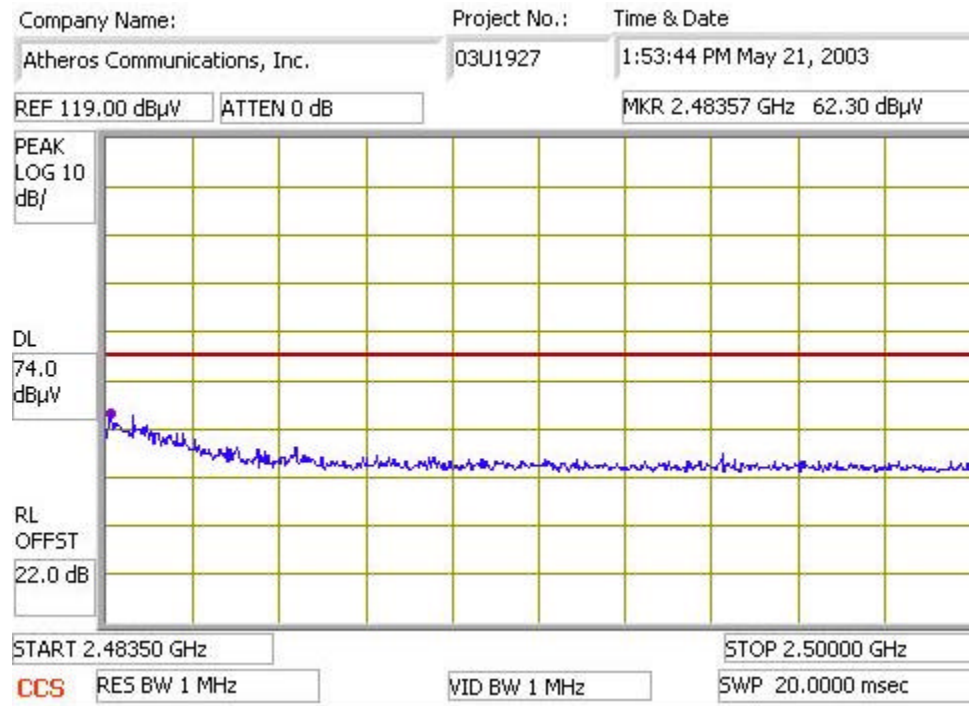
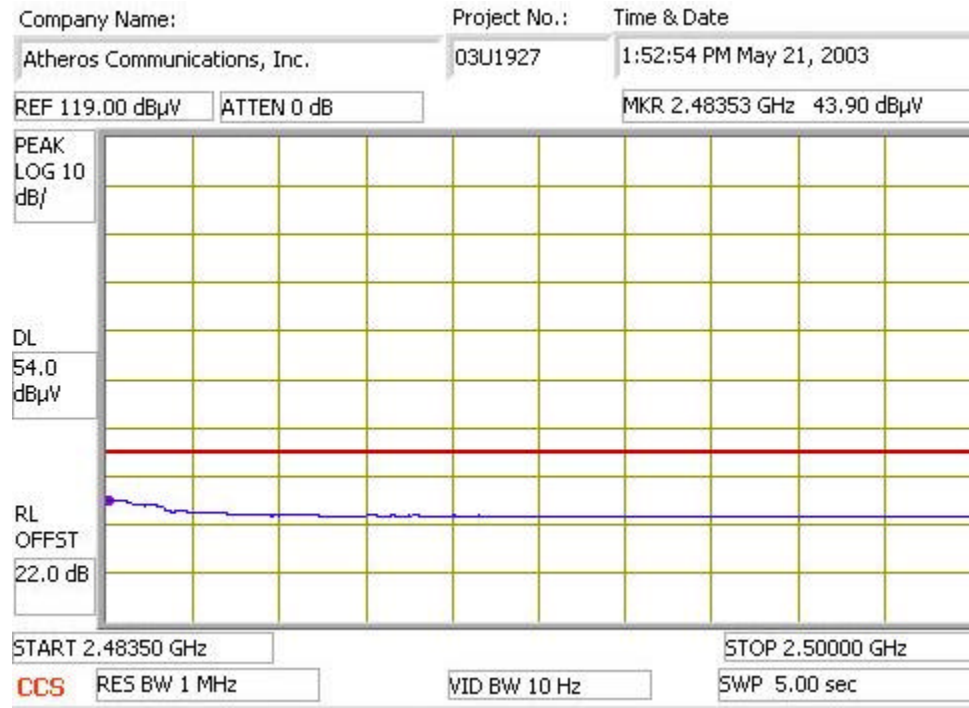
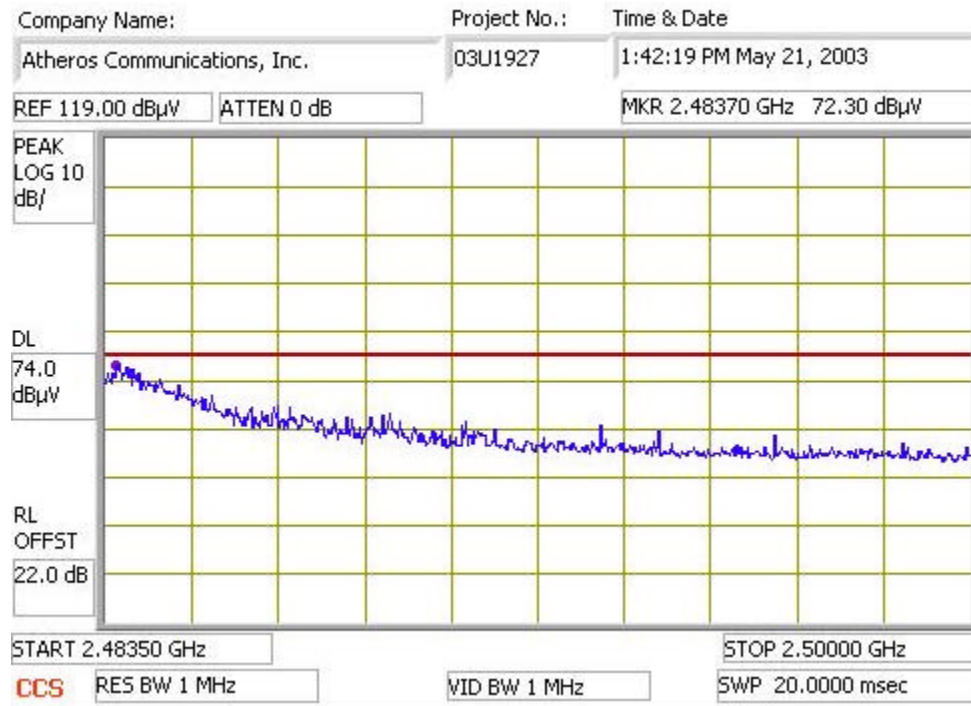


