FCC PART 15B TEST REPORT
On Behalf of
Shenzhen ERALED Optoelectronics Co., Ltd.

LED Display Screen
Model No.: P7.62, P10, P12, P16, P20, P31.5

Prepared for	:	Shenzhen ERALED Optoelectronics Co., Ltd.
Address	:	ERALED Industry Park, Xincheng Road, Shajing Town, Bao'an District, Shenzhen, China

Prepared By	:	Anbotek Compliance Laboratory Limited
Address	:	1/F, 1/Build, SEC Industrial Park, No. 4 Qianhai Road, Nanshan District, Shenzhen, 518054, China Tel: (86) 755-26014771 Fax: (86) 755-26014772

Report Number	:	201107825F
Date of Test	:	Aug. 01~ 09, 2011
Date of Report	:	Aug. 09, 2011

TABLE OF CHONTENTS

Description

Page

Test Report Verification

TEST REPORT VERIFICATION

Applicant	:	Shenzhen ERALED Optoelectronics Co., Ltd.
Manufacturer	:	Shenzhen ERALED Optoelectronics Co., Ltd.
EUT	:	LED Display Screen
Model No.	:	P7.62, P10, P12, P16, P20, P31.5
Rating	:	100-240V~, 50Hz, 4A, 1000W
Trade Mark	:	ERA

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart B 2010 & FCC / ANSI C63.4-2009

The device described above is tested by Anbotek Com pliance Laboratory Lim ited To determine the m aximum em ission levels em anating from the device. The m aximum emission levels are compared to the FCC Part 15 Subpart B Class B lim its both radiated and conducted emissions. The measurement results are contained in this test report and Anbotek Compliance Laboratory Lim ited Is assum ed 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 Anbotek Compliance Laboratory Limited

Date of Test : Agu. 01~09, 2011

Prepared by : Well Wang

(Engineer/ Well Wang)

Reviewer : Coco. Xiang

(Project Manager/ Coco Xiang)

Approved & Authorized Signer : Henry. Yang

(Manager/ Henry Yang)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	LED Display Screen
Model Number	:	P7.62, P10, P12, P16, P20, P31.5 (Note: All samples are the same except the model number & size of appliances, so we prepare "P16" for EMC test only.)
Test Power Supply	:	AC 120V, 60Hz
Applicant	:	Shenzhen ERALED Optoelectronics Co., Ltd.
Address	:	ERALED Industry Park, Xincheng Road, Shajing Town, Bao'an District, Shenzhen, China
Manufacturer	:	Shenzhen ERALED Optoelectronics Co., Ltd.
Address	:	ERALED Industry Park, Xincheng Road, Shajing Town, Bao'an District, Shenzhen, China
Date of Sample received	:	Jul. 30, 2011
Date of Test	:	Aug. 01~09, 2011

1.2. Auxiliary Equipment Used during Test

PC	:	Manufacturer: DELL M/N: OPTIPLEX 380 S/N: 1J63X2X CE , FCC: DOC
MONITOR	:	Manufacturer: DELL M/N: E170Sc S/N: CN-00V539-64180-055-0UPS CE , FCC: DOC
KEYBOARD	:	Manufacturer: DELL M/N: SK-8115 S/N: CN-0DJ313-71616-06C-02XN CE , FCC: DOC Cable: 1m, unshielded
MOUSE	:	Manufacturer: DELL M/N: M-UARDEL7 S/N: N/A CE , FCC: DOC Cable: 1m, unshielded
Power Line	:	1.5m, unshielded
VGA Cable	:	1.5m, unshielded
USB Cable	:	1m, unshielded
Ethernet Cable	:	10m, unshielded

1.3. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS - LAB Code: L3503
Anbotek Compliance Laboratory Limited., Laboratory has been assessed and in compliance with CNAS/CL01: 2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing Laboratories.

