FCC TEST REPORT
On Behalf of

BRUMTECH CO., LTD

Digital Satellite Receiver

Model No.: the PRO digy

Prepared for	:	BRUMTECH CO., LTD
Address	:	#208, Kyoungnam Lake Park, 32-1 Songpa-Dong, Songpa-Gu, Seoul, Korea 138-907

Prepared by	:	SHENZHEN LCS CERTIFICATION SERVICES INC.
Address	:	12/F., Tower A, Pengdou Building, Nanhai Road, Nanshan District, Shenzhen, Guangdong, China

FCC ID	:	XCPKBOX
Report Number	:	LCS0904241345F
Date of Test	:	April 27, 2009 – May 04, 2009
Date of Report	:	May 04, 2009 – May 06, 2009

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Description Page

TEST REPORT DESCRIPTION

Applicant : BRUMTECH CO., LTD

Manufacturer : DONGGUAN ARION ELECTRONICS Co., Ltd.

EUT : Digital Satellite Receiver

(A) MODEL NO.: the PRO digy

(B) SERIAL NO.: N/A

(C) POWER SUPPLY: 100-250V~, 50/60Hz

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart B Class B May 2006 & FCC / ANSI C63.4-2000

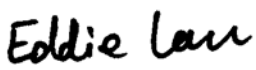
The device described above is tested by Shenzhen Huatongwei International Inspection Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart Class B limits both radiated and conducted emissions. The measurement results are contained in this test report and Shenzhen Huatongwei International Inspection Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of SHENZHEN LCS CERTIFICATION SERVICES INC.

Date of Test: April 27, 2009 – May 04, 2009

Prepared by: _____

(Engineer)



Reviewed by: _____

(Quality Manager)

1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT	:	Digital Satellite Receiver
Model Number	:	the PRO digy
Power Supply	:	100-250V~, 50/60Hz
Cable	:	Unshielded, nondetachable, 1.2m
Applicant	:	BRUMTECH CO., LTD
Address	:	#208, Kyoungnam Lake Park, 32-1 Songpa-Dong, Songpa-Gu, Seoul, Korea 138-907
Manufacturer	:	DONGGUAN ARION ELECTRONICS Co., Ltd.
Address	:	#40, SANJIANG INDUSTRIAL AREA, HENGLI TOWN, DONGGUAN CITY, GUANGDONG PROVINCE, PR CHINA 523-460
Date of Sample	:	April 24, 2009
Date of Test	:	April 27, 2009 – May 04, 2009

1.2. Test Facility

Site Description

EMC Lab.	:	CNAS-LAB Code: L1225. Date of Registration: August 02, 2007. Valid time is until March 04, 2009 A2LA-Lab Cert. No. 2243.01. Valid time is from Aug 24, 2005 to September 30, 2009 FCC-Registration No.: 662850. Renewal date: September 12, 2006 IC-Registration No.: 5377. Renewal date: November 28, 2005 VCCI-Registration No.: R-2484. Date of Registration: December 20, 2006. Valid time is until December 19, 2009
Name of Firm	:	Shenzhen Huatongwei International Inspection Co., Ltd.
Site Location	:	Huatongwei Building, Keji Rd. 12 S., High-tech Park, Nanshan District, Shenzhen, Guangdong, China

1.3. Measurement Uncertainty

Radiation Uncertainty	:	Ur = ±4.26dB
Conduction Uncertainty	:	Uc = ±2.66dB

2. POWER LINE CONDUCTED MEASUREMENT

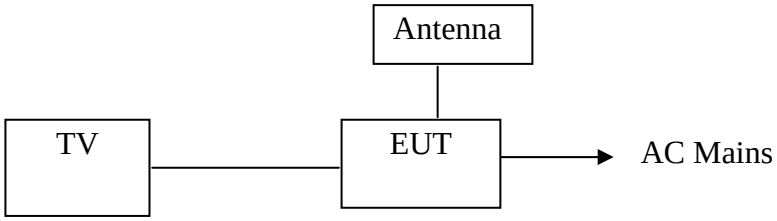
2.1.Test Equipment

The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCS30	8289851018	May 29, 2008	1 Year
2.	L.I.S.N	Rohde & Schwarz	ESH2-Z5	834549/005	May 29, 2008	1 Year
3.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100006	May 29, 2008	1 Year
4.	RF Cable	FUJIKURA	RG-55/U	LISN Cable	May 29, 2008	1 Year

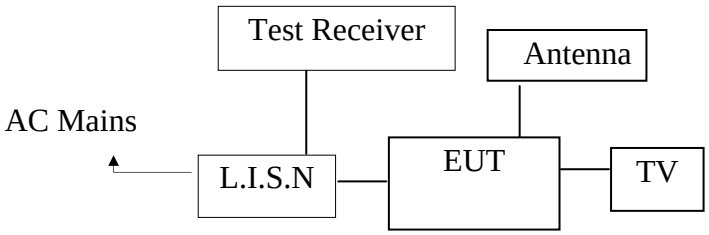
2.2.Block Diagram of Test Setup

2.2.1 Block diagram of connection between the EUT and simulators



(EUT: Digital Satellite Receiver)

2.2.2 Block diagram of test setup



(EUT: Digital Satellite Receiver)

2.3.Power Line Conducted Emission Measurement Limits (Class B)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

2.4. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

EUT	:	Digital Satellite Receiver
Model Number	:	the PRO digy
Cable	:	Unshielded, nondetachable, 1.2m

2.5. Operating Condition of EUT

2.5.1. Setup the EUT and simulator as shown as Section 2.2.
2.5.2. Turn on the power of all equipment.
2.5.3. Let the EUT work in test mode (ON) and measure it.

2.6. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC/ANSI C63.4-2000 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9KHz.

The frequency range from 150KHz to 30MHz is checked.

The test result is reported on Section 2.7. All the scanning waveforms for Conducted Emission Measurement are attached in Appendix I.

2.7. Power Line Conducted Emission Measurement Results

PASS.

The frequency range from 150KHz to 30 MHz is investigated.

The test data of the worst mode please reference APPENDIX I.

