Nemko Korea Co., Ltd.

300-2, Osan-Ri, Mohyun-Myeon, Cheoin-Gu, Yongin-City, Gyeonggi-Do, Korea
TEL:+ 82 31 322 2333 FAX:+ 82 31 322 2332

FCC PART 15 Class II Permissive Change

Applicant :

D&T Inc.
Daedeok Valley, 59-9, Jang Dong, Yuseong Gu,
Daejeon, 305-343 Korea
Attn : Mr. Kyutae Park

Dates of Issue : August 24, 2010
Test Report No. : NK-10-E-663
Test Site : Nemko Korea Co., Ltd.
EMC site, Korea

FCC ID	***THCFS-P6501C***
Brand Name	***TANDBERG, CISCO***
Contact Person	**D&T Inc.** **Daedeok Valley, 59-9, Jang Dong, Yuseong Gu,** **Daejeon, 305-343 Korea** **Mr. Kyutae Park** **Telephone No. : + 82 42 360 8000**

Applied Standard:	Part 15 & 2
Classification :	FCC Class B Device
EUT Type:	65” LCD Monitor

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 the measurement procedures specified in ANSI C63.4-2003.

I attest to the accuracy of data and all measurements reported herein were performed by me 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.

Aug. 24. 2010
Tested By : Kiwang Kim
Engineer

Aug. 24. 2010
Reviewed By : Hyunho Kim
Manager & Chief Engineer

TABLE OF CONTENTS

SCOPE

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission under FCC part 15.

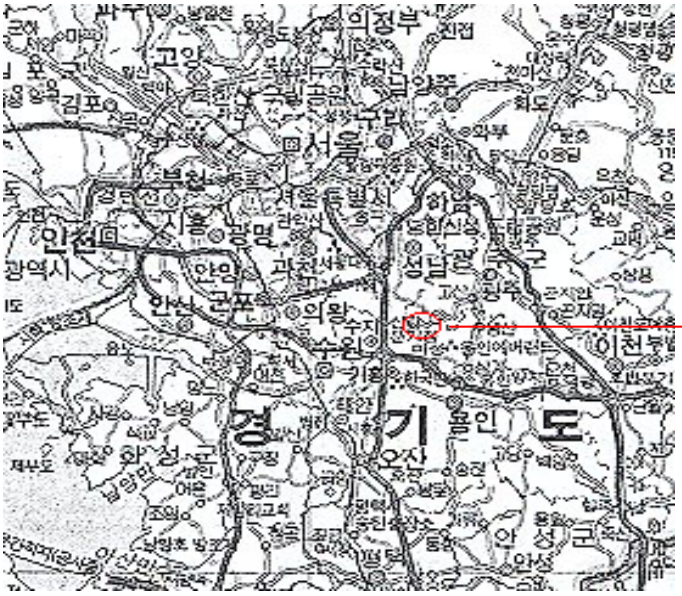
Responsible Party :	D&T Inc.
Contact Person :	Mr. Kyutae Park Tel No.: + 82 42 360 8000
Manufacturer :	D&T Inc. Daedeok Valley, 59-9, Jang Dong, Yuseong Gu, Daejeon, 305-343 Korea
Factory :	D&T Inc. Daedeok Valley, 59-9, Jang Dong, Yuseong Gu, Daejeon, 305-343 Korea

- FCC ID: THCFS-P6501C
- Model: FS-P6501C
- Alternate Model: FS-P6502C
- EUT Type: 65” LCD Monitor
- Electric Rating: a.c. 100-240 V, 50-60 Hz, 5 A MAX.
- Test Voltage: a.c. 120 V, 60 Hz
- Port/Connector: HDMI x 3 EA, D-Sub x 1 EA, RS-232 Input x 1 EA, RS-232 Output x 1 EA, Speaker Input x 1 EA
- Classification: FCC Class B
- Applied Standard: FCC Part 15 & Part 2
- Test Procedure(s): ANSI C63.4 (2003)
- Dates of Test: July 23, 2010 to August 10, 2010
- Place of Tests: Nemko Korea Co., Ltd. EMC Site
- Test Report No.: NK-10-E-663

INTRODUCTION

The measurement procedure described in American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz (ANSI C63.4-2003) was used in determining radiated and conducted emissions emanating from **D&T Inc.**
FCC ID : **THCFS-P6501C, 65" LCD Monitor.**

These measurement tests were conducted at ***Nemko Korea Co., Ltd. EMC Laboratory***.
The site address is 300-2, Osan-Ri, Mohyun-Myeon, Cheoin-Gu, Yongin-City, Gyeonggi-Do, KOREA
The area of Nemko Korea Corporation Ltd. EMC Test Site is located in a mountain area at 80 kilometers (48 miles) southeast and Incheon International Airport (Incheon Airport), 30 kilometers (18miles) south-southeast from central Seoul.
It is located in the valley surrounded by mountains in all directions where ambient radio signal conditions are quiet and a favorable area to measure the radio frequency interference on open field test site for the computing and ISM devices manufactures.
The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4 on 2003.



Nemko Korea Co., Ltd.
OPEN AREA TEST SITE
300-2, Osan-Ri, Mohyun-Myeon,
Cheoin-Gu, Yongin-City, Gyeonggi-Do,
KOREA, 449-852
Tel)+ 82 31 322 2333
Fax)+ 82 31 322 2332

Fig. 1. The map above shows the Seoul in Korea vicinity area.
The map also shows Nemko Korea Corporation Ltd. EMC Lab and Incheon Airport.

TEST CONDITIONS & EUT INFORMATION

Operating During Test

The EUT was connected to the PC and it displayed continuously an “H” pattern on the screen. The EUT was set to 1920 x 1080 video resolution, with 60 Hz vertical refresh rate.

