Lab Code: 200707-0

FCC PART 15B, CLASS B

MEASUREMENT AND TEST REPORT

For

Gajah International (HK) Co., Ltd.

18/F Bel Trade Commercial Building, 1-3, Burrows Street, Wan Chai, Hong Kong

FCC ID: UFKTB2007B0

Report Type:	**Product Type:**
Original Report	TV-BOX

Test Engineer:	Mick Yin
Report Number:	RSZ130124003-00A
Report Date:	2013-03-01
Reviewed By:	Sula Huang RF Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Gajah International (HK) Co., Ltd.*'s product, model number: *TB2007B (FCC ID: UFKTB2007B0)* or the "EUT" in this report was a TV-BOX, which was measured approximately: 16.0 cm (L) x 14.52 cm (W) x 3.11 cm (H), rated with input voltage: DC5V from adapter. The highest operating frequency is 1.5 GHz.

Adapter Information:
Model: PC-351078
Input: AC 100-240V~0.45 A 50-60Hz
Output: DC 5V, 2A

Note: The series product, model TB2007B and TAB803B are electrically identical, they have the same PCB layout and schematic, the difference between them is just the model number, model TB2007B was selected for fully testing, detais can be reffered to the attached declaration letter which is stated and guaranteed by the applicant.

**All measurement and test data in this report was gathered from production sample serial number: 1301107 (Assigned by BACL, Shenzhen). The EUT was received on 2013-01-24.*

Objective

This report is prepared on behalf of *Gajah International (HK) Co., Ltd.* in accordance with Part 2-Subpart J, Part 15- Subparts A and B of the Federal Communication Commissions rules.

The objective of the manufacturer is to determine the compliance of EUT with FCC Part 15B, Class B.

Related Submittal(s)/Grant(s)

FCC Part DTS submission with FCC ID: UFKTB2007B0.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp.(Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on December 06, 2010. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 200707-0).

The current scope of accreditations can be found at http://ts.nist.gov/Standards/scopes/2007070.htm

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a typical mode which is provided by manufacture.

The EUT was tested together with the below additional components and configuration, such case produced the worst emission level that was selected to test and recorded in this report.

EUT operation mode 1: Play video&audio file (HDMI)
EUT operation mode 2: Play video&audio file (AV)

After the preliminary scan, EUT operation mode 1 was found to produce the highest emission level.

EUT Exercise Software

No exercise software was used

Equipment Modifications

No modification was made to the EUT

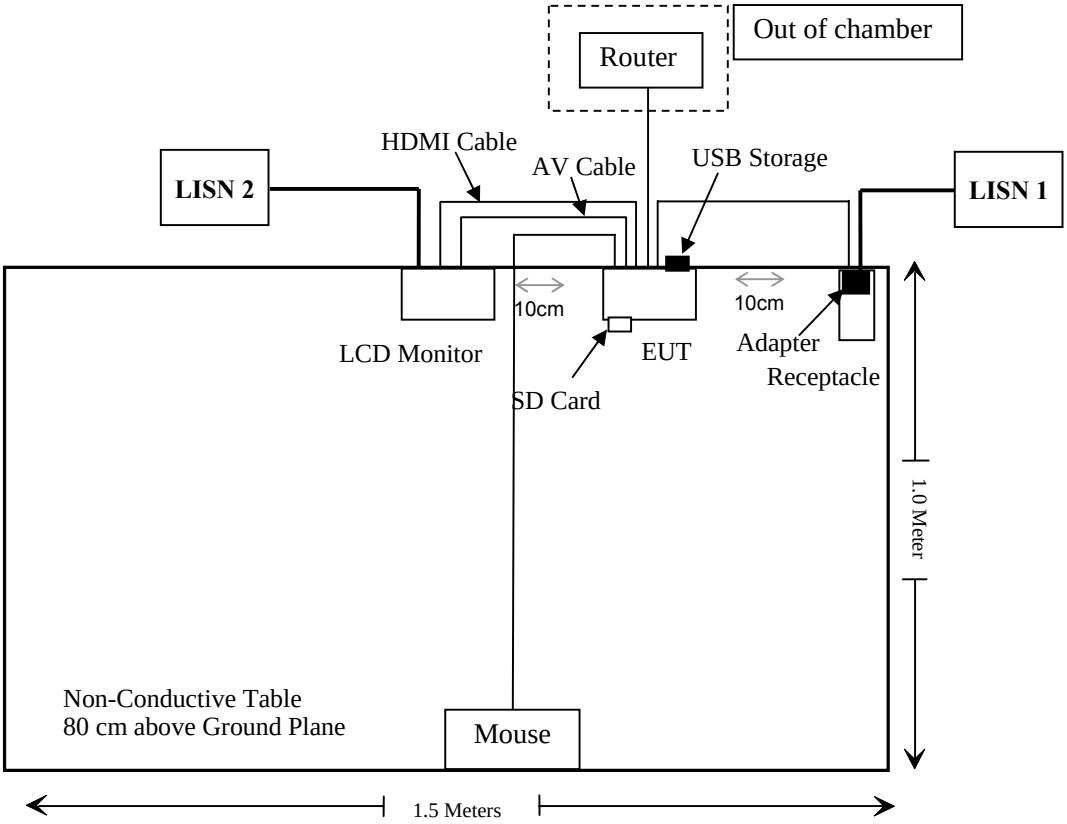
Remote or Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
SAMSUNG	LCD MONITOR	225MS	CR22HVIP401073M
Kingston	USB Storage	2GB	N/A
SAGEMCOM	Modem/Router	F@st 3804	LK11153DP530005
Kingston	SD Card	2GB	--
DELL	Mouse	MOC5UO	G1900NKD

