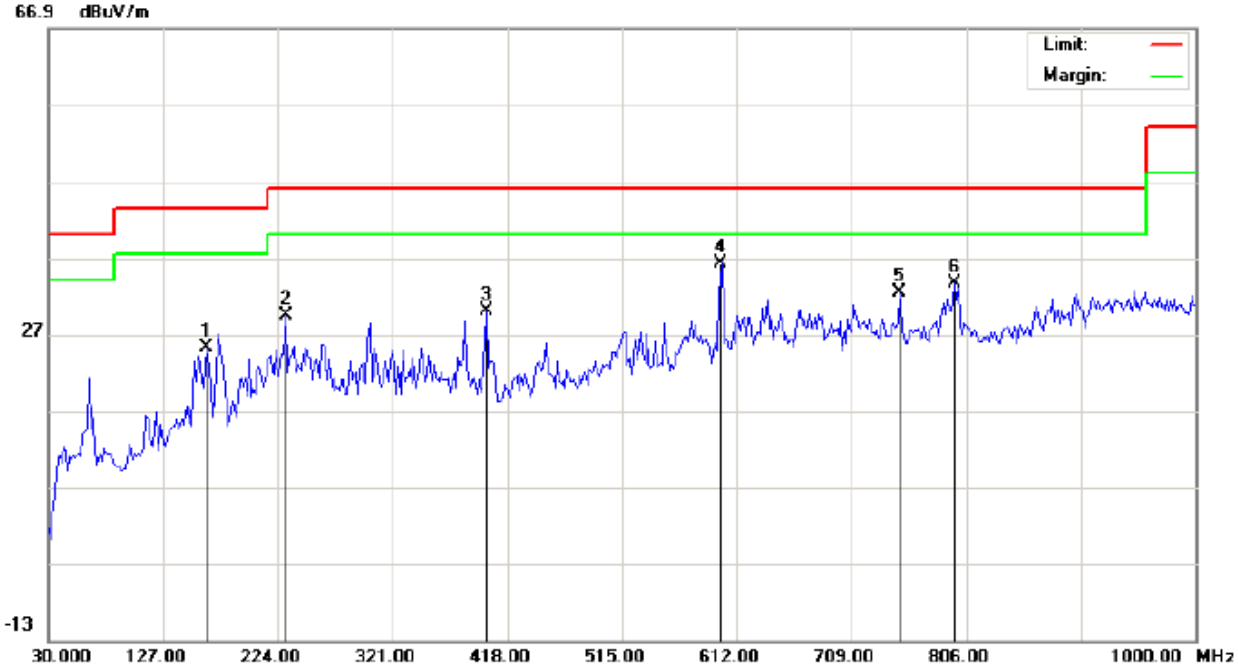
No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	.	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		152.8667	15.00	15.28	30.28	43.50	-13.22	peak			
2		230.4667	18.28	11.99	30.27	46.00	-15.73	peak			
3		306.4499	8.03	15.84	23.87	46.00	-22.13	peak			
4		400.2167	8.50	19.08	27.58	46.00	-18.42	peak			
5		450.3333	1.82	20.59	22.41	46.00	-23.59	peak			
6	*	749.4166	6.18	26.61	32.79	46.00	-13.21	peak			

RESULT: PASS

Note: 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. The “Factor” value can be calculated automatically by software of measurement system.

RADIATED EMISSION TEST- (30MHZ-1GHZ)-HIGH CHANNEL-HORIZONTAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Wireless Blood Pressure Wrist Monitor
M/N: FP7S
Mode: High Channel TX
Note:

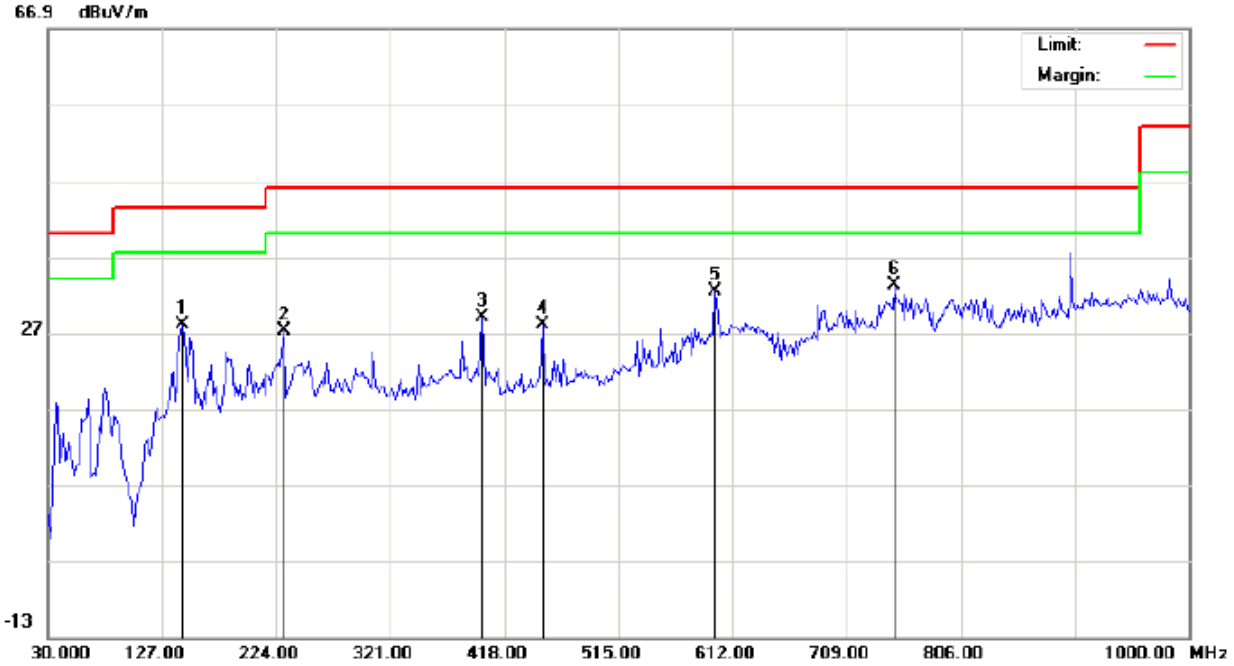
Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 22.5
Humidity: 53.1 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		164.1833	10.73	14.44	25.17	43.50	-18.33	peak			
2		230.4667	16.32	13.16	29.48	46.00	-16.52	peak			
3		400.2167	11.00	19.08	30.08	46.00	-15.92	peak			
4	*	599.0665	12.54	23.71	36.25	46.00	-9.75	peak			
5		749.4166	5.81	26.61	32.42	46.00	-13.58	peak			
6		796.2998	6.29	27.27	33.56	46.00	-12.44	peak			

RESULT: PASS

RADIATED EMISSION TEST- (30MHZ-1GHZ)-HIGH CHANNEL -VERTICAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Wireless Blood Pressure Wrist Monitor
M/N: FP7S
Mode: High Channel TX
Note:

Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 22.5
Humidity: 53.1 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	.	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		144.7831	12.84	15.23	28.07	43.50	-15.43	peak			
2		230.4667	15.28	11.99	27.27	46.00	-18.73	peak			
3		398.6000	9.86	19.06	28.92	46.00	-17.08	peak			
4		450.3333	7.32	20.59	27.91	46.00	-18.09	peak			
5		597.4500	9.59	22.72	32.31	46.00	-13.69	peak			
6	*	749.4166	6.68	26.61	33.29	46.00	-12.71	peak			

RESULT: PASS

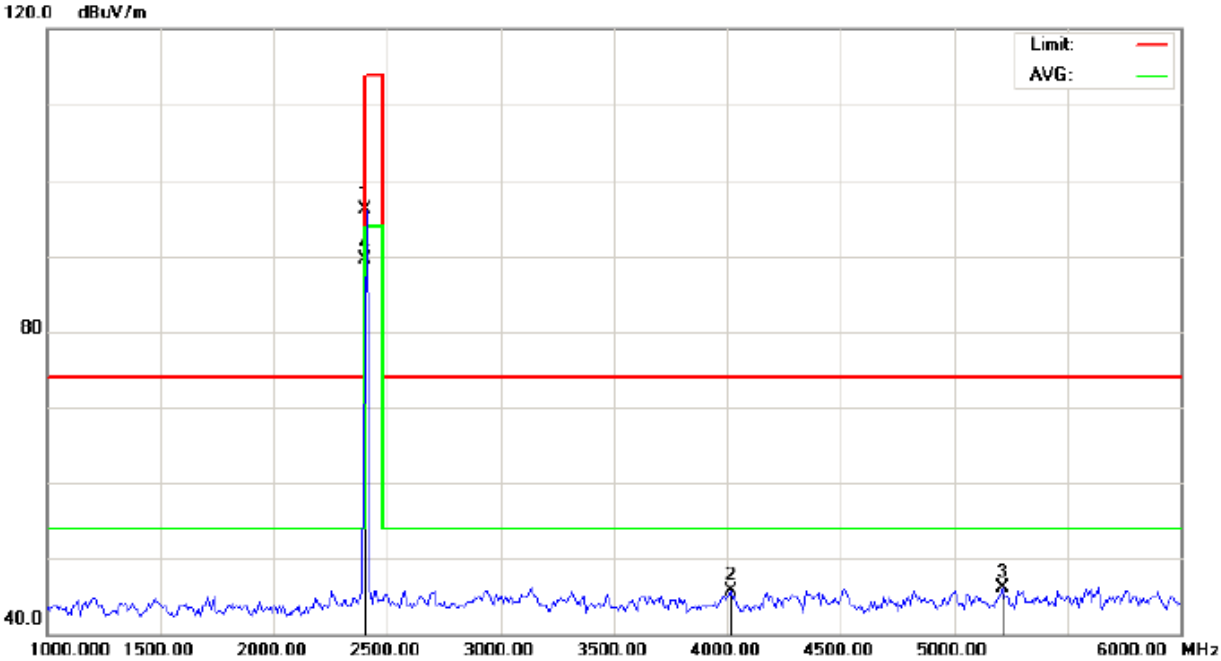
Note: 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. The “Factor” value can be calculated automatically by software of measurement system.

RADIATED EMISSION ABOVE 1GHZ

FOR BR/EDR BLUETOOTH

RADIATED EMISSION TEST- (ABOVE 1GHZ)-LOW CHANNEL-HORIZONTAL

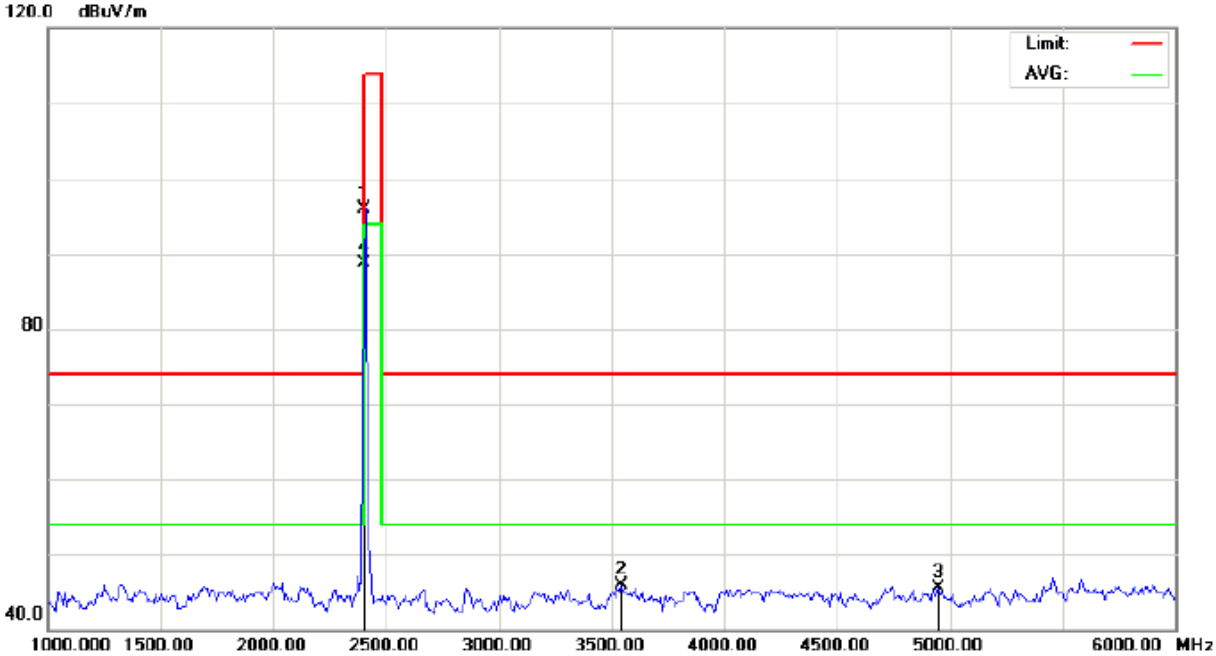


Site: site #1 Polarization: *Horizontal* Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK)- Power: Humidity: 60 %
EUT: Wireless Blood Pressure Wrist Monitor Distance: 3m
M/N: BP7S
Mode: Low Channel TX
Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	.	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2402.000	105.73	-9.68	96.05	114.00	-17.95	peak			
2		4016.667	50.53	-4.75	45.78	74.00	-28.22	peak			
3		5216.667	47.89	-1.80	46.09	74.00	-27.91	peak			
4	*	2402.000	99.13	-9.68	89.45	94.00	-4.55	AVG	100	347	

RESULT: PASS

RADIATED EMISSION TEST- (ABOVE 1GHZ)-LOW CHANNEL- VERTICAL



Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)-
EUT: Wireless Blood Pressure Wrist Monitor
M/N: BP7S
Mode: Low Channel TX
Note:

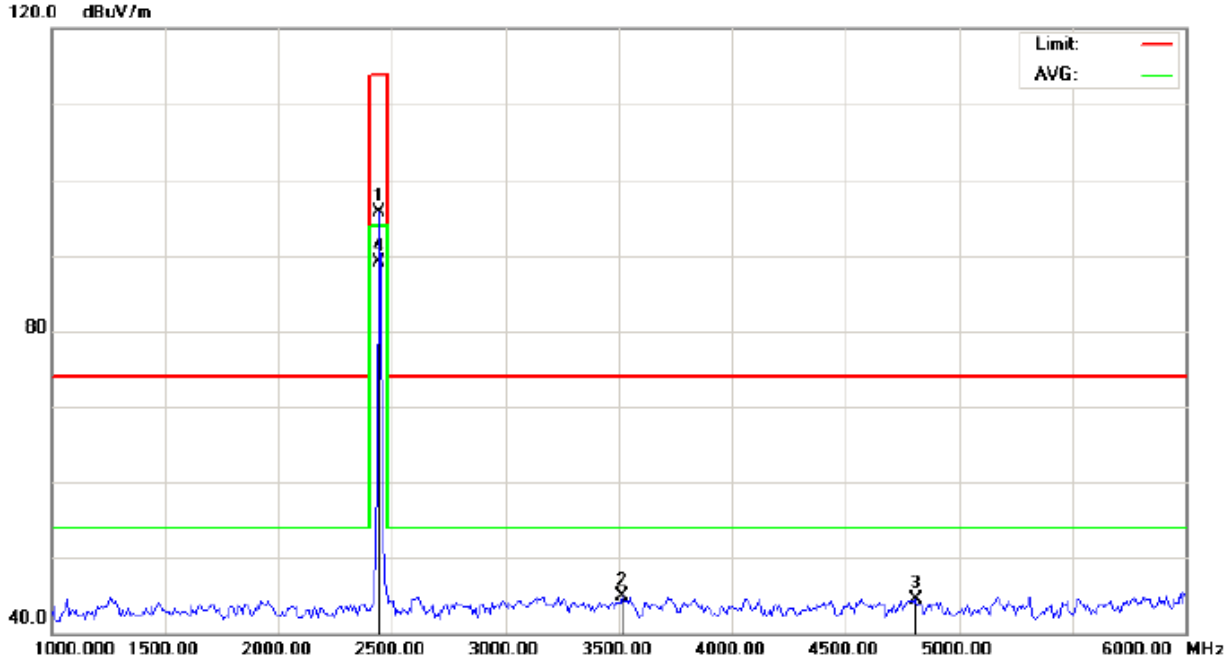
Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2402.000	105.65	-9.68	95.97	114.00	-18.03	peak			
2		3541.667	53.60	-7.63	45.97	74.00	-28.03	peak			
3		4950.000	47.48	-1.93	45.55	74.00	-28.45	peak			
4	*	2402.000	98.39	-9.68	88.71	94.00	-5.29	AVG	100	206	

RESULT: PASS

RADIATED EMISSION TEST- (ABOVE 1GHZ)-MIDDLE CHANNEL-HORIZONTAL



Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)-
EUT: Wireless Blood Pressure Wrist Monitor
M/N: BP7S
Mode: Middle Channel TX
Note:

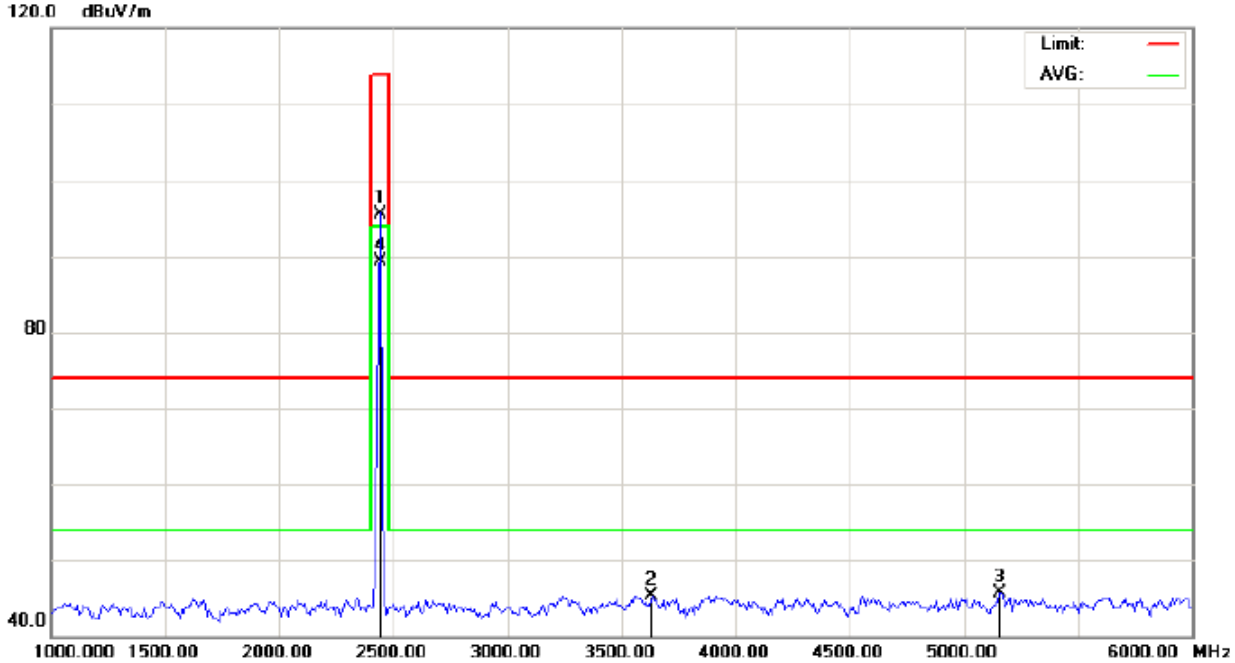
Polarization: ***Horizontal***
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2441.000	105.29	-9.63	95.66	114.00	-18.34	peak			
2		3516.667	52.77	-7.79	44.98	74.00	-29.02	peak			
3		4808.333	46.86	-2.30	44.56	74.00	-29.44	peak			
4	*	2441.000	98.67	-9.63	89.04	94.00	-4.96	AVG	100	348	