Support Equipment

65” LCD Monitor (EUT)	D&T Inc. FCC ID : THCFS-P6501C 1.9 m shielded HDMI cable 1.8 m shielded Analogue cable 1.8 m unshielded RS-232 cable	S/N: N/A
PC	Dell Inc. Model : DCSM 1.6 m unshielded AC power cable	FCC DOC S/N: N/A
Mouse	Kardak Model : M056UO 1.8 m unshielded USB cable	FCC DOC S/N : 513032204
Keyboard	Samsung Electro-Mechanics Co., Ltd. Model : SDM4600UH 1.8 m unshielded USB cable	FCC DOC S/N : 4S006484
Printer	HEWLETT PACKARD COMPANY. Model : C6429A 1.8 m shielded parallel cable 1.8 m unshielded AC power cable	FCC DOC S/N: N/A
Dummy load	N/A	S/N : N/A

EUT Information

Clock	27.00 MHz (Y1), 28.322 MHz(Y2)
Chipset(s)	U4(SII9185), U10(SII9125), U12(M29W800DT),
	U14/U15(DDR400_SDRAM_256M), U29(ATmega88V-10AU),
	U27(AD9984AKSTZ-170)
LCD Panel Type	A-si TFT Active matrix
Screen size	163.9 cm (Diagonal)
Maximum Resolution	1920 x 1080 @ 60 Hz
Pixel pitch	0.744 (H) mm x 0.744 (V) mm
Display colors	1073.7 M (RGB 10-bit data)
Contrast Ratio(Typ.)	4000:1
Viewing Angle(Typ.)	89/89/89/89
Response Time(Typ.)	6.5 ms
Luminance(Typ.)	350 cd/m^2
Synchronization	Horizontal Frequency : 67.5 kHz
	Vertical Frequency : 60 Hz
Power Consumption	Maximum : 500 W
Port(s)	HDMI x 3 EA, D-Sub x 1 EA, RS-232 Input x 1 EA,
	RS-232 Output x 1 EA, Speaker Input x 1 EA
Size and weight	1532 x 170 x 1235.5 / 120 kg

EUT System

Equipment	Model	Manufacturer	Serial Number
LCD Panel	P645HW03	AU Optronics Corporation	N/A
Main Board	LB506	D&T Inc.	N/A
IO Board	LB506 IO Board	D&T Inc.	N/A
Inverter Board	V324-001(S1)	Darfon Electronics Corp.	N/A
	V324-001(S2)	Darfon Electronics Corp.	N/A
	V324-001(M)	Darfon Electronics Corp.	N/A
Status Indicator Board	LB506 Status Indicator Board (Left)	D&T Inc.	N/A
	LB506 Status Indicator Board (Right)	D&T Inc.	N/A
SMPS Board	DT-PB260W	D&T Inc.	N/A
AC DIVIDE BOARD	AC DIVIDE2	D&T Inc.	N/A

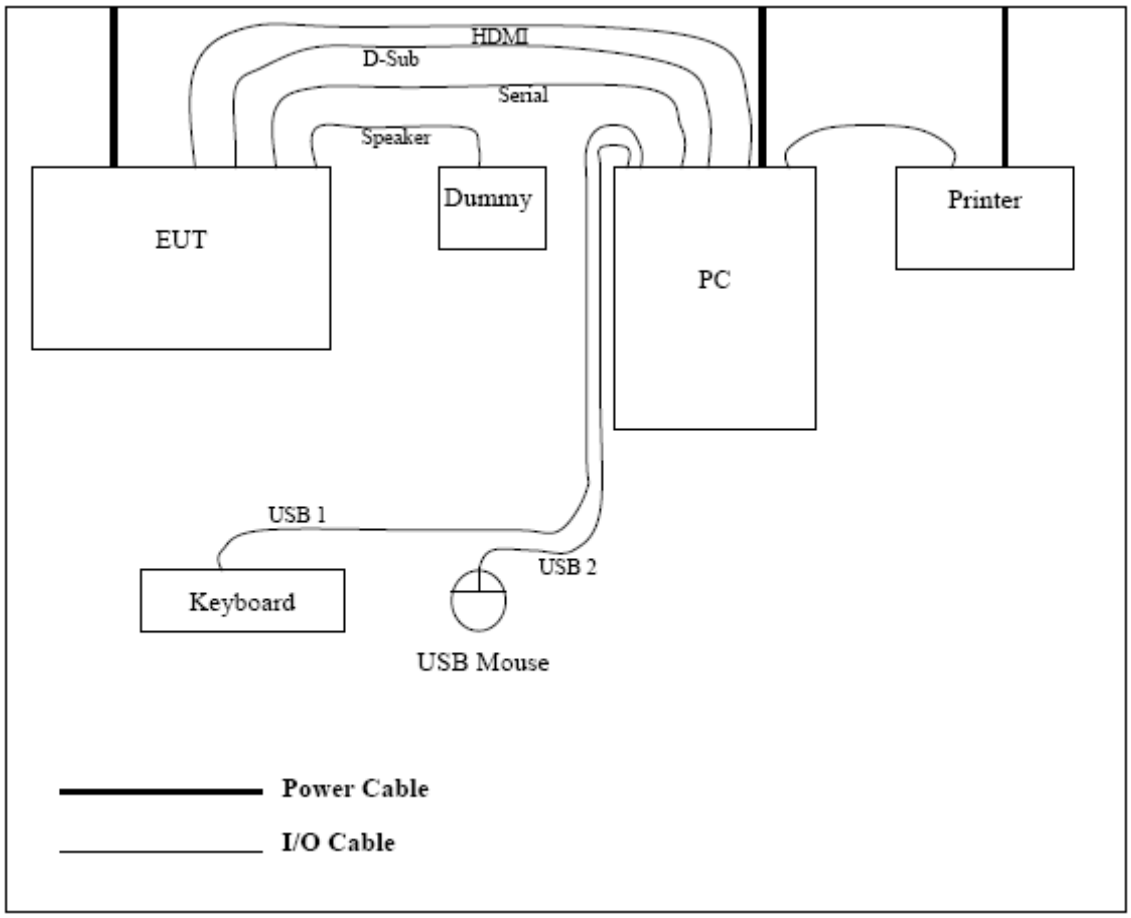
Description of Test Modes

The EUT was pre-tested under the following resolutions mode:

1. 800 x 600 (60 Hz / 37.9 kHz) : Clock 40.0 MHz
2. 1280 x 720 (60 Hz / 45 kHz) : Clock 74.25 MHz
3. 1366 x 768 (60 Hz / 48.3 kHz) : Clock 87.75 MHz
4. 1680 x 1050 (60 Hz / 64.7 kHz) : Clock 119.125 MHz
5. 1920 x 1080 (60 Hz / 67.5 kHz) : Clock 148.5 MHz

The worst emission level was found when the EUT was tested under 1920 x 1080 resolution, therefore, the test data of this mode was recorded in the report.