External I/O Cable

Cable Description	Length (m)	From/Port	To
Shielding Detachable HDMI Cable	2.0	EUT	LCD Monitor
Un-shieldingd Detachable AV Cables	1.5	EUT	LCD Monitor
Un-shielding Detachable RJ45 Cables	10.0	EUT	Router
Un-shielding DC Power Cable	1.5	EUT	Adapter
Shielding Detachable USB Cable	1.5	EUT	Mouse

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	AC Line Conducted Emissions	Compliance
§15.109	Radiated Emissions	Compliance

FCC §15.107 – AC LINE CONDUCTED EMISSIONS

Applicable Standard

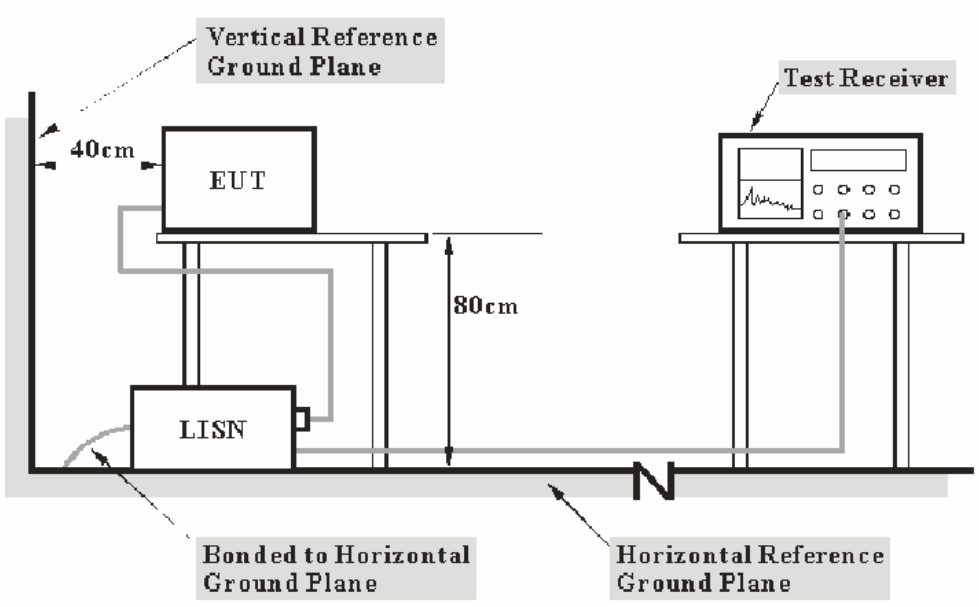
FCC §15.107

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on CISPR 16-4-2, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is 2.4 dB.(k=2, 95% level of confidence), and the uncertainty will not be taken into consideration for the test data recorded in the report.