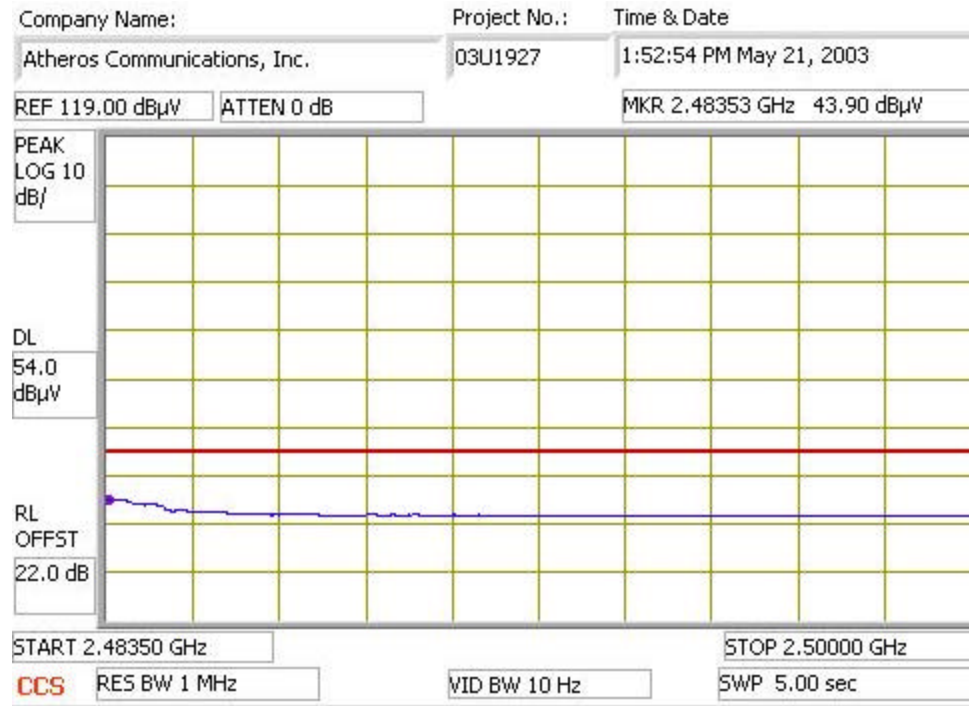
RESTRICTED BANDEDGE (b MODE, HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (b MODE, HIGH CHANNEL, VERTICAL)

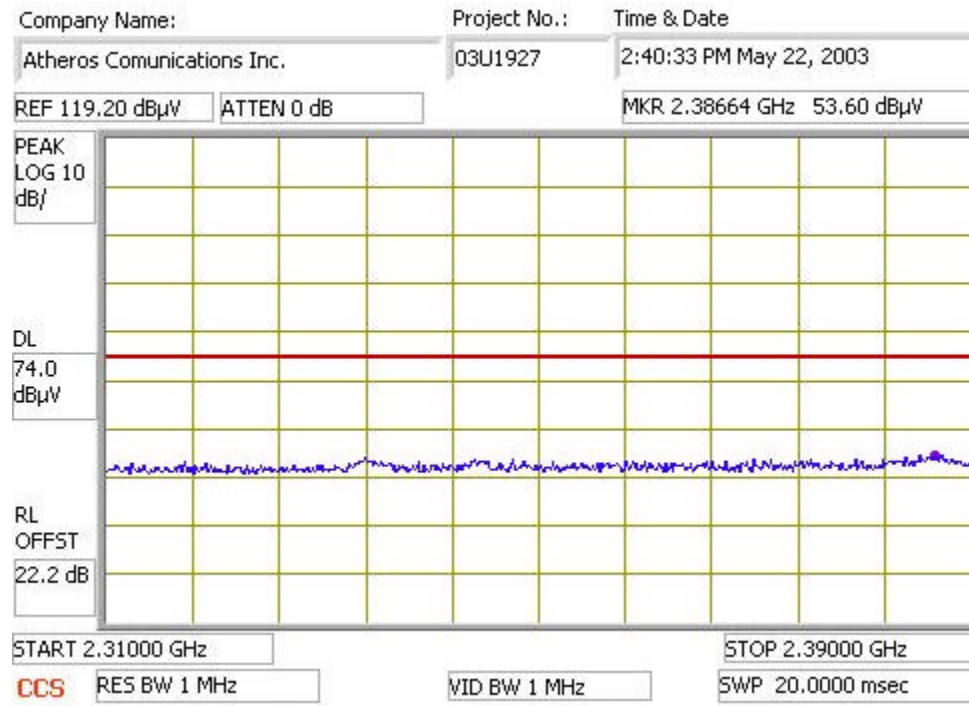




HARMONICS AND SPURIOUS EMISSIONS (b MODE)

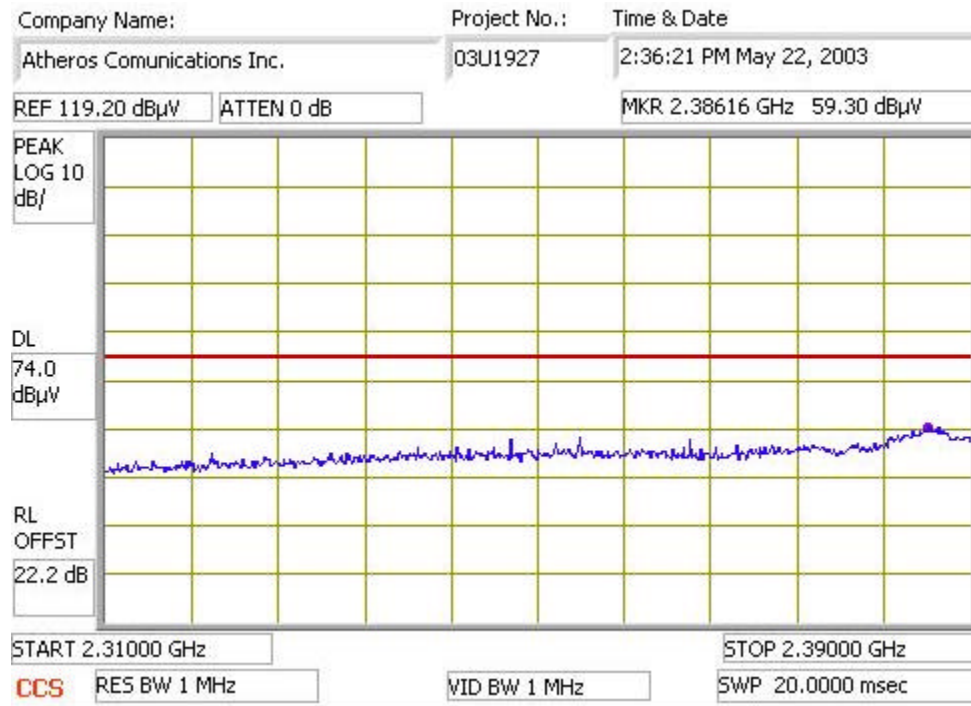
06/07/03 High Frequency Measurement Compliance Certification Services, Morgan Hill Open Field Site																
Test Engr:		Yan Zheng														
Project #:		03U2005														
Company:		Atheros														
EUT Descrip.:		802.11b														
EUT M/N:		TB74-105														
Test Target:																
Mode Oper:		Transmitt														
Test Equipment:																
EMCO Horn 1-18GHz				Pre-amplifier 1-26GHz				Spectrum Analyzer				Horn > 18GHz				
T72; S/N: 6739 @1m				T87 Miteq 924342				HP 8566B Analyzer				T117; ARA 18-26GHz; S/N:1013				
Hi Frequency Cables ☐ (2 ft) ☐ (2 ~ 3 ft) ☐ (4 ~ 6 ft) ☒ (12 ft)																
Peak Measurements: 1 MHz Resolution Bandwidth 1MHz Video Bandwidth Average Measurements: 1 MHz Resolution Bandwidth 10Hz Video Bandwidth																
f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes	
Channel 11 (2462MHz)																
Harmonic																
4.924	9.8	50.9	38.8	34.1	3.8	-44.8	0.0	1.0	45.0	32.9	74.0	54.0	-29.0	-21.1	V	
7.386	9.8	56.1	44.8	37.1	4.9	-44.5	0.0	1.0	54.6	43.3	74.0	54.0	-19.4	-10.7	V	
7.386	9.8	61.3	49.5	37.1	4.9	-44.5	0.0	1.0	59.8	48.0	74.0	54.0	-14.2	-6.0	H	
4.924	9.8	44.6	36.7	34.1	3.8	-44.8	0.0	1.0	38.7	30.8	74.0	54.0	-35.3	-23.2	H	
Channel 6 (2437MHz)																
4.874	9.8	52.9	40.4	34.1	3.8	-44.7	0.0	1.0	47.0	34.5	74.0	54.0	-27.0	-19.5	V	
7.311	9.8	54.8	41.5	37.0	4.8	-44.5	0.0	1.0	53.1	39.8	74.0	54.0	-20.9	-14.2	V	
7.311	9.8	56.2	45.8	37.0	4.8	-44.5	0.0	1.0	54.5	44.1	74.0	54.0	-19.5	-9.9	H	
4.874	9.8	53.0	44.8	34.1	3.8	-44.7	0.0	1.0	47.1	38.9	74.0	54.0	-26.9	-15.1	H	
Channel 1 (2412MHz)																
4.824	9.8	50.3	36.7	34.0	3.7	-44.7	0.0	1.0	44.4	30.8	74.0	54.0	-29.6	-23.2	V	
7.286	9.8	54.8	41.5	37.0	4.8	-44.5	0.0	1.0	53.0	39.7	74.0	54.0	-21.0	-14.3	V	
7.286	9.8	61.0	49.3	37.0	4.8	-44.5	0.0	1.0	59.2	47.5	74.0	54.0	-14.8	-6.5	H	
4.824	9.8	54.4	46.0	34.0	3.7	-44.7	0.0	1.0	48.5	40.1	74.0	54.0	-25.5	-13.9	H	
f	Measurement Frequency					Amp	Preamp Gain					Avg Lim	Average Field Strength Limit			
Dist	Distance to Antenna					D Corr	Distance Correct to 3 meters					Pk Lim	Peak Field Strength Limit			
Read	Analyzer Reading					Avg	Average Field Strength @ 3 m					Avg Mar	Margin vs. Average Limit			
AF	Antenna Factor					Peak	Calculated Peak Field Strength					Pk Mar	Margin vs. Peak Limit			
CL	Cable Loss					HPF	High Pass Filter									

