
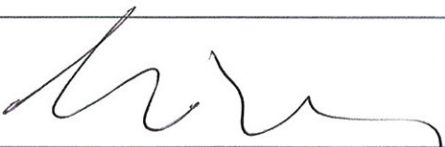





TEST REPORT N°: BVC-08-JU-H0792-HTHFB

TEST REPORT

To:	CEPIA LLC	To:	-
Attn:	Amy Zhou	Attn:	-
Address:	21F(west), Great China Exchange Square, South Jiantian Road, Futian District, Shenzhen PC:518026	Address:	-
Fax:	86 755 23997250	Fax:	-
E-mail:	azhou@cepiallc.cn	E-mail:	-
Factory name:	Unidentified	Offer:	BVC08JU06-02HTHHFS
Location:	Unidentified	Sample No:	--
		Start date:	June 03, 2008
		Finish date:	June 03, 2008
		Test Requested:	FCC Part 15 Certification Procedure
		Test Method:	ANSI C63.4 – 2003
		Re-testing:	NONE
B2B ROBOT 2 FIGHTING ROBOTS MODEL 0014857940		FCC ID: T4650001	
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: June 19, 2008		Date: June 19, 2008	

BUREAU VERITAS HONG KONG LIMITED –
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TEST REPORT N^o: BVC-08-JU-H0792-HTHFB

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
A801 0002	EMI TEST RECEIVER	R&S	ESCI	100379	13-APR-2009
A803 0003	HF LOOP ANTENNA	SCHAFFNER	HLA 6120	21728	31-AUG-2008
A803 0002	BILOG ANTENNA	SCHAFFNER	CBL6112D	25229	31-JAN-2009
A813 0001	OPEN AREA TEST SITE	BVCPS	N/A	N/A	05-JULY-2008
A814 0001	ANECHOIC CHAMBER	ALBATROSS	M-CDC	80374004499B	09-JULY-2008

Conducted Emission

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATION DUE
A801 0001	EMI TEST RECEIVER	R&S	ESCS30	830986/030	19-OCT-2008
A808 0001	LISN	R&S	ESH3-Z5	100116	15-FEB-2009
A816 0001	PULSE LIMITER	R&S	ESH3 Z2	100088	17-APR-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°: BVC-08-JU-H0792-HTHFB

Equipment Under Test [EUT]

Description of Sample:

Model Name: B2B Robot

Model Number: 50001

Rating: 9Vd.c ("6F22" size battery x 1)

Description of EUT Operation:

The Equipment Under Test (EUT) is a **Cepia LLC** of Radio Control toy. The transmitter is a 4 buttons transmitter and operating at 27.165MHz (Channel A) and 27.135MHz (Channel B). The EUT continues to transmit while buttons is being pressed, Modulation by IC, and type is pulse modulation.

The transmitter has 4 different control buttons:

1. Talk – say a phrase to antagonize your opponent
2. Punch – active the punching action
3. Left thumb wheel – left wheel control
4. Right thumb wheel – right wheel control

Antenna Requirement (Section 15.203)

The EUT is use of a permanently antenna. The antenna consists of 2.3cm long telescoping chrome over brass tubing. 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.

TEST REPORT N°: BVC-08-JU-H0792-HTHFB

Radiated Emissions (Fundamental)