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with ANSI C63.4-2003 measurement procedure. The related limit was specified in FCC Part 15.107.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS30	100176	2012-11-24	2013-11-23
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2012-08-22	2013-08-21
Rohde & Schwarz	Attenuator	ESH3Z2	DE25985	2012-07-08	2013-07-07
BACL	CE Test software	BACL-CE	V1.0	-	-

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the first LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.107, with the worst margin reading of:

14.11 dB at **0.165 MHz** in the **Line** conducted mode

Test Data

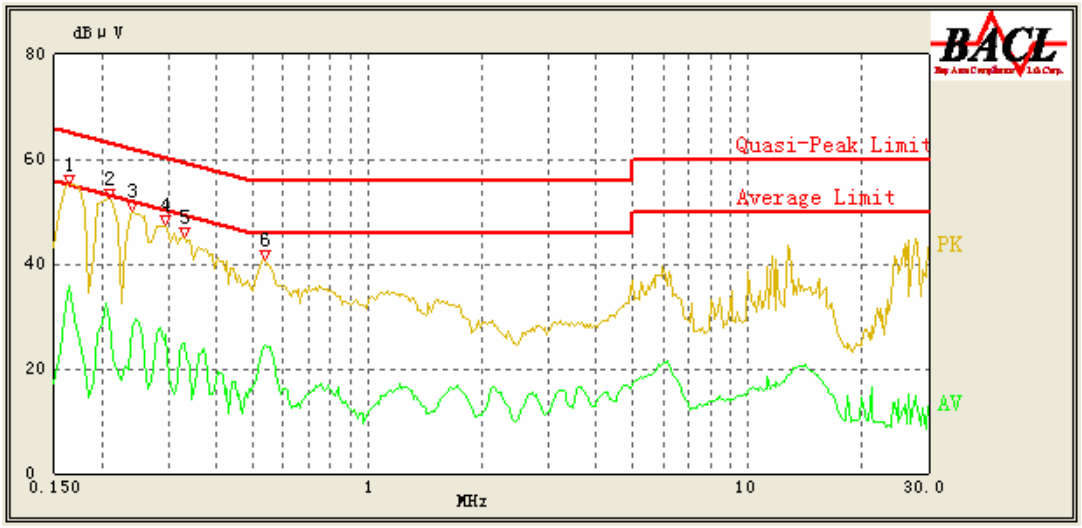
Environmental Conditions

Temperature:	24 °C
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Mick Yin on 2013-01-26.

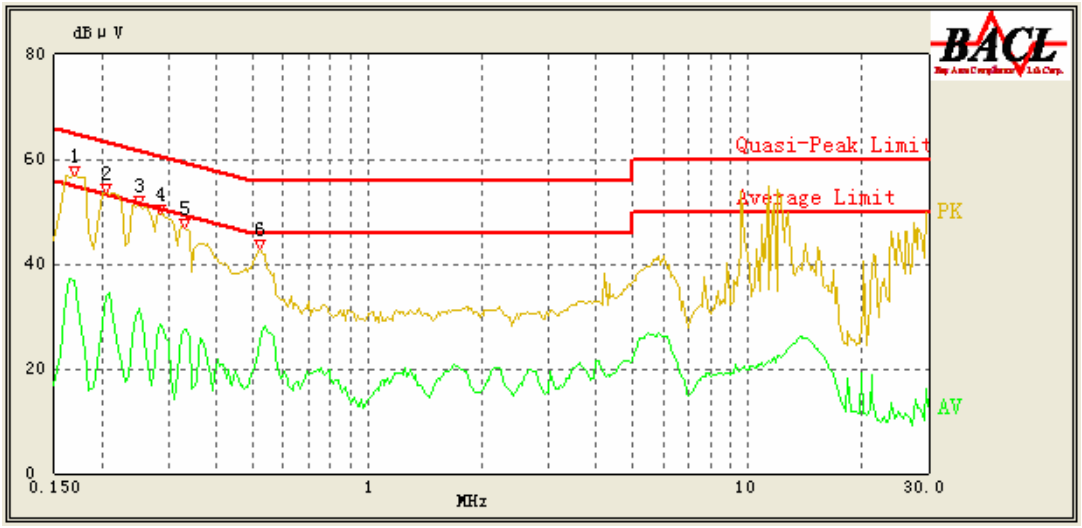
EUT operation mode1: Play video&audio file (HDMI) - (worst case)

AC 120V/60 Hz, Line



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/ QP/Ave.)
0.165	51.46	10.27	65.57	14.11	QP
0.210	47.92	10.27	64.29	16.37	QP
0.240	45.60	10.26	63.43	17.83	QP
0.295	42.79	10.26	61.86	19.07	QP
0.165	35.87	10.27	55.57	19.70	Ave.
0.330	41.02	10.26	60.86	19.84	QP
0.535	35.06	10.25	56.00	20.94	QP
0.540	24.60	10.25	46.00	21.40	Ave.
0.210	29.30	10.27	54.29	24.99	Ave.
0.295	26.37	10.26	51.86	25.49	Ave.
0.240	27.67	10.26	53.43	25.76	Ave.
0.330	24.72	10.26	50.86	26.14	Ave.

