



Product Name	Ultra Slim RF Receiver
Model No.	RF607 / RF607x / RF607-xxx (x=0~9,A~Z)
FCC ID	ULI-CYRFRX01

Applicant	FORMOSA21 Inc.	
Address	8F-6, NO.351, CHUNG SHAN RD.,SEC.2, CHUNG	
	HO CITY, TAIPEI, TAIWAN, R.O.C.	

Date of Receipt	Apr. 16, 2008
Issued Date	May. 02, 2008
Report No.	084263R-RFUSP07V01-A
Version	V1.0

The test results relate only to the samples tested.

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Test Report Certification

Issued Date: May. 02, 2008

Report No.: 084263R-RFUSP07V01-A



Product Name	Ultra Slim RF Receiver		
Applicant	FORMOSA21 Inc.		
Address	8F-6, NO.351, CHUNG SHAN RD.,SEC.2, CHUNG HO CITY, TAIPEI,TAIWAN,R.O.C.		
Manufacturer	FORMOSA21 Inc.		
Model No.	RF607 / RF607x / RF607-xxx (x=0~9,A~Z)		
Rated Voltage	AC 120V/60Hz		
Working Voltage	DC 5V (Power by PC)		
Trade Name	FORMOSA21		
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2007 ANSI C63.4: 2003 NVLAP Lab Code: 200533-0		
Test Result	Complied		

Test results relate only to the samples tested.

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Documented By :

(Adm. Specialist / Leven Huang)

FC

Tested By

(Engineer / Molin Huang)

Approved By

Engineer / Molin Huang)

ilac-MRA

Testing Laboratory
0914

(Deputy Manager / Vincent Lin)

Page: 2 of 31 Version:1.0



TABLE OF CONTENTS

De	scription	Page
1.	GENERAL INFORMATION	
1.1.	EUT Description	
1.2.	Operational Description	
1.3.	Tested System Datails	
1.4.	Configuration of Test System	
1.5.	EUT Exercise Software	
1.6.	Test Facility	
2.	Conducted Emission	
2.1.	Test Equipment	
2.2.	Test Setup	
2.3.	Limits	8
2.4.	Test Procedure	
2.5.	Uncertainty	
2.6.	Test Result of Conducted Emission.	
3.	Radiated Emission	12
3.1.	Test Equipment	12
3.2.	Test Setup	
3.3.	Limits	14
3.4.	Test Procedure	15
3.5.	Uncertainty	15
3.6.	Test Result of Radiated Emission	16
4.	Band Edge	23
4.1.	Test Equipment	23
4.2.	Test Setup	
4.3.	Limits	
4.4.	Test Procedure	
4.5.	Uncertainty	
4.6.	Test Result of Band Edge	
5	FMI Reduction Method During Compliance Testing	20

Attachment 1: EUT Test Photographs
Attachment 2: EUT Detailed Photographs



1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Ultra Slim RF Receiver
Trade Name	FORMOSA21
Model No.	RF607 / RF607x / RF607-xxx (x=0~9,A~Z)
FCC ID	ULI-CYRFRX01
Frequency Range	2402~2480MHz
Channel Control	Auto
Channel Separation	1MHz
Antenna Gain	1.1 dBi
Channel Number	79
Type of Modulation	GFSK
Antenna Type	Printed on PCB

