APPLICATION FOR CERTIFICATION
On Behalf of
Dynamco Pty. Ltd.

Remote Relay (Transmitter)

Model : TX21

FCC ID：PJ9TX21

Prepared for : Dynamco Pty. Ltd.
10 Brown Street, East Perth,
Western Australia 6004 Australia

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

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File Number	:	EM950693
Report Number	:	EM-F950258
Date of Test	:	Jul. 03, 2006
Date of Report	:	Jul. 07, 2006

TABLE OF CONTENTS

TEST REPORT CERTIFICATION

Applicant	:	Dynamco Pty. Ltd.
Manufacturer	:	Tesor Plus Corp.
EUT Description	:	Remote Relay (Transmitter)
FCC ID	:	PJ9TX21
		(A) MODEL NO. : TX21
		(B) SERIAL NO. : N/A
		(C) POWER SUPPLY : DC 12V

Measurement Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART C, FEB 2006
AND ANSI C63.4/2003
(FCC CFR 47 Part 15C, §15.231, §15.207 and §15.209)

The device described above was tested by AUDIX COPORATION. 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: Jul. 03, 2006

Prepared by: Cherry Wang Jul. 14 2006
(Cherry Wang/Section Manager)

Test Engineer: Ben Cheng Jul. 17. 2006
(Ben Cheng/Section Manager)

Approved & Authorized Signer: Leon Liu Jul. 17 2006
(Leon Liu/Senior Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	Remote Relay (Transmitter) This remote relay is a transmitter, which is apply to the CDL、Parking or Passing Light 、windows of security vehicle.
Model Number	:	TX21
FCC ID	:	PJ9TX21
Applicant	:	Dynamco Pty. Ltd. 10 Brown Street, East Perth, Western Australia 6004 Australia
Manufacturer	:	Tesor Plus Corp. 37, Lane 136, Chung-Hsing N.St., San-Chung, Taipei Hsien, Taiwan
Fundamental Frequency	:	433MHz
Power Supply	:	DC 12V
DC Power Wire *2	:	Non-Shielded, Detachable, 0.8m
Date of Receipt of Sample	:	May 18, 2006
Date of Test	:	Jul. 03, 2006

Remark:

Antenna requirement: This EUT's transmitter antenna is design in 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. DC POWER SUPPLY

Model Number	:	3303A
Serial Number	:	721773
Manufacturer	:	TOP WARD
Rating	:	DC12V
AC Power Cord	:	Non-Shielded, Detachable, 1.8m

1.3. Description of Test Facility

Name of Firm	:	Audix Corporation Technical Division EMC Department No. 53-11, Tin-Fu Tsun, Lin-Kou Hsiang, Taipei Hsien 24443, Taiwan, R.O.C.
Test Location & Facility (A/C)	:	**Semi-Anechoic Chamber** No. 53-11, Tin-Fu Tsun, Lin-Kou Hsiang, Taipei Hsien 24443, Taiwan, R.O.C. Federal Communication Commission Registration Number: 90993 Date of Renewal: May 16, 2006
NVLAP Lab. Code	:	200077-0

1.4. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB)
Conduction Test	150kHz~30MHz	± 1.73dB
Radiation Test (Distance: 3m)	30MHz~300MHz	± 2.91dB
	300MHz~1000MHz	± 2.94dB

Remark：Uncertainty = $ku_c(y)$

2. POWERLINE CONDUCTED EMISSION MEASUREMENT

【The EUT only employ DC power for operation, no conductive emissions limits are required according to FCC Part 15 Section §15.207】

3. RADIATED EMISSION MEASUREMENT

3.1.Test Equipment

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

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

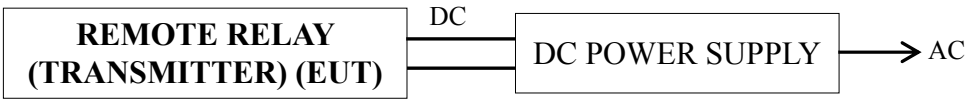
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	HP	8593EM	3826A00248	Sep.25, 05’	Sep.24, 06’
2.	Test Receiver	R&S	ESCS 30	100265	Sep.27, 05’	Sep.26, 06’
3.	Pre-Amplifier	HP	8447D	2944A06305	Mar.09, 06’	Mar.08, 07’
4.	Biconical Antenna	CHASE	VBA6106A	1264	Nov.11, 05‘	Nov.10, 06‘
5.	Log Periodic Antenna	Schwarzbeck	UHALP9108-A	0139	Nov.19, 05‘	Nov.18, 06‘
6.	Coaxial Switch	Anritsu	MP59B	6100226512	Mar.11, 06’	Mar.10, 07’

3.1.2. For 1GHz~5GHz frequency (at Semi-Anechoic Chamber)

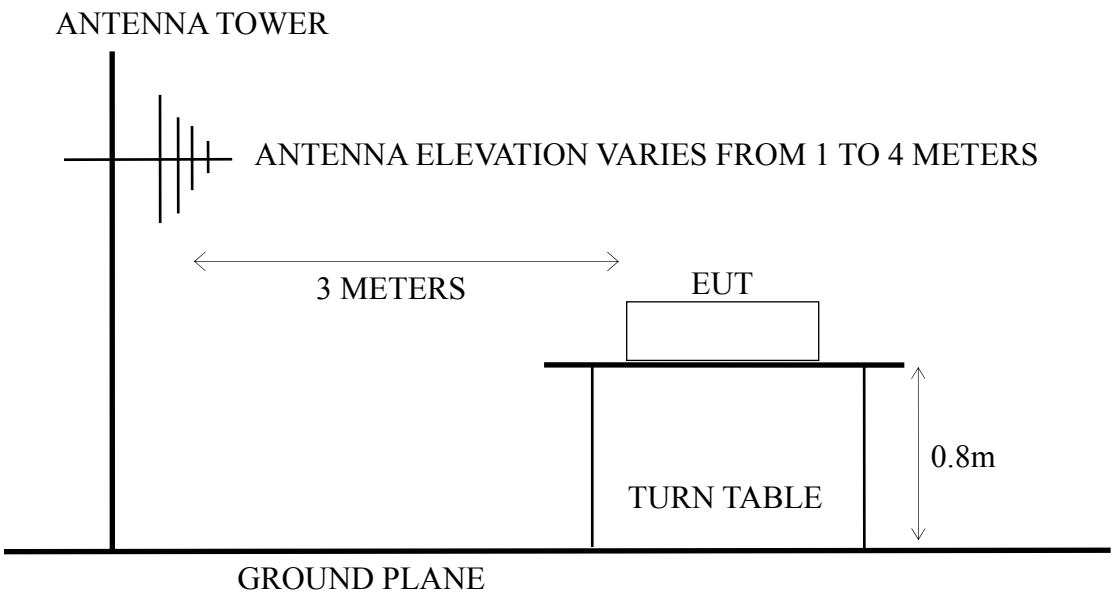
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	HP	8593EM	3826A00248	Sep.25, 05’	Sep.24, 06’
2.	Pre-Amplifier	HP	8449B	3008A01284	Jun.30, 06’	Jun.29, 07’
3.	Horn Antenna	EMCO	3115	9112-3775	Jun.01, 06’	May 31, 07’

