HYUNDAI CALIBRATION & CERTIFICATION TECH. CO., LTD.

PRODUCT COMPLIANCE TEAM
SAN 136-1, AMI-RI , BUBAL-EUP, ICHEON-SI, KYOUNKI-DO, 467-701, KOREA
TEL : +82 31 639 8518 FAX : +82 31 639 8525 www.hctec.co.kr

CERTIFICATION

Manufacture; **CAS Corporation** **#19 Ganap-ri Gwangjuk-Myoun angju-gun** **Gyeounggi-do, Seoul Korea** **CAS FRN : 0007-1276-16**	**Date of Issue: MAY 21, 2002** **Test Report No.: HCT-F02-0505** **Test Site: HYUNDAI CALIBRATION & CERTIFICATION TECHNOLOGIES CO., LTD.** **HCT FRN : 0005-8664-21**

FCC ID : **QD8RW2601PRF**

APPLICANT : **CAS Corporation**

FCC Rule Part(s): Part 15 & 2; ET Docket 95-19
Equipment Class: Communications Receiver used w/ Pt 15 Tx (CYY)
Frequency Range: 20 ch, 903.000Mhz 918.500Mhz
Standard(s): FCC Class B: 2001
Equipment(EUT) Type: Road weigher
Model(s): RW-2601PRF
Port/ Connector(s): Power cable 1.5m

The device bearing the trade name and model 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 C63.4-1992.(See Test Report if any modifications were made for compliance)

I attest to the accuracy of data. 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.

HYUNDAI C-Tech. certifies that no party to application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse of 1988,21 U.S.C.853(a).

Ki Soo Kim

Report prepared by : Ki-Soo Kim
Manager of EMC Tech. Part

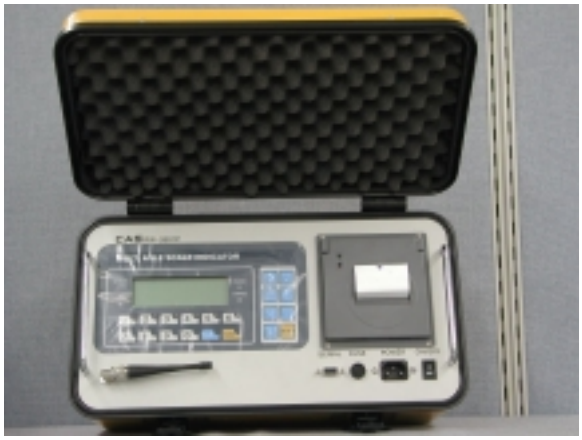

TABLE OF CONTENTS

PAGE

HYUNDAI CALIBRATION & CERTIFICATION TECHNOLOGIES CO., LTD.
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1. GENERAL INFORMATION

1.1 Product Description

These goods have hold excellent performance and splendid properties through strike tests as well as devoting ourselves under severe quality management.

Product specification information described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	**METAL**
LIST OF EACH OSC. OR XTAL. FREQ.(FREQ. 1MHz)	**11.0592MHz(2ea), 4.9152MHz**
Display	**LCD 6 Digit (25 mm)**
CHIPSET BRAND AND PART NO.	**HM6264LP-70 : HMC** **4082351 : OKI** **W27C512-45 : WINBAND** **74HC54IN : PHILIPS** **HD74HC240P : HITACHI** **HD74HC00P : HITACH** **HD74HCI75P : HITACHI** **HD74HC544P** **MC14066BCP : MOTROLA** **AT89C55 : ATMEL** **D722FG: NEC** **M82C51A : OKI** **HEF4040BP : PHILIPS** **GMS97C54 : HYNIX**
NUMBER OF LAYER	**RF BOARD 4 LAYER** **MAIN BOARD 4LAYER** **PRINT BOARD 4LAYER** **POWER BOARD 2 LAYER**
Channel	**20 channels**
Operation temperature	**-10 to +40**
FREQUENCY RANGE	**903.000Mhz 918.500Mhz**
Product Weight	**9.2 kg**

1.2 Related Submittal(s) / Grant(s)

ORIGINAL SUBMITTAL ONLY

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1.3 Tested System Details

The Model names for all equipment, plus descriptions used in the tested system (including inserted cards) are:

DEVICE TYPE	MANUFACTURER	MODEL NUMBER	FCC ID / DoC	CONNECTED TO
Road weigher (EUT)	CAS Corporation	RW-2601PRF	QD8RW2601PRF	N/A

1.4 Test Methodology

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

1.5 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data are located at the 254-1,MAEKOK-RI,HOBUP-MYUN,ICHON-SI,KYOUNGKI-DO, 467-701,KOREA. The site is constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated July 24,2000(Confirmation Number: EA90661)

2.SYSTEM TEST CONFIGURATION

2.1 Justification

The device was configured for testing in a typical fashion (as a customer would normally use it). During the tests, the following components inside the E.U.T were used.

