



EMISSION TEST REPORT

Test report file No. : **01-IST-142/FB** Date of issue : Nov. 15, 2001

Model / Type No. : DVC-500

☒ Basic ☐ Alternate

Kind of product : Digital Voice Camera

Brand name : VoiceCamII

Applicant : InterMagic, Corp.

Manufacturer : InterMagic, Corp.

License holder : InterMagic, Corp.

Address : 7F., Yoojin Bldg., 37-2, Daebang-dong, Dongjak-ku, Seoul, Korea

Test result according to the regulation(s)

☒ Positive ☐ Negative

at page 3.

This test report with appendix consists of 19 pages.

The test result only responds to the tested sample (EUT No : IST-011015273).

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.

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B) Test Data.

Conducted emissions (Mains)	: 450 kHz - 30 MHz	<u>10~12</u>
Radiated emissions	: 30 MHz – 1 GHz	<u>13~18</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>18</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 :


Y. J. Kim / 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 :



Y. J. Kim / Research Engineer
IST EMC Lab.

EQUIPMENT UNDER TEST

Equipment Description

The Equipment Under Test (EUT) is the **Digital Voice Camera of Intermagic corp.**

Power Requirement	DC 3V (AAA Size)
Power Consumption	260mW(Play) / 260mW(Rec) / 375mW(Photo)
Dimension	110mm x 45mm x 21mm(WxHxD)
Weight	80g (including 2pcs of battery)
USB Upload	Max 12Mbps
Recording Media	Built in 16MB Flash Memory
Voice Recording mode	DSPG TrueSpeech TM
Voice Input / Output	Speaker, Earphone, Microphone
Camera Resolution	130 Frames (640x480) / 500 Frames (320x240)
Camera Sensor	CMOS
Camera Video Format	JPEG

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 :
 - Upload files from EUT to PC
 - Play mode
 - Rec. mode

Configuration of the equipment under test :

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

Equipment	Type	Brand	Serial No
PC	Pavillion 8821	HP	KR1105100
Monitor	529B	Daewoo	GC95510077
Keyboard	5181	HP	BM10206995
Mouse	M-S48a	HP	LZA10201213

Connecting Interface Cables :

- Unshielded AC power cable : 1.8 m
- Shielded monitor's signal cable : 1.5 m
- Unshielded USB cable of EUT (with core) : 1.5 m
- Earphone cable (with core) : 1.17 m

TEST RESULT

Upload Mode :

Conducted emissions : 450 kHz - 30 MHz

The requirements are.

☒ KEPT

☐ NOT KEPT

Min. limit margin

10.1 dB

at 29.999 MHz

Remarks : See test data and graphs to be attached at pages 10 ~ 12.

The plots represent of peak measurement.

Radiated emissions (electric field) 30 MHz - 1000 MHz

The requirements are.

☒ KEPT

☐ NOT KEPT

Min. limit margin

3.0 dB

at 40.9 MHz

Remarks : See test-data at page 13 ~ 14.

Play Mode :

Radiated emissions (electric field) 30 MHz - 1000 MHz

The requirements are.

☒ KEPT

☐ NOT KEPT

Min. limit margin

5.2 dB

at 672.0 MHz

Remarks : See test-data at page 15 ~ 16.

Rec Mode :

Radiated emissions (electric field) 30 MHz - 1000 MHz

The requirements are.

☒ KEPT

☐ NOT KEPT

Min. limit margin

9.2 dB

at 672.0 MHz

Remarks : See test-data at page 17 ~ 18.

Test Set-Up
(Type : DVC-500, Upload Mode)

