



ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR FCC CLASS B CERTIFICATION

Test report file number : E03OR-071

Applicant : KTV Global Corporation

Address : 149, Gongdan1-Dong, Gumi-City, KyungSangBuk-Do, 730-031, Korea

Manufacturer : KTV Global Corporation

Address : 149, Gongdan1-Dong, Gumi-City, KyungSangBuk-Do, 730-031, Korea

Type of Equipment : 20.1" LCD TV & Monitor

FCC ID : BRFLT201AA

Model Name : LT201AA

Serial number : N/A

Total page of Report : 16 pages (including this page)

Date of Incoming : July 05, 2003

Date of Issuing : October 31, 2003

SUMMARY

The equipment complies with the regulation; **FCC PART 15 SUBPART B, SECTION 15.101**

This test report contains only the results of a single test of the sample supplied for the examination.

It is not a general valid assessment of the features of the respective products of the mass-production

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**1. VERIFICATION OF COMPLIANCE**

- APPLICANT : KTV Global Corporation
- ADDRESS : 149, Gongdan1-Dong, Gumi-City, KyungSangBuk-Do, 730-031, Korea
- CONTACT PERSON : Mr. Eui-Yeun Kim / Senior Engineer
- TELEPHONE NO : +82-54-467-3550
- FCC ID : BRFLT201AA
- MODEL NO/NAME : LT201AA
- SERIAL NUMBER : N/A
- DATE : October 31, 2003

DEVICE TYPE	Peripheral Device for Class B Computing Device - Unintentional Radiator
E.U.T. DESCRIPTION	20.1" LCD TV & Monitor
THIS REPORT CONCERNS	ORIGINAL GRANT
MEASUREMENT PROCEDURES	ANSI C63.4: 1992
TYPE OF EQUIPMENT TESTED	PRE-PRODUCTION
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	CERTIFICATION
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 15, SECTION 15.101
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	No
FINAL TEST WAS CONDUCTED ON	3 METER OPEN AREA TEST SITE

- This device has shown compliance with the conducted emissions limits in 15.107 adopted under FCC 02-107 (ET Docket 98-80). The device may be marketed after July 11, 2005 affected by the 15.37(j) transition provisions.
- The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.



2. GENERAL INFORMATION

2.1 Product Description

The KTV Global Corporation, Model LT201AA (referred to as the EUT in this report) is 20.1" LCD TV & Monitor that is LCD Monitor with TV receiver. Product specification described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Plastic
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1MHz)	12MHz, 14.318MHz, 18.432MHz, 20.25MHz
NUMBER OF LAYERS	4 Layers
INVERTER M/N, MFR	DS-1009WB, DS-PLUS INC. / Alternate: FIF2064-31A, FRONTEK CO., LTD.
TELEVISION SYSTEM	NTSC
TUNER Type NO. / MFR	TCLN9081PA27D / SAMSUNG
ANTENNA INPUT IMPEDANCE	75ohms Coaxial
EXTERNAL TERMINALS	Ant., Headphone, DVD In (Y, Pb, Pr), DVD Audio (L/R), A/V In (Video, L(Mono), R), S-Video, PC Audio In, PC Video In, DC In

2.2 Model Differences:

-. The difference(s) compared to the EUT is as follows:

	Model Name	Model Difference
Basic Model	LT201AA	
Multiple Model	OCL-201L KLT201	Only type designation according to brand name

2.3 Related Submittal(s) / Grant(s)

Original submittal only



2.4 Test System Details

Defined as equipment needed for correct operation of the EUT, but not considered as tested:

Model	Manufacturer	FCC ID	Description	Connected to
LT201AA	KTV Global Corporation	BRFLT201AA	20.1" LCD TV & Monitor (EUT)	PC
0219B1570	LI SHIN	N/A	AC/DC Adapter	EUT
SMS-015N	SUNGIL	N/A	Speaker	EUT
DVD2000	TAEYOUNG	N/A	DVD Player	EUT
GX240	DELL	DOC	PC	-
SK-8110	SILITEK	DOC	KEYBOARD	PC
X06-08477	MICROSOFT CORP.	DOC	MOUSE	PC
GHV-S9990	GoldStar	N/A	VCR	EUT
2225C	HP	DSI6XU2225	PRINTER	PC
020-0470	Cardinal	GDE0196	MODEM	PC

2.5 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4/1992. Radiated testing was performed at a distance of 3 meters from EUT to the antenna.

