Compliance Test Report for FCC

Report Number		ESTF150408-008		
Applicant	Company name	DG Lab Co., Ltd.		
	Address	Room 306, Han-Sol B/D # 145-1, GuMi-Dong, BunDang-Gu, SeongNam-City, KyeongGi-Do, Korea		
	Telephone	82-31-711-0534		
Product	Product name	MP3 Player		
	Model No.	My-2030	Manufacturer	DG Lab Co., Ltd.
	Serial No.	NONE	Country of origin	Korea
Test date	2004-08-06		Date of issue	2004-08-31
Testing location	ESTECH. Co., Ltd. 97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea			
Standard	FCC PART 15 2002 , ANSI C 63.4 2001			
Test item	■ Conducted Emission	□ Class A ■ Class B	Test result	OK
	■ Radiated Emission	□ Class A ■ Class B	Test result	OK
Measurement facility registration number		94696		
Tested by	Senior Engineer J.M. Yang	(Signature)		
Reviewed by	Director T.K. Lee	(Signature)		
Abbreviation	OK, Pass = Passed, Fail = Failed, N/A = not applicable			

* Note

- This test report is not permitted to copy partly without our permission
- This test result is dependent on only equipment to be used
- This test result based on a single evaluation of one sample of the above mentioned

Contents

1. Laboratory Information

1.1 General

This EUT (Equipment Under Test) has been shown to be capable of compliance with the applicable technical standards and is tested in accordance with the measurement procedures as indicated in this report.
ESTECH Lab attests to accuracy of test data. All measurement reported herein were performed by ESTECH Co., Ltd.
ESTECH Lab assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

1.2 Test Lab.

Corporation Name : ESTECH Co. Ltd

Head Office : 3 rd Fl., Chungdam Bldg., 119-1 Chungdam-dong Kangnam-gu , Seoul, Korea
(Safety & Telecom. Test Lab)

EMC Test Lab : 58-1 Osan-Ri, GaNam-Myon, YeoJoo-Gun, KyungKi-Do, Korea
97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea

1.3 Official Qualification(s)

MIC : Granted Accreditation from Ministry of Information & Communication for EMC, Safety and Telecommunication
KOLAS : Accredited Lab By Korea Laboratory Accreditation Schema base on CENELEC requirements
FCC : Filed Laboratory at Federal Communications Commission
VCCI : Granted Accreditation from Voluntary Control Council for Interference from ITE

2. Description of EUT

2.1 Summary of Equipment Under Test

Product : MP3 Player

Model Number : My-2030

Serial Number : NONE

Manufacturer : DG Lab Co., Ltd.

Country of origin : Korea

Rating : 120V, 60Hz

Receipt Date : 2004-07-29

2.2 General descriptions of EUT

Audio	Frequency	20Hz - 20KHz
	Ear set output	26 mW(L 13mW + R 13mW), Max SRS
	S/N	90dB
File support	File format	MPEG Layer 3(MP3), MPEG2 Layer3, MPEG2.5 Layer3
	Bit rate	8Kbps -320Kbps, VBR
FM Radio	FM Frequency	88 ~ 108 MHz(USA, EUROPE), 78.5 - 108 MHz (JAPEN)
	Ear set Output	12 mW (L 6mW + R 6mW)
	S/N	50dB
	Antenna	Ear set code Antenna
Power	Battery	Li-polymer
		Charging : 3 hours
		Playing - 15 hours
		Using USB power
Normal	Display	OLED Type(96X63Dot, Graphic), 3 color
	Product size	35.7 mm(W) X 78.2 mm(H) X 19.5 mm(D)
	Weight	42g
	Transmit speed	5Mbps(USB V1.1)
	Operate	-5℃ ~ 35℃
	Memory	128MB / 256MB / 512MB
Voice record		Approximately 18 Hour(256MB) / 36 hours (512MB)
Line in record		Approximately 4 Hour
USB		USB 1.1
Using OSC		32.768MHZ/12MHZ

3. Test Standards

Test Standard : FCC PART 15 (2002)

This Standard sets out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications, administrative requirements and other conditions relating to the marketing of Part 15 devices.

