ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT

OF

2.4GHz Direct Sequence Spread Spectrum USB Wireless LAN Module

MODEL No.: XI726 mini USB module

BRAND NAME: Quanta

FCC ID: HFSEFSERIES

REPORT NO: 020005-R

ISSUE DATE: March 8, 2002

Prepared for

Quanta Computer Inc.
No. 188, Wen Hwa 2nd Rd., Kuei shan Hsiang,
Tao Yuan Shien, Taiwan, R. O. C.

Prepared by

C&C LABORATORY, CO., LTD.
#B1, 1st Fl., Universal Center,
No. 183, Sec. 1, Tatung Rd., Hsi Chih,
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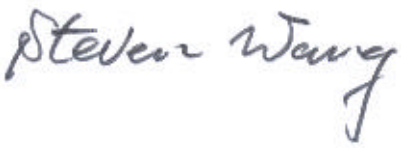
1. VERIFICATION OF COMPLIANCE

COMOANY NAME:	Quanta Computer Inc.
CONTACT PERSON:	Joyce Kuo / R & D Dept. 5 Design Section 3 EMI Specialist
TELEPHONE NO.:	+886-3-3272345 # 5714
EUT DESCRIPTION:	2.4GHz Direct Sequence Spread Spectrum USB Wireless LAN Module
MODEL No.:	XI726 mini USB module
BRAND NAME:	Quanta
DATE TESTED:	January 16, 2002 ~ February 18, 2002

LIMIT APPLY TO: FCC PART 15 SECTION 15.247	
TECHNICAL LIMITS	**TEST RESULT**
Minimum 6dB Bandwidth@ > 500kHz	Passed
RF Power Output < 1 Watt	Passed
Out of Band Measurements	Passed
DSSS Power Density < 8dBm @ 3kHz bandwidth	Passed
Processing Gain of a DSSS > 10dB	Passed
LIMIT APPLY TO: FCC PART 15 SECTION 15.205/SECTION 15.209	
Restricted Band of Operation	Passed
LIMIT APPLY TO: FCC PART 15 SECTION 15.209 (15.109)	
Radiated Emission Limits	Passed
LIMIT APPLY TO: FCC PART 15 SECTION 15.207	
AC Line Conducted Emission	Passed
The above equipment was tested by C&C Laboratory Co., Ltd. for compliance with the requirements set forth in CFR 47 PART 15 SUBPART C. This said equipment in the configuration described in this report show that maximum emission levels emanating from equipment are within the compliance requirements.	

Approved By



STEVEN WANG / RF DEPT. VICE MANAGER
C&C LABROTARY CO., LTD.

2. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

Product	2.4GHz Direct Sequence Spread Spectrum USB Wireless LAN Module
Model Name	XI726 mini USB module
Brand Name	Quanta
Power Supply	3.3VDC From USB Wireless Adapter of Host Equipment
Frequency Range	2.412GHz – 2.462GHz
Transmit Power	15dBm
Modulation Technique	DSSS (CCK; DQPSK; DBPSK)
Radio Technique	Direct Sequence spread Spectrum
Number of Channels	11
Operating Mode	Point-to-Point
Air data Rate	1/2/5.5/11Mbps
Antenna Type	PIFA Metal Antenna
USB Wireless Adapter	Shielded, 1.8m, with a core

3. TEST LOCATION

All emissions tests were performed at:

C&C Laboratory, Co., Ltd.
No. 81-1, 210 Lane, Pa-de 2nd Road, Lu-Chu Hsiang, Taoyuan, Taiwan, R.O.C.

There are four 3/10m open area test sites and three line conducted labs for final test. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 1992 and CISPR 22/EN 55022 requirements.

Radiated emissions from the digital portion of the EUT were performed on site 3, one of the 10 meter sites.

4. DESCRIPTION OF TEST MODES

The EUT (mini USB Wireless LAN Module) with a standard USB adapter that connected into a notebook computer has been tested under operating condition. Software used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Channel 1、6 and 11 with 11Mbps highest data rate are chosen for testing.

5. SUPPORT EQUIPMENT

Device Type	Manufacturer	Model Number	Serial No.	FCC ID / DoC	Description
* USB Wireless LAN Module	Quanta Computer Inc.	XI726 mini USB module	N/A	HFSEFSERIES	2.4GHz Direct Sequence Spread Spectrum USB Wireless LAN Module

Remark: the " * " means is Equipment Under Test.

6. TEST PROCEDURES AND TEST RESULTS

Radiated Emissions (General Requirements)

Test Requirement: 15.205

Measurement Equipment Used:

Open Area Test Site # 3					
EQUIPMENT TYPE	**MFR**	**MODEL NO.**	**SERIAL NO.**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	ADVANTEST	R3261A	N/A	03/16/2001	03/15/2002
EMI Test Receiver	R&S	ESVS20	838804/004	01/05/2002	01/04/2003
Pre-Amplifier	HP	8447D	2944A09173	02/19/2001	02/18/2002
Bilog Antenna	CHASE	CBL6112B	SITE2	07/28/2001	07/27/2002
Turn Table	EMCO	2081-1.21	9709-1885	N.C.R	N.C.R
Antenna Tower	EMCO	2075-2	9707-2060	N.C.R	N.C.R
Controller	EMCO	2090	9709-1256	N.C.R	N.C.R
RF Switch	ANRITSU	MP59B	M53867	N.C.R	N.C.R
Site NSA	C&C	N/A	N/A	11/17/2001	11/16/2002
Horn Antenna	EMCO	3115	5761	02/24/2001	02/23/2002
Horn Antenna	EMCO	3116	2487	08/25/2001	08/24/2002
High Pass Filter	HP	84300-80038	R9812	08/01/2001	07/31/2002
Pre-Amplifier	HP	8449B	3008A00965	10/11/2001	10/10/2002

Test Set-Up:

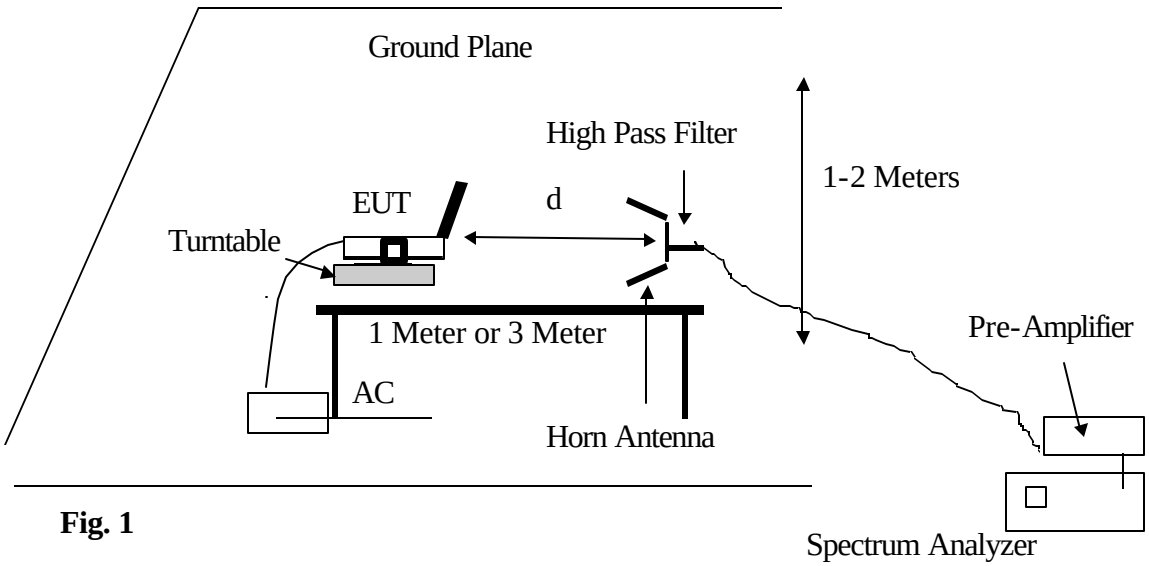


Fig. 1

Test Procedures

1. The EUT was placed on a wooden table on the outdoor ground plane. The search antenna was placed 3 or 1meter from the EUT. The EUT antenna was mounted vertically as per normal installation.
2. The turntable was slowly rotated to locate the direction of maximum emission at each emission falling in the restricted bands of 15.205.
3. Once maximum direction was determined, the search antenna was raised and lowered in both vertical and horizontal polarizations. The maximum readings so obtained are recorded in the data listed below.

Test Results: Refer to attached tabular data sheets.

15.205 Radiated Emissions

Operation Mode: Transmitting Mode
Fundamental Frequency: 2412.20MHz (CH 1)
Temperature : 20 ℃
Humidity : 66 %

Test Date : January 18, 2002
Test By: Markba Lee
Pol: Vertical

Freq. (MHz)	Reading (dBuV)	AF)	Closs (dB)	Pre-amp (dB)	Filter dB	Dist dB	Level (dBuV/m	Limit FCC_B	n (dB)	Mark (P/Q/A)	Pol (H/V)	Az (Deg)	Height (Meter)
2037.7	61.25	25.92	2.03	37.59	1	-9.5	43.11	74.00	-30.89	P	1mV	30	1.2
2037.7	51.87	25.92	2.03	37.59	1	-9.5	33.73	54.00	-20.27	A	1mV	30	1.2
4075.4*	62.30	29.70	2.79	36.69	1	-9.5	49.60	74.00	-24.40	P	1mV	30	1.2
4075.4*	53.87	29.70	2.79	36.69	1	-9.5	41.17	54.00	-12.83	A	1mV	30	1.2
4824.4*	57.26	31.43	3.45	37.06	1	-9.5	46.58	74.00	-27.42	P	1mV	30	1.2
4824.4*	46.89	31.43	3.45	37.06	1	-9.5	36.21	54.00	-17.79	A	1mV	30	1.2
7236.4	58.21	35.54	4.55	37.39	1	-9.5	52.41	74.00	-21.59	P	1mV	30	1.2
7236.4	48.63	35.54	4.55	37.39	1	-9.5	42.83	54.00	-11.17	A	1mV	30	1.2
9648.8	---	---	---	---	---	---	---	74.00	---	---	---	---	---
9648.8	---	---	---	---	---	---	---	54.00	---	---	---	---	---
12060.8*	---	---	---	---	---	---	---	74.00	---	---	---	---	---
12060.8*	---	---	---	---	---	---	---	54.00	---	---	---	---	---
14473.0*	---	---	---	---	---	---	---	74.00	---	---	---	---	---
14473.0*	---	---	---	---	---	---	---	54.00	---	---	---	---	---
16885.2	---	---	---	---	---	---	---	74.00	---	---	---	---	---
16885.2	---	---	---	---	---	---	---	54.00	---	---	---	---	---
19297.4*	---	---	---	---	---	---	---	74.00	---	---	---	---	---
19297.4*	---	---	---	---	---	---	---	54.00	---	---	---	---	---
21709.6	---	---	---	---	---	---	---	74.00	---	---	---	---	---
21709.6	---	---	---	---	---	---	---	54.00	---	---	---	---	---
24121.8	---	---	---	---	---	---	---	74.00	---	---	---	---	---
24121.8	---	---	---	---	---	---	---	54.00	---	---	---	---	---

Note :

1. Measurement was up to 10th harmonic, Remark "---" means that the emissions level is too low to be measured.
2. AF: Antenna Factor, Closs: Cable Loss, Pre-Amp: Preamp gain, Filter: High Pass Filter

   Insertion Loss (3.5GHz) Dist: Correction to extra plate reading to 3m specification distance 1M

   measurement distance: -9.5dB
3. Analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
4. Remark "*" means that Restricted band.

