



BUREAU VERITAS

TEST REPORT N°: BJA-08OCH1844ETZFB-A1

# TEST REPORT

To:	<b>BEIJING JIA AN ELECTRONIC TECHNOLOGY CO., LTD.</b>	To:	-
Attn:	Helen Ban	Attn:	-
Address:	N0.19 Gu Cheng West Street, Shi Jing Shan District, Beijing 100043, CHINA	Address:	-
Fax:	86 10-68889905	Fax:	-
E-mail:	<a href="mailto:helen@alarmsources.com">helen@alarmsources.com</a>	E-mail:	-

Factory name:	<b>BEIJING JIA AN ELECTRONIC TECHNOLOGY CO., LTD.</b>	Offer:	BJA08OC16-01ETZHFP-A1
Location:	N0.19 Gu Cheng West Street, Shi Jing Shan District, Beijing 100043, CHINA	Sample No:	-



Start date:	October 20, 2008
Finish date:	October 21, 2008
Test Requested:	FCC Part 15 Certification Procedure
Test Method:	ANSI C63.4 – 2003

<b>Remote Controller, MODEL: T612-6S434-C616, T612-5S434-C616, T612-4S434-C616</b>	<b>FCC ID:VVJ-T612S434</b>
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The results given in this report are related to the tested specimen of the described electrical apparatus. This report replaces the old report BJA-08OCH1844ETZFB, which has been cancelled.

**CONCLUSION: The submitted sample was found to COMPLY with requirement of FCC Part 15 Subpart C.**

Authorized Signature:

Reviewed by: Eric Wong Date: January 16, 2008	Approved by: Steven Tsang Date: January 16, 2008	

BUREAU VERITAS HONG KONG LIMITED –  
 Unit 1611, 1614 & 1615,  
 16/F, VANTA INDUSTRIAL CENTRE 21-33,  
 TAI LIN PAI ROAD, KWAI CHUNG, N.T.  
 HONG KONG  
 Tel: +852 2494 4676  
 Fax: +852 2426 0613  
 Email: [bvcpes.electrical@hk.bureauveritas.com](mailto:bvcpes.electrical@hk.bureauveritas.com)

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## TEST REPORT N<sup>o</sup>: BJA-08OCH1844ETZFB-A1

### Location of the test site

Radiated and Conducted emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2003. An Open Area Test Site and Full Anechoic Chamber (FCC Listed Site, Registration No. 642151) are set up for investigation and located at :

### BUREAU VERITAS HONG KONG LIMITED, EMC CENTRE

No. 2106-2107, 21/F., Westin Centre,  
26 Hung To Road,  
Kwun Tong, Kowloon,  
Hong Kong

### List of measuring equipment

#### Radiated Emission

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATION DUE
M0008	EMI TEST RECEIVER	R&S	ESCI	100379	13-APR-2009
M0012	HF LOOP ANTENNA	SCHAFFNER	HLA 6120	21728	14-NOV-2009
M0011	BILOG ANTENNA	SCHAFFNER	CBL6112D	25229	31-JAN-2009
M0027	OPEN AREA TEST SITE	BVCPS	N/A	N/A	05-JULY-2009
M0028	ANECHOIC CHAMBER	ALBATROSS	M-CDC	80374004499B	09-JULY-2009
M0036	HORN ANTENNA	SCHWARZBECK	BBHA9120D	9120D-692	29-JULY-2009
M0037	PREAMPLIFIER	SCHWARZBECK	BBV9718	9718-152	22-JULY-2009
M0029	Spectrum Analyzer	ADVANTEST	R3127	111000909	02-DEC-2009
M0050	COAXIAL CABLE 1-18GHz	SUHNER	N/A	N/A	23-JULY-2009

#### Remarks:-

N/A : Not Applicable or Not Available

The measurement instrumentation uncertainty would be taking into consideration on each of the test result

## TEST REPORT N°: BJA-08OCH1844ETZFB-A1

### Equipment Under Test [EUT]

#### Description of Sample:

Model Name: Remote Controller  
Model Number: T612-6S434-C616, T612-5S434-C616, T612-4S434-C616  
Rating: 12Vd.c. (Battery size "23A" x 1)

#### Description of EUT Operation:

The Equipment Under Test (EUT) is a **BEIJING JIA AN ELECTRONIC TECHNOLOGY CO** of Remote Controller. The transmitter is a 4 buttons transmitter and operating at 434MHz. The EUT continues to transmit while buttons is being pressed, Modulation by IC, and type is amplitude modulation.