Test Method : ANSI C 63.4 (2001)

This standard sets forth uniform methods of measurement of radio-frequency (RF) signals and noise emitted from both unintentional and intentional emitters of RF energy in the frequency range 9 kHz to 40 GHz. Methods for the measurement of radiated and AC power-line conducted radio noise are covered and may be applied to any such equipment unless otherwise specified by individual equipment requirements. These methods cover measurement of certain decides that deliberately radiate energy, such as intentional emitters, but does not cover licensed transmitters. This standard is not intended for certification/approval of avionic equipment or for industrial, scientific, and medical (ISM) equipment These method apply to the measurement of individual units or systems comprised of multiple units

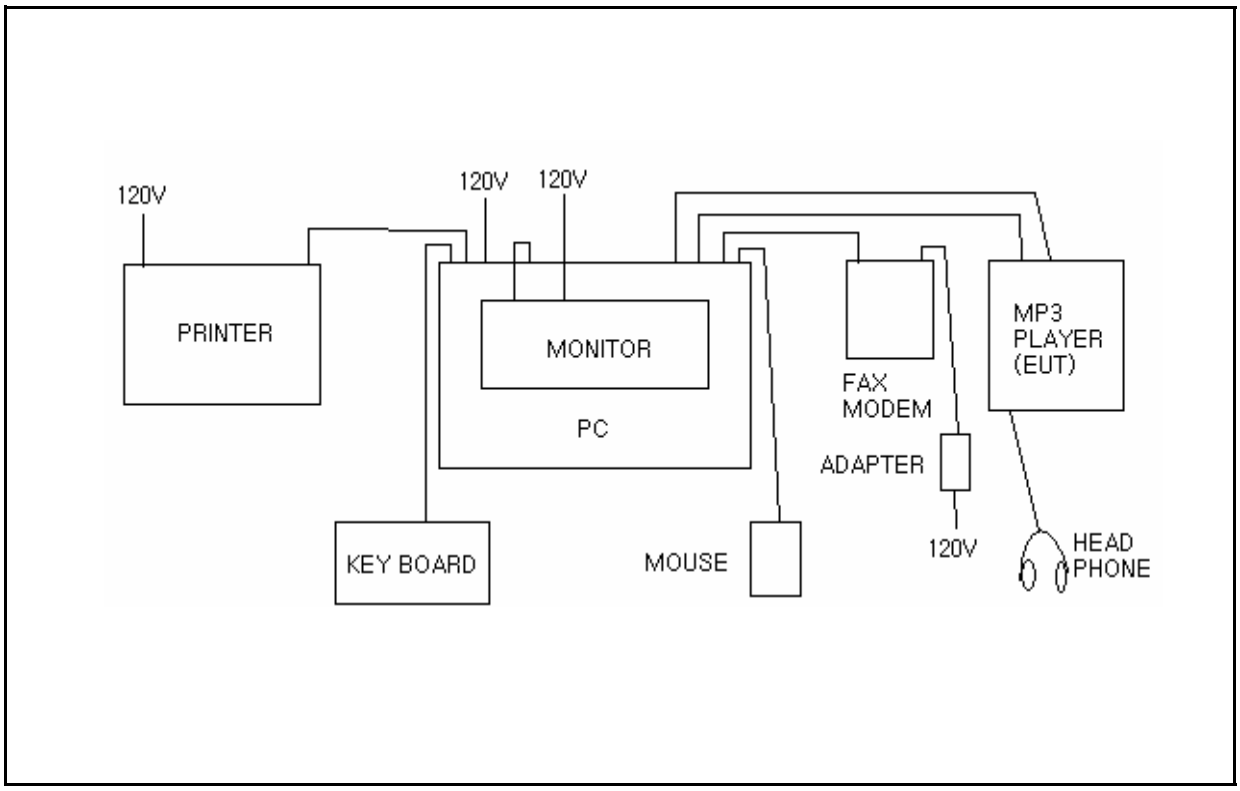
4. Measurement Condition

4.1 EUT Operation.

* The EUT was in the following operation mode during all testing
* The operational conditions of the EUT was determined by the manufacturer according to the typical use of the EUT with respect to the expected hightest level of emission
* After setting as test arrangement diagram,