Operation Mode: Transmitting Mode
Fundamental Frequency: 2412.20MHz (CH 1)
Temperature : 20 ℃
Humidity : 66 %

Test Date : January 18, 2002
Test By: Markba Lee
Pol: Horizontal

Freq. (MHz)	Reading (dBuV)	AF ( )	Closs (dB)	Pre-amp (dB)	Filter dB	Dist dB	Level (dBuV/m	Limit FCC_B	n (dB)	Mark (P/Q/A)	Pol (H/V)	Az (Deg)	Height (Meter)
2037.7	66.16	25.92	2.03	37.59	1	-9.5	48.02	74.00	-25.98	P	1mH	30	1.2
2037.7	56.71	25.97	2.03	37.59	1	-9.5	38.62	54.00	-15.38	A	1mH	30	1.2
4075.4*	64.88	29.70	2.79	36.69	1	-9.5	52.18	74.00	-21.82	P	1mH	30	1.2
4075.4*	53.71	29.70	2.79	36.69	1	-9.5	41.01	54.00	-12.99	A	1mH	30	1.2
4824.0*	56.63	31.42	3.45	37.05	1	-9.5	45.95	74.00	-28.05	P	1mH	30	1.2
4824.0*	46.09	31.42	3.45	37.05	1	-9.5	35.41	54.00	-18.59	A	1mH	30	1.2
7234.7*	58.13	35.53	4.56	37.39	1	-9.5	52.33	74.00	-21.67	P	1mH	30	1.2
7234.7*	47.71	35.53	4.56	37.39	1	-9.5	41.91	54.00	-12.09	A	1mH	30	1.2
9646.7	---	---	---	---	---	---	---	74.00	---	---	---	---	---
9646.7	---	---	---	---	---	---	---	54.00	---	---	---	---	---
12058.7*	---	---	---	---	---	---	---	74.00	---	---	---	---	---
12058.7*	---	---	---	---	---	---	---	54.00	---	---	---	---	---
14470.7*	---	---	---	---	---	---	---	74.00	---	---	---	---	---
14470.7*	---	---	---	---	---	---	---	54.00	---	---	---	---	---
16882.7	---	---	---	---	---	---	---	74.00	---	---	---	---	---
16882.7	---	---	---	---	---	---	---	54.00	---	---	---	---	---
19294.7*	---	---	---	---	---	---	---	74.00	---	---	---	---	---
19294.7*	---	---	---	---	---	---	---	54.00	---	---	---	---	---
21706.7	---	---	---	---	---	---	---	74.00	---	---	---	---	---
21706.7	---	---	---	---	---	---	---	54.00	---	---	---	---	---
24118.7	---	---	---	---	---	---	---	74.00	---	---	---	---	---
24118.7	---	---	---	---	---	---	---	54.00	---	---	---	---	---

Note :

1. Measurement was up to 10th harmonic, Remark "---" means that the emissions level is too low to be measured.
2. AF: Antenna Factor, Closs: Cable Loss, Pre-Amp: Preamp gain, Filter: High Pass Filter Insertion Loss (3.5GHz) Dist: Correction to extra plate reading to 3m specification distance 1M measurement distance: -9.5dB
3. Analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
4. Remark "*" means that Restricted band.

Operation Mode:	Transmitting Mode	Test Date :	January 18, 2002
Fundamental Frequency:	2437.20MHz (CH 6)	Test By:	Markba Lee
Temperature :	20 ℃	Pol:	Vertical
Humidity :	66 %		

Freq. (MHz)	Reading (dBuV)	AF ( )	Closs (dB)	Pre-amp (dB)	Filter dB	Dist dB	Level (dBuV/m	Limit FCC_B	n (dB)	Mark (P/Q/A)	Pol (H/V)	Az (Deg)	Height (Meter)
2062.7	65.31	25.98	2.04	37.59	1	-9.5	47.24	74.00	-26.76	P	1mV	30	1.2
2062.7	56.12	25.98	2.04	37.59	1	-9.5	38.05	54.00	-15.95	A	1mV	30	1.2
4125.5*	63.79	29.82	2.83	36.71	1	-9.5	51.23	74.00	-22.77	P	1mV	30	1.2
4125.5*	52.51	29.82	2.83	36.71	1	-9.5	39.95	54.00	-14.05	A	1mV	30	1.2
4873.8*	58.18	31.53	3.49	37.08	1	-9.5	47.62	74.00	-26.38	P	1mV	30	1.2
4873.8*	48.49	31.53	3.49	37.08	1	-9.5	37.93	54.00	-16.07	A	1mV	30	1.2
7310.8*	60.05	35.63	4.53	37.40	1	-9.5	54.31	74.00	-19.69	P	1mV	30	1.2
7310.8*	51.07	35.63	4.53	37.40	1	-9.5	45.33	54.00	-8.67	A	1mV	30	1.2
9747.7	---	---	---	---	---	---	---	74.00	---	---	---	---	---
9747.7	---	---	---	---	---	---	---	54.00	---	---	---	---	---
12184.6*	---	---	---	---	---	---	---	74.00	---	---	---	---	---
12184.6*	---	---	---	---	---	---	---	54.00	---	---	---	---	---
14621.5	---	---	---	---	---	---	---	74.00	---	---	---	---	---
14621.5	---	---	---	---	---	---	---	54.00	---	---	---	---	---
17058.4	---	---	---	---	---	---	---	74.00	---	---	---	---	---
17058.4	---	---	---	---	---	---	---	54.00	---	---	---	---	---
19495.3*	---	---	---	---	---	---	---	74.00	---	---	---	---	---
19495.3*	---	---	---	---	---	---	---	54.00	---	---	---	---	---
21932.2	---	---	---	---	---	---	---	74.00	---	---	---	---	---
21932.2	---	---	---	---	---	---	---	54.00	---	---	---	---	---
24369.1	---	---	---	---	---	---	---	74.00	---	---	---	---	---
24369.1	---	---	---	---	---	---	---	54.00	---	---	---	---	---

Note :

1. Measurement was up to 10th harmonic, Remark "---" means that the emissions level is too low to be measured.
2. AF: Antenna Factor, Closs: Cable Loss, Pre-Amp: Preamp gain, Filter: High Pass Filter

   Insertion Loss (3.5GHz) Dist: Correction to extra plate reading to 3m specification distance 1M

   measurement distance: -9.5dB
3. Analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
4. Remark "*" means that Restricted band.

Operation Mode:	Transmitting Mode	Test Date :	January 18, 2002
Fundamental Frequency:	2437.20MHz (CH 6)	Test By:	Markba Lee
Temperature :	20 ℃	Pol:	Horizontal
Humidity :	66 %		

Freq. (MHz)	Reading (dBuV)	AF)	Closs (dB)	Pre-amp (dB)	Filter dB	Dist dB	Level (dBuV/m	Limit FCC_B	n (dB)	Mark (P/Q/A)	Pol (H/V)	Az (Deg)	Height (Meter)
2062.7	70.12	25.98	2.04	37.59	1	-9.5	52.05	74.00	-21.95	P	1mH	30	1.2
2062.7	59.82	25.98	2.04	37.59	1	-9.5	41.75	54.00	-12.25	A	1mH	30	1.2
4125.5*	62.53	29.82	2.83	36.71	1	-9.5	49.97	74.00	-24.03	P	1mH	30	1.2
4125.5*	53.10	29.82	2.83	36.71	1	-9.5	40.54	54.00	-13.46	A	1mH	30	1.2
4874.0*	56.47	31.53	3.49	37.08	1	-9.5	45.91	74.00	-28.09	P	1mH	30	1.2
4874.0*	46.20	31.53	3.49	37.08	1	-9.5	35.64	54.00	-18.36	A	1mH	30	1.2
7312.2*	56.63	35.64	4.53	37.40	1	-9.5	50.90	74.00	-23.10	P	1mH	30	1.2
7312.2*	47.64	35.64	4.53	37.40	1	-9.5	41.91	54.00	-12.09	A	1mH	30	1.2
9749.2	---	---	---	---	---	---	---	74.00	---	---	---	---	---
9749.2	---	---	---	---	---	---	---	54.00	---	---	---	---	---
12186.2*	---	---	---	---	---	---	---	74.00	---	---	---	---	---
12186.2*	---	---	---	---	---	---	---	54.00	---	---	---	---	---
14623.2	---	---	---	---	---	---	---	74.00	---	---	---	---	---
14623.2	---	---	---	---	---	---	---	54.00	---	---	---	---	---
17060.2	---	---	---	---	---	---	---	74.00	---	---	---	---	---
17060.2	---	---	---	---	---	---	---	54.00	---	---	---	---	---
19497.2*	---	---	---	---	---	---	---	74.00	---	---	---	---	---
19497.2*	---	---	---	---	---	---	---	54.00	---	---	---	---	---
21934.2	---	---	---	---	---	---	---	74.00	---	---	---	---	---
21934.2	---	---	---	---	---	---	---	54.00	---	---	---	---	---
24371.2	---	---	---	---	---	---	---	74.00	---	---	---	---	---
24371.2	---	---	---	---	---	---	---	54.00	---	---	---	---	---

Note :

1. Measurement was up to 10th harmonic, Remark "---" means that the emissions level is too low to be measured.
2. AF: Antenna Factor, Closs: Cable Loss, Pre-Amp: Preamp gain, Filter: High Pass Filter Insertion Loss (3.5GHz) Dist: Correction to extra plate reading to 3m specification distance 1M measurement distance: -9.5dB
3. Analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
4. Remark "*" means that Restricted band.

Operation Mode:	Transmitting Mode	Test Date :	January 18, 2002
Fundamental Frequency:	2462.16MHz (CH 11)	Test By:	Markba Lee
Temperature :	20 ℃	Pol:	Vertical
Humidity :	66 %		

Freq. (MHz)	Reading (dBuV)	AF)	Closs (dB)	Pre-amp (dB)	Filter dB	Dist dB	Level (dBuV/m	Limit FCC_B	n (dB)	Mark (P/Q/A)	Pol (H/V)	Az (Deg)	Height (Meter)
2087.8	69.96	26.05	2.05	37.57	1	-9.5	51.99	74.00	-22.01	P	1mV	30	1.2
2087.8	60.13	26.05	2.05	37.57	1	-9.5	42.16	54.00	-11.84	A	1mV	30	1.2
4175.6*	58.29	29.93	2.87	36.74	1	-9.5	45.85	74.00	-28.15	P	1mV	30	1.2
4175.6*	49.10	29.93	2.87	36.74	1	-9.5	36.66	54.00	-17.34	A	1mV	30	1.2
4924.3*	59.44	31.70	3.56	37.12	1	-9.5	49.08	74.00	-24.92	P	1mV	30	1.2
4924.3*	47.70	31.70	3.56	37.12	1	-9.5	37.34	54.00	-16.66	A	1mV	30	1.2
7386.4*	---	---	---	---	---	---	---	74.00	---	---	---	---	---
7386.4*	---	---	---	---	---	---	---	54.00	---	---	---	---	---
9848.6	---	---	---	---	---	---	---	74.00	---	---	---	---	---
9848.6	---	---	---	---	---	---	---	54.00	---	---	---	---	---
12310.8*	---	---	---	---	---	---	---	74.00	---	---	---	---	---
12310.8*	---	---	---	---	---	---	---	54.00	---	---	---	---	---
14772.9	---	---	---	---	---	---	---	74.00	---	---	---	---	---
14772.9	---	---	---	---	---	---	---	54.00	---	---	---	---	---
17235.1	---	---	---	---	---	---	---	74.00	---	---	---	---	---
17235.1	---	---	---	---	---	---	---	54.00	---	---	---	---	---
19697.2*	---	---	---	---	---	---	---	74.00	---	---	---	---	---
19697.2*	---	---	---	---	---	---	---	54.00	---	---	---	---	---
22159.4*	---	---	---	---	---	---	---	74.00	---	---	---	---	---
22189.4	---	---	---	---	---	---	---	54.00	---	---	---	---	---
24621.6	---	---	---	---	---	---	---	74.00	---	---	---	---	---
24621.6	---	---	---	---	---	---	---	54.00	---	---	---	---	---

Note :

1. Measurement was up to 10th harmonic, Remark "---" means that the emissions level is too low to be measured.
2. AF: Antenna Factor, Closs: Cable Loss, Pre-Amp: Preamp gain, Filter: High Pass Filter

   Insertion Loss (3.5GHz) Dist: Correction to extra plate reading to 3m specification distance 1M measurement distance: -9.5dB
3. Analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
4. Remark "*" means that Restricted band.

Operation Mode:	Transmitting Mode	Test Date :	January 18, 2002
Fundamental Frequency:	2462.16MHz (CH 11)	Test By:	Markba Lee
Temperature :	20 ℃	Pol:	Horizontal
Humidity :	66 %		

Freq. (MHz)	Reading (dBuV)	AF)	Closs (dB)	Pre-amp (dB)	Filter dB	Dist dB	Level (dBuV/m	Limit FCC_B	n (dB)	Mark (P/Q/A)	Pol (H/V)	Az (Deg)	Height (Meter)
2087.8	69.65	26.05	2.05	37.57	1	-9.5	51.68	74.00	-22.32	P	1mH	30	1.2
2087.8	58.79	26.05	2.05	37.57	1	-9.5	40.82	54.00	-13.18	A	1mH	30	1.2
4175.6*	62.73	29.93	3.53	37.10	1	-9.5	50.59	74.00	-23.41	P	1mH	30	1.2
4175.6*	53.12	29.93	2.87	36.74	1	-9.5	40.68	54.00	-13.32	A	1mH	30	1.2
4924.1*	56.86	31.65	3.53	37.10	1	-9.5	46.44	74.00	-27.56	P	1mH	30	1.2
4924.1*	45.47	31.65	3.53	37.10	1	-9.5	35.05	54.00	-18.95	A	1mH	30	1.2
7386.15*	---	---	---	---	---	---	---	74.00	---	---	---	---	---
7386.15*	---	---	---	---	---	---	---	54.00	---	---	---	---	---
9848.20	---	---	---	---	---	---	---	74.00	---	---	---	---	---
9848.20	---	---	---	---	---	---	---	54.00	---	---	---	---	---
*	---	---	---	---	---	---	---	74.00	---	---	---	---	---
*	---	---	---	---	---	---	---	54.00	---	---	---	---	---
14772.30	---	---	---	---	---	---	---	74.00	---	---	---	---	---
14772.30	---	---	---	---	---	---	---	54.00	---	---	---	---	---
17234.35	---	---	---	---	---	---	---	74.00	---	---	---	---	---
17234.35	---	---	---	---	---	---	---	54.00	---	---	---	---	---
*	---	---	---	---	---	---	---	74.00	---	---	---	---	---
*	---	---	---	---	---	---	---	54.00	---	---	---	---	---
*	---	---	---	---	---	---	---	74.00	---	---	---	---	---
*	---	---	---	---	---	---	---	54.00	---	---	---	---	---
24620.50	---	---	---	---	---	---	---	74.00	---	---	---	---	---
24620.50	---	---	---	---	---	---	---	54.00	---	---	---	---	---

Note :

1. Measurement was up to 10th harmonic, Remark "---" means that the emissions level is too low to be measured.
2. AF: Antenna Factor, Closs: Cable Loss, Pre-Amp: Preamp gain, Filter: High Pass Filter

   Insertion Loss (3.5GHz) Dist: Correction to extra plate reading to 3m specification distance 1M

   measurement distance: -9.5dB
3. Analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
4. Remark "*" means that Restricted band.

