# **FCC Test Report**

Report No.: AGC01105151201FE03

FCC ID : 2AG9D2S

**APPLICATION PURPOSE** : Original Equipment

**PRODUCT DESIGNATION**: BT watch

**BRAND NAME** : CHR

MODEL NAME : 2S

**CLIENT** : SHENZHEN COHERETECH CO.,LTD.

**DATE OF ISSUE** : Jan.12,2016

**STANDARD(S)** : FCC Part 15 Rules

**REPORT VERSION**: V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

#### **CAUTION:**

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# **Report Revise Record**

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	1	Jan.12,2016	Valid	Original Report

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#### 1. VERIFICATION OF CONFORMITY

Applicant	SHENZHEN COHERETECH CO.,LTD.		
Address	Room 501,212 building,Tairan Technology Park, chegongmiao, futiandistrict,shenzhen,China		
Manufacturer	SHENZHEN COHERETECH CO.,LTD.		
Address	Room 501,212 building,Tairan Technology Park, chegongmiao, futiandistrict,shenzhen,China		
Product Designation	BT watch		
Brand Name	CHR		
Test Model	2S		
Date of test	Jan.04,2016 to Jan.06,2016		
Deviation	None		
Condition of Test Sample	Normal		
Report Template	AGCRT-US-BR/RF (2013-03-01)		

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 15.247.

Tested By	Time Human			
	Time Huang(Huang Nanhui)	Jan.12,2016		
Reviewed By	Forest ce			
-	Forrest Lei(Lei Yonggang)	Jan.12,2016		
Approved By	golga stong			
•	Solger Zhang(Zhang Hongyi)  Authorized Officer	Jan.12,2016		

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#### 2. GENERAL INFORMATION

#### 2.1. PRODUCT DESCRIPTION

The EUT is "BT watch" designed as a "Communication Device". It is designed by way of utilizing the FHSS technology to achieve the system operation.

A major technical description of EUT is described as following

······································				
Operation Frequency	2.402 GHz to 2.480GHz			
RF Output Power	7.79dBm(Max)			
Bluetooth Version	V 3.0			
Modulation	GFSK, π /4-DQPSK, 8DPSK			
Number of channels	79			
Hardware Version	M13_IWATCH_PCB_V1.1			
Software Version	V021			
Antenna Designation	Fixed Antenna			
Antenna Gain	0dBi			
Power Supply	DC3.7V by Battery			

Note: The USB port only used for charging and can't be used to transfer data with PC.

The EUT is equipped with Chip MT6260MA which supports GSM,BT and FM function, but for this device the functionality is limited to bluetooth by the firmware.

End-user is not able to change the settings and enable any additional functionality by himself.

#### 2.2. TABLE OF CARRIER FREQUENCYS

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

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#### 2.3. RECEIVER INPUT BANDWIDTH

The input bandwidth of the receiver is 1.3MHZ,In every connection one Bluetooth device is the master and the other one is slave. The master determines the hopping sequence. The slave follows this sequence. Both devices shift between RX and TX time slot according to the clock of the master. Additionally the type of connection(e.g. single of multislot packet) is set up at the beginning of the connection. The master adapts its hopping frequency and its TX/RX timing according to the packet type of the connection. Also the slave of the connection will use these settings.

Repeating of a packet has no influence on the hopping sequence. The hopping sequence generated by the master of the connection will be followed in any case. That means, a repeated packet will not be send on the same frequency, it is send on the next frequency of the hopping sequence.

#### 2.4. EXAMPLE OF A HOPPING SEQUENCY IN DATA MODE

Example of a 79 hopping sequence in data mode: 40,21,44,23,42,53,46,55,48,33,52,35,50,65,54,67 56,37,60,39,58,69,62,71,64,25,68,27,66,57,70,59 72,29,76,31,74,61,78,63,01,41,05,43,03,73,07,75 09,45,13,47,11,77,15,00,64,49,66,53,68,02,70,06 01, 51, 03, 55, 05, 04

#### 2.5. EQUALLY AVERAGE USE OF FREQUENCIES AND BEHAVIOUR

The generation of the hopping sequence in connection mode depends essentially on two input values:

- 1. LAP/UAP of the master of the connection.
- 2. Internal master clock

The LAP(lower address part) are the 24 LSB's of the 48 BD\_ADDRESS. The BD\_ADDRESS is an unambiguous number of every Bluetooth unit. The UAP(upper address part) are the 24MSB's of the 48BD ADDRESS

The internal clock of a Bluetooth unit is derived from a free running clock which is never adjusted and is never turned off. For ehavior zation with other units only offset are used. It has no relation to the time of the day. Its resolution is at least half the RX/TX slot length of 312.5us. The clock has a cycle of about one day(23h30). In most case it is implemented as 28 bit counter. For the deriving of the hopping sequence the entire. LAP(24 bits), 4LSB's(4bits)(Input 1) and the 27MSB's of the clock(Input 2) are used. With this input values different mathematical procedures(permutations, additions, XOR-operations) are performed to generate te Sequence. This will be done at the beginning of every new transmission.

Regarding short transmissions the Bluetooth system has the following ehavior:

The first connection between the two devices is established, a hopping sequence was generated. For Transmitting the wanted data the complete hopping sequence was not used. The connection ended. The second connection will be established. A new hopping sequence is generated. Due to the fact the Bluetooth clock has a different value, because the period between the two transmission is longer(and it Cannot be shorter) than the minimum resolution of the clock(312.5us). The hopping sequence will always Differ from the first one.

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#### 2.6. RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2AG9D2S** filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

#### 2.7. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4 (2009). Radiated testing was performed at an antenna to EUT distance 3 meters.

Test has been referenced to the DA 00-705

#### 2.8. SPECIAL ACCESSORIES

Refer to section 5.2.

#### 2.9. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

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#### 3. MEASUREMENT UNCERTAINTY

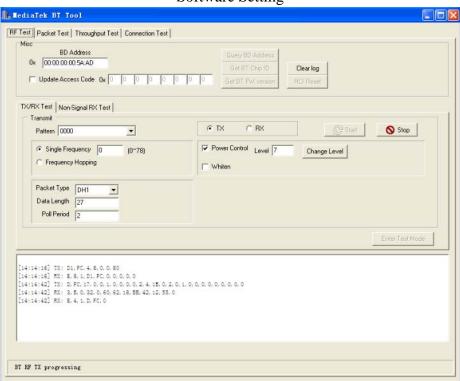
Conducted measurement: +/- 2.75dB Radiated measurement: +/- 3.2dB

#### 4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION
1	Low channel TX
2	Middle channel TX
3	High channel TX
4	Normal Operating (BT)
5	BT Link with charging
6	BT Link without charging

#### Note:

- 1. 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



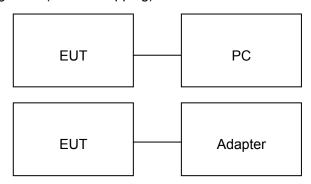
# Software Setting

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### **5. SYSTEM TEST CONFIGURATION**

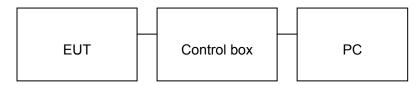
#### **5.1. CONFIGURATION OF EUT SYSTEM**

Configure 1: (Normal hopping)



Note: Owing to the EUT has own battery, Testing will be performed while PC or adapter remove.

Configure 2: (Control continuous TX)



### 5.2. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Mfr/Brand	Model/Type No.	Remark
1	BT watch	CHR	2S	EUT
2	PC	Sony	E1412AYCW	A.E
3	Control box	N/A	N/A	A.E
4	USB Cable	N/A	0.5m, unshielded	A.E
5	Temporary Antenna Connector	T10	N/A	A.E
6	AC adapter	GPE0538	1.1m,unshielded	A.E

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#### **5.3. SUMMARY OF TEST RESULTS**

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.247	Peak Output Power	Compliant
§15.247	20 dB Bandwidth	Compliant
§15.247	Spurious Emission	Compliant
§15.209	Radiated Emission	Compliant
§15.247	Band Edges	Compliant
§15.207	Conduction Emission	Compliant
§15.247	Number of Hopping Frequency	Compliant
§15.247	Time of Occupancy	Compliant
§15.247	Frequency Separation Compliant	

### **6. TEST FACILITY**

Site Dongguan Precise Testing Service Co., Ltd.		
Location  Building D,Baoding Technology Park,Guangming Road2,Dongcheng Distribution  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.	