Setup Drawing



Description of the Changes according to FCC part 2.1043

Adding as follows.

Items	Before	After
LCD Panel	LK645D3LZ6L	P645HW03
Manufacturer of LCD panel	SHARP Corporation	AU Optronics Corporation
Inverter Board (included in LCD panel)	IM3852-1	V324-001(S1)
	IM3852-2	V324-001(S2)
	-	V324-001(M)
SMPS	0627D04349	DT-PB260W
Manufacturer of SMPS	LITE-ON TECHNOLOGY CORP	D&T Inc.
AC DIVIDE BOARD	AC DIVIDE BOARD R03B	AC DIVIDE 2 BOARD
MAIN BOARD	LB506(R03D)	LB506(R03F)
Product Label	Trademark is TANDBERG	Trademark is multiple (TANDBERG & CISCO)

SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specification:

Name of Test	Paragraph No.	Result	Remark
Conducted Emission	15.107(a)	Complies	
Radiated Emission	15.109(g)	Complies	Below 1 GHz
Radiated Emission	15.109(a)	Complies	Above 1 GHz

RECOMMENDATION/CONCLUSION

The data collected shows that the **D&T Inc.**
FCC ID : **THCFS-P6501C, 65" LCD Monitor.**
The highest emission observed was at **0.73 MHz** for conducted emissions with a A.V margin of **6.2 dB,** at **54.00 MHz** for radiated emissions with a margin of **3.2 dB.**

SAMPLE CALCULATION

$$\text{dB}\,\mu N = 20 \log_{10}(\mu N/\text{m})$$

$$\mu N = 10^{(\text{dB}\,\mu N/20)}$$

EX. 1.

@165.0 MHz Class B limit = 30.0 dB μN/m

Reading = 38.2 dB μN(calibrated level)
Antenna factor + Cable Loss + Amplifier Gain = -12.9 dB
Total = 25.30 dB μN/m
Margin = 30.0 – 25.30 = 4.70
4.70 dB below the limit

DESCRIPTION OF TESTS

Conducted Emissions

The Line conducted emission test facility is located inside a 4 x 7 x 2.5 m shielded enclosure.
It is manufactured by EM engineering. The shielding effectiveness of the shielded room is in accordance with MIL-STD-285 or NSA 65-6.
A 1 m x 1.5 m wooden table 0.8 m height is placed 0.4 m away from the vertical wall and 0.5 m away from the side of wall of the shielded room
Rohde & Schwarz (ESH2-Z5) and Rohde & Schwarz (ESH3-Z5) of the 50 ohm / 50 uH Line Impedance Stabilization Network(LISN) are bonded to the shielded room.
The EUT is powered from the Rohde & Schwarz (ESH3-Z5) LISN and the support equipment is powered from the Rohde & Schwarz (ESH2-Z5) LISN.
Power to the LISN s are filtered by high-current high insertion loss power line filters.
The purpose of filter is to attenuate ambient signal interference and this filter is also bonded to shielded enclosure. All electrical cables are shielded by tinned copper zipper tubing with inner diameter of 1 / 2 ".
If d.c. power device, power will be derived from the source power supply it normally will be powered from and this supply lines will be connected to the LISNs,
All interconnecting cables more than 1 m were shortened by non inductive bundling (serpentine fashion) to a 1 m length.
Sufficient time for EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the spectrum analyzer to determine the frequency producing the maximum EME from the EUT.
The spectrum was scanned from 150 kHz to 30 MHz with 20 ms sweep time.
The frequency producing the maximum level was re-examined using the EMI test receiver. (Rohde & Schwarz ESCS30).
The detector functions were set to CISPR quasi-peak mode & average mode.
The bandwidth of receiver was set to 9 kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each EME emission.
Each emission was maximized by; switching power lines; varying the mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and of support equipment, and powering the monitor from the floor mounted outlet box and computer aux a.c. outlet, if applicable; which ever determined the worst case emission.
Each EME reported was calibrated using the R&S signal generator.

