Electromagnetic Emission

F C C M E A S U R E M E N T R E P O R T

CERTIFICATION OF COMPLIANCE

FCC Part 15 Certification Measurement

PRODUCT	:	PDP TV
MODEL/TYPE NO	:	EPT-42Q0AN
FCC ID	:	OIOEPT-4211
APPLICANT	:	Erae Electronics Industry Co., Ltd. #371-51, Kasan-Dong, Keumcheon-Ku, Seoul, 153-803, Korea Attn.: Woon Seok, Yu **/** Deputy General Manager
MANUFACTURER	:	Erae Electronics Industry Co., Ltd. #371-51, Kasan-Dong, Keumcheon-Ku, Seoul, 153-803, Korea
FCC CLASSIFICATION	:	Class B personal computers and peripherals & TV Receiver
FCC RULE PART(S)	:	FCC Part 15 Subpart B
FCC PROCEDURE	:	Certification
TRADE NAME	:	ERAE
TEST REPORT No.	:	ETLE060110.010
DATES OF TEST	:	January 10 – 27, 2006
REPORT ISSUE DATE	:	January 27, 2006
TEST LABORATORY	:	ETL Inc. (FCC Registration Number : 95422)

This PDP TV, Model EPT-42Q0AN has been tested in accordance with the measurement procedures specified in ANSI C63.4-2003 at the ETL/EMC Test Laboratory and has been shown to be complied with the electromagnetic radiated emission limits specified in FCC Rule Part15 Subpart B:
I attest to the accuracy of data. All measurement herein was performed by me or was made under my supervision and is correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.
The results of testing in this report apply to the product/system which was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Hyung Seok, Lee / Chief Engineer

ETL Inc.
#584 Sangwhal-ri, Kanam-myon, Yoju-kun, Kyounggi-do, 469-885, Korea
Tel : (031) 885-0072 Fax : (031) 885-0074

Table of Contents

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FCC MEASUREMENT REPORT

Scope – *Measurement and determination of electromagnetic emission(EME) of radio frequency devices including intentional radiators and/or unintentional radiators for compliance with the technical rules and regulations of the U.S Federal Communications Commission(FCC)*

General Information

Applicant Name : Erae Electronics Industry Co., Ltd.

Address : 371-51,Kasan-Dong,Keumcheon-Ku,Seoul, 153-803, Korea

Attention : Woon Seok, Yu / Deputy General Manager

- **EUT Type :** PDP TV
- **Model Number :** EPT-42Q0AN
- **FCC ID :** OIOEPT-4211
- **S/N :** N/A
- **FCC Rule Part(s) :** FCC Part 15 Subpart B
- **Test Procedure :** ANSI C63.4-2003
- **FCC Classification :** Class B personal computers and peripherals & TV Receiver
- **Dates of Tests :** January 27, 2006
- **Place of Tests :** ETL Inc.
  EMC Testing Lab. (FCC Registration Number : 95422)
  584, Sangwhal-Ri, Kanam-Myun, Yoju-Kun,
  Kyounggi-Do, Korea
  Tel : (031) 885-0072 Fax : (031) 885-0074
- **Test Report No. :** ETLE060110.010

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1. INTRODUCTION

The measurement test for radiated and conducted emission test were conducted at the open area test site of E-RAE Testing Laboratory Inc. facility located at 584, Sangwhal-ri, Ganam-myun, Youju-kun, Kyoungki-do, Korea. The site is constructed in conformance with the requirements of the ANSI C63.4-2003 and CISPR Publication 16. The ETL has site descriptions on file with the FCC for 3 and 10 meter site configurations. Detailed description of test facility was found to be in compliance with the requirements of Section 2.948 FCC Rules according to the ANSI C63.4-2003 and registered to the Federal Communications Commission (Registration Number : 95422).

The measurement procedure described in American National Standard for Method of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz (ANSI C.63.4-2003) was used in determining radiated and conducted emissions from the Erae Electronics Industry Co., Ltd., Model: EPT-42Q0AN.

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2. PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the Erae Electronics Industry Co., Ltd., Model: EPT-42Q0AN.

2.2 General Specification

Aspect Ratio	16 : 9
Screen Size (H * V)	920.1 * 518.4 mm
Resolution	1024 * 768 (Wide VGA)
Cell pitch (H * V)	0.900 (H) * 0.676 (V) mm
Displayable Colors	16.77 M (256 * 256 * 256) / 10.7 Billion
Brightness	1200 cd/㎡ (w/o filter)
Contrast	10000 : 1
Viewing Angle	160。
Input Signal	NTSC, SD, HD, VGA, SVGA, XGA, SXGA (1280 * 1024 / 60 Hz)
RGB Input	Analog RGB (D-Sub 15pin), DVI-D (HDCP)
AC Input	AC 100-240 V ~, 50 / 60 Hz, 5A
Power Consumption	380 W

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3. DESCRIPTION OF TESTS

3.1 Conducted Emission Measurement

Conducted emissions measurements were made in accordance with section 11, "Measurement of Information Technology Equipment" of ANSI C63.4-2003. The measurements were performed over the frequency range of 0.15MHz to 30MHz using a 50Ω/50uH LISN as the input transducer to a Spectrum Analyzer or a Test Receiver. The measurements were made with the detector set for "Peak" amplitude within a bandwidth of 9 kHz or for "quasi-peak" within a bandwidth of 9 kHz.

