



JAPAN QUALITY ASSURANCE ORGANIZATION

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JQA APPLICATION NO.: 80-81033

Issue Date : April 12, 1999

Page 1 of 12

REPORT OF MEASUREMENTS

JQA APPLICATION NO.: 80-81033

Applicant : NIKKO CO., LTD.
1-7-14, Mizumoto, Katsushika-ku,
Tokyo 125-0032, Japan

Manufacturer : NIKKO ELECTRONICS BHD.
PLOT 497, PRAI FREE TRADE ZONE,
PRAI INDUSTRIAL ESTATE, 13600 PRAI,
PENANG, MALAYSIA

Description of Equipment : Radio Controlled Toy

FCC ID : CVTTN7700Y
Trade Name : NIKKO
Model No. : TN7700Y
Serial No. : None
Operating Frequency : 26.995 MHz - 27.255 MHz
Power Supply : 9.0 VDC

Applicable Rule : FCC Rules & Regulations Part 15
Subpart C (June 23, 1989)

Place of Measurement : JQA EMC Engineering Dept.

Date of Measurement : March 30, 1999

Total Pages of This Report : 12 (including this page)

I certify that I am authorized to sign for the report and that all the statement in this report and in the exhibits hereto are true and correct to the best my knowledge and belief.

Shigeru Osawa, Engineer
Testing Div.
EMC Engineering Dept.



1. Radiated Spurious Emissions: [§15.227(a),(b)]

Measurement Method Employed:

Measurements were made under the conditions specified ANSI C63.4.

The field strength measurements of the equipment under test were made at the distance of 3 meters away from the device which was placed on the wooden turntable 0.8 meter in height.

The receiving antenna polarized horizontally was varied from 1 to 4 meters and the wooden turntable was rotated through 360 degrees to obtain the highest reading on the field strength meter. The device was tested three orthogonal planes.

These measurements were repeated with the receiving antenna polarized vertically.

The internal pre-amplifier was used from 27 MHz up to 1000 MHz.

Measurement Results:

Operating Frequency : 27.145 MHz
Distance of Measurement : 3.0 meters

Frequency (MHz)	Antenna Factor (dB)	Meter Reading		Field Strength at 3 m	
		Horiz. (dB/μV)	Vert. (dB/μV)	Horiz. (μV/m)	Vert. (μV/m)
Fundamental					
27.145	-2.0	50.1	61.5	254.1	944.1 (Average)
27.145	-2.0	57.0	68.3	562.3	2065.4 (Peak)
Harmonics & other Frequency components					
54.290	4.3	17.8	16.3	12.7	10.7
81.435	8.1	< -5.0	< -5.0	1.4 or	Less
108.580	10.7	< -5.0	< -5.0	1.9 or	Less
135.725	12.8	< -5.0	< -5.0	2.5 or	Less
162.870	14.5	< -5.0	< -5.0	3.0 or	Less
190.015	15.9	< -5.0	< -5.0	3.5 or	Less
217.160	17.2	< -5.0	< -5.0	4.1 or	Less
244.305	18.3	< -5.0	< -5.0	4.6 or	Less
271.450	19.4	< -5.0	< -5.0	5.2 or	Less
298.595	20.3	< -5.0	< -5.0	5.8 or	Less
325.740	21.1	< -5.0	< -5.0	6.4 or	Less
352.885	21.9	< -5.0	< -5.0	7.0 or	Less
380.030	22.6	< -5.0	< -5.0	7.6 or	Less
407.175	23.3	< -5.0	< -5.0	8.2 or	Less
434.320	24.0	< -5.0	< -5.0	8.9 or	Less
461.465	24.6	< -5.0	< -5.0	9.5 or	Less
488.610	25.1	< -5.0	< -5.0	10.1 or	Less
515.755	25.7	< -5.0	< -5.0	10.8 or	Less
542.900	26.2	< -5.0	< -5.0	11.5 or	Less
579.045	26.7	< -5.0	< -5.0	12.2 or	Less
597.190	27.2	< -5.0	< -5.0	12.9 or	Less
624.335	27.7	< -5.0	< -5.0	13.6 or	Less
651.480	28.2	< -5.0	< -5.0	14.5 or	Less
678.625	28.6	< -5.0	< -5.0	15.1 or	Less