Frequency of Each Channel

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2402 MHz	Channel 21:	2422 MHz	Channel 41:	2442 MHz	Channel 61:	2462 MHz
Channel 02:	2403 MHz	Channel 22:	2423 MHz	Channel 42:	2443 MHz	Channel 62:	2463 MHz
Channel 03:	2404 MHz	Channel 23:	2424 MHz	Channel 43:	2444 MHz	Channel 63:	2464 MHz
Channel 04:	2405 MHz	Channel 24:	2425 MHz	Channel 44:	2445 MHz	Channel 64:	2465 MHz
Channel 05:	2406 MHz	Channel 25:	2426 MHz	Channel 45:	2446 MHz	Channel 65:	2466 MHz
Channel 06:	2407 MHz	Channel 26:	2427 MHz	Channel 46:	2447 MHz	Channel 66:	2467 MHz
Channel 07:	2408 MHz	Channel 27:	2428 MHz	Channel 47:	2448 MHz	Channel 67:	2468 MHz
Channel 08:	2409 MHz	Channel 28:	2429 MHz	Channel 48:	2449 MHz	Channel 68:	2469 MHz
Channel 09:	2410 MHz	Channel 29:	2430 MHz	Channel 49:	2450 MHz	Channel 69:	2470 MHz
Channel 10:	2411 MHz	Channel 30:	2431 MHz	Channel 50:	2451 MHz	Channel 70:	2471 MHz
Channel 11:	2412 MHz	Channel 31:	2432 MHz	Channel 51:	2452 MHz	Channel 71:	2472 MHz
Channel 12:	2413 MHz	Channel 32:	2433 MHz	Channel 52:	2453 MHz	Channel 72:	2473 MHz
Channel 13:	2414 MHz	Channel 33:	2434 MHz	Channel 53:	2454 MHz	Channel 73:	2474 MHz
Channel 14:	2415 MHz	Channel 34:	2435 MHz	Channel 54:	2455 MHz	Channel 74:	2475 MHz
Channel 15:	2416 MHz	Channel 35:	2436 MHz	Channel 55:	2456 MHz	Channel 75:	2476 MHz
Channel 16:	2417 MHz	Channel 36:	2437 MHz	Channel 56:	2457 MHz	Channel 76:	2477 MHz
Channel 17:	2418 MHz	Channel 37:	2438 MHz	Channel 57:	2458 MHz	Channel 77:	2478 MHz
Channel 18:	2419 MHz	Channel 38:	2439 MHz	Channel 58:	2459 MHz	Channel 78:	2479 MHz
Channel 19:	2420 MHz	Channel 39:	2440 MHz	Channel 59:	2460 MHz	Channel 79:	2480 MHz
Channel 20:	2421 MHz	Channel 40:	2441 MHz	Channel 60:	2461 MHz		

Page: 4 of 31 Version: 1.0



Note:

- 1. The EUT is an Ultra Slim RF Receiver with a built-in 2.4GHz transceiver.
- 2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
- 3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report.
- 4. These tests are conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.249 for spread spectrum devices.
- 5. Part 15 Subpart B compliance for spread spectrum devices is shown on the report no. 084263R-RFUSP01V02-A.
- 6. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

1.2. Operational Description

The EUT is 2.4GHz Ultra Slim RF Receiver built-in 2.4GHz transceiver. The operation frequency is from 2402 MHz to 2480MHz with GFSK modulation. The signal will be transmitted through 2.4 GHz RF signal from the Printed on PCB antenna. DC 5V (power by PC) shall be provided for EUT operation.

Test Mode	Mode 1: Transmitter

Page: 5 of 31 Version: 1.0



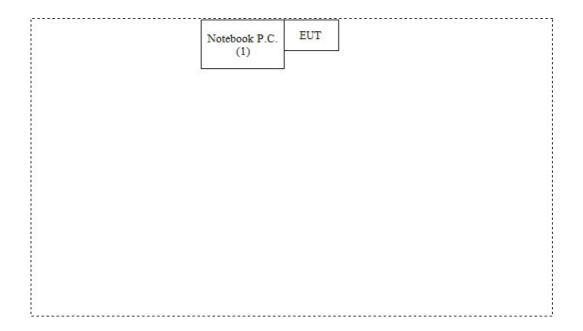
1.3. Tested System Datails

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Pı	oduct	Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	DELL	PPT	N/A	Non-Shielded, 0.8m

Signal Cable Type	Signal cable Description
1	N/A

1.4. Configuration of Test System



1.5. EUT Exercise Software

(1)	Setup the EUT as shown in section 1.4
(2)	Execute the RF program (the continuous transmission program) on the EUT
(3)	Setup the test mode, the test channel, and the data rate.
(4)	Press OK to start the transmission.
(5)	Verify that the EUT works correctly.