RESULT: PASS

RADIATED EMISSION TEST- (ABOVE 1GHZ)-MIDDLE CHANNEL- VERTICAL

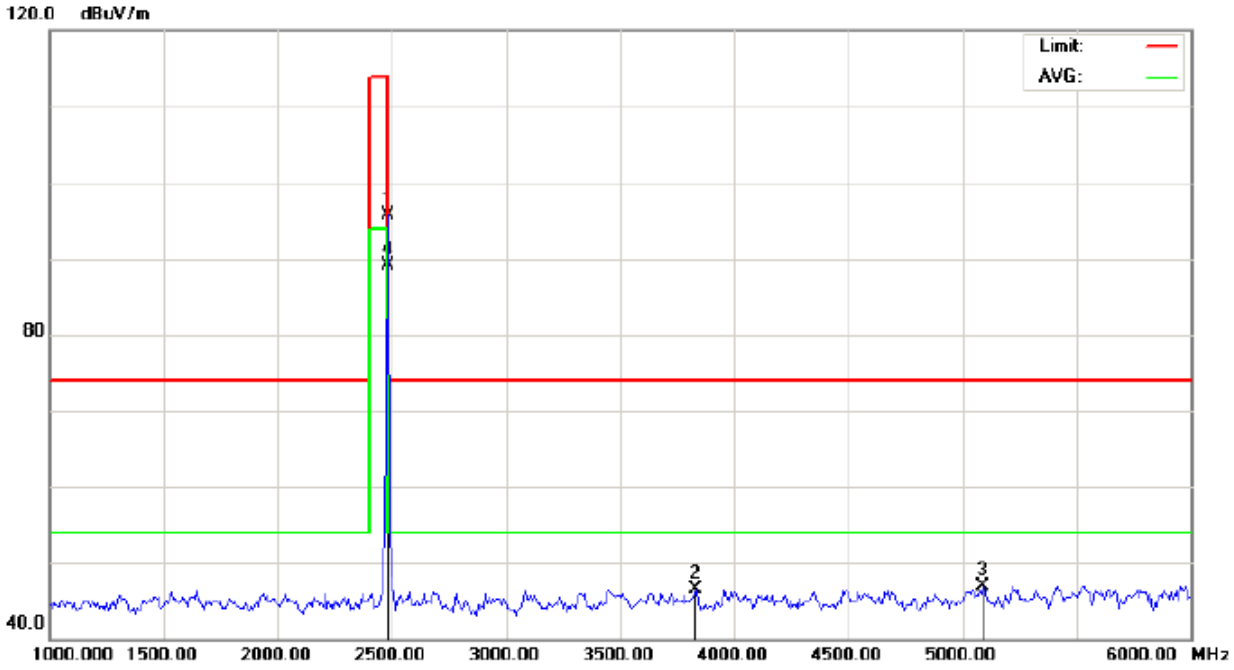


Site: site #1 Polarization: *Vertical* Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK)- Power: Humidity: 60 %
EUT: Wireless Blood Pressure Wrist Monitor Distance: 3m
M/N: BP7S
Mode: Middle Channel TX
Note:

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2441.000	105.23	-9.63	95.60	114.00	-18.40	peak			
2		3633.333	52.43	-7.07	45.36	74.00	-28.64	peak			
3		5158.333	47.54	-1.80	45.74	74.00	-28.26	peak			
4	*	2441.000	98.91	-9.63	89.28	94.00	-4.72	AVG	100	209	

RESULT: PASS

RADIATED EMISSION TEST- (ABOVE 1GHZ)-HIGH CHANNEL-HORIZONTAL



Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)-
EUT: Wireless Blood Pressure Wrist Monitor
M/N: BP7S
Mode: High Channel TX
Note:

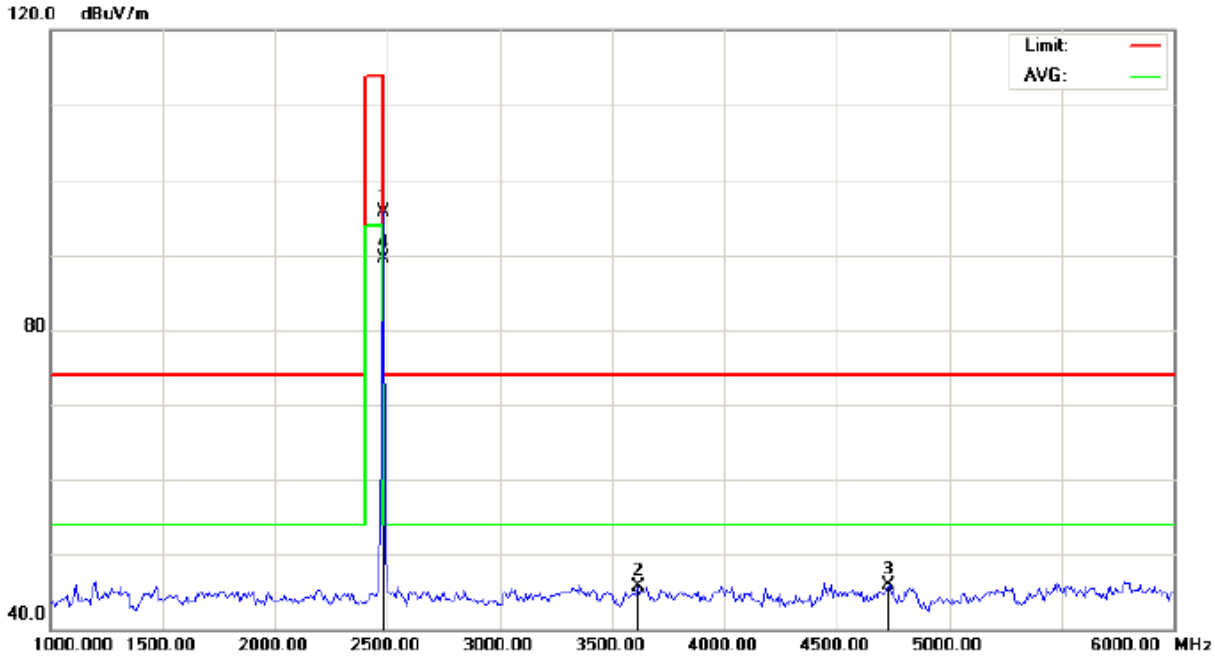
Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2480.000	105.37	-9.59	95.78	114.00	-18.22	peak			
2		3833.333	52.40	-5.84	46.56	74.00	-27.44	peak			
3		5091.667	48.62	-1.80	46.82	74.00	-27.18	peak			
4	*	2480.000	98.77	-9.59	89.18	94.00	-4.82	AVG	100	350	

RESULT: PASS

RADIATED EMISSION TEST- (ABOVE 1GHZ)-HIGH CHANNEL- VERTICAL



Site: site #1 Polarization: *Vertical* Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK)- Power: Humidity: 60 %
EUT: Wireless Blood Pressure Wrist Monitor Distance: 3m
M/N: BP7S
Mode: High Channel TX
Note:

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2480.000	105.37	-9.59	95.78	114.00	-18.22	peak			
2		3616.667	52.97	-7.17	45.80	74.00	-28.20	peak			
3		4733.333	48.39	-2.50	45.89	74.00	-28.11	peak			
4	*	2480.000	99.17	-9.59	89.58	94.00	-4.42	AVG	100	210	

RESULT: PASS

Note: 6~25GHz at least have 20dB margin. No recording in the test report.
Factor=Antenna Factor + Cable loss - Amplifier gain, Margin=Measurement-Limit.
The “Factor” value can be calculated automatically by software of measurement system.

Field strength of the fundamental signal

Peak value

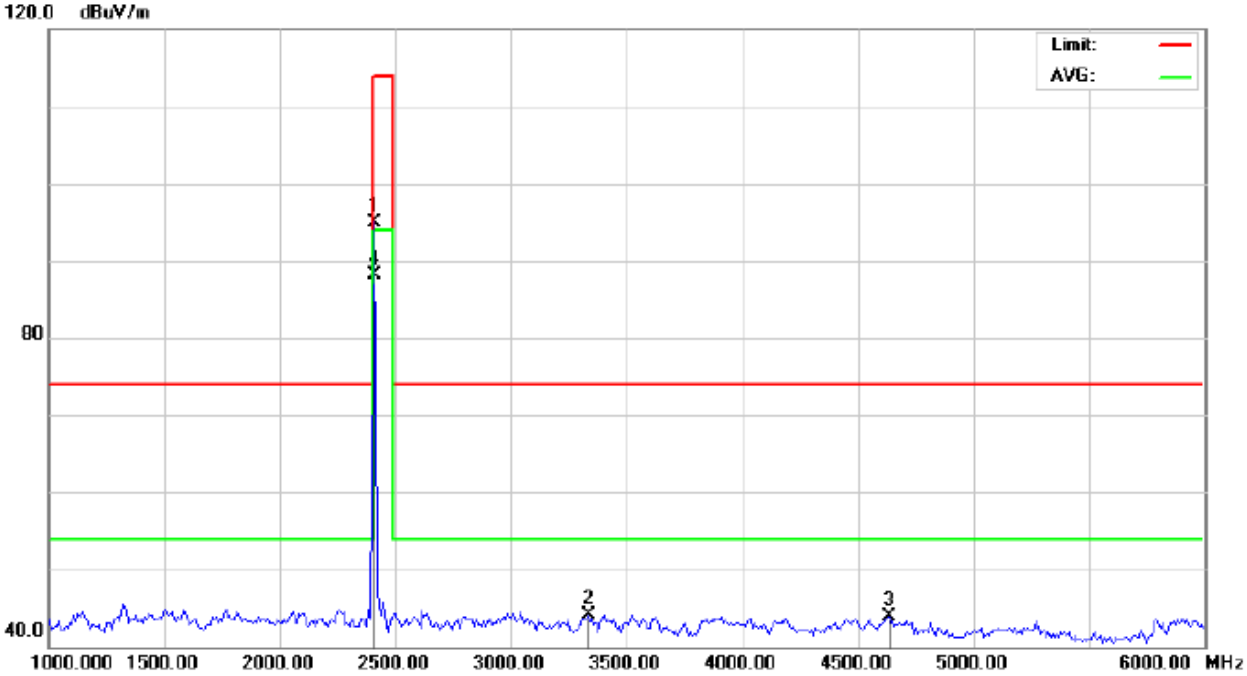
Frequency	Reading Level	Factor	Measurement	Limit	Over	Antenna
(MHz)	(dBuv)	(dB/m)	(dBuv/m)	(dBuv/m)	(dB)	Polarization
2402	105.73	-9.68	96.05	114	-17.95	Horizontal
2402	105.65	-9.68	95.97	114	-18.03	Vertical
2441	105.29	-9.63	95.66	114	-18.34	Horizontal
2441	105.23	-9.63	95.60	114	-18.40	Vertical
2480	105.37	-9.59	95.78	114	-18.22	Horizontal
2480	105.37	-9.59	95.78	114	-18.22	Vertical

Average value

Frequency	Reading Level	Factor	Measurement	Limit	Over	Antenna
(MHz)	(dBuv)	(dB/m)	(dBuv/m)	(dBuv/m)	(dB)	Polarization
2402	99.13	-9.68	89.45	94	-4.55	Horizontal
2402	98.39	-9.68	88.71	94	-5.29	Vertical
2441	-9.63	-9.63	89.04	94	-4.96	Horizontal
2441	98.91	-9.63	89.28	94	-4.72	Vertical
2480	98.77	-9.59	89.18	94	-4.82	Horizontal
2480	99.17	-9.59	89.58	94	-4.42	Vertical

FOR BLE

RADIATED EMISSION TEST- (ABOVE 1GHZ)-LOW CHANNEL-HORIZONTAL

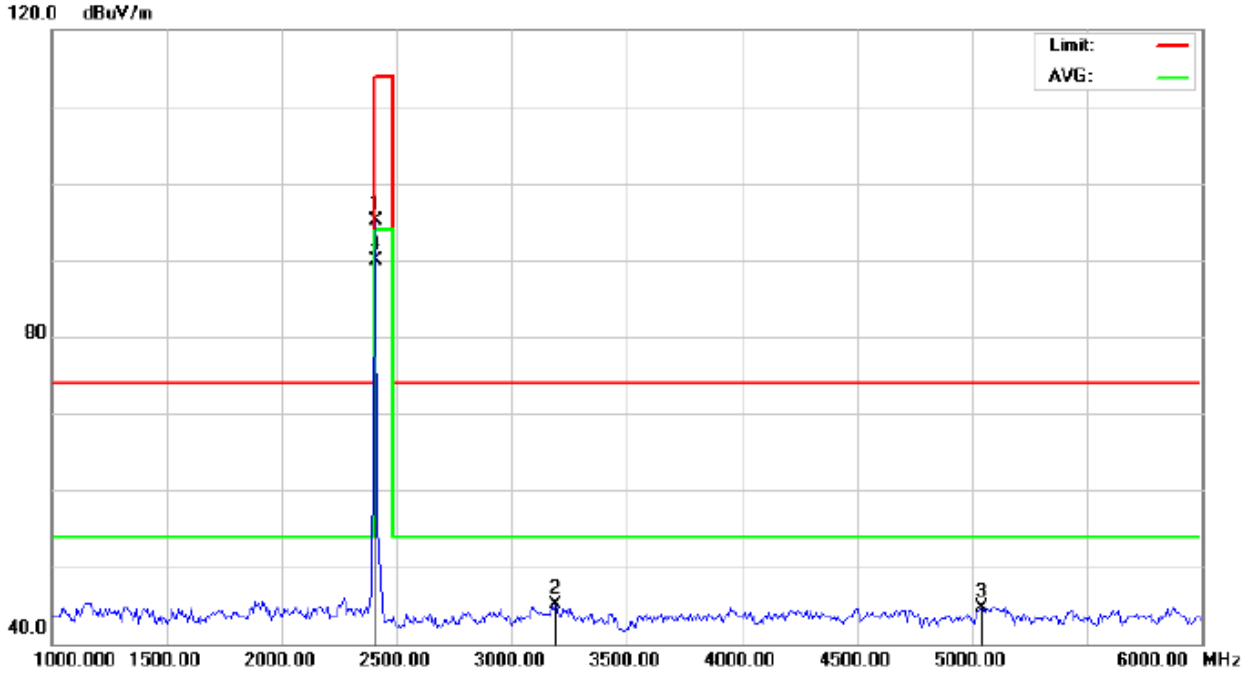


Site: site #1 Polarization: *Horizontal* Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK)- Power: Humidity: 60 %
EUT: Wireless Blood Pressure Wrist Monitor Distance: 3m
M/N: BP7S
Mode: Low Channel TX
Note:

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2402.000	104.59	-9.68	94.91	114.00	-19.09	peak			
2		3333.333	52.17	-8.05	44.12	74.00	-29.88	peak			
3		4633.333	46.57	-2.76	43.81	74.00	-30.19	peak			
4	*	2402.000	97.87	-9.68	88.19	94.00	-5.81	AVG	100	102	

RESULT: PASS

RADIATED EMISSION TEST- (ABOVE 1GHZ)-LOW CHANNEL- VERTICAL

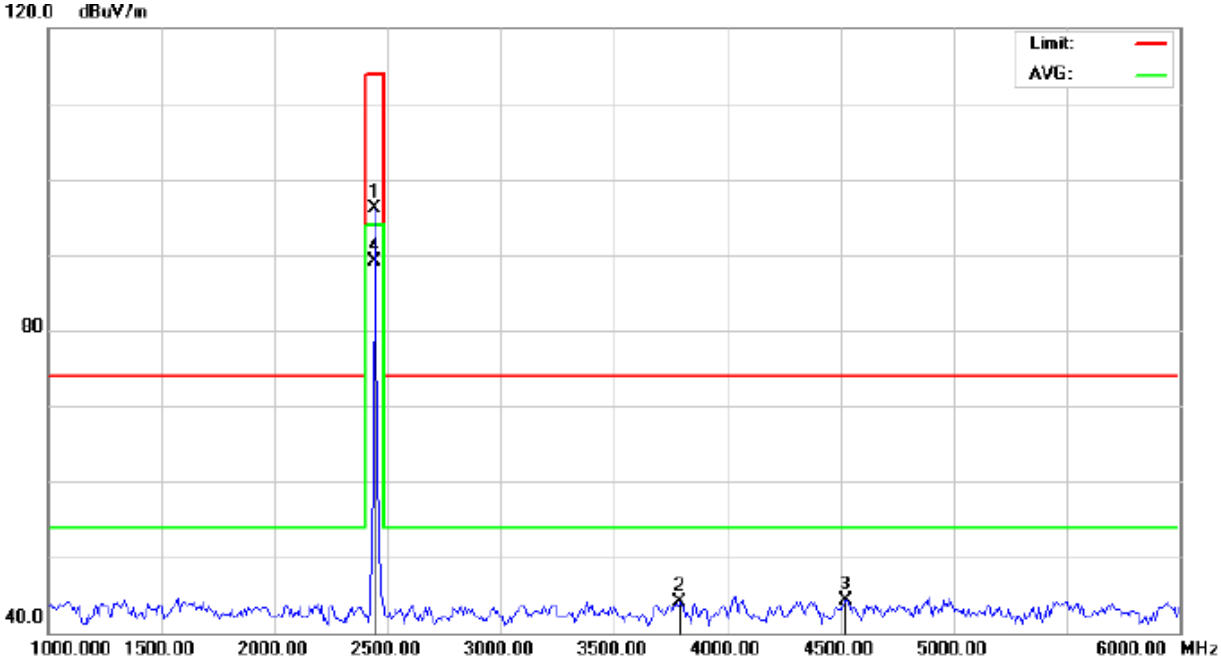


Site: site #1 Polarization: *Vertical* Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK)- Power: Humidity: 60 %
EUT: Wireless Blood Pressure Wrist Monitor Distance: 3m
M/N: BP7S
Mode: Low Channel TX
Note:

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2402.000	104.73	-9.68	95.05	114.00	-18.95	peak			
2		3191.667	53.23	-8.18	45.05	74.00	-28.95	peak			
3		5041.667	46.43	-1.80	44.63	74.00	-29.37	peak			
4	*	2402.000	99.67	-9.68	89.99	94.00	-4.01	AVG	100	256	

RESULT: PASS

RADIATED EMISSION TEST- (ABOVE 1GHZ)-MIDDLE CHANNEL-HORIZONTAL

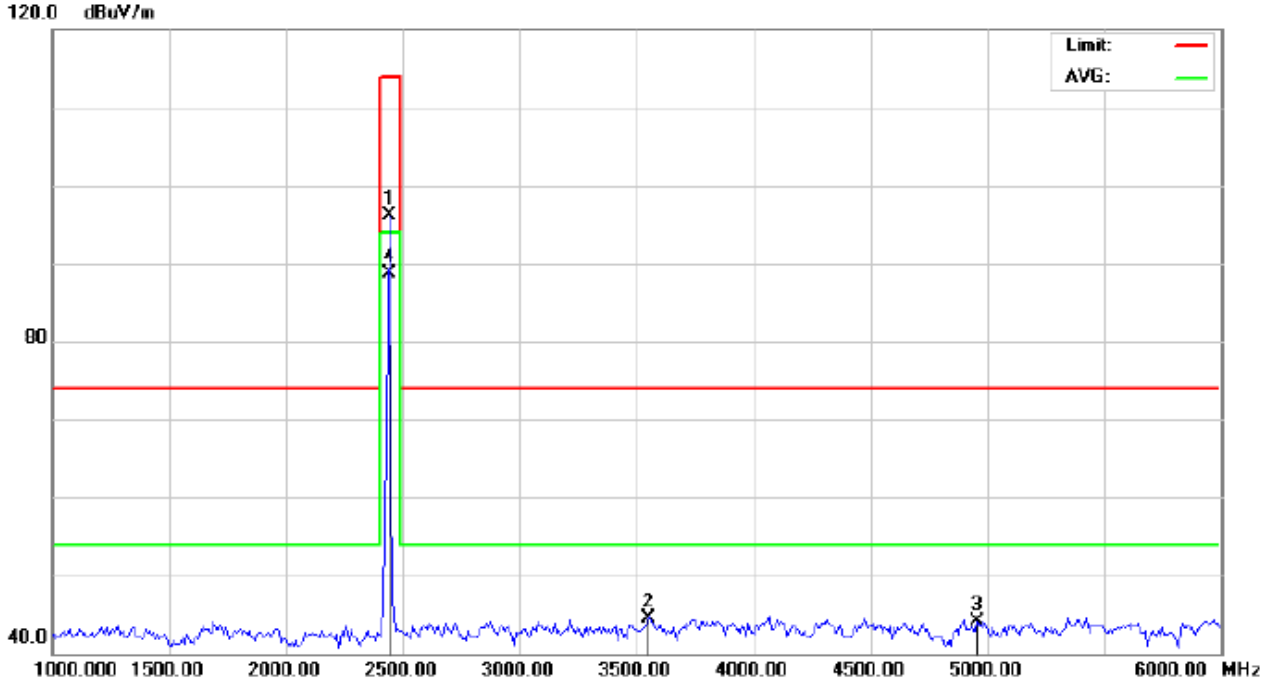


Site: site #1	Polarization: ***Horizontal***	Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK)-	Power:	Humidity: 60 %
EUT: Wireless Blood Pressure Wrist Monitor	Distance: 3m	
M/N: BP7S		
Mode: Middle Channel TX		
Note:		

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2440.000	105.80	-9.64	96.16	114.00	-17.84	peak			
2		3791.667	50.14	-6.09	44.05	74.00	-29.95	peak			
3		4525.000	47.29	-3.04	44.25	74.00	-29.75	peak			
4	*	2440.000	98.79	-9.64	89.15	94.00	-4.85	AVG	100	103	

