

Emission Test Report

CFR 47 Part 15 Subpart B

Test Report File No. : 01-IST-038 **Date of Issue** : May 17, 2001
Model(s) : DVC-100
Kind of Product : Digital Voice Camera
Applicant : Intermagic Corporation
 Address : 7F, Yoojin Bldg., 37-2, Daebang-dong, Dongjak-ku
 Seoul, Korea, 156-807
Manufacturer : Intermagic Corporation
 Address : 7F, Yoojin Bldg., 37-2 Daebang-dong, Dongjak-ku
 Seoul, Korea, 156-807

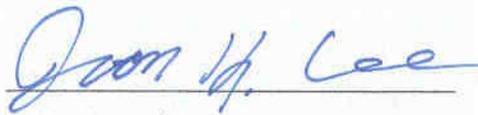
Test Result

Positive

Negative

Reviewed By

Approved By



J.H. Lee / EMC Group Manager



G.Chung / Chief

- The test report with appendix consists of 15 pages.
- The test result only responds to the tested sample.
- It is not allowed to copy this report even partly without the allowance of IST EMC Laboratory.
- This equipment as for has been shown to be capable of continued compliance 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.



TABLE OF CONTENTS

Table of contents		2
Information of test laboratory, Environmental condition, Power used,		
Product information		3
Description of test		
Conducted Emission		4
Radiated Emission		5
Summary		6
Test conditions and data		
Conducted emissions	0.45 MHz - 30 MHz	Applicable
Test equipment		7
Data and plots		8-9
Radiated emissions	30 MHz - 1 GHz	Applicable
Test equipment		10
Data and plots		11-13
Appendix		
A. The DUT Photos		14
B. The Accessory		15

INFORMATIONS OF TEST LABORATORY

EMC LABORATORY of IST Co., Ltd.

San 21-8, Goan-Ri, Baekam-Myun, Yongin-City

Kyonggi-Do, 449-860, Korea

TEL : +82 31 333 4093

FAX : +82 31 333 4094

ENVIRONMENTAL CONDITIONS

Temperature	24°C
Humidity	40 %
Atmospheric pressure	1003 mbar

POWER SUPPLY SYSTEM USED

Power supply system 120 Vac , 60 Hz (For Desktop PC)

PRODUCT INFORMATIONS

The Device Under Test(DUT) is a digital voice recorder with digital camera.

Power Requirement	DC 3V (AAA Size)
Power Consumption	382mW(Play)/387mW(Rec)/500mW(Photo)
Dimension	110mm x 45mm x 21mm(WxHxD)
Weight	80g (including 2pcs of battery)
USB Upload	Max 12Mbps
USB Cable Length	1m
Recording Media	Built in 16MB Flash Memory
Voice Recording mode	DSPG TrueSPeech™
Voice Input/Output	Speaker, Earphone / Microphone
Camera Resolution	44 frames(640X480) / 127 frames(320X240)
Camera Sensor	CMOS
Camera Video Format	CCIR656

- EMC suppression device is not used during the test.
- For more detail information, see user's manual.

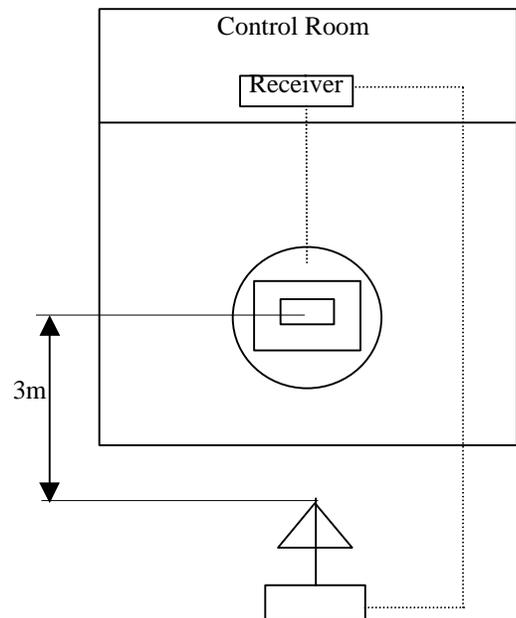
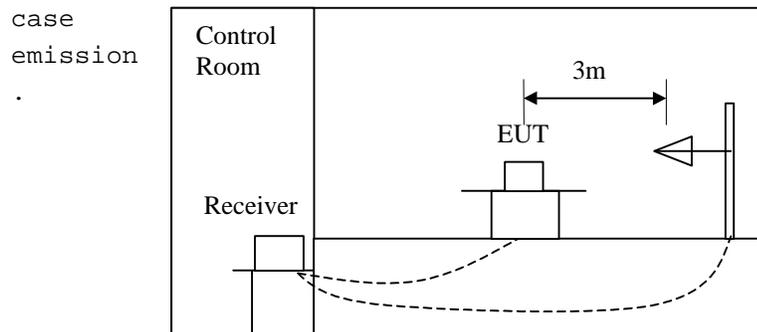
DESCRIPTION OF TEST