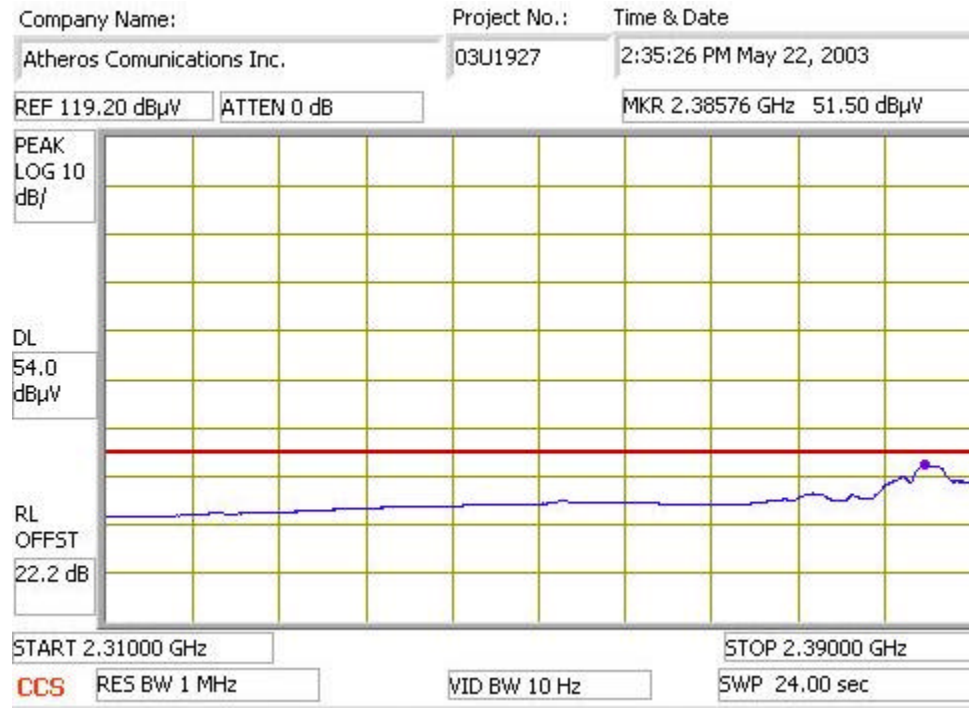
RESTRICTED BANDEDGE (q NORMAL MODE, LOW CHANNEL, HORIZONTAL)



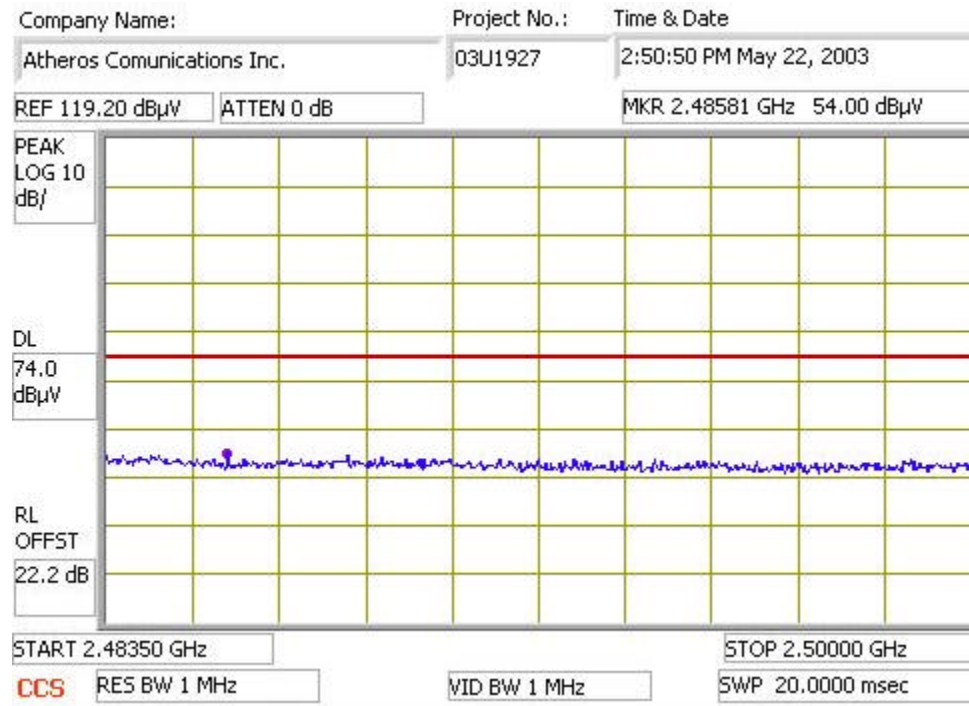


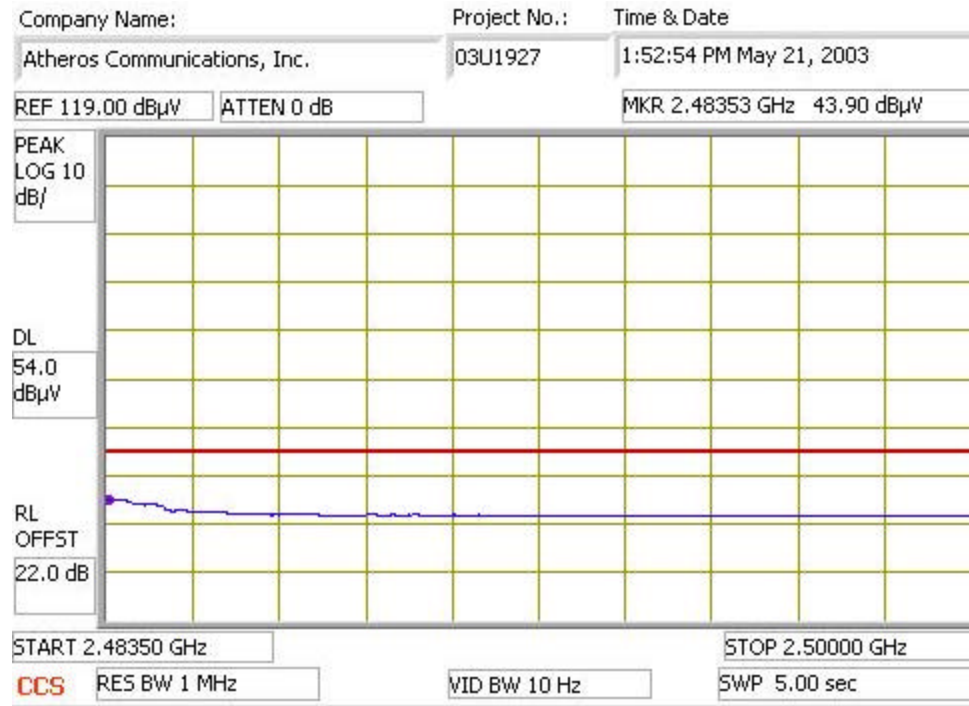
RESTRICTED BANDEDGE (a NORMAL MODE, LOW CHANNEL, VERTICAL)