RESULT: PASS

RADIATED EMISSION TEST- (ABOVE 1GHZ)-MIDDLE CHANNEL- VERTICAL

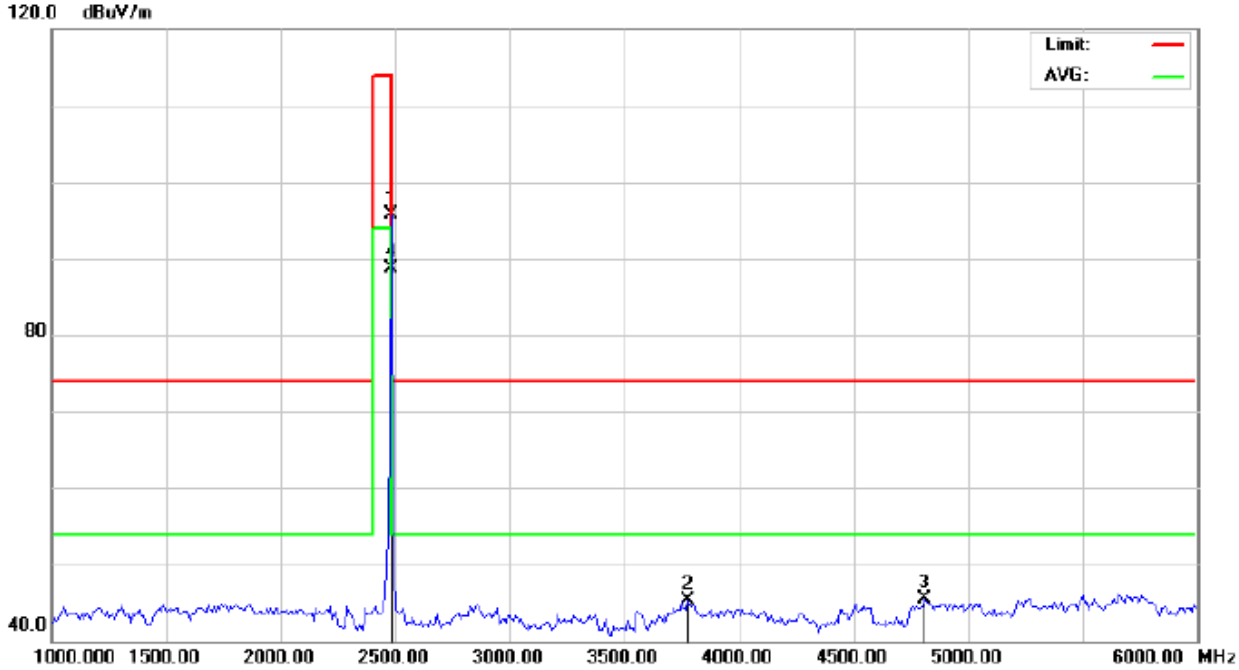


Site: site #1 Polarization: *Vertical* Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK)- Power: Humidity: 60 %
EUT: Wireless Blood Pressure Wrist Monitor Distance: 3m
M/N: BP7S
Mode: Middle Channel TX
Note:

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2440.000	105.74	-9.64	96.10	114.00	-17.90	peak			
2		3550.000	52.08	-7.58	44.50	74.00	-29.50	peak			
3		4958.333	46.08	-1.91	44.17	74.00	-29.83	peak			
4	*	2440.000	98.39	-9.64	88.75	94.00	-5.25	AVG	100	261	

RESULT: PASS

RADIATED EMISSION TEST- (ABOVE 1GHZ)-HIGH CHANNEL-HORIZONTAL



Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)-
EUT: Wireless Blood Pressure Wrist Monitor
M/N: BP7S
Mode: High Channel TX
Note:

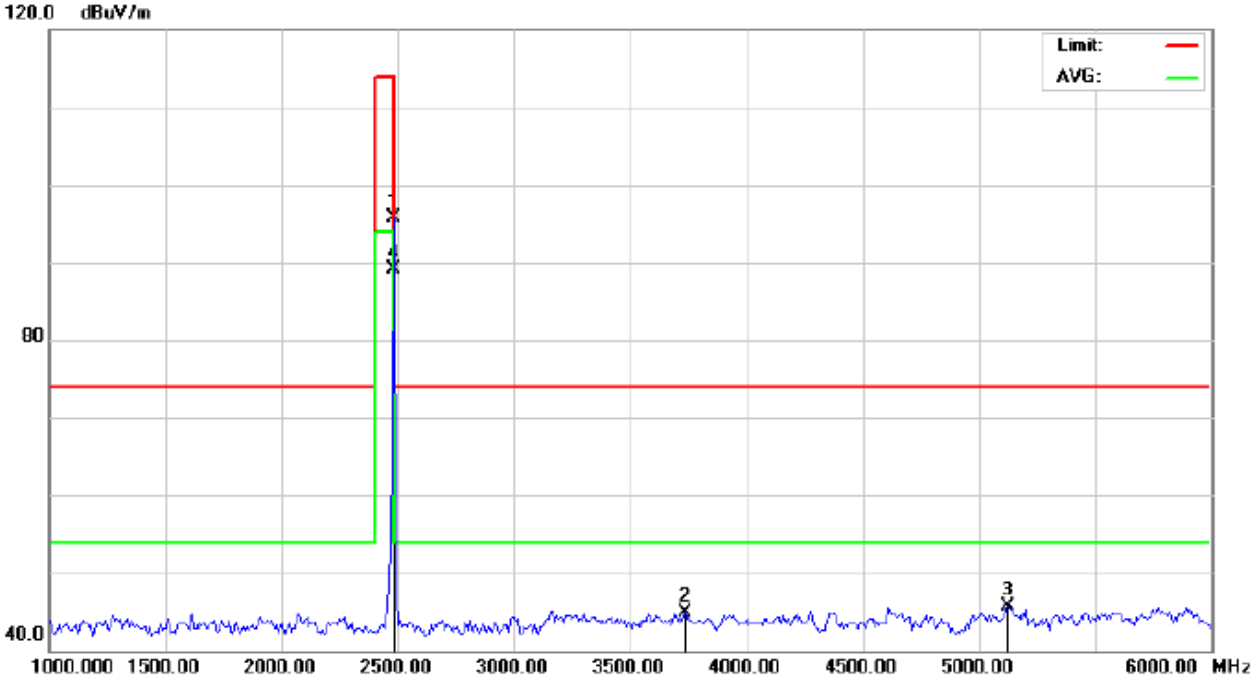
Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2480.000	105.37	-9.59	95.78	114.00	-18.22	peak			
2		3775.000	51.49	-6.20	45.29	74.00	-28.71	peak			
3		4808.333	47.76	-2.30	45.46	74.00	-28.54	peak			
4	*	2480.000	98.38	-9.59	88.79	94.00	-5.21	AVG	100	105	

RESULT: PASS

RADIATED EMISSION TEST- (ABOVE 1GHZ)-HIGH CHANNEL- VERTICAL



Site: site #1 | Polarization: *Vertical* | Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK)- | Power: | Humidity: 60 %
EUT: Wireless Blood Pressure Wrist Monitor | Distance: 3m
M/N: BP7S
Mode: High Channel TX
Note:

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2480.000	105.37	-9.59	95.78	114.00	-18.22	peak			
2		3733.333	51.45	-6.45	45.00	74.00	-29.00	peak			
3		5125.000	47.56	-1.80	45.76	74.00	-28.24	peak			
4	*	2480.000	98.65	-9.59	89.06	94.00	-4.94	AVG	100	258	

RESULT: PASS

Note: 6~25GHz at least have 20dB margin. No recording in the test report.
Factor=Antenna Factor + Cable loss - Amplifier gain, Margin=Measurement-Limit.
The “Factor” value can be calculated automatically by software of measurement system.

Field strength of the fundamental signal

Peak value

Frequency	Reading Level	Factor	Measurement	Limit	Over	Antenna
(MHz)	(dBuv)	(dB/m)	(dBuv/m)	(dBuv/m)	(dB)	Polarization
2402	104.59	-9.68	94.91	114	-19.09	Horizontal
2402	104.73	-9.68	95.05	114	-18.95	Vertical
2440	105.80	-9.64	96.16	114	-17.84	Horizontal
2440	105.74	-9.64	96.10	114	-17.90	Vertical
2480	105.37	-9.59	95.78	114	-18.22	Horizontal
2480	105.37	-9.59	95.78	114	-18.22	Vertical

Average value

Frequency	Reading Level	Factor	Measurement	Limit	Over	Antenna
(MHz)	(dBuv)	(dB/m)	(dBuv/m)	(dBuv/m)	(dB)	Polarization
2402	97.87	-9.68	88.19	94	-5.81	Horizontal
2402	99.67	-9.68	89.99	94	-4.01	Vertical
2440	98.79	-9.64	89.15	94	-4.85	Horizontal
2440	98.39	-9.64	88.75	94	-5.25	Vertical
2480	98.38	-9.59	88.79	94	-5.21	Horizontal
2480	98.65	-9.59	89.06	94	-4.94	Vertical

9. BAND EDGE EMISSION

9.1. MEASUREMENT PROCEDURE

1The EUT operates at hopping-off test mode. The lowest or highest channels are tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.

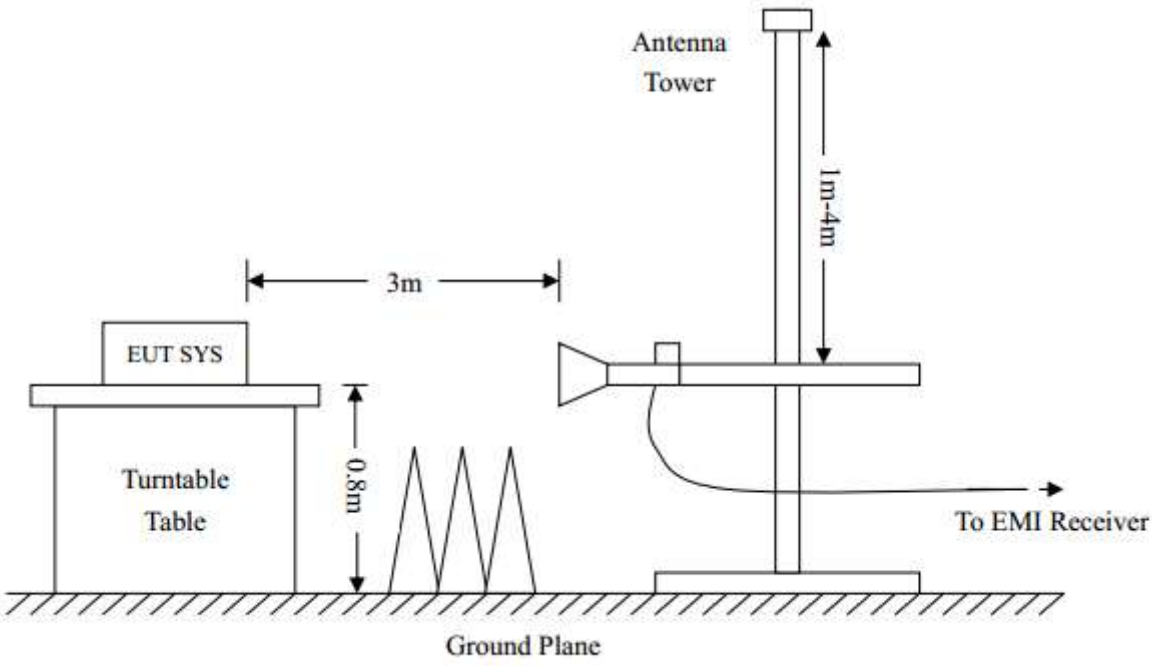
2Max hold the trace of the setp 1,and the EUT operates at hopping-on test mode to verify the largest spurious emissions power.

3Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission: (a) PEAK: RBW=VBW=1.5MHz / Sweep=AUTO

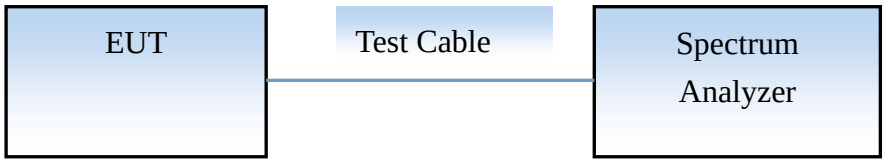
(b) AVERAGE: RBW=1.5MHz ; VBW=1/on time(1KHz) / Sweep=AUTO

9.2 TEST SETUP

RADIATED EMISSION TEST SETUP



CONDUCTED TEST SETUP

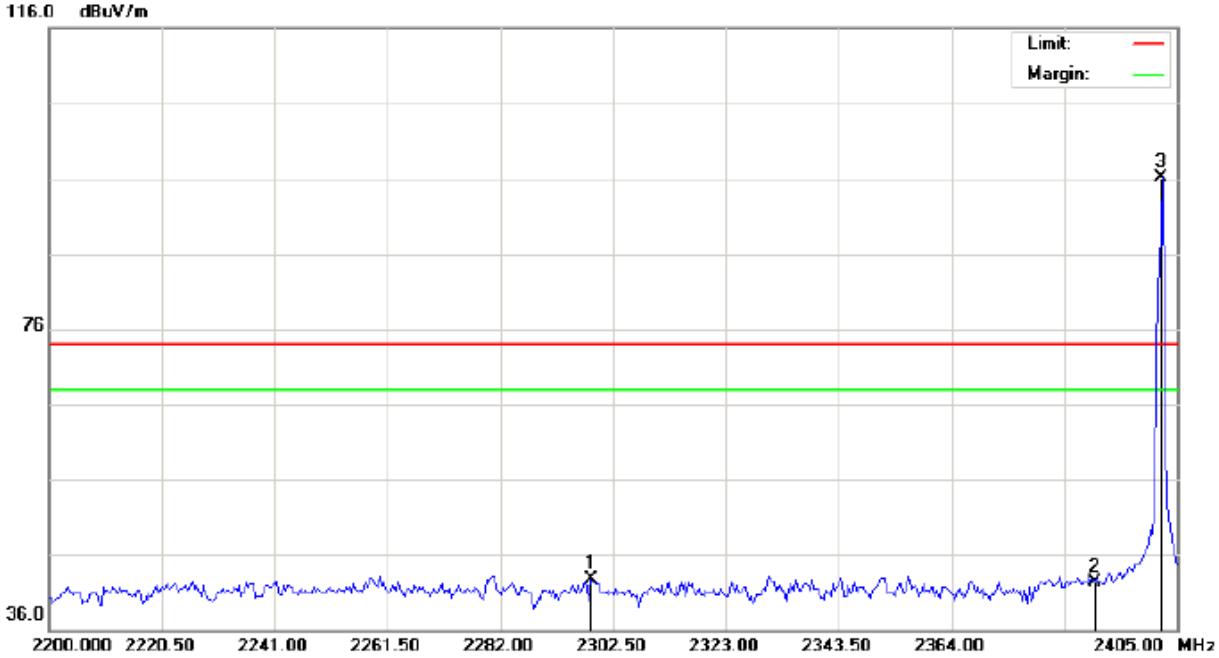


9.3 RADIATED TEST RESULT

(Worst modulation: GFSK)

FOR BR/EDR BLEUTOOTH

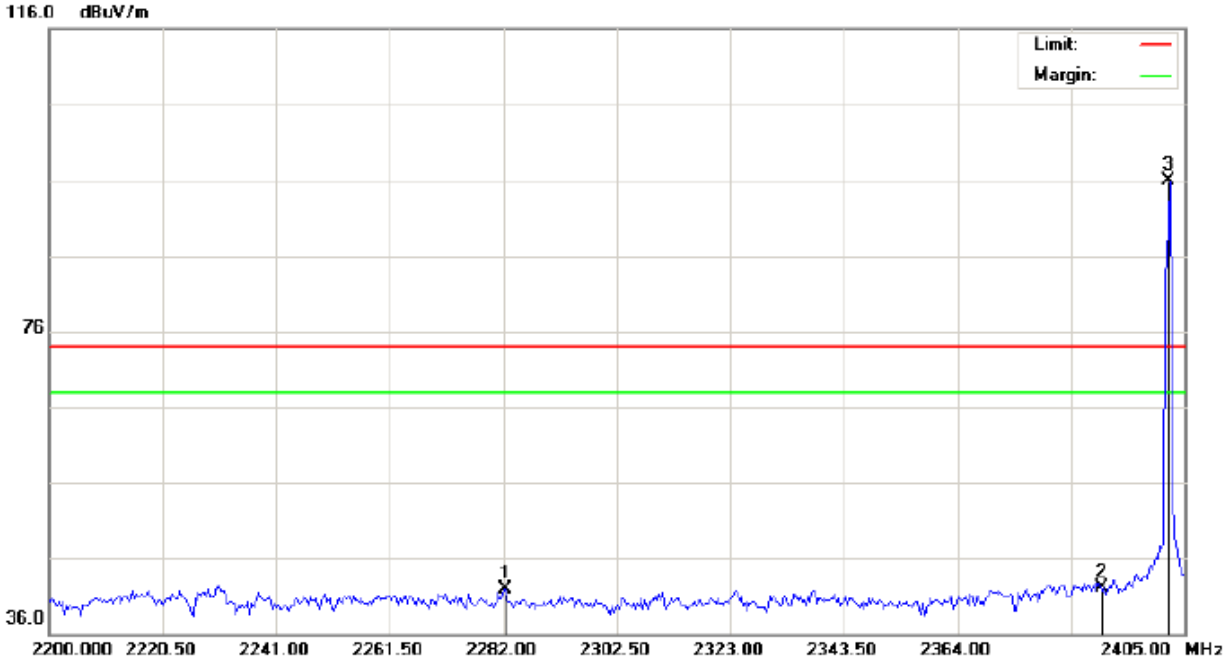
TEST PLOT OF BAND EDGE FOR LOW CHANNEL-Horizontal



Site: site #1 | Polarization: *Horizontal* | Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) | Power: | Humidity: 60 %
EUT: Wireless Blood Pressure Wrist Monitor | Distance:
M/N: BP7S
Mode: Low Channel TX
Note:

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2298.400	32.53	10.21	42.74	74.00	-31.26	peak			
2		2390.000	32.00	10.31	42.31	74.00	-31.69	peak			
3	*	2402.000	85.72	10.32	96.04	74.00	22.04	peak			

TEST PLOT OF BAND EDGE FOR LOW CHANNEL –Vertical



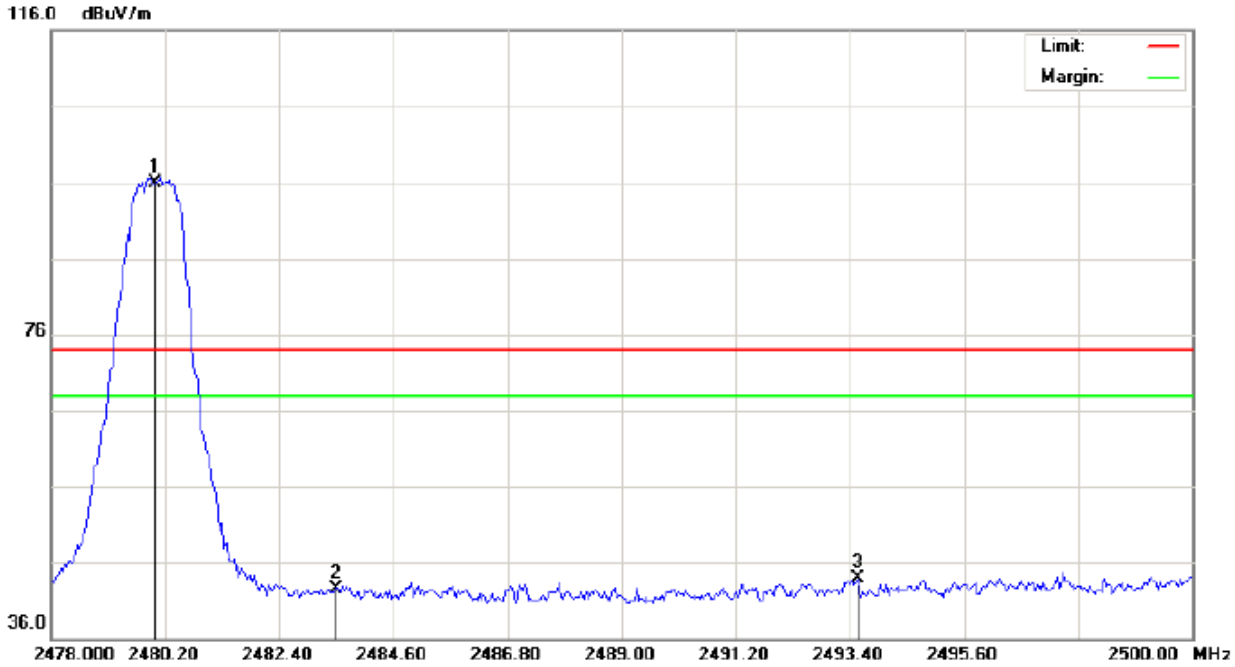
Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: Wireless Blood Pressure Wrist Monitor
M/N: BP7S
Mode: Low Channel TX
Note:

Polarization: *Vertical*
Power:
Distance:

