FCC Test Report

Report No.: AGC00019161103FE03

FCC ID : XELA01

APPLICATION PURPOSE: Original Equipment

PRODUCT DESIGNATION: Bluetooth Headset

BRAND NAME : ORiCORE

MODEL NAME : A01

CLIENT Shenzhen Hongnanke Communication Equipment Co.,

Ltd.

DATE OF ISSUE : Nov.30, 2016

STANDARD(S)

TEST PROCEDURE(S)

: FCC Part 15 Rules

REPORT VERSION: V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

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Page 2 of 55

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Nov.30, 2016	Valid	Original Report

TABLE OF CONTENTS

1. VERIFICATION OF CONFORMITY	
2. GENERAL INFORMATION	5
2.1. PRODUCT DESCRIPTION	5
2.2. TABLE OF CARRIER FREQUENCYS	5
3. MEASUREMENT UNCERTAINTY	6
4. DESCRIPTION OF TEST MODES	
5. SYSTEM TEST CONFIGURATION	
5.1. CONFIGURATION OF EUT SYSTEM	
5.2. EQUIPMENT USED IN EUT SYSTEM	8
5.3. SUMMARY OF TEST RESULTS	
6. TEST FACILITY	9
TEST METHODOLOGY	
7. ALL TEST EQUIPMENT LIST	
8. RADIATED EMISSION	
8.1TEST LIMIT	11
8.2. MEASUREMENT PROCEDURE	12
8.3. TEST SETUP	14
8.4. TEST RESULT	
9. BAND EDGE EMISSION	31
9.1. MEASUREMENT PROCEDURE	
9.2 TEST SETUP	31
9.3 RADIATED TEST RESULT	
10. 20DB BANDWIDTH	36
10.1. MEASUREMENT PROCEDURE	
10.2. TEST SET-UP	36
10.3. LIMITS AND MEASUREMENT RESULTS	
11. FCC LINE CONDUCTED EMISSION TEST	
11.1. LIMITS OF LINE CONDUCTED EMISSION TEST	
11.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST	43
11.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST	44
11.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST	44
11.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST	45
APPENDIX A: PHOTOGRAPHS OF TEST SETUP	47
APPENDIX B: PHOTOGRAPHS OF EUT	50

Page 4 of 55

1. VERIFICATION OF CONFORMITY

Applicant Shenzhen Hongnanke Communication Equipment Co., Ltd.			
Address	No. 16, the Second Industry Park Xiakeng, Tongle, Longgang District, Shenzhen, Guangdong, China		
Manufacturer	Shenzhen Hongnanke Communication Equipment Co., Ltd.		
Address	No. 16, the Second Industry Park Xiakeng, Tongle, Longgang District, Shenzhen, Guangdong, China		
Product Designation	Bluetooth Headset		
Brand Name	ORICORE		
Test Model	A01		
Date of test	Nov.19, 2016 to Nov.22, 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, the energy emitted by the sample tested as described in this report is in compliance with the requirements of FCC Rules Part 15.249.

Tested By	Time Uwang	
	Time Huang(Huang Nanhui)	Nov.22, 2016
Reviewed By	Loweth cen	
	Forrest Lei(Lei Yonggang)	Nov.30, 2016
Approved By	Solya shong	
	Solger Zhang(Zhang Hongyi) Authorized Officer	Nov.30, 2016

Page 5 of 55

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	0.27dBm (Max EIRP Power=Max radiation field-95.2)	
Bluetooth Version	V4.1	
Modulation	GFSK, π /4-DQPSK, 8DPSK	
Number of channels	79	
Hardware Version	LB300-V03	
Software Version Baseus A01-eh5.msf		
Antenna Designation	Fixed Antenna	
Antenna Gain	0dBi	
Power Supply	DC 3.7V by battery	

Note:

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

2. The EUT didn't support BLE.

2.2. TABLE OF CARRIER FREQUENCYS

BR/EDR channel List

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

Page 6 of 55

3. MEASUREMENT UNCERTAINTY

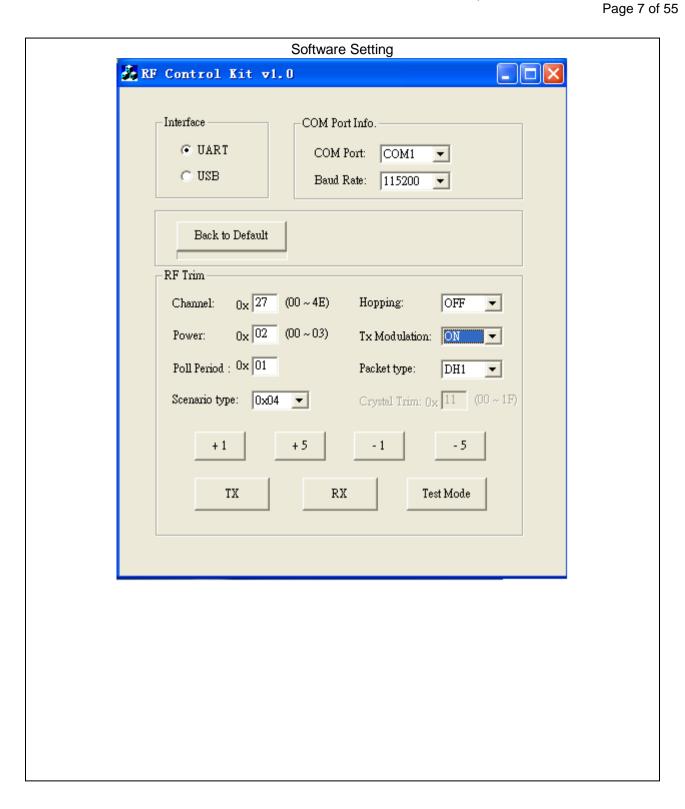
The reported uncertainty of measurement y $\pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 % \circ

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 TX(GFSK)
2	Middle channel TX (GFSK)
3	High channel TX (GFSK)
4	Low channel TX(π/4-DQPSK)
5	Middle channel TX(π/4-DQPSK)
6	High channel TX (π/4-DQPSK)
7	Low channel TX(8DPSK)
8	Middle channel TX (8DPSK)
9	High channel TX (8DPSK)
10	BT Link with charging
11	BT Link

- 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.

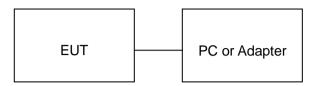


Page 8 of 55

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	Bluetooth Headset	ORICORE	A01	EUT
2	Battery	JIN YU ZHOU	450825	A.E
3	PC	Sony	E1412AYCW	A.E
4	Control box	ISSC	N/A	A.E
5	Adapter	IPRO	NTR-S01	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
§15.215	Bandwidth	Compliant

Page 9 of 55

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 C63.10:2013.

TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.10-2013.