The transmitter has different control and up to 6 button employed. All the models are sharing the same circuitry with disabling 5<sup>th</sup> and/or 6<sup>th</sup> function upon its marketing strategies.

1. Lock button – lock the car
2. Unlock button – unlock the car
3. Trunk release button – Open the trunk release
4. Start button – Start
5. 2<sup>nd</sup> vehicle selection (Additional to EUT: 5 & 6 button)
6. 2<sup>nd</sup> function selection (Additional to EUT: 6 button)

Pretest were made on all button of model 4, 5 & 6 button, the final testes were carried with the full function model (6 button) and button 1 as its dominant and the worst characteristics over the spectrum. Vehicle selection was also achieved by its coding system without deviation on the spectrum.

#### Antenna Requirement (Section 15.203)

The EUT is use of a permanently antenna. The antenna consists of 1.8cm long spring wire. It is soldered on the PCB. The antenna is not replaceable or user serviceable. The requirement of S15.203 are met. There are no deviations or exceptions to the specifications.

#### Photo of Antenna connection





## TEST REPORT N<sup>o</sup>: BJA-08OCH1844ETZFB-A1

### Radiated Emissions (Fundamental Emissions)

Test Requirement: FCC Part 15 Section 15.231 (a)

Test Method: ANSI C63.4

Test Date(s): 2008-10-20

Mode of Operation: Transmission mode

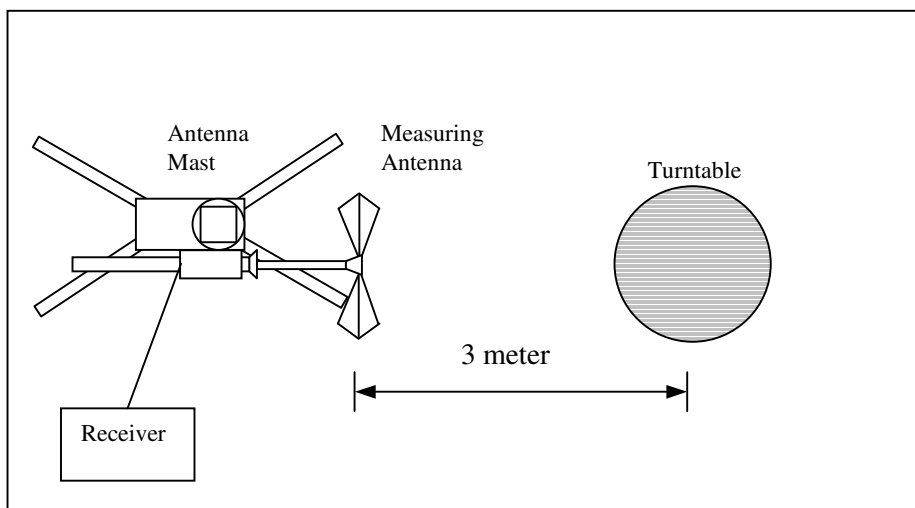
### Test Procedure:

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2003.

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 1m and 0.8m high above the ground. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using new battery. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.

### Test Setup: Open Area Test Site





**TEST REPORT N°: BJA-08OCH1844ETZFB-A1**

**Limits for Field Strength of Fundamental Emissions [FCC 47CFR 15.231(a)]:**

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission [Average] [µV/m]	Field Strength of Spurious Emission [Average] [µV/m]
260-470	3,750 to 12,500**	375 to 1,250**

\*\*linear interpolations

[Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows: for the band 260-470MHz, µV/m at 3 meters = 41.6667(F) – 7083.3333. The maximum permitted unwanted emission level is 20dB below the maximum permitted fundamental level]

**Measurement Data**

**Test Result of (Transmission mode): PASS**

**Detection mode: Peak**

Frequency (MHz)	Polarity (H/V) and degree	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
434.3	V	26.1	69.7	80.8	-11.1

**Detection mode: Peak**

Frequency (MHz)	Polarity (H/V) and degree	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
434.3	H	26.1	67.7	80.8	-13.1

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 100KHz  
VBW = 300KHz



## TEST REPORT N<sup>o</sup>: BJA-08OCH1844ETZFB-A1

### Radiated Emissions (Field Strength of Spurious Emissions)

Test Requirement: FCC Part 15 Section 15.231 (a)

