

APPLICATION FOR CERTIFICATION

On Behalf of

Marasst Inc.

Wireless Security System (Camera/Transmitter)

Product Name : Guardian Angel

Model : GA-251

FCC ID : Q8603010

Prepared for : Marasst Inc.

104, 8F., No. 49, Sec. 3, Minsheng E. Rd.,
Taipei, Taiwan, R.O.C.

Prepared By : Audix Corporation

Technical Division EMC Department
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Report Number : TTEMC-F92122

Date of Test : Apr. 17 ~ May 12, 2003

Date of Report : Jun. 16, 2003

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TEST REPORT CERTIFICATION

Applicant : Marasst Inc.
Manufacturer : Marasst Inc.
EUT Description : Wireless Security System (Camera/Transmitter)
(A) PRODUCT NAME. : Guardian Angel
(B) MODEL NO. : GA-251
(C) POWER SUPPLY : DC 10V (via Adapter)
DC 2.4V (Battery)
(D) TEST VOLTAGE : AC 120V/60Hz (via Adapter)

Measurement Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART C Section 15.249, MAY 2002
AND ANSI C63.4/1992

The device described above was tested by Audix Corporation to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15 subpart C limits both radiated and conducted emissions.

The measurement results are contained in this test report and Audix Corporation is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the FCC official limits.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Corporation.

Date of Test : Apr. 17 ~ May 12, 2003

Prepared by : Monica Chang Jun. 24, 2003
(Monica Chang/Assistant)

Test Engineer : Ben Cheng Jun. 24, 2003
(Ben Cheng/Assistant Manager)

Approve & Authorized Signer : Leon Liu Jun. 24 2003
(Leon Liu/Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	Wireless Security System (Camera/Transmitter)
Product Name	:	Guardian Angel
Model Number	:	GA-251
FCC ID	:	Q8603010
Applicant	:	Marasst Inc. 104, 8F., No. 49, Sec. 3, Minsheng E. Rd., Taipei, Taiwan, R.O.C.
Manufacturer	:	Marasst Inc. 104, 8F., No. 49, Sec. 3, Minsheng E. Rd., Taipei, Taiwan, R.O.C.
Radio Technology	:	FM Modulation
Fundamental Range	:	2410MHz ~ 2470MHz
Channel Selection	:	4 Channels CH1 : 2410MHz CH2 : 2430MHz CH3 : 2450MHz CH4 : 2470MHz
Bandwidth of Each Channel	:	20MHz
Output Power	:	1mW/10mW
Power Supply	:	DC 10V (via Adapter) DC 2.4V (Battery)
Power Adapter	:	Deer Computer Co., Ltd. M/N AD1609CF Input 100-240V~ 47~63Hz, 0.8A Output 8.0~10.5V, 1.6~1.24A Power Cord: Non-Shielded, Undetachable, 1.8m Boned a ferrite core
Data Cable (AV/S-Video)	:	Non-Shielded, Detachable, 1m Boned a ferrite core

Date of Receipt of Sample : Mar. 25, 2003

Date of Test : Apr. 17 ~ May 12, 2003

Wireless Security System (Video Monitor/Receiver)

Model No.: GA-251

FCC ID : By DoC

Remark:

Antenna requirement: This EUT's transmitter antenna is soldered to a printed circuit board, comply with §15.203 and inform to user that any change and modify is prohibited.

1.2. Tested Supporting System Details

1.2.1. Color TV Pattern Generator

Model Number : PM 5415TX+Y/C
 Serial Number : LO732610
 Manufacturer : Fluke
 Cal. Date : Apr. 18, 2003
 Power Cord : Non-Shielded, Detachable 1.8m

1.3. Description of Test Facility

Site Description : May 16, 2003 Re-File on
 (Semi-Anechoic Chamber) Federal Communication Commission
 Registration Number: 90993

Test Site : No. 2 Shielded Room & Semi-Anechoic Chamber

Name of Firm : Audix Corporation
 Technical Division EMC Department
 No. 53-11, Tin-Fu Tsun, Lin-Kou,
 Taipei Hsien, Taiwan, R.O.C.

Site Location : No. 53-11, Tin-Fu Tsun, Lin-Kou,
 Taipei Hsien, Taiwan, R.O.C.

NVLAP Lab. Code : 200077-0
 (NVLAP is a NATA accredited body under Mutual Recognition Agreement)

1.4. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB)
Conduction Test	150KHz~30MHz	±2.66dB
Radiation Test (Distance: 3m)	30MHz~300MHz	+4.26dB / -4.22dB
	300MHz~1000MHz	+5.28dB / -4.0dB

Remark : Uncertainty = $K\mu c(y)$

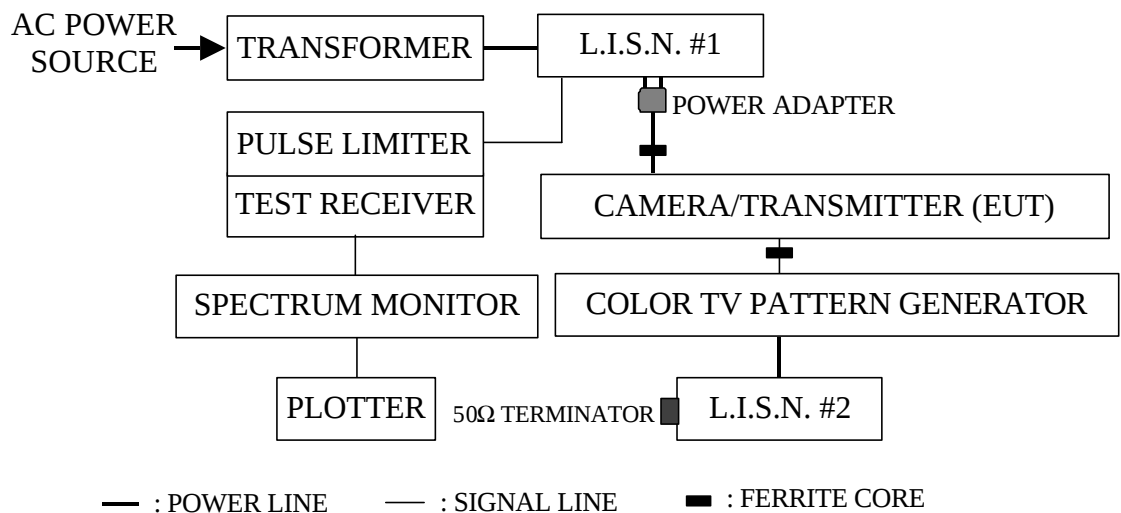
2. POWERLINE CONDUCTED EMISSION MEASUREMENT