DEVICE TYPE	MANUFACTURE	MODEL/PART NUMBER
RF BOARD	CAS Corporation	6180-PTW-0011-0
MIAN BOARD	CAS Corporation	6110-PRM-6181-0
PRINT BOARD	BASO ENGINEERING	BA-6026
POWER BOARD	CAS Corporation	6180-PCI-1100-B

2.2 EUT exercise Software

N/A

2.3 Cable Description

DEVICE TYPE	Power Cord Shielded (Y/N)	I/O Cable Shielded (Y/N)	Length (M)
Road weigher (EUT)	N	N/A	1.5(P)

The marked "(D)" means the Data Cable and "(P)" means the Power Cable.

2.4 Noise Suppression Parts on Cable. (I/O CABLE)

DEVICE TYPE	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
Road weigher (EUT)	N	N/A	N	N/A

2.5 Equipment Modifications

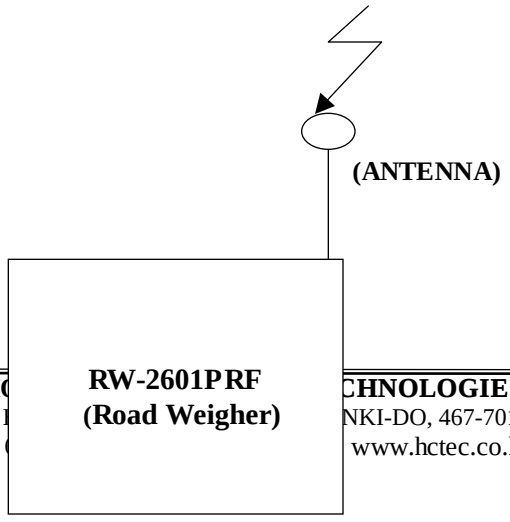
N/A

2.6 Configuration of Test system

Line Conducted Test : EUT was connected to LISN, all other supporting equipment were connected to another LISN.
Preliminary Power line Conducted Emission tests were performed by using the procedure in ANSI C63.4/1992 7.2.3 to determine the worse operating conditions.

Radiated Emission Test : Preliminary Radiated Emissions tests were conducted using the procedure in ANSI C63.4/1992 8.3.1.1 to determine the worse operating condition. Final Radiated Emission tests were conducted at 3 meter open area test site.

[Configuration of Tested System]



3. FINAL CONDUCTED AND RADIATED EMISSION TESTS SUMMARY

3.1 Conducted Emissions

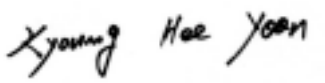
The following table shows the highest levels of conducted emissions on both polarization of hot and neutral line.

Humidity Level : 33% Temperature : 19
Limit apply to : FCC CFR 47, PART 15, SUBPART B §15.207
Type of Tests : CLASS B
Date : April 19, 2002
Result : PASSED

==========

EUT : Road Weigher / RW-2601PRF
Detector : CISPR Quasi-Peak (6 dB Bandwidth : 9KHz)

Power Line Conducted Emissions			FCC Class B	
Frequency (MHz)	Amplitude (dBuV)	Conductor	Limit (dBuv)	Margin (dB)
14.745	23.2	HOT	48	-18.5
22.120	33.6	HOT	48	-18.2
23.960	33.3	HOT	48	-14.7
25.805	33.3	HOT	48	-14.7
27.645	33.5	HOT	48	-14.5
29.490	33.4	HOT	48	-14.6