Test Method: ANSI C63.4

Test Date(s): 2008-10-20

Mode of Operation: Transmission mode

### Measurement Data

**Test Result of (Transmission mode): PASS**

#### Detection mode: Peak

Frequency (MHz)	Polarity (H/V) and degree	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
867.81	V	34.90	40.94	60.80	-19.86

#### Detection mode: Peak

Frequency (GHz)	Polarity (H/V) and degree	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
*1.30	V	25.52	26.31	54.00	-27.69
1.73	V	25.07	47.29	60.80	-13.51
2.17	V	27.95	49.46	60.80	-11.43
2.60	V	27.80	30.45	60.80	-30.35
3.03	V	28.65	47.31	60.80	-13.49
3.47	V	28.80	31.30	60.80	-29.50
*3.91	V	29.75	30.82	54.00	-23.18
*4.34	V	30.50	32.45	54.00	-21.55

\*Restricted band of Section 15.205, Section 15.209 limits is applied





## TEST REPORT N<sup>o</sup>: BJA-08OCH1844ETZFB-A1

### Radiated Emissions (30MHz – 1GHz)

Test Requirement: FCC Part 15 Section 15.209

Test Method: ANSI C63.4

Test Date(s): 2008-10-20

Mode of Operation: Transmission mode

#### Limits for Radiated Emissions [FCC 47 CFR 15.209]:

Frequency Range [MHz]	Quasi-Peak Limits [ $\mu$ V/m]
30-88	100
88-216	150
216-960	200
Above960	500

### Measurement Data

**Test Result of (Transmission mode): PASS**

**Detection mode: Quasi-Peak**

Frequency (MHz)	Polarity (H/V) and degree	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
35.83	V	17.2	28.27	40.00	-11.73
395.45	V	25.0	29.16	46.00	-16.84
597.62	V	30.1	34.59	46.00	-11.41
918.36	V	35.8	39.03	46.00	-6.97
35.83	H	17.2	28.54	40.00	-11.46
385.73	H	24.7	27.95	46.00	-17.05
659.82	H	31.3	35.48	46.00	-10.52
922.24	H	35.9	39.75	46.00	-6.25

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 120KHz  
VBW = 300KHz





## TEST REPORT N°: BJA-08OCH1844ETZFB-A1

### 20dB Bandwidth of Fundamental Emission

Test Requirement: FCC 47 CFR 15.231  
Test Method: ANSI C63.4:2003 (Section 13.1.7)  
Test Date: 2008-10-20  
Mode of Operation: Transmission mode