The line-conducted emission test is conducted inside a shielded anechoic chamber room with 1 m x 1.5 m x 0.8m wooden table which is placed 40 cm away from the vertical wall and 1.5 m away from the side wall of the chamber room. Two LISN are bonded to the shielded room. The EUT is powered from the LISN and the support equipment is powered from the other LISN. Power to the LISNs are filtered by a noise cut power line filters. All electrical cables are shielded by braided tinned steel tubing with inner ϕ 1.2cm. If the EUT is a DC-powered device, power will be derived from the source power supply it normally will be powered from and these supply lines will be connected to the LISN. Non-inductive bundling to a 1m length shortened all interconnecting cables more than 1m. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the EMI Test Receiver to determine the frequency producing the maximum emission from the EUT. The frequency producing the maximum level was reexamined using to set Quasi-Peak mode by manual, after scanned by automatic Peak mode from 0.15 to 30 MHz. The bandwidth of the spectrum analyzer was set to 9 kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission.

Photographs of the worst-case emission can be seen in photographs of conducted emission test setup in Appendix B.

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3. DESCRIPTION OF TESTS

3.2.1 Radiated Emission Measurement

Radiated emission measurements were made in accordance with section 11, "Measurement of Information Technology Equipment" of ANSI C63.4-2003. The measurements were performed over the frequency range of 30 MHz to 1 GHz using antenna as the input transducer to a spectrum analyzer or a field intensity meter. The measurements were made with the detector set for "Quasi-peak" within a bandwidth of 120 kHz.

Preliminary measurements were made at 10 meter using broadband antennas, and spectrum analyzer to determined the frequency producing the maximum emission in shielded room. Appropriate precaution was taken to ensure that all emission from the EUT were maximized and investigated. The system configuration, mode of operation, turntable azimuth and height with respect to the antenna were noted for each frequency found. The spectrum was scanned from 30 to 1000 MHz using Log-Bicon antenna. Above 1 GHz, linearly polarized double ridge horn antennas were used. Final measurements were made open site at 10-meters. The test equipment was placed on a wooden turn-table. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. Each frequency found during pre-scan measurements was re-examined by manual. The detector function was set to CISPR Quasi-peak mode and the bandwidth of the receiver was set to 120 kHz or 1MHz depending on the frequency of type of signal. The EUT, support equipment and interconnecting cables were re-configured to the set-up producing the maximum emission for the frequency and were placed on top of a 0.8-meter high nonmetallic 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were re-arranged and manipulated to maximize each emission. The turntable containing the system was rotated; the antenna height was varied 1 to 4 meters and stopped at the azimuth or height producing the maximum emission. Each emission was maximized by: varying the mode of operation to the EUT and/or support equipment and changing the polarity of the antenna, whichever determined the worst-case emission.

Photographs of the worst-case emission can be seen in Photographs of the worst-case emission test setup can be seen in Appendix B.

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3. DESCRIPTION OF TESTS

3.2.2 Radiated Emission Measurement

Preliminary measurements were made at indoors 3 meter semi EMC anechoic chamber using broadband antennas, broadband amplifier, and spectrum analyzer to determine the emission frequencies producing the maximum EME.
Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configurations, mode of operation, turntable azimuth with respect to the antenna were noted for each frequency found. The spectrum was scanned from 30 to 1000 MHz using biocenology antenna and above 1000 MHz, linearly polarized double ridge horn antennas were used. Above 1 GHz, linearly polarized double ridge horn antennas were used. The measurements were performed with three frequencies which were selected as bottom, middle and top frequency in the operating band. Emission levels from the EUT with various configurations were examined on the spectrum analyzer connected with the RF amplifier and plotted graphically.

Final measurements were made outdoors open site at 3-meter test range using biocenology antenna. The output from the antenna was connected, via a pre-selector or a preamplifier, to the input of the EMI Measuring Receiver and Spectrum analyzer (for above 1 GHz). The detector function was set to the quasi-peak or peak mode as appropriate. The measurement bandwidth on the Field strength receiver was set to at least 120 kHz (1 MHz for measurement above 1 GHz); with all post-detector filtering no less than 10 times the measurement bandwidth. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition.

Each frequency found during preliminary measurement was examined and investigated as the same set up and configuration which produced the maximum emission The EUT, support equipment and interconnecting cables were configured to the set-up producing the maximum emission for the frequency and were placed on top of a 0.8-meter high non-metallic 1 x 1.5 meter table. The turntable containing the system was rotated and the antenna height was varied 1 to 4 meters and stopped at the azimuth or height producing the maximum emission.

Each emission was maximized by varying the mode of operating frequencies of the EUT. The worst case emissions are recorded in the data tables. If necessary, the radiated emission measurement could be performed at a closer distance to ensure higher accuracy and the results were extrapolated to the specified distance using an inverse linear distance extrapolation factor (20dB/decade) as per section 15.31(f).

Photographs of the worst-case emission test setup can be seen in Appendix B.