Measured by Kyoung-Hee YOON / Engineer **Date : April 19, 2002**

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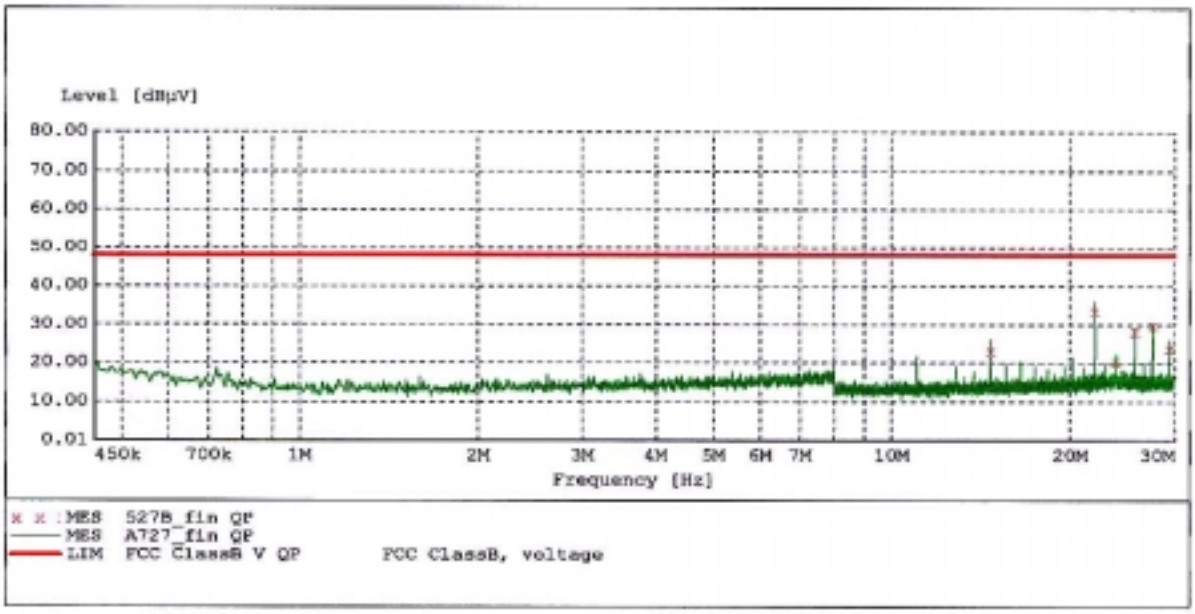
HYUNDAI C-TECH. CO., LTD.
EMC TEST LAB.

EUT:	RW-2601PRF
Manufacturer:	CAS Corporation
Operating Condition:	NORMAL CONDITIONS
Test Site:	Shield Room
Operator:	Kyoung Hee Yoon
Test Specification:	FCC Class B
Comment:	HOT

SCAN TABLE: "FCC ClassB Voltage"

Short Description: FCC ClassB Voltage

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
450.0 kHz	30.0 MHz	5.0 kHz	MaxPeak	10.0 ms	9 kHz	CABLE LOSS (NEW)



MEASUREMENT RESULT: "527B_fin QP"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
14.745000	23.20	1.5	48	24.8	1	---
22.120000	33.60	1.9	48	14.4	1	---
23.960000	20.40	2.0	48	27.6	1	---
25.805000	28.30	2.1	48	19.7	1	---
27.645000	29.90	2.2	48	18.1	1	---
29.490000	23.90	2.3	48	24.1	1	---

