EXHIBIT B

Test Report

Report No.	C3515398
Specifications Test Method	FCC Part 15.231, Class B – Certification ANSI C63.4 1992
Applicant address	P.O.Box 100. Placentia. CA92806. USA
Applicant Items tested Model No.	Targus Group International. DEFCON 3 Wireless Security alarm for Transmitter PA430-TX (Sample # C35398)
Results Sample received date	**Compliance** (As detailed within this report) 02/24/2000 (month / day / year)
Prepared by	project engineer
Authorized by	General Manager (Frank Tsai)
Issue date	*MAR. 15, 2000* (month / day / year)
Modifications Tested by Office at Anechoic Chamber at	**Appendix A** Training Research Co., Ltd. 2, Lane 194, Huan-Ho Street, Hsichih, Taipei Hsien 221, Taiwan 2, Lane 194, Huan-Ho Street, Hsichih, Taipei Hsien 221, Taiwan

Conditions of issue:

(1) ***This test report shall not be reproduced except in full, without written approval of TRC. And the test result contained within this report only relate to the sample submitted for testing.***

(2) ***This report must not be used by the client to claim product endorsement by NVLAP or any agency of U.S. Government.***

★ ***FCC ID: OXMPA430-TX***

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Chapter 1 GENERAL

1.1 Introduction

The following measurement report is submitted on behalf of applicant in support of an Intentional Periodic Radiator certification with Part 2 Subpart J and Part 15 Subpart A and C of the Commission's Rules and Regulations.

1.2 Description of EUT

EUT	**:**	DEFCON 3 Wireless Security alarm for Transmitter
Model No.	**:**	PAD430-TX
FCC ID	**:**	OXMPA430-TX
Frequency Range	**:**	Operated in 433.92 MHz
Power Type	**:**	Powered by one ALKALINE size, 23A, 12V battery
Applicant	**:**	Targus Group International.
Applicant address	**:**	P.O.Box 100. Placentia. CA92806. USA

The fundamental frequency of transmitter emitted is due to a press on button of the EUT. **The emitting time of fundamental frequency is less than 5 seconds** pursuant to FCC Part 15.231(a). There are security codes for avoiding the possibility of duplicating codes in adjacent systems. The coding must be matching with the companion receiver.

While testing the EUT was adjusted at a position which transmit the maximum emission.

1.3 Description of Support Equipment

The EUT itself forms a system. No support equipment is requited for its normal operation.

1.4 Test Procedure

All measurements contained in this report were performed according to the techniques described in measurement procedure of ANSI C63.4 1992 section 13.

1.5 Location of the Test Site

The radiated emission measurement required by the rule were performed on the three-meter, open-field test site maintained by ***Training Research Co., Ltd.***, ***2, Lane 194, Huan-Ho Street, Hsichih, Taipei Hsien 221, Taiwan, R.O.C.*** Complete description data have been placed on file with the Commission. The conducted power line emissions tests were performed in a shielded enclosure also located at the above facility. ***Training Research Co., Ltd. Listed is by the FCC as a facility available to do measurement work for other on a contract basis.***

1.6 General Test Condition

The conditions under which the EUT operates were varied to determine their effect on the equipment's emission characteristics. The final configuration of the test system and the mode of operation used during these tests were chosen as that which produced highest emission levels. However, only those conditions that the EUT was considered likely encounter in normal use were investigated.

Chapter 2 Transmitter Duty Cycle Measurements

2.1 Test Condition and Setup

The duty cycle measurements were performed in a shielded enclosure. The EUT was placed on a wooded table which is 0.8 meters height and a bi-log periodic antenna was used distance about 3 meters for receiving. While testing EUT was set to transmit continuously. Various key configurations were also investigated to find the maximum duty cycle.

The resolution bandwidth and the video bandwidth of the spectrum analyzer were all set to 1MHz to encompass all significant spectral components during the test. The analyzer operated in linear scale and zero span mode after tuning to the transmitter carrier frequency. A digital oscilloscope was connected to the aux video output of the spectrum analyzer for measuring pules width. The pulse width was determined by the difference between the two half voltage points on a pulse.