we tested the EUT under "H" character read/write from pc

4.2 Configuration and Peripherals



4.3 EUT and Support equipment

Equipment Name	Model Name	S/N	Manufacturer	Remark (FCC ID)
MP3 Player	My-2030	NONE	DG Lab Co., Ltd.	EUT
PC	OPTIPLEX GX50	NONE	DELL	
MONITOR	D8897	CN11104168	HP	
PRINTER	LQ-570H	B1021095782	SAMBO COMPUTER	
KEY BOARD	SEM-DT35	32006555	SAMSUNG ELECTRIC.	
MOUSE	M-S48a	HCA31409057	LOGITECH	
HEAD PHONE	NONE	NONE	NONE	
FAX MODEM	5630	335630-01	3COM CORPORATION	
ADAPTER	J41091000A010G	NONE	US ROBOTICS	

4.4 Cable Connecting

Start Equipment		End Equipment		Cable Standard		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
MP3 Player	USB	PC	USB	1	Y	
MP3 Player	LINE-IN	PC	LINE-OUT	1	Y	
MP3 Player	SPEAKER	HEAD PHONE	-	1	Y	
PC	VIDEO	MONITOR	VIDEO	2	Y	
PC	PS/2 MOUSE	MOUSE	PS/2 MOUSE	2	N	
PC	PS/2 KEYBOARD	KEY BOARD	PS/2 KEYBOARD	2	N	
PC	PARALLEL	PRINTER	PARALLEL	2	Y	
PC	SERIAL	FAX MODEM	SERIAL	2	N	
FAX MODEM	POWER	ADAPTOR	-	2	Y	

5. Measurement of radiated disturbance

Above 30 MHz Electric Field strength was measured in accordance with FCC Part 15 (2002) & ANSI C 63.4 (2001). The test setup was made according to FCC Part 15 (2002) & ANSI C 63.4 (2001) on an open test site, which allows a 3m distance measurement. The EUT was placed in the center of wooden turntable. The height of this table was 0.8m. The measurement was conducted with both horizontal and vertical antenna polarization. The turntable has fully rotated. For further description of the configuration refer to the picture of the test set-up.

5.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
Receiver	ESVS10	Rohde & Schwarz	838562/002	2005.1.12
Spectrum Analyzer	R3261B	ADVANTEST	1720302	2005.2.12
LogBicon Antenna	VULB 9160	S/B	3142	2005.7.06
Turn Table	2087	EMCO	2129	-
Antenna Mast	2070-01	EMCO	9702-203	-
ANT Mast Controller	2090	EMCO	1535	-
Turn Table Controller	2090	EMCO	1535	-

5.2 Environmental Condition

Test Place : Open site(3m)
Temperature (°C) : 29 ℃
Humidity (%) : 38 %

5.3 Test data

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dBμV/m)
40.53	11.50	V	1.0	12.71	1.00	40.00	25.21	(14.79)
117.52	7.20	H	2.3	11.79	1.66	43.50	20.65	(22.85)
198.61	7.40	H	1.9	10.48	2.18	43.50	20.06	(23.44)
206.50	13.10	V	1.0	10.50	2.23	43.50	25.83	(17.67)
208.01	12.10	H	1.5	10.53	2.24	43.50	24.87	(18.63)
214.82	11.30	H	1.3	10.66	2.27	43.50	24.24	(19.26)
236.83	12.60	H	1.0	11.56	2.38	46.00	26.54	(19.46)
265.48	9.40	H	1.0	12.32	2.48	46.00	24.19	(21.81)
299.98	13.10	H	1.0	13.19	2.70	46.00	28.99	(17.01)
336.24	9.10	H	1.0	14.01	2.81	46.00	25.92	(20.08)
356.04	12.10	H	1.0	14.33	2.97	46.00	29.40	(16.60)
398.04	12.40	H	1.0	15.28	3.14	46.00	30.82	(15.18)
457.62	8.10	H	1.0	16.47	3.40	46.00	27.98	(18.02)
Remark	-We measured from 88 Mhz to 108 Mhz but We did not find any frequency. -We tested waste case.							

