

FCC TEST REPORT(Bluetooth)
for
ASKA ELECTRONICS CO., LIMITED
Bluetooth headset
Model Number: F6P
FCC ID: 2ACXHF6

Prepared for : ASKA ELECTRONICS CO., LIMITED
Address : ROOM A 11/F, HO LEE COMMERCIAL BUILDING 38-44
D' AGUILAR STREET CENTRAL HK

Prepared by : Guangdong Keyway Testing Technology Co., Ltd.
Address : Building 1, Baishun Industrial Zone, Zhangmutou Town,
Dongguan, Guangdong, China

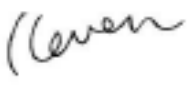
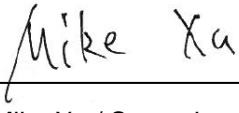

Tel: 86-769-8718 2258
Fax: 86-769-8718 1058

Supplement to Report Number: 15KWE103122F
Report No. : 16KWE094393F
Date of Test : Oct. 19~22, 2015
Date of Report : Oct. 10, 2016

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Guangdong Keyway Testing Technology Co., Ltd.

Applicant:	ASKA ELECTRONICS CO., LIMITED		
Address:	ROOM A 11/F, HO LEE COMMERCIAL BUILDING 38-44 D' AGUILAR STREET CENTRAL HK		
Manufacturer:	ASKA ELECTRONICS CO., LTD.		
Address:	3F, BUILDING 19#, DALINGBIAN ROAD, SHAHU COMMUNITY, TANGXIA TOWN, DONGGUAN		
E.U.T:	Bluetooth headset		
Model Number:	F6P		
Trade Name:	ASKA	Serial No.:	-----
Date of Receipt:	Sep. 26, 2016	Date of Test:	Oct.19~22, 2015
Test Specification:	FCC Part 15, Subpart C Section 15.247: 2014 ANSI C63.10:2013		
Test Result:	The equipment under test was found to be compliance with the requirements of the standards applied.		
Issue Date: Oct. 10, 2016			
Tested by:	Reviewed by:	Approved by:	
 <hr/> Keven Wu / Engineer	 <hr/> Mike Xu / Supervisor	 <hr/> Andy Gao / Supervisor	
Other Aspects:			
Update Appearance and model based on the report 15KWE103122F.			
Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested			
This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Guangdong Keyway Testing Technology Co., Ltd.			

1. TEST SUMMARY

Test Items	Test Requirement	Result
Conducted Emissions	15.207	N/A
Radiated Emissions	15.205(a)/15.209	PASS
20dB Bandwidth	15.247(a)(1)	N/A
Frequency Separation	15.247(a)(1)	N/A
Maximum Peak Output Power	15.247(b)(1)	N/A
Number of Hopping Frequency	15.247(a)(1)(iii)	N/A
Dwell time	15.247(a)(1)(iii)	N/A
Emissions from out of band	15.247(d)	N/A
Antenna Requirement	15.203	N/A

Note: Compared with the original product, The transmitter module and circuit are the same,
it is changed shape of the ear shell and color of the buttons. So radiated emissions are tested only.

2.GENERAL PRODUCT INFORMATION

2.1. Product Function

Refer to Technical Construction Form and User Manual.

2.2. Description of Device (EUT)

Product Name:	Bluetooth headset
Model No.:	F6P
Operation Frequency:	2402MHz ~2480MHz
Channel numbers:	79 Channels
Channel spacing	1MHz
Modulation technology:	BT(1Mbps): GFSK BT EDR(2Mbps): $\pi/4$ -DQPSK BT EDR(3Mbps): 8-DPSK
Bit Rate of Transmitter	1Mbps/2Mbps/3Mbps
Antenna Type:	PCB
Antenna gain:	1.0dBi
Power supply:	DC 3.7V

2.3. Difference between Model Numbers

None.

