



EMISSION TEST REPORT

Test report file No. : **01-IST-143/FB**Date of issue : Nov. 14, 2001Model / Type No. : Linky☒ Basic ☐ AlternateKind of product : PC CameraBrand name : Core LogicApplicant : Core Logic, Inc.Manufacturer : Core Logic, Inc.License holder : Core Logic, Inc.Address : 6th Fl., City Air Tower, 159-9, Samsung-dong, Kangnam-ku, Seoul, Korea**Test result** according to the regulation(s)☒ Positive ☐ Negative

at page 3.

This test report with appendix consists of 14 pages.

The test result only responds to the tested sample (EUT No : IST-011016262).

It is not allowed to copy this report even partly without the allowance of the Test Laboratory.

This equipment is complied with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-1992.

DIRECTORY

A) Documentation.

Page

Directory	<u>2</u>
Test regulations	<u>3</u>
Environmental Conditions	<u>3</u>
Test Conditions	<u>4 ~ 5</u>
Equipment under Test	<u>6</u>
Test Result	<u>7</u>
Test-setup (Figures)	<u>8</u>
Summary	<u>14</u>

B) Test Data.

Conducted emissions (Mains)	: 450 kHz - 30 MHz	<u>9 ~ 11</u>
Radiated emissions	: 30 MHz – 1 GHz	<u>12 ~ 13</u>

C) Appendix

TEST REGULATIONS

The tests were performed according to the following regulations ;

- - FCC Part 15, Subpart B (Unintentional Radiators, Class B)

Information of Test Laboratory

IST EMC Lab.

San 21-8 Goan-Ri, Baekam-Myun, Yongin-Si, Kyunggi-Do, Korea

International - Tel : 82-31 - 333 - 4093. Fax : 82-31 - 333 - 4094.

Domestic - Tel : 031 - 333 - 4093. Fax : 031 - 333 - 4094.

ENVIRONMENTAL CONDITIONS

Temperature	<u>20</u>
Humidity	<u>40</u> %
Atmospheric pressure	<u>1000</u> mbar

TEST CONDITIONS

The **measurement of the conducted emissions (Interference voltage)** was performed in a shielded room.

Test location :
☒ Shielded room. No.1

☐ Compact chamber 2

Used testing instruments :

Name	Type	Manufacturer	Calibration. Date	Serial Number
ESH 3	Test Receiver	Rohde & Schwarz	Jun. 16, 2001	861742/015
3725/2	LISN	EMCO	Jul. 30, 2001	9101-2068
KNW-407	LISN	Hyup-Rip	Jul. 26, 2001	8-883-10
ESH 3-Z2	Pulse Limiter	Rohde & Schwarz	Jul. 13, 2001	357.8810.52

Test - accessories :

Type	Manufacturer
Aneroid Barometer	Sato
Hygrometer	Sato

Measurement Procedures :

Conducted emissions measurements were made in accordance with ANSI C-63.4-1992, "Method of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz". The measurement were performed over the frequency range of 0.45MHz to 30MHz using a 50Ω/50uH LISN as the input transducer to an EMI/Field Intensity Meter. The measurements were made with the detector set for "Peak" amplitude within an IF bandwidth of 10kHz or for "quasi-peak" within a bandwidth of 9kHz.

All used test-instruments as well as the test-accessories are calibrated regularly.

Test engineer :


H. J. Yoon / Research Engineer
IST EMC Lab.

The **measurement of the radiated emissions (Electric field)** in the frequency range from 30 MHz to 1GHz was performed in horizontal and vertical antenna polarization at a open-site which meet the site attenuation requirement of ANSI C63.4-1992 and a test distance of :

Location : ☒ Open Site No. 1 ☐ Open Site No. 2 ☐ Open Site No. 3
 Distance : ☒ 3 meters ☐ 10 meters

Used testing instruments :

Name	Type	Manufacturer	Calibration. Date	Serial Number
ESVP	Test Receiver	Rohde & Schwarz	Jun. 12, 2001	861744/018
VULB 9160	Antenna	Schwarzbeck	Jun. 04, 2001	3048

Test - accessories :

Type	Manufacturer
Aneroid Barometer	Sato
Hygrometer	Sato

Measurement procedures

Radiated measurements were in accordance with ANSI C63.4-1992 "Method of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz". The measurements were performed over the frequency range of 30MHz to 1GHz using antenna as the input transducer to a EMI/Field Intensity Meter. The measurements were made with the detector set for "quasi-peak" within a bandwidth of 120kHz.