3.2.Test Setup

3.2.1. Block Diagram of connection between EUT and simulators



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



3.3.Radiation Limit (§15.231)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMITS	
		μV/m	dBμV/m
Fundamental Freq.	3	10958.34	80.795 (Quasi-Peak)
Spurious Emission	3	1095.834	60.795 (Quasi-Peak)
Above 1GHz *(6)	3	---	74 (Peak)
Above 1GHz *(6)	3	---	54 (Average)

Remark： (1) Emission level (dBμV/m) = 20 log Emission level (μV/m)
(2) The tighter limit applies at the edge between two frequency bands.
(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) Where limit of Fundamental Freq. is calculated by:
41.6667x433-7083.3333= 10958.34μV/m= 80.795dBμV/m
limit of spurious emission is 80.795dBμV/m–20dB= 60.795dBμV/m
(5) The limits in this table are based on CFR 47 Part 15.205(a)(b) and Part 15.209 (a) and Part 15.231(b).
(6) The over 1GHz limit, FCC limit is used based on CFR 47 Part 15.35 (b) and Part 15.205(b) & Part 15.209(b) & Part 15.231(a)-(3).

3.4.EUT's Configuration during Compliance Measurement

The following equipment were installed on radiated measurement to meet the commission requirement and operating in a manner which tended to maximize its emission characteristics in a normal application.

3.4.1. Remote Relay (Transmitter) (EUT)

Model Number	：	TX21
Serial Number	：	N/A
Manufacturer	：	Tesor Plus Corp.
FCC ID.	：	PJ9TX21
Fundamental Frequency	：	433MHz

3.5.Operating Condition of EUT

3.5.1. Setup the EUT and simulator as shown on 3.2.
3.5.2. Turned on the power of all equipment.
3.5.3. The EUT [Remote Relay (Transmitter)] was emitted the fundamental frequency at the lie conditions.
3.5.4. The EUT was at worked on maximum transmitting status during all testing.

3.6. Test Procedure

The EUT and its simulators were placed on a turn table which was 0.8 meter above the ground. The turn table rotated 360 degrees to determine the position of the maximum emission level. For 30MHz to 5.5GHz frequency range, EUT was set 3 meters away from the receiving antenna which was mounted on a antenna tower. The antenna moved up and down between 1 to 4 meters for 30MHz to 5.5GHz frequency range to find out the maximum emission level. Broadband antenna such as calibrated biconical and log- periodical antenna or horn antenna were used as a 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 FCC ANSI C63.4-2003 regulation.

The bandwidth of test receiver was set at 120kHz for 30-1000MHz frequency range and resolution bandwidth of spectrum analyzer was set at 1MHz for 1-5.5GHz frequency range.

The frequency range from 30MHz to 5.5GHz was checked.
All the test results are listed in section 3.7.

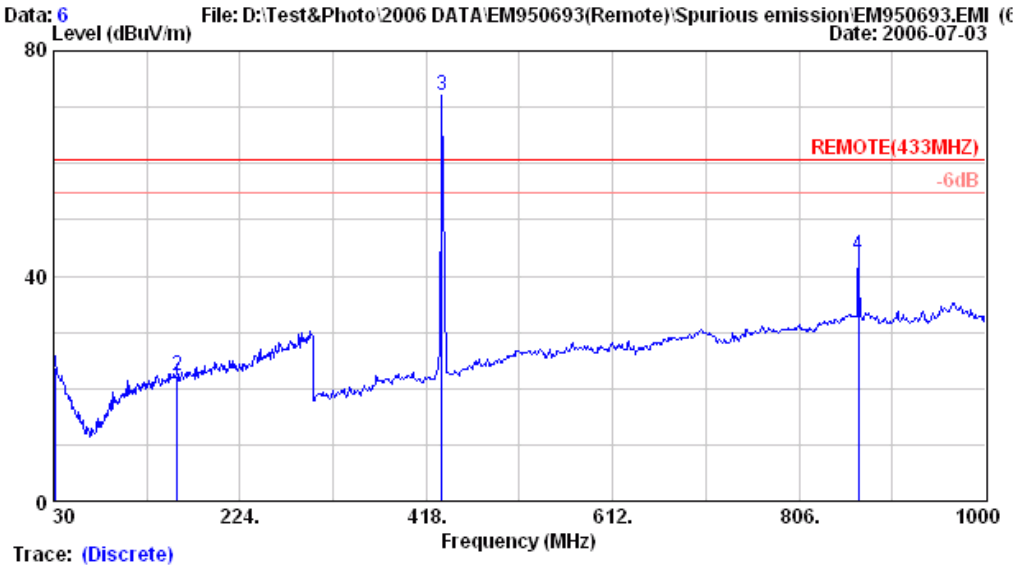
Mode	Operation of EUT	Reference Test Data No.	
		Horizontal	Vertical
Frequency Range: 30-1000MHz			
1.	Transmitting Mode	# 6.	# 5.
Frequency Range: 1000-2680MHz			
1.	Transmitting Mode	# 1.	# 2.
Frequency Range: 2680-5500MHz			
1.	Transmitting Mode	# 4.	# 3.

3.7.Radiated Emission Noise Measurement Results

3.7.1. 30MHz to 1GHz Frequency Range Measurement Results: **PASSED.**

All the emissions not reported below are too low against the FCC part 15 Subpart C limit.