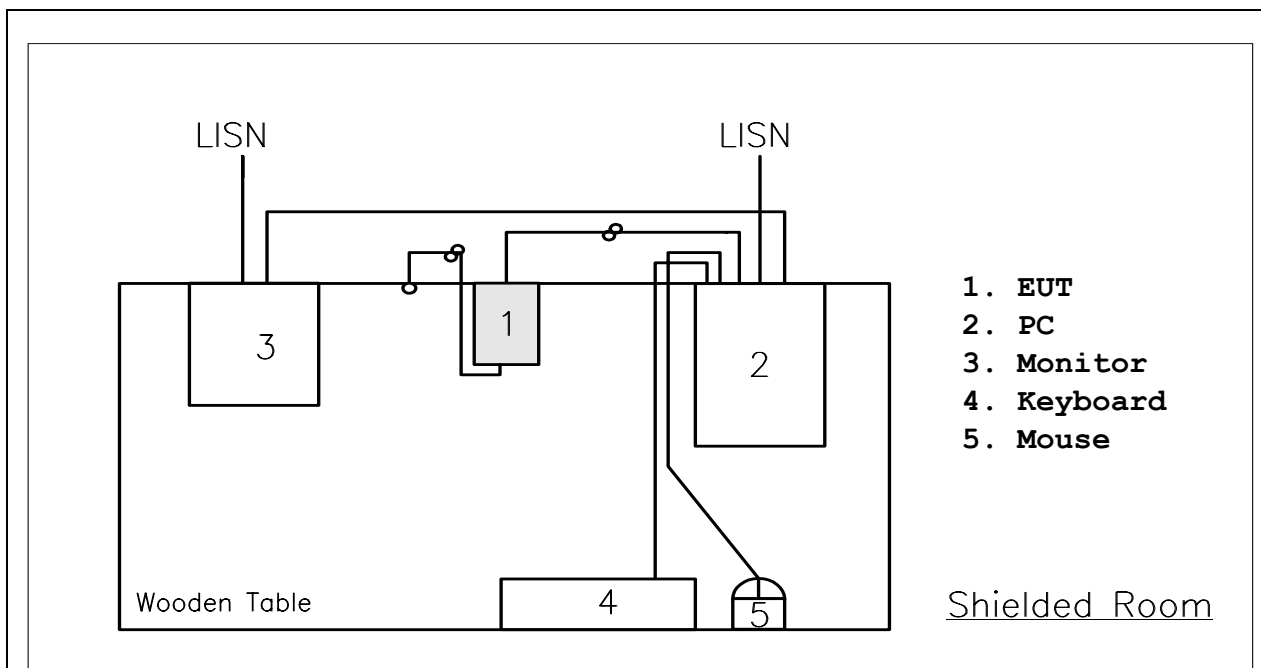


Figure 1 : Conducted emission 450kHz ~ 30MHz

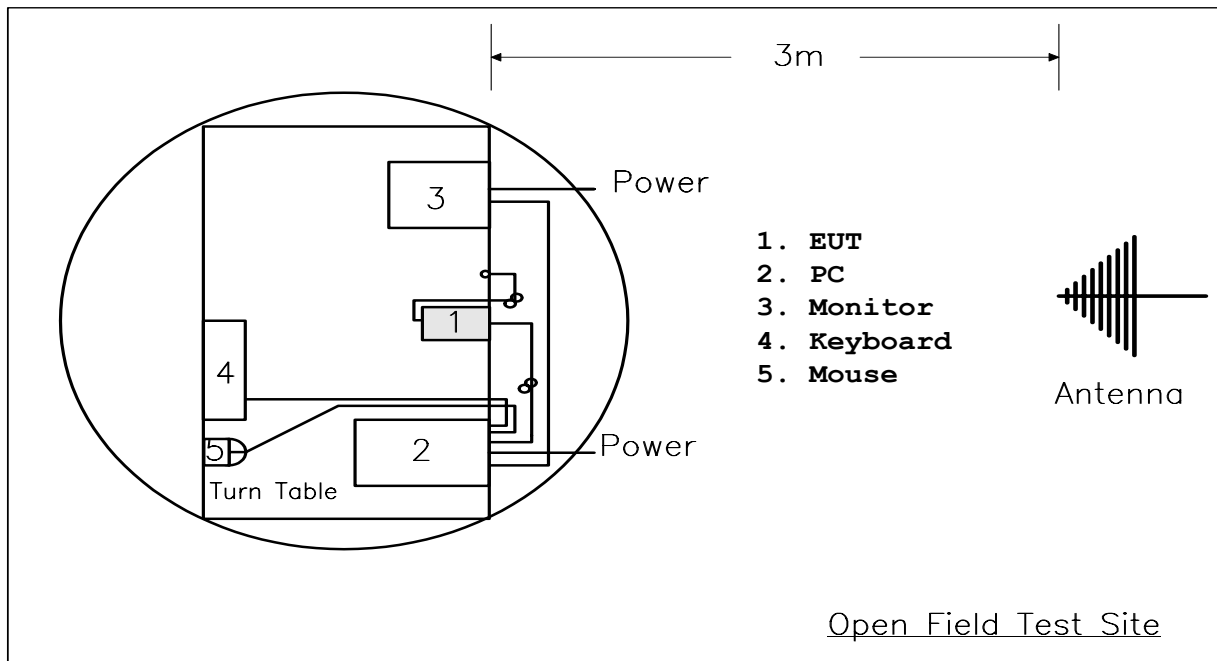
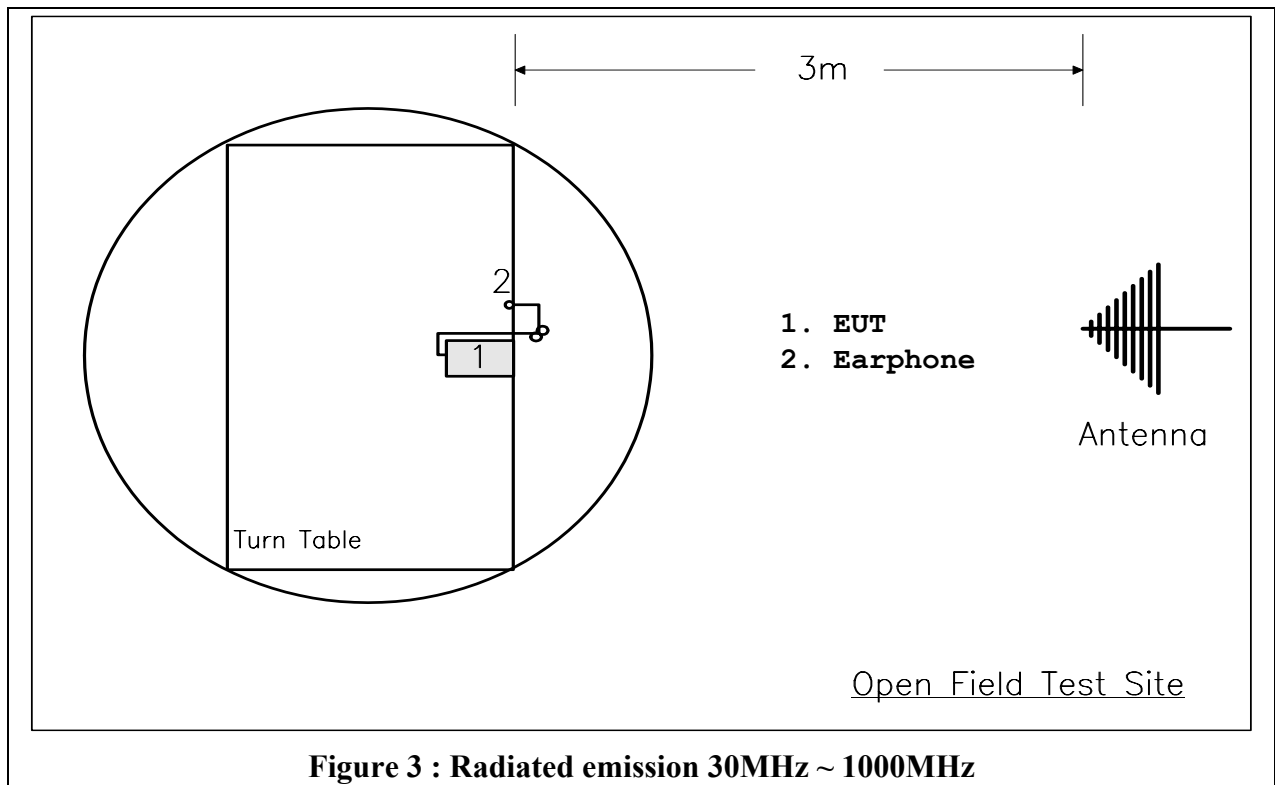


Figure 2 : Radiated emission 30MHz ~ 1000MHz

Test Set-Up
(Type : DVC-500, Play / Rec Mode)



Conducted Emission Test Data

Type : DVC-500
 Manufacturer : Intermagic Corp.
 Operation mode : Upload files from EUT to PC
 Date : Nov. 14, 2001