2.1. Test Equipment

The following test equipment is used during the power line conducted measurement :

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	Rohde & Schwarz	ESH3	893044/015	Jul. 08, 02'	Jul. 07, 03'
2.	L.I.S.N. # 1	Kyoritsu	KNW-407	8-881-13	Apr. 16, 03'	Apr. 15, 04'
3.	L.I.S.N. # 2	Kyoritsu	KNW-407	8-855-9	Apr. 16, 03'	Apr. 15, 04'
4.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	002	Aug. 21, 02'	Aug. 20, 03'

2.2. Block Diagram of Test Setup



2.3. AC Power Line Conducted Limits ((§15.207, Class B)

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level	Average Level
150KHz ~ 500KHz	66 ~ 56 dB *	56 ~ 46 dB *
500KHz ~ 5MHz	56 dB	46 dB
5MHz ~ 30MHz	60 dB	50 dB

- Remarks:
- * Decreases with the logarithm of the frequency.
 - If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.
 - The lower limit applies at the band edges.

2.4. EUT's Configuration during Compliance Measurement

The following equipment was installed on RF LINE VOLTAGE measurement to meet the Commission requirement and operating in a manner which tended to maximize its emission characteristics in a normal application.

2.4.1. Wireless Security System (Camera/Transmitter) (EUT)

Product Number	:	Guardian Angel
Model Number	:	GA-251
Manufacturer	:	Marasst Inc.
Radio Technology	:	FM Modulation
Fundamental Range	:	2410MHz ~ 2470MHz
Channel Selection	:	4 Channels CH1 : 2410MHz CH2 : 2430MHz CH3 : 2450MHz CH4 : 2470MHz
Bandwidth of Each Channel	:	20MHz
Output Power	:	1mW/10mW
Power Supply	:	DC 10V (via Adapter) DC 2.4V (Battery)
Power Adapter	:	Deer Computer Co., Ltd. M/N AD1609CF Input 100-240V~ 47~63Hz, 0.8A Output 8.0~10.5V, 1.6~1.24A Power Cord: Non-Shielded, Undetachable, 1.8m Boned a ferrite core
Data Cable (AV/S-Video)	:	Non-Shielded, Detachable, 1m Boned a ferrite core

2.4.2. Supporting System : As in Section 1.2

2.5. Operating Condition of EUT

2.5.1. Setup the EUT and simulator as shown on 2.2.

2.5.2. Turned on the power of all equipment.

2.5.3. The EUT [Wireless Security System (Camera/Transmitter)] was set to channel 1 for conducted measurement and channel 1 & channel 4 for radiated measurement.

2.5.4. The color TV pattern generator sent the color bars to the EUT and then the EUT transmitted the color bars to the receiver.

2.6. Test Procedure

The EUT's power adapter was connected to the power mains through a line impedance stabilization network (L.I.S.N. #1) and the other peripheral devices power cord were connected to the power mains through a line impedance stabilization network (L.I.S.N. #2) This provided a 50 ohm coupling impedance for the measuring equipment. (Please refer to the block diagram of the test setup and photographs.) Both sides of A.C. line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed according to FCC ANSI C63.4-1992 on conducted measurement.

The bandwidth of R&S Test Receiver ESH3 was set at 10KHz.

The frequency range from 150KHz to 30MHz is checked.

All the test results are listed in the following pages.

2.7. Line Conducted RF Voltage Measurement Results

PASSED. All emissions not reported below are too low against the prescribed limits.

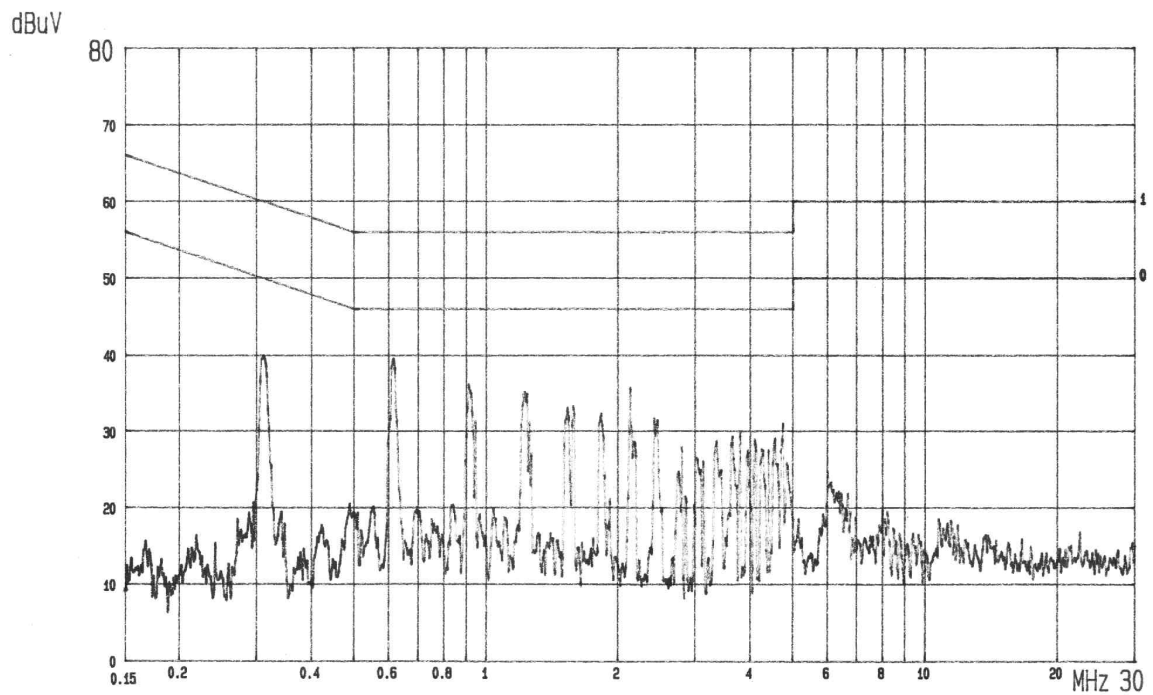
Date of Test : May 12, 2003 Temperature : 24