2.4. Independent Operation Modes

The basic operation modes are:

2.4.1. EUT work continues TX mode and frequency as below:

Channel	Frequency
Low	2402MHz
Middle	2441MHz
High	2480MHz

2.5. Test Supporting System

Adapter:	Manufacturer: Cenique Infotainment Group Limited I/P: AC 100~240V 50/60Hz 0.15A O/P: DC 5V 1A DC Line: Unshielded, detachable 1.2m
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2.6. Test Facilities

Lab Qualifications : 944 Shielded Room built by ETS-Lindgren, USA
Date of completion: March 28, 2011

966 Chamber built by ETS-Lindgren, USA
Date of completion: March 28, 2011

Certificated by TUV Rheinland, Germany.
Registration No.: UA 50207153
Date of registration: July 13, 2011

Certificated by UL, USA
Registration No.: 100567-237
Date of registration: September 1, 2011

Certificated by Intertek
Registration No.: 2011-RTL-L1-31
Date of registration: October 11, 2011

Certificated by Industry Canada
Registration No.: 9868A
Date of registration: December 8, 2011

Certificated by FCC, USA
Registration No.: 370994
Date of registration: February 21, 2012

Certificated by CNAS China
Registration No.: CNAS L5783
Date of registration: August 8, 2012

Name of Firm : Guangdong Keyway Testing Technology Co., Ltd.

Site Location : Building 1, Baishun Industrial Zone, Zhangmutou
Town, Dongguan, Guangdong, China

2.7. List of Test and Measurement Instruments

2.7.1. For conducted emission at the mains terminals test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCI	101156	Apr. 09,16	Apr. 08,17
Artificial Mains Network	Rohde&Schwarz	ENV216	101315	Apr. 09,16	Apr. 08,17
Artificial Mains Network (AUX)	Rohde&Schwarz	ENV216	101314	Apr. 09,16	Apr. 08,17
RF Cable	FUJIKURA	3D-2W	944 Cable	Apr. 09,16	Apr. 08,17

2.7.2. For radiated emission test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCI	101156	Apr. 09,16	Apr. 08,17
System Simulator	Agilent	E5515C	GB43130245	Apr. 09,16	Apr. 08,17
Power Splitter	Weinschel	1506A	NW425	Apr. 09,16	Apr. 08,17
Bilog Antenna	ETS-LINDGREEN	3142D	135452	Apr. 09,16	Apr. 08,17
Spectrum Analyzer	Agilent	E4411B	MY4511304	Apr. 09,16	Apr. 08,17
3m Semi-anechoic Chamber	ETS-LINDGREEN	966	KW01	Apr. 09,16	Apr. 08,17
Signal Amplifier	SONOMA	310	187016	Apr. 09,16	Apr. 08,17
Signal Amplifier	Agilent	8449B	3008A00251	Apr. 09,16	Apr. 08,17
RF Cable	IMRO	IMRO-400	966 Cable 1#	N/A	N/A
MULTI-DEVICE Controller	ETS-LINDGREEN	2090	126913	N/A	N/A
Horn Antenna	DAZE	ZN30701	11003	Apr. 09,16	Apr. 08,17
Horn Antenna	SCHWARZBECK	BBHA9170	9170-068	Apr. 09,16	Apr. 08,17
Spectrum Analyzer	Agilent	8593E	3911A04271	Apr. 09,16	Apr. 08,17
Spectrum Analyzer	Agilent	E4408B	MY44211125	Apr. 09,16	Apr. 08,17
Signal Amplifier	DAZE	ZN3380C	11001	Apr. 09,16	Apr. 08,17
High Pass filter	Micro	HPM50111	324216	Apr. 09,16	Apr. 08,17
Filter	COM-MW	ZBSF-C836.5-25-X	KW032	Apr. 09,16	Apr. 08,17
Filter	COM-MW	ZBSF-C1747.5-75-X2	KW035	Apr. 09,16	Apr. 08,17
Filter	COM-MW	ZBSF-C1880-60-X2	KW037	Apr. 09,16	Apr. 08,17
DC Power Supply	LongWei	PS-305D	010964729	Apr. 09,16	Apr. 08,17
Constant temperature and humidity box	GF	GTH-800-40-1P	MAA9906-005	Apr. 09,16	Apr. 08,17
Universal radio communication tester	Rohde&Schwarz	CMU200	3215420	Apr. 09,16	Apr. 08,17
Splitter	Agilent	11636B	0025164	Apr. 09,16	Apr. 08,17
Attenuation	MCE	24-10-34	BN9258	Apr. 09,16	Apr. 08,17

