



Test Report

Product Name	Jabra OTE6
Model No.	OTE6
FCC ID.	DoC

Applicant	GN Netcom A/S
Address	Lautrupbjerg 7, DK-2750 Ballerup, Denmark.

Date of Receipt	Dec. 30, 2009
Issued Date	Jan. 11, 2010
Report No.	101044R-RFUSP37V02
Report Version	V0.2-Draft

The Test Results relate only to the samples tested.

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This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Test Report Certification

Issued Date: Jan. 11, 2010

Report No.: 101044R-RFUSP37V02



Product Name	Jabra OTE6
Applicant	GN Netcom A/S
Address	Lautrupbjerg 7, DK-2750 Ballerup, Denmark.
Manufacturer	DONG GUAN G-COM COMPUTER CO., LTD.
Model No.	OTE6
FCC ID.	DoC
EUT Rated Voltage	AC 100-240V, 50/60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	Jabra
Applicable Standard	FCC CFR Title 47 Part 15 Subpart B: 2008 ANSI C63.4: 2003
Test Result	Complied



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Testing Laboratory

0914

Approved By : Vincent Lin
(Manager / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Jabra OTE6
Trade Name	Jabra
Model No.	OTE6
FCC ID.	DoC
Frequency Range	2402 – 2480MHz
Channel Number	79
Type of Modulation	FHSS: GFSK(1Mbps) / π /4DQPSK(2Mbps) / 8DPSK(3Mbps)
Antenna Type	Printed on PCB
Channel Control	Auto
Antenna Gain	Refer to the table “Antenna List”
Earphone	Non-Shielded, 0.65m
Power Adapter (1)	MFR: Jabra, M/N: SSA-5W-05 US 050018F Input: AC 100-240V, 50/60Hz, 0.2A Output: DC 5V, 180mA Cable IN: Non-Shielded, 0.25m
Power Adapter (2)	MFR: Jabra, M/N: SSA-5W-05 CH 050018F Input: AC 100-240V, 50/60Hz, 0.2A Output: DC 5V, 180mA Cable IN: Non-Shielded, 0.25m

Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	DONG GUAN G-COM COMPUTER CO., LTD.	N/A	-4.5 dBi for 2.4 GHz

Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 00:	2402 MHz	Channel 20:	2422 MHz	Channel 40:	2442 MHz	Channel 60:	2462 MHz
Channel 01:	2403 MHz	Channel 21:	2423 MHz	Channel 41:	2443 MHz	Channel 61:	2463 MHz
Channel 02:	2404 MHz	Channel 22:	2424 MHz	Channel 42:	2444 MHz	Channel 62:	2464 MHz
Channel 03:	2405 MHz	Channel 23:	2425 MHz	Channel 43:	2445 MHz	Channel 63:	2465 MHz
Channel 04:	2406 MHz	Channel 24:	2426 MHz	Channel 44:	2446 MHz	Channel 64:	2466 MHz
Channel 05:	2407 MHz	Channel 25:	2427 MHz	Channel 45:	2447 MHz	Channel 65:	2467 MHz
Channel 06:	2408 MHz	Channel 26:	2428 MHz	Channel 46:	2448 MHz	Channel 66:	2468 MHz
Channel 07:	2409 MHz	Channel 27:	2429 MHz	Channel 47:	2449 MHz	Channel 67:	2469 MHz
Channel 08:	2410 MHz	Channel 28:	2430 MHz	Channel 48:	2450 MHz	Channel 68:	2470 MHz
Channel 09:	2411 MHz	Channel 29:	2431 MHz	Channel 49:	2451 MHz	Channel 69:	2471 MHz
Channel 10:	2412 MHz	Channel 30:	2432 MHz	Channel 50:	2452 MHz	Channel 70:	2472 MHz
Channel 11:	2413 MHz	Channel 31:	2433 MHz	Channel 51:	2453 MHz	Channel 71:	2473 MHz
Channel 12:	2414 MHz	Channel 32:	2434 MHz	Channel 52:	2454 MHz	Channel 72:	2474 MHz
Channel 13:	2415 MHz	Channel 33:	2435 MHz	Channel 53:	2455 MHz	Channel 73:	2475 MHz
Channel 14:	2416 MHz	Channel 34:	2436 MHz	Channel 54:	2456 MHz	Channel 74:	2476 MHz
Channel 15:	2417 MHz	Channel 35:	2437 MHz	Channel 55:	2457 MHz	Channel 75:	2477 MHz
Channel 16:	2418 MHz	Channel 36:	2438 MHz	Channel 56:	2458 MHz	Channel 76:	2478 MHz
Channel 17:	2419 MHz	Channel 37:	2439 MHz	Channel 57:	2459 MHz	Channel 77:	2479 MHz
Channel 18:	2420 MHz	Channel 38:	2440 MHz	Channel 58:	2460 MHz	Channel 78:	2480 MHz
Channel 19:	2421 MHz	Channel 39:	2441 MHz	Channel 59:	2461 MHz		

Note:

1. The EUT is a Jabra OTE6 with a built-in 2.4GHz Bluetooth V2.1+EDR transceiver.
2. These tests were conducted on a sample for demonstrating compliance of Bluetooth receiver with Part 15 Subpart B.
3. Regarding to the operation frequency band, the lowest, middle, and highest frequency are selected to perform the test.
4. This device is a composite device in accordance with Part 15 regulations. The function for the 2.4GHz transmitting was measured and made a test report that the report number is 101044R-RFUSP29V01, certified under FCC ID: BCE-OTE6
5. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