## **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	

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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)	SCHWAR/BECK		9120D-1246	July 11, 2015	July 10, 2016			
Spectrum Analyzer Agilent		E4411B	MY4511453	July 4, 2015	July 3, 2016			
Signal Amplifier	Signal Amplifier SCHWARZBECK		9718-269	July 7, 2015	July 6, 2016			
RF Cable	RF Cable SCHWARZBECK		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)			9170-181	June 6, 2015	June 5, 2016			

Conducted Emission Test Site								
Name of Equipment	Manufacturer   Model Number   Serial Number							
EMI Test Receiver	- Rohde & Schwarz	ESCI	101417	July 4, 2015	July 3, 2016			
Artificial Mains Network	Narda	L2-16B	000WX31025	July 8, 2015	July 7, 2016			
Artificial Mains Network (AUX)	Narda	L2-16B	000WX31026	July 8, 2015	July 7, 2016			
RF Cable	SCHWARZBECK	AK9515E	96222	July 4, 2015	July 3, 2016			
Shielded Room	CHENGYU	843	PTS-002	June 6,2015	June 5,2016			

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#### 7. PEAK OUTPUT POWER

#### 7.1. MEASUREMENT PROCEDURE

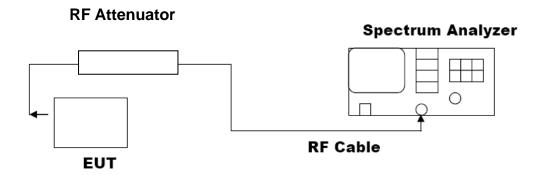
For peak power test:

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Set the EUT Work on the top, middle and the bottom operation frequency individually.
- 3. RBW > the 20 dB bandwidth of the emission being measured, VBW ≥ RBW.
- 4. Record the maximum power from the Spectrum Analyzer.

**Note**: The EUT was tested according to DA000705 for compliance to FCC 47CFR 15.247 requirements.

#### 7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

#### **PEAK POWER TEST SETUP**

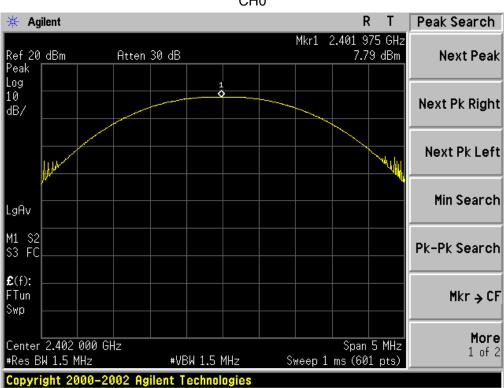


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#### 7.3. LIMITS AND MEASUREMENT RESULT

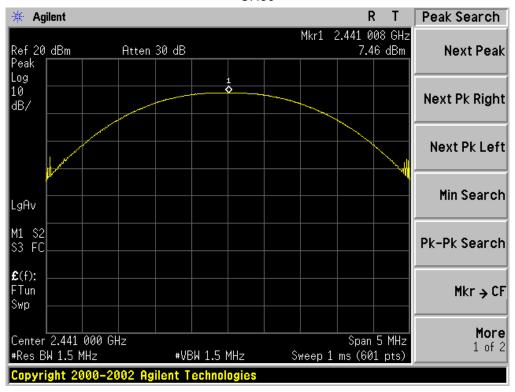
PEAK OUTPUT POWER MEASUREMENT RESULT FOR GFSK MOUDULATION							
Frequency Peak Power Applicable Limits (GHz) Pass or Fail							
2.402	7.79	21	Pass				
2.441	7.46	21	Pass				
2.480	6.91	21	Pass				

CH0

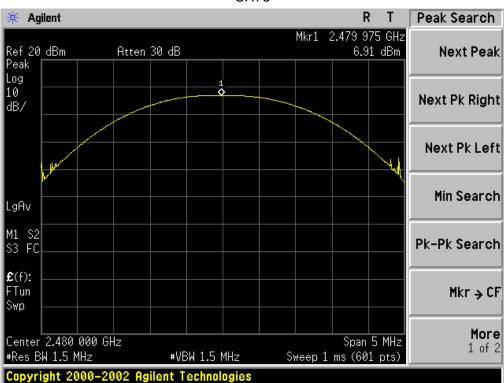


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**CH39** 



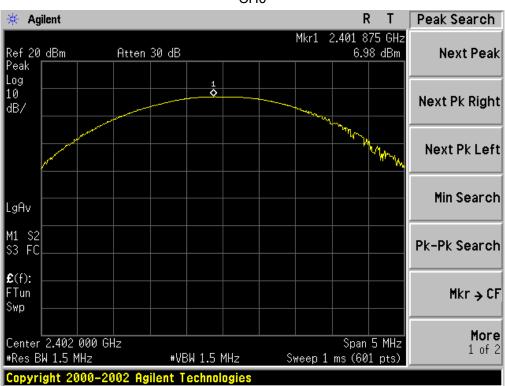
**CH78** 



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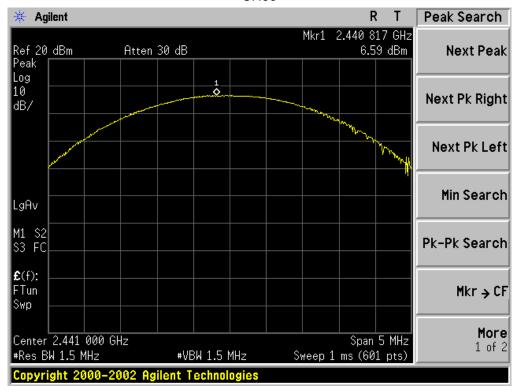
PEAK OUTPUT POWER MEASUREMENT RESULT FOR II /4-DQPSK MODULATION						
Frequency Peak Power Applicable Limits (GHz) Pass or Fail						
2.402	6.98	21	Pass			
2.441	6.59	21	Pass			
2.480	6.01	21	Pass			

CH<sub>0</sub>

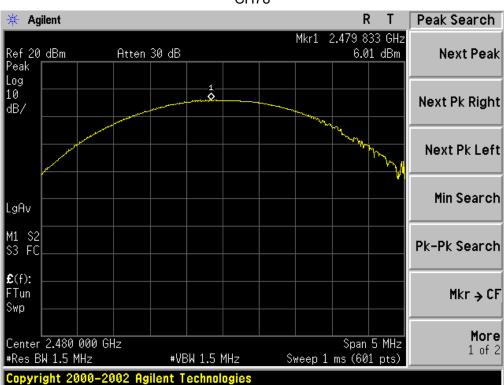


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**CH39** 



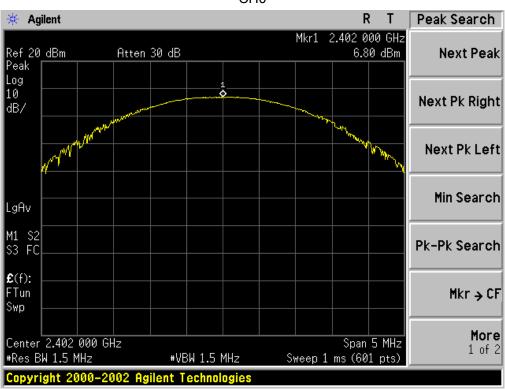
**CH78** 



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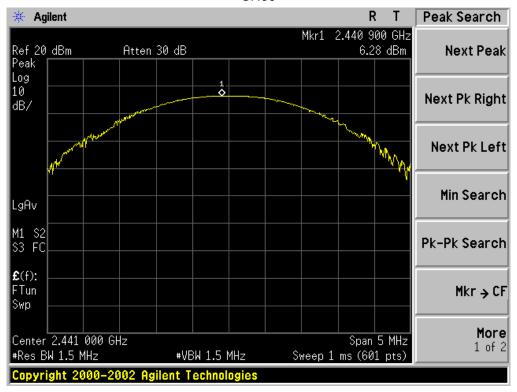
PEAK OUTPUT POWER MEASUREMENT RESULT FOR 8-DPSK MODULATION						
Frequency Peak Power Applicable Limits (GHz) (dBm) Pass or Fail						
2.402	6.80	21	Pass			
2.441	6.28	21	Pass			
2.480	5.65	21	Pass			



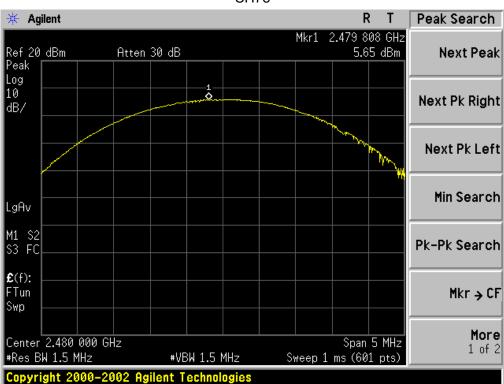


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**CH39** 



**CH78** 



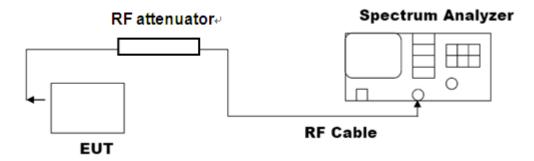
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#### 8. 20DB BANDWIDTH