The duty cycle was determined by the following equation:

$$\text{Duty Cycle (\%)} = \frac{\text{Total on interval in a complete pulse train}}{\text{Length of a complete pulse train}} \quad X \quad 100\%$$

To calculate the actual field intensity, the duty cycle correction factor in decibel is needed for later use and be obtained from following conversion:

Duty Cycle Correction Factor (dB) = 20 x Log_{10} Duty Cycle

2.2 List of Test Instruments

Manufacturer	Device	Model	Input impedance
Hewlett Packard	9KHz - 1.8GHz Spectrum Analyzer	HP8591EM	50.00
Hewlett Packard	400MHz Digitizing Oscilloscope	HP54502A	1M
EMCO	20-1000MHz Log Periodic Antenna	3142	50.00

2.3 Test Instruments Configuration

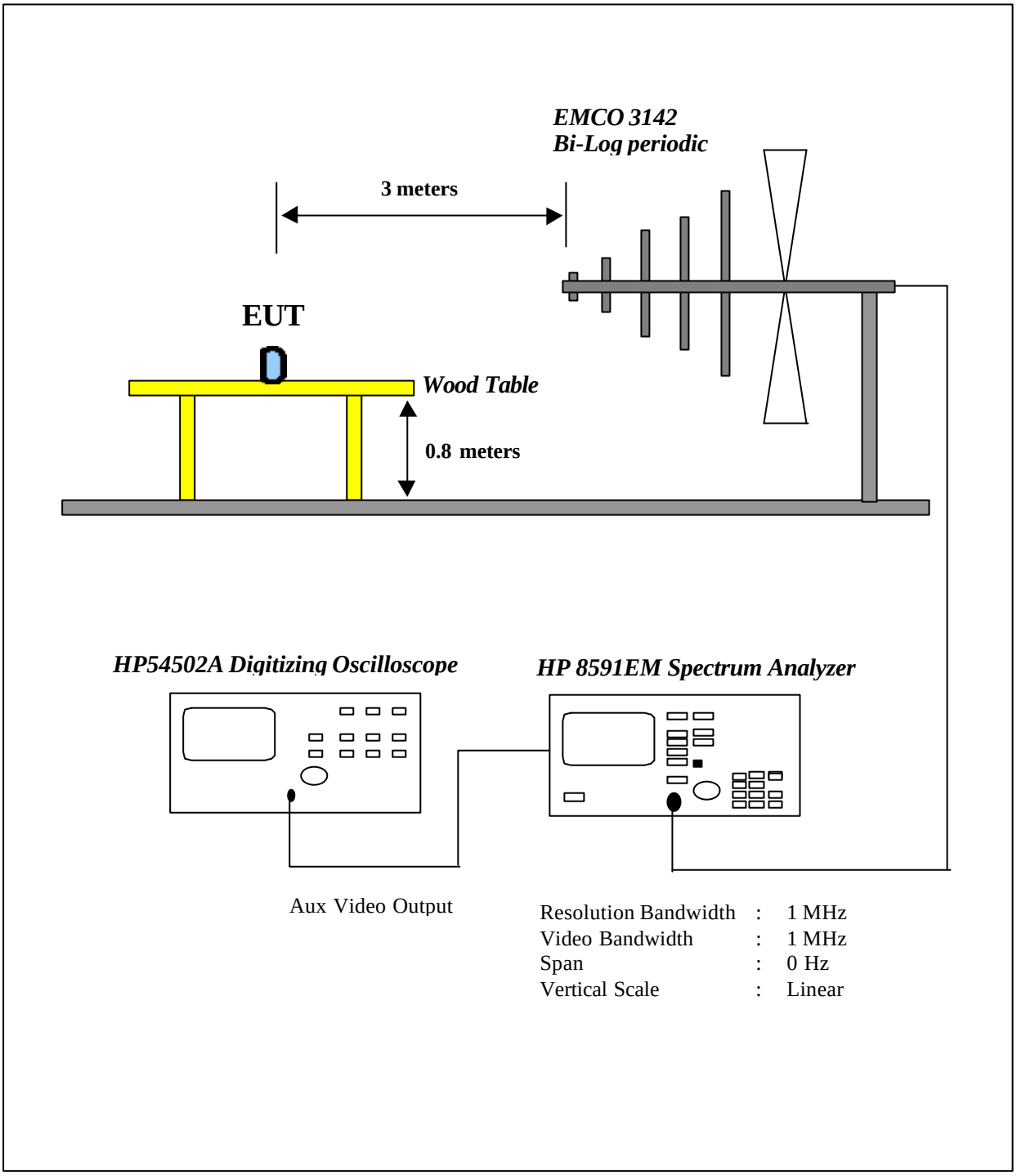


fig 1. Test Configuration of Duty Cycle Measurement

2.4 Test Result

Following is the test result which produce maximum duty cycle:

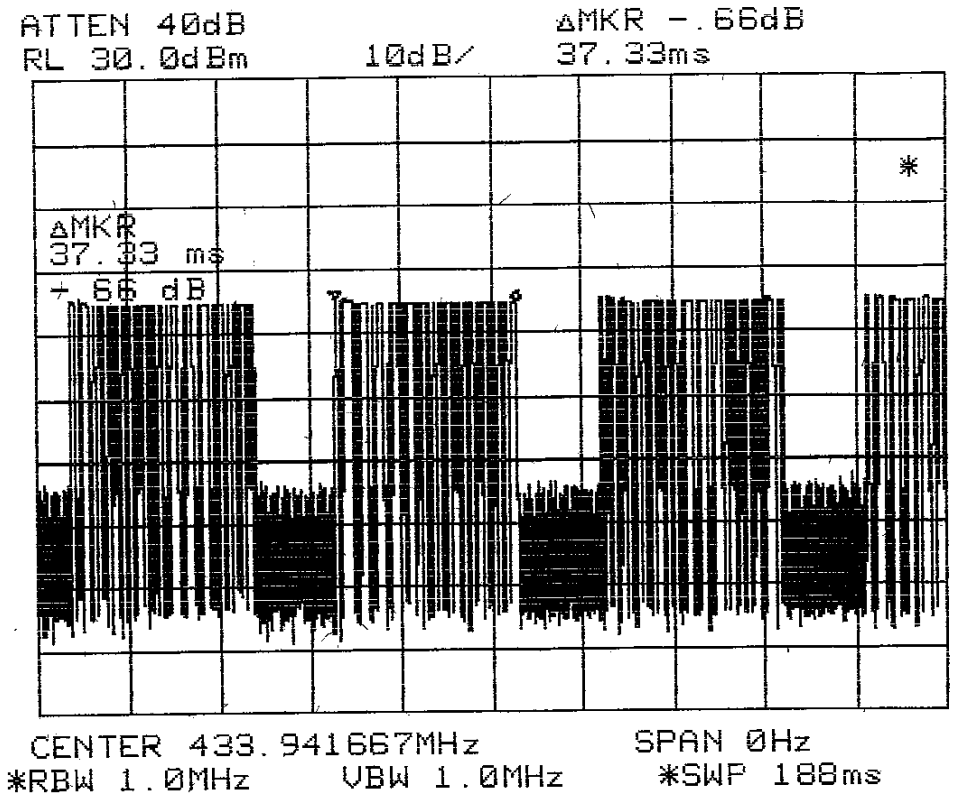
Total on interval in a complete pulse train = 54.90 ms