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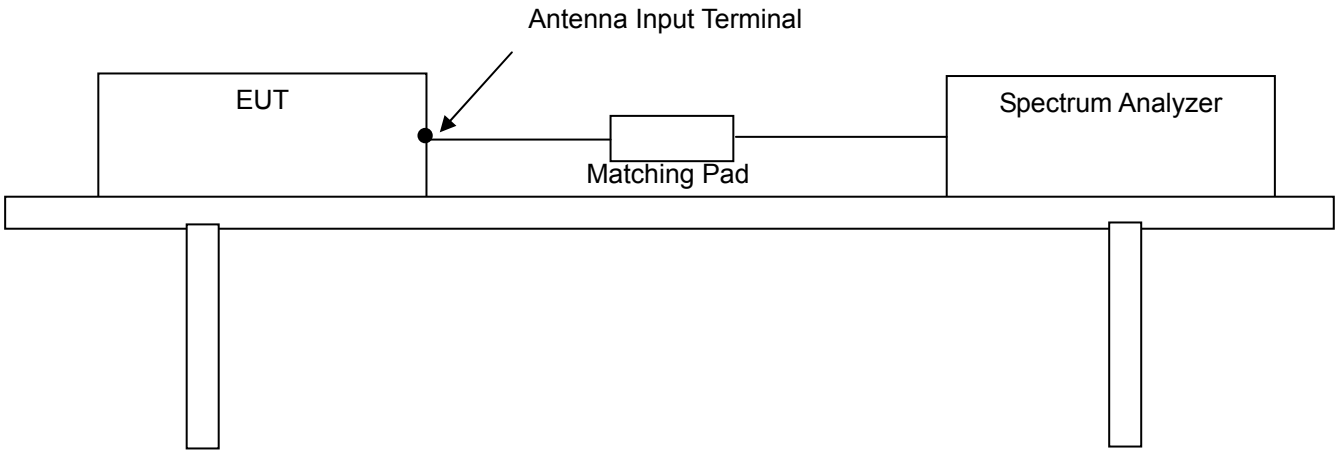
3. DESCRIPTION OF TESTS

3.3 Antenna-Conducted Power Measurements

Power on the receive antenna terminals was to be determined by measurement of the voltage present at these terminals. An antenna-conducted power measurement is performed with the EUT antenna terminals connected directly to a spectrum analyzer, if the antenna impedance matches the impedance of the measuring instrument. Otherwise, use an impedance-matching network to connect the measuring instrument to the antenna terminals of the EUT. Losses in decibels in any impedance-matching network used are added to the measured value in dBμV.

With the EUT tuned to one of the frequency over which device operates , measure both the frequency and voltage present at the antenna input terminals over the frequency range specified in the individual equipment requirements. Repeat this measurement with the receiver tuned to another frequency until the numbers of frequencies specified have been successively measured. Power on the receive antenna terminals is the ratio of V^2/R, where V is the loss-corrected voltage measured at the antenna terminals, and R is the impedance of the measuring instrument.



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4. TEST CONDITION

4.1 Test Configuration

The device was configured for testing in a typical fashion (as a customer would normally use it). During the tests, the EUT and the supported equipments were installed to meet FCC requirement and operated in a manner and which tends to maximize its emission level in a typical application.

4.2 EUT operation

Operating Mode	The worst operating condition
Stand-by mode	X
"1280 * 1024 Vf = 75 Hz Full "H" pattern display with MP3 sound play mode	◎

◎ : Worst case investigated during the test.

The EUT was set to the normal receiving mode in a TV mode during all the testing in a manner similar to a typical use. For the EUT operation, the Color bar signal (Supplied from color TV pattern generator) was feed to the EUT through the antenna. During the preliminary testing, the worst case condition of the operating mode was ch.2

4.3 Support Equipment Used

EUT – PDP Monitor

FCC ID	: OIOEPT-4211
Model Name	: EPT-42Q0AN
Serial No.	: N/A
Manufacturer	: Erae Electronics Industry Co., Ltd.
Power Supply Type	: Switching
Power Cord	: Non-Shielded, Detachable : 1.2m
Data Cable	: RGB In : 1, DVI In : 1 , Component In : 2, S-Video In : 1, PC Audio In :1 Component Audio In : 2, Composite In : 1, Speaker Out : 2

Support Unit 1 – Personal computer (DELL)

FCC ID	: N/A (DoC)
Model Name	: DHM
Serial No.	: H9MB71S
Manufacturer	: DELL
Power Supply Type	: Switching
Power Cord	: Non-Shielded, Detachable: 1.2m
Data Port	: RGB out:1, DVI out:1, Parallel:1, RS-232:1, PS/2: 2, USB: 4, RJ-45:1 Audio in:1, Audio out:1, MIC in:1

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EMC Lab : #584 Sangwhal-ri, Kanam-myon, Yoju-kun, Kyounggi-do, 469-885, Korea Tel:82-31-885-0072, Fax:82-31-885-0074 ETLQP-21-F22-0

Support Unit 2 –Keyboard (COMPAQ)

FCC ID	: N/A (DoC)
Model Name	: KB-9963
Serial No.	: B26960GBUKO13F
Manufacturer	: COMPAQ
Power Supply Type	: N/A
Power Cord	: N/A
Data Cable	: Shielded, 1.5m

Support Unit 3 – Mouse (LOGITECH)

FCC ID	: DZL211029
Model Name	: M-S34
Serial No.	: LZC01002314
Manufacturer	: LOGITECH
Power Supply Type	: N/A
Power Cord	: N/A
Data Cable	: None-Shielded, 1.2m

Support Unit 4- USB Mouse (N/A)

FCC ID	: N/A
Model Name	: HL898W
Serial No.	: HL08011837
Manufacturer	: N/A
Power Supply Type	: N/A
Power Cord	: N/A
Data Cable	: None-Shielded, 1.2m

Support Unit 5 – Serial Mouse (PETRA)

FCC ID	: JKGMUS5S01
Model Name	: MUS5S
Serial No.	: E183027
Manufacturer	: PETRA
Power Supply Type	: N/A
Power Cord	: N/A
Data Cable	: Shielded, 1.2m

Support Unit 6 – DVD PLAYER (Alpha Cast)