#### **8.1. 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.

### 8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



#### 8.3. LIMITS AND MEASUREMENT RESULTS

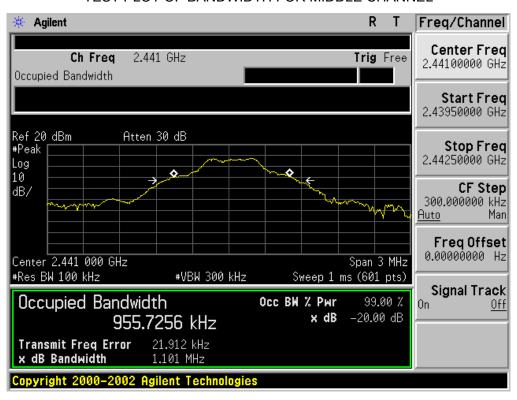
BLUETOOTH 1MBPS LIMITS AND MEASUREMENT RESUL						
Amaliachta Limita	Measurement Result					
Applicable Limits	Test Da	Criteria				
	Low Channel	1.058	PASS			
N/A	Middle Channel	1.101	PASS			
	High Channel	1.084	PASS			

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#### TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

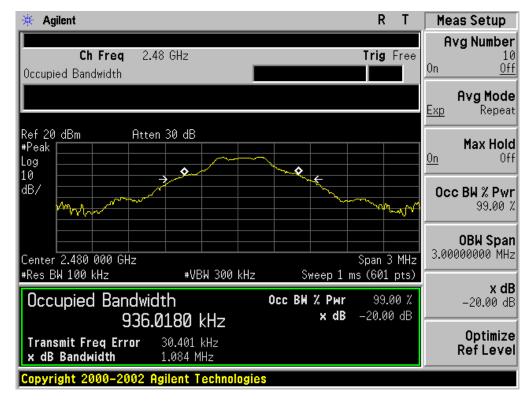


#### TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



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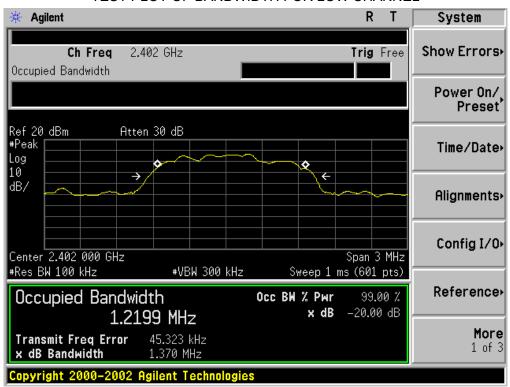
#### TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



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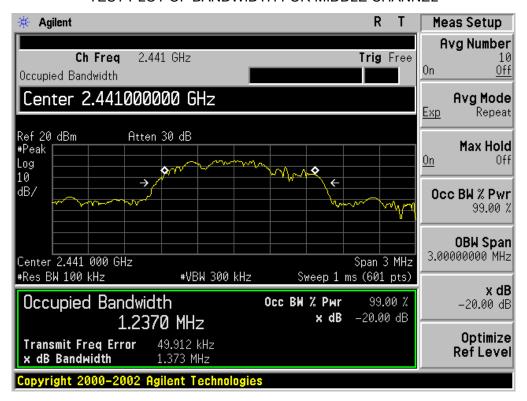
BLUETOOTH 2MBPS LIMITS AND MEASUREMENT RESUL						
Amaliachla Limita	Measurement Result					
Applicable Limits	Test Da	Criteria				
N/A	Low Channel	1.370	PASS			
	Middle Channel	1.373	PASS			
	High Channel	1.370	PASS			

#### TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

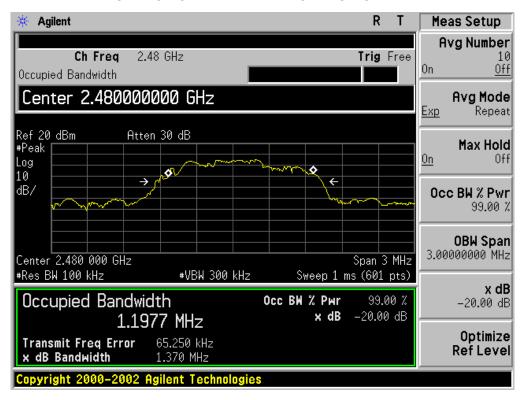


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#### TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



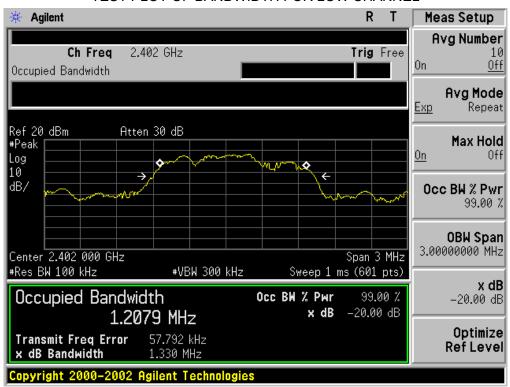
TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



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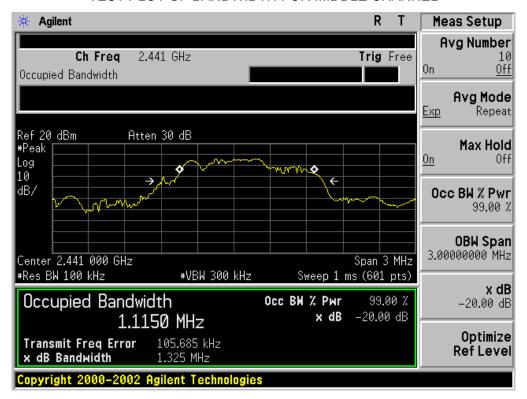
BLUETOOTH 3MBPS LIMITS AND MEASUREMENT RESUL						
Applicable Limite	Measurement Result					
Applicable Limits	Test Da	Criteria				
N/A	Low Channel	1.330	PASS			
	Middle Channel	1.325	PASS			
	High Channel	1.334	PASS			

#### TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

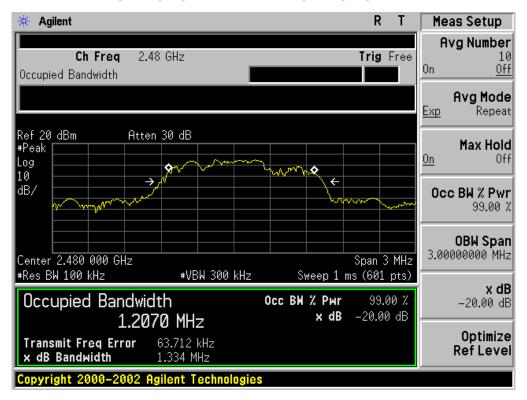


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#### TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



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# 9. CONDUCTED SPURIOUS EMISSION

#### 9.1. 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 the Span = wide enough to capture the peak level of the in-band emission and all spurious emissions from the lowest frequency generated in the EUT up through the 10th harmonic.

  RBW = 100 kHz; VBW ≥ RBW; Sweep = auto; Detector function = peak.
- 4. Set SPA Trace 1 Max hold, then View.

#### 9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 8.2

#### 9.3. MEASUREMENT EQUIPMENT USED

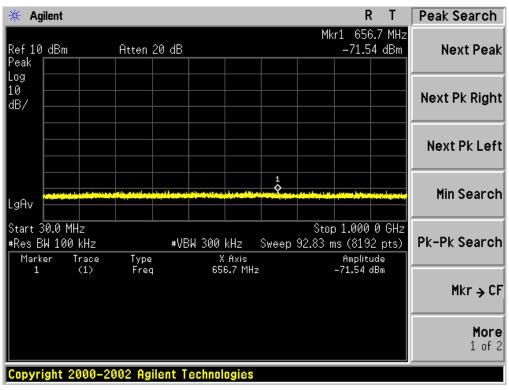
The same as described in section 6

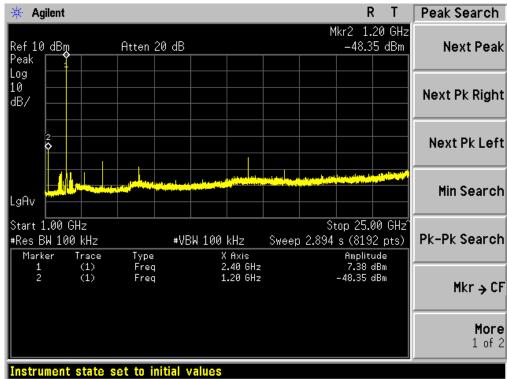
#### 9.4. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT							
Amulia abla Limita	Measurement Result						
Applicable Limits	Test Data	Criteria					
In any 100 KHz Bandwidth Outside the	At least -20dBc than the limit						
frequency band in which the spread spectrum	Specified on the BOTTOM	PASS					
intentional radiator is operating, the radio frequency	Channel						
power that is produce by the intentional radiator							
shall be at least 20 dB below that in 100KHz							
bandwidth within the band that contains the highest							
level of the desired power.	At least -20dBc than the limit	DACC					
In addition, radiation emissions which fall in the	Specified on the TOP Channel	PASS					
restricted bands, as defined in §15.205(a), must also							
comply with the radiated emission limits specified							
in§15.209(a))							

