# TEST REPORT FOR CERTIFICATION On Behalf of CHUNGEAR INDUSTRIAL CO., LTD.

Ceiling Fan Remote Controller

Model No.: TR35C

FCC ID: KUJCE9603

Prepared for: CHUNGEAR INDUSTRIAL CO., LTD. 106 Kanho Rd., Taichung, Taiwan, R.O.C.

Prepared by: Audix Technology Corporation

**EMC** Department

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File Number EM961429 Report Number : EM-F960537 Date of Test : Nov. 08, 2007 Date of Report : Nov. 15, 2007

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# TEST REPORT CERTIFICATION

Applicant : CHUNGEAR INDUSTRIAL CO., LTD.

Manufacturer #1 : CHUNGEAR INDUSTRIAL CO., LTD.

Manufacturer #2 : SATELLITE ELECTRONIC (ZHONGSHAN) LTD.

Manufacturer #3 : ZHONGSHAN AMITY ELECTRONIC LTD.

EUT Description : Ceiling Fan Remote Controller

FCC ID : KUJCE9603

(A) MODEL NO.: TR35C

(B) SERIAL NO.: N/A

(C) POWER SUPPLY: DC 12V (Battery)

(D) TEST VOLTAGE : DC 12V

Measurement Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART C, Sep. 2007 AND ANSI C63.4/2003

(FCC CFR 47 Part 15C, §15.207, §15.209 and §15.231)

The device described above was tested by Audix Technology 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 Technology 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 Technology Corporation.

Date of Test: Nov. 08, 2007

Prepared by: Monica Chang Dec. 05 2007

(Monica Chang/Administrator)

Test Engineer: Sen Shing Dec. 63
(Ben Cheng/Section Manager)

Approved & Authorized Signer: Klon Lin De

(Leon Liu/Vice President)

# 1. GENERAL INFORMATION

## 1.1.Description of Device (EUT)

Description : Ceiling Fan Remote Controller

Model Number : TR35C

FCC ID : KUJCE9603

Applicant : CHUNGEAR INDUSTRIAL CO., LTD.

160 Kanho Rd., Taichung, Taiwan, R.O.C.

Manufacturer #1 : CHUNGEAR INDUSTRIAL CO., LTD.

160 Kanho Rd., Taichung,

Taiwan, R.O.C.

Manufacturer #2 : SATELLITE ELECTRONIC (ZHONGSHAN)

LTD.

No. 15, Torch Hi-Tech Industrial Development Zone, Zhongshan City Guangdong Province

China.

Manufacturer #3 : ZHONGSHAN AMITY ELECTRONIC LTD.

2F. No. 16, Torch Hi-Tech Industrial

Development Zone, Zhongshan City Guangdong

Province China.

Fundamental Frequency : 304MHz

Power Supply : DC 12V (Battery)

Date of Receipt of Sample : Oct. 18, 2007

Date of Test : Nov. 08, 2007

\* Ceiling Fan Remote Controller - Receiver

(1)Model No.: JY199, FCC by DoC (2)Model No.: JY326B, FCC by DoC

#### Remark:

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

# 1.2.Description of Test Facility

Name of Firm : Audix Technology Corporation

**EMC** Department

No. 53-11, Tin-Fu Tsun, Lin-Kou Hsiang, Taipei County 24443, Taiwan, R.O.C.

Test Location & Facility:

(AC)

Semi-Anechoic Chamber

No. 53-11, Tin-Fu Tsun, Lin-Kou Hsiang,

Taipei County 24443, Taiwan, R.O.C.

