



Test Report No : KST-FCC-080064

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FCC EVALUATION REPORT FOR Certification of Conformity

1. Client

Name : IDPHONE Co.,Ltd

Address : 7F Ace Techno Tower 5th B/D, 197-22 Guro-Dong,
Guro-Gu, Seoul, Korea, 152-766

Date of Receipt : May 15, 2008

2. Test Sample : KAISHOT

3. Date of Test : June 2, 2008

4. Test method used : FCC Part 15 subpart B Class B personal computers and peripherals

5. Testing Environment :

Temperature : (23 ~ 26) °C , Relative Humidity : (38 ~ 57) % R.H.

6. Test Results :

Pass

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
This Test Report cannot be reproduced, except in full.

Supplementary Information

The device bearing the brand name and FCC ID specified above has been shown to comply with the applicable Technical standards as indicated in the measurement report and was tested in accordance with measurement Procedures specified in ANSI C63.4-2003.

I attest to the accuracy of data and all measurements reported herein were performed by or were made under my Supervision and are 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.

Affirmation	Tested by	Technical Manager
	Name : Jeong, seok-jin (Signature)	Name : Hong, Jeoung-Gil (Signature)

The above test certificate is the accredited test results by Korea Laboratory Accreditation Scheme, which signed the ILAC-MRA.

2008.06.04

KOSTEC Co., Ltd.

KOSTEC Co., Ltd 180-254, Annyung-dong, Hwasung-shi, Gyeonggi-do, Korea 445-970

TEL : 82-31-222-4251

FAX : 82-31-222-4252

www.kosteclab.com

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1. Testing Environment
2. Information of Testing Laboratory
3. Product Description of E.U.T.
4. TEST SYSTEM CONFIGURATION
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7. Test results.
8. Test Setup and E.U.T. Photographs

Appendix

1. Testing Environment

- | | |
|-------------------------------|---|
| 1) Equipment: | KAISHOT |
| 2) Model Name: | IDF-PVR01 |
| 3) Serial No.: | Prototype |
| 4) Type of Sample Tested: | Pre-production |
| 5) High Frequency Used: | 32.768 kHz, 12 MHz, 14.31818 MHz, 24.576 MHz |
| 6) Electrical Power | DC 5 V, 2 A |
| 7) Power : | 6 W |
| 8) Tested Power supply: | AC 120 V, 60 Hz |
| 9) Date of Manufacture: | April 10, 2008 |
| 10) Manufacturer: | IDFONE Co.,Ltd |
| 11) Address: | 7F Ace Techno Tower 5th B/D, 197-22 Guro-Dong, Guro-Gu, Seoul, Korea, 152-766 |
| 12) Description of Operating: | Displayed A/V signal to TV by E.U.T.
Upload & download data to E.U.T. |
| 13) Dates of Test: | June 2, 2008 |
| 14) Place of Tests: | KOSTEC Co., Ltd. EMC site |
| 15) Test Report No.: | KST-FCC-080064 |
| 16) Abbreviations : | PASS = Passed , Fail = Failed , N/A = Not applicable |

2. Information of Testing Laboratory

The open field test site and conducted measurement facility are used for these testing, where are located following address and drawing. This site was fully described in a report dated November 14, 2002, that was submitted to the FCC.

KOSTEC CO., LTD.

Head office & Test Lab ;