3. TEST SET-UP AND OPERATION MODES

3.1. Principle of Configuration Selection

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

3.2. Block Diagram of Test Set-up

System Diagram of Connections between EUT and Simulators



(EUT: Bluetooth headset)

3.3. Test Operation Mode and Test Software

None.

3.4. Special Accessories and Auxiliary Equipment

None.

3.5. Countermeasures to Achieve EMC Compliance

None.

4. EMISSION TEST RESULTS

4.1. Radiated Emission Test

4.1.1. Limit 15.209 limits

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
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	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

4.1.2. Restricted bands of operation

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

4.1.3. Test setup

The EUT was placed on a turn table which was 0.8 m above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was set 3 m away from the receiving antenna which was mounted on an antenna tower. The measuring antenna moved up and down to find out the maximum emission level. It moved from 1 m to 4 m for both horizontal and vertical polarizations.

The EUT was tested in the Chamber Site. It was pre-scanned with a Peak detector from the spectrum, and all the final readings from the test receiver were measured with the Quasi-Peak detector.

The bandwidth of the EMI test receiver is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's VBW is set at 3MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz, the EUT was placed on a turn table which was 1.5 m above the ground, for all test, used peak detector.

The frequency range from 30MHz to 10th harmonic (25GHz) are checked. and no any emissions were found from 18GHz to 25 GHz, So the radiated emissions from 18GHz to 25GHz were not record.

Notes: 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading-Preamp Factor.

2. Measurement Uncertainty: ± 3.2 dB at a level of confidence of 95%.

3. For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.

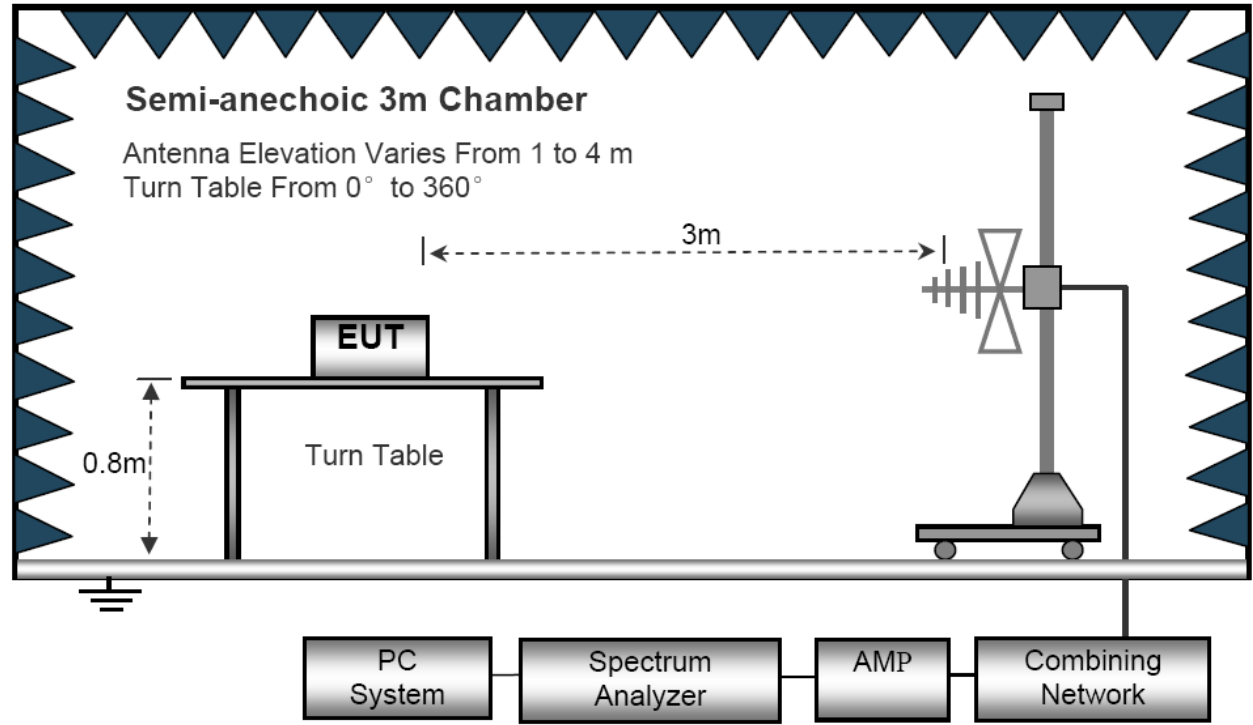
4. For emissions below 1GHz, pretest for all mode, The test data of the worst case condition(s) was reported on the following pages.