FCC-Registration No.: 752021
Anbotek Compliance Laboratory Limited, EMC Laboratory has been registed and fully described in a report filed w ith the (FCC) Federal Com munications Commission. The acceptance letter from the FCC is m aintained in our files. Registration 752021, August 20, 2010

IC-Registration No.: 8058A-1
Anbotek Com pliance Laboratory Lim ited., EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is m aintained in our files. Registration 8058A-1, August 30, 2010

Test Location
All Emissions tests were performed
Anbotek Com pliance Laboratory Lim ited. at 1/F, 1/Build, SEC Industrial Park, No. 4 Qianhai Road, Nanshan District, Shenzhen, 518054, China

1.4. Measurement Uncertainty

Radiation Uncertainty **:** Ur = 4.3dB

Conduction Uncertainty **:** Uc = 3.4dB

1.5. Test Summary

For the EUT described above. The standards used were FCC Part 15 Subpart B for Emissions.
Table 1 : Tests Carried Out Under FCC Part 15 Subpart B

Standard	Test Items	Status
FCC Part 15 Subpart B	Power Line Conducted Emission Test (150KHz To 30MHz)	√
FCC Part 15 Subpart B	Radiated Emission Test (30MHz To 1000MHz)	√

√ Indicates that the test is applicable
x Indicates that the test is not applicable

2. POWER LINE CONDUCTED MEASUREMENT

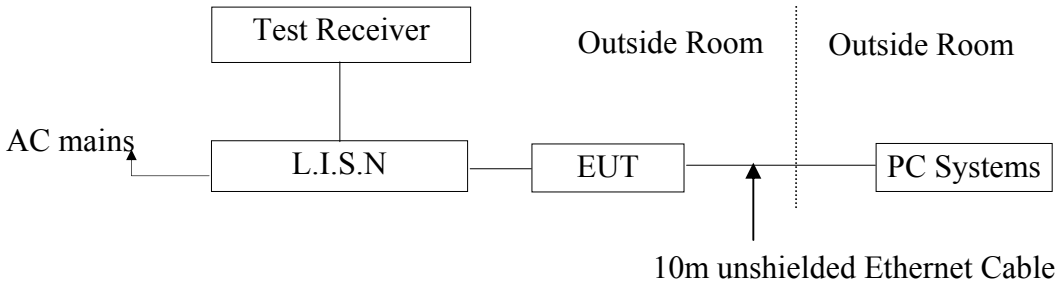
2.1. Test Equipment

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

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Nov. 12, 2010	1 Year
2.	Two-Line V-network	Rohde & Schwarz	ENV216	10055	May 19, 2011	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	May 19, 2011	1 Year
4.	EMI Test Software	ES-K1 N/A		N/A	N/A	N/A

2.2. Block Diagram of Test Setup

2.2.1. Block diagram of connection between the EUT and simulators



(EUT: LED Display Screen)

2.3. Power Line Conducted Emission Measurement Limits (FCC Part 15 Subpart B 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.
2.3.1. 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	:	LED Display Screen
Model Number	:	P16
Applicant	**:**	Shenzhen ERALED Optoelectronics Co., Ltd.

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. Test software(provided by the manufacturer) which controlles the displaying content is installed and running on the host PC. Runs the test software and is communicating via the signal in interface to EUT.

2.6. Test Procedure

The EUT system is connected to th e power m ains through a line im pedance stabilization network (L.I.S.N.). This pr ovides a 50ohm coupling im pedance for the EUT system . Please refer the block diag ram of the test setup and photographs. Both sides of AC line are checked to find out the m aximum conducted em ission. In order to find the m aximum em ission levels, the relative positions of equipm ent and all of the interface cables shall be changed according to FCC ANSI C63.4-2009 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9KHz.

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

The test result are reported on Section 2.7.

2.7. Power Line Conducted Emission Measurement Results

PASS.