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 & SCHWARZBECK	ESCI	101417	July 4, 2016	July 3, 2017		
Trilog Broadband Antenna (25M-1GHz)	SCHWARZBECK	VULB9160	9160-3355	July 4, 2016	July 3, 2017		
Signal Amplifier	SCHWARZBECK	BBV 9475	9745-0013	July 4, 2016	July 3, 2017		
RF Cable	SCHWARZBECK	AK9515E	96221	July 4, 2016	July 3, 2017		
3m Anechoic Chamber	CHENGYU	966	PTS-001	June 6, 2016	June 5, 2017		
MULTI-DEVICE Positioning Controller	MAX-FULL	MF-7802	MF780208339	N/A	N/A		
Active loop antenna (9K-30MHz)	SCHWARZBECK	FMZB1519	1519-038	June 6, 2016	June 5, 2017		
Spectrum analyzer	AGILENT	E4407B	MY46185649	June 6, 2016	June 5, 2017		
Radiation Cable 1	MXT	RS1	R005	June 6, 2016	June 5, 2017		
Radiation Cable 2	MXT	RS1	R006	June 6, 2016	June 5, 2017		

Page 10 of 55

FOR RADIATED EMISSION TEST (1GHZ ABOVE)

TORTOLON (TED EIVINGE	,	ted Emission Tes	st Site		
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI Test Receiver	ROHDE & SCHWARZBECK	ESCI	101417	July 4, 2016	July 3, 2017
Horn Antenna (1G-18GHz)	SCHWARZBECK	BBHA9120D	9120D-1246	July 11, 2016	July 10, 2017
Spectrum Analyzer	AGILENT	E4411B	MY4511453	July 4, 2016	July 3, 2017
Signal Amplifier	SCHWARZBECK	BBV 9718	9718-269	July 4, 2016	July 3, 2017
RF Cable	SCHWARZBECK	AK9515H	96220	July 4, 2016	July 3, 2017
3m Anechoic Chamber	CHENGYU	966	PTS-001	June 6, 2016	June 5, 2017
MULTI-DEVICE Positioning Controller	MAX-FULL	MF-7802	MF780208339	N/A	N/A
Horn Ant (18G-40GHz)	SCHWARZBECK	BBHA 9170	9170-181	June 6, 2016	June 5, 2017
Radiation Cable 1	MXT	RS1	R005	June 6, 2016	June 5, 2017
Radiation Cable 2	MXT	RS1	R006	June 6, 2016	June 5, 2017

	Conducted Emission Test Site											
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration							
EMI Test Receiver	ROHDE & SCHWARZBECK	ESCI	101417	July 4, 2016	July 3, 2017							
Artificial Mains Network	NARDA	L2-16B	000WX31025	July 8, 2016	July 7, 2017							
Artificial Mains Network (AUX)	NARDA	L2-16B	000WX31026	July 8, 2016	July 7, 2017							
RF Cable	SCHWARZBECK	AK9515E	96222	July 4, 2016	July 3, 2017							
Shielded Room	CHENGYU	843	PTS-002	June 6, 2016	June 5, 2017							
Conduction Cable	MXT	SE1	S003	June 6, 2016	June 5, 2017							

Page 11 of 55

8. RADIATED EMISSION

8.1TEST LIMIT

Standard FCC15.249

Fundamental Frequency	Field Strength of Fundamental	Field Strength of Harmonics
	(millivolts/meter)	(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	Distance	Field Stre	ngths Limit			
(MHz)	Meters	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 dB μ 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.

Page 12 of 55

8.2. MEASUREMENT PROCEDURE

1. The measuring distance of 3m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation(Below 1GHz)

- 2. The measuring distance of 3m shall used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation(Above 1GHz)
- 3. The height of the test antenna shall vary between 1m to 4m.Both horizontal and vertical polarization Of the antenna are set to make the measurement.
- 4. The initial step in collecting radiated emission data is a receive peak detector mode. Pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- 5. All readings are peak unless otherwise stated QP in column of Note. Peak denoted that the Peak reading compliance with the QP limits and then QP Mode measurement didn't perform(Below 1GHz)
- 6. All readings are Peak mode value unless otherwise stated AVG in column of Note. If the Peak mode measured value compliance with the Peak limits and lower than AVG Limits, the EUT shall be deemed to meet Peak & AVG limits and then only Peak mode was measured, but AVG mode didn't perform.(Above 1GHz)

Report No.: AGC00019161103FE03 Page 13 of 55

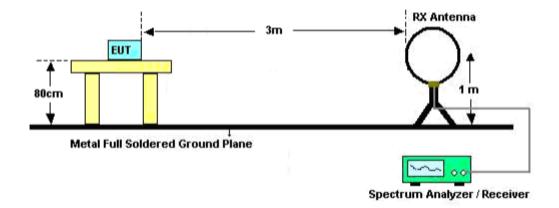
The following table is the setting of spectrum analyzer and receiver.

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 1MHz/3MHz for Peak, 1MHz/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

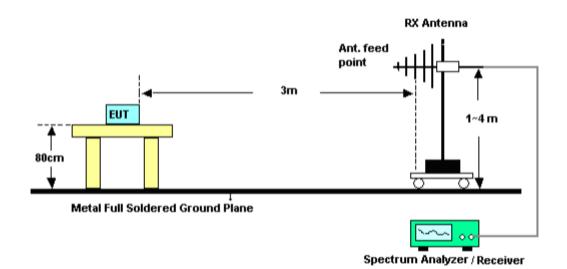
Report No.: AGC00019161103FE03 Page 14 of 55

8.3. TEST SETUP

Radiated Emission Test-Setup Frequency Below 30MHz

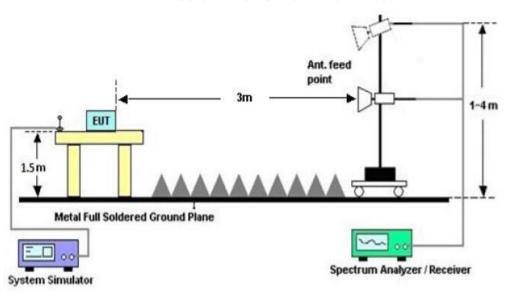


RADIATED EMISSION TEST SETUP 30MHz-1000MHz



Page 15 of 55

RADIATED EMISSION TEST SETUP ABOVE 1000MHz



Page 16 of 55

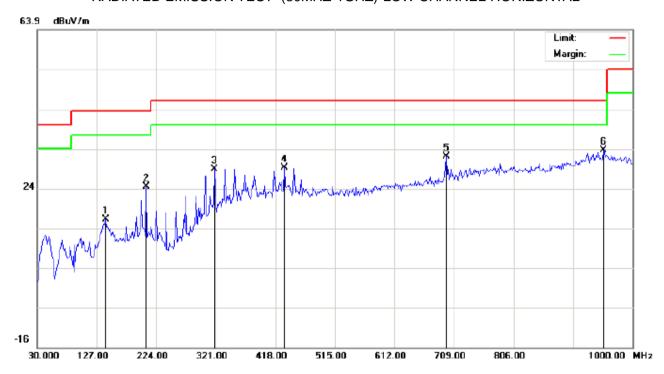
8.4. TEST RESULT (Worst modulation: 8DPSK)

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: Bluetooth Headset

M/N: A01

Mode:Low Channel TX

Note:

Polarization: Horizontal Temperature: 25.3
Power: Humidity: 55.2 %

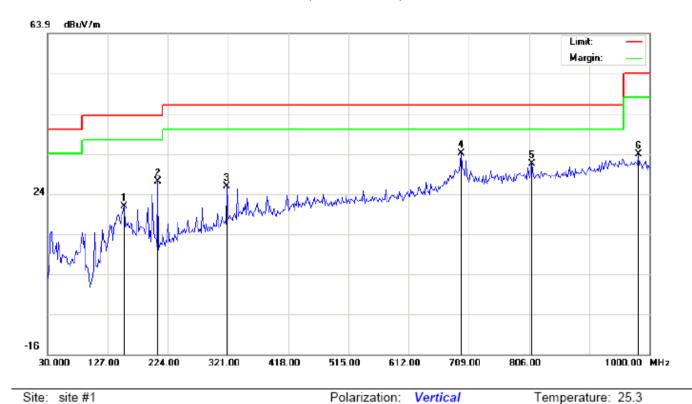
Distance:

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		141.5500	1.29	14.82	16.11	43.50	-27.39	peak			
2		207.8333	13.29	11.20	24.49	43.50	-19.01	peak			
3		319.3833	12.11	16.70	28.81	46.00	-17.19	peak			
4		432.5500	9.18	20.06	29.24	46.00	-16.76	peak			
5		696.0667	7.00	25.08	32.08	46.00	-13.92	peak		·	
6	*	953.1167	3.65	29.97	33.62	46.00	-12.38	peak			