May 16, 2006 Re-File on

Federal Communication Commission

Registration Number: 90993

NVLAP Lab. Code : 200077-0

(NVLAP is a NATA accredited body under Mutual Recognition Agreement)

DAR-Registration No. : DAT-P-145/03-01

# 1.3. Measurement Uncertainty

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

Remark: Uncertainty =  $ku_c(y)$ 

# 2. CONDUCTED EMISSION MEASUREMENT

【The EUT only employs battery power for operation, no conductive emission limits are required according to FCC Part 15 Section §15.207】

# 3. RADIATED EMISSION MEASUREMENT

# 3.1.Test Equipment

The following test equipment was used during the radiated emission tests:

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E7405A	MY42000134	Jun. 27, 07'	Jun. 26, 08'
2.	Test Receiver	R&S	ESCS30	100265	Sep. 04, 07'	Sep. 03, 08'
3.	Pre-Amplifier	HP	8447D	2944A06305	Mar. 03, 07'	Mar. 02, 08'
4.	Biconical Antenna	CHASE	VBA6106A	1264	Apr. 11, 07'	Apr. 10, 08'
5.	Log Periodic Antenna	Schwarzbeck	UHALP9108-A	0139	Apr. 11, 07'	Apr. 10, 08'
6.	Coaxial Switch	Anritsu	MP59B	6100226512	Mar. 10, 07'	Mar. 09, 08'

## 3.1.2. For Frequency Range Above 1GHz (Semi-Anechoic Chamber)

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E7405A	MY42000134	Jun. 27, 07'	Jun. 26, 08'
2.	Amplifier	HP	8449B	3008A01284	Jun. 22, 07'	Jun. 21, 08'
3.	Horn Antenna	EMCO	3115	9112-3775	May 23, 07'	May 22, 08'

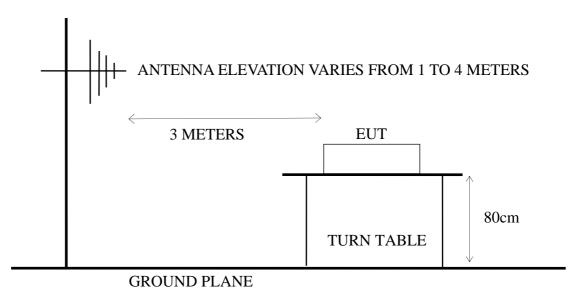
# 3.2.Test Setup

3.2.1. Block Diagram of connection between EUT and simulators

#### **CEILING FAN REMOTE CONTROLLER (EUT)**

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

### ANTENNA TOWER



Audix Technology Corporation Report No.: EM-F960537

# 3.3. Radiation Emission Limits (§15.209 & 15.231)

### 3.3.1. Spurious Emission Limit (§15.209)

FREQUENCY	DISTANCE	FIELD STR	ENGTHS LIMITS
MHz	Meters	μV/m	$dB\mu V/m$
30 - 88	3	100	40.00
88 - 216	3	150	43.50
216 - 960	3	200	46.00
Above 960	3	500	54.00

Remarks: (1) Emission level  $(dB\mu V/m) = 20 \log Emission level (\mu V/m)$ 

- (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.

#### 3.3.2. Fundamental Frequency Emission Limit (§15.231)

FREQUENCY	DISTANCE	FIELD STR	ENGTHS LIMITS
MHz	Meters	μV/m	$dB\mu V/m$
Fundamental Frequency	3	5597.51	74.95 (Quasi-Peak)

Remarks: (1) Emission level  $(dB\mu V/m) = 20 \log Emission level (\mu V/m)$ 

- (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:  $41.6667x304.34-7083.333=5597.51\mu V/m=74.95dB\mu V/m$
- (5) The limits in this table are based on CFR 47 Part 15.231(b).

## 3.4.EUT's Configuration during Compliance Measurement

The following equipment was 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. Ceiling Fan Remote Controller (EUT)

Model Number : TR35C Serial Number : N/A

FCC ID : KUJCE9603

Manufacturer : SATELLITE ELECTRONIC (ZHONGSHAN)

LTD.

Fundamental Frequency : 304MHz

# 3.5. Operating Condition of EUT

- 3.5.1. Set up the EUT and simulator as shown on 3.2.
- 3.5.2. Turned on the power of all equipment.
- 3.5.3. The EUT (Ceiling Fan Remote Controller) emitted the fundamental frequency with data code at the stand, side and lying conditions.
- 3.5.4. The EUT was at working on maximum transmitting status during all testing.

