
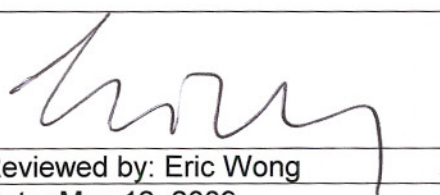
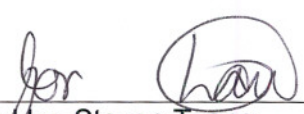




TEST REPORT N°: BVCK09AP208MTHS

TEST REPORT

| | | | |
|---|--|--|--|
| To: | MAY CHEONG TOY PRODUCTS FACTORY LTD. -TST | To: | - |
| Attn: | ZHONG CHENG | Attn: | - |
| Address: | 7/F., East Wing, Tsim Sha Tsui Centre, 66 Mody Road, Tsimshatsui East, Kowloon, Hong Kong | Address: | - |
| Fax: | (86) 769-87753123 | Fax: | - |
| E-mail: | electcqa@maycheonggroup.cn | E-mail: | - |
| Offer No.: | BVCK09AP17-06MTHS-A0 | | |
| Factory name: | -- | | |
| Location: | -- | | |
| Product: | 1:10 R/C VEHICLES FOR PLAYERZ & PRO-RODZ, ASSORTED/#81021 LAMBORGHINI GALLARDO/#81022 MERCEDES SLR MCLAREN/#81031 PRO-RODZ – 1969 DODGE CHARGER R/T/#81032 1967 FORD MUSTANG GT/#81041 1951 VOLKSWAGEN BEETLE/#81042 1964 CHEVROLET IMPALA SS/#81043 VOLKSWAGEN VAN “SAMBA” WITH MP3 PLAYER HOOKUP/#81044 1:10 CS – RADIO CONTROL VOLKSWAGEN VAN “SAMBA” INACTIVE/#20-81024 LAMBORGHINI GALLOARDO POLICE/#81028 1:10 HUMMER HX RC/#04236 REMOTE CONTROLLER MODEL: 81021 / 81022 / 81031 / 81032 / 81041 / 81042 / 81043 / 81044 / 81024 / 81028 / 04236 Assortment #: 81019 | | |
|  | | Sample No: | (5209) 104-0994 |
| | | Test date: | April 18, 2009 to April 21, 2009 |
| | | Test Requested: | FCC Part 15 - 2008 |
| | | Test Method: | ANSI C63.4 - 2003 |
| | | FCC ID: | PKG04236RC27 |
| The results given in this report are related to the tested specimen of the described electrical apparatus. CONCLUSION: The submitted sample was found to COMPLY with requirement of FCC Part 15 Subpart C. | | | |
| Authorized Signature: | | | |
|  | |  | |
| Reviewed by: Eric Wong | | Approved by: Steven Tsang | |
| Date: May 12, 2009 | | Date: May 12, 2009 | |

BUREAU VERITAS HONG KONG LIMITED –
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This report is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



TEST REPORT N°: BVCK09AP208MTHS

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

| EQUIPMENT | MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATION DUE |
|--------------------------|--------------|-----------|--------------|-----------------|
| EMI TEST RECEIVER | R&S | ESCI | 100379 | 18-AUG-2009 |
| HF LOOP ANTENNA | SCHAFFNER | HLA 6120 | 21728 | 14-NOV-2009 |
| BILOG ANTENNA | SCHAFFNER | CBL6112D | 25229 | 31-JAN-2010 |
| OPEN AREA TEST SITE | BVCPS | N/A | N/A | 05-JULY-2009 |
| ANECHOIC CHAMBER | ALBATROSS | M-CDC | 80374004499B | 09-JULY-2009 |
| HORN ANTENNA | SCHWARZBECK | BBHA9120D | 9120D-692 | 29-JULY-2009 |
| PREAMPLIFIER | SCHWARZBECK | BBV9718 | 9718-152 | 22-JULY-2009 |
| COAXIAL CABLE 1-18GHz | SUHNER | N/A | N/A | 23-JULY-2009 |
| SPECTRUM ANALYZER | ADVANTEST | R3127 | 111000909 | 02-DEC-2009 |