Humidity: 55.2 %

Page 17 of 55

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



Site: site #1

Limit: FCC Class B 3M Radiation

EUT: Bluetooth Headset

M/N: A01

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		152.8667	5.53	15.28	20.81	43.50	-22.69	peak			
2		207.8333	17.33	9.77	27.10	43.50	-16.40	peak			
3		319.3833	9.15	16.70	25.85	46.00	-20.15	peak			
4	*	696.0667	8.83	25.08	33.91	46.00	-12.09	peak			
5		810.8500	4.17	27.32	31.49	46.00	-14.51	peak		·	
6		982.2167	4.08	29.69	33.77	54.00	-20.23	peak			

Power:

Distance:

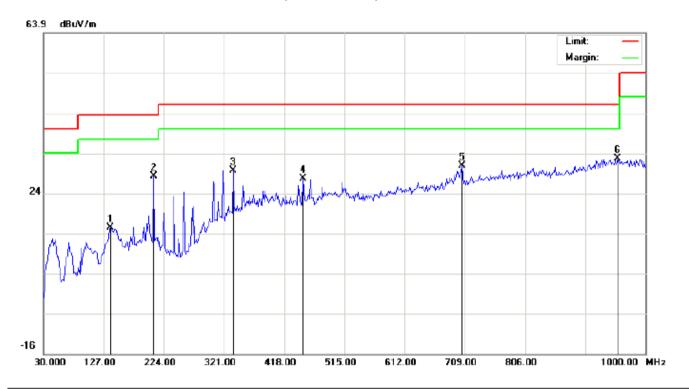
RESULT: PASS

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

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

Page 18 of 55

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



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

EUT: Bluetooth Headset

M/N: A01

Mode:Middle Channel TX

Note:

Polarization: *Horizontal* Temperature: 25.3 Power: Humidity: 55.2 %

Distance:

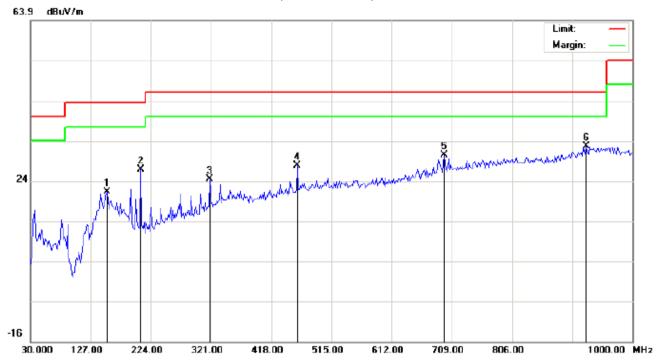
No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu∀/m	dBu∀/m	dB		cm	degree	
1		138.3167	1.03	14.41	15.44	43.50	-28.06	peak			
2		207.8333	16.97	11.20	28.17	43.50	-15.33	peak			
3		335.5500	11.88	17.78	29.66	46.00	-16.34	peak			
4		448.7167	7.11	20.55	27.66	46.00	-18.34	peak			
5		704.1500	5.55	25.31	30.86	46.00	-15.14	peak			
6	*	954.7333	2.59	29.95	32.54	46.00	-13.46	peak			

Temperature: 25.3

Humidity: 55.2 %

Page 19 of 55

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



Polarization: Vertical

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

LITTIL. I CC Class D SIVI Radiatio

EUT: Bluetooth Headset

M/N: A01

Mode:Middle 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		152.8667	5.84	15.28	21.12	43.50	-22.38	peak			
2		207.8333	17.08	9.77	26.85	43.50	-16.65	peak			
3		319.3833	7.72	16.70	24.42	46.00	-21.58	peak			
4		460.0333	7.19	20.70	27.89	46.00	-18.11	peak			
5		696.0667	5.23	25.08	30.31	46.00	-15.69	peak			
6	*	925.6333	3.28	29.32	32.60	46.00	-13.40	peak			

Power:

Distance:

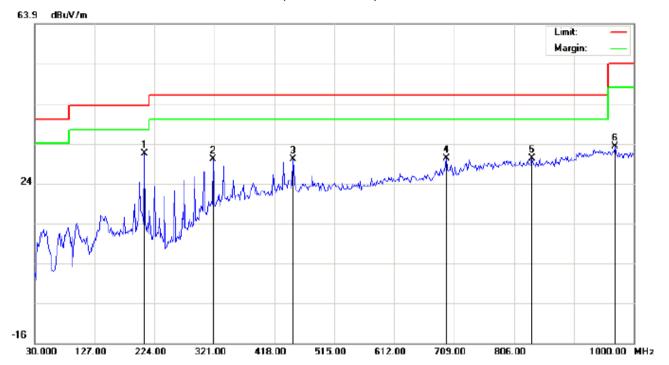
RESULT: PASS

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

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

Page 20 of 55

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



Site: site #1

Limit: FCC Class B 3M Radiation

EUT: Bluetooth Headset

M/N: A01

Mode: High Channel TX

Note:

Polarization: *Horizontal* Temperature: 25.3 Power: Humidity: 55.2 %

Distance:

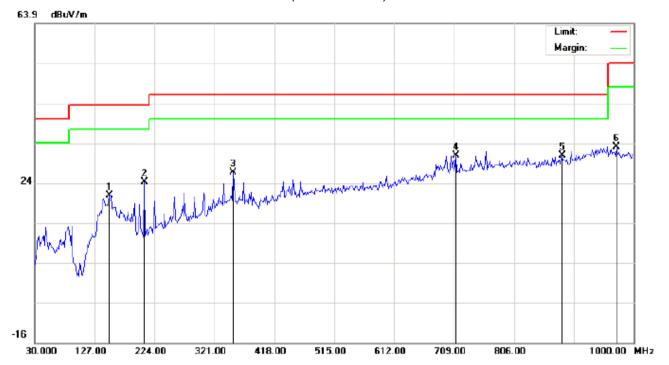
No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu∀/m	dBu∀/m	dB		cm	degree	
1	*	207.8333	20.11	11.20	31.31	43.50	-12.19	peak			
2		319.3833	13.25	16.70	29.95	46.00	-16.05	peak			
3		448.7167	9.49	20.55	30.04	46.00	-15.96	peak			
4		696.0667	5.20	25.08	30.28	46.00	-15.72	peak			
5		835.1000	2.89	27.31	30.20	46.00	-15.80	peak			
6		969.2833	3.48	29.81	33.29	54.00	-20.71	peak			

Temperature: 25.3

Humidity: 55.2 %

Page 21 of 55

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



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

EUT: Bluetooth Headset

M/N: A01

Mode:High 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		151.2500	5.63	15.27	20.90	43.50	-22.60	peak			
2		207.8333	14.36	9.77	24.13	43.50	-19.37	peak			
3		351.7167	7.91	18.75	26.66	46.00	-19.34	peak			
4	*	712.2333	5.28	25.54	30.82	46.00	-15.18	peak			
5		883.6000	2.55	28.18	30.73	46.00	-15.27	peak		·	
6		972.5167	3.24	29.78	33.02	54.00	-20.98	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.