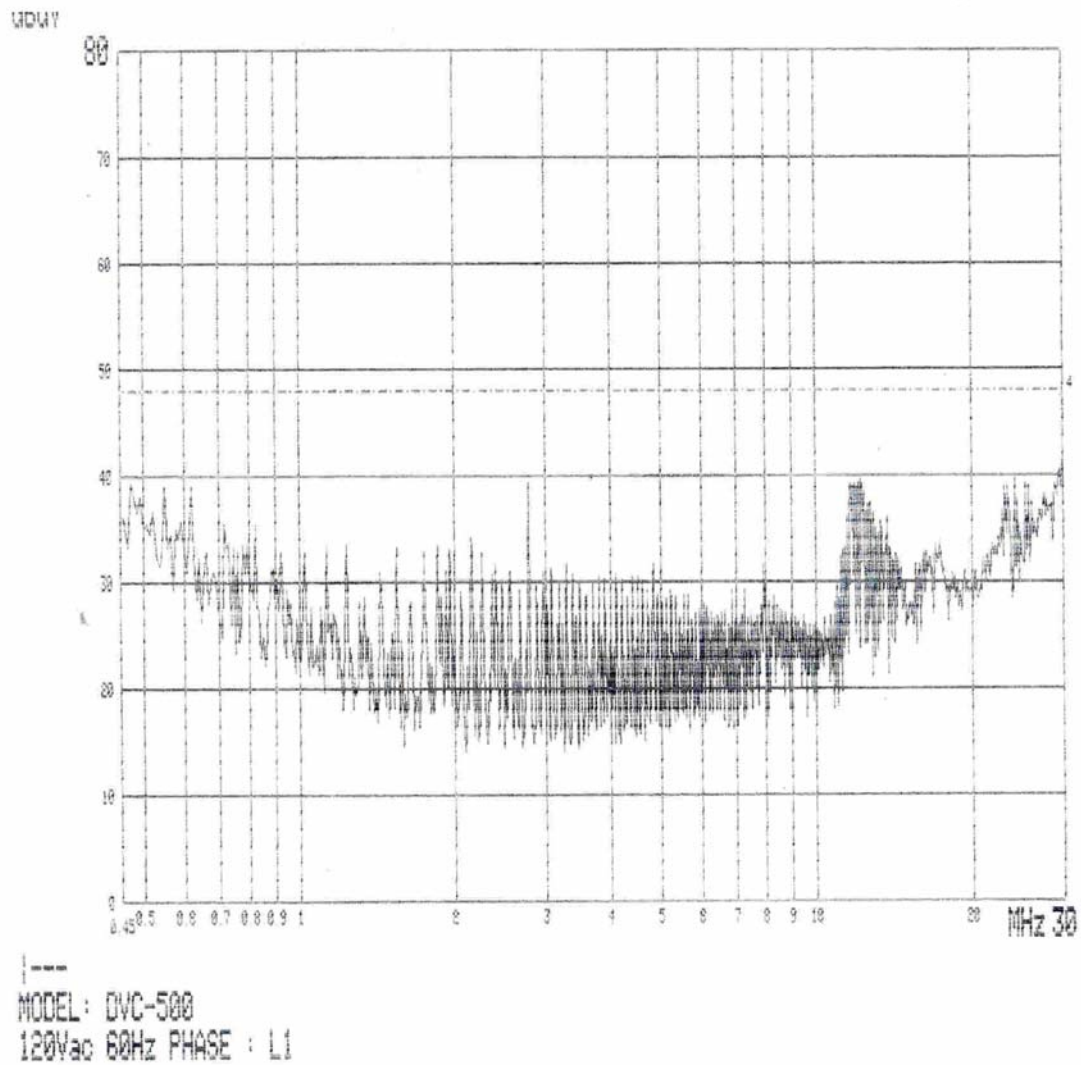
Highest Emissions relative to the limit

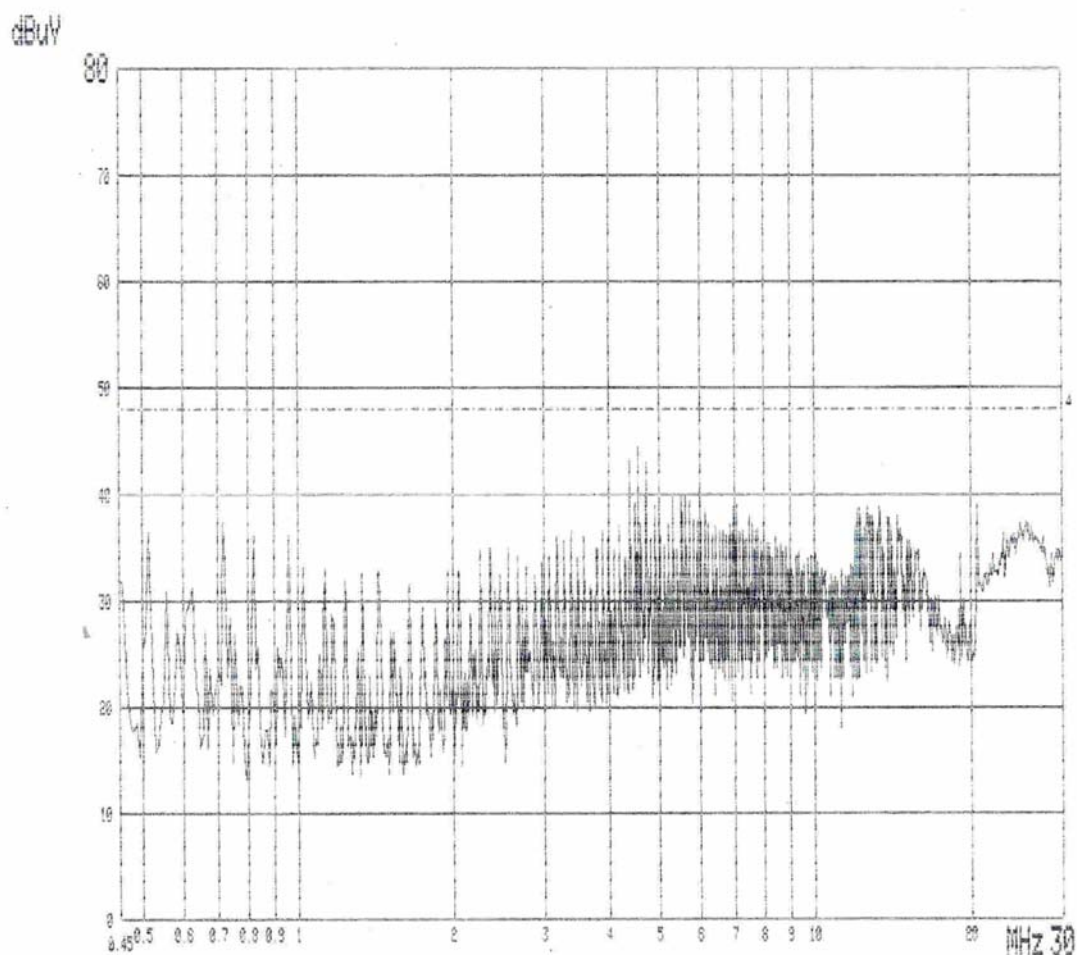
Frequency [MHz]	Reading [dBμV]	Insertion loss [dB]	Phase (L1/N)	Result [dBμV]	Limit [dBμV]	Margin [dB]
0.5116	33.2	0.8	L1	34.0	48.0	14.0
2.7769	34.8	0.8		35.6	48.0	12.4
2.8014	36.3	0.8		37.1	48.0	10.9
7.9840	30.2	0.8		31.0	48.0	17.0
11.9655	36.6	0.8		37.4	48.0	10.6
29.9999	37.1	0.8		37.9	48.0	10.1
0.5128	31.7	0.8	N	32.5	48.0	15.5
4.4125	32.1	0.8		32.9	48.0	15.1
4.5542	35.8	0.8		36.6	48.0	11.4
4.6541	33.2	0.8		34.0	48.0	14.0
12.6545	34.3	0.8		35.1	48.0	12.9
20.5673	35.4	0.8		36.2	48.0	11.8
Cable loss are less than 0.1 dB						