All used test-instruments as well as the test-accessories are calibrated regularly.

Test engineer :



H. J. Yoon / Research Engineer
IST EMC Lab.

EQUIPMENT UNDER TEST

Equipment Description :

Sensor	: 1/3" Color VGA CMOS Image Sensor
Pixel	: CLP 110 : 640(H) x 480(V) CLP 120 : 352(H) x 288(V)
Exposure	: Automatic
Min. Illumination	: 5lux
Lens	: CLP 110 : F2.4, f=5.58 CLP 120 : F2.4, f=4.30
Angle	: CLP 110 : 64.5°, CLP 120 : 58.95°
Dimension (mm)	: 50 x 71.5 x 48 (W x H x D)
Weight	: 105g

EUT Type :

- ☒ Table-Top.
☐ Floor-Standing.
☐ Table-Top and Floor-Standing(Combination).

Operation – mode of the E.U.T. :

The equipment under test was operated during the measurement under following conditions :

- ☐ Standby.
☒ Operational Condition : PC camera (EUT), which is connected to PC via USB port, is taking a picture at real time and displaying it on monitor during the test.

Configuration of the equipment under test :

Following peripheral devices and interface cables were connected during the measurement :

Equipment	Type	Brand	Serial No
PC	Brio BA600/550	HP	SG01301176
Monitor	529B	Daewoo	GC95510077
Keyboard	SK-2502C	HP	M000375059
Printer	A0302384	Northern Telecom	26633S60168
Mouse1	M-S48A	HP	LZA00850320
Mouse2	M-M28	Logitech	LCA53305547

Connecting Interface Cables :

- Unshielded AC power cable : 1.8 m
 - Shielded monitor's signal cable : 1.5 m
 - Shielded printer's signal cable : 1.8 m
 - Unshielded USB cable of EUT : 1.5 m
-

TEST RESULT

Conducted emissions : 450 kHz - 30 MHz

The requirements are.

☒ KEPT

☐ NOT KEPT

Min. limit margin

7.2 dB at 0.588 MHz

Remarks : See test-graph to be attached at pages 9 ~ 11.

Radiated emissions (electric field) 30 MHz - 1000 MHz

The requirements are.

☒ KEPT

☐ NOT KEPT

Min. limit margin

4.8 dB at 48.0 MHz

Remarks : See test-data at page 12 ~ 13.

Test Set-Up (Type : Linky)

