

## FCC EVALUATION REPORT FOR Certification of Conformity

### 1. Client

Name : IDPHONE Co., Ltd.

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

Date of Receipt : December 26, 2008

### 2. Test Sample : KAISHOT (IDF-PVR02)

### 3. Date of Test : December 2, 2008

### 4. Test method used : FCC Part 15 subpart B Class B digital devices & peripherals

### 5. Testing Environment :

Temperature : ( 2 ~ 18 ) °C , Relative Humidity : ( 27 ~ 35 ) % 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	<b>Tested by</b>	<b>Technical Manager</b>
	Name : Lee, Jun-Hui (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.

2008.12.31

**KOSTEC Co., Ltd.**

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## 1. Testing Environment

- 1) Equipment: KAISHOT
- 2) Model Name: IDF-PVR02
- 3) Serial No.: Prototype
- 4) Type of Sample Tested: Pre-production
- 5) High Frequency Used: 32.768 kHz, 12 MHz, 14.318 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: September 22, 2008
- 10) Manufacturer: IDPHONE Co.,Ltd.
- 11) Manufacturer: 7F Ace Techno Tower 5<sup>th</sup> B/D, 197-22 Guro-Dong, Guro-Gu, Seoul, Korea, 152-766
- 12) Description of Operating: Recorded the A/V signal to the Micro SDHC Card.  
Displayed A/V signal to TV by E.U.T.
- 13) Dates of Test: December 26, 2008
- 14) Place of Tests: KOSTEC Co., Ltd. EMC site
- 15) Test Report No.: KST-FCC-080154
- 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**

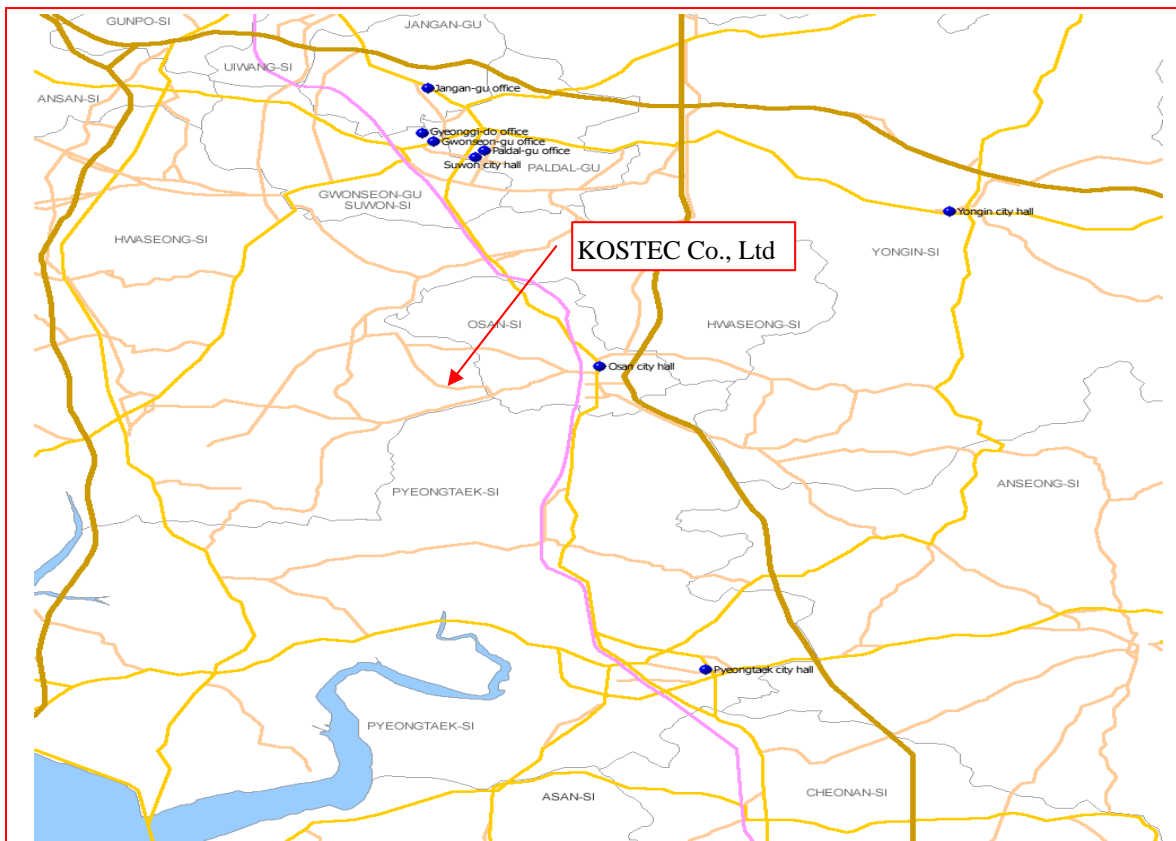
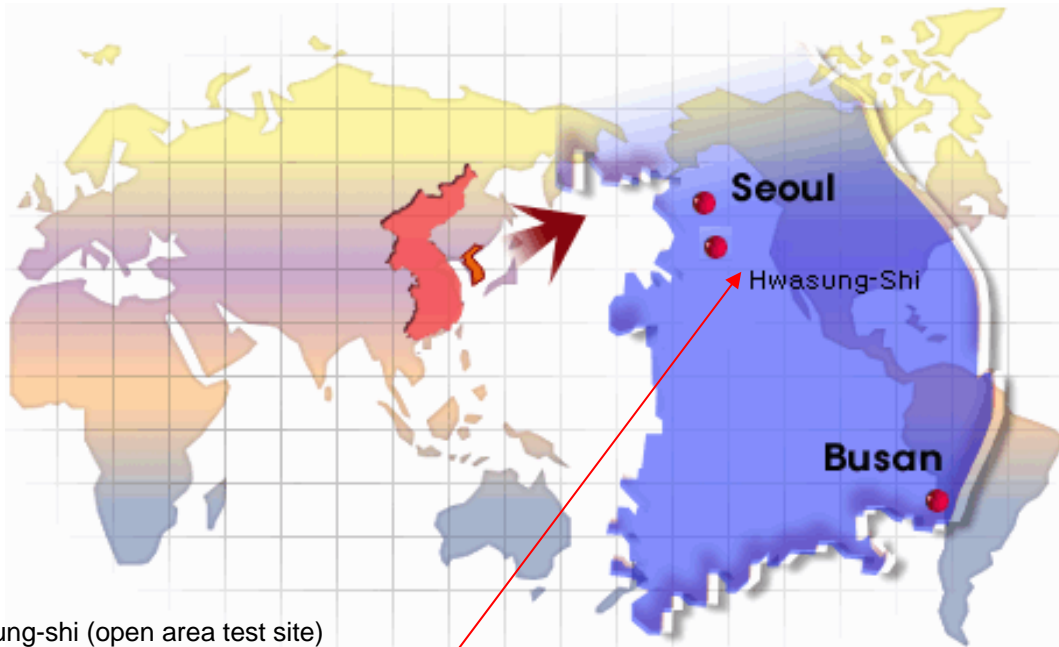
**VCCI** Membership Number of KOSTEC Co., Ltd.: **2005**