Test Mode	Mode 1: Receiver
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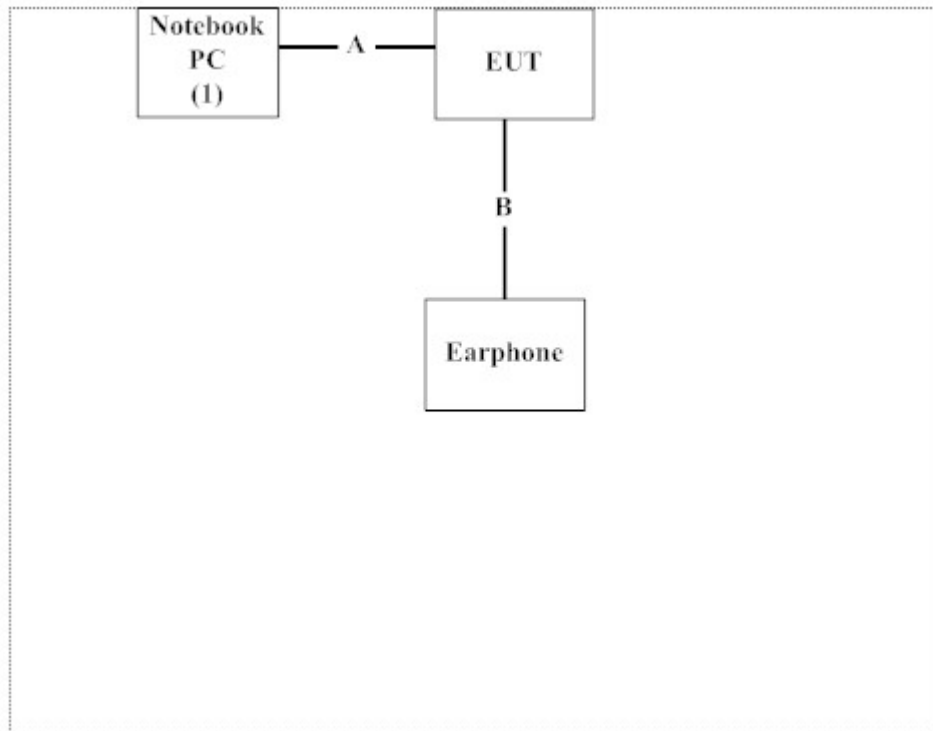
1.2. Test System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

	Product	Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1.	Notebook PC	ASUS	L-4000L	N/A	N/A	Non-shielded, 1.2m

	Signal Cable Type	Signal cable Description
A	Printer Cable	Non-shielded, 1.2m
B	Earphone Cable	Non-shielded, 0.65m

1.3. Configuration of Test System



1.4. EUT Exercise Software

- (1) Setup the EUT as shown in section 1.3
- (2) Execute the CSR program (Bluetest3.exe) on the EUT
- (3) Setup the test mode, the test channel, and the data rate.
- (4) Press OK to start the transmission.
- (5) Verify that the EUT works correctly.

1.5. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation’s Web Site : <http://tw.quietek.com/modules/myalbum/>

The address and introduction of Quietek Corporation’s laboratories can be founded in our Web site : <http://www.quietek.com/>

Site Description: Federal Communications Commission
 FCC Engineering Laboratory
 7435 Oakland Mills Road
 Columbia, MD 21046
 Registration Number: 92195



Accreditation on NVLAP
 NVLAP Lab Code: 200533-0



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FCC Accreditation Number: TW1014



2. Conducted Emission

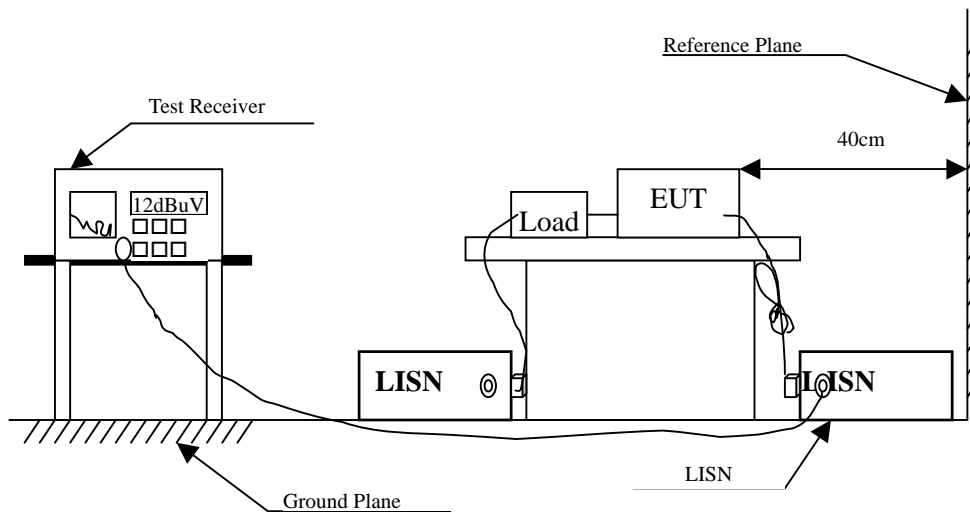
2.1. Test Equipment

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/014	Feb., 2009	
2	L.I.S.N.	R & S	ESH3-Z5/825562/002	Feb., 2009	EUT
3	L.I.S.N.	R & S	ENV4200/848411/010	Feb., 2009	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2/100410	July, 2009	
5	No.1 Shielded Room			N/A	

Note: All equipments are calibrated every one year.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart B Paragraph 15.107 (dBuV) Limit		
Frequency MHz	Limits	
	QP	AV
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges.

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : Jabra OTE6
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 1: Receiver (2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
LINE 1					
Quasi-Peak					
0.263	9.790	28.310	38.100	-24.671	62.771
0.588	9.790	19.500	29.290	-26.710	56.000
1.212	9.800	17.750	27.550	-28.450	56.000
5.556	9.840	26.510	36.350	-23.650	60.000
7.826	9.860	23.460	33.320	-26.680	60.000
15.884	10.110	14.680	24.790	-35.210	60.000
Average					
0.263	9.790	19.110	28.900	-23.871	52.771
0.588	9.790	4.780	14.570	-31.430	46.000
1.212	9.800	7.900	17.700	-28.300	46.000
5.556	9.840	10.590	20.430	-29.570	50.000
7.826	9.860	8.190	18.050	-31.950	50.000
15.884	10.110	3.400	13.510	-36.490	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "■" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Jabra OTE6
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 1: Receiver (2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
LINE 2					
Quasi-Peak					
0.263	9.780	29.400	39.180	-23.591	62.771
0.584	9.790	23.210	33.000	-23.000	56.000
1.045	9.790	21.240	31.030	-24.970	56.000
4.920	9.830	22.670	32.500	-23.500	56.000
7.412	9.870	27.730	37.600	-22.400	60.000
19.587	10.228	17.790	28.018	-31.982	60.000
Average					
0.263	9.780	15.620	25.400	-27.371	52.771
0.584	9.790	7.960	17.750	-28.250	46.000
1.045	9.790	6.060	15.850	-30.150	46.000
4.920	9.830	7.680	17.510	-28.490	46.000
7.412	9.870	12.080	21.950	-28.050	50.000
19.587	10.228	4.780	15.008	-34.992	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "█" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3. Radiated Emission

