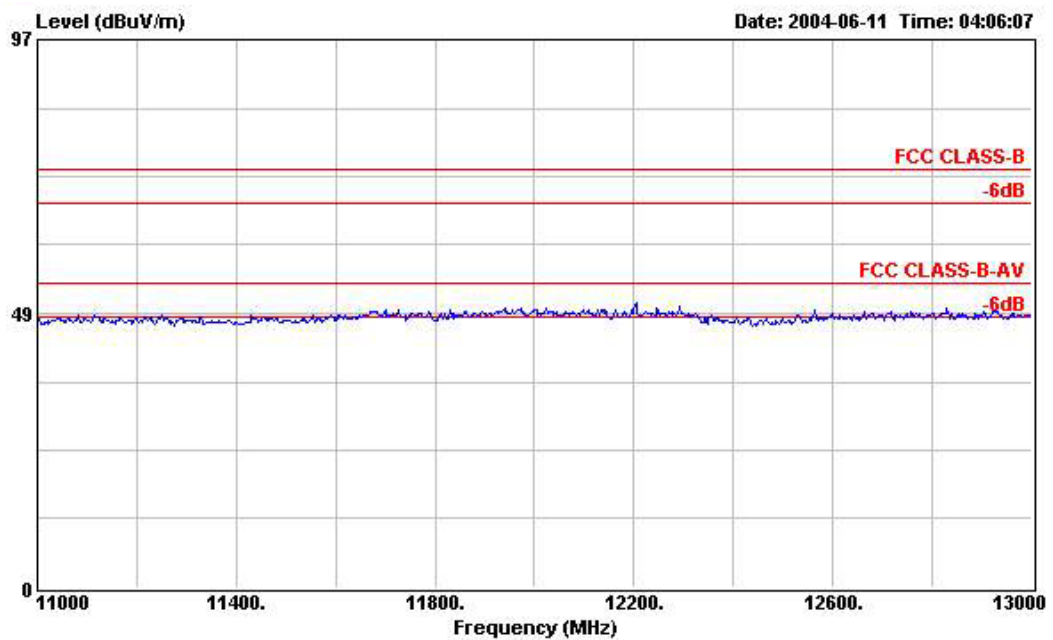




Site : 03CH03-HY
Condition : FCC CLASS-B 3m HORN-ANT-6821 VERTICAL
EUT : 2.4G Hopping Host
Power : 120V/60Hz
Memo : LM610
Host TX 2441MHz (CH:39)

- Remark: Frequency from 10332MHz to 25000MHz, the emission emitted by the EUT is too low to be measured.

FCC TEST REPORT

Report No. : F460202-A

■ Field strength of fundamental and harmonics

Frequency	Antenna	Cable	Reading	Preamp	Limits	Emission	Margin	Detect	
Polarity	Factor	Loss		Factor					
(MHz)	(dB/m)	(dB)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Mode	
2440.000	H	28.27	1.77	58.68	41.17	-	88.72	-	Peak
2440.000	H	28.27	1.77	37.03	41.17	-	67.07	-	A.V.
2442.000	V	28.28	1.77	62.97	41.17	-	93.02	-	Peak
2442.000	V	28.28	1.77	43.95	41.17	-	74.00	-	A.V.
4884.000	H	33.37	2.51	11.97	42.45	74.00	47.85	-26.15	Peak
7318.000	H	36.29	2.99	19.37	42.60	74.00	58.65	-15.35	Peak
7318.000	H	36.29	2.99	8.32	42.60	54.00	47.60	-6.40	A.V.
12204.000	H	39.13	4.41	6.30	40.12	74.00	49.84	-24.16	Peak
4884.000	V	33.37	2.51	10.94	42.45	74.00	46.82	-27.18	Peak
4884.000	V	3.37	2.51	34.38	42.45	54.00	40.26	-13.74	A.V.
7318.000	V	36.29	2.99	17.23	42.60	74.00	56.51	-17.49	Peak
7318.000	V	36.29	2.99	9.24	42.60	54.00	48.52	-5.48	A.V.
9764.000	V/H	-	-	-	-	-	-	-	Peak, A.V.
12205.000	V	-	-	-	-	-	-	-	Peak, A.V.
14646.000	V/H	-	-	-	-	-	-	-	Peak, A.V.
17087.000	V/H	-	-	-	-	-	-	-	Peak, A.V.
19528.000	V/H	-	-	-	-	-	-	-	Peak, A.V.
21969.000	V/H	-	-	-	-	-	-	-	Peak, A.V.
24410.000	V/H	-	-	-	-	-	-	-	Peak, A.V.

Remark: The emission emitted by the EUT is too low to be measured except the emission listed above

Test Engineer: 

Jay

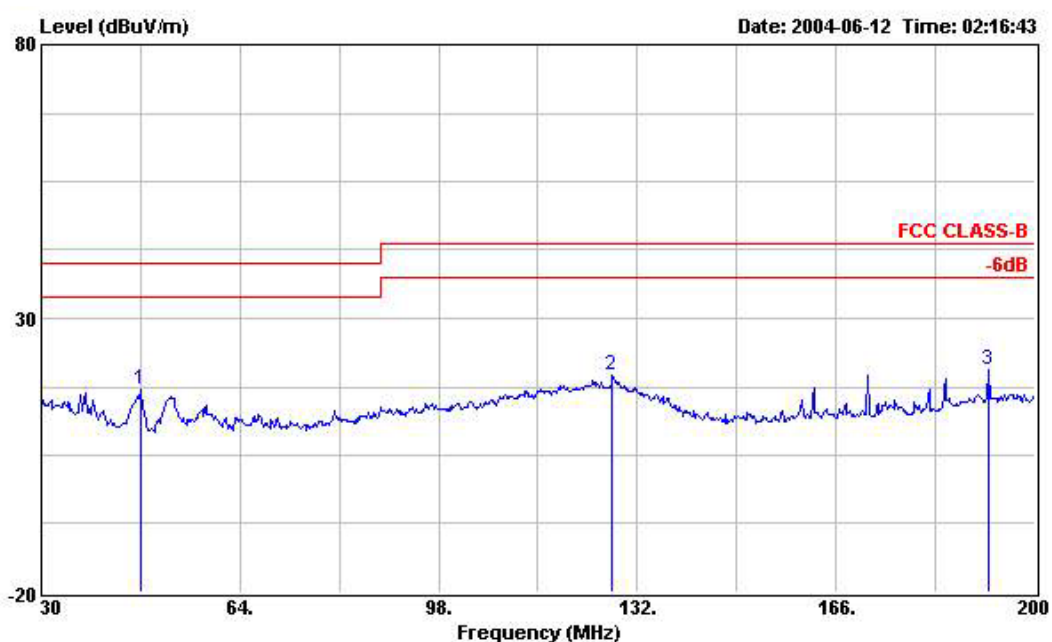
FCC TEST REPORT

Report No. : F460202-A

- Test Mode: Mode 3
- Test Distance: 3m
- Temperature: 26°C
- Relative Humidity: 53%
- Test Date: June 15, 2004
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

■ The test that passed at the minimum margin was marked by the frame in the following test record