3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

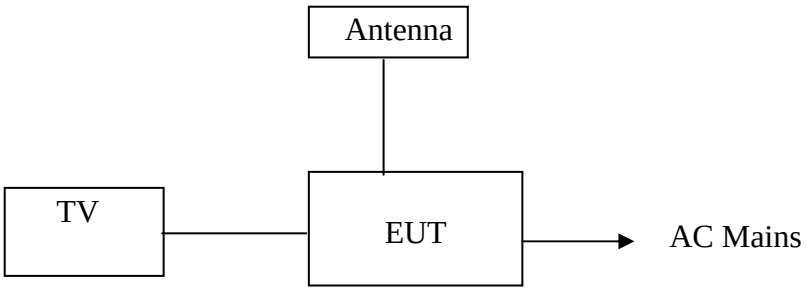
The following test equipments are used during the radiated emission measurement:

3.1.1. For Anechoic Chamber

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	ANRITSU	MS2661C	6200140915	May 29, 2008	1 Year
2.	Test Receiver	Rohde & Schwarz	ESCS30	828985/018	May 29, 2008	1 Year
3.	Bilog Antenna	Schwarzbeck	VULB9163	142	May 29, 2008	1 Year
4.	50 Coaxial Switch	Anritsu Corp	MP59B	6100237248	May 29, 2008	1 Year
5.	Cable	Schwarzbeck	AK9513(1m)	CR RX2	May 29, 2008	1 Year
6.	Cable	Schwarzbeck	AK9513(10m)	AC RX1	May 29, 2008	1 Year
7.	Cable	Rosenberger	N/A(6m)	CR RX1	May 29, 2008	1 Year
8.	Cable	Rosenberger	N/A(10m)	FP2RX2	May 29, 2008	1 Year
9.	DC Power Filter	MPE	23872C	N/A	May 29, 2008	1 Year
10.	Single Phase Power Line Filter	MPE	23332C	N/A	May 29, 2008	1 Year
11.	3 Phase Power Line Filter	MPE	23333C	N/A	May 29, 2008	1 Year
12.	Signal Generator	HP	8648A	3625U00573	May 29, 2008	1 Year

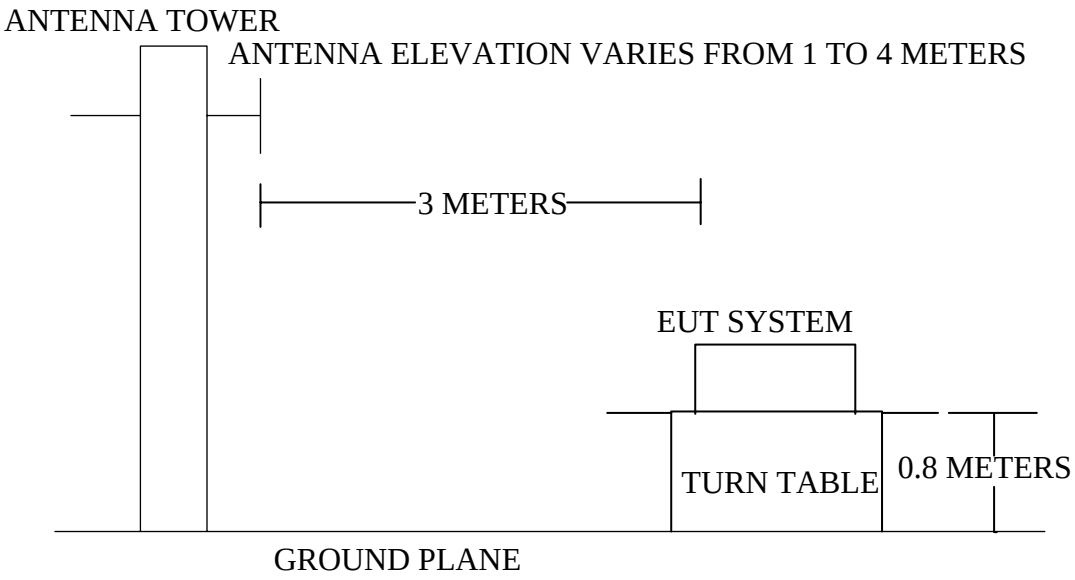
3.2.Block Diagram of Test Setup

3.2.1. Block diagram of connection between the EUT and simulators



(EUT: Digital Satellite Receiver)

3.2.2. Anechoic Chamber Test Setup Diagram



(EUT: Digital Satellite Receiver)

3.3. Radiated Emission Limit (Class B)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0

Remark： (1) Emission level (dB)μV = 20 log Emission level μV/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

3.4. EUT Configuration on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

Digital Satellite Receiver (EUT)

Model Number : the PRO digy
Serial Number : N/A

3.5. Operating Condition of EUT

1. Setup the EUT as shown in Section 2.2.
2. Let the EUT work in test mode (ON) and measure it.

3.6. Test Procedure

EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to FCC/ANSI C63.4-2000 on radiated emission measurement.
The bandwidth of the EMI test receiver (R&S ESCS30) is set at 120KHz.

The frequency range from 30MHz to 1000MHz is checked.

The test mode (ON) is tested in chamber and all the scanning waveforms are attached in Appendix II.

3.7. Radiated Emission Noise Measurement Result

PASS.

The frequency range from 30MHz to 1000MHz is investigated.

The test data of the worst mode please reference APPENDIX II.