3.1. Test Equipment

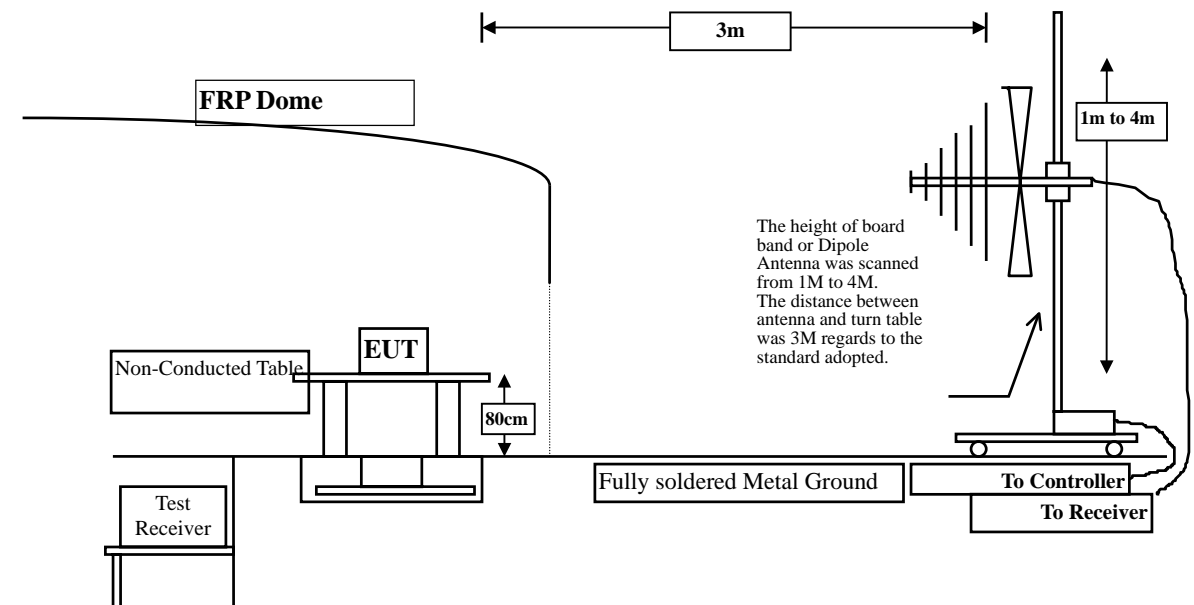
The following test equipment are used during the radiated emission test:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3	X Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2009
	X Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2009
	X Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2009
	X Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2009
	X Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009
	X Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2009
	X Coaxial Cable	Quietek	QTK-CABLE/ CAB5	Feb., 2009
	X Controller	Quietek	QTK-CONTROLLER/ CTRL3	N/A
	X Coaxial Switch	Anritsu	MP59B/6200265729	N/A

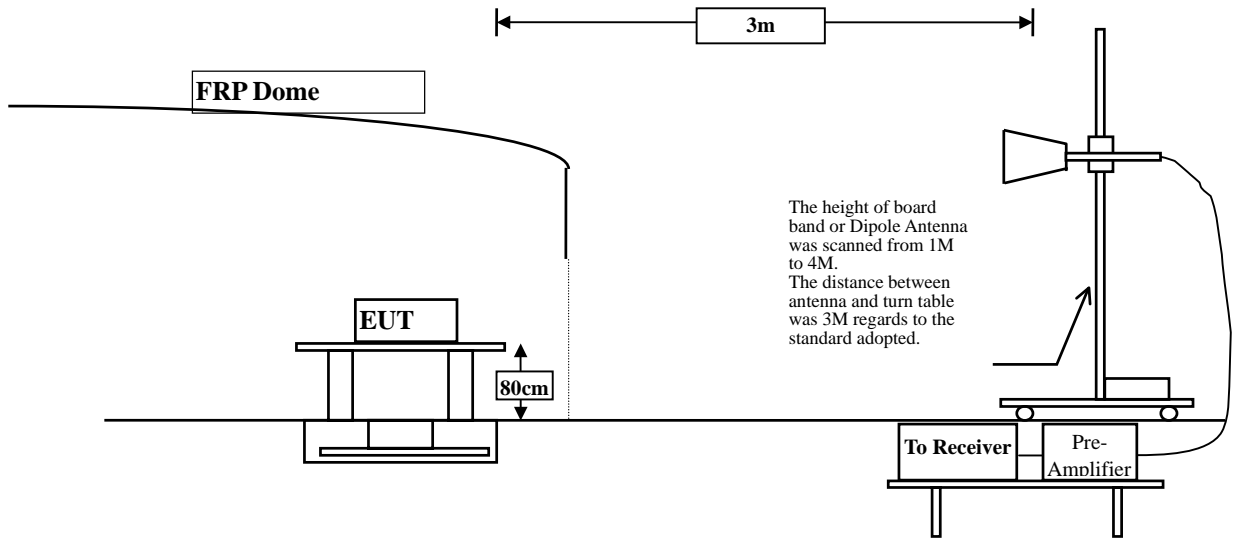
- Note:
1. All equipments are calibrated every one year.
 2. The test equipments marked by “X” are used to measure the final test results.

3.2. Test Setup

Below 1GHz



Above 1GHz



3.3. Limits

FCC Part 15 Subpart B Paragraph 15.109 Limits		
Frequency MHz	uV/m @3m	DBuV /m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

- Remarks :
1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
 2. In the Above Table, the tighter limit applies at the band edges.
 3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3.4. Test Procedure

The EUT and its Peripherals are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz. The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

3.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

3.6. Test Result of Radiated Emission

Product : Jabra OTE6
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Receiver (2402MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
1602.000	-3.349	58.880	55.531	-18.469	74.000
2403.500	-1.357	49.200	47.843	-26.157	74.000
4807.000	4.044	41.280	45.325	-28.675	74.000
7210.500	8.673	39.580	48.253	-25.747	74.000
Average Detector:					
1602.000	-3.349	38.200	34.851	-19.149	54.000
Vertical					
Peak Detector:					
1602.000	-1.703	52.300	50.597	-23.403	74.000
2403.500	-2.136	48.520	46.384	-27.616	74.000
4807.000	4.012	41.580	45.593	-28.407	74.000
7210.500	9.664	40.940	50.603	-23.397	74.000
Average Detector:					
--					

Note:

1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz.
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Jabra OTE6
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Receiver (2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
1568.000	-3.371	56.590	53.218	-20.782	74.000
2441.000	-1.164	48.300	47.136	-26.864	74.000
4882.000	3.933	43.360	47.293	-26.707	74.000
7323.000	7.996	41.260	49.257	-24.743	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
1602.000	-1.703	50.600	48.897	-25.103	74.000
2441.000	-1.730	47.320	45.591	-28.409	74.000
4882.000	4.469	41.690	46.159	-27.841	74.000
7323.000	8.788	39.200	47.988	-26.012	74.000
Average Detector:					
--					