EUT : Wireless Security System Humidity : 59 %
(Camera/Transmitter)

Frequency (MHz)	Factor dB	Reading (dBμV)		Measurement (dBμV)		Limits		Margin	
		Phase VA				(dBμV)		dB	
		Q.P.	AV	Q.P.	AV	Q.P.	AV	Q.P.	AV
0.3094	0.4	39.2	*	39.6	*	59.9	49.9	20.3	*
0.6125	0.5	38.4	*	38.9	*	56.0	46.0	17.1	*
0.9082	0.5	35.6	*	36.1	*	56.0	46.0	19.9	*
1.2194	0.5	34.7	*	35.2	*	56.0	46.0	20.8	*
1.5711	0.5	32.8	*	33.3	*	56.0	46.0	22.7	*
2.1211	0.5	34.7	*	35.2	*	56.0	46.0	20.8	*

Frequency (MHz)	Factor dB	Reading (dBμV)		Measurement (dBμV)		Limits		Margin	
		Phase VB				(dBμV)		dB	
		Q.P.	AV	Q.P.	AV	Q.P.	AV	Q.P.	AV
0.3130	0.4	41.7	*	42.1	*	59.8	49.8	17.7	*
0.6125	0.5	39.4	*	39.9	*	56.0	46.0	16.1	*
0.9087	0.5	36.4	*	36.9	*	56.0	46.0	19.1	*
1.2126	0.5	36.5	*	37.0	*	56.0	46.0	19.0	*
1.5167	0.5	31.7	*	32.2	*	56.0	46.0	23.8	*
2.4146	0.5	35.4	*	35.9	*	56.0	46.0	20.1	*

- Remark :
1. All readings are Quasi-Peak values.
 2. Factor = Insertion Loss + Cable Loss
 3. Measurement = Factor + Reading
 4. The worst emission was detected at 0.6125MHz with corrected signal level of 39.4dBuV (limit was 56.0dBuV) when the VB side of the EUT was connected to L.I.S.N.
 5. "*" means that the Quasi-Peak values have met Average limits, it's unnecessary to measure with Average detector.

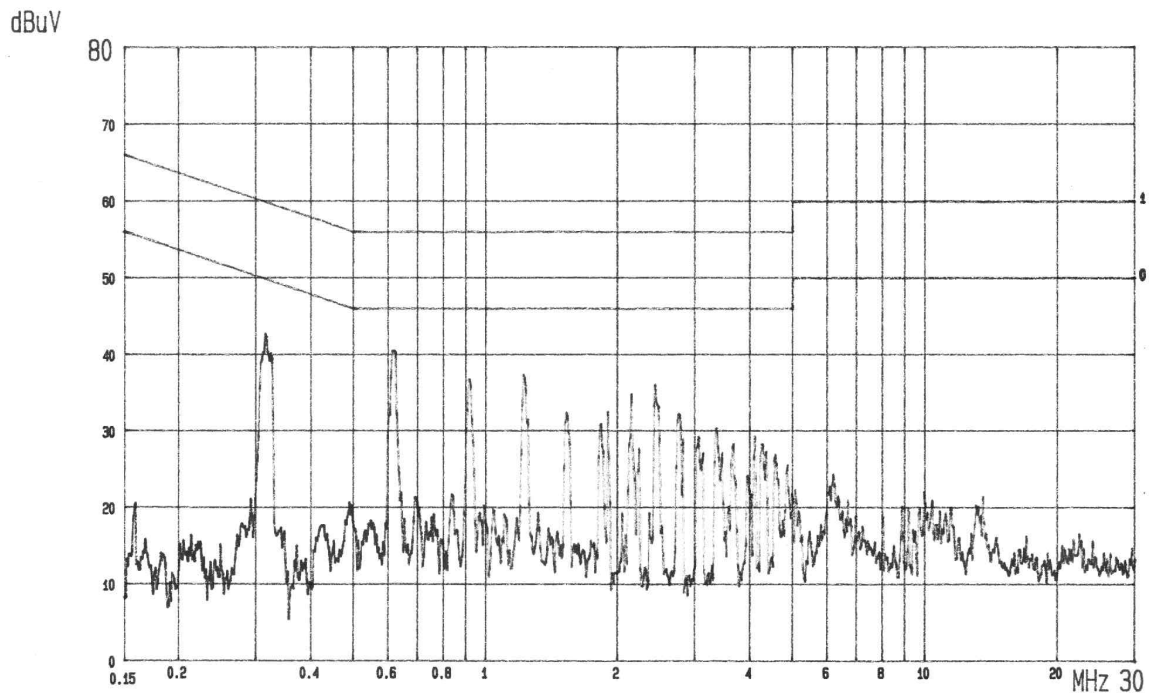


MARASST
LINE: Va

EUT: GUARDIAN ANGEL
MEMO: TX (S.G)

M/N: GA251

120V/60Hz PAGE: 01
(PEAK VALUE) AUDIX



MARASST
LINE: Vb

EUT: GUARDIAN ANGEL
MEMO: TX (S.G)

M/N: GA251

120V/60Hz PAGE: 02
(PEAK VALUE) AUDIX

3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

The following test equipment is used during the radiated emission measurement :