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

**KOLAS** Number: **232**

### 3. Route Map of Measurement Facility

Korea



## 4. TEST SYSTEM CONFIGURATION

### 4.1 Operation Environment

Ambient	<u>Temperature</u> (℃)	<u>Humidity</u> (%R.H.)	<u>Atmospheric pressure</u> (kPa)
10m Open Area site :	( 2 ~ 4 ) ℃	( 34 ~ 35 ) %R.H.	101.2 kPa
Shielded room :	( 18 ~ 19 ) ℃	( 28 ~ 30 ) %R.H.	101.2 kPa

#### 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:

$$FS = MR + LF + CL$$

MR = Meter Reading

LF = LISN Factor

CL = Cable Loss

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
Battery	IDFONE Co.,Ltd	IDF-PVR01-BAT	BAS-0807-0020
Main controller board	IDFONE Co.,Ltd	MAIN B/D	None
Switch board	IDFONE Co.,Ltd	Key B/D	None
LCD panel	GP	T240320-B3	SYT0852311
Adapter	AULT KOREA Corp.	JPW110	None

### 5.2 E.U.T. Used cables

Cable Type	Shield	Length (m)	Ferrite	Connector	Connection Point 1	Connection Point 2
Record mode						
12Pin connector	Yes	1.5	Yes	12Pin connector type	E.U.T.	DSP COLOR CCD CAMERA
6Pin connector	Yes	0.3	No	USB	E.U.T.	54M Wireless USB Adapter
Micro SD Card Slot	-	-	-	Micro SDHC Card Slot Type	E.U.T.	Micro SDHC Card
DC IN	Yes	1.5	No	Din	E.U.T.	Adapter
Display mode						
12Pin connector	Yes	1.5	Yes	12Pin connector type	E.U.T.	DSP COLOR CCD CAMERA
6Pin connector	Yes	0.3	No	USB	E.U.T.	54M Wireless USB Adapter
Micro SD Card Slot	-	-	-	Micro SDHC Card Slot Type	E.U.T.	Micro SDHC Card
DC IN	Yes	1.5	No	Din	E.U.T.	Adapter
A/V OUT	Yes	1.5	Yes	RCA	E.U.T.	TV
USB	Yes	1.5	Yes	-	E.U.T.	-