Note:

1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz.
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Jabra OTE6
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Receiver (2480MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
1654.000	-3.341	53.050	49.708	-24.292	74.000
2481.500	-0.844	43.500	42.656	-31.344	74.000
4963.000	3.863	41.620	45.483	-28.517	74.000
7444.500	7.917	38.420	46.337	-27.663	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
1654.000	-1.849	45.800	43.950	-30.050	74.000
2481.500	-1.148	42.580	41.432	-32.568	74.000
4963.000	5.018	42.950	47.968	-26.032	74.000
7444.500	8.432	37.990	46.422	-27.578	74.000
Average Detector:					
--					

Note:

1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz.
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Jabra OTE6
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Receiver (2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
369.500	0.787	34.370	35.157	-10.843	46.000
460.680	4.031	32.887	36.918	-9.082	46.000
507.240	2.529	35.053	37.582	-8.418	46.000
571.260	2.310	32.952	35.263	-10.737	46.000
664.380	1.882	37.410	39.292	-6.708	46.000
736.160	2.994	37.258	40.252	-5.748	46.000
Vertical					
377.260	0.647	34.613	35.260	-10.740	46.000
476.200	-3.462	33.699	30.238	-15.762	46.000
540.220	2.169	34.387	36.556	-9.444	46.000
612.000	1.942	32.247	34.189	-11.811	46.000
693.480	1.747	36.004	37.751	-8.249	46.000
761.380	1.924	36.870	38.794	-7.206	46.000

Note:

1. The reading levels below 1GHz are quasi-peak values.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

4. EMI Reduction Method During Compliance Testing

No modification was made during testing.

Attachment 1: EUT Test Photographs

Attachment 1: EUT Test Setup Photographs

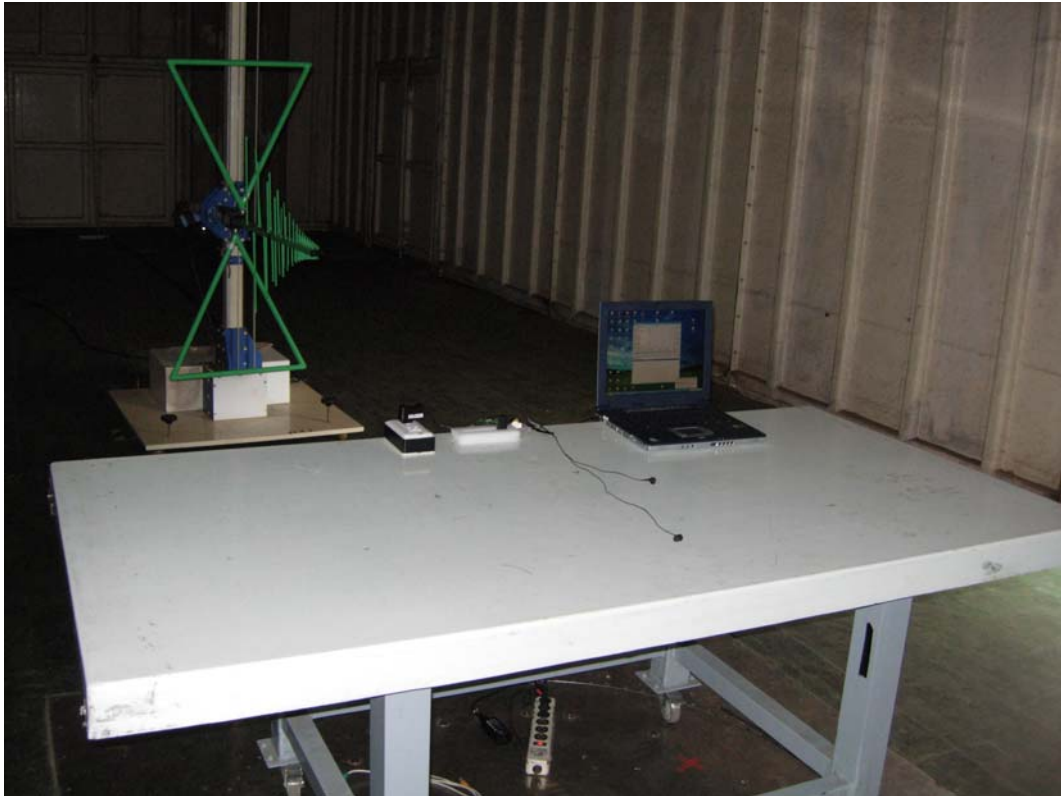
Front View of Conducted Test



Back View of Conducted Test



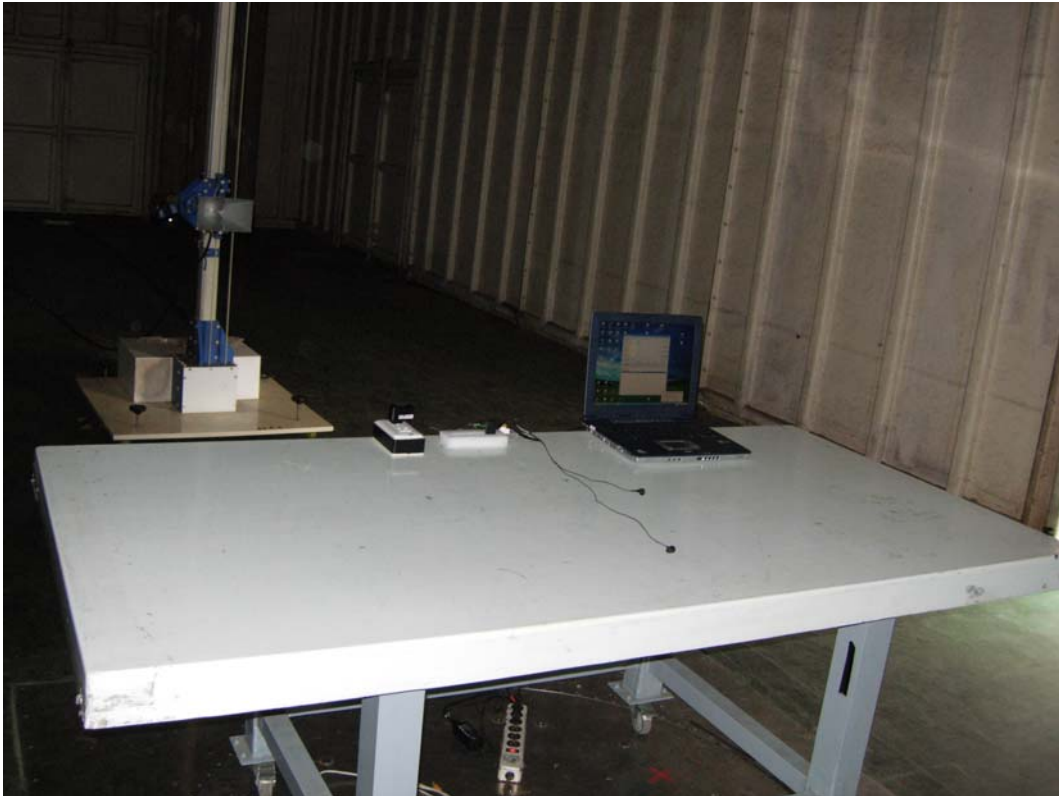
Front View of Radiated Test



Back View of Radiated Test



Front View of Radiated Test (Horn)