2.6 Test Facility

The open area test site and conducted measurement facilities are located on at 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Kun, Kyunggi-Do 464-080 Korea. Description details of test facilities were submitted to the Commission on January 18, 2002. (Registration Number: 92819)



3. SYSTEM TEST CONFIGURATION

3.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

DEVICE TYPE	MANUFACTURER	MODEL/PART NUMBER	FCC ID
MAIN BOARD	N/A	MNX20-KE	N/A
TUNER BOARD	KTV Global Corporation	N/A	N/A
SWITCH BOARD	KTV Global Corporation	20C-KE	N/A
INVERTER BOARD	DS-PLUS INC.	DS-1009WB	N/A
INVERTER BOARD (Alt.)	FKONTEK CO., LTD.	FIF2064-31A	N/A
REMOTE SENSOR BOARD	KTV Global Corporation	N/A	N/A
LCD Panel	LG Phillips LCD	LC201V02 (A3)	N/A

3.2 EUT Operating Condition

The windows program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. This program was included into HOST. Once loaded, this program sequentially exercises each system component in turn. The series of H characters are printed on the EUT until the screen is completely full. Other input/output cables for video/audio signals are connected for other peripherals.

The EUT has two inverter boards, so the EUT was measured at each inverter type, but the worst emission levels were recorded in this test report.

3.3 Cable Description

	Power Cord Shielded (Y/N)	I/O cable Shielded (Y/N)	Length (M)
20.1" LCD TV & Monitor (EUT)	N	Y (VGA Cable)	1.2 (P), 1.2 (D)
AC/DC Adapter	N	N (DC OUT)	1.5 (P), 1.2 (D)
Speaker	N/A	N	1.2 (D)
DVD Player	N	N	1.5 (P), 1.2 (D)
PC	N	-	1.5 (P)
KEYBOARD	N/A	N	1.2(D)
MOUSE	N/A	N	1.2 (D)
VCR	N	Y	1.2 (P), 1.2 (D)

* The marked "(P)" means the Power Cable and "D" means the I/O Cable.

**3.4 Noise Suppression Parts on Cable**

	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
20.1" LCD TV & Monitor (EUT)	Y	BOTH END (VGA CABLE)	Y	BOTH END
AC/DC Adapter	Y	EUT END	Y	EUT END
Speaker	N	N/A	Y	EUT END
DVD Player	N	N/A	Y	BOTH END
PC	-	-	-	-
KEYBOARD	N	N/A	Y	PC END
MOUSE	N	N/A	Y	PC END
VCR	N	N/A	Y	BOTH END

3.5 Equipment Modifications

To achieve compliance to CLASS B levels, the following change(s) was made by ONETECH Corp. during compliance testing:

“There were no Modified items during EMI test”

3.6 Configuration of Test System

Line Conducted Test : The power was fed to the EUT through AC/DC adapter and the adapter was connected to LISN. All supporting equipments were connected to another LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.4/1992 7.2.3 to determine the worse operating conditions.

Radiated Emission Test : Preliminary radiated emission test was conducted using the procedure in ANSI C63.4/1992 8.3.1.1 to determine the worse operating conditions. Final radiated emission test was conducted at 3 meters open area test site.