### Test Method:

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

### Limits for 20dB Bandwidth of Fundamental Emission: Result for 20dB Bandwidth of Fundamental Emission:

Frequency	20dB Bandwidth	FCC Limits
[MHz]	[kHz]	[kHz]
434	254.5	1085

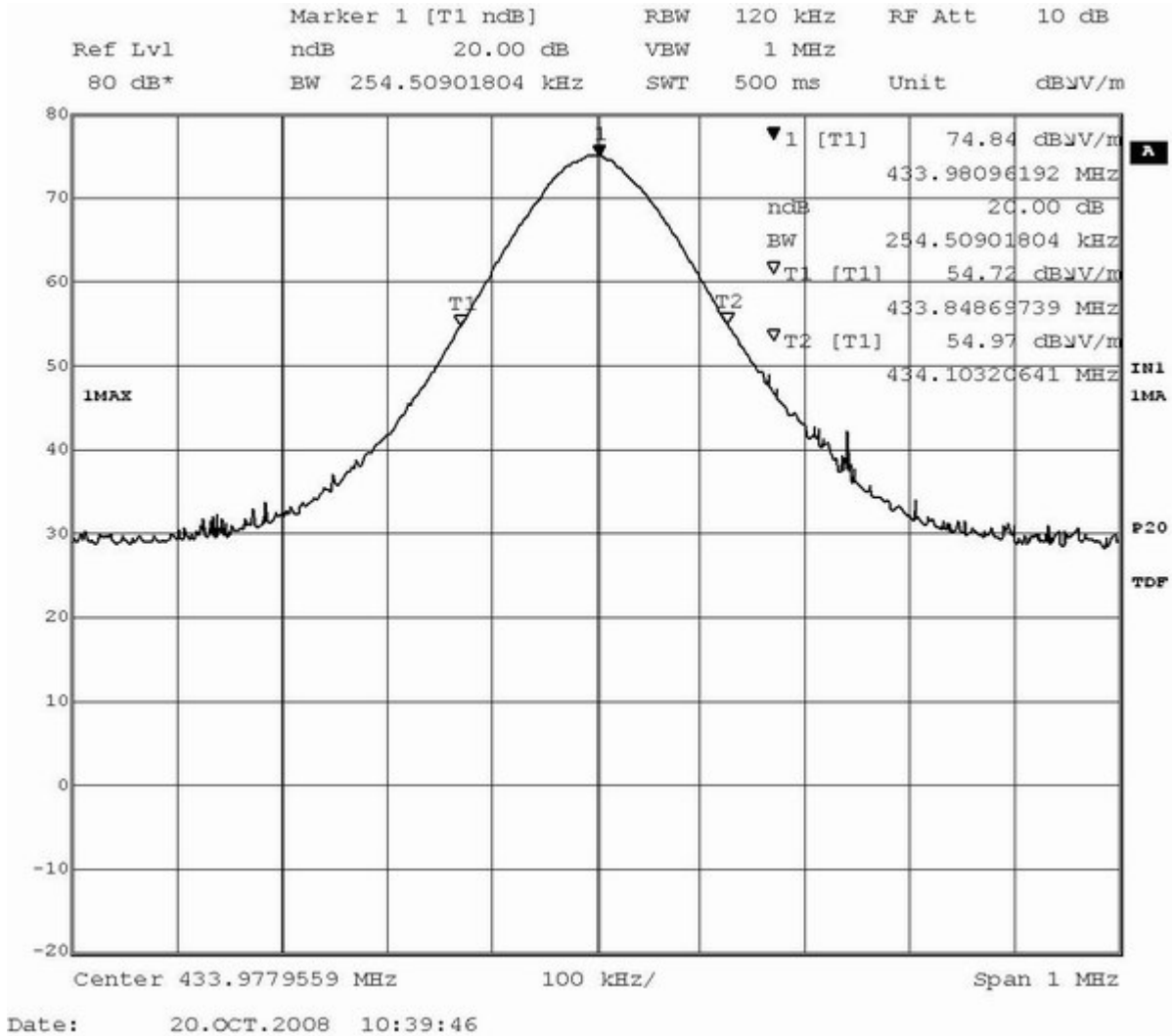


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Measurement Data :

Test Result of 20dB Bandwidth of Fundamental Emission: PASS



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 Unit 1611, 1614 & 1615,  
 16/F, VANTA INDUSTRIAL CENTRE 21-33,  
 TAI LIN PAI ROAD, KWAI CHUNG, N.T.  
 HONG KONG  
 Tel: +852 2494 4676  
 Fax: +852 2426 0613  
 Email: [bvcp.electrical@hk.bureauveritas.com](mailto:bvcp.electrical@hk.bureauveritas.com)

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## TEST REPORT N°: BJA-08OCH1844ETZFB-A1

### Duration of Transmission

Test Requirement: FCC 47 CFR 15.231(a)(1)

Test Date: 2008-10-21

Mode of Operation: Transmission mode

### Test requirement:

A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 second of being released.

### Result:

Push button	Frequency (MHz)	Transmission duration (sec)	Maximum limit (sec)	Result
Lock	434	2.92	5	Pass
Unlock	434	2.90	5	Pass
Trunk release	434	2.92	5	Pass
Start	434	2.94	5	Pass

The following figures [Figure A to Figure D] show the characteristics of these functions.



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Figure A [Lock button]