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

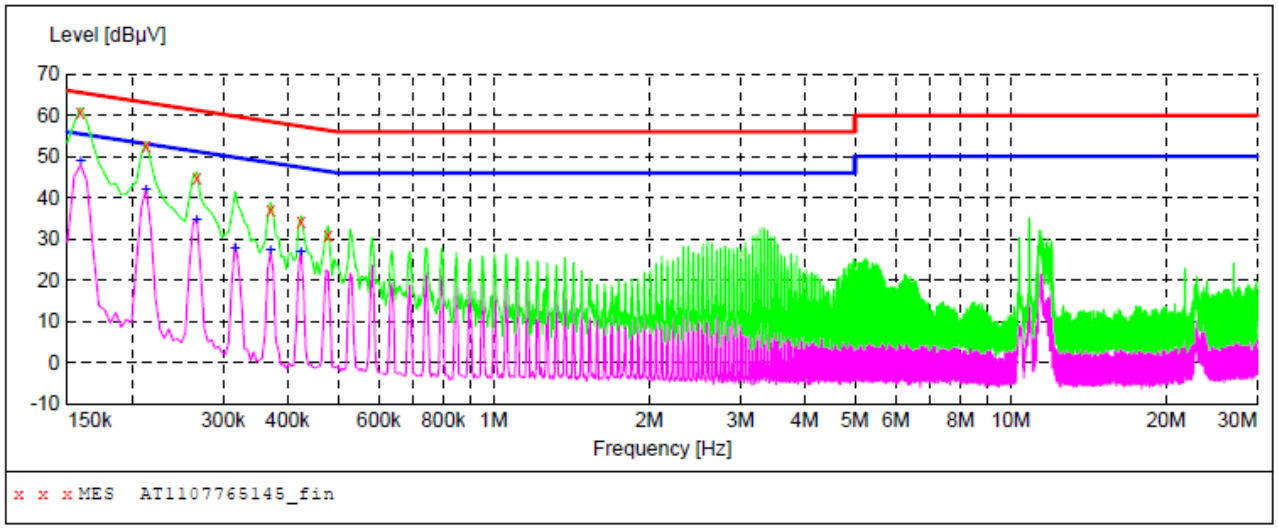
The test curves are shown in the following pages.

CONDUCTED EMISSION TEST DATA

EUT:	LED Display Screen M/N: P16
Operating Condition:	On
Test Site:	1# Shielded Room
Operator:	Well Wang
Test Specification:	AC 120V, 60Hz
Comment:	L
	Tem:22.2℃ Hum:60%

SCAN TABLE: "Voltage(150K~30M)FIN"

Short Description: 150K-30M Disturbance Voltages



MEASUREMENT RESULT: "AT1107765145_fin"

8/9/2011 11:22AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.159000	60.60	10.1	66	4.9	QP	L1	GND
0.213000	52.60	10.1	63	10.5	QP	L1	GND
0.267000	44.90	10.1	61	16.3	QP	L1	GND
0.370500	37.10	10.1	59	21.4	QP	L1	GND
0.424500	34.30	10.1	57	23.1	QP	L1	GND
0.478500	30.90	10.1	56	25.5	QP	L1	GND

MEASUREMENT RESULT: "AT1107765145_fin2"