Page: 6 of 30 Version:1.0



1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

Site Description: File on

Federal Communications Commission

FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046 Registration Number: 92195

Accreditation on NVLAP NVLAP Lab Code: 200533-0

Site Name: Quietek Corporation

Site Address: No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen,

Lin-Kou Shiang, Taipei,

Taiwan, R.O.C.

TEL: 886-2-8601-3788 / FAX: 886-2-8601-3789

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FCC Accreditation Number: TW1014







2. Conducted Emission

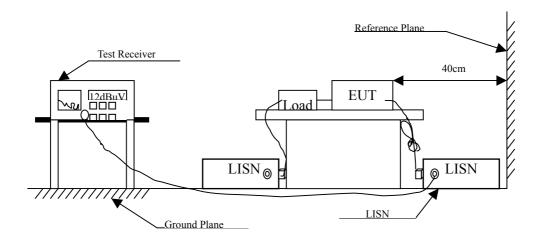
2.1. Test Equipment

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 2008	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2008	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2008	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2008	
5	No.1 Shielded Room	m		N/A	

Note: All instruments are calibrated every one year.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit						
Frequency	Limits					
MHz	QP	AV				
0.15 - 0.50	66-56 _(\$\delta\)	56-46 ₍₁₂₎				
0.50-5.0	56	46				
5.0 - 30	60	50				

Page: 8 of 30 Version: 1.0



2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Uncertainty

+ 2.26 dB



2.6. Test Result of Conducted Emission

Product : Ultra Slim RF Receiver
Test Item : Conducted Emission Test

Power Line : Line 1

Test Mode : Mode 1: Transmitter (2440 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.212	9.850	42.200	52.050	-12.179	64.229
0.318	9.840	33.920	43.760	-17.440	61.200
0.685	9.820	33.680	43.500	-12.500	56.000
1.681	9.840	24.520	34.360	-21.640	56.000
6.201	9.890	22.680	32.570	-27.430	60.000
12.970	10.146	24.590	34.736	-25.264	60.000
Average					
0.212	9.850	41.540	51.390	-2.839	54.229
0.318	9.840	33.410	43.250	-7.950	51.200
0.685	9.820	26.570	36.390	-9.610	46.000
1.681	9.840	15.980	25.820	-20.180	46.000
6.201	9.890	16.950	26.840	-23.160	50.000
12.970	10.146	16.590	26.736	-23.264	50.000

Note:

- 1. All Reading Levels are Quasi-Peak and average value.
- 2. " "means the worst emission level.
- 3. Measurement Level = Reading Level + Correct Factor

Page: 10 of 31 Version: 1.0



Product : Ultra Slim RF Receiver
Test Item : Conducted Emission Test

Power Line : Line 2

Test Mode : Mode 1: Transmitter(2440 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.212	9.860	39.330	49.190	-15.039	64.229
0.400	9.840	25.420	35.260	-23.597	58.857
0.677	9.840	26.000	35.840	-20.160	56.000
1.005	9.830	27.640	37.470	-18.530	56.000
1.771	9.840	24.660	34.500	-21.500	56.000
6.361	9.880	21.690	31.570	-28.430	60.000
Average					
0.212	9.860	37.350	47.210	-7.019	54.229
0.400	9.840	22.790	32.630	-16.227	48.857
0.677	9.840	16.740	26.580	-19.420	46.000
1.005	9.830	26.040	35.870	-10.130	46.000
1.771	9.840	20.040	29.880	-16.120	46.000
6.361	9.880	15.660	25.540	-24.460	50.000

Note:

- 1. All Reading Levels are Quasi-Peak and average value.
- 2. " "means the worst emission level.
- 3. Measurement Level = Reading Level + Correct Factor