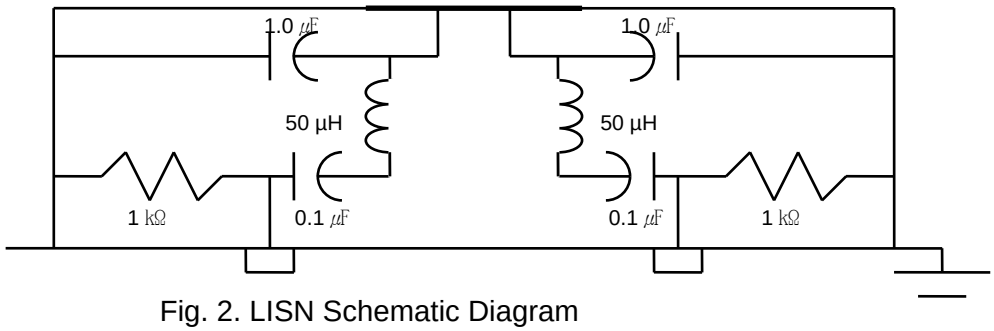


Fig. 2. LISN Schematic Diagram

DESCRIPTION OF TESTS

Radiated Emissions

Preliminary measurement were made indoors at 3 meter using broad band antennas, broadband amplifier, and spectrum analyzer to determine the frequency producing the maximum EME. Appropriate precaution was taken to ensure that all EME from the EUT were maximized and investigated. The Technology configuration, clock speed, mode of operation or video resolution, turntable azimuth with respect to the antenna was note for each frequency found. The spectrum was scanned from 30 to 1000 MHz using Biconical log Antenna(ARA, LPB-2520/A). Above 1 GHz, Double Ridged Broadband Horn Antenna (SCHWARTZBECK, BBHA9120D) was used.
Final Measurements were made outdoors at 10 m test range using Trilog-Broadband Antenna (Shwarzbeck, VULB9168) and Above 1 GHz, at 3 m test range using a Double Ridged Broadband Horn Antenna(SCHWARTZBECK, BBHA9120D) in fully anechoic chamber.
The test equipment was placed on a wooden table.
Sufficient time for the EUT, support 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 reexamined and investigated using EMI test receiver. (ESCS30) & (FSP40)
The detector function were set to CISPR quasi-peak and peak mode and the bandwidth of the receiver were set to 120 kHz and 1MHz depending on the frequency or type of signal.
The half wave dipole antenna was tuned to the frequency found during preliminary radiated measurements.
The EUT support equipment and interconnecting cables were re configured to the setup producing the maximum emission for the frequency and were placed on top of a 0.8 m high non- metallic 1.0 x 1.5 meter table.
The EUT, support equipment and interconnecting cables were re-arranged and manipulated to maximize each EME emission.
The turn table containing the Technology was rotated; the antenna height was varied 1 to 4 meter and stopped at the azimuth or height producing the maximum emission. Each emission was maximized by : switching power lines; varying the mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and of support equipment, and powering the monitor from the floor mounted outlet box and computer aux a.c. outlet, if applicable; which ever determined the worst case emission.
Each EME reported was calibrated using the R/S signal generator.

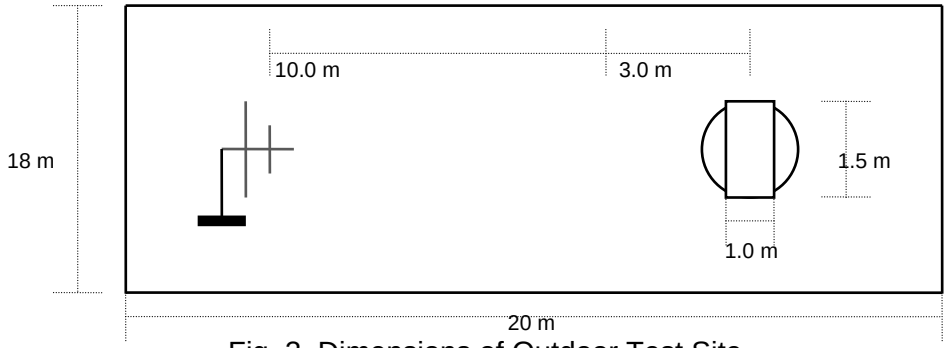


Fig. 3. Dimensions of Outdoor Test Site

TEST DATA

Conducted Emissions

FCC ID : THCFS-P6501C

▶D-Sub mode

Frequency	Level(dBμV)		*)Factor	**) Line	Limit(dBμV)		Margin(dB)	
(MHz)	Q-Peak	Average	(dB)		Q-Peak	Average	Q-Peak	Average
0.26	44.9	42.7	0.2	L	61.4	51.4	16.5	8.7
0.33	44.0	42.6	0.2	L	59.5	49.5	15.5	6.9
0.73	41.4	39.8	0.1	L	56.0	46.0	14.6	6.2
1.20	42.1	39.5	0.2	L	56.0	46.0	13.9	6.5
3.22	46.8	39.0	0.2	L	56.0	46.0	9.2	7.0
4.16	39.3	35.4	0.2	L	56.0	46.0	16.7	10.6

Table 1. Line Conducted Emissions Tabulated Data

▶HDMI mode

Frequency	Level(dBμV)		*)Factor	**) Line	Limit(dBμV)		Margin(dB)	
(MHz)	Q-Peak	Average	(dB)		Q-Peak	Average	Q-Peak	Average
0.26	44.7	42.6	0.2	N	61.4	51.4	16.7	8.8
0.33	45.2	42.7	0.2	N	59.5	49.5	14.3	6.8
0.73	41.7	39.8	0.1	N	56.0	46.0	14.3	6.2
1.21	42.0	39.4	0.2	N	56.0	46.0	14.0	6.6
3.29	47.4	37.9	0.2	N	56.0	46.0	8.6	8.1
15.60	45.3	42.0	0.9	N	60.0	50.0	14.7	8.0

Table 2. Line Conducted Emissions Tabulated Data

NOTES:

1. Measurements using CISPR quasi-peak mode & average mode.

2. All modes of operation were investigated and the worst -case emission are reported. See attached Plots.

3. LINE : L =Line , N = Neutral

4. The limit for Class B device is on the FCC Part section 15.107(a).

Tested by : ***Kiwang Kim***

TEST DATA

Radiated Emissions

FCC ID : THCFS-P6501C

▶30 MHz ~ 1 GHz (D-Sub mode)

Frequency (MHz)	Reading (dBμV/m)	Pol* (H/V)	Antenna Heights (cm)	Turntable Angles (°)	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
54.00	48.3	H	400	210	-21.6	26.7	30.0	3.3
108.00	37.4	V	100	270	-18.1	19.3	30.0	10.7
135.00	43.7	V	100	260	-18.6	25.1	30.0	4.9
148.50	43.1	V	100	280	-18.6	24.5	30.0	5.5
192.43	40.5	V	100	80	-16.7	23.8	30.0	6.2
703.97	23.4	V	160	180	-5.2	18.2	37.0	18.8

Table 3. Radiated Measurements at 10 meters (1920 x 1080, 60 Hz)

▶30 MHz ~ 1 GHz (HDMI mode)

Frequency (MHz)	Reading (dBμV/m)	Pol* (H/V)	Antenna Heights (cm)	Turntable Angles (°)	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
54.00	48.4	V	100	320	-21.6	26.8	30.0	3.2
108.00	38.9	V	100	70	-18.1	20.8	30.0	9.2
135.00	44.9	V	100	210	-18.6	26.3	30.0	3.7
148.50	45.3	V	100	190	-18.6	26.7	30.0	3.3
192.43	40.7	V	100	110	-16.7	24.0	30.0	6.0
703.97	28.2	V	160	80	-5.2	23.0	37.0	14.0

Table 4. Radiated Measurements at 10 meters (1920 x 1080, 60 Hz)

▶1 GHz ~ 2 GHz (D-Sub mode)

