FCC Test Report
(TR-0908-016-01)

Applicant	:	Starbridge Networks L.L.C.
Address	:	3265 Meridian Parkway, STE # 134 Weston, FL 33331, USA
Manufacturer	:	Kasda Digital Technology Co., Ltd.
Address	:	B-31 Building,Tanglang Industry Zone, XiLi, Nanshan, Shenzhen, China
Product Name	:	ADSL2+ 802.11b/g 4 Port Managed Switch Router
Trademark	:	Starbridge
Model(s)	:	Lynx 524
Standard(s)	:	FCC Part 15 Subpart C
Test Result	:	Pass
Date of Test	:	Sep 11, 2009 to Sep 18, 2009
Report issued Dated	:	Sep 22, 2009

The results in this report apply only to the sample(s) tested. The production units are required to conform to the initial sample as received when the units are placed in the market.

Responsible Engineer	:	Phenix Zhang	Approved by	:	CHAN king-chui
			Technical manager		
Date	:	2009.09.22	Date	:	2009.09.22

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1. Description of the Test Site

1.1 Test Site Location:

Laboratory	:	TDK South China EMC Center SAE Technologies Development (Dongguan) Co., Ltd. Changan Branch
Address	:	Zhenan Hi-tech Industrial Park, Dongguang City, Guangdong Province, China
Phone no.	:	(86)-769-8564-4678
Fax no.	:	(86)-769-8564-4499
Email	:	emc@cn.tdk.com

1.2 Site Registration

VCCI (September, 2008)	:	Reg. No. R-2205, C-2392
FCC site registration (July, 2008)	:	Reg. No. 732901
IC registration	:	Reg. No. 7993
EMCC (September, 2008)	:	Reg. No. NAR/tl-060330

1.3 Test Scope

EMC and RF testing according to national / international standards

2. Description of the Tested Samples

2.1 Customer Information

Customer	:	Starbridge Networks L.L.C.
Address	:	3265 Meridian Parkway, STE # 134 Weston, FL 33331, USA
Phone no.	:	954-334-1390
Fax no.	:	954 334-1395

2.2 Identification of EUT

Trademark	:	Starbridge
Model(s) No.	:	ADSL2+ 802.11b/g 4 Port Managed Switch Router
Serial No.	:	None

2.3 Spec of EUT

Description of Antenna	:	fixed omnidirectional antenna, 3dBi gain
Power Supply	:	12V DC, 1A
Description of adaptor	:	Trademark: OEM Model: ADS0121-W 120100 Input: AC 100-120V, 50/60Hz, 0.5A Output: DC 12V 1A
Operation Frequency	:	2412 MHz ~ 2462 MHz
Number of Channels	:	11
Type of Modulation	:	DSSS for IEEE 802.11b OFDM for IEEE 802.11g
Data Rate	:	IEEE 802.11b: 11/5.5/2/1Mbps IEEE 802.11g: 54/48/36/24/18/12/9/6Mbps

2.4 Test Standards List

FCC Part 15 (2008)

American national standard for methods of measurement of radio noise emissions from low-voltage electrical and electronic equipment in the range of 9KHz to 40GHz.

3. Test Specifications

3.1 Standard(s) Used

FCC Rules	Description Of Test	Result
15.203/15.247(b)	Antenna Requirement	Pass
15.207	Conducted Emission	Pass
15.247(b)(3)	Maximum Peak Output Power	Pass
15.247(d)	Band Edges Emission	Pass
15.247(a)(2)	6 dB Bandwidth	Pass
15.247(e)	Power Spectral Density	Pass
15.247(d)	Spurious Radiated Emission	Pass

3.2 Test Mode

The EUT has been tested under operating condition.
Software used to control the EUT for staying in continuous transmitting and receiving mode is programmed.
IEEE 802.11b: Channel 1(2412MHz), Channel 6(2437MHz) and Channel 11(2462MHz) with 11Mbps data rate (worst case) are chosen for the final testing.
IEEE 802.11g: Channel 1(2412MHz), Channel 6(2437MHz) and Channel 11(2462MHz) with 12Mbps data rate (worst case) are chosen for the final testing.

3.3 Deviations from the Test Specification

N/A

4. Test Result

4.1 Antenna Requirement

4.1.1 Standard Applicable

Section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna James or electrical connector is prohibited.

Section 15.247(b):

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

4.1.2 Antenna Connected Construction

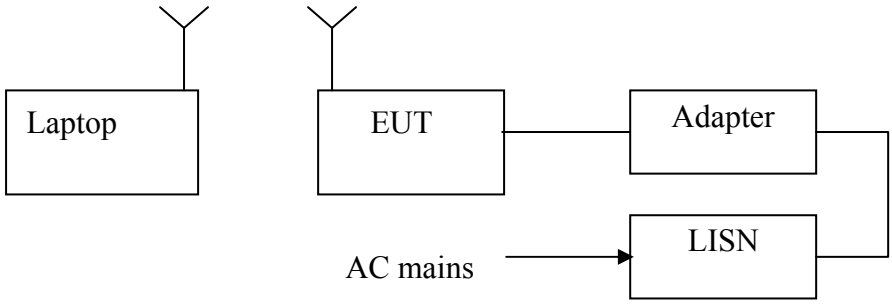
The antenna connector is designed with permanent attachment and no consideration of replacement.
Transmitter antenna of directional gain is 3dBi.

4.2 Conducted Emission (mains)

4.2.1 Test Summary

Test Room	:	Shielded Room
Power Source	:	AC 120V / 60Hz
Standards:	:	FCC Part15 B : 2008
EUT Type	:	Table Top
EUT configuration	:	EUT's highest possible emission level

4.2.2 Block diagram of test setup



4.2.3 Measurement method

The EUT along with its peripherals were placed on a 1.0m (W) x 1.5m(L) and 0.8m in height wooden table and the EUT was adjusted to maintain a 0.4m space from a vertical reference plane. The EUT was connected to power mains through a Artificial Mains Network(AMN), which provided 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room.

The excess power cable between the EUT and the AMN was bundled. All connecting cables of EUT and peripherals were moved to find the maximum emission.

4.2.4. Result

PASS

2009-09-14 12:47:25

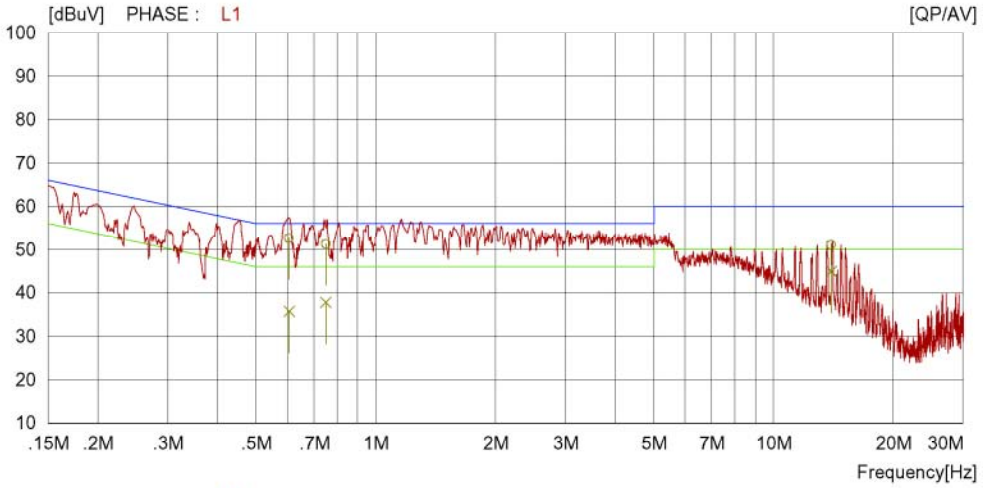
Conducted Emission

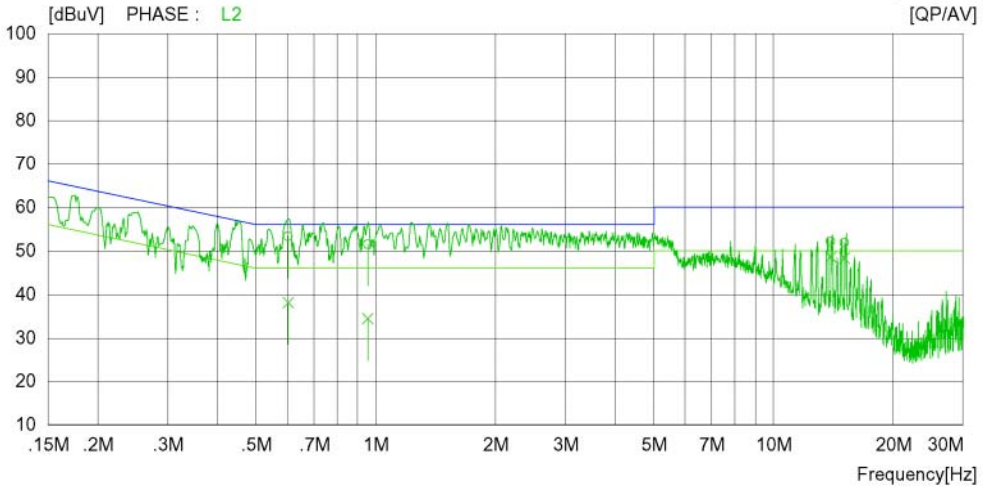
TDK South China EMC Centre
Date : 2009-09-14 12:47:12

Company Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC120V/60Hz
Product Name	:		Temp/Humi	:	25deg / 52%RH
Test condition	:	NORMAL	Operator	:	YONG SHENG PANG

Memo : Product:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part 15 B QP
FCC Part 15 B AV





TDK South China EMC Centre Tell:0769-8564-4678 Fax:0769-8564-4499

2009-09-14 12:47:25

Conducted Emission

TDK South China EMC Centre
Date : 2009-09-14 12:47:12

Company Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC120V/60Hz
Product Name	:		Temp/Humi	:	25deg / 52%RH
Test condition	:	NORMAL	Operator	:	YONG SHENG PANG

Memo : Product:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part 15 B QP
FCC Part 15 B AV

NO	FREQ	READING		C.FACTOR	RESULT		LIMIT		MARGIN		PHASE
		QP	AV		QP	AV	QP	AV	QP	AV	
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	
1	0.60500	42.6	25.7	10.1	52.7	35.8	56.0	46.0	3.3	10.2	L1
2	0.74800	41.2	27.7	10.1	51.3	37.8	56.0	46.0	4.7	8.2	L1
3	13.95700	41.1	35.0	9.9	51.0	44.9	60.0	50.0	9.0	5.1	L1
4	0.60200	43.1	28.0	10.1	53.2	38.1	56.0	46.0	2.8	7.9	L2
5	0.95400	41.4	24.3	10.1	51.5	34.4	56.0	46.0	4.5	11.6	L2
6	13.92300	42.3	38.7	9.9	52.2	48.6	60.0	50.0	7.8	1.4	L2
7	15.07300	41.9	38.4	9.9	51.8	48.3	60.0	50.0	8.2	1.7	L2

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4.3 Maximum Peak Output Power

4.3.1 Applicable Standard

According to Section 15.247(b)(3), for systems using digital modulation in 2400-2483.5MHz: 1 Watt.

4.3.2 Block diagram of test setup

Spectrum

Connection method: The shield cable was connected with EUT and Spectrum which have 50Ω Z_C. The connector of EUT side is original by manufacturer. The connector of Spectrum side is N type.

4.3.3 Measurement method

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in above figure without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Use the following spectrum analyzer settings:
   Measurement mode: Channel Power
   Center Frequency = 2412MHz, 2437MHz or 2462MHz
   Channel Power Span = 30MHz
   Integ. Bandwidth = 16MHz for 802.11b, 20MHz for 802.11g
   Sweep = auto
   Detector function = peak
4. Hold on 30s, find out the max value on the screen of Spectrum.
5. Repeat above procedures until all frequencies measured were complete.

4.3.4. Result

Temperature (℃) : 22~23	EUT: ADSL2+ 802.11b/g 4 Port Managed Switch Router
Humidity (%RH): 50~54	M/N: Lynx 524
Barometric Pressure (mbar): 950~1000	Operation Condition: Tx Mode
Test data: Sep 11, 2009	Test engineer: Phenix

802.11b mode:

Channel No.	Frequency (MHz)	Output Power (dBm)	Limits (dBm)	Margin (dB)
LOW (CH 1)	2412	17.22	30	12.78
MID (CH 6)	2437	17.79	30	12.21
HIG (CH 11)	2462	18.01	30	11.99

802.11g mode:

Channel No.	Frequency (MHz)	Output Power (dBm)	Limits (dBm)	Margin (dB)
LOW (CH 1)	2412	15.79	30	14.21
MID (CH 6)	2437	16.62	30	13.38
HIG (CH 11)	2462	18.06	30	11.94

4.4 Band Edges Emission

4.4.1 Applicable Standard

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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. In addition, radiated emissions that fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209.

4.4.2 Block diagram of test setup

Spectrum

Connection method: The shield cable was connected with EUT and Spectrum which have 50Ω Z_C. The connector of EUT side is original by manufacturer. The connector of Spectrum side is N type.

4.4.3 Measurement method

1. The transmitter is set to the lowest channel.
2. The transmitter output was connected to the spectrum analyzer via a cable and cable loss is used as the offset of the spectrum analyzer.
3. Set both RBW and VBW of spectrum analyzer to 100KHz with convenient frequency span including 20MHz bandwidth from lower band edge. Then detector set to peak and max hold this trace.
4. The lowest band edges emission was measured and recorded.
5. The transmitter set to the highest channel and repeated 2~4.

4.4.4. Result

Conducted:

Temperature (℃) : 22~23	EUT: ADSL2+ 802.11b/g 4 Port Managed Switch Router
Humidity (%RH): 50~54	M/N: Lynx 524
Barometric Pressure (mbar): 950~1000	Operation Condition: Tx Mode
Test data: Sep 11, 2009	Test engineer: Phenix

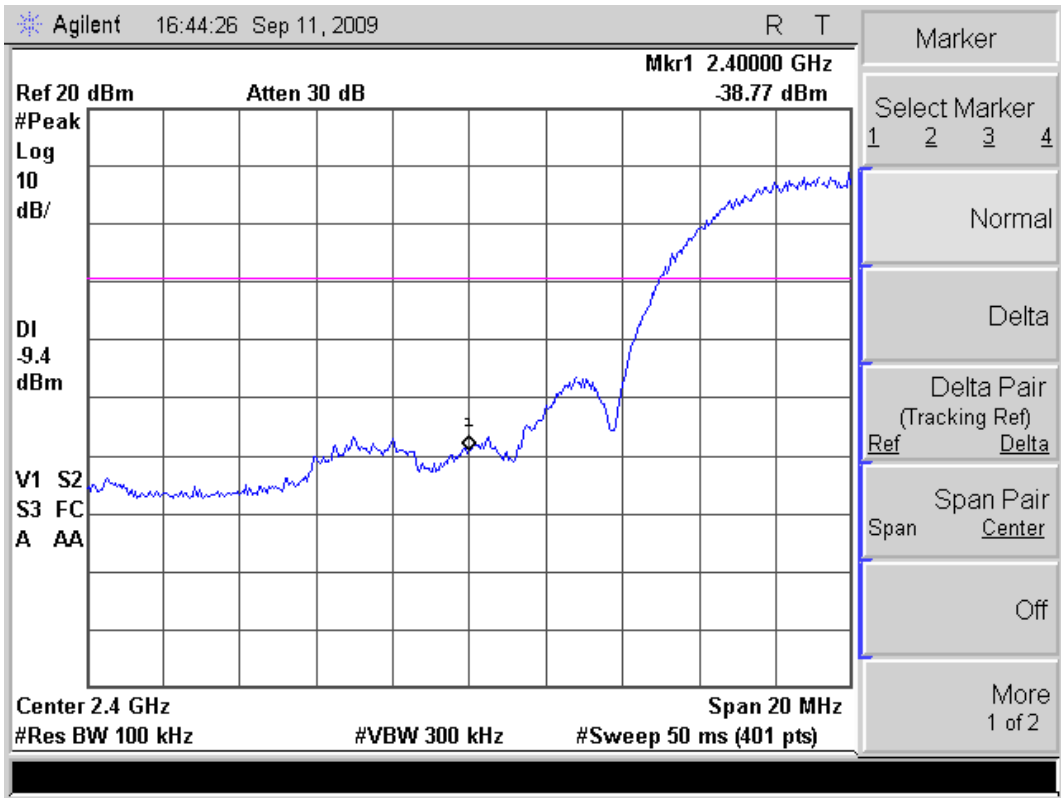
802.11b mode:

Frequency (MHz)	Read Delta (dB)	Limits (dB)	Margin (dB)
2400	-49.37	-20	29.37
2483.5	-55.48	-20	35.48

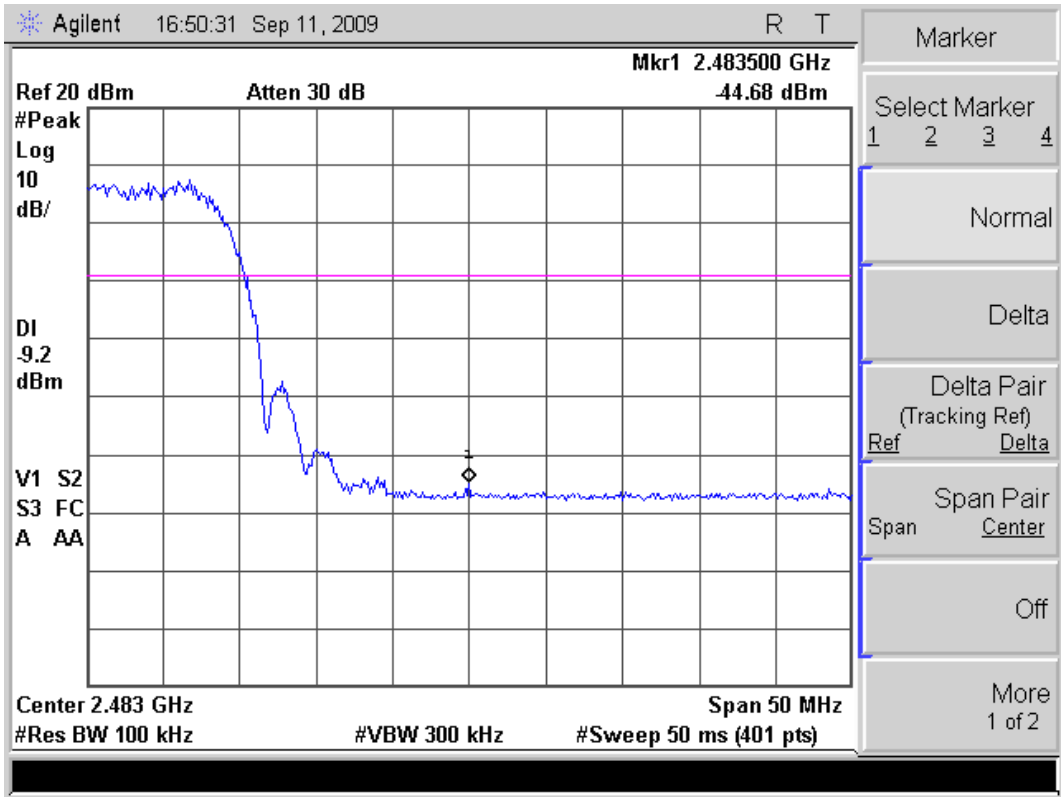
802.11g mode:

Frequency (MHz)	Read Delta (dB)	Limits (dB)	Margin (dB)
2400	-54.52	-20	34.52
2483.5	-62.25	-20	42.25

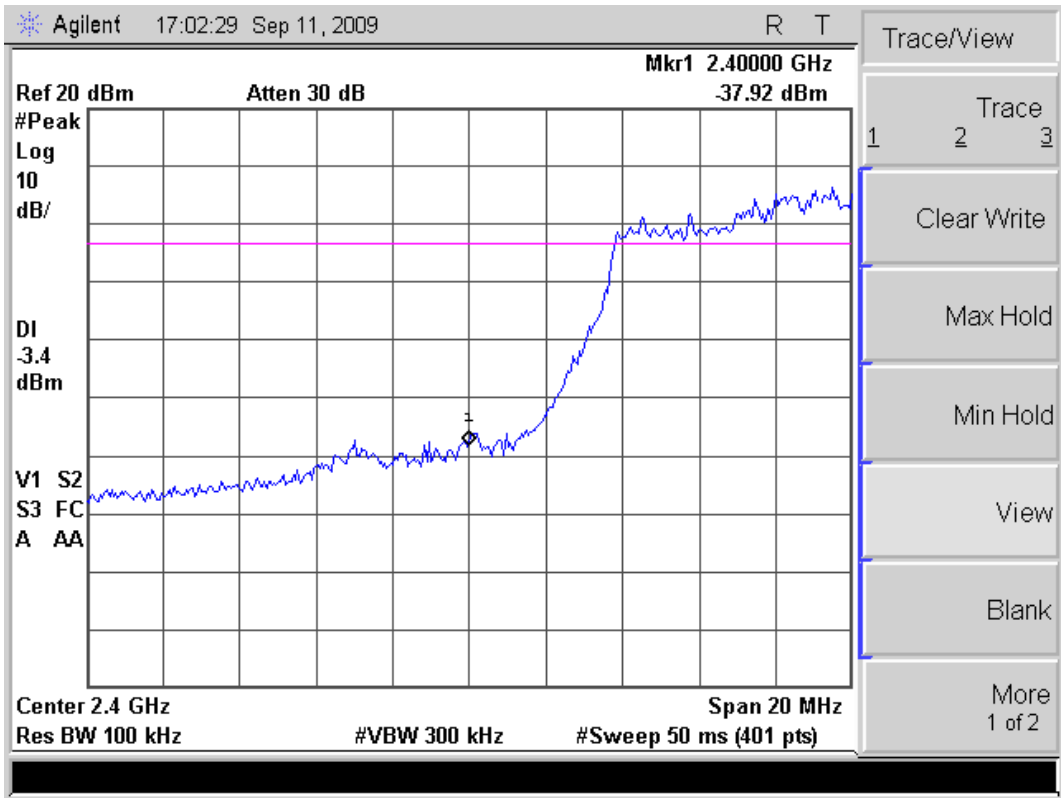
802.11b mode Plot:
Channel LOW：



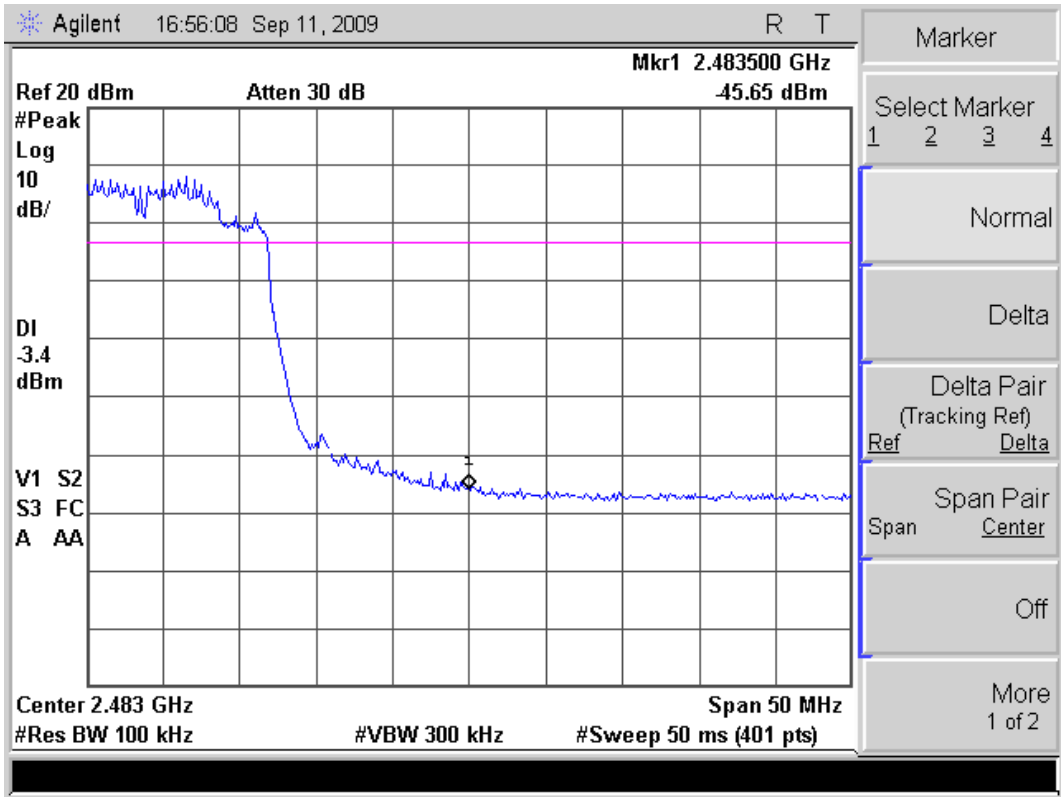
Channel HIG：



802.11g mode Plot:
Channel LOW：



Channel HIG：



Radiated:

802.11b mode:

2009-09-18 10:54:45

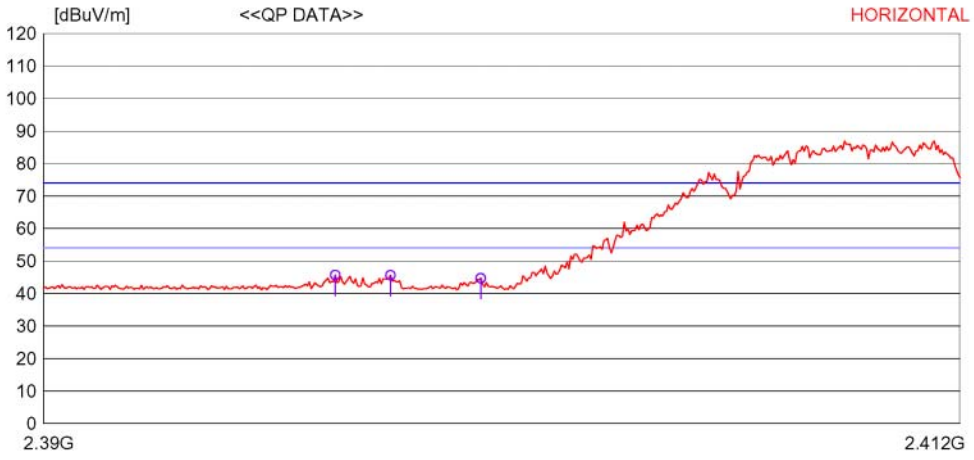
RADIATED EMISSION

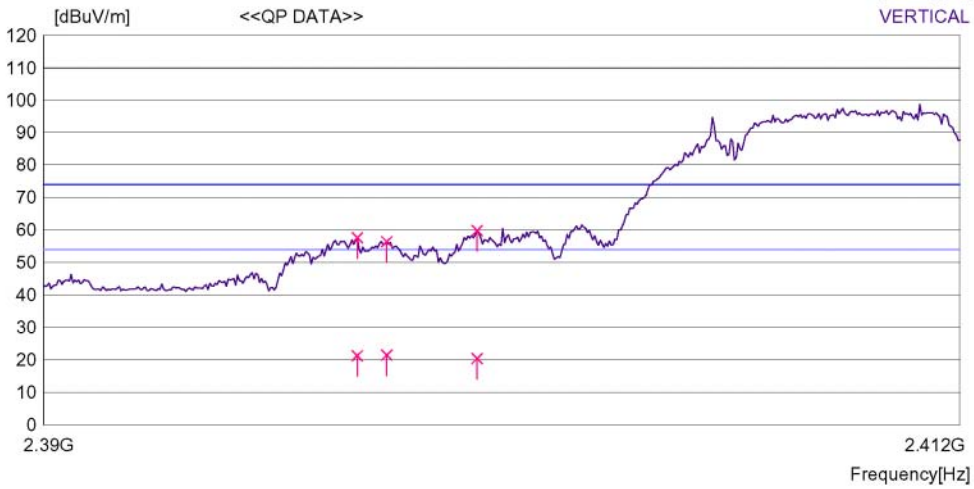
Date : 2009-09-18 10:54:29

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11b, CH 1	Operator	:	Phenix zhang

Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)





2009-09-18 10:54:45

RADIATED EMISSION

Date : 2009-09-18 10:54:29

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11b, CH 1	Operator	:	Phenix zhang

Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)

No.	FREQ [MHz]	READING [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [deg]	REMARK
----- Horizontal ------											
1	2396.982	48.3	31.4	5.5	39.5	45.7	74.0	28.3	200	270	PK
2	2398.308	48.2	31.4	5.5	39.5	45.6	74.0	28.4	100	179	PK
3	2400.473	47.3	31.4	5.5	39.5	44.7	74.0	29.3	100	179	PK
----- Vertical ------											
4	2397.512	60.2	31.4	5.5	39.5	57.6	74.0	16.4	200	225	PK
5	2398.219	59.0	31.4	5.5	39.5	56.4	74.0	17.6	100	224	PK
6	2400.385	62.4	31.4	5.5	39.5	59.8	74.0	14.2	100	179	PK
7	2397.512	23.9	31.4	5.5	39.5	21.3	74.0	52.7	200	225	AV
8	2398.219	24.1	31.4	5.5	39.5	21.5	74.0	52.5	100	224	AV
9	2400.385	23.0	31.4	5.5	39.5	20.4	74.0	53.6	100	179	AV

2009-09-18 11:15:13

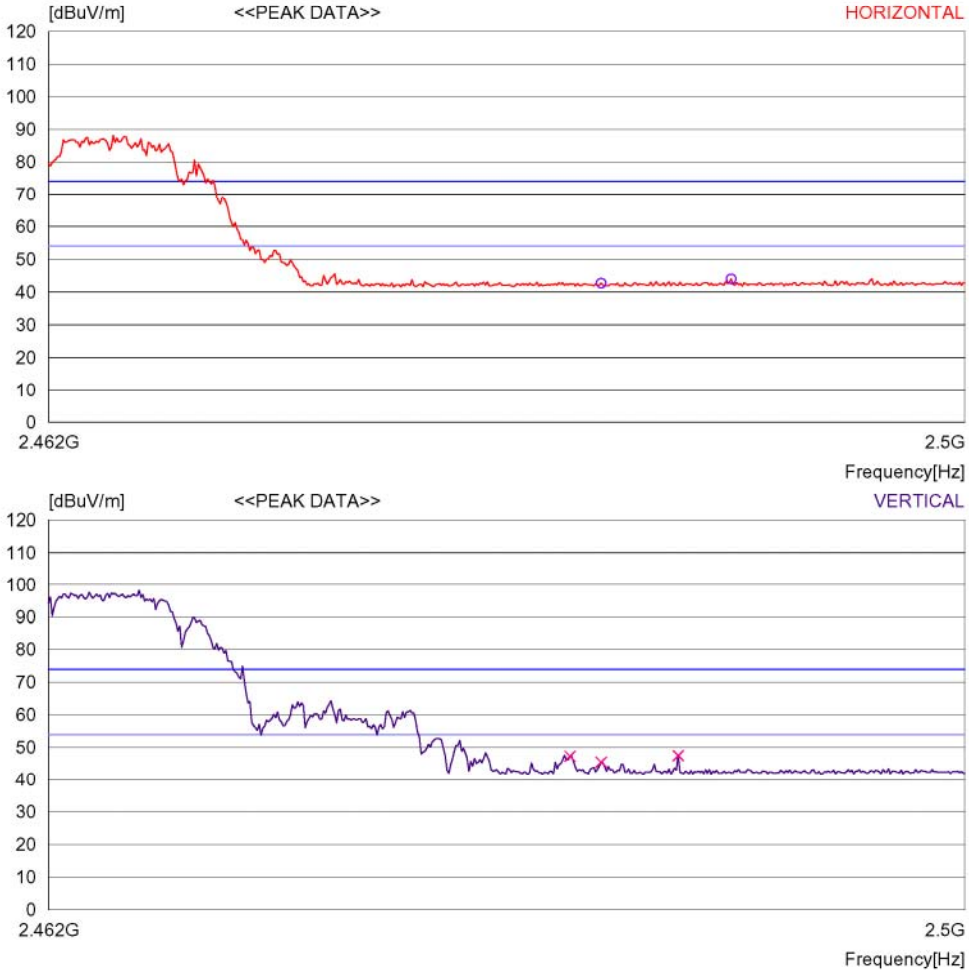
RADIATED EMISSION

Date : 2009-09-18 11:15:01

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11b, CH 11	Operator	:	Phenix zhang

Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)



2009-09-18 11:15:13

RADIATED EMISSION

Date : 2009-09-18 11:15:01

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11b, CH 11	Operator	:	Phenix zhang

Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	2484.852	45.3	31.2	5.6	39.4	42.7	74	31.3	200	45
2	2490.260	46.6	31.2	5.6	39.4	44.0	74	30.0	200	270
----- Vertical ------										
3	2483.557	49.9	31.2	5.6	39.4	47.3	74	26.7	100	180
4	2484.852	48.1	31.2	5.6	39.4	45.5	74	28.5	100	90
5	2488.051	50.1	31.2	5.6	39.4	47.5	74	26.5	100	180

802.11g mode:

2009-09-18 11:59:22

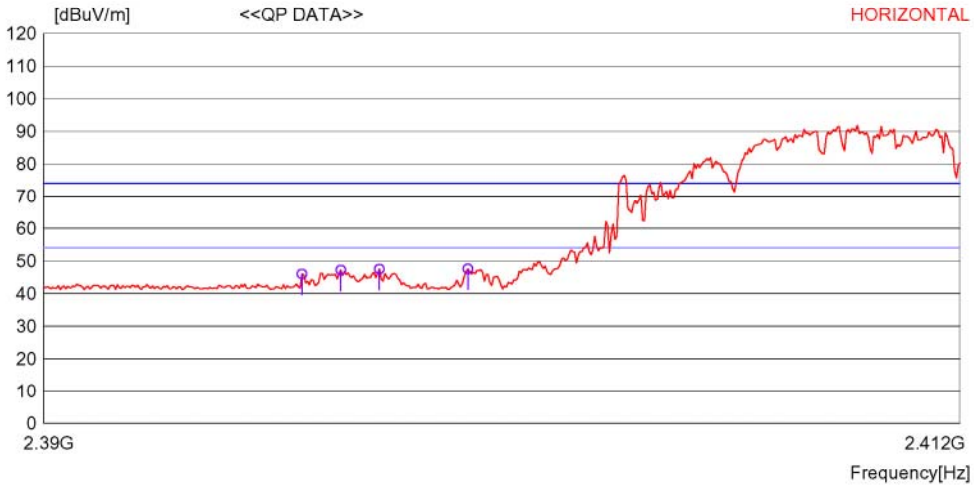
RADIATED EMISSION

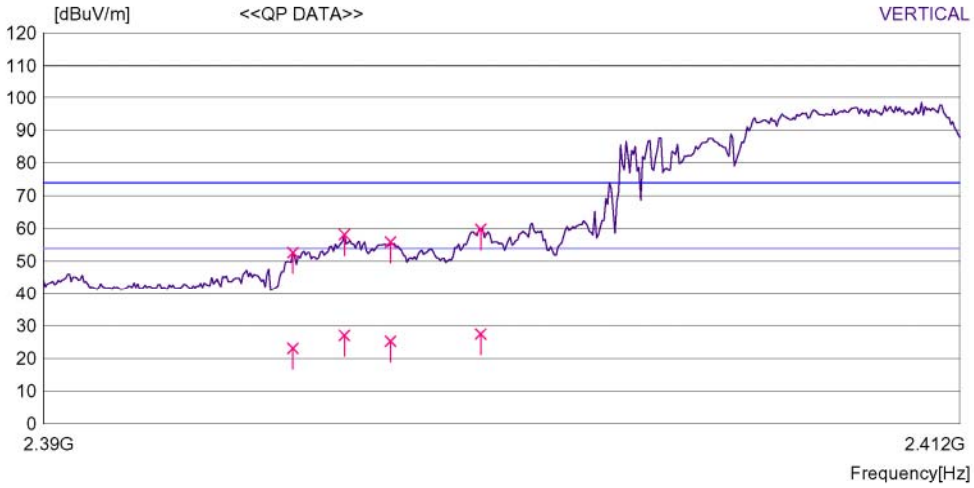
Date : 2009-09-18 11:59:14

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11g, CH 1	Operator	:	Phenix zhang

Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)





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RADIATED EMISSION

Date : 2009-09-18 11:59:14

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11g, CH 1	Operator	:	Phenix zhang

Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)

No.	FREQ [MHz]	READING [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [deg]	REMARK
----- Horizontal ------											
1	2396.187	48.6	31.4	5.5	39.5	46.0	74.0	28.0	200	315	PK
2	2397.115	49.8	31.4	5.5	39.5	47.2	74.0	26.8	200	315	PK
3	2398.042	50.1	31.4	5.5	39.5	47.5	74.0	26.5	200	315	PK
4	2400.164	50.2	31.4	5.5	39.5	47.6	74.0	26.4	200	315	PK
----- Vertical ------											
5	2395.966	55.3	31.4	5.5	39.5	52.7	74.0	21.3	100	180	PK
6	2397.203	60.8	31.4	5.5	39.5	58.2	74.0	15.8	100	180	PK
7	2398.308	58.5	31.4	5.5	39.5	55.9	74.0	18.1	100	180	PK
8	2400.473	62.4	31.4	5.5	39.5	59.8	74.0	14.2	100	180	PK
9	2395.966	25.7	31.4	5.5	39.5	23.1	74.0	50.9	100	180	AV
10	2397.203	29.7	31.4	5.5	39.5	27.1	74.0	46.9	100	180	AV
11	2398.308	27.9	31.4	5.5	39.5	25.3	74.0	48.7	100	180	AV
12	2400.473	30.1	31.4	5.5	39.5	27.5	74.0	46.5	100	180	AV

2009-09-18 11:34:09

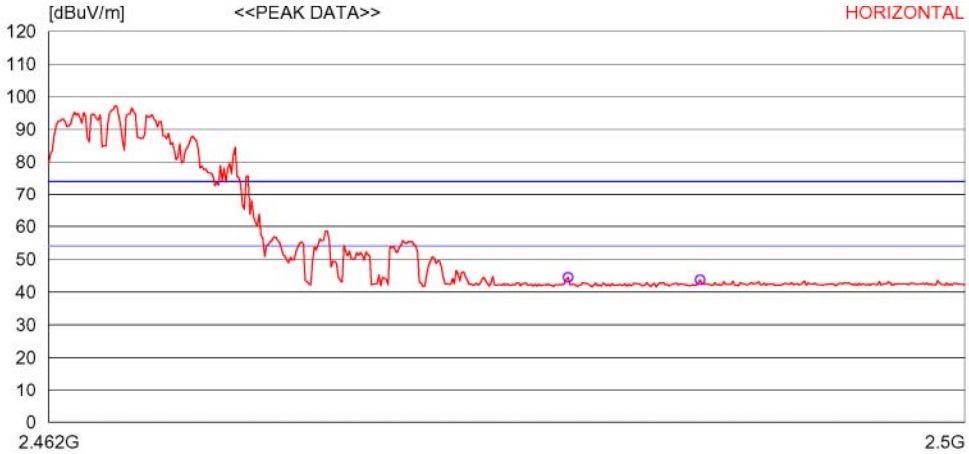
RADIATED EMISSION

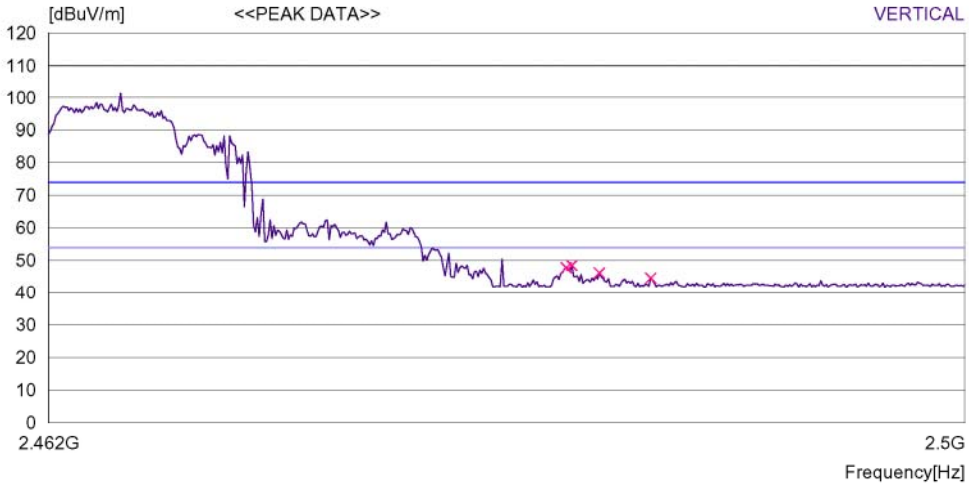
Date : 2009-09-18 11:34:00

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11g, CH 11	Operator	:	Phenix zhang

Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)





2009-09-18 11:34:09

RADIATED EMISSION

Date : 2009-09-18 11:34:00

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11g, CH 11	Operator	:	Phenix zhang

Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	2483.480	47.1	31.2	5.6	39.4	44.5	74	29.5	100	359
2	2488.965	46.3	31.2	5.6	39.4	43.7	74	30.3	200	359
----- Vertical ------										
3	2483.404	50.4	31.2	5.6	39.4	47.8	74	26.2	100	180
4	2483.633	51.1	31.2	5.6	39.4	48.5	74	25.5	100	180
5	2484.775	48.8	31.2	5.6	39.4	46.2	74	27.8	100	180
6	2486.908	47.2	31.2	5.6	39.4	44.6	74	29.4	100	180

4.5 6dB BANDWIDTH

4.5.1 Applicable Standard

According to section 15.247(a)(2), for digital modulation technique, the minimum 6dB bandwidth shall be at least 500kHz.

4.5.2 Block diagram of test setup

Spectrum

Connection method: The shield cable was connected with EUT and Spectrum which have 50Ω Z_C. The connector of EUT side is original by manufacturer. The connector of Spectrum side is N type.

4.5.3 Measurement method

1. The transmitter output was connected to the spectrum analyzer through a shielded cable.
2. Set the spectrum analyzer as RBW=100 kHz, VBW=300 kHz, Span=40MHz, Sweep=auto.
3. Set Detector to Peak, Trace to Max Hold and Sweep Time is auto.
4. Mark the peak frequency and -6dB(upper and lower) frequency.
5. Repeat above 1-4 points for the middle and highest channel of the EUT.

4.5.4. Result

Temperature (℃) : 22~23	EUT: ADSL2+ 802.11b/g 4 Port Managed Switch Router
Humidity (%RH): 50~54	M/N: Lynx 524
Barometric Pressure (mbar): 950~1000	Operation Condition: Tx Mode
Test data: Sep 11, 2009	Test engineer: Phenix

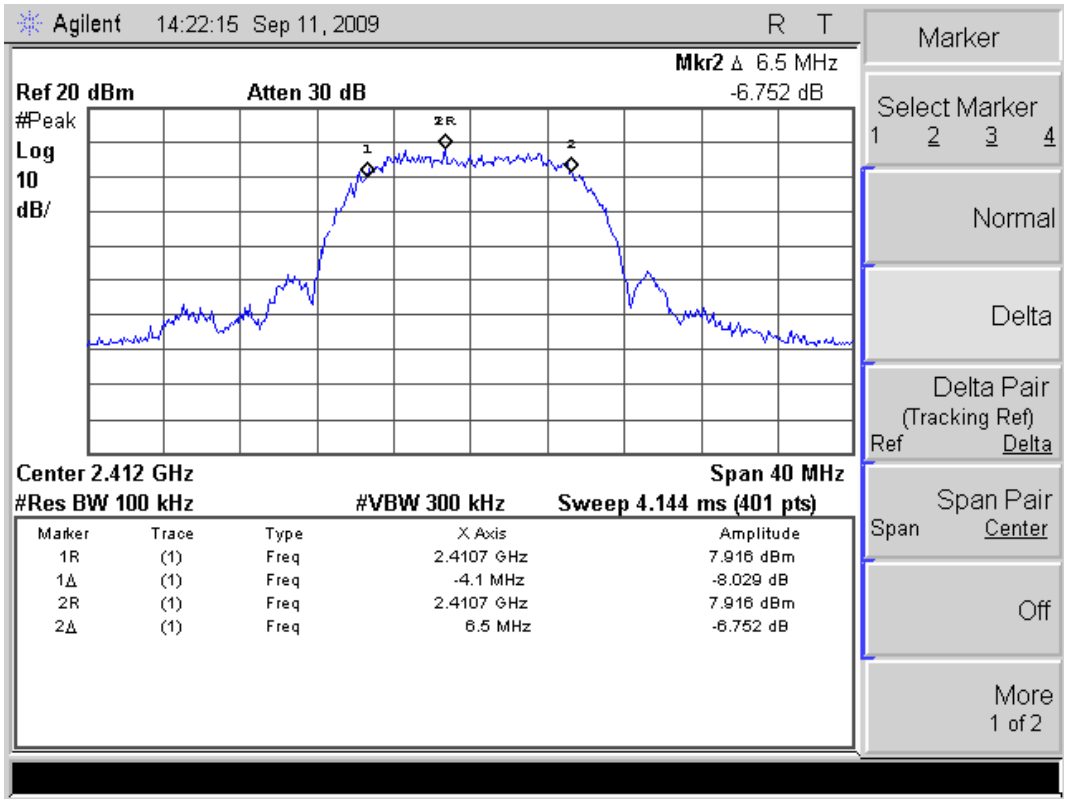
802.11b mode:

Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limits (MHz)
LOW (CH 1)	2412	10.6	＞0.5
MID (CH 6)	2437	10.8	＞0.5
HIG (CH 11)	2462	10.8	＞0.5

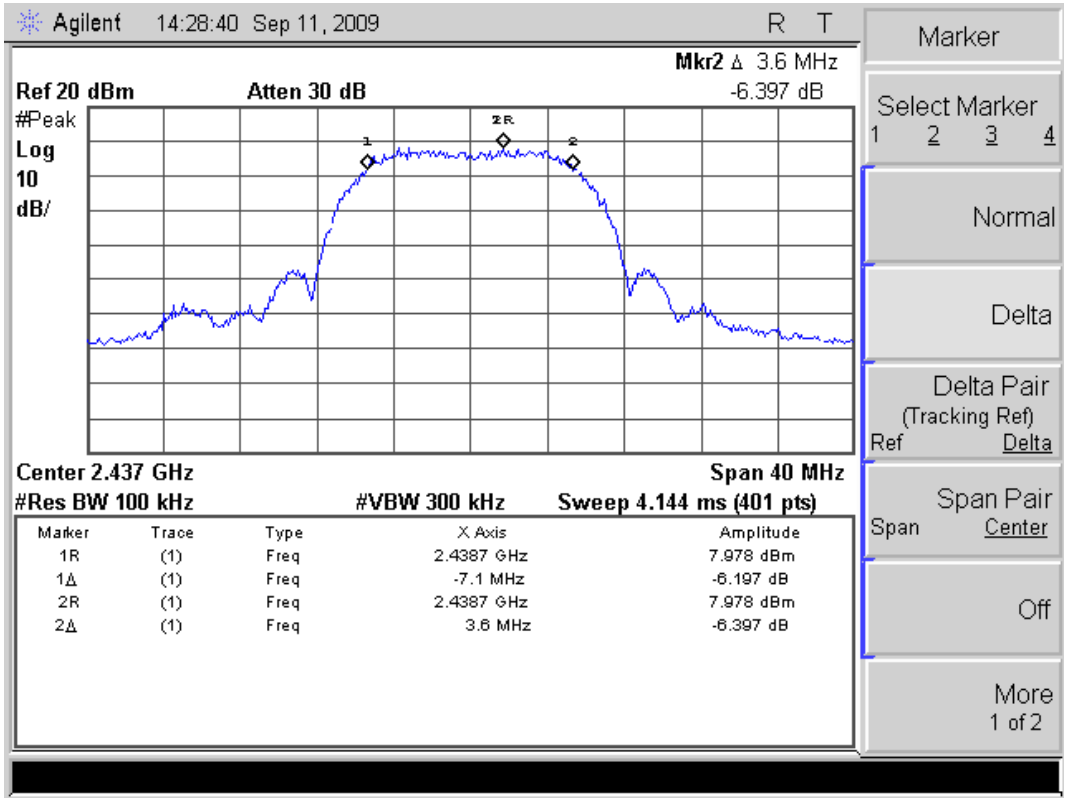
802.11g mode:

Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limits (MHz)
LOW (CH 1)	2412	16.6	＞0.5
MID (CH 6)	2437	16.5	＞0.5
HIG (CH 11)	2462	16.6	＞0.5