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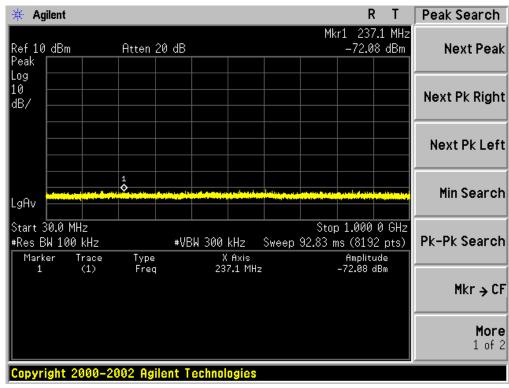
# TEST PLOT OF OUT OF BAND EMISSIONS WITH THE WORST CASE OF GFSK MODULATION IN LOW CHANNEL

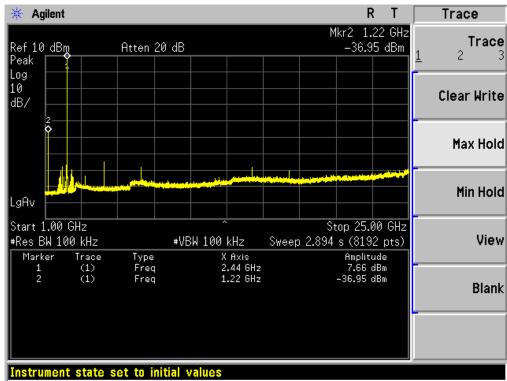




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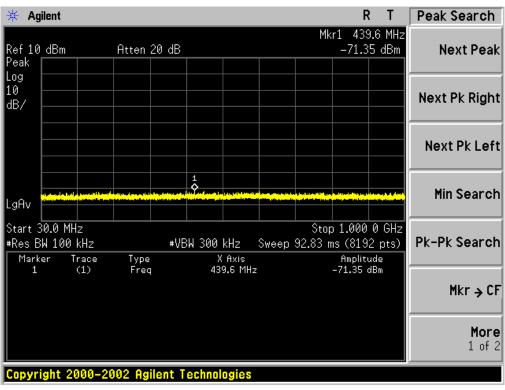
# TEST PLOT OF OUT OF BAND EMISSIONS OF GFSK MODULATION IN MIDDLE CHANNEL

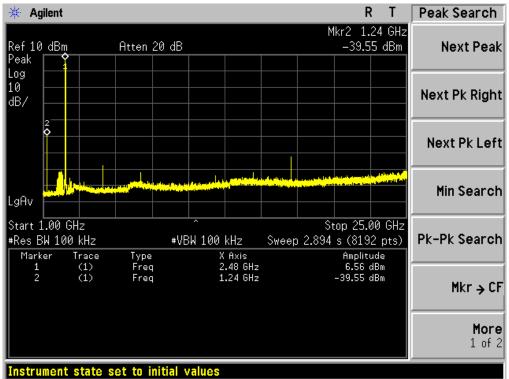




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# TEST PLOT OF OUT OF BAND EMISSIONS OF GFSK MODULATION IN HIGH CHANNEL





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#### 10. RADIATED EMISSION

#### 10.1. 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.
- Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 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 for above 1GHz, and 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.

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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				
Clare Glop Frequency	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

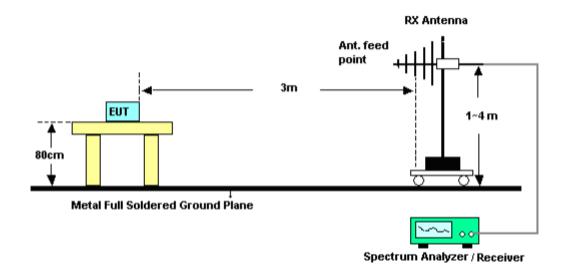
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#### 10.2. TEST SETUP

# Radiated Emission Test-Setup Frequency Below 30MHz

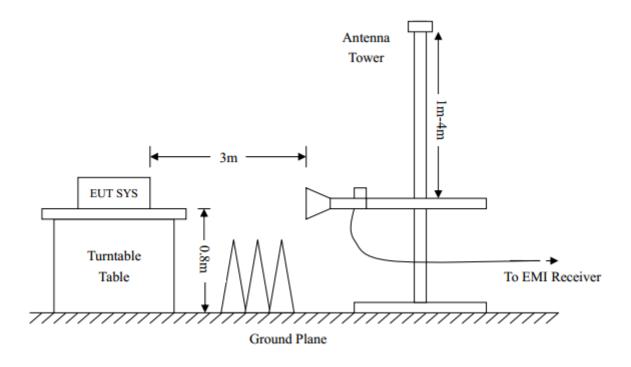


#### RADIATED EMISSION TEST SETUP 30MHz-1000MHz



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# **RADIATED EMISSION TEST SETUP ABOVE 1000MHz**



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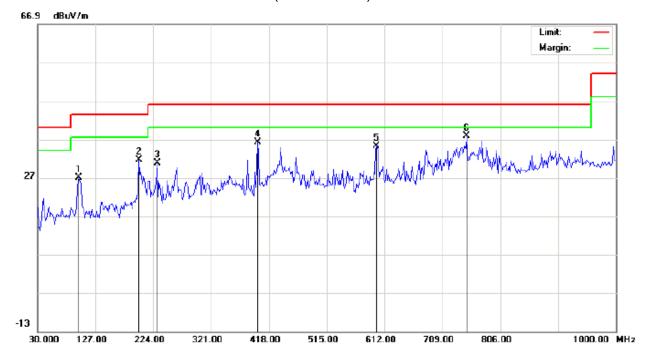
#### 10.3. TEST RESULT (Worst Modulation: GFSK)

#### **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 Polarization: Horizontal Temperature: 24.1 Limit: FCC Class B 3M Radiation Power: Humidity: 55.6 %

EUT:BT watch Distance:

M/N:2S

Mode: Low Channel TX

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height		Comment
	-	MHz	dBu∀	dB/m	dBu∀/m	dBu∀/m	dB		cm	degree	
1		99.5167	16.96	10.00	26.96	43.50	-16.54	peak			
2		199.7500	19.57	11.99	31.56	43.50	-11.94	peak			
3		230.4667	21.96	8.89	30.85	46.00	-15.15	peak			
4		398.6000	17.05	19.06	36.11	46.00	-9.89	peak			
5		599.0665	11.48	23.71	35.19	46.00	-10.81	peak			
6	*	749.4166	11.19	26.61	37.80	46.00	-8.20	peak			

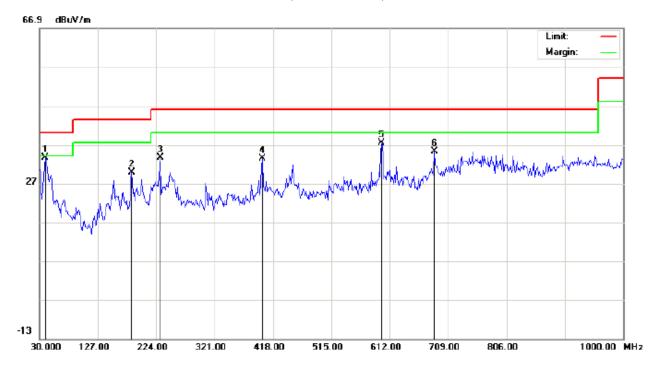
**RESULT: PASS** 

Temperature: 24.1

Humidity: 55.6 %

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



Site: site #1 Limit: FCC Class B 3M Radiation

EUT:BT watch

M/N:2S

Mode: Low Channel TX

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu∀/m	dBu∀/m	dB		cm	degree	
1	*	39.7000	25.13	8.51	33.64	40.00	-6.36	peak			
2		183.5833	16.72	13.16	29.88	43.50	-13.62	peak			
3		230.4667	21.61	11.99	33.60	46.00	-12.40	peak			
4		400.2167	14.25	19.08	33.33	46.00	-12.67	peak			
5		599.0665	14.63	22.73	37.36	46.00	-8.64	peak			
6		686.3667	10.43	24.82	35.25	46.00	-10.75	peak			