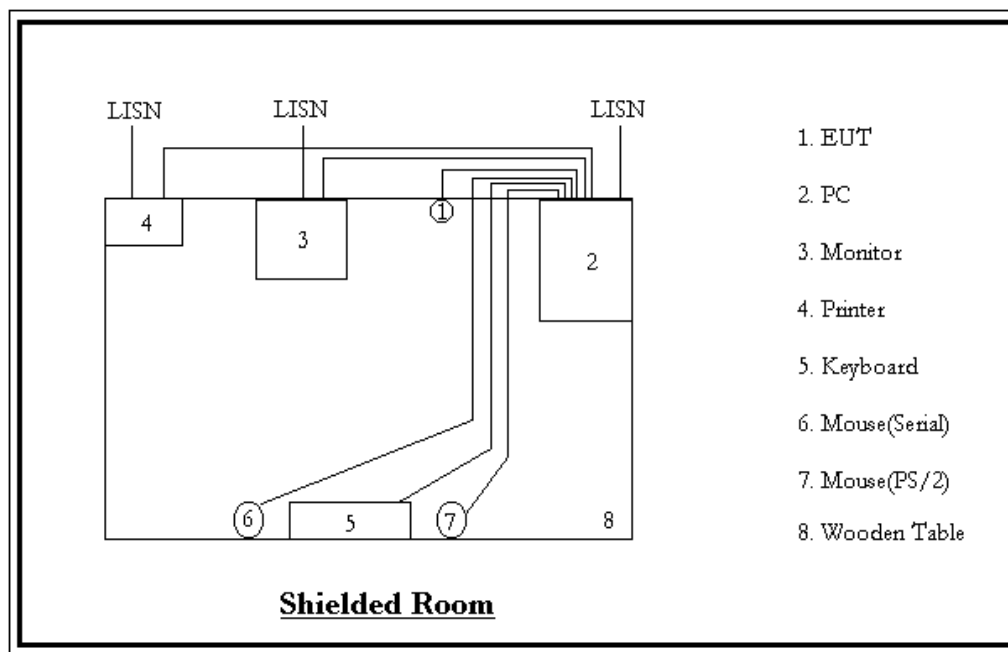


Figure 1 : Conducted emission 450kHz ~ 30MHz

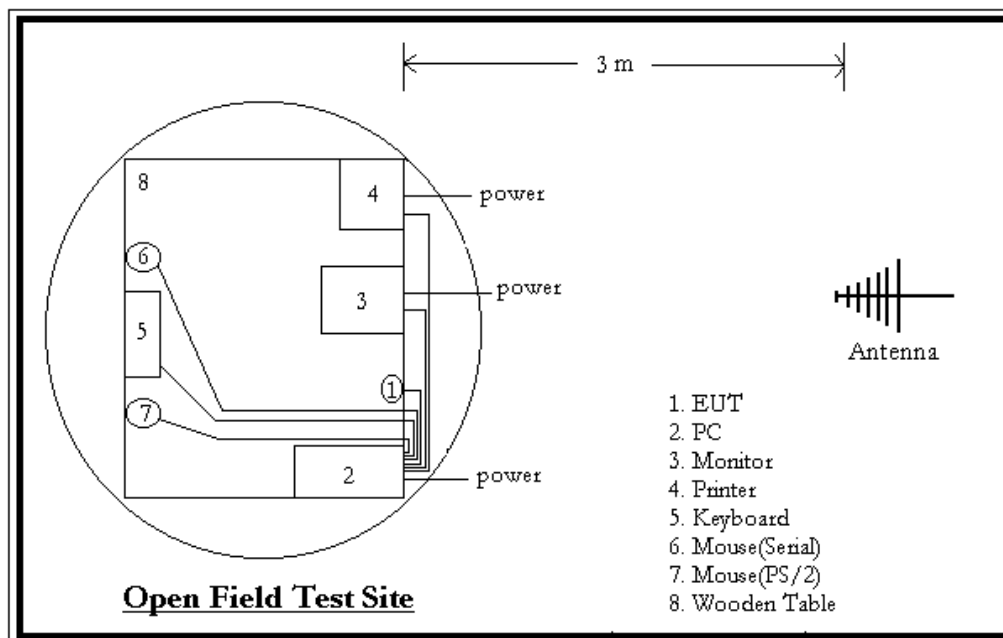


Figure 2 : Radiated emission 30MHz ~ 1000MHz

Conducted Emission Test Data

Type : Linky
 Manufacturer : Core Logic, Inc.
 Operation mode : Taking and displaying a picture
 Date : Nov. 14, 2001