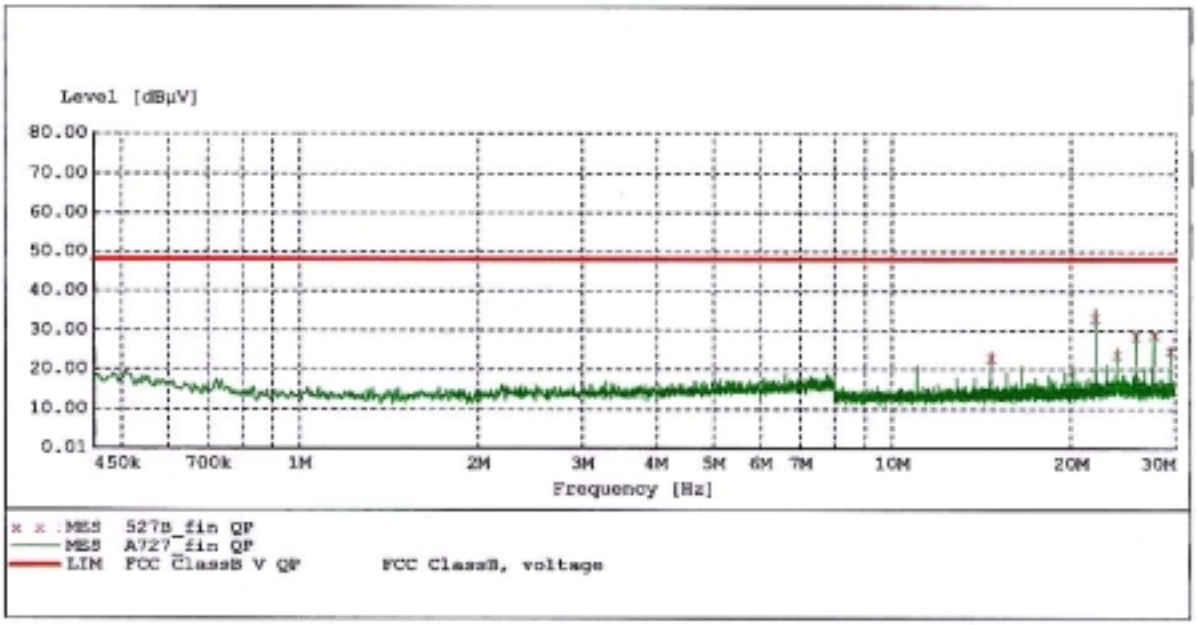
HYUNDAI C-TECH. CO., LTD.
EMC TEST LAB.

EUT:	RW-2601PRF
Manufacturer:	CAS Corporation
Operating Condition:	NORMAL CONDITIONS
Test Site:	Shield Room
Operator:	Kyoung Hae Yoon
Test Specification:	FCC Class B
Comment:	NEUTRAL

SCAN TABLE: "FCC ClassB Voltage"

Short Description: FCC ClassB Voltage

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
450.0 kHz	30.0 MHz	5.0 kHz	MaxPeak	10.0 ms	9 kHz	CABLE LOSS (NEW)



MEASUREMENT RESULT: "527B_fin QP"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
14.745000	23.10	1.5	48	24.9	1	---
22.120000	33.20	1.9	48	14.8	1	---
23.960000	23.80	2.0	48	24.2	1	---
25.805000	28.60	2.1	48	19.4	1	---
27.645000	28.80	2.2	48	19.2	1	---
29.490000	24.90	2.3	48	23.1	1	---

3.2 Antenna power conduction limits for receivers

The following table shows the highest levels of Antenna power conduction test.

Humidity Level :34% Temperature : 20

Limit apply to : FCC CFR 47 PART 15 , SUBPART B §15.111

Date :APRIL, 19 2002

Result : PASSED

EUT : Road Weigher/ RW-2601PRF

Detector : CISPR Quasi-Peak (6dB Bandwidth : 120KHz) – (30MHz-1000MHz)

Average (6dB Bandwidth : 1MHz) – (Above 1000MHz)

Antenna-conducted power			
Frequency (MHz)	**Amplitude (dBuV)**	**Limit (dBuV)**	**Margin (dB)**
43.60	32.8	50	-17.2
64.98	33.5	50	-16.5
76.65	32.0	50	-18.0
109.69	34.0	50	-16.0
131.01	39.0	50	-11.0
142.74	38.2	50	-11.8
154.40	47.0	50	-3.0
162.18	38.0	50	-12.0
166.07	39.5	50	-10.5
175.79	42.5	50	-7.5
265.21	30.8	50	-19.2
906.69	33.5	50	-16.5
1258.17	44.0	50	-6.0
1799.59	40.5	50	-9.5
2711.42	35.2	50	-14.8
3623.46	24.0	50	-26.0

NOTES:

The frequency range investigated during radiated emission test was from 30MHz to 8GHz.