Date of Test：	Jul. 03, 2006	Temperature：	26℃
EUT：	Remote Relay (Transmitter)	Humidity：	62%
Test Position：	Transmitting Mode	Fundamental Freq.：	433MHz

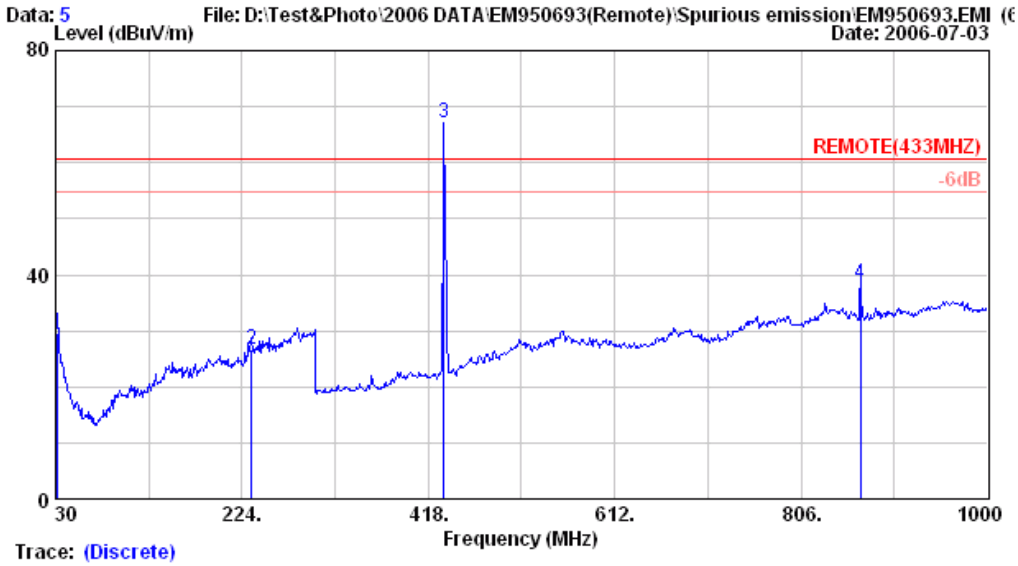



```
Site no.      : A/C Chamber                  Data no.   : 6
Dis. / Ant.   : 3m   VBA6106A/UHALP9108-A    Ant. pol.  : HORIZONTAL
Limit         : REMOTE(433MHZ)
Env. / Ins.   : 8593EM  26*C/62%             Engineer   : Alvin_Yang
EUT           : Remote Relay  M/N:TX21
Power Rating  : DC12V
Test Mode     : Operating
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	30.970	24.81	1.10	-2.08	23.83	60.80	36.97	
2	159.010	20.78	2.70	-1.18	22.29	60.80	38.50	
3	433.950	17.33	5.20	49.43	71.96	80.80	8.84	@
4	867.900	25.89	7.20	10.44	43.53	60.80	17.27	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.
3. All readings are Quasi-Peak values.

Date of Test：	Jul. 03, 2006	Temperature：	26℃
EUT：	Remote Relay (Transmitter)	Humidity：	62%
Test Position：	Transmitting Mode	Fundamental Freq.：	433MHz