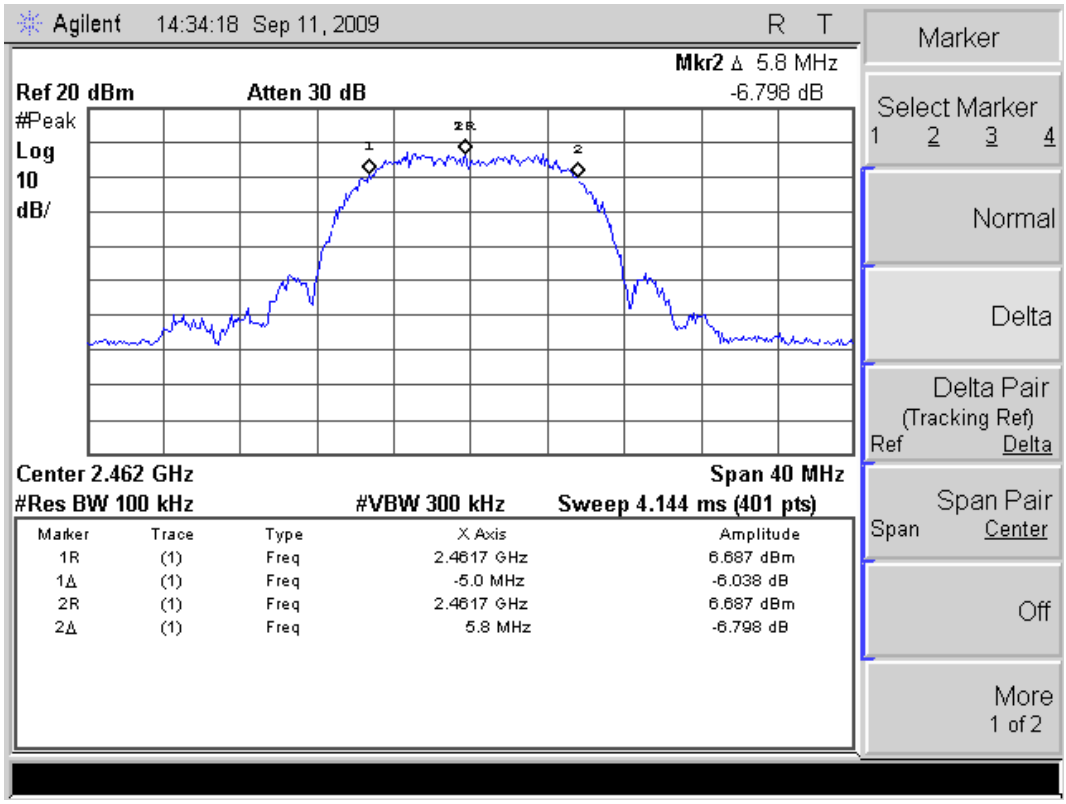
802.11b mode Plot:
Channel LOW：



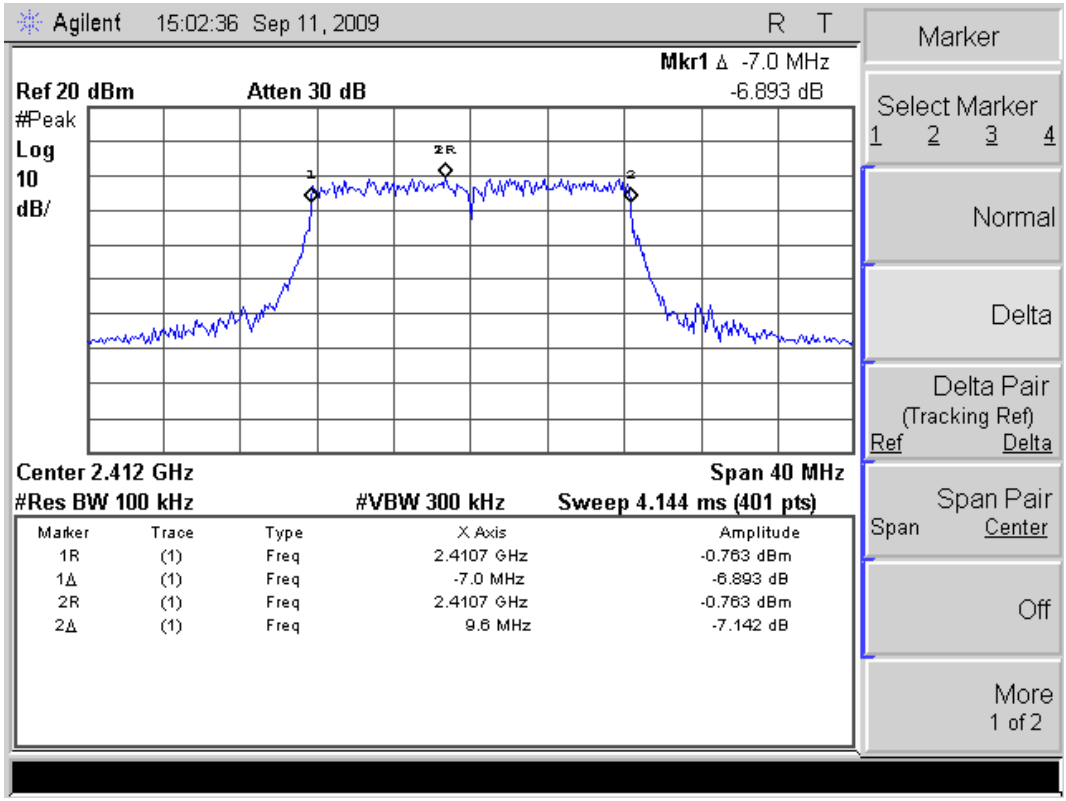
Channel MID：



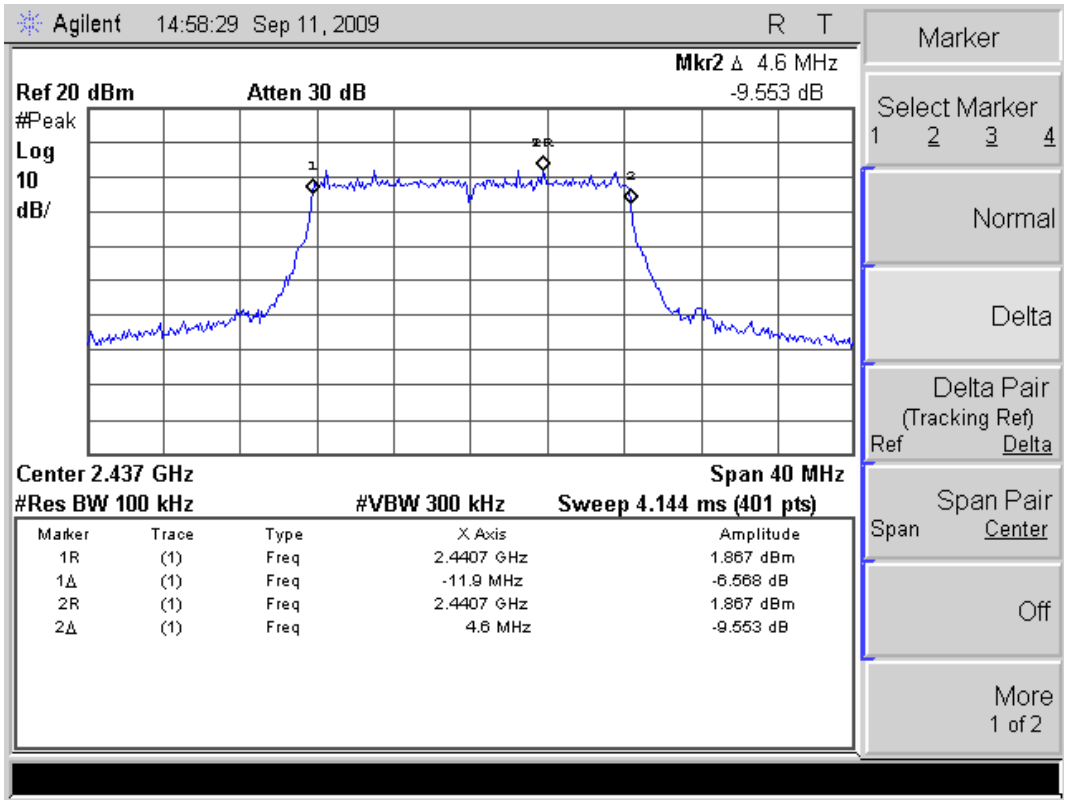
Channel HIG：



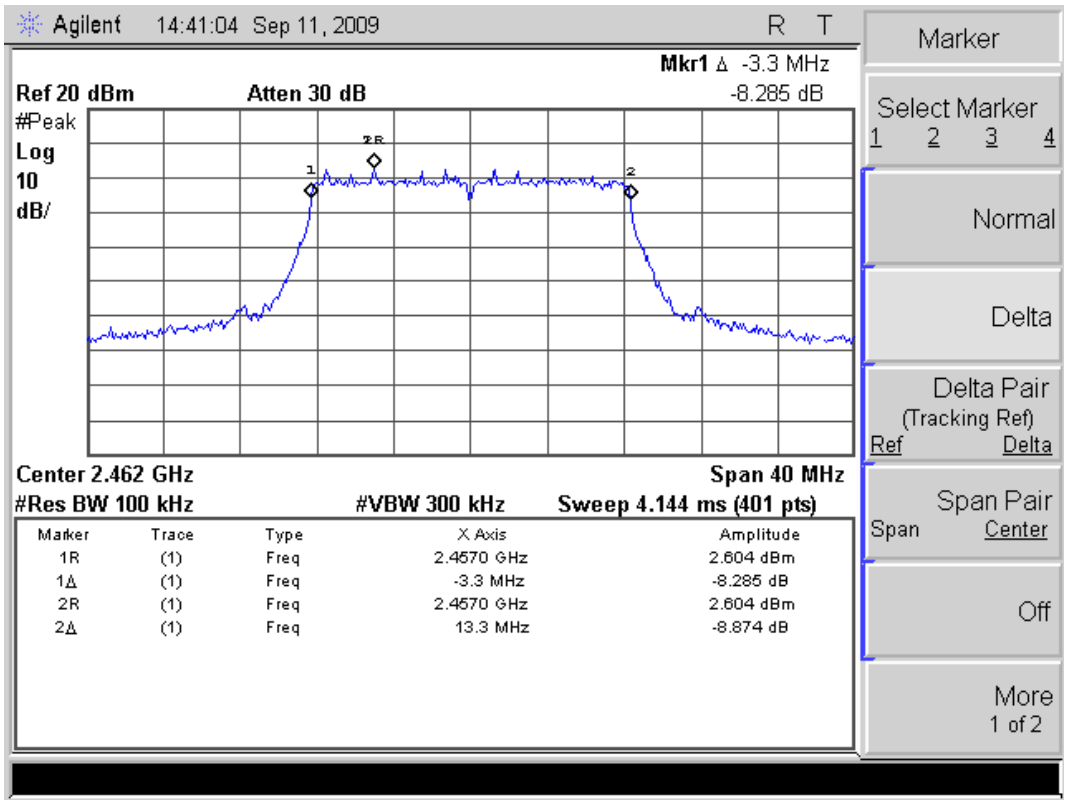
802.11g mode Plot:
Channel LOW：



Channel MID：



Channel HIG：



4.6 Power Spectral Density

4.6.1 Applicable Standard

According to section 15.247(d), for digital modulation technique, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.

4.6.2 Block diagram of test setup

Spectrum

Connection method: The shield cable was connected with EUT and Spectrum which have 50Ω Z_C. The connector of EUT side is original by manufacturer. The connector of Spectrum side is N type.

4.6.3 Measurement method

1. The transmitter output was connected to the spectrum analyzer through a shielded cable.
2. Set the spectrum analyzer as RBW=3 kHz, VBW=10 kHz, Span=300 kHz, Sweep=100s.
3. Set Detector to Peak, Trace to Max Hold.
4. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The plot of result is show on the screen of spectrum analyzer.
5. Repeat above 1-4 points for the middle and highest channel of the EUT.

4.6.4. Result

Temperature (℃) : 22~23	EUT: ADSL2+ 802.11b/g 4 Port Managed Switch Router
Humidity (%RH): 50~54	M/N: Lynx 524
Barometric Pressure (mbar): 950~1000	Operation Condition: Tx Mode
Test data: Sep 11, 2009	Test engineer: Phenix

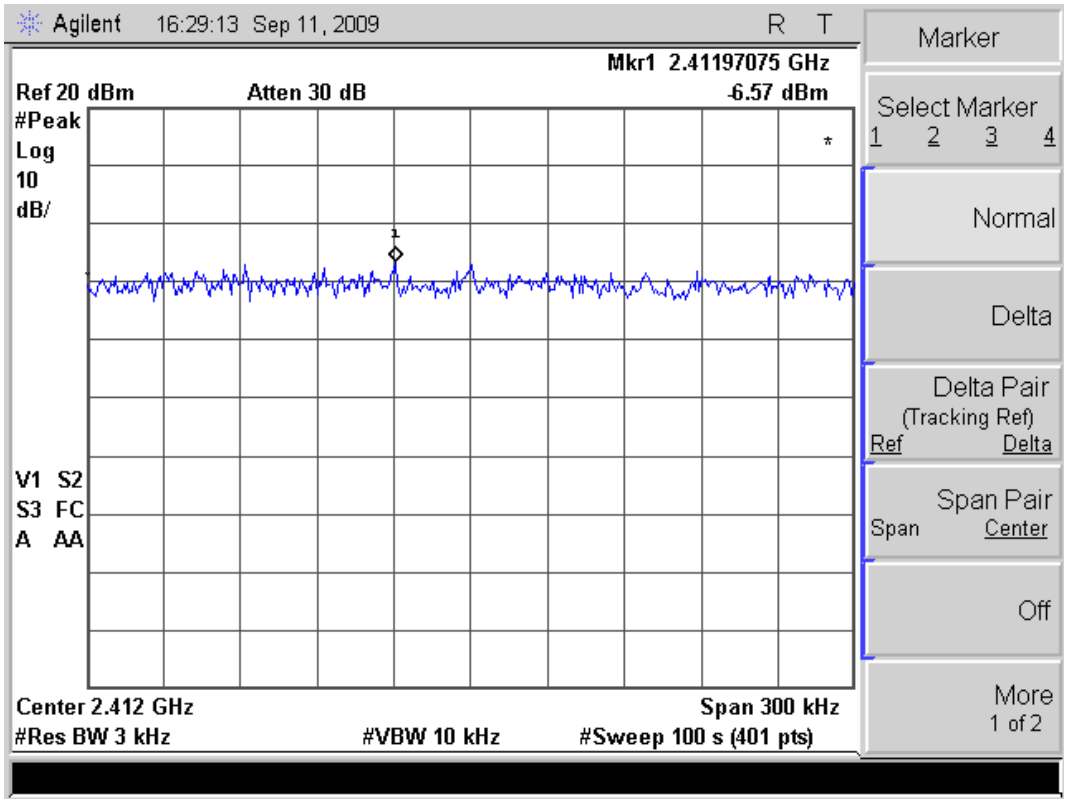
802.11b mode:

Channel No.	Frequency (MHz)	Power Spectral Density (MHz)	Limits (dBm)	Margin (dB)
LOW (CH 1)	2412	-6.57	8	14.57
MID (CH 6)	2437	-7.17	8	15.17
HIG (CH 11)	2462	-7.81	8	15.61

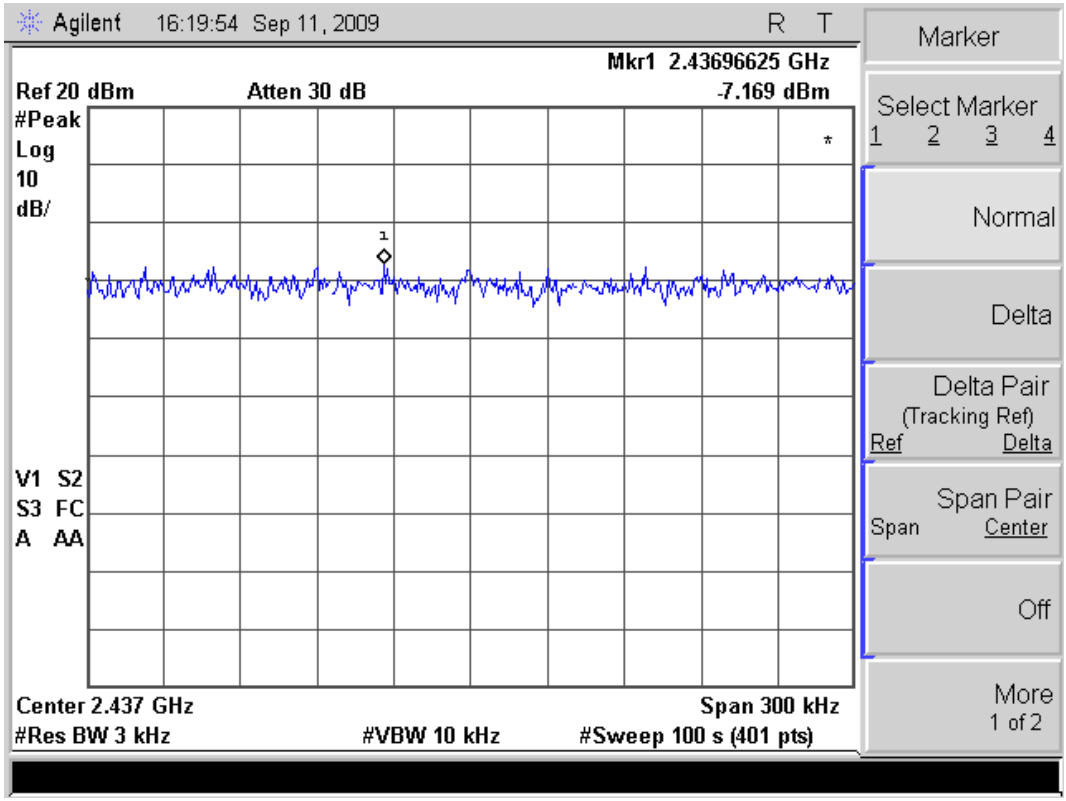
802.11g mode:

Channel No.	Frequency (MHz)	Power Spectral Density (MHz)	Limits (dBm)	Margin (dB)
LOW (CH 1)	2412	-12.43	8	20.43
MID (CH 6)	2437	-11.51	8	19.51
HIG (CH 11)	2462	-10.56	8	18.56

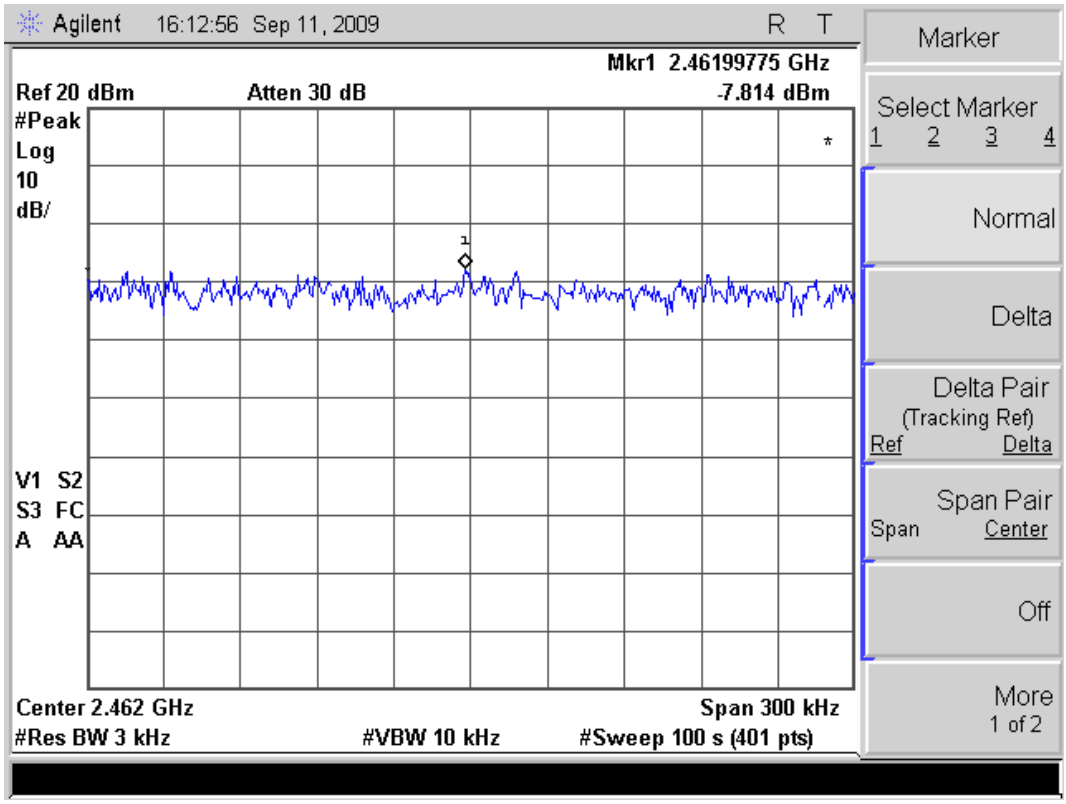
802.11b mode Plot:
Channel LOW：



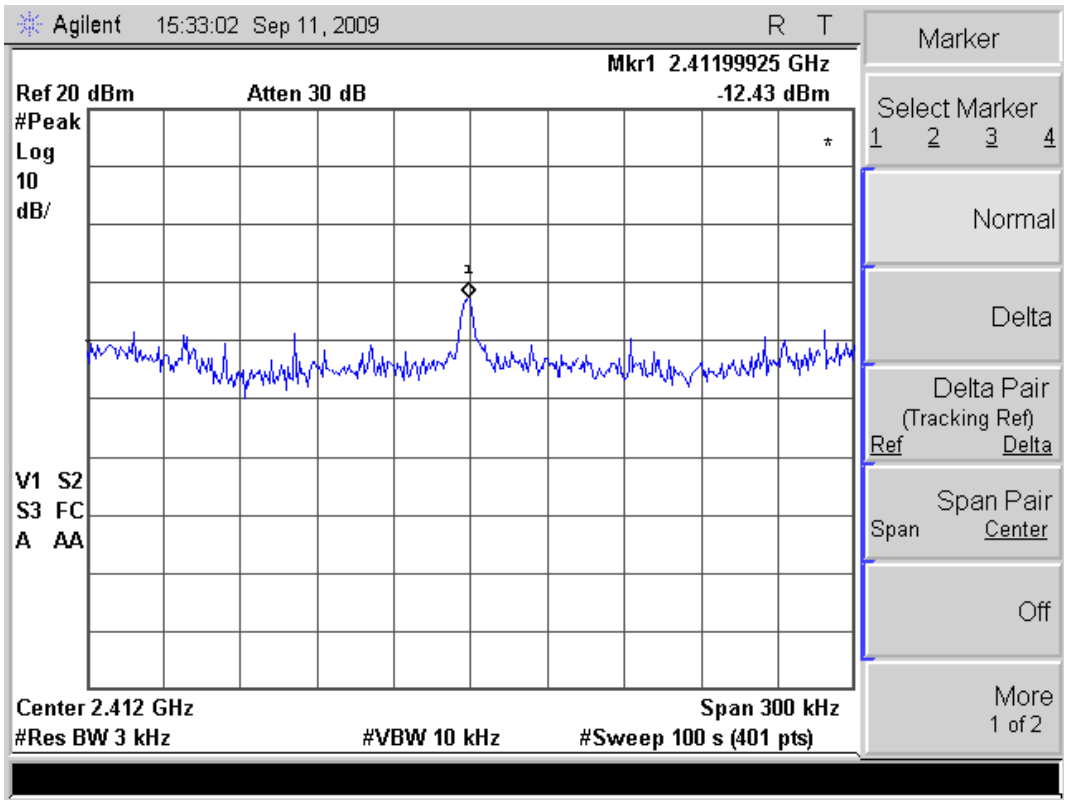
Channel MID：



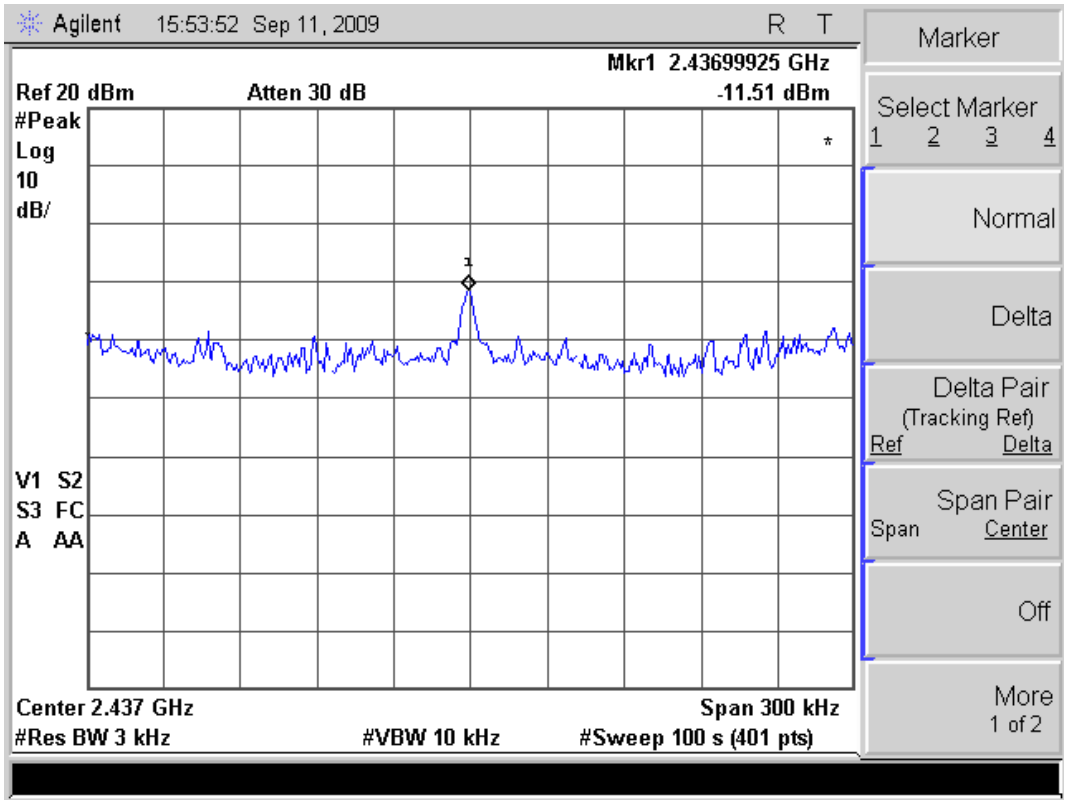
Channel HIG：



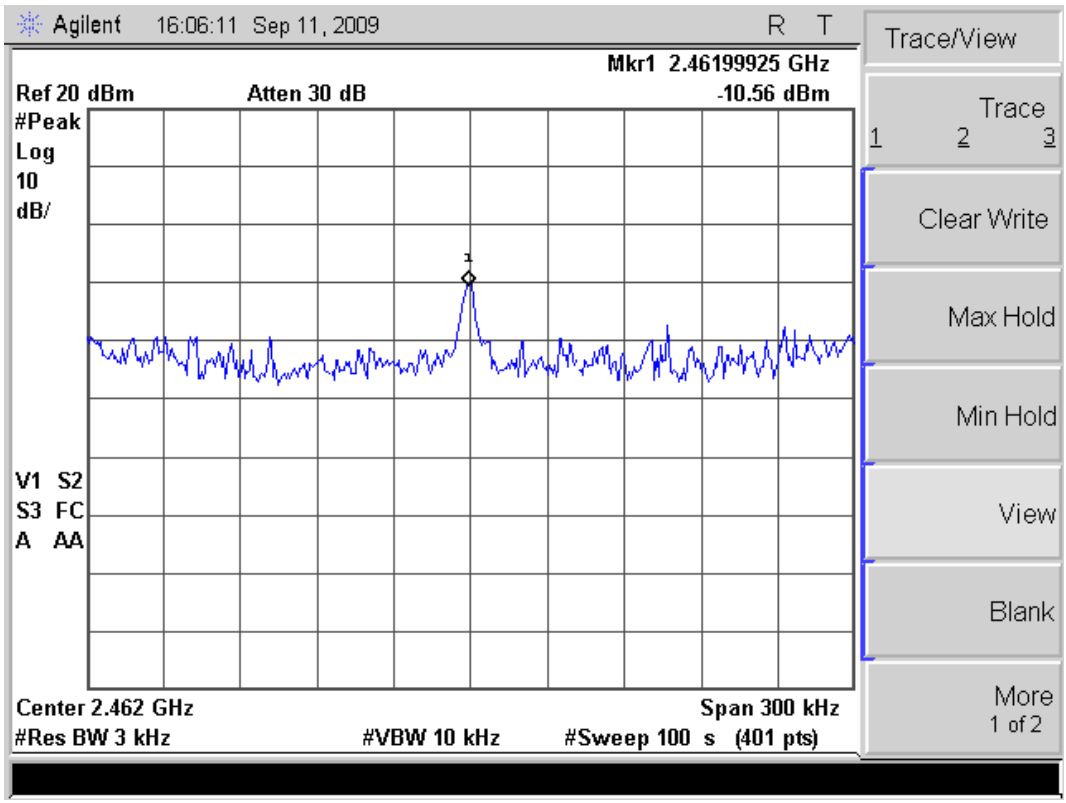
802.11g mode Plot:
Channel LOW：



Channel MID：



Channel HIG：



4.7 Spurious Radiated Emission

4.7.1 Applicable Standard

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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. In addition, radiated emissions that fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209.