*L1 : Live Line

**N : Neutral Line

*** Please refer to data graphs at page 11 ~ 12



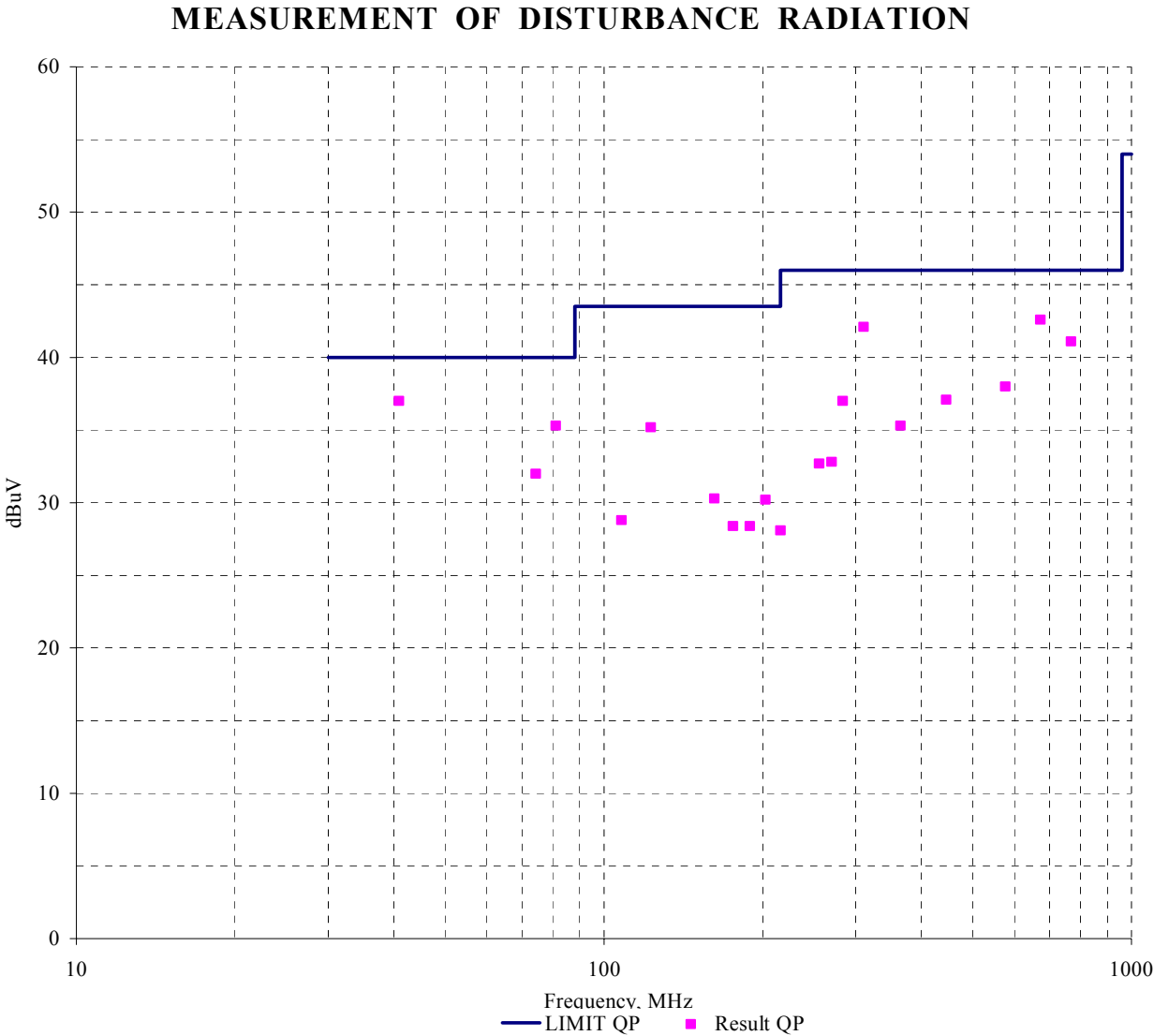


MODEL: DVC-500
120Vac 60Hz PHASE : N

Radiation Test Data

Type : DVC-500
 Manufacturer : Intermagic Corp.
 Operation mode : Upload files from EUT to PC
 Test distance : 3 m
 Antenna : VULB9160
 Date : Oct. 24, 2001.