Length of a complete pulse train = 37.33 ms

Duty cycle (%) = 37.33 ms / 54.90 ms * 100% = 0.679964

Duty Cycle Correction Factor (dB) = 20 * Log (0.679964) = –3.350

A plot is attached on the following page.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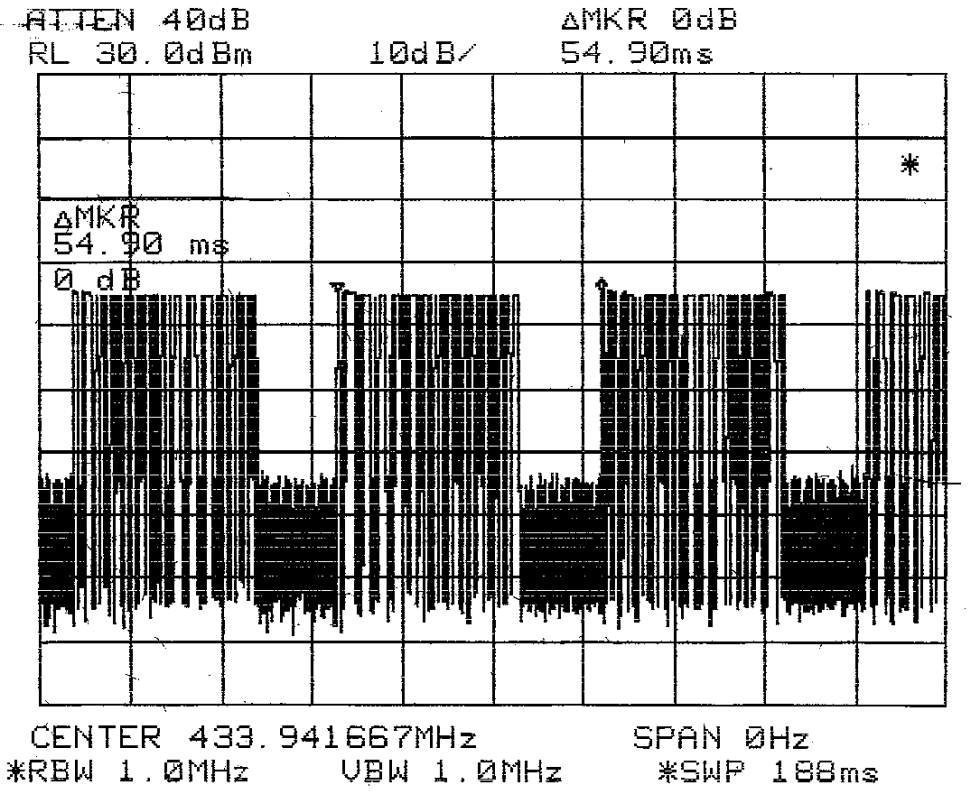
RL 30.0dBm
10dB/
ΔMKR -.66dB
37.33ms
ΔMKR
37.33 ms
-.66 dB
CENTER 433.941667MHz
SPAN 0Hz
*RBW 1.0MHz
VBW 1.0MHz
*SWP 188ms


ATTEN 40dB
RL 30.0dBm
10dB/
ΔMKR 0dB
54.90ms
ΔMKR
54.90 ms
0 dB
CENTER 433.941667MHz
SPAN 0Hz
*RBW 1.0MHz
VBW 1.0MHz
*SWP 188ms

Chapter 3 Transmitter Bandwidth Measurements,

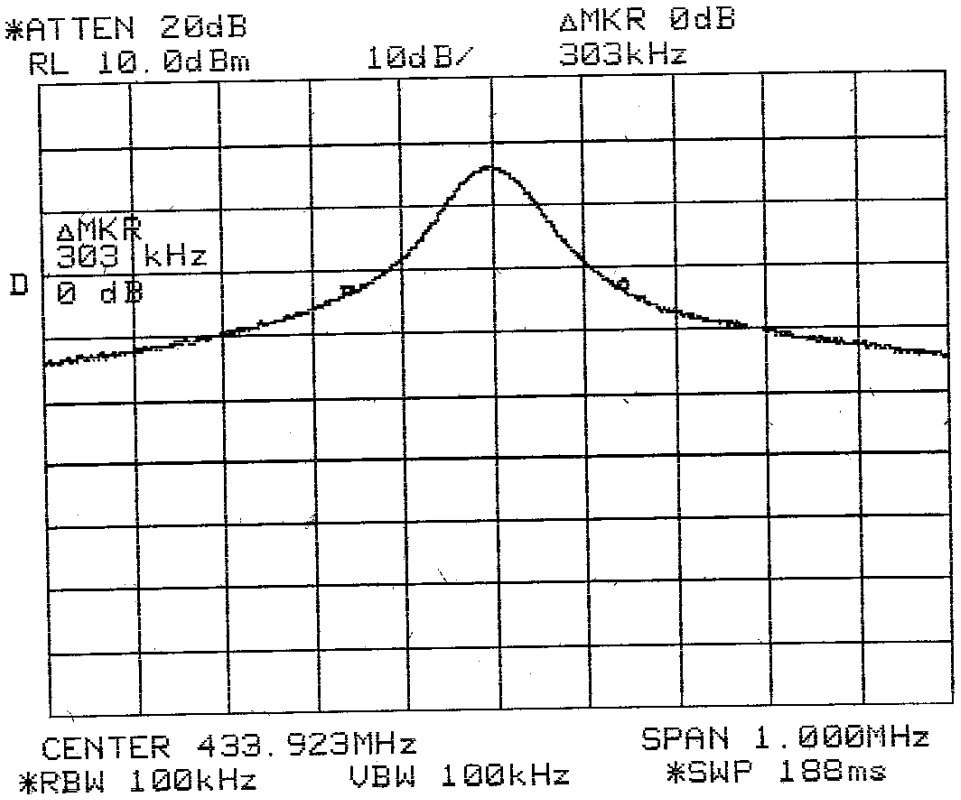
3.1 Test Condition & Setup

The test setup used to transmitter bandwidth measurement was the same with duty cycle test, except there is no need for digital oscilloscope in the bandwidth test. For detailed description, please reference to section 2.1, 2.2, 2.3 on page 6 to page 8 of this report.