- Spurious Emission

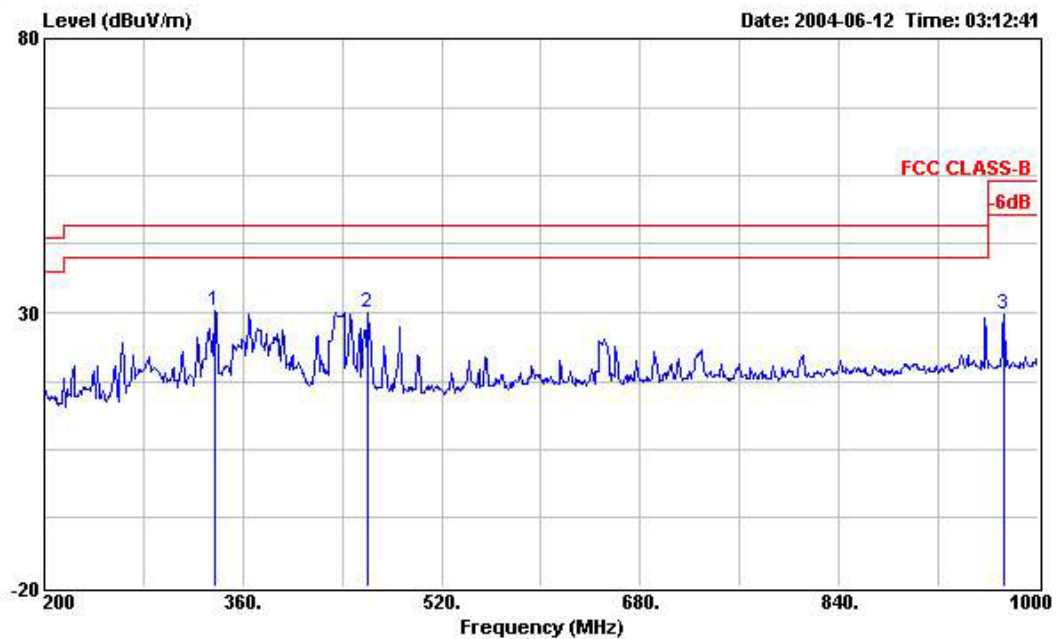


Site : 03CH03-HY
Condition : FCC CLASS-B 3m BIC-9124--301 HORIZONTAL
EUT : 2.4G Hopping Host
Power : 120V/60Hz
Memo : LM610
Host TX 2480MHz (CH:78)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	47.170	17.06	-22.94	40.00	34.43	10.33	0.30	28.00	Peak	---	---
2	127.750	19.57	-23.93	43.50	35.61	11.19	0.61	27.84	Peak	---	---
3	192.180	20.66	-22.84	43.50	33.04	14.62	0.71	27.71	Peak	---	---

FCC TEST REPORT

Report No. : F460202-A

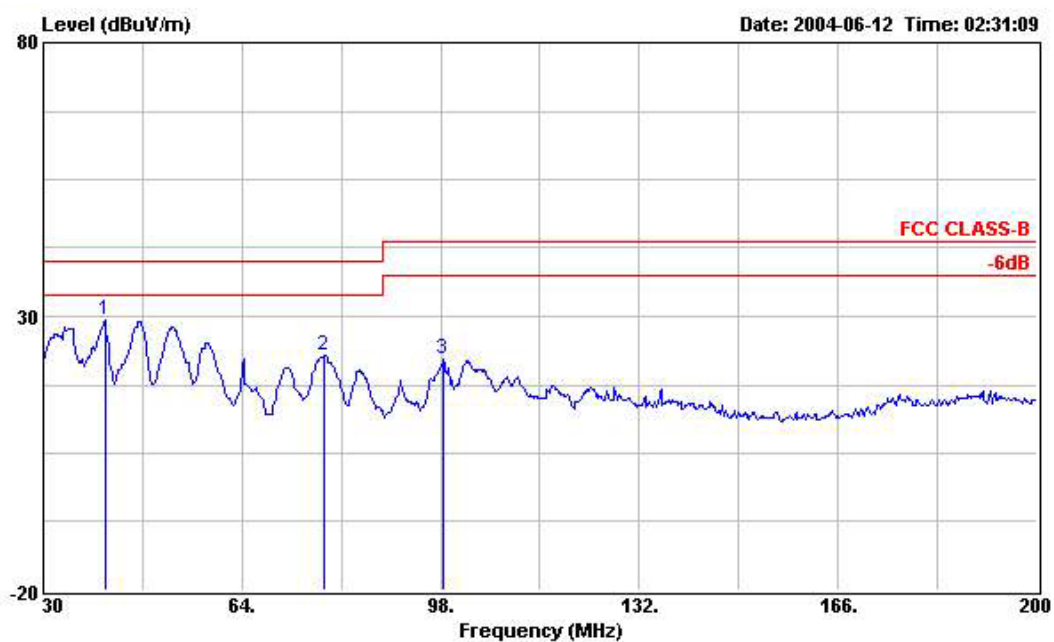


Site : 03CH03-HY
 Condition : FCC CLASS-B 3m LOG-9111-221 HORIZONTAL
 EUT : 2.4G Hopping Host
 Power : 120V/60Hz
 Memo : LM610
 : Host TX 2480MHz (CH:78)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	336.800	30.34	-15.66	46.00	41.57	15.16	1.09	27.48	Peak	---	---
2	460.800	29.95	-16.05	46.00	40.16	16.75	1.38	28.34	Peak	---	---
3	972.800	29.58	-24.42	54.00	33.94	22.02	1.85	28.23	Peak	---	---