Conducted Emission

| EQUIPMENT | MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATION DUE |
|-------------------|--------------|-----------|------------|-----------------|
| EMI TEST RECEIVER | R&S | ESCS30 | 830986/030 | 18-SEP-2009 |
| LISN | R&S | ENV216 | 100024 | 25-MAR-2010 |

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^o: BVCK09AP208MTHS

Equipment Under Test [EUT]

Description of Sample:

Model Name: 1:10 R/C VEHICLES FOR PLAYERZ & PRO-RODZ, ASSORTED/#81021 LAMBORGHINI GALLARDO/#81022 MERCEDES SLR MCLAREN/#81031 PRO-RODZ – 1969 DODGE CHARGER R/T/#81032 1967 FORD MUSTANG GT/#81041 1951 VOLKSWAGEN BEETLE/#81042 1964 CHEVROLET IMPALA SS/#81043 VOLKSWAGEN VAN “SAMBA” WITH MP3 PLAYER HOOKUP/#81044 1:10 CS – RADIO CONTROL VOLKSWAGEN VAN “SAMBA” INACTIVE/#20-81024 LAMBORGHINI GALLOARDO POLICE/#81028 1:10 HUMMER HX RC/#04236 REMOTE CONTROLLER

Model Number: 81021 / 81022 / 81031 / 81032 / 81041 / 81042 / 81043 / 81044 / 81024 / 81028 / 04236 / Assortment #: 81019 (81021, 81022, 81031, 81032, 81041, 81042, 81043, 81044, 81024, 81028 are receiver and 04236 is transmitter)

Rating: 9Vd.c (Battery size: “6F22” x 1)

Description of EUT Operation:

The Equipment Under Test (EUT) is a MAY CHEONG TOY PRODUCTS FACTORY LTD. -TST of Radio Control toy. The transmitter is 3 switches, 1 trigger and 1 wheel transmitter and operating at 27.1456MHz. The EUT continues to transmit when trigger is being pressed, Modulation by IC, and type is pulse modulation.

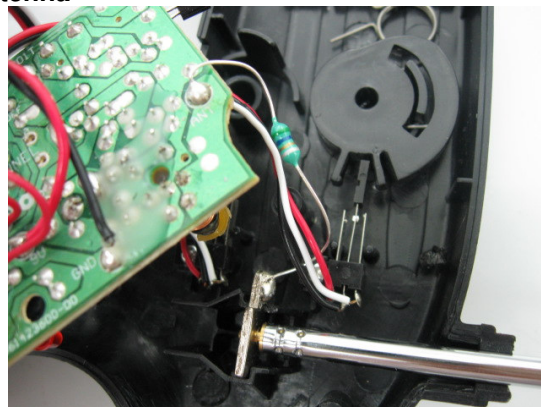
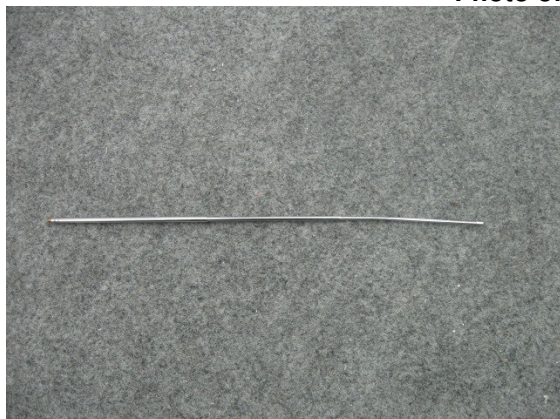
The transmitter has different control:

1. Wheel – Left or right control
2. Trigger– Forward or backward control
3. Switch “A/B/C” – Choose A/B/C channel (*Test result of Channel A are recorded.*)
4. Switch “OFF/ON” – Choose OFF/ON to control turn ON or OFF the transmitter
5. Switch “Light” – Choose light OFF/ON

Antenna Requirement (Section 15.203)

The EUT is use of a permanently antenna. The antenna consists of 33.0cm long metal antenna. 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



TEST REPORT N^o: BVCK09AP208MTHS

Radiated Emissions (Fundamental)

Test Requirement: FCC Part 15 Section 15.227

Test Method: ANSI C63.4

Test Date(s): 2009-04-21

Mode of Operation: Transmission mode (Channel A)
(The transmitter has channel A, B and C. Channel selection in the controller must be paired with the vehicle channel with designated coding and decoding scheme. All transmission frequency and RF power among the channels are same.)