4.7.2 Block diagram of test setup

Radiated Measurement Setup:

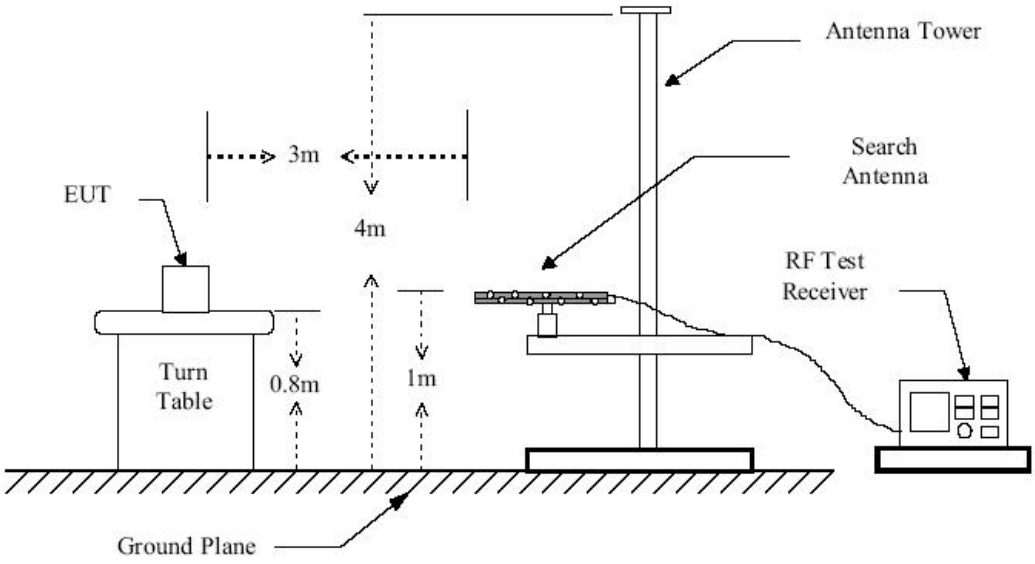


Figure 1 : Frequencies measured below 1 GHz configuration

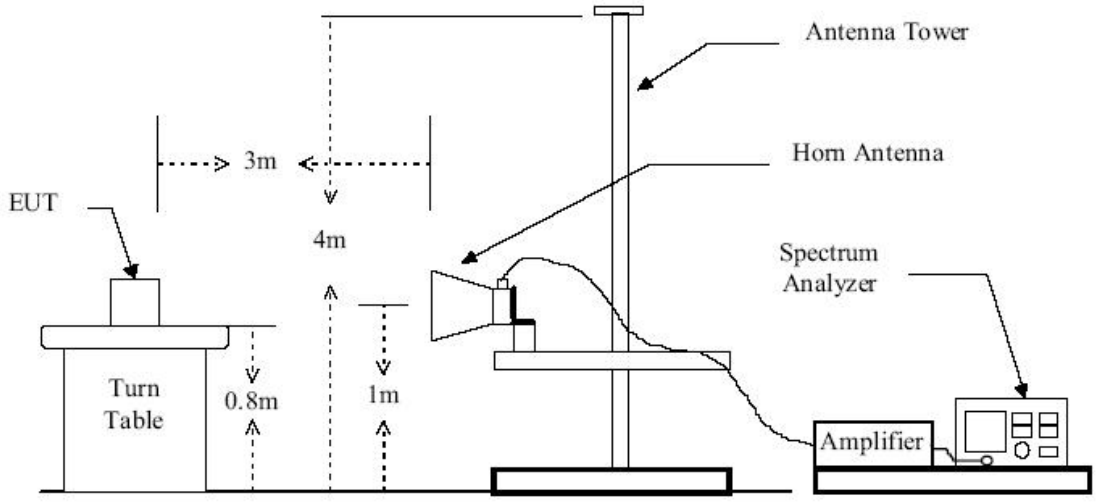


Figure 2 : Frequencies measured above 1 GHz configuration

Conducted Measurement Setup:

Spectrum

Connection method: The shield cable was connected with EUT and Spectrum which have 50Ω Z_C. The connector of EUT side is original by manufacturer. The connector of Spectrum side is N type.

4.7.3 Measurement method

Radiated Measurement

1. Configure the EUT according to ANSI C63.4.
2. The EUT was placed on the top of the turntable 0.8 meter above ground.
3. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
4. Power on the EUT and all the supporting units.
5. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
6. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emission field strength of both horizontal and vertical polarization.
7. For each suspected emission, the antenna tower was scanned (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
8. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.

Conducted Measurement

1. For emission above 1GHz, conducted measurement method is used.
2. The transmitter is set to the lowest channel.
3. The transmitter output was connected to the spectrum analyzer via a cable and cable loss is used as the offset of the spectrum analyzer.
4. Set RBW to 100 KHz and VBW to 300 KHz, Then detector set to peak and max hold this trace.
5. The lowest band edges emission was measured and recorded.
6. The transmitter set to the highest channel and repeated 2~4.

4.7.4. Result

PASS

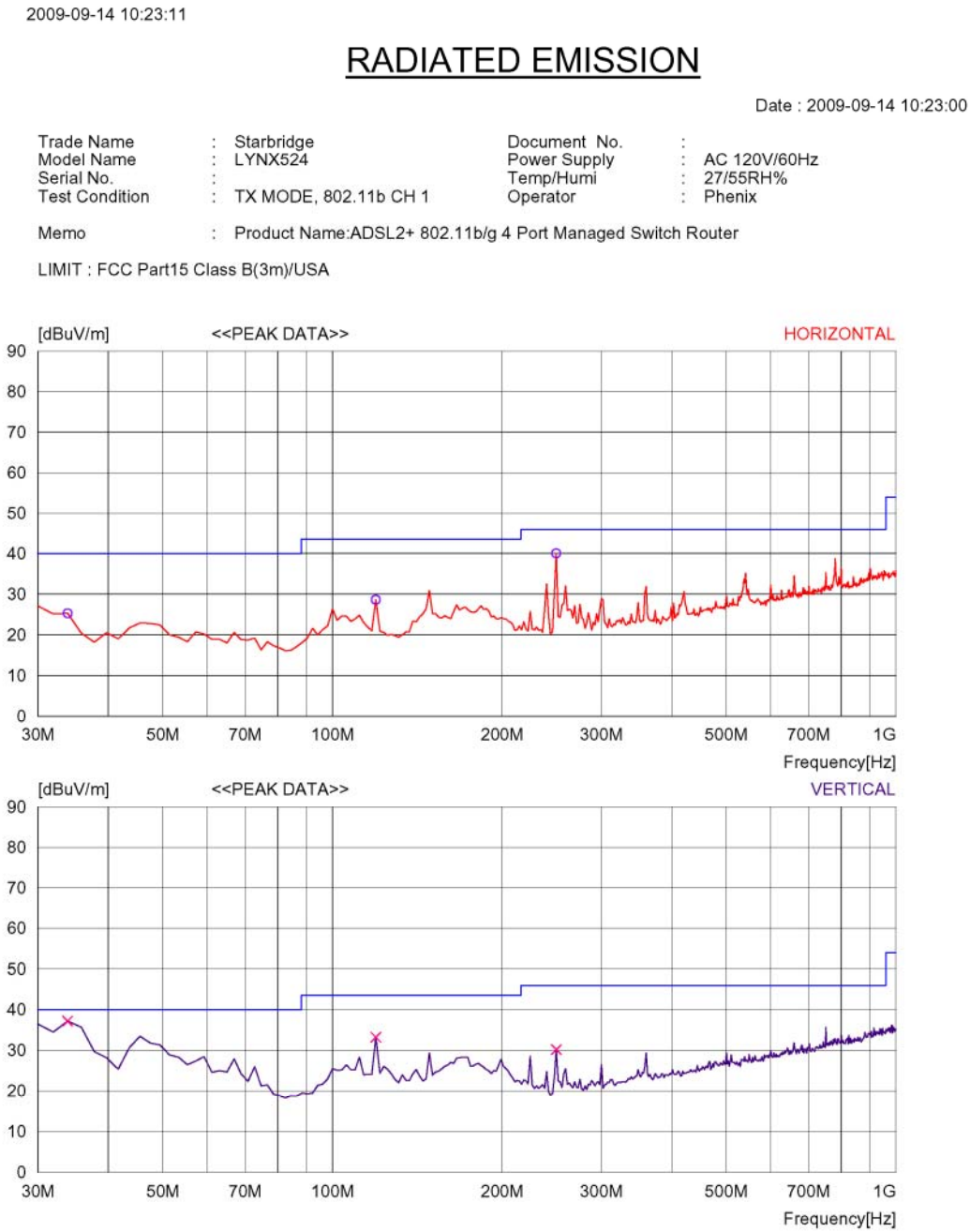
Radiated:

Below 30MHz:

No further spurious emissions found between lowest internal used or generated frequency and 30 MHz.

30M- 1GHz:

802.11b mode Channel Low:



2009-09-14 10:23:11

RADIATED EMISSION

Date : 2009-09-14 10:23:00

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX MODE, 802.11b CH 1	Operator	:	Phenix

Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 Class B(3m)/USA

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	33.888	38.6	11.6	6.8	31.7	25.3	40	14.7	100	55
2	119.419	42.0	10.6	7.6	31.6	28.6	43.5	14.9	300	109
3	249.660	51.5	11.6	8.3	31.4	40.0	46	6.0	100	43
----- Vertical ------										
4	33.888	50.5	11.6	6.8	31.7	37.2	40	2.8	100	28
5	119.419	46.6	10.6	7.6	31.6	33.2	43.5	10.3	100	69
6	249.660	41.7	11.6	8.3	31.4	30.2	46	15.8	100	5

802.11b mode Channel Mid:

2009-09-14 17:05:06

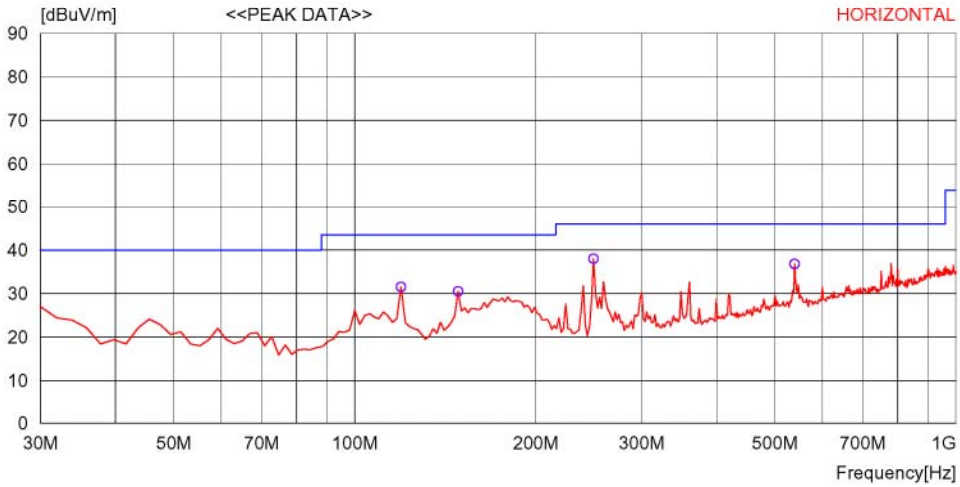
RADIATED EMISSION

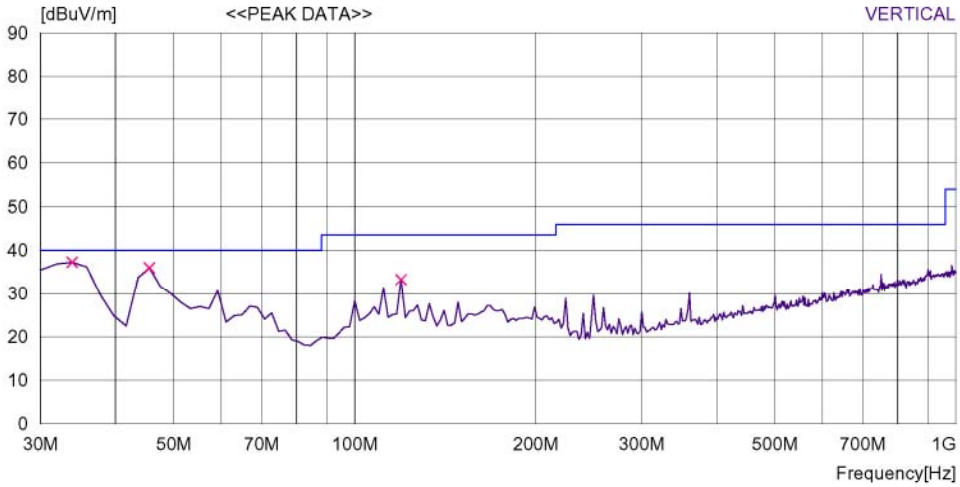
Date : 2009-09-14 17:04:48

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 230V/50Hz
Series No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11b, CH 6	Operator	:	Phenix

Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 Class B(3m)/USA





2009-09-14 17:05:06

RADIATED EMISSION

Date : 2009-09-14 17:04:48

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 230V/50Hz
Series No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11b, CH 6	Operator	:	Phenix

Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 Class B(3m)/USA

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	119.419	44.9	10.6	7.6	31.6	31.5	43.5	12.0	400	52
2	148.577	42.6	11.6	7.8	31.5	30.5	43.5	13.0	300	258
3	249.660	49.5	11.6	8.3	31.4	38.0	46	8.0	100	51
4	539.298	39.7	18.9	9.6	31.4	36.8	46	9.2	100	314
----- Vertical ------										
5	33.888	50.6	11.6	6.8	31.7	37.3	40	2.7	100	6
6	45.551	49.7	11.1	6.9	31.7	36.0	40	4.0	100	48
7	119.419	46.7	10.6	7.6	31.6	33.3	43.5	10.2	100	21

802.11b mode Channel High:

2009-09-14 17:12:32

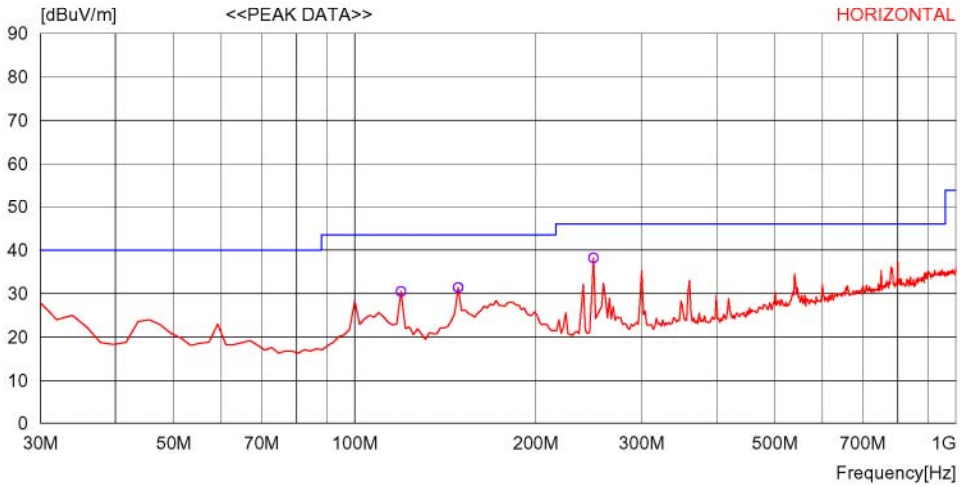
RADIATED EMISSION

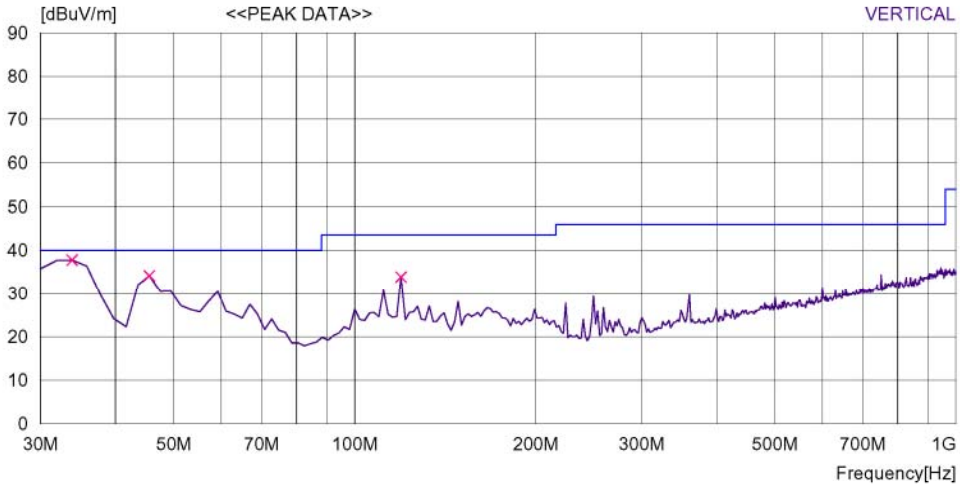
Date : 2009-09-14 17:12:26

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 230V/50Hz
Series No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11b, CH 11	Operator	:	Phenix

Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 Class B(3m)/USA





2009-09-14 17:12:33

RADIATED EMISSION

Date : 2009-09-14 17:12:26

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 230V/50Hz
Series No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11b, CH 11	Operator	:	Phenix

Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 Class B(3m)/USA

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	119.419	43.9	10.6	7.6	31.6	30.5	43.5	13.0	300	261
2	148.577	43.5	11.6	7.8	31.5	31.4	43.5	12.1	200	273
3	249.660	49.7	11.6	8.3	31.4	38.2	46	7.8	100	80
----- Vertical ------										
4	33.888	51.1	11.6	6.8	31.7	37.8	40	2.2	100	106
5	45.551	47.9	11.1	6.9	31.7	34.2	40	5.8	100	24
6	119.419	47.3	10.6	7.6	31.6	33.9	43.5	9.6	100	48

802.11g mode Channel Low:

2009-09-14 17:20:36

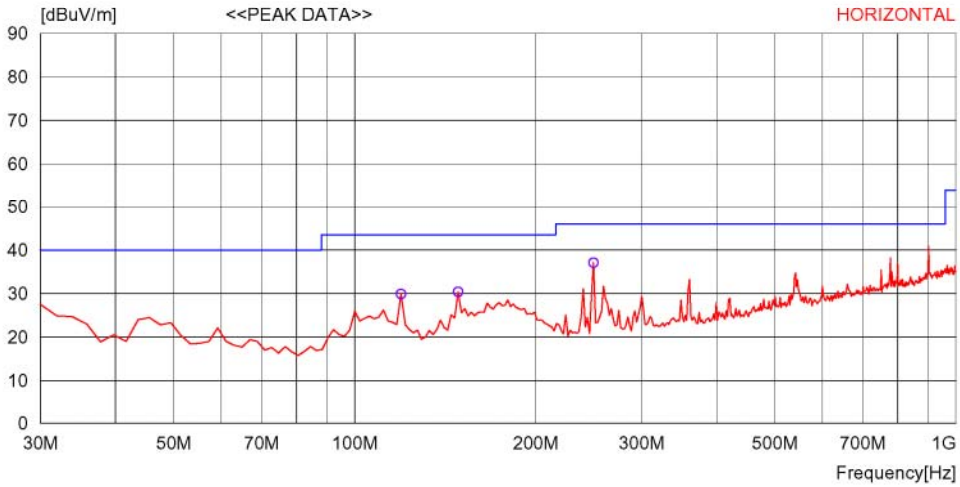
RADIATED EMISSION

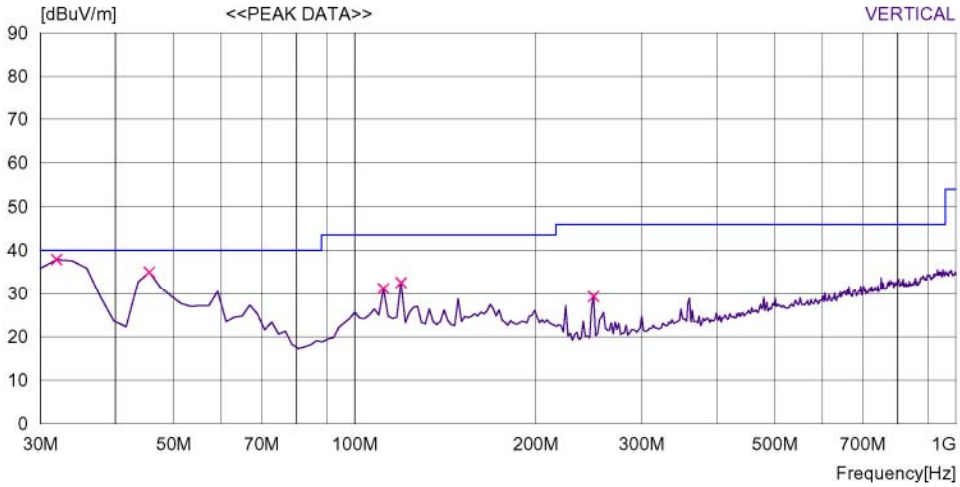
Date : 2009-09-14 17:20:26

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 230V/50Hz
Series No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11g, CH 1	Operator	:	Phenix

Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 Class B(3m)/USA





2009-09-14 17:20:37

RADIATED EMISSION

Date : 2009-09-14 17:20:26

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 230V/50Hz
Series No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11g, CH 1	Operator	:	Phenix

Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 Class B(3m)/USA

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	119.419	43.3	10.6	7.6	31.6	29.9	43.5	13.6	400	69
2	148.577	42.5	11.6	7.8	31.5	30.4	43.5	13.1	300	266
3	249.660	48.6	11.6	8.3	31.4	37.1	46	8.9	100	55
----- Vertical ------										
4	31.944	50.9	12.0	6.7	31.7	37.9	40	2.1	100	3
5	45.551	48.7	11.1	6.9	31.7	35.0	40	5.0	100	60
6	111.643	45.5	9.8	7.5	31.6	31.2	43.5	12.3	100	160
7	119.419	46.0	10.6	7.6	31.6	32.6	43.5	10.9	100	14
8	249.660	40.8	11.6	8.3	31.4	29.3	46	16.7	199	315

802.11g mode Channel Mid:

2009-09-14 17:33:37

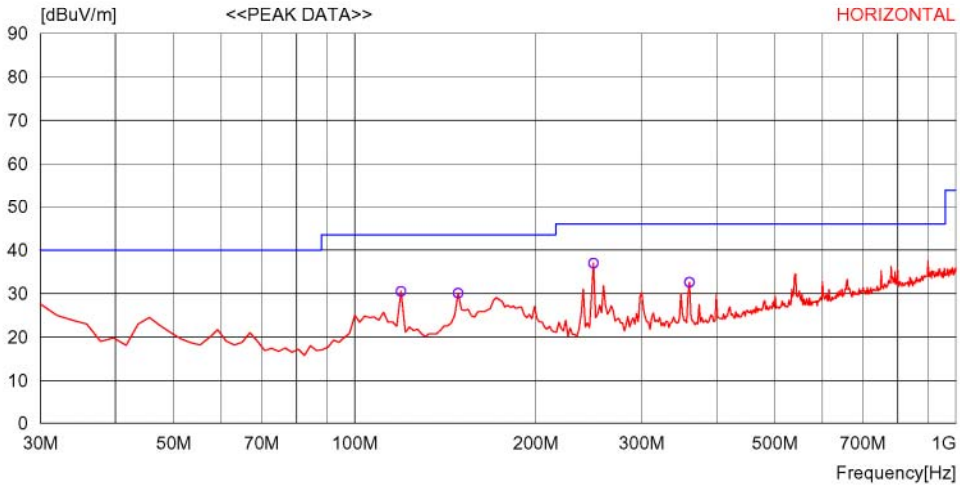
RADIATED EMISSION

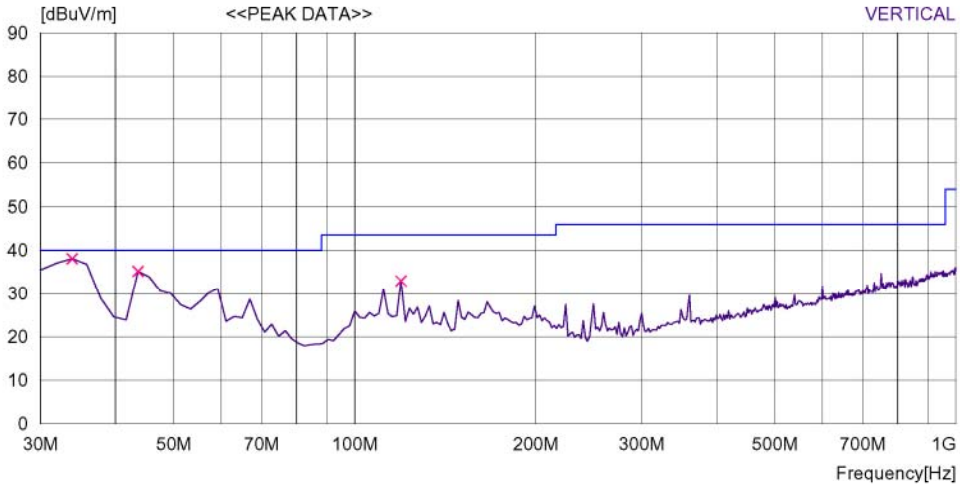
Date : 2009-09-14 17:33:28

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Series No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11g, CH 6	Operator	:	Phenix

Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 Class B(3m)/USA





2009-09-14 17:33:37

RADIATED EMISSION

Date : 2009-09-14 17:33:28

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Series No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11g, CH 6	Operator	:	Phenix

Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 Class B(3m)/USA

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	119.419	43.9	10.6	7.6	31.6	30.5	43.5	13.0	400	71
2	148.577	42.2	11.6	7.8	31.5	30.1	43.5	13.4	200	258
3	249.660	48.5	11.6	8.3	31.4	37.0	46	9.0	100	59
4	360.461	38.9	16.0	9.0	31.3	32.6	46	13.4	100	158
----- Vertical ------										
5	33.888	51.4	11.6	6.8	31.7	38.1	40	1.9	100	10
6	43.607	48.8	11.2	6.9	31.7	35.2	40	4.8	100	84
7	119.419	46.4	10.6	7.6	31.6	33.0	43.5	10.5	100	18

802.11g mode Channel High:

2009-09-14 17:44:44

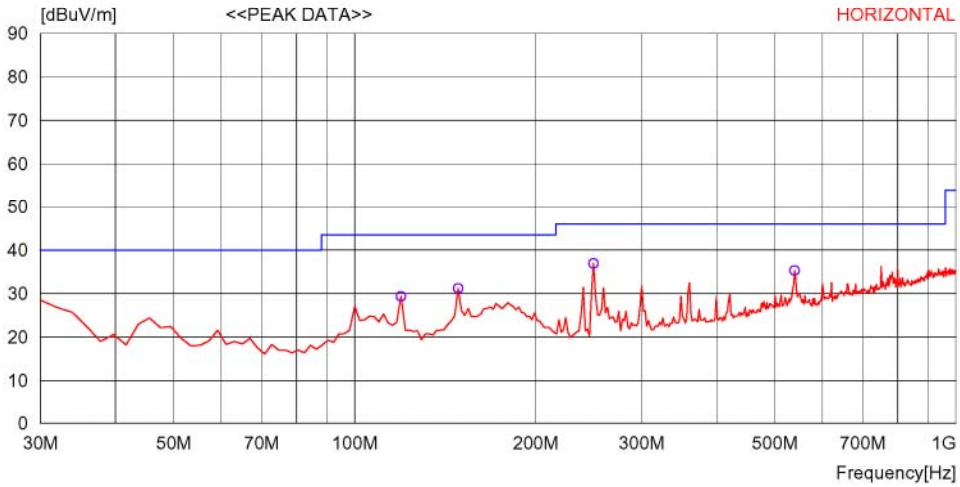
RADIATED EMISSION

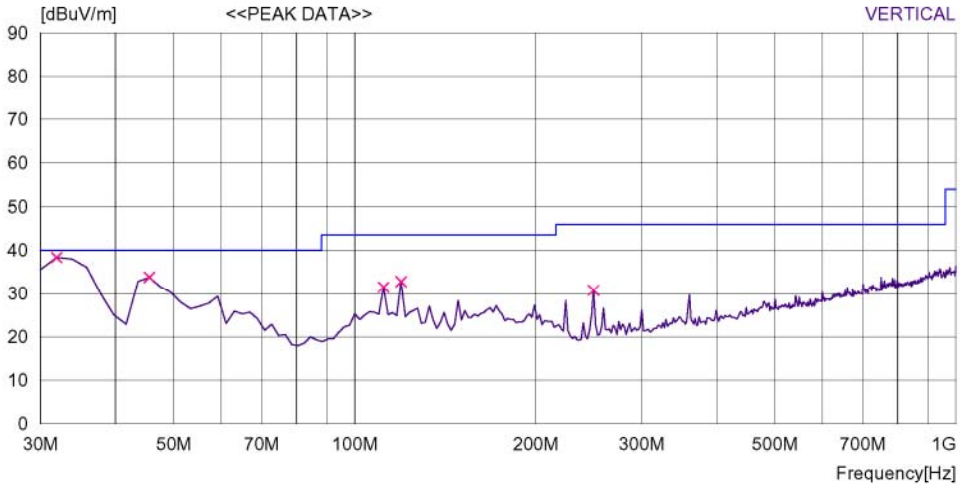
Date : 2009-09-14 17:44:37

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Series No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11g, CH 11	Operator	:	Phenix

Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 Class B(3m)/USA





2009-09-14 17:44:44

RADIATED EMISSION

Date : 2009-09-14 17:44:37

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Series No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11g, CH 11	Operator	:	Phenix

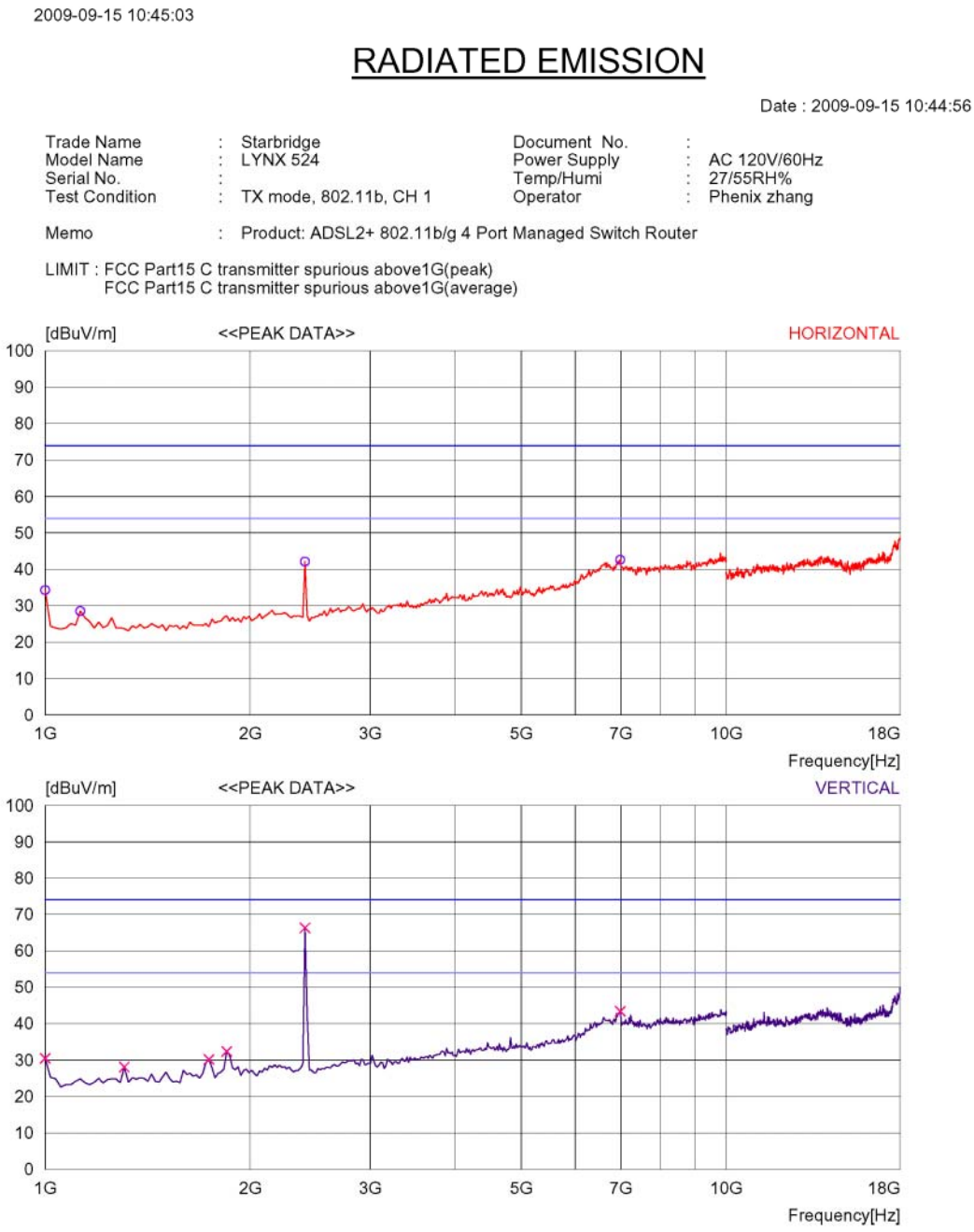
Memo : Product Name:ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 Class B(3m)/USA

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	119.419	42.8	10.6	7.6	31.6	29.4	43.5	14.1	300	94
2	148.577	43.3	11.6	7.8	31.5	31.2	43.5	12.3	200	133
3	249.660	48.4	11.6	8.3	31.4	36.9	46	9.1	100	86
4	539.298	38.2	18.9	9.6	31.4	35.3	46	10.7	100	325
----- Vertical ------										
5	31.944	51.4	12.0	6.7	31.7	38.4	40	1.6	100	304
6	45.551	47.5	11.1	6.9	31.7	33.8	40	6.2	100	52
7	111.643	45.8	9.8	7.5	31.6	31.5	43.5	12.0	100	14
8	119.419	46.2	10.6	7.6	31.6	32.8	43.5	10.7	100	4
9	249.660	42.3	11.6	8.3	31.4	30.8	46	15.2	199	14

Above 1GHz:

802.11b mode Channel Low:



No further spurious emissions found between 18GHz and 25GHz.

2009-09-15 10:45:03

RADIATED EMISSION

Date : 2009-09-15 10:44:56

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11b, CH 1	Operator	:	Phenix zhang

Memo : Product: ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	1000.000	44.2	27.3	3.5	40.7	34.3	74	39.7	100	105
2	1126.253	37.5	27.9	3.7	40.6	28.5	74	45.5	100	298
3	2406.818	44.6	31.4	5.5	39.4	42.1	74	31.9	300	147
4	6987.996	31.2	41.0	9.6	39.2	42.6	74	31.4	300	209
----- Vertical ------										
5	1000.000	40.4	27.3	3.5	40.7	30.5	74	43.5	200	178
6	1306.614	35.9	28.6	4.0	40.4	28.1	74	45.9	100	325
7	1739.481	35.8	29.6	4.7	39.9	30.2	74	43.8	100	8
8	1847.698	37.6	29.8	4.8	39.8	32.4	74	41.6	100	201
9	2406.818	68.8	31.4	5.5	39.4	66.3	74	7.7	200	191
10	6987.996	32.0	41.0	9.6	39.2	43.4	74	30.6	100	333

802.11b mode Channel Mid:

2009-09-15 10:54:10

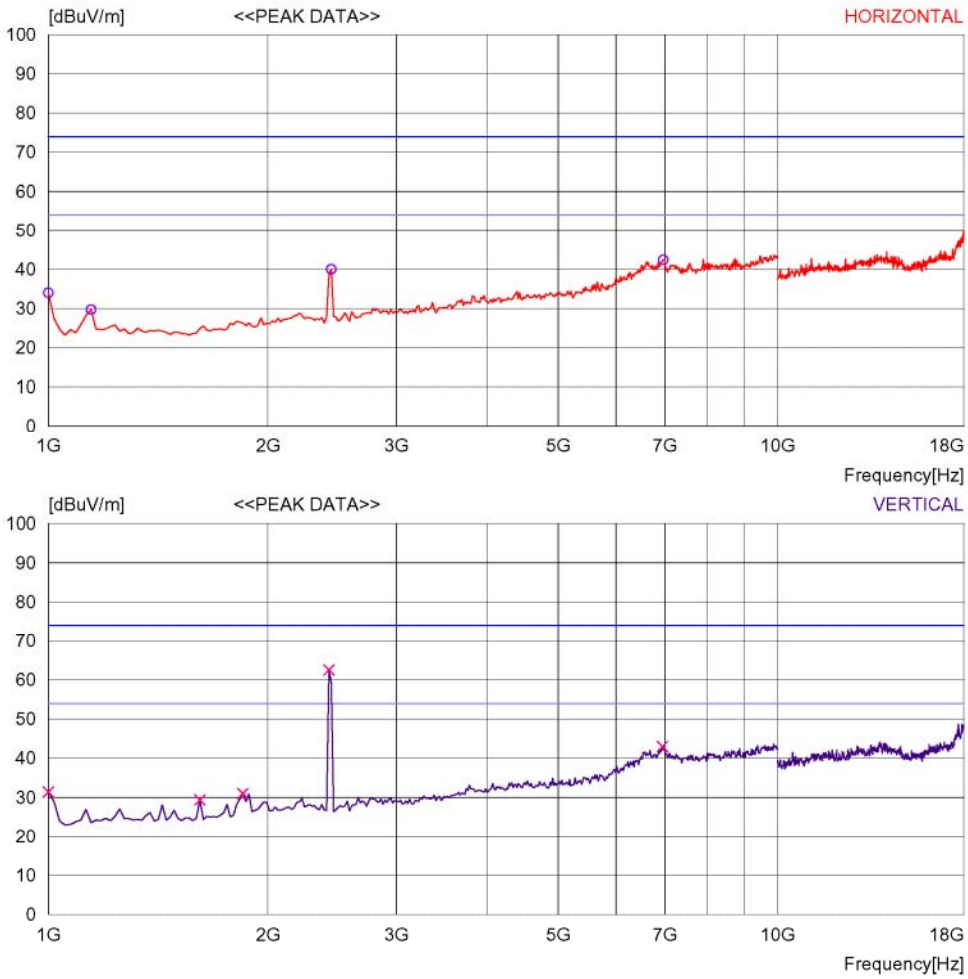
RADIATED EMISSION

Date : 2009-09-15 10:54:02

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11b, CH 6	Operator	:	Phenix zhang

Memo : Product: ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)



No further spurious emissions found between 18GHz and 25GHz.

2009-09-15 10:54:10

RADIATED EMISSION

Date : 2009-09-15 10:54:02

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11b, CH 6	Operator	:	Phenix zhang

Memo : Product: ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	1000.000	43.9	27.3	3.5	40.7	34.0	74	40.0	100	100
2	1144.289	38.5	28.0	3.8	40.6	29.7	74	44.3	100	257
3	2442.890	42.5	31.3	5.6	39.4	40.0	74	34.0	300	65
4	6969.959	31.2	40.9	9.6	39.3	42.4	74	31.6	100	249
----- Vertical ------										
5	1000.000	41.3	27.3	3.5	40.7	31.4	74	42.6	100	306
6	1613.228	35.8	29.1	4.5	40.0	29.4	74	44.6	100	84
7	1847.698	36.2	29.8	4.8	39.8	31.0	74	43.0	200	189
8	2424.854	65.0	31.4	5.5	39.4	62.5	74	11.5	200	73
9	6951.923	31.8	40.9	9.6	39.3	43.0	74	31.0	100	3

802.11b mode Channel High:

2009-09-15 11:02:22

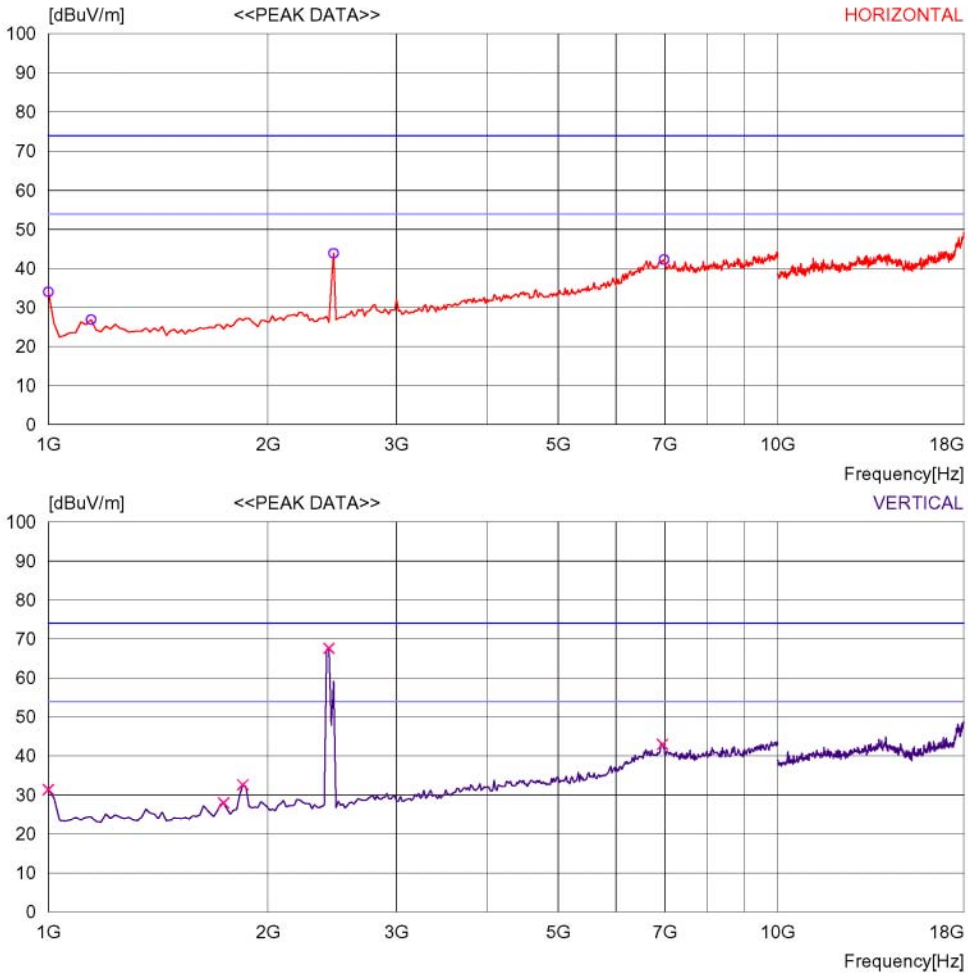
RADIATED EMISSION

Date : 2009-09-15 11:02:13

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11b, CH 11	Operator	:	Phenix zhang

Memo : Product: ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)



No further spurious emissions found between 18GHz and 25GHz.

2009-09-15 11:02:22

RADIATED EMISSION

Date : 2009-09-15 11:02:13

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11b, CH 11	Operator	:	Phenix zhang

Memo : Product: ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	1000.000	43.9	27.3	3.5	40.7	34.0	74	40.0	100	108
2	1144.289	35.7	28.0	3.8	40.6	26.9	74	47.1	100	274
3	2460.927	46.4	31.3	5.6	39.4	43.9	74	30.1	100	84
4	6987.996	30.9	41.0	9.6	39.2	42.3	74	31.7	300	319
----- Vertical ------										
5	1000.000	41.3	27.3	3.5	40.7	31.4	74	42.6	200	181
6	1739.481	33.6	29.6	4.7	39.9	28.0	74	46.0	100	10
7	1847.698	37.8	29.8	4.8	39.8	32.6	74	41.4	100	13
8	2424.854	70.1	31.4	5.5	39.4	67.6	74	6.4	100	112
9	6951.923	31.8	40.9	9.6	39.3	43.0	74	31.0	100	327

802.11g mode Channel Low:

2009-09-15 10:35:19

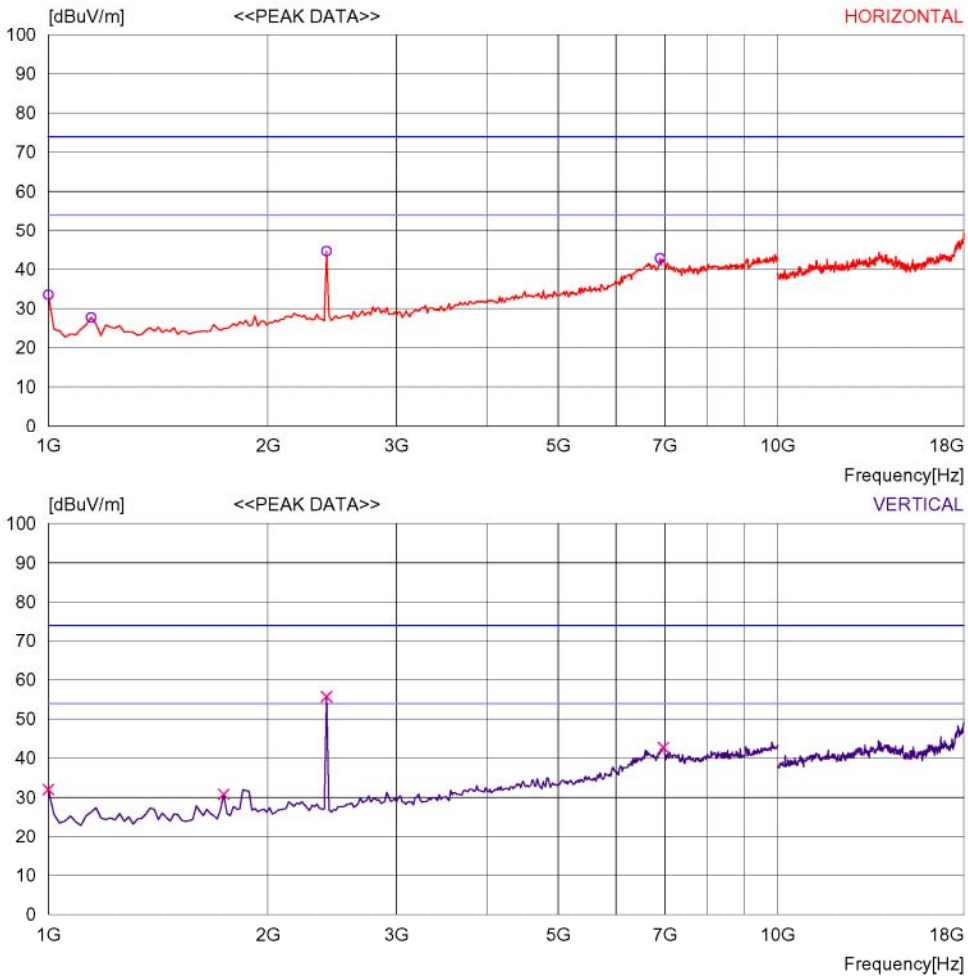
RADIATED EMISSION

Date : 2009-09-15 10:35:12

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11g, CH 1	Operator	:	Phenix zhang

Memo : Product: ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)



No further spurious emissions found between 18GHz and 25GHz.

2009-09-15 10:35:20

RADIATED EMISSION

Date : 2009-09-15 10:35:12

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11g, CH 1	Operator	:	Phenix zhang

Memo : Product: ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	1000.000	43.4	27.3	3.5	40.7	33.5	74	40.5	100	96
2	1144.289	36.5	28.0	3.8	40.6	27.7	74	46.3	100	134
3	2406.818	47.1	31.4	5.5	39.4	44.6	74	29.4	100	55
4	6897.815	32.0	40.6	9.5	39.3	42.8	74	31.2	100	146
----- Vertical ------										
5	1000.000	41.9	27.3	3.5	40.7	32.0	74	42.0	100	307
6	1739.481	36.4	29.6	4.7	39.9	30.8	74	43.2	100	0
7	2406.818	58.2	31.4	5.5	39.4	55.7	74	18.3	200	106
8	6969.959	31.5	40.9	9.6	39.3	42.7	74	31.3	100	80

802.11g mode Channel Mid:

2009-09-15 10:27:21

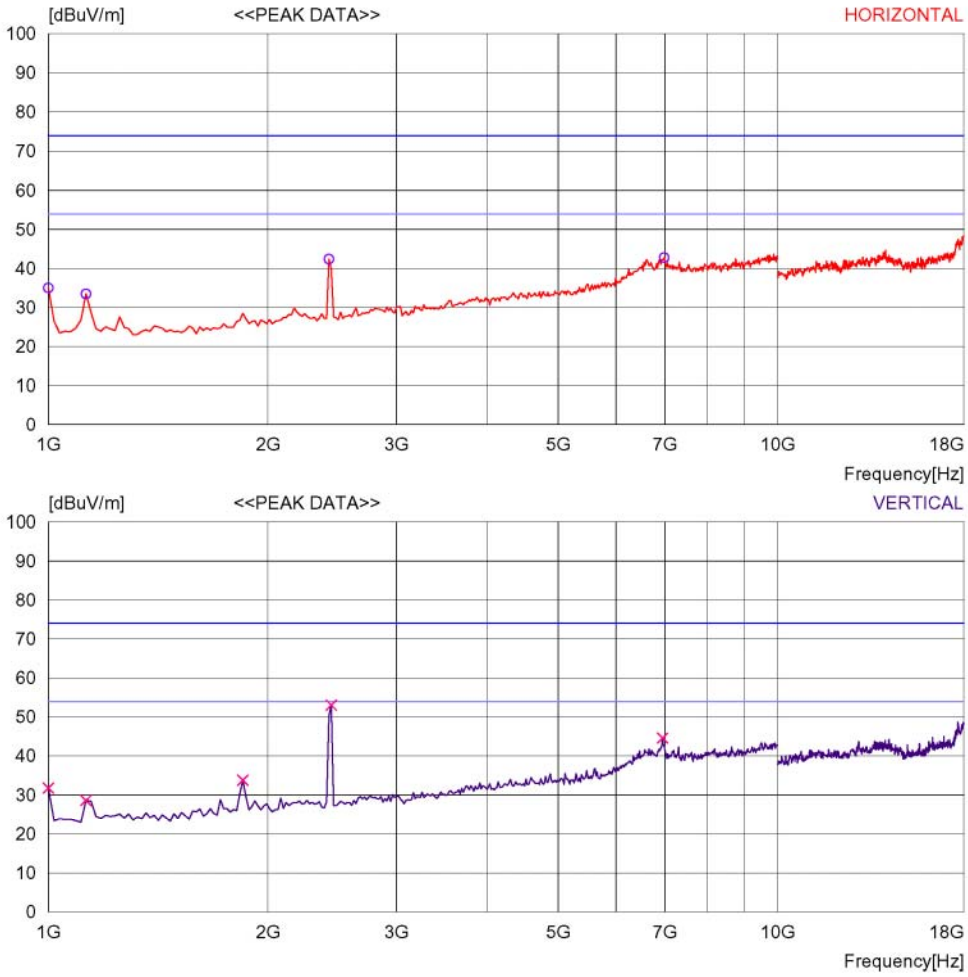
RADIATED EMISSION

Date : 2009-09-15 10:27:12

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11g, CH 6	Operator	:	Phenix zhang

Memo : Product: ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)



No further spurious emissions found between 18GHz and 25GHz.

2009-09-15 10:27:22

RADIATED EMISSION

Date : 2009-09-15 10:27:12

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11g, CH 6	Operator	:	Phenix zhang

Memo : Product: ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	1000.000	44.9	27.3	3.5	40.7	35.0	74	39.0	100	105
2	1126.253	42.5	27.9	3.7	40.6	33.5	74	40.5	100	250
3	2424.854	44.9	31.4	5.5	39.4	42.4	74	31.6	100	171
4	6987.996	31.4	41.0	9.6	39.2	42.8	74	31.2	100	280
----- Vertical ------										
5	1000.000	41.7	27.3	3.5	40.7	31.8	74	42.2	100	307
6	1126.253	37.6	27.9	3.7	40.6	28.6	74	45.4	200	122
7	1847.698	39.0	29.8	4.8	39.8	33.8	74	40.2	100	208
8	2442.890	55.5	31.3	5.6	39.4	53.0	74	21.0	100	224
9	6951.923	33.4	40.9	9.6	39.3	44.6	74	29.4	200	130

802.11g mode Channel High:

2009-09-15 10:15:53

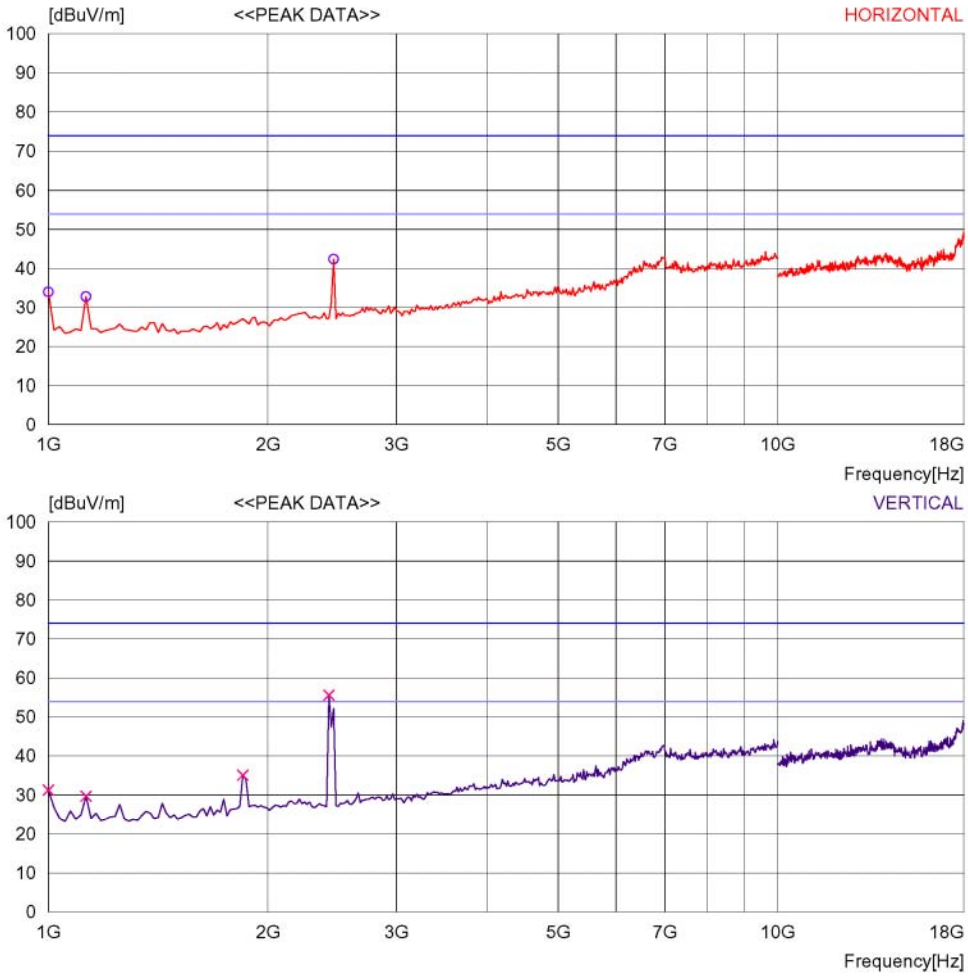
RADIATED EMISSION

Date : 2009-09-15 10:15:35

Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11g, CH 11	Operator	:	Phenix zhang

Memo : Product: ADSL2+ 802.11b/g 4 Port Managed Switch Router

LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)



No further spurious emissions found between 18GHz and 25GHz.