4. PRELIMINARY TEST

4.1 AC Power line Conducted Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
Resolution 640 x 480	
Resolution 800 x 600	
Resolution 1024 x 768	
Resolution 1280 x 1024	X

4.2 Radiated Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
Resolution 640 x 480	
Resolution 800 x 600	
Resolution 1024 x 768	
Resolution 1280 x 1024	X

**5. FINAL RESULT OF MEASUREMENT**

Preliminary test was done in normal operation mode. And the final measurement was selected for the maximized emission level

5.1 Conducted Emission Test (Type no. of Inverter - DS-1009WB)Humidity Level : 51 %Temperature: 20 °CLimits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.107(a)Type of Test : CLASS BResult : PASSED BY -18.74 dB at 18.70 MHz (at peak mode)

EUT : 20.1" LCD TV & Monitor

Date: October 08, 2003

Operating Condition : "H" Characters auto scroll (Resolution 1280 x 1024)

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)

Frequency (MHz)	Line	Peak (dBuV)		Margin (dB)
		Emission level	Q.P Limits	
11.91	N	39.95	60.00	-20.05
12.04	H	40.18	60.00	-19.82
13.37	N	40.31	60.00	-19.69
16.28	N	40.07	60.00	-19.93
18.38	N	40.75	60.00	-19.25
18.70	H	41.26	60.00	-18.74
Frequency (MHz)	Line	Average (dBuV)		Margin (dB)
		Emission level	Limits	
-				
-				