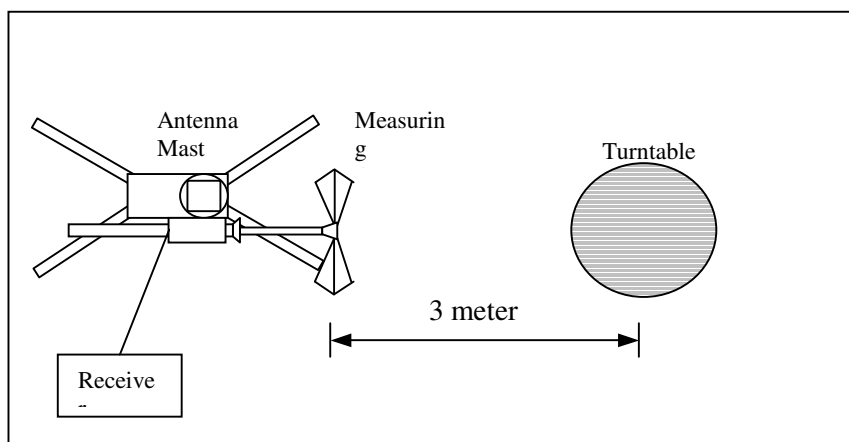
Test Procedure:

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°: BVCK09AP208MTHS

Limits for Field Strength of Fundamental Emissions [FCC 47CFR 15.227]:

| Frequency Range of Fundamental [MHz] | Field Strength of Fundamental Emission [Peak] [μV/m] | Field Strength of Fundamental Emission [Average] [μV/m] |
|---|--|---|
| 26.96 – 27.28 | 100,000 (100 dBμV/m) | 10,000 (80 dBμV/m) |

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) |
|-----------------|---------------------------|--------------------------------------|-------------------------------|----------------------|-------------|
| 27.145 | V/0° | 21.8 | 71.9 | 100 | -28.1 |

Detection mode: # Average

| 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) |
|-----------------|---------------------------|--------------------------------------|-------------------------------|----------------------|-------------|
| 27.145 | V/0° | 21.8 | **67.5 | 80 | -12.5 |

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

**Duty Cycle Correction = $20\log(0.599) = -4.4\text{dB}$

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 100KHz
VBW = 300KHz

TEST REPORT N°: BVCK09AP208MTHS

Radiated Emissions (9kHz – 1GHz)

Test Requirement: FCC Part 15 Section 15.209

Test Method: ANSI C63.4

Test Date(s): 2009-04-21

Mode of Operation: Transmission mode (Channel A)
(The transmitter has channel A, B and C. Channel selection in the controller must be paired with the vehicle channel with designated coding and decoding scheme. All transmission frequency and RF power among the channels are same.)

Limits for Radiated Emissions [FCC 47 CFR 15.209]:

| Frequency Range [MHz] | Quasi-Peak Limits [μV/m] |
|--------------------------|-----------------------------|
| 1.705-30 | 300 |
| 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) | Antenna Factor and Cable Loss (dB/m) | Field Strength at 3m (dBμV/m) | Limit at 3m (dBμV/m) | Margin (dB) |
|--------------------|-------------------|--|----------------------------------|-------------------------|----------------|
| 54.29 | V | 9.2 | 39.3 | 40.0 | -0.7 |
| 81.435 | V | 10.6 | 24.3 | 40.0 | -15.7 |
| 108.58 | V | 15.0 | 24.0 | 43.5 | -19.5 |
| 135.725 | H | 14.9 | 22.6 | 43.5 | -20.9 |
| 162.87 | V | 14.8 | 25.6 | 43.5 | -17.9 |
| 190.015 | H | 15.0 | 29.5 | 43.5 | -14.0 |
| 217.16 | H | 15.9 | 30.0 | 46.0 | -16.0 |
| 244.305 | H | 17.5 | 27.3 | 46.0 | -18.7 |
| 271.45 | H | 19.3 | 32.0 | 46.0 | -14.0 |
| 298.595 | H | 21.0 | 37.7 | 46.0 | -8.3 |