4. DISTURBANCE VOLTAGE AT THE ANTENNA TERMINALS

APPLICANT: BRUMTECH CO., LTD

NAME OF TEST: Disturbance voltage at the antenna terminals

RULES PART NUMBER: 15.111(a)

REQUIREMENTS: S15.111 30 -1000 MHz 51.8 dBuV/m

Test Data

Channel	Frequency(MHz)	Level(dBuV)	Limit(dBuV)
3(61.25MHz)	107.0(Fundamental)	30.06	51.8
	215.05(Harmonic)	19.35	51.8
	320.53(Harmonic)	18.64	51.8
	535.29(Harmonic)	18.58	51.8
	61.25 (other)	28.65	51.8
	122.15(other)	15.89	51.8
4(67.25MHz)	113.0(Fundamental)	29.85	51.8
	227.10(Harmonic)	18.94	51.8
	339.24(Harmonic)	17.62	51.8
	791.37(Harmonic)	17.53	51.8
	67.25 (other)	27.66	51.8
	203.65(other)	14.28	51.8

Memo: Set the spectrum analyzer as follows.
Frequency Span: 2MHz
Resolution Bandwidth: 300kHz
Video Bandwidth: 300kHz
Detector Function: Quasi-peak Mode

5. OUTPUT AND SPURIOUS CONDUCTED LEVEL MEASUREMENTS

APPLICANT: BRUMTECH CO., LTD

NAME OF TEST: Output and spurious conducted level measurements

RULES PART NUMBER: 15.115(b)
REQUIREMENTS: Source Limits(dBuV)
Video Carrier 69.54
Audio Carrier 56.53
Spurious 39.55

Test Data:

Source			Reading Level (dBuV)	Factor (dB)	Emission Level (dBuV)	Limits (dBuV)
Channel	Carrier Frequency (MHz)					
3	Video	61.25	26.38	4.8	31.18	69.54
	Audio	65.75	23.45	4.8	28.25	56.53
	Spurious	70.09	19.16	4.8	23.96	39.55
	Spurious	116.35	13.56	4.8	18.36	39.55
	Spurious	342.67	13.83	4.8	18.63	39.55
	Spurious	684.72	14.28	4.8	19.08	39.55
4	Video	67.25	27.53	4.8	32.33	69.54
	Audio	71.75	24.67	4.8	29.47	56.53
	Spurious	121.18	17.86	4.8	22.66	39.55
	Spurious	425.16	16.35	4.8	21.15	39.55
	Spurious	599.44	14.68	4.8	19.48	39.55
	Spurious	764.28	15.16	4.8	19.96	39.55

Memo:
1.The impedance of RF Output terminal is 75 ohm. (dBuV=20lguV)
2. Emission level =Reading Level +Factor
3. Factor =Cable loss + Matching Network

6. INCORPORATE CIRCUITRY TO AUTOMATICALLY PREVENT EMANATIONS

APPLICANT: BRUMTECH CO., LTD

NAME OF TEST: Incorporate circuitry to automatically prevent emanations

RULES PART NUMBER: 15.115(d)

REQUIREMENTS:

A TV interface device, including a cable system terminal device, shall incorporate circuitry to automatically prevent emanations from the device from exceeding the technical specifications in this Part. These circuits shall be adequate to accomplish their functions when the TV interface device is presented, if applicable, with video input signal levels in the range of one to five volts.

Test results:

The EUT meets the requirements of 15.115(d), these circuits could accomplish their function when input a video input signal levels from one to five volts.

7. PHOTOGRAPH

Fig. 1

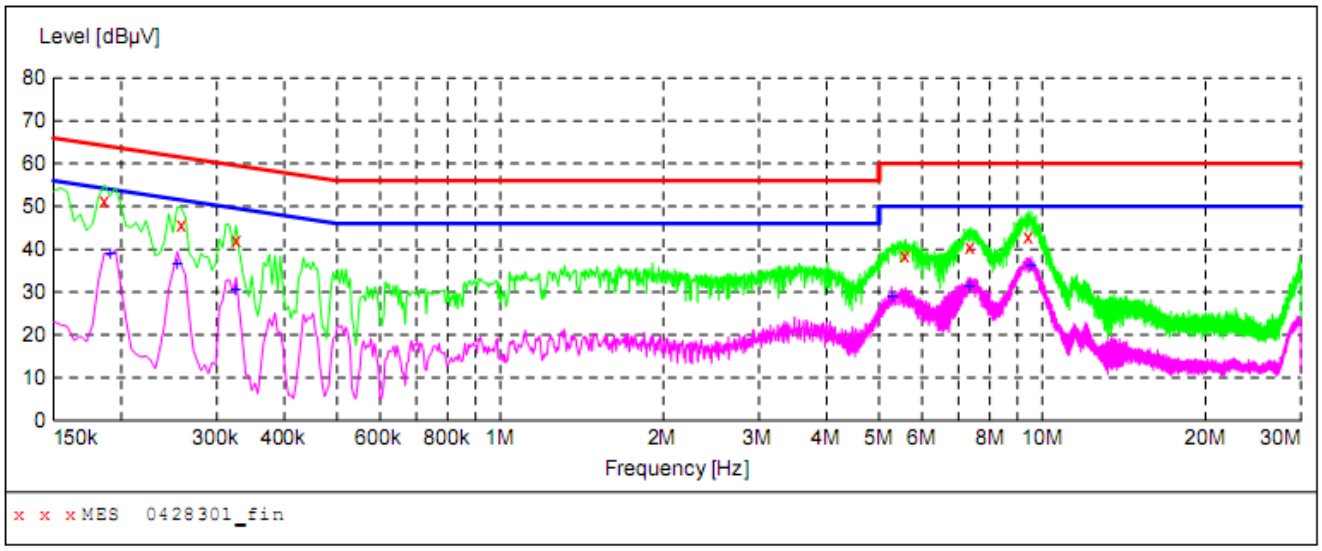
Fig. 2

Fig. 3

Fig. 4

APPENDIX I

SCAN TABLE: "Voltage (9K-30M)FIN"
Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "0428301_fin"

2009-4-28 12:46PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.186000	51.50	10.0	64	12.7	QP	N	GND
0.258000	45.50	10.1	62	16.0	QP	N	GND
0.325500	41.90	10.1	60	17.7	QP	N	GND
5.568000	38.60	10.3	60	21.4	QP	N	GND
7.377000	40.30	10.4	60	19.7	QP	N	GND
9.397500	42.80	10.5	60	17.2	QP	N	GND