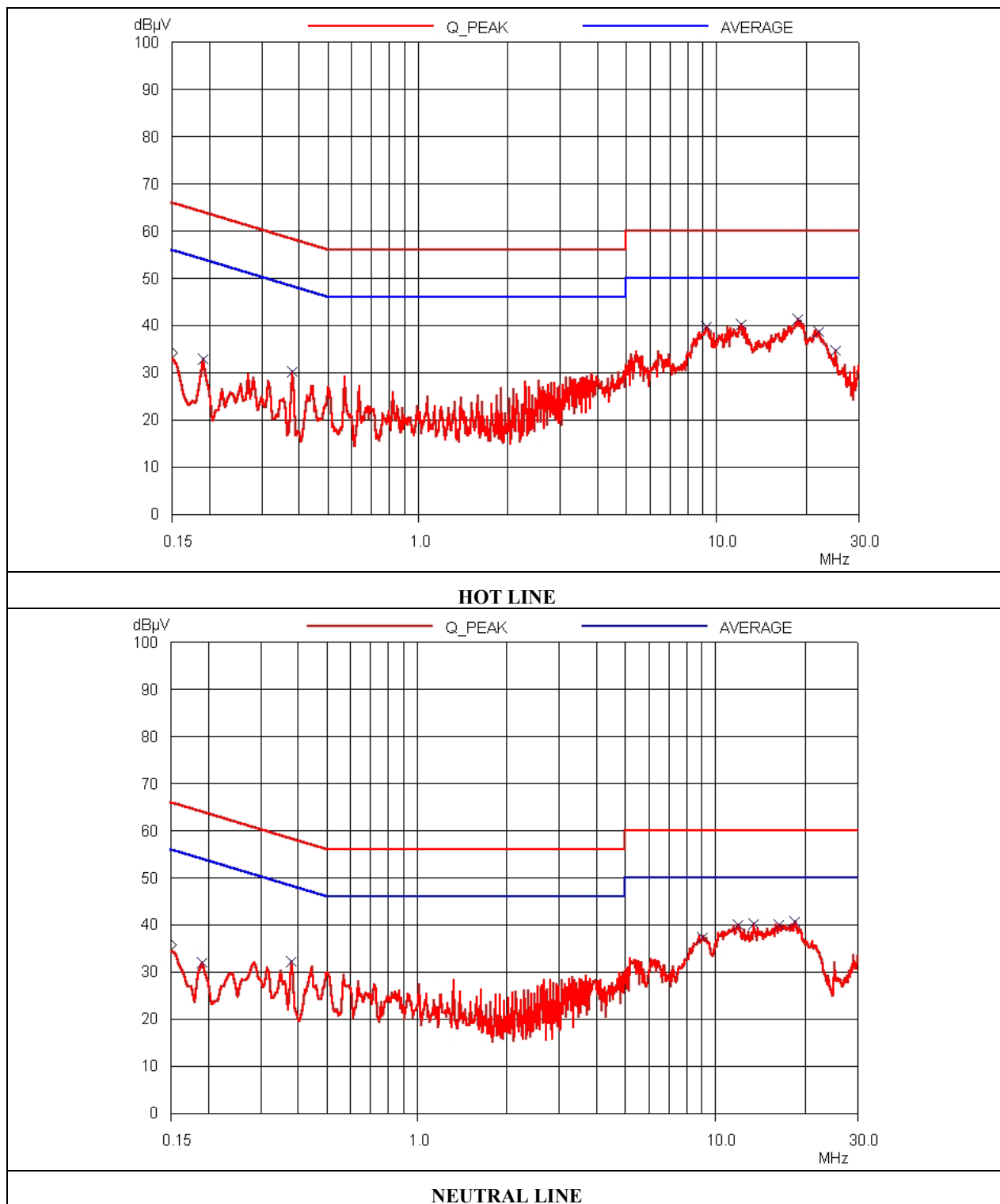
Line Conducted Emissions Tabulated Data

Remark : "H": Hot Line, "N": Neutral line, "Q.P": Quasi-Peak detect

Average mode was not measured, because Peak values were under the Average limit.

See next page for an overview sweep performed with peak detector.

Tested by: In-Sub, Youn / Test Engineer





5.2 Conducted Emission Test (Type no. of Inverter – FIF2064-31A)

Humidity Level : 51 %

Temperature: 20 °C

Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.107(a)

Type of Test : CLASS B

Result : PASSED BY -18.36 dB at 9.20 MHz (at peak mode)

EUT : 20.1" LCD TV & Monitor

Date: October 08, 2003

Operating Condition : "H" Characters auto scroll (Resolution 1280 x 1024)

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)

Frequency (MHz)	Line	Peak (dBuV)		Margin (dB)
		Emission level	Q.P Limits	
8.69	H	40.66	60.00	-19.34
9.20	N	41.64	60.00	-18.36
11.67	H	41.53	60.00	-18.47
12.30	N	41.32	60.00	-18.68
18.76	H	40.40	60.00	-19.60
25.62	H	40.70	60.00	-19.30
Frequency (MHz)	Line	Average (dBuV)		Margin (dB)
		Emission level	Limits	
-				
-				