The resolution bandwidth of the spectrum analyzer was set to 100KHz which is greater 5 percent of the maximum permitted bandwidth that required by the ANSI C 63.4 section13. The maximum permitted bandwidth specified by the rule was 0.25% of the center frequency of the EUT, e.g. 433.92MHz * 0.25% = 1.084MHz. The detector function was set to peak and hold mode to clearly observe the components.

3.2 Test Result

Measured Transmitter Bandwidth : 303 KHz
Permitted Maximum Bandwidth : 1.084 MHz
A plot attached on the following page.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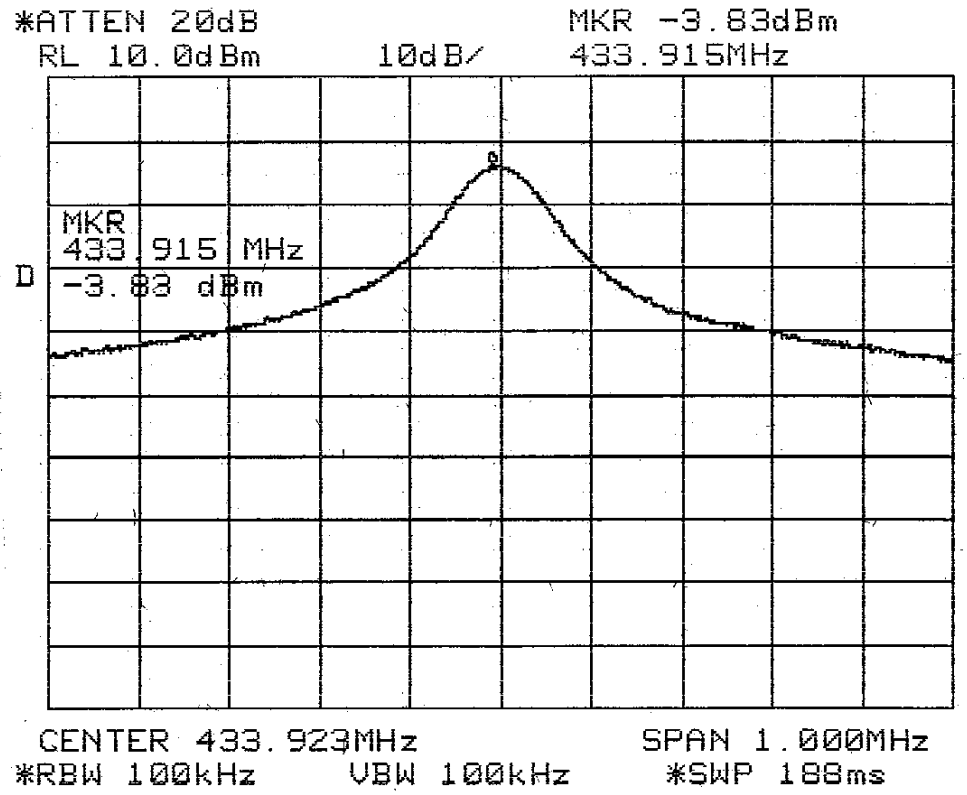
10dB/
ΔMKR 0dB
303kHz
ΔMKR
303 kHz
D
0 dB
CENTER 433.923MHz
SPAN 1.000MHz
*RBW 100kHz
VBW 100kHz
*SWP 188ms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RL 10.0dBm
10dB/
MKR -3.83dBm
433.915MHz
MKR
433.915 MHz
D
-3.83 dBm
CENTER 433.923MHz
SPAN 1.000MHz
*RBW 100kHz
VBW 100kHz
*SWP 188ms

Chapter 4 Conducted Emissions Measurements

The EUT operates solely by the battery. According to the rule of section 15.207(c). The EUT exempt to the power line conducted test.