Frequency (MHz)	Antenna Factor (dB)	MeterReading		Field Strength at 3 m	
		Horiz. (dB/μV)	Vert. (dB/μV)	Horiz. (μV/m)	Vert. (μV/m)
705.770	29.1	< -5.0	< -5.0	16.0 or Less	
732.915	29.6	< -5.0	< -5.0	17.0 or Less	
760.060	30.0	< -5.0	< -5.0	17.8 or Less	
787.205	30.4	< -5.0	< -5.0	18.6 or Less	
814.350	30.9	< -5.0	< -5.0	19.7 or Less	
841.495	31.3	< -5.0	< -5.0	20.7 or Less	
868.640	31.7	< -5.0	< -5.0	21.6 or Less	
895.785	32.1	< -5.0	< -5.0	22.6 or Less	
922.930	32.5	< -5.0	< -5.0	23.7 or Less	
950.075	32.9	< -5.0	< -5.0	24.8 or Less	
977.220	33.3	< -5.0	< -5.0	26.0 or Less	

Note:1. The spectrum was checked from 27 MHz to 1000 MHz.
All emissions not listed were found to be more than 20 dB below the limits.

- The symbol of "<" means "or less".
- The cable loss was included in the antenna factor.
- Sample calculation :

at 27.145 MHz

$$10^{(AF+Mr)/20} = 10^{(-2.0+61.5)/20} = 944.1 \mu\text{V/m}$$

Where,

Af = Antenna Factor including the cable loss.

Mr = Meter Reading

5. Measuring Instrument Setting:

Fundamental

Detector function : Average / Peak
IF Bandwidth : 120 KHz

Harmonics & other frequency components

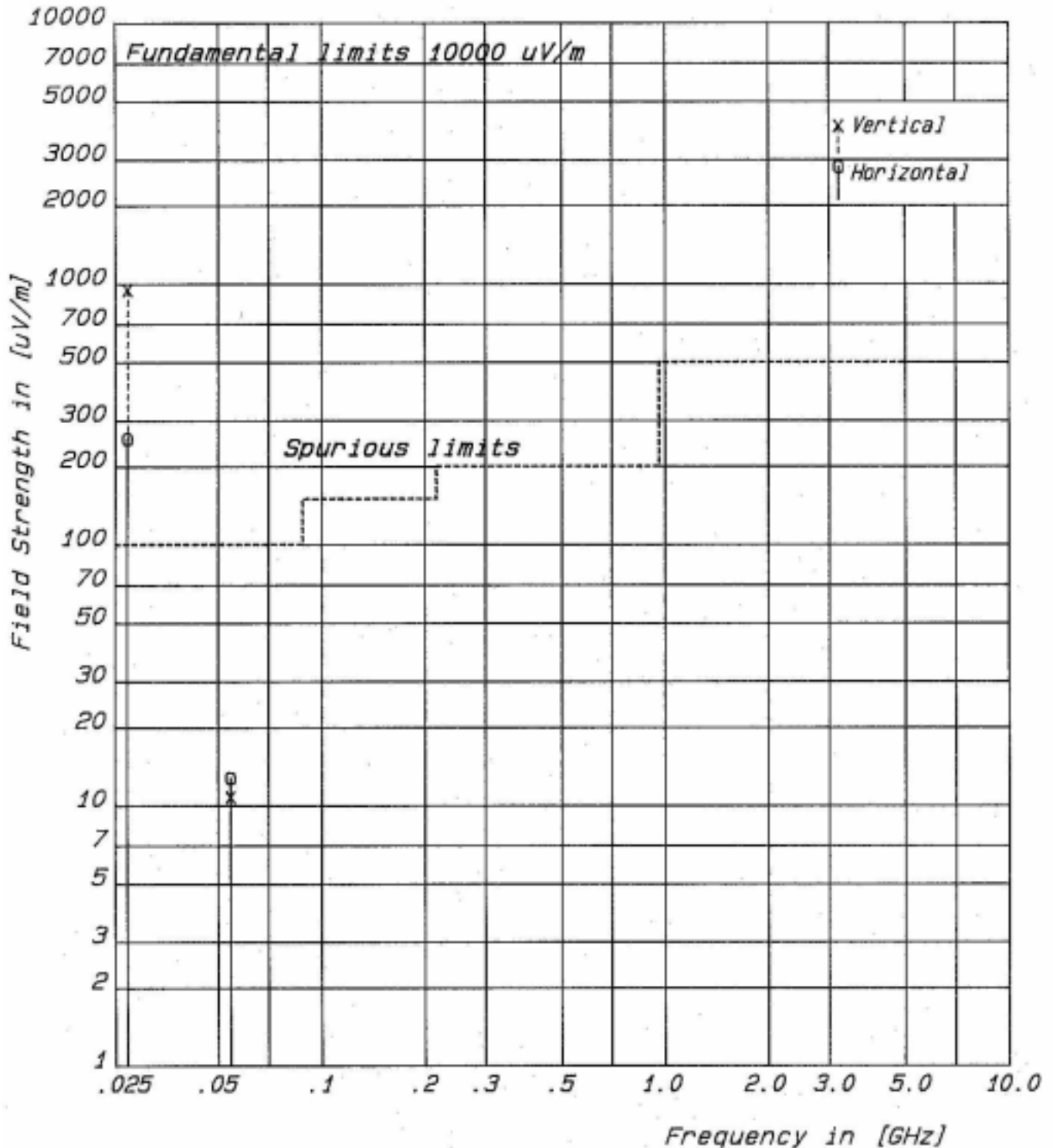
Detector function : CISPR quasi-peak
IF Bandwidth : 120 KHz