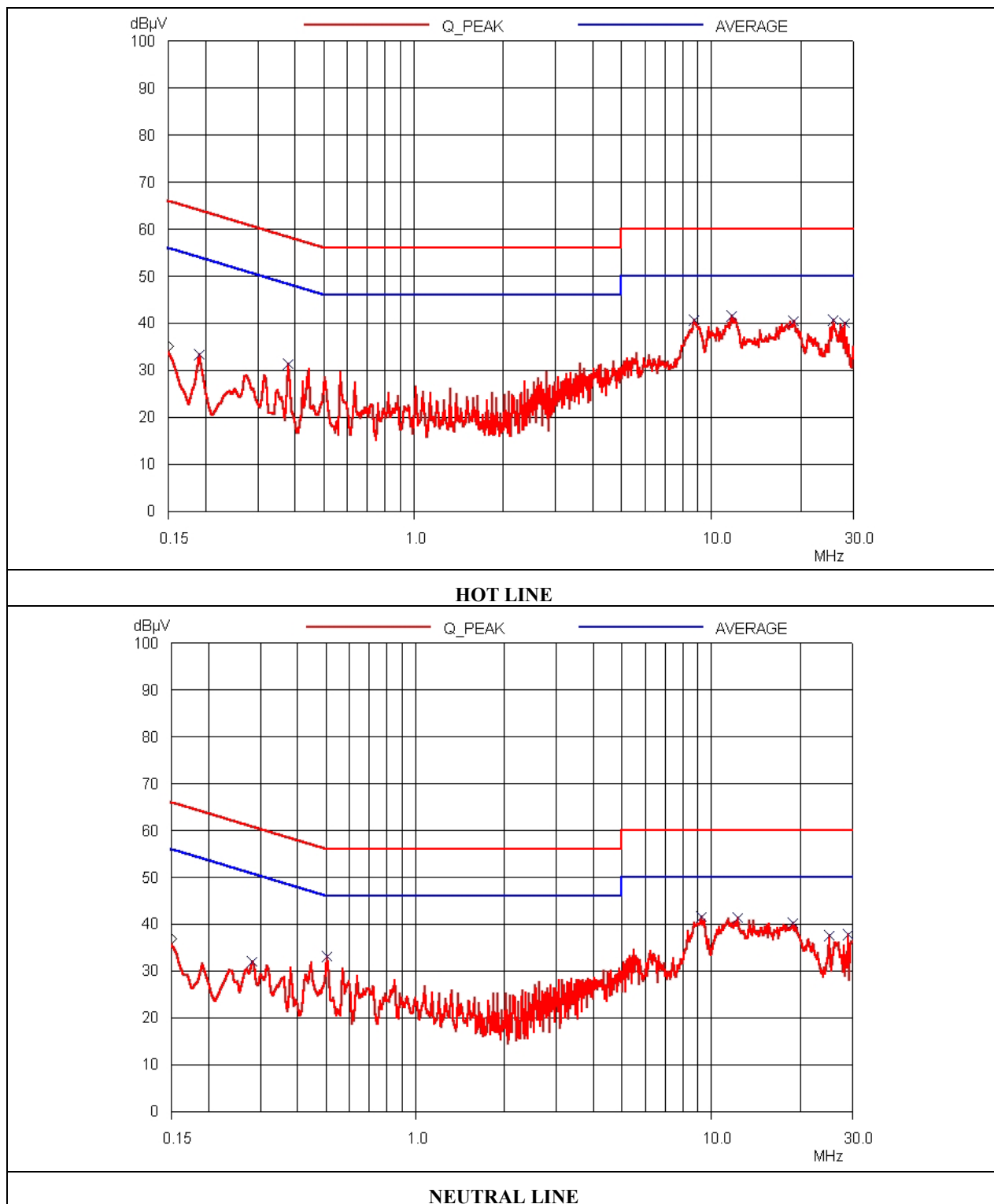
Line Conducted Emissions Tabulated Data

Remark : "H": Hot Line, "N": Neutral line, "Q.P": Quasi-Peak detect

Average mode was not measured, because Peak values were under the Average limit.

See next page for an overview sweep performed with peak detector.

Tested by: In-Sub, Youn / Test Engineer





5.3 Radiated Emission Test

The following table shows the highest levels of radiated emission on both polarizations of horizontal and vertical.

Humidity Level : 51 % Temperature: 20 °C
 Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.109 (a)
 Type of Test : CLASS B
 Result : PASSED BY -4.24 dB at 125.31 MHz

EUT : 20.1" LCD TV & Monitor Date: July 11, 2003
 Operating Condition : "H" Characters auto scroll (Resolution 1280 x 1024)
 Frequency of Emission : 30MHz – 1000MHz
 Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)
 Distance : 3 Meter

Radiated Emissions		Ant	Correction Factors		Total	FCC CLASS B	
Freq. (MHz)	Amp. (dBuV)	Pol.	Ant. (dBuV/m)	Cable (dB)	Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
62.25	27.00	V	7.21	0.52	34.73	40.00	-5.27
75.30	28.80	V	6.36	0.45	35.61	40.00	-4.39
112.75	19.50	V	12.08	0.37	31.95	43.52	-11.57
125.31	25.28	V	13.51	0.49	39.28	43.52	-4.24
137.84	20.90	H	14.37	0.61	35.88	43.52	-7.64
150.40	20.10	V	15.04	0.52	35.66	43.52	-7.86
162.89	21.90	V	15.43	0.65	37.98	43.52	-5.54
188.12	19.00	V	16.06	0.55	35.61	43.52	-7.91
200.39	13.20	V	16.24	0.69	30.13	43.52	-13.39
212.80	15.30	H	16.67	0.74	32.71	43.52	-10.81
236.80	13.70	V	17.23	0.62	31.55	46.02	-14.47
238.00	14.80	H	17.25	0.60	32.65	46.02	-13.37
250.60	13.20	H	17.41	0.44	31.05	46.02	-14.97
301.80	15.30	H	13.62	0.57	29.49	46.02	-16.53
367.80	14.70	H	14.95	0.93	30.58	46.02	-15.44
402.90	13.90	V	15.82	0.80	30.52	46.02	-15.50
420.90	15.90	H	16.19	0.71	32.80	46.02	-13.22