FCC ID	: N/A
Model Name	: DVDP-M100
Serial No.	: N/A
Manufacturer	: Alpha Cast
Power Supply Type	: DC 12V From Adaptor
Power Cord	: Non-Shield, 1.5m
Data Cable	: A/V Cable (1.2m) : 3EA, Audio Cable (1.2m) : 1EA, S-Video (1.2m) : 1EA

Support Unit 7 – DVD PLAYER (ellion)

FCC ID	: N/A
Model Name	: Dva-4000
Serial No.	: N/A
Manufacturer	: ellion
Power Supply Type	: Switching
Power Cord	: Non-Shield, 1.5m
Data Cable	: A/V Cable (1.2m) : 3EA, Audio Cable (1.2m) : 1EA, S-Video (1.2m) : 1EA

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5. TEST RESULTS

5.1 Summary of Test Results

The measurement results were obtained with the EUT tested in the conditions described in this report. Detailed measurement data and plots showing the maximum emission of the EUT are reported.

FCC Rule	Measurement Required	Result
15.107	Conducted Emission Measurement	**Passed by 6.3 dB**
15.109	Radiated Emission Measurement	**Passed by 3.2 dB**
15.111	Antenna Power Conduction Measurement	☒ met ☐ not met ☐ N/A
15.117(f)	Picture Sensitivity	☒ met ☐ not met ☐ N/A
15.117(g)	Noise Figure Measurement	☒ met ☐ not met ☐ N/A
15.119	Closed caption decoder requirements	☒ met ☐ not met ☐ N/A
15.120	Program blocking technology requirements	☒ met ☐ not met ☐ N/A

The data collected shows that the **Erae Electronics Industry Co., Ltd. / PDP TV / EPT-42Q0AN** complied with technical requirements of above rules part 15.107 and 15.109 Class B Limits and CISPR Publication 22 & Part 15 Subpart B Unintentional radiators and the TV Broadcast Receiver section of the FCC Rules.

The equipment is not modified anything, mechanical or circuits to improve EMI status during a measurement. No EMI suppression device(s) was added and/or modified during testing.

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5. TEST RESULTS

5.2.1 Conducted Emissions Measurement

EUT	PDP TV / EPT-42Q0AN (SN :N/A)
Limit apply to	FCC Part 15. 107(CISPR Pub.22 Class B)
Test Date	January 11, 2006
Operating Condition	1280 * 1024 Vf = 75Hz, Full "H" pattern display with MP3 file play mode
Environment Condition	Humidity Level : 35 % R.H., Temperature : 15 ℃
Result	Passed by 6.3 dB

Conducted Emission Test Data

The following table shows the highest levels of conducted emissions on both polarizations of hot and neutral line.

Detector mode: CISPR Quasi-Peak mode (6dB Bandwidth : 9 kHz)

Frequency [MHz]	Result [dBμV]		Phase (*H/**N)	Limit [dBμV]		Margin [dB]	
	Quasi-peak	Average		Quasi-peak	Average	Quasi-peak	Average
0.156	52.3	37.9	H	65.7	55.7	13.4	17.8
0.176	48.3	35.9	H	64.7	54.7	16.4	18.8
0.333	38.3	29.0	H	59.4	49.4	21.1	20.4
0.378	41.3	32.9	H	58.3	48.3	17.0	15.4
0.434	35.2	26.5	H	57.2	47.2	22.0	20.7
0.548	36.7	27.6	H	56.0	46.0	19.3	18.4
1.522	44.3	32.0	H			11.7	14.0
1.957	49.7	35.9	H			6.3	10.1
2.390	39.9	28.3	H			16.1	17.7
2.757	35.1	25.9	H			20.9	20.1
8.892	35.9	28.7	H	60.0	50.0	24.1	21.3
9.780	41.7	31.0	H			18.3	19.0
11.085	40.7	33.1	H			19.3	16.9
12.710	37.2	30.3	H			22.8	19.7
18.184	34.2	27.6	H			25.8	22.4

NOTES: **1. * H: HOT Line , **N: Neutral Line**
2. Margin value = Limit – Result
3. Measurement were performed at the AC Power Inlet in the frequency band of 150 kHz ~ 30 MHz according to the FCC Part 15 and CISPR 22 Class B

Test Engineer: Jae Young, Kwon

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5. TEST RESULTS

5.2.2 Conducted Emissions Measurement

EUT	PDP TV / EPT-42Q0AN (SN :N/A)
Limit apply to	FCC Part 15. 107(CISPR Pub.22 Class B)
Test Date	January 11, 2006
Operating Condition	Color Bar Display mode
Environment Condition	Humidity Level : 35 % R.H., Temperature : 15 ℃
Result	Passed by 9.0 dB

Conducted Emission Test Data

The following table shows the highest levels of conducted emissions on both polarizations of hot and neutral line.