Power:

Distance:

Polarization: Vertical

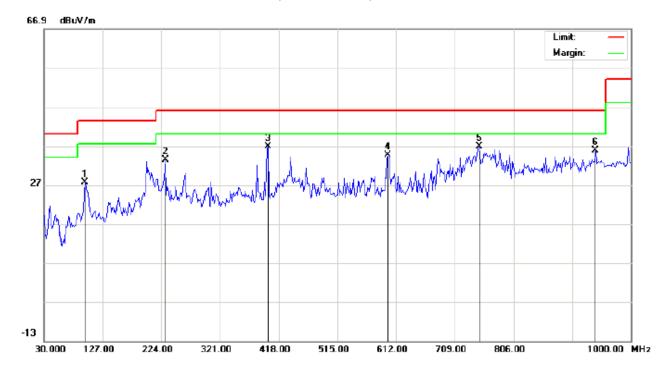
#### **RESULT: PASS**

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

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

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



Site: site #1 Limit: FCC Class B 3M Radiation

EUT:BT watch

M/N:2S

Mode: Middle Channel TX

Note:

Polarization: Horizontal Temperature: 24.1 Power: Humidity: 55.6 %

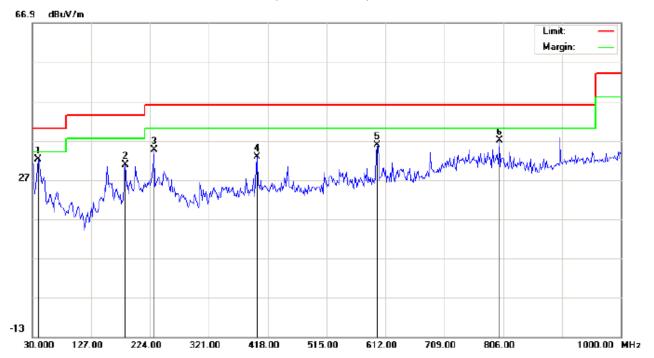
Distance:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu\//m	dBu∀/m	dB		cm	degree	
1		97.9000	19.23	8.38	27.61	43.50	-15.89	peak			
2		230.4667	24.46	8.89	33.35	46.00	-12.65	peak			
3	*	400.2167	17.74	19.08	36.82	46.00	-9.18	peak			
4		599.0665	10.98	23.71	34.69	46.00	-11.31	peak			
5		749.4166	10.19	26.61	36.80	46.00	-9.20	peak			
6		941.7998	6.00	29.77	35.77	46.00	-10.23	peak			

Temperature: 24.1

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



Polarization:

Site: site #1 Limit: FCC Class B 3M Radiation

Limit: FCC Class B 3W Radiatio

EUT:BT watch M/N:2S

Mode: Middle Channel TX

Note:

Power:	Humidity: 55.6 %
Distance:	

Vertical

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu∀/m	dBu∀/m	dB		cm	degree	
1	*	39.7000	23.63	8.51	32.14	40.00	-7.86	peak			
2		183.5833	17.72	13.16	30.88	43.50	-12.62	peak			
3		230.4667	22.61	11.99	34.60	46.00	-11.40	peak			
4		400.2167	13.75	19.08	32.83	46.00	-13.17	peak			
5		599.0665	13.13	22.73	35.86	46.00	-10.14	peak			
6		799.5333	9.65	27.31	36.96	46.00	-9.04	peak			

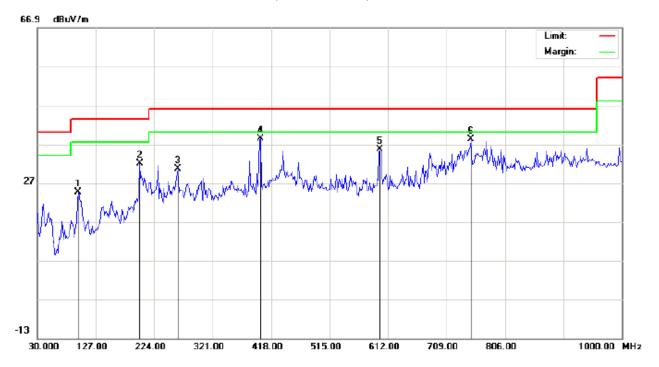
#### **RESULT: PASS**

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

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

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



Site: site #1

Limit: FCC Class B 3M Radiation

EUT:BT watch

M/N:2S

Mode: High Channel TX

Note:

Polarization:	Horizontal	Temperatu	ıre: 24.1
Power:		Humidity:	55.6 %

Distance:

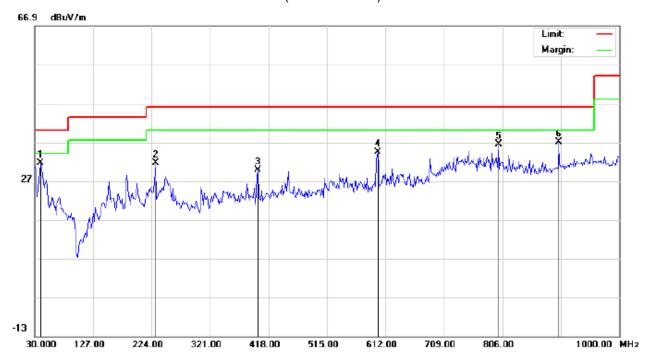
No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu∀/m	dBu∀/m	dB		cm	degree	
1		97.9000	16.23	8.38	24.61	43.50	-18.89	peak			
2		199.7500	20.07	11.99	32.06	43.50	-11.44	peak			
3		262.8000	21.45	9.08	30.53	46.00	-15.47	peak			
4	*	400.2167	19.24	19.08	38.32	46.00	-7.68	peak			
5		599.0666	11.98	23.71	35.69	46.00	-10.31	peak			
6		749.4166	11.69	26.61	38.30	46.00	-7.70	peak			

Temperature: 24.1

Humidity: 55.6 %

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



Polarization: Vertical

Site: site #1 Limit: FCC Class B 3M Radiation

EUT:BT watch

M/N:2S

Mode: High Channel TX

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBuV/m	dBu∀/m	dB		cm	degree	
1	*	39.7000	23.13	8.51	31.64	40.00	-8.36	peak			
2		230.4667	19.61	11.99	31.60	46.00	-14.40	peak			
3		400.2167	10.75	19.08	29.83	46.00	-16.17	peak			
4		599.0667	11.63	22.73	34.36	46.00	-11.64	peak			
5		799.5333	9.15	27.31	36.46	46.00	-9.54	peak			
6		899.7667	8.42	28.60	37.02	46.00	-8.98	peak			

Power:

Distance:

#### **RESULT: PASS**

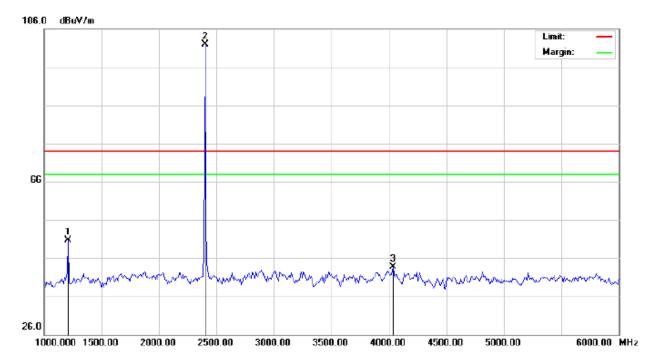
Note: 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

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

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# **RADIATED EMISSION ABOVE 1GHZ**

# RADIATED EMISSION ABOVE 1GHZ (1-10<sup>th</sup> Harmonics)-LOW CHANNEL-HORIZONTAL



Site: Conduction Polarization: Horizontal Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT:BT watch Distance:

M/N: 2S

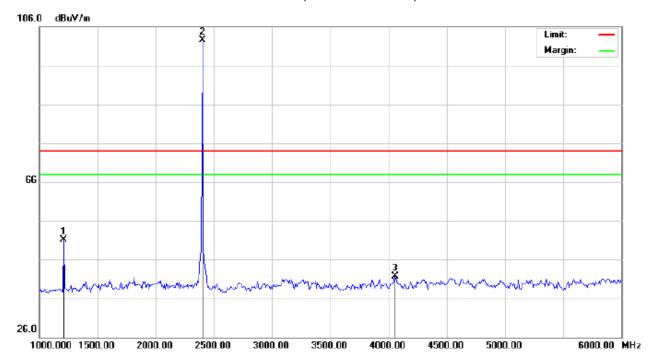
Mode: Low Channel TX

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		1208.333	46.30	4.50	50.80	74.00	-23.20	peak			
2	*	2402.000	91.61	10.32	102.93	74.00	27.93	peak			
3		4033.333	28.99	14.64	43.63	74.00	-30.37	peak			