#### 3.6.Test Procedure

The EUT and was 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. EUT was set to 3 meters away from the receiving antenna which was mounted on an antenna tower. The antenna moved up and down between 1 to 4 meters 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 frequencies below 1GHz and resolution bandwidth of spectrum analyzer was set at 1MHz for frequencies above 1GHz.

The frequency range from 30MHz to 1000MHz was measured with Quasi-Peak detector.

The frequency range from 1GHz to 5.5GHz was pre-scanned with Peak detector.

EUT with three kinds of positions (Stand, Side, Lying) was tested during radiated measurement and all the test results are listed in section 3.7.

#### 3.7. Radiated Emission Measurement Results

3.7.1. Frequency Range 30MHz to 1GHz Measurement Results: **PASSED.**All the emissions not reported below are too low against the FCC part 15 Subpart C limit.

$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	]	Date of Test	:	Nov. (	08, 2007		Tempe	erature:	23	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	]	EUT:	Ceil	ing Fan Ro	emote Contr	oller	Hu	midity:	50%	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	,	Test Position	:		EUT on S	Stand				
304.300   14.87   3.90   32.83   51.61   74.95   23.34     Spurious / Harmonic Freq. (Quasi-Peak Value)     31.940   24.26   1.10   26.78   25.65   40.00   14.35     96.930   16.75   2.05   36.21   28.71   43.50   14.79     ± 254.070   24.13   3.60   26.62   28.61   46.00   17.39     ± 608.600   21.47   6.20   15.23   42.90   46.00   3.10     912.900   24.98   7.40   7.54   39.92   46.00   6.08     Emission   Antenna   Cable Meter Reading Emission Level Frequency   Factor   Loss   Vertical   Vertical   Limits   Margin     MHz   dB/m   dB   dBμV   dBμV/m   dBμV/m   dB     Fundamental Freq. (Quasi-Peak Value)   304.300   14.87   3.90   36.57   55.34   74.95   19.61     Spurious / Harmonic Freq. (Quasi-Peak Value)   30.970   24.81   1.10   23.72   23.13   40.00   16.87     100.810   17.17   2.10   29.37   22.34   43.50   21.16     ± 266.680   24.74   3.70   25.57   28.28   46.00   17.72     ± 608.600   21.47   6.20   15.60   43.27   46.00   2.73		Frequency	Factor	Loss	Horizontal	Horiz	zontal		•	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Func				,			74.05		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	C					51.	.61	74.95	23.34	
Frequency Factor Loss Vertical Vertical Limits Margin dB/m dB/m dB dBμV dBμV/m dBμV/m dB $^{2}$ Fundamental Freq. (Quasi-Peak Value) 304.300 14.87 3.90 36.57 55.34 74.95 19.61 Spurious / Harmonic Freq. (Quasi-Peak Value) 30.970 24.81 1.10 23.72 23.13 40.00 16.87 100.810 17.17 2.10 29.37 22.34 43.50 21.16 $^{2}$ 4266.680 24.74 3.70 25.57 28.28 46.00 17.72 $^{2}$ 608.600 21.47 6.20 15.60 43.27 46.00 2.73	*	31.940 96.930 254.070 608.600	24.26 16.75 24.13 21.47	1.10 2.05 3.60 6.20	26.78 36.21 26.62 15.23	28. 28. 42.	.71 .61 .90	43.50 46.00 46.00	14.79 17.39 3.10	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$										
304.300 14.87 3.90 36.57 55.34 74.95 19.61  Spurious / Harmonic Freq. (Quasi-Peak Value)  30.970 24.81 1.10 23.72 23.13 40.00 16.87 100.810 17.17 2.10 29.37 22.34 43.50 21.16  \$\pm\$ 266.680 24.74 3.70 25.57 28.28 46.00 17.72  \$\pm\$ 608.600 21.47 6.20 15.60 43.27 46.00 2.73									•	
Spurious / Harmonic Freq. (Quasi-Peak Value)         30.970       24.81       1.10       23.72       23.13       40.00       16.87         100.810       17.17       2.10       29.37       22.34       43.50       21.16         * 266.680       24.74       3.70       25.57       28.28       46.00       17.72         * 608.600       21.47       6.20       15.60       43.27       46.00       2.73	Func		1 '		,					
30.970 24.81 1.10 23.72 23.13 40.00 16.87 100.810 17.17 2.10 29.37 22.34 43.50 21.16 * 266.680 24.74 3.70 25.57 28.28 46.00 17.72 * 608.600 21.47 6.20 15.60 43.27 46.00 2.73	G					55.	34	74.95	19.61	
100.810 17.17 2.10 29.37 22.34 43.50 21.16 * 266.680 24.74 3.70 25.57 28.28 46.00 17.72 * 608.600 21.47 6.20 15.60 43.27 46.00 2.73	Spur		• .	_	,		10	40.00	46.00	
* 266.680 24.74 3.70 25.57 28.28 46.00 17.72 * 608.600 21.47 6.20 15.60 43.27 46.00 2.73										
+ 608.600 21.47 6.20 15.60 43.27 46.00 2.73	*									
		608.600	21.47	6.20	15.60	43.	.27	46.00	2.73	