Page: 11 of 31 Version: 1.0



3. Radiated Emission

3.1. Test Equipment

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

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☐Site # 1		Test Receiver	R & S	ESVS 10 / 834468/003	May, 2008
		Spectrum Analyzer	Advantest	R3162/ 00803480	May, 2008
		Pre-Amplifier	Advantest	BB525C/ 3307A01812	May, 2008
		Bilog Antenna	SCHAFFNER	CBL6112B / 2697	Sep., 2007
Site # 2		Test Receiver	R & S	ESCS 30 / 836858 / 022	May, 2008
		Spectrum Analyzer	Advantest	R3162 / 100803466	May, 2008
		Pre-Amplifier	Advantest	BB525C/3307A01814	May, 2008
		Bilog Antenna	SCHAFFNER	CBL6112B / 2705	May, 2008
		Horn Antenna	ETS	3115 / 0005-6160	Sep., 2007
		Pre-Amplifier	QTK	QTK-AMP-01/0001	May, 2008
⊠Site # 3	X	Test Receiver	R & S	ESI 26 / 838786/004	May, 2008
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2008
	X	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2008
	X	Horn Antenna	Schwarzbeck	BBHA9120D / 305, 306	July, 2007
	X	Horn Antenna	Schwarzbeck	BBHA9170 / 208, 209	July, 2007
	X	Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2007
	X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2008
	X	Pre-Amplifier	НР	8449B / 3008A01123	July, 2007

Note: 1. All equipments are calibrated every one year.

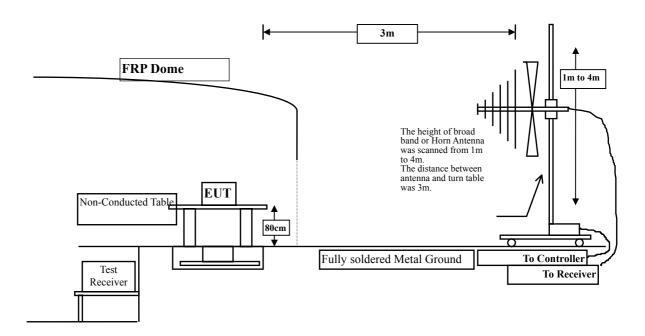
2. Test equipments marked by "X" are used to measure the final test results.

Page: 12 of 31 Version:1.0

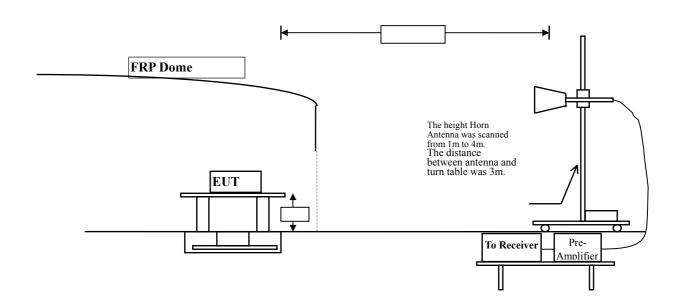


3.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



Page: 13 of 31 Version: 1.0



3.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209 Limits						
Frequency MHz	uV/m @3m	dBuV/m@3m				
30-88	100	40				
88-216	150	43.5				
216-960	200	46				
Above 960	500	54				

Remarks: E field strength $(dBuV/m) = 20 \log E$ field strength (uV/m)

Page: 14 of 31 Version: 1.0



3.4. Test Procedure

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB beamwidth of the antenna.

The worst radiated emission is measured on the Final Measurement.

The frequency range from 30MHz to 10th harminics is checked.

3.5. Uncertainty

- + 3.9 dB above 1GHz
- ± 3.8 dB below 1GHz



3.6. Test Result of Radiated Emission

Product : Ultra Slim RF Receiver

Test Item : Fundamental Radiated Emission

Test Site : No.3OATS

Test Mode : Mode 1: Transmitter (2402MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
Channel 01					
2403.600	29.649	97.330	90.610	-23.390	114.000
Average Detector					
Vertical					
Peak Detector:					
Channel 01					
2403.500	-6.721	104.540	97.820	-16.180	114.000

Average Detector

--

Note:

- 1. Measurement Level = Reading Level + Correct Factor.
- 2. Correct Factor = Antenna Factor + Cable Loss PreAMP.