Radiated Emissions:

The measurement was performed over the frequency range of 30MHz to 1GHz using antenna as the input transducer to a Spectrum analyzer or a Field Intensity Meter. The measurement was made with the detector set for "quasi-peak" within a bandwidth of 120KHz.

- Procedure of Test

Preliminary measurements were made at 3 meter using bi-conical and log-periodic antennas, and spectrum analyzer to determine the frequency producing the max. emission in anechoic chamber. Appropriate precaution was taken to ensure that all emission from the EUT were maximized and investigated. The system configuration, mode of operation, turn-table azimuth and height with respect to the antenna were noted for each frequency found. The spectrum was scanned from 40MHz to 300MHz using S/B bi-conical antenna and 300 to 1000MHz using S/B log-periodic antenna. Above 1GHz, linearly polarized double ridge horn antennas were used. Final measurements were made at open site with 3-meters test distance using S/B bi-log antenna or horn antenna. The OATS have been verified in regular for its normalized site attenuation. The test equipment was placed on a wooden table. Sufficient time for the EUT, peripheral 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 120kHz or 1MHz depending on the frequency of type of signal. The EUT, peripheral 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, peripheral 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 peripheral equipment and changing the polarity of the antenna, whichever determined the worst-



SUMMARY

Conducted Emission

The requirements are	MET		Not MET
Minimum limit margin	6.8 dB	at	12.552 MHz
Maximum limit exceeding		dB	at Hz

Remarks : The minimum margin was measured at Neutral Phase for PC Up/download mode.

Radiated Emission

The requirements are	MET		Not MET
Minimum limit margin	5.7 dB	at	144.0 MHz
Maximum limit exceeding		dB	at Hz

Remarks : The minimum margin was measured with PC upload mode.

Reported By



H.C. Kim / EMC Engineer

*Note : It was only performed by PC connecting mode for conducted emission.
In case of radiation test, the test was performed with playback and PC connection mode.*

means the test is applicable, is not applicable.



TEST CONDITIONS AND DATA Conducted Emissions

[Applicable]

Test Equipment Used

<u>Model Name</u>	<u>Manufacturer</u>	<u>Description</u>	<u>Next Cal. Date</u>
ESH3	Rohde Schwarz	Receiver	Oct. 8, 2001
ESH3-Z2	Rohde Schwarz	Pulse Limiter	Dec. 18, 2001
EZM	Rohde Schwarz	Spectrum monitor	-
3825/2	EMCO	LISN	Dec. 18, 2001
-	-	-	-
-	-	-	-
-	-	-	-