3.1.1. For 30MHz~1000MHz Frequency (at Semi-Anechoic Chamber)

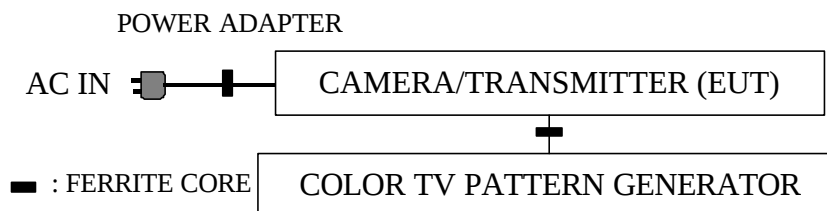
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	HP	8593EM	3826A00248	Sep. 23, 02'	Sep. 22, 03'
2.	Test Receiver	R&S	ESVP	879691/036	Jul. 09, 02'	Jul. 08, 03'
3.	Pre-Amplifier	HP	8447D	2944A06305	Mar. 13, 03'	Mar. 12, 04'
4.	Broadband Antenna	Schwarzbeck	BBA 9106	A3L	Feb. 23, 03'	Feb. 22, 04'
5.	Broadband Antenna	Schwarzbeck	UHALP9108-A	0138	Feb. 23, 03'	Feb. 22, 04'

3.1.2. For above 1GHz Frequency (at Semi-Anechoic Chamber)

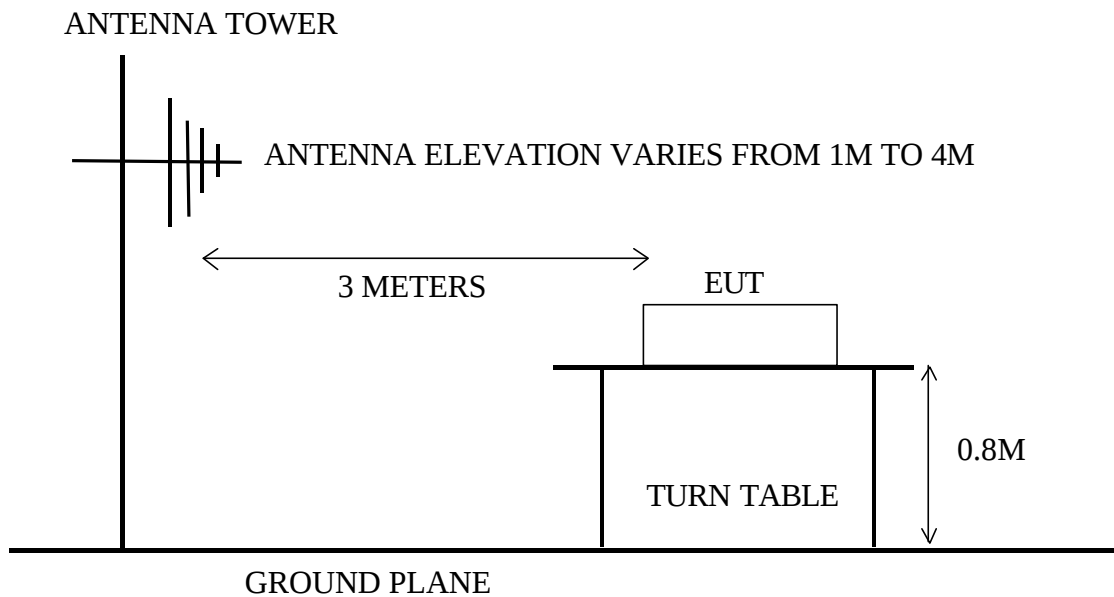
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	HP	8593EM	3826A00248	Sep. 23, 02'	Sep. 22, 03'
2.	Pre-Amplifier	HP	8449B	3008A00529	Jan. 07, 03'	Jan. 06, 04'
3.	Horn Antenna	EMCO	3115	9112-3775	Apr. 21, 03'	Apr. 22, 04'

3.2. Block Diagram of Test Setup

3.2.1. Block Diagram of connection between EUT and simulators



3.2.2. Semi-Anechoic Chamber (3M) Setup Diagram



3.3. Radiated Emission Limits [§15.249 (d)]

Frequency MHz	Distance Meters	Field Strength	
		$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0

- Remarks :
- (1) Emission level ($\text{dB}\mu\text{V/m}$) = $20 \log$ Emission level ($\mu\text{V/m}$)
 - (2) The tighter limit applies at the band edges.
 - (3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
 - (4) The limits shown in the above table is under §15.209.

3.4. Radiated Emission Limits [§15.249 (a)]

Frequency MHz	Field Strength of Fundamental		Field Strength of Harmonicas	
	mV/m	$\text{dB}\mu\text{V/m}$	$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$
902 ~ 928	50	94 (114)	500	54 (74)
2400 ~ 2483.5	50	94 (114)	500	54 (74)
5725 ~ 5875	50	94 (114)	500	54 (74)
24.0 ~ 24.25	250	108 (128)	2500	68 (88)

- Remarks :
- (1) Emission level ($\text{dB}\mu\text{V/m}$) = $20 \log$ Emission level ($\mu\text{V/m}$)
 - (2) Field strength limits are specified at a distance of 3 meters.
 - (3) Brackets () are peak limits.

3.5. EUT's Configuration during Compliance Measurement

The configuration of EUT and its simulators are same as those used in conducted measurement. Please refer to 2.4.

3.6. Operating Condition of EUT

Same as conducted measurement which is listed in 2.5.

3.7. Test Procedure

The EUT and its simulators were placed on a turn table which was 0.8 meter above ground. The turn table rotate 360 degrees to determine the position of the maximum emission level. EUT was set 3 meters away from the receiving antenna which were mounted on a antenna tower. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated biconical and log periodical antenna) and dipole antenna were used as receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4-1992 on radiated measurement.

The bandwidth of the R&S Test Receiver ESVP was set at 120KHz for frequency range 30MHz~1000MHz.