Page: 16 of 31 Version: 1.0



Test Item : Fundamental Radiated Emission

Test Site : No.3OATS

Test Mode : Mode 1: Transmitter (2440MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					_
Peak Detector:					
Channel 39					
2439.750	29.798	97.890	91.303	-22.697	114.000
Average Detector					
Vertical					
Peak Detector:					
Channel 39					
2439.700	-6.587	102.500	95.913	-18.087	114.000

Average Detector

--

Note:

1. Measurement Level = Reading Level + Correct Factor.

2. Correct Factor = Antenna Factor + Cable Loss – PreAMP.

Page: 17 of 31 Version:1.0



Test Item : Fundamental Radiated Emission

Test Site : No.3OATS

Test Mode : Mode 1: Transmitter (2480MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector: Channel 79					
2478.700	29.954	93.130	86.649	-27.351	114.000
Average Detector					
Vertical					
Peak Detector: Channel 79					
2478.700	-6.481	100.650	94.169	-19.831	114.000

Average Detector

Note:

1. Measurement Level = Reading Level + Correct Factor.

2. Correct Factor = Antenna Factor + Cable Loss – PreAMP.

Page: 18 of 31 Version: 1.0



Test Item : Harmonic Radiated Emission Data

Test Site : No.3 OATS

Test Mode : Mode 1: Transmitter (2402MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4807.350	-0.209	52.640	52.430	-21.540	74.000
7211.350	3.252	46.870	50.122	-23.848	74.000
9614.750	5.710	46.320	52.030	-21.940	74.000
Average					
Detector:					
Vertical					
Peak Detector:					
4807.200	-0.210	48.110	47.901	-26.069	74.000
7211.200	3.253	46.340	49.593	-24.377	74.000
9614.650	5.710	48.110	53.820	-20.150	74.000
Average					

Note:

Detector:

- 1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
- 2. Receiver setting (Peak Detector): RBW:1MHz; VBW:1MHz; Span:100MHz •
- 3. Receiver setting (AVG Detector): RBW:1MHz; VBW:30Hz; Span:5MHz •
- 4. Emission Level = Reading Level + Correct Factor.
- 5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Page: 19 of 31 Version:1.0



Test Item : Harmonic Radiated Emission Data

Test Site : No.3 OATS

Test Mode : Mode 1: Transmitter (2440 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4879.150	-0.273	51.210	50.937	-23.033	74.000
7318.850	3.314	47.600	50.914	-23.056	74.000
9760.000	6.246	45.270	51.516	-22.454	74.000
Average					
Detector:					
Vertical					
Peak Detector:					
4879.350	-0.273	51.220	50.947	-23.023	74.000
7318.950	3.314	47.470	50.785	-23.185	74.000
9759.000	6.242	46.410	52.652	-21.318	74.000

Average

Detector:

--

Note:

- 1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
- 2. Receiver setting (Peak Detector): RBW:1MHz; VBW:1MHz; Span:100MHz •
- 3. Receiver setting (AVG Detector): RBW:1MHz; VBW:30Hz; Span:5MHz •
- 4. Emission Level = Reading Level + Correct Factor.
- 5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Page: 20 of 31 Version:1.0



Test Item : Harmonic Radiated Emission Data

Test Site : No.3 OATS

Test Mode : Mode 1: Transmitter (2480 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					_
Peak Detector:					
4957.400	0.558	51.000	51.557	-22.413	74.000
7436.000	3.904	47.330	51.233	-22.737	74.000
9914.800	6.478	45.800	52.278	-21.692	74.000
Average					
Detector:					
Vertical					
Peak Detector:					
4957.450	0.558	50.520	51.078	-22.892	74.000
7435.750	3.902	46.165	50.067	-23.903	74.000
9914.800	6.478	46.000	52.478	-21.492	74.000
Average					

Note:

Detector:

- 1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
- 2. Receiver setting (Peak Detector): RBW:1MHz; VBW:1MHz; Span:100MHz •
- 3. Receiver setting (AVG Detector): RBW:1MHz; VBW:30Hz; Span:5MHz °
- 4. Emission Level = Reading Level + Correct Factor.
- 5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.