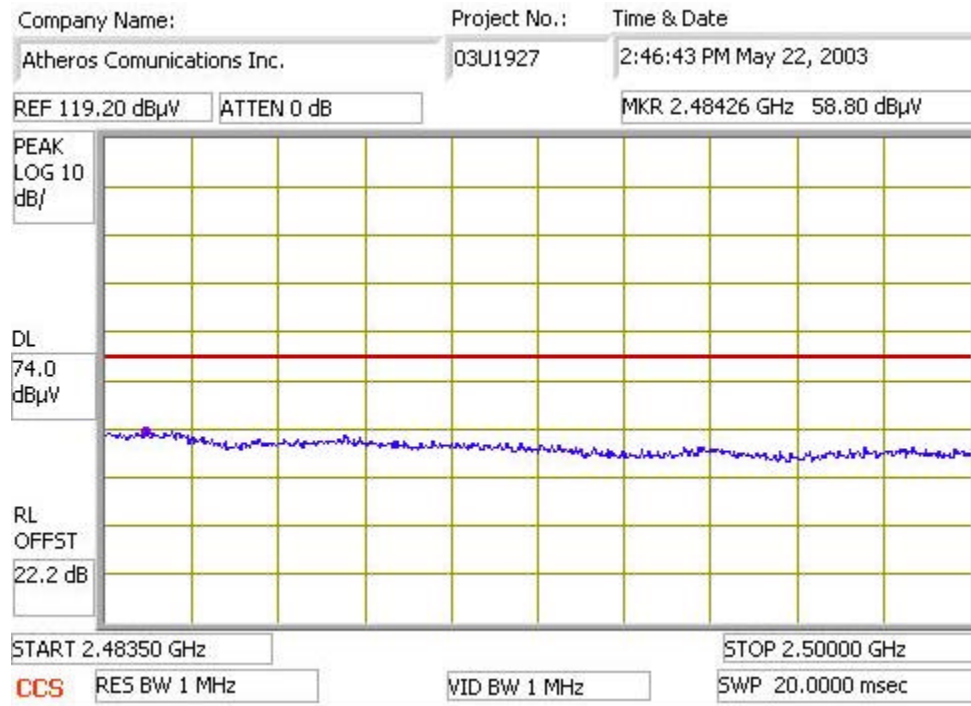


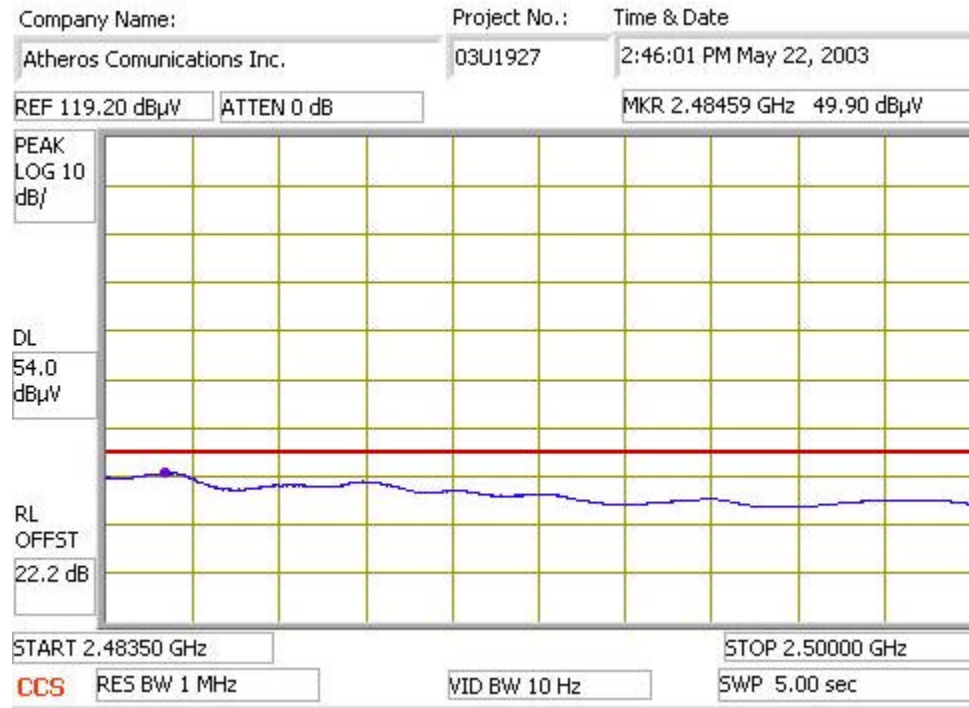
RESTRICTED BANDEDGE (q NORMAL MODE, HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (a NORMAL MODE, HIGH CHANNEL, VERTICAL)

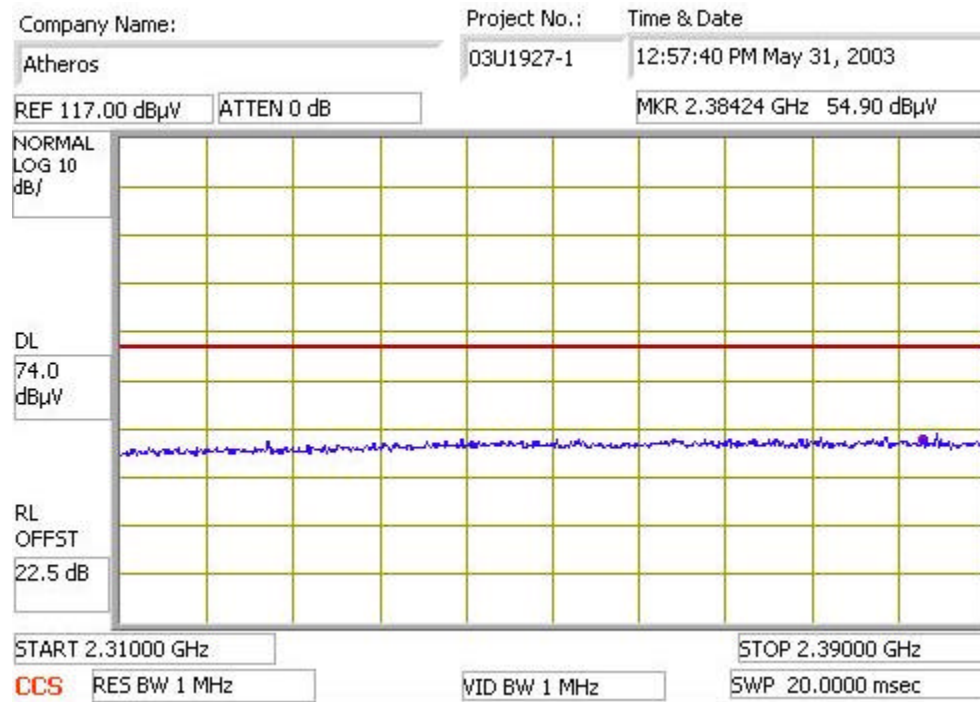




HARMONICS AND SPURIOUS EMISSIONS (q NORMAL MODE)