### 5.3 Operating conditions

The operating mode/system was as follows in details:

**Record mode :** After setting, the each I/O port of E.U.T connected to DSP COLOR CCD CAMERA, 54M Wireless USB Adapter, Micro SDHC Card and Adapter. And then the E.U.T was tested in a state of record the A/V signal to the Micro SDHC Card.

**Display mode :** After setting, the each I/O port of E.U.T connected to DSP COLOR CCD CAMERA, 54M Wireless USB Adapter, Micro SDHC Card, Adapter and TV. And then the E.U.T was tested in a state of display the A/V signal of the Micro SDHC Card.

(E.U.T. can't perform Record mode and Display mode 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	2009.6.25	●

#### Measurement uncertainty

Conducted Emission measurement:  $\pm 2.4$  dB (K=2)



### 7.3 Test Data

Record mode

#### < Class B >

FREQ. (MHz)	LEVEL(dB $\mu$ V)		LINE PoI	Loss (dB)	LIMIT(dB $\mu$ V)		MARGIN(dB)	
	QP	AV			QP	AV	QP	AV
0.198	56.61	46.84	N	0.08	63.69	53.69	7.08	6.85
0.258	54.14	48.22	N	0.29	61.50	51.50	7.36	3.28
0.322	48.68	43.19	N	0.29	59.66	49.66	10.98	6.47
0.518	36.83	34.80	N	0.90	56.00	46.00	19.17	11.20
0.646	37.52	35.40	N	0.90	56.00	46.00	18.48	10.60
1.294	37.00	33.41	N	0.44	56.00	46.00	19.00	12.59
5.438	30.98	26.85	N	0.75	60.00	50.00	29.02	23.15
6.158	29.81	23.22	L	0.97	60.00	50.00	30.19	26.78
7.310	30.05	14.38	N	1.20	60.00	50.00	29.95	35.62

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

Display mode

#### < Class B >

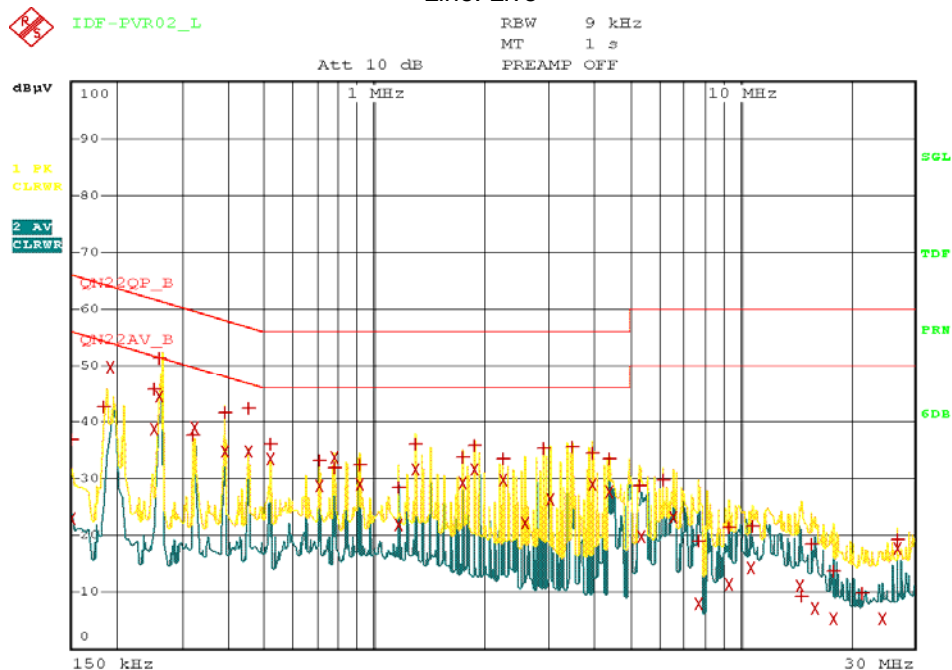
FREQ. (MHz)	LEVEL(dB $\mu$ V)		LINE PoI	Loss (dB)	LIMIT(dB $\mu$ V)		MARGIN(dB)	
	QP	AV			QP	AV	QP	AV
0.174	50.37	43.20	L	0.08	64.77	54.77	14.40	11.57
0.190	54.79	46.85	L	0.08	64.04	54.04	9.25	7.19
0.258	52.00	42.21	N	0.29	61.50	51.50	9.50	9.29
0.518	36.30	31.90	L	0.90	56.00	46.00	19.70	14.10
0.646	35.28	31.91	L	0.90	56.00	46.00	20.72	14.09
3.034	35.11	23.40	L	0.62	56.00	46.00	20.89	22.60
5.234	27.82	24.66	N	0.75	60.00	50.00	32.18	25.34
7.494	28.31	26.61	N	1.20	60.00	50.00	31.69	23.39
8.914	28.95	26.46	N	1.24	60.00	50.00	31.05	23.54