```
Site no.      : A/C Chamber                  Data no.   : 5
Dis. / Ant.   : 3m   VBA6106A/UHALP9108-A    Ant. pol.  : VERTICAL
Limit         : REMOTE(433MHZ)
Env. / Ins.   : 8593EM  26*C/62%             Engineer   : Alvin_Yang
EUT           : Remote Relay  M/N:TX21
Power Rating  : DC12V
Test Mode     : Operating
```

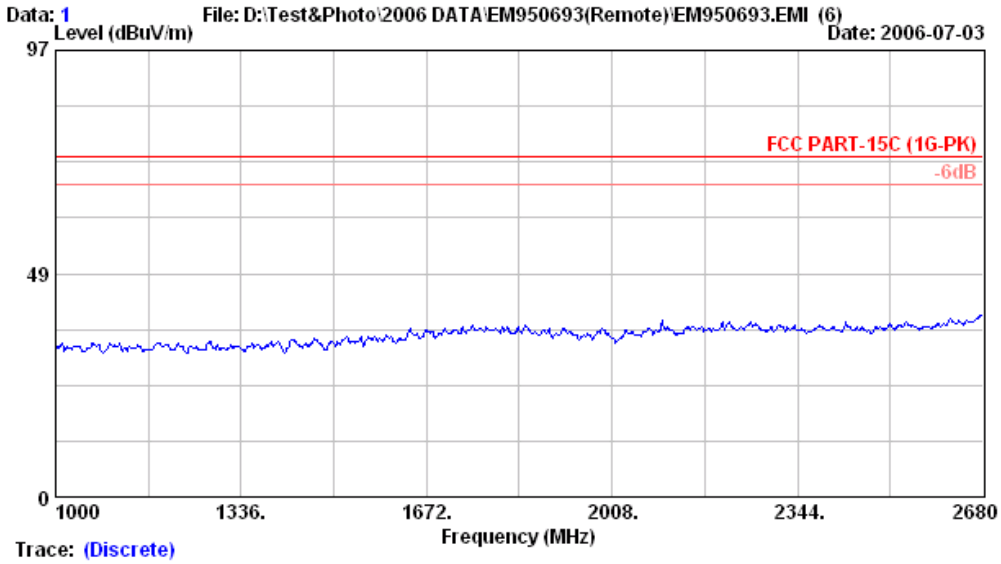
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	31.940	22.57	1.10	6.05	29.71	60.80	31.08	
2	233.700	24.84	3.38	-1.44	26.78	60.80	34.01	
3	433.950	17.19	5.20	44.78	67.17	80.80	13.63	@
4	867.900	25.27	7.20	6.01	38.48	60.80	22.32	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.
3. All readings are Quasi-Peak values.

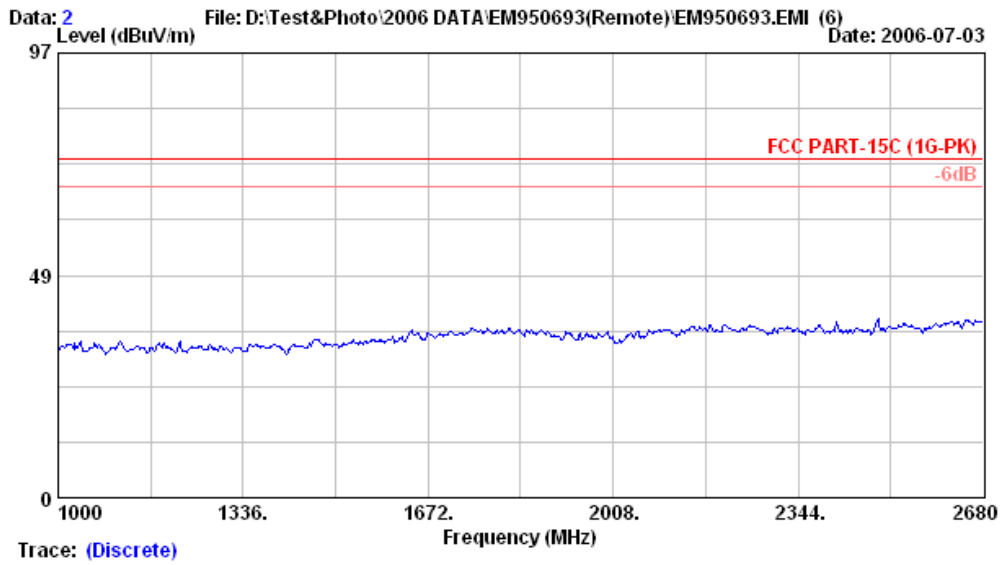
3.7.2. 1GHz to 5GHz Frequency Range Measurement Results: **PASSED.**

The frequency spectrum from 1GHz to 5.5GHz (up to 10th harmonics) was investigated. All the emissions not reported below are too low against the FCC part 15 Subpart C limit.

Date of Test：	Jul. 03, 2006	Temperature：	26℃
EUT：	Remote Relay (Transmitter)	Humidity：	62%
Test Position：	Transmitting Mode	Fundamental Freq.：	433MHz

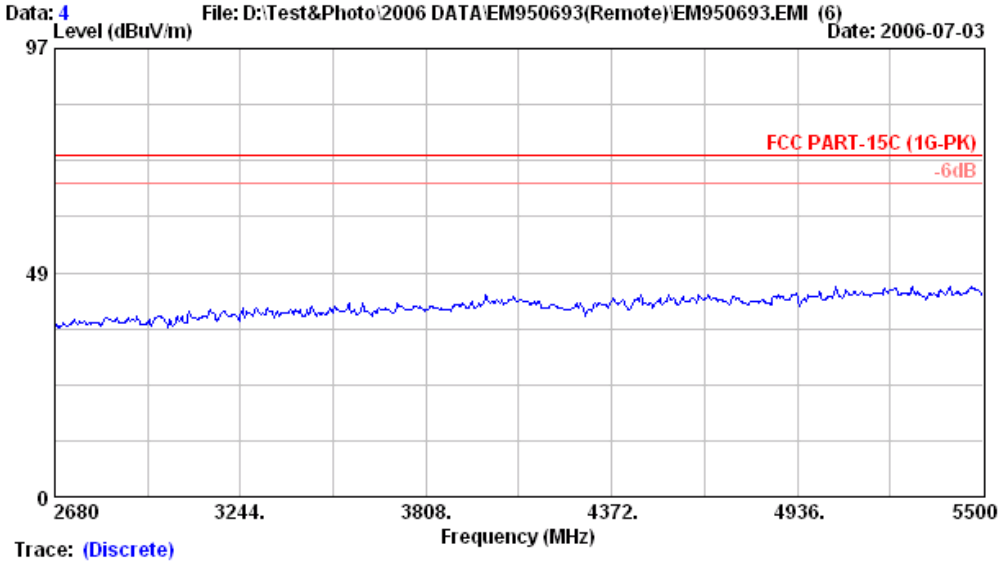



```
Site no.      : A/C Chamber                 Data no.   : 1
Dis. / Ant.   : 3m   3115                   Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : 8593EM  26*C/62%            Engineer   : Alvin_Yang
EUT           : Remote Relay  M/N:TX21
Power Rating  : DC12V
Test Mode     : Operating
```

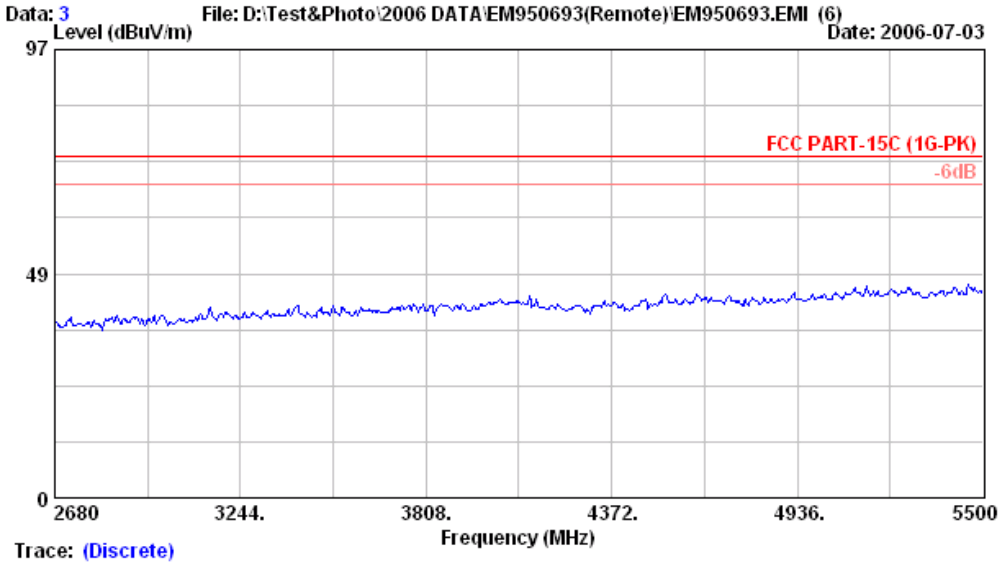