5.3 Radiated Emission Test (Continued)

Radiated Emissions		Ant	Correction Factors		Total	FCC CLASS B	
Freq. (MHz)	Amp. (dBuV)	Pol.	Ant. (dBuV/m)	Cable (dB)	Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
453.60	16.70	H	16.83	1.14	34.67	46.02	-11.35
467.10	19.50	V	16.98	1.09	37.57	46.02	-8.45
493.50	16.60	V	17.27	0.83	34.70	46.02	-11.32
541.50	18.90	H	18.38	1.13	38.41	46.02	-7.61
552.90	17.20	V	18.59	1.11	36.90	46.02	-9.12
592.50	15.70	V	18.64	0.96	35.30	46.02	-10.72
616.00	17.20	H	18.95	1.02	37.17	46.02	-8.85
663.20	19.20	H	19.84	1.24	40.28	46.02	-5.74
690.00	17.00	V	20.38	1.32	38.70	46.02	-7.32
762.80	15.30	H	20.44	1.16	36.90	46.02	-9.12
789.20	15.70	V	20.78	1.31	37.79	46.02	-8.23
987.20	15.30	H	22.39	1.35	39.04	53.97	-14.93

Radiated Emissions Tabulated Data

Remark: The test result of each inverter was observed the same result during the emission test.

Tested by: In-Sub, Youn / Test Engineer



6. FIELD STRENGTH CALCULATION

Meter readings are compared to the specification limit correcting for antenna and cable losses

+ Meter reading (dBuV)

+ Cable Loss (dB)

+ Antenna Factor (Loss) (dB/meter)

= Corrected Reading (dBuV/meter)

- Specification Limit (dBuV/meter)

= dB Relative to Spec (+/- dB)



7. LIST OF TEST EQUIPMENT

No.	EQUIPMENTS	MFR.	MODEL	SER. NO.	LAST CAL	DUE CAL	USE
1.	Test receiver	R/S	ESVS 10	827864/005	NOV/03	12MONTH	■
2.	Test receiver	R/S	ESHS 10	834467/007	APR/03	12MONTH	■
3.	Spectrum analyzer	HP	8566B	3407A08547	MAY/03	12MONTH	■
4.	Spectrum analyzer	HP	8568B	3109A05456	MAY/03	12MONTH	■
5.	RF preselector	HP	85685A	3107A01264	MAY/03	12MONTH	■
6.	Quasi-Peak Adapter	HP	85650A	3107A01542	MAY/03	12MONTH	■
7.	TRILOG Broadband Antenna	Schwarzbeck	VULB9163	VULB9163 166	FEB/03	12MONTH	
8.	Biconical antenna	EMCO	3104C	9109-4443	MAY/03	12MONTH	■
				9109-4444	JUL/03		
		Schwarzbeck	VHA9103	91031852	AUG/02		
9.	Log Periodic antenna	EMCO	3146	9109-3213	AUG/02	12MONTH	■
				9109-3214	JUL/03		
				9109-3217	MAY/03		
		Schwarzbeck	9108-A(494)	62281001	AUG/02		
10.	LISN	EMCO	3825/2	9109-1867	AUG/03	12MONTH	■
				9109-1869	OCT/03		■
11.	Position Controller	EMCO	1090	9107-1038	N/A	N/A	■
12.	Turn Table	EMCO	1080-1.21	9109-1576	N/A	N/A	■
13.	Antenna Master	EMCO	1070-1	9109-1624	N/A	N/A	■