Radiated Emissions
Test Requirement: 15.209 (15.109)

Measurement Equipment Used:

Open Area Test Site # 3					
EQUIPMENT TYPE	**MFR**	**MODEL NO.**	**SERIAL NO.**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	ADVANTEST	R3261A	N/A	03/16/2001	03/15/2002
EMI Test Receiver	R&S	ESVS20	838804/004	01/05/2002	01/04/2003
Pre-Amplifier	HP	8447D	2944A09173	02/19/2001	02/18/2002
Bilog Antenna	CHASE	CBL6112B	SITE2	07/28/2001	07/27/2002
Turn Table	EMCO	2081-1.21	9709-1885	N.C.R	N.C.R
Antenna Tower	EMCO	2075-2	9707-2060	N.C.R	N.C.R
Controller	EMCO	2090	9709-1256	N.C.R	N.C.R
RF Switch	ANRITSU	MP59B	M53867	N.C.R	N.C.R
Site NSA	C&C	N/A	N/A	11/17/2001	11/16/2002

Test Set-Up:

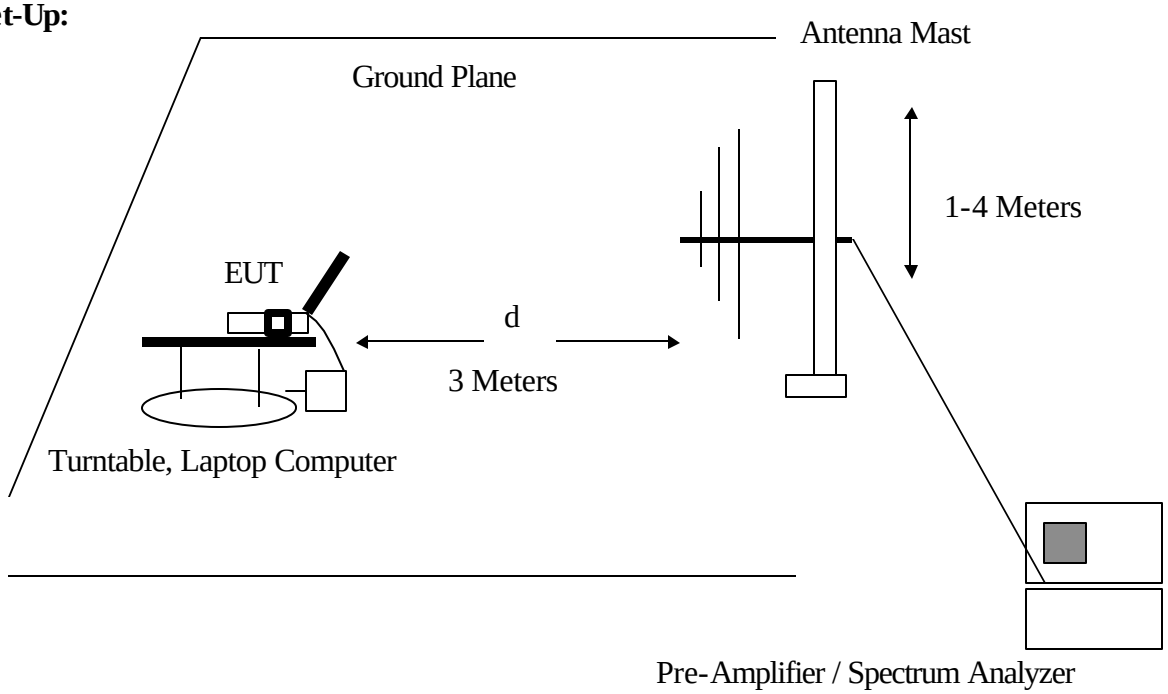


Fig. 2

Test Procedures:

The EUT was placed on a turntable at a distance of 3 meters from a Bilog a Antenna or Log Periodic search antenna. The antenna was raised and lowered, the EUT rotated on the turntable, until the EUT azimuth, antenna elevation, and antenna polarity were found which yielded maximum received emission levels on the spectrum analyzer.

Test Result: Refer to attached tabular data sheets.

NOTE:

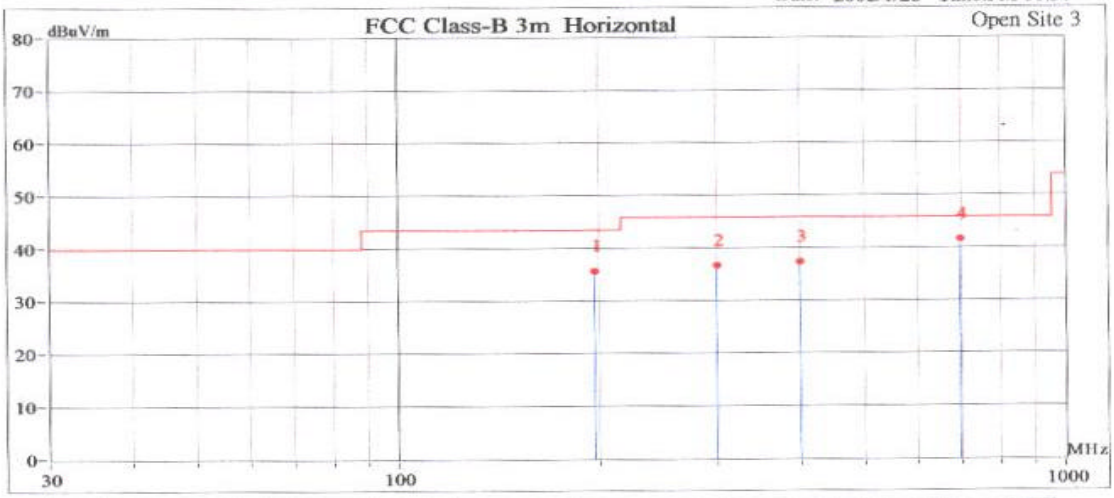
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.

C&C LABORATORY CO., LTD.

Custom Name: QUANTA Test Mode: CH_1 RX MODE

Model Name: X1726 mini USB module Engineer Name: MARKBA LEE

Date: 2002/1/28 Time:PM 01:31



	Frequency(MHz)	Amplitude(dBuV/m)	Margin(dB)	Limit(dBuV/m)	Read Amplitude(dBuV)	Factor(dB)
1	196.3600	36.00 PK	-7.50	43.50	23.64	12.36
2	299.8700	37.00 PK	-9.00	46.00	20.12	16.88
3	399.8400	37.70 PK	-8.30	46.00	16.79	20.91
4	694.9300	41.90 PK	-4.10	46.00	15.58	26.32

Comments:

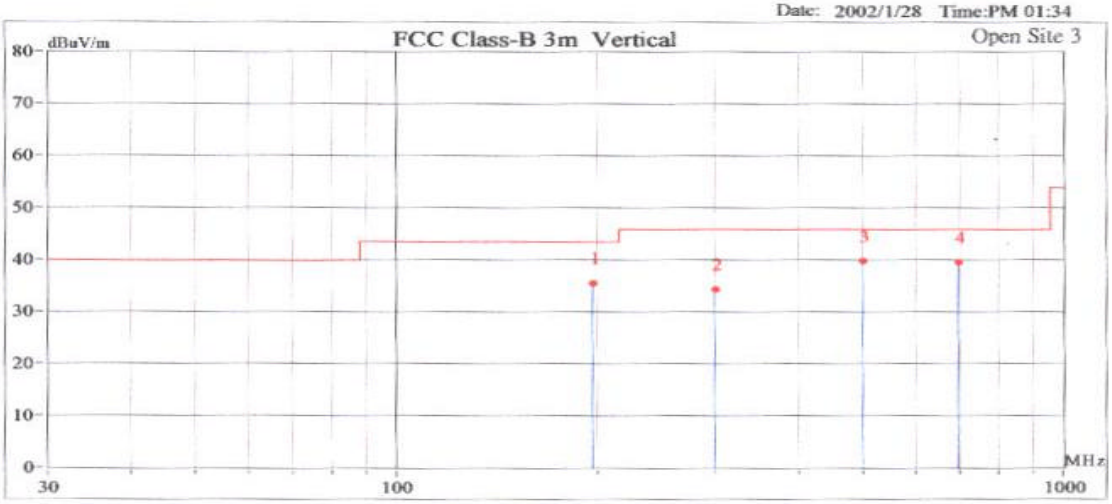
Lab TEL:886-3-3240332 Office TEL:886-2-86422071
FAX:886-3-3245235 FAX:886-2-86422256

C&C LABORATORY CO., LTD.

Custom Name: QUANTA Test Mode: CH_1 RX MODE

Model Name: X1726 mini USB module Engineer Name: MARKBA LEE

Date: 2002/1/28 Time:PM 01:34



	Frequency(MHz)	Amplitude(dBuV/m)	Margin(dB)	Limit(dBuV/m)	Read Amplitude(dBuV)	Factor(dB)
1	196.3100	35.60 PK	-7.90	43.50	23.24	12.36
2	299.8500	34.50 PK	-11.50	46.00	17.63	16.87
3	499.8700	39.90 PK	-6.10	46.00	16.89	23.01
4	694.9000	39.80 PK	-6.20	46.00	13.48	26.32

Comments:

Lab TEL:886-3-3240332 Office TEL:886-2-86422071

FAX:886-3-3245235 FAX:886-2-86422256

RADIATED EMISSION SETUP PHOTOS (WORST EMISSION POSITION)

AC Line Conducted Emissions
Test Requirement: 15.207

Measurement Equipment Used:

Conducted Emission Test Site # 3					
EQUIPMENT TYPE	**MFR**	**MODEL NO.**	**SERIAL NO.**	**LAST CAL.**	**CAL DUE.**
EMI Test Receiver	R&S	ESHS10	843743/015	12/19/2001	12/18/2002
LISN	R&S	ESH2-Z5	843285/010	12/10/2001	12/09/2002
LISN	EMCO	3825/2	9003-1628	07/16/2001	07/15/2002
Spectrum Analyzer	ADVANTEST	R3261AN	31720234	08/03/2001	08/02/2002
2X2 WIRE ISN	R&S	ENY22	830661/027	04/06/2001	04/05/2002
FOUR WIRE ISN	R&S	ENY41	830663/024	04/04/2001	04/03/2002

Test Set-Up:

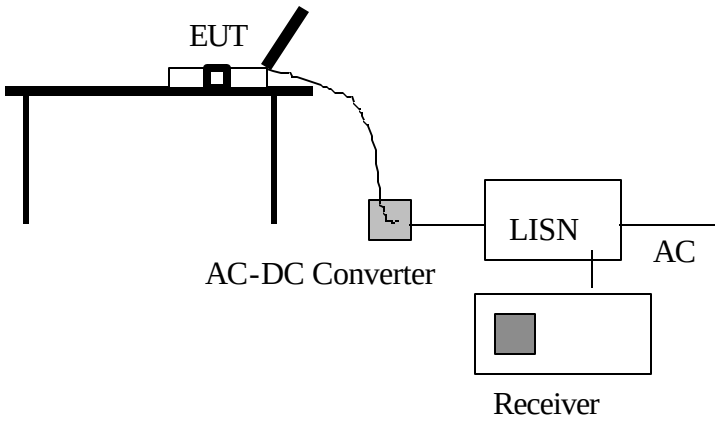


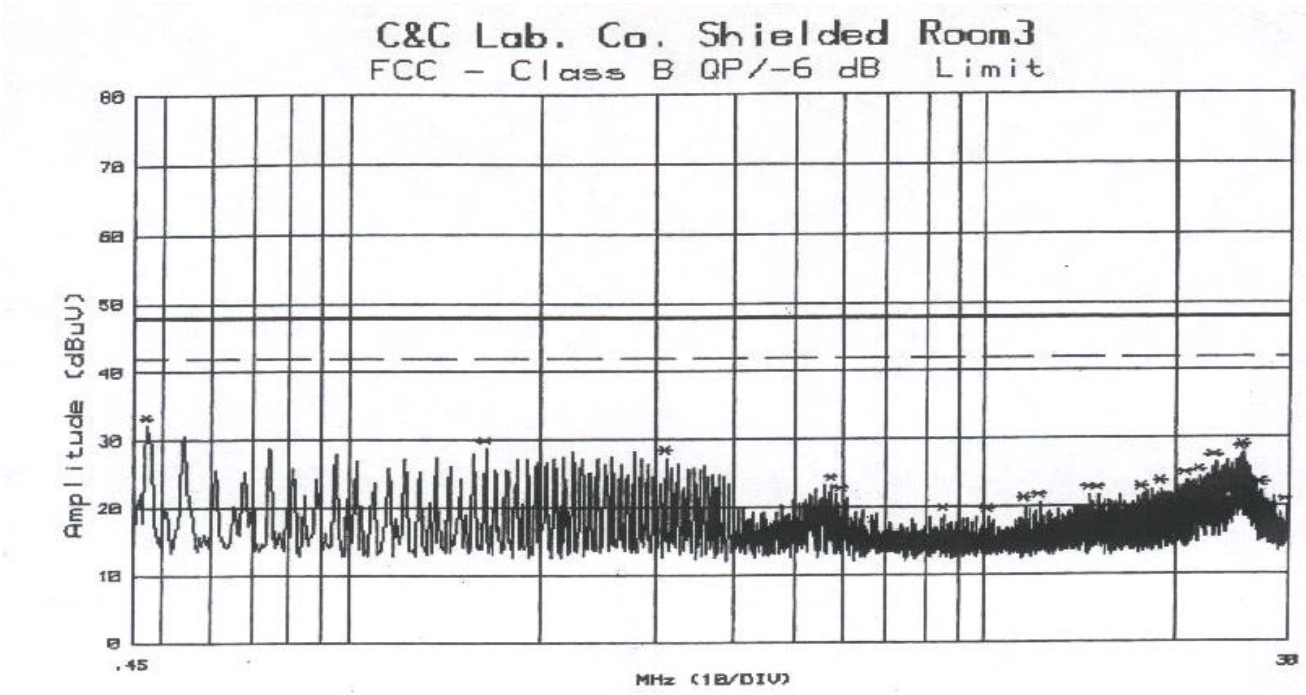
Fig. 3

Test Procedure:

1. The EUT was placed on a wooden table 40 cm from a vertical ground plane and approximately 80 cm above the horizontal ground plane on the floor. The EUT was set to transmit in a normal mode.

2. Line conducted data was recorded for both NEUTRAL and HOT lines.

Test Results : Refer to attached graph (Worst Data).



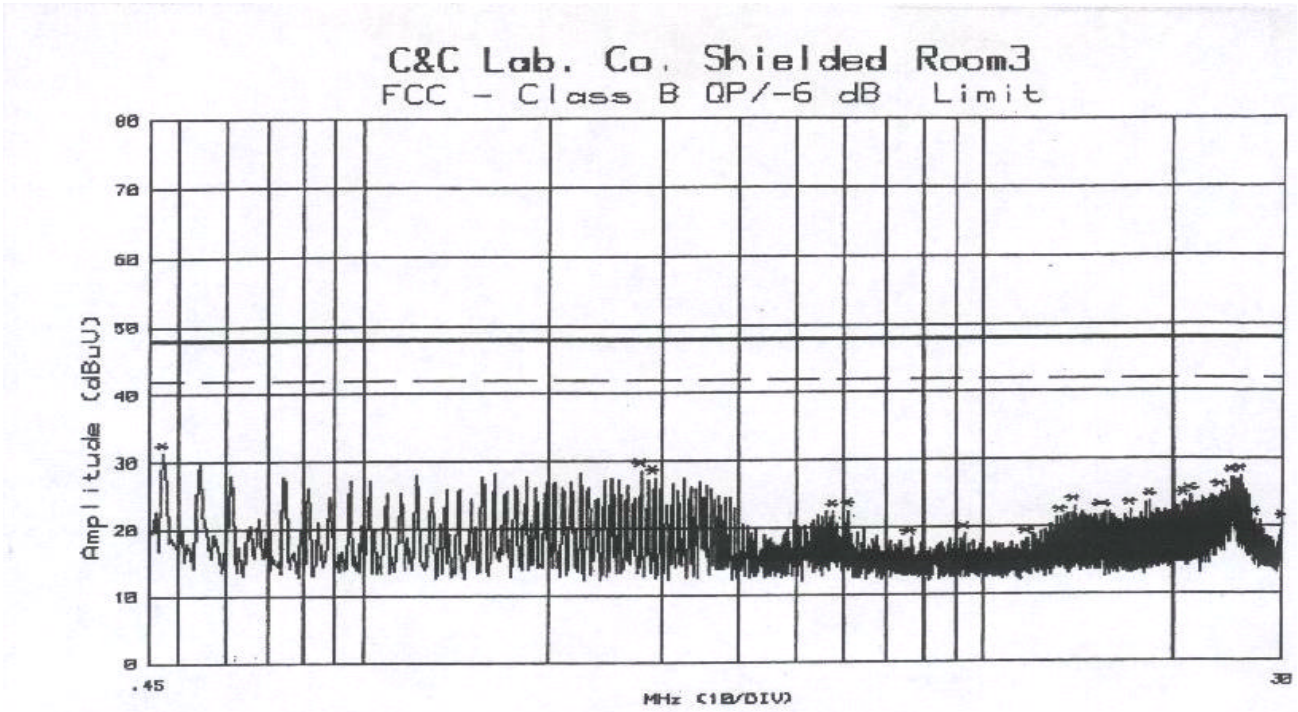
Customer: QUANTA
Model : XI726 mini USB module
Mode :
Reading : Peak(R&S Receiver)
Remark : STANDBY MODE

File#: 865
Humd.: 70 (%)
Port : L1

Date : 28 Jan 2002 13:42:46
Temp. : 16 (C)
Tested by: MARKBA LEE

No.	Freq. (MHz)	Reading (dBuV)	I_Loss (dB)	Total (dBuV)	QP.Lmt (dBuV)	Margin (dB)	Warning Mark
1	.475	31.7	.4	32.1	48.0	-15.9	
2	1.630	28.3	.4	28.7	48.0	-19.3	
3	3.120	26.9	.3	27.2	48.0	-20.8	
4	5.770	22.7	.5	23.2	48.0	-24.8	
5	5.970	21.1	.5	21.6	48.0	-26.4	
6	8.620	18.2	.5	18.7	48.0	-29.3	
7	10.120	18.0	.5	18.5	48.0	-29.5	
8	11.670	19.6	.5	20.1	48.0	-27.9	
9	12.350	20.0	.5	20.5	48.0	-27.5	
10	14.860	21.1	.5	21.6	48.0	-26.4	
11	15.340	21.1	.5	21.6	48.0	-26.4	
12	17.920	21.1	.5	21.6	48.0	-26.4	
13	19.210	22.0	.5	22.5	48.0	-25.5	
14	20.900	23.3	.4	23.7	48.0	-24.3	
15	22.060	23.8	.4	24.2	48.0	-23.8	
16	23.280	25.9	.4	26.3	48.0	-21.7	
17	25.450	26.8	.7	27.4	48.0	-20.6	
18	25.650	27.0	.7	27.7	48.0	-20.3	
19	27.090	21.5	.7	22.2	48.0	-25.8	
20	29.790	19.0	.7	19.7	48.0	-28.3	

End of file : 865



Customer: QUANTA
Model : XI726 mini USB module
Mode :
Reading : Peak(R&S Receiver)
Remark : STANDBY MODE

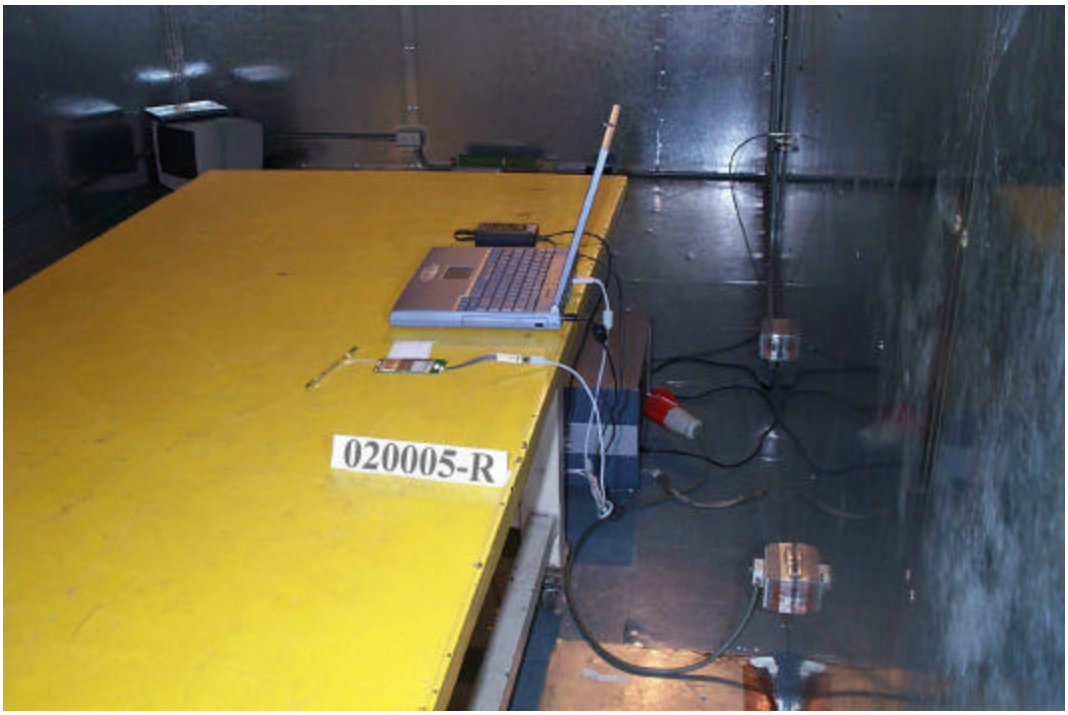
File#: 866
Humd.: 70 (%)
Port : L2

Date : 28 Jan 2002 13:51:41
Temp. : 16 (C)
Tested by: MARKBA LEE

No.	Freq. (MHz)	Reading (dBuV)	I_Loss (dB)	Total (dBuV)	QP.Lmt (dBuV)	Margin (dB)	Warning Mark
1	.475	30.9	.4	31.3	48.0	-16.7	
2	2.780	28.3	.3	28.6	48.0	-19.4	
3	2.920	27.2	.3	27.5	48.0	-20.5	
4	5.770	21.9	.4	22.3	48.0	-25.7	
5	6.110	22.0	.4	22.4	48.0	-25.6	
6	7.610	17.9	.4	18.3	48.0	-29.7	
7	9.300	18.5	.4	18.9	48.0	-29.1	
8	11.810	17.9	.3	18.2	48.0	-29.8	
9	13.370	21.0	.3	21.3	48.0	-26.7	
10	14.050	22.6	.3	23.0	48.0	-25.0	
11	15.680	21.9	.2	22.1	48.0	-25.9	
12	17.310	22.2	.2	22.4	48.0	-25.6	
13	18.530	23.4	.2	23.6	48.0	-24.4	
14	20.840	23.7	.1	23.8	48.0	-24.2	
15	21.380	24.3	.1	24.4	48.0	-23.6	
16	23.750	25.0	.1	25.1	48.0	-22.9	
17	24.900	27.0	.1	27.1	48.0	-20.9	
18	25.650	27.1	.3	27.4	48.0	-20.6	
19	27.070	20.6	.3	20.9	48.0	-27.1	
20	29.860	20.1	.3	20.4	48.0	-27.6	

End of file : 866

CONDUCTED EMISSION SETUP PHOTOS (WORST EMISSION POSITION)



Minimum 6 DB Bandwidth for DSSS
Test Requirement: 15.247(a)(2)

Measurement Equipment Used:

Equipment	Model No.	Serial No.	Cal. Due.
ROHDE & SCHWARZ Spectrum Analyzer	FSEB	1066.3010	11/08/2002
HP Preamplifier	8449B	3008A00965	10/03/2001
ADVANTEST Spectrum Analyzer	R3271A	85060321	01/03/2002
SCHWARZBECK Horn antenna	BBHA 9120D	210	02/03/2002
HP Plotter	7475	2325A82294	N/A
Huber + Suhner low loss cable	Sucoflex 104	N/A	N/A