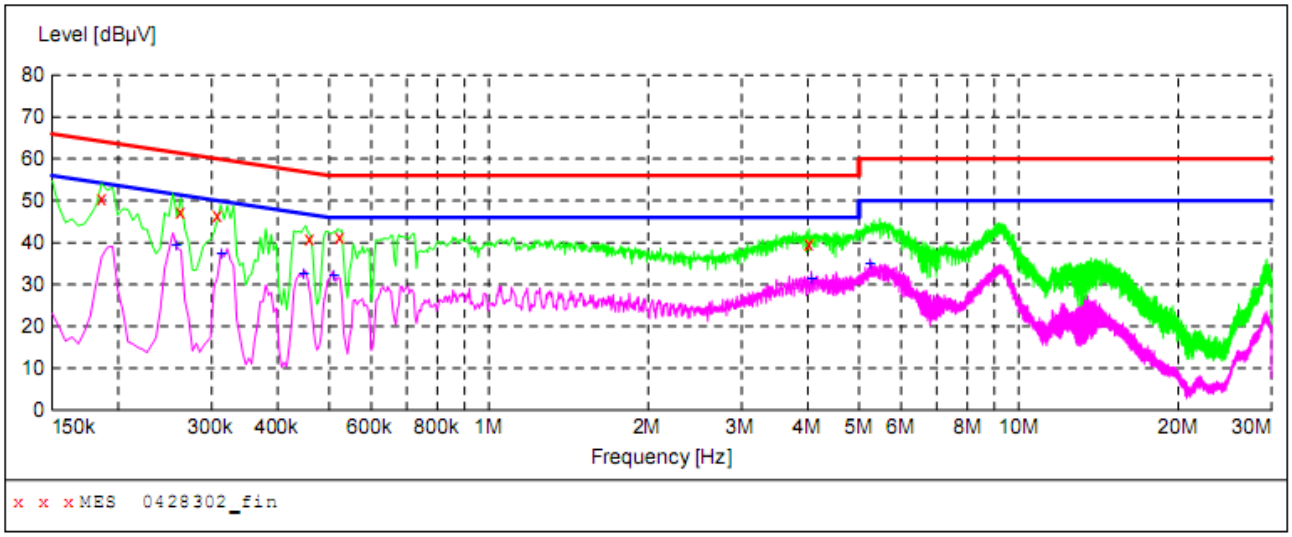
MEASUREMENT RESULT: "0428301_fin2"

2009-4-28 12:46PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.190500	39.00	10.0	54	15.0	AV	N	GND
0.253500	36.60	10.1	52	15.0	AV	N	GND
0.325500	30.30	10.1	50	19.3	AV	N	GND
5.271000	28.90	10.3	50	21.1	AV	N	GND
7.341000	31.40	10.4	50	18.6	AV	N	GND
9.532500	35.90	10.5	50	14.1	AV	N	GND

SCAN TABLE: "Voltage (9K-30M) FIN"

Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "0428302_fin"

2009-4-28 12:49PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.186000	50.60	10.0	64	13.6	QP	L1	GND
0.262500	47.10	10.1	61	14.3	QP	L1	GND
0.307500	46.30	10.1	60	13.7	QP	L1	GND
0.460500	41.00	10.1	57	15.7	QP	L1	GND
0.523500	41.30	10.1	56	14.7	QP	L1	GND
4.015500	39.50	10.3	56	16.5	QP	L1	GND

MEASUREMENT RESULT: "0428302_fin2"

2009-4-28 12:49PM

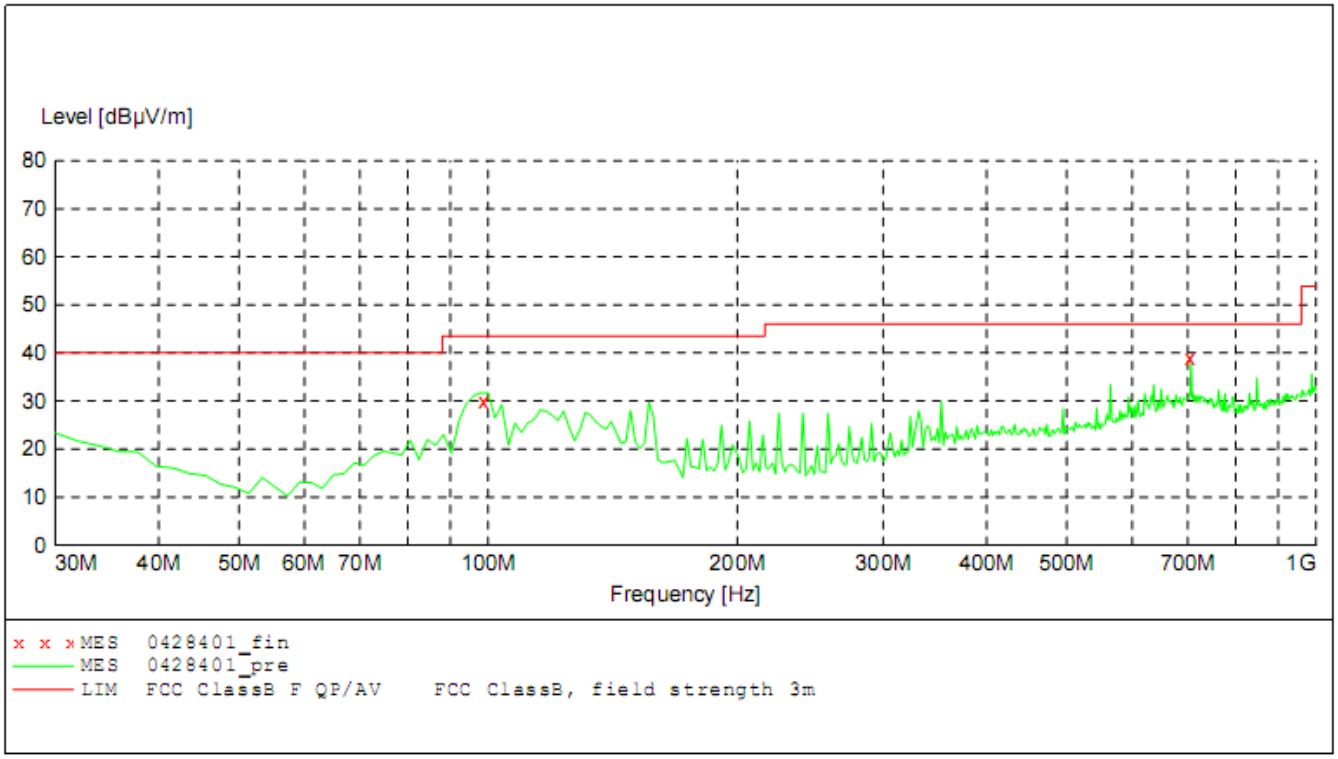
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.258000	39.30	10.1	52	12.2	AV	L1	GND
0.312000	37.20	10.1	50	12.7	AV	L1	GND
0.447000	32.30	10.1	47	14.6	AV	L1	GND
0.510000	32.00	10.1	46	14.0	AV	L1	GND
4.060500	31.40	10.3	46	14.6	AV	L1	GND
5.262000	34.80	10.3	50	15.2	AV	L1	GND