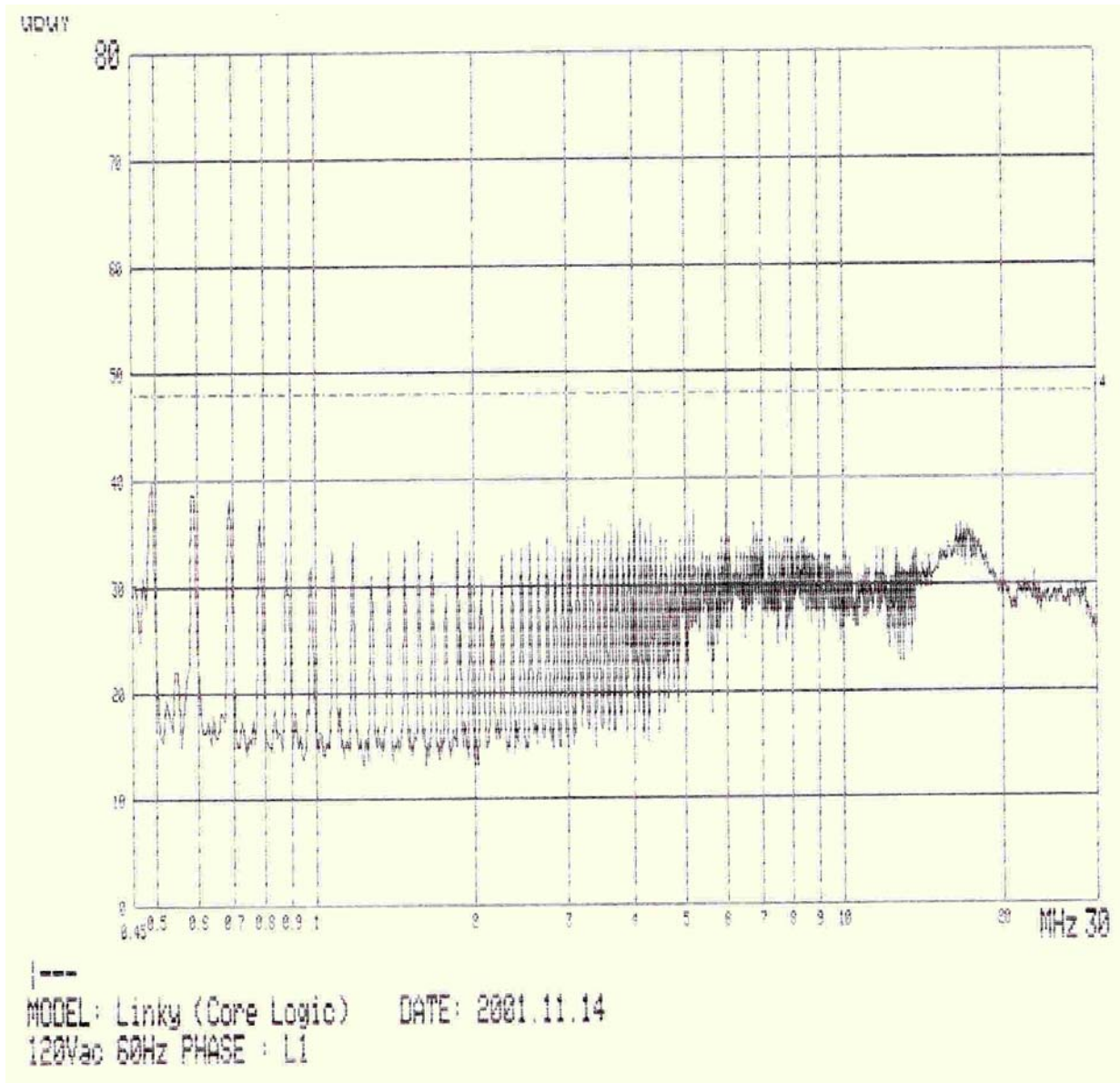
Highest Emissions relative to the limit

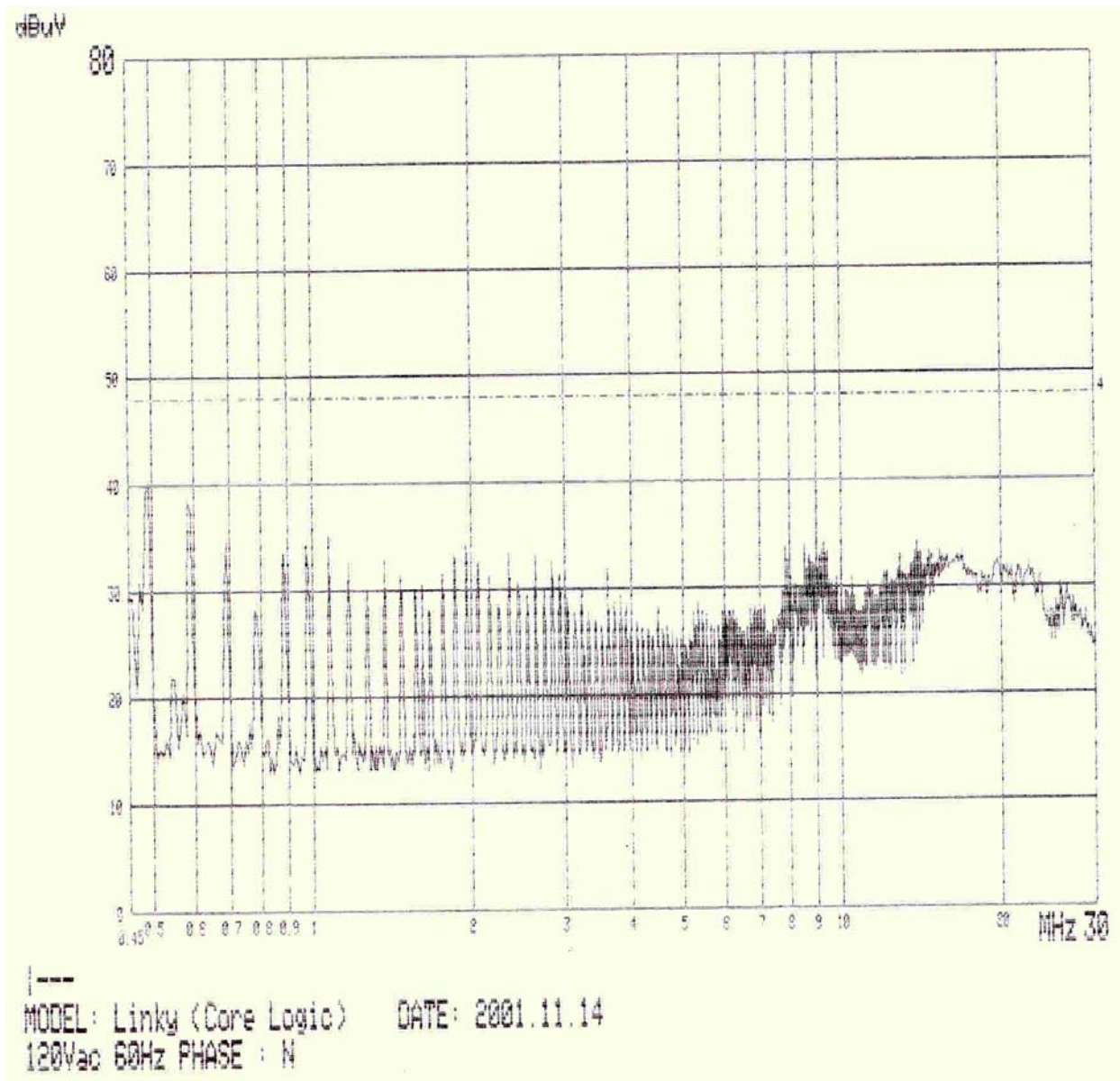
Frequency [MHz]	Reading [dBμV]	Insertion loss [dB]	Phase (L1/N)	Result [dBμV]	Limit [dBμV]	Margin [dB]
0.490	39.0	0.8	L1	39.8	48.0	8.2
0.588	40.0	0.8		40.8	48.0	7.2
0.688	38.9	0.8		39.7	48.0	8.3
3.327	34.7	0.8		35.5	48.0	12.5
0.490	40.4	0.8	N	41.2	48.0	6.8
0.492	39.9	0.8		40.7	48.0	7.3
0.588	39.8	0.8		40.6	48.0	7.4
9.315	33.5	0.8		34.3	48.0	13.7
Cable loss are less than 0.1 dB						