FCC TEST REPORT

Report No. : F460202-A

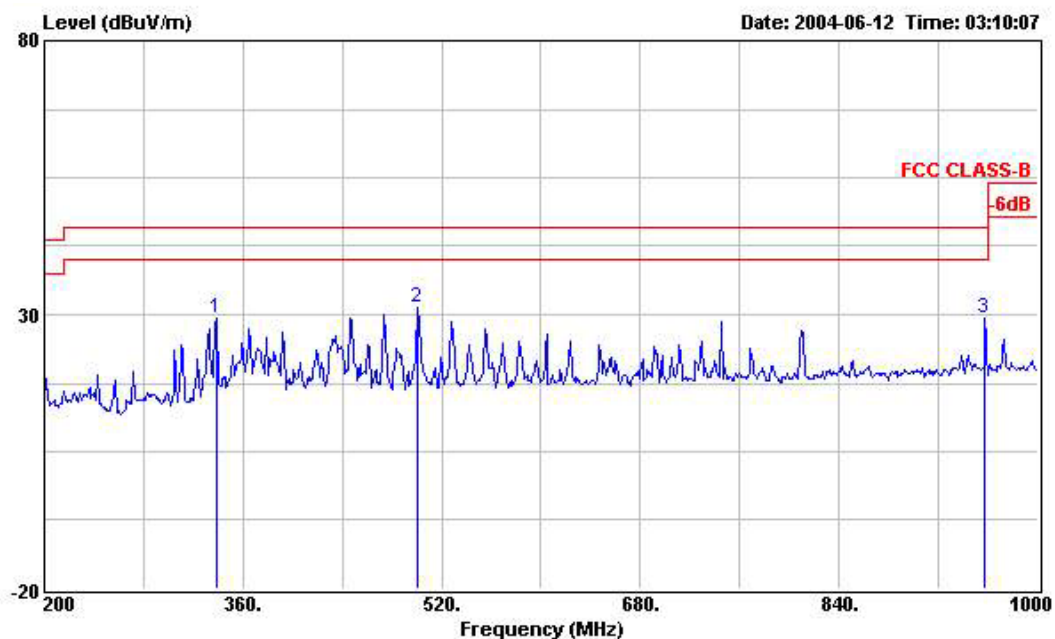


Site : 03CH03-HY
 Condition : FCC CLASS-B 3m BIC-9124--301 VERTICAL
 EUT : 2.4G Hopping Host
 Power : 120V/60Hz
 Memo : LM610
 : Host TX 2480MHz (CH:78)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	40.540	29.29	-10.71	40.00	45.69	11.48	0.14	28.02	Peak	---	---
2	78.110	22.78	-17.22	40.00	40.89	9.32	0.51	27.94	Peak	---	---
3	98.510	22.08	-21.42	43.50	39.84	9.66	0.48	27.90	Peak	---	---

FCC TEST REPORT

Report No. : F460202-A

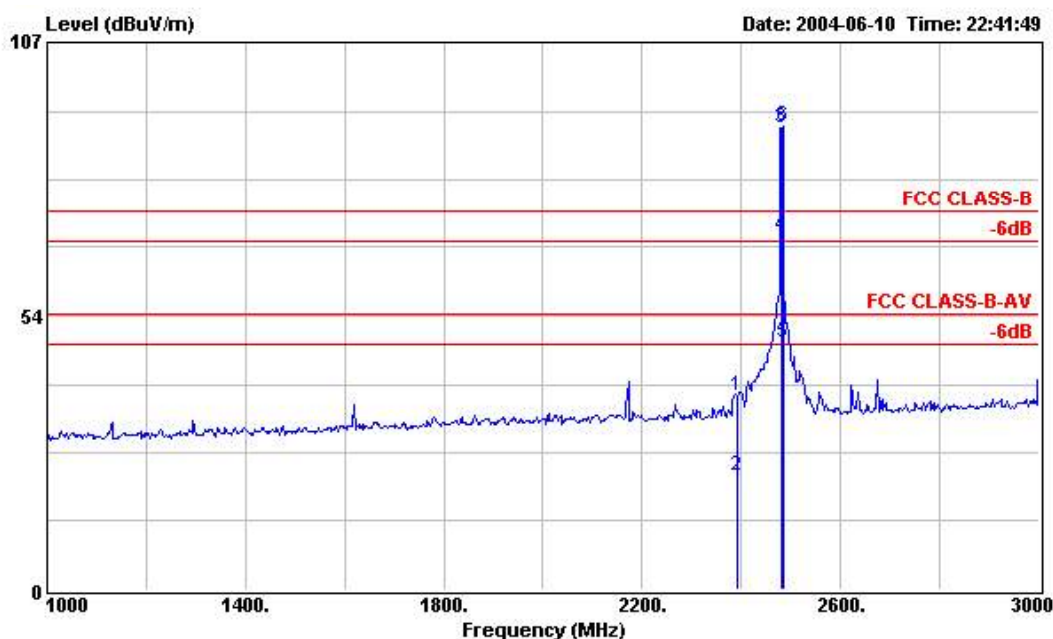


Site : 03CH03-HY
 Condition : FCC CLASS-B 3m LOG-9111-221 VERTICAL
 EUT : 2.4G Hopping Host
 Power : 120V/60Hz
 Memo : LM610
 : Host TX 2480MHz (CH:78)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	339.200	29.46	-16.54	46.00	40.59	15.27	1.09	27.49	Peak	---	---
2	500.000	31.36	-14.64	46.00	41.35	17.35	1.36	28.70	Peak	---	---
3	957.600	29.48	-16.52	46.00	34.23	21.90	1.59	28.24	Peak	---	---

FCC TEST REPORT

Report No. : F460202-A



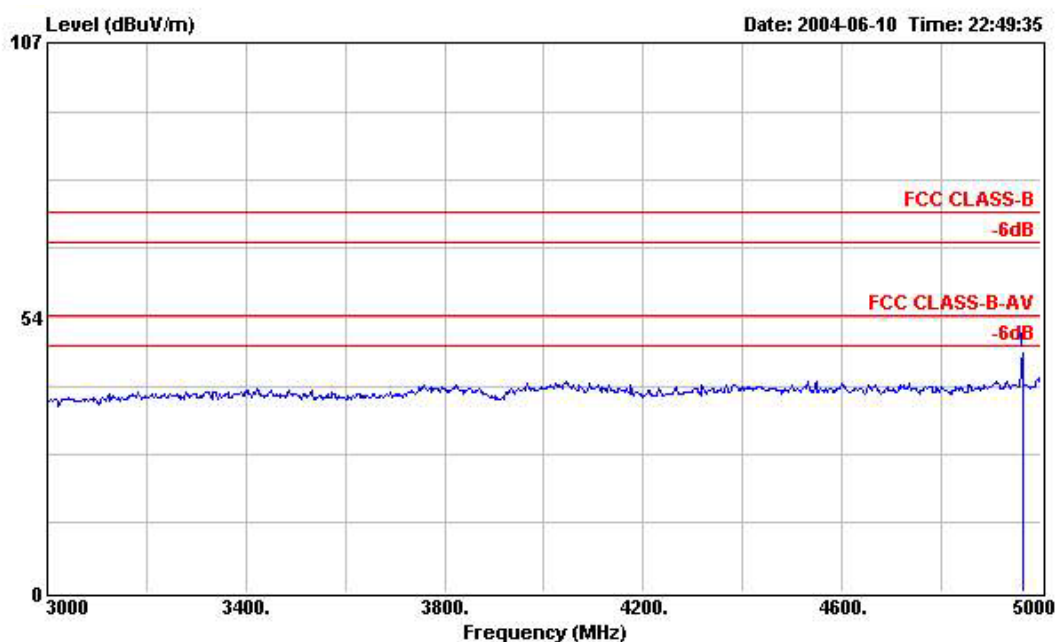
Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 HORIZONTAL
 EUT : 2.4G Hopping Host
 Power : 120V/60Hz
 Memo : LM610
 : Host TX 2480MHz (CH:78)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	2390.000	37.76	-36.24	74.00	49.04	28.14	1.72	41.14	Peak	100	328
2	2390.000	22.28	-31.72	54.00	33.56	28.14	1.72	41.14	Average	100	328
3 X	2480.000	90.47			101.47	28.38	1.81	41.19	Peak	100	212
4 X	2480.000	69.17			80.17	28.38	1.81	41.19	Average	100	212
5 !	2484.000	48.16	-5.84	54.00	59.15	28.39	1.82	41.20	Average	100	328
6 X	2484.000	90.52	16.52	74.00	101.51	28.39	1.82	41.20	Peak	100	328

Remark: The "X" represent a fundamental frequency.