Test Requirement: FCC Part 15 Section 15.227
Test Method: ANSI C63.4

Test Date(s): 2008-06-03

Mode of Operation: Transmission mode

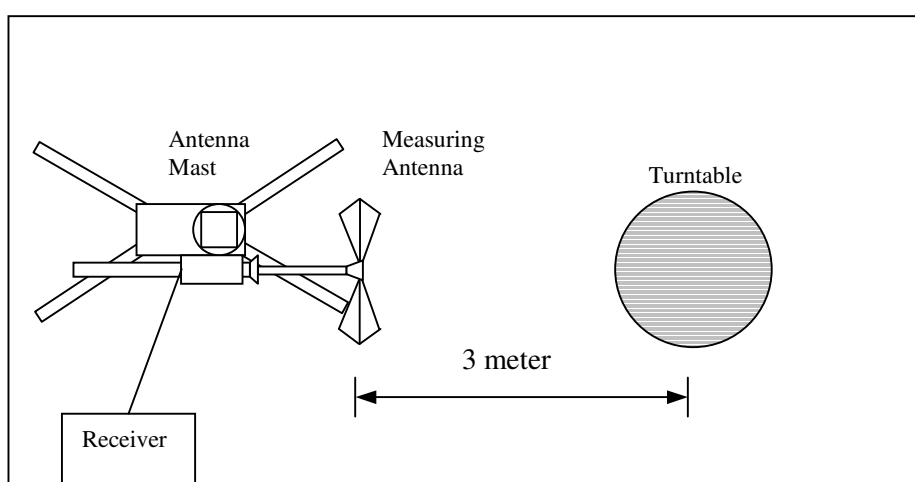
Test Procedure:

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°: BVC-08-JU-H0792-HTHFB

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	10,000

Measurement Data

Test Result of Channel A (Transmission mode): PASS

Detection mode: 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)
27.165	V	20.1	44.5	100	-55.5

Detection mode: # Average

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)
27.165	V	20.1	**38.3	80	-41.7

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

**Duty Cycle Correction = $20\log(0.492) = -6.2\text{dB}$

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 100KHz
VBW = 300KHz



TEST REPORT N°: BVC-08-JU-H0792-HTHFB

Measurement Data

Test Result of Channel B (Transmission mode): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V) and Degrees	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
27.135	V, (0°)	20.1	47.0	100	-53.0

Detection mode: # Average

Frequency (MHz)	Polarity (H/V) and Degrees	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
27.135	V (0°)	20.1	**40.6	80	-39.4

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

**Duty Cycle Correction = $20\log(0.479) = -6.4\text{dB}$

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 100KHz
VBW = 300KHz



TEST REPORT N°: BVC-08-JU-H0792-HTHFB

Radiated Emissions (9kHz – 1GHz)

Test Requirement: FCC Part 15 Section 15.209
Test Method: ANSI C63.4

Test Date(s): 2008-03-06

Mode of Operation: **Transmission mode (Channel A)**

Limits for Radiated Emissions [FCC 47 CFR 15.209]:

Frequency Range [MHz]	Quasi-Peak Limits [μ V/m]
1.705-30	300
30-88	100
88-216	150
216-960	200
Above 960	500

Measurement Data

Test Result of Channel A (Transmission mode): PASS

Detection mode: Quasi-Peak

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
54.32	V	6.2	31.7	40.0	-8.3
81.52	V	6.8	24.4	40.0	-15.6
135.80	V	11.4	28.2	43.5	-15.3
108.66	V	11.4	21.2	43.5	-22.3
162.99	V	9.4	19.6	43.5	-23.9
190.16	V	8.5	18.3	43.5	-25.2

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 120KHz
VBW = 120KHz



TEST REPORT N^o: BVC-08-JU-H0792-HTHFB

Measurement Data

Test Result of Channel B (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)
54.28	V	6.2	31.2	40.0	-8.8
81.44	V	6.8	24.1	40.0	-15.9
135.64	V	11.4	28.3	43.5	-15.2
108.54	V	11.4	21.3	43.5	-22.2
162.81	V	9.4	19.4	43.5	-24.1
189.95	V	8.5	18.2	43.5	-25.3

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 120KHz
VBW = 120KHz



TEST REPORT N°: BVC-08-JU-H0792-HTHFB

26dB Bandwidth of Fundamental Emission

Test Requirement: FCC 47 CFR 15.227
Test Method: ANSI C63.4:2003 (Section 13.1.7)
Test Date: 2008-06-03
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: Channel A

Frequency [MHz]	26dB Bandwidth [KHz]	FCC Limits [MHz]
27.165	25.0	within 26.96-27.28

Limits for 26dB Bandwidth of Fundamental Emission: Channel B

Frequency [MHz]	26dB Bandwidth [KHz]	FCC Limits [MHz]
27.135	24.2	within 26.96-27.28