*L1 : Live Line

**N : Neutral Line

*** Please refer to data graphs at page 10 ~ 11

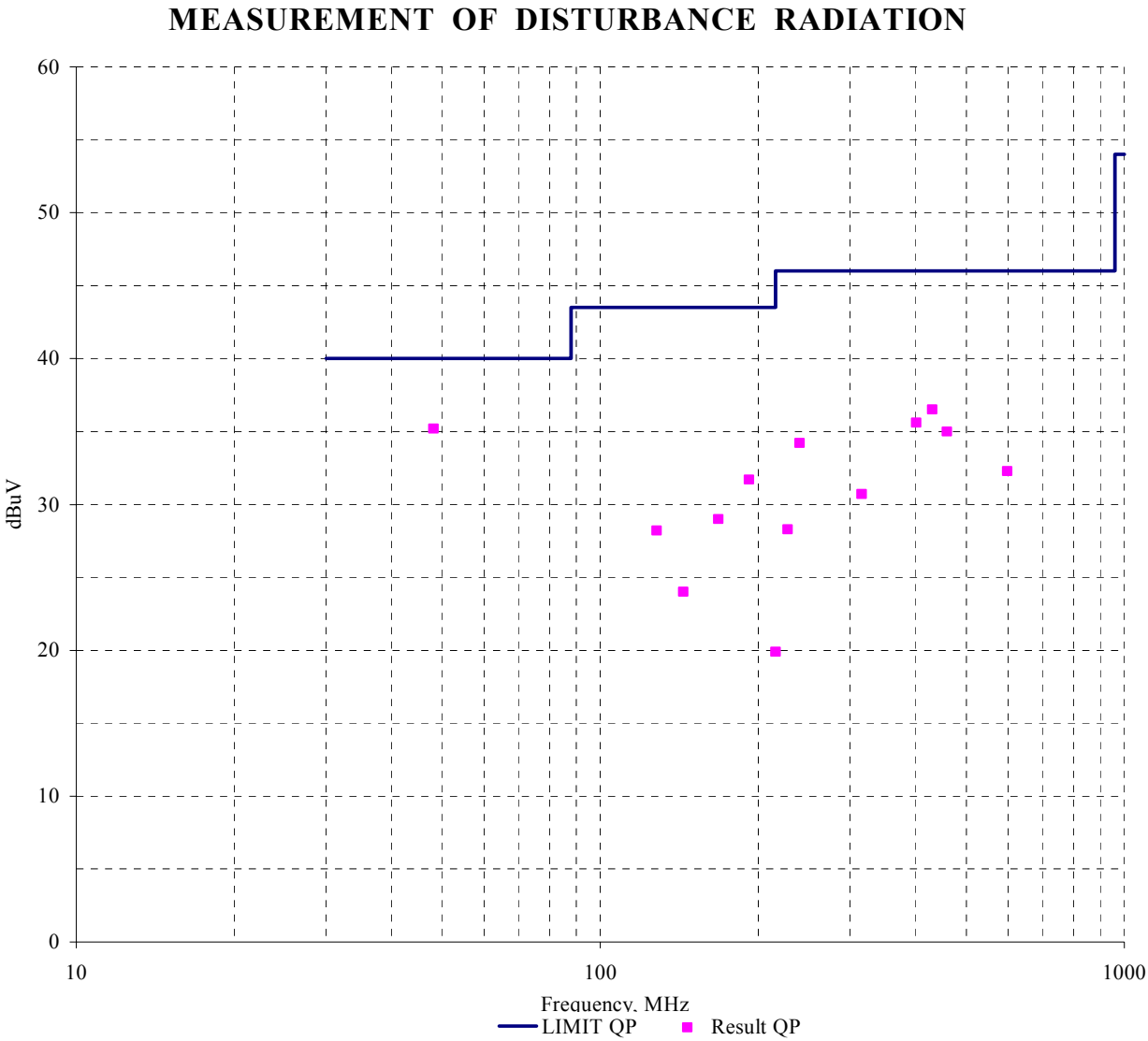




Radiation Test Data

Type : Linky
 Manufacturer : Core Logic, Inc
 Operation mode : Taking and displaying a picture
 Test distance : 3 m
 Antenna : VULB9160
 Date : Oct. 25, 2001.

Freq. [MHz]	Reading [dBuV]	Antenna Factor [dB]	Cable Loss [dB]	Angle [deg]	Height [cm]	Polar [H/V]	Result [dBuV]	Limit [dBuV]	Margin [dB]
48.0	23.7	10.2	1.3	177	110	V	35.2	40.0	4.8
128.0	15.6	10.5	2.1	188	115	V	28.2	43.5	15.3
144.0	10.0	11.8	2.2	344	114	V	24.0	43.5	19.5
168.0	14.3	12.3	2.4	354	122	V	29.0	46.0	14.5
192.0	20.1	9.1	2.5	348	121	V	31.7	43.5	11.8
216.0	8.8	8.4	2.7	186	132	V	19.9	46.0	26.1
227.5	16.2	9.3	2.8	182	122	V	28.3	46.0	17.7
240.0	21.0	10.3	2.9	186	125	V	34.2	46.0	11.8
315.0	15.6	11.7	3.4	345	151	V	30.7	46.0	15.3
400.8	18.0	13.3	4.3	350	114	V	35.6	46.0	10.4
429.5	18.4	13.7	4.4	160	110	V	36.5	46.0	9.6
458.9	16.5	14.0	4.5	182	132	V	35.0	46.0	11.0
597.5	10.8	16.8	4.7	13	122	V	32.3	46.0	13.7



SUMMARY

GENERAL REMARKS :

The equipment is not modified anything, mechanical or circuit to improve EMI status during a measurement and complied the regulation "Part 15 subpart B Class B of CFR 47"

FINAL JUDGMENT :

The requirements according to the technical regulations are

☒ Kept ☐ Not kept

The equipment under test does

☒ Fulfill the general approval requirements mentioned on page 3.
☐ Not fulfill the general approval requirements mentioned on page 3.

Begin of testing : Oct. 15, 2001

End of testing : Nov. 14, 2001

Reviewed by :

For 

Joon H. Lee / EMC Manager
IST EMC Lab.

Approved by :



G. Chung / Chief of EMC Lab.