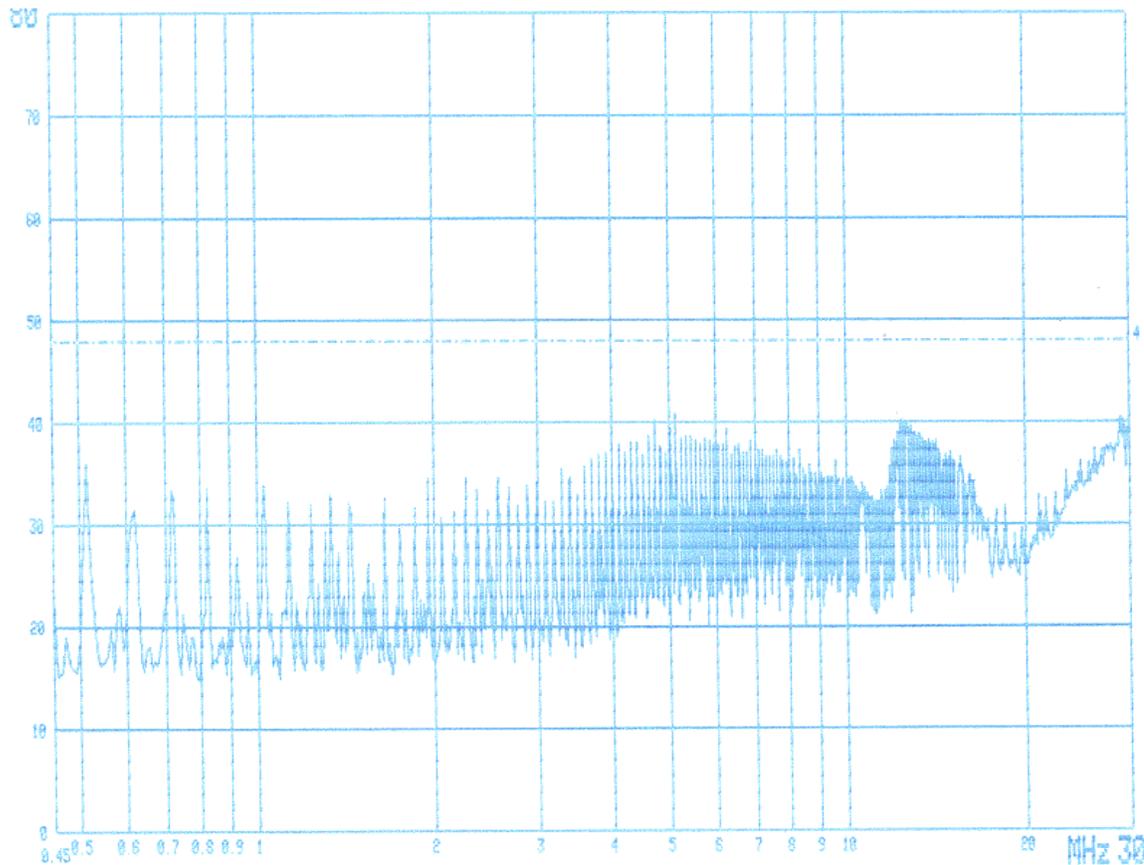
Test Program Up/Download (Audio file and Capture Image)

Test Area Shielded Room #3

Note :

- Find the test data in following page(s) 8 to 9.

Conducted Emissions
(Mains Terminal Disturbance Voltages)

