





# ISO/IEC17025Accredited Lab.

Report No: FCC 1009298
File reference No: 2010-10-18

Applicant: E-CORE AUDIO LIMITED

Product: 2.4GHZ WIRLESS SPEAKER

Model No: EAP-850

Trademark: N/A

Test Standards: FCC Part 15 Subpart C, Paragraph 15.247

Test result:

It is herewith confirmed and found to comply with the

requirements set up by ANSI C63.4&FCC Part 15 Subpart C, Paragraph 15.247 regulations for the evaluation of

electromagnetic compatibility

Approved By

Jack Chung

Jack Chung Manager

Dated: October 16, 2010

Results appearing herein relate only to the sample tested The technical reports is issued errors and omissions exempt and is subject to withdrawal at

# SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO LTD

5/F,Block 4, Anhua Industrial Zone.,No.8 TaiRan Rd.CheGongMiao,FuTian District, Shenzhen,CHINA.

Tel (755) 83448688 Fax (755) 83442996

Report No: 1009298 Page 2 of 38

Date: 2010-10-18



# **Special Statement:**

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meets with ISO/IEC-17025 requirements, which is approved by CNAL. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

# **CNAL-LAB Code: L2292**

The EMC Laboratory has been assessed and in compliance with CNAL/AC01:2002 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:1999 General Requirements) for the Competence of testing Laboratories.

# FCC-Registration No.: 899988

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 899988.

# IC- Registration No.: IC5205A-01

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration IC No.: 5205A-01.

Page 3 of 38

Report No: 1009298 Date: 2010-10-18



# **Test Report Conclusion** Content

1.0	General Details	3
1.1	Test Lab Details.	3
1.2	Applicant Details	3
1.3	Description of EUT	3
1.4	Submitted Sample.	3
1.5	Test Duration.	4
1.6	Test Uncertainty.	4
1.7	Test By	4
2.0	List of Measurement Equipment.	4
3.0	Technical Details	7
3.1	Summary of Test Results.	7
3.2	Test Standards.	8
4.0	EUT Modification.	8
5.0	Power Line Conducted Emission Test.	8
5.1	Schematics of the Test.	8
5.2	Test Method and Test Procedure.	8
5.3	Configuration of the EUT	8
5.4	EUT Operating Condition.	9
5.5	Conducted Emission Limit.	9
5.6	Test Result.	9
6.0	Radiated Emission test	11
6.1	Test Method and Test Procedure.	11
6.2	Configuration of the EUT	11
6.3	EUT Operation Condition.	11
6.4	Radiated Emission Limit.	12
7.0	6dB Bandwidth Measurement	18
8.0	Maximum Peak Output Power	22
9.0	Power Spectral Density Measurement.	23
10.0	Out of Band Measurement.	27
11.0	Antenna Requirement.	30
12.0	Maximum Permissible Exposure.	31
13.0	FCC and IC ID Label.	33
14.0	Photo of Test Setup and EUT View	34

Report No: 1009298 Page 4 of 38

Date: 2010-10-18



### 1.0 General Details

### 1.1 Test Lab Details

Name: SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO LTD

Address: 5/F,Block 4, Anhua Industrial Zone.,No.8 TaiRan Rd.CheGongMiao,FuTian District,

Shenzhen, CHINA.

Telephone: (755) 83448688 Fax: (755) 83442996

Site on File with the Federal Communications Commission – United Sates

Registration Number: 899988

For 3m & 10 m OATS

Site Listed with Industry Canada of Ottawa, Canada

Registration Number: IC: 5205A-01

For 3m & 10 m OATS

# 1.2 Applicant Details

Applicant: E-CORE AUDIO LIMITED

Address: 3<sup>rd</sup> Building, Weidonglong Industrial, Heping East Road, LongHua, Shenzhen, Guangdong,

China

Telephone: 86-755-29674909 Fax: 86-755-81708411

# 1.3 Description of EUT

Product: 2.4GHZ WIRLESS SPEAKER
Manufacturer: E-CORE AUDIO LIMITED

Brand Name: N/A Model Number: EAP-850

Additional Model Name SR-15i, ID4120 Additional Trade Name TEAC, Karcher

Rating: DC5V Powered by Docking Base

Power Supply: Model: SWP-21091-00L, Input: 100-240V~, 50-60Hz, Output: 7.5VDC, 2.4A

Type of Modulation GFSK

Frequency range 2406-2472MHz

Number of Channel 67

Antenna type PIFA antenna, designed as an indispensable part of the EUT.

# 1.4 Submitted Sample: 1 Sample

### 1.5 Test Duration

2010-09-26 to 2010-10-18

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Page 5 of 38

Report No: 1009298 Date: 2010-10-18

1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB Radiated Emissions Uncertainty =4.7dB