TEST REPORT N°: BVC-08-JU-H0792-HTHFB

Measurement Data :Channel A

Test Result of 26dB Bandwidth of Fundamental Emission: PASS



19.Jun 08 11:38

Ref 82 dBμV/m

*Att 10 dB

*RBW 3 kHz

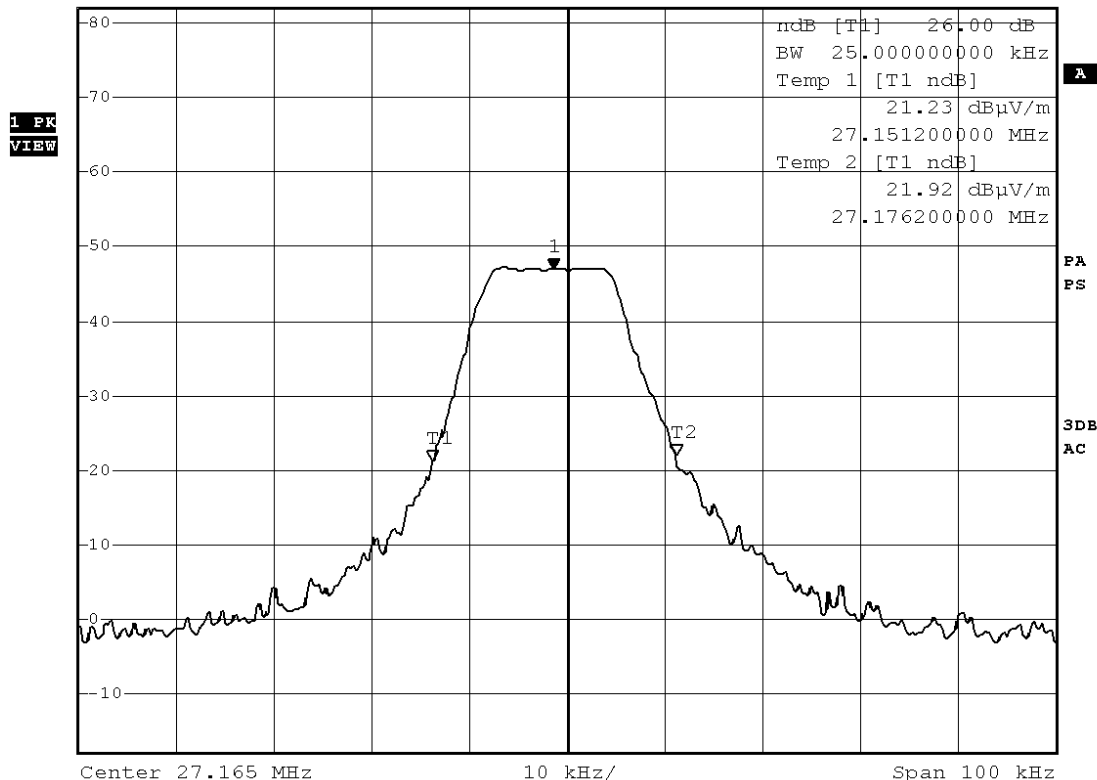
*VBW 3 kHz

SWT 25 ms

Marker 1 [T1]