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# RADIATED EMISSION ABOVE 1GHZ (1-10<sup>th</sup> Harmonics)-LOW CHANNEL -VERTICAL



Site: Conduction Polarization: Vertical Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT:BT watch Distance:

M/N: 2S

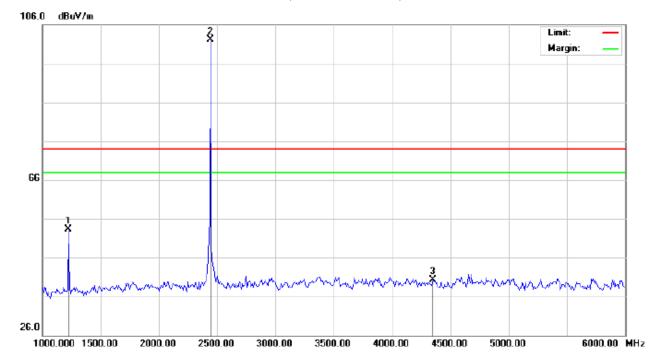
Mode: Low Channel TX

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		1208.333	46.55	4.50	51.05	74.00	-22.95	peak			
2	*	2402.000	92.17	10.32	102.49	74.00	28.49	peak			
3		4058.333	27.51	14.22	41.73	74.00	-32.27	peak			

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# RADIATED EMISSION ABOVE 1GHZ (1-10<sup>th</sup> Harmonics)-MIDDLE CHANNEL-HORIZONTAL



Site: Conduction Polarization: Horizontal Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT:BT watch Distance:

M/N: 2S

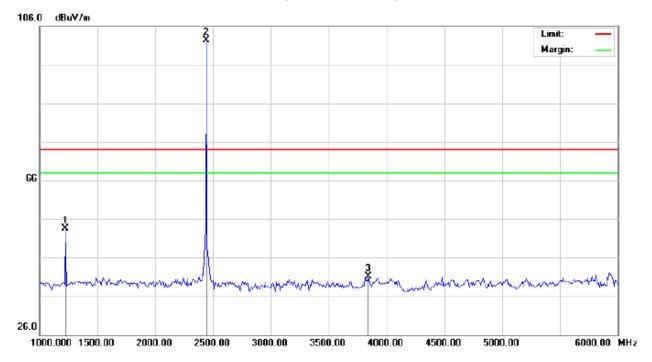
Mode: Middle Channel TX

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height		Comment
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB		cm	degree	
1		1225.000	48.74	4.50	53.24	74.00	-20.76	peak			
2	*	2441.667	91.72	10.37	102.09	74.00	28.09	peak			
3		4350.000	30.90	9.38	40.28	74.00	-33.72	peak			

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# RADIATED EMISSION ABOVE 1GHZ (1-10<sup>th</sup> Harmonics) - MIDDLE CHANNEL -VERTICAL



Site: Conduction Polarization: Vertical Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT:BT watch Distance:

M/N: 2S

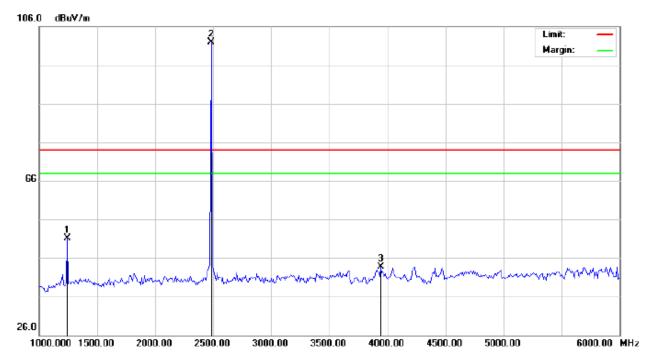
Mode: Middle Channel TX

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		1225.000	49.05	4.50	53.55	74.00	-20.45	peak			
2	*	2441.667	91.88	10.37	102.25	74.00	28.25	peak			
3		3841.667	26.86	14.21	41.07	74.00	-32.93	peak			

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# RADIATED EMISSION ABOVE 1GHZ (1-10<sup>th</sup> Harmonics)-HIGH CHANNEL-HORIZONTAL



Site: Conduction Polarization: Horizontal Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT:BT watch Distance:

M/N: 2S

Mode: High Channel TX

Note:

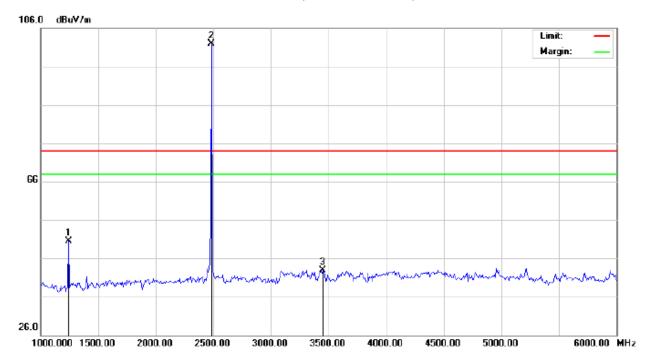
No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB		cm	degree	
1		1241.667	46.51	4.51	51.02	74.00	-22.98	peak			
2	*	2480.333	91.43	10.41	101.84	74.00	27.84	peak			
3		3941.667	28.94	14.83	43.77	74.00	-30.23	peak			

Temperature: 26

Humidity: 60 %

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# RADIATED EMISSION ABOVE 1GHZ (1-10<sup>th</sup> Harmonics)-HIGH CHANNEL -VERTICAL



Site: Conduction Polarization: Vertical
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power:

EUT: BT watch Distance:

M/N: 2S

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		1241.667	45.93	4.51	50.44	74.00	-23.56	peak			
2	*	2480.333	91.47	10.41	101.88	74.00	27.88	peak			
3		3450.000	30.92	12.06	42.98	74.00	-31.02	peak			

#### **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.

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# 11. BAND EDGE EMISSION

# 11.1. MEASUREMENT PROCEDURE

- 1. Set the EUT Work on the top, the bottom operation frequency individually.
- 2. Set SPA Start or Stop Frequency=Operation Frequency, RBW>=100kHz, VBW>=3\*RBW, Center frequency =Operation frequency
- 3. The band edges was measured and recorded.

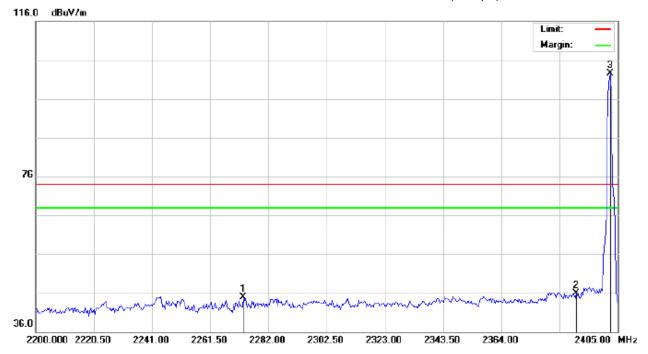
# 11.2. TEST SET-UP

Radiated same as 10.2

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# 11.3. TEST RESULT (Worst Modulation: GFSK)

# TEST PLOT OF BAND EDGE FOR LOW CHANNEL (1Mbps)-Horizontal



Site: Conduction

Polarization: Horizontal Temperature: 26

Limit: FCC Class B 3M Radiation above 1GHZ(PK)

Power:

Humidity: 60 %

EUT: BT watch

M/N: 2S

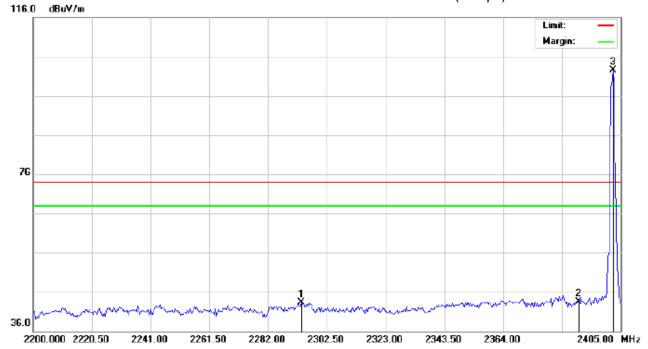
Distance:

Mode: Low Channel TX

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		2273.117	34.71	10.18	44.89	74.00	-29.11	peak			
2		2390.000	35.50	10.31	45.81	74.00	-28.19	peak			
3	*	2402.000	92.22	10.32	102.54	74.00	28.54	peak			

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# TEST PLOT OF BAND EDGE FOR LOW CHANNEL (1Mbps)-Vertical



Site: Conduction Polarization: Vertical Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT: BT watch Distance:

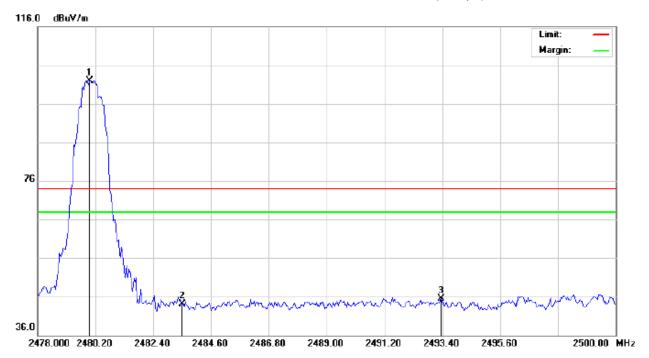
M/N: 2S

Mode: Low Channel TX

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		2293.617	33.07	10.20	43.27	74.00	-30.73	peak			
2		2390.000	33.21	10.31	43.52	74.00	-30.48	peak			
3	*	2402.000	92.09	10.32	102.41	74.00	28.41	peak			

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# TEST PLOT OF BAND EDGE FOR HIGH CHANNEL (1Mbps)-Horizontal



Site: Conduction Polarization: Horizontal Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT: BT watch Distance:

M/N: 2S

Mode: High Channel TX

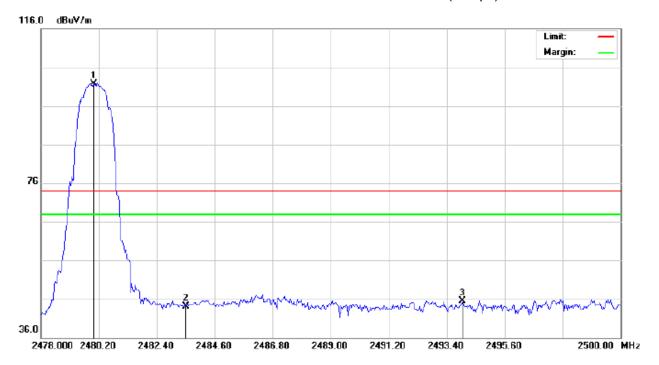
No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2480.000	91.55	10.41	101.96	74.00	27.96	peak			
2		2483.500	33.69	10.41	44.10	74.00	-29.90	peak			
3		2493.363	35.02	10.42	45.44	74.00	-28.56	peak			

Temperature: 26

Humidity: 60 %

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# TEST PLOT OF BAND EDGE FOR HIGH CHANNEL (1Mbps)-Vertical



Site: Conduction

Limit: FCC Class B 3M Radiation above 1GHZ(PK)

EUT: BT watch Distance:

M/N: 2S

Mode: High Channel TX

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height		Comment
	.	MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2480.000	91.32	10.41	101.73	74.00	27.73	peak			
2		2483.500	33.76	10.41	44.17	74.00	-29.83	peak			
3		2493.987	35.04	10.42	45.46	74.00	-28.54	peak			

Polarization:

Power:

Vertical

#### **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.
- 3. Hopping off and Hopping on have been tested and only worst case recorded

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#### 12. NUMBER OF HOPPING FREQUENCY

#### 12.1. MEASUREMENT PROCEDURE

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum analyzer.
- 3. Set the spectrum analyzer Start = 2.4GHz Stop = 2.4835GHz
- 4. Set the Spectrum Analyzer as RBW>=1%span, VBW>=RBW.

#### 12.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 8.2

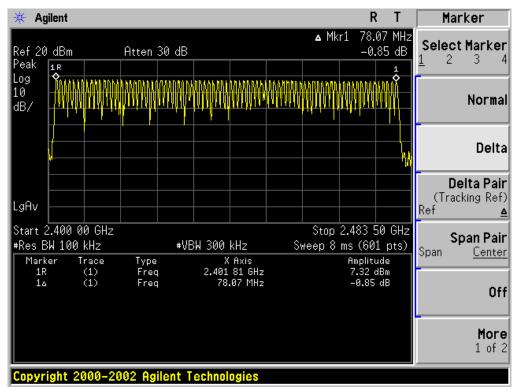
#### 12.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6

#### 12.4. LIMITS AND MEASUREMENT RESULT

TOTAL NO. OF	LIMIT (NO. OF CH)	MEASUREMENT (NO. OF CH)	RESULT
HOPPING CHANNEL	>=15	79	PASS

#### TEST PLOT FOR NO. OF TOTAL CHANNELS (3M)



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# 13. TIME OF OCCUPANCY (DWELL TIME)

#### 13.1. MEASUREMENT PROCEDURE

- 1. Place the EUT on the table and set it in transmitting mode
- 2. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum analyzer.
- 3. Set Span = zero span, centered on a hoping channel
- 4. Set the spectrum analyzer as RBW=1MHz, VBW>=RBW, Span = 0 Hz

# 13.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 8.2

#### 13.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6

#### 13.4. LIMITS AND MEASUREMENT RESULT

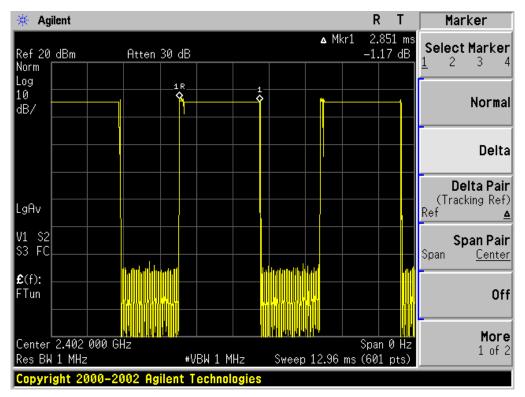
#### The Worst Case (3Mbps)

Channel	Time of Pulse for DH5 (ms)	Period Time (s)	Sweep Time (ms)	Limit (ms)
Low	2.851	31.6	304.1067	400
Middle	2.894	31.6	308.6933	400
High	2.894	31.6	308.6933	400

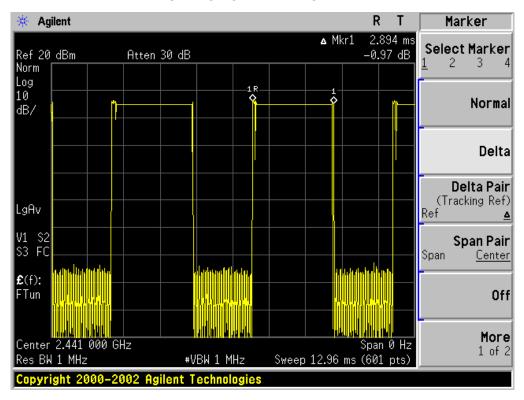
Low Channel Time 2.851\*(1600/6)/79\*31.6=304.11ms Middle Channel Time 2.894\*(1600/6)/79\*31.6=308.69ms High Channel Time 2.894\*(1600/6)/79\*31.6=308.69ms

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#### TEST PLOT OF LOW CHANNEL

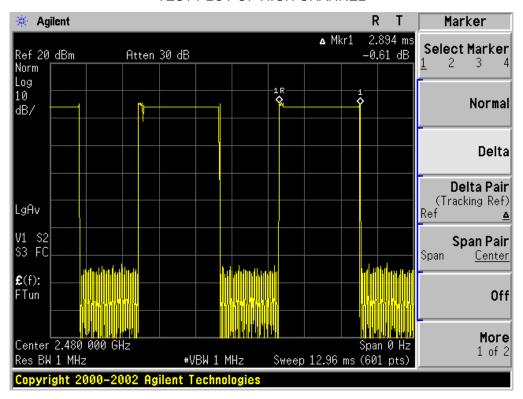


#### TEST PLOT OF MIDDLE CHANNEL



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#### TEST PLOT OF HIGH CHANNEL



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# 14. FREQUENCY SEPARATION

#### 14.1. MEASUREMENT PROCEDURE

- 1. Place the EUT on the table and set it in transmitting mode
- 2. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum analyzer
- 3. Set Span = wide enough to capture the peaks of two adjacent channels Resolution (or IF) Bandwidth (RBW) ≥ 1% of the span Video (or Average) Bandwidth (VBW) ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold

# 14.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 6.2

#### 14.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6.3

#### 14.4. LIMITS AND MEASUREMENT RESULT

CHANNEL	CHANNEL SEPARATION	LIMIT	RESULT
	KHz	KHz	Dage
CH00-CH01	1000	>=25 KHz or 2/3 20 dB BW	Pass

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# TEST PLOT FOR FREQUENCY SEPARATION (3Mbps) worst case



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# 15. FCC LINE CONDUCTED EMISSION TEST

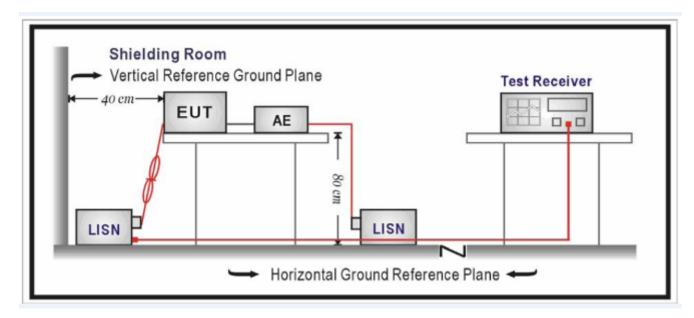
#### 15.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Francis	Maximum RF Line Voltage							
Frequency	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.