Chapter 5 Radiated Emissions Measurements

5.1 General Configuration

Prior to open-field testing, the EUT was placed in a shielded enclosure and scanned at a close distance to determine its emission characteristics. The physical arrangement of the EUT was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude, directivity, and frequency. The exact system configuration which produced the highest emissions was noted so it could be reproduced later during the open-field tests. This was done to ensure that the final measurements would demonstrate the worst-case interference potential of the EUT.

5.2 Test Condition and Setup

Final radiation measurements were made on a three-meter, open-field test site. The EUT was placed on a nonconductive turntable which is 0.8 meters height, top surface 1.0 x 1.5 meter.

The spectrum was examined from 30 MHz to 20 GHz order to check the whole spectrum which could be generated from the EUT. During the test, EUT was set to transmit continuously and the switch was positioned to yield the maximum duty cycle which had measured before radiated emissions test. The test battery was a totally brand-new one.

A nonconductive material surrounded the EUT to supporting the EUT for standing on three orthogonal planes. At each condition, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarizations.

NOTE: *SETTING THE EUT TO TRANSMIT CONTINUOUSLY WAS JUST FOR THE TESTING*

The field strength below 1 GHz was measured by EMCO Bi-Log Periodic Antenna (model 3142) at 3 meter, and the EMCO Double Ridged Guide Antenna (model 3115) was used in frequencies 1~20 GHz at a distance of 1 meter. All test results were extrapolated equivalent signal at 3 meters utilizing an inverse linear distance extrapolated factor (20dB/decade).

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. No post-detector video filters were used in the test. The spectrum analyzer's 6dB bandwidth was set to 3 M and the was operated in the peak detection mode, for frequencies both below and up 1GHz. The peak levels were obtained by subtracting the duty cycle correction factor from the peak readings.

The following procedures were used to convert the emission levels measured in decibels referenced to 1 micro volt (dBμV) into field intensity in micro volts pre meter (μV/ m).

The actual field intensity in decibels referenced to 1 micro volt per meter (dBμV/ m) is determined by algebraically adding the measured reading in dBμV, the correction factor (dB), duty cycle correction factor (dB), and distance extrapolation factor (dB) at the appropriate frequency:

30 MHz ~ 1GHz:

1. Corrected Amplitude = Reading Amplitude – Correction Factors
2. Correction Factor = Antenna Factor + (Cable Loss – Amplitude Gain)
   (For example : 30MHz correction factor = 15.5 – (–15.26) = 30.76 dB/m)

Above 1GHz:

1. Correction Factors = Antenna Factor + Cable Loss – Distance Extrapolation Factor (9.54dB) – Amplifier Gain
2. Peak Amplitude + Correction Factor + Duty Cycle Correction Factor = Corrected

(2) The field intensity in micro volts per meter can then be determined by the following equation:

$$FI(\mu V/m) = 10^{FI(dB\mu V/m)/20}$$

The FCC specified emission limits were calculated according the EUT operating frequency and obtained by following linear interpolation equations:

(1) For fundamental frequency:

f_{EUT} : EUT Operating Frequency

$$\text{Emission Limit}(\mu V/m) = [f_{EUT}(MHz) - 260(MHz)] \times \frac{12500(\mu V/m) - 3750(\mu V/m)}{470(MHz) - 260(MHz)} + 3750(\mu V/m)$$

(2) For spurious frequencies:

f_{EUT} : EUT Operating Frequency

$$\text{Emission Limit}(\mu V/m) = [f_{EUT}(MHz) - 260(MHz)] \times \frac{1250(\mu V/m) - 375(\mu V/m)}{470(MHz) - 260(MHz)} + 375(\mu V/m)$$

5.3 List of Test Instruments

Manufacturer	Device	Model	Input Impedance
Hewlett Packard	9KHz-2.9 GHz Spectrum Analyze	HP8594EM	50.00
Hewlett Packard	50kHz-22GHz Spectrum Analyzer	HP8592A	50.00
Hewlett Packard	1GHz-26.5GHz Preamplifier	HP8449B	50.00
Anritsu	0.1-1200MHz Preamplifier	MH648A	50.00
EMCO	20-2000MHz Biconical Antenna	3142	50.00
EMCO	1G-18GMHz Double Ridge Antenna	3115	50.00
TRC	Open Field Test Site	TRC-OFTS1	N/A
TRC	Notch Filter	N/A	50.00
TRC	Horn Antenna with Amplifier	TRC1	50.00