8/9/2011 11:22AM

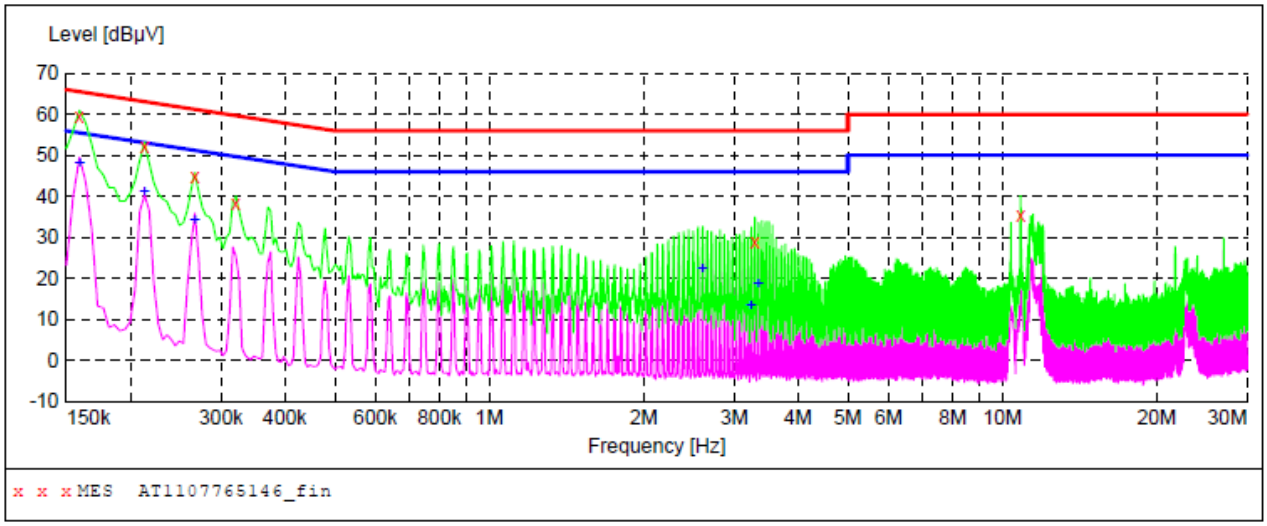
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.159000	48.80	10.1	56	6.7	AV	L1	GND
0.213000	41.80	10.1	53	11.3	AV	L1	GND
0.267000	34.70	10.1	51	16.5	AV	L1	GND
0.316500	27.60	10.1	50	22.2	AV	L1	GND
0.370500	27.10	10.1	49	21.4	AV	L1	GND
0.424500	27.00	10.1	47	20.4	AV	L1	GND

CONDUCTED EMISSION TEST DATA

EUT:	LED Display Screen M/N: P16
Operating Condition:	On
Test Site:	1# Shielded Room
Operator:	Well Wang
Test Specification:	AC 120V, 60Hz
Comment:	N
	Tem:22.2℃ Hum:60%

SCAN TABLE: "Voltage(150K~30M)FIN"

Short Description: 150K-30M Disturbance Voltages



MEASUREMENT RESULT: "AT1107765146_fin"

8/9/2011 11:25AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.159000	59.60	10.1	66	5.9	QP	N	GND
0.213000	52.00	10.1	63	11.1	QP	N	GND
0.267000	44.70	10.1	61	16.5	QP	N	GND
0.321000	38.40	10.1	60	21.3	QP	N	GND
3.297000	28.90	10.4	56	27.1	QP	N	GND
10.857000	35.40	10.6	60	24.6	QP	N	GND

MEASUREMENT RESULT: "AT1107765146_fin2"

8/9/2011 11:25AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.159000	48.10	10.1	56	7.4	AV	N	GND
0.213000	41.20	10.1	53	11.9	AV	N	GND
0.267000	34.00	10.1	51	17.2	AV	N	GND
2.607000	22.50	10.4	46	23.5	AV	N	GND
3.243000	13.40	10.4	46	32.6	AV	N	GND
3.351000	18.50	10.4	46	27.5	AV	N	GND

3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

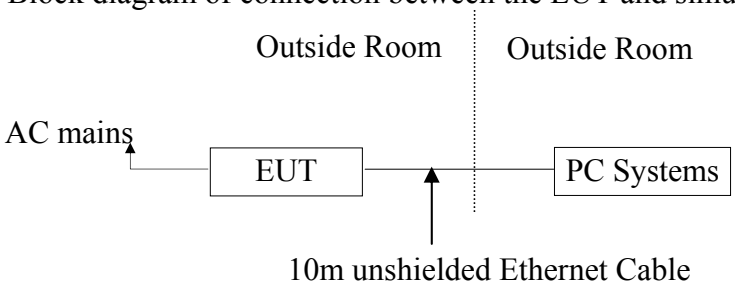
The following test equipments are used during the radiated emission measurement:

3.1.1. For Anechoic Chamber

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Nov. 12, 2011	1 Year
2.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	100015	May 17, 2011	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	May 19, 2011	1 Year
4.	EMI Test Software	ES-K1 N/A		N/A	N/A	N/A

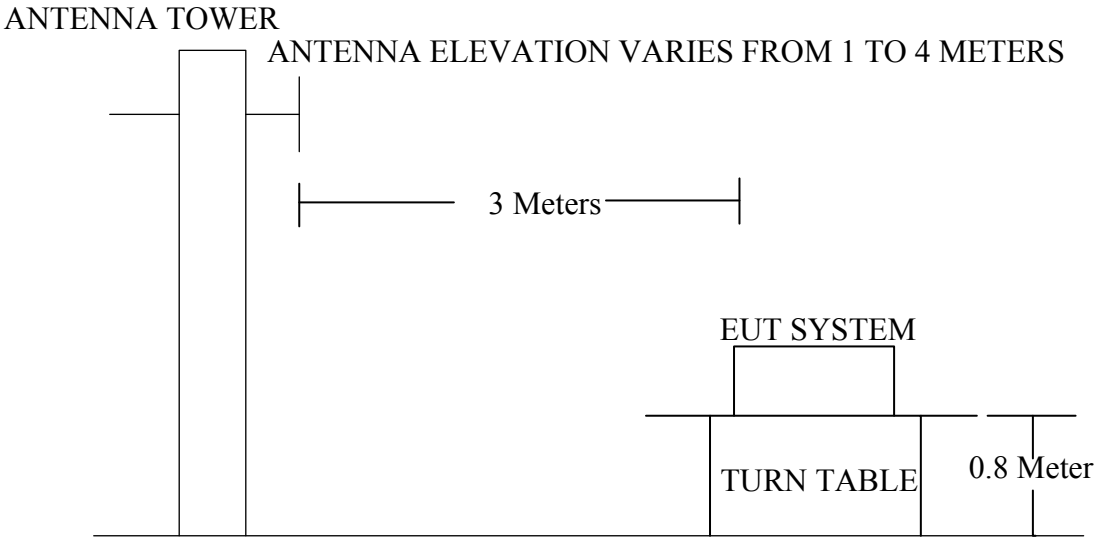
3.2. Block Diagram of Test Setup

3.2.1. Block diagram of connection between the EUT and simulators



(EUT: LED Display Screen)

3.2.2. Anechoic Chamber Test Setup Diagram



(EUT: LED Display Screen)

3.3. Radiated Emission Limit (Subpart B 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 sm aller lim it shall appl y at the cross point between two frequency bands.

(3) Distance is the distance in m eters 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 equipments are installed on Radiated Emission Measurement to meet the commission requirements and operating re gulations in a m anner which tends to maximize its emission characteristics in normal application.

EUT : LED Display Screen
Model Number : P16
Applicant : Shenzhen ERALED Optoelectronics Co., Ltd.

3.5. Operating Condition of EUT

3.5.1. Setup the EUT and simulator as shown as Section 2.2.

3.5.2. Turn on the power of all equipment.

3.5.3. Test software(provided by the manufacturer) which controlles the displaying content is installed and running on the host PC. Runs the test software and is communicating via the signal in interface to EUT.

3.6. Test Procedure

EUT and its sim ulators are placed on a turn table, which is 0.8 m eter high above ground. The turn table can rotate 360 de grees to determ ine the position of the maximum emission level. EUT is set 3.0 m eters away from the receiving antenna, which is m ounted on a antenna tower. The antenna can be m oved up and down between 1.0 m eter and 4 m eters to find out the m aximum em ission level. Broadband antenna (Trilog Broadband Antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables m ust be manipulated according to ANSI C63.4-2009 on radiated emission measurement.