Test Set-up:

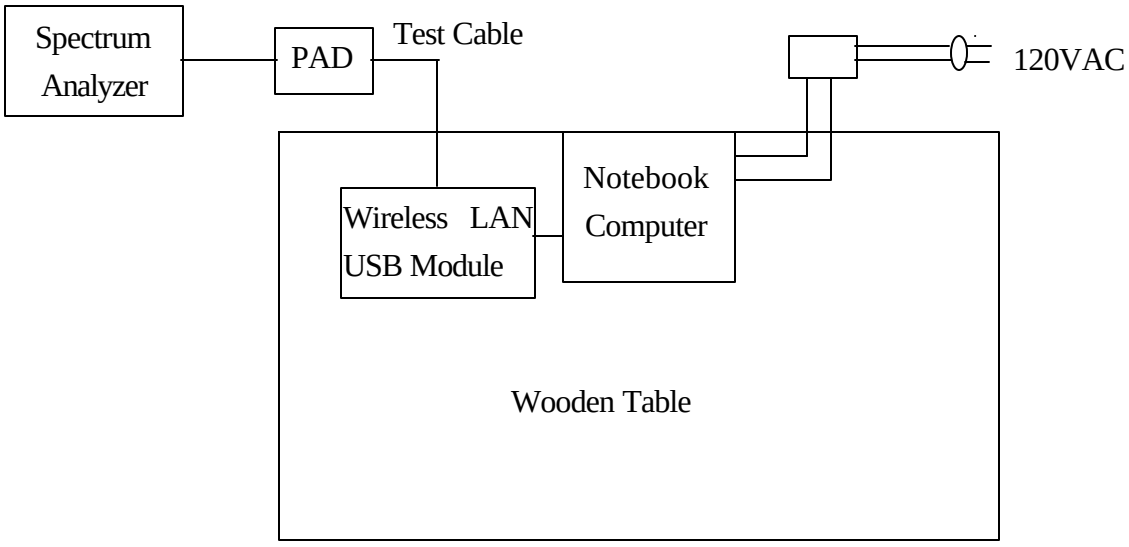


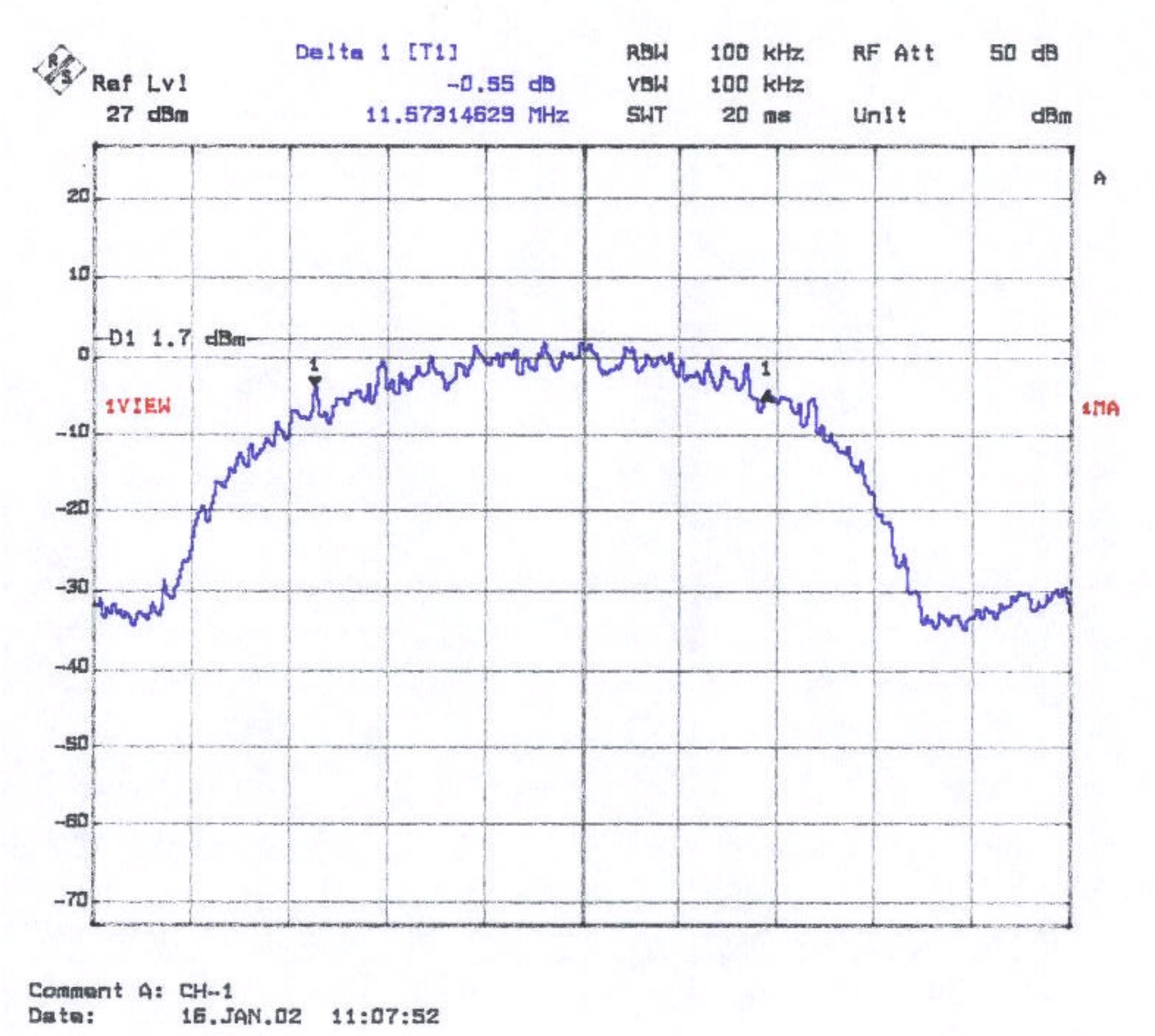
Fig. 4 : Measurement setup for testing on Antenna connector

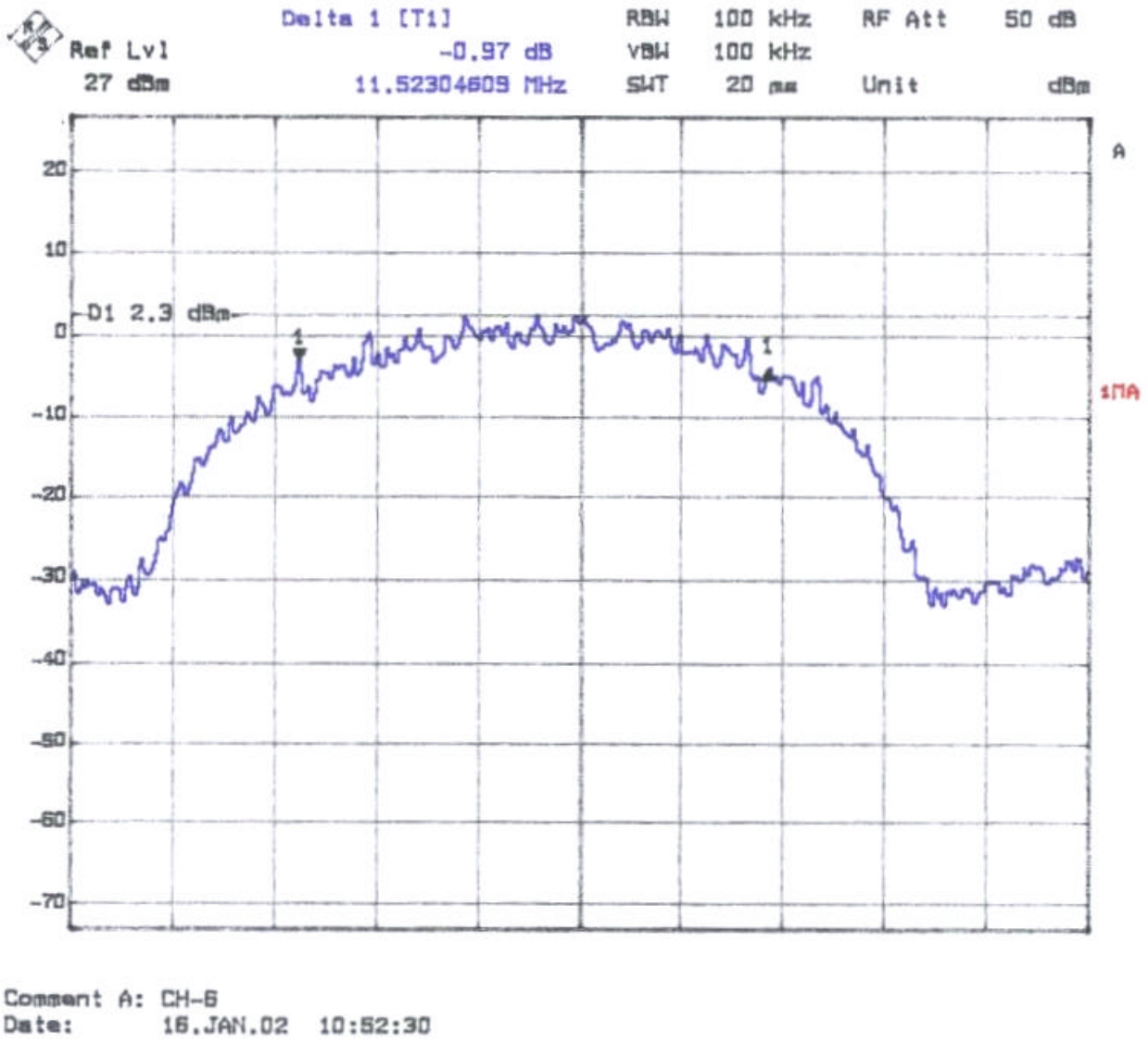
Test Procedure:

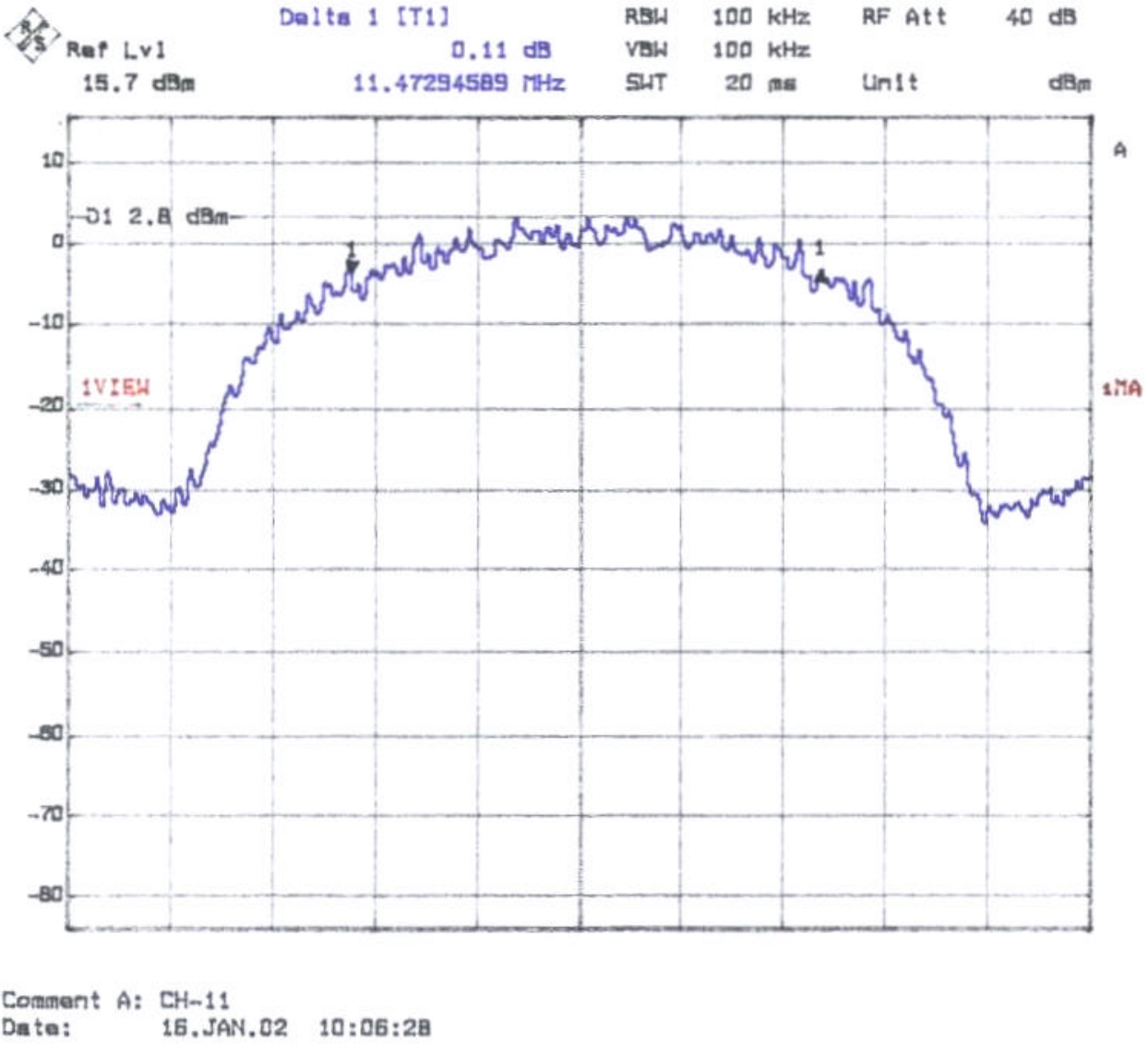
The minimum 6dB band width was measured with a spectrum analyzer connected to RF antenna connector(conducted measurement) while EUT was operating in transmit mode at the appropriate center frequency.
The analyzer center frequency was set to the EUT carrier frequency, using the analyzer.
Display Line and Marker Delta functions, the 6dB band width of the emission was determined.