Back View of Radiated Test (Horn)



Attachment 2: EUT Detailed Photographs

Attachment 2 : EUT Detailed Photographs

(1) EUT Photo



(2) EUT Photo



(3) EUT Photo



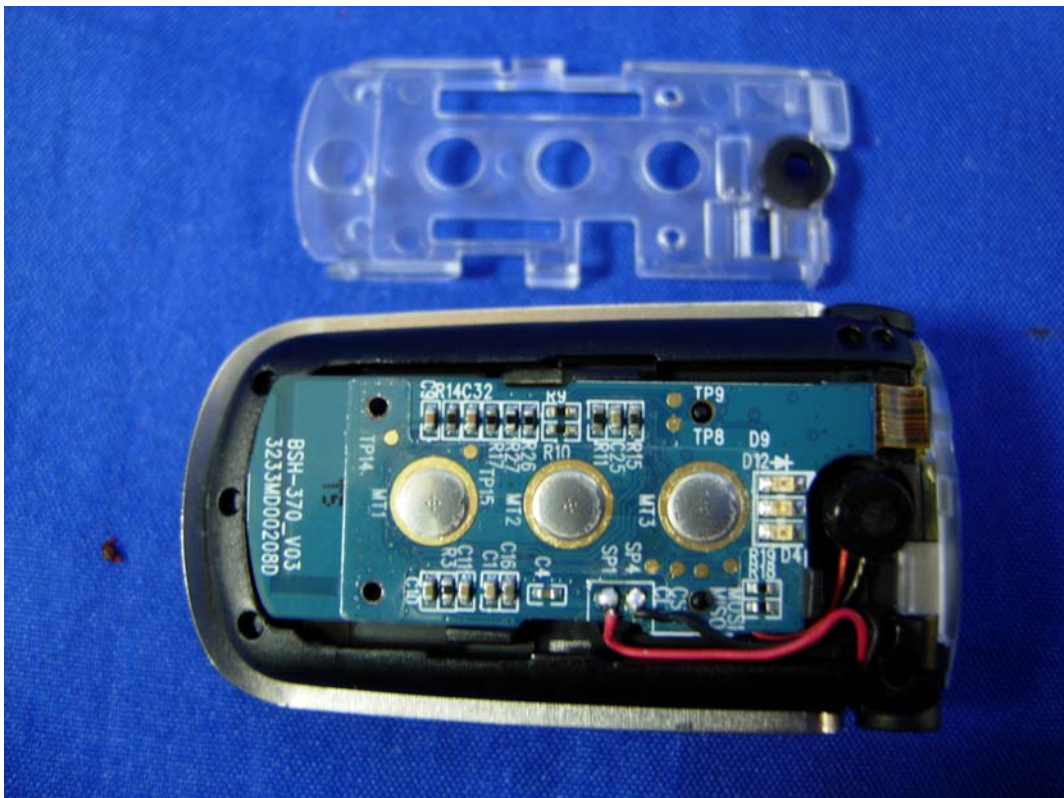
(4) EUT Photo