1.7 Test Engineer &verify Engineer

Test Engineer

The sample(s) tested by

Brown Lu

Print Name: Brown Lu/ Engineer

Verify Engineer

The report verified by

Print Name: Terry Tang/ EMC Manager

Temy lang

2.0		Test Equipm	ents		
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	ROHDE&SCHWARZ	ESPI 3	100379	2009-12-05	2010-12-04
TWO Line-V-NETW	ROHDE&SCHWARZ	EZH3-Z5	100294	2009-12-05	2010-12-04
TWO Line-V-NETW	ROHDE&SCHWARZ	EZH3-Z5	100253	2009-12-05	2010-12-04
Ultra Broadband ANT	ROHDE&SCHWARZ	HL562	100157	2009-12-05	2010-12-04
ESDV Test Receiver	ROHDE&SCHWARZ	ESDV	100008	2010-03-29	2011-03-28
Impuls-Begrenzer	ROHDE&SCHWARZ	ESH3-Z2	100281	2010-02-17	2011-02-16
System Controller	CT	SC100	-	2010-02-17	2011-02-16
Field probe	Holaday	HI-6005	105152	2010-02-17	2011-02-16
Bilog Antenna	Chase	CBL6111C	2576	2010-02-17	2011-02-16
Loop Antenna	EMCO	6502	00042960	2010-02-17	2011-02-16
ESPI Test Receiver	ROHDE&SCHWARZ	ESI26	838786/013	2010-02-17	2011-02-16
3m OATS			N/A	2010-02-17	2011-02-16
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170265	2010-08-14	2011-08-13
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-631	2010-07-03	2011-07-02
Power meter	Anritsu	ML2487A	6K00003613	2010-02-17	2011-02-16
Power sensor	Anritsu	MA2491A	32263	2010-02-17	2011-02-16
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2010-05-14	2011-05-13
LISN	AFJ	LS16C	10010947251	2010-5-14	2011-05-13

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Page 6 of 38

Report No: 1009298 Date: 2010-10-18

LISN (Three Phase)	Schwarebeck	NSLK 8126	8126453	2010-5-14	2011-05-13
9*6*6 Anechoic	1		N/A	2010-5-14	2011-05-13

# 3.0 Technical Details

# 3.1 Summary of test results

Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.107 & 15.207	<b>Conducted Emission Test</b>	PASS	Complies
FCC Part 15 Subpart C Paragraph 15.247(a)(2) Limit	Spectrum bandwidth of a Orthogonal Frequency Division Multiplex System Limit: 6dB bandwidth>500kHz	PASS	Complies
FCC Part 15, Paragraph 15.247(b)	Maximum peak output power Limit: max. 30dBm	PASS	Complies
FCC Part 15, Paragraph 15.109,15.205 & 15.209	Transmitter Radiated Emission Limit: Table 15.209	PASS	Complies
FCC Part 15, Paragraph 15.247(d)	Power Spectral Density Limit: max. 8dBm	PASS	Complies
FCC Part 15, Paragraph 15.247(c)	Out of Band Emission and Restricted Band Radiation Limit: 20dB less than peak value of fundamental frequency Restricted band limit: Table 15.209	PASS	Complies

# 3.2 Test Standards

FCC Part 15 Subpart & Subpart C, Paragraph 15.247

# 4.0 EUT Modification

No modification by Shenzhen Timeway Technology Consulting Co.,Ltd

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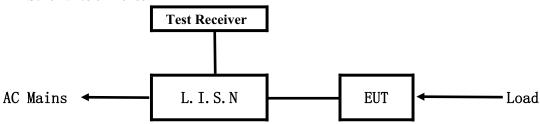
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Report No: 1009298 Page 7 of 38

Date: 2010-10-18



5.1 Schematics of the test

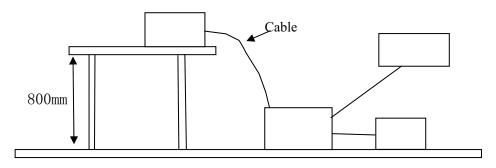


**EUT: Equipment Under Test** 

### 5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2003. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4-2003.

# Block diagram of Test setup



# 5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.4-2003. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

# A. EUT

Device	Manufacturer	Model	FCC ID
2.4GHZ	E-CORE AUDIO LIMITED	EAP-850	YVZ-EAP850A
WIRLESS			
SPEAKER			

# B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

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Report No: 1009298 Page 8 of 38

Date: 2010-10-18

# C. Peripherals

Device	Manufacturer	Model	FCC ID/DOC	Cable
N/A				

# 5.4 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2003.

- A Setup the EUT and simulators as shown on follow
- B Enable AF signal and confirm EUT active to normal condition

# 5.5 Power line conducted Emission Limit according to Paragraph 15.207

Frequency	Class A Lim	Class A Limits (dB $\mu$ V) Class B Limits		
(MHz)	Quasi-peak Level	Average Level	Quasi-peak Level	Average Level
$0.15 \sim 0.50$	79.0	66.0	66.0~56.0*	56.0~46.0*
$0.50 \sim 5.00$	73.0	60.0	56.0	46.0
$5.00 \sim 30.00$	73.0	60.0	60.0	50.0

Notes:

- 1. \*Decreasing linearly with logarithm of frequency.
- 2. The tighter limit shall apply at the transition frequencies

# 5.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

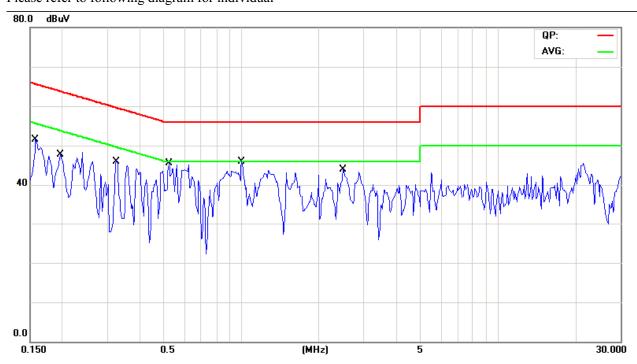
Report No: 1009298 Date: 2010-10-18

# A Conducted Emission on Neutral Terminal of the power line (150kHz to 30MHz)

EUT set Condition: Transmitting mode

Results: Pass

**Test Voltage** 120V~,60Hz Please refer to following diagram for individual



Engguenav	Reading(dB µ V)			Limit		
Frequency (MHz)	Neutral		Line		(dB µ V)	
(WITIZ)	Quasi-peak	Average	Quasi-peak	Average	Quasi-peak	Average
0.157	44.40	37.82			65.57	55.57
0.196	45.58	42.04			63.74	53.74
0.325	45.02	44.21			59.56	49.56
0.521	42.76	40.71			56.00	46.00
1.001	42.10	37.53			56.00	46.00
2.497	41.32	38.02			56.00	46.00