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

## Conducted emission test graph

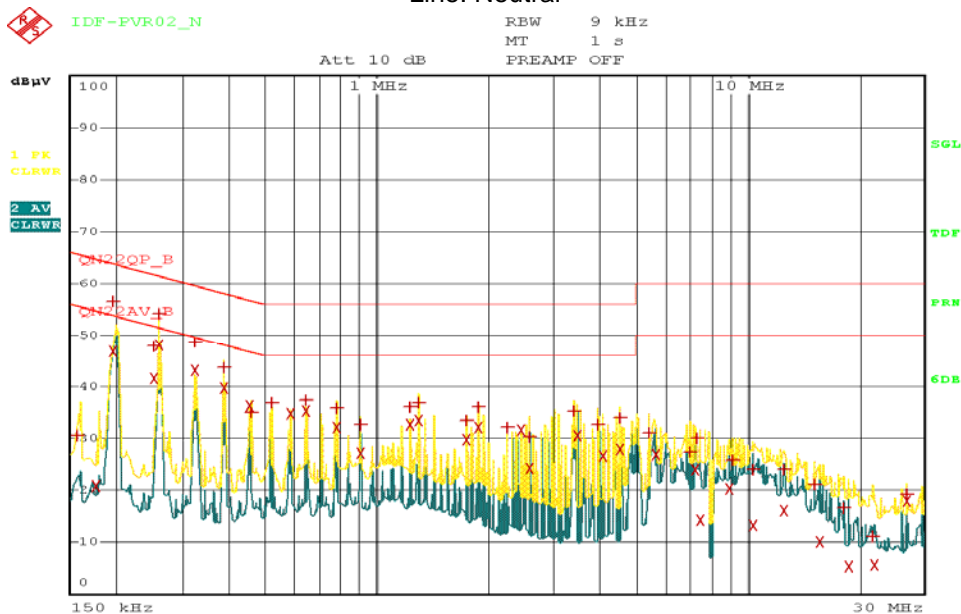
Record mode

Line. Live



Date: 5.JAN.2009 11:37:26

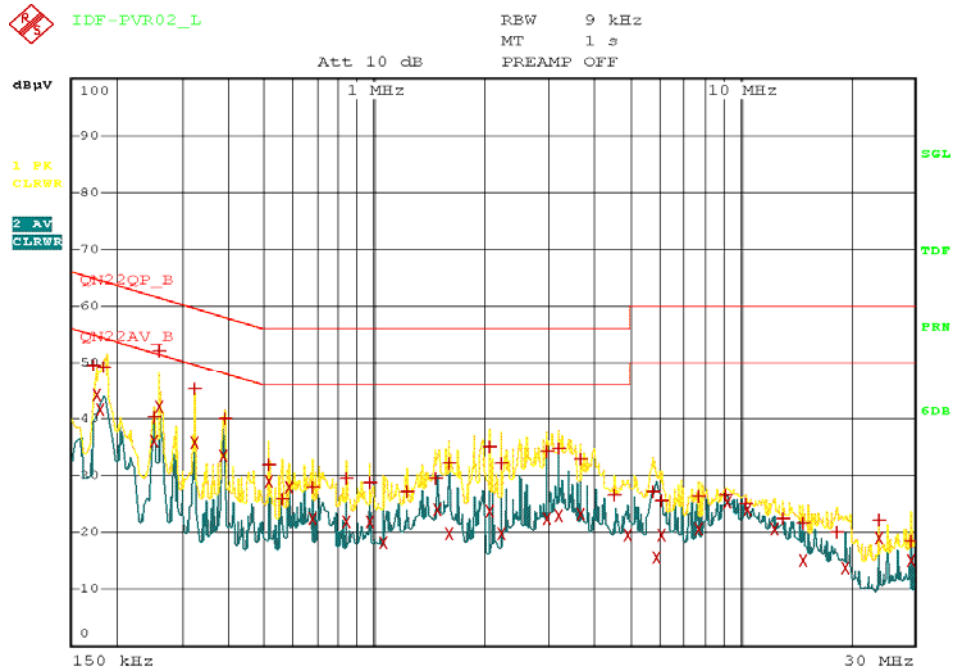
Line. Neutral



Date: 5.JAN.2009 11:41:58

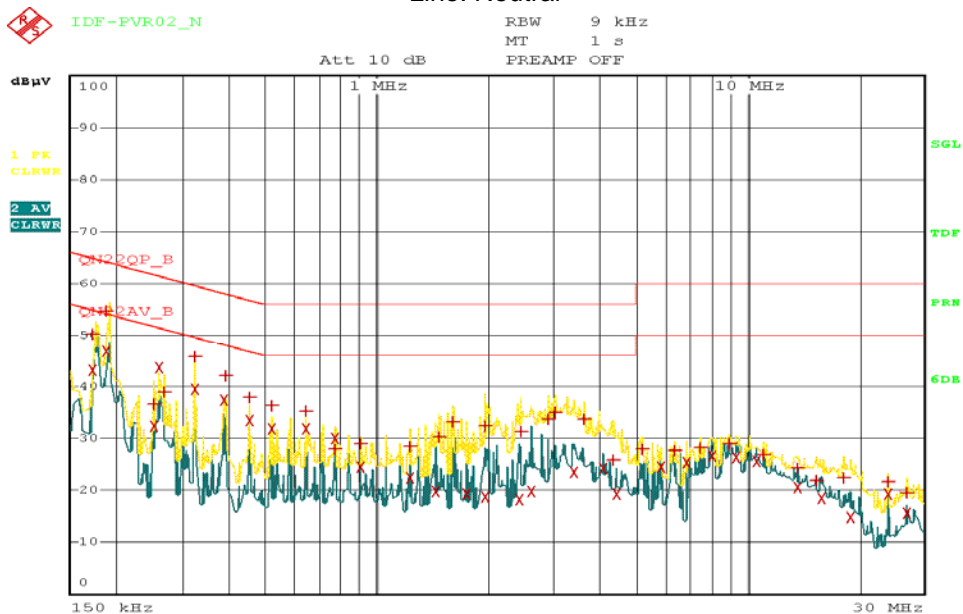
Display mode

Line. Live



Date: 5.JAN.2009 12:01:22

Line. Neutral



Date: 5.JAN.2009 11:57:17

#### 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

Record mode

### < Class B >

Freq (MHz)	Reading (dB $\mu$ V)	P (H/V)	H (m)	A (. )	Antenna (dB/m)	Cable Loss (dB)	Result (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
81.00	10.92	V	3.20	90	8.25	3.40	29.80	40.0	10.20
141.88	10.34	H	2.40	315	7.95	4.11	29.50	43.5	14.00
166.25	12.77	V	1.00	180	7.40	4.38	35.60	43.5	7.90
212.81	9.10	H	1.40	45	7.72	4.98	35.00	43.5	8.50