Temperature: 26
Humidity: 60 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	.	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2282.342	31.70	10.19	41.89	74.00	-32.11	peak			
2		2390.000	31.71	10.31	42.02	74.00	-31.98	peak			
3	*	2402.000	85.59	10.32	95.91	74.00	21.91	peak			

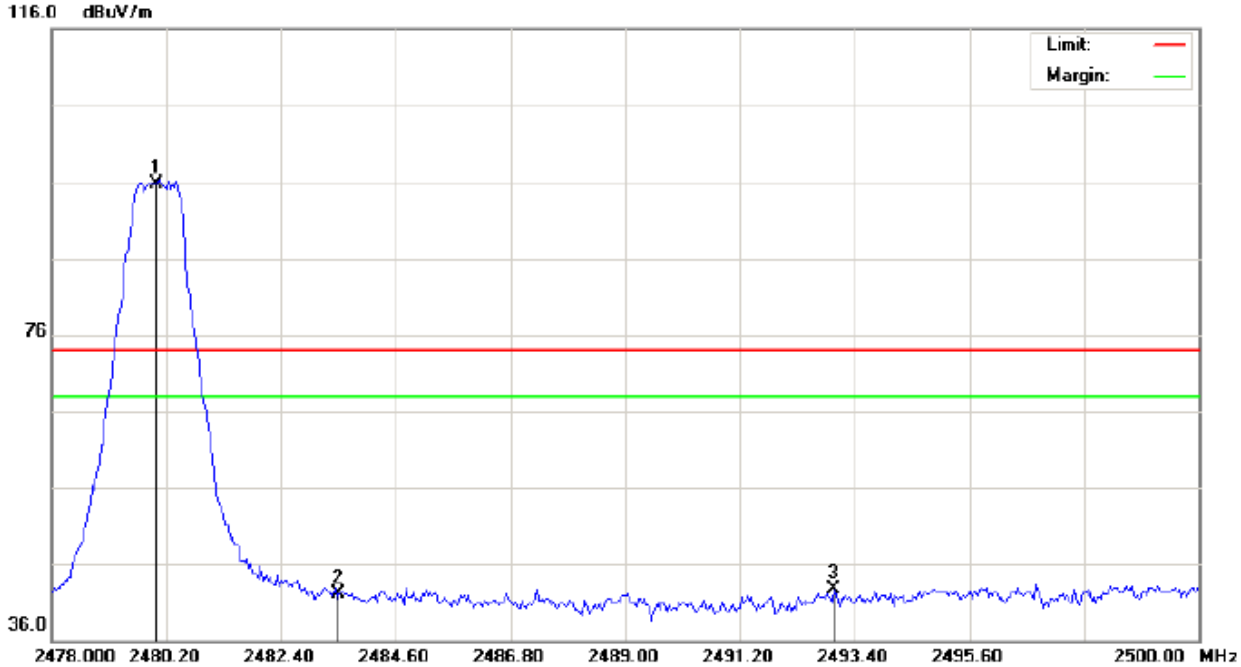
TEST PLOT OF BAND EDGE FOR HIGH CHANNEL -Horizontal



Site: site #1 Polarization: ***Horizontal*** Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %
EUT: Wireless Blood Pressure Wrist Monitor Distance:
M/N: BP7S
Mode: High Channel TX
Note:

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2480.000	85.55	10.41	95.96	74.00	21.96	peak			
2		2483.500	32.19	10.41	42.60	74.00	-31.40	peak			
3		2493.547	33.56	10.42	43.98	74.00	-30.02	peak			

TEST PLOT OF BAND EDGE FOR HIGH CHANNEL-Vertical



Site: site #1 Polarization: *Vertical* Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %
EUT: Wireless Blood Pressure Wrist Monitor Distance:
M/N: BP7S
Mode: High Channel TX
Note:

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2480.000	85.32	10.41	95.73	74.00	21.73	peak			
2		2483.500	31.76	10.41	42.17	74.00	-31.83	peak			
3		2492.997	32.29	10.42	42.71	74.00	-31.29	peak			

RESULT: PASS

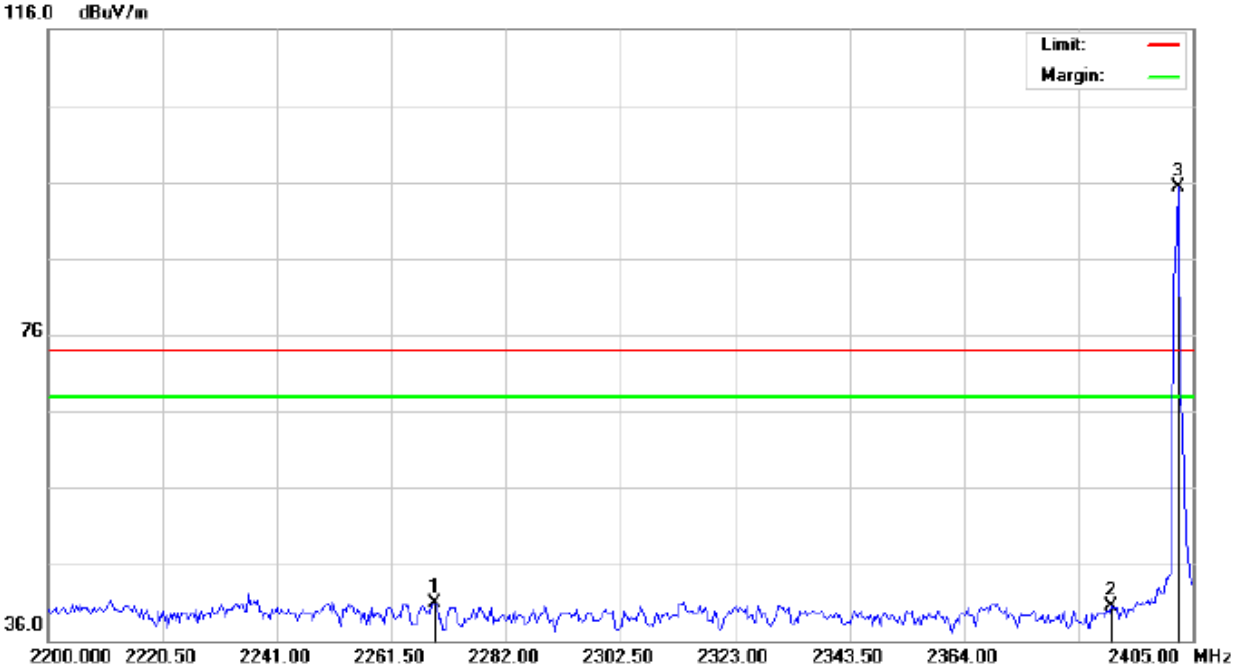
Note: The other modes radiation emission have enough 20dB margin.

Factor=Antenna Factor + Cable loss - Amplifier gain, Over=Measure-Limit.

The “Factor” value can be calculated automatically by software of measurement system.

FOR BLE

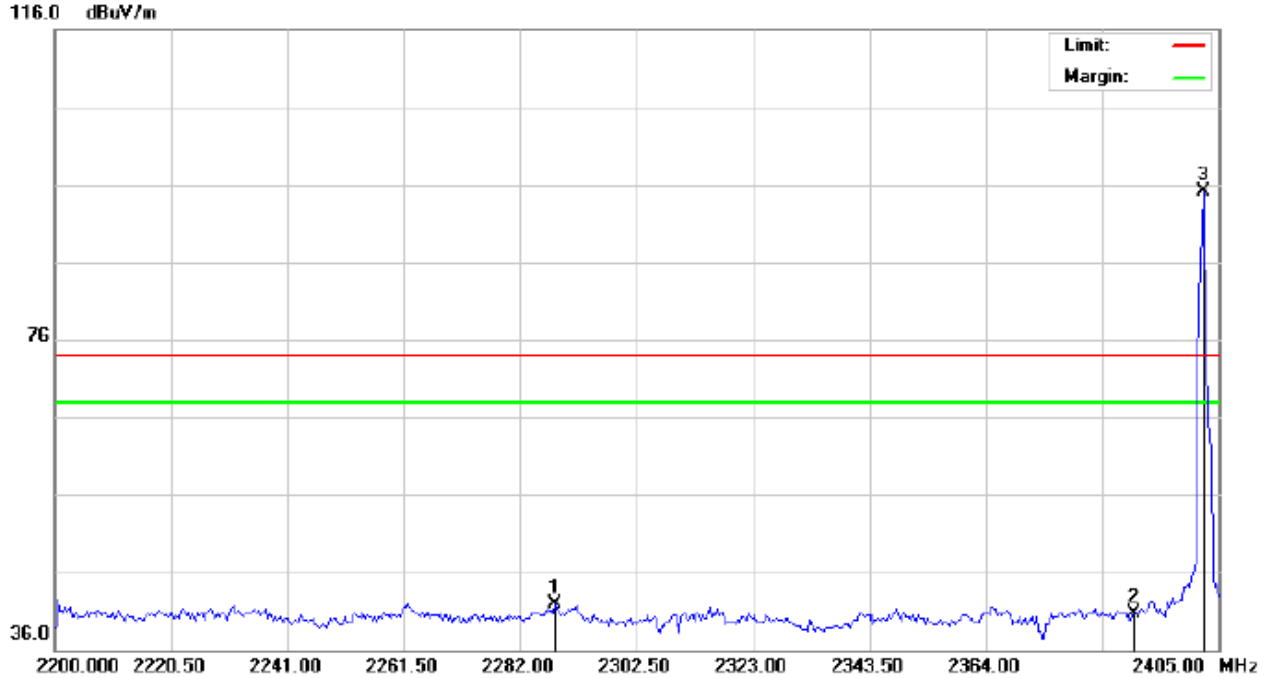
TEST PLOT OF BAND EDGE FOR LOW CHANNEL-Horizontal



Site: site #1 Polarization: ***Horizontal*** Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %
EUT: Wireless Blood Pressure Wrist Monitor Distance:
M/N: BP7S
Mode: Low Channel TX
Note:

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2269.358	30.68	10.18	40.86	74.00	-33.14	peak			
2		2390.000	30.12	10.31	40.43	74.00	-33.57	peak			
3	*	2402.000	84.91	10.32	95.23	74.00	21.23	peak			

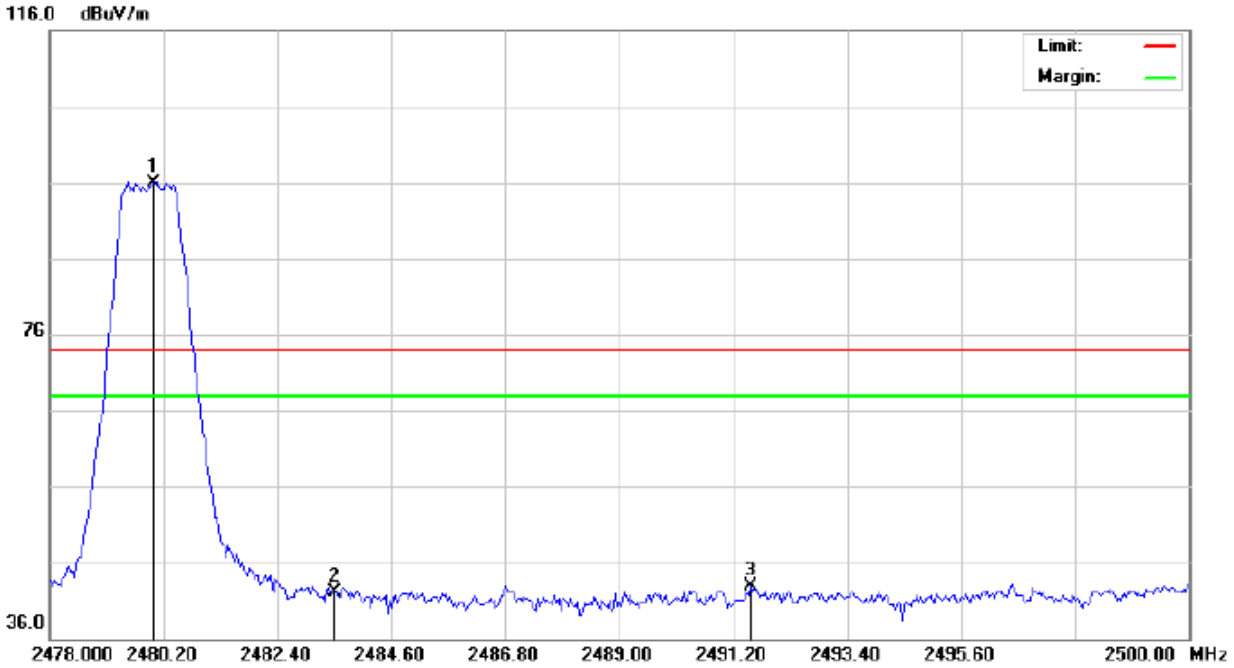
TEST PLOT OF BAND EDGE FOR LOW CHANNEL –Vertical



Site: site #1 Polarization: *Vertical* Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %
EUT: Wireless Blood Pressure Wrist Monitor Distance:
M/N: BP7S
Mode: Low Channel TX
Note:

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2288.150	31.66	10.20	41.86	74.00	-32.14	peak			
2		2390.000	30.35	10.31	40.66	74.00	-33.34	peak			
3	*	2402.000	84.76	10.32	95.08	74.00	21.08	peak			

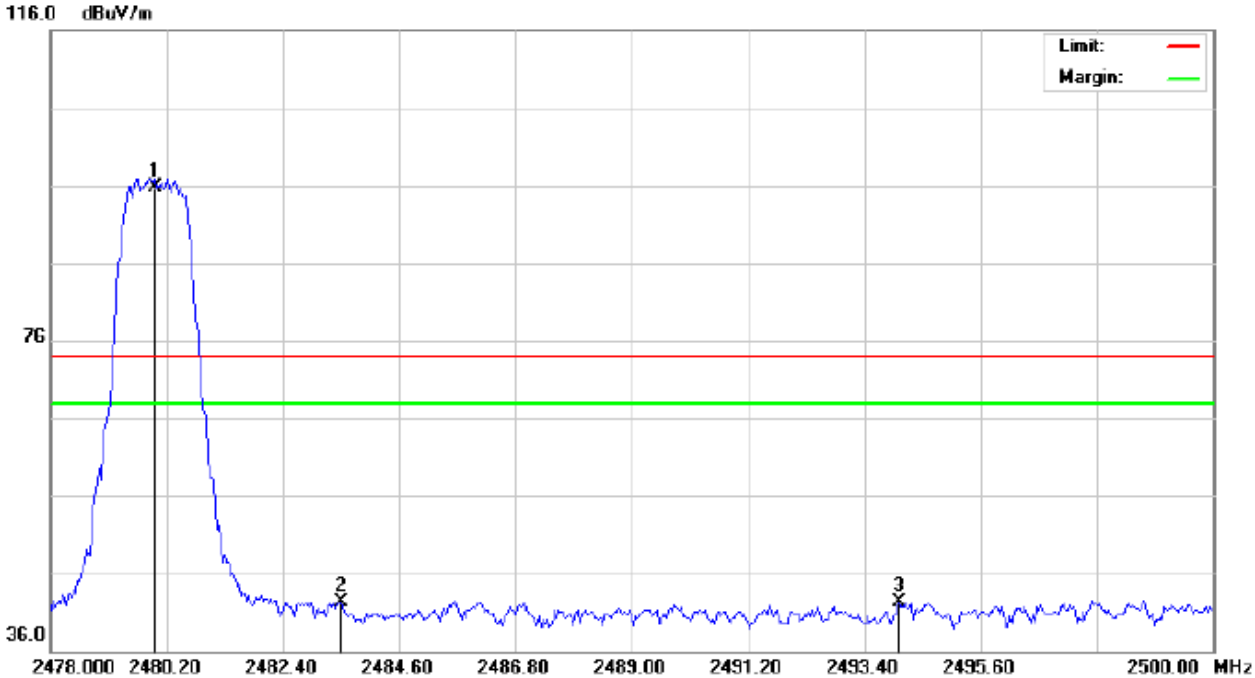
TEST PLOT OF BAND EDGE FOR HIGH CHANNEL -Horizontal



Site: site #1 Polarization: *Horizontal* Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %
EUT: Wireless Blood Pressure Wrist Monitor Distance:
M/N: BP7S
Mode: High Channel TX
Note:

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2480.000	85.46	10.41	95.87	74.00	21.87	peak			
2		2483.500	31.75	10.41	42.16	74.00	-31.84	peak			
3		2491.530	32.41	10.42	42.83	74.00	-31.17	peak			

TEST PLOT OF BAND EDGE FOR HIGH CHANNEL-Vertical



Site: site #1	Polarization: ***Vertical***	Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK)	Power:	Humidity: 60 %
EUT: Wireless Blood Pressure Wrist Monitor	Distance:	
M/N: BP7S		
Mode: High Channel TX		
Note:		

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2480.000	85.35	10.41	95.76	74.00	21.76	peak			
2		2483.500	31.87	10.41	42.28	74.00	-31.72	peak			
3		2494.060	31.90	10.42	42.32	74.00	-31.68	peak			

RESULT: PASS

Note: The other modes radiation emission have enough 20dB margin.

Factor=Antenna Factor + Cable loss - Amplifier gain, Over=Measure-Limit.

The “Factor” value can be calculated automatically by software of measurement system.

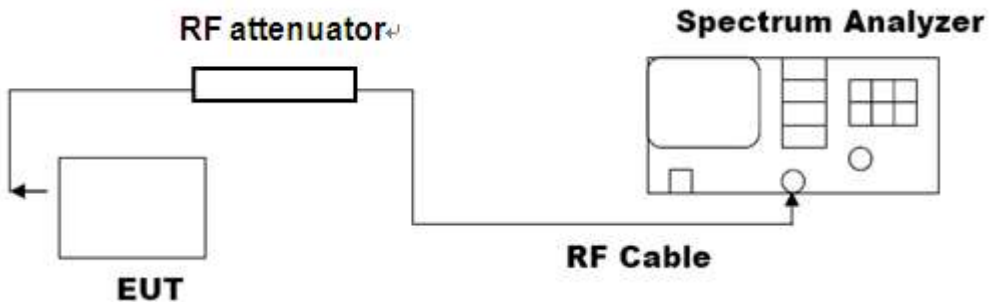
10. 20DB BANDWIDTH

10.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hoping channel
   RBW ≥ 1% of the 20 dB bandwidth, VBW ≥ RBW; Sweep = auto; Detector function = peak
4. Set SPA Trace 1 Max hold, then View.