#### 15.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



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#### 15.3. 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 adapter 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.

#### 15.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

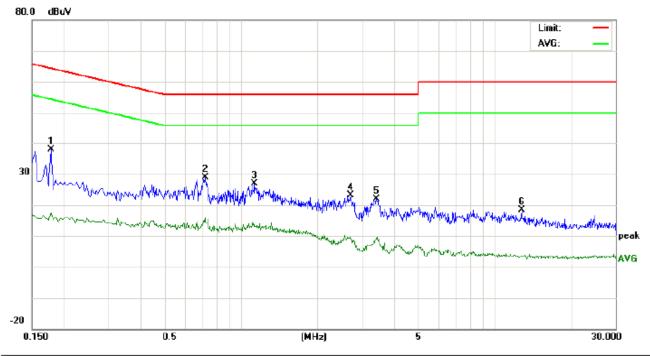
- 1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- 2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were 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.

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# 15.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

(By adapter worst case)

Line Conducted Emission Test Line 1-L



Site: Conduction Phase: L1 Temperature: 23.6
Limit: FCC Class B Conduction(QP) Power: Humidity: 56.6 %

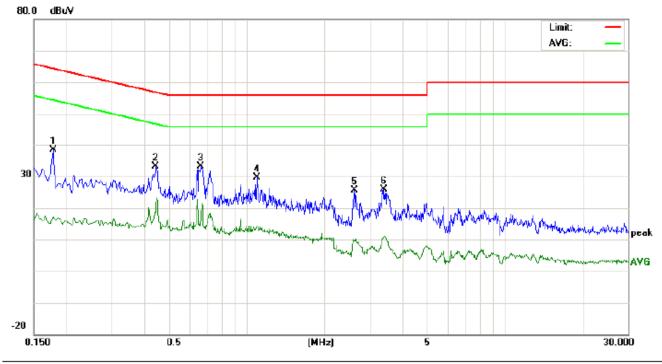
EUT:BT watch M/N: 2S

Mode: BT Link with charging

No.	Freq.	Reading_Level (dBuV)		Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment	
(MH	(MHz)	Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1780	27.70		7.28	10.19	37.89		17.47	64.57	54.57	-26.68	-37.10	Р	
2	0.7260	18.64		4.28	10.33	28.97		14.61	56.00	46.00	-27.03	-31.39	Р	
3	1.1300	16.42		3.30	10.37	26.79		13.67	56.00	46.00	-29.21	-32.33	Р	
4	2.7100	12.62		-1.71	10.48	23.10		8.77	56.00	46.00	-32.90	-37.23	Р	
5	3.4220	11.45		-1.51	10.52	21.97		9.01	56.00	46.00	-34.03	-36.99	Р	
6	12.8180	8.15		-6.88	10.14	18.29		3.26	60.00	50.00	-41.71	-46.74	Р	

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# Line Conducted Emission Test Line 2-N



Site: Conduction Phase: N Temperature: 23.6
Limit: FCC Class B Conduction(QP) Power: Humidity: 56.6 %

EUT:BT watch M/N: 2S

Mode: BT Link with charging

No.	Freq.	Reading_Level (dBuV)		Correct Measureme Factor (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment		
	(MHz)	Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1780	28.16		6.90	10.19	38.35		17.09	64.57	54.57	-26.22	-37.48	Р	
2	0.4460	22.72		11.61	10.36	33.08		21.97	56.95	46.95	-23.87	-24.98	Р	
3	0.6620	22.78		6.90	10.33	33.11		17.23	56.00	46.00	-22.89	-28.77	Р	
4	1.0980	19.38		3.79	10.37	29.75		14.16	56.00	46.00	-26.25	-31.84	Р	
5	2.6140	15.17		-0.89	10.46	25.63		9.57	56.00	46.00	-30.37	-36.43	Р	
6	3.4100	15.46		0.43	10.52	25.98		10.95	56.00	46.00	-30.02	-35.05	Р	

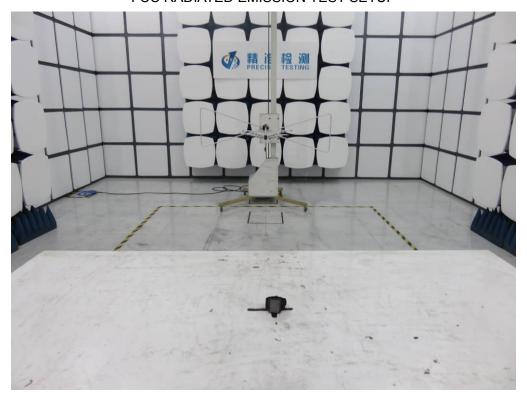
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# **APPENDIX A: PHOTOGRAPHS OF TEST SETUP**

FCC LINE CONDUCTED EMISSION TEST SETUP



FCC RADIATED EMISSION TEST SETUP





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# **APPENDIX B: PHOTOGRAPHS OF EUT**

TOP VIEW OF EUT



**BOTTOM VIEW OF EUT** 



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FRONT VIEW OF EUT



**BACK VIEW OF EUT** 



LEFT VIEW OF EUT



RIGHT VIEW OF EUT



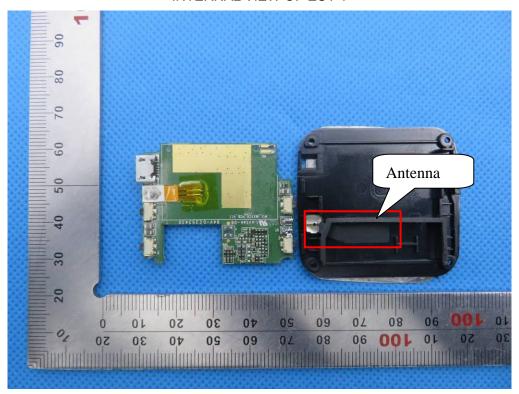
VIEW OF EUT (PORT)



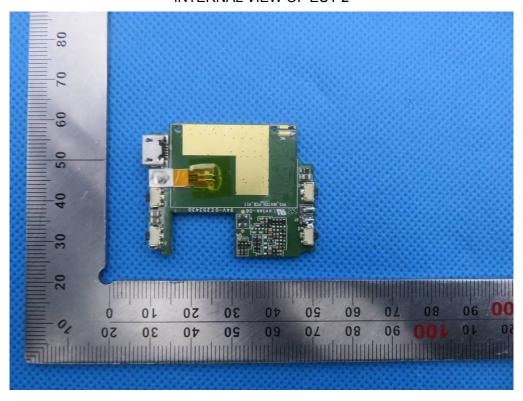
OPEN VIEW OF EUT



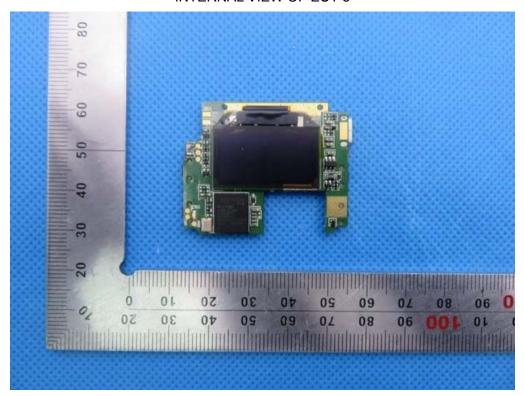
**INTERNAL VIEW OF EUT-1** 



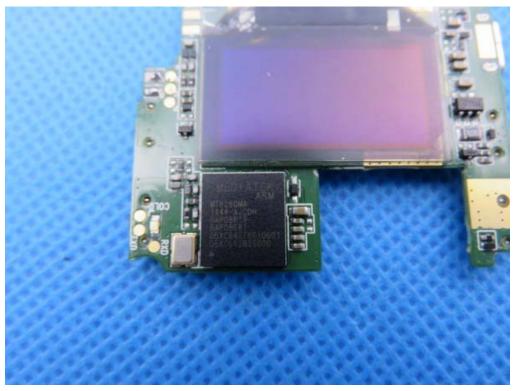
**INTERNAL VIEW OF EUT-2** 



**INTERNAL VIEW OF EUT-3** 



**INTERNAL VIEW OF EUT-4** 



----END OF REPORT----