The bandwidth of the Spectrum Analyzer 8593EM was set at 1MHz for frequency range above 1GHz.

Two test modes (channel 1 & channel 4) were tested during radiated testing and all the test results are listed in section 3.7.

3.8. Radiated Emission Measurement Results

PASSED. All emissions not reported below are too low against the prescribed limits.

3.8.1. Frequency range 30MHz to 1000MHz

Date of Test : Apr. 17, 2003 Temperature : 22

EUT : Wireless Security System Humidity : 70%
(Camera/Transmitter)

Test Mode : Channel 1

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Limits dBμV/m	Margin dB
32.430	22.19	1.10	-0.52	22.77	40.00	17.23
114.510	18.55	2.30	0.50	21.35	43.50	22.15
233.310	23.98	3.30	1.45	28.73	46.00	17.27
297.840	26.78	3.98	-0.08	30.68	46.00	15.32
397.300	16.84	4.79	0.56	22.19	46.00	23.81
472.900	17.80	5.80	1.92	25.52	46.00	20.48
505.800	18.40	6.70	3.54	28.64	46.00	17.36

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
36.480	21.00	1.20	2.33	24.53	40.00	15.47
157.980	21.19	2.70	0.47	24.36	43.50	19.14
294.060	26.90	3.96	-1.08	29.78	46.00	16.22
505.800	17.90	6.70	3.55	28.15	46.00	17.85
549.200	19.06	6.80	1.03	26.89	46.00	19.11
714.400	21.48	6.60	0.96	29.04	46.00	16.96

- Remarks : 1. All readings are Quasi-Peak values.
 2. Emission Level = Meter Reading + Antenna Factor + Cable Loss.

Date of Test : Apr. 17, 2003 Temperature : 22

EUT : Wireless Security System Humidity : 70%
(Camera/Transmitter)

Test Mode : Channel 4

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading		Emission Level		Margin dB
			Horizontal dB μ V		Horizontal dB μ V/m	Limits dB μ V/m	
92.100	15.41	2.00	0.14		17.55	43.50	25.95
101.280	16.96	2.10	1.84		20.90	43.50	22.60
117.750	18.78	2.30	2.55		23.63	43.50	19.87
282.990	25.80	3.80	2.13		31.73	46.00	14.27
311.200	14.60	4.00	1.67		20.27	46.00	25.73
821.500	22.15	7.00	2.08		31.23	46.00	14.77

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading		Emission Level		Margin dB
			Vertical dB μ V		Vertical dB μ V/m	Limits dB μ V/m	
36.480	21.00	1.20	2.73		24.93	40.00	15.07
58.080	15.54	1.60	4.12		21.26	40.00	18.74
236.280	24.44	3.40	2.16		30.00	46.00	16.00
505.100	17.83	6.62	3.52		27.97	46.00	18.03
549.900	19.06	6.80	1.54		27.40	46.00	18.60
714.400	21.48	6.60	0.52		28.60	46.00	17.40

Remarks : 1. All readings are Quasi-Peak values.
2. Emission Level = Meter Reading + Antenna Factor + Cable Loss.

3.8.2. Frequency range above 1GHz

Date of Test : Apr. 17, 2003 Temperature : 22

EUT : Wireless Security System
(Camera/Transmitter) Humidity : 70%

Test Mode : Channel 1

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Limits dBμV/m	Margin dB
Fundamental Freq. (Average Value)						
2410.640	28.61	6.34	33.67	68.62	94.00	25.38
Fundamental Freq. (Peak Value)						
2410.640	28.61	6.34	39.31	74.26	114.00	39.74
Harmonic Freq. (Average Value)						
4820.380	33.61	9.14	-6.65	36.10	54.00	17.90
7230.000	36.75	11.25	-13.99	34.01	54.00	19.99
9640.000	38.27	13.02	-16.48	34.81	54.00	19.19
12050.850	38.73	14.96	-20.22	33.47	54.00	20.53
Harmonic Freq. (Peak Value)						
4820.380	33.61	9.14	-0.65	42.10	74.00	31.90
7230.000	36.75	11.25	-12.99	35.01	74.00	38.99
9640.000	38.27	13.02	-16.48	34.81	74.00	39.19
12050.850	38.73	14.96	-20.22	33.47	74.00	40.53

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
Fundamental Freq. (Average Value)						
2410.080	28.61	6.34	32.30	67.25	94.00	26.75
Fundamental Freq. (Peak Value)						
2410.080	28.61	6.34	37.38	72.33	114.00	41.67
Harmonic Freq. (Average Value)						
4820.380	33.61	9.14	-6.00	36.75	54.00	17.25
7230.000	36.75	11.25	-13.62	34.38	54.00	19.62
9640.000	38.27	13.02	-16.85	34.44	54.00	19.56
12050.850	38.73	14.96	-20.63	33.06	54.00	20.94
Harmonic Freq. (Peak Value)						
4820.380	33.61	9.14	-1.00	41.75	74.00	32.25
7230.000	36.75	11.25	-12.62	35.38	74.00	38.62
9640.000	38.27	13.02	-16.85	34.44	74.00	39.56
12050.850	38.73	14.96	-20.63	33.06	74.00	40.94

Remarks : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Measurement is up to the 10th harmonic, the other harmonics not in the report is that the noise is too low to be measured.