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 120KHz
 VBW = 120KHz



TEST REPORT N°: BVCK09AP208MTHS

26dB Bandwidth of Fundamental Emission

Test Requirement: FCC 47 CFR 15.227
Test Method: ANSI C63.4:2003 (Section 13.1.7)
Test Date: 2009-04-18
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.

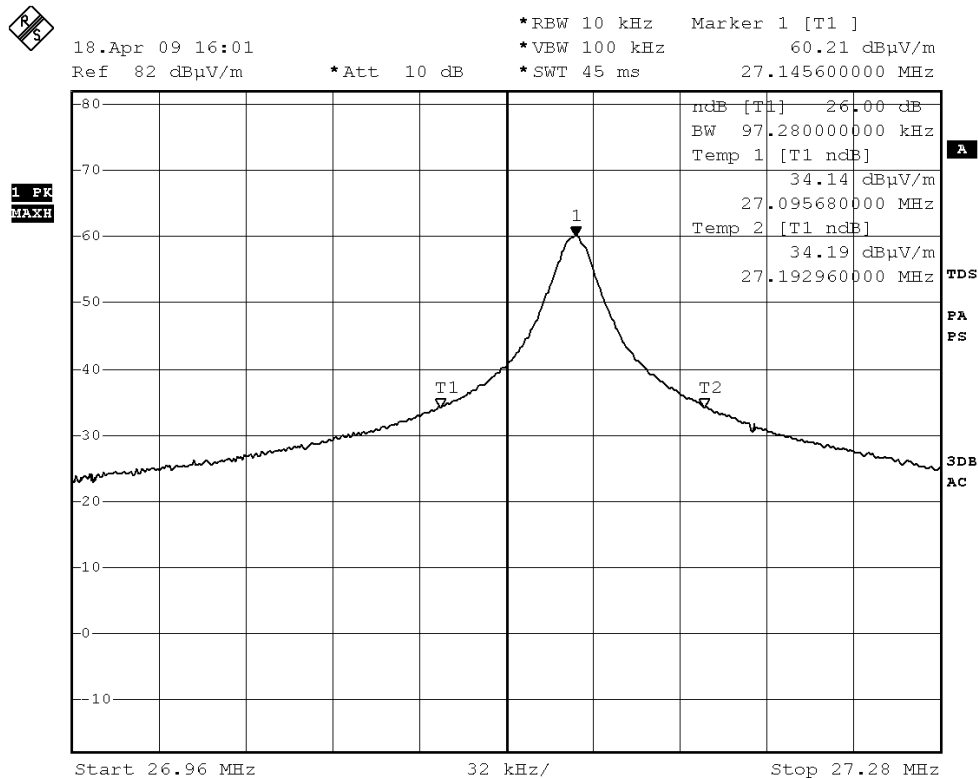
Limits for 26dB Bandwidth of Fundamental Emission:

| Frequency [MHz] | 26dB Bandwidth [KHz] | Limits [MHz] |
|--------------------|-------------------------|----------------------|
| 27.1456 | 97.28 | within 26.96 – 27.28 |

TEST REPORT N°: BVCK09AP208MTHS

Measurement Data :

Test Result of 26dB Bandwidth of Fundamental Emission: PASS



Date: 18.APR.2009 16:01:17



TEST REPORT N°: BVCK09AP208MTHS

Duty Cycle Correction During 100msec:

Each function key sends a different series of characters, but each packet period (5.84msec) never exceeds a series of 1 long (0.5msec) and 15 short (0.2msec) pulses. Assuming any combination of short and long pulses may be obtained due to encoding the worst case transmit duty cycle would be considered $(1 \times 0.5\text{msec}) + (15 \times 0.2\text{msec})$ per 5.84msec = 59.9% duty cycle. Figure A through C show the characteristics of the pulse train for one of these functions.