Test Results: Refer to attached spectrum analyzer data chart.

6dB band width >500KHz
(1) 2413.30MHz (Low) 11.57MHz
(2) 2437.19MHz (Mid) 11.52MHz
(3) 2461.16MHz (High) 11.47MHz







RF Power Output
Test Requirement: 15.247(b) (Conducted)

Measurement Equipment Used:

Equipment	Model No.	Serial No.	Cal. Due.
ROHDE & SCHWARZ Spectrum Analyzer	FSIB 7	1066.3010	11/08/2002
HP Plotter	7475	2325A82294	N/A
Huber + Suhner low loss cable	Sucoflex 104	N/A	N/A
HP Power Meter	436A	2709A29027	02/14/2002

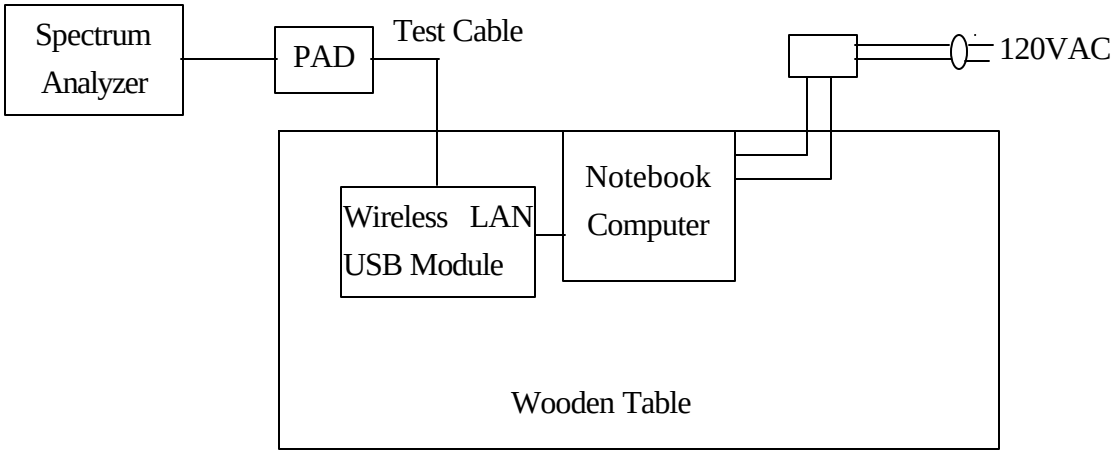


Fig. 5-1

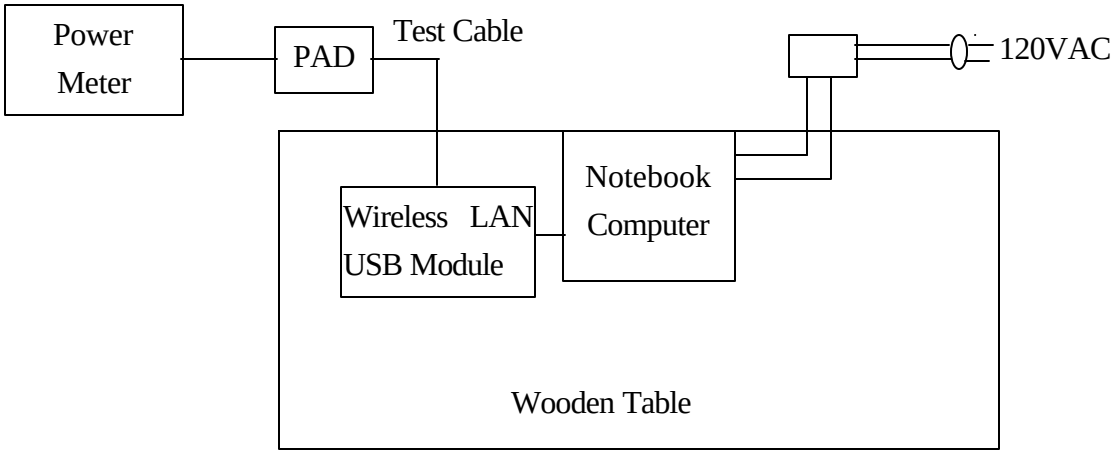


Fig. 5-2

Test Procedure

The RF power output was measured with a spectrum analyzer connected to the RF Antenna connector (conducted measurement) while EUT was operating in transmit mode at the appropriate center frequency, A spectrum analyzer was used to record the shape of the transmit signal see Fig. 5-1 for the measurement set up.

Test Results : Refer to attached graph.

TX Freq.(MHz)	Reading (dBm)	Cable Loss	Power Output (dBm)	Limit (dBm)
2412.21 (Low)	12.72	1.47	14.19	30
2437.25 (Mid)	13.53	1.47	15.00	30
2462.11 (High)	14.34	1.47	15.81	30

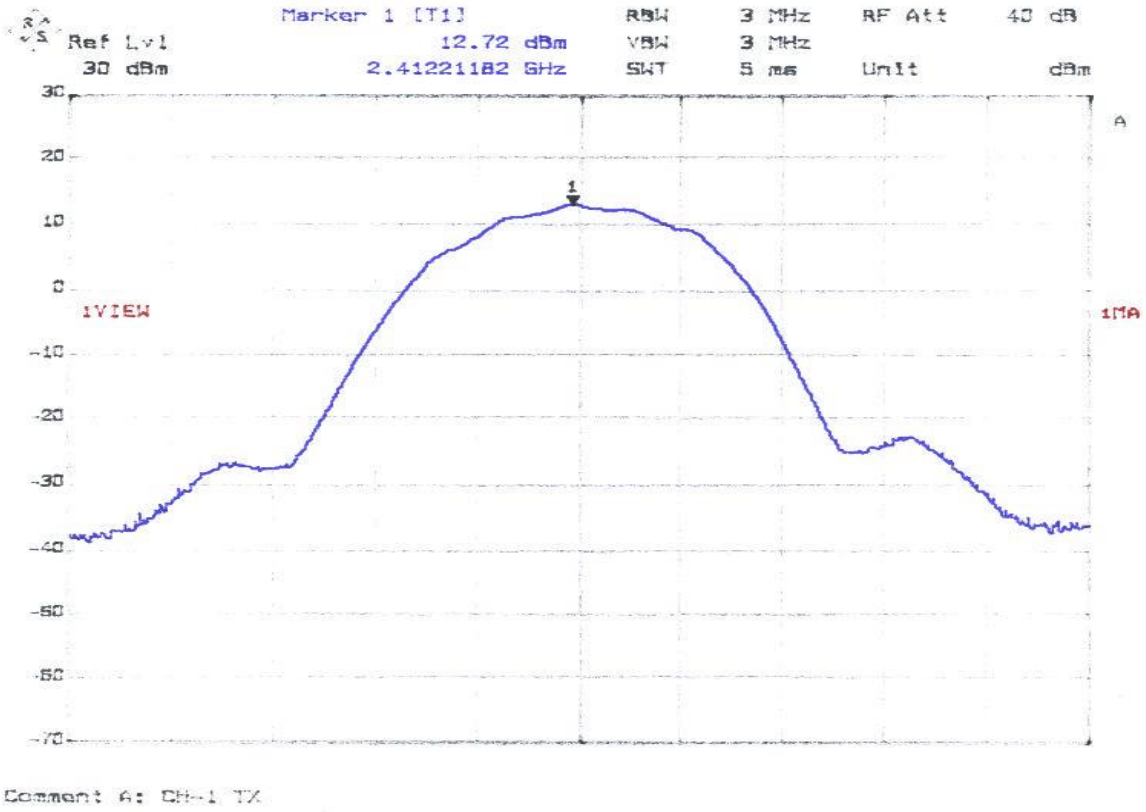
Design goal for transmitter output power: 15dBm output.

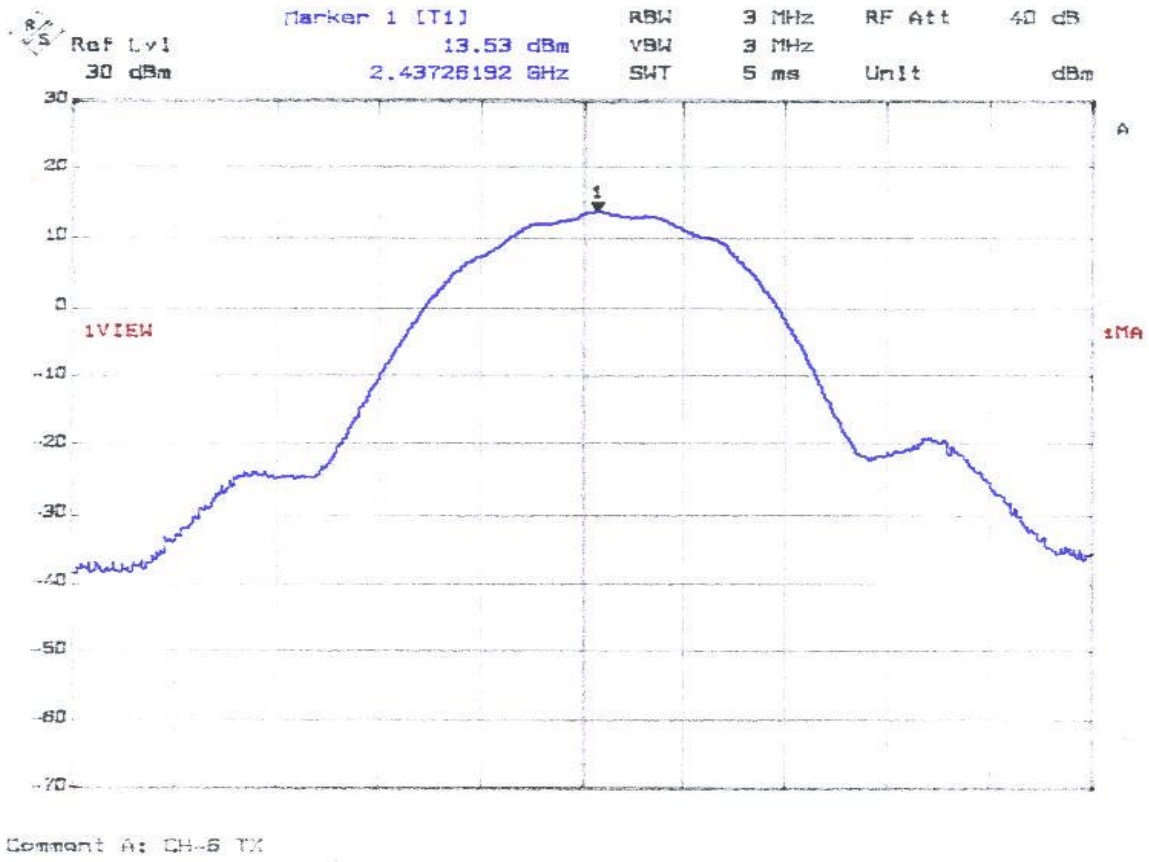
The RF power output was measured with a power meter connected to the RF Antenna connector (conducted measurement) while EUT was operating in transmit mode at the appropriate center frequency, A power meter was used to record the shape of the transmit signal see Fig. 5-2 for the measurement set up.