47.04 dBμV/m

27.163600000 MHz



Date: 19.JUN.2008 11:38:29

TEST REPORT N°: BVC-08-JU-H0792-HTHFB

Measurement Data :Channel B

Test Result of 26dB Bandwidth of Fundamental Emission: PASS



19.Jun 08 11:39

Ref 82 dBμV/m

*Att 10 dB

*RBW 3 kHz

*VBW 3 kHz

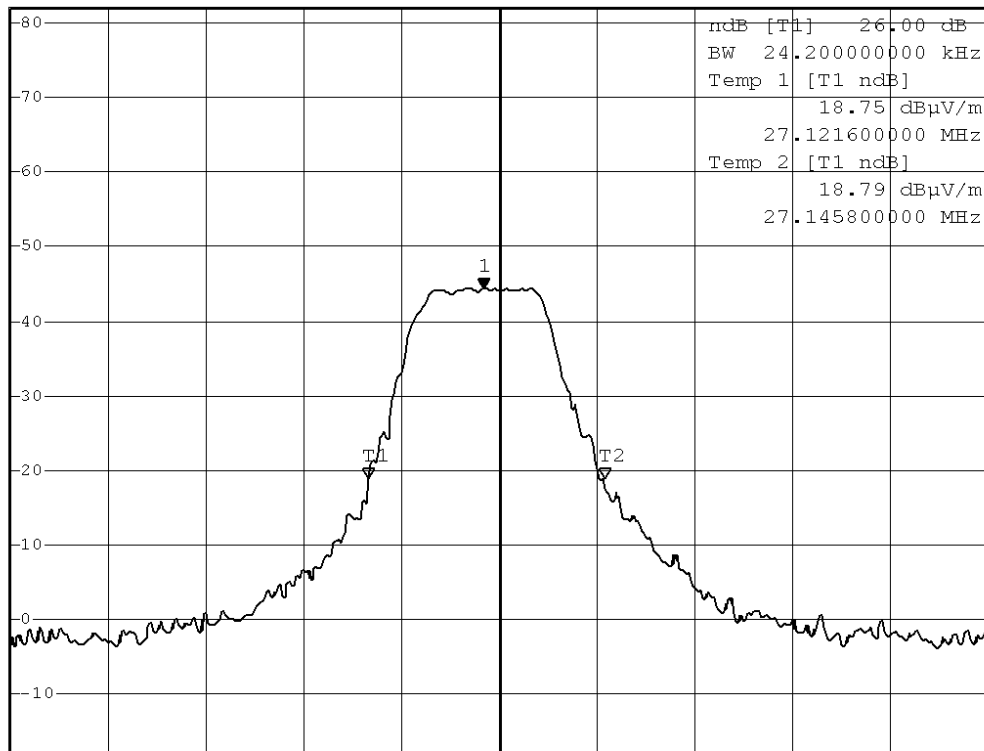
SWT 25 ms

Marker 1 [T1]

44.32 dBμV/m

27.133400000 MHz

1 FK
VIEW



Center 27.135 MHz

10 kHz/

Span 100 kHz

Date: 19.JUN.2008 11:39:43



TEST REPORT N°: BVC-08-JU-H0792-HTHFB

Duty Cycle Correction During 100msec: Channel A

Each function key sends a different series of characters, but each packet period (92.6msec) never exceeds a series of 6 long or short (7.6msec, long) pulses. Assuming any combination of short or long pulses may be obtained due to encoding the worst case transmit duty cycle would be considered 45.6msec(6x7.6msec) per 92.6msec=49.2% duty cycle. Figure A and B show the characteristics of the pulse train for one of these functions.

Remarks:

Duty Cycle Correction = $20\text{Log}(0.492) = -6.2\text{dB}$

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

Duty Cycle Correction During 100msec: Channel B

Each function key sends a different series of characters, but each packet period (92.6msec) never exceeds a series of 6 long or short (7.4msec, long) pulses. Assuming any combination of short or long pulses may be obtained due to encoding the worst case transmit duty cycle would be considered 44.4msec(6x7.4msec) per 92.6msec=47.9% duty cycle. Figure C and D show the characteristics of the pulse train for one of these functions.