5.4 Test Instruments Configuration

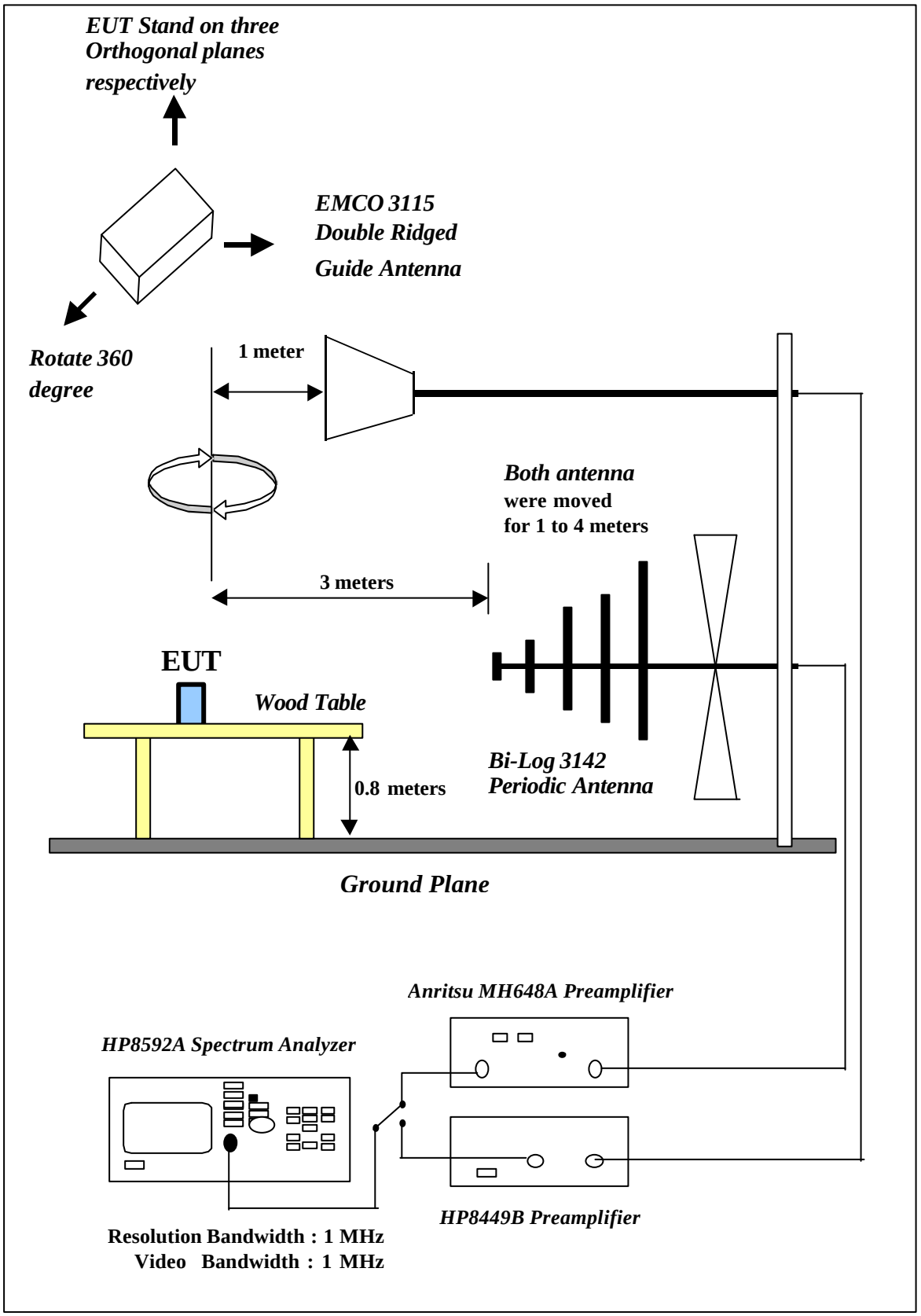

fig 1. Test Configuration of the Radiated Emissions (Front View)

fig 2. Test Configuration of the Radiated Emissions (Back View)

5.5 Test Result of Radiated Emissions

The highest peak values of radiated emissions form the EUT at various antenna heights, antenna polarization, EUT orientation, etc. are recorded on the following.