:180-254, Annyung-dong, Hwasung-shi, Gyeonggi-do, Korea

Telephone Number: 82-31-222-4251

Facsimile Number: 82-31-222-4252

MIC (Ministry of Information and Communication) designate Number: **KR0041**

FCC Filing Number: **525762**

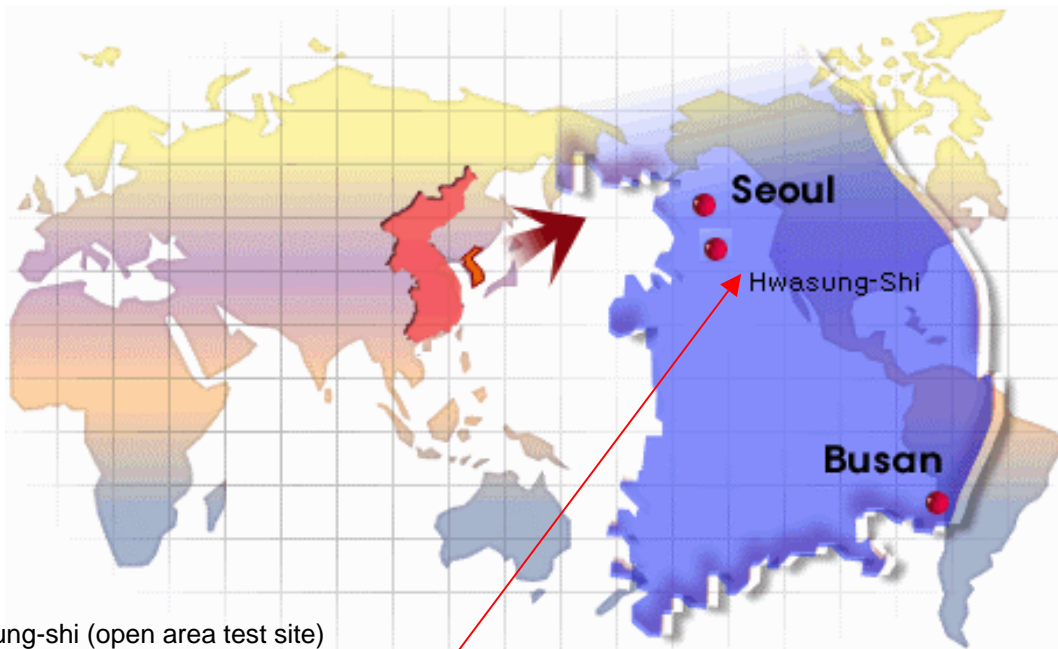
VCCI Membership Number of KOSTEC Co., Ltd.: **2005**