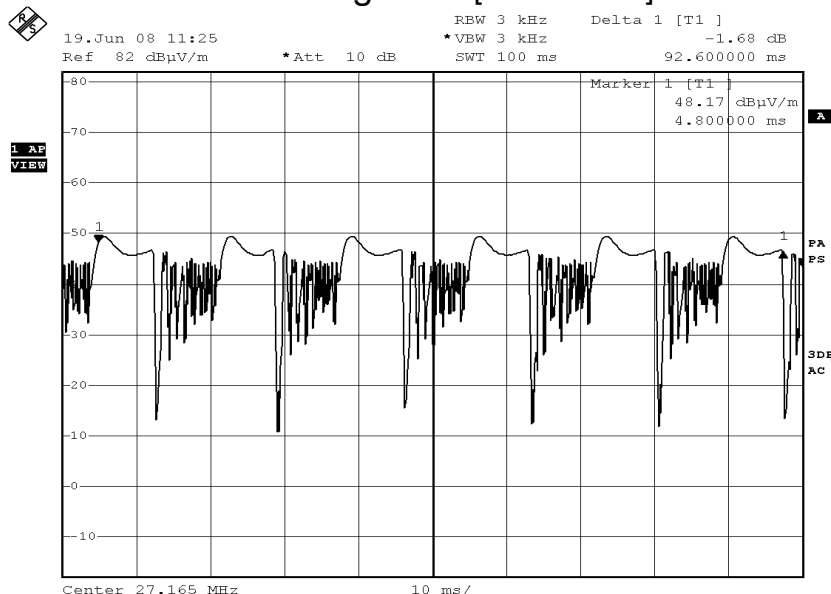
Remarks:

Duty Cycle Correction = $20\text{Log}(0.479) = -6.4\text{dB}$

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

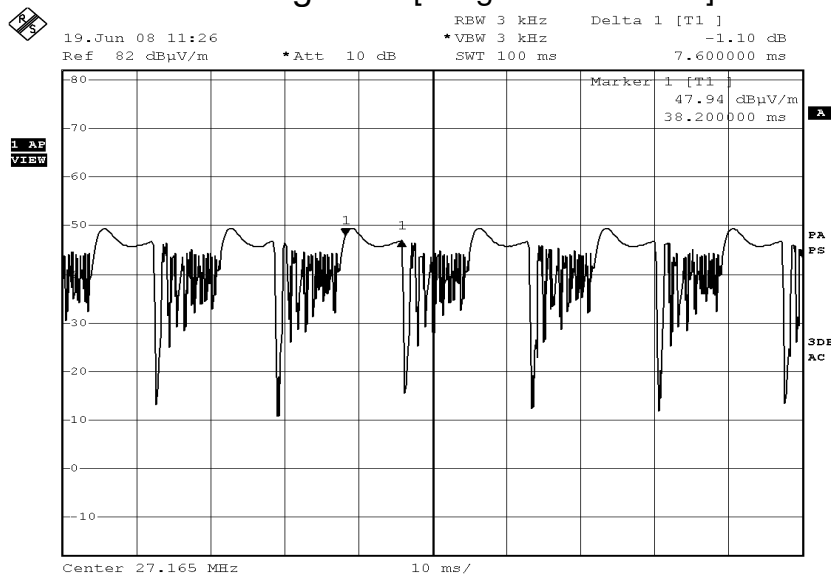
TEST REPORT N°: BVC-08-JU-H0792-HTHFB

Figure A [Pulse Train]



Date: 19.JUN.2008 11:25:39

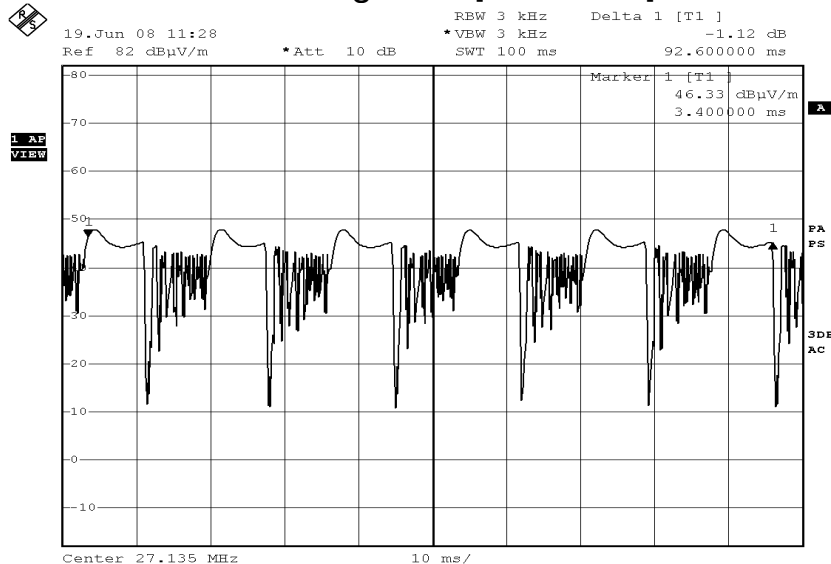
Figure B [Long or Short Pulse]