Date of Test : Apr. 17, 2003 Temperature : 22

EUT : Wireless Security System
(Camera/Transmitter) Humidity : 70%

Test Mode : Channel 4

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Peak Limits dBμV/m	Margin dB
Fundamental Freq. (Average Value)						
2470.236	28.74	6.42	31.11	66.27	94.00	27.73
Fundamental Freq. (Peak Value)						
2470.236	26.77	7.16	38.88	72.81	114.00	41.19
Harmonic Freq. (Average Value)						
4940.442	33.92	9.13	-9.21	33.84	54.00	20.16
7410.347	37.20	11.58	-16.14	32.64	54.00	21.36
Harmonic Freq. (Peak Value)						
4940.442	33.92	9.13	-3.21	39.84	74.00	34.16
7410.347	37.20	11.58	-14.14	34.64	74.00	39.36

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Peak Limits dBμV/m	Margin dB
Fundamental Freq. (Average Value)						
2470.566	28.14	6.05	28.13	62.32	94.00	31.68
Fundamental Freq. (Peak Value)						
2470.566	28.14	6.05	33.23	67.42	114.00	46.58
Harmonic Freq. (Average Value)						
4940.442	33.92	9.13	-9.90	33.15	54.00	20.85
7410.347	37.20	11.58	-15.89	32.89	54.00	21.11
Harmonic Freq. (Peak Value)						
4940.442	33.92	9.13	-4.90	38.15	74.00	35.85
7410.347	37.20	11.58	-13.89	34.89	74.00	39.11

Remarks : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
2. Measurement is up to the 10th harmonic, the other harmonics not in the report is that the noise is too low to be measured.

4. DEVIATION TO TEST SPECIFICATIONS

【NONE】

5. MODIFICATON TO EUT

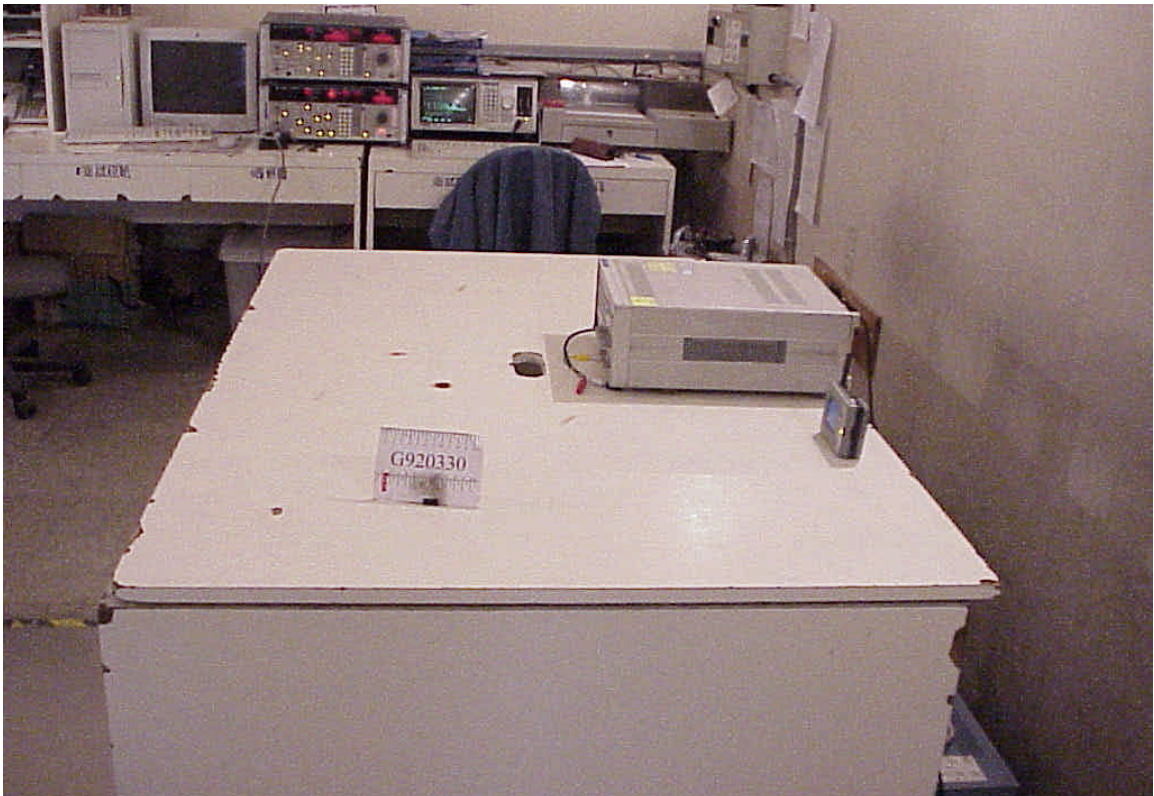
1. Add a ferrite core with one turn on the power cord.
2. Add a ferrite core with one turn on the data cable (AV/S-Video).