- Remarks: 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
  - 2. Measurement was up to 10th harmonics (~5.5GHz), but the emission levels were too low against the official limit and not report.
  - 3. "\*" The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

	Date of Test	:	Nov. (	08, 2007		Tempe	erature:	23	
	EUT:	Ceil	ing Fan Ro	emote Contr	oller	Hu	midity:	50%	
	Test Position	n:		EUT on	Side				
	Emission Frequency MHz	Antenna Factor dB/m	Cable M Loss dB	eter Reading Horizontal dBµV	Horiz		Limits dBµV/m	Margin dB	
Fund	damental Fre			*					_
C	304.300	14.87	3.90	41.49	60.	27	74.95	14.68	
Spui	rious / Harmo	_							
	30.970	24.81	1.10	31.74	31.		40.00	8.84	
	96.930	16.75			28.		43.50	14.90	
	280.260		3.80		31.		46.00	14.73	
*	608.600	21.47	6.20	15.50	43.		46.00	2.83	
	912.900	24.98	7.40	8.78	41.	16	46.00	4.84	
	Emission	Antenna	Cable M	eter Reading	Emissic	n Level			-
	Frequency	Factor	Loss	Vertical	Ver		Limits	Margin	
	MHz	dB/m	dB	$dB\mu V \\$	dΒμ	V/m	$dB\mu V/m$	dB	
Fund	damental Fre	 g. (Ouasi-P	eak Value	 :)					-
	304.300	14.87	3.90	32.77	51.	54	74.95	23.41	
Spui	rious / Harmo	onic Freq. (	Quasi-Pea	k Value)					
	30.970	24.81	1.10	32.68	32.	09	40.00	7.91	
	40.670	20.36	1.30	34.46	29.	68	40.00	10.32	
	100.810	17.17	2.10	32.77	25.	74	43.50	17.76	
*	608.600	21.47	6.20	15.89	43.	56	46.00	2.44	
	912.900	24.98	7.40	7.55	39.	93	46.00	6.07	
									_

Remarks: 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.

- 2. Measurement was up to 10th harmonics (~5.5GHz), but the emission levels were too low against the official limit and not report.
- 3. "\*" The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