APPENDIX II

HORIZONTAL

SCAN TABLE: "test Field(30M-1G)OP"

Short Description:			Field Strength(30M-1G)			
Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	60.0 kHz	QuasiPeak	1.0 s	120 kHz	HL562new



MEASUREMENT RESULT: "0428401_fin"

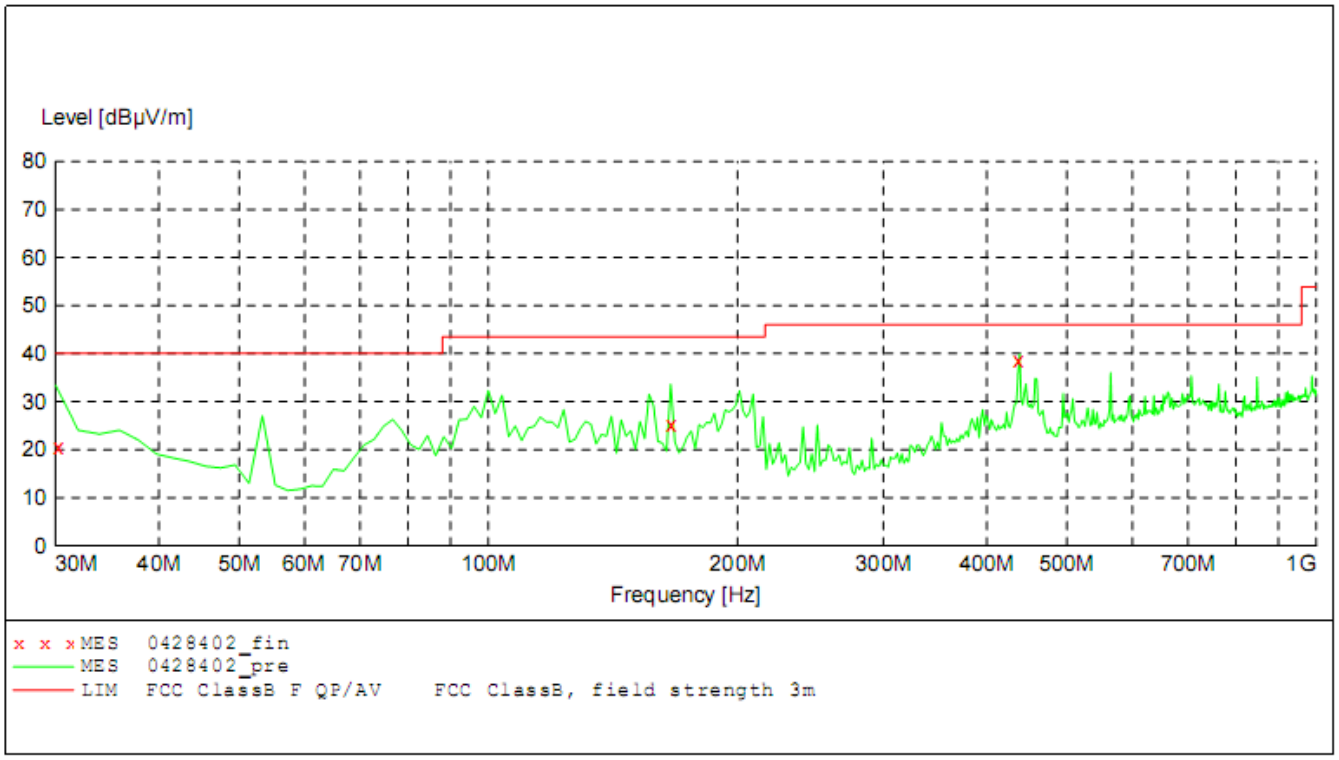
2009-4-28 10:52AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
98.760000	30.00	11.7	43.5	13.5	QP	321.0	68.00	HORIZONTAL
705.600000	38.80	26.6	46.0	7.2	QP	293.0	224.00	HORIZONTAL

VERTICAL

SCAN TABLE: "test Field(30M-1G)OP"

Short Description:			Field Strength(30M-1G)			
Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	60.0 kHz	QuasiPeak	1.0 s	120 kHz	HL562new



MEASUREMENT RESULT: "0428402_fin"

2009-4-28 10:59AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.300000	20.50	21.0	40.0	19.5	QP	100.0	80.00	VERTICAL
166.740000	25.20	10.7	43.5	18.3	QP	100.0	293.00	VERTICAL
437.520000	38.70	20.2	46.0	7.3	QP	100.0	174.00	VERTICAL

APPENDIX III
(Photos of EUT)