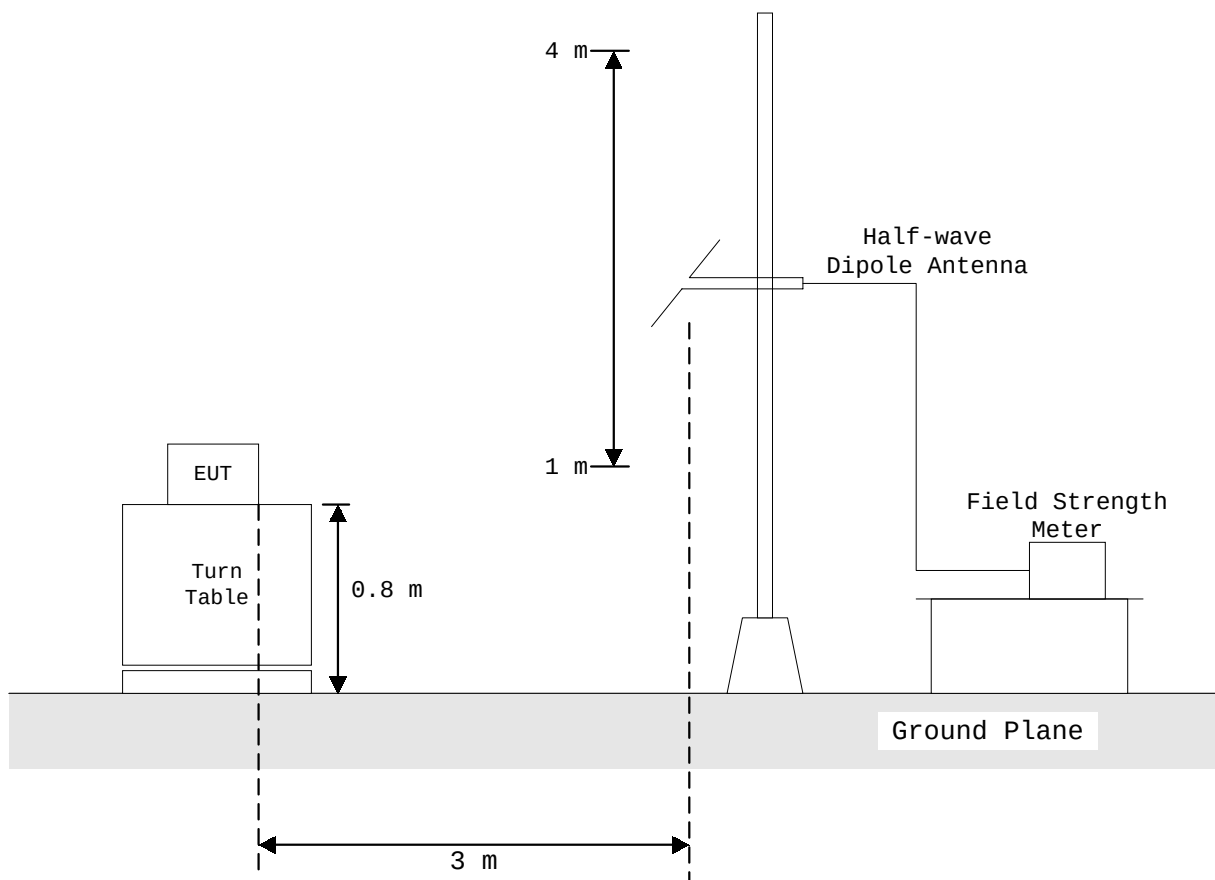
Transmitter Fundamental & Spurious Radiation