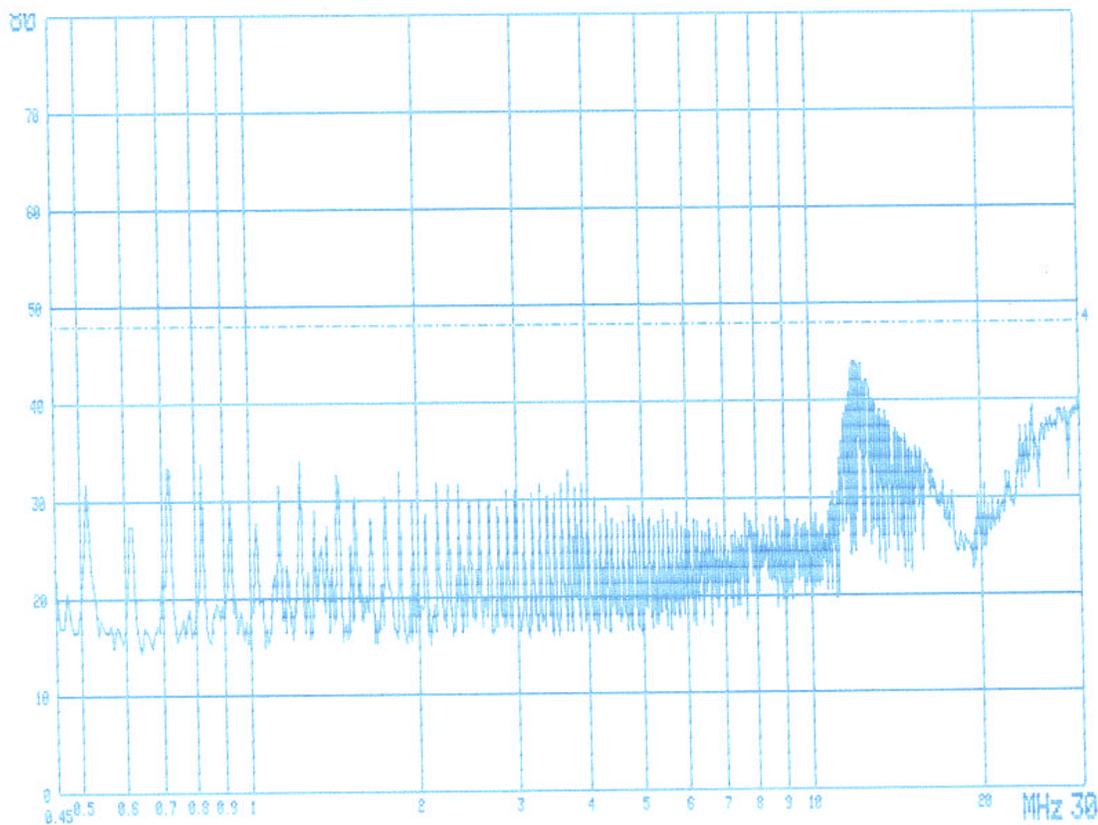


MODEL : DVC-100
120Vac 60Hz Phase : L1

Frequency [MHz]	Measurement [dBuV]	Insertion Loss [dBuV]	Result [dBuV]	Limit [dBuV]	Margin [dBuV]
	Q-Peak	Q-Peak	Q-Peak	Q-Peak	Q-Peak
0.514	36.0	0.8	36.8	48.0	11.2
5.664	36.8	0.8	37.6	48.0	10.4
12.565	37.7	0.8	38.5	48.0	9.5
29.660	36.8	0.8	37.6	48.0	10.4

Note : The cable loss of measurement setup is less than 0.1dB

Conducted Emissions
(Mains Terminal Disturbance Voltages)



MODEL : DVC-100
120Vac 60Hz Phase : N

Frequency [MHz]	Measurement [dBuV]	Insertion Loss [dBuV]	Result [dBuV]	Limit [dBuV]	Margin [dBuV]
	Q-Peak	Q-Peak	Q-Peak	Q-Peak	Q-Peak
1.234	32.5	0.8	33.3	48.0	14.7
12.552	40.4	0.8	41.2	48.0	6.8
24.793	31.2	0.8	32.0	48.0	16.0

Note : The cable loss of measurement setup is less than 0.1dB

TEST CONDITIONS AND DATA

Radiated Emission

[Applicable]

Test Equipment Used

<u>Model Name</u>	<u>Manufacturer</u>	<u>Description</u>	<u>Next Cal. Date</u>
ESVP	Rohde Schwarz	Receiver	July 21, 2001
VULB9160	Schwarzbeck	Antenna	July 11, 2001
EZM	Rohde Schwarz	Spectrum monitor	
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

Test Program Playback / Upload

Test Area Open Field Test Site #1

*Note : The play mode was operated with connection of earphone.
The upload operation was performed without connection of microphone and earphone.*

- Find the test data in following pages 11 to 13.