]	Date of Test	:	Nov. (	08, 2007		Temp	erature:	23	
]	EUT:	Ceili	ing Fan Re	emote Contr	oller	Hu	midity:	50%	
<b>.</b>	Test Position	:		EUT on I	Lying				
	Emission Frequency MHz	Antenna Factor dB/m	Cable Mo Loss dB	eter Reading Horizontal dBµV	Horiz	on Level zontal V/m	Limits dBµV/m	Margin dB	
Fund	lamental Fred	q. (Quasi-P	eak Value	)					-
_	304.300	14.87	3.90	40.69	59	.46	74.95	15.49	
Spur	ious / Harmo	• .	-	ŕ					
	30.970	24.81	1.10	29.69		.10	40.00	10.90	
	96.930	16.75				.02	43.50	14.48	
*	275.410	25.25	3.70			.03	46.00	13.97	
*	608.600	21.47	6.20			.27	46.00	3.73	
	912.800	24.98	7.40	8.65	41.	.03	46.00	4.97	
	Emission	Antenna	Cable Mo	eter Reading	Emissic	on Level			-
	Frequency	Factor	Loss	Vertical		tical	Limits	Margin	
	MHz	dB/m	dB	$dB\mu V$	dΒμ	V/m	$dB\mu V/m \\$	dB	
Fund	lamental Fred	 a. (Ouasi-P	 eak Value	· )					-
	304.300	14.87	3.90	34.86	53	. 64	74.95	21.31	
Spur	ious / Harmo	onic Freq. (	Quasi-Pea	k Value)					
•	30.970	24.81	1.10	26.86	26	.28	40.00	13.72	
	185.200	21.37	2.90	27.17	25	.58	43.50	17.92	
*	608.600	21.47	6.20	14.66	42	.33	46.00	3.67	
	912.900	24.98	7.40	8.40	40	.78	46.00	5.22	
	967.990	26.90	7.69	27.46	35	.25	54.00	18.75	
									_

Remarks: 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.

- 2. Measurement was up to 10th harmonics (~5.5GHz), but the emission levels were too low against the official limit and not report.
- 3. "\*" The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

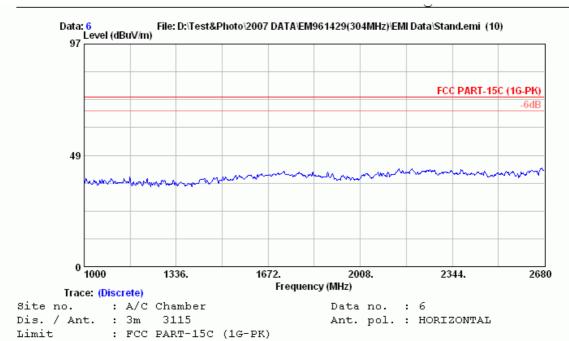
### 3.7.2. Frequency Range 1GHz to 5.5GHz Measurement Results: PASSED.

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

Date of Test: Nov. 08, 2007 Temperature:

Ceiling Fan Remote Controller 50% EUT: Humidity:

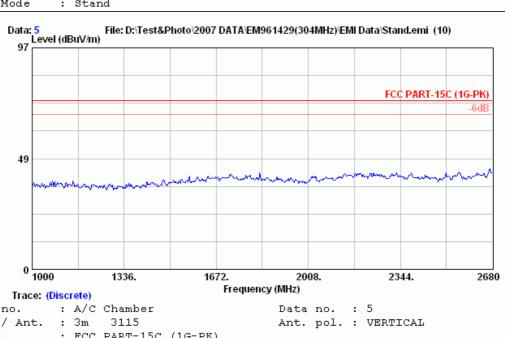
EUT on Stand Test Position:



: 23\*c/50% Env. / Ins. Engineer : Jarwei Wang

: Celling Fan Remote Controller M/N:TR35C

Power Rating : DC 12V Test Mode : Stand



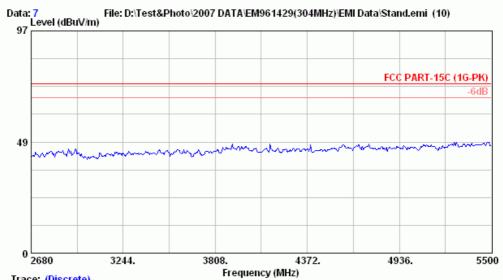
Site no. Dis. / Ant.

: FCC PART-15C (1G-PK) Limit

: 23\*C/50% Engineer : Jarwei Wang

: Celling Fan Remote Controller M/N:TR35C

Power Rating : DC 12V Test Mode : Stand



Trace: (Discrete)

: A/C Chamber Site no.