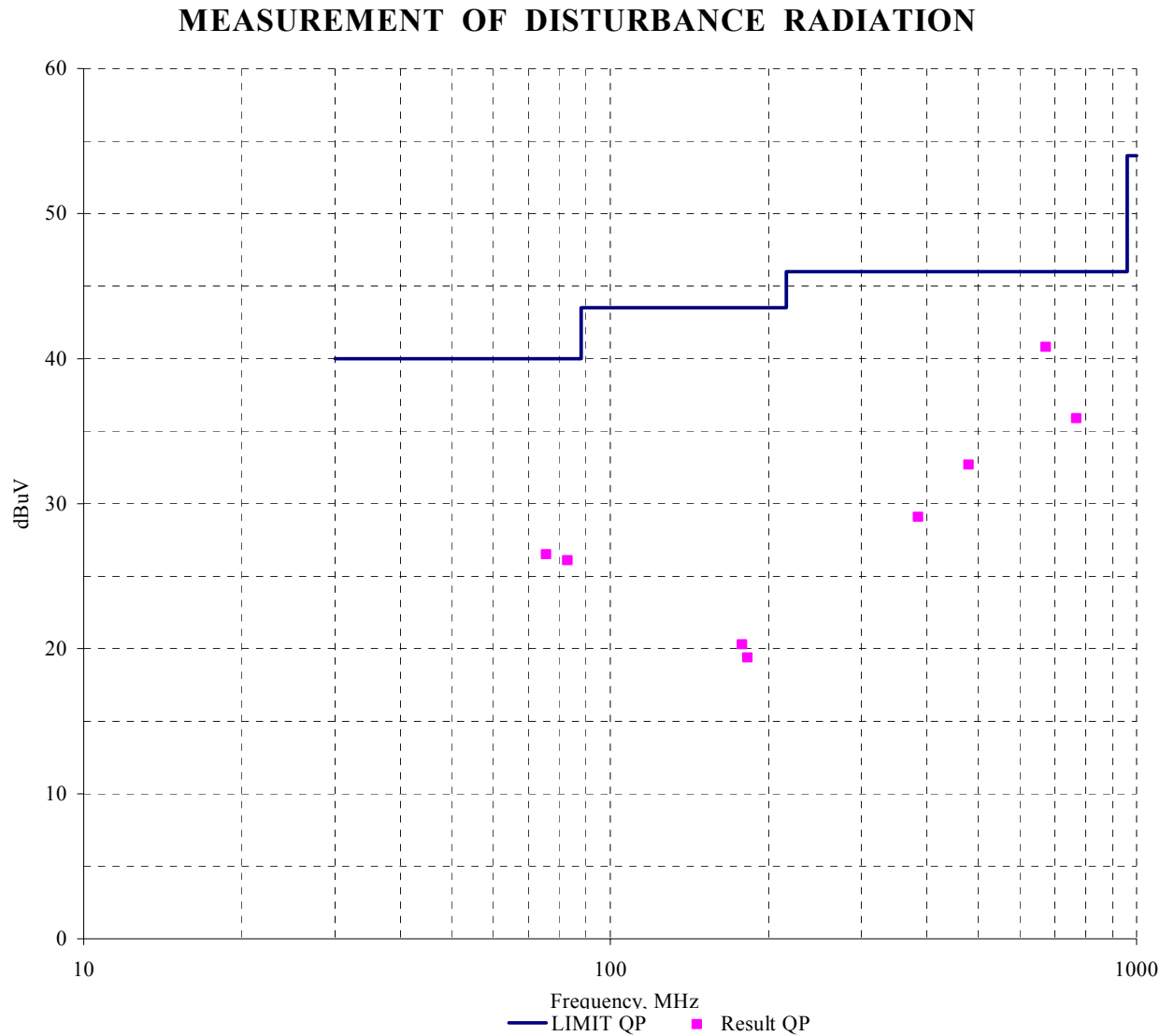
Freq. [MHz]	Reading [dBuV]	Antenna Factor [dB]	Cable Loss [dB]	Angle [deg]	Height [cm]	Polar [H/V]	Result [dBuV]	Limit [dBuV]	Margin [dB]
40.9	22.2	13.6	1.2	26	112	V	37.0	40.0	3.0
74.3	21.5	8.9	1.6	356	110	V	32.0	40.0	8.0
81.0	26.0	7.7	1.6	15	110	V	35.3	40.0	4.7
108.0	17.8	9.1	1.9	0	111	V	28.8	43.5	14.7
122.8	22.9	10.2	2.1	14	105	V	35.2	43.5	8.3
162.0	15.7	12.3	2.3	354	105	V	30.3	43.5	13.2
175.5	14.6	11.4	2.4	16	100	V	28.4	43.5	15.1
189.0	16.6	9.3	2.5	15	113	V	28.4	43.5	15.1
202.5	19.2	8.5	2.5	11	105	V	30.2	43.5	13.3
216.0	17.0	8.4	2.7	178	108	V	28.1	46.0	17.9
256.5	18.7	11.1	2.9	22	254	H	32.7	46.0	13.3
270.1	18.2	11.6	3.0	354	225	H	32.8	46.0	13.2
283.5	22.0	11.9	3.1	333	284	H	37.0	46.0	9.0
310.5	27.1	11.7	3.3	355	265	H	42.1	46.0	3.9
364.6	19.5	12.1	3.7	356	244	H	35.3	46.0	10.7
445.5	18.7	13.9	4.5	12	184	H	37.1	46.0	8.9
576.0	16.8	16.5	4.7	10	189	H	38.0	46.0	8.0
672.0	20.0	17.6	5.0	0	135	H	42.6	46.0	3.4
768.0	16.7	19.0	5.4	9	142	H	41.1	46.0	4.9



Radiation Test Data

Type : DVC-500
 Manufacturer : Intermagic Corp.
 Operation mode : Play Mode
 Test distance : 3 m
 Antenna : VULB9160
 Date : Oct. 23, 2001.