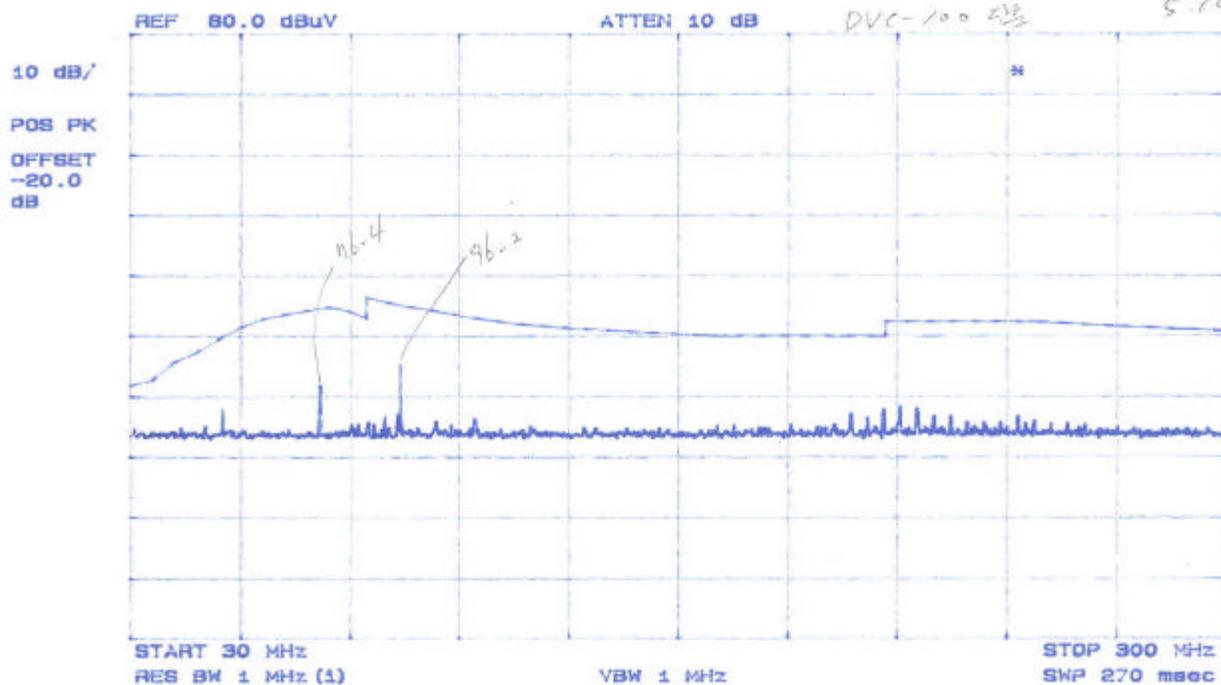
Radiated Emissions
(Disturbance Radiation)