VCCI Registration Number of EMI site: **R-1657 / C-1763**

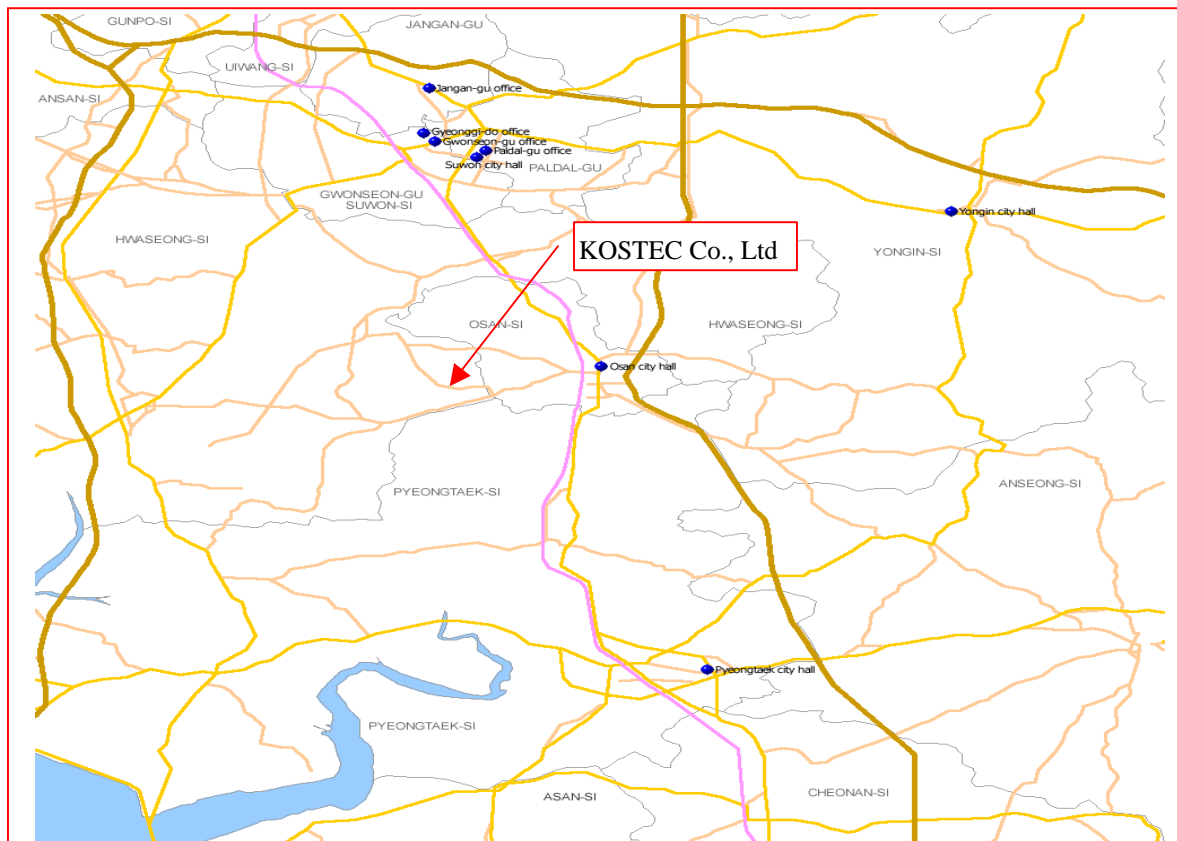
KOLAS Number: **232**

3. Product Description of E.U.T.

Korea



Hwasung-shi (open area test site)



KOSTEC Co., Ltd 180-254, Annyung-dong, Hwasung-shi, Gyeonggi-do, Korea 445-970

TEL : 82-31-222-4251

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4. TEST SYSTEM CONFIGURATION

4.1 Operation Environment

Ambient	<u>Temperature</u> (°C)	<u>Humidity</u> (%) R.H.	<u>Atmospheric pressure</u> (kPa)
10m Open Area site :	26	57	100.7
Shielded room :	23	39	100.7

Test site

These testing were performed following locations;

Shielded room :	Conducted Emission
10 m Open Area Site :	Radiated Emission

4.2 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC.

The factors contributing to uncertainties are test receiver, Cable loss, antenna factor calibration, Antenna directivity, antenna factor variation with height, antenna phase center variation, antenna Frequency interpolation, measurement distance variation, ite imperfection, mismatch, and system Repeatability.

Based on NIS 80,81, The measurement uncertainty level with a 95 % confidence level were applied.

4.3 Sample calculation

Conducted emission

The field strength is calculated by adding the LISN factor, cable loss from the measured reading.
The sample calculation is as follows:

$$\begin{aligned}FS &= MR + LF + CL \\MR &= \text{Meter Reading} \\LF &= \text{LISN Factor} \\CL &= \text{Cable Loss}\end{aligned}$$

If MR is 30 dB, LISN Factor 1 dB, CL 1 dB

The result (MR) is

$$30 + 1 + 1 = 32 \text{ dB}\mu V$$

5. Condition and Procedure for Test activities

5.1 Configuration of E.U.T.

Description	Manufacturer	Model/Part #	Serial Number
KAISHOT			
KEYPAD	IDFONE Co.,Ltd	None	None
Main board	IDFONE Co.,Ltd	None	None
LCD Pannel	None	None	None
Battery	IDFONE Co.,Ltd	IDF-mPVR-BAT	00608-0012
Hybrid Camera			
Camera Module board	IDFONE Co.,Ltd	6-000-5091	None
Sub board	IDFONE Co.,Ltd	MAY222008	None
CCD board	IDFONE Co.,Ltd	6-000-5085	None
54M Wireless USB Adapter	TP-LINK	TL-WN321G	082A1002083

5.2 E.U.T. Used cables

Cable Type	Shield	Length (m)	Ferrite	Connector	Connection Point 1	Connection Point 2
DC IN	N	1.8	Y	DIN	E.U.T.	Adapter
A/V OUT	Y	1.5	Y	RCA	E.U.T.	TV
USB	Y	1.5	Y	USB	E.U.T.	PC
micro SD Card Slot	N	-	N	micro SD Card Slot Type	E.U.T.	micro SD Card
12 Pin Connector	N	1.5	N	12 Pin Connector Type	E.U.T.	Hybrid Camera

5.3 Operating conditions

The operating mode/system was as follows in details:

After setting, the each I/O port of E.U.T connected to adapter, PC, Hybride Camera, micro SD Card and TV. And then the E.U.T was tested in a state of as following.