6. PHOTOGRAPHS

6.1. Photos of Powerline Conducted Measurement



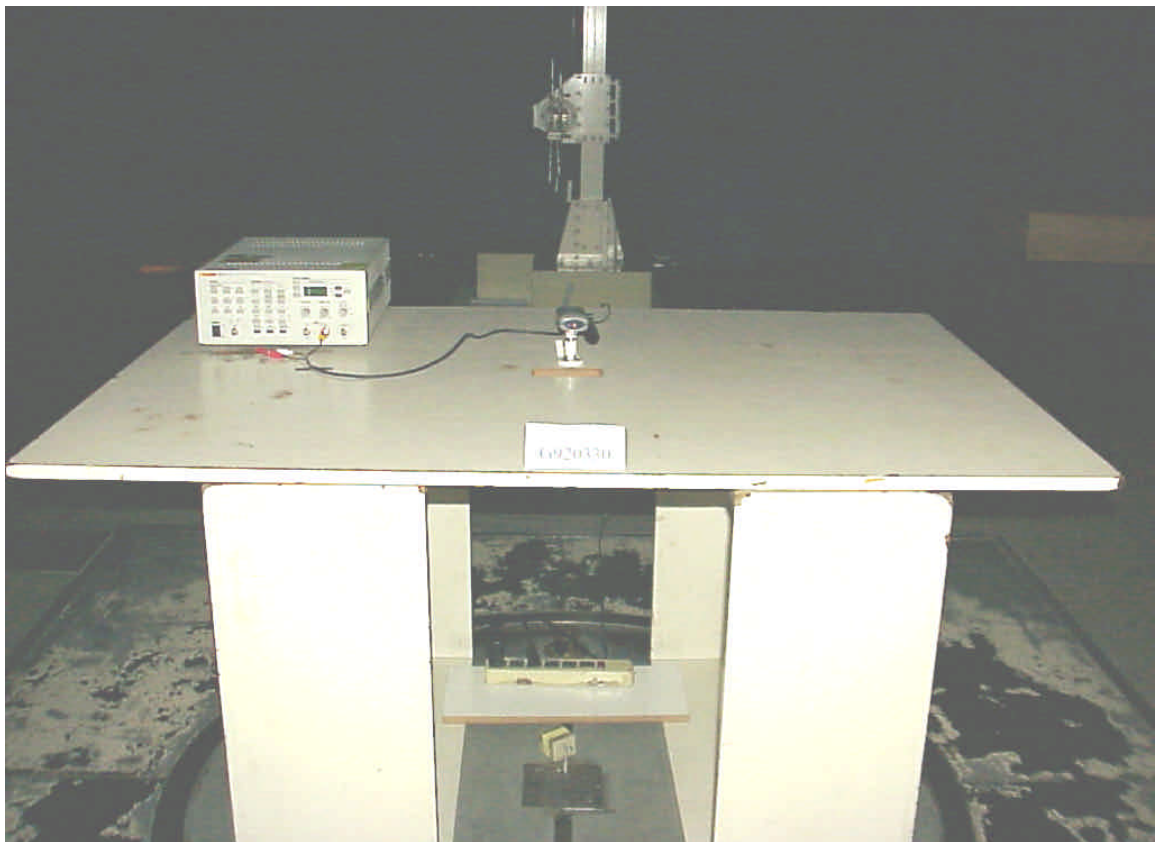
FRONT VIEW OF CONDUCTED MEASUREMENT



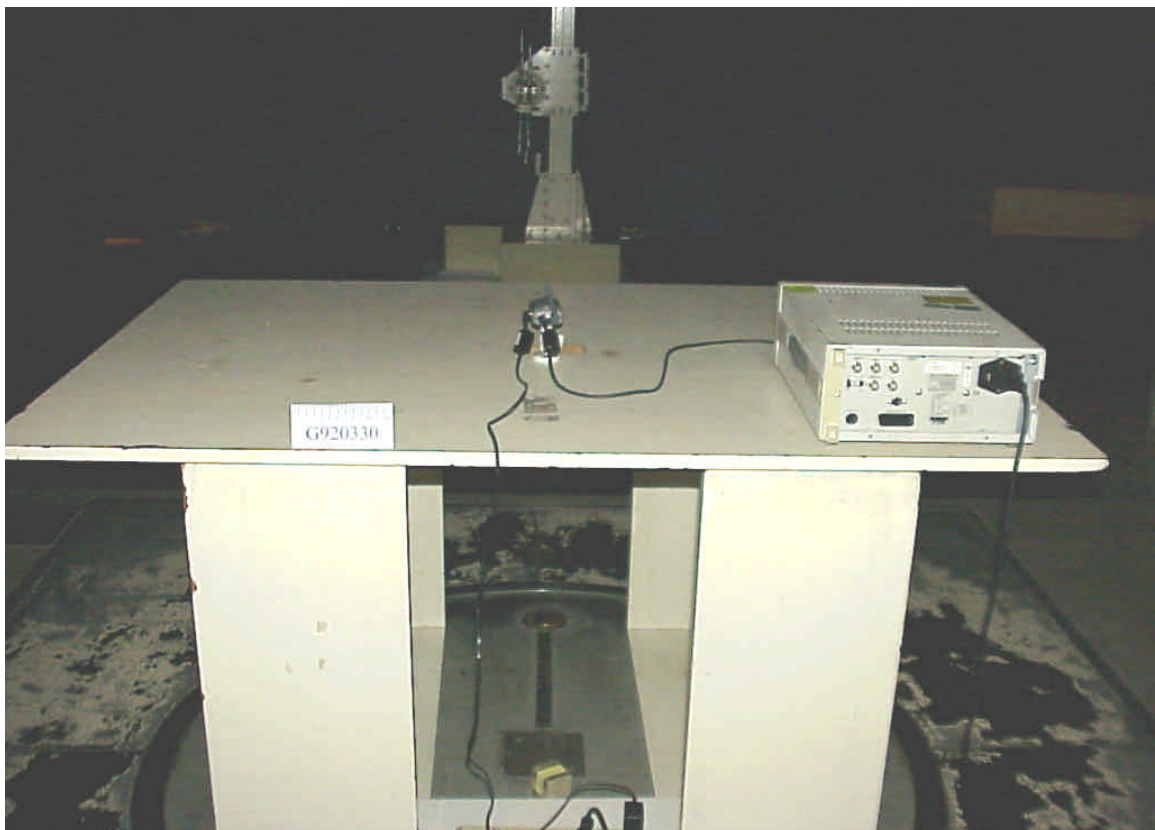
SIDE VIEW OF CONDUCTED MEASUREMENT

6.2. Photos of Radiated Measurement at Semi-Anechoic Chamber

6.2.1. Frequency range 30MHz to 1000MHz



FRONT VIEW OF RADIATED MEASUREMENT

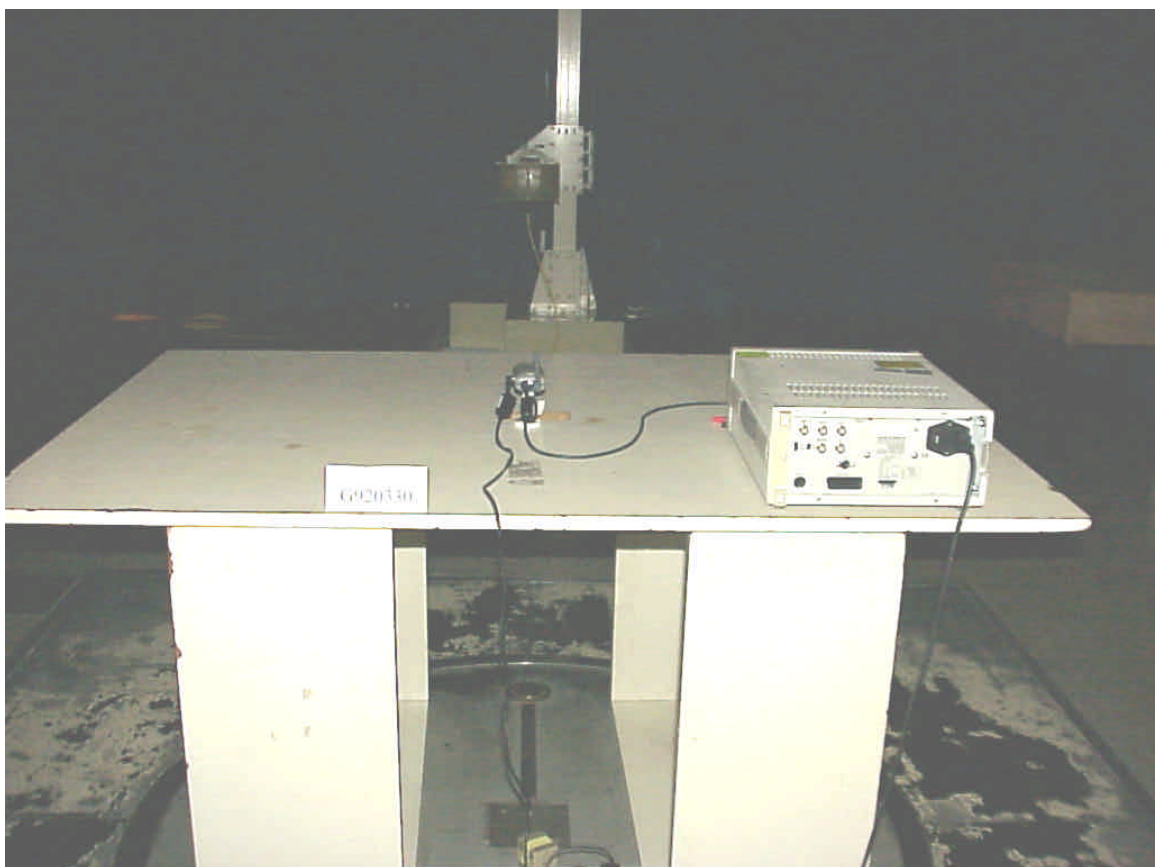


BACK VIEW OF RADIATED MEASUREMENT

6.2.2. Frequency range above 1GHz



FRONT VIEW OF RADIATED MEASUREMENT



BACK VIEW OF RADIATED MEASUREMENT

Supplementary Data (Middle Channel Test Data)

Frequency range 30MHz to 1000MHz

Date of Test : Jul. 09, 2003 Temperature : 24

EUT : Wireless Security System Humidity : 62%
(Camera/Transmitter)

Test Mode : Channel 2

Frequency MHz	Antenna	Cable	Meter Reading	Emission Level		Margin
	Factor dB/m	Loss dB	Horizontal dBμV	Horizontal dBμV/m	Limits dBμV/m	
32.430	22.19	1.10	-0.47	22.82	40.00	17.18
114.510	18.55	2.30	0.58	21.43	43.50	22.07
233.310	23.98	3.30	1.49	28.77	46.00	17.23
297.840	26.78	3.98	-0.03	30.73	46.00	15.27
397.300	16.84	4.79	1.10	22.73	46.00	23.27
472.900	17.80	5.80	1.59	25.19	46.00	20.81
505.800	18.40	6.70	3.58	28.68	46.00	17.32

Frequency MHz	Antenna	Cable	Meter Reading	Emission Level		Margin
	Factor dB/m	Loss dB	Vertical dBμV	Vertical dBμV/m	Limits dBμV/m	
36.480	21.00	1.20	2.73	24.93	40.00	15.07
157.980	21.19	2.70	0.28	24.17	43.50	19.33
294.060	26.90	3.96	-0.87	29.99	46.00	16.01
505.800	17.90	6.70	3.85	28.45	46.00	17.55
549.200	19.06	6.80	1.03	26.89	46.00	19.11
714.400	21.48	6.60	0.52	28.60	46.00	17.40

Remarks : 1. All readings are Quasi-Peak values.
2. Emission Level = Meter Reading + Antenna Factor + Cable Loss.

Frequency range above 1GHz

Date of Test : Jul. 09, 2003 Temperature : 24

EUT : Wireless Security System
(Camera/Transmitter) Humidity : 62%

Test Mode : Channel 2