Detector mode: CISPR Quasi-Peak mode (6dB Bandwidth : 9 kHz)

Frequency [MHz]	Result [dBμV]		Phase (*H/**N)	Limit [dBμV]		Margin [dB]	
	Quasi-peak	Average		Quasi-peak	Average	Quasi-peak	Average
0.167	49.6	33.7	N	65.1	55.1	15.5	21.4
0.193	48.1	41.3	N	63.9	53.9	15.8	12.6
0.354	37.7	28.0	N	58.9	48.9	21.2	20.9
0.385	40.4	32.6	N	58.2	48.2	17.8	15.6
0.415	38.4	28.6	N	57.5	47.5	19.1	18.9
2.874	46.8	37.0	N	56.0	46.0	9.2	9.0
3.046	43.1	35.4	N			12.9	10.6
3.473	39.4	31.7	N			16.6	14.3
4.088	38.3	31.3	N			17.7	14.7
4.374	41.6	35.0	N			14.4	11.0
5.591	36.4	29.6	N	60.0	50.0	23.6	20.4
8.935	40.1	32.8	N			19.9	17.2
9.663	44.7	33.5	N			15.3	16.5
10.986	43.9	36.0	N			16.1	14.0
12.545	41.1	34.1	N			18.9	15.9

NOTES: **1. * H: HOT Line , **N: Neutral Line**
2. Margin value = Limit – Result
3. Measurement were performed at the AC Power Inlet in the frequency band of 150 kHz ~ 30 MHz according to the FCC Part 15 and CISPR 22 Class B

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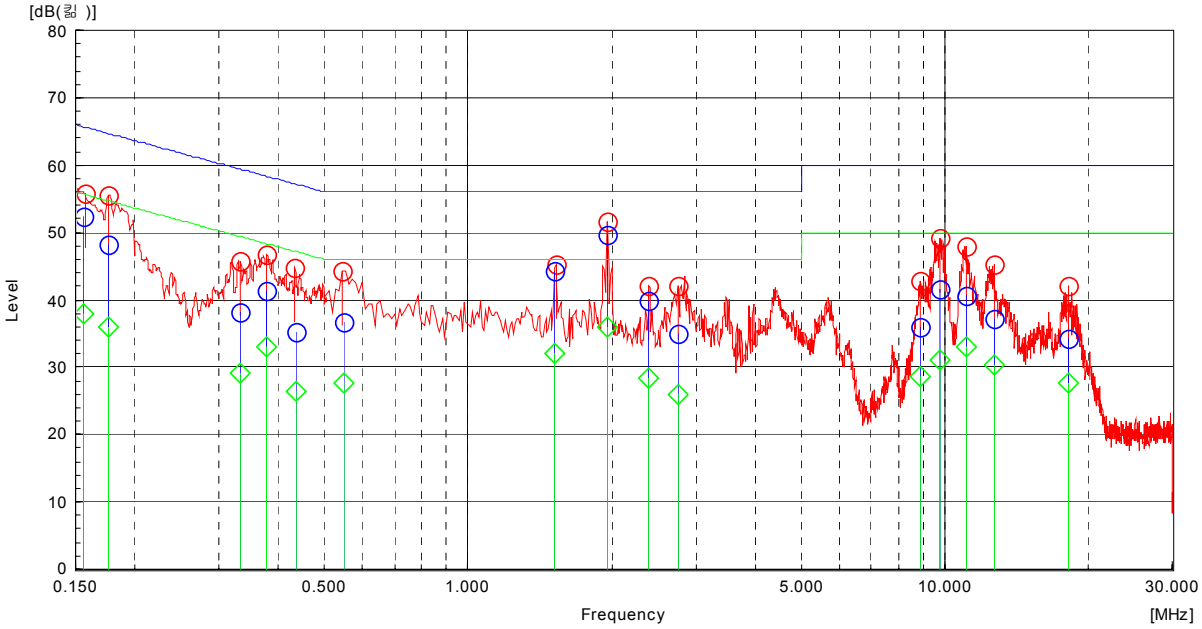
5. TEST RESULTS

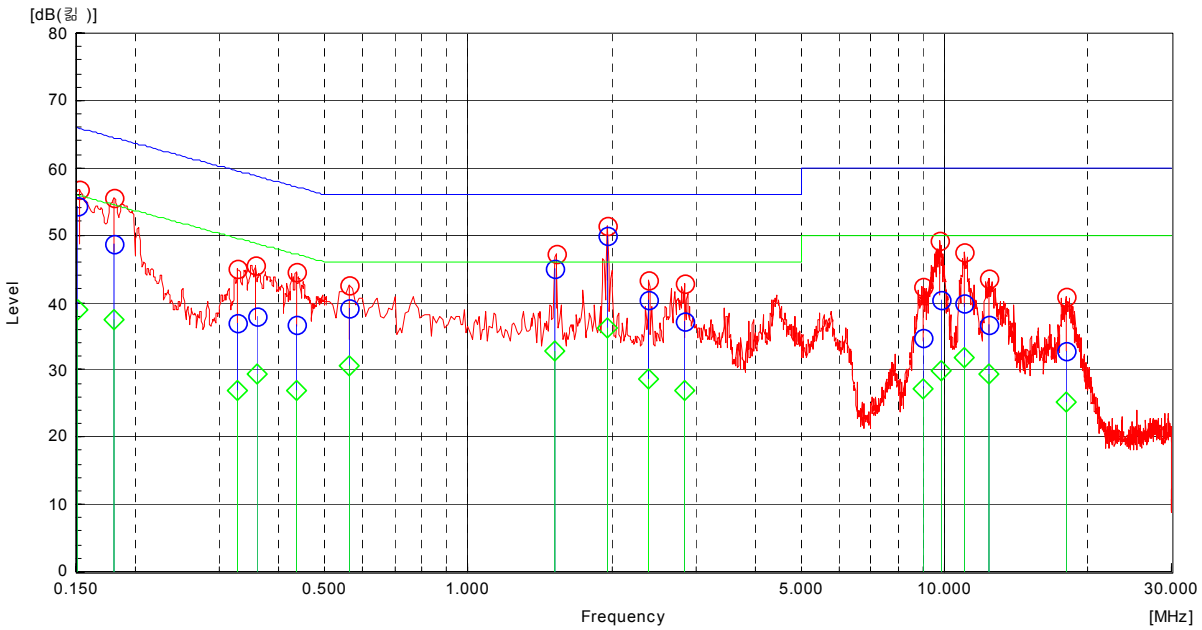
1280 * 1024 Vf = 75Hz, Full "H" pattern display with MP3 file play mode