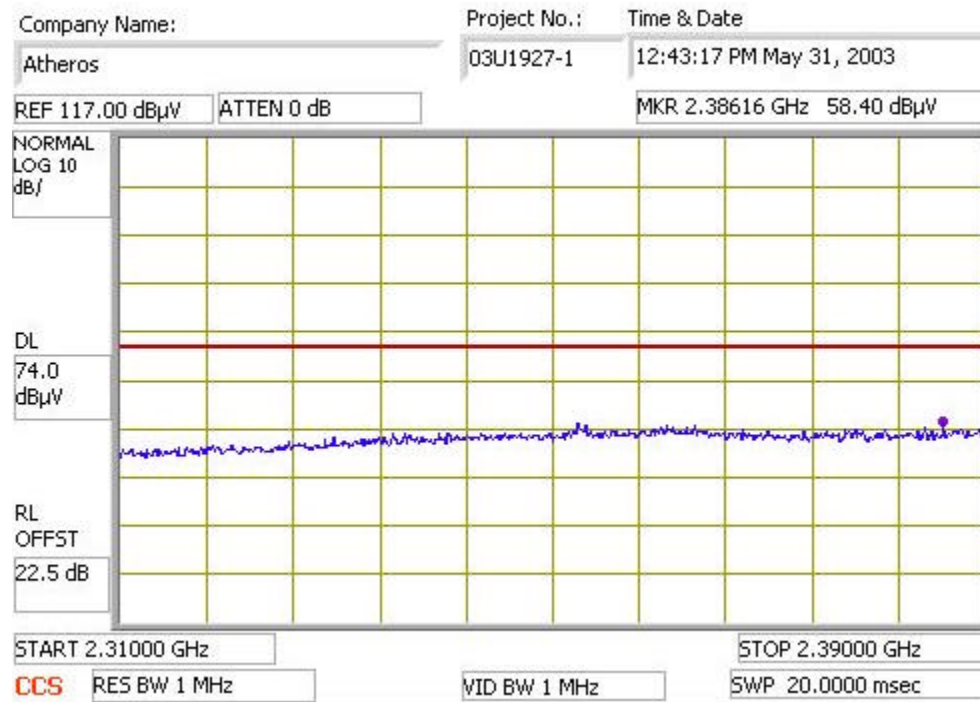
06/07/03 High Frequency Measurement Compliance Certification Services, Morgan Hill Open Field Site																
Test Engr: Yan Zheng Project #: 03U2005 Company: Atheros EUT Descrip.: 802.11g Normal EUT M/N: TB74-105 Test Target: Mode Oper: Transmitt																
Test Equipment:																
EMCO Horn 1-18GHz T72; S/N: 6739 @1m				Pre-amplifier 1-26GHz T87 Miteq 924342				Spectrum Analyzer HP 8566B Analyzer				Horn > 18GHz T117; ARA 18-26GHz; S/N:1013				
Hi Frequency Cables ☐ (2 ft) ☐ (2 ~ 3 ft) ☐ (4 ~ 6 ft) ☒ (12 ft) Peak Measurements: 1 MHz Resolution Bandwidth 1MHz Video Bandwidth Average Measurements: 1 MHz Resolution Bandwidth 10Hz Video Bandwidth																
f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes	
Channel 1 (2412MHz)																
4.824	9.8	46.5	34.8	34.0	3.7	-44.7	0.0	1.0	40.6	28.9	74.0	54.0	-33.4	-25.1	V	
4.824	9.8	49.8	37.3	34.0	3.7	-44.7	0.0	1.0	43.9	31.4	74.0	54.0	-30.1	-22.6	H	
Channel 6 (2437MHz)																
4.874	9.8	44.6	32.5	34.1	3.8	-44.7	0.0	1.0	38.7	26.6	74.0	54.0	-35.3	-27.4	V	
4.874	9.8	46.1	34.9	34.1	3.8	-44.7	0.0	1.0	40.2	29.0	74.0	54.0	-33.8	-25.0	H	
7.311	9.8	59.5	45.7	37.0	4.8	-44.5	0.0	1.0	57.8	44.0	74.0	54.0	-16.2	-10.0	V	
7.311	9.8	53.2	38.9	37.0	4.8	-44.5	0.0	1.0	51.5	37.2	74.0	54.0	-22.5	-16.8	H	
Channel 11 (2462MHz)																
4.924	9.8	42.8	31.6	34.1	3.8	-44.8	0.0	1.0	36.9	25.7	74.0	54.0	-37.1	-28.3	V	
4.924	9.8	45.4	34.1	34.1	3.8	-44.8	0.0	1.0	39.5	28.2	74.0	54.0	-34.5	-25.8	H	
7.386	9.8	57.9	44.0	37.1	4.9	-44.5	0.0	1.0	56.4	42.5	74.0	54.0	-17.6	-11.5	V	
7.386	9.8	51.2	39.3	37.1	4.9	-44.5	0.0	1.0	49.7	37.8	74.0	54.0	-24.3	-16.2	H	
f	Measurement Frequency					Amp	Preamp Gain					Avg Lim	Average Field Strength Limit			
Dist	Distance to Antenna					D Corr	Distance Correct to 3 meters					Pk Lim	Peak Field Strength Limit			
Read	Analyzer Reading					Avg	Average Field Strength @ 3 m					Avg Mar	Margin vs. Average Limit			
AF	Antenna Factor					Peak	Calculated Peak Field Strength					Pk Mar	Margin vs. Peak Limit			
CL	Cable Loss					HPF	High Pass Filter									

LOW RESTRICTED BANDEGE (g TURBO MODE, HORIZONTAL)