The bandwidth of the EMI test receiver (ESCI) is set at 120kHz.

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

The test mode (On) is tested in chamber and all the test results are listed in Section 3.7.

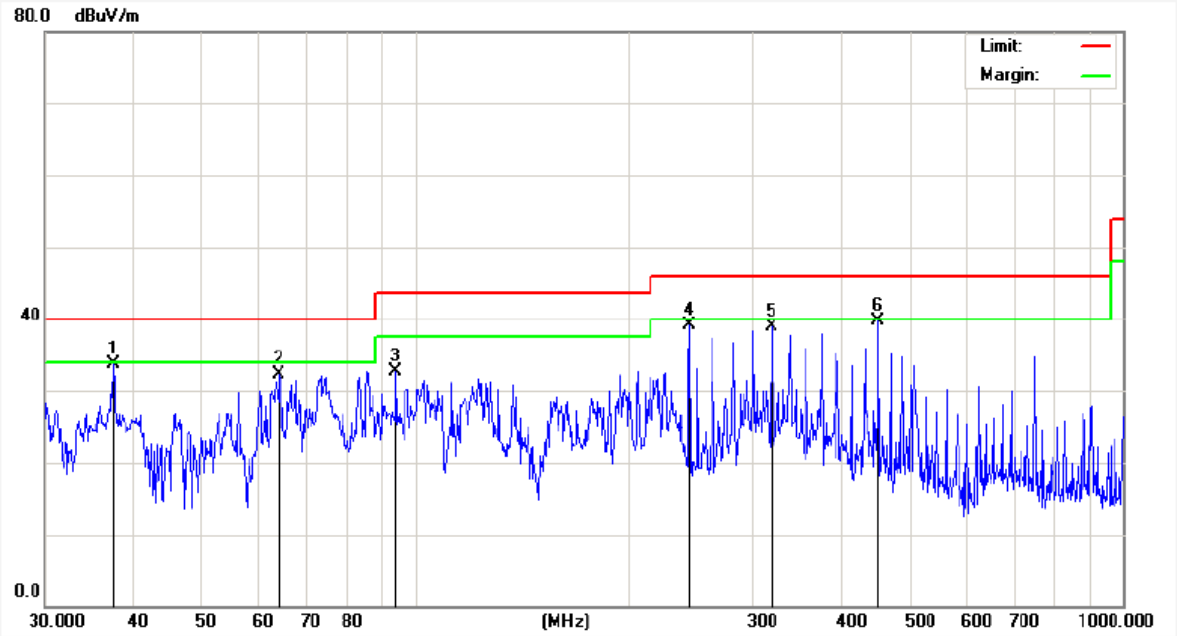
3.7. Radiated Emission Measurement Results

PASS.

The test curves are shown in the following pages.

Anbotek Compliance Laboratory Limited
1/F, 1/Building, SEC Industrial Park, No.4 Qianhai Road,
Nanshan District, Shenzhen, 518054, China
Tel: (86)755-26014771
Fax: (86)755-26014772
Http://www.anbotek.com