2009-09-15 10:15:54

RADIATED EMISSION

Date : 2009-09-15 10:15:35

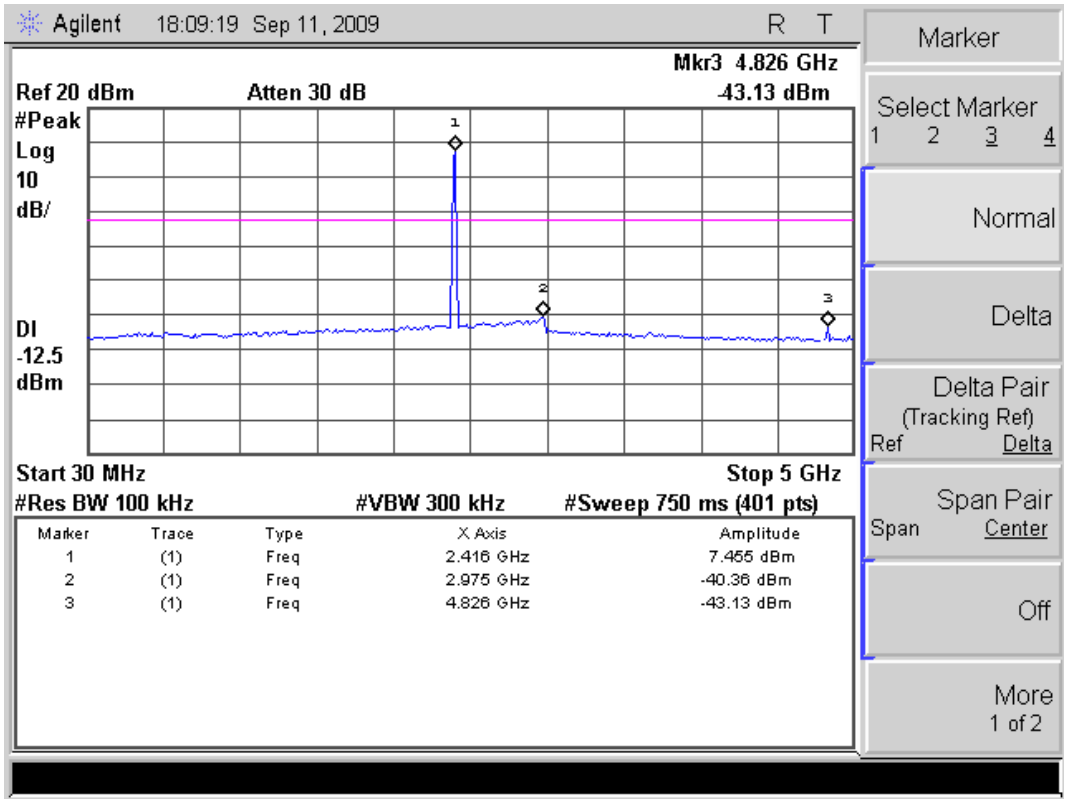
Trade Name	:	Starbridge	Document No.	:	
Model Name	:	LYNX 524	Power Supply	:	AC 120V/60Hz
Serial No.	:		Temp/Humi	:	27/55RH%
Test Condition	:	TX mode, 802.11g, CH 11	Operator	:	Phenix zhang

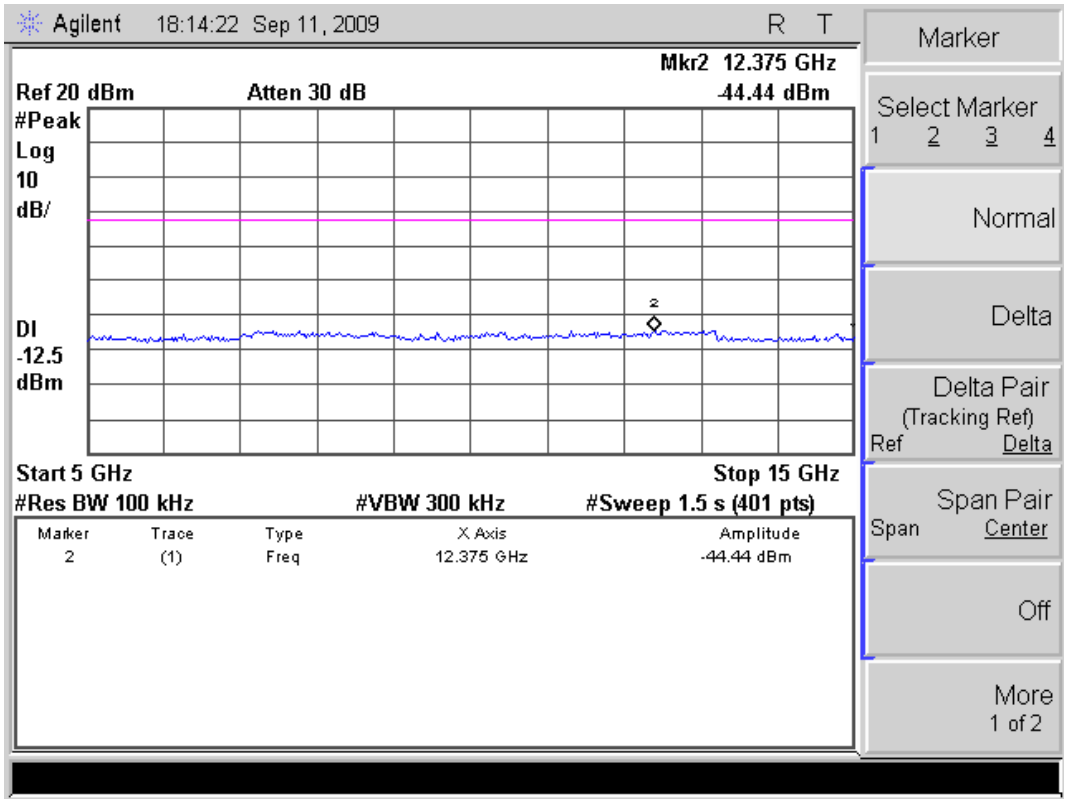
Memo : Product: ADSL2+ 802.11b/g 4 Port Managed Switch Router

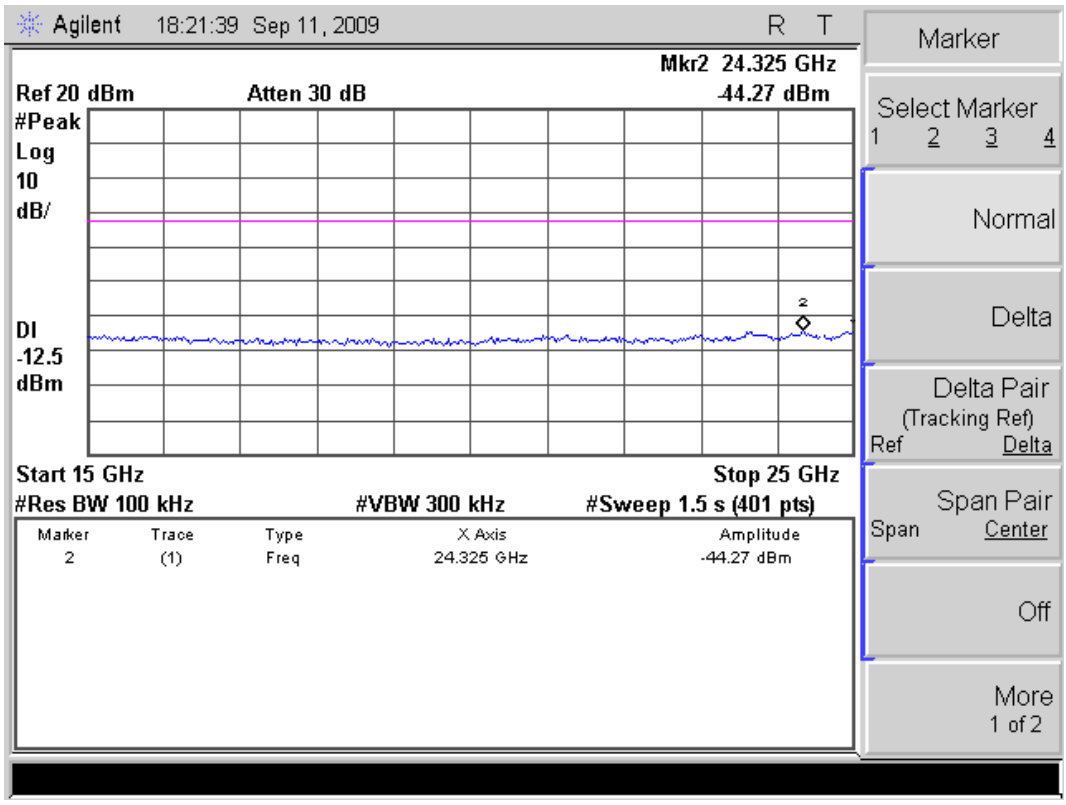
LIMIT : FCC Part15 C transmitter spurious above1G(peak)
FCC Part15 C transmitter spurious above1G(average)

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	1000.000	43.9	27.3	3.5	40.7	34.0	74	40.0	100	100
2	1126.253	41.8	27.9	3.7	40.6	32.8	74	41.2	100	269
3	2460.927	44.9	31.3	5.6	39.4	42.4	74	31.6	300	204
----- Vertical ------										
4	1000.000	41.2	27.3	3.5	40.7	31.3	74	42.7	100	308
5	1126.253	38.7	27.9	3.7	40.6	29.7	74	44.3	100	151
6	1847.698	40.3	29.8	4.8	39.8	35.1	74	38.9	100	4
7	2424.854	58.1	31.4	5.5	39.4	55.6	74	18.4	100	341

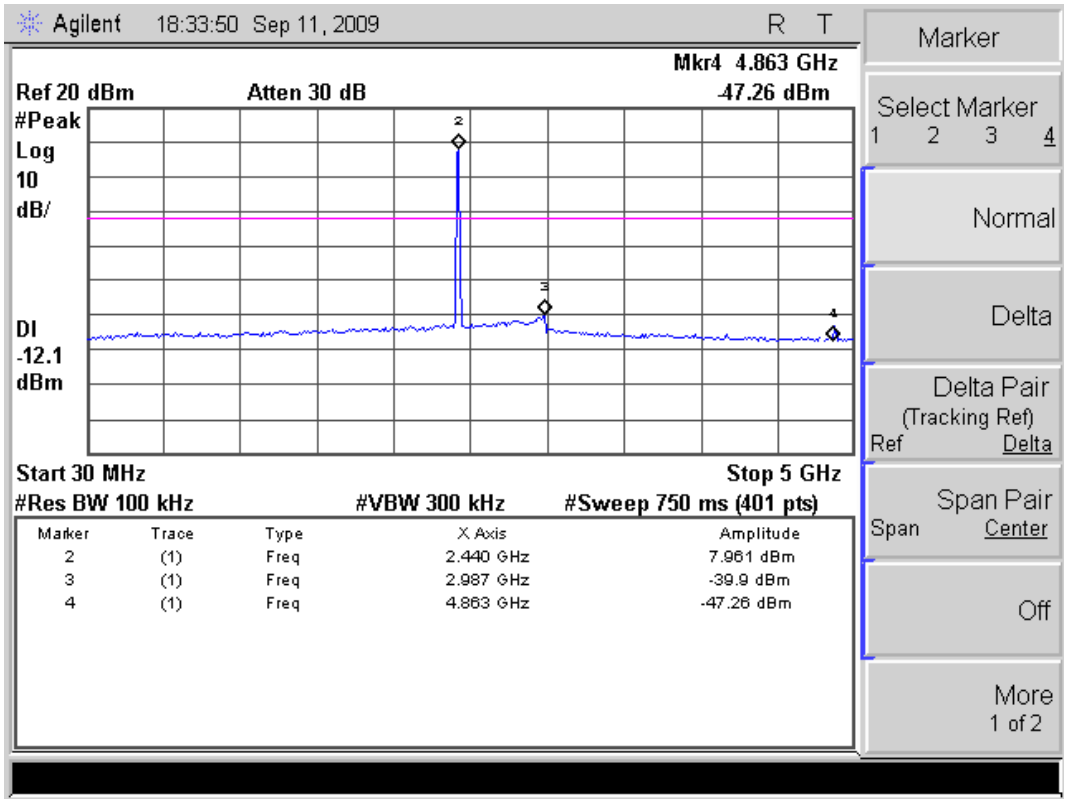
Conducted:
802.11b mode Channel LOW：

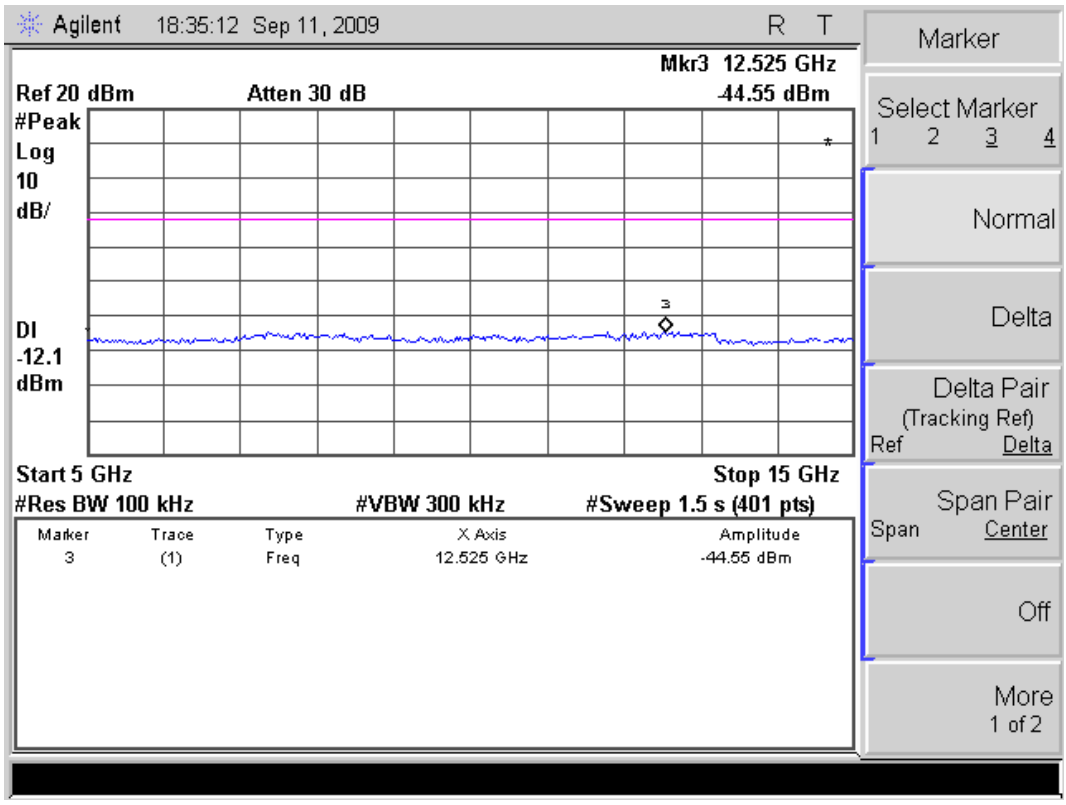


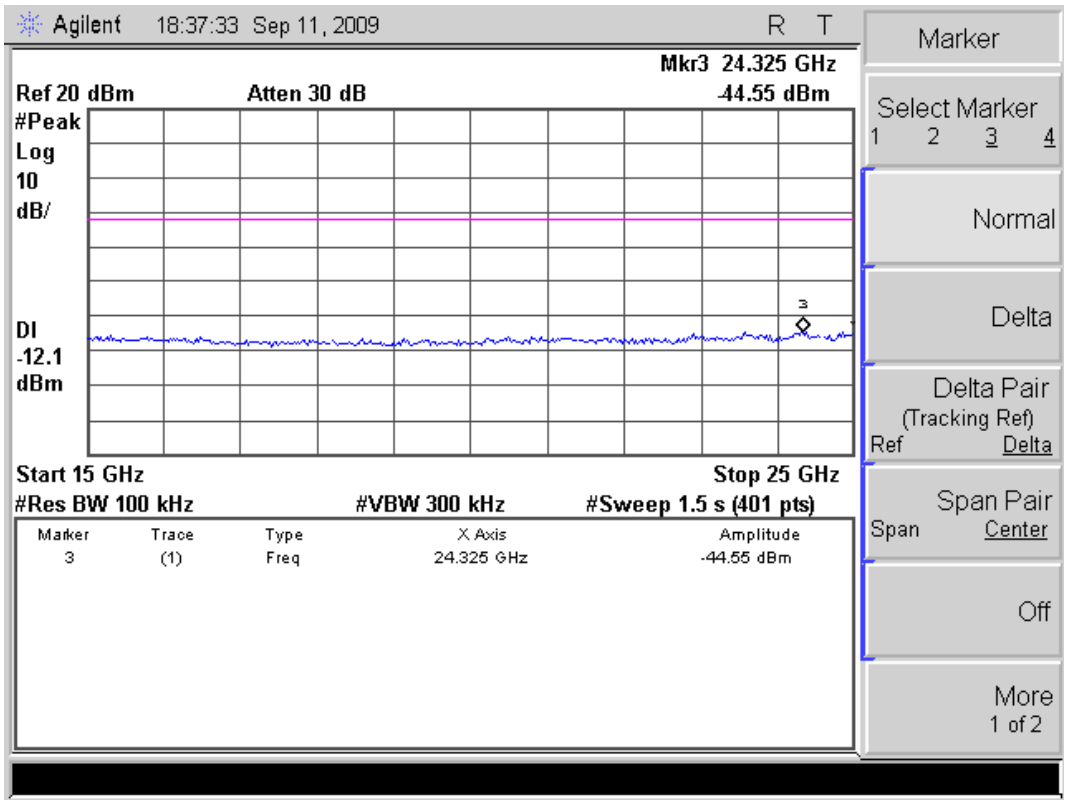



Agilent 18:21:39 Sep 11, 2009
R T
Mkr2 24.325 GHz
Ref 20 dBm
Atten 30 dB
-44.27 dBm
#Peak
Log
10
dB/
DI
-12.5
dBm
Start 15 GHz
Stop 25 GHz
#Res BW 100 kHz
#VBW 300 kHz
#Sweep 1.5 s (401 pts)
Marker Trace Type X Axis Amplitude
2 (1) Freq 24.325 GHz -44.27 dBm
Marker
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref Delta
Span Pair
Span Center
Off
More
1 of 2

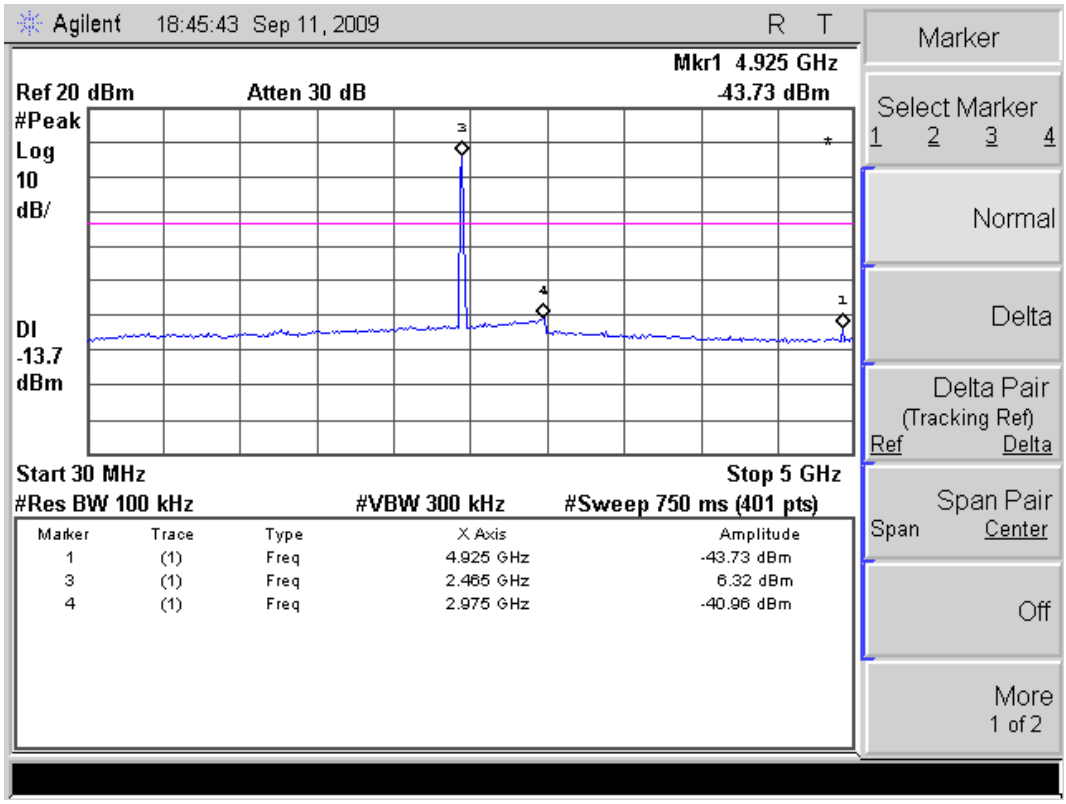
Channel MID：

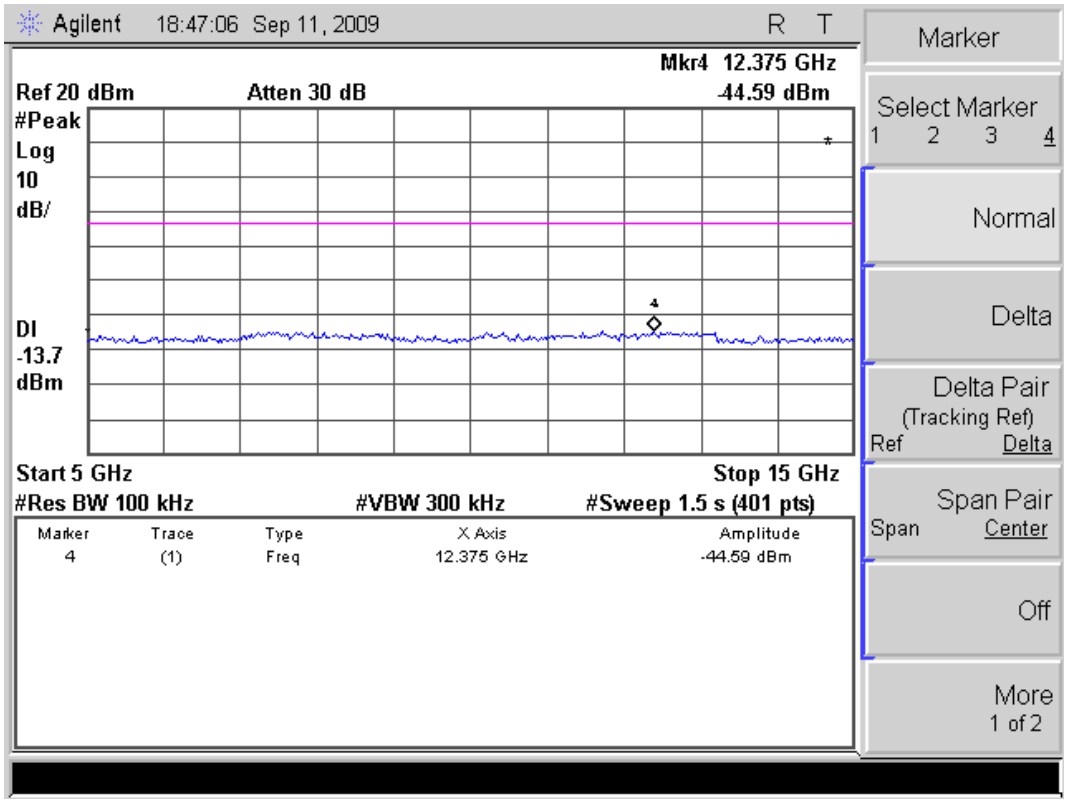

Agilent 18:33:50 Sep 11, 2009
R T
Mkr4 4.863 GHz
Ref 20 dBm
Atten 30 dB
-47.26 dBm
#Peak
Log
10
dB/
DI
-12.1
dBm
Start 30 MHz
Stop 5 GHz
#Res BW 100 kHz
#VBW 300 kHz
#Sweep 750 ms (401 pts)
Marker Trace Type X Axis Amplitude
2 (1) Freq 2.440 GHz 7.961 dBm
3 (1) Freq 2.987 GHz -39.9 dBm
4 (1) Freq 4.863 GHz -47.26 dBm
Marker
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref Delta
Span Pair
Span Center
Off
More
1 of 2