8. Measurement of conducted disturbance

The continuous disturbance voltage of AC Mains in the frequency from 0.15 to 30 MHz was measured in accordance to FCC Part 15 (2002) & ANSI C 63.4 (2001) The test setup was made according to FCC Part 15 (2002) & ANSI C 63.4 (2001) in a shielded. The EUT was placed on a non-conductive table at least 80 above the ground plan. A grounded vertical reference plane was positioned in a distance of 40cm from the EUT. The distance from the EUT to other metal surfaces was at least 0.8m. The EUT was only earthen by its power cord through the line impedance stabilizing network. The power cord has been bundled to a length of 1.0m.. The test receiver with Quasi Peak detector complies with CISPR 16.

8.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
LISN	ESH3-Z5	Rohde & Schwarz	838979/010	2005. 2. 12
LISN	NNLA8120A	Schwarzbeck	NONE	2005. 2. 12
TEST Receive	ESPC	Rohde & Schwarz	838248/001	2005.1.29
Pulse Limiter	ESH3Z2	Rohde & Schwarz	NONE	2005. 6. 15

8.2 Environmental Condition

Test Place : Shield Room

Temperature (°C) : 22℃

Humidity (%) : 41%

8.3 Test data

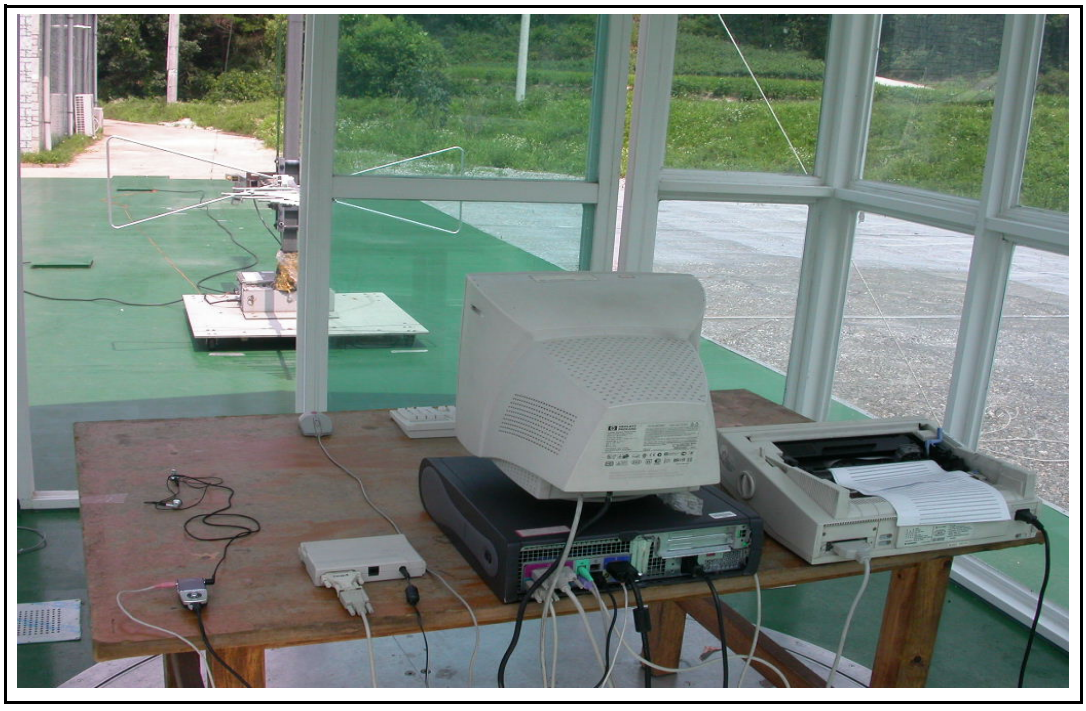
Frequency (MHz)	Correction Factor		Line (H/N)	Quasi-peak Value			Average Value		
	Lisn (dB)	Cable (dB)		Limit (dBμV)	Reading (dBμV)	Result (dBμV)	Limit (dBμV)	Reading (dBμV)	Result (dBμV)
0.160	0.07	0.0	N	65.47	53.52	53.60	55.47		
0.186	0.07	0.0	N	64.21	50.19	50.28	54.21		
0.195	0.07	0.0	H	63.82	49.24	49.34	53.82		
0.231	0.07	0.1	N	62.43	42.40	42.52	52.43		
0.284	0.07	0.1	N	60.71	36.59	36.75	50.71		
0.291	0.07	0.1	H	60.51	34.66	34.82	50.51		
0.559	0.07	0.2	N	56.00	24.02	24.29	46.00		
0.586	0.08	0.2	H	56.00	26.44	26.72	46.00		
0.704	0.08	0.2	H	56.00	25.03	25.31	46.00		
0.727	0.09	0.2	N	56.00	24.14	24.43	46.00		
0.999	0.09	0.2	N	56.00	23.52	23.81	46.00		
3.935	0.17	0.3	N	56.00	23.19	23.66	46.00		
8.060	0.31	0.5	H	60.00	30.28	31.06	50.00		
8.455	0.32	0.5	N	60.00	28.62	29.44	50.00		
8.591	0.32	0.5	H	60.00	31.60	32.43	50.00		
12.006	0.46	0.7	N	60.00	36.46	37.60	50.00		
15.994	0.63	0.8	N	60.00	30.38	31.81	50.00		
19.992	0.70	0.8	N	60.00	30.92	32.42	50.00		
Remark	H : Hot Line, N : Neutral Line								