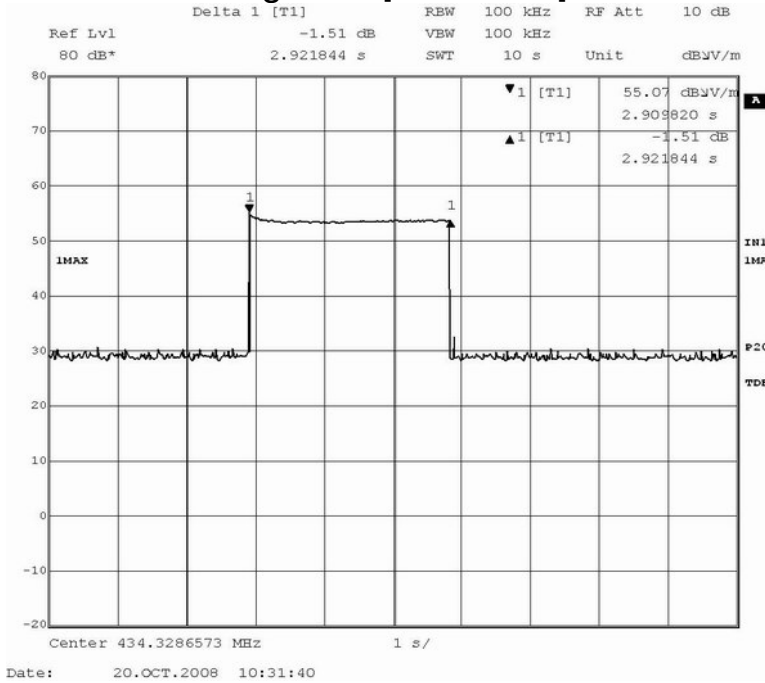
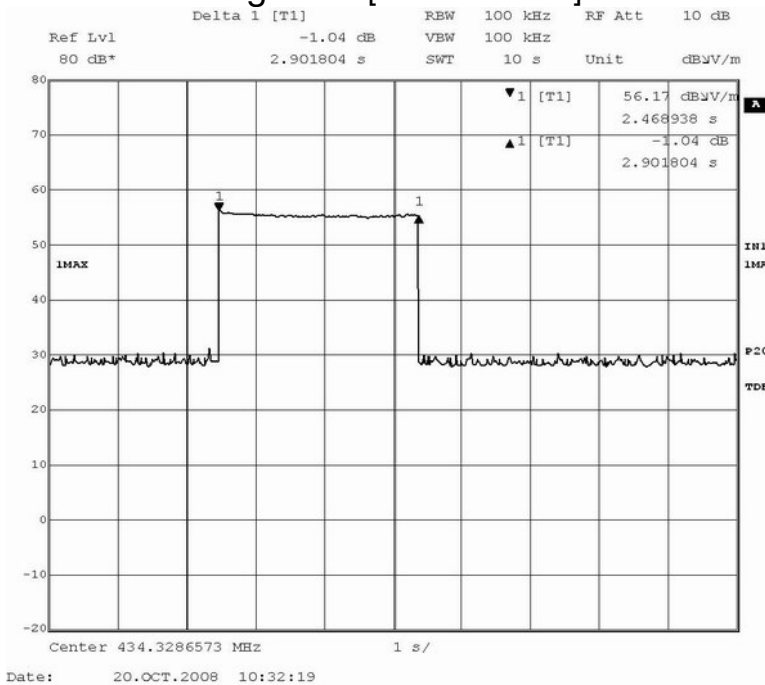


Figure B [Unlock button]



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 HONG KONG  
 Tel: +852 2494 4676  
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Figure C [Trunk release]