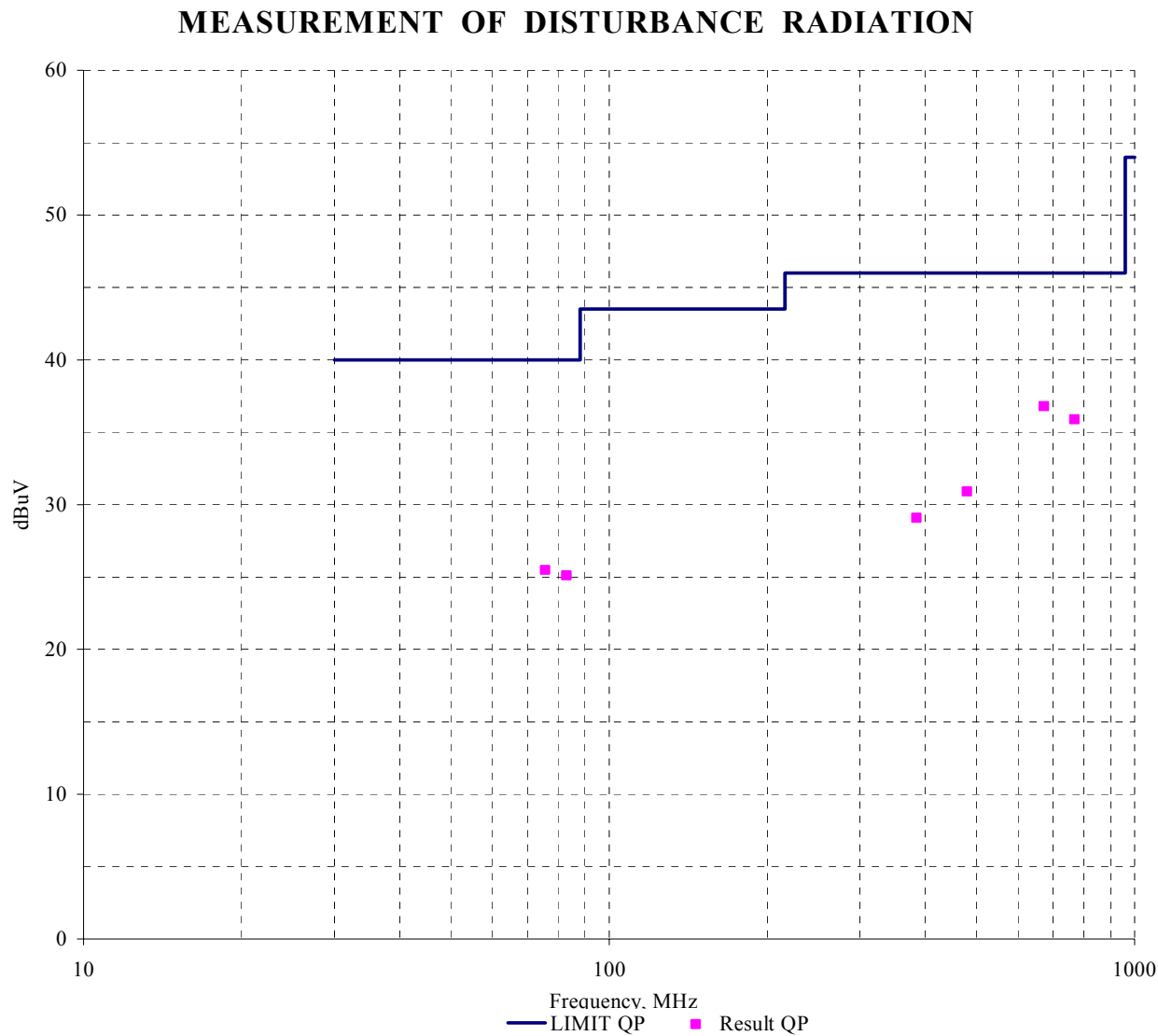
Freq. [MHz]	Reading [dBuV]	Antenna Factor [dB]	Cable Loss [dB]	Angle [deg]	Height [cm]	Polar [H/V]	Result [dBuV]	Limit [dBuV]	Margin [dB]
75.5	16.2	8.7	1.6	16	108	V	26.5	40.0	13.5
82.9	17.0	7.5	1.6	184	325	H	26.1	40.0	13.9
178.0	7.0	10.9	2.4	22	110	V	20.3	43.5	23.2
182.1	6.7	10.3	2.4	14	100	V	19.4	43.5	24.1
384.1	12.8	12.5	3.8	10	250	H	29.1	46.0	16.9
480.0	13.3	14.6	4.8	0	221	H	32.7	46.0	13.4
672.0	18.2	17.6	5.0	355	185	H	40.8	46.0	5.2
768.1	11.5	19.0	5.4	9	162	H	35.9	46.0	10.1



Radiation Test Data

Type : DVC-500
 Manufacturer : Intermagic Corp.
 Operation mode : Rec Mode
 Test distance : 3 m
 Antenna : VULB9160
 Date : Oct. 23, 2001.

Freq. [MHz]	Reading [dBuV]	Antenna Factor [dB]	Cable Loss [dB]	Angle [deg]	Height [cm]	Polar [H/V]	Result [dBuV]	Limit [dBuV]	Margin [dB]
75.5	15.2	8.7	1.6	16	108	V	25.5	40.0	14.5
82.9	16.0	7.5	1.6	184	325	H	25.1	40.0	14.9
384.1	12.8	12.5	3.8	10	250	H	29.1	46.0	16.9
480.0	11.5	14.6	4.8	0	221	H	30.9	46.0	15.1
672.0	14.2	17.6	5.0	355	185	H	36.8	46.0	9.2
768.1	11.5	19.0	5.4	9	162	H	35.9	46.0	10.1



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. 17, 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.