Frequency (MHz)	Reading (dBμV)		Pol* (H/V)	Antenna Heights (cm)	Turntable Angles (°)	AF+CL+Amp (dB)**	Limit (dBμV/m)		Final Result(dBμV/m)	
	Peak	Average					Peak	Average	Peak	Average
1014.00	49.2	***)	V	100	0	-6.67	74.0	54.0	42.5	***)
1188.00	51.0	***)	V	100	345	-6.30	74.0	54.0	44.7	***)
1228.00	46.6	***)	V	100	97	-6.15	74.0	54.0	40.4	***)
1242.00	46.7	***)	H	200	45	-6.09	74.0	54.0	40.6	***)
1282.00	45.4	***)	V	115	37	-5.92	74.0	54.0	39.5	***)
1866.00	47.9	***)	H	185	145	-4.12	74.0	54.0	43.8	***)

Table 5. Radiated Measurements at 3 meters (1920 x 1080, 60 Hz)

▶1 GHz ~ 2 GHz (HDMI mode)

Frequency (MHz)	Reading (dBμV)		Pol* (H/V)	Antenna Heights (cm)	Turntable Angles (°)	AF+CL+Amp (dB)**	Limit (dBμV/m)		Final Result(dBμV/m)	
	Peak	Average					Peak	Average	Peak	Average
1038.00	53.6	***)	H	142	0	-6.62	74.0	54.0	47.0	***)
1334.00	49.2	***)	H	137	127	-5.69	74.0	54.0	43.5	***)
1484.00	49.3	***)	V	100	226	-5.33	74.0	54.0	44.0	***)
1632.00	51.4	***)	V	100	75	-5.13	74.0	54.0	46.3	***)
1866.00	47.1	***)	H	146	48	-4.12	74.0	54.0	43.0	***)
1928.00	46.5	***)	H	152	315	-3.72	74.0	54.0	42.8	***)

Table 6. Radiated Measurements at 3 meters (1920 x 1080, 60 Hz)

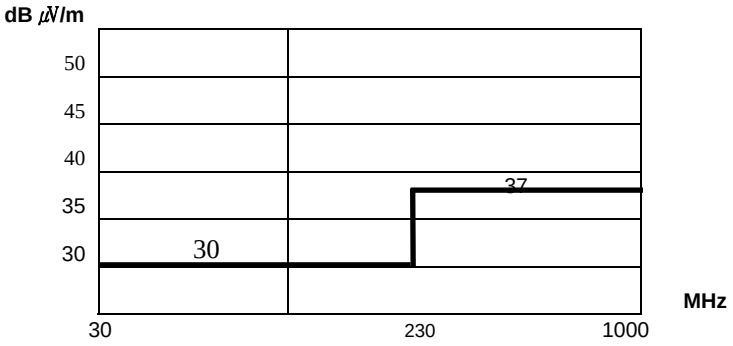


Fig. 4. Limits at 10 meters

NOTES:

1. All modes were measured and the worst-case emission was reported.

2. Below 1 GHz, the radiated limits are shown on Figure 4.

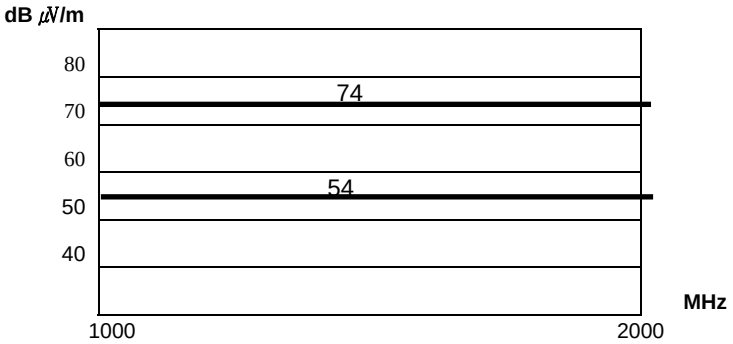


Fig. 5. Limits at 3 meters

NOTES:

1. All modes were measured and the worst-case emission was reported.

2. Above 1 GHz, the radiated limits are shown on Figure 5.

NOTES:

1. *Pol. H =Horizontal V=Vertical

2. **AF+CL+Amp. = Antenna Factor + Cable Loss + Amplifier.

3. *** average limit is met when using a peak detector receiver, the EUT was deemed to meet both limits and measurement with the average detector receiver is unnecessary.

4. The limit for Class B device is on the FCC Part section 15.109(g) & (a).

5. All modes of operations were invested and the worst -case emission was reported.

6. Above 1 GHz, peak detector function mode is used using a resolution bandwidth of 1 MHz and a video bandwidth of 1 MHz, average detector function mode is used using a resolution bandwidth of 1 MHz and a video bandwidth of 1 MHz.
Peak mode is used with linearly polarized horn antenna and low-loss microwave cable.

Tested by : ***Kiwang Kim***

PLOTS OF EMISSIONS

- ***Conducted Emission at the Mains port (D-Sub mode, Line)***

NEMKO KOREA (NK-10-E-663) 02 Aug 2010 16:57

Conducted Emissions

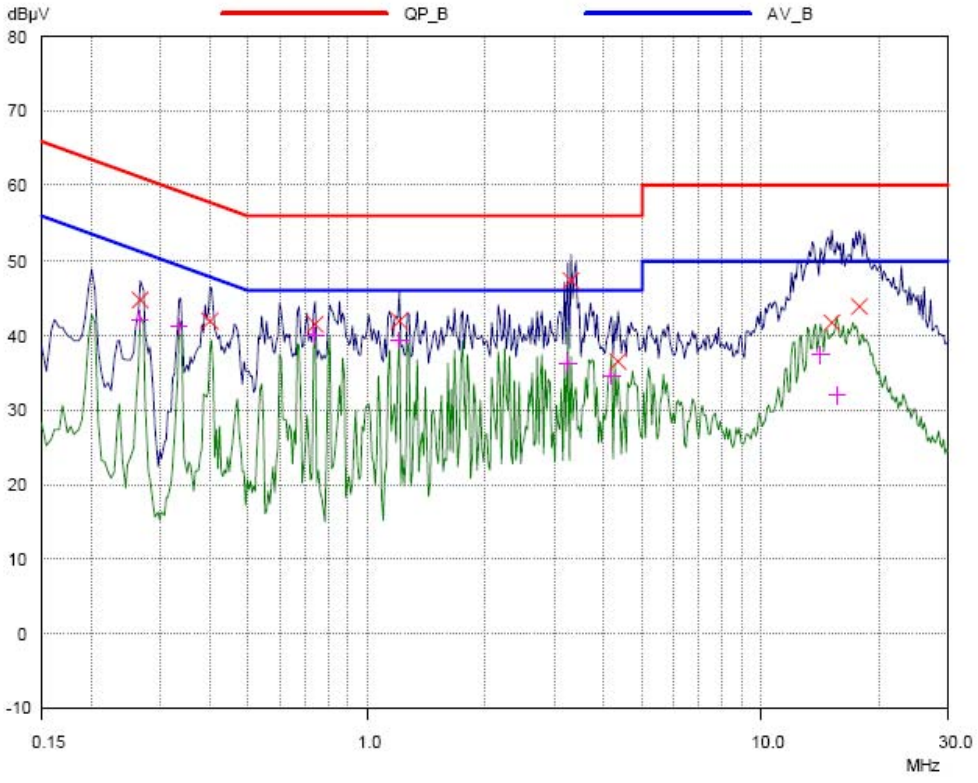
EUT:	65 Inch LCD Monitor
Manuf:	D&T Inc.
Op Cond:	a.c. 120 V / 60 Hz
Operator:	Ki Wang, Kim
Test Spec:	FCC PART 15
Comment:	MODEL : FS-P6501C [RGB MODE]
	LINE : LINE - PE
Result File:	663l_rgb.dat : FCC PART 15