Line: HOT Line

Limit : Quasi-Peak
Average



Line: Neutral Line



Quasi-peak Average

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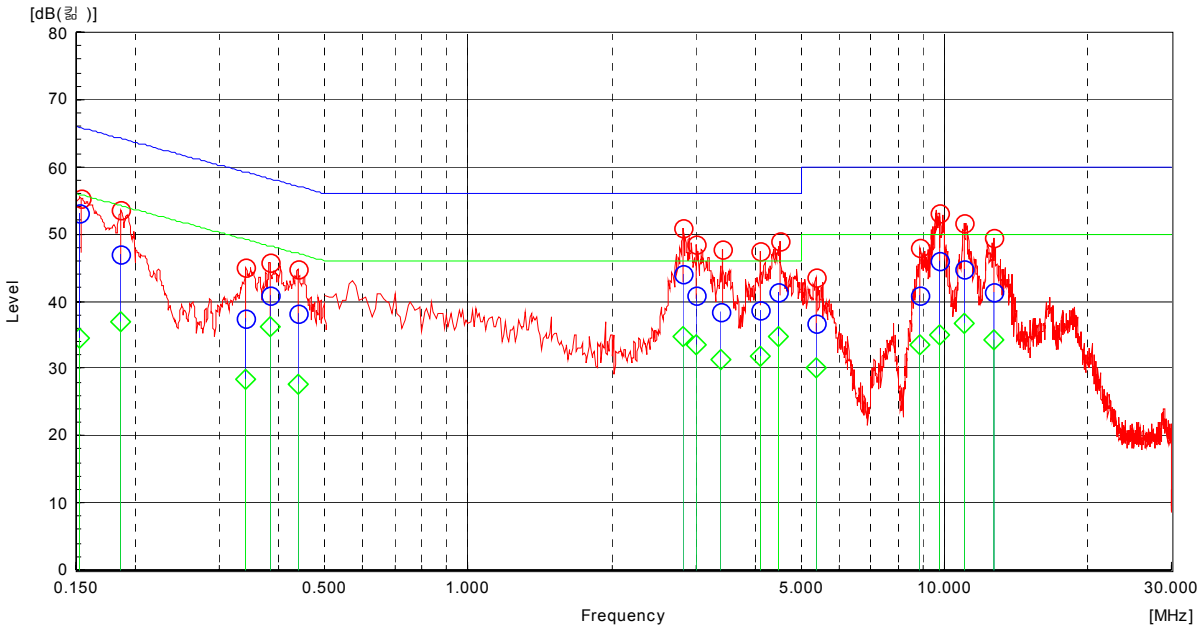
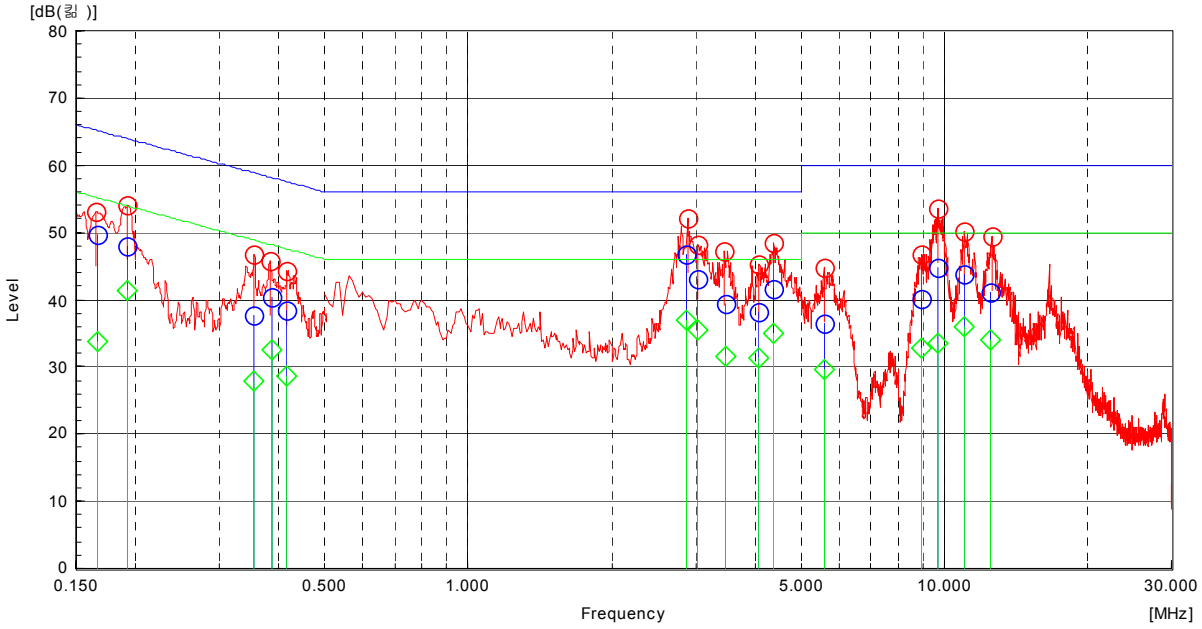
5. TEST RESULTS