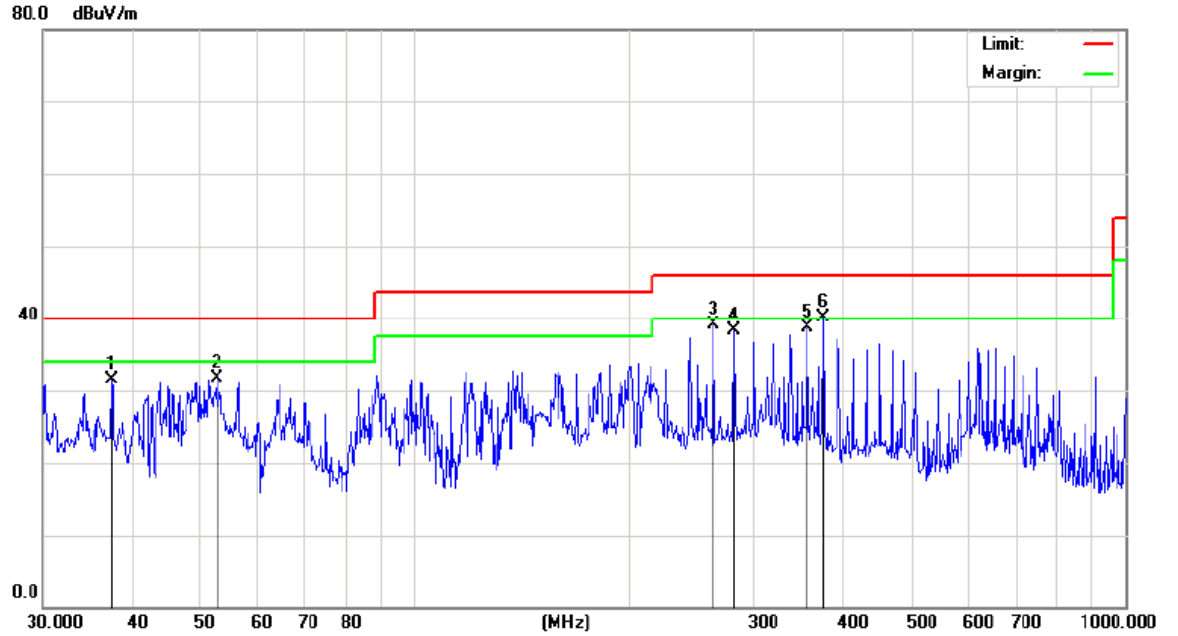
Job No.:	**AT1107765F**	**Polarziation:**	**Horizontal**
Standard:	**(RE)FCC PART15 B _3m**	**Power Source:**	**AC 120V, 60Hz**
Test item:	**Radiation Test**	**Date:**	**2011/08/03**
Temp.(C)/Hum.(%RH):	**24.3(C)/55%RH**	**Time:**	**17:30:20**
EUT:	**LED Display Screen**	**Test By:**	**Well Wang**
Model:	**P16**	**Distance:**	**3m**
Mode:	**On**		
Note:			



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	37.4164	59.16	-25.54	33.62	40.00	-6.38	peak			
2	64.2074	59.26	-27.04	32.22	40.00	-7.78	peak			
3	93.7685	63.14	-30.43	32.71	43.50	-10.79	peak			
4	244.2321	65.96	-26.79	39.17	46.00	-6.83	peak			
5	318.8170	62.71	-23.90	38.81	46.00	-7.19	peak			
6	451.1349	60.31	-20.59	39.72	46.00	-6.28	peak			

Anbotek Compliance Laboratory Limited
1/F, 1 /Building, SEC Industrial Park, No.4 Qianhai Road,
Nanshan District, Shenzhen, 518054, China
Tel: (86)755-26014771
Fax: (86)755-26014772
Http://www.anbotek.com

Job No.:	**AT1107765F**	**Polarziation:**	**Vertical**
Standard:	**(RE)FCC PART15 B _3m**	**Power Source:**	**AC 120V, 60Hz**
Test item:	**Radiation Test**	**Date:**	**2011/08/03**
Temp.(C)/Hum.(%RH):	**24.3(C)/55%RH**	**Time:**	**17:27:58**
EUT:	**LED Display Screen**	**Test By:**	**Well Wang**
Model:	**P16**	**Distance:**	**3m**
Mode:	**On**		
Note:			



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	37.4164	57.01	-25.54	31.47	40.00	-8.53	peak			
2	52.5752	56.78	-25.02	31.76	40.00	-8.24	peak			
3	262.8955	61.77	-22.68	39.09	46.00	-6.91	peak			
4	281.0074	61.99	-23.69	38.30	46.00	-7.70	peak			
5	356.6757	59.98	-21.31	38.67	46.00	-7.33	peak			
6	375.9384	61.08	-20.90	40.18	46.00	-5.82	QP			