Test Conditions: Testing room : Temperature : 26 ° C Humidity : 73 % RH
Testing site : Temperature : 31 ° C Humidity : 75 % RH

Table 1 Open Field Radiated Emissions For 30MHz 1GHz [Horizontal]

Radiated Emission				*Correction Factors*	*Corrected Amplitude*	*FCC Class B (3 m)*	
Frequency (MHz)	*Amplitude (dBmV/m)*	*Ant. H. (m)*	*Table (°)*	*(dB)*	*(dBmV/m)*	*Limit (dBmV/m)*	*Margin (dB)*
433.923	56.33	1.00	23	-19.95	76.28	80.82	-4.54
867.830	23.04	1.00	2	-26.80	49.84	60.82	-10.98
***							

Note:

1. Margin = Amplitude – limit, *if margin is minus means under limit.*
2. Corrected Amplitude = Reading Amplitude – Correction Factors
3. Correction factor = Antenna factor + (Cable Loss – Amplitude gain)
   (For example: 30MHz correction factor = 15.5 – (–15.26) = 30.76 dB/m)

$$\text{Emission Limit}(\mu\text{V/m}) = [433.923 - 260] \text{ X } \frac{12500(\mu\text{V/m}) - 3750(\mu\text{V/m})}{470(\text{MHz}) - 260(\text{MHz})} + 3750(\mu\text{V/m})$$

$$= 10996.79167$$

$$\text{Limit} = 20*\log(10996.79167) = 80.82\ (\text{dB}\mu\text{V/m})$$

Table 2 Open Field Radiated Emissions For 1GHz 18GHz [Horizontal]

Radiated Emission				*Correction Factors*	*Duty Cycle*	*Corrected Amplitude*	*FCC Class B (3 m)*	
Frequency (GHz)	*Amplitude (dBm V/m)*	*Ant. H. (m)*	*Table (°)*	*(dB)*	*(dB)*	*(dBm V/m)*	*Limit (dBm V/m)*	*Margin (dB)*
1.301	56.64	1.00	326	-8.67	-3.35	44.62	54.00	-9.38
1.735	52.95	1.00	26	-8.67	-3.35	40.93	60.82	-19.89
2.170	55.02	1.00	107	-8.67	-3.35	43.00	60.82	-17.82
***								

Note:

1. Margin = Corrected - Limit.
2. Peak Amplitude + Correction Factor + Duty Cycle = Corrected

Table 3 Open Field Radiated Emissions For 30MHz 1GHz [Vertical]

Radiated Emission				*Correction Factors*	*Corrected Amplitude*	*FCC Class B (3 m)*	
Frequency (MHz)	*Amplitude (dBmV/m)*	*Ant. H. (m)*	*Table (°)*	*(dB)*	*(dBmV/m)*	*Limit (dBmV/m)*	*Margin (dB)*
433.923	59.98	1.00	119	-20.00	79.98	80.82	-0.84
867.870	25.70	1.00	131	-27.61	53.31	60.82	-7.51
***							

Table 4 Open Field Radiated Emissions For 1GHz 18GHz [Vertical]

Radiated Emission				Correction Factors	Duty Cycle	Corrected Amplitude	FCC Class B (3 m)	
Frequency (GHz)	Amplitude (dBm V/m)	Ant. H. (m)	Table (°)	(dB)	(dB)	(dBm V/m)	Limit (dBm V/m)	Margin (dB)
1.301	61.53	1.00	36	-8.67	-3.35	49.51	54.00	-4.49
1.735	60.18	1.00	185	-8.67	-3.35	48.16	60.82	-12.66
2.170	57.85	1.00	29	-8.67	-3.35	45.83	60.82	-14.99
2.603	54.52	1.00	57	-6.84	-3.35	44.33	60.82	-16.49
***								

Final statement:

This test report, measurements made by TRC are traceable to the NIST.

Appendix A

List of Modifications :

1. Replace R1 with 330Ω

Please refer to the photograph of EUT

Jo=昌凱

黃正弁先生

Statement of Applicant:

I acknowledge that the modifications made to the EUT for compliance during testing will be incorporated into mass production units.

Mfg.: Targus Group International.

By : _____ ***Mr.*** ***Date: MAR. 14, 2000***

Signature ***Title: Manger***