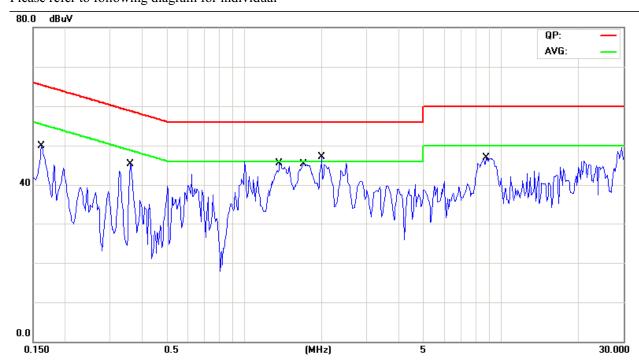
Date: 2010-10-18

# B Conducted Emission on Live Terminal of the power line (150kHz to 30MHz)

EUT set Condition: Transmitting mode

Results: Pass

**Test Voltage** 120V~,60Hz Please refer to following diagram for individual



Enaguanav	Reading(dB µ V)			Limit		
Frequency (MHz)	Neutral		Line		(dB µ V)	
(WIT1Z)	Quasi-peak	Average	Quasi-peak	Average	Quasi-peak	Average
0.161			45.65	39.18	65.37	55.37
0.360			45.03	44.62	58.71	48.71
1.372			43.13	39.89	56.00	46.00
1.704			44.56	42.57	56.00	46.00
2.001			45.76	41.38	56.00	46.00
8.773			41.74	32.89	60.00	50.00

Report No: 1009298 Page 11 of 38

Date: 2010-10-18



### 6 Radiated Emission Test

- 6.1 Test Method and test Procedure:
- (1) The EUT was tested according to ANSI C63.4 –2003. The radiated test was performed at Timeway Laboratory. This site is on file with the FCC laboratory division, Registration No.899988
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-2003.
- (3) The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 kHz. All readings are above 1 GHz, peak values with a resolution bandwidth of 1 MHz. Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "QP" in the data table.
- (6) The antenna polarization: Vertical polarization and Horizontal polarization.

# Block diagram of Test setup Distance = 3m Computer Pre -Amplifier EUT Turn-table Receiver

- 6.2 Configuration of The EUT
  Same as section 5.3 of this report
- 6.3 EUT Operating Condition
  Same as section 5.4 of this report.

Report No: 1009298 Page 12 of 38

Date: 2010-10-18



# 6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

Frequencies in restricted band are complied to limit on Paragraph 15.209

1		8 1
Frequency Range (MHz)	Distance (m)	Field strength (dB µ V/m)
0.009-0.490	300	2400/F(kHz)
0.490-1.705	30	24000/F(kHz)
1.705-30.0	30	30
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

Note:

- 1. RF Voltage  $(dBuV) = 20 \log RF \text{ Voltage } (uV)$
- 2. In the Above Table, the higher limit applies at the band edges.
- 3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT

Page 13 of 38

Report No: 1009298 Date: 2010-10-18

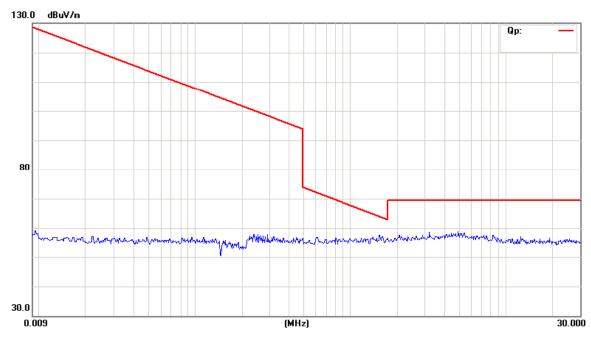


# Radiated Emission In Horizontal (0.009MHz----30MHz)

EUT set Condition: Transmitting

**Results:** Pass

Please refer to following diagram for individual



Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Limit@3m (dB \mu V/m)
	1	

Report No: 1009298 Page 14 of 38

Date: 2010-10-18



### Test result

# General Radiated Emission Data and Harmonics Radiated Emission Data

# Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Tx under transmitting mode (Low Channel)

Results: Pass

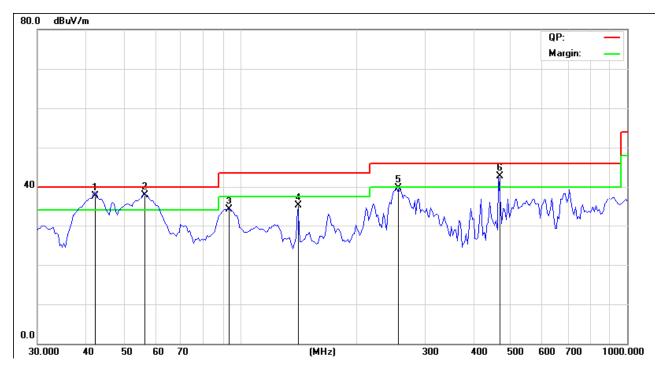
Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \mu V/m)
42.125	37.64	V	40.00
56.675	37.85	V	40.00
93.050	34.14	V	43.50
141.550	35.03	V	43.50
255.525	39.72	V	46.00
468.928	42.80	V	46.00
204.860	41.25	Н	43.50
252.231	43.92	Н	46.00
325.850	39.93	Н	46.00
468.925	42.91	Н	46.00
517.425	41.30	Н	46.00
769.625	41.11	Н	46.00