9. Photographs of test setup

9.1 Setup for Radiated Test : 30 ~ 1000 MHz

[Front]

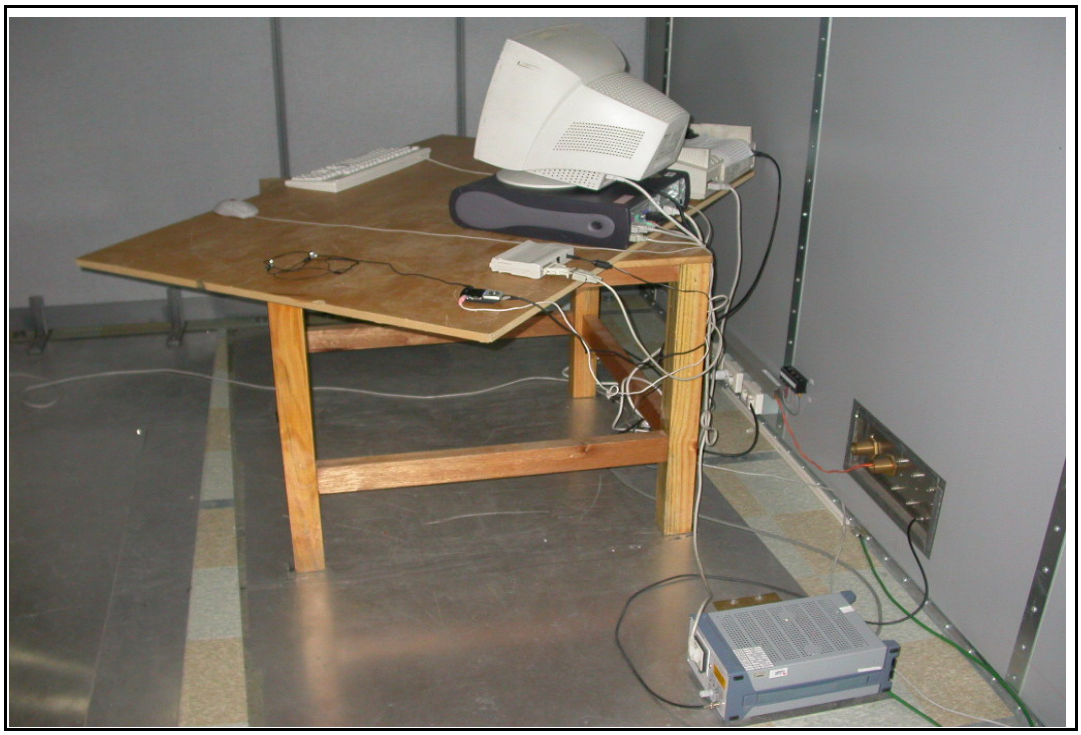
[Rear]