523.13	2.40	H	1.90	270	16.07	8.29	38.80	46.0	7.20
531.99	8.98	H	2.00	270	16.01	8.53	38.40	46.0	7.60
539.13	7.18	H	1.90	90	16.09	8.77	39.40	46.0	6.60
709.38	7.17	H	1.40	45	18.49	10.09	41.00	46.0	5.00

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

Display mode

### < Class B >

Freq (MHz)	Reading (dB $\mu$ V)	P (H/V)	H (m)	A (. )	Antenna (dB/m)	Cable Loss (dB)	Result (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
81.00	10.92	V	1.00	90	8.25	3.40	30.20	40.0	9.80
108.00	10.34	V	1.00	270	9.13	3.80	34.50	43.5	9.00
133.00	12.77	V	1.20	360	8.43	4.10	29.60	43.5	13.90
166.25	9.10	V	1.00	180	7.40	4.38	35.70	43.5	7.80
313.88	2.40	H	3.30	360	11.39	6.63	36.50	46.0	9.50
398.99	8.98	V	1.50	135	13.46	7.38	39.50	46.0	6.50
627.75	7.18	H	1.40	360	17.37	9.40	38.50	46.0	7.50
764.74	7.17	H	1.40	270	19.00	10.80	39.40	46.0	6.60

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