-

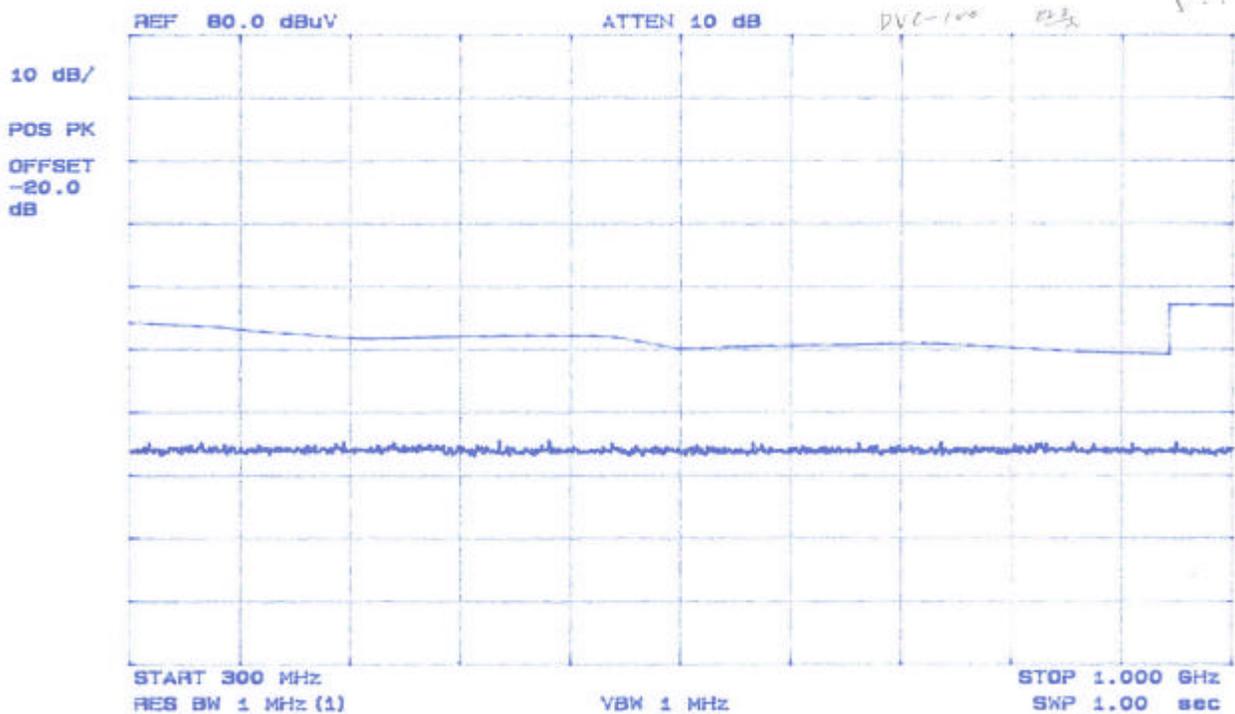
Mode	Freq. [MHz]	Reading [dBuV]	Antenna Factor [dB]	Cable Loss [dB]	Angle [deg]	Polar. [H/V]	Result [dBuV]	Limit [dBuV]	Margin [dB]
Play	76.2	< 10.0	8.7	1.6		H/V	< 30.0	40.0	> 10.0
	96.0	< 10.0	7.6	1.8		H/V	< 30.0	43.5	> 10.0
Upload	96.0	< 10.0	7.6	1.8		H/V	< 20.0	43.5	> 10.0
	144.0	23.8	11.8	2.2	166	H	37.8	43.5	5.7