9.3 Setup for Conducted Test : 0.15 ~ 30 MHz

[Front]

[Rear]



10. Photographs of EUT

[Front]

[Rear]

Appendix 1. Spectral diagram

*HOT

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ES TECH
HOT

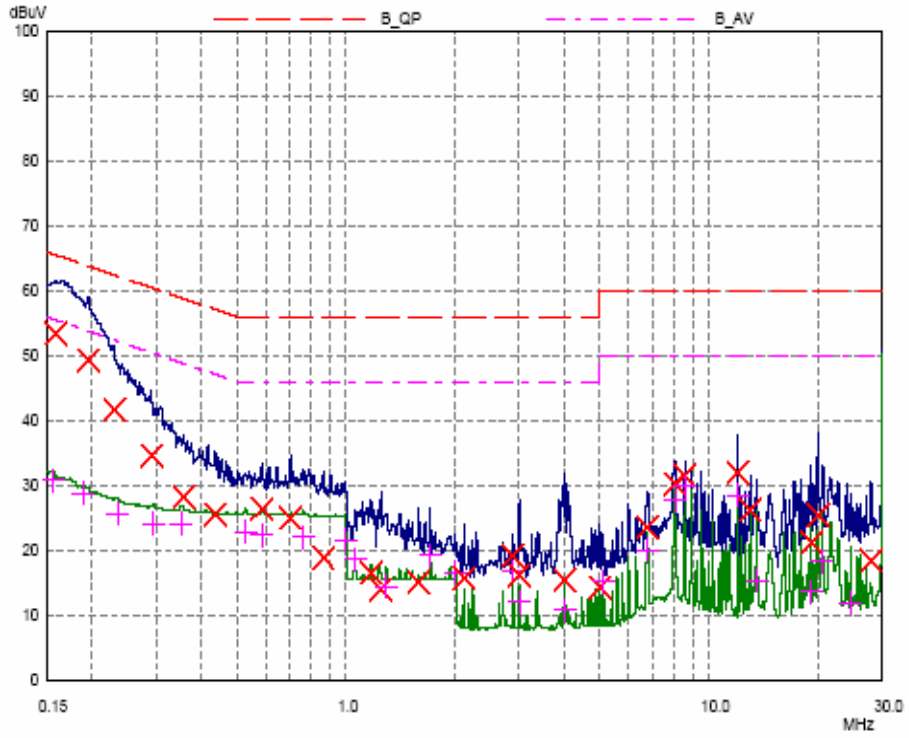
EUT:	MY-2030
Manuf:	DG Lab Co., Ltd
Op Cond:	120 V
Operator:	Senior Engineer J.M. Yang
Test Spec:	CLASS B
Comment:	

File: 0691_h.dat : DG Lab Co., Ltd

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	OpRge
150kHz	30MHz	0.8%	10kHz	PK+AV	20msec	Auto	60dB

Final Measurement: X QP / + AV
Meas Time: 1sec
Subranges: 25
Acc Margin: 60 dB



*NETRUL

06 Aug 2004 09:28

ES TECH
NEUTRAL

EUT:	MY-2030
Manuf:	DG Lab Co., Ltd
Op Cond:	120 V
Operator:	Senior Engineer J.M. Yang
Test Spec:	CLASS B
Comment:	