Report No: 1009298 Date: 2010-10-18

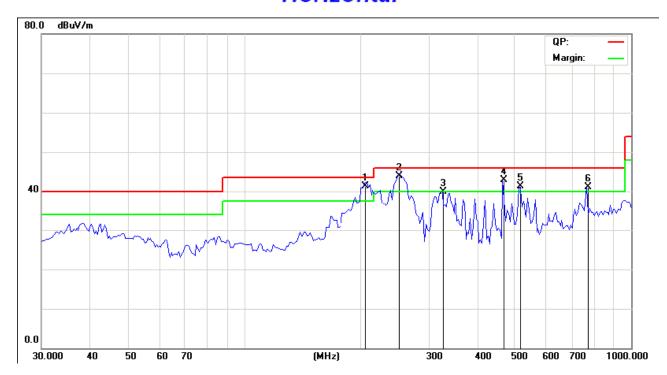


Test Figure: transmitting mode

# Vertical



# Horizontal



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Report No: 1009298 Page 16 of 38

Date: 2010-10-18

Operation Mode: Transmitting under Low CH

o per union in	Touc. If ansimitting under Low CII		
Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \mu V/m)
2406	95.2 (PK) /83.4 (AV)	Н	Even do mo antal Ena avian avi
2406	97.6 (PK) /84.5 (AV)	V	Fundamental Frequency
4812	54.2 (PK) /40.3 (AV)	Н	74(Peak)/ 54(AV)
4812	58.1(PK)/ 45.8 (AV)	V	74(Peak)/ 54(AV)
7218	53.1 (PK) /39.7 (AV)	H/V	74(Peak)/ 54(AV)
7218	56.1(PK)/ 42.7(AV)	H/V	74(Peak)/ 54(AV)
9624		H/V	74(Peak)/ 54(AV)
12030		H/V	74(Peak)/ 54(AV)
14436		H/V	74(Peak)/ 54(AV)
16842		H/V	74(Peak)/ 54(AV)
19248		H/V	74(Peak)/ 54(AV)
21654	<del></del>	H/V	74(Peak)/ 54(AV)
24060		H/V	74(Peak)/ 54(AV)

# **Operation Mode: Transmitting under Mid CH**

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB µ
			V/m)
2435	96.5 (PK) /84.1 (AV)	Н	Fundamental
2435	100.5 (PK) /87.9 (AV)	V	Frequency
4870	46.8(PK)	V	74(Peak)/ 54(AV)
4870	44.6(PK)	Н	74(Peak)/ 54(AV)
7305	58.3 (PK) / 46.1(AV)	V	74(Peak)/ 54(AV)
7305	56.6(PK) / 43.4 (AV)	Н	74(Peak)/ 54(AV)
9740	55.6 (PK) / 42.8(AV)	V	74(Peak)/ 54(AV)
9740	53.2(PK) / 41.9 (AV)	Н	74(Peak)/ 54(AV)
12175		H/V	74(Peak)/ 54(AV)
14610		H/V	74(Peak)/ 54(AV)
17045		H/V	74(Peak)/ 54(AV)
19480		H/V	74(Peak)/ 54(AV)
21915		H/V	74(Peak)/ 54(AV)
24350		H/V	74(Peak)/ 54(AV)

Report No: 1009298 Page 17 of 38

Date: 2010-10-18

<b>Operation Mode:</b>	Transmitting	under High CH
------------------------	--------------	---------------

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \mu V/m)
2472	96.8 (PK) /84.5 (AV)	Н	Fundamental Fraguency
2472	101.3 (PK) /89.6 (AV)	V	Fundamental Frequency
4944	52.3 (PK)/ 39.4( AV)	Н	74(Peak)/ 54(AV)
4944	56.6(PK) /43.6 (AV)	V	74(Peak)/ 54(AV)
7416	57.6 (PK)/ 44.5 (AV)	Н	74(Peak)/ 54(AV)
7416	59.7(PK) /46.2 (AV)	V	74(Peak)/ 54(AV)
9888		H/V	74(Peak)/ 54(AV)
12360		H/V	74(Peak)/ 54(AV)
14832		H/V	74(Peak)/ 54(AV)
17304		H/V	74(Peak)/ 54(AV)
19776		H/V	74(Peak)/ 54(AV)
22248		H/V	74(Peak)/ 54(AV)
24720		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. Margin=Emission-Limits
- 4.According to section 15.35(b), the peak limit is 20dB higher than the average limit

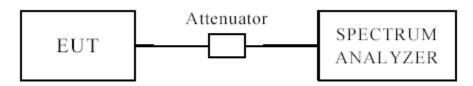
Report No: 1009298 Page 18 of 38

Date: 2010-10-18



# 7.0 6dB Bandwidth Measurement

# 7.1 Test Setup



# 7.2 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is >500 kHz

# 7.3 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator.

The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100 KHz RBW and 100 KHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