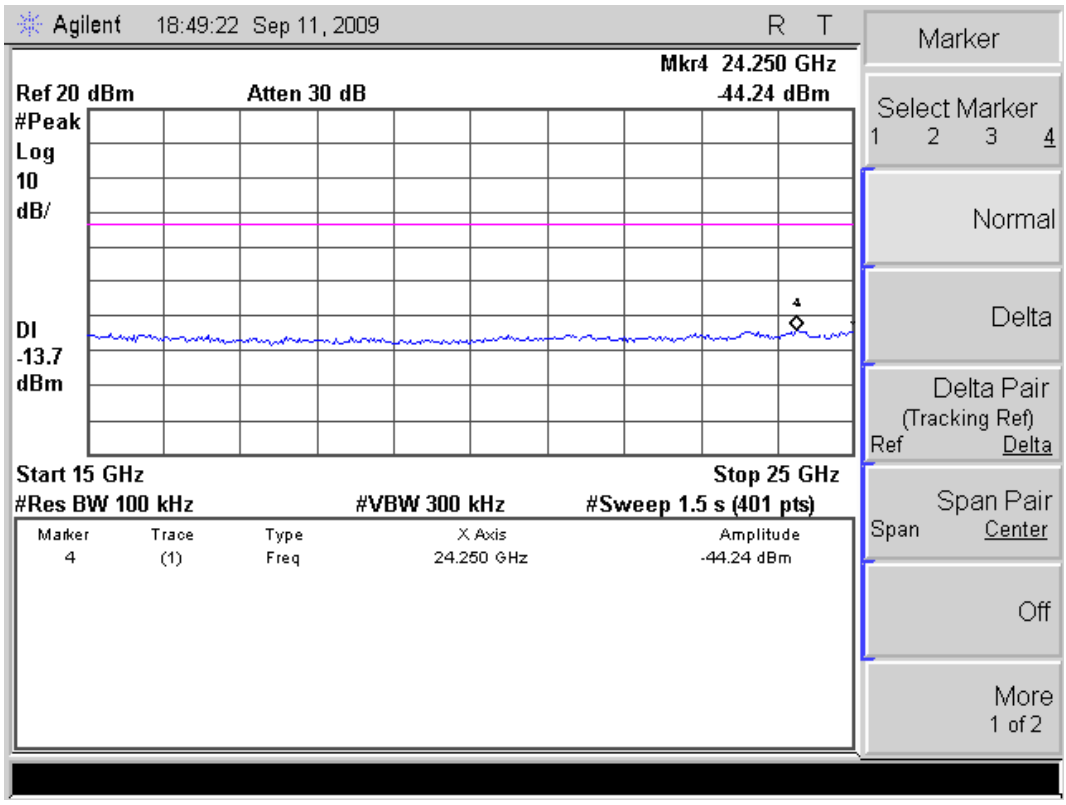

Agilent 18:35:12 Sep 11, 2009
R T
Mkr3 12.525 GHz
Ref 20 dBm
Atten 30 dB
-44.55 dBm
#Peak
Log
10
dB/
DI
-12.1
dBm
Start 5 GHz
Stop 15 GHz
#Res BW 100 kHz
#VBW 300 kHz
#Sweep 1.5 s (401 pts)
Marker Trace Type X Axis Amplitude
3 (1) Freq 12.525 GHz -44.55 dBm
Marker
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref Delta
Span Pair
Span Center
Off
More
1 of 2


Agilent 18:37:33 Sep 11, 2009
R T
Mkr3 24.325 GHz
Ref 20 dBm
Atten 30 dB
-44.55 dBm
#Peak
Log
10
dB/
DI
-12.1
dBm
Start 15 GHz
Stop 25 GHz
#Res BW 100 kHz
#VBW 300 kHz
#Sweep 1.5 s (401 pts)
Marker Trace Type X Axis Amplitude
3 (1) Freq 24.325 GHz -44.55 dBm
Marker
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref Delta
Span Pair
Span Center
Off
More
1 of 2

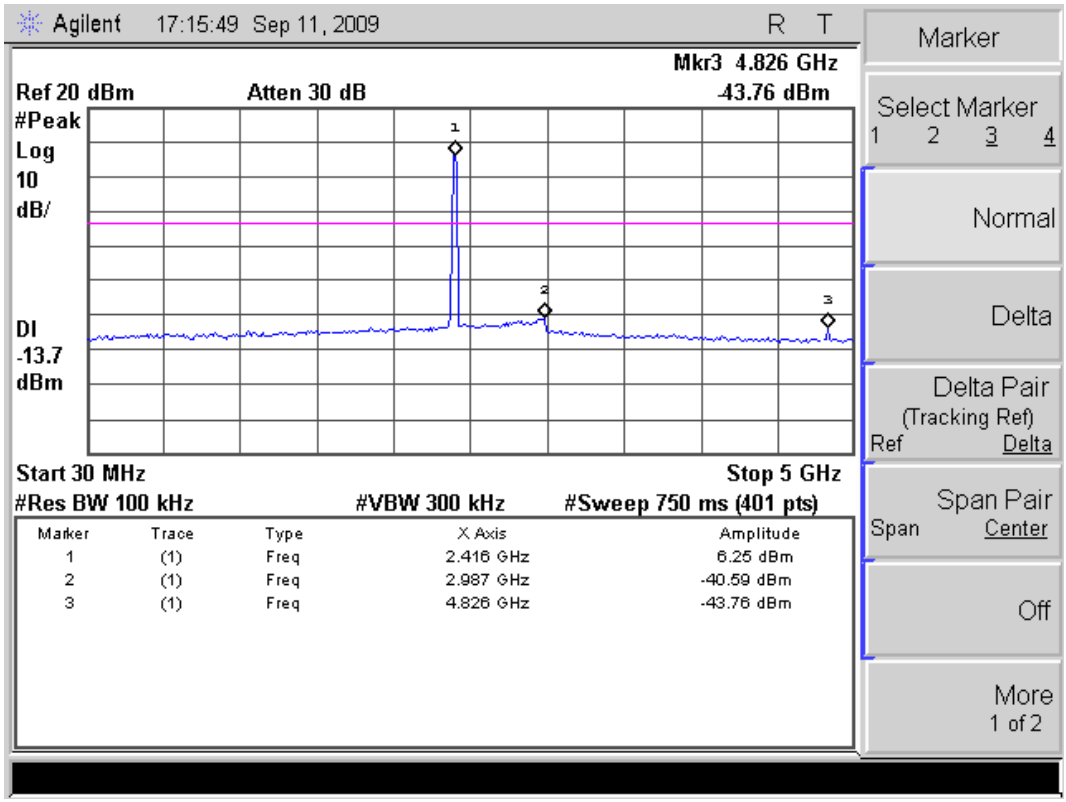
Channel HIG：

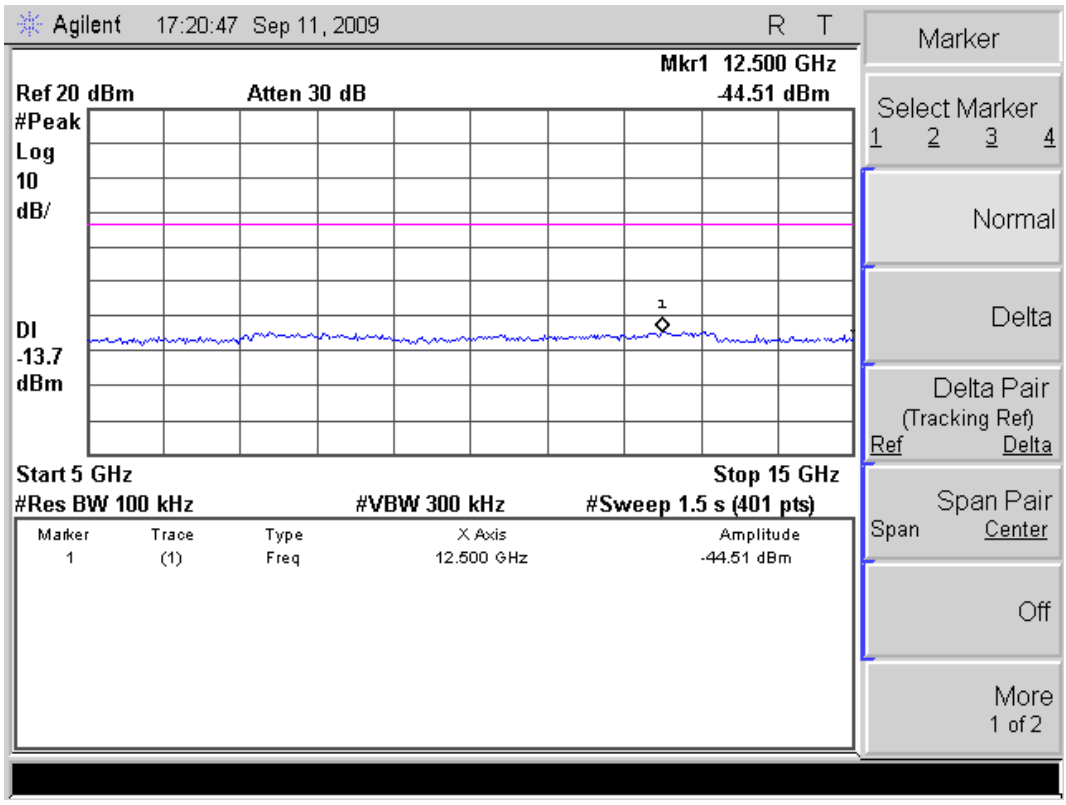

Agilent 18:45:43 Sep 11, 2009
R T
Mkr1 4.925 GHz
Ref 20 dBm
Atten 30 dB
-43.73 dBm
#Peak
Log
10
dB/
DI
-13.7
dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 5 GHz
#Sweep 750 ms (401 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 4.925 GHz -43.73 dBm
3 (1) Freq 2.465 GHz 6.32 dBm
4 (1) Freq 2.975 GHz -40.96 dBm
Marker
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref Delta
Span Pair
Span Center
Off
More
1 of 2

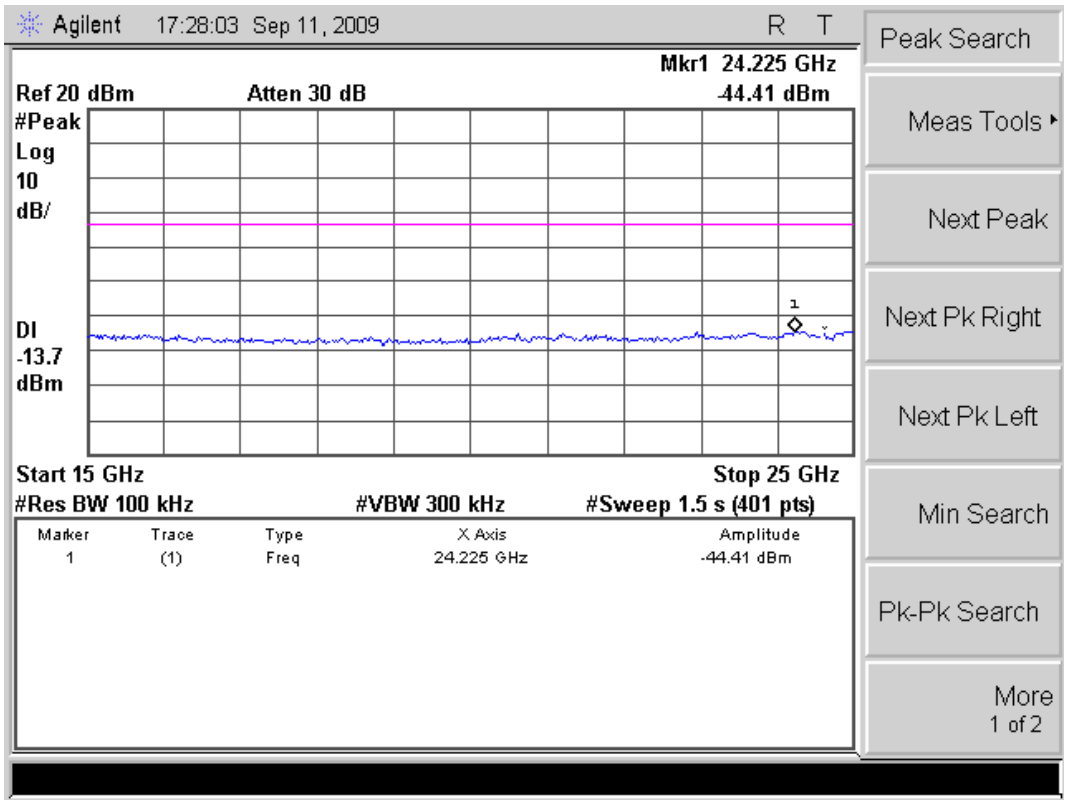

Agilent 18:47:06 Sep 11, 2009
R T
Mkr4 12.375 GHz
Ref 20 dBm
Atten 30 dB
-44.59 dBm
#Peak
Log
10
dB/
DI
-13.7
dBm
Start 5 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 15 GHz
#Sweep 1.5 s (401 pts)
Marker Trace Type X Axis Amplitude
4 (1) Freq 12.375 GHz -44.59 dBm
Marker
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref Delta
Span Pair
Span Center
Off
More
1 of 2



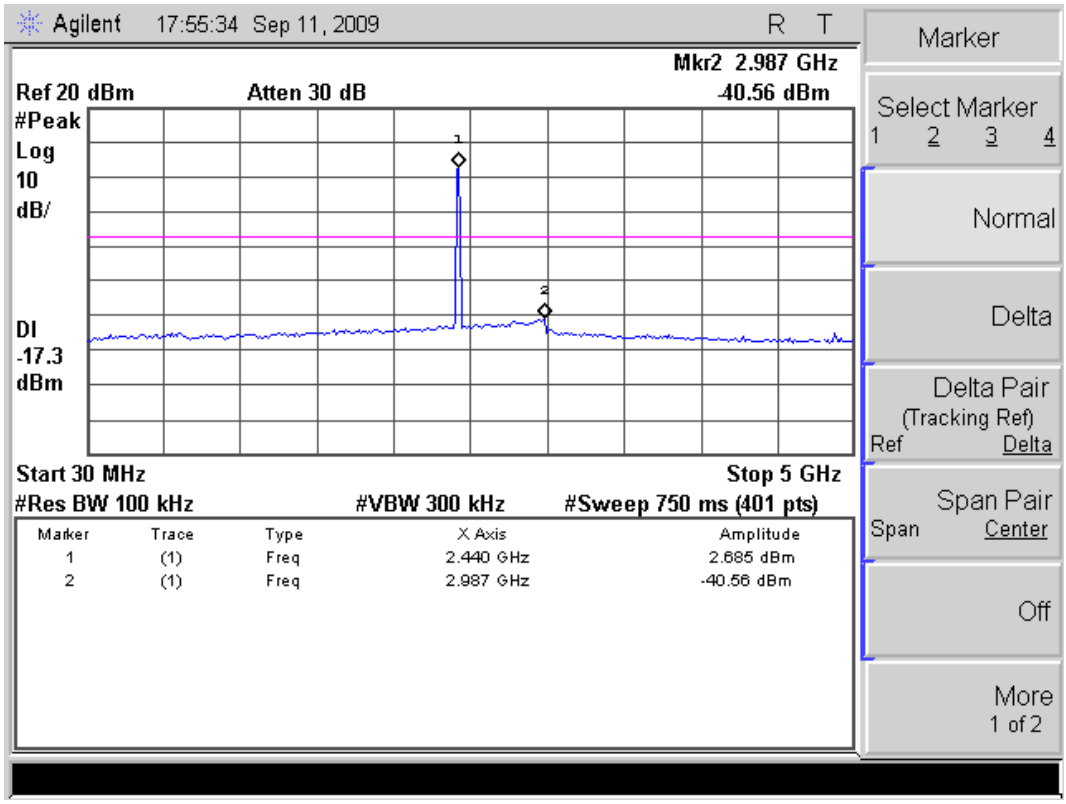
802.11g mode Channel LOW：

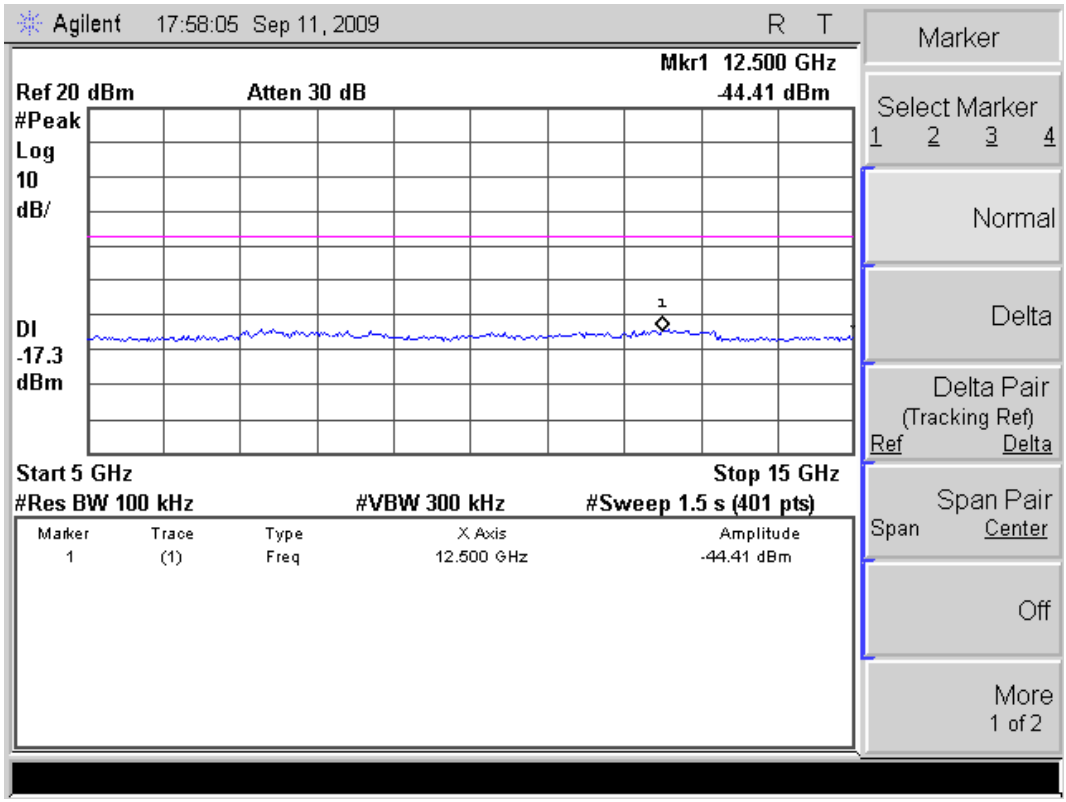


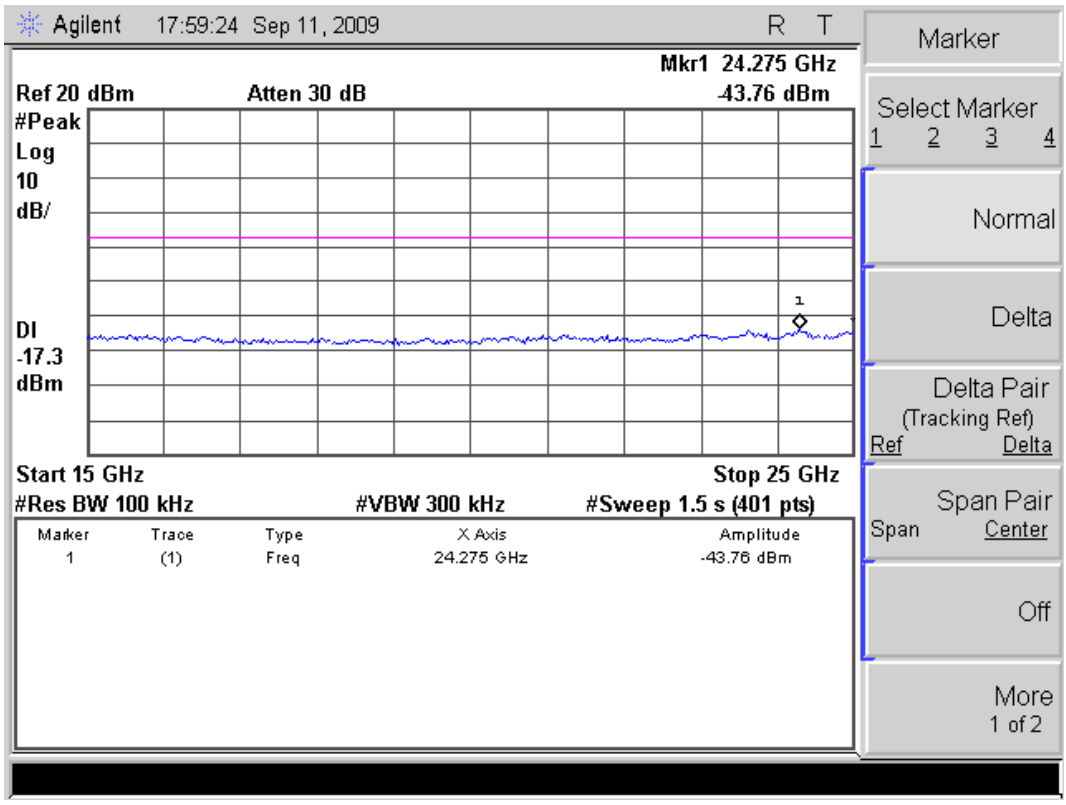

Agilent 17:20:47 Sep 11, 2009
R T
Mkr1 12.500 GHz
Ref 20 dBm
Atten 30 dB
-44.51 dBm
#Peak
Log
10
dB/
Dl
-13.7
dBm
Start 5 GHz
Stop 15 GHz
#Res BW 100 kHz
#VBW 300 kHz
#Sweep 1.5 s (401 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 12.500 GHz -44.51 dBm
Marker
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref Delta
Span Pair
Span Center
Off
More
1 of 2


Agilent 17:28:03 Sep 11, 2009
R T
Mkr1 24.225 GHz
Ref 20 dBm
Atten 30 dB
-44.41 dBm
#Peak
Log
10
dB/
Dl
-13.7
dBm
Start 15 GHz
Stop 25 GHz
#Res BW 100 kHz
#VBW 300 kHz
#Sweep 1.5 s (401 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 24.225 GHz -44.41 dBm
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

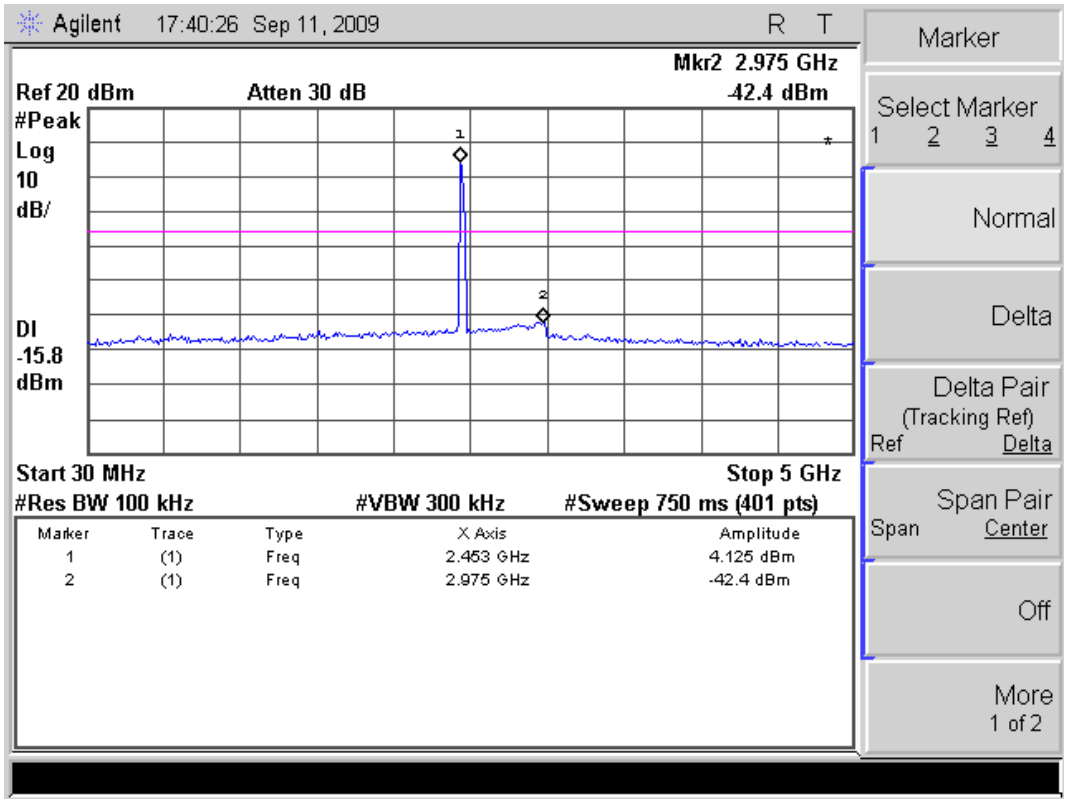
Channel MID：

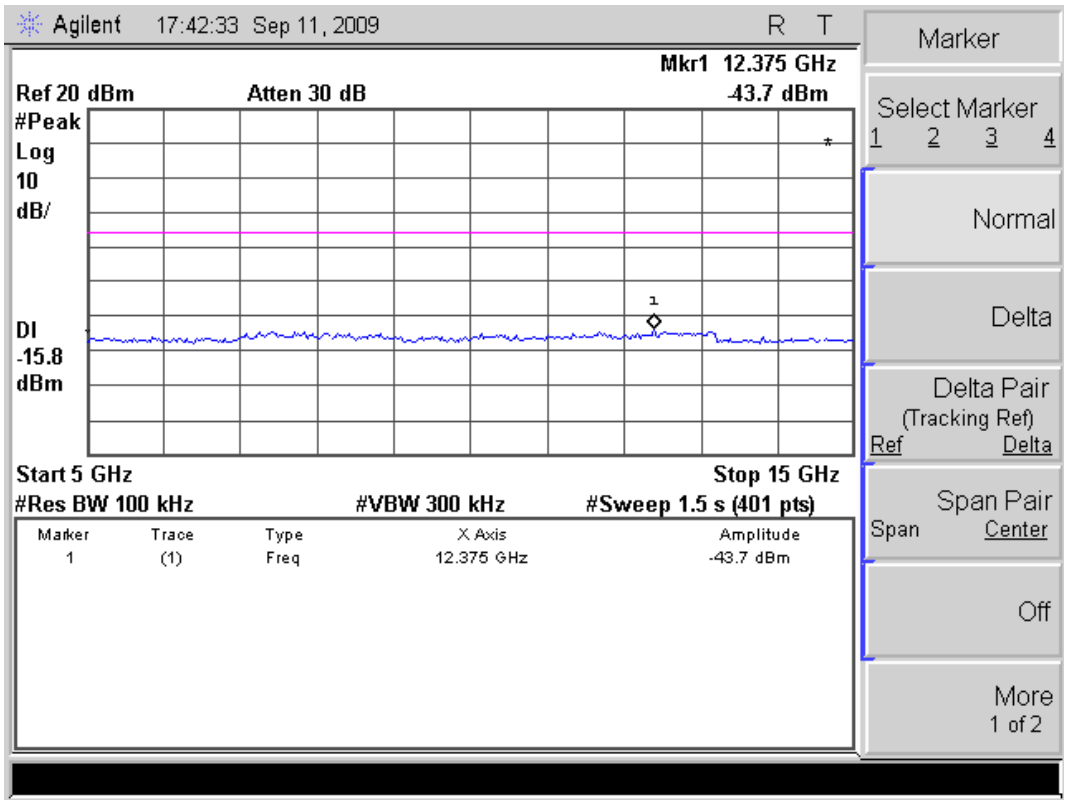

Agilent 17:55:34 Sep 11, 2009
R T
Mkr2 2.987 GHz
Ref 20 dBm
Atten 30 dB
-40.56 dBm
#Peak
Log
10
dB/
DI
-17.3
dBm
Start 30 MHz
Stop 5 GHz
#Res BW 100 kHz
#VBW 300 kHz
#Sweep 750 ms (401 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.440 GHz 2.685 dBm
2 (1) Freq 2.987 GHz -40.56 dBm
Marker
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref Delta
Span Pair
Span Center
Off
More
1 of 2