(5) EUT Photo



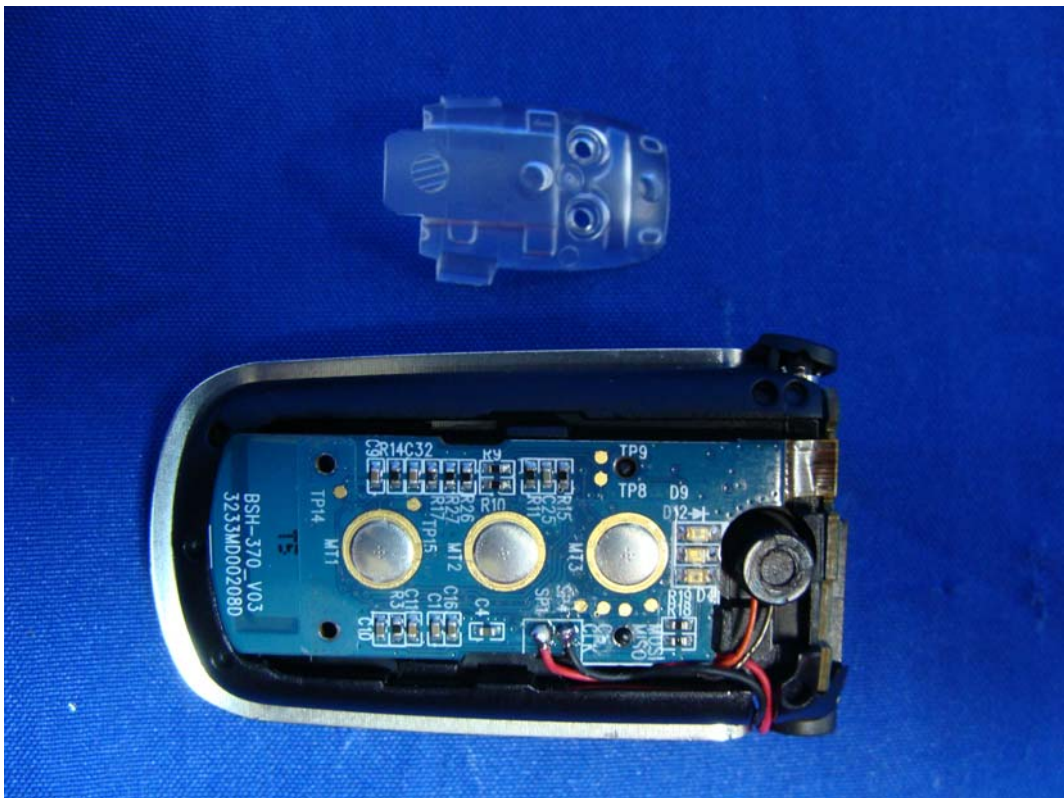
(6) EUT Photo



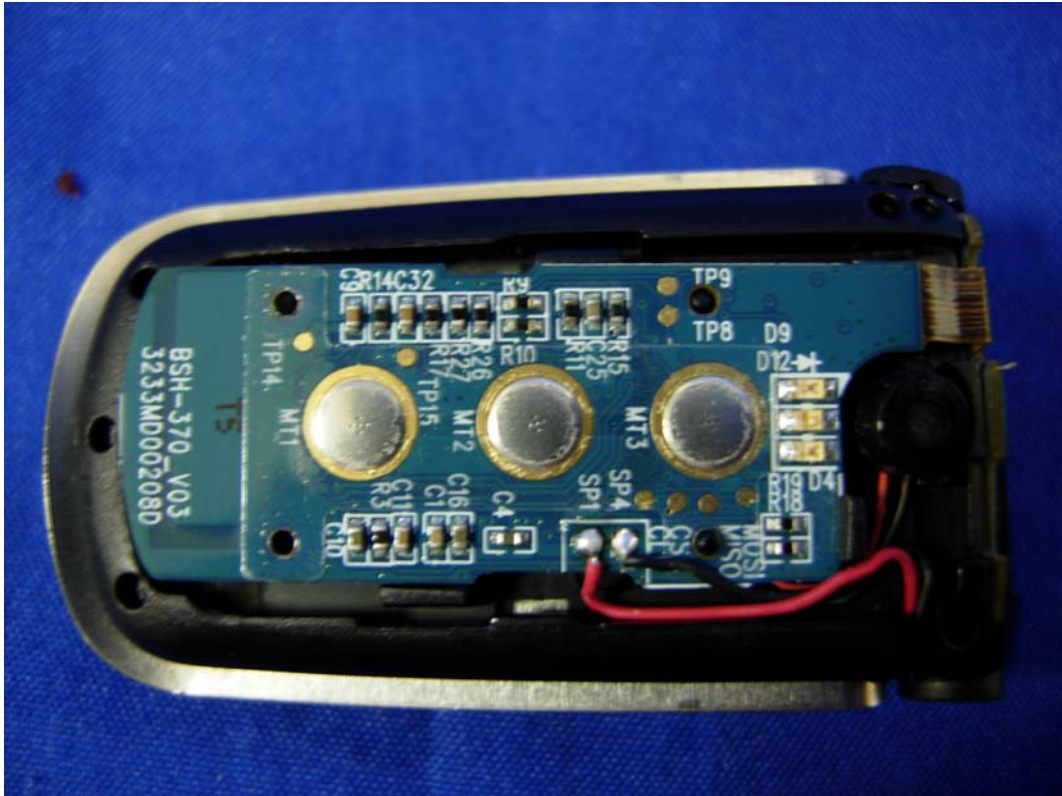
(7) EUT Photo



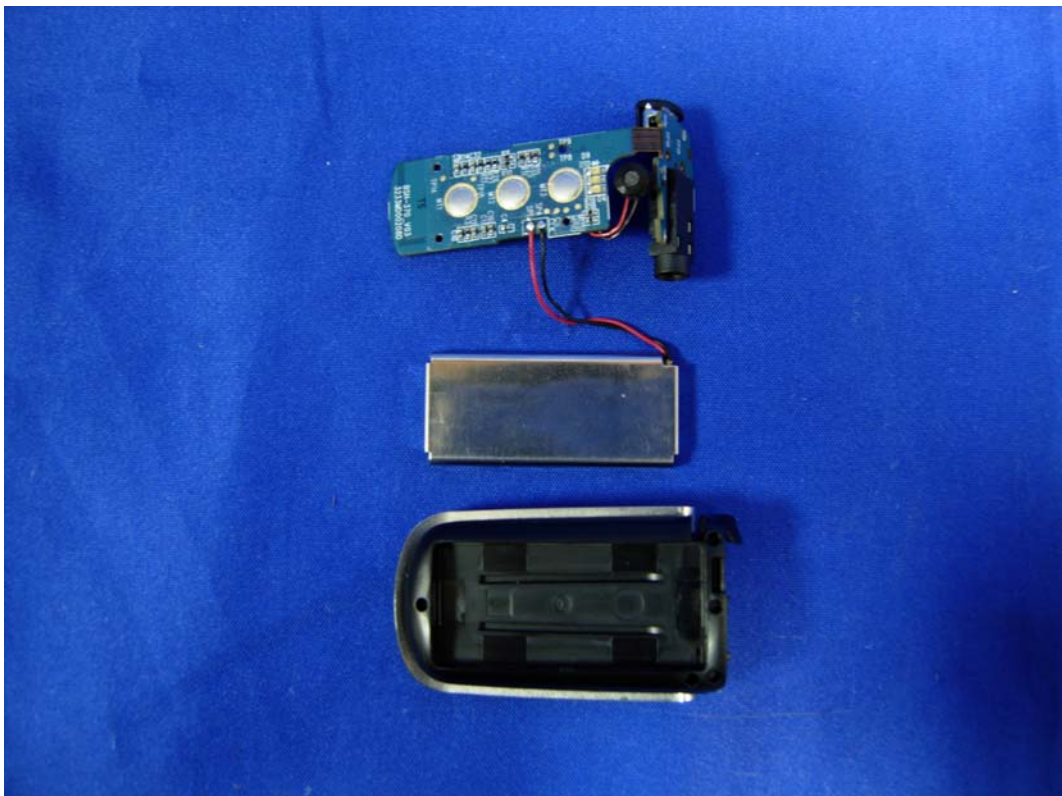
(8) EUT Photo



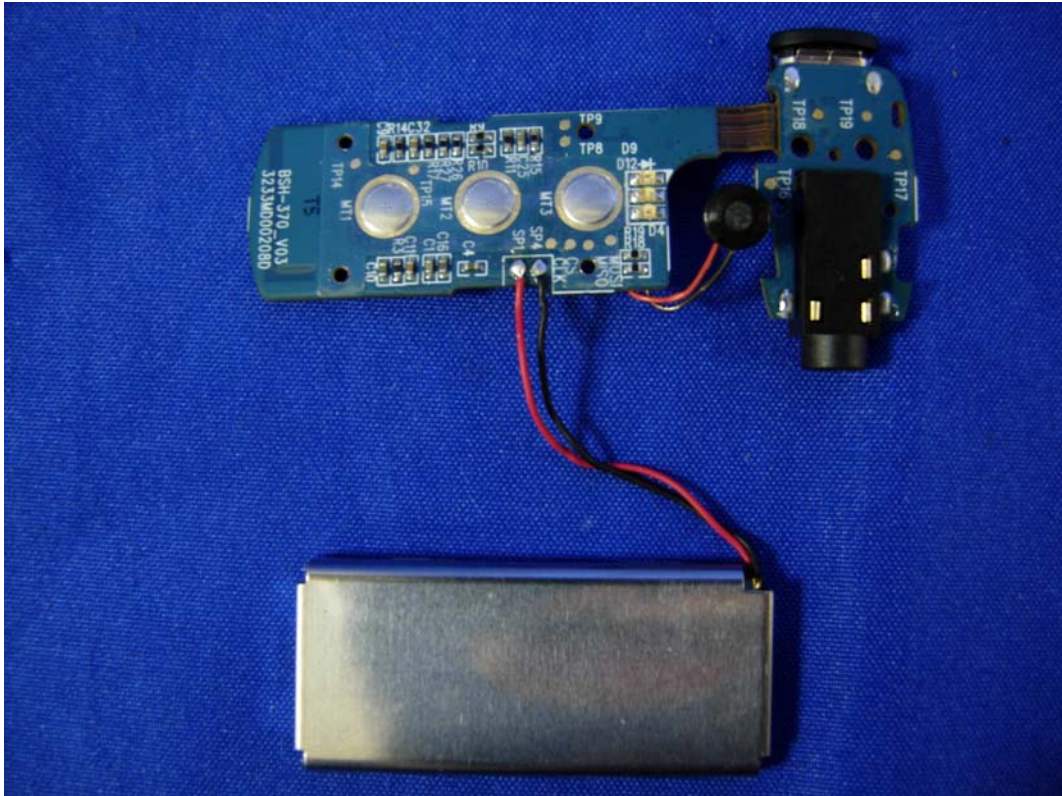