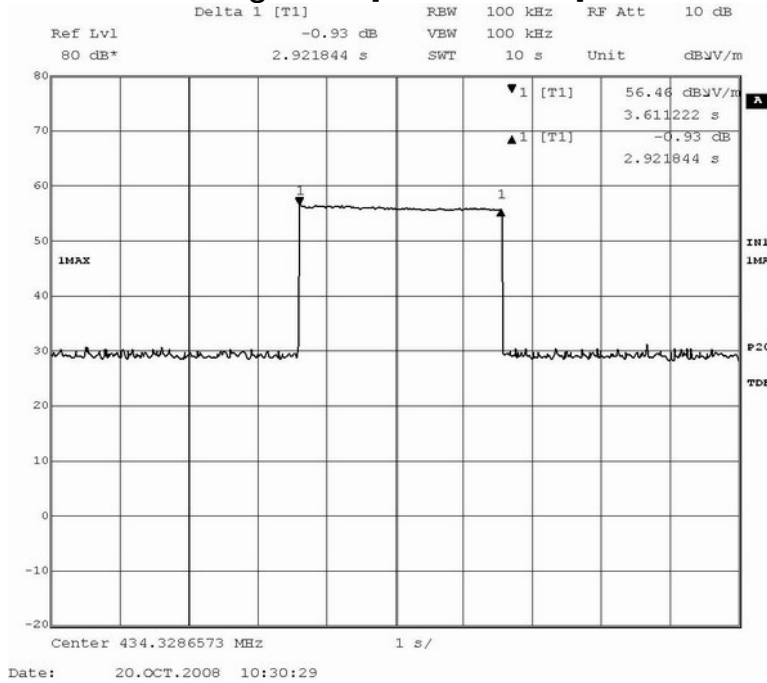
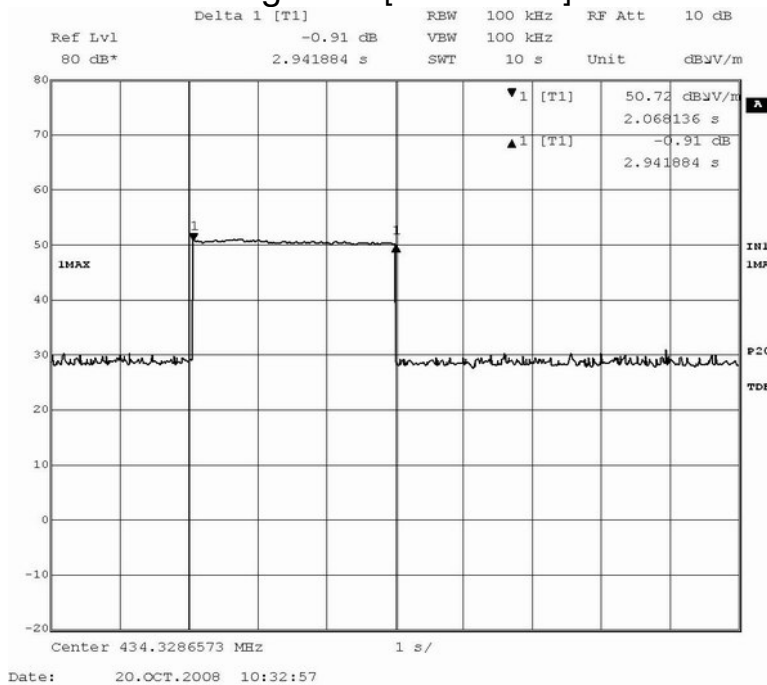


Figure D [Start Button]



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 Unit 1611, 1614 & 1615,  
 16/F, VANTA INDUSTRIAL CENTRE 21-33,  
 TAI LIN PAI ROAD, KWAI CHUNG, N.T.  
 HONG KONG  
 Tel: +852 2494 4676  
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**Photographs of EUT**

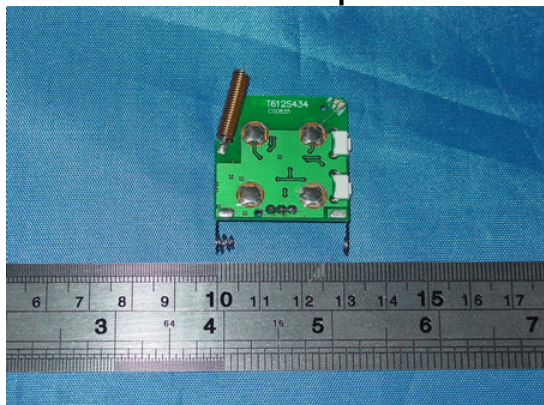
**Front View of the product**



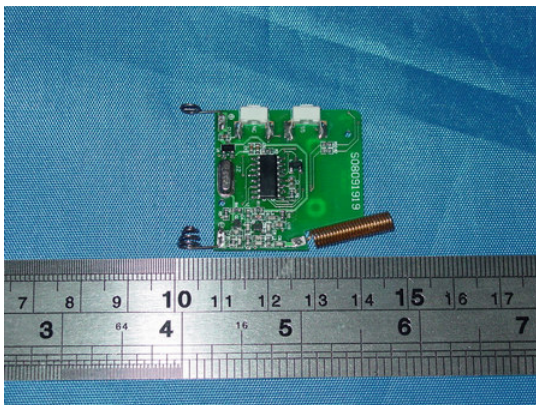
**Rear View of the product**



**Inner Circuit Top View**



**Inner Circuit Bottom View**



**TEST REPORT N°: BJA-080CH1844ETZFB-A1**

**Photographs of EUT**

**Battery compartment**



**Internal enclosure (Front)**



**Internal enclosure (Rear)**



**Antenna**







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## TEST REPORT N<sup>o</sup>: BJA-08OCH1844ETZFB-A1

### Measurement of Radiated Emission Test Set Up



**\*\*\*\*\* End of Report \*\*\*\*\***