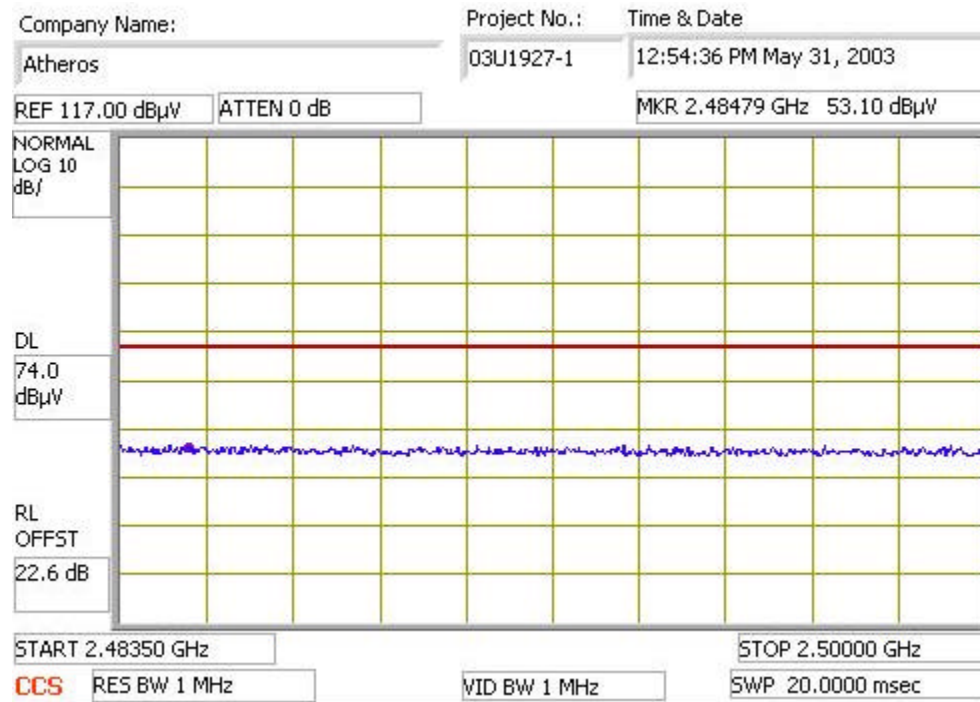


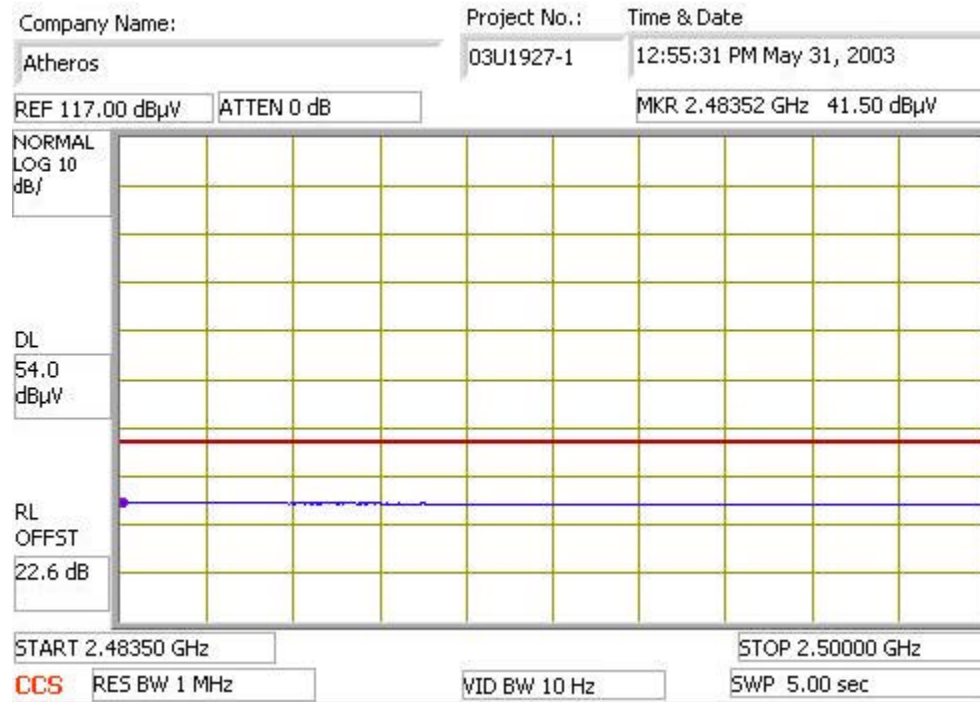
LOW RESTRICTED BANDEGE (g TURBO MODE, VERTICAL)





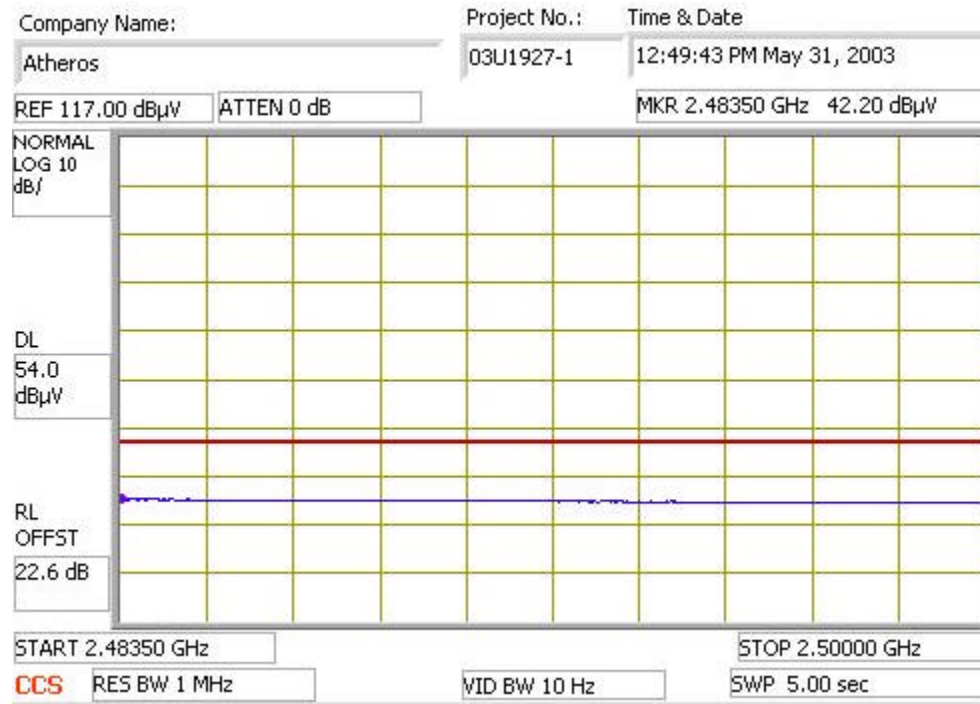
HIGH RESTRICTED BANDEDGE (g TURBO MODE, HORIZONTAL)





HIGH RESTRICTED BANDEDGE (g TURBO MODE, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS (g TURBO MODE)

06/02/03 High Frequency Measurement Compliance Certification Services, Morgan Hill Open Field Site																							
Test Engr: chin Pang Project #: 03U1927-1 Company: Atheros EUT Descrip.: 802.11b/g Cardbus EUT M/N: CB31 Test Target: FCC 15.247 Mode Oper: Tx																							
Test Equipment:																							
EMCO Horn 1-18GHz		Pre-amplifier 1-26GHz		Spectrum Analyzer		Horn >18GHz																	
T72; S/N: 6739 @3m		T87 Miteq 924342		HP 8566B Analyzer																			
Hi Frequency Cables ☐ (2 ft) ☒ (2 ~ 3 ft) ☐ (4 ~ 6 ft) ☒ (12 ft)								Peak Measurements: 1 MHz Resolution Bandwidth 1MHz Video Bandwidth								Average Measurements: 1 MHz Resolution Bandwidth 10Hz Video Bandwidth							
f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes								
4.860	9.8	58.6	43.5	33.3	4.0	-44.7	0.0	1.0	52.1	37.0	74.0	54.0	-21.9	-17.0	V								
4.860	9.8	56.7	43.4	33.3	4.0	-44.7	0.0	1.0	50.2	36.9	74.0	54.0	-23.8	-17.1	H								
7.311	9.8	58.7	41.9	35.8	5.2	-44.5	0.0	1.0	56.1	39.3	74.0	54.0	-17.9	-14.7	V								
7.311	9.8	55.8	40.2	35.8	5.2	-44.5	0.0	1.0	53.2	37.6	74.0	54.0	-20.8	-16.4	H								
no emissions were detected above 3rd harmonic																							
f	Measurement Frequency					Amp	Preamp Gain					Avg Lim	Average Field Strength Limit										
Dist	Distance to Antenna					D Corr	Distance Correct to 3 meters					Pk Lim	Peak Field Strength Limit										
Read	Analyzer Reading					Avg	Average Field Strength @ 3 m					Avg Mar	Margin vs. Average Limit										
AF	Antenna Factor					Peak	Calculated Peak Field Strength					Pk Mar	Margin vs. Peak Limit										
CL	Cable Loss					HPF	High Pass Filter																