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	3.9063kHz	9kHz	PK+AV	20msec	20 dB	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	Z5_LINE

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 8
Acc Margin: 60 dB



PLOTS OF EMISSIONS

- ***Conducted Emission at the Mains port (D-Sub mode, Neutral)***

NEMKO KOREA (NK-10-E-663) 02 Aug 2010 17:14
Conducted Emissions

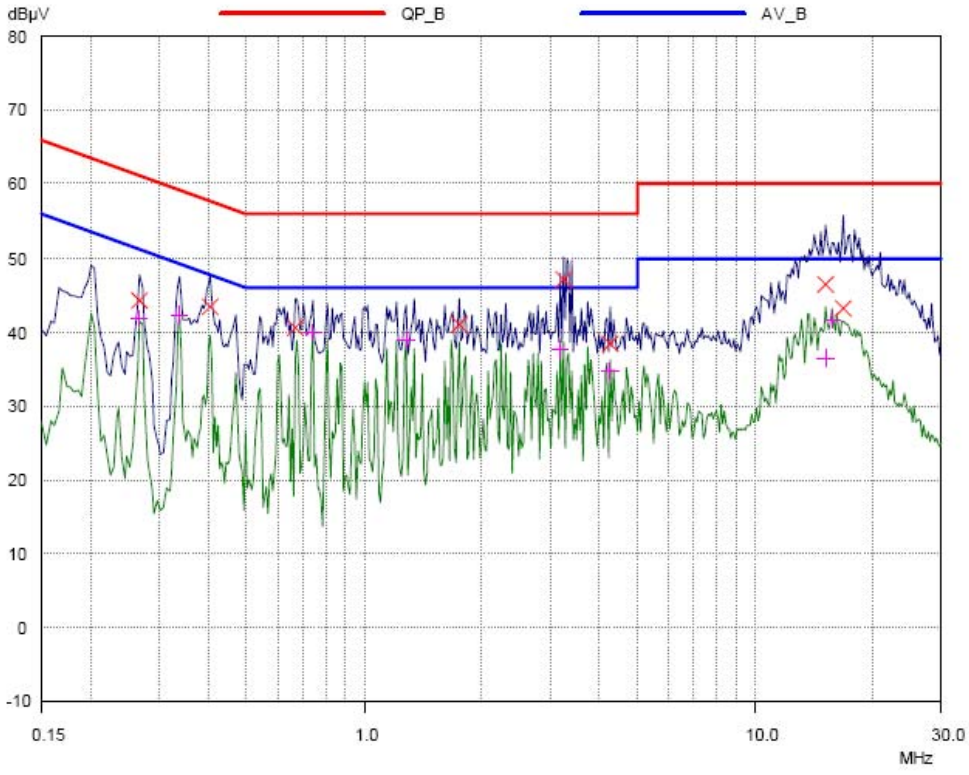
EUT:	65 Inch LCD Monitor
Manuf:	D&T Inc.
Op Cond:	a.c. 120 V / 60 Hz
Operator:	Ki Wang, Kim
Test Spec:	FCC PART 15
Comment:	MODEL : FS-P6501C [RGB MODE]
	LINE : NEUTRAL - PE
Result File:	663n_rgb.dat : FCC PART 15

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	3.9063kHz	9kHz	PK+AV	20msec	20 dB	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	Z5_NEU