10.2. TEST SET-UP

(BLOCK DIAGRAM OF CONFIGURATION)

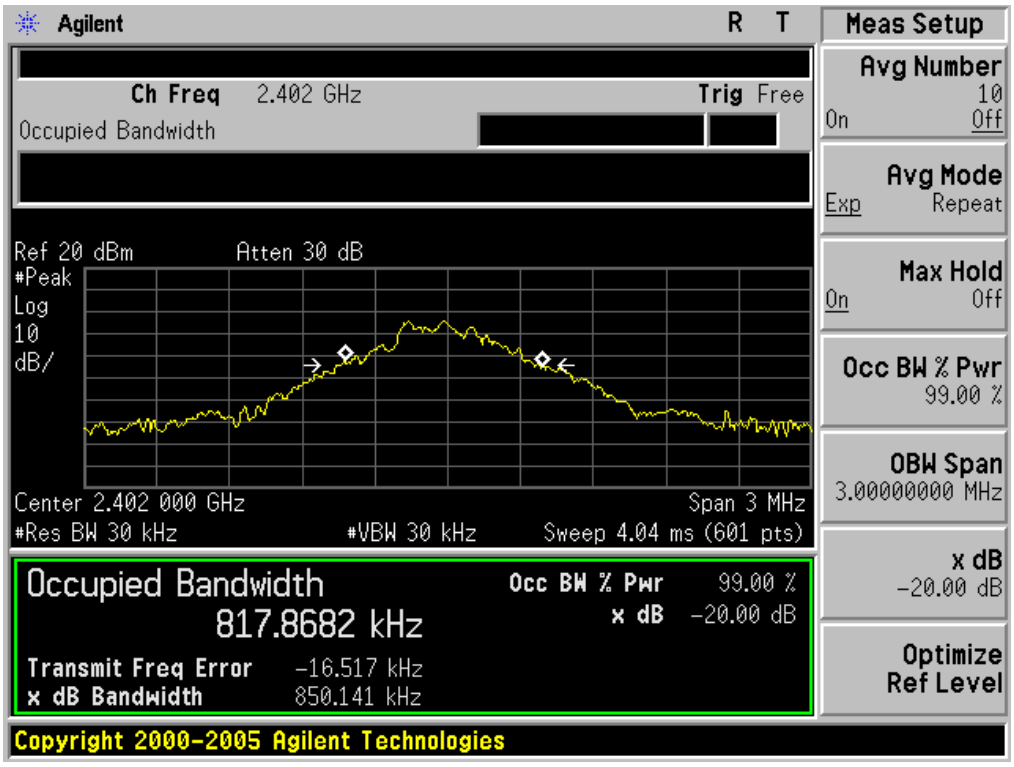


10.3. LIMITS AND MEASUREMENT RESULTS

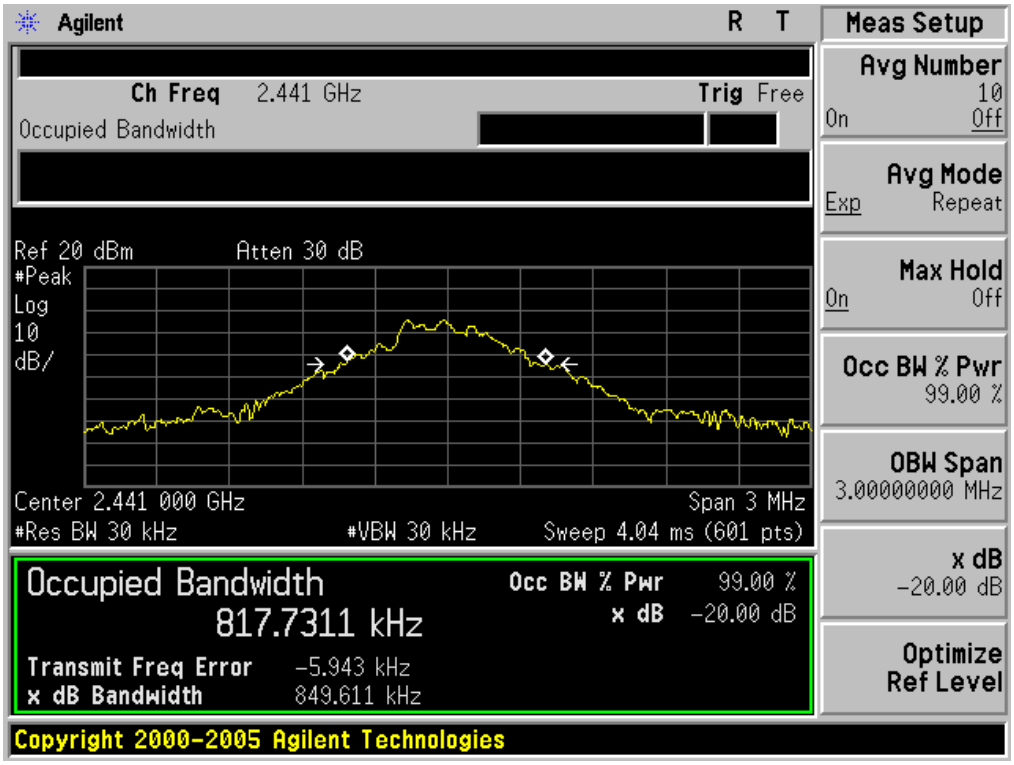
FOR BR/EDR BLUETOOTH

BLUETOOTH 1MBPS LIMITS AND MEASUREMENT RESUL			
Applicable Limits	Measurement Result		
	Test Data (MHz)		Criteria
N/A	Low Channel	0.850	PASS
	Middle Channel	0.850	PASS
	High Channel	0.851	PASS

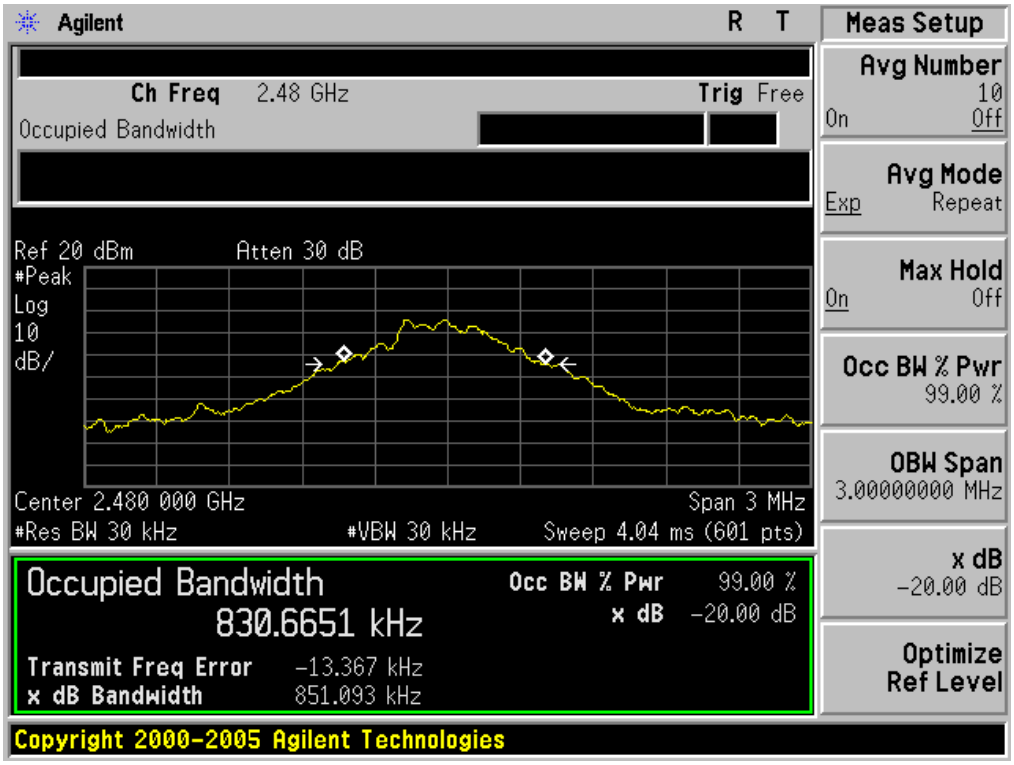
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

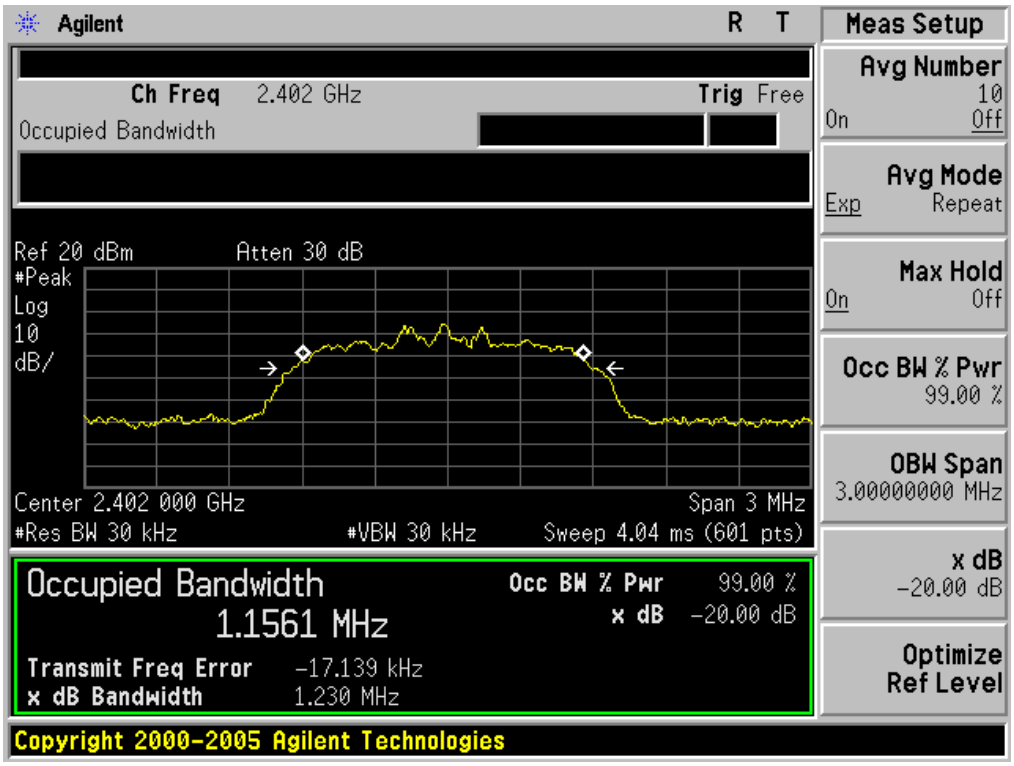


TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

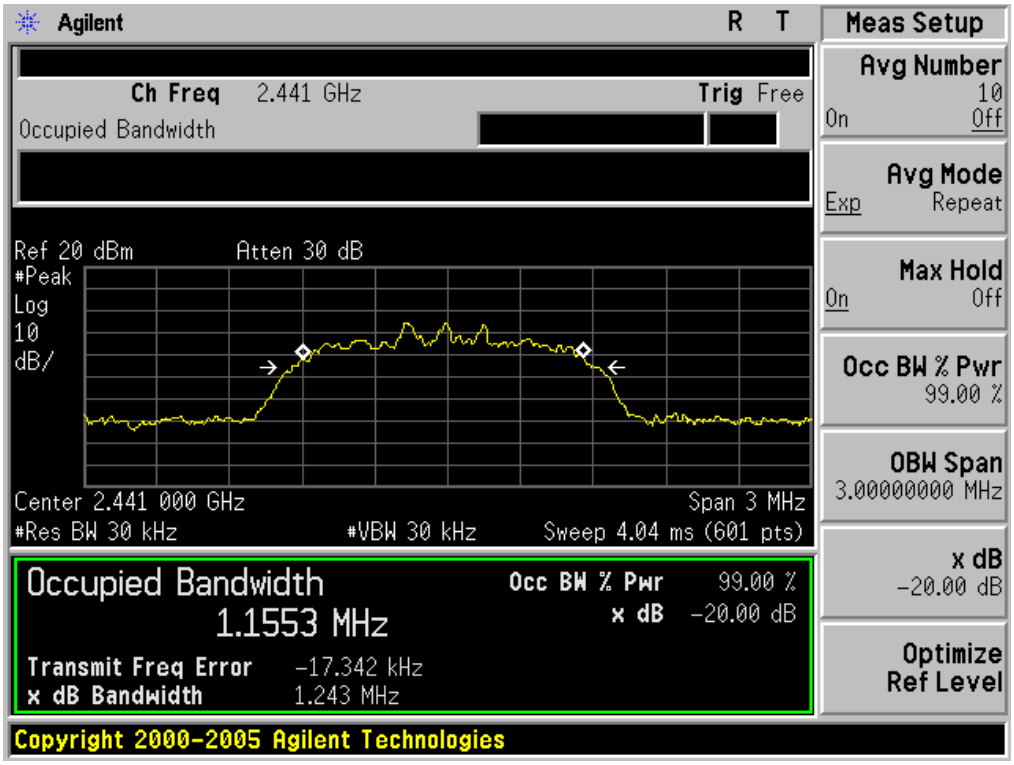


BLUETOOTH 2MBPS LIMITS AND MEASUREMENT RESUL			
Applicable Limits	**Measurement Result**		
	Test Data (MHz)		**Criteria**
N/A	Low Channel	1.230	PASS
	Middle Channel	1.243	PASS
	High Channel	1.236	PASS

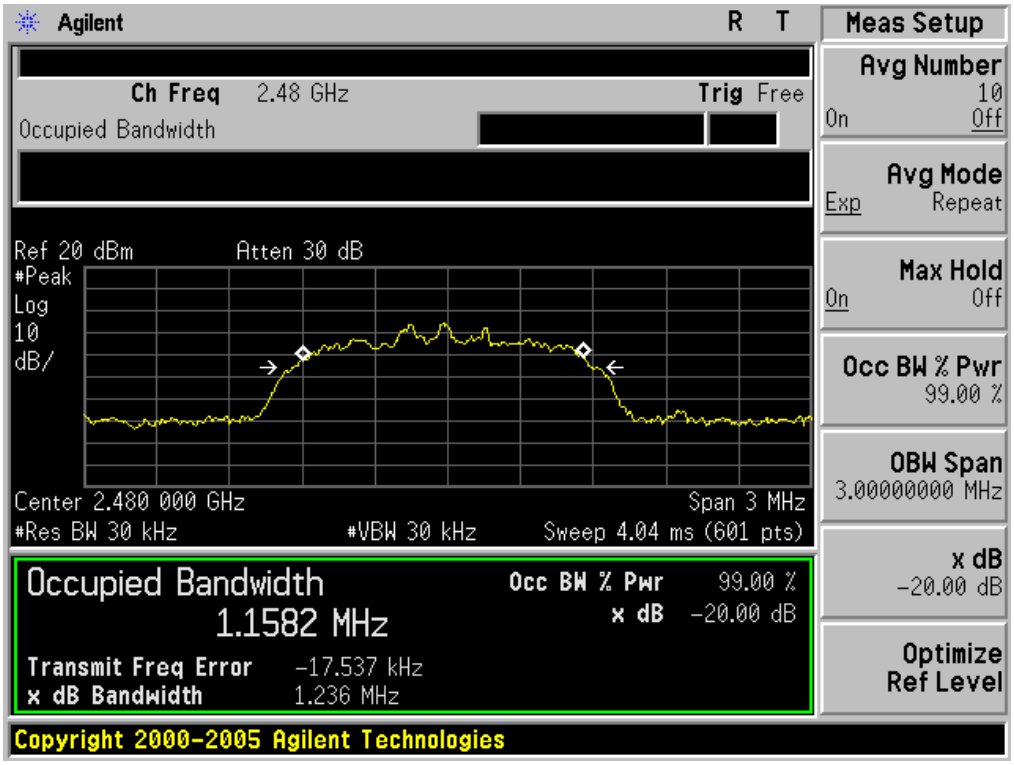
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

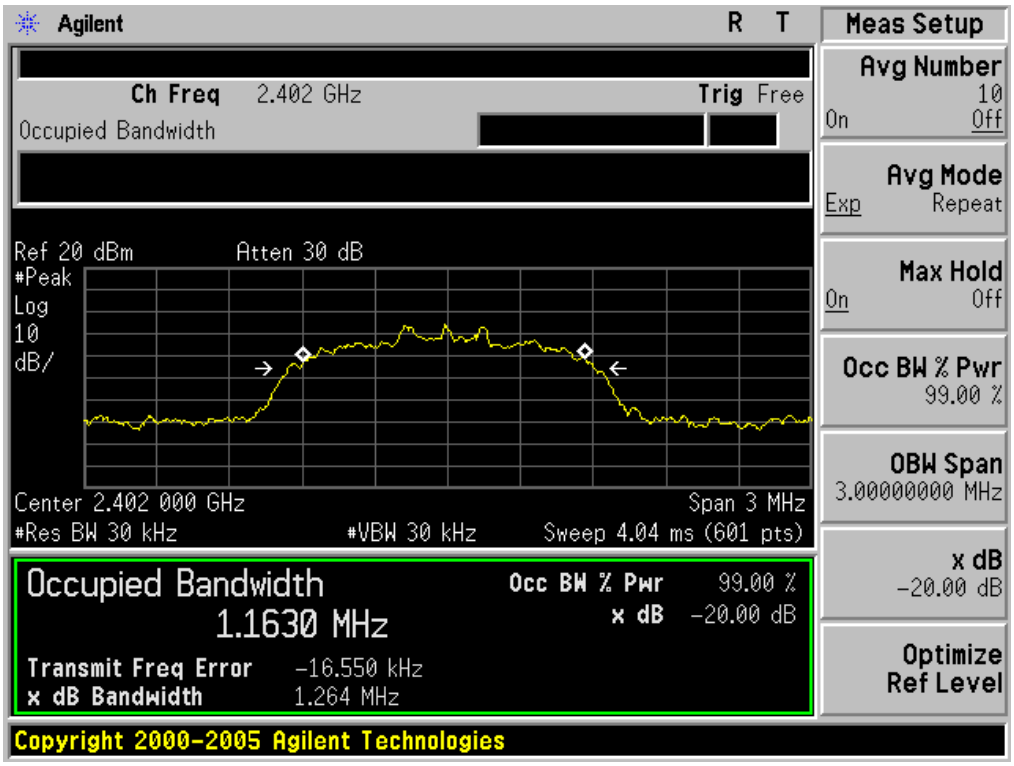


TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

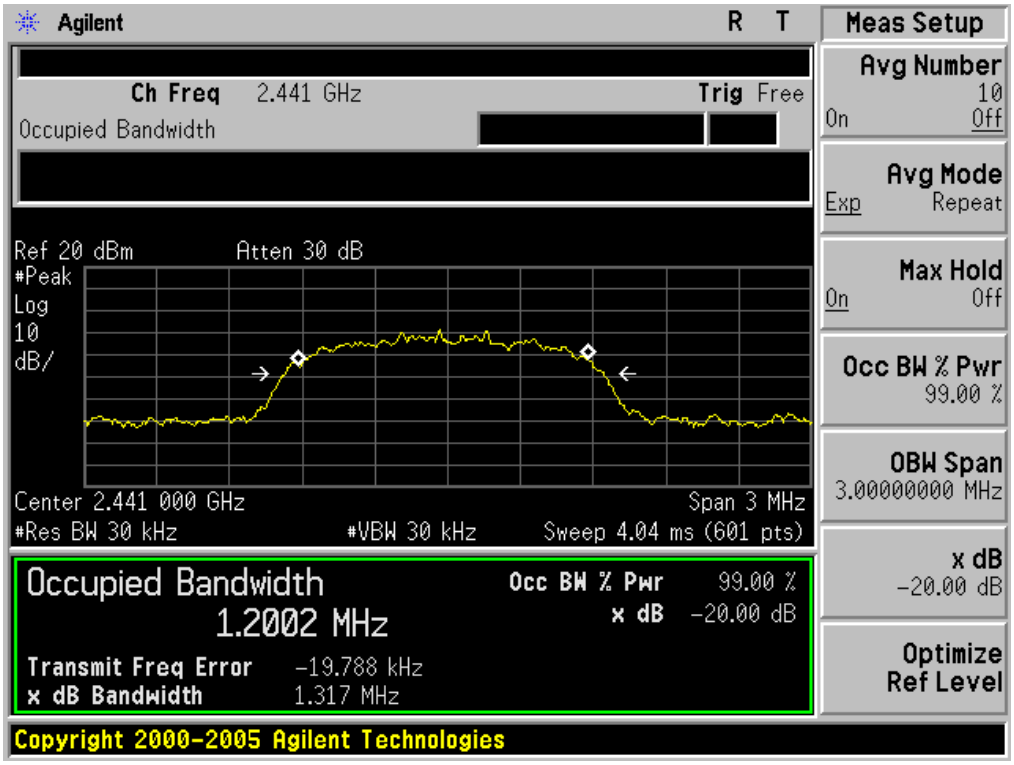


BLUETOOTH 3MBPS LIMITS AND MEASUREMENT RESUL			
Applicable Limits	Measurement Result		
	Test Data (MHz)		Criteria
N/A	Low Channel	1.264	PASS
	Middle Channel	1.317	PASS
	High Channel	1.260	PASS

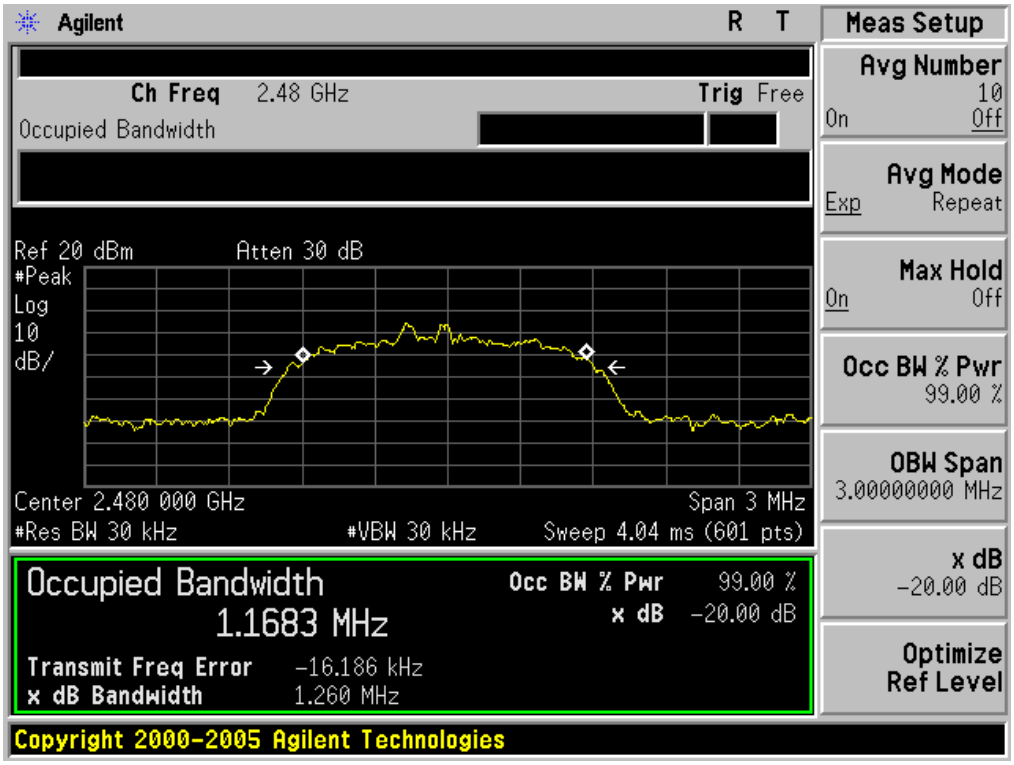
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



