FCC Test Report

Product Name ： VDSL2 Security Firewall

Model No. ： Vigor2860ac, Vigor2860Vac, Vigor2862ac, Vigor2862Vac, Vigor2925ac, Vigor2925Vac, Vigor2925Fac, Vigor2925Fvac, Vigor2860Fac, Vigor2860Fvac, VigorIPPBX2860ac, IPOffice3860ac, IPOffice2860ac, Vigor3220ac, Vigor3220Vac, Vigor3220Fac, Vigor3220Fvac, Vigor2132n-plus, Vigor2132Vn-plus, Vigor2132Fn-plus, Vigor2132FVn-plus, Vigor2132ac, Vigor2132Vac, Vigor2132Fac, Vigor2132FVac, VigorBX 2000ac, VigorBX 2000Fac

FCC ID. ： VGYV2860AC

Applicant ： DrayTek Corp.

Address ： No.26 Fu Shing Rd., HuKou County,Hsin-Chu Industrial Park,Hsin-Chu,Taiwan 303 R.O.C

Date of Receipt ： 2013/03/27

Issued Date ： 2015/03/23

Report No. ： 1490454R-RFUSP27V00

Report Version ： V1.0

ilac-MRA TAF Testing Laboratory 3024

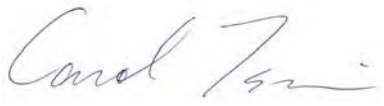
Test Report Certification

Issued Date : 2015/03/23
Report No. : 1490454R-RFUSP27V00

QuieTek

Product Name	:	VDSL2 Security Firewall
Applicant	:	DrayTek Corp.
Address	:	No.26 Fu Shing Rd., HuKou County,Hsin-Chu Industrial Park,Hsin-Chu,Taiwan 303 R.O.C
Manufacturer	:	DrayTek Corp.
Model No.	:	Vigor2860ac, Vigor2860Vac, Vigor2862ac, Vigor2862Vac, Vigor2925ac, Vigor2925Vac, Vigor2925Fac, Vigor2925Fvac, Vigor2860Fac, Vigor2860Fvac, VigorIPPBX2860ac, IPOffice3860ac, IPOffice2860ac, Vigor3220ac, Vigor3220Vac, Vigor3220Fac, Vigor3220Fvac, Vigor2132n-plus, Vigor2132Vn-plus, Vigor2132Fn-plus, Vigor2132FVn-plus, Vigor2132ac, Vigor2132Vac, Vigor2132Fac, Vigor2132FVac, VigorBX 2000ac, VigorBX 2000Fac
FCC ID.	:	VGYV2860AC
EUT Voltage	:	AC 100-240V, 50-60Hz
Trade Name	:	DrayTek
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart C Section 15.247:2012 ANSI C63.4: 2009
Test Result	:	Complied

The test results relate only to the samples tested.
The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

Documented By : 

(Carol Tsai / Engineering Adm. Assistant)

Reviewed By : 

(Jimmie Liu / Senior Engineer)

Approved By : 

(Roy Wang / Director)

Laboratory Information

We, **QuieTek Corporation**, are an independent RF consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted (audited or listed) by the following related bodies in compliance with ISO 17025 specified testing scopes:

Taiwan R.O.C.	**:**	**TAF, Accreditation Number: 3024**
USA	**:**	**FCC, Registration Number: 365520**
Canada	**:**	**IC, Submission No: 150981**

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site: http://www.quietek.com/chinese/about/certificates.aspx?bval=5
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/
If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

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TEL:+886-3-592-8858 / FAX:+886-3-592-8859 E-Mail : service@quietek.com

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TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789 E-Mail : service@quietek.com

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1. General Information

1.1. EUT Description

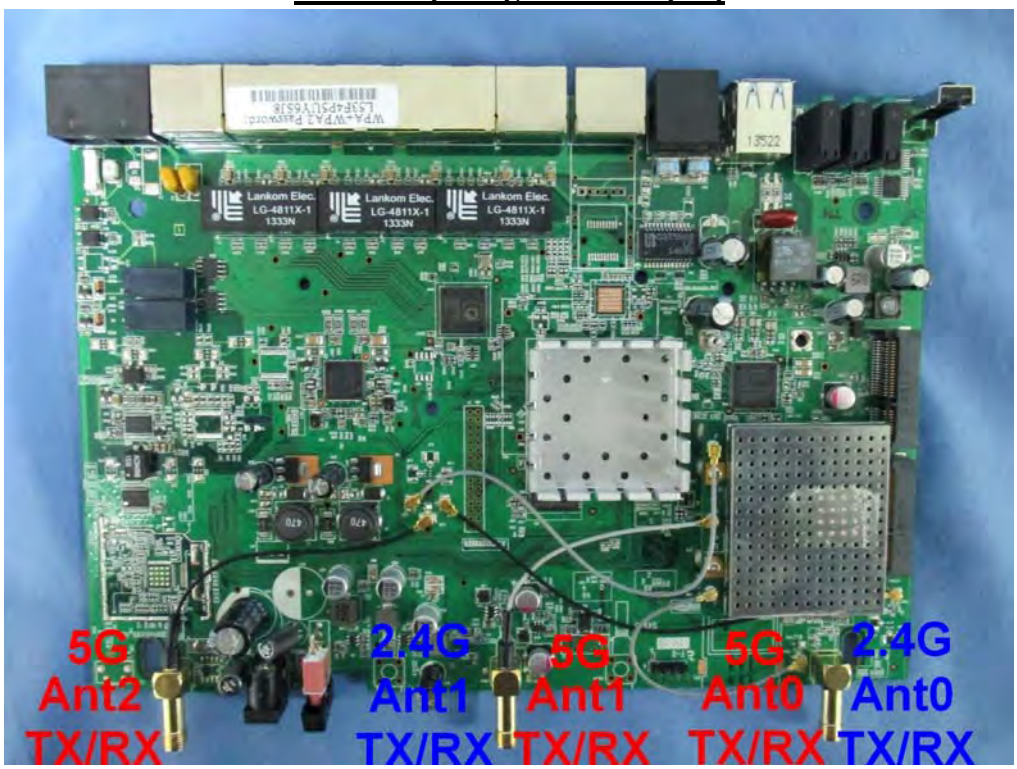
Product Name	VDSL2 Security Firewall	
Product Type	WLAN(2TX,2RX)	
Trade Name	DrayTek	
Model No.	Vigor2860ac, Vigor2860Vac, Vigor2862ac, Vigor2862Vac, Vigor2925ac, Vigor2925Vac, Vigor2925Fac, Vigor2925Fvac, Vigor2860Fac, Vigor2860Fvac, VigorIPPBX2860ac, IPOffice3860ac, IPOffice2860ac, Vigor3220ac, Vigor3220Vac, Vigor3220Fac, Vigor3220Fvac, Vigor2132n-plus, Vigor2132Vn-plus, Vigor2132Fn-plus, Vigor2132FVn-plus, Vigor2132ac, Vigor2132Vac, Vigor2132Fac, Vigor2132FVac, VigorBX 2000ac, VigorBX 2000Fac	
Frequency Range/ Channel Number	IEEE 802.11b/g/ IEEE 802.11n (20MHz)	2412~2462MHz / 11 Channels
	IEEE 802.11n (40MHz)	2422~2452MHz / 7 Channels
Type of Modulation	IEEE