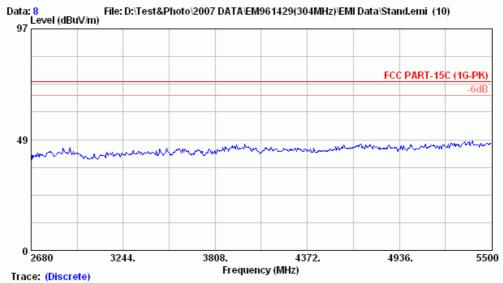
Data no. : 7 Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 3115

Limit : FCC PART-15C (1G-PK)

Env. / Ins. : 23\*C/50% Engineer : Jarwei Wang

: Celling Fan Remote Controller M/N:TR35C

Power Rating : DC 12V Test Mode : Stand



: A/C Chamber Site no. Data no. : 8

Ant. pol. : VERTICAL Dis. / Ant. : 3m 3115

Limit : FCC PART-15C (1G-PK)

Env. / Ins. : 23\*C/50% Engineer : Jarwei Wang

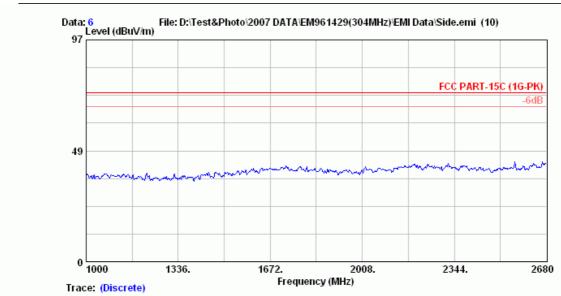
: Celling Fan Remote Controller M/N:TR35C

Power Rating : DC 12V Test Mode : Stand

Date of Test: Nov. 08, 2007 Temperature:

EUT: Ceiling Fan Remote Controller Humidity: 50%

Test Position: EUT on Side



Site no. : A/C Chamber Dis. / Ant. : 3m 3115

Data no. : 6 Ant. pol. : HORIZONTAL

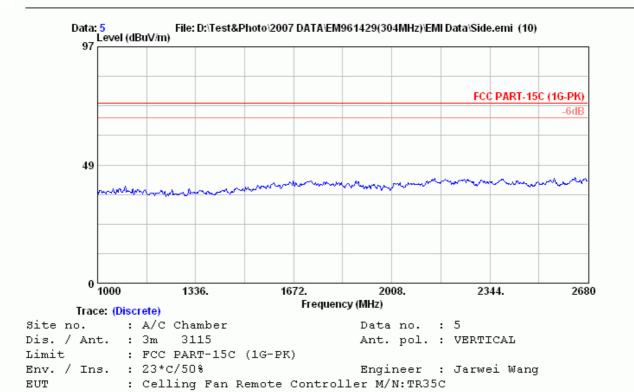
: FCC PART-15C (1G-PK) Limit

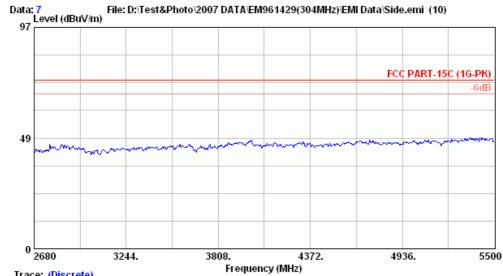
Env. / Ins. : 23\*C/50% Engineer : Jarwei Wang

EUT : Celling Fan Remote Controller M/N:TR35C

Power Rating : DC 12V Test Mode : Side

Power Rating : DC 12V Test Mode : Side





Trace: (Discrete)

Site no. : A/C Chamber

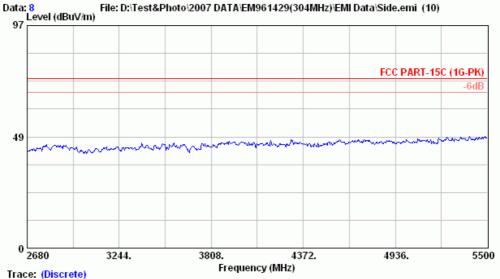
Data no. : 7 Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 3115