5: we pretest 3 packages DH1, DH3, DH5, package DH5 is largest; we are testing DH5 in the report.

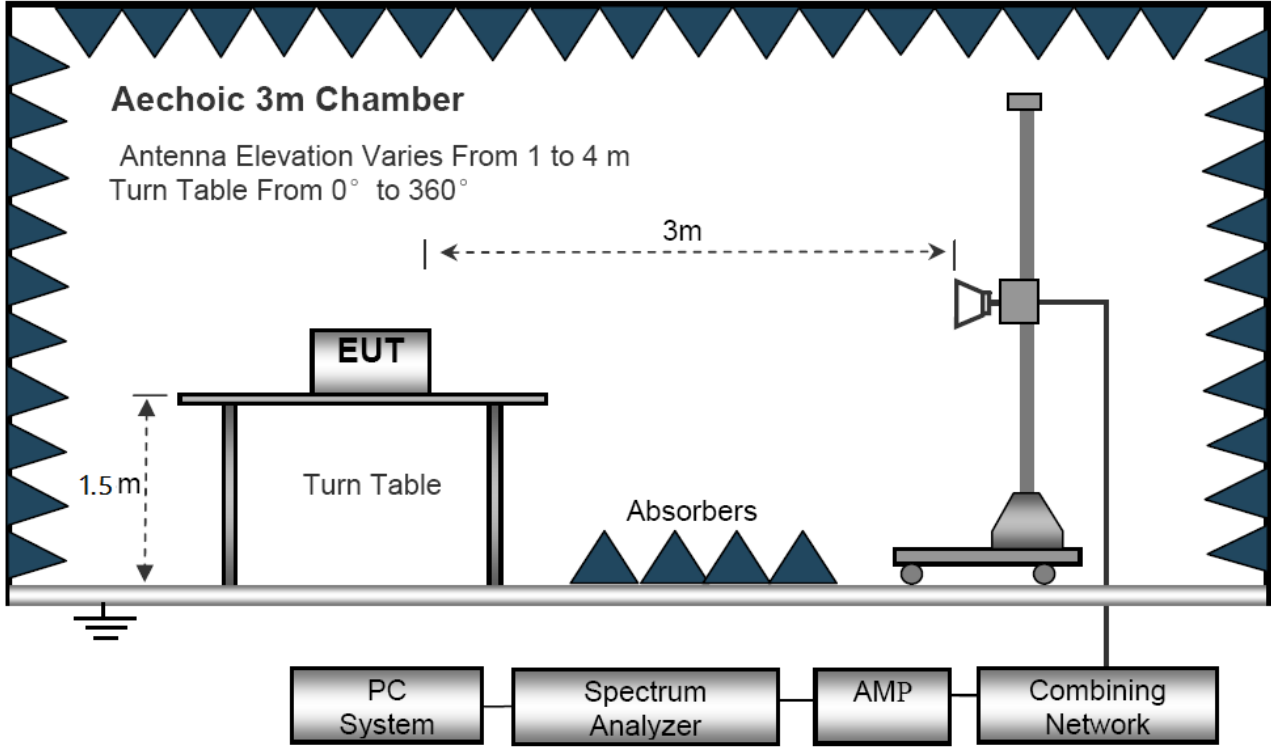
6:Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