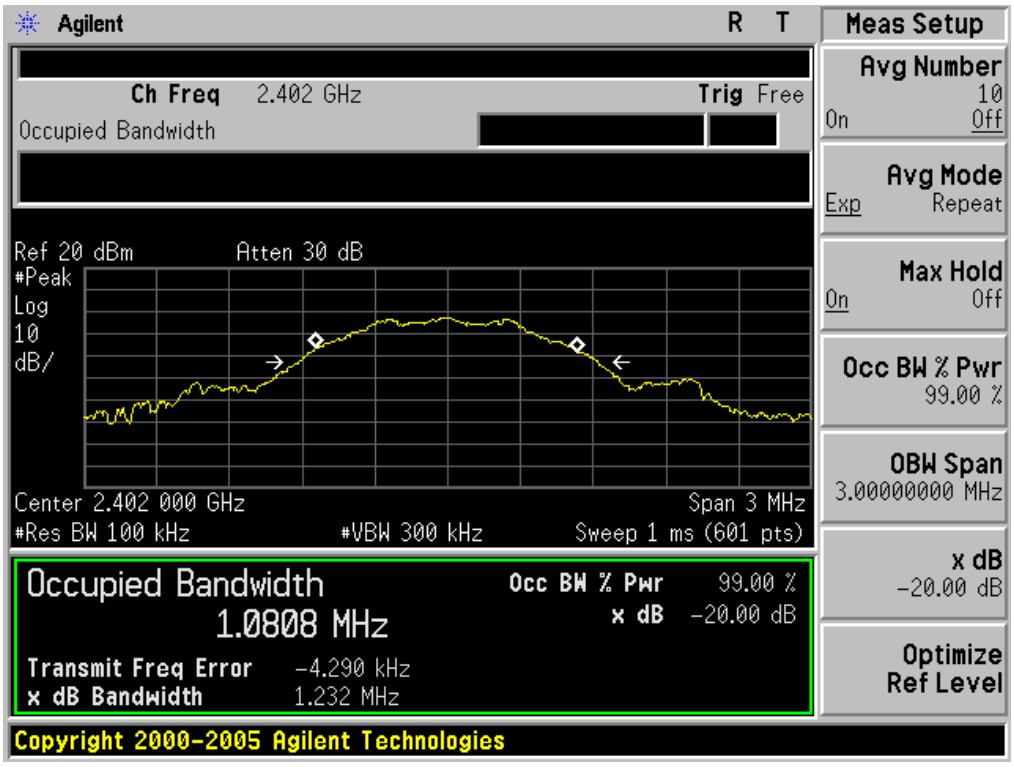
TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



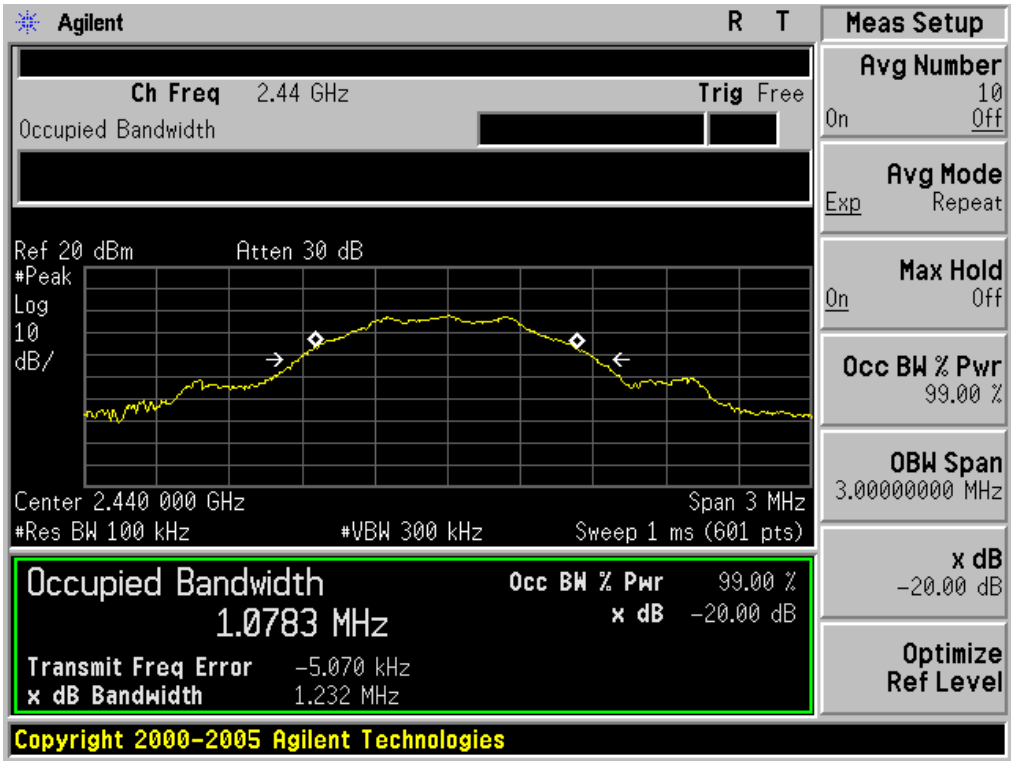
FOR BLE

BLUETOOTH 1MBPS LIMITS AND MEASUREMENT RESUL			
Applicable Limits	**Measurement Result**		
	Test Data (MHz)		**Criteria**
N/A	Low Channel	1.232	PASS
	Middle Channel	1.232	PASS
	High Channel	1.246	PASS

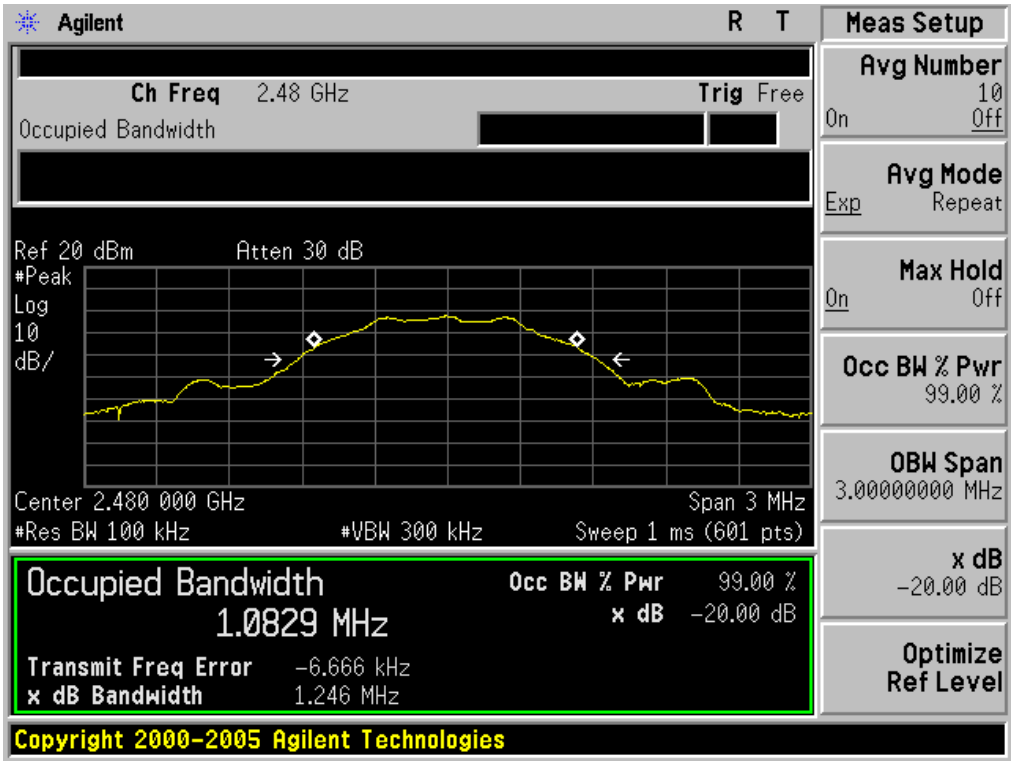
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



11. FCC LINE CONDUCTED EMISSION TEST

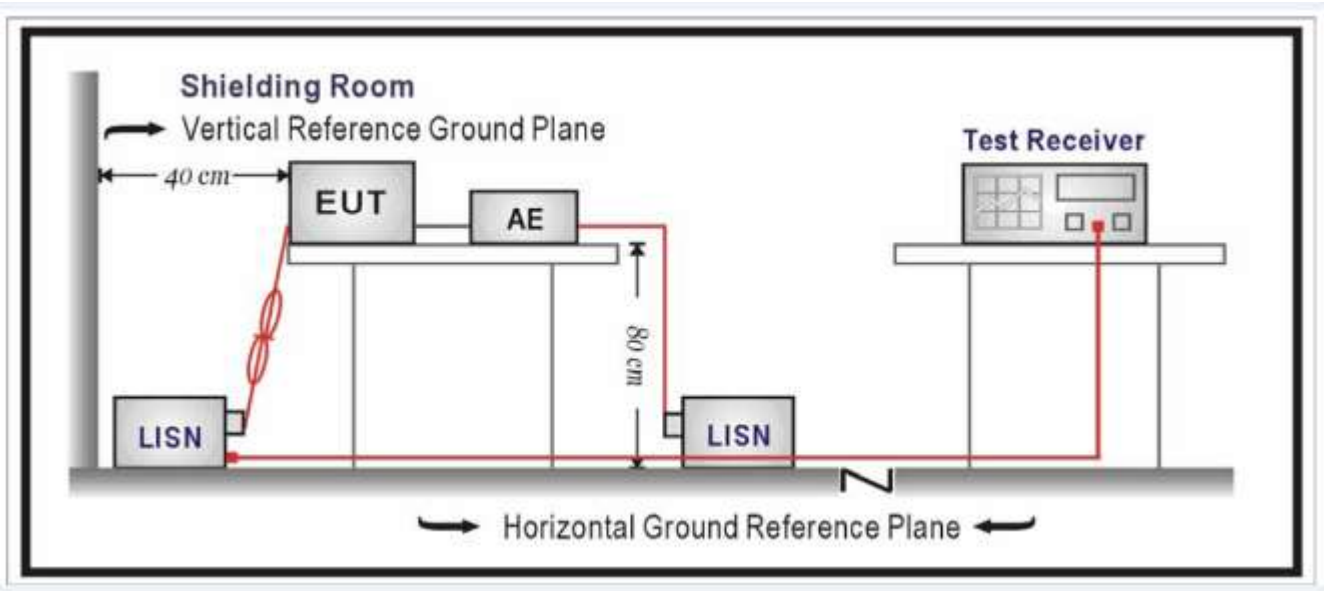
11.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Note:

1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

11.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



11.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2. Support equipment, if needed, was placed as per ANSI C63.4.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
4. All support equipments received AC120V/60Hz power from a LISN, if any.
5. The EUT received DC charging voltage by PC which received 120V/60Hzpower by a LISN..
6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

11.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

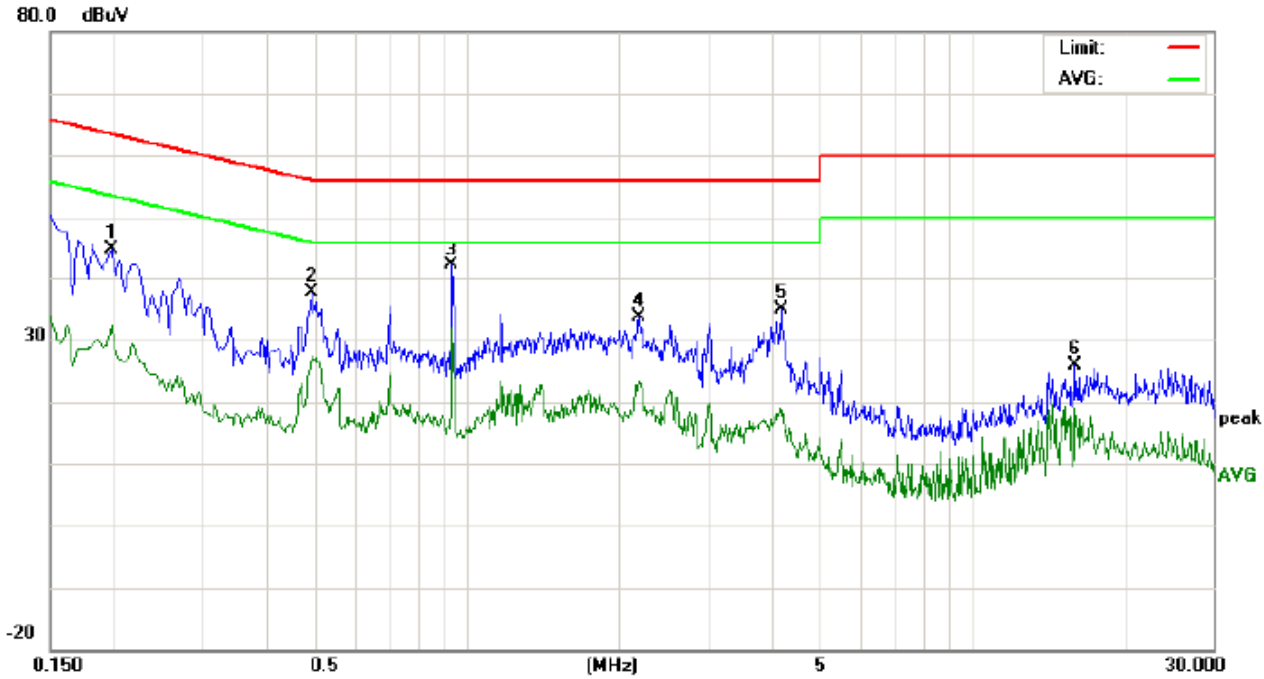
- EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.

2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data of the worst case condition(s) was reported on the Summary Data page.

11.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

FOR BR/EDR BLUETOOTH

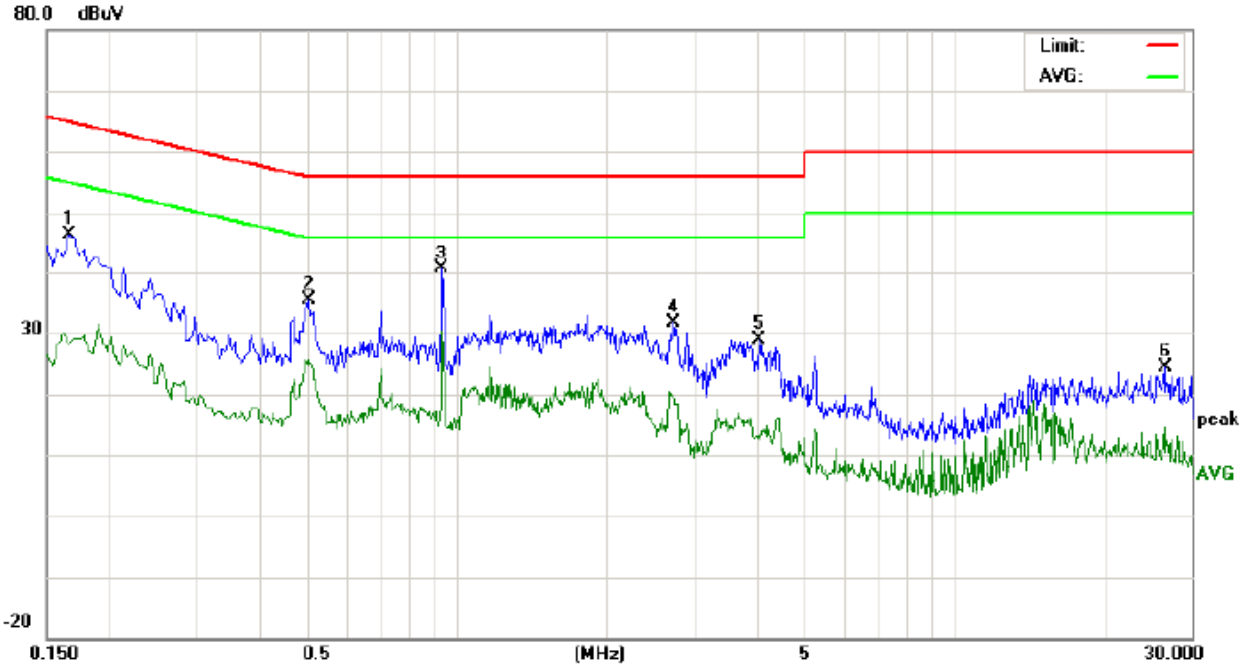
Line Conducted Emission Test Line 1-L



Site: Conduction | Phase: *L1* | Temperature: 23.5
Limit: FCC Class B Conduction(QP) | Power: | Humidity: 55.1 %
EUT: Wireless Blood Pressure Wrist Monitor
M/N: BP7S
Mode: BT Link with charging
Note:

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1980	34.77		22.19	10.21	44.98		32.40	63.69	53.69	-18.71	-21.29	P	
2	0.4940	27.20		17.03	10.40	37.60		27.43	56.10	46.10	-18.50	-18.67	P	
3	0.9380	31.81		21.53	10.39	42.20		31.92	56.00	46.00	-13.80	-14.08	P	
4	2.1900	23.21		13.03	10.30	33.51		23.33	56.00	46.00	-22.49	-22.67	P	
5	4.1860	24.41		8.39	10.35	34.76		18.74	56.00	46.00	-21.24	-27.26	P	
6	16.0100	15.79		8.72	10.11	25.90		18.83	60.00	50.00	-34.10	-31.17	P	

Line Conducted Emission Test Line 2-N

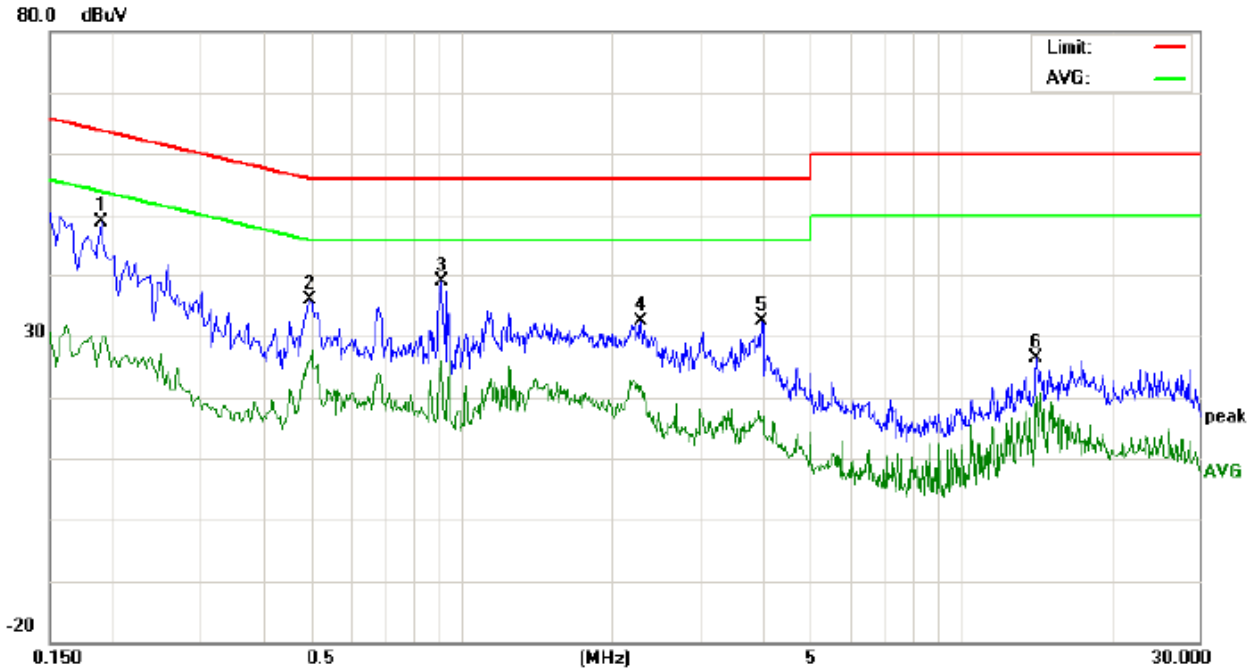


Site: Conduction | Phase: *N* | Temperature: 23.5
Limit: FCC Class B Conduction(QP) | Power: | Humidity: 55.1 %
EUT: Wireless Blood Pressure Wrist Monitor
M/N: BP7S
Mode: BT Link with charging
Note:

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1660	36.20		18.20	10.18	46.38		28.38	65.15	55.15	-18.77	-26.77	P	
2	0.5020	24.93		14.54	10.40	35.33		24.94	56.00	46.00	-20.67	-21.06	P	
3	0.9380	30.31		19.93	10.39	40.70		30.32	56.00	46.00	-15.30	-15.68	P	
4	2.7340	21.25		9.19	10.49	31.74		19.68	56.00	46.00	-24.26	-26.32	P	
5	4.0660	18.47		2.90	10.40	28.87		13.30	56.00	46.00	-27.13	-32.70	P	
6	26.4580	14.26		4.61	10.11	24.37		14.72	60.00	50.00	-35.63	-35.28	P	

FOR BLE

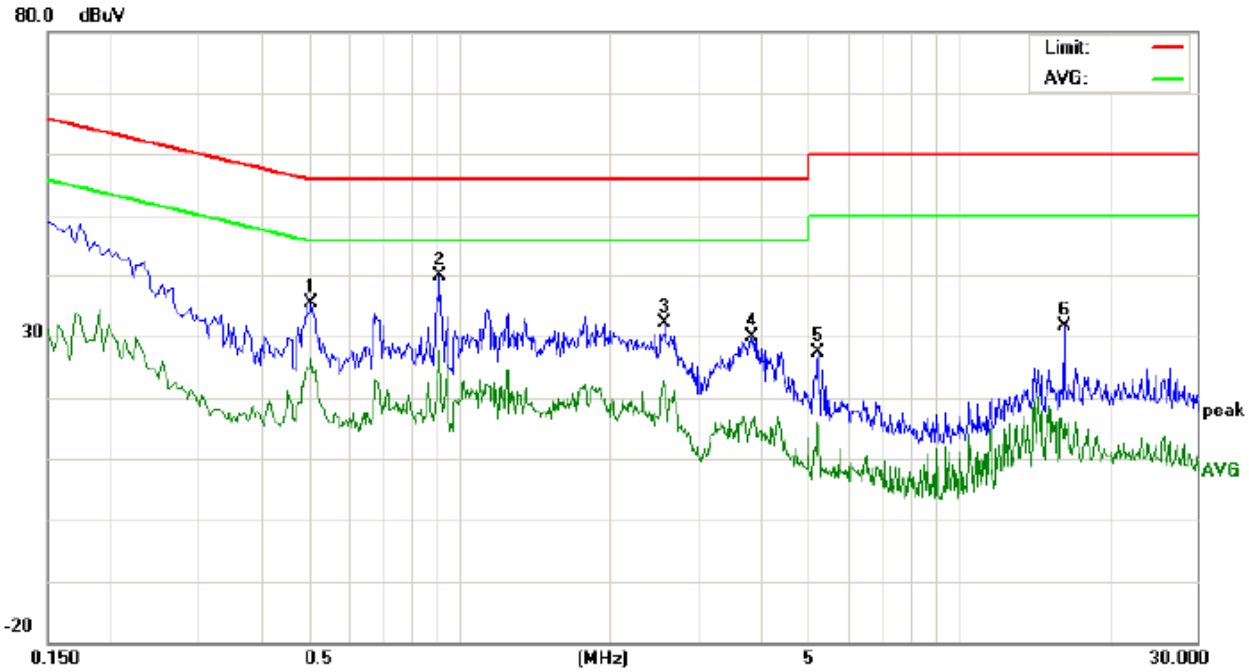
Line Conducted Emission Test Line 1-L



Site: Conduction | Phase: *L1* | Temperature: 23.5
Limit: FCC Class B Conduction(QP) | Power: | Humidity: 55.1 %
EUT: Wireless Blood Pressure Wrist Monitor
M/N: BP7S
Mode: BT Link with charging
Note:

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1900	38.61		19.64	10.20	48.81		29.84	64.03	54.03	-15.22	-24.19	P	
2	0.4980	25.48		15.15	10.40	35.88		25.55	56.03	46.03	-20.15	-20.48	P	
3	0.9100	28.54		15.52	10.41	38.95		25.93	56.00	46.00	-17.05	-20.07	P	
4	2.2860	21.98		11.57	10.34	32.32		21.91	56.00	46.00	-23.68	-24.09	P	
5	3.9860	22.04		5.58	10.43	32.47		16.01	56.00	46.00	-23.53	-29.99	P	
6	14.2100	16.18		9.96	10.12	26.30		20.08	60.00	50.00	-33.70	-29.92	P	

Line Conducted Emission Test Line 2-N



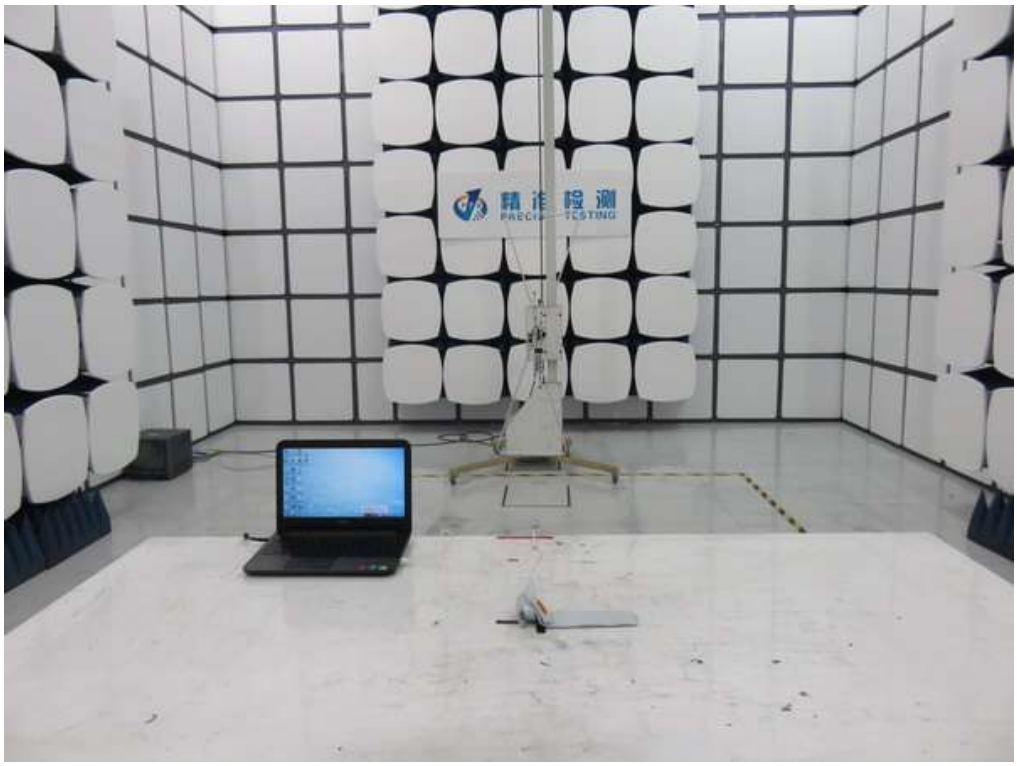
Site: Conduction
Phase: N
Temperature: 23.5
Limit: FCC Class B Conduction(QP)
Power:
Humidity: 55.1 %
EUT: Wireless Blood Pressure Wrist Monitor
M/N: BP7S
Mode: BT Link with charging
Note:

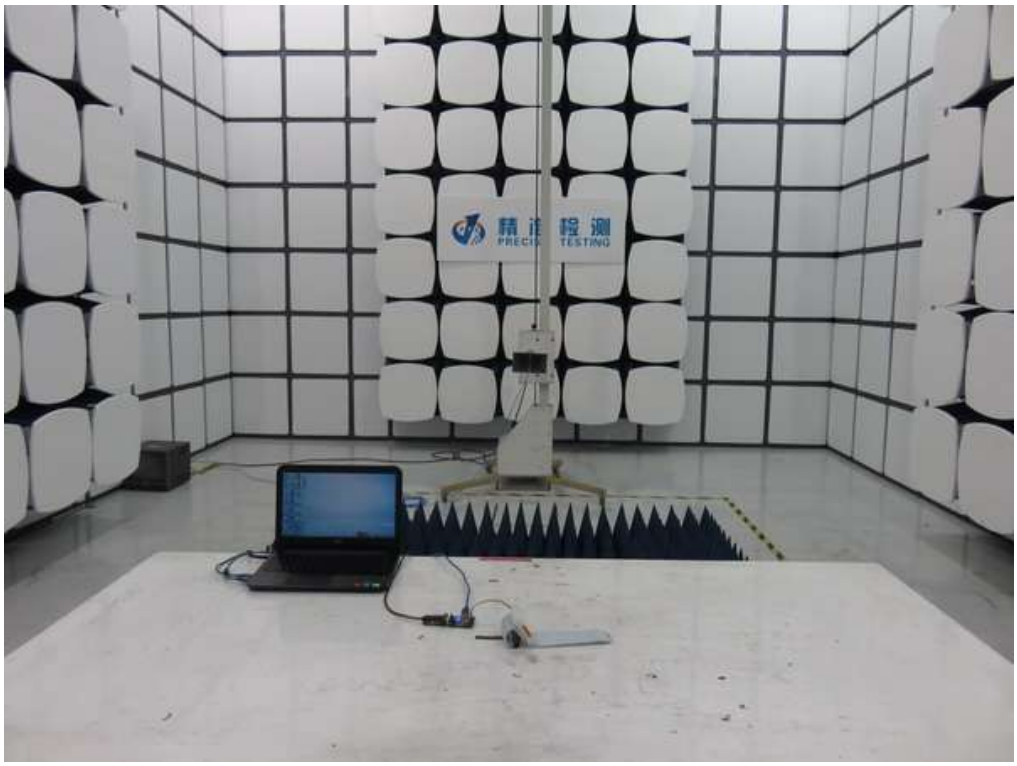
No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.5060	25.00		16.08	10.39	35.39		26.47	56.00	46.00	-20.61	-19.53	P	
2	0.9140	29.59		17.25	10.40	39.99		27.65	56.00	46.00	-16.01	-18.35	P	
3	2.5900	21.73		11.75	10.45	32.18		22.20	56.00	46.00	-23.82	-23.80	P	
4	3.8780	19.50		5.71	10.45	29.95		16.16	56.00	46.00	-26.05	-29.84	P	
5	5.2460	17.10		5.17	10.24	27.34		15.41	60.00	50.00	-32.66	-34.59	P	
6	16.3100	21.41		5.47	10.12	31.53		15.59	60.00	50.00	-28.47	-34.41	P	

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

FCC LINE CONDUCTED EMISSION TEST SETUP

FCC RADIATED EMISSION TEST SETUP




精准检测
PRECISION TESTING

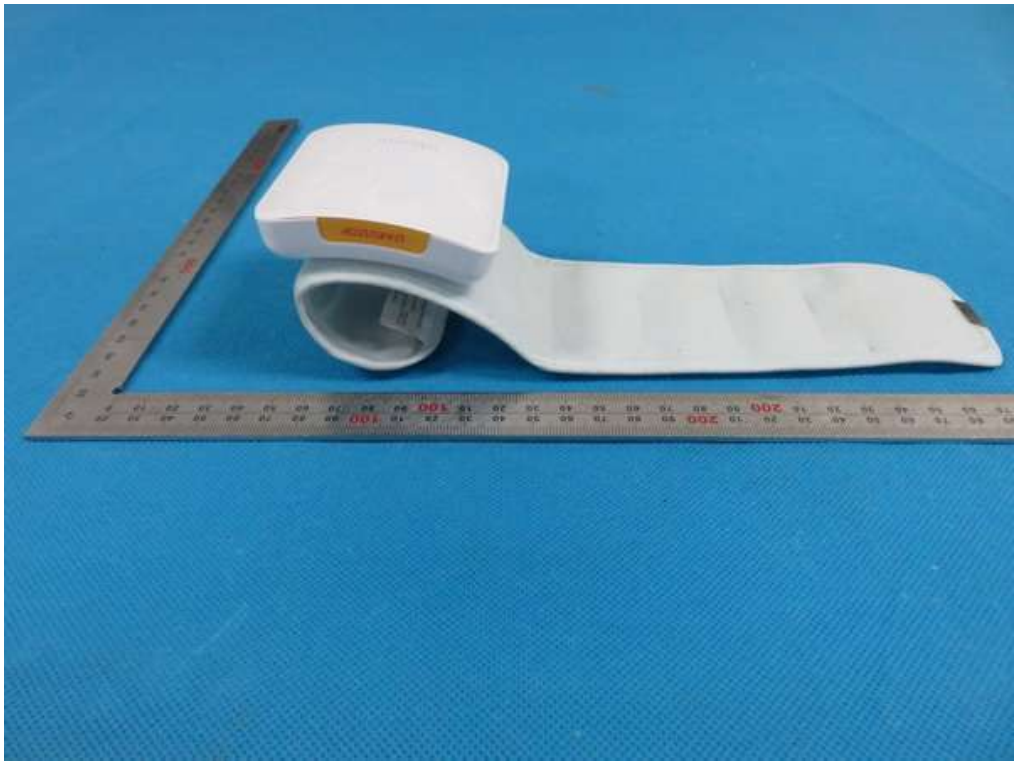
APPENDIX B: PHOTOGRAPHS OF EUT

TOTAL VIEW OF EUT

TOP VIEW OF EUT

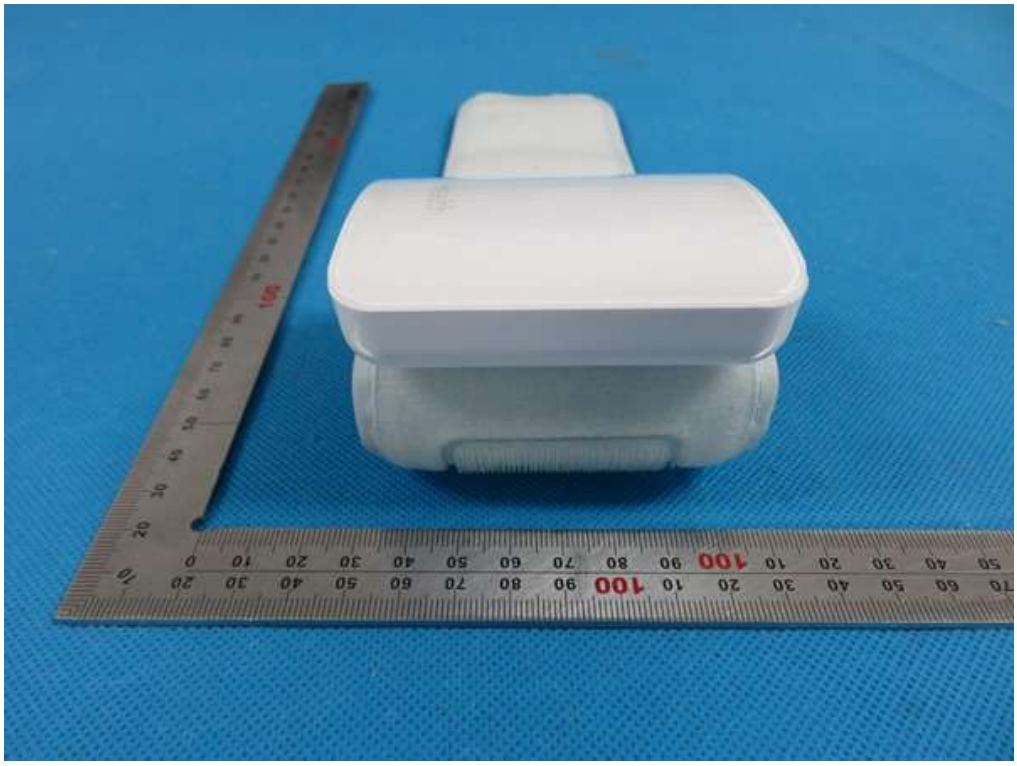
BOTTOM VIEW OF EUT

FRONT VIEW OF EUT



BACK VIEW OF EUT

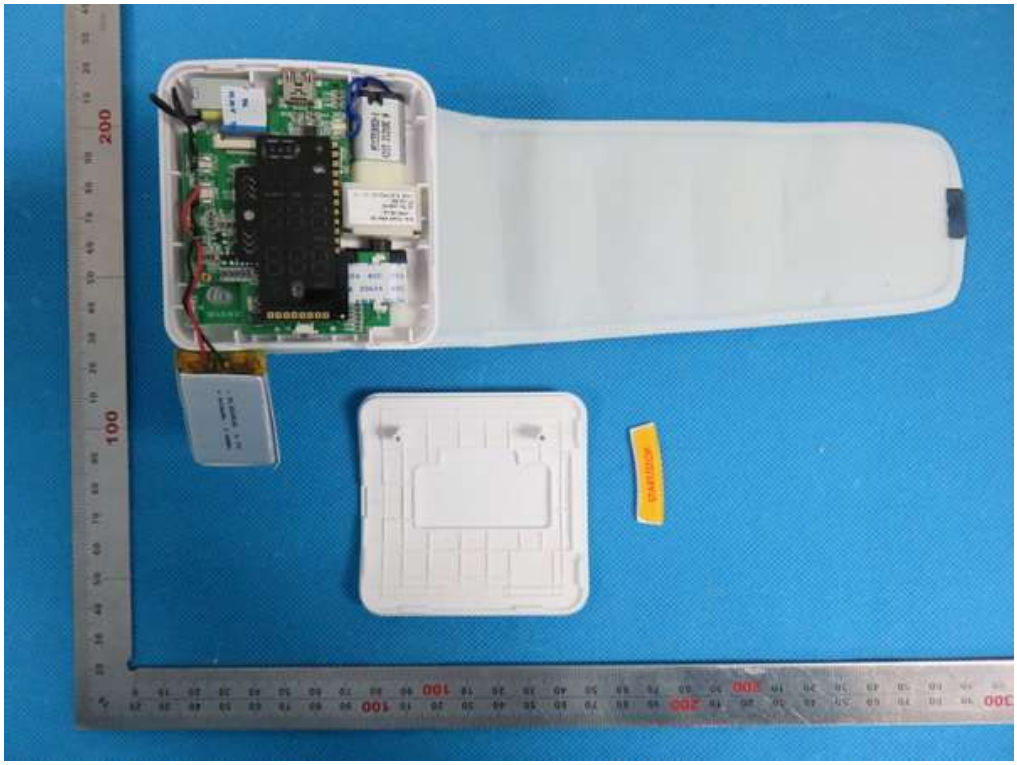
LEFT VIEW OF EUT



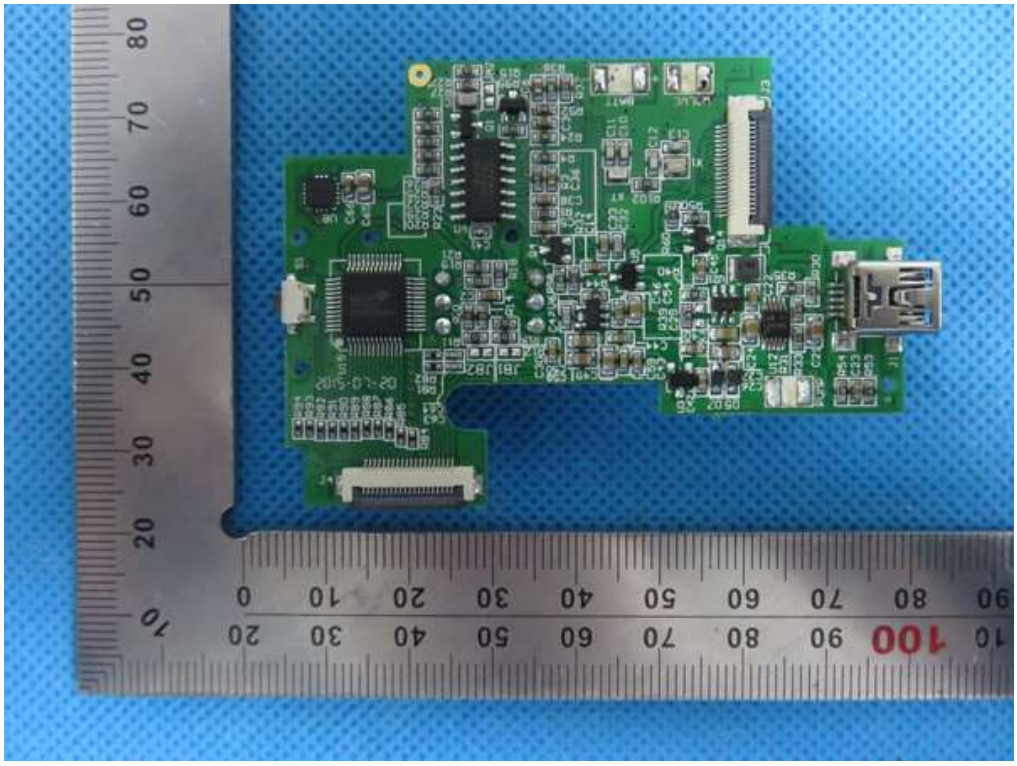
RIGHT VIEW OF EUT

VIEW OF EUT (PORT)