FCC TEST REPORT

Report No. : F460202-A

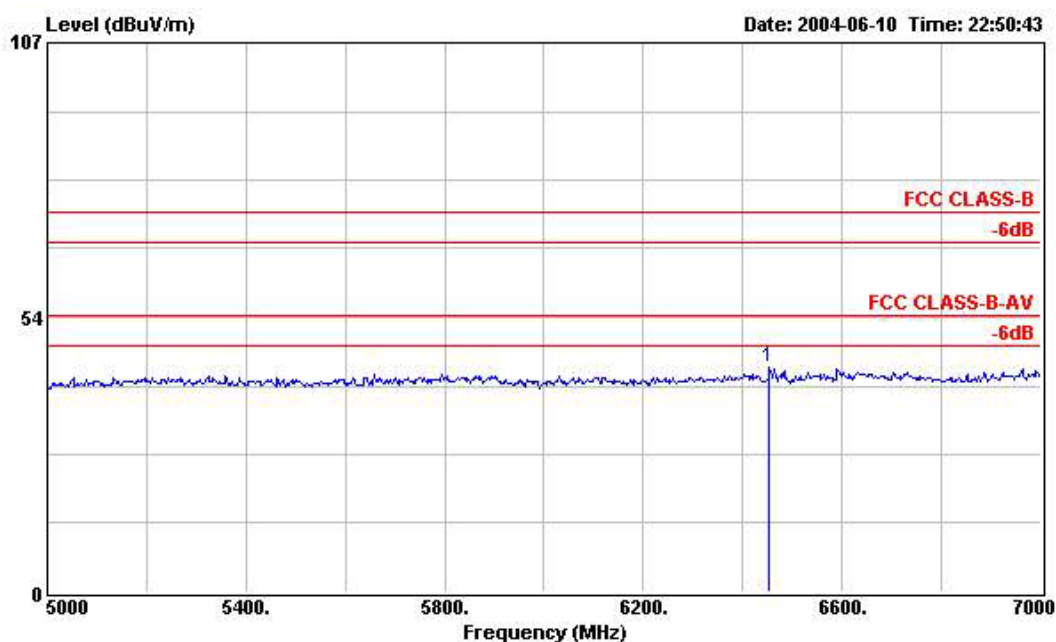


Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 HORIZONTAL
 EUT : 2.4G Hopping Host
 Power : 120V/60Hz
 Memo : LM610
 : Host TX 2480MHz (CH:78)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4964.000	46.67	-27.33	74.00	53.22	33.55	2.46	42.56	Peak	---	---

FCC TEST REPORT

Report No. : F460202-A

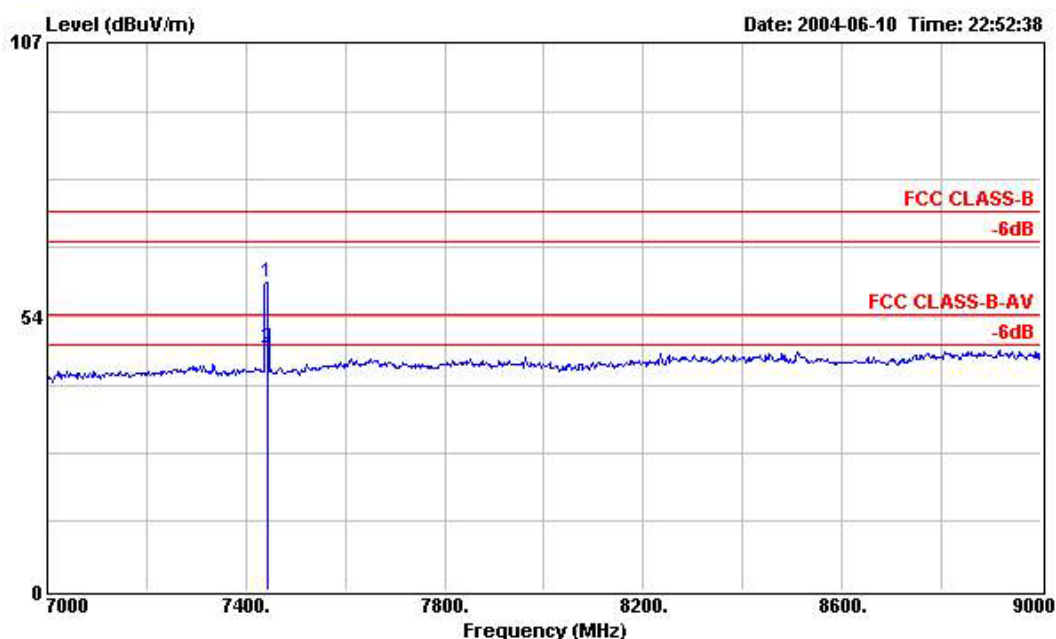


Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 HORIZONTAL
 EUT : 2.4G Hopping Host
 Power : 120V/60Hz
 Memo : LM610
 : Host TX 2480MHz (CH:78)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	6454.000	43.68	-30.32	74.00	49.48	34.60	2.90	43.30	Peak	---	---

FCC TEST REPORT

Report No. : F460202-A

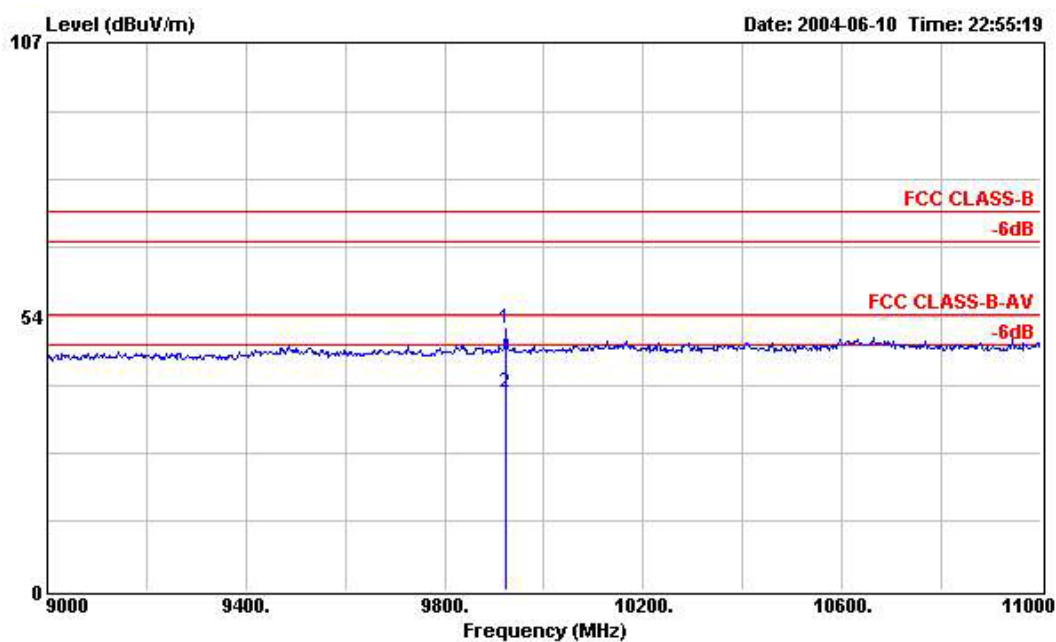


Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 HORIZONTAL
 EUT : 2.4G Hopping Host
 Power : 120V/60Hz
 Memo : LM610
 : Host TX 2480MHz (CH:78)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamplifier Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	7444.000	60.24	-13.76	74.00	63.10	36.60	2.99	42.45	Peak	100	65
2	7444.000	47.35	-6.65	54.00	50.21	36.60	2.99	42.45	Average	100	65