Mode 1. Displayed A/V signal to TV by E.U.T..(The A/V port of E.U.T. was connected to TV)
: E.U.T. was tested in a state of recording audio & video signal through Hybrid Camera and E.U.T.. It was continuously displayed on the TV for audio & video signal through EUT from micro SD Card.

Mode 2. Upload & download data to E.U.T. (The USB port of E.U.T. was connected to PC)
: E.U.T. was tested in a state of continuously upload & download for data of PC.

(E.U.T. can't perform mode 1 and mode 2 at once.)

7. TEST RESULTS

7.1 Conducted emission Measurement

Measurement procedure

The measurements were performed in a shielded room. EUT was placed on a non-metallic table Height of 0.4 m above the reference ground plane. They were folded back and forth forming a bundle 30 cm to 40 cm long and were hanged at a 40 cm height to the ground plane. Each EUT power lead, except ground (safety) lead, was individually connected through a LISN to Input power source. Both lines of power cord, hot and neutral, were measured.

7.2 Used equipment

Equipment	Model No.	Serial No.	Manufacturer	Next cal date	Used
Test receiver	ESPI3	100109	R&S	2009.3.03	●
L.I.S.N.	ESH2-Z5	100044	R&S	2009.4.30	●
	ESH3-Z5	100147	R&S	2008.8.06	●

Measurement uncertainty

Conducted Emission measurement: ± 2.4 dB (K=2)

7.3 Test Data

Mode 1. Displayed A/V signal to TV by E.U.T.

< Class B >

FREQ. (MHz)	LEVEL(dB μ V)		LINE PoI	Loss (dB)	LIMIT(dB μ V)		MARGIN(dB)	
	QP	AV			QP	AV	QP	AV
0.162	42.38	24.39	L	0.08	65.36	55.36	22.98	30.97
0.194	47.90	36.06	N	0.08	63.86	53.86	15.96	17.80
0.258	43.59	33.64	L	0.29	61.50	51.50	17.91	17.86
0.846	42.33	40.14	N	0.43	56.00	46.00	13.67	5.86
0.974	44.06	41.47	N	0.43	56.00	46.00	11.94	4.53
1.558	44.35	41.23	N	0.44	56.00	46.00	11.65	4.77
10.330	39.40	30.98	L	1.33	60.00	50.00	20.60	19.02
11.630	45.44	38.96	L	1.43	60.00	50.00	14.56	11.04
12.410	43.93	41.75	N	1.52	60.00	50.00	16.07	8.25

- * Level = test receiver reading value
- * Loss = LISN insertion Loss + Cable Loss

Mode 2. Upload & download data to E.U.T.