Fig. 1

Fig. 2


TV OUT
AUD-R
VIDEO
ANT IN
AUD-L
S/PDIF
RS232
ON
OFF
POWER
CAUTION

Fig. 3


the PRO digy
STANDBY
VOL
CH

Fig. 4

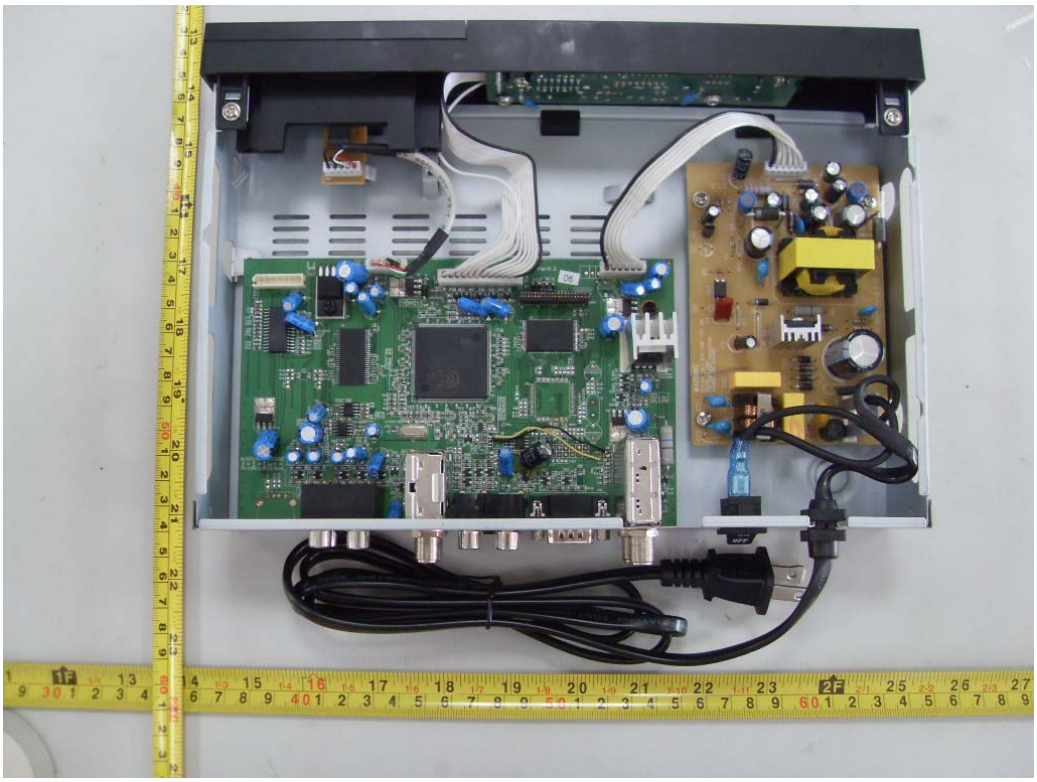