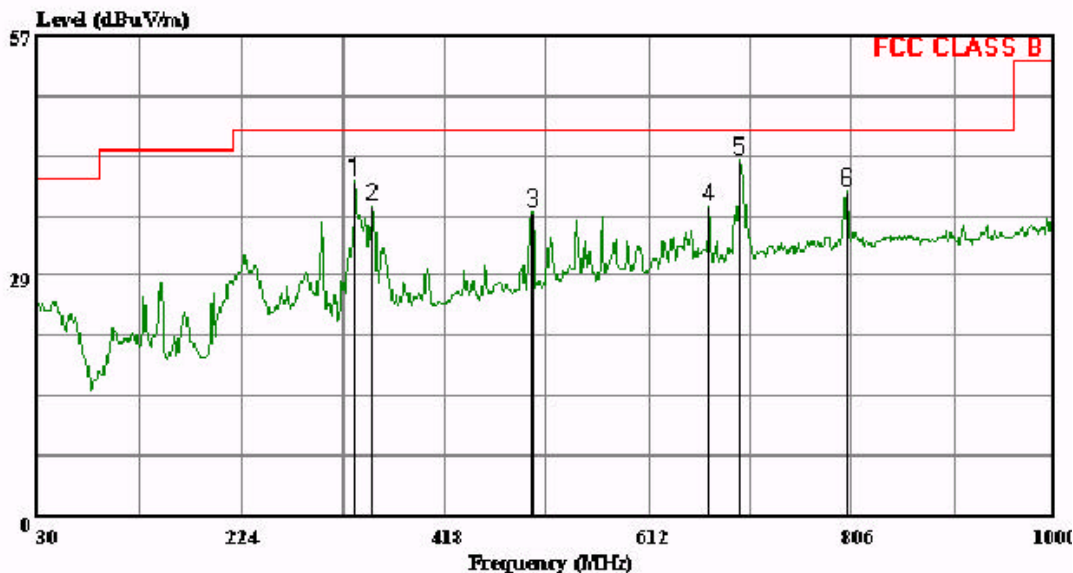
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)



561F Monterey Road
Morgan Hill, CA 95037, U.S.A.
Tel: (408) 463-0885
Fax: (408) 463-0888

Data#: 4 File#: SpurLow.EMI

Date: 06-03-2003 Time: 22:44:0



(Audix ATC)

Trace: 3

Ref Trace:

Condition: FCC CLASS B 3m CHAMBER 030306 1185 VERTICAL
Company : ATHEROS COMMUNICATIONS, INC.
EUT Description : 802.11a/b/g Cardbus
Model Number : CB32
Test Configuration: EUT plugin the Laptop
Test Target : FCC CLASS-B
Mode of Operation: Tx Worst case
Project No : 03U2005-1
 : 30MHz-1GHz Vertical Antenna

Page: 1

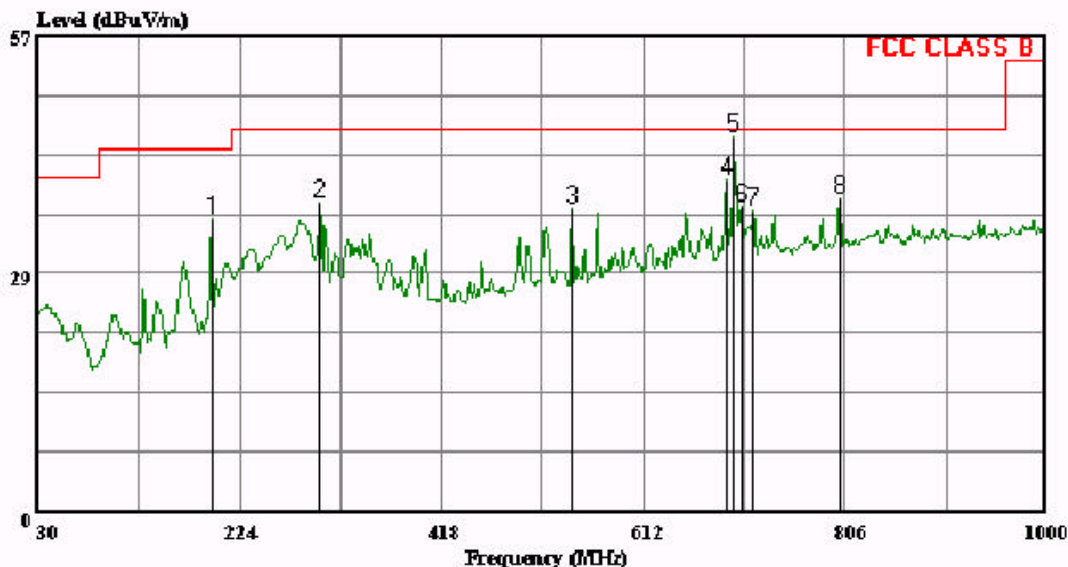
	Read Freq	Probe Level	Probe Factor	Cable Loss	Preamp Factor	Level	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	332.640	24.94	12.91	1.87	0.00	39.72	46.00	-6.28	Peak
2	349.130	21.67	13.31	1.87	0.00	36.85	46.00	-9.15	Peak
3	502.390	17.14	16.57	2.31	0.00	36.02	46.00	-9.98	Peak
4	669.230	15.65	18.30	2.71	0.00	36.66	46.00	-9.34	Peak
5	698.330	20.89	18.54	2.78	0.00	42.21	46.00	-3.79	Peak
6	800.180	15.78	19.80	3.01	0.00	38.59	46.00	-7.41	Peak



561F Monterey Road
Morgan Hill, CA 95037, U.S.A.
Tel: (408) 463-0885
Fax: (408) 463-0888

Data#: 2 File#: SpurLow.EMI

Date: 06-03-2003 Time: 22:36:38



(Auxiliary ATC)

Trace: 1

Ref Trace:

Condition: FCC CLASS B 3m CHAMBER 030306 1185 HORIZONTAL
Company : ATHEROS COMMUNICATIONS, INC.
EUT Description : 802.11a/b/g Cardbus
Model Number : CB32
Test Configuration: EUT plugin the Laptop
Test Target : FCC CLASS-B
Mode of Operation: Tx Worst case
Project No : 03U2005-1
 : 30MHz-1GHz Horizontal Antenna

Page: 1

	Read Freq	Probe Level	Probe Factor	Cable Loss	Preamp Factor	Level	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	196.840	24.48	9.11	1.36	0.00	34.95	43.50	-8.55	Peak
2	300.630	23.31	12.06	1.71	0.00	37.08	46.00	-8.92	Peak
3	543.130	16.74	17.06	2.39	0.00	36.19	46.00	-9.81	Peak
4	691.540	18.42	18.48	2.80	0.00	39.70	46.00	-6.30	Peak
5	698.330	23.47	18.54	2.78	0.00	44.79	46.00	-1.21	Peak
6	706.090	15.12	18.64	2.75	0.00	36.51	46.00	-9.49	Peak
7	717.730	14.45	18.79	2.80	0.00	36.04	46.00	-9.96	Peak
8	800.180	14.67	19.80	3.01	0.00	37.48	46.00	-8.52	Peak

7.6. POWERLINE CONDUCTED EMISSIONS

LIMIT

§15.207 (a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal.