(9) EUT Photo



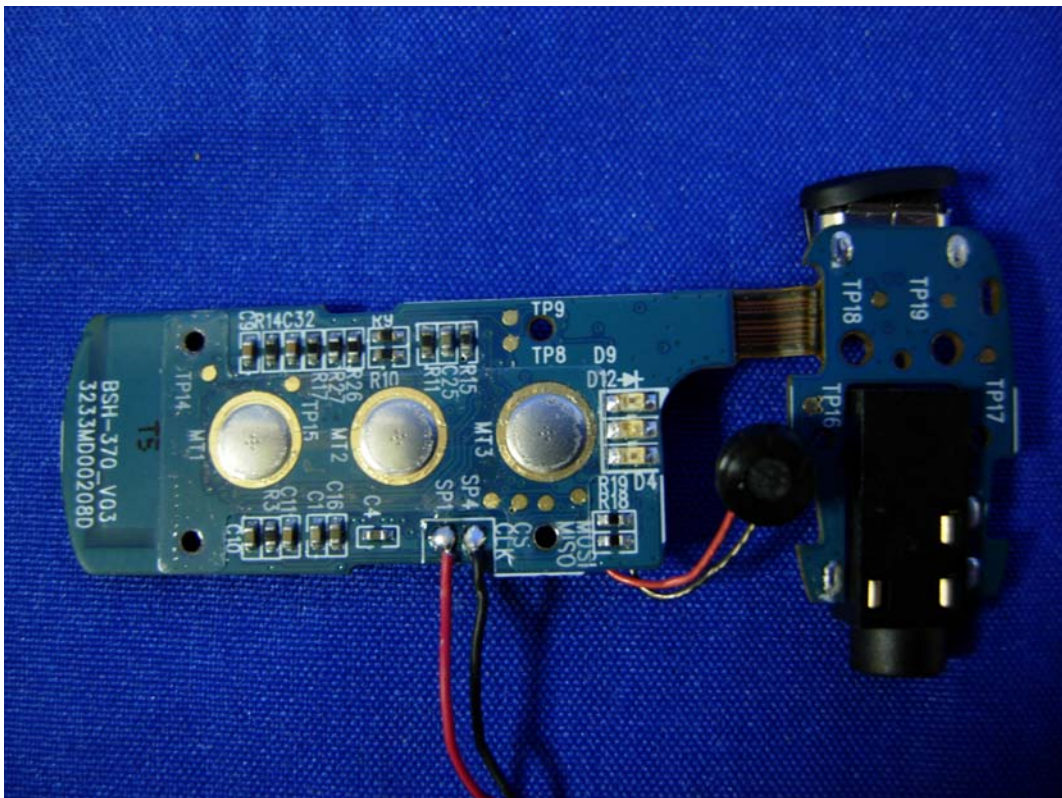
(10) EUT Photo



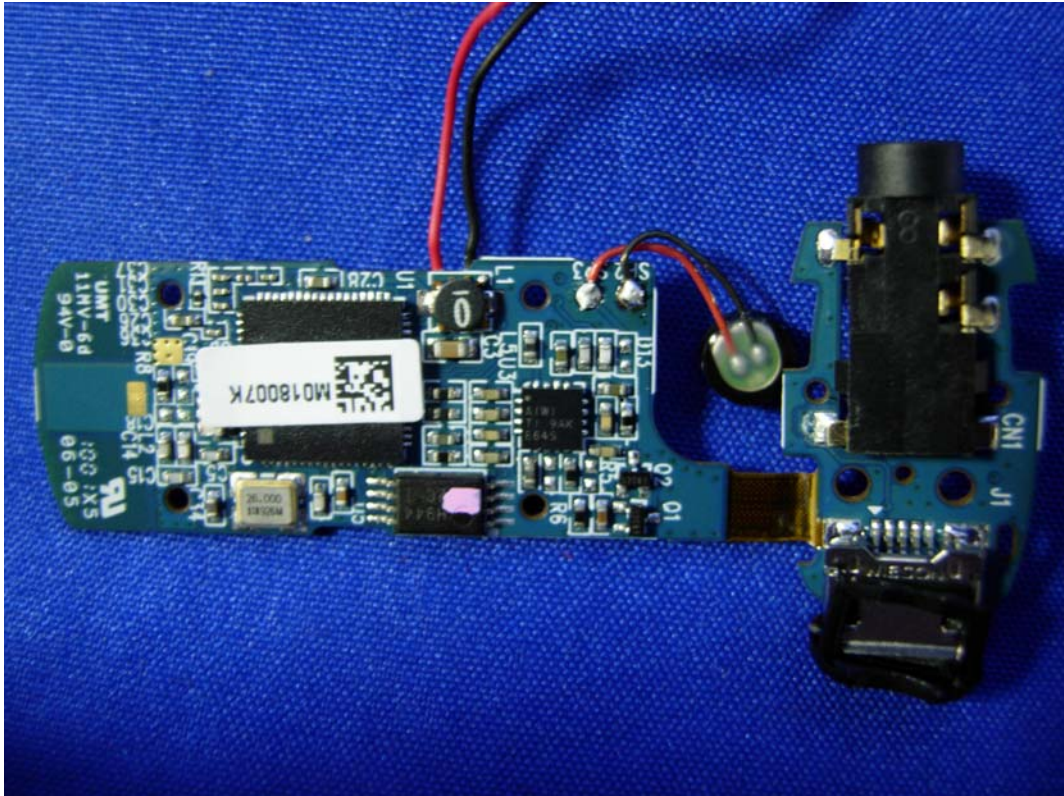
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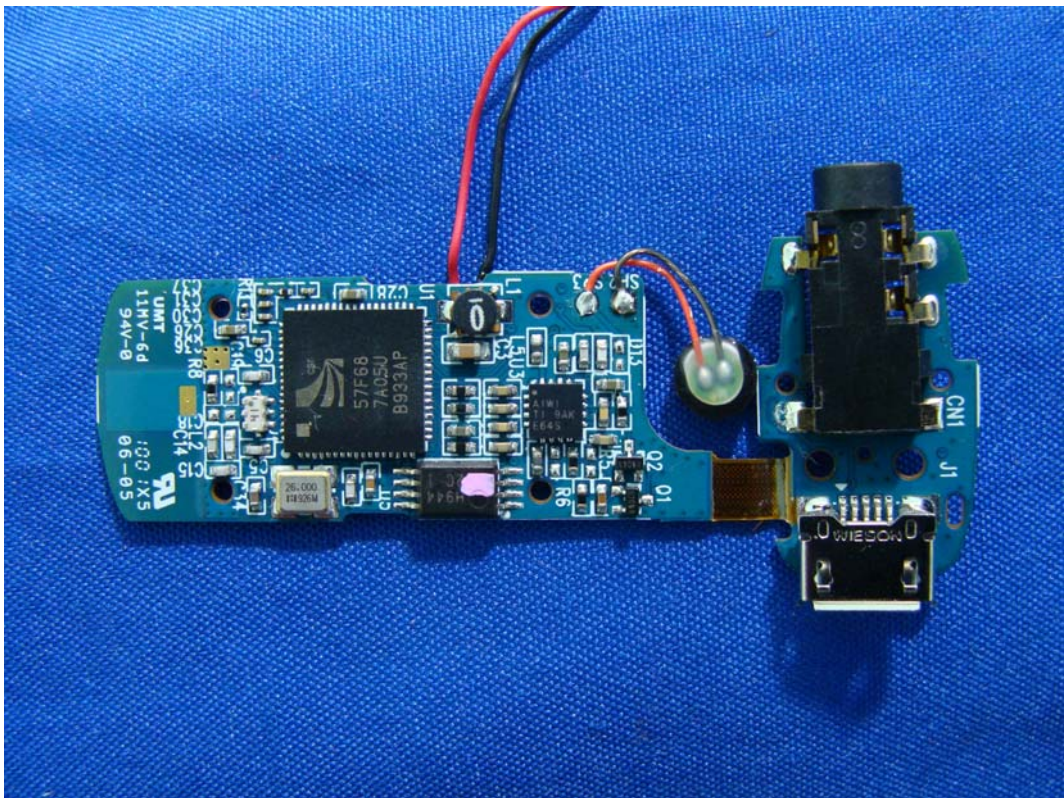
(12) EUT Photo