: FCC PART-15C (1G-PK) Limit

Env. / Ins. : 23\*C/50% Engineer : Jarwei Wang

: Celling Fan Remote Controller M/N:TR35C

Power Rating : DC 12V Test Mode : Side



Site no. : A/C Chamber Data no. : 8

Dis. / Ant. : 3m Ant. pol. : VERTICAL 3115

: FCC PART-15C (1G-PK)

: 23\*c/50% Env. / Ins. Engineer : Jarwei Wang

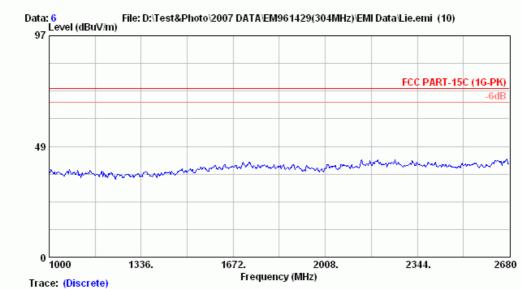
: Celling Fan Remote Controller M/N:TR35C

Power Rating : DC 12V Test Mode : Side

Nov. 08, 2007 Date of Test: 23 Temperature:

EUT: Ceiling Fan Remote Controller Humidity: 50%

**EUT** on Lying Test Position:



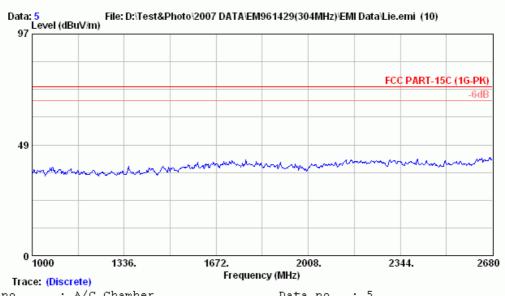
Site no. : A/C Chamber Data no. : 6

Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 3115

Limit : FCC PART-15C (1G-PK) Env. / Ins. : 23\*C/50% Engineer : Jarwei Wang

: Celling Fan Remote Controller M/N:TR35C

Power Rating : DC 12V : Lying Test Mode



Site no. : A/C Chamber Data no. : 5

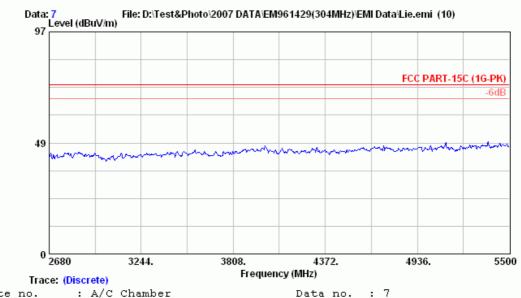
Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL

Limit : FCC PART-15C (1G-PK)

Env. / Ins. : 23\*C/50% Engineer : Jarwei Wang

: Celling Fan Remote Controller M/N:TR35C

Power Rating : DC 12V Test Mode : Lying



Site no. : A/C Chamber Data no. : 7

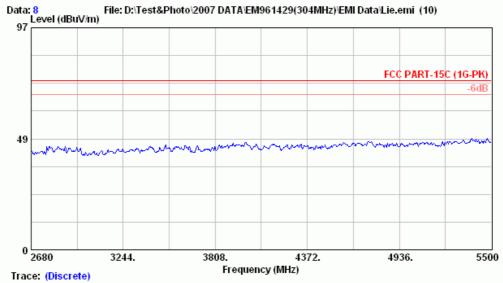
Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 3115

Limit : FCC PART-15C (1G-PK)

Env. / Ins. : 23\*C/50% Engineer : Jarwei Wang

: Celling Fan Remote Controller M/N:TR35C

Power Rating : DC 12V : Lying Test Mode



Site no. : A/C Chamber Data no. : 8

Ant. pol. : VERTICAL Dis. / Ant. : 3m 3115

Limit : FCC PART-15C (1G-PK)