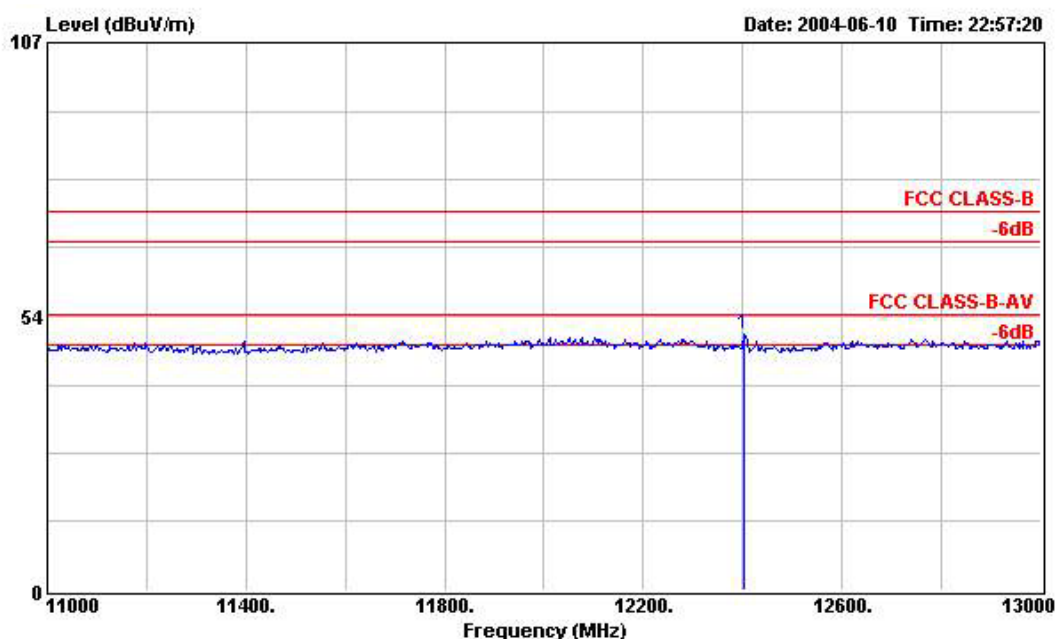
FCC TEST REPORT

Report No. : F460202-A



Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 HORIZONTAL
 EUT : 2.4G Hopping Host
 Power : 120V/60Hz
 Memo : LM610
 : Host TX 2480MHz (CH:78)

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	9924.000	51.05	-22.95	74.00	47.92	38.81	3.88	39.56	Peak	100	56
2	9924.000	38.51	-15.49	54.00	35.38	38.81	3.88	39.56	Average	100	56



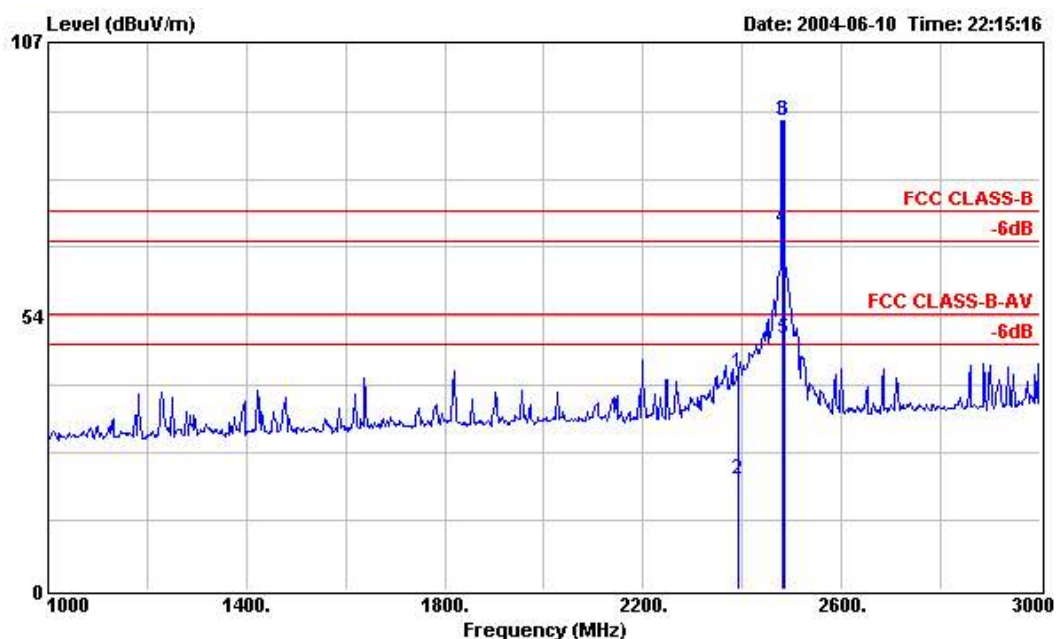
Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 HORIZONTAL
 EUT : 2.4G Hopping Host
 Power : 120V/60Hz
 Memo : LM610
 : Host TX 2480MHz (CH:78)

Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	Remark	Ant	Table
		Limit	Line							
MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1 12404.000	49.94	-24.06	74.00	46.95	38.97	4.62	40.60	Peak	---	---

- Remark: Frequency from 12404MHz to 25000MHz, the emission emitted by the EUT is too low to be measured.

FCC TEST REPORT

Report No. : F460202-A



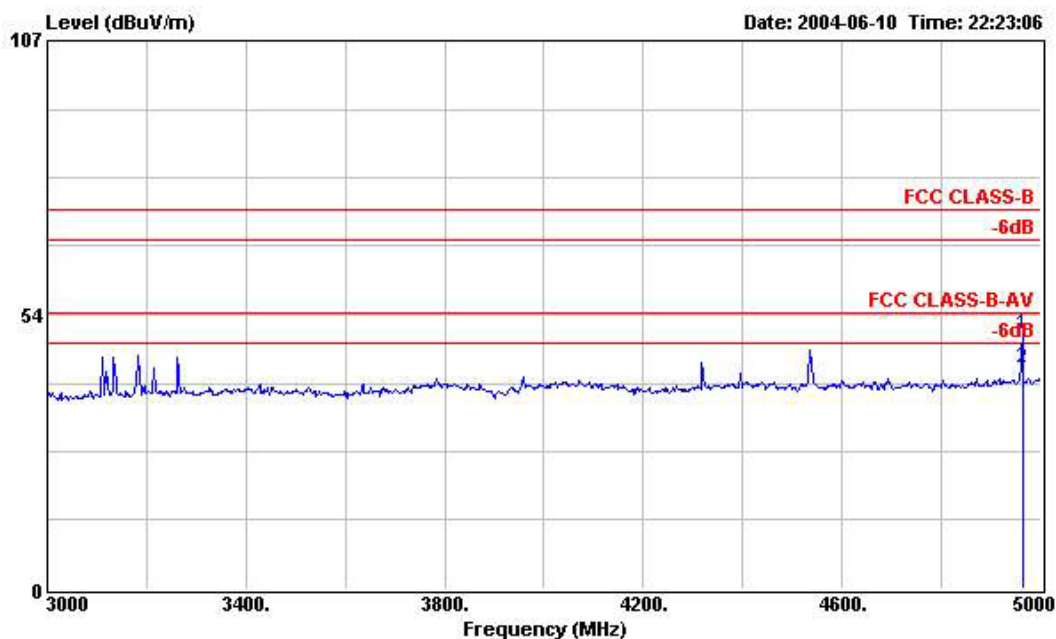
Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 VERTICAL
 EUT : 2.4G Hopping Host
 Power : 120V/60Hz
 Memo : LM610
 Host TX 2480MHz (CH:78)