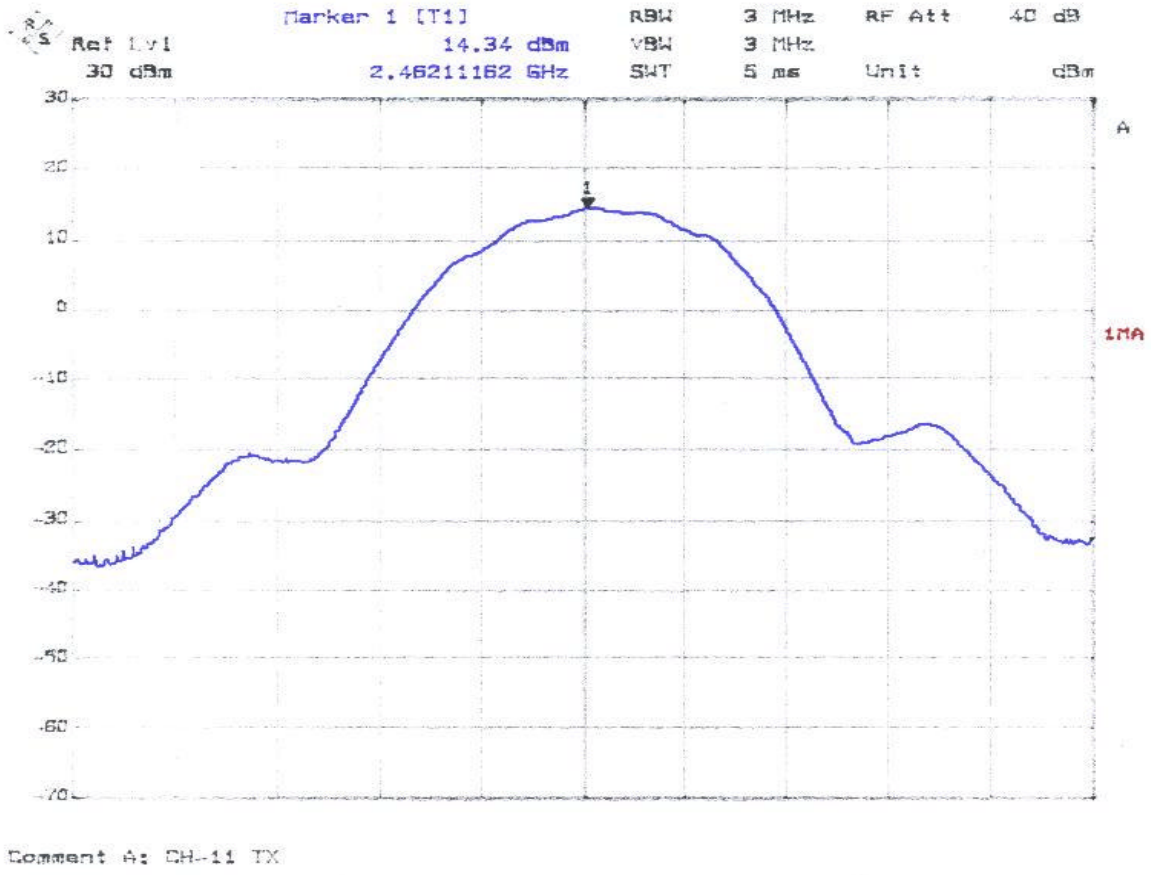
Test Results :

TX Freq.(MHz)	Reading (dBm)	Cable Loss	Power Output (dBm)	Limit (dBm)
2412.21 (Low)	13.45	1.47	14.92	30
2437.25 (Mid)	13.77	1.47	15.24	30
2462.11 (High)	13.50	1.47	14.97	30

Design goal for transmitter output power: 15dBm output.



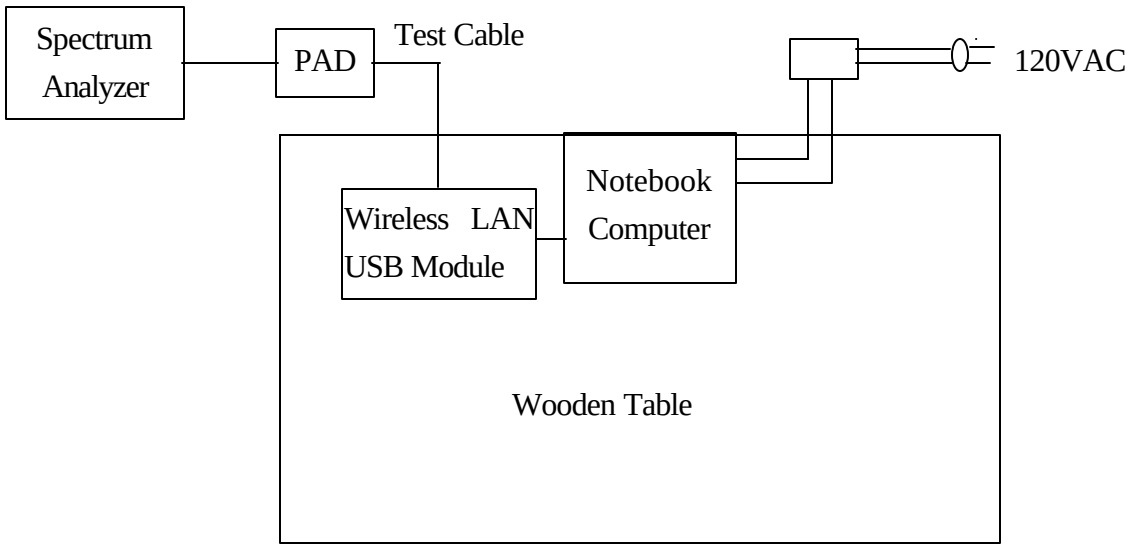




Out of Band Measurements
Test Requirement: 15.247(c)

Measurement Equipment Used:

Equipment	Model No.	Serial No.	Cal. Due.
R&S Spectrum Analyzer	FSP 30	1093.4495.30	05/28/2002
HP Plotter	7475	2325A82294	N/A
Huber + Suhner low loss cable	Sucoflex 104	N/A	N/A



Test Procedure:

Section 15.247(c): Spurious emissions. The following tests are required:

(1) RF antenna conducted test: Set RBW= 100kHz, Video bandwidth (VBW) > RBW, scan up through 10th harmonic. All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100kHz RBW.
(2) Radiated emission test: Applies to harmonics/spurs that fall in the restricted bands listed in Section 15.205. The maximum permitted average field strength is listed in Section 15.209. A pre-amp (and possibly a high-pass filter) is necessary for this measurement. For measurements above 1 GHz, set RBW= 1MHz, VBW= 10Hz, Sweep: Auto. If the emission is pulsed, modify the unit for continuous operation, use the setting shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation. See Section 15.35(b) and (c).

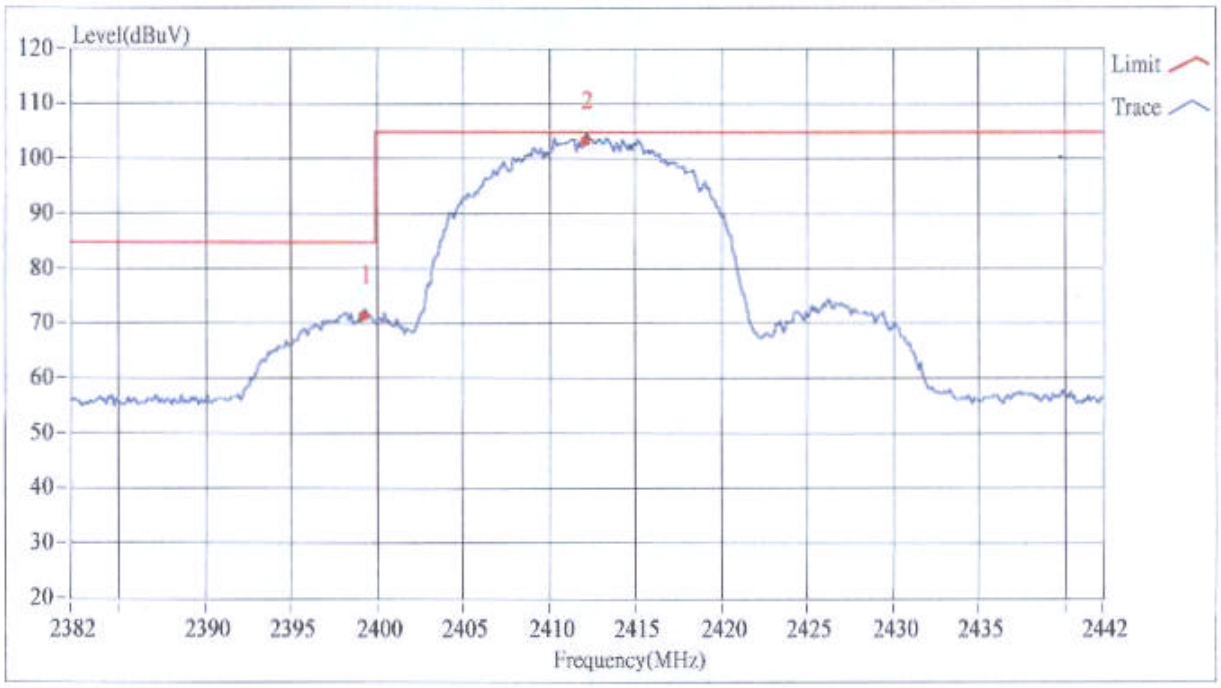
Test Results:

a. Conducted

Refer to attached spectrum analyzer data chart.

b. Radiated

Refer to the section of " Radiated Emissions(General Requirements)". Test requirement: 15.205, from P8 to P17 of the measurements data.



Custom Name: QUANTA

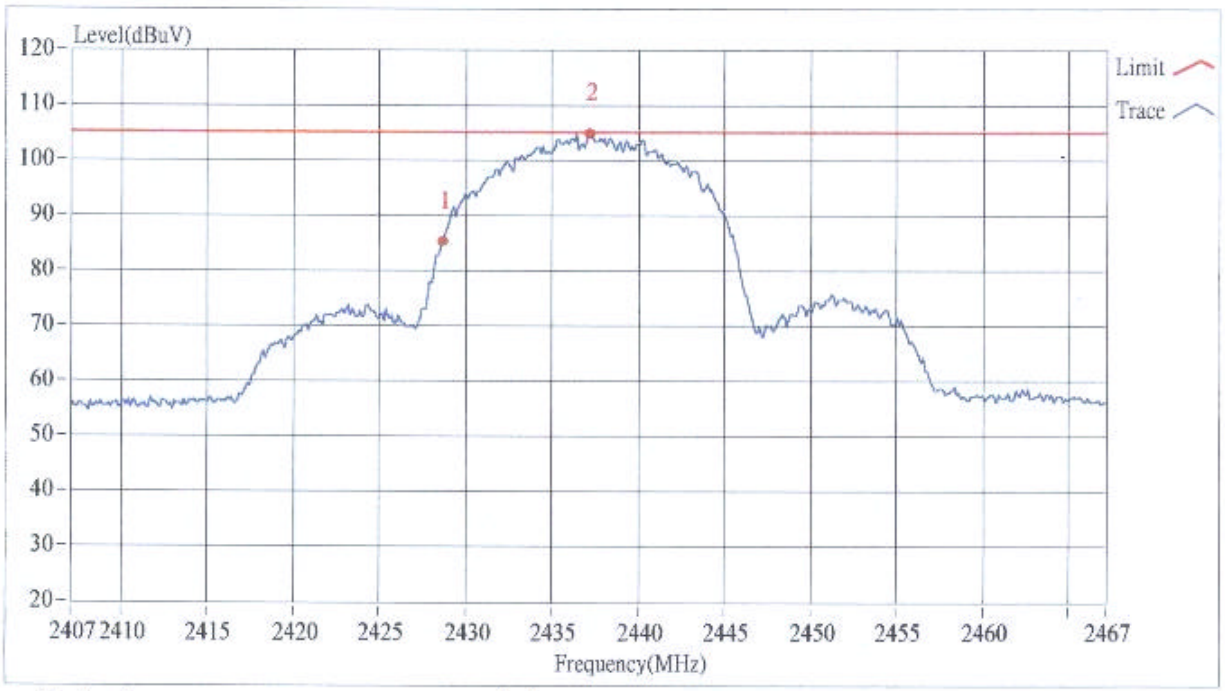
Engineer: MARKBA

Model Name: XI726 mini USB module

Report No.: 020005-R

Test Mode: CH_1

	Frequency(MHz)	Read Level (dBuV)	Probe (dB)	Cable Loss (dB)	Level(dBuV)
1	2399.3600	70.39	0.00	2.40	72.79
2	2412.2000	102.62	0.00	2.40	105.02