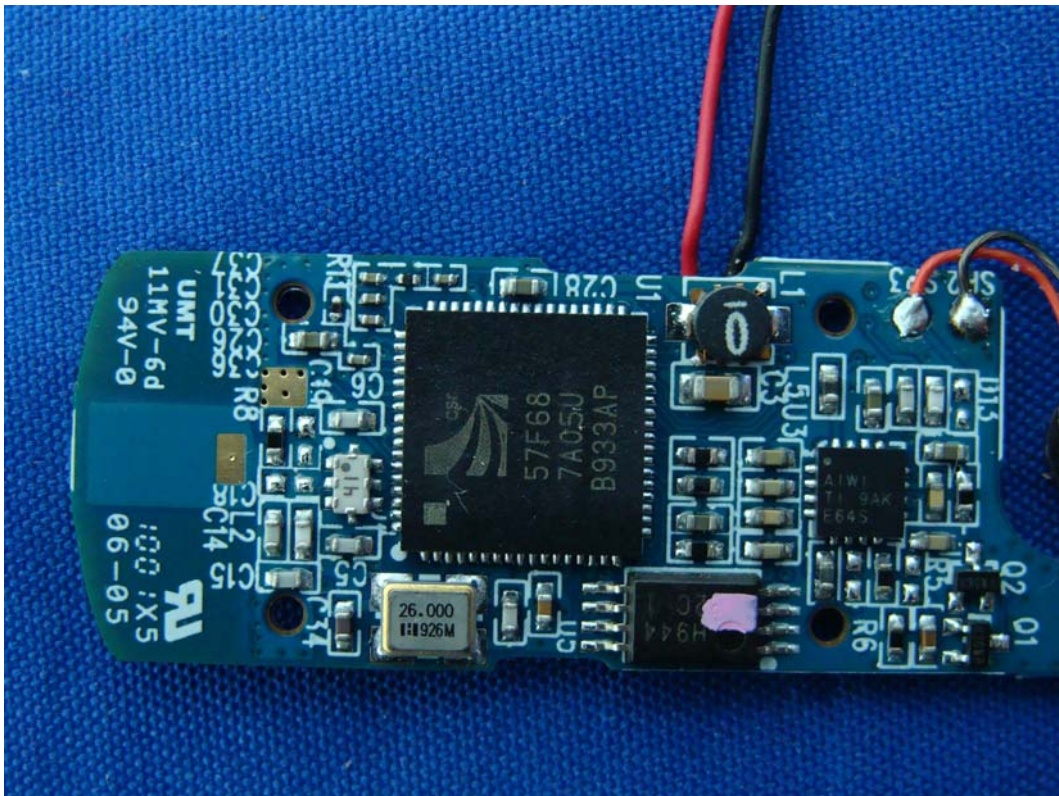
(13) EUT Photo



(14) EUT Photo



(15) EUT Photo



(16) EUT Photo



(17) EUT Photo



(18) EUT Photo



(19) EUT Photo



(20) EUT Photo



(21) EUT Photo



(22) EUT Photo