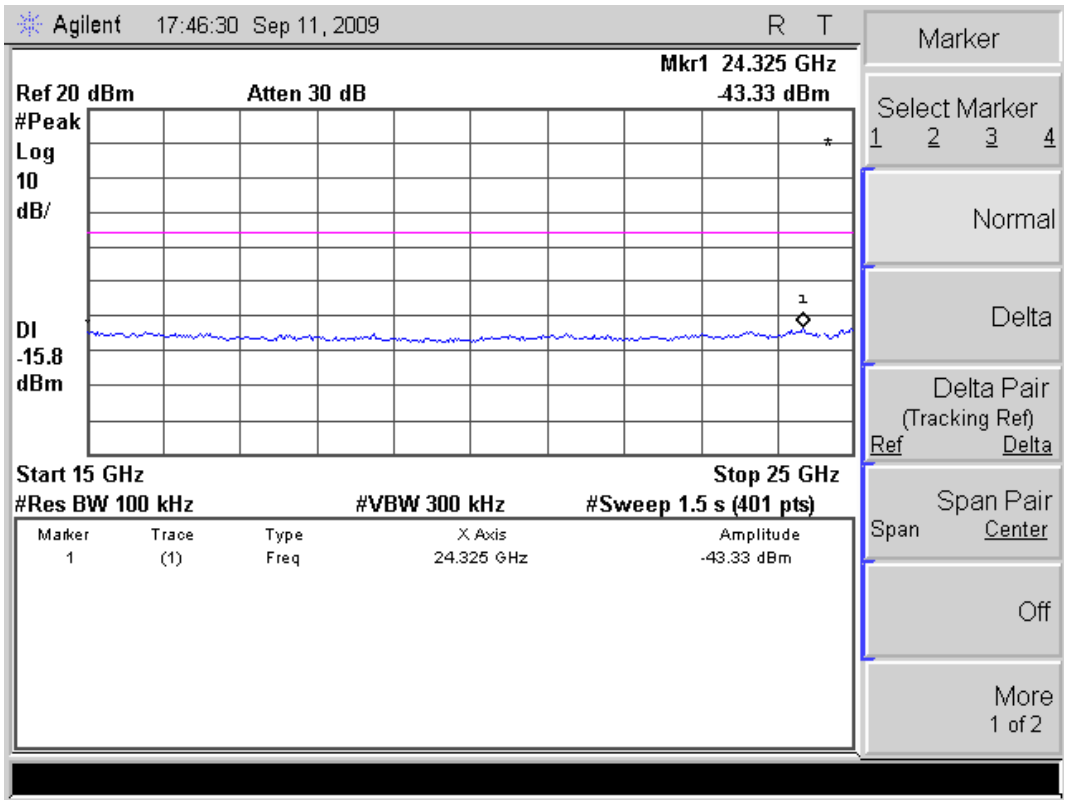

Agilent 17:58:05 Sep 11, 2009
R T
Mkr1 12.500 GHz
Ref 20 dBm
Atten 30 dB
-44.41 dBm
#Peak
Log
10
dB/
DI
-17.3
dBm
Start 5 GHz
Stop 15 GHz
#Res BW 100 kHz
#VBW 300 kHz
#Sweep 1.5 s (401 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 12.500 GHz -44.41 dBm
Marker
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref Delta
Span Pair
Span Center
Off
More
1 of 2


Agilent 17:59:24 Sep 11, 2009
R T
Mkr1 24.275 GHz
Ref 20 dBm
Atten 30 dB
-43.76 dBm
#Peak
Log
10
dB/
DI
-17.3
dBm
Start 15 GHz
Stop 25 GHz
#Res BW 100 kHz
#VBW 300 kHz
#Sweep 1.5 s (401 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 24.275 GHz -43.76 dBm
Marker
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref Delta
Span Pair
Span Center
Off
More
1 of 2

Channel HIG：


Agilent 17:40:26 Sep 11, 2009
R T
Mkr2 2.975 GHz
Ref 20 dBm
Atten 30 dB
-42.4 dBm
#Peak
Log
10
dB/
DI
-15.8
dBm
Start 30 MHz
Stop 5 GHz
#Res BW 100 kHz
#VBW 300 kHz
#Sweep 750 ms (401 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.453 GHz 4.125 dBm
2 (1) Freq 2.975 GHz -42.4 dBm
Marker
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref Delta
Span Pair
Span Center
Off
More
1 of 2


Agilent 17:42:33 Sep 11, 2009
R T
Mkr1 12.375 GHz
Ref 20 dBm
Atten 30 dB
-43.7 dBm
#Peak
Log
10
dB/
DI
-15.8
dBm
Start 5 GHz
Stop 15 GHz
#Res BW 100 kHz
#VBW 300 kHz
#Sweep 1.5 s (401 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 12.375 GHz -43.7 dBm
Marker
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref Delta
Span Pair
Span Center
Off
More
1 of 2


Agilent 17:46:30 Sep 11, 2009
R T
Mkr1 24.325 GHz
Ref 20 dBm
Atten 30 dB
-43.33 dBm
#Peak
Log
10
dB/
DI
-15.8
dBm
Start 15 GHz
Stop 25 GHz
#Res BW 100 kHz
#VBW 300 kHz
#Sweep 1.5 s (401 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 24.325 GHz -43.33 dBm
Marker
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref Delta
Span Pair
Span Center
Off
More
1 of 2

5. FCC ID Label

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions :(1)this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Mark Location:

5. Test Setup

5.1 Ancillary and Accessory Equipment Used

Conducted Emission:

No.	Description	Specification	Quantity
1.	PC1	DELL, M/N:540, S/N: 124XK2X	1
2.	Monitor1	DELL, M/N:E157FPc, S/N:CN-OFJ061-64180-69A-06CS	1
3.	Keyboard1	DELL, M/N:L100, S/N: CN0RH6566589006860007J	1
4.	Mouse1	HP, M/N:M-SBF96	1
5.	PC2	HP, M/N:g3118cx, S/N:CNX7321XWV	1
6.	Monitor2	Samsung, M/N:710MP, S/N: MH17HVYL500468F	1
7.	Keyboard2	HP, M/N:PR1101, S/N:PKI07300 11427	1
8.	Mouse2	DELL, M/N: OKD944, S/N: E1F014ZD	1
9.	Laptop	DELL, M/N:Vostro 1400	1

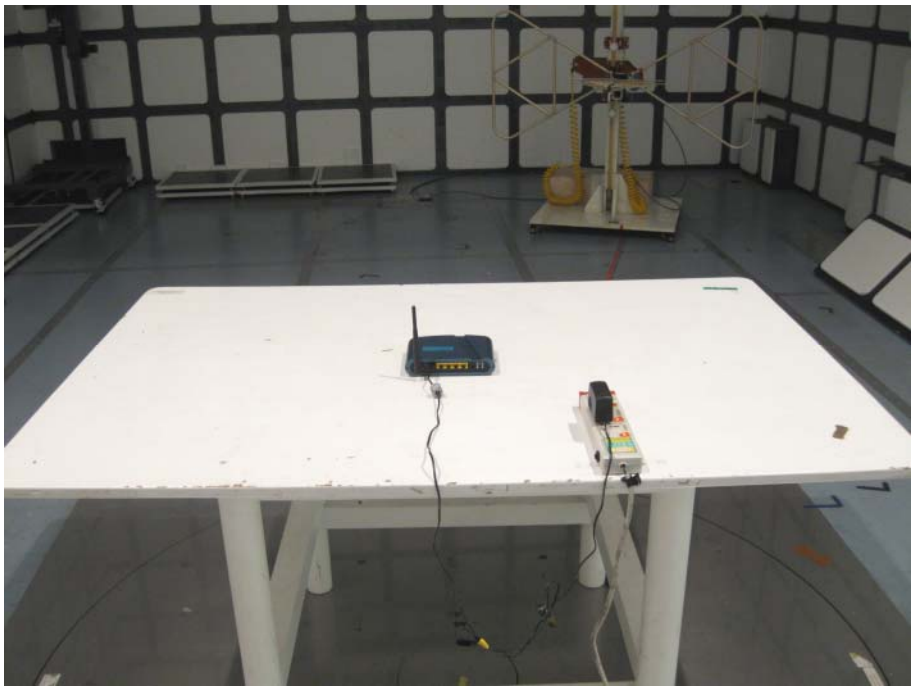
Radiated Emission:

No.	Description	Specification	Quantity
1.	Laptop	DELL, M/N:Vostro 1400	1

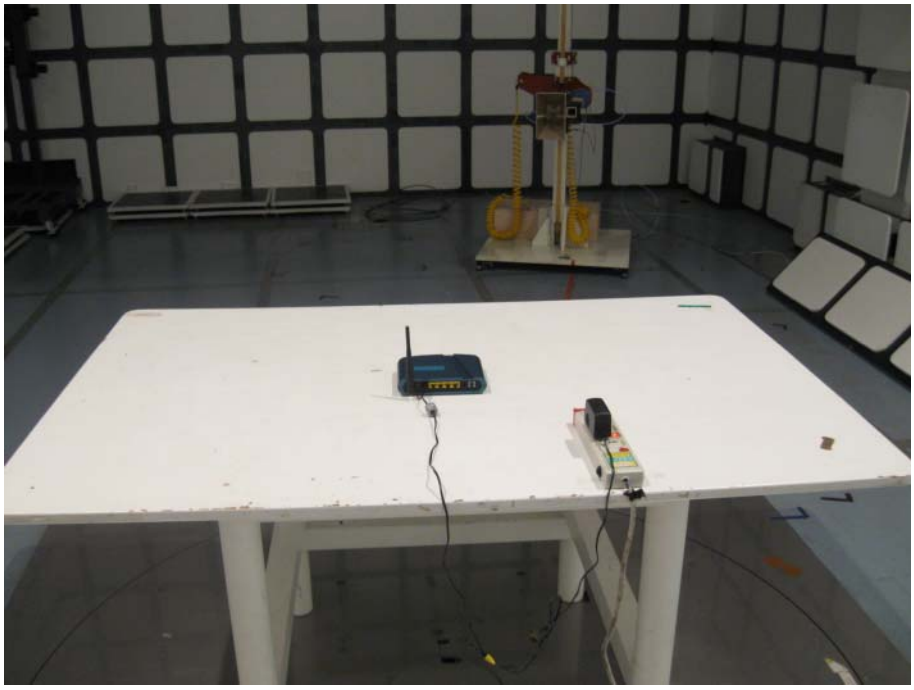
5.2 Photographs of the Test Configuration

5.2.1 Radiated emission

Below 1GHz:



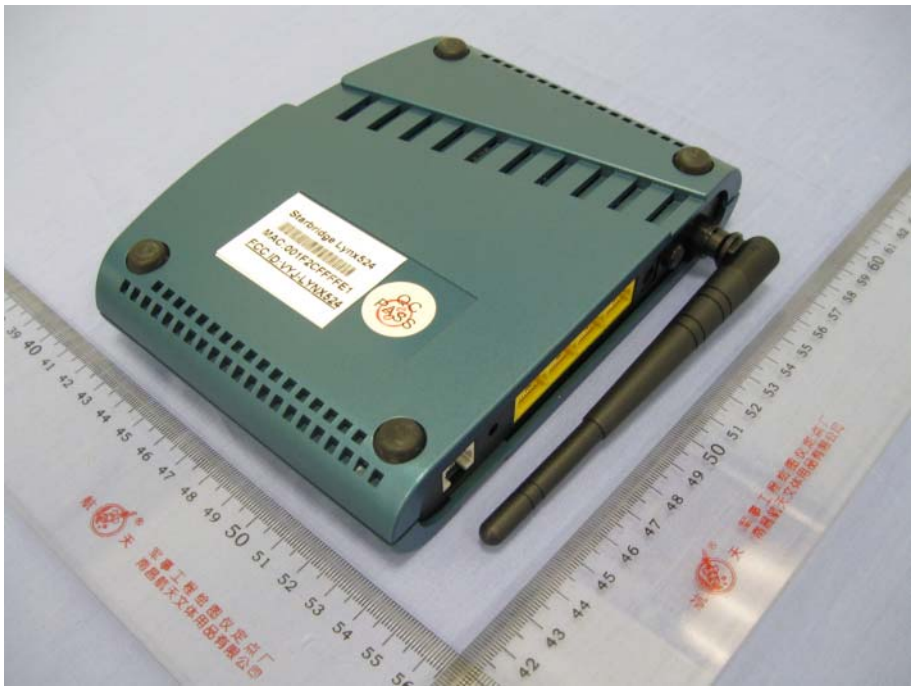
Above 1GHz:



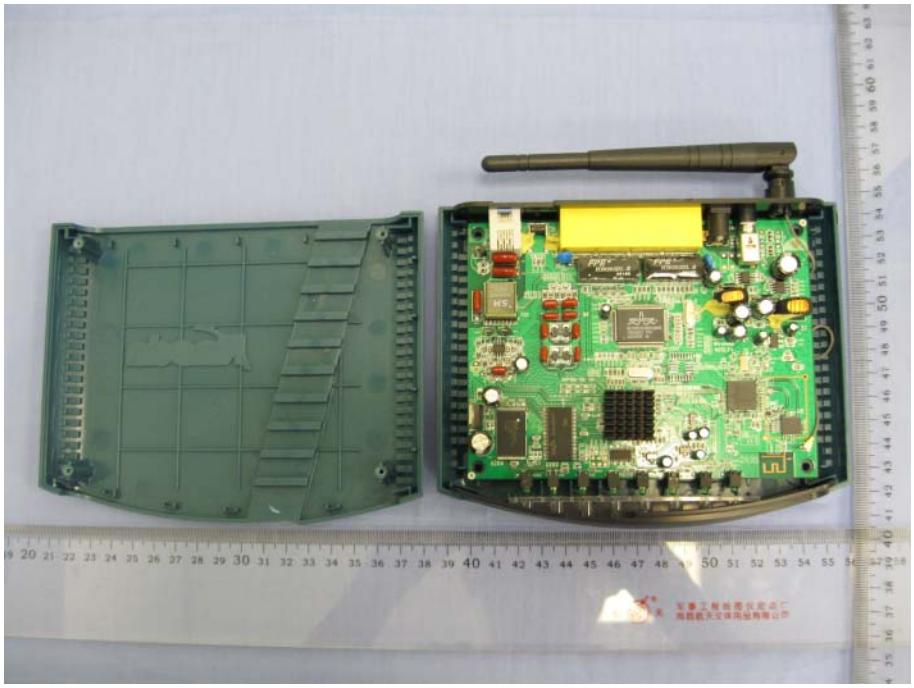
5.2.2 Conducted emission

5.3 Photographs of the EUT

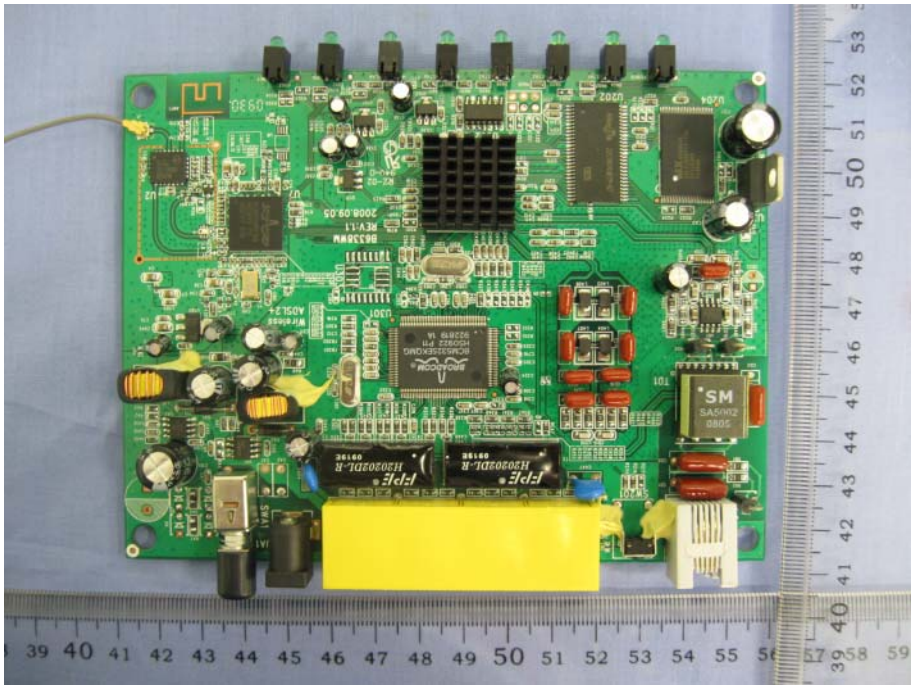
Enclosure of EUT



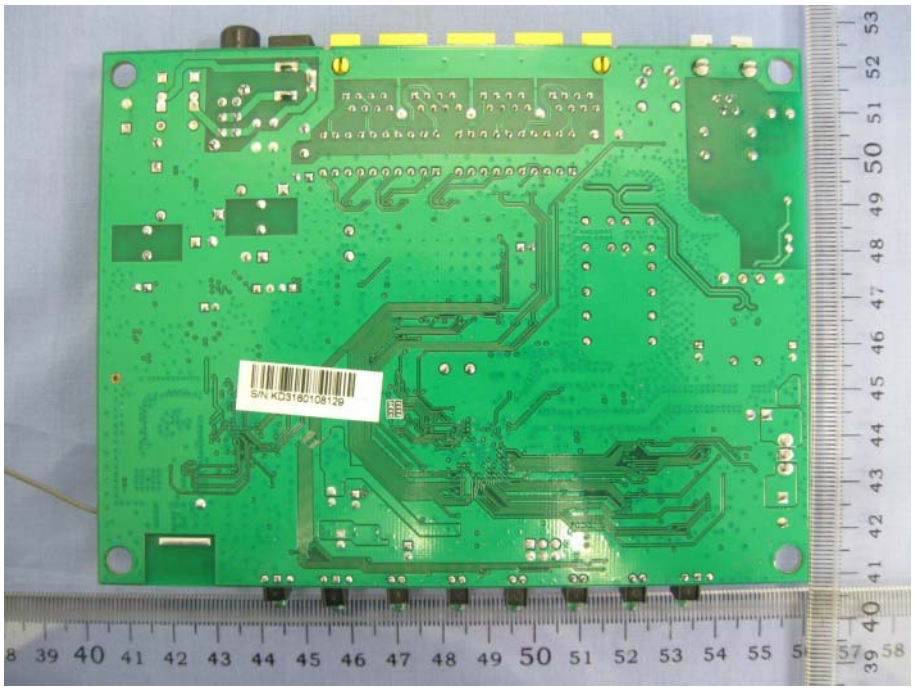
Enclosure of EUT



Internal of EUT

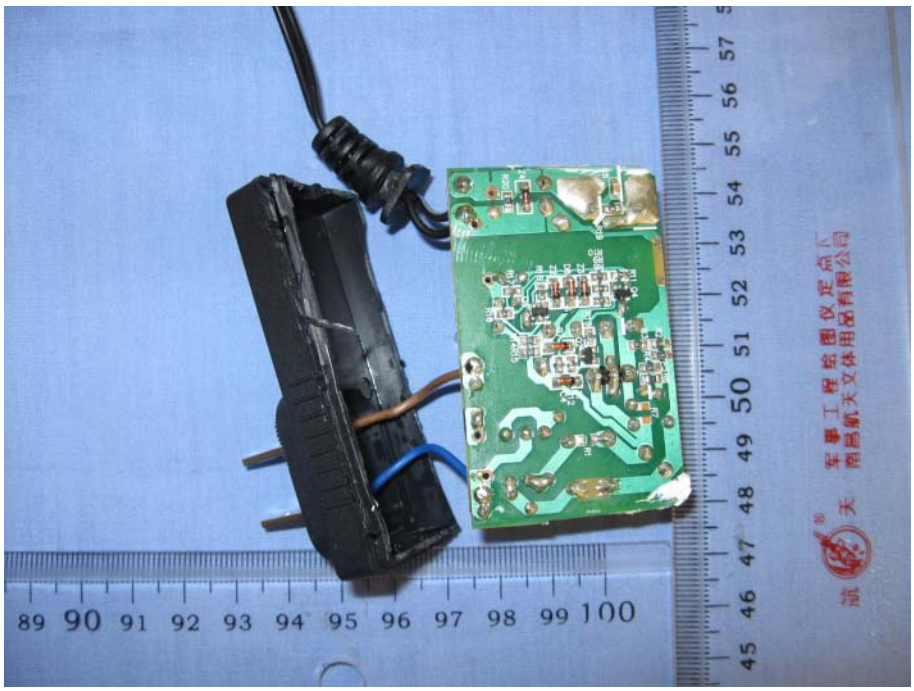


PCB of EUT

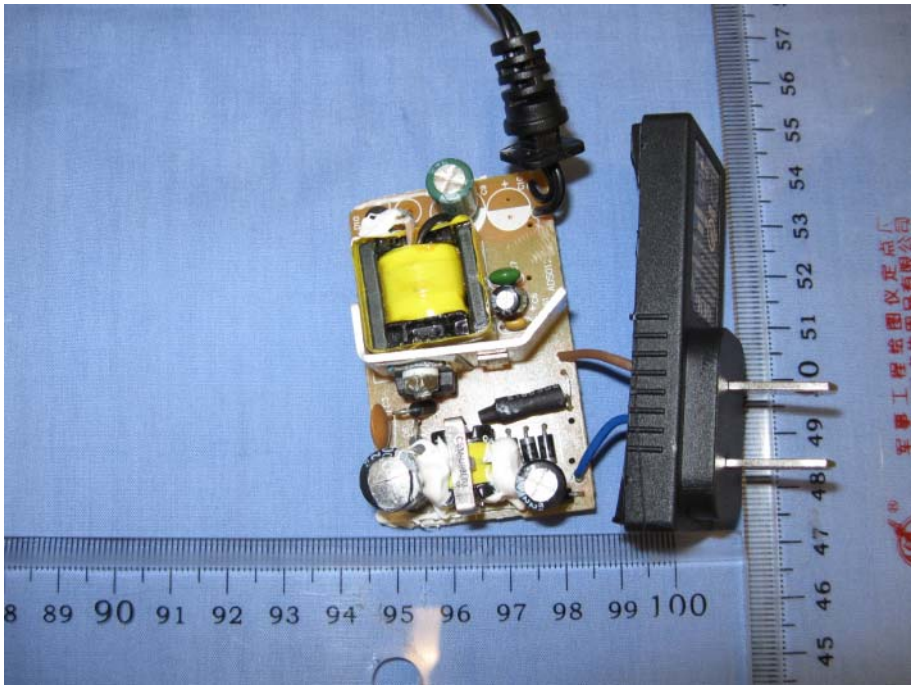


PCB of EUT

Photo of adapter



PCB of adapter



PCB of adapter

6. Equipment List

No.	Equipment	Manufacturer	Model	Serial No.	Calibration Date
1	Precision Biconical Antenna	TDK Co.	PBA-2030	090500	2008-09-18
2	Precision Log Periodic Antenna	TDK Co.	PLP-3003	061001	2008-09-18
3	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130174	2008-09-18
4	Horn antenna	TDK	HRN-0118	130186	2009-04-07
5	Attenuator 6 dB	Agilent	8491B	MY39260147	2008-09-18
6	Preamplifier	TDK Sonoma	310	242803	2009-04-07
7	Preamplifier	ELENA	EAU-3718 GXA	A070701	2009-04-07
8	EMI Receiver	Rohde & Schwarz	ESIB26	100234	2009-04-07
9	EMI Receiver	Rohde & Schwarz	ESCS30	100350	2009-04-07
10	Spectrum Analyzer	Agilent	E4403B	MY44210199	2009-04-07
11	Art. Mains Network	EMCO	3816/2	00044921	2009-04-07
12	Transient Limiter(10 dB)	Agilent	11947A	3107A03736	2009-04-07
13	Personal Computer	HP	DX2000MT	MXD4250FZM	N/A
14	Personal Computer	HP	DX2000MT	MXD4130B2N	N/A
15	Semi-Anechoic Chamber	TDK Co.	N/A	N/A	2009-04-07
16	Shielded Room	TDK Co.	N/A	N/A	N/A
17	Loop Antenna	EMCO	6502	9107-2440	2009-04-07

7. Test Uncertainty

Test	Range	Confidence Level	Calculated Uncertainty
Radiated emission(3m)	30-1000MHz	95%	4.3dB
Conducted emission	0.15-30MHz	95%	3.3dB

8. Appendix

8.1 Confirmation of Compliance within the Limits

8.1.1 Method of calculating measurement result

Radiated Emission

For example the point of 33.888MHz, vertical, Page 30.

	Reading	+	Antenna factor	+	Cable loss	-	Gain	=	Result
Example	50.5	+	11.6	+	6.8	-	31.7	=	37.2

Conducted Emission

For example the point of 0.605MHz, L1 QP, Page 9.

	Reading	+	C. FACTOR	=	Result
Example	42.6	+	10.1	=	52.7