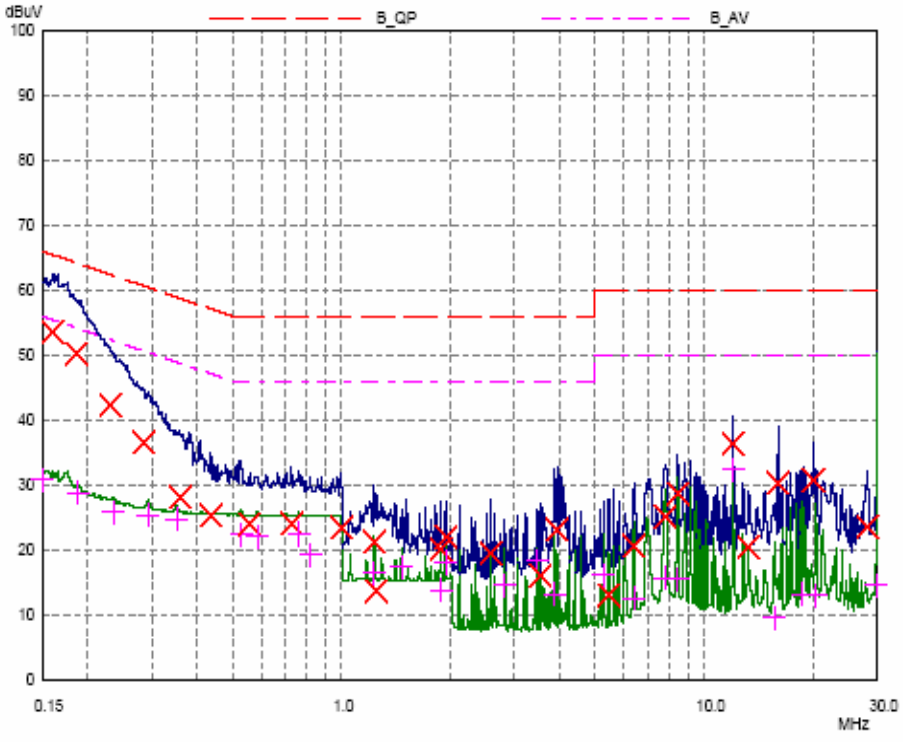
File: 0891_n.dat : DG Lab Co., Ltd

Scan Settings (1 Range)

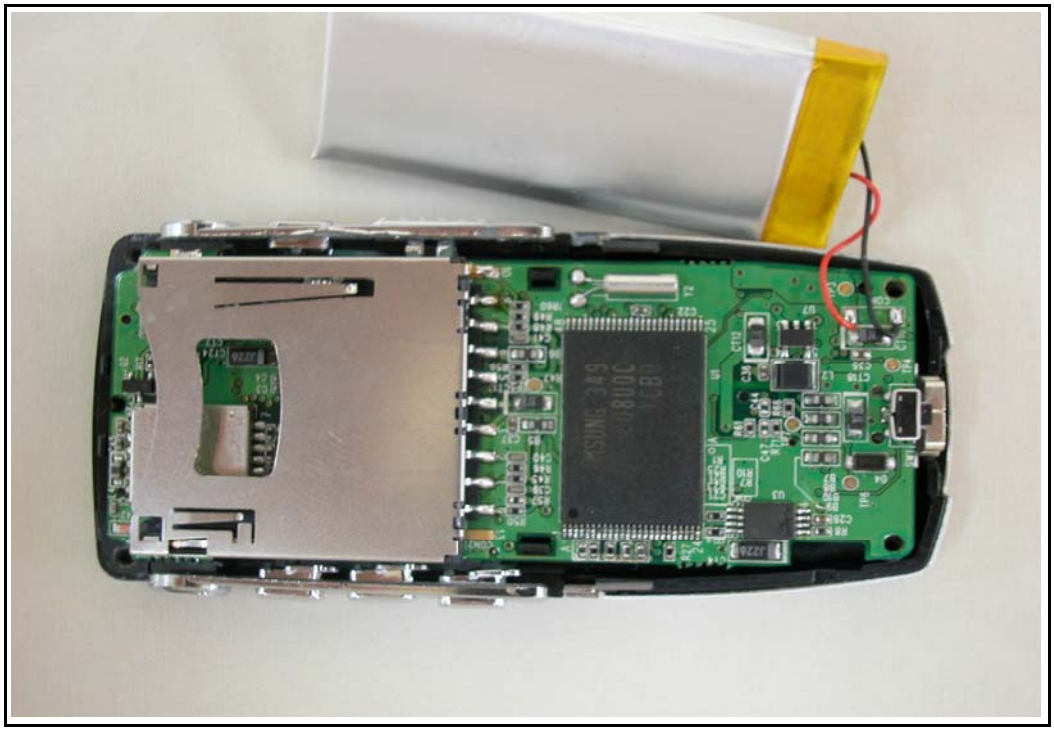
Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	OpRge
150kHz	30MHz	0.8%	10kHz	PK+AV	20msec	Auto	60dB