Color Bar Display mode

Line: HOT Line



Line: Neutral Line



Quasi-peak Average

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5. TEST RESULTS

5.3.1 Radiated Emissions Measurement

EUT	PDP TV / EPT-42Q0AN (SN :N/A)
Limit apply to	FCC Part 15. 107(CISPR Pub.22 Class B)
Test Date	January 12, 2006
Operating Condition	1280 * 1024 Vf = 75Hz, Full "H" pattern display with MP3 file play mode
Environment Condition	Humidity Level : 34 % R.H., Temperature : 9 ℃
Result	Passed by 3.20 dB

Radiated Emission Test Data

The following table shows the highest levels of radiated emissions on both polarizations of horizontal and vertical.
Detector mode: CISPR Quasi-Peak mode (6dB Bandwidth: 120 kHz)

Frequency [MHz]	Reading [dBμV]	Polarization (*H/**V)	Ant. Factor [dB/m]	Cable Loss [dBμV]	Emission Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]
44.85	11.62	V	9.78	1.99	23.40	30.0	6.60
86.43	13.03	H	7.92	2.75	23.70	30.0	6.30
129.63	12.26	H	11.30	3.24	26.80	30.0	3.20
140.43	11.51	H	11.68	3.41	26.60	30.0	3.40
183.63	12.13	H	9.95	3.92	26.00	30.0	4.00
257.61	12.40	H	11.03	4.96	28.40	37.0	8.60
399.40	10.35	V	14.46	6.59	31.40	37.0	5.60
475.00	6.26	V	16.44	7.40	30.10	37.0	6.90
540.10	7.11	V	17.85	8.24	33.20	37.0	3.80
676.60	4.07	V	20.07	9.46	33.60	37.0	3.40

NOTES :*** H : Horizontal polarization , ** V : Vertical polarization**
Result = Reading + Antenna factor + Cable loss
Margin value = Limit - Result
The measurement was performed for the frequency range 30 MHz ~ 1000 MHz according to the CISPR 22 Class B

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5. TEST RESULTS

5.3.2 Radiated Emissions Measurement

EUT	PDP TV / EPT-42Q0AN (SN :N/A)
Limit apply to	FCC Part 15. 107(CISPR Pub.22 Class B)
Test Date	January 12, 2006
Operating Condition	Color Bar Display mode
Environment Condition	Humidity Level : 34 % R.H., Temperature : 9 ℃
Result	Passed by 3.20 dB

Radiated Emission Test Data

The following table shows the highest levels of radiated emissions on both polarizations of horizontal and vertical.
Detector mode: CISPR Quasi-Peak mode (6dB Bandwidth : 120 kHz)

Frequency [MHz]	Reading [dBμV]	Polarization (*H/**V)	Ant. Factor [dB/m]	Cable Loss [dBμV]	Emission Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]
35.40	15.77	V	9.11	1.52	26.40	30.0	3.60
45.12	10.61	V	9.79	2.00	22.40	30.0	7.60
81.57	10.74	H	7.45	2.41	20.60	30.0	9.40
128.55	12.32	V	11.26	3.23	26.80	30.0	3.20
133.14	9.98	V	11.43	3.30	24.70	30.0	5.30
418.30	8.02	V	14.96	6.82	29.80	37.0	7.20
514.90	6.20	H	17.36	7.84	31.40	37.0	5.60
533.10	7.26	H	17.71	8.13	33.10	37.0	3.90
580.00	5.33	H	18.37	8.70	32.40	37.0	4.60
643.70	4.78	H	19.57	9.25	33.60	37.0	3.40

NOTES: *** H : Horizontal polarization , ** V : Vertical polarization**
Result Level = Reading + Antenna factor + Cable loss
Margin value = Limit - Result
The measurement was performed for the frequency range 30 MHz ~ 1000 MHz according to the FCC Part 15 Class B

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5. TEST RESULTS

5.4 Antenna power conduction measurement

EUT	PDP TV / EPT-42Q0AN (SN :N/A)
Limit apply to	FCC Part15 Subpart B Section 15.111
Test Date	January 13, 2006
Operating Condition	CH 2~69
Environment Condition	Humidity Level : 41 %RH, Temperature : 21 ℃
Result	Passed

Antenna power conduction test data

Tuned Frequency [MHz]	Meter Reading [dBμV]	Correction Factor [dB]	Result [dBμV]	Limit [dBμV]	Margin [dB]
597.50	29.0	7.7	36.7	50.0	13.3
847.75	31.3	7.9	39.2		10.9
1500.00	26.6	8.6	35.2		14.8
2190.00	26.5	8.7	35.2		14.9
2885.00	27.5	8.8	36.3		13.8
3080.00	31.7	8.9	40.6		9.4
3310.00	29.4	8.9	38.3		11.7

NOTES :

1. The other frequencies has 10dB margin at least.
2. Result = Meter Reading + Correction Factor.
Margin value = Limit - Result
3. Measurements using the CISPR Quasi-peak mode and 1MHz resolution peak mode for above 1GHz, The limits are 2.0 nanowatts in the frequency range from 30 to 5000 MHz.