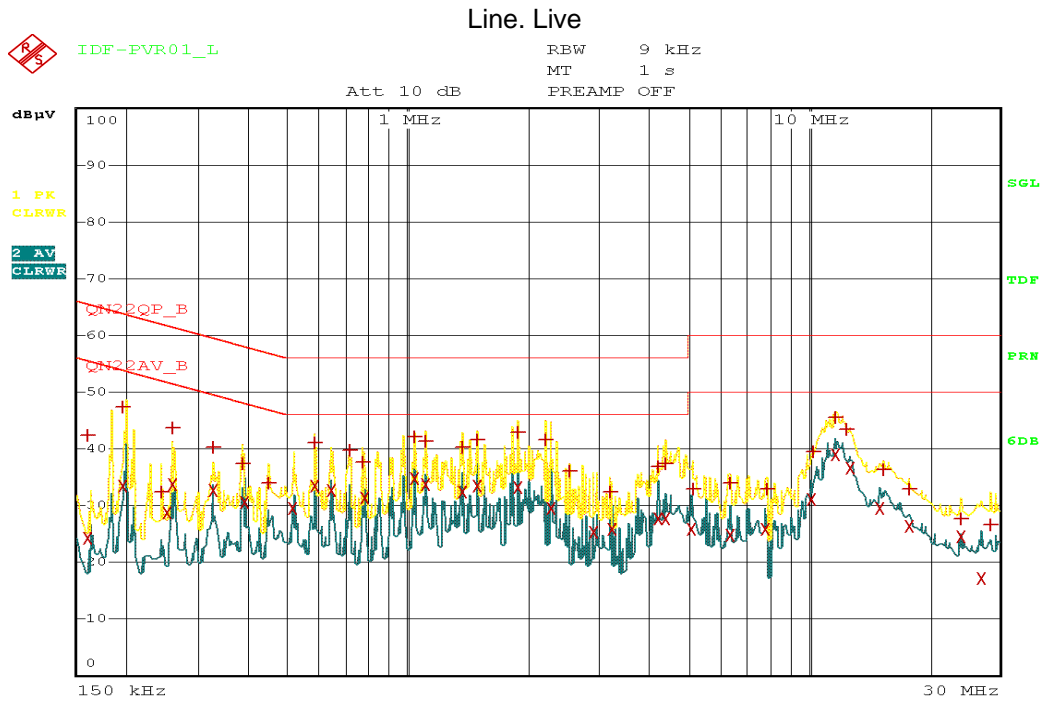
< Class B >

FREQ. (MHz)	LEVEL(dB μ V)		LINE PoI	Loss (dB)	LIMIT(dB μ V)		MARGIN(dB)	
	QP	AV			QP	AV	QP	AV
0.326	41.45	39.15	L	0.29	59.55	49.55	18.10	10.40
0.390	43.86	41.92	L	0.29	58.06	48.06	14.20	6.14
0.454	40.20	34.12	L	0.29	56.80	46.80	16.60	12.68
0.974	44.29	41.55	N	0.43	56.00	46.00	11.71	4.45
1.690	44.62	41.69	L	0.44	56.00	46.00	11.38	4.31
2.146	46.89	42.02	L	0.57	56.00	46.00	9.11	3.98
10.266	43.64	41.87	N	1.33	60.00	50.00	16.36	8.13
10.978	43.80	42.94	N	1.33	60.00	50.00	16.20	7.06
12.542	37.84	36.14	L	1.52	60.00	50.00	22.16	13.86

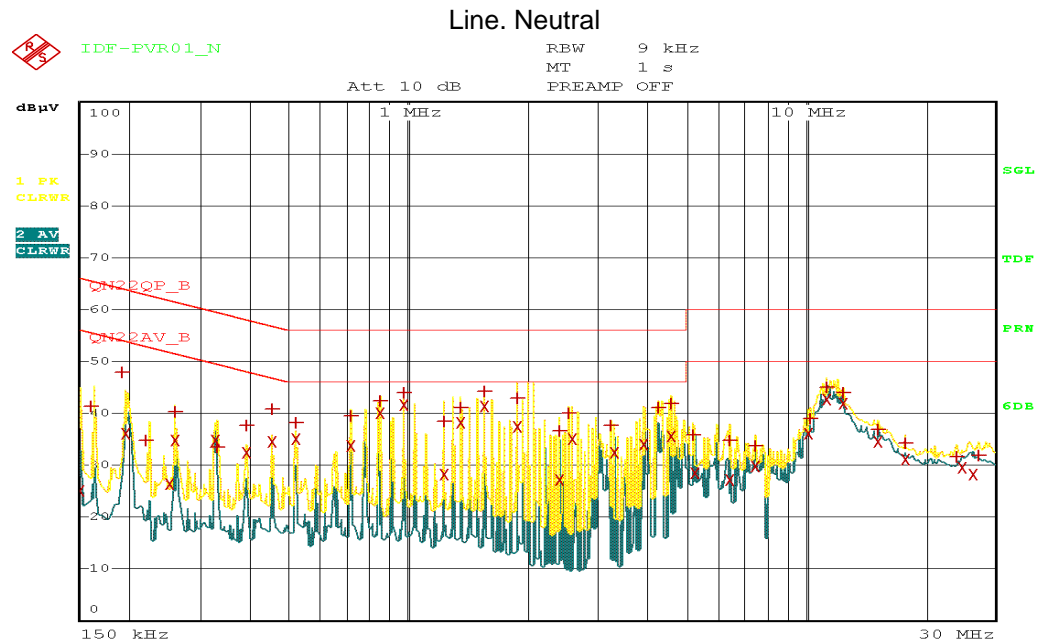
- * Level = test receiver reading value
- * Loss = LISN insertion Loss + Cable Loss

Conducted emission test graph

Mode 1. Displayed A/V signal to TV by E.U.T.