# 7.4 Test Result

EUT		2.4GHz WIRELESS SPEAKER Mod		2.4GHz WIRELESS SPEAKER Model		EAP-8	350
Mode		Keep	Transmitting	Input Vo	oltage	tage 120V~	
Temperat	ure	24	1 deg. C,	Humidity		56% I	RH
Channel		el Frequency (MHz)	6 dB Bandwi (MHz)	idth Mir		Minimum Limit (MHz)	
Low		2406	0.892			0.5	Pass
Mid		2435	0.912	0.912		0.5	Pass
High		2472	0.832			0.5	Pass

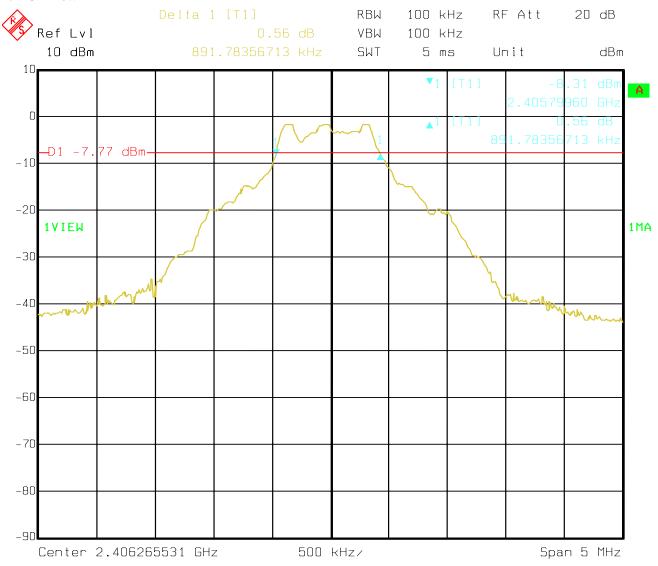
Page 19 of 38

Report No: 1009298 Date: 2010-10-18



# **Test Plots:**

# 1. CH Low



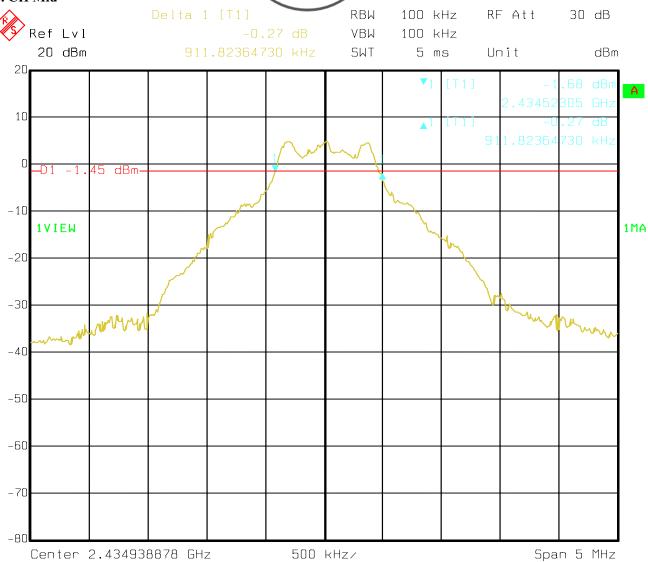
Date: 01.0CT.2010 13:16:09

Page 20 of 38

Report No: 1009298 Date: 2010-10-18



# 2. CH Mid



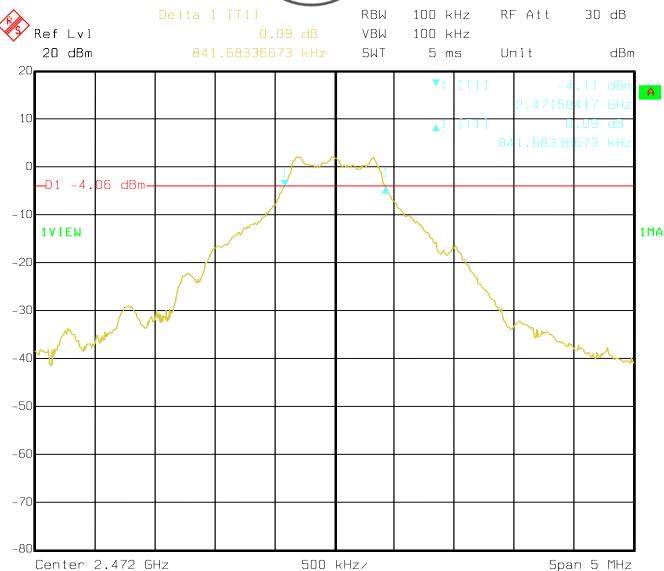
Date: 01.0CT.2010 11:14:56

Page 21 of 38

Report No: 1009298 Date: 2010-10-18



# 3. CH High



Date: 01.0CT.2010 11:53:25

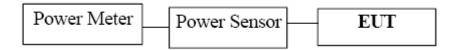
Page 22 of 38

Report No: 1009298 Date: 2010-10-18



# 8. Maximum Peak Output Power

8.1 Test Setup



# 8.2 Limits of Maximum Peak Output Power

The Maximum Peak Output Power Measurement is 30dBm.

### 8.3 Test Procedure

The RF power output was measured with a Power meter connected to the RF Antenna connector (conducted measurement) while EUT was operating in transmit mode at the appropriate centre frequency.