Date: 19.JUN.2008 11:26:31

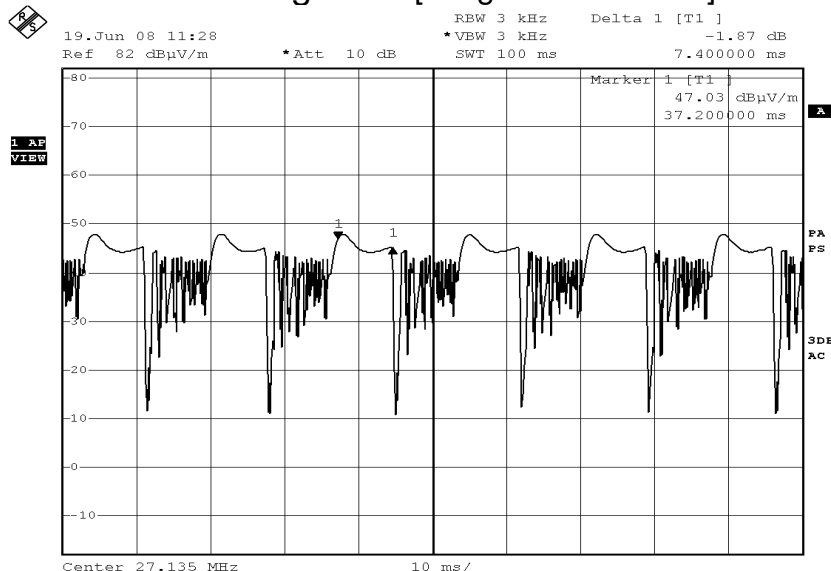
TEST REPORT N°: BVC-08-JU-H0792-HTHFB

Figure C [Pulse Train]



Date: 19.JUN.2008 11:28:09

Figure D [Long or Short Pulse]



Date: 19.JUN.2008 11:28:46

TEST REPORT N°: BVC-08-JU-H0792-HTHFB

Photographs of EUT

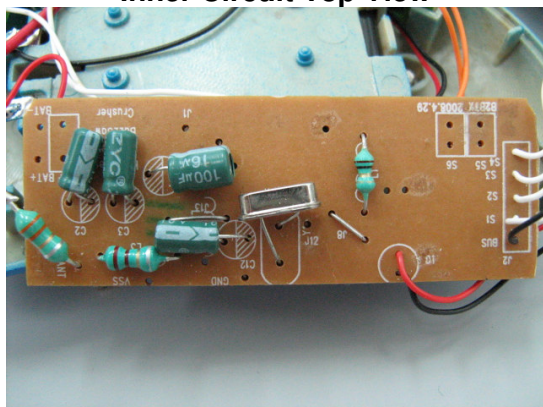
Front View of the product



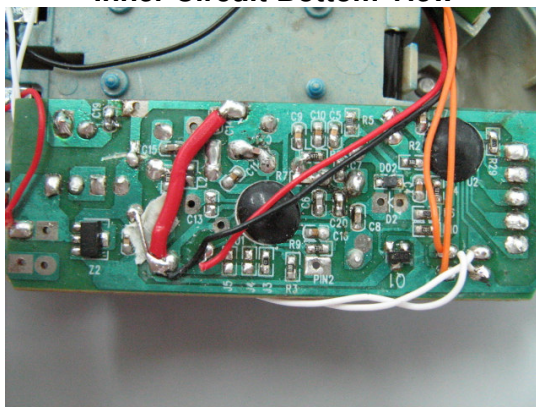
Rear View of the product



Inner Circuit Top View



Inner Circuit Bottom View



TEST REPORT N°: BVC-08-JU-H0792-HTHFB

Measurement of Radiated Emission Test Set Up



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