```
Site no.      : A/C Chamber                 Data no.   : 2
Dis. / Ant.   : 3m   3115                   Ant. pol.  : VERTICAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : 8593EM  26*C/62%            Engineer   : Alvin_Yang
EUT           : Remote Relay  M/N:TX21
Power Rating  : DC12V
Test Mode     : Operating
```

Date of Test：	Jul. 03, 2006	Temperature：	26℃
EUT：	Remote Relay (Transmitter)	Humidity：	62%
Test Position：	Transmitting Mode	Fundamental Freq.：	433MHz




```
Site no.      : A/C Chamber                 Data no.   : 4
Dis. / Ant.   : 3m   3115                   Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : 8593EM  26*C/62%            Engineer   : Alvin_Yang
EUT           : Remote Relay  M/N:TX21
Power Rating  : DC12V
Test Mode     : Operating
```




```
Site no.      : A/C Chamber                 Data no.   : 3
Dis. / Ant.   : 3m   3115                   Ant. pol.  : VERTICAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : 8593EM  26*C/62%            Engineer   : Alvin_Yang
EUT           : Remote Relay  M/N:TX21
Power Rating  : DC12V
Test Mode     : Operating
```

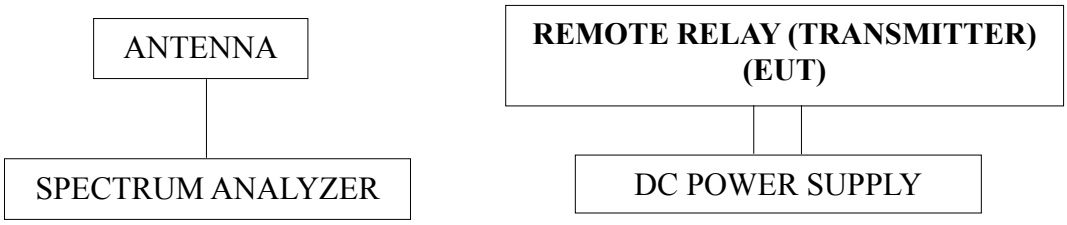
4. EMISSION BANDWIDTH MEASUREMENT

4.1. Test Equipment

The following test equipment were used during the Bandwidth Measurement：

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug.23, 05'	Aug.22, 06'
2.	Wide Band Antenna	Diamond	RH799	N/A	N/A	N/A

4.2. Block Diagram of Test Setup



4.3. Specification Limits [§15.231-(c)]

The bandwidth of emission shall be no wider than 0.25% of the center frequency for device operating above 70MHz and below 900MHz. Bandwidth is determined at the points 20dB down from the modulated carrier.

4.4. EUT's Configuration during Compliance Measurement

The configuration of EUT were same as section 3.4.

4.5. Emission Bandwidth Measurement Results

PASSED. (0.01085% < 0.25%)