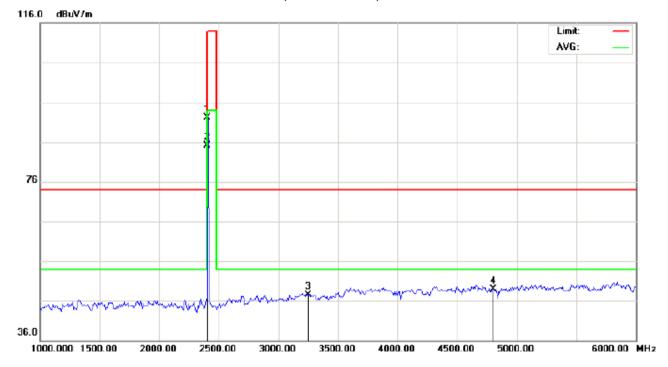
Page 22 of 55

RADIATED EMISSION ABOVE 1GHZ

(Worst modulation: 8DPSK)

FOR BR/EDR

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



Site: site #1 Polarization: Horizontal Temperature: 22.7
Limit: FCC Class B 3M Radiation above 1GHZ(PK)- Power: Humidity: 53.6 %

EUT: Bluetooth Headset Distance:

M/N: A01

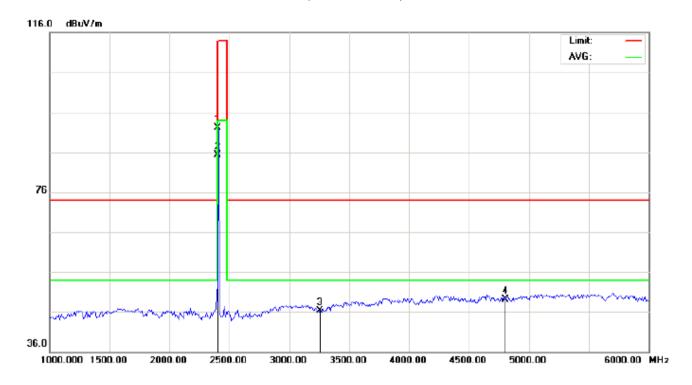
Mode: Low Channel TX

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		2402.000	81.81	10.32	92.13	114.00	-21.87	peak			
2	*	2402.000	74.73	10.32	85.05	94.00	-8.95	AVG	100	35	
3		3252.000	35.72	11.88	47.60	74.00	-26.40	peak			
4		4804.000	41.24	7.69	48.93	74.00	-25.07	peak			

Page 23 of 55

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



Site: site #1 Polarization: Vertical Temperature: 22.7
Limit: FCC Class B 3M Radiation above 1GHZ(PK)- Power: Humidity: 53.6 %

EUT: Bluetooth Headset Distance:

M/N: A01

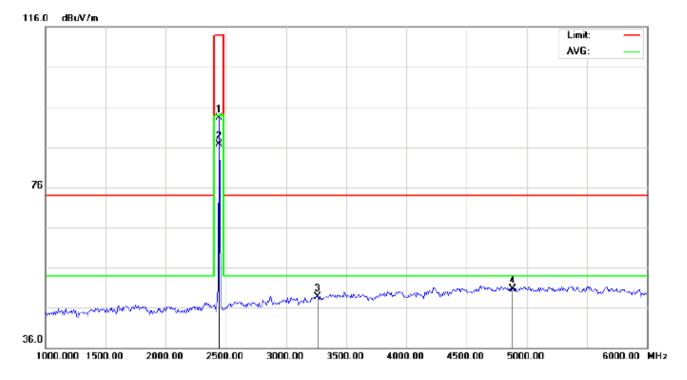
Mode: Low Channel TX

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		2402.000	81.84	10.32	92.16	114.00	-21.84	peak			
2	*	2402.000	75.04	10.32	85.36	94.00	-8.64	AVG	100	37	
3		3256.000	34.40	11.88	46.28	74.00	-27.72	peak			
4		4804.000	41.38	7.69	49.07	74.00	-24.93	peak			

Page 24 of 55

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



Site: site #1 Polarization: Horizontal Temperature: 22.7
Limit: FCC Class B 3M Radiation above 1GHZ(PK)- Power: Humidity: 53.6 %

EUT: Bluetooth Headset Distance:

M/N: A01

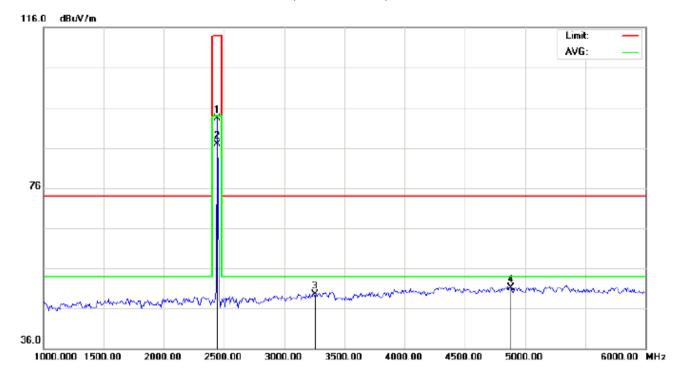
Mode: Middle Channel TX

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		2441.000	83.00	10.36	93.36	114.00	-20.64	peak			
2	*	2441.000	76.33	10.36	86.69	94.00	-7.31	AVG	100	36	
3		3264.000	36.86	11.89	48.75	74.00	-25.25	peak			
4		4882.000	42.88	7.89	50.77	74.00	-23.23	peak			

Page 25 of 55

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



Site: site #1 Polarization: Vertical Temperature: 22.7

Limit: FCC Class B 3M Radiation above 1GHZ(PK)- Power: Humidity: 53.6 %

EUT: Bluetooth Headset Distance:

M/N: A01

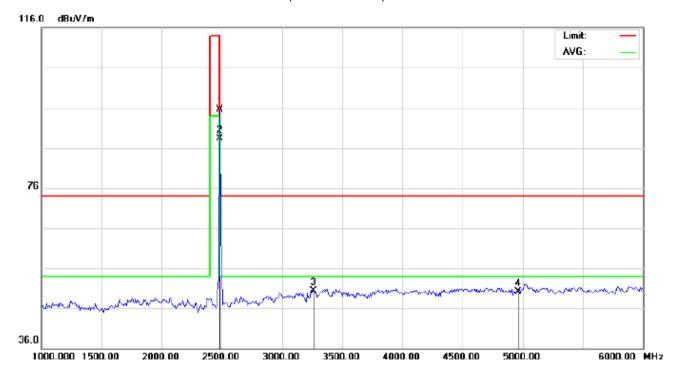
Mode: Middle Channel TX

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		2441.000	83.02	10.36	93.38	114.00	-20.62	peak			
2	*	2441.000	76.53	10.36	86.89	94.00	-7.11	AVG	100	39	
3		3259.000	37.63	11.88	49.51	74.00	-24.49	peak			
4		4882.000	43.31	7.89	51.20	74.00	-22.80	peak			

Page 26 of 55

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



Site: site #1 Polarization: Horizontal Temperature: 22.7
Limit: FCC Class B 3M Radiation above 1GHZ(PK)- Power: Humidity: 53.6 %

EUT: Bluetooth Headset Distance:

M/N: A01

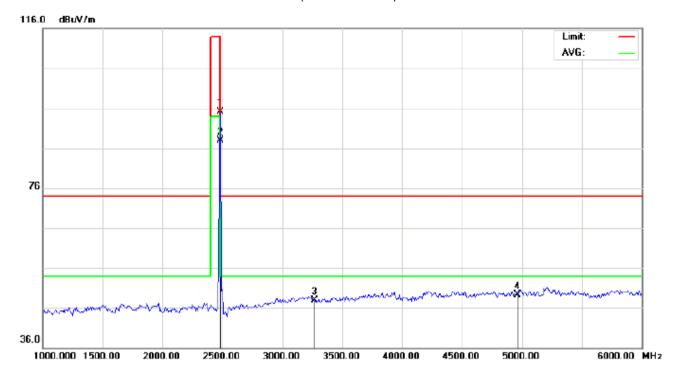
Mode: High Channel TX

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		2480.000	85.06	10.41	95.47	114.00	-18.53	peak			
2	*	2480.000	77.98	10.41	88.39	94.00	-5.61	AVG	100	36	
3		3265.000	38.41	11.89	50.30	74.00	-23.70	peak			
4		4960.000	42.01	8.09	50.10	74.00	-23.90	peak			

Page 27 of 55

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



Site: site #1 Polarization: Vertical Temperature: 22.7
Limit: FCC Class B 3M Radiation above 1GHZ(PK)- Power: Humidity: 53.6 %

EUT: Bluetooth Headset Distance:

M/N: A01

Mode: High 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		2480.000	84.72	10.41	95.13	114.00	-18.87	peak			
2	*	2480.000	77.45	10.41	87.86	94.00	-6.14	AVG	100	41	
3		3267.000	35.97	11.89	47.86	74.00	-26.14	peak			
4		4960.000	41.16	8.09	49.25	74.00	-24.75	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.