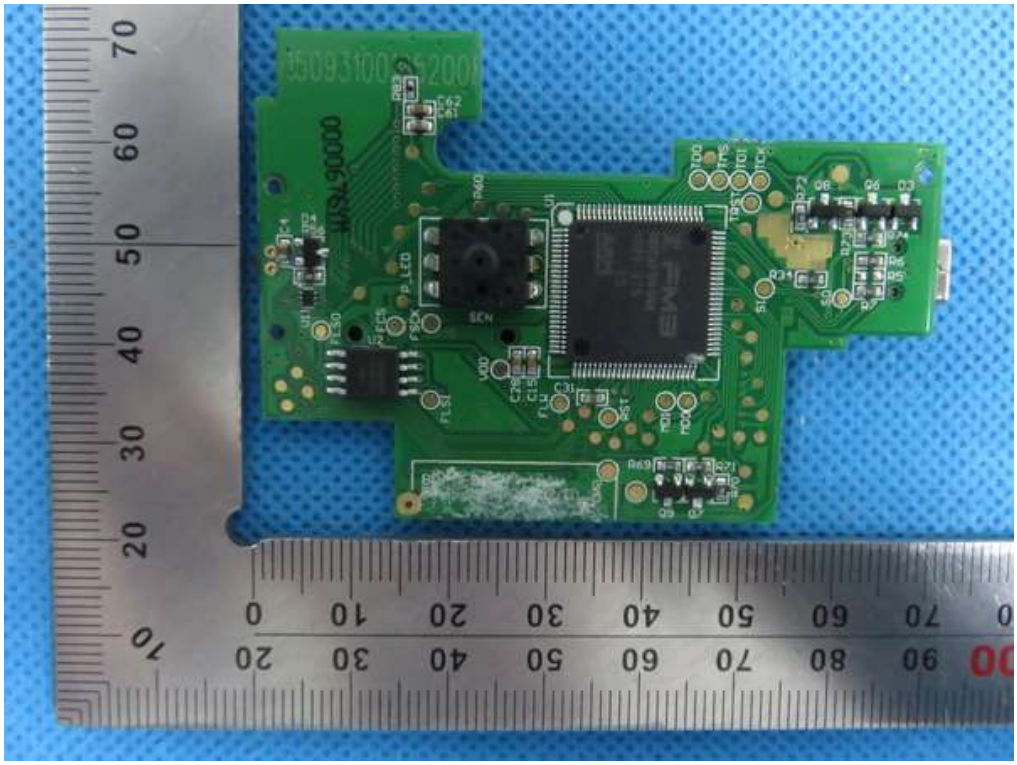
OPEN VIEW OF EUT



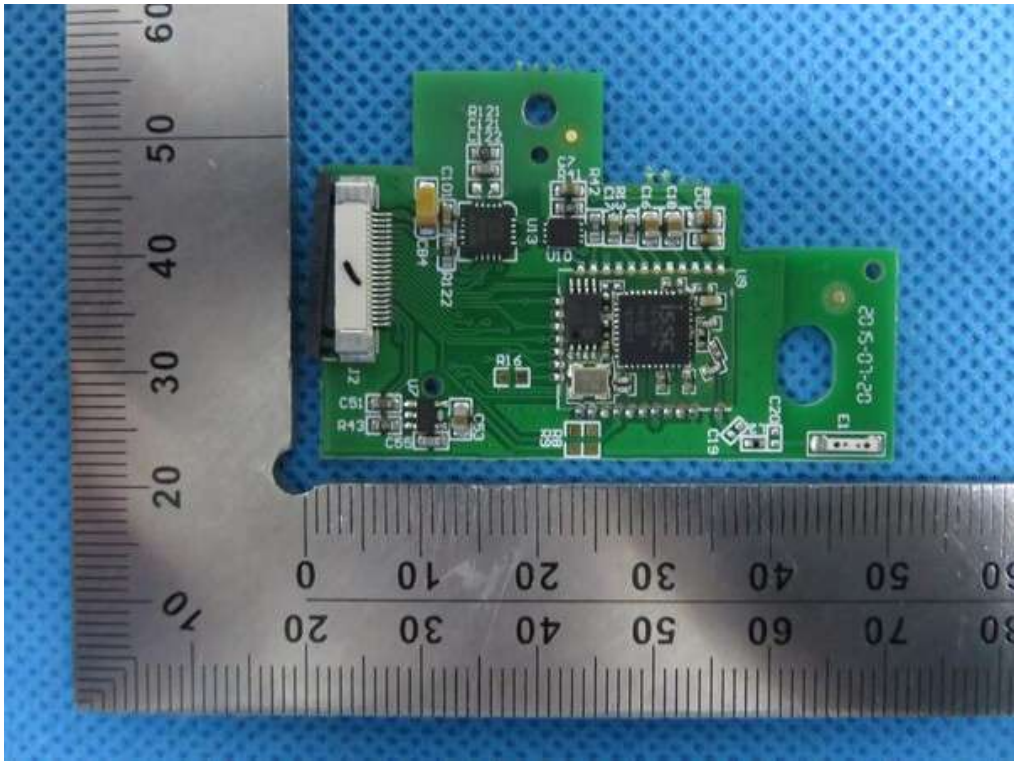
INTERNAL VIEW OF EUT-1



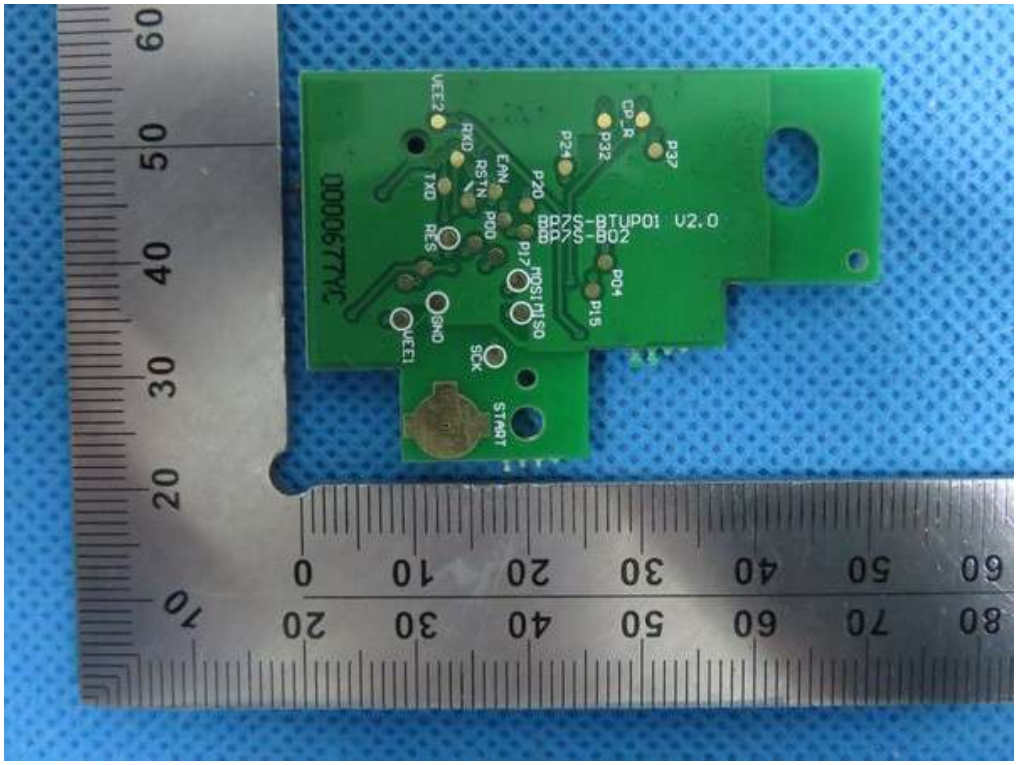
INTERNAL VIEW OF EUT-2



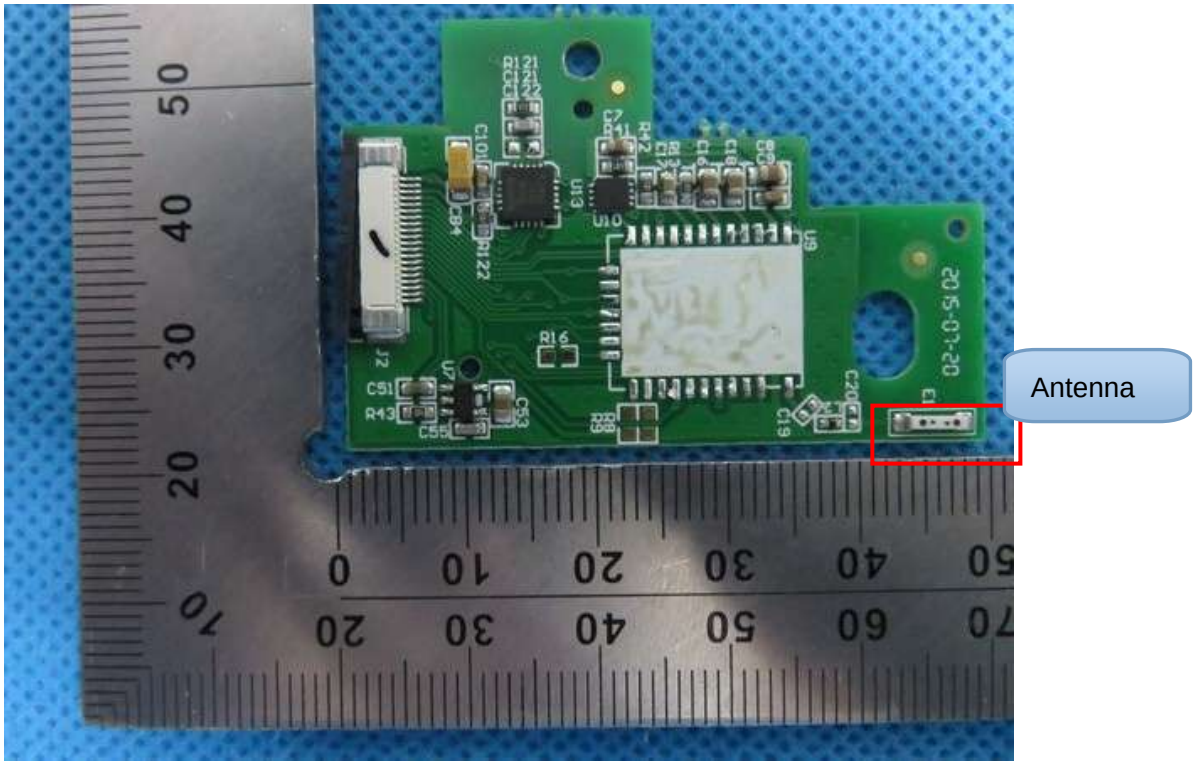
INTERNAL VIEW OF EUT-3



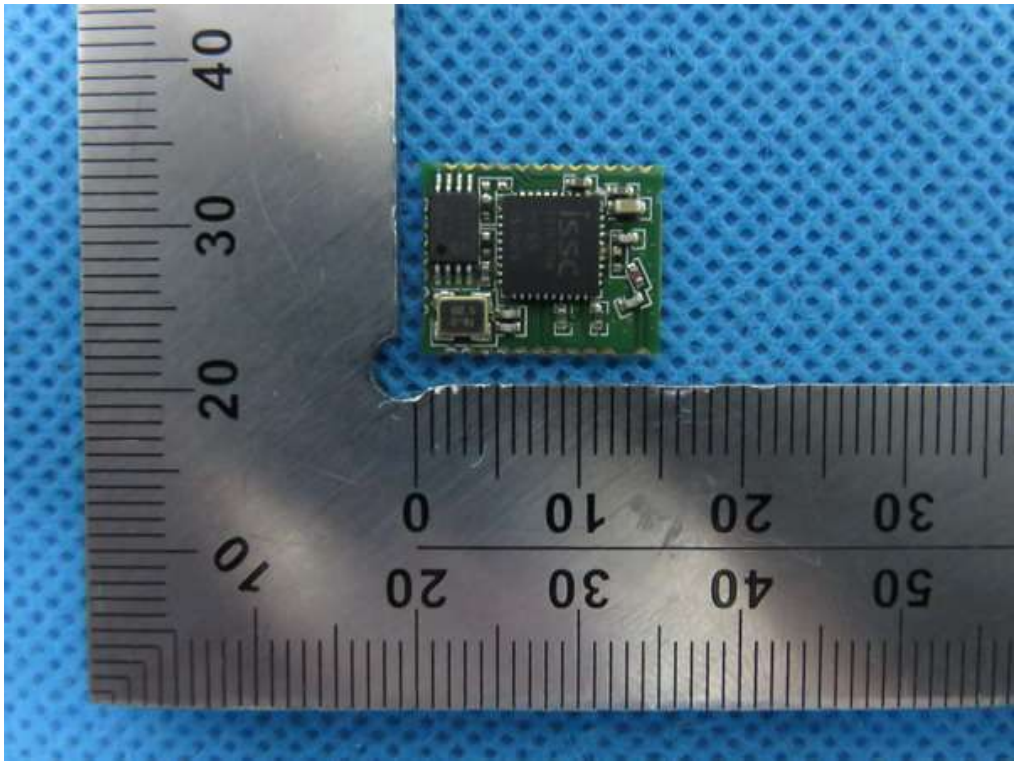
INTERNAL VIEW OF EUT-4



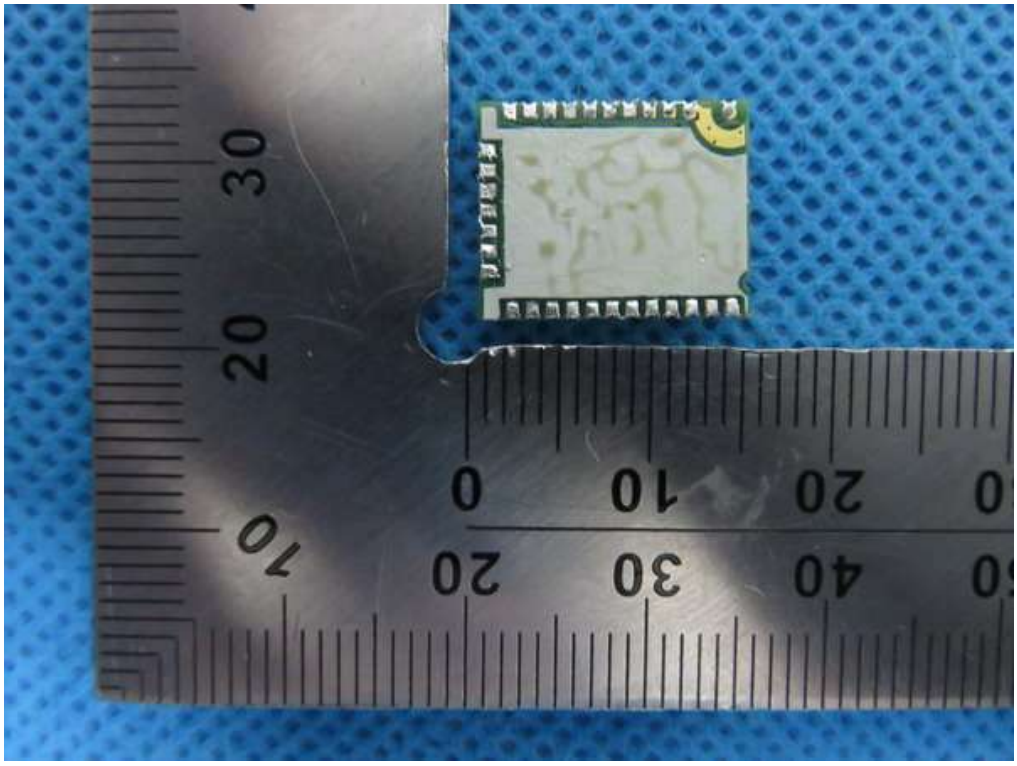
INTERNAL VIEW OF EUT-5



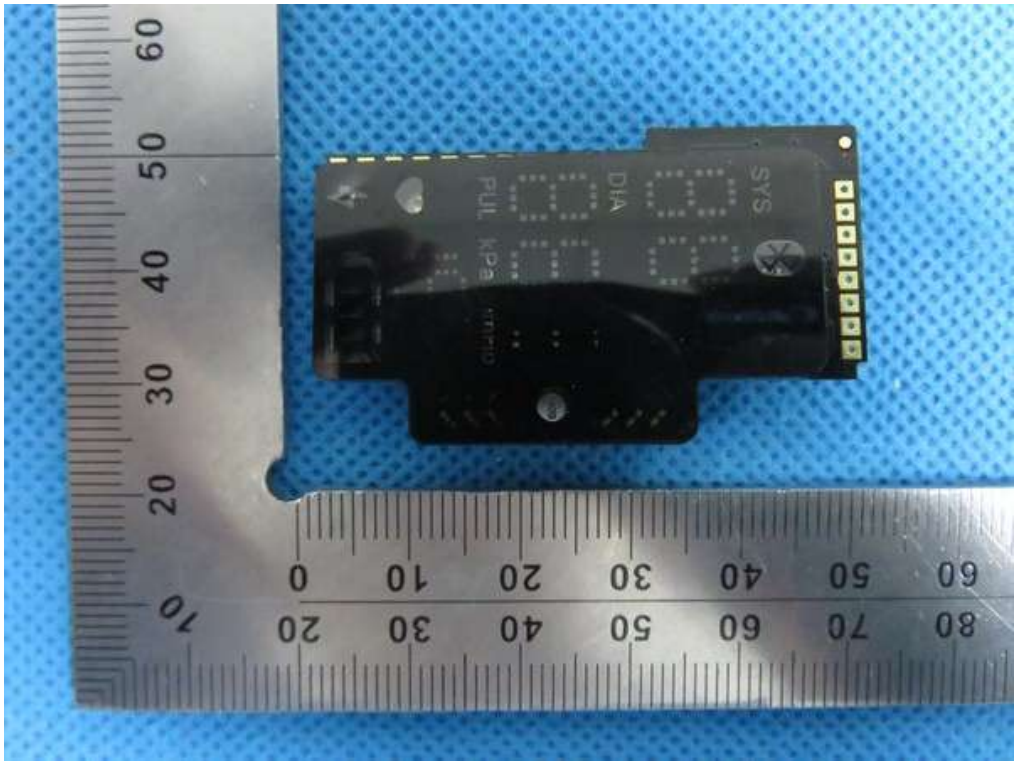
INTERNAL VIEW OF EUT-6



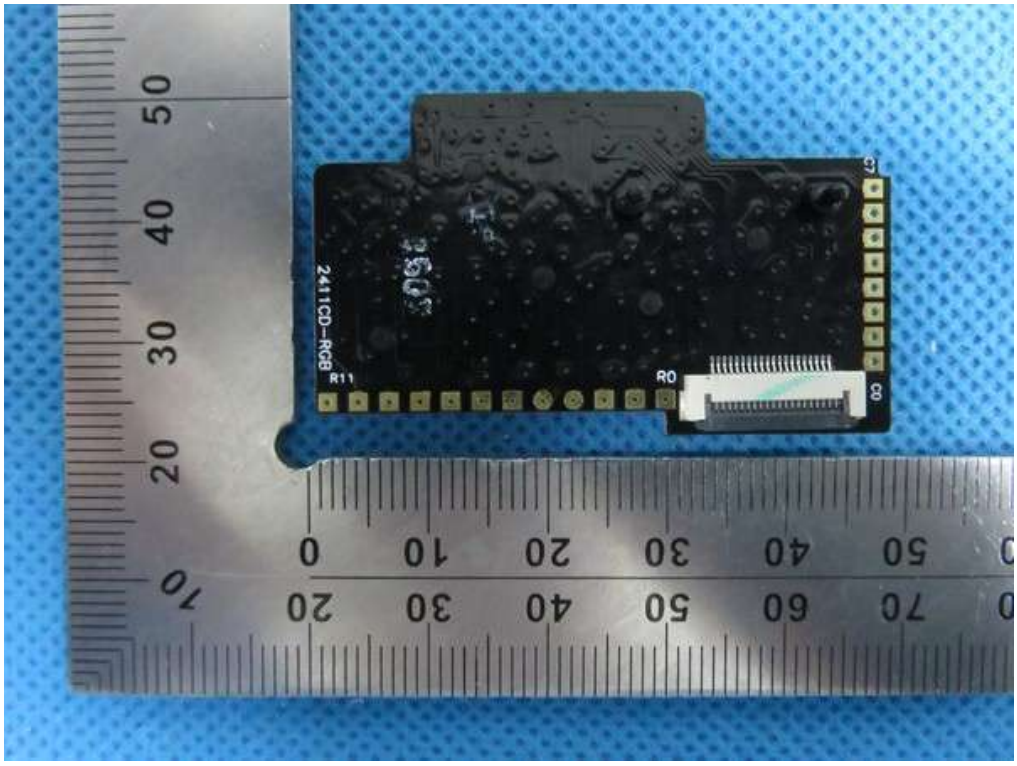
INTERNAL VIEW OF EUT-7



INTERNAL VIEW OF EUT-8



INTERNAL VIEW OF EUT-9



----END OF REPORT----