AC 120V/60 Hz, Neutral



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/ QP/Ave.)
0.170	50.70	10.24	65.43	14.73	QP
0.205	49.00	10.24	64.43	15.43	QP
0.250	46.12	10.25	63.14	17.02	QP
0.285	43.95	10.25	62.14	18.19	QP
0.520	37.26	10.24	56.00	18.74	QP
0.170	36.68	10.24	55.43	18.75	Ave.
0.330	41.22	10.25	60.86	19.64	QP
0.205	33.87	10.24	54.43	20.56	Ave.
0.520	25.07	10.24	46.00	20.93	Ave.
0.250	31.39	10.25	53.14	21.75	Ave.
0.330	27.40	10.25	50.86	23.46	Ave.
0.285	28.47	10.25	52.14	23.67	Ave.

FCC §15.109 - RADIATED EMISSIONS

Applicable Standard

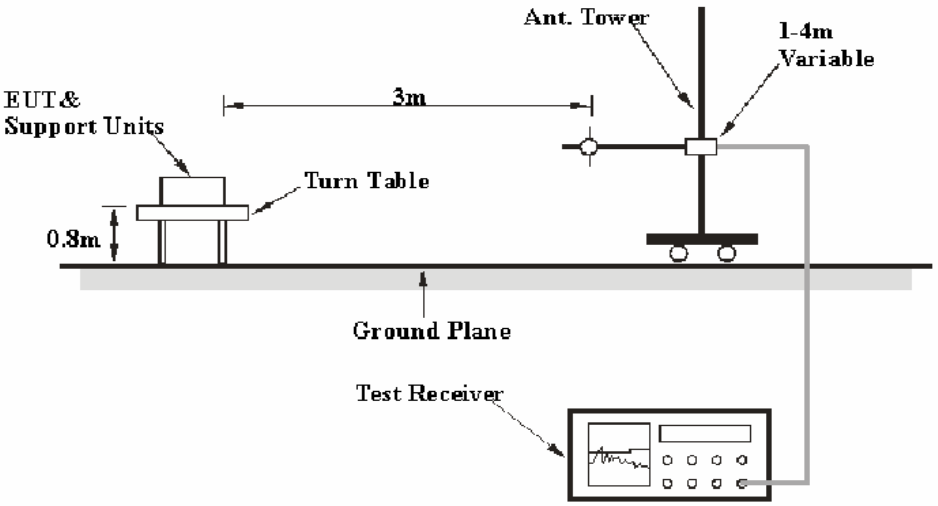
FCC §15.109

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-2, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is 4.0 dB. (k=2, 95% level of confidence), and the uncertainty will not be taken into consideration for the test data recorded in the report.

EUT Setup



The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.4-2003. The related limit was specified in FCC Part 15.109.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120V/60Hz AC power source.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 5th harmonic of the highest frequency.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	Ave.

Test Procedure

During the radiated emissions test, the adapter was connected to AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the Quasi-peak detection mode from 30 MHz to 1 GHz, Peak and average detection mode above 1 GHz.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	8447E	1937A01046	2012-11-24	2013-11-23
Rohde & Schwarz	EMI Test Receiver	ESCI	101122	2012-08-08	2013-08-07
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2011-11-28	2014-11-27
Mini-Circuits	Amplifier	ZVA-213+	N/A	2012-11-24	2013-11-23
Sunol Sciences	Horn Antenna	DRH-118	A052304	2011-12-01	2014-11-30
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2012-11-24	2013-11-23
BACL	CE Test software	BACL-CE	V1.0	-	-

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Correction Factor = Antenna Loss + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Results Summary

According to the data in the following table, the EUT complied with the FCC §15.109 Class B, with the worst margin reading of:

6.94 dB at **1113.9 MHz** in the **Vertical** polarization

Test Data

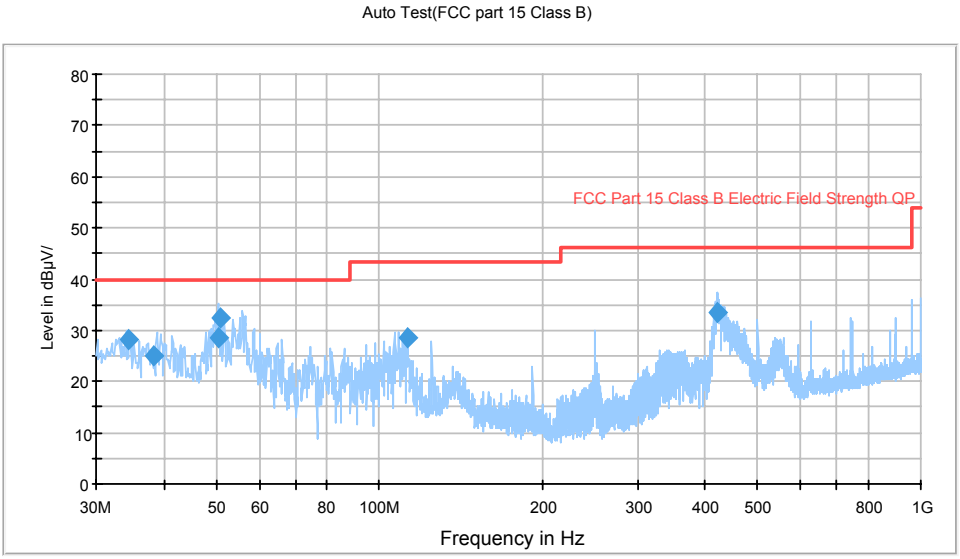
Environmental Conditions

Temperature:	24 °C
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Mick Yin on 2013-01-25.

EUT operation mode1: Play video&audio file (HDMI) - (worst case)

30~1000 MHz



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna height (cm)	Antenna Polarity	Turntable position (deg)	Correction Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
51.014050	32.3	130.0	V	86.0	-20.5	40.0	7.7
50.580750	28.6	105.0	V	0.0	-20.4	40.0	11.4
34.472900	28.2	126.0	V	122.0	-10.3	40.0	11.8
421.043650	33.4	220.0	V	290.0	-11.3	46.0	12.6
112.813750	28.7	110.0	V	106.0	-14.4	43.5	14.8
38.381300	24.9	105.0	V	72.0	-13.2	40.0	15.1

Above 1 GHz

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBµV/m)	FCC Part 15B, Class B	
	Reading (dBµV)	Detector (PK/QP/Ave.)		Height (m)	Polar (H/V)			Limit (dBµV/m)	Margin (dB)
1113.9	47.64	Ave.	156	1.2	V	-0.58	47.06	54	6.94
1113.9	45.07	Ave.	124	1.3	H	-0.58	44.49	54	9.51
1039.7	44.97	Ave.	58	1.1	H	-0.66	44.31	54	9.69
1039.7	44.93	Ave.	63	1.1	V	-0.66	44.27	54	9.73
1188.2	40.42	Ave.	302	1.2	H	0.13	40.55	54	13.45
1188.2	40.16	Ave.	278	1.0	V	0.13	40.29	54	13.71
1113.9	59.48	PK	156	1.2	V	-0.58	58.90	74	15.10
1113.9	57.91	PK	124	1.3	H	-0.58	57.33	74	16.67
1039.7	54.60	PK	63	1.1	V	-0.66	53.94	74	20.06
1039.7	53.88	PK	58	1.1	H	-0.66	53.22	74	20.78
1188.2	51.19	PK	278	1.0	V	0.13	51.32	74	22.68
1188.2	50.91	PK	302	1.2	H	0.13	51.04	74	22.96

PRODUCT SIMILARITY DECLARATION LETTER

Gajah International (HK) Co.,Ltd
18/F Bel Trade Commercial Building, 1-3, Burrows Street, Wan Chai, Hong Kong.
Tel: +852-6326 5997

2013-2-26

Product Similarity Declaration

To Whom It May Concern,

We, Gajah International (HK) Co.,Ltd hereby declare that our TV-BOX, Model Number: TAB803B is electrically identical with the TB2007B that was certified by BACL. They are just different in model number due to marketing purposes.

Please contact me if you have any question.

Yong Zhao
Manager

******* END OF REPORT *******