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Limits dBμV/m	Margin dB
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Fundamental Freq. (Average Value)

2430.690	28.67	6.38	32.65	67.70	94.00	26.30
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Fundamental Freq. (Peak Value)

2430.690	28.67	6.38	37.65	72.70	114.00	41.30
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Harmonic Freq. (Average Value)

4860.633	33.75	9.15	-7.07	35.83	54.00	18.17
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7290.357	36.90	11.36	-13.89	34.37	54.00	19.63
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Harmonic Freq. (Peak Value)

4860.633	33.75	9.15	-0.07	42.83	74.00	31.17
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7290.357	36.90	11.36	-11.29	36.97	74.00	37.03
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Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
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Fundamental Freq. (Average Value)

2430.690	28.67	6.38	31.33	66.38	94.00	27.62
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Fundamental Freq. (Peak Value)

2430.690	28.67	6.38	34.83	69.88	114.00	44.12
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Harmonic Freq. (Average Value)

4860.633	33.75	9.15	-7.81	35.09	54.00	18.91
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7290.357	36.90	11.36	-14.17	34.09	54.00	19.91
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Harmonic Freq. (Peak Value)

4860.633	33.75	9.15	-1.81	41.09	74.00	32.91
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7290.357	36.88	11.34	-13.83	34.39	74.00	39.61
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Remarks : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
2. Measurement is up to the 10th harmonic, the other harmonics not in the report is that the noise is too low to be measured.