Page 28 of 55

Field strength of the fundamental signal

3Mbps Result:

Peak value

Frequency	equency Reading Factor Measurement		Limit	Over	Antenna	
(MHz)	(dBuv)	(dB/m)	(dBuv/m)	(dBuv/m)	(dB)	Polarization
2402	81.81	10.32	92.13	114	-21.87	Horizontal
2402	81.84	10.32	92.16	114	-21.84	Vertical
2441	83.00	10.36	93.36	114	-20.64	Horizontal
2441	83.02	10.36	93.38	114	-20.62	Vertical
2480	85.06	10.41	95.47	114	-18.53	Horizontal
2480	84.72	10.41	95.13	114	-18.87	Vertical

Average value

Frequency	Reading Level	Factor	Measurement	Limit	Over	Antenna
(MHz)	(dBuv)	(dB/m)	(dBuv/m)	(dBuv/m)	(dB)	Polarization
2402	74.73	10.32	85.05	94	-8.95	Horizontal
2402	75.04	10.32	85.36	94	-8.64	Vertical
2441	76.33	10.36	86.69	94	-7.31	Horizontal
2441	76.53	10.36	86.89	94	-7.11	Vertical
2480	77.98	10.41	88.39	94	-5.61	Horizontal
2480	77.45	10.41	87.86	94	-6.14	Vertical

Report No.: AGC00019161103FE03 Page 29 of 55

2Mbps Result:

Peak value

Frequency	Reading Level	Factor	Measurement	Limit	Over	Antenna
(MHz)	(dBuv)	(dB/m)	(dBuv/m)	(dBuv/m)	(dB)	Polarization
2402	81.79	10.32	92.11	114	-21.89	Horizontal
2402	81.81	10.32	92.13	114	-21.87	Vertical
2441	82.78	10.36	93.14	114	-20.86	Horizontal
2441	82.88	10.36	93.24	114	-20.76	Vertical
2480	84.85	10.41	95.26	114	-18.74	Horizontal
2480	84.48	10.41	94.89	114	-19.11	Vertical

Average value

Frequency	Reading Level	Factor	Measurement	Limit	Over	Antenna
(MHz)	(dBuv)	(dB/m)	(dBuv/m)	(dBuv/m)	(dB)	Polarization
2402	74.70	10.32	85.02	94	-8.98	Horizontal
2402	74.82	10.32	85.14	94	-8.86	Vertical
2441	75.86	10.36	86.22	94	-7.78	Horizontal
2441	75.90	10.36	86.26	94	-7.74	Vertical
2480	77.86	10.41	88.27	94	-5.73	Horizontal
2480	77.12	10.41	87.53	94	-6.47	Vertical

Report No.: AGC00019161103FE03 Page 30 of 55

1Mbps Result:

Peak value

Frequency	Reading Level	Factor	Measurement	Limit	Over	Antenna
(MHz)	(dBuv)	(dB/m)	(dBuv/m)	(dBuv/m)	(dB)	Polarization
2402	81.63	10.32	91.95	114	-22.05	Horizontal
2402	81.79	10.32	92.11	114	-21.89	Vertical
2441	82.68	10.36	93.04	114	-20.96	Horizontal
2441	82.85	10.36	93.21	114	-20.79	Vertical
2480	84.73	10.41	95.14	114	-18.86	Horizontal
2480	84.61	10.41	95.02	114	-18.98	Vertical

Average value

Frequency	Reading Level	Factor	Measurement	Limit	Over	Antenna
(MHz)	(dBuv)	(dB/m)	(dBuv/m)	(dBuv/m)	(dB)	Polarization
2402	74.57	10.32	84.89	94	-9.11	Horizontal
2402	74.84	10.32	85.16	94	-8.84	Vertical
2441	75.90	10.36	86.26	94	-7.74	Horizontal
2441	76.26	10.36	86.62	94	-7.38	Vertical
2480	77.72	10.41	88.13	94	-5.87	Horizontal
2480	77.21	10.41	87.62	94	-6.38	Vertical

Page 31 of 55

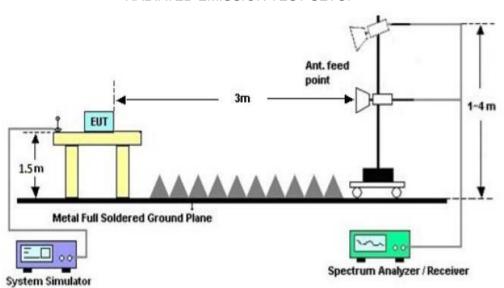
9. BAND EDGE EMISSION

9.1. MEASUREMENT PROCEDURE

- 1. The 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.
- 2. Max hold the trace of the setup1, and the EUT operates at hopping-on test mode to verify the largest spurious emissions power.
- 3. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission

9.2 TEST SETUP

RADIATED EMISSION TEST SETUP



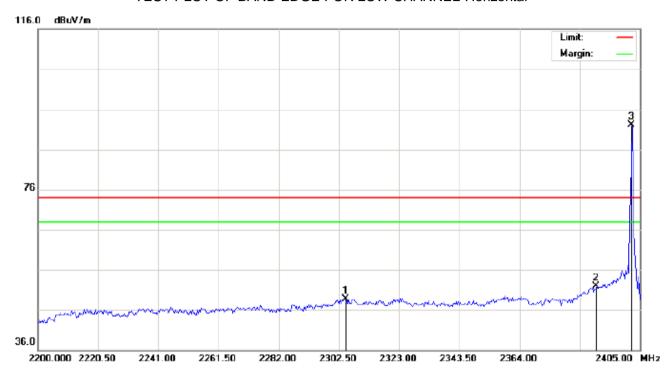
Page 32 of 55

9.3 RADIATED TEST RESULT

(Worst modulation: GFSK)

FOR BR/EDR

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:Bluetooth Headset

Distance:

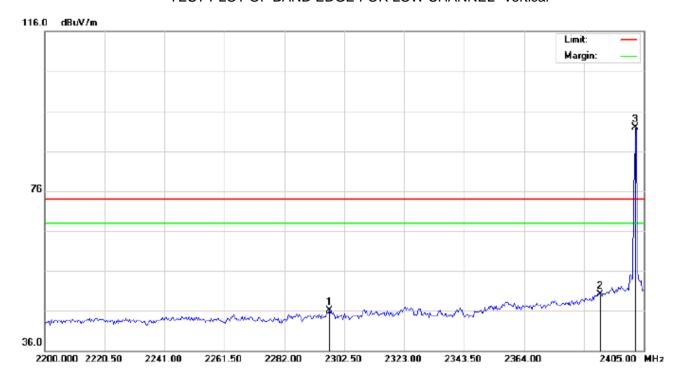
M/N:A01

Mode: Low Channel TX

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		2304.892	38.48	10.22	48.70	74.00	-25.30	peak			
2		2390.000	41.50	10.31	51.81	74.00	-22.19	peak			
3	*	2402.000	81.82	10.32	92.14	74.00	18.14	peak			

Page 33 of 55

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:Bluetooth Headset Distance:

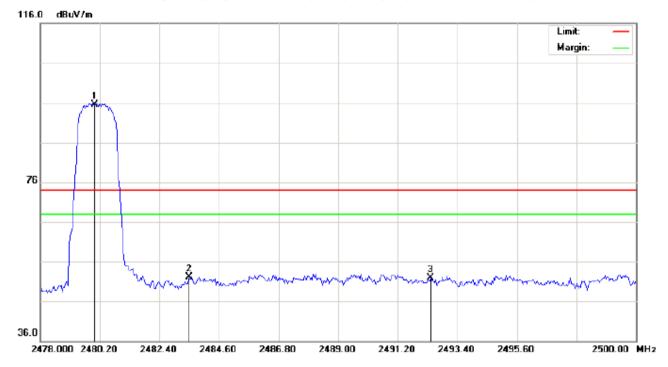
M/N:A01

Mode: Low Channel TX

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		2297.375	35.92	10.21	46.13	74.00	-27.87	peak			
2		2390.000	39.71	10.31	50.02	74.00	-23.98	peak			
3	*	2402.000	81.61	10.32	91.93	74.00	17.93	peak			

Page 34 of 55

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) Humidity: 60 % Power:

EUT:Bluetooth Headset

Distance:

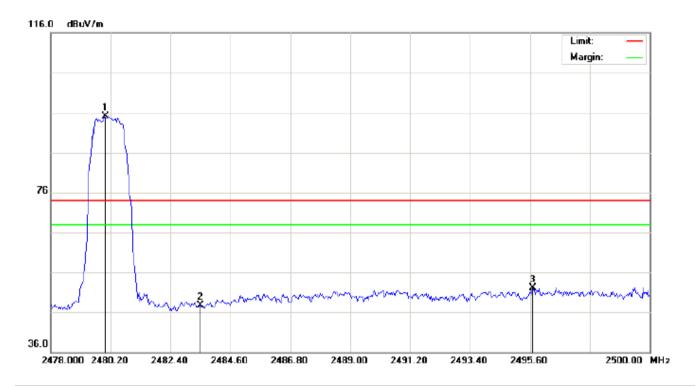
M/N:A01

Mode: High Channel TX

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	*	2480.000	85.05	10.41	95.46	74.00	21.46	peak			
2		2483.500	41.69	10.41	52.10	74.00	-21.90	peak			
3		2492.410	41.44	10.42	51.86	74.00	-22.14	peak			

Page 35 of 55

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:Bluetooth Headset Distance:

M/N:A01

Mode: High 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	*	2480.000	84.71	10.41	95.12	74.00	21.12	peak			
2		2483.500	37.26	10.41	47.67	74.00	-26.33	peak			
3		2495.710	41.65	10.43	52.08	74.00	-21.92	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.

Hopping on mode and Hopping off mode have been tested, but only worst case reported.

Page 36 of 55

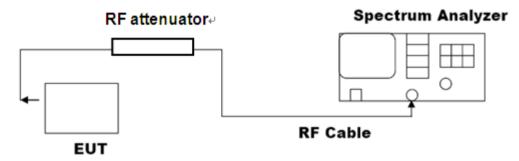
10. 20DB BANDWIDTH

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 \geq 1% of the 20 dB bandwidth, VBW \geq RBW; Sweep = auto; Detector function = peak
- 4. Set SPA Trace 1 Max hold, then View.

10.2. TEST SET-UP

(BLOCK DIAGRAM OF CONFIGURATION)



Note: The EUT has been used temporary antenna connector for testing.

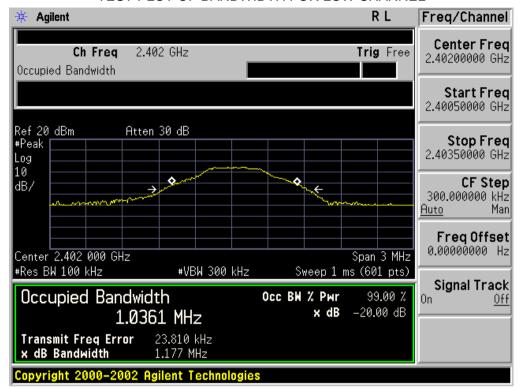
10.3. LIMITS AND MEASUREMENT RESULTS

FOR BR/EDR

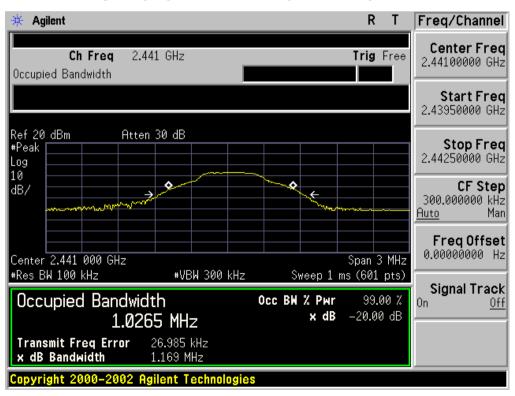
BLUETOOTH 1MBPS LIMITS AND MEASUREMENT RESULT										
	Measurement Result									
Applicable Limits		Dogult								
		Result								
	Low Channel	1.036	1.177	PASS						
N/A	Middle Channel	1.027	1.169	PASS						
	High Channel	1.026	1.170	PASS						

Page 37 of 55

TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

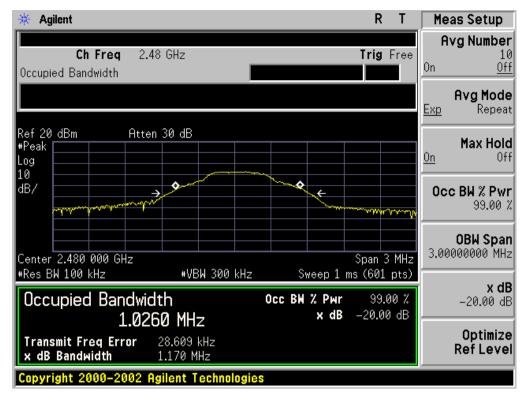


TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



Page 38 of 55

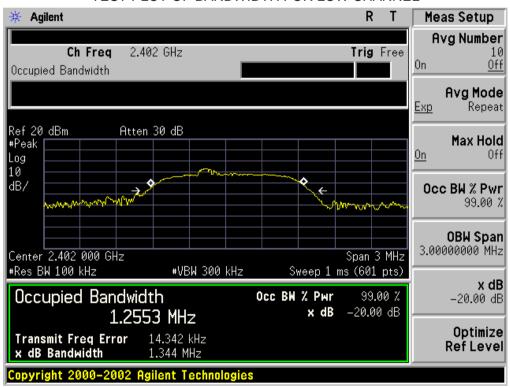
TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



Report No.: AGC00019161103FE03 Page 39 of 55

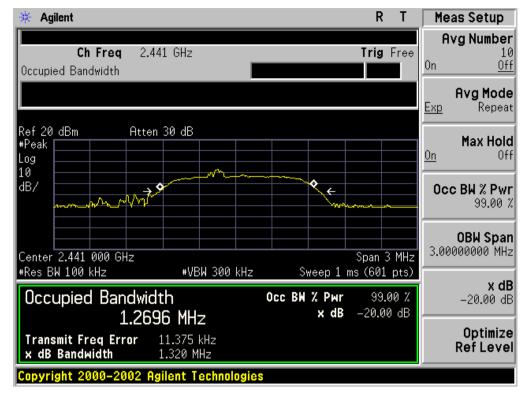
BLUETOOTH 2MBPS LIMITS AND MEASUREMENT RESULT									
	Measurement Result								
Applicable Limits		Result							
		99%OBW (MHz)	-20dB BW(MHz)	Result					
	Low Channel	1.255	1.344	PASS					
N/A	Middle Channel	1.270	1.320	PASS					
	High Channel	1.263	1.336	PASS					

TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

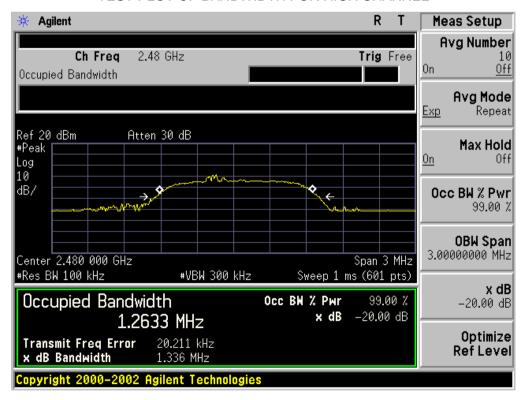


Page 40 of 55

TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



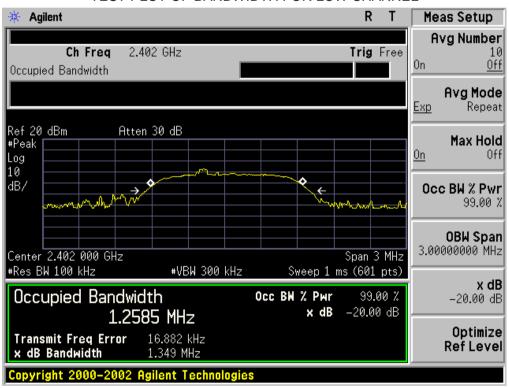
TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



Report No.: AGC00019161103FE03 Page 41 of 55

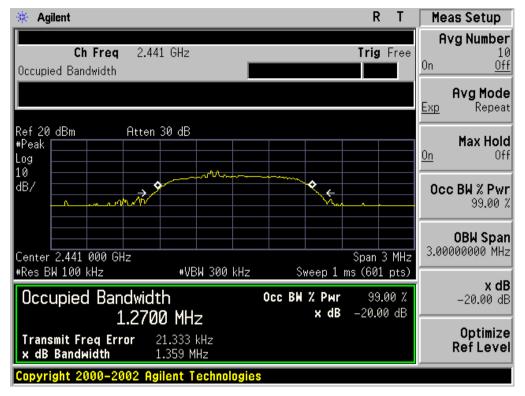
BLUETOOTH 3MBPS LIMITS AND MEASUREMENT RESULT									
	Measurement Result								
Applicable Limits		Decult							
		99%OBW (MHz)	-20dB BW(MHz)	Result					
	Low Channel	1.259	1.349	PASS					
N/A	Middle Channel	1.270	1.359	PASS					
	High Channel	1.246	1.351	PASS					

TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

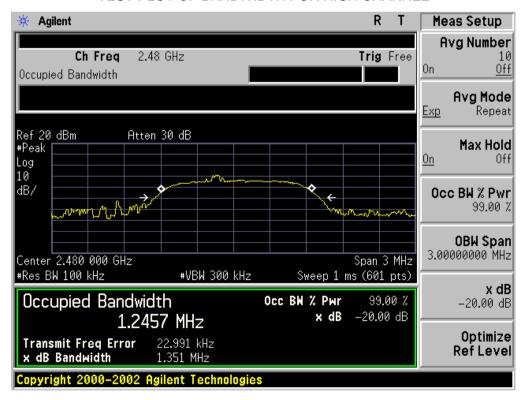


Page 42 of 55

TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



Page 43 of 55

11. FCC LINE CONDUCTED EMISSION TEST

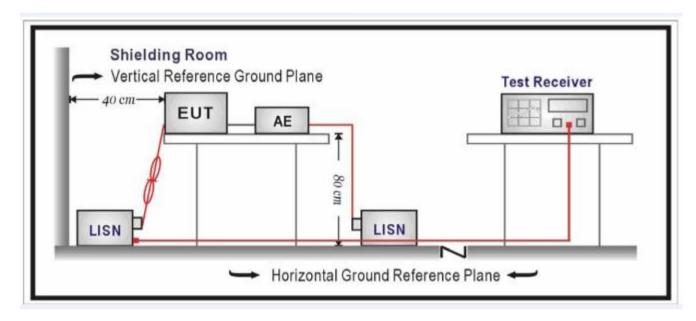
11.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Fraguenay	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.

11.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



Page 44 of 55

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 C63.10 (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 C63.10.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4. All support equipments received AC120V/60Hz power from a LISN, if any.
- 5. The EUT received DC charging voltage by adapter or 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

- 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.

Humidity: 60 %

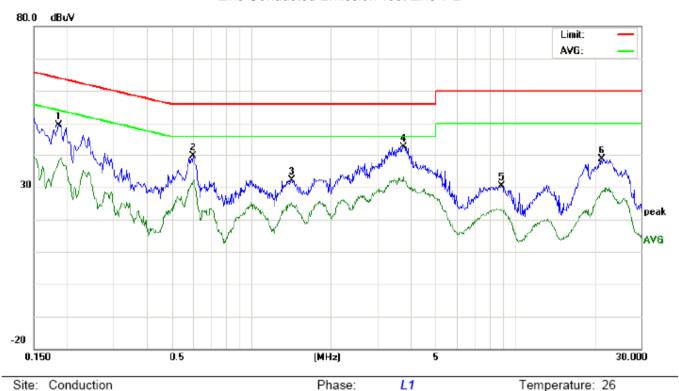
Page 45 of 55

11.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

By adapter(worst case)

FOR BR/EDR

Line Conducted Emission Test Line 1-L



Limit: FCC Class B Conduction(QP)

EUT: Bluetooth Headset

M/N: A01

Mode: BT Link With Charging

Note:

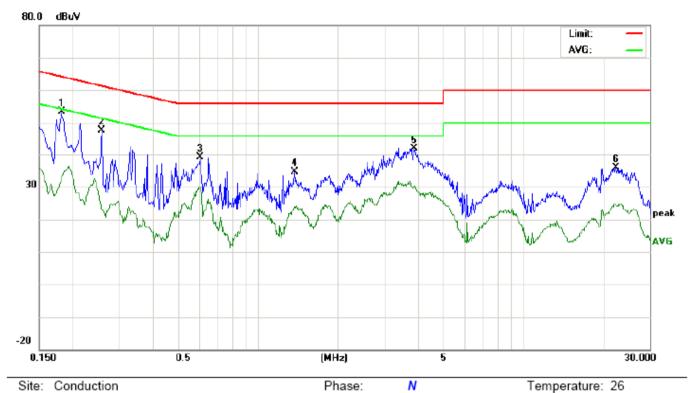
No.	Freq.	req. (dBuV)		Reading_Level Corre (dBuV) Factor					Limit (dBuV)		Margin (dB)		P/F	Comment
	(MHz)	Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1859	39.13		27.62	10.20	49.33		37.82	64.21	54.21	-14.88	-16.39	Р	
2	0.6018	29.38		21.81	10.31	39.69		32.12	56.00	46.00	-16.31	-13.88	Р	
3	1.4218	21.74		14.89	10.38	32.12		25.27	56.00	46.00	-23.88	-20.73	Р	
4	3.7700	32.15		22.55	10.47	42.62		33.02	56.00	46.00	-13.38	-12.98	Р	
5	8.9059	20.25		12.41	10.23	30.48		22.64	60.00	50.00	-29.52	-27.36	Р	
6	21.3580	28.54		18.61	10.13	38.67		28.74	60.00	50.00	-21.33	-21.26	Р	

Power:

Humidity: 60 %

Page 46 of 55

Line Conducted Emission Test Line 2-N



Site: Conduction Phase: N
Limit: FCC Class B Conduction(QP) Power:

EUT: Bluetooth Headset

M/N: A01

Mode: BT Link With Charging

Note:

No	No. Freq.		Reading_Level (dBuV)		Correct Measurement Factor (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment	
	(MHz)	Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1819	43.29		22.48	10.20	53.49		32.68	64.39	54.39	-10.90	-21.71	Р	
2	0.2580	37.45		12.64	10.27	47.72		22.91	61.49	51.49	-13.77	-28.58	Р	
3	0.6059	28.70		19.92	10.31	39.01		30.23	56.00	46.00	-16.99	-15.77	Р	
4	1.3740	24.32		13.39	10.38	34.70		23.77	56.00	46.00	-21.30	-22.23	Р	
5	3.8940	31.55		19.98	10.45	42.00		30.43	56.00	46.00	-14.00	-15.57	Р	
6	22.4499	25.78		14.54	10.12	35.90		24.66	60.00	50.00	-24.10	-25.34	Р	

Page 47 of 55

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

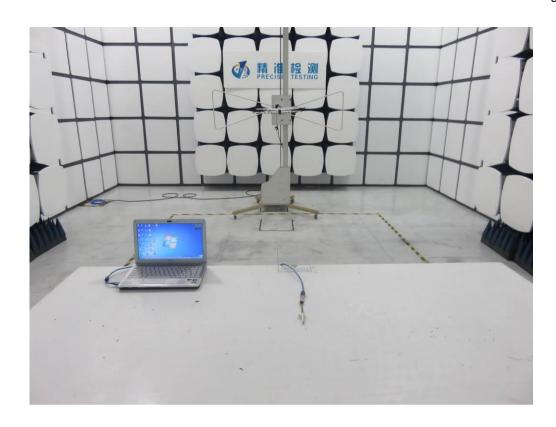
FCC LINE CONDUCTED EMISSION TEST SETUP

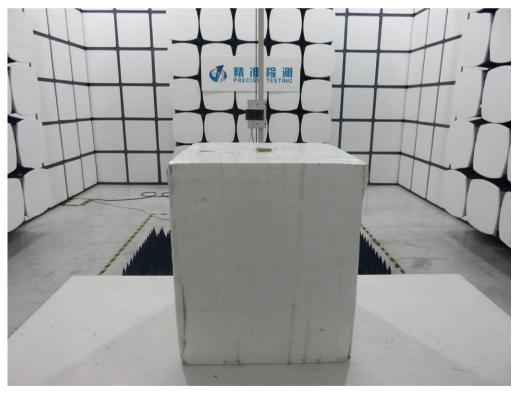


FCC RADIATED EMISSION TEST SETUP

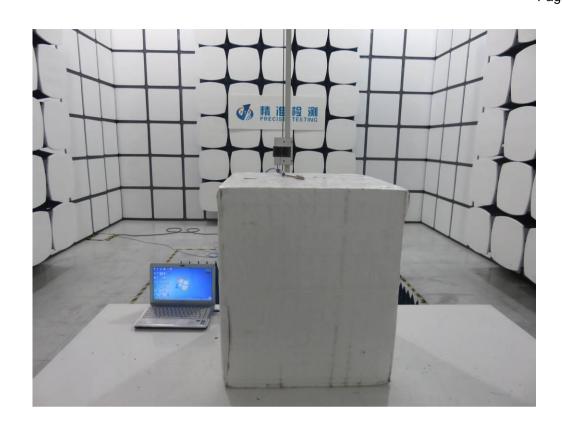


Report No.: AGC00019161103FE03 Page 48 of 55





Report No.: AGC00019161103FE03 Page 49 of 55



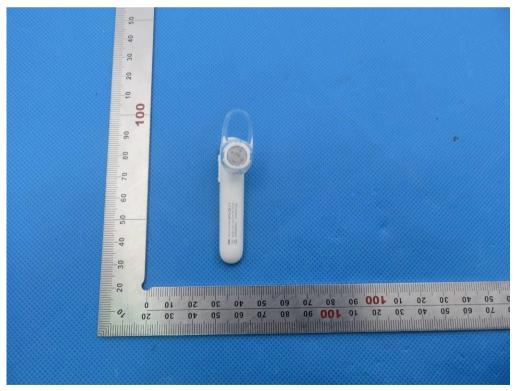
Page 50 of 55

APPENDIX B: PHOTOGRAPHS OF EUT

TOP VIEW OF EUT



BOTTOM VIEW OF EUT



Page 51 of 55

FRONT VIEW OF EUT



BACK VIEW OF EUT



Report No.: AGC00019161103FE03 Page 52 of 55

LEFT VIEW OF EUT

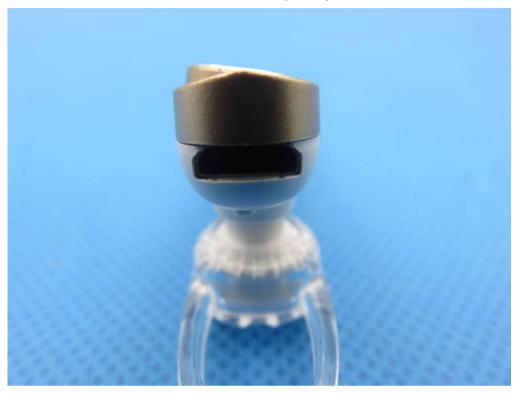


RIGHT VIEW OF EUT



Report No.: AGC00019161103FE03 Page 53 of 55

VIEW OF EUT (PORT)

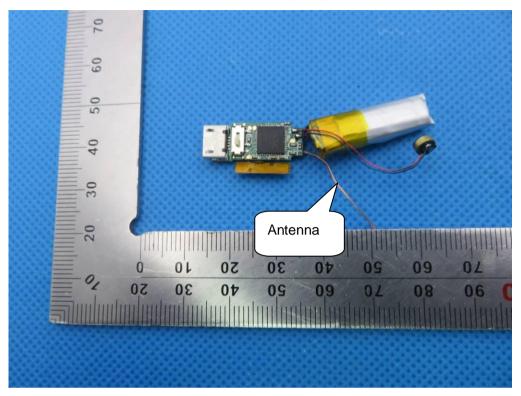


OPEN VIEW OF EUT

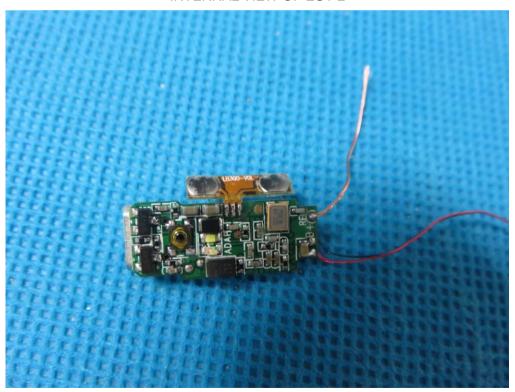


Report No.: AGC00019161103FE03 Page 54 of 55

INTERNAL VIEW OF EUT-1

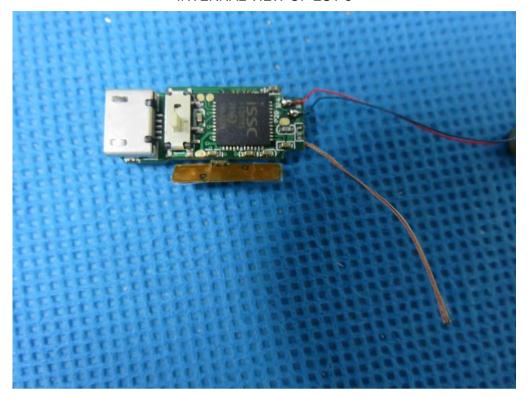


INTERNAL VIEW OF EUT-2



Page 55 of 55

INTERNAL VIEW OF EUT-3



VIEW OF ADAPTER (AE)



THE ADAPTER SUPPLIED BY AGC

----END OF REPORT----