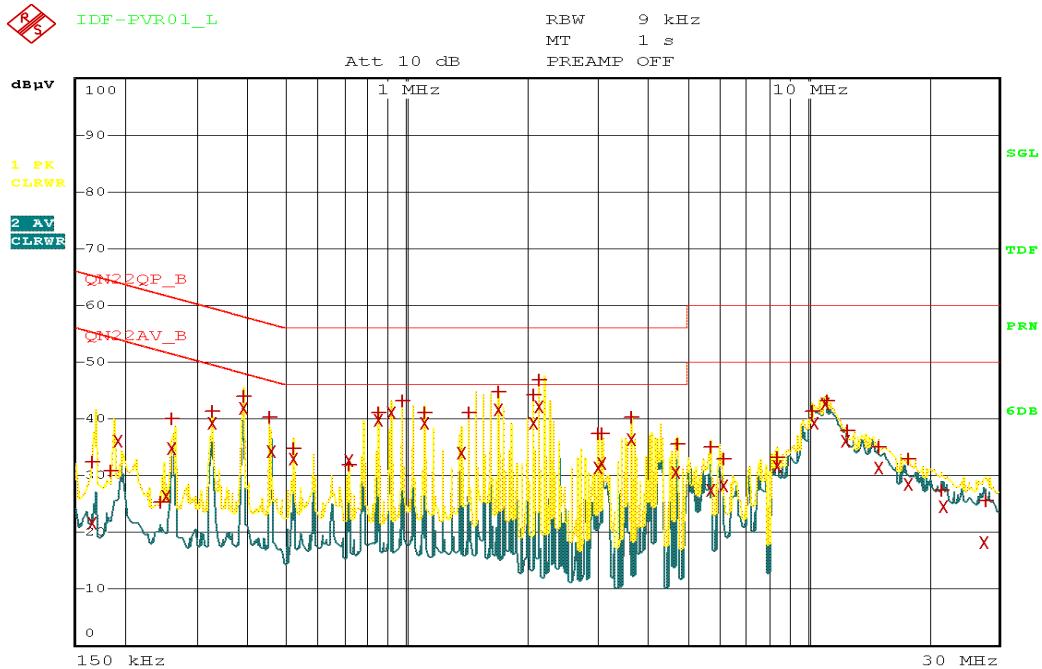
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Date: 2.JUN.2008 13:01:06

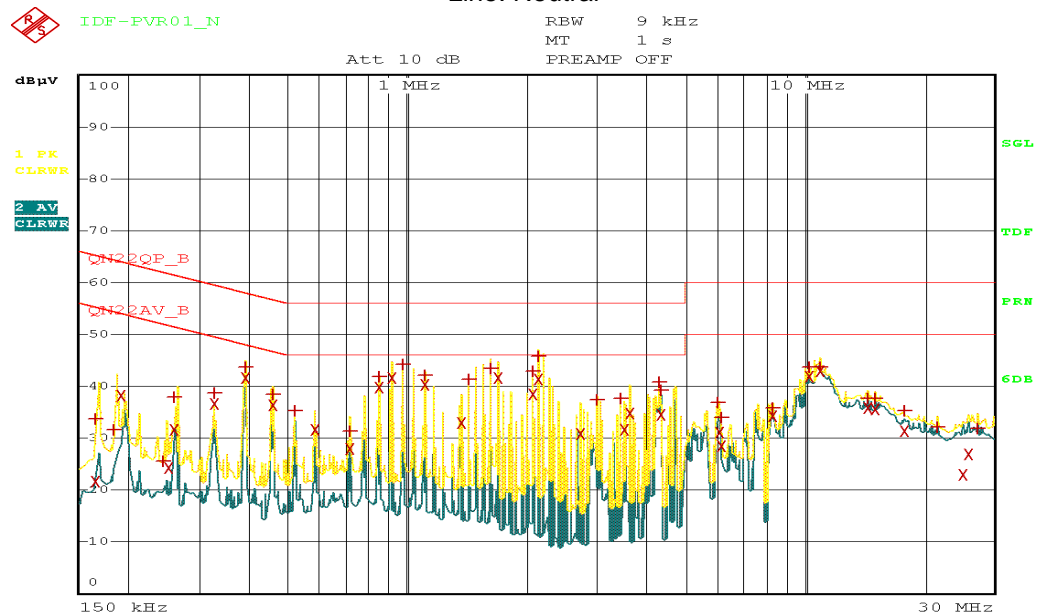
Mode 2. Upload & download data to E.U.T

Line. Live



Date: 2.JUN.2008 12:44:20

Line. Neutral



Date: 2.JUN.2008 12:40:49

7.4 Radiated Emission Measurement

Measurement procedure

A pretest was performed at 3 m distances in a semi-anechoic chamber for searching correct Frequency.