### **8.4Test Results**

EUT		2.4GHz WIRELE	2.4GHz WIRELESS SPEAKER Model E		Model		AP-850		
Mode		Keep Tran	Keep Transmitting Input Voltage		Input Voltage		ting Input Voltage		.20V~
Temperature	e	24 deg	g. C, Humidity		24 deg. C, Humidity 56		Humidity		5% RH
Channel	Cha	annel Frequency (MHz)	Peak Power Output (dBm)		Peak P Lin (dB	nit	Pass/ Fail		
Low		2406	2.73		30	)	Pass		
Mid		2435	4.44		30	)	Pass		
High		2472	4.47		30	)	Pass		

Note: 1. At finial test to get the worst-case emission for CH Low, CH Mid and CH High

2. The result basic equation calculation as follow:

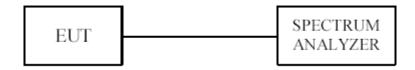
Peak Power Output = Peak Power Reading + Cable loss + Attenuator

Report No: 1009298 Page 23 of 38

Date: 2010-10-18

# 9. Power Spectral Density Measurement

9.1 Test Setup



# 9.2 Limits of Power Spectral Density Measurement

The Maximum Power Spectral Density Measurement is 8dBm.

### 9.3 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3KHz RBW and 10kHz VBW, set sweep time=100s

The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span / 3 kHz for a full response of the mixer in the spectrum analyzer.

# 9.4Test Result

EUT		2.4GHz WIRELE	ESS SPEAKER	Model		EAP-850			
Mode		Keep Tran	smitting Input Voltage		Keep Transmitting Input Voltage		1	20V~	
Temperature	e	24 deg	deg. C, Humidity		Humidity		Humidity		5% RH
Channel	Cha	annel Frequency (MHz)	Final RF Po Level in 3kH: (dBm)		Maximur (dB		Pass/ Fail		
Low		2406	-11.88	8			Pass		
Mid		2435	-7.47		8		Pass		
High		2472	-10.22		8		Pass		

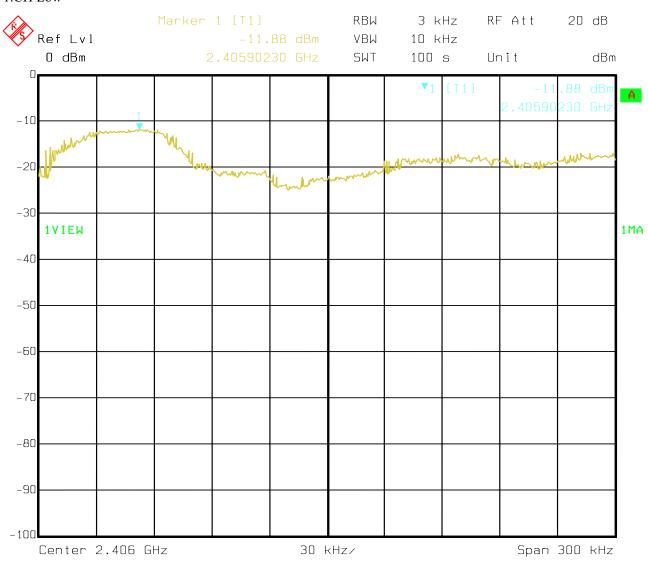
Note: At finial test to get the worst-case emission for CH Low, CH Mid and CH High

Report No: 1009298 Page 24 of 38

Date: 2010-10-18

# 9.5Photo of Power Spectral Density Measurement

# 1.CH Low



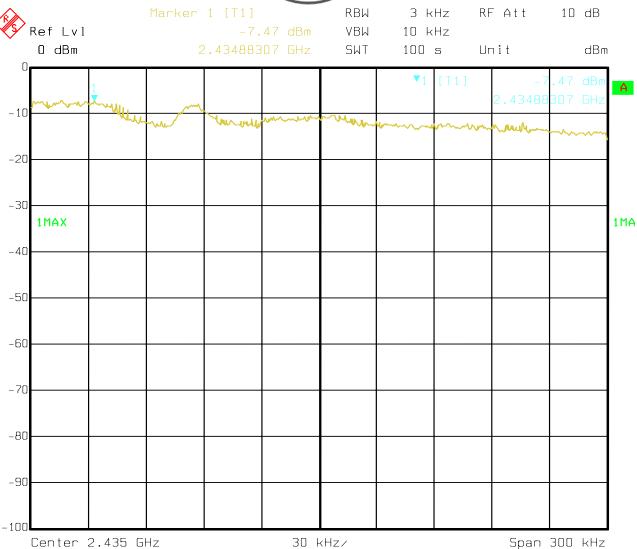
Date: 01.0CT.2010 13:12:14

Page 25 of 38

Report No: 1009298 Date: 2010-10-18



# 2. CH Mid



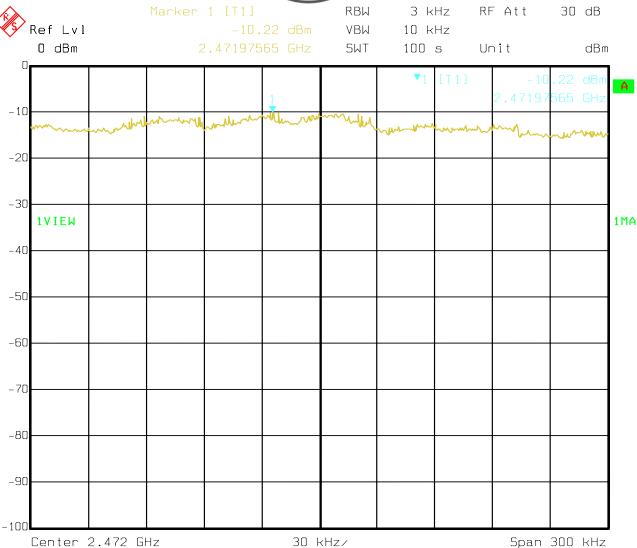
Date: 01.0CT.2010 11:29:26

Page 26 of 38

Report No: 1009298 Date: 2010-10-18



# 3. CH High



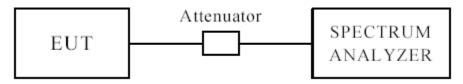
Date: 01.0CT.2010 12:41:57

Report No: 1009298 Page 27 of 38

Date: 2010-10-18



# 10 Out of Band Measurement 10.1 Test Setup



The restricted band requirement based on radiated emission test; please see the clause 6 for the test setup