7: We pretest all modulation, The worst was 8-DPSK, the worst data was show in the report.

Below 1GHz



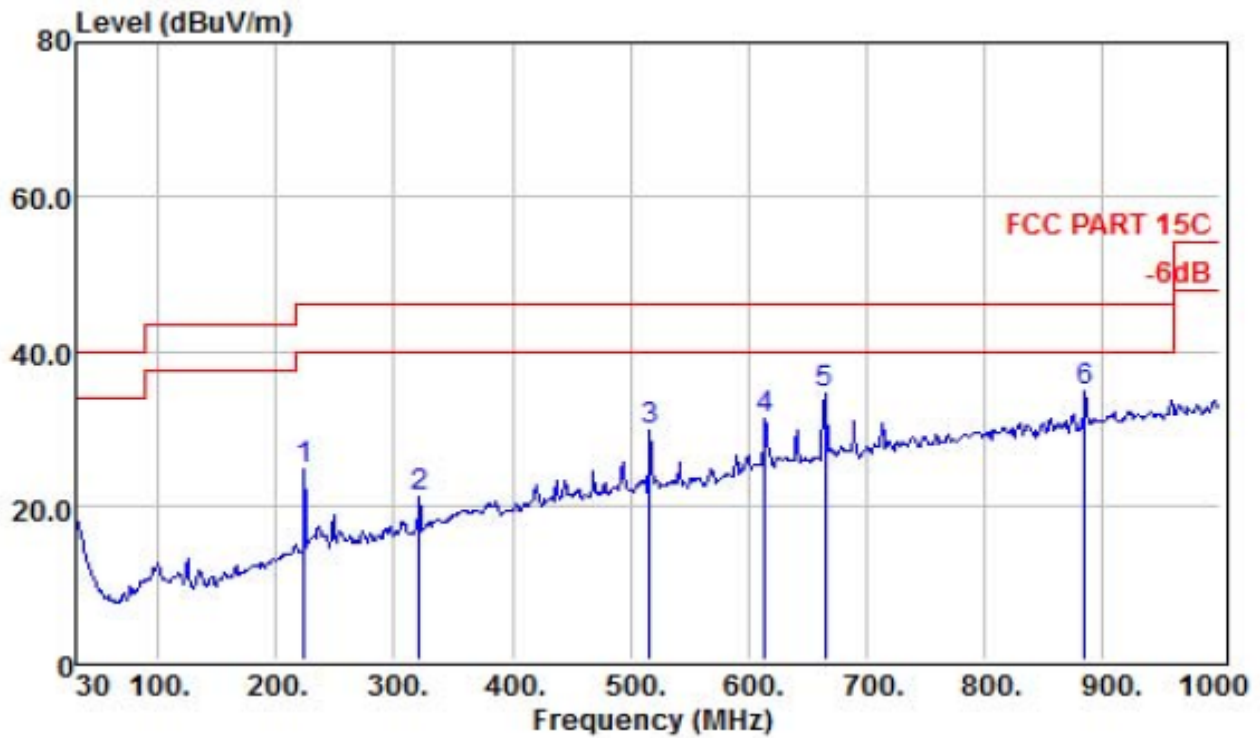
Above 1GHz



4.1.4. Test result

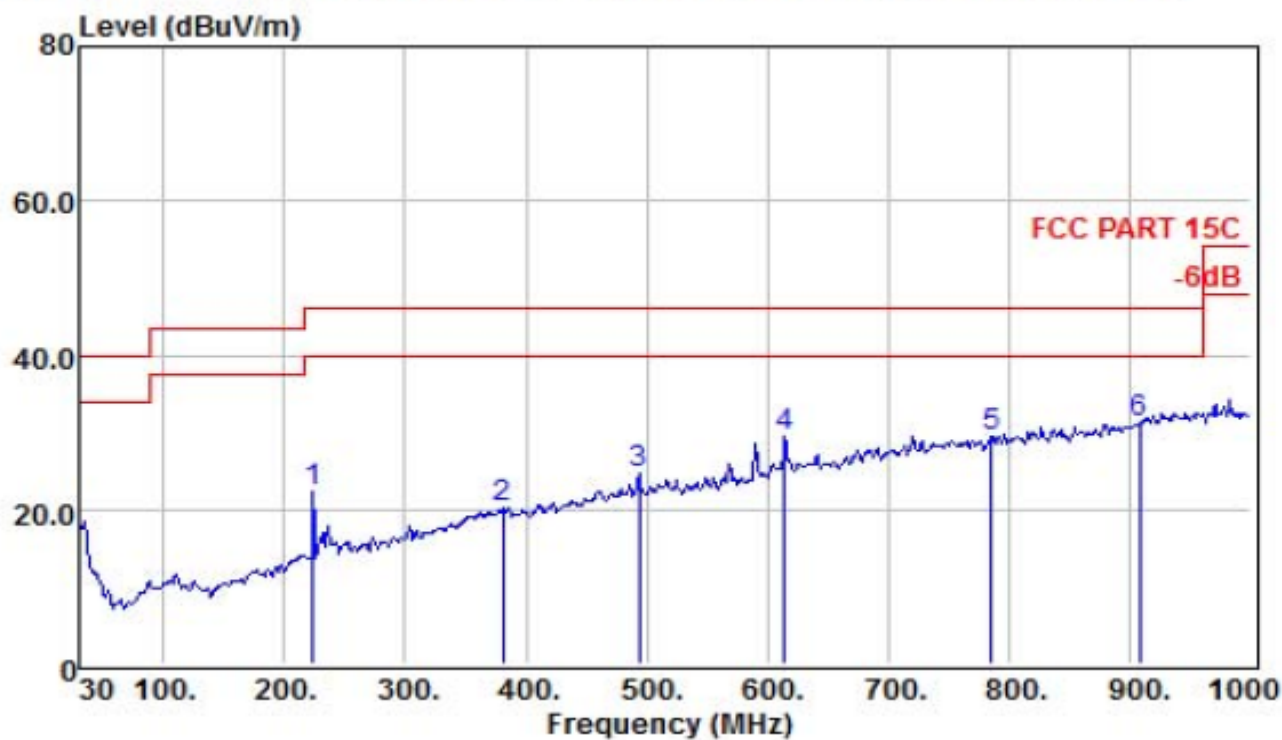
EUT :	Bluetooth headset	Model Name :	F6P
Temperature :	25 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Voltage :	DC 3.7V
Test Mode :	TX		

Below 1GHz
Horizontal



	Freq	Read Level	Preamp Factor	Antenna Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV		dB/m	dB	dBuV/m	dBuV/m	dB	
1	224.00	41.83	30.95	12.15	1.53	24.56	46.00	-21.44	QP
2	321.00	35.52	30.84	14.39	2.02	21.09	46.00	-24.91	QP
3	516.94	38.43	30.65	19.04	2.94	29.76	46.00	-16.24	QP
4	613.94	37.59	30.63	20.99	3.38	31.33	46.00	-14.67	QP
5	665.35	39.76	30.80	21.77	3.69	34.42	46.00	-11.58	QP
6	885.54	36.53	30.15	23.71	4.76	34.85	46.00	-11.15	QP