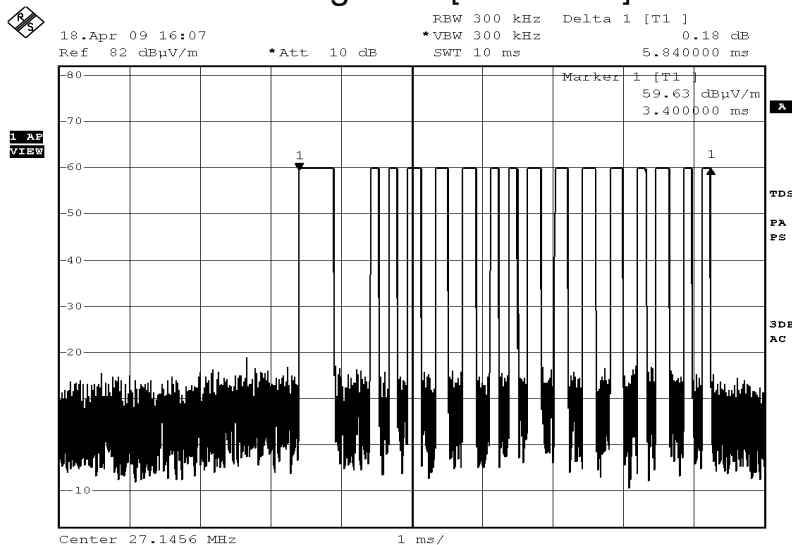
Remarks:

Duty Cycle Correction = $20\text{Log}(0.599) = -4.4\text{dB}$

The following figures [Figure A to Figure C] show the characteristics of the pulse train for one of these functions.

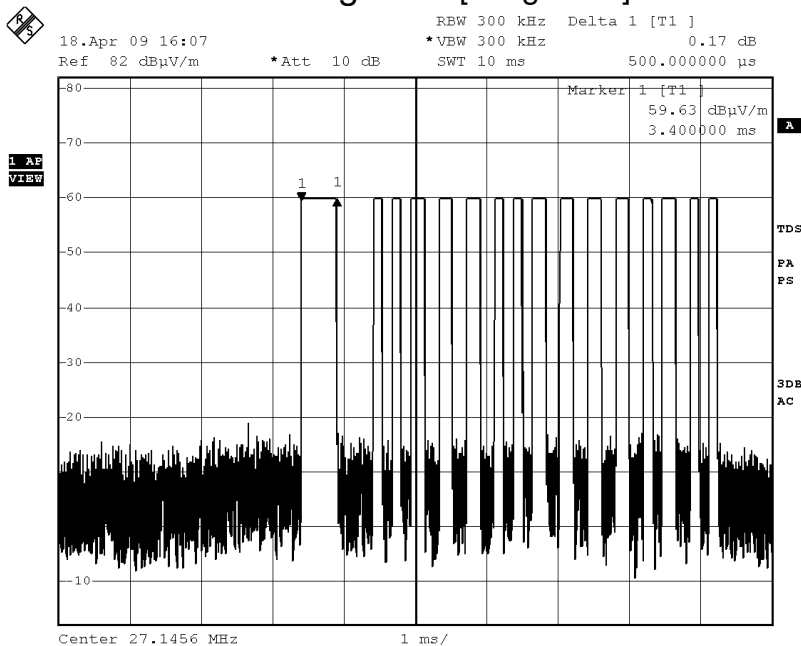
TEST REPORT N°: BVCK09AP208MTHS

Figure A [Pulse Train]