Env. / Ins. : 23\*C/50% Engineer : Jarwei Wang

: Celling Fan Remote Controller M/N:TR35C

Power Rating : DC 12V Test Mode : Lying

## 4. EMISSION BANDWIDTH MEASUREMENT

## 4.1.Test Equipment

The following test equipment was used during the Emission Bandwidth Test:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 13, 07'	Aug. 12, 08'
2.	Wide Band Antenna	Diamond	RH799	2944A06305	N/A	N/A

## 4.2.Block Diagram of Test Setup

SPECTRUM ANALYZER	ANTENNA	CEILING FAN REMOTE CONTROLLER (EUT)
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# 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 was same as section 3.4.

# 4.5. Emission Bandwidth Measurement Results

#### PASS.

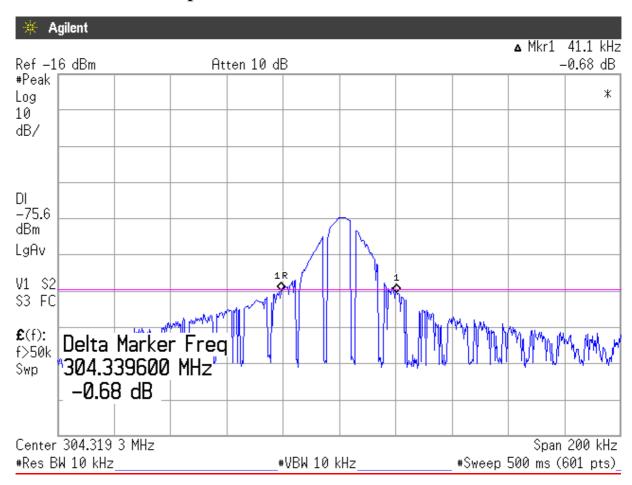
Fundamental Frequency: 304MHz

Test Date: Nov. 08, 2007 Temperature: 25 Humidity: 70%

No.	Center Frequency	Bandwidth	Tolerance (%)
1.	304.34MHz	41.1kHz	0.0135%

The bandwidth of emission was measured at the point 20dB down from the center frequency of modulated carrier.

# **Graph of Bandwidth Measurement**



Note: "\$\Omega\$" The line is 20dB from the modulated carrier.

## 5. PERIODIC OPERATED MEASUREMENT

# 5.1.Test Equipment

The following test equipment was used during the periodic operated test:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 13, 07'	Aug. 12, 08'
2.	Wide Band Antenna	Diamond	RH799	2944A06305	N/A	N/A

## 5.2.Block Diagram of Test Setup

SPECTRUM ANALYZER	RECEIVER ANTENNA
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#### **CEILING FAN REMOTE CONTROLLER (EUT)**

## 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 was same as section 3.4.

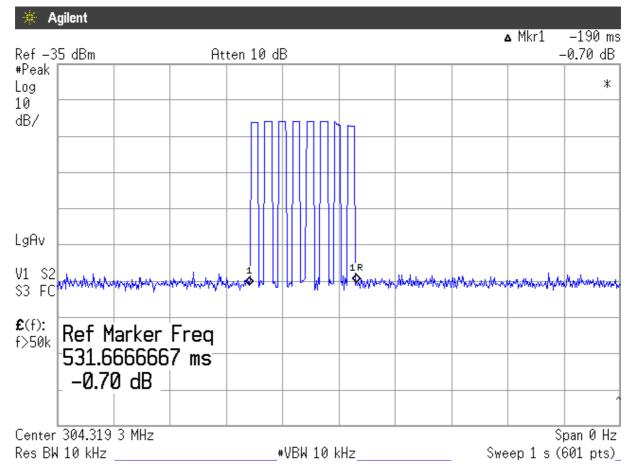
## 5.5. Periodic Operated Measurement Results

**PASS.** T = 190 ms. (< 5 sec.)

Test Date: Nov. 08, 2007 Temperature: 25 Humidity: 70%

The graph of testing is attached in next page.

# **Graph of Periodic Operated Measurement**



# 6. DEVIATION TO TEST SPECIFICATIONS

[NONE]