Vertical



	Freq	Read Level	Preamplifier Factor	Antenna Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB/m	dB	dBuV/m	dBuV/m	dB	
1	224.00	39.56	30.95	12.15	1.53	22.29	46.00	-23.71	QP
2	381.14	32.32	30.62	16.21	2.27	20.18	46.00	-25.82	QP
3	493.66	33.86	30.59	18.60	2.77	24.64	46.00	-21.36	QP
4	613.94	35.76	30.63	20.99	3.38	29.50	46.00	-16.50	QP
5	785.63	32.77	30.60	22.83	4.29	29.29	46.00	-16.71	QP
6	907.85	32.08	30.00	24.22	4.84	31.14	46.00	-14.86	QP

NOTE:
Absolute Level= ReadingLevel+antenna Factor+cable loss-preamp factor,
Over Limit= Absolute Level – Limit

Above 1GHz

Frequency (MHz)	Reading (dB μ V)	Antenna Factor (dB)	Preamplifier factor (dB)	cable loss (dB)	Corrected Amplitude (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Remark	Polar (H/V)
Low channel(2402MHz)									
4804.000	46.19	32.42	30.25	7.95	56.31	74	-17.69	Pk	Vertical
4804.000	34.37	32.42	30.25	7.95	44.49	54	-9.51	AV	Vertical
7206.000	44.84	31.62	30.02	10.45	56.89	74	-17.11	Pk	Vertical
7206.000	33.45	31.62	30.02	10.45	45.5	54	-8.5	AV	Vertical
4804.000	45.26	32.42	30.25	7.95	55.38	74	-18.62	Pk	Horizontal
4804.000	33.52	32.42	30.25	7.95	43.64	54	-10.36	AV	Horizontal
7206.000	43.92	31.62	30.02	10.45	55.97	74	-18.03	Pk	Horizontal
7206.000	33.18	31.62	30.02	10.45	45.23	54	-8.77	AV	Horizontal
Middle channel(2441MHz)									
4882.000	49.28	32.61	30.31	8.12	59.7	74	-14.3	Pk	Vertical
4882.000	34.54	32.61	30.31	8.12	44.96	54	-9.04	AV	Vertical
7323.000	44.83	32.37	30.14	10.58	57.64	74	-16.36	Pk	Vertical
7323.000	32.16	32.37	30.14	10.58	44.97	54	-9.03	AV	Vertical
4882.000	45.33	32.61	30.31	8.12	55.75	74	-18.25	Pk	Horizontal
4882.000	33.29	32.61	30.31	8.12	43.71	54	-10.29	AV	Horizontal
7323.000	43.68	32.37	30.14	10.58	56.49	74	-17.51	Pk	Horizontal
7323.000	33.37	32.37	30.14	10.58	46.18	54	-7.82	AV	Horizontal
High channel(2480MHz)									
4960.000	49.25	32.87	30.27	7.88	59.73	74	-14.27	Pk	Vertical
4960.000	34.78	32.87	30.27	7.88	45.26	54	-8.74	AV	Vertical
7440.000	44.26	32.41	30.16	10.62	57.13	74	-16.87	Pk	Vertical
7440.000	33.14	32.41	30.16	10.62	46.01	54	-7.99	AV	Vertical
4960.000	45.83	32.87	30.27	7.88	56.31	74	-17.69	Pk	Horizontal
4960.000	32.37	32.87	30.27	7.88	42.85	54	-11.15	AV	Horizontal
7440.000	43.15	32.41	30.16	10.62	56.02	74	-17.98	Pk	Horizontal
7440.000	35.79	32.41	30.16	10.62	48.66	54	-5.34	AV	Horizontal

NOTE:

- 1.Mode 1Mbps is the worst mode.
- 2.Corrected Amplitude=Reading+ Antenna Factor+cable loss-Preamplifier factor
Margin= Absolute Level – Limit
- 3.The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has not to be reported.

5. PHOTOGRAPHS OF THE EUT







-----End-----