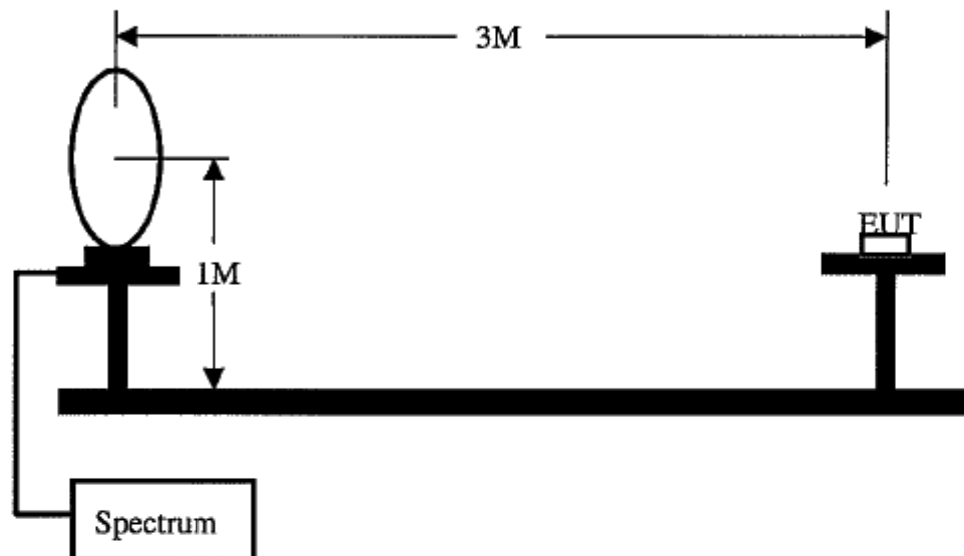


Chapter 3 Peak Power Measurement (Frequency Band: 26.96 ~ 27.28)

Test Setup:

1. Test Setup:



2. Test Procedure:

- The EUT was setup in the anechoic chamber as shown above.
- The loop antenna was located upon its plane vertical, 3-meter distance from the EUT. The center of the loop is 1-meter above the ground plane.
- In order to find the maximum radiation, the EUT was rotated 360°. The measuring antenna was rotated about its axis at each azimuth about the EUT.

List of test Instrument :

Instrument Name	Model No.	Brand	Serial No.	Calibration Date	
				Last time	Next time
Receiver	SCR3102	SCHAFFNER	012	03/29/02	03/28/03
Control Box	TWR95-4	TRC	C9001-2	12/01/01	12/01/02
Antenna	CBL6141A	SCHAFFNER	4188	11/29/01	11/28/02
Open test side (Antenna, Amplify, cable calibrated together)				05/15/02	05/15/03

The level of confidence of 95% , the uncertainty of measurement of radiated emission is ± 3.44 dB .

Test Result : Appendix A

Chapter 4 Radiated Emission Test

Test Condition and Setup:

Pretest : Prior to the final test ,the EUT is placed in an anechoic chamber, and scan from 30MHz to 1GHz. The devices rotated through three orthogonal axes to determine which attitude and configuration produces the highest emission relative to the limit. This is done to ensure the radiation exactly emits form the EUT.

Final test: Final radiation measurements is made on a **3 – meter** open-field test site. The EUT's maximum emission of radiation is placed on a nonconductive table, which is 0.8m height, the top surface is 1.0 x 1.5 meter. All placement is according to ANSI C63.4 - 1992.

The emissions was examined from 30 MHz to 1000 MHz measured by receiver.

The whole range Antenna is used to measure frequency from 30 MHz to 1 GHz. The final test is used the receiver.

Measure more than six top marked frequencies generated form pretest by computer step by step at each frequency. The EUT is rotated 360 degrees, and antenna is raised and lowered from 1 to 4 meters to find the maximum emission levels. The antenna is used with both horizontal and vertical polarization.

Appropriated preamplifier, which is made by TRC is used for improving sensitivity and precautions is taken to avoid overloading. The spectrum analyzer's 6dB bandwidth is set to 120 KHz, and the EUT is measured at quasi-peak mode.

If the emission is close to the frequency band of ambient, the tester will recheck the data and the corrected data will be written in the test data sheet. If the emission is just within the ambient, the data from shield room will be taken as the final data.

List of test Instrument :

Instrument Name	Model No.	Brand	Serial No.	<u>Calibration Date</u>	
				Last time	Next time
Receiver	SCR3102	SCHAFFNER	012	03/29/02	03/28/03
Control Box	TWR95-4	TRC	C9001-2	12/01/01	12/01/02
Antenna	CBL6141A	SCHAFFNER	4188	11/29/01	11/28/02
Open test side (Antenna, Amplify, cable calibrated together)				05/15/02	05/15/03

The level of confidence of 95% , the uncertainty of measurement of radiated emission is ± 3.44 dB .