Kyoung Hee Yoon

Measured by : Kyoung Hee Yoon / Engineer **Date : April 19, 2002**

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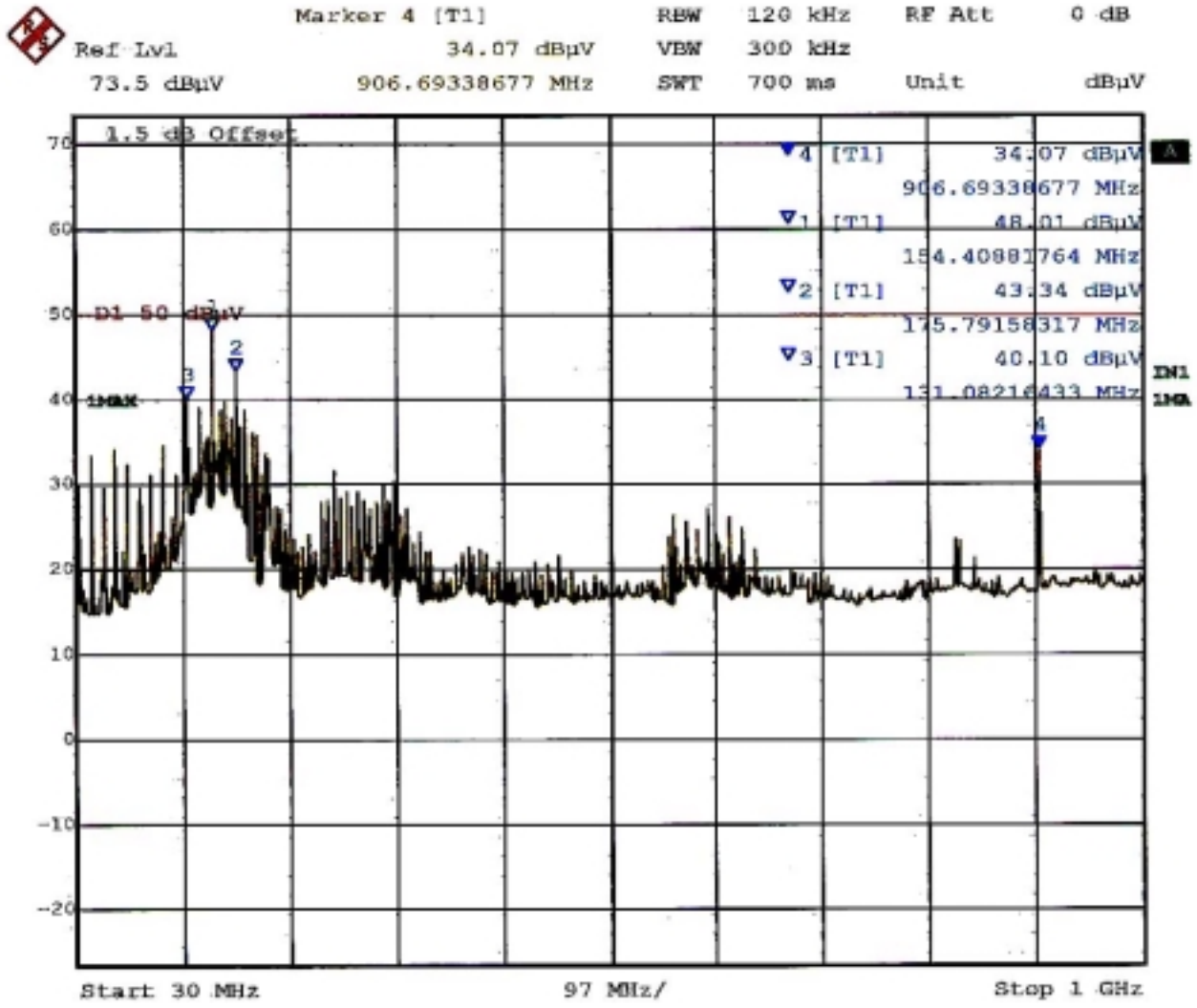
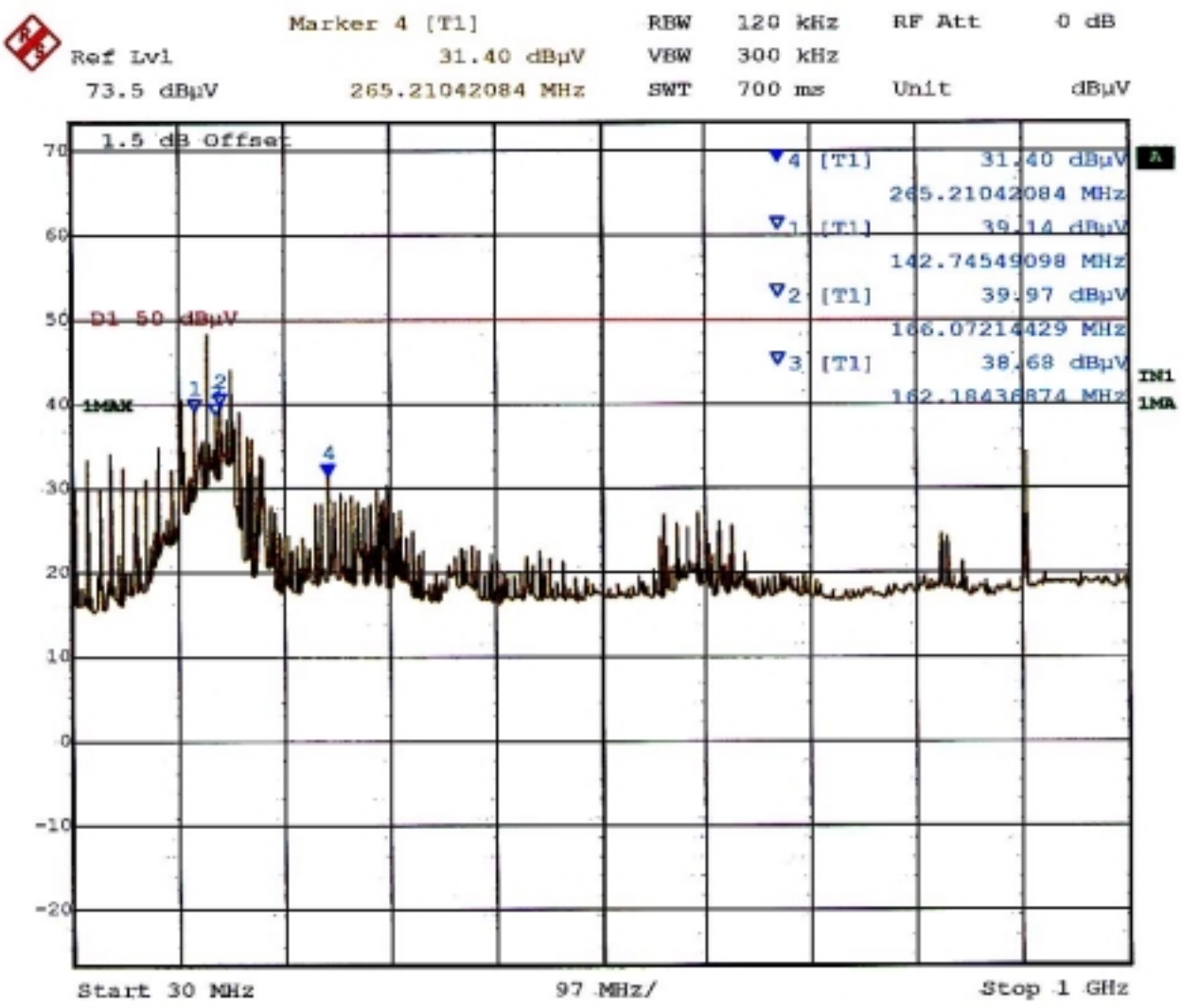
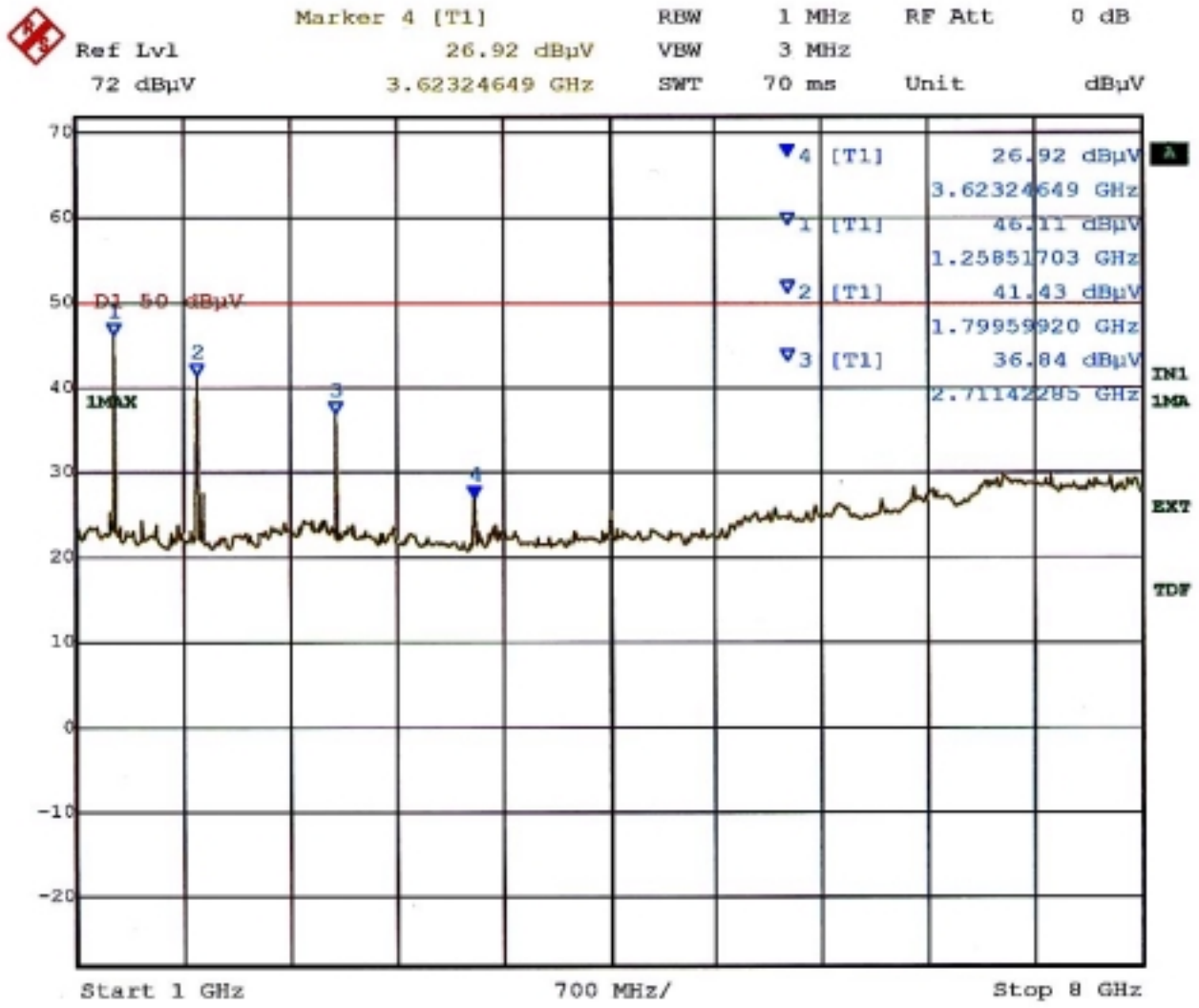