# 10.2 Limits of Out of Band Emissions Measurement

- 1. Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).
- 2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209

### **10.3 Test Procedure**

For signals in the restricted bands above and below the 2.4-2.483GHz allocated band a measurement was made of radiated emission test.( Peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=10Hz and PK detector)

For bandage test, the spectrum set as follows: RBW=VBW=100 kHz. A conducted measurement used

Page 28 of 38

Report No: 1009298 Date: 2010-10-18



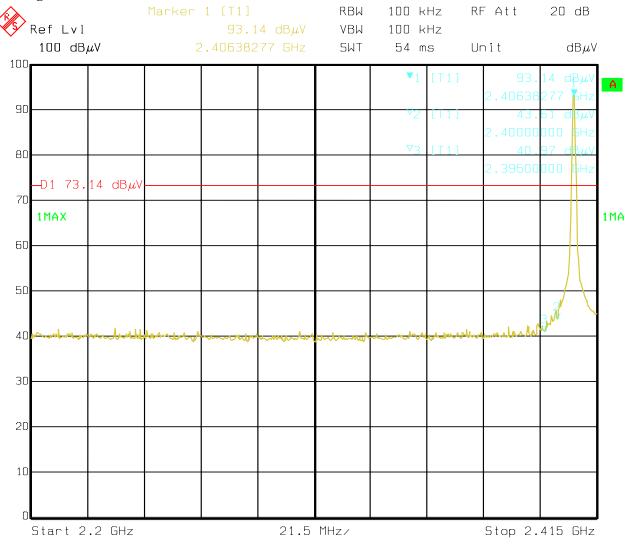
### 10.4Test Result

CH Low

### 10.4 Out of Band Test Result

Product:	2.4GHz WIRELESS SPEAKER		Test Mode:	CH Low
Mode	Keep Transmitting		Input Voltage	120V~
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
The Max. FS in	PK (dBμV/m)	42.7(V)/40.4(H)	Timit	74(dBµV/m)
Restrict Band	AV(dBμV/m)		Limit	54(dBµV/m)

# **Test Figure:**



Date: 01.0CT.2010 10:19:59

Note: The Max. FS in Restrict Band are measured in conventional method.

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Page 29 of 38

Report No: 1009298 Date: 2010-10-18

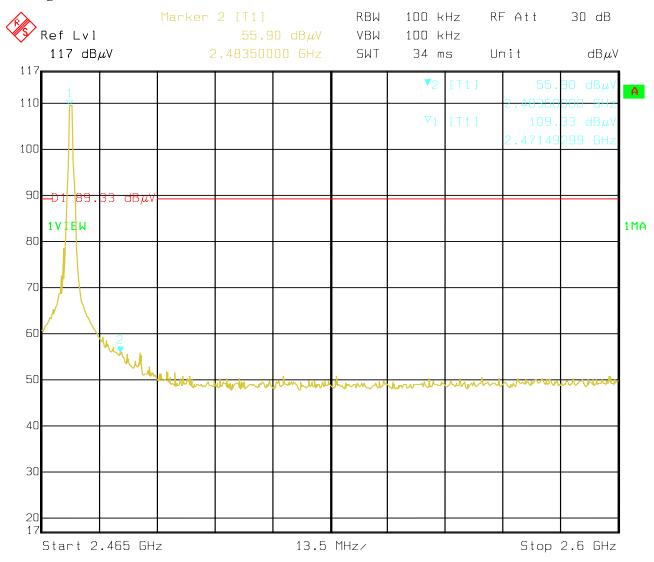


# CH High

### 10.4 Out of Band Test Result

Product:	2.4GHz WIRELESS SPEAKER		Test Mode:	CH High
Mode	Keep Transmitting		Input Voltage	120V~
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
The Max. FS in	PK (dBμV/m)	52.2(V)/49.4(H)	Limit	74(dBµV/m)
Restrict Band	$AV(dB\mu V/m)$	38.8(V)/36.5(H)	Lillit	54(dBµV/m)

# **Test Figure:**



Date: 01.0CT.2010 12:45:34

### Note: The Max. FS in Restrict Band are measured in conventional method.

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Report No: 1009298 Page 30 of 38

Date: 2010-10-18



# 11.0 Antenna Requirement

# 11.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitter antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the mount in dB that the directional gain of the antenna exceeds 6 dBi.