The final test was done at a 10 m open area test site with a quasi-peak detector.

EUT was placed on a non-metallic table height of 0.8 m above the reference ground plane.

Cables connected to EUT were fixed to cause maximum emission.

Test was made with the antenna positioned in both the horizontal and vertical planes of polarization.

The measurement antenna was varied in height above the conducting ground plane to obtain the Maximum signal strength.

7.5 Used equipment

Equipment	Model No.	Serial No.	Manufacturer	Next cal date	USED
Test receiver	ESCS30	100111	R&S	2009.3.07	●
Ultra broadband antenna	HL562	100075	R&S	2010.3.20	●
Antenna Mast	AT14	None	Daeil EMC	-	●
Turn Table	TT15	None	Daeil EMC	-	●
10m Open area site	None	None	KOSTEC Lab	-	●
Chamber (3 m)	None	None	FRANCONIA	-	-

Measurement uncertainty

Radiated Emission measurement: 30 – 300 MHz + 3.96 dB / -4.04 dB
300 – 1000 MHz + 3.04 dB / -3.00 dB

7.6 Test Data

Mode 1. Displayed A/V signal to TV by E.U.T.

< Class B >

Freq (MHz)	Reading (dB μ V)	P (H/V)	H (m)	A (.)	Antenna (dB/m)	Cable Loss (dB)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
120.00	10.92	H	2.70	90	9.60	3.70	35.40	43.5	8.10
167.99	10.34	H	1.80	225	7.40	4.36	32.10	43.5	11.40
197.31	12.77	H	2.20	225	7.24	4.98	28.80	43.5	14.70
221.17	9.10	H	1.60	180	8.28	4.92	34.90	46.0	11.10
313.87	2.40	V	1.20	90	11.39	6.63	38.20	46.0	7.80
398.49	8.98	V	1.60	180	13.46	7.38	42.40	46.0	3.60
414.49	7.18	H	1.80	225	13.82	7.54	39.70	46.0	6.30
627.74	7.17	H	2.00	270	17.37	9.40	41.60	46.0	4.40

Reading = Test receiver reading / P= antenna Polarization / H=antenna High

A=turn table Angle / Antenna = antenna factor / Cable loss = used cable loss

Result = reading + antenna + loss / Margin = Limit - result

* Receiving Antenna Mode: Horizontal, Vertical / * Test site: 10 m Open area site

Mode 2. Upload & download data to E.U.T.

< Class B >

Freq (MHz)	Reading (dB μ V)	P (H/V)	H (m)	A (.)	Antenna (dB/m)	Cable Loss (dB)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
120.00	10.92	V	1.20	225	9.60	3.70	29.30	43.5	14.20
155.99	10.34	H	2.20	135	7.80	4.35	29.90	43.5	13.60
167.99	12.77	H	2.20	135	7.40	4.36	32.70	43.5	10.80
221.17	9.10	H	1.60	190	8.28	4.92	34.80	46.0	11.20
311.99	2.40	H	1.20	190	11.33	6.61	31.60	46.0	14.40
698.24	8.98	H	2.20	180	18.38	9.98	40.60	46.0	5.40
764.74	7.18	H	2.20	180	19.00	10.80	36.10	46.0	9.90
897.73	7.17	H	2.20	315	20.64	11.84	35.50	46.0	10.50

Reading = Test receiver reading / P= antenna Polarization / H=antenna High

A=turn table Angle / Antenna = antenna factor / Cable loss = used cable loss

Result = reading + antenna + loss / Margin = Limit - result

* Receiving Antenna Mode: Horizontal, Vertical / * Test site: 10 m Open area site