Test Item : General Radiated Emission Data

Test Site : No.3 OATS

Test Mode : Mode 1: Transmitter (2440 MHz)

Correct	Reading	Measurement	Margin	Limit
Factor	Level	Level		
dB	dBuV	dBuV/m	dB	dBuV/m
				_
9.709	15.233	24.942	-21.058	46.000
12.679	13.971	26.650	-19.350	46.000
15.810	13.550	29.360	-16.640	46.000
16.865	9.545	26.410	-19.590	46.000
17.862	5.608	23.470	-22.530	46.000
18.274	13.576	31.850	-14.150	46.000
8.380	22.903	31.283	-12.217	43.500
13.518	19.792	33.310	-12.690	46.000
16.927	12.033	28.960	-17.040	46.000
17.626	15.514	33.140	-12.860	46.000
20.643	8.047	28.690	-17.310	46.000
20.060	11.570	31.630	-22.370	54.000
	9.709 12.679 15.810 16.865 17.862 18.274 8.380 13.518 16.927 17.626 20.643	Factor Level dBuV 9.709 15.233 12.679 13.971 15.810 13.550 16.865 9.545 17.862 5.608 18.274 13.576 8.380 22.903 13.518 19.792 16.927 12.033 17.626 15.514 20.643 8.047	Factor Level Level dB dBuV dBuV/m 9.709 15.233 24.942 12.679 13.971 26.650 15.810 13.550 29.360 16.865 9.545 26.410 17.862 5.608 23.470 18.274 13.576 31.850 8.380 22.903 31.283 13.518 19.792 33.310 16.927 12.033 28.960 17.626 15.514 33.140 20.643 8.047 28.690	Factor dB Level dBuV Level dBuV/m dB 9.709 15.233 24.942 -21.058 12.679 13.971 26.650 -19.350 15.810 13.550 29.360 -16.640 16.865 9.545 26.410 -19.590 17.862 5.608 23.470 -22.530 18.274 13.576 31.850 -14.150 8.380 22.903 31.283 -12.217 13.518 19.792 33.310 -12.690 16.927 12.033 28.960 -17.040 17.626 15.514 33.140 -12.860 20.643 8.047 28.690 -17.310

Note:

- 1. The reading levels below 1GHz are quasi-peak values.
- 2. "means the worst emission level.
- 3. Measurement Level = Reading Level + Correct Factor.
- 4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

Page: 22 of 31 Version: 1.0



4. Band Edge

4.1. Test Equipment

The following test equipments are used during the band edge tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Test Receiver	R & S	ESI 26 / 838786/004	May, 2008
X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2008
X	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2008
X	Horn Antenna	Schwarzbeck	BBHA9120D / 305, 306	July, 2007
X	Horn Antenna	Schwarzbeck	BBHA9170 / 208, 209	July, 2007
X	Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2007
X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2008
X	Pre-Amplifier	HP	8449B / 3008A01123	July, 2007

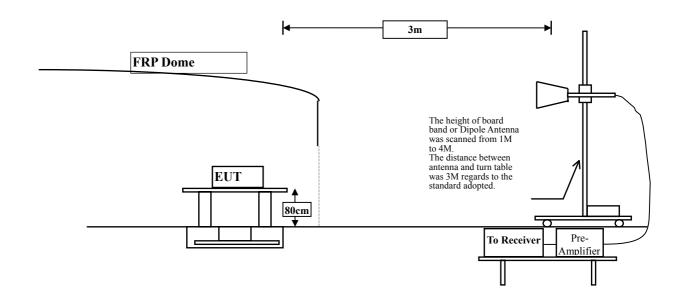
Test Site: Site3

Note: 1. All equipments are calibrated every one year.

2. The test equipments marked by "X" are used to measure the final test results.

4.2. Test Setup

RF Radiated Measurement:



Page: 23 of 31 Version:1.0



4.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

4.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated measurement.