Custom Name: QUANTA

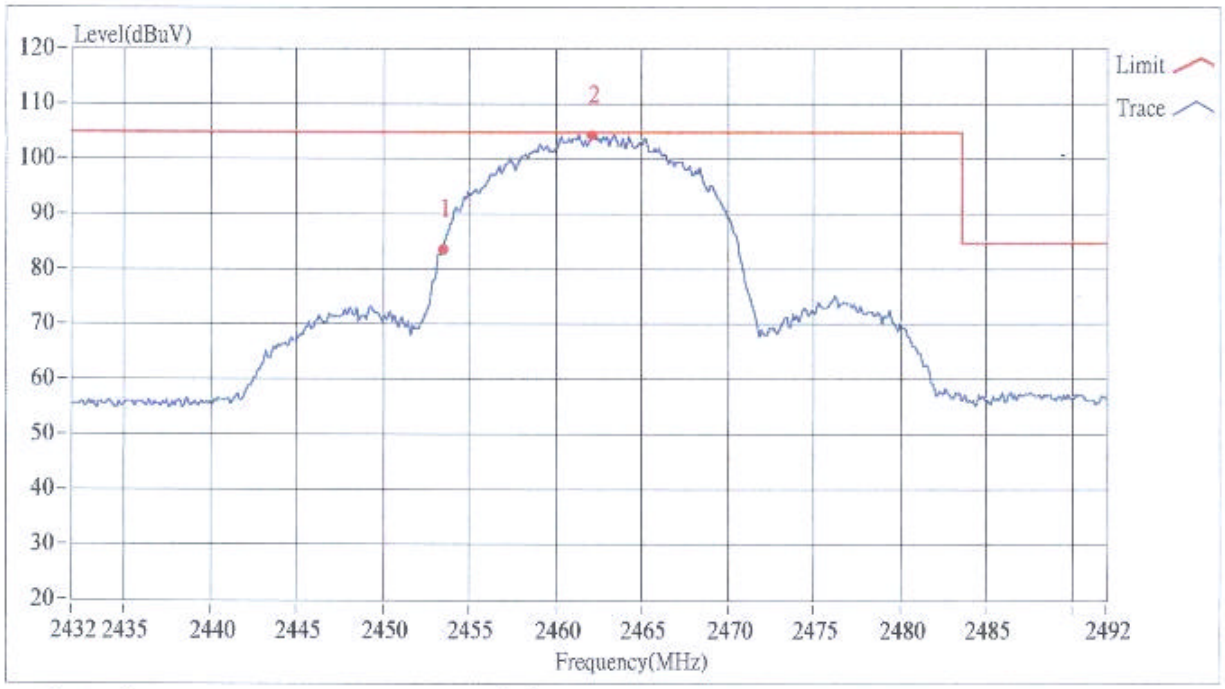
Engineer: MARKBA

Model Name: XI726 mini USB module

Report No.: 020005-R

Test Mode: CH_6

	Frequency(MHz)	Read Level (dBuV)	Probe (dB)	Cable Loss (dB)	Level(dBuV)
1	2428.6400	83.24	0.00	2.40	85.64
2	2437.1600	102.78	0.00	2.40	105.18



Custom Name: QUANTA

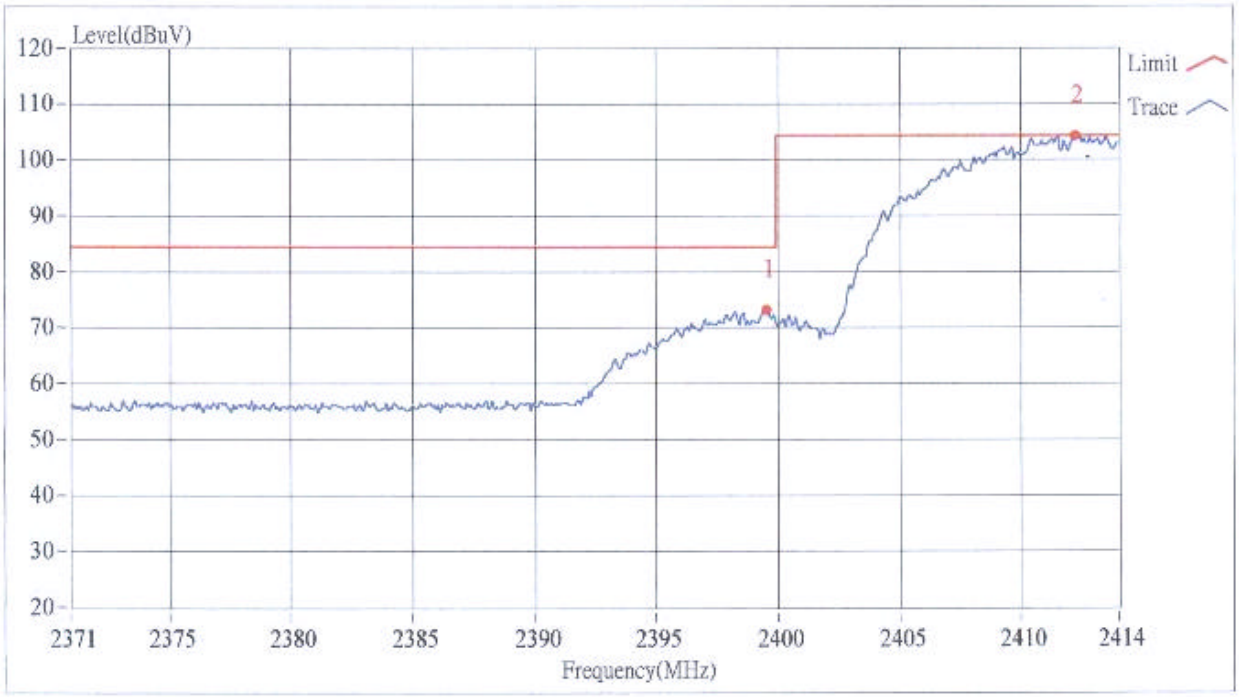
Engineer: MARKBA

Model Name: XI726 mini USB module

Report No.: 020005-R

Test Mode: CH_11

	Frequency(MHz)	Read Level (dBuV)	Probe (dB)	Cable Loss (dB)	Level(dBuV)
1	2453.6000	82.32	0.00	2.40	84.72
2	2462.2400	102.67	0.00	2.40	105.07



Custom Name: QUANTA

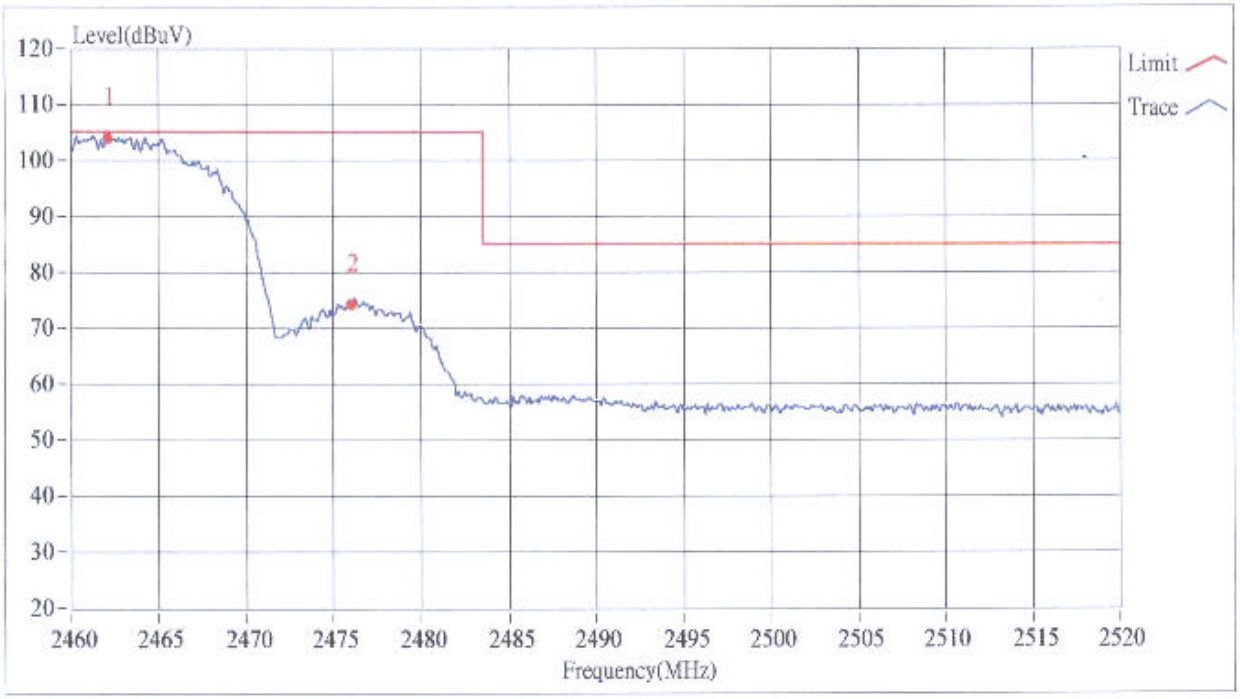
Engineer: MARKBA

Model Name: XI726 mini USB module

Report No.: 020005-R

Test Mode: CH_1

	Frequency(MHz)	Read Level (dBuV)	Probe (dB)	Cable Loss (dB)	Level(dBuV)
1	2399.4660	71.06	0.00	2.40	73.46
2	2412.1940	102.38	0.00	2.40	104.78



Custom Name: QUANTA

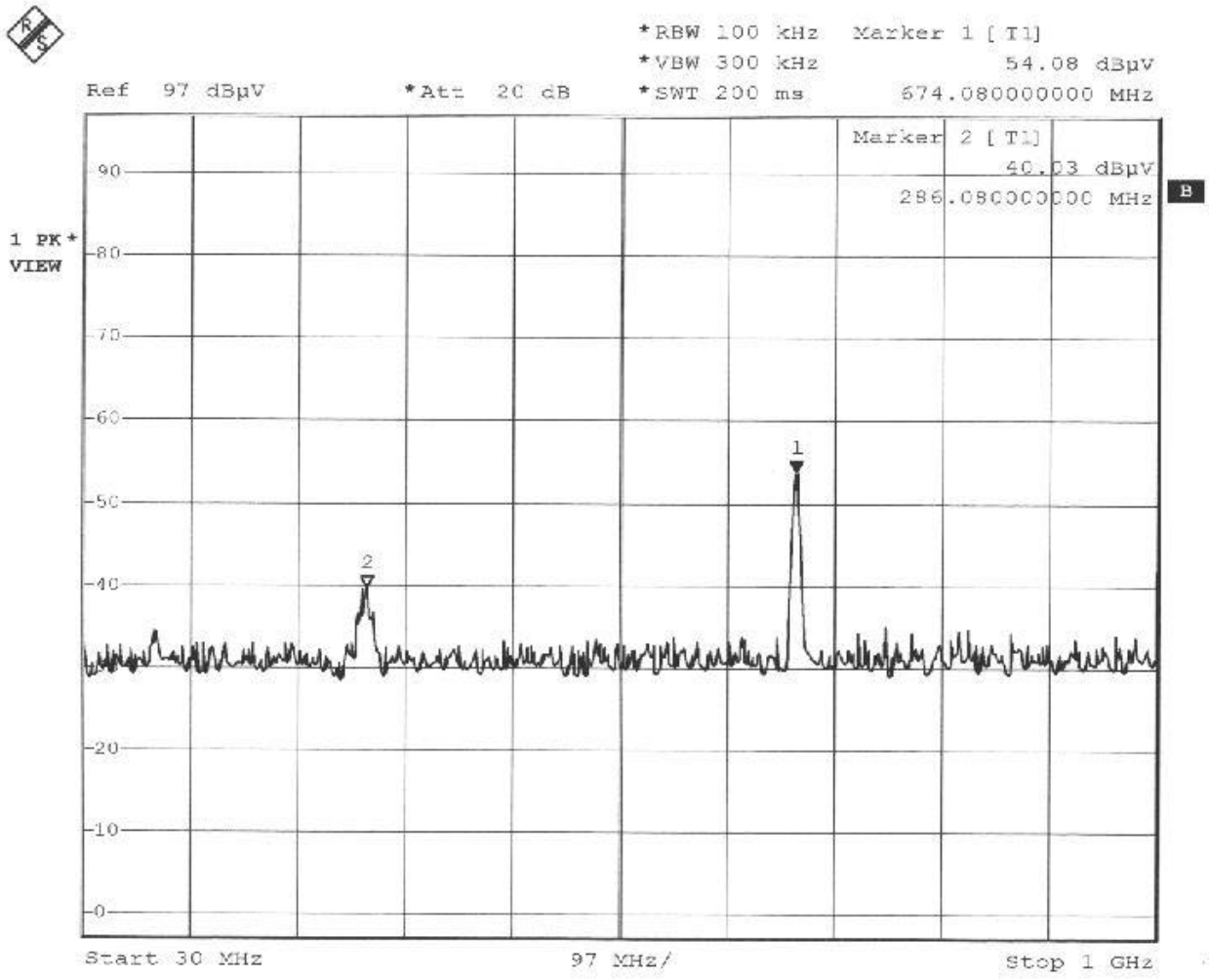
Engineer: MARKBA

Model Name: XI726 mini USB module

Report No.: 020005-R

Test Mode: CH_11

	Frequency(MHz)	Read Level (dBuV)	Probe (dB)	Cable Loss (dB)	Level(dBuV)
1	2462.1600	103.05	0.00	2.40	105.45
2	2476.2000	73.25	0.00	2.40	75.65



Comment B: CH-1