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	2390.000	42.41	-31.59	74.00	53.69	28.14	1.72	41.14	Peak	100	36
2	2390.000	21.40	-32.60	54.00	32.68	28.14	1.72	41.14	Average	100	36
3	X 2480.000	91.57			102.57	28.38	1.81	41.19	Peak	100	36
4	X 2480.000	70.40			81.40	28.38	1.81	41.19	Average	100	36
5	! 2484.000	49.03	-4.97	54.00	60.02	28.39	1.82	41.20	Average	100	36
6	X 2484.000	91.56	17.56	74.00	102.55	28.39	1.82	41.20	Peak	100	36

Remark: The "X" represent a fundamental frequency.

FCC TEST REPORT

Report No. : F460202-A

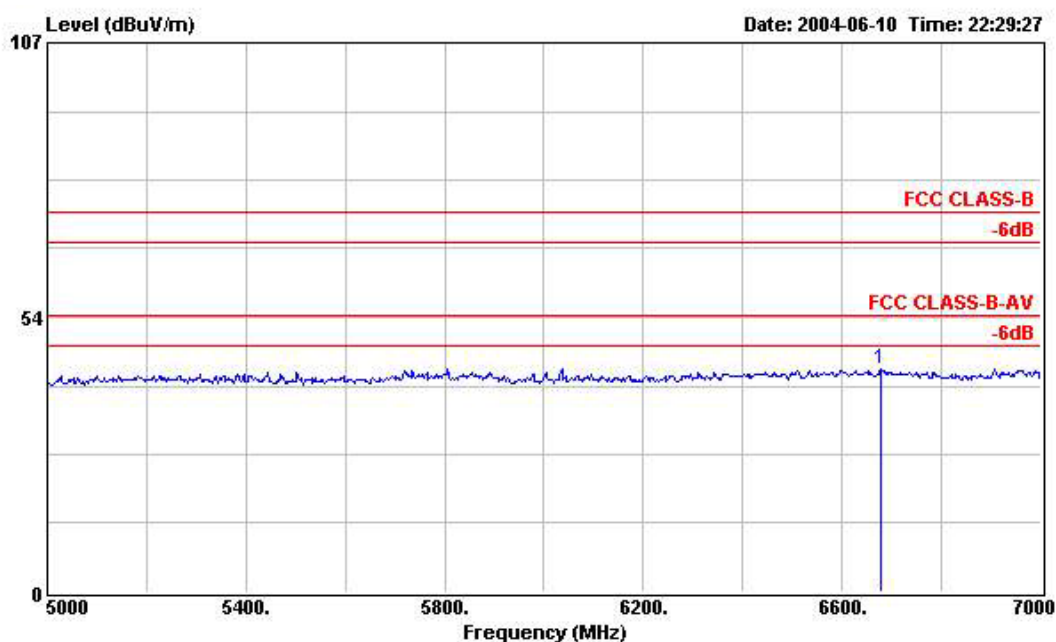


Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 VERTICAL
 EUT : 2.4G Hopping Host
 Power : 120V/60Hz
 Memo : LM610
 : Host TX 2480MHz (CH:78)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4964.000	49.59	-24.41	74.00	56.14	33.55	2.46	42.56	Peak	100	29
2	4964.000	43.25	-10.75	54.00	49.80	33.55	2.46	42.56	Average	100	29

FCC TEST REPORT

Report No. : F460202-A

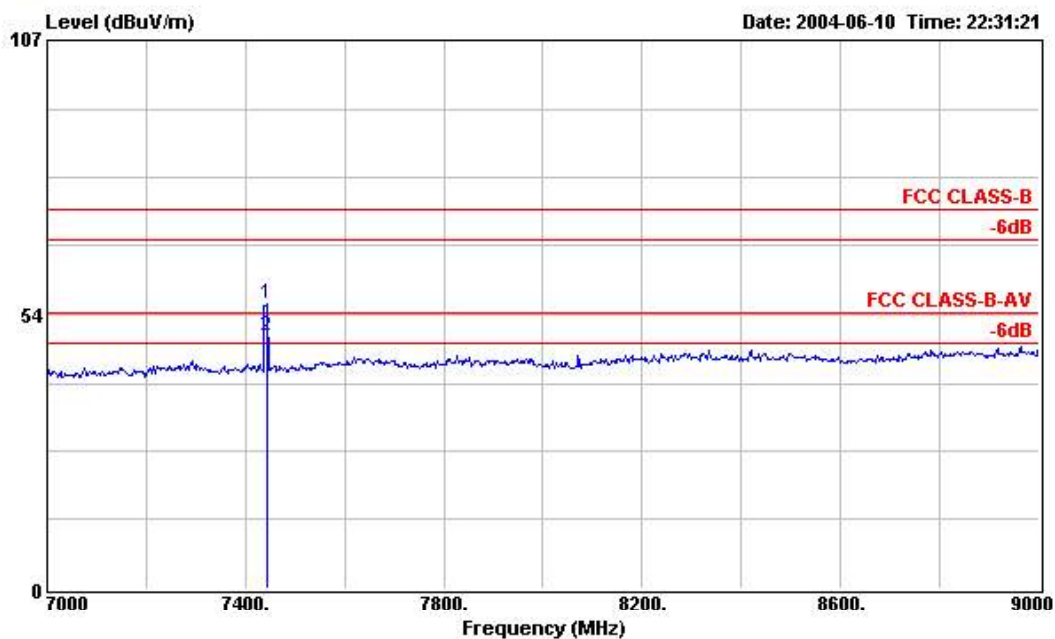


Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 VERTICAL
 EUT : 2.4G Hopping Host
 Power : 120V/60Hz
 Memo : LM610
 : Host TX 2480MHz (CH:78)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	6678.000	43.49	-30.51	74.00	48.77	34.92	2.99	43.19	Peak	---	---