The bandwidth setting below 1GHz and above 1GHz on the field strength meter is 120 kHz and 1MHz, respectively.

4.5. Uncertainty

Conducted is \pm 1.27 dB

Radiated is + 3.9 dB



4.6. Test Result of Band Edge

Product : Ultra Slim RF Receiver

Test Item : Band Edge Data
Test Site : No.3 OATS

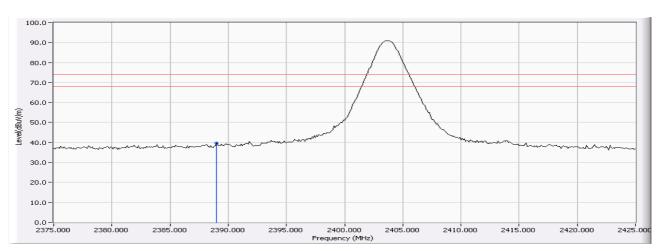
Test Mode : Mode 1: Transmitter

RF Radiated Measurement (Horizontal):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Result
Chamier 1 (o.	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dBuV/m)	resure
01 (Peak)	2389.000	-6.771	46.399	39.628	74.00	54.00	Pass
01(Average)	-	-			74.00	54.00	Pass

Figure Channel 01:

Horizontal (Peak)





Test Item : Band Edge Data Test Site : No.3 OATS

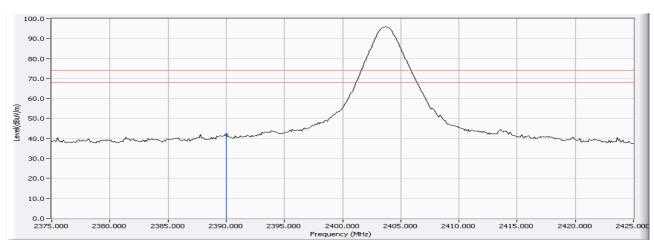
Test Mode : Mode 1: Transmitter

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	-6.769	48.563	41.795	74.00	54.00	Pass
01 (Average)					74.00	54.00	Pass

Figure Channel 01:

Vertical (Peak)





Test Item : Band Edge Data
Test Site : No.3 OATS

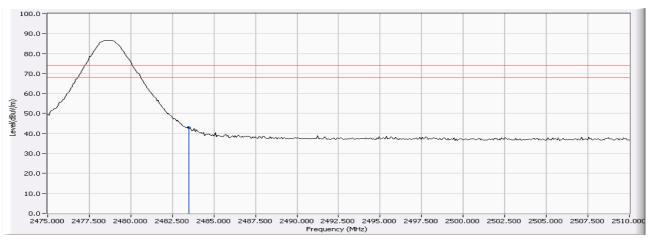
Test Mode : Mode 1: Transmitter

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
79(Peak)	2483.500	-6.469	49.436	42.968	74.00	54.00	Pass
79(Average)		1		-	74.00	54.00	Pass

Figure Channel 79:

Horizontal (Peak)





Test Item : Band Edge Data
Test Site : No.3 OATS

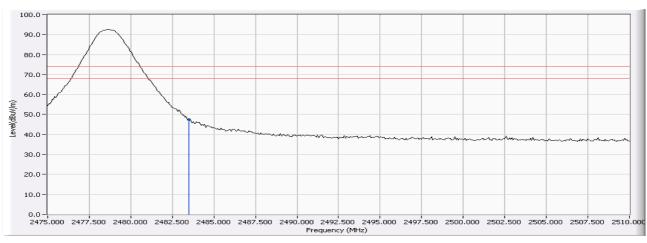
Test Mode : Mode 1: Transmitter

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
79(Peak)	2483.500	-6.469	53.891	47.423	74.00	54.00	Pass
79(Average)					74.00	54.00	Pass

Figure Channel 79:

Vertical (Peak)





5. EMI Reduction Method During Compliance Testing

No modification was made during testing.

Page: 29 of 31 Version:1.0