Date: 18.APR.2009 16:07:10

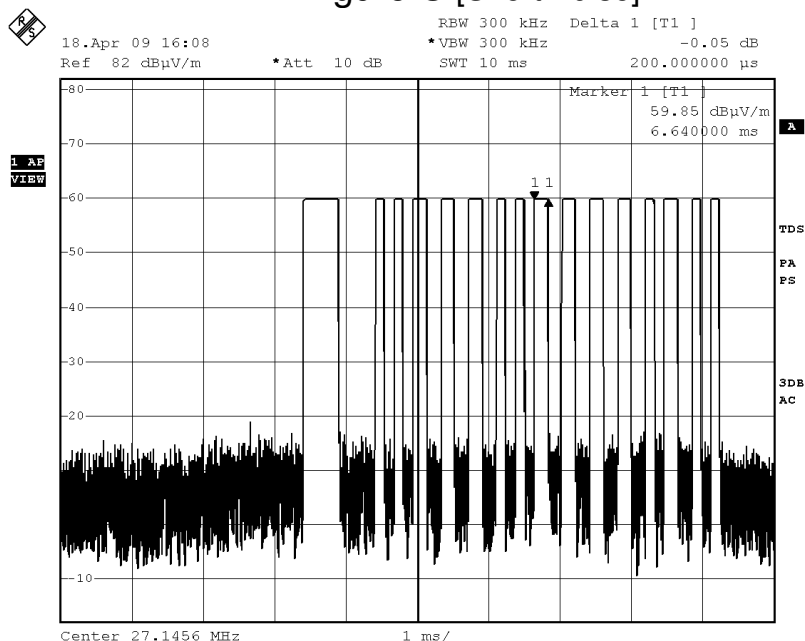
Figure B [Long Train]



Date: 18.APR.2009 16:07:29

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Figure C [Short Pulse]



Date: 18.APR.2009 16:08:18

TEST REPORT N°: BVCK09AP208MTHS

Photographs of EUT

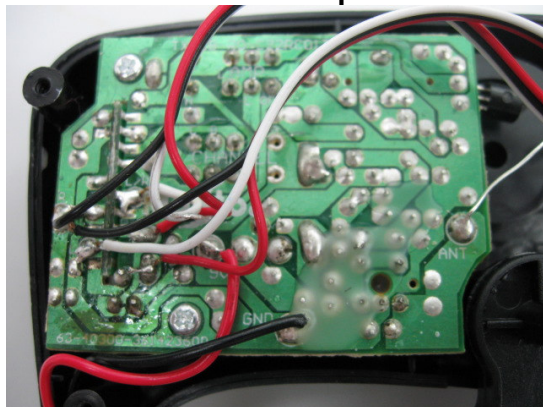
Front View of the product



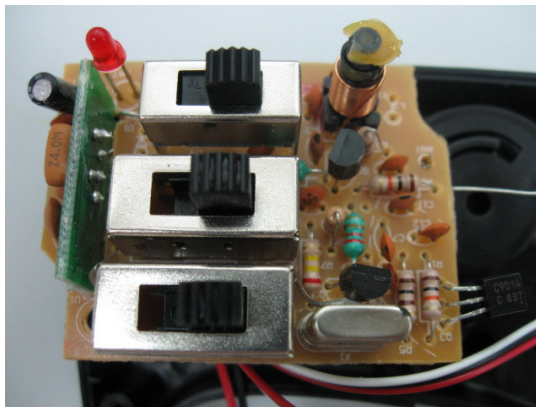
Rear View of the product



Inner Circuit Top View



Inner Circuit Bottom View



TEST REPORT N°: BVCK09AP208MTHS

Battery compartment



Battery Cover



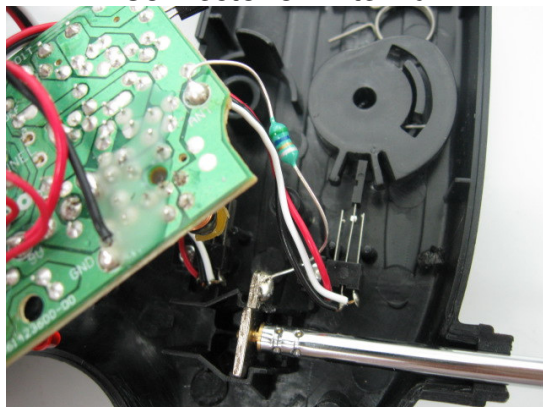
Front View of the product (Internal)



Rear View of the product (Internal)



Connector of Antenna



Control Switch



TEST REPORT N°: BVCK09AP208MTHS

Measurement of Radiated Emission Test Set Up



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