Fig. 5

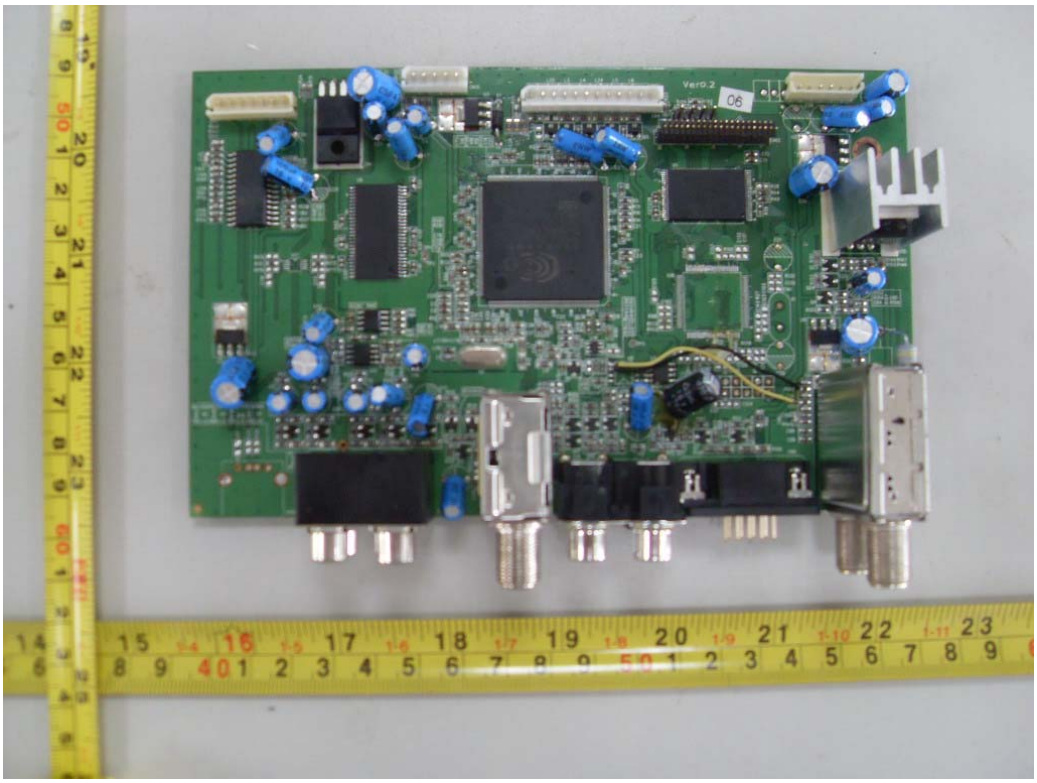


Fig. 6

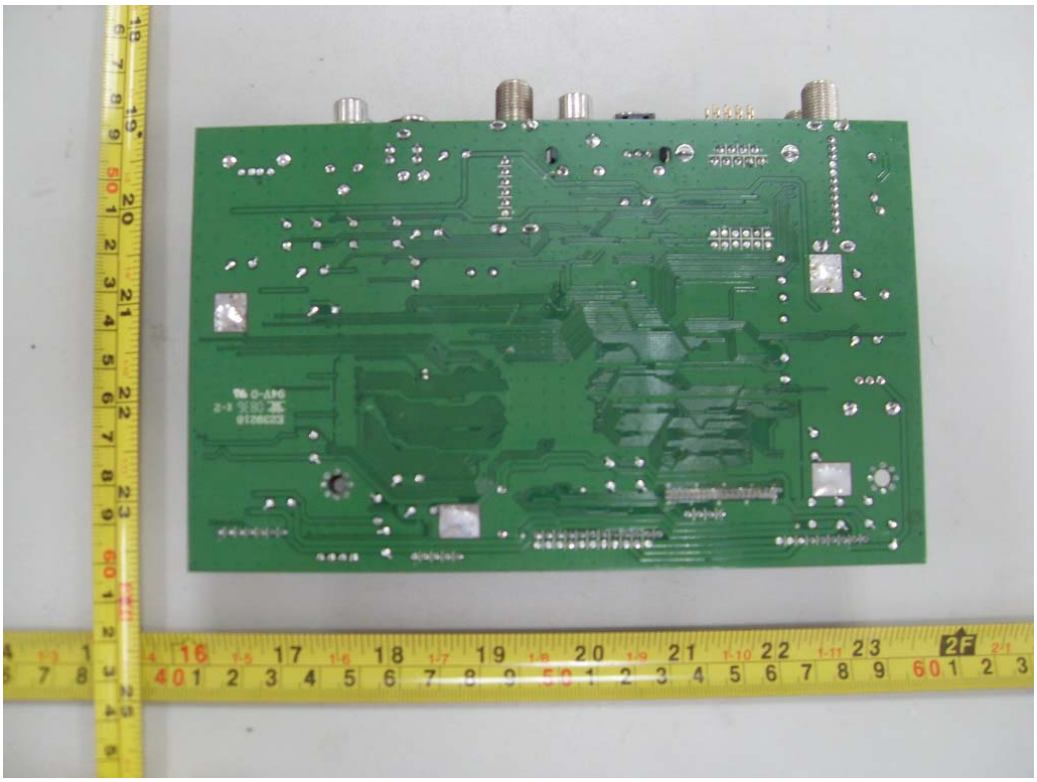


Fig. 7

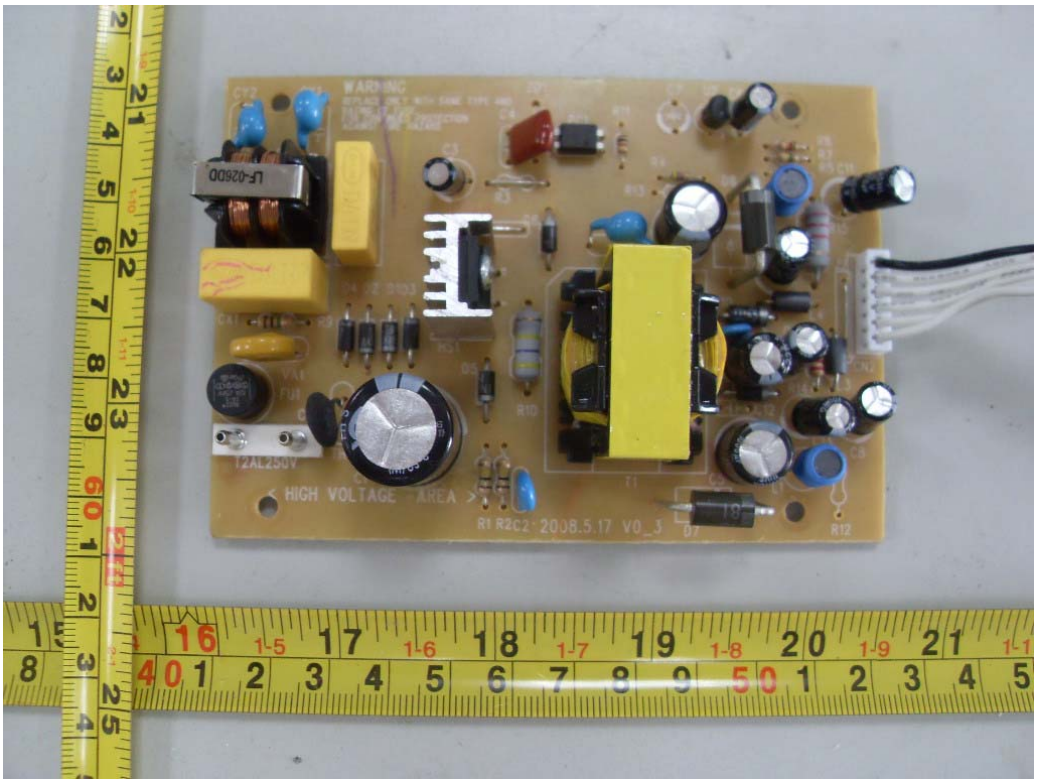


Fig. 8