Final Measurement: X QP / + AV

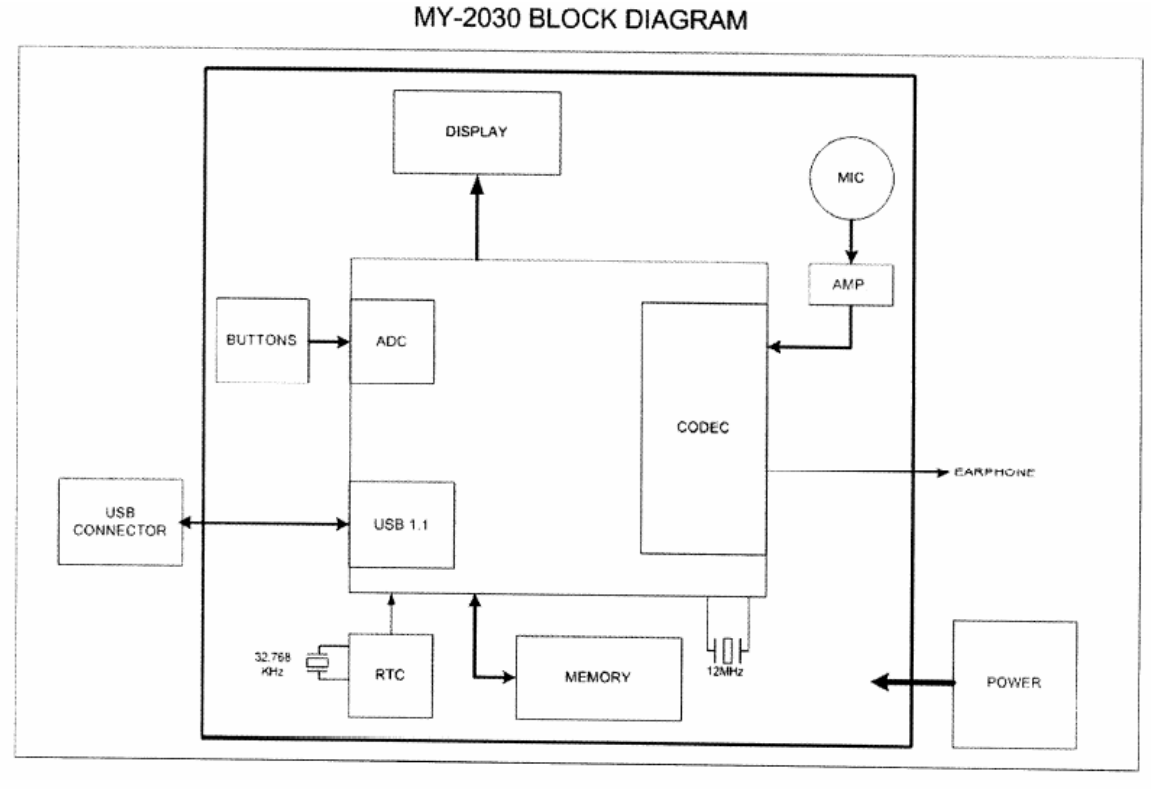
Meas Time:	1sec
Subranges:	25
Acc Margin:	60 dB



Appendix 2. Phorographs of EUT in side PCB



Appendix 3. Block diagram of EUT



Appendix 4. Circuit Diagram