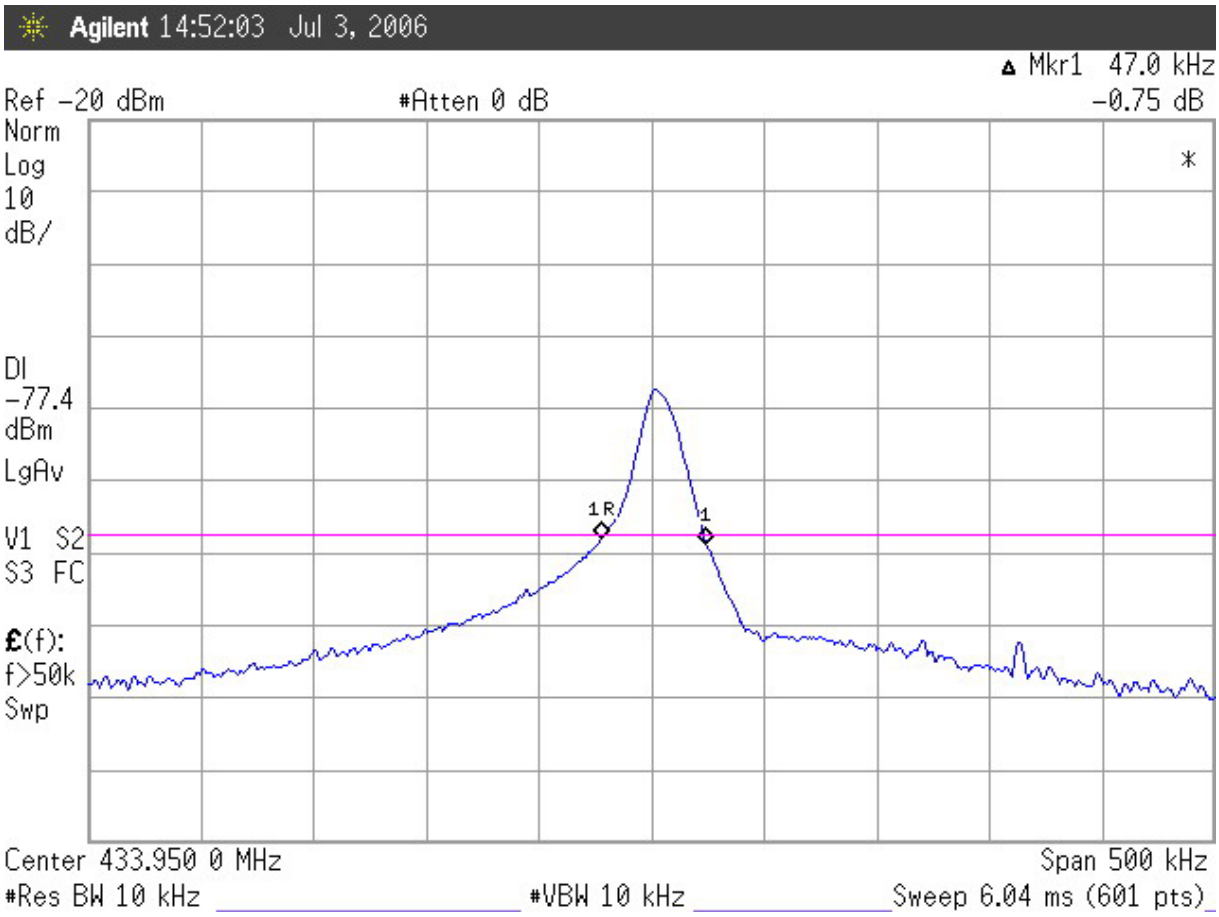
Fundamental Frequency: 433MHz

(Test Date: Jul. 03, 2006, Temperature: 26℃, Humidity: 62%)

No.	Center Frequency	**Bandwidth**	**Tolerance (%)**
1.	433.95MHz	**47.0kHz**	**0.01085%**

The graph of bandwidth measured is attached in next page.

(Graph of Bandwidth Measurement)



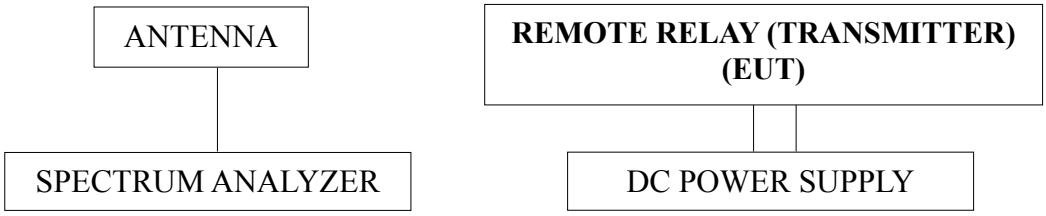
5. PERIODIC OPERATED MEASUREMENT

5.1. Test Equipment

The following test equipment were used during the periodic operated Measurement：

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug.23, 05'	Aug.22, 06'
2.	Wide Band Antenna	Diamond	RH799	N/A	N/A	N/A

5.2. Block Diagram of Test Setup



5.3. Specification Limits [§15.231-(a)-(1)]

The operation of this device is manually operated transmitter that is automatically deactivated the transmitter within not more than 5 seconds of being released, Compliance with §15.231 (a)- (1).

5.4. EUT's Configuration during Compliance Measurement