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 8
Acc Margin: 60 dB



PLOTS OF EMISSIONS

- ***Conducted Emission at the Mains port (HDMI mode, Line)***

NEMKO KOREA (NK-10-E-663) 02 Aug 2010 17:34
Conducted Emissions

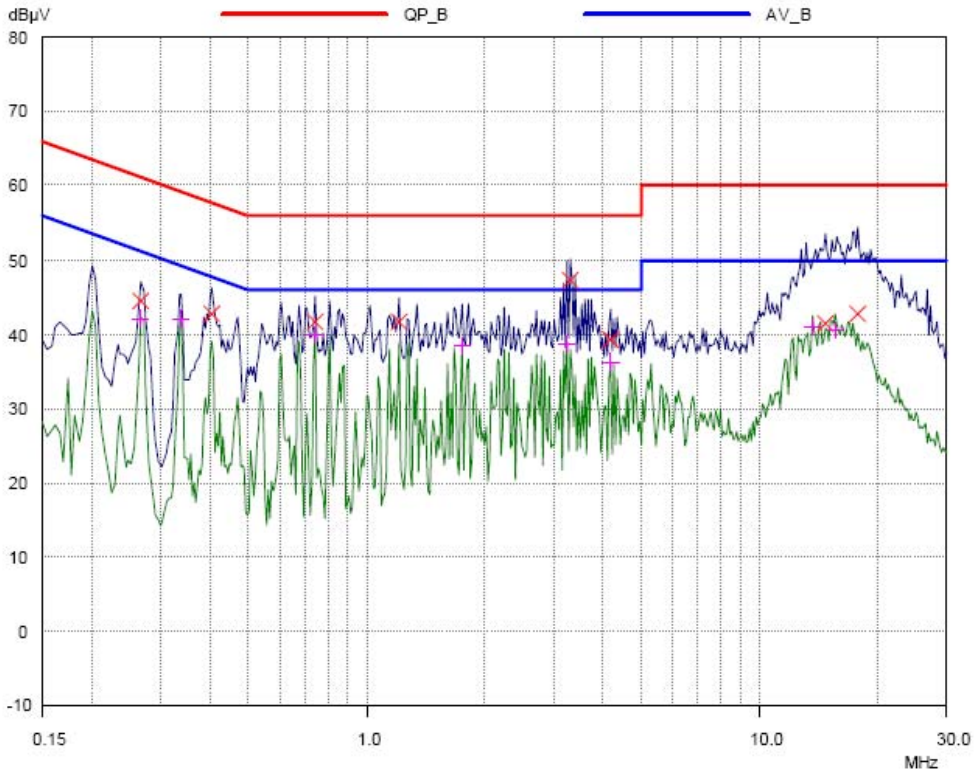
EUT:	65 Inch LCD Monitor
Manuf:	D&T Inc.
Op Cond:	a.c. 120 V / 60 Hz
Operator:	Ki Wang, Kim
Test Spec:	FCC PART 15
Comment:	MODEL : FS-P6501C [HDMI MODE]
	LINE LINE - PE
Result File:	663l_hd.dat : FCC PART 15

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	3.9063kHz	9kHz	PK+AV	20msec	20 dB	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	Z5_LINE

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 8
Acc Margin: 60 dB



PLOTS OF EMISSIONS

- ***Conducted Emission at the Mains port (HDMI mode, Neutral)***

NEMKO KOREA (NK-10-E-663) 02 Aug 2010 17:23

Conducted Emissions

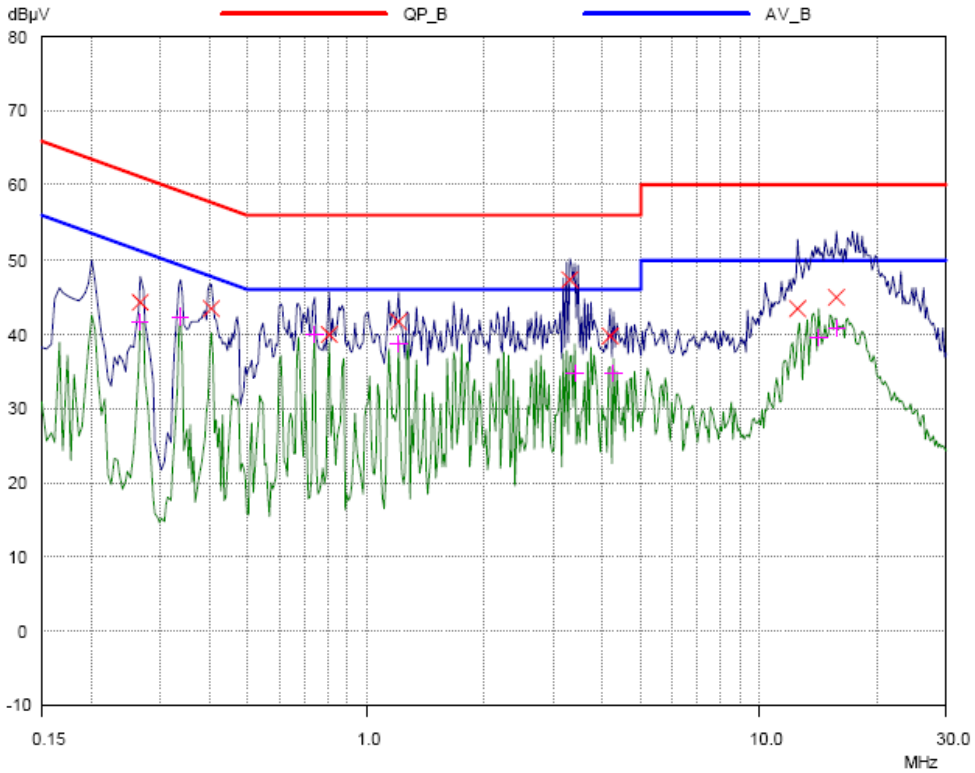
EUT:	65 Inch LCD Monitor
Manuf:	D&T Inc.
Op Cond:	a.c. 120 V / 60 Hz
Operator:	Ki Wang, Kim
Test Spec:	FCC PART 15
Comment:	MODEL : FS-P6501C [HDMI MODE]
	LINE : NEUTRAL - PE
Result File:	663n_hd.dat : FCC PART 15

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	3.9063kHz	9kHz	PK+AV	20msec	20 dB	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	Z5_NEU

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 8
Acc Margin: 60 dB



ACCURACY OF MEASUREMENT

The Measurement Uncertainties stated were calculated in accordance with the requirements of measurement uncertainty contained in CISPR 16-4-2 with the confidence level of 95 %

1. Conducted Uncertainty Calculation

Source of Uncertainty	*Xi*	Uncertainty of *Xi*		Coverage factor *k*	*u(Xi)* (dB)	*Ci*	*Ci u(Xi)* (dB)
		Value (dB)	Probability Distribution				
Receiver reading	*RI*	± 0.1	normal 1	1.000	0.1	1	0.1
Attenuation AMN-Receiver	*LC*	± 0.08	normal 2	2.000	0.04	1	0.04
AMN Voltage division factor	*LAMN*	± 0.8	normal 2	2.000	0.4	1	0.4
Sine wave voltage	*dVSW*	± 2.00	normal 2	2.000	1.00	1	1.00
Pulse amplitude response	*dVPA*	± 1.50	rectangular	1.732	0.87	1	0.87
Pulse repetition rate response	*dVPR*	± 1.50	rectangular	1.732	0.87	1	0.87
Noise floor proximity	*dVNF*	± 0.00			0.00	1	0.00
AMN Impedance	*dZ*	± 1.80	triangular	2.449	0.73	1	0.73
ⓐ Mismatch	*M*	+ 0.70	U-Shaped	1.414	0.49	1	0.49
ⓑ Mismatch	*M*	- 0.80	U-Shaped	1.414	- 0.56	1	- 0.56
Measurement System Repeatability	*RS*	0.05	normal 1	1.000	0.05	1	0.05
Remark	ⓐ: AMN-Receiver Mismatch : + ⓑ: AMN-Receiver Mismatch : -						
Combined Standard Uncertainty	Normal			± 1.88			
Expended Uncertainty U	Normal (k = 2)			± 3.76			