Marker 4 [T1]
RBW 120 kHz
RF Att 0 dB
Ref Lvl
34.07 dBµV
VBW 300 kHz
73.5 dBµV
906.69338677 MHz
SWT 700 ms
Unit dBµV
1.5 dB Offset
4 [T1] 34.07 dBµV
906.69338677 MHz
1 [T1] 48.01 dBµV
154.40881764 MHz
2 [T1] 43.34 dBµV
175.79158317 MHz
3 [T1] 40.10 dBµV
131.08216433 MHz
D1 50 dBµV
1MAX
70
60
50
40
30
20
10
0
-10
-20
Start 30 MHz
97 MHz/
Stop 1 GHz


Marker 4 [T1]
RBW 120 kHz
RF Att 0 dB
Ref Lvl
31.40 dBµV
VBW 300 kHz
73.5 dBµV
265.21042084 MHz
SWT 700 ms
Unit dBµV
1.5 dB Offset
4 [T1] 31.40 dBµV
265.21042084 MHz
1 [T1] 39.14 dBµV
142.74549098 MHz
2 [T1] 39.97 dBµV
166.07214429 MHz
3 [T1] 38.68 dBµV
162.18436874 MHz
D1 50 dBµV
1MAX
IN1
1MA
70
60
50
40
30
20
10
0
-10
-20
Start 30 MHz
97 MHz/
Stop 1 GHz


Marker 4 [T1]
RBW 1 MHz
RF Att 0 dB
Ref Lvl
26.92 dBµV
VBW 3 MHz
72 dBµV
3.62324649 GHz
SWT 70 ms
Unit dBµV
4 [T1] 26.92 dBµV
3.62324649 GHz
1 [T1] 46.11 dBµV
1.25851703 GHz
2 [T1] 41.43 dBµV
1.79959920 GHz
3 [T1] 36.84 dBµV
2.71142285 GHz
D1 50 dBµV
1MAX
IN1
1MA
EXT
TDF
70
60
50
40
30
20
10
0
-10
-20
Start 1 GHz
700 MHz/
Stop 8 GHz

3.3 Radiated Emissions

The following table shows the highest levels of Radiated Emissions on both polarization of horizontal and vertical.