The lower limit applies at the boundary between the frequency ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

The resolution bandwidth is set to 9 kHz for both peak detection and quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

No non-compliance noted:

6 WORST EMISSIONS

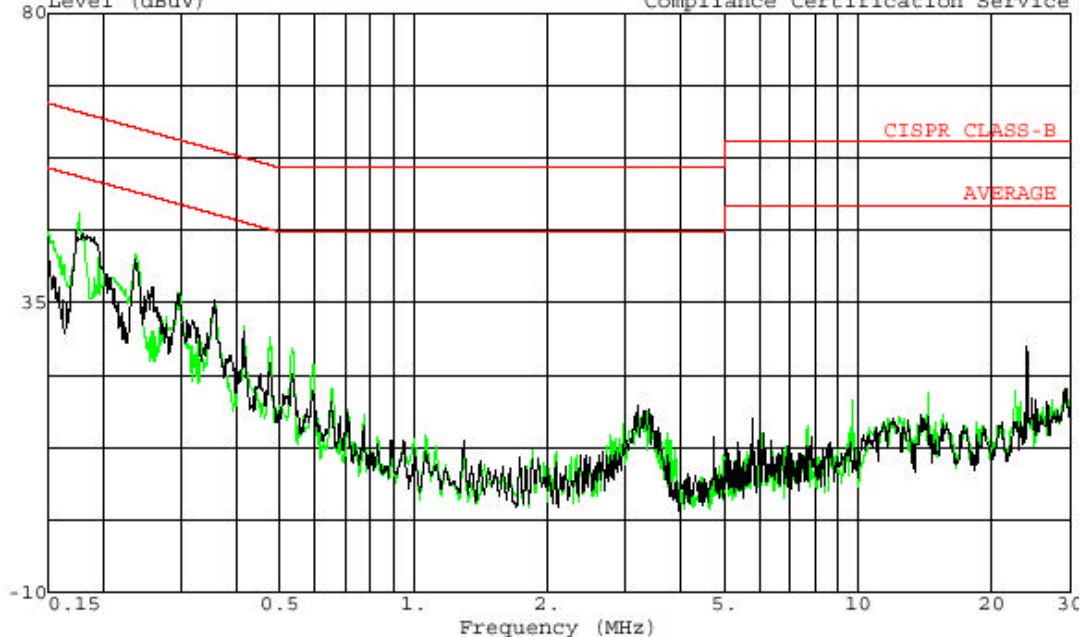
CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	EN_B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.18	48.86	--	--	0.00	65.23	55.23	-16.37	-6.37	L1
24.01	27.68	--	--	0.00	60.00	50.00	-32.32	-22.32	L1
3.35	18.22	--	--	0.00	56.00	46.00	-37.78	-27.78	L1
0.17	46.12	--	--	0.00	65.31	55.31	-19.19	-9.19	L2
24.01	28.42	--	--	0.00	60.00	50.00	-31.58	-21.58	L2
3.19	19.14	--	--	0.00	56.00	46.00	-36.86	-26.86	L2
6 Worst Data									

RESULTS



561F Monterey Road,
San Jose, CA 95037
Tel: (408) 463-0885
Fax: (408) 463-0888

Data#: 7 File#: LCTEST.EMI Date: 06-03-2003 Time: 21:48:
Level (dBuV) Compliance Certification Service

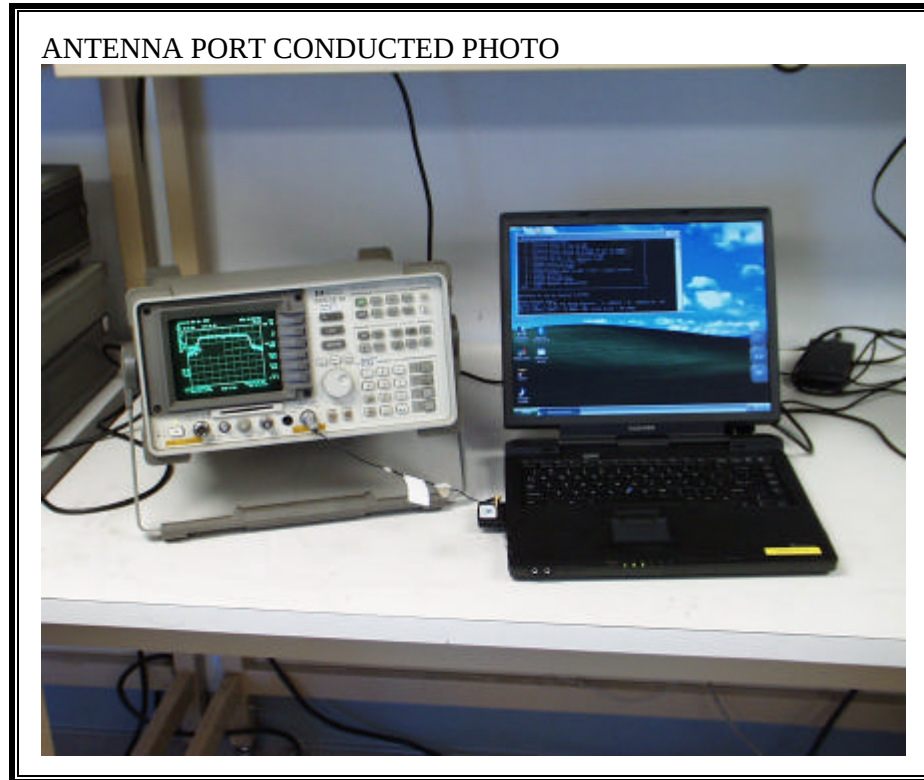


Trace: 3
Project # : 03U2005-1
Test Engineer : Thanh Nguyen
Company : Atheros Communications, Inc.
EUT : 802.11a/b/g Card Bus
Model : CB32
Configuration : EUT
Target of Test: FCC 15.247, Class B
: 115Vac, 60Hz
: Peak , L1: (Green), L2 (Black)

Ref Trace:

8. SETUP PHOTOS

ANTENNA PORT CONDUCTED RF MEASUREMENT SETUP



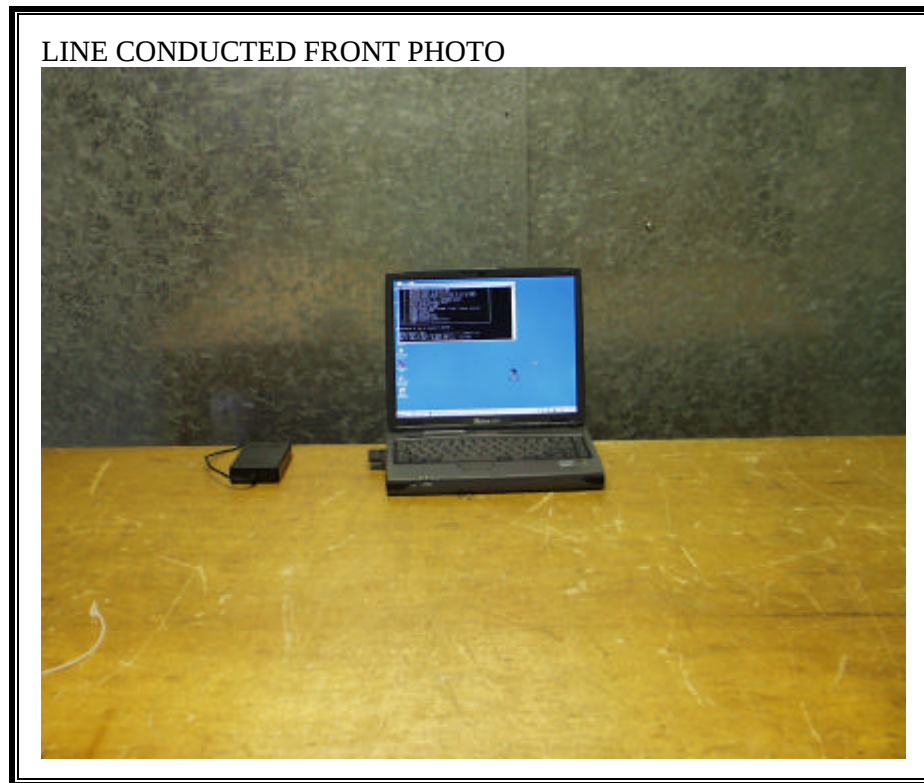
RADIATED RF MEASUREMENT SETUP



RADIATED BACK PHOTO



POWERLINE CONDUCTED EMISSIONS MEASUREMENT SETUP



LINE CONDUCTED BACK PHOTO



END OF REPORT