### 11.2 Antenna Connected construction

The maximum Gain of this antenna is 2.0dBi

Report No: 1009298 Date: 2010-10-18



# 12.0 Maximum Permissible Exposure

# **Applicable Standard**

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

# (a) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Times   E   2 ,   H   2 or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100000			5	6

# (b) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Times   E   2 ,   H   2 or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100000			1.0	30

Note: f=frequency in MHz; \*Plane-wave equivalent power density

# **MPE Calculation Method**

 $E (V/m) = (30*P*G)^{0.5}/d$  Power Density: Pd  $(W/m^2) = E^2/377$ 

 $\mathbf{E} = \text{Electric Field (V/m)}$ 

P = Peak RF output Power (W)

**G** = EUT Antenna numeric gain (numeric)

**d** = Separation distance between radiator and human body (m)

The formula can be changed to

 $Pd = (30*P*G) / (377*d^2)$ 

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained.

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Report No: 1009298 Page 32 of 38

Date: 2010-10-18



# **Calculated Result and Limit**

Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm²)	Limit of Power Density (S) (mW/cm²)	Test Result
1.585	4.47	2.79898	0.00088	1	Compiles

Report No: 1009298 Page 33 of 38

Date: 2010-10-18



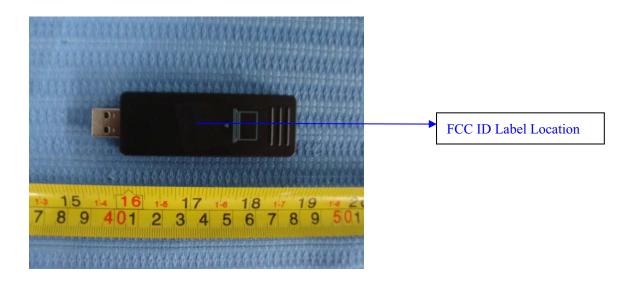
# 13.0 FCC ID Label

# FCC ID: YVZ-EAP850A

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

### **Mark Location:**



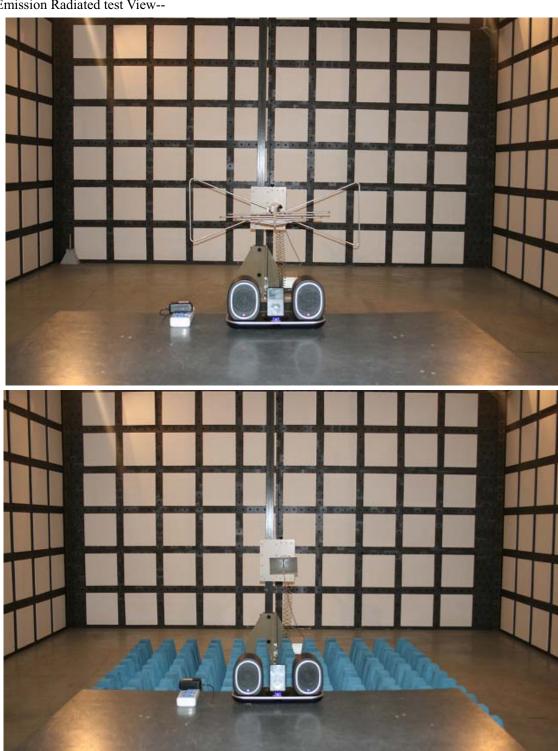
Page 34 of 38

Report No: 1009298 Date: 2010-10-18



### 14.0 Photo of testing

### 14.1 Emission Radiated test View--



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Report No: 1009298 Page 35 of 38

Date: 2010-10-18



# Conducted Emissions test View



Page 36 of 38

Report No: 1009298 Date: 2010-10-18



### 15.0 Photographs - EUT





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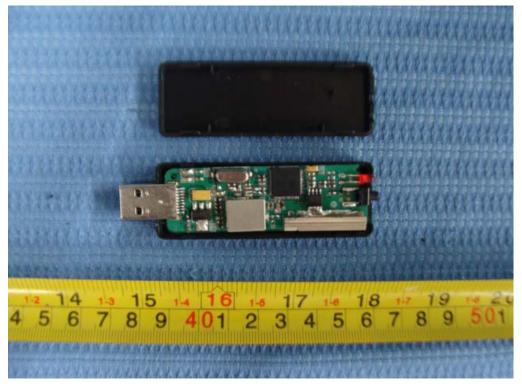
adopt any other remedies which may be appropriate.

Page 37 of 38

Report No: 1009298 Date: 2010-10-18







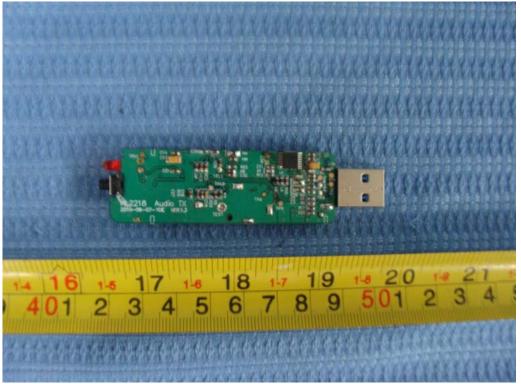
The report refers only to the sample tested and does not apply to the bulk.

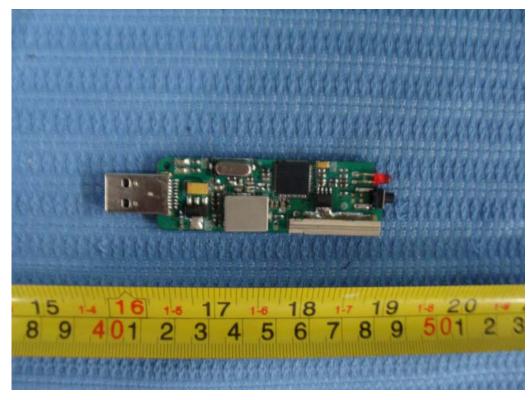
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