Humidity Level : 35 % Temperature : 20
Limit apply to : FCC CFR 47, PART 15, SUBPART B §15.209
Type of Tests : CLASS B
Date : April 20, 2002
Result : PASSED

EUT : Weigher Road / RW-2601PRF
Detector : CISPR Quasi-Peak (6dB Bandwidth : 120KHz) – (30MHz-1000MHz)
Average (6dB Bandwidth : 1MHz) – (Above 1000MHz)

Frequency MHz	Reading dBuV	Ant. Factor dB	Cable Loss dB	ANT POL (H/V)	Total dBuV/m	Limit dBuV/m	Margin dB
96.2	18.45	9.55	2.00	V	30.0	43.5	-13.5
111.0	15.84	12.26	2.30	V	30.4	43.5	-13.1
113.0	17.20	12.50	2.30	V	32.0	43.5	-11.5
155.6	16.03	14.77	2.60	V	33.4	43.5	-10.1
242.0	14.94	17.56	3.50	H	36.0	46.0	-10.0
278.4	15.69	17.81	3.80	V	37.3	46.0	-8.7
287.9	18.17	18.03	3.80	V	40.0	46.0	-6.0
461.0	16.04	17.86	4.80	H	38.7	46.0	-7.3
471.5	14.21	17.99	4.80	V	37.0	46.0	-9.0
483.8	17.09	18.11	4.80	V	40.0	46.0	-6.0
494.3	15.90	18.20	4.90	H	39.0	46.0	-7.0
615.0	12.04	21.06	5.90	H	39.0	46.0	-7.0
627.3	13.62	21.28	5.90	V	40.8	46.0	-5.2
637.8	12.87	21.43	5.90	H	40.2	46.0	-5.8
905.0	10.56	25.14	7.00	V	42.7	46.0	-3.3
1258.5	11.02	27.28	7.80	V	46.1	54.0	-7.9

NOTES:
The frequency range investigated during radiated emission test was from 30MHz to 10GHz.
ALL other spurious emissions were 20dB lower than limit.

Kyoung Hee Yoon

Measured by : Kyoung Hee Yoon / Engineer **Date : April 20, 2002**

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4. Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor.
The basic equation with a sample calculation is as follows:

FS = RA + AF + CF

where FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Attenuation Factor

Assume a receiver reading of 21.5 dBuV is obtained. The Antenna Factor of 7.4 and a Cable Factor of 1.1 is added. The 30 dBuV/m value was mathematically converted to its corresponding level in uV/m.

FS = 21.5 + 7.4 + 1.1 = 30 dBuV/m

Level in uV/m = Common Antilogarithm [(30 dBuV/m)/20] = 31.6 uV/m

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5. LIST OF TEST EQUIPMENT

TYPE	MANUFACTURE	MODEL	CAL.DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESI40	2002.11.5
EMI Test Receiver	Rohde & Schwarz	ESVS30	2003.3.6
Graphic Plotter	HP	7440+	N.A
Printer	Rohde & Schwarz	PDN	N.A
Spectrum Analyzer	H.P	8591EM	2002.7.11
LISN	EMCO	3825/2	2003.2.7
LISN	Rohde & Schwarz	ESH2-Z5	2002.8.12
Amplifier	Hewlett-Packard	8447E	2003.3.2
Dipole Antennas	Rohde & Schwarz	VHAP	2002.6.28
Dipole Antennas	Rohde & Schwarz	UHAP	2002.6.28
Biconical Antenna	Rohde & Schwarz	BBA-9106	2002.6.28
Log-Periodic Antenna	Rohde & Schwarz	UHALP-9107	2002.6.26
Broadband Horn Antenna	Rohde & Schwarz	BBHA 9120 D(1099)	2002.10.26
Antenna Position Tower	EMCO	1051-12	N.A
Turn Table	EMCO	1060-06	N.A
Line Filter	KEENE	ULW 2X30-60	N.A

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