FCC TEST REPORT

Report No. : F460202-A

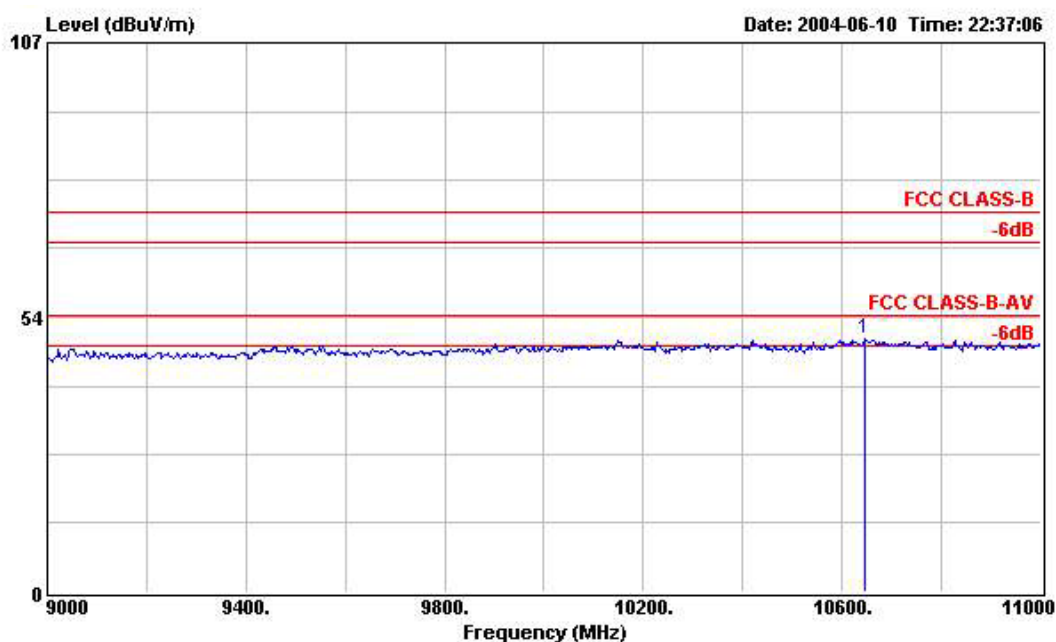


Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 VERTICAL
 EUT : 2.4G Hopping Host
 Power : 120V/60Hz
 Memo : LM610
 : Host TX 2480MHz (CH:78)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamplifier Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	7444.000	55.47	-18.53	74.00	58.33	36.60	2.99	42.45	Peak	100	85
2	7444.000	49.46	-4.54	54.00	52.32	36.60	2.99	42.45	Average	100	85

FCC TEST REPORT

Report No. : F460202-A

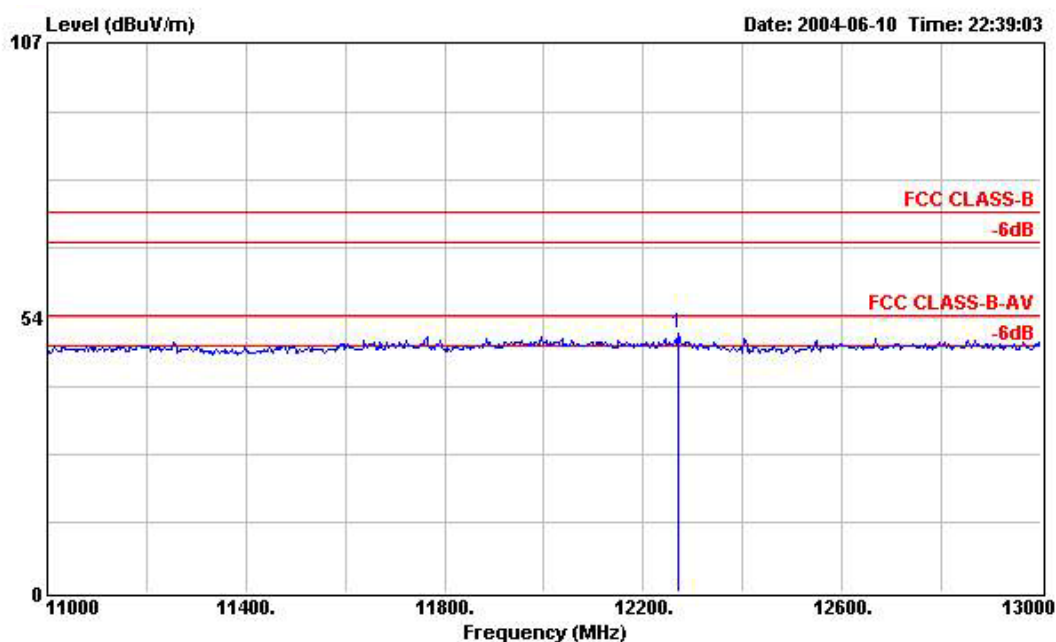


Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 VERTICAL
 EUT : 2.4G Hopping Host
 Power : 120V/60Hz
 Memo : LM610
 : Host TX 2480MHz (CH:78)

Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	Remark	Ant	Table
		Limit	Line							
MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1 10646.000	49.33	-24.67	74.00	45.17	39.41	4.12	39.37	Peak	---	---

FCC TEST REPORT

Report No. : F460202-A



Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 VERTICAL
 EUT : 2.4G Hopping Host
 Power : 120V/60Hz
 Memo : LM610
 : Host TX 2480MHz (CH:78)

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	12270.000	50.53	-23.47	74.00	47.04	39.07	4.69	40.27	Peak	---	---

- Remark: Frequency from 12270MHz to 25000MHz, the emission emitted by the EUT is too low to be measured.

FCC TEST REPORT

Report No. : F460202-A

■ Field strength of fundamental and harmonics

Frequency	Antenna	Cable	Reading	Preamp	Limits	Emission	Margin	Detect	
	Polarity	Factor	Loss		Factor				
(MHz)		(dB/m)	(dB)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Mode
2480.000	H	28.38	1.81	60.28	41.19	-	90.47	-	Peak
24800.000	H	28.38	1.81	38.98	41.19	-	69.17	-	A.V.
2480.000	V	28.38	1.81	61.38	41.19	-	91.57	-	Peak
2480.000	V	28.38	1.81	40.21	41.19	-	70.40	-	A.V.
4964.000	H	33.55	2.46	10.66	42.56	74.00	46.67	-27.33	Peak
7444.000	H	36.60	2.99	20.65	42.45	74.00	60.24	-13.76	Peak
7444.000	H	36.60	2.99	7.76	42.45	54.00	47.35	-6.65	A.V.
9924.000	H	38.81	3.88	8.36	39.56	74.00	51.05	-22.95	Peak
9924.000	H	38.81	3.88	-4.18	39.56	54.00	38.51	-15.49	Peak
12404.000	H	38.97	4.62	6.35	40.60	74.00	49.94	-24.06	Peak
4964.000	V	33.55	2.46	13.58	42.56	74.00	49.59	-24.41	Peak
4964.000	V	33.55	2.46	7.24	42.56	54.00	43.25	-10.75	A.V.
7444.000	V	36.60	2.99	15.88	42.45	74.00	55.47	-18.53	Peak
7444.000	V	36.60	2.99	9.87	42.45	54.00	49.46	-4.54	A.V.
9920.000	V	-	-	-	-	-	-	-	Peak, A.V.
12400.000	V	-	-	-	-	-	-	-	Peak, A.V.
14880.000	V/H	-	-	-	-	-	-	-	Peak, A.V.
17360.000	V/H	-	-	-	-	-	-	-	Peak, A.V.
19840.000	V/H	-	-	-	-	-	-	-	Peak, A.V.
22320.000	V/H	-	-	-	-	-	-	-	Peak, A.V.
24800.000	V/H	-	-	-	-	-	-	-	Peak, A.V.