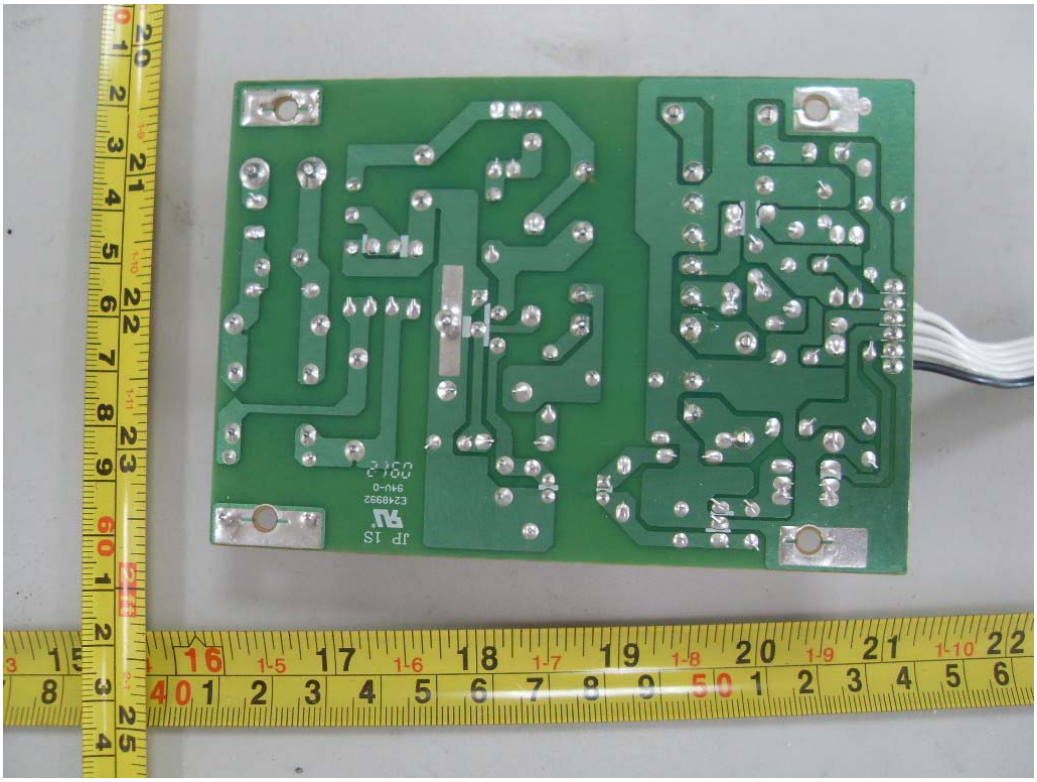


Fig. 9

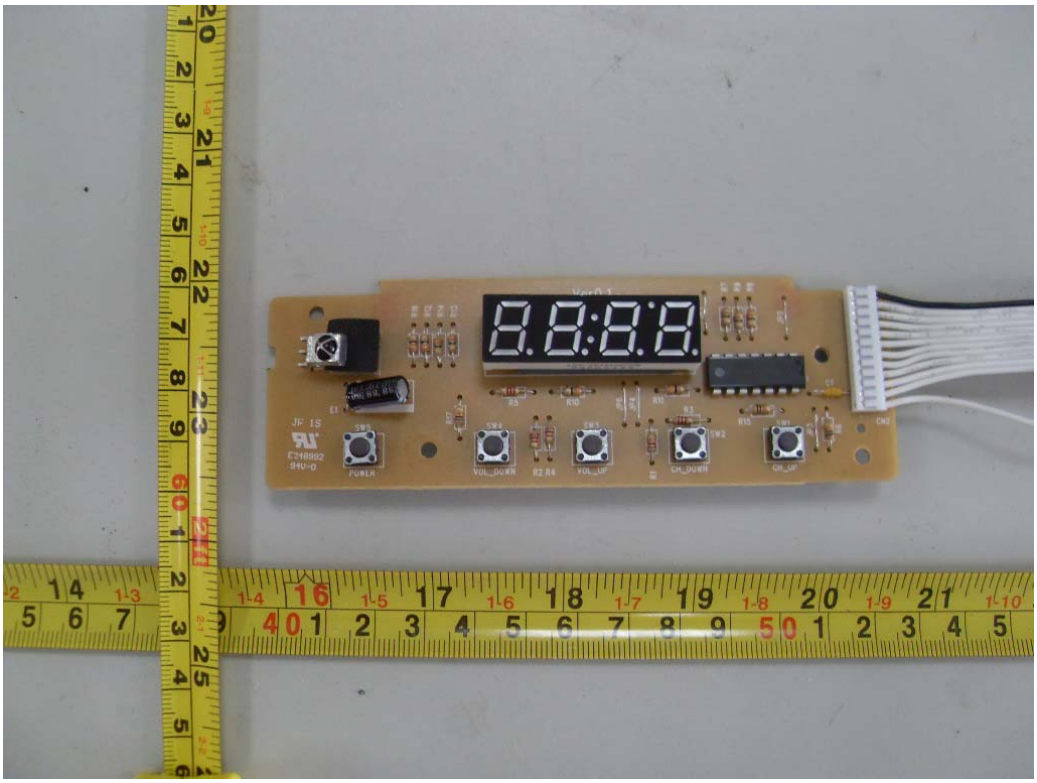


Fig. 10

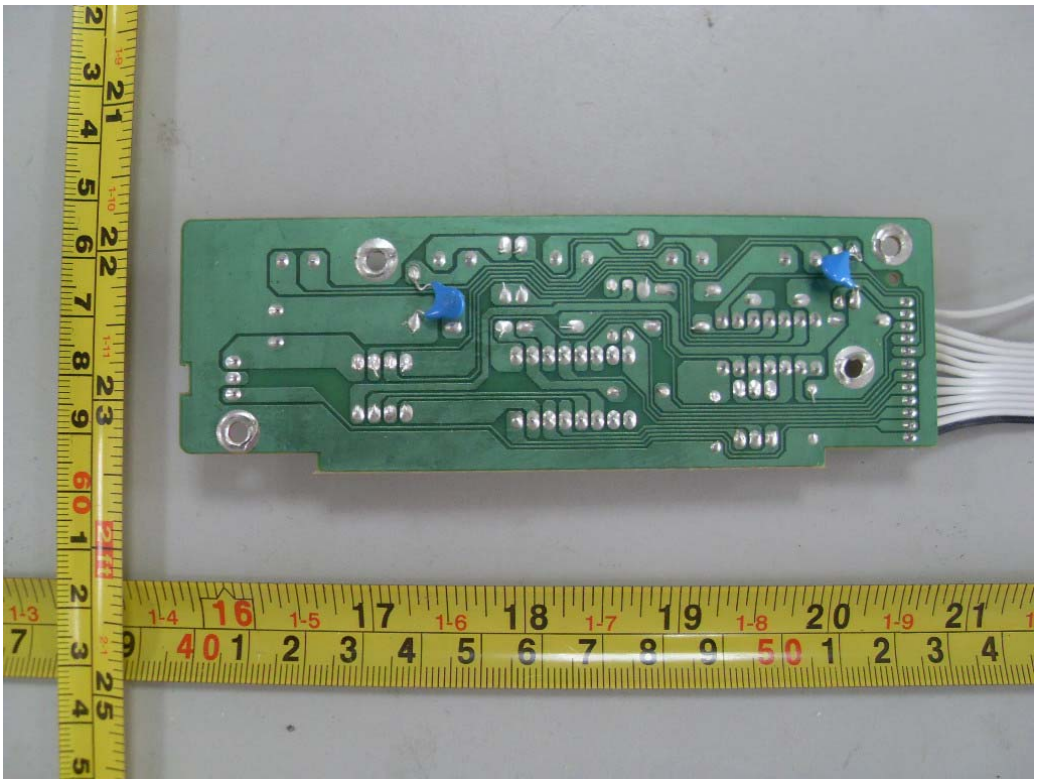


Fig. 11

Fig. 12

Fig. 13

Fig. 14