2. Radiation Uncertainty Calculation

Source of Uncertainty	*Xi*	Uncertainty of *Xi*		Coverage factor *k*	*u(Xi)* (dB)	*Ci*	*Ci u(Xi)* (dB)
		Value (dB)	Probability Distribution				
Receiver reading	*RI*	± 0.10	normal 1	1.000	0.10	1	0.10
Sine wave voltage	*dVsw*	± 2.00	normal 2	2.000	1.00	1	1.00
Pulse amplitude response	*dVpa*	± 1.50	rectangular	1.732	0.87	1	0.87
Pulse repetition rate response	*dVpr*	± 1.50	rectangular	1.732	0.87	1	0.87
Noise floor proximity	*dVnf*	± 0.50	normal 2	2.000	0.25	1	0.25
Antenna Factor Calibration	*AF*	± 1.50	normal 2	2.000	0.75	1	0.75
Attenuation Antenna-receiver	*CL*	± 0.52	normal 2	2.000	0.26	1	0.26
Antenna Directivity	*AD*	± 1.00	rectangular	1.732	0.58	1	0.58
Antenna Factor Height Dependence	*AH*	± 0.50	rectangular	1.732	0.29	1	0.29
Antenna Phase Centre Variation	*AP*	± 0.30	rectangular	1.732	0.17	1	0.17
Antenna Factor Frequency Interpolation	*AI*	± 0.30	rectangular	1.732	0.17	1	0.17
Site Imperfections	*SI*	± 4.00	triangular	2.449	1.63	1	1.63
Measurement Distance Variation	*DV*	± 0.10	rectangular	1.732	0.06	1	0.06
Antenna Balance	*Dbal*	± 0.90	rectangular	1.732	0.52	1	0.52
Cross Polarisation	*DCross*	± 0.90	rectangular	1.732	0.52	1	0.52
ⓐ Mismatch	*M*	+ 0.25	U-Shaped	1.414	0.18	1	0.18
ⓑ Mismatch	*M*	- 0.26	U-Shaped	1.414	- 0.18	1	- 0.18
ⓒ Mismatch	*M*	+ 0.98	U-Shaped	1.414	0.69	1	0.69
ⓓ Mismatch	*M*	- 1.11	U-Shaped	1.414	- 0.79	1	- 0.79

Measurement System Repeatability	*RS*	0.09	normal 1	1.000	0.09	1	0.09
Remark	ⓐ: Biconical Antenna-receiver Mismatch : + (< 200 MHz) ⓑ: Biconical Antenna-receiver Mismatch : - (< 200 MHz) ⓒ: Log Periodic Antenna-receiver Mismatch : + (≧ 200 MHz) ⓓ: Log Periodic Antenna-receiver Mismatch : - (≧ 200 MHz)						
Combined Standard Uncertainty	Normal			± 2.63 (< 200 MHz) ± 2.74 (≧200 MHz)			
Expended Uncertainty U	Normal (k = 2)			± 5.26 (< 200 MHz) ± 5.48 (≧200 MHz)			

LIST OF TEST EQUIPMENT

No.	Instrument	Manufacturer	Model	Serial No.	Calibration Date	Calibration Interval
1	*Test Receiver	R & S	ESCS 30	833364/020	Mar. 24 2010	1 year
2	*Test Receiver	R & S	ESCS 30	100302	Nov. 11 2009	1 year
3	*Amplifier	HP	8447F	2805A03427	Jul. 20 2010	1 year
4	Amplifier	HP	8447F	2805A03351	Oct. 12 2009	1 year
5	*Amplifier	Sonoma Instrument	310N	291916	Jul. 22 2010	1 year
6	*Pre Amplifier	HP	8449B	3008A00107	Feb. 03 2010	1 year
7	Spectrum Analyzer	ADVANTEST	R3265A	45060401	Jul. 20 2010	1 year
8	*Spectrum Analyzer	HP	8593E	3926A04282	Nov. 11 2009	1 year
9	*Spectrum Analyzer	R & S	FSP40	100361	Sep. 04 2009	1 year
10	Biconical Log Antenna	ARA	LPB-2520/A	1180	Apr. 14 2010	2 years
11	*Biconical Log Antenna	ARA	LPB-2520/A	1209	Dec. 08 2008	2 years
12	*Trilog-Broadband Antenna	SCHWARZBECK	VULB9168	9168-257	Apr. 14 2010	2 years
13	*Horn Antenna	SCHWARZBECK	BBHA 9120 A	1201	Dec. 18 2008	2 years
14	Signal Generater	R & S	SMP02	833286/003	Jul. 20 2010	1 year
15	*LISN	R & S	ESH3-Z5	833874/006	Nov. 11 2009	1 year
16	*LISN	R & S	ESH2-Z5	100227	Feb. 03 2010	1 year
17	*Position Controller	DAEIL EMC	N/A	N/A	N/A	N/A
18	*Turn Table	DAEIL EMC	N/A	N/A	N/A	N/A
19	*Antenna Mast	DAEIL EMC	N/A	N/A	N/A	N/A
20	*Anechoic Chamber	EM Eng.	N/A	N/A	N/A	N/A
21	*Shielded Room	EM Eng.	N/A	N/A	N/A	N/A
22	*Position Controller	Seo-Young EMC	N/A	N/A	N/A	N/A
23	*Turn Table	Seo-Young EMC	N/A	N/A	N/A	N/A
24	*Antenna Mast	Seo-Young EMC	N/A	N/A	N/A	N/A
25	*Anechoic Chamber	Seo-Young EMC	N/A	N/A	N/A	N/A

) Test equipment used during the test

APPENDIX E – BLOCK DIAGRAM

APPENDIX F – USER'S MANUAL

APPENDIX G – SCHEMATIC DIAGRAM