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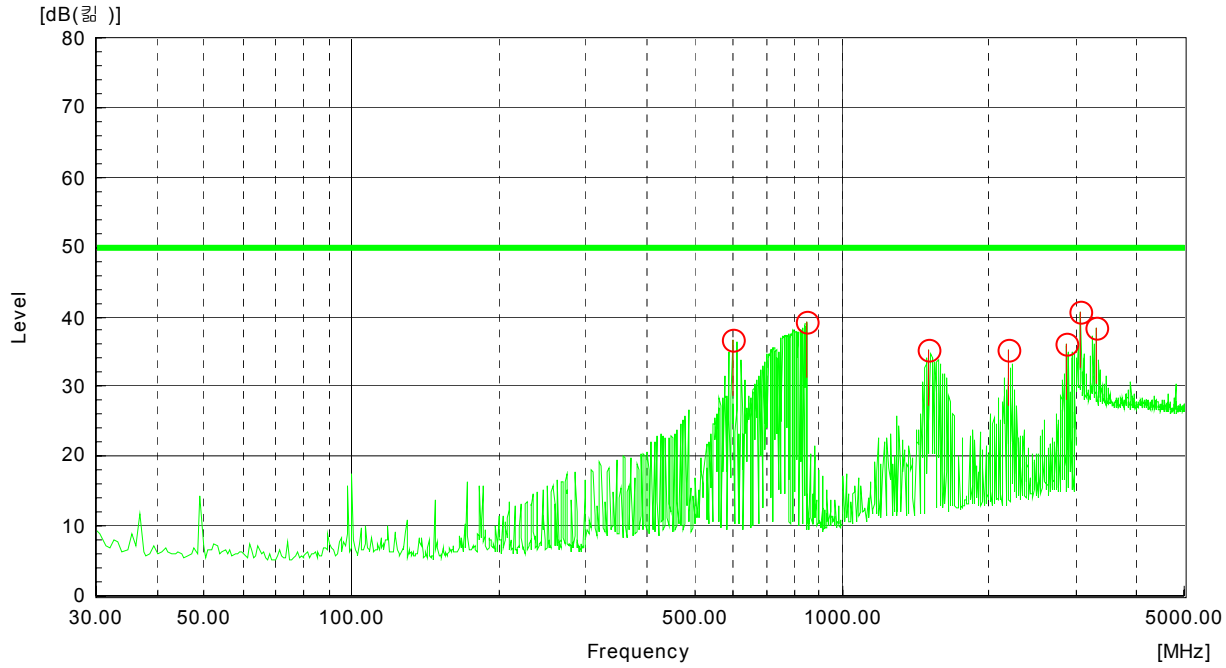
5. TEST RESULTS

Channel (CH 2 ~ 69)



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5. TEST RESULTS

5.5 Picture sensitivity

EUT	PDP TV / EPT-42Q0AN (SN :N/A)
Limit apply to	FCC Part15 Subpart B Section 15.117(f)
Test Date	January 13, 2006
Operating Condition	Color bar display
Environment Condition	Humidity Level : 44 %RH, Temperature : 21 ℃
Result	Passed

Picture sensitivity test data

Tuner Model name:

Measured Channel	Average Level [dB μV]	Result (dB)	Limit (dB)
VHF	18.40	4.00	< 8
UHF	22.40		

NOTES:

1. **Result = UHF band average value – VHF band average value**
2. **Measurements using 50/75 ohm matching transformer between spectrum analyzer and TV broadcast receiver.**

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5. TEST RESULTS

5.6 Noise figure measurement

Measured Channel	Limit (dB)
471.25	< 14
549.25	
723.25	
801.25	

NOTES :

1. **The limits shall not exceed 14 dB in the all television channels**

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6. SAMPLE CALCULATION

Sample Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor.
The basic equation with a sample calculation is as follows:

FS = RA + AF + CF

Where FS = Field Strength
RA = Receiver Amplitude
AF = Antenna Factor
CF = Cable Attenuation Factor

$dB(\mu V) = 20 \log_{10} (\mu V)$
$dB\mu V$ = dBm + 107

Example : @ 129.63 MHz

Class B Limit = 200 μV/m = 30 dB μV/m

Reading = 12.26 dB μV

Antenna Factor + Cable Loss = 11.30 + 3.24 = 14.54 dB μV/m

Total = 26.8 dB μV/m

Margin = 30 – 26.8 = 3.20 dB

= 3.20 dB below Limit

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7. List of test equipments used for measurements

	Test Equipment	Model	Mfg.	Serial No.	Cal. Due Date
☒	Spectrum Analyzer	E7402A	H.P	US39110107	06-10-17
☐	Spectrum Analyzer	R3261A	Advantest	21720033	06-10-17
☒	Receiver	ESVS 10	R & S	835165/001	06-04-07
☒	EMI TEST Receiver	ESPI	Rohde & Schwarz	100478	06-10-17
☐	Preamplifier	HP 8347A	HP	2834A00544	06-04-07
☒	LISN	3825/2	EMCO	9006-1669	06-04-06
☒	LISN	3825/2	EMCO	9208-1995	06-04-07
☐	TriLog Antenna	VULB9160	Schwarz Beck	3082	06-07-19
☒	LogBicon	VULB9165	Schwarz Beck	2023	06-07-05
☐	Dipole Antenna	VHAP	Schwarz Beck	964	06-06-24
☐	Dipole Antenna	VHAP	Schwarz Beck	965	06-07-05
☐	Dipole Antenna	UHAP	Schwarz Beck	949	06-06-24
☐	Dipole Antenna	UHAP	Schwarz Beck	950	06-07-05
☐	Broad-band Horn Antenna	BBHA 9120D	Schwarz Beck	227	06-04-04
☒	Turn-Table	DETT-03	Daeil EMC	-	N/A
☒	Antenna Master	DEAM-03	Daeil EMC	-	N/A
☐	Plotter	7440A	H.P	2725A 75722	N/A
☒	Chamber	DTEC01	DAETONG	-	N/A
☐	Thermo Hygrograph	3-3122	ISUZU	3312201	06-04-07
☐	BaroMeter	-	Regulus	-	06-03-15

End of Test Report

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