The configuration of EUT were same as section 3.4.

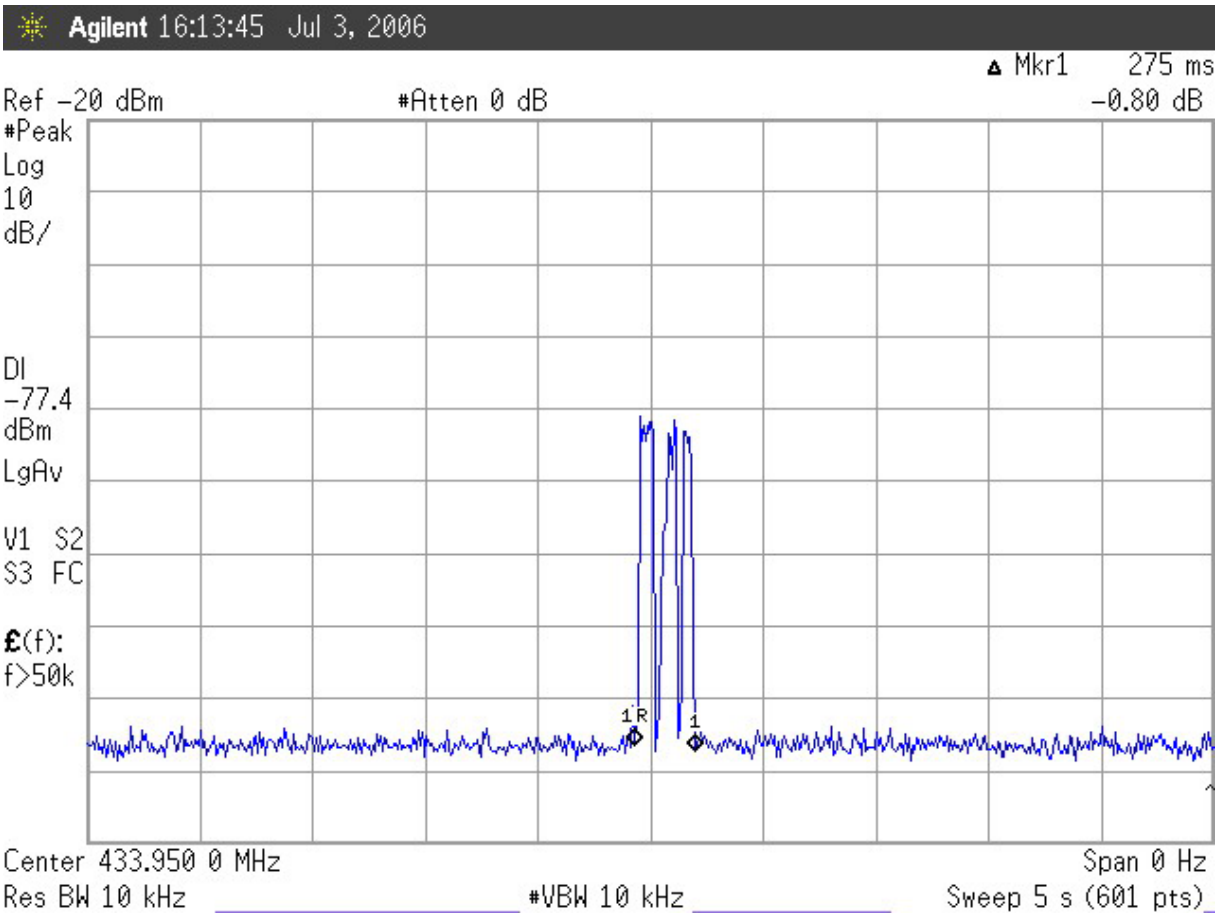
5.5. Periodic Operated Measurement Results

PASSED. T = 200ms. (< 5sec.)

(Test Date: Jul. 03, 2006, Temperature: 26℃, Humidity: 62%)

The graph of testing is attached in next page.

(Graph of Periodic Operated Measurement)

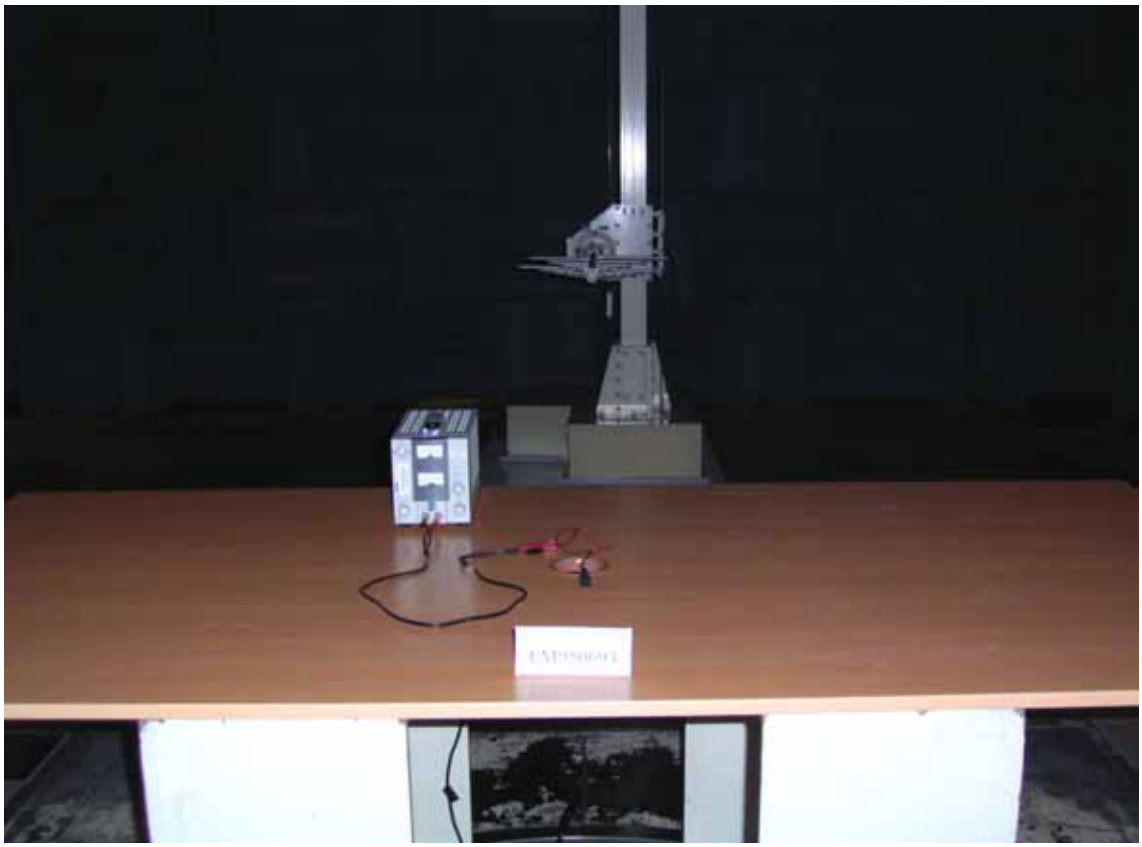


6. DEVIATION TO TEST SPECIFICATIONS

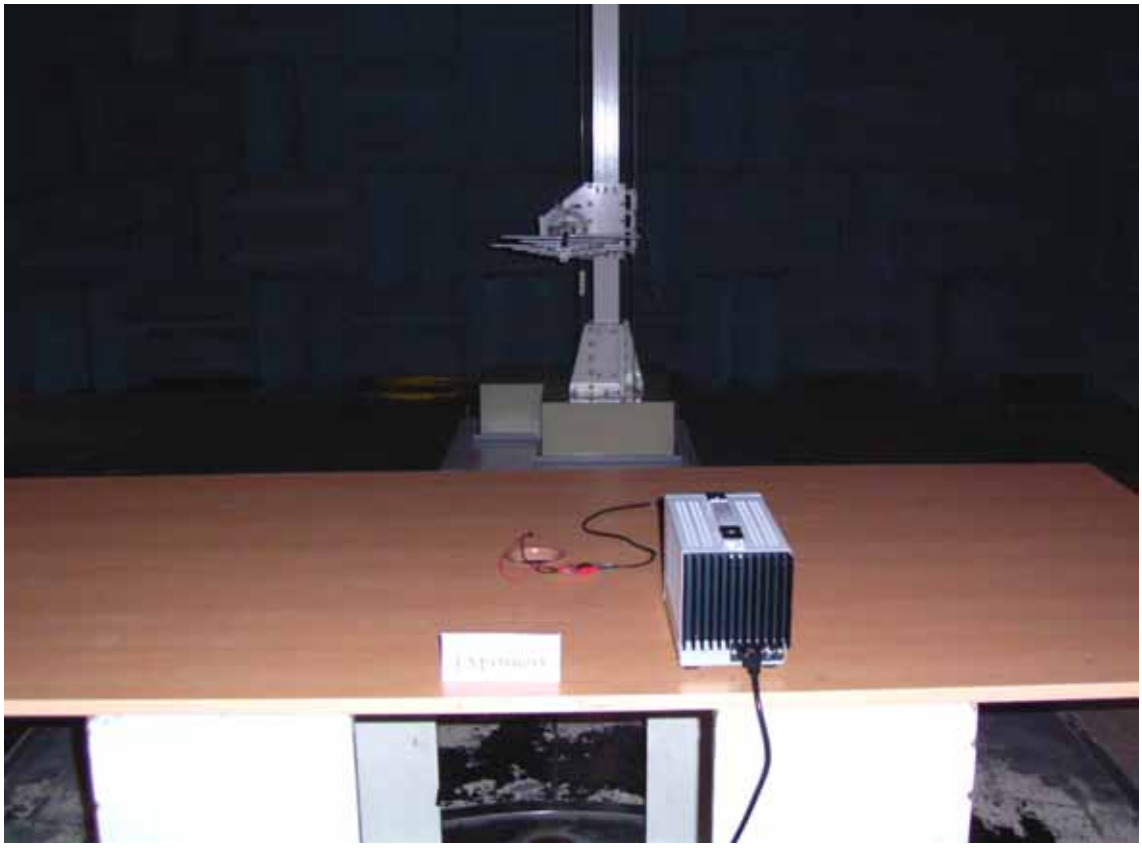
【NONE】

7. PHOTOGRAPHS

7.1. Photos of Radiated Measurement at Semi-Anechoic Chamber (30~1000MHz)

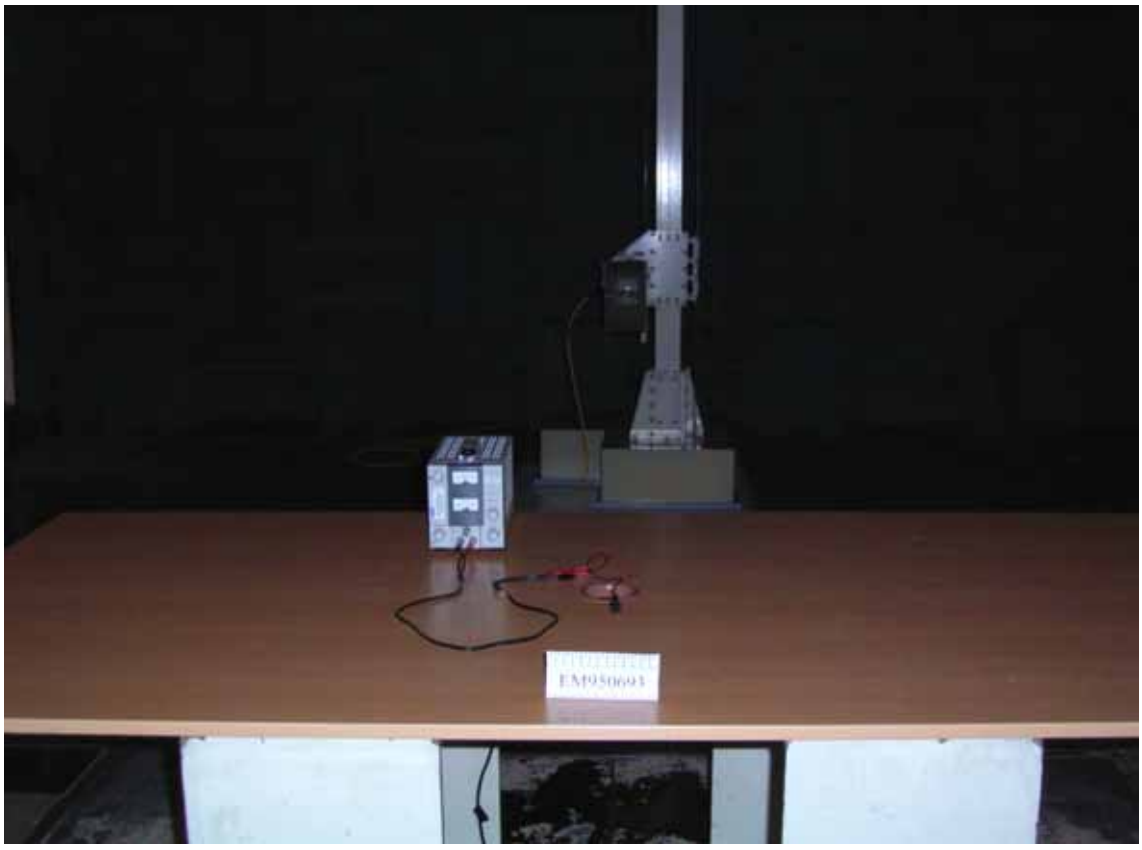


FRONT VIEW OF RADIATED MEASUREMENT

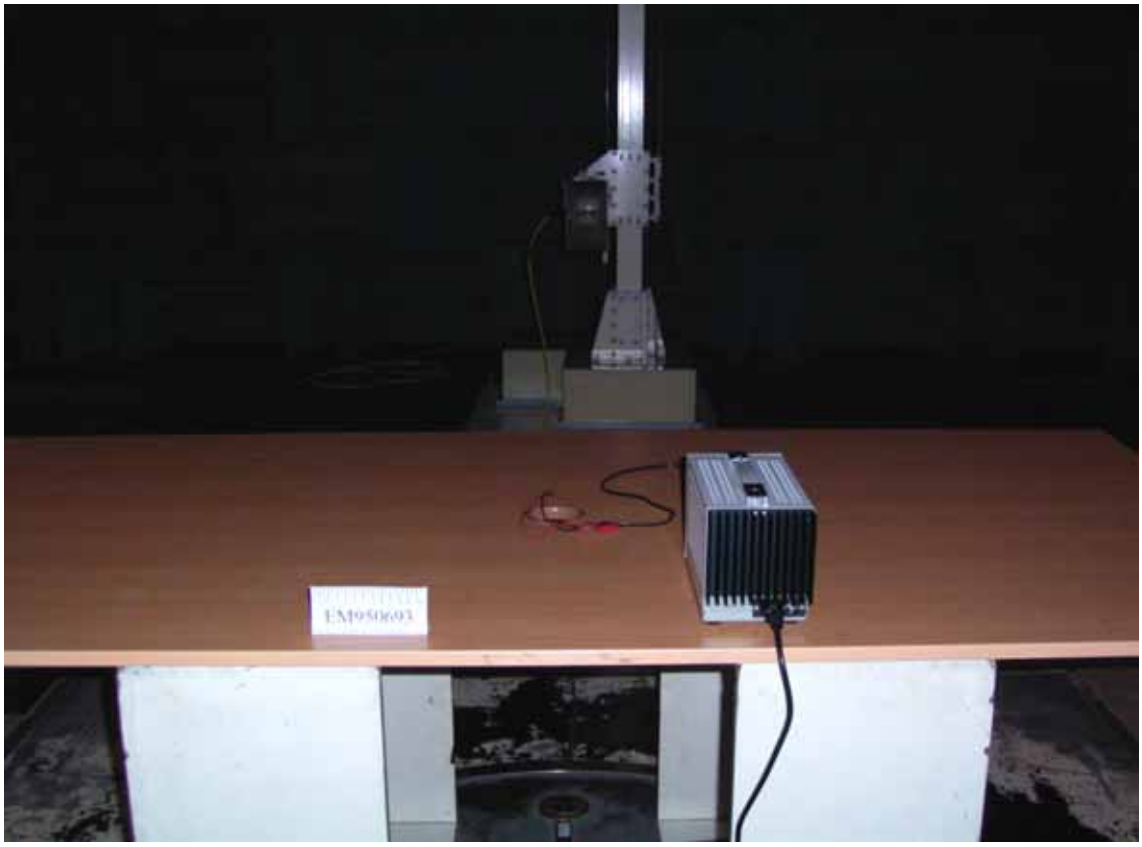


BACK VIEW OF RADIATED MEASUREMENT

7.2.Photos of Radiated Measurement at Semi-Anechoic Chamber (1~5.5GHz)



FRONT VIEW OF RADIATED MEASUREMENT



BACK VIEW OF RADIATED MEASUREMENT

7.3.Photos of Bandwidth Measurement

7.4. Photos of Periodic Operated Measurement