FCC ID : CVTTN7700Y

Operating Frequency : 27.145 MHz



MEASUREMENT SET-UP FOR RADIATED EMISSIONS



Configuration of EUT



for horizontal plane



for vertical plane



JQA Application No. :80-81033

Model No. :TN7700Y

Standard :CFR 47 FCC Rules Part 15

FCC ID :CVTTN7700Y

Issue Date :April 12 1999

Page 7 of 12

2. Radiated Emission, Additional Provisions : [§15.215(c)]

Measurement Method Employed: By using a spectrum analyzer with a vertical antenna for picking up the signal, the measurements of the fundamental frequency component were made under the following transmitting modes of the EUT.

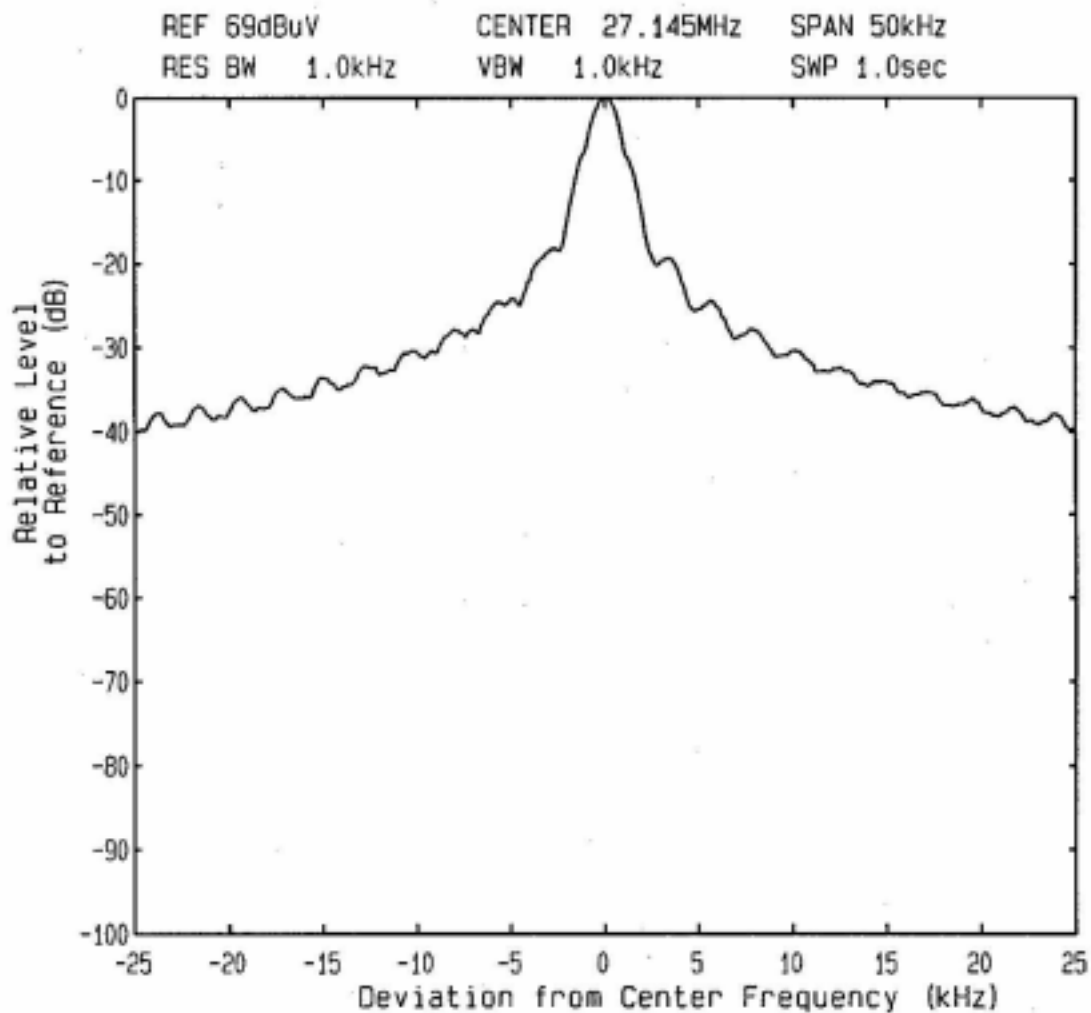
Measurements Results : This device comply with §15.215 (c) recommendation. Refer to the attached graphs.

Emission Limitation

FCC ID : CVTTN7700Y

Model : TN7700YH

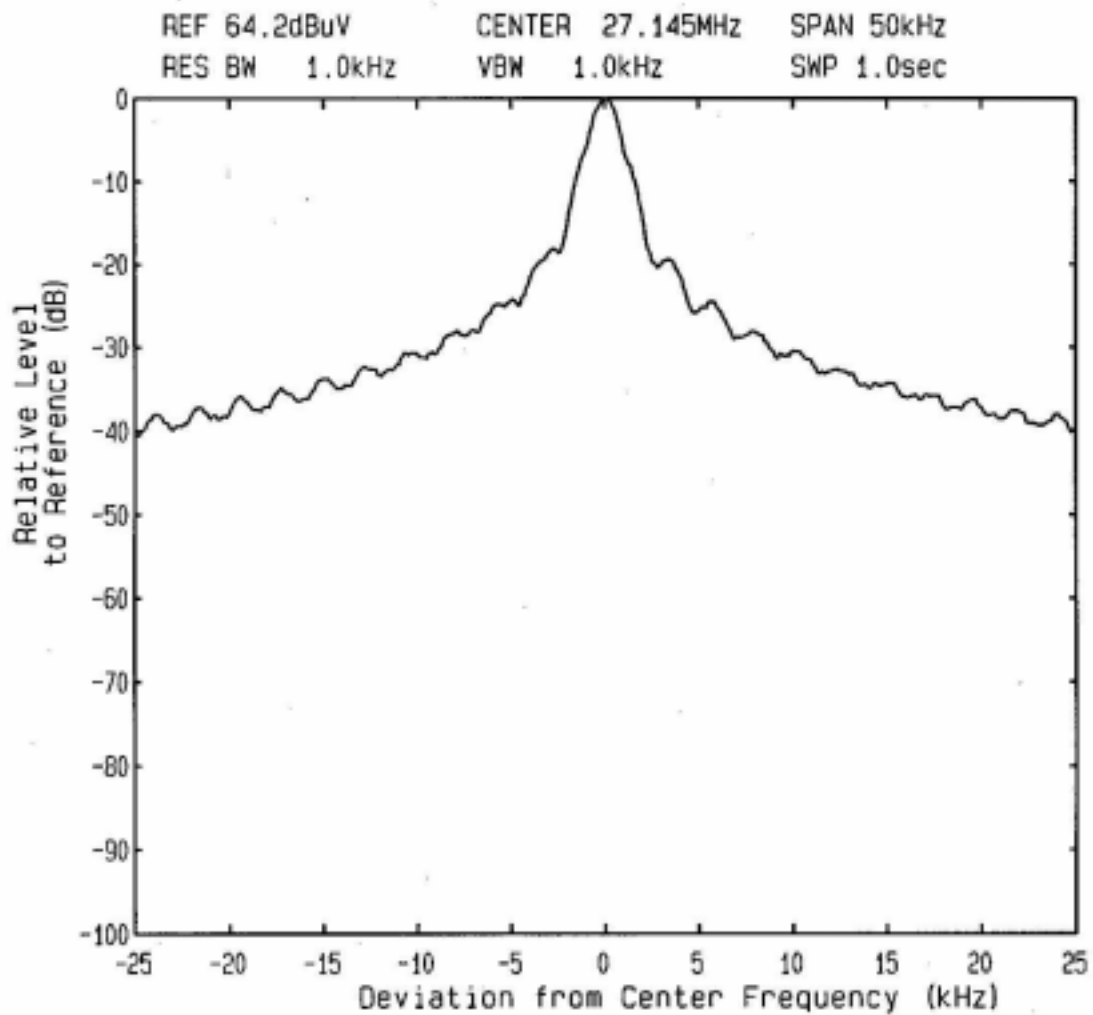
Mode of EUT : Left



Emission Limitation

FCC ID : CVTTN7700Y
 Model : TN7700YH

Mode of EUT : Right

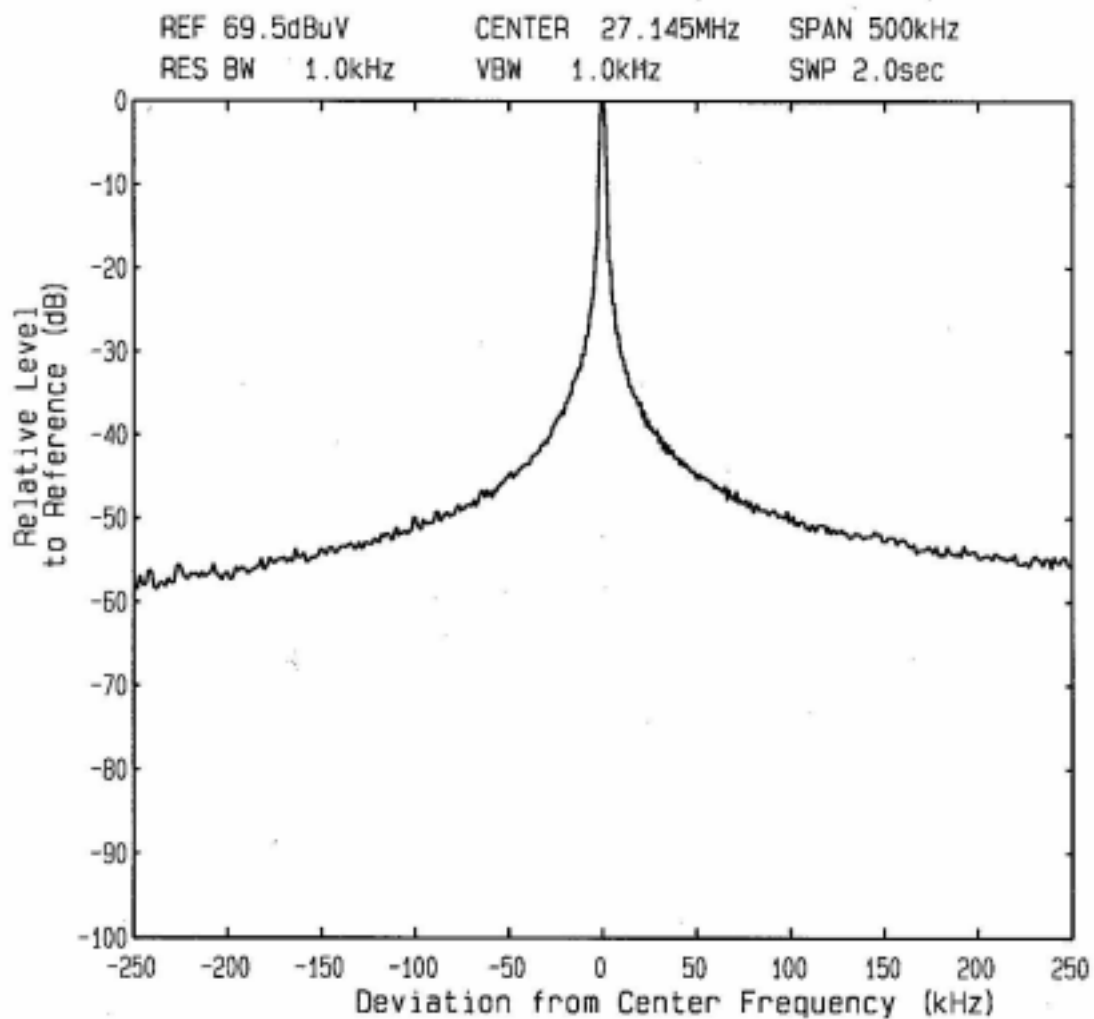




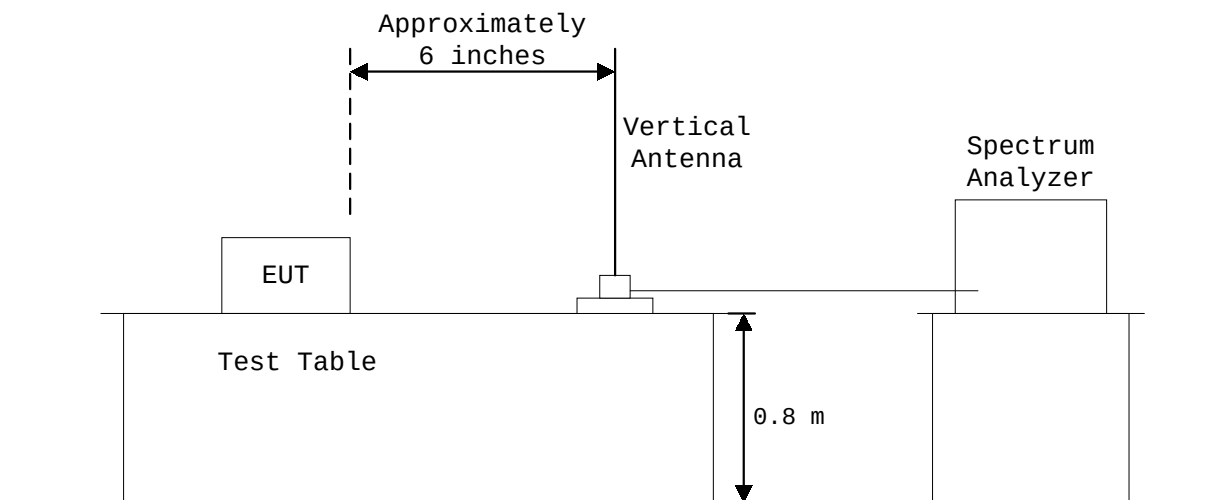
Emission Limitation

FCC ID : CVTTN7700Y
Model : TN7700Y

Mode of EUT : Right



MESUREMENT SET-UP FOR BAND WIDTH





LIST OF MEASUREMENT EQUIPMENT

<u>Equipment (Model No.)</u>	<u>Manufacturer</u>	<u>Date of Cal.</u>
1. Field Strength Meter		
ESVP	Rohde & Schwarz	May 1998
2. Spectrum Analyzer		
8566B	Hewlett Packard Inc.	April 1998
3. Tuned Dipole Antenna		
KBA-511	Kyoritsu Electrical Works	November 1998
KBA-611	Kyoritsu Electrical Works	November 1998
4. Vertical Antenna		
91972-2	Stoddard Aircraft Radio Co., Ltd.	-