-
-
-
-
-
-
-
-
-
-

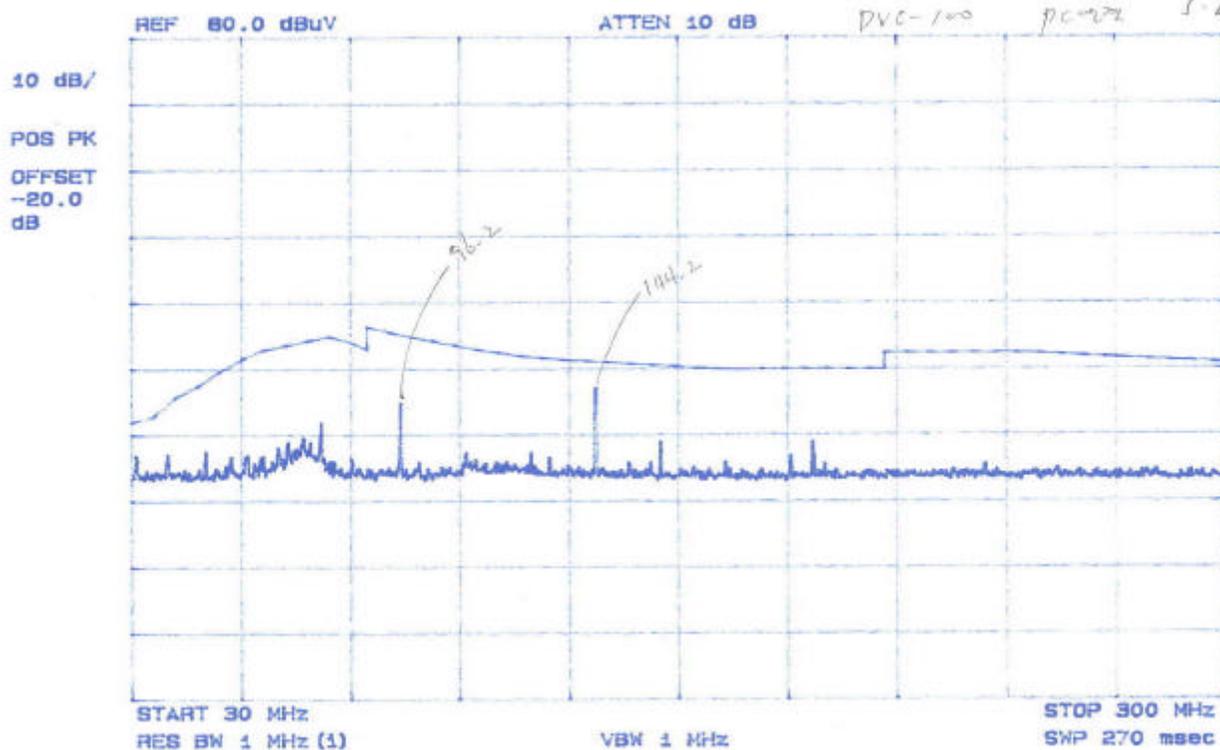
End of data



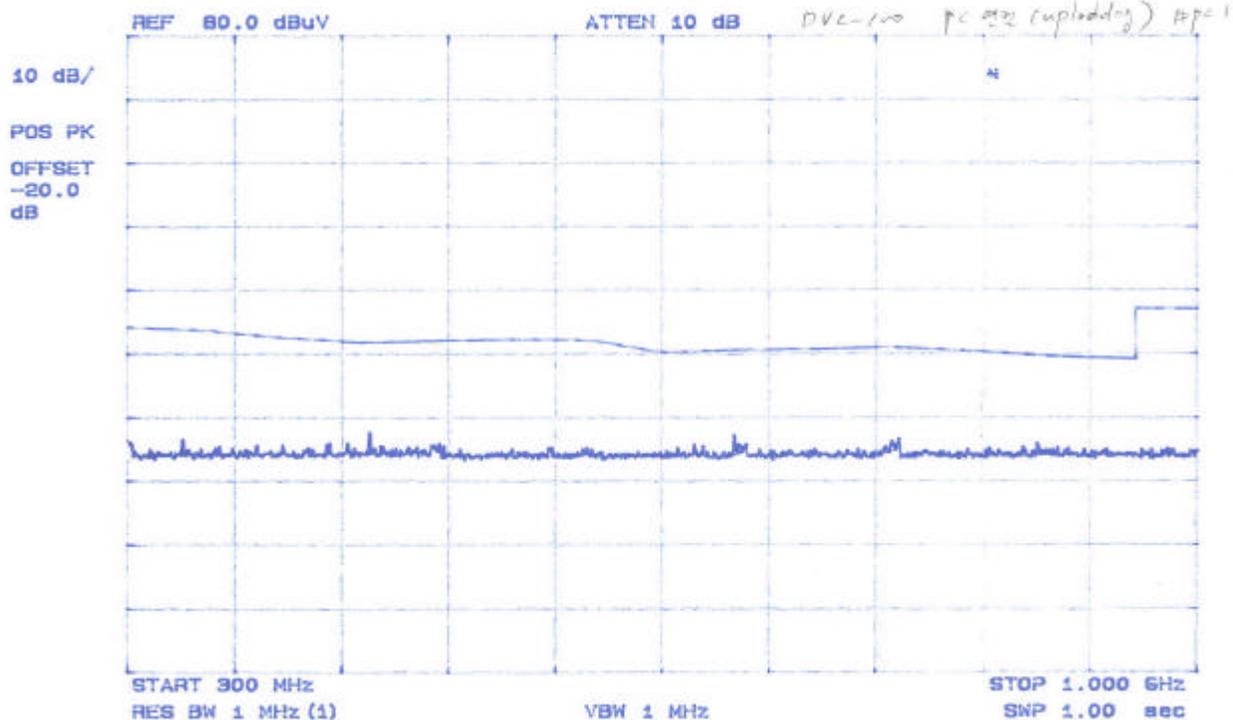
Playback (DUT alone, 30 - 300MHz) Reference only



Playback (DUT alone, 300 - 1GHz) Reference only



Playback (PC Connect, 30 - 300MHz) Reference only



Playback (PC Connect, 30 - 300MHz) Reference only

Appendix A. The DUT Photos



Front View



Playback (PC Connect, 30 - 300MHz) Reference only

Appendix B. The Accessory



Earphone



USB Cable