Test Result : Pass (Appendix A)

Radiated Test Placement: (Photographs)



Appendix A

Conducted Emission Test Result: (Test mode: Charging)

Testing room : Temperature : 21 ° C Humidity : 72 % RH

Line 1

Frequency (KHz)	READING AMPLITUDE			LIMIT		Margin (dB)
	Peak (dBμV)	Quasi-Peak (dBμV)	Average (dBμV)	Quasi-Peak (dBμV)	Average (dBμV)	
461.00	26.99	***.***	***.***	48.00	***.***	-21.01
473.00	27.57	***.***	***.***	48.00	***.***	-20.43
483.00	27.50	***.***	***.***	48.00	***.***	-20.50
512.00	26.74	***.***	***.***	48.00	***.***	-21.26
545.00	27.49	***.***	***.***	48.00	***.***	-20.51
560.00	27.83	***.***	***.***	48.00	***.***	-20.17
579.00	28.43	***.***	***.***	48.00	***.***	-19.57
597.00	27.15	***.***	***.***	48.00	***.***	-20.85
612.00	26.85	***.***	***.***	48.00	***.***	-21.15
641.00	26.13	***.***	***.***	48.00	***.***	-21.87

Line 2

Frequency (KHz)	READING AMPLITUDE			LIMIT		Margin (dB)
	Peak (dBμV)	Quasi-Peak (dBμV)	Average (dBμV)	Quasi-Peak (dBμV)	Average (dBμV)	
461.00	30.53	***.***	***.***	48.00	***.***	-17.47
477.00	29.81	***.***	***.***	48.00	***.***	-18.19
489.00	30.13	***.***	***.***	48.00	***.***	-17.87
499.00	30.83	***.***	***.***	48.00	***.***	-17.17
527.00	31.04	***.***	***.***	48.00	***.***	-16.96
545.00	30.66	***.***	***.***	48.00	***.***	-17.34
564.00	30.10	***.***	***.***	48.00	***.***	-17.90
579.00	31.14	***.***	***.***	48.00	***.***	-16.89
612.00	30.31	***.***	***.***	48.00	***.***	-17.69
645.00	28.63	***.***	***.***	48.00	***.***	-19.37

*The reading amplitudes are all under limit.

Appendix B

Peak Power Test Result: (Horizontal)(Test mode: Normal CH 1)

Frequency	Reading Amplitude	Correction Factors	Corrected Amplitude	Limit	Margin
MHz	dBμV/m	dB	dBμV/m	dBμV/m	dB
27.1000	30.84	12.00	42.84	80.00	-37.16

Radiated Emission Test Result: (Horizontal) (Test mode: Normal CH 1)

Test Conditions:

Testing site : Temperature : 28 ° C Humidity : 73 % RH

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class B Limit	Margin
MHz	dBμV/m	m	degree	dB	dBμV/m	dBμV/m	dB
67.597	1.61	1.00	0	-9.61	11.22	40.00	-28.78
81.129	5.35	3.94	60	-10.23	15.58	40.00	-24.42
189.346	1.72	1.00	46	-12.72	14.44	43.50	-29.06
243.379	11.38	1.00	52	-15.26	26.64	46.00	-19.36
270.416	15.15	1.00	39	-15.51	30.66	46.00	-15.34
513.791	3.88	1.00	42	-21.16	25.04	46.00	-20.96

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) = 0.24 dB/m)

Peak Power Test Result: (Vertical) (Test mode: Normal CH 1)

Frequency	Reading Amplitude	Correction Factors	Corrected Amplitude	Limit	Margin
MHz	dB μ V/m	dB/m	dB μ V	dB μ V/m	dB
27.1025	30.37	12.00	42.37	80.00	-37.63

Radiated Emission Test Result: (Vertical) (Test mode: Normal CH 1)

Test Conditions:

Testing site : Temperature : 28 ° C Humidity : 73 % RH

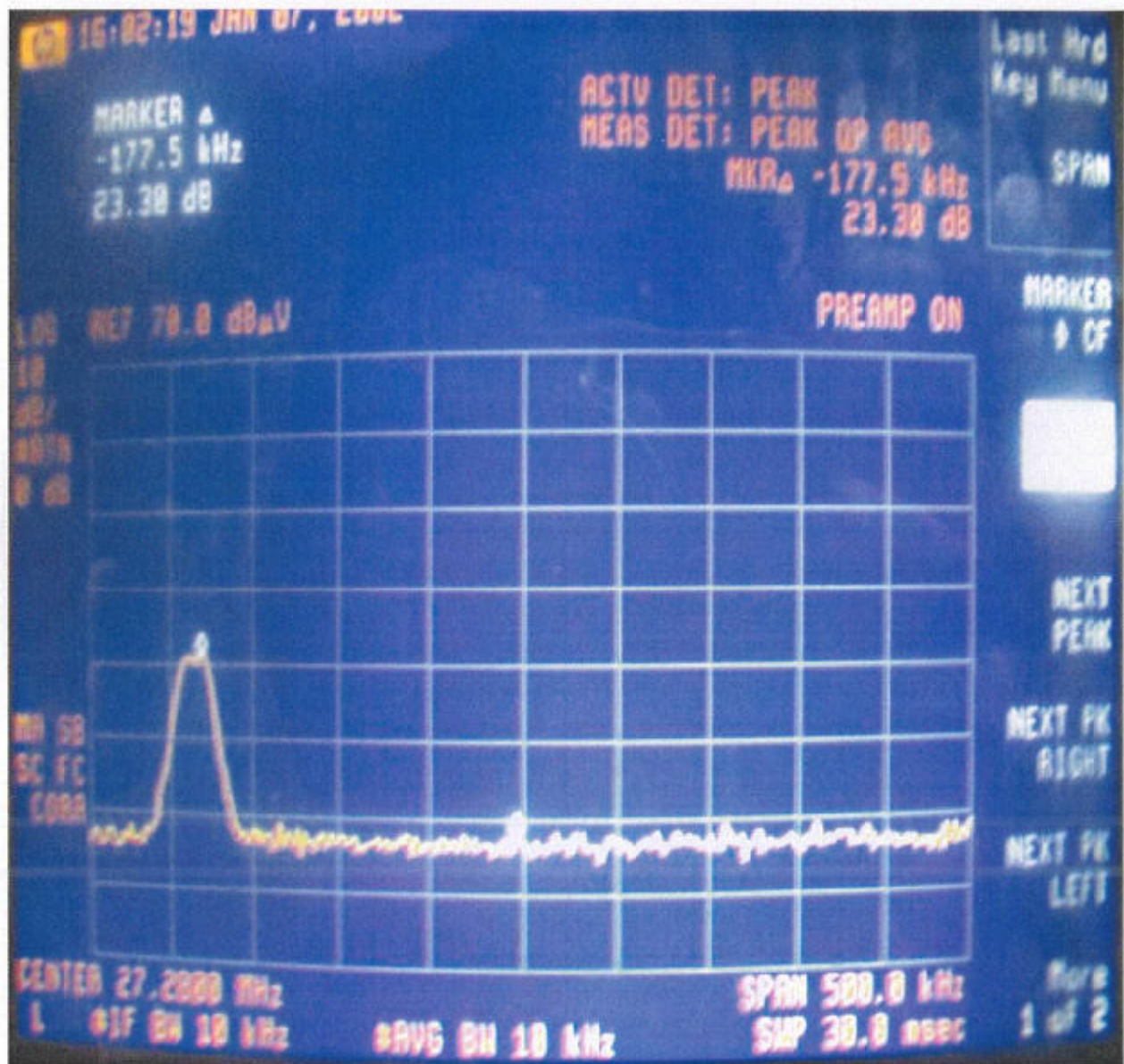
Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class B Limit	Margin
MHz	dB μ V/m	m	degree	dB	dB μ V/m	dB μ V/m	dB
135.221	4.53	1.00	83	-14.02	18.55	43.50	-24.95
189.292	1.19	1.00	14	-12.76	13.95	43.50	-29.55
216.334	3.97	1.00	69	-14.80	18.77	46.00	-27.23
243.360	8.93	2.43	119	-15.23	23.83	46.00	-22.17
270.418	10.51	1.00	98	-15.94	26.45	46.00	-19.55
513.814	0.67	1.00	115	-22.15	22.82	46.00	-23.18

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) = 0.24 dB/m)

Band Edge of Measurement: (Frequency Band: 26.96 ~ 27.28)

Lower channel



26.96MHz << Class B Limit.

MARKER ▲
50.0 kHz
24.33 dB

ACTV DET: PEAK
REFS DET: PEAK GP AVG
MKR▲ 50.0 kHz
24.33 dB

REF 70.0 dBμV

PREAMP ON

CENTER 25.9500 MHz
SPAN 500.0 kHz
BW 20 kHz
SOP 30.0 msec

Last Hrd Key Menu
SPR
MARKER
CF
NEXT PEAK
NEXT PK RIGHT
NEXT PK LEFT
More 1 of 2

27.28 MHz >> Class B Limit.