Remark: The emission emitted by the EUT is too low to be measured except the emission listed above

Test Engineer: 

Jay

6. Antenna Requirements

The EUT use a on board antenna. It is considered to meet antenna requirement of FCC.

Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that assembled by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if directional gain of transmitting antennas greater than 6dBi are used, the power shall be reduced by the same amount in unit dB comparing to the directional gain of the antenna minus 6dBi.

Antenna Connected Construction

The antenna used in this product is printed antenna on board connector.

7. RF Exposure

FCC Rules and Regulations Part 1.1307,1.1310,2.1091,2.1093:

RF Exposure Compliance

7.1 Limit For Maximum Permissible Exposure (MPE)

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

F=frequency in MHz

*Plane-wave equivalent power density

7.2 MPE Calculations

Power Density = Pd (mW/cm²) = EIRP/4 π d²

EIRP = P · G

P=Peak output power (mW)

G=Antenna numeric gain (numeric)

d=Separation distance (cm)

Because the EUT belongs to General Population/ Uncontrolled Exposure, the limit of power density is 1.0 mW/cm².

Channel NO.	Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Calculated RF Exposure at d=20cm (mW/cm ²)	Limit (mW/cm ²)
Channel 00	6.00	3.98	4.82	3.03	0.0024	1.00
Channel 39	6.00	3.98	4.76	2.99	0.0024	1.00
Channel 78	6.00	3.98	4.26	2.67	0.0021	1.00

7.3 FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm during normal operation.

8. List of Measuring Equipments Used

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver	R&S	ESCS 30	100132	9 KHz – 2.75 GHz	Jun. 12, 2003	Conduction
LISN	MessTec	NNB-2/16Z	2001-008	9 KHz – 30 MHz	Apr. 30, 2003	Conduction
LISN	MessTec	NNB-2/16Z	2001-009	9 KHz – 30 MHz	Apr. 30, 2003	Conduction
EMI Filter	LINDGREN	LRE-2060	1004	< 450 Hz	N/A	Conduction
EMI Filter	LINDGREN	N6006	201052	0 ~ 60 Hz	N/A	Conduction
RF Cable-CON	Suhner Switzerland	RG223/U	CB029	9KHz~30MHz	Dec. 24, 2003	Conduction
50 ohm BNC type	NOBLE	50ohm	TM013	50 ohm	Apr. 24, 2003	Conduction
3m Semi Anechoic	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz~1GHz	Jun. 21, 2003	Radiation
Spectrum analyzer	R&S	FSP40	100004	9KHz~40GHz	Aug. 23, 2003	Radiation
Amplifier	HP	8447D	2944A09072	100KHz – 1.3GHz	Nov. 05, 2003	Radiation
Biconical Antenna	SCHWARZBECK	VHBB 9124	301	30MHz –200MHz	Jul. 24, 2003	Radiation (03CH03-HY)
Log Antenna	SCHWARZBECK	VUSLP 9111	221	200MHz -1GHz	Jul. 24, 2003	Radiation (03CH03-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	30MHz~1GHz	Dec. 03, 2003	Radiation
Amplifier	MITEQ	AFS44	879981	100MHz~26.5GHz	Jul. 23, 2003	Radiation
Horn Antenna	COM-POWER	3115	6741	1GHz – 18GHz	Apr. 08, 2004	Radiation
Turn Table	HD	DS 420	420/650/00	0 ~ 360 degree	N/A	Radiation
Antenna Mast	HD	MA 240	240/560/00	1 m - 4 m	N/A	Radiation
Horn Antenna	Schwarzbeck	BBHA9170	154	15GHz~40GHz	Jun. 02, 2004	Radiation
RF Cable-HIGH	Jye Bao	RG142	CB030-HIGH	1GHz~29.5GHz	Dec. 05, 2003	Radiation

※ Calibration Interval of instruments listed above is one year.

※ Calibration Interval of instruments listed above is one year, except for Horn Antenna, BBHA9170.

※ Calibration Interval of Horn Antenna, BBHA9170, is three years.

9. Uncertainty of Test Site

Uncertainty of Conducted Emission Measurement (30MHz ~ 1000MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.10	Normal(k=2)	0.05
Cable loss	0.10	Normal(k=2)	0.05
AMN insertion loss	2.50	Rectangular	0.63
Receiver Spec	1.50	Rectangular	0.43
Site imperfection	1.39	Rectangular	0.80
Mismatch Receiver VSWR Γ_1 = LISN VSWR Γ_2 = Uncertainty= $20\log(1-\Gamma_1*\Gamma_2)$	+0.34/-0.3 5	U-shape	0.24
combined standard uncertainty Uc(y)	1.13		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.26		

Uncertainty of Radiated Emission Measurement (150kHz ~ 30MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.41	Normal(k=2)	0.21
Antenna factor calibration	0.83	Normal(k=2)	0.42
Cable loss calibration	0.25	Normal(k=2)	0.13
Pre Amplifier Gain calibration	0.27	Normal(k=2)	0.14
RCV/SPA specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site imperfection	1.43	Rectangular	0.83
Mismatch Receiver VSWR Γ_1 = 0.20 Antenna VSWR Γ_2 = 0.23 Uncertainty= $20\log(1-\Gamma_1*\Gamma_2)$	+0.39/-0.41	U-shaped	0.28
combined standard uncertainty Uc(y)	1.27		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.54		

$$U = \sqrt{\{(1/2)^2 + (0.3/2)^2 + (2^2 + 0.5^2 + 2^2 + 0.25^2 + 2^2)/3 + (0.54)^2/2\}} = 2.2 \quad \text{for 10m test distance}$$

$$U = \sqrt{\{(1/2)^2 + (0.3/2)^2 + (2^2 + 3^2 + 2^2 + 0.25^2 + 2^2)/3 + (0.54)^2/2\}} = 2.7 \quad \text{for 3m test distance}$$

Uncertainty of Conducted Emission Measurement (1GHz ~ 40GHz)

Contribution	Uncertainty of x_i		$u(x_i)$	C_i	$C_i * u$
	dB	Probability Distribution			
Receiver reading	± 0.10	Normal(k=1)	0.10	1	0.10
Antenna factor calibration	± 1.70	Normal(k=2)	0.85	1	0.85
Cable loss calibration	± 0.50	Normal(k=2)	0.25	1	0.25
Receiver Correction	± 2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	± 1.50	Rectangular	0.87	1	0.87
Site imperfection	± 2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20 \log(1 - \Gamma_1 * \Gamma_2 * \Gamma_3)$	+0.34/-0.35	U-shaped	0.244	1	0.244
Combined standard uncertainty Uc(y)	2.36				
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	4.72				

$$U = \sqrt{\{(0.3/2)^2 + (2^2 + 1.5^2 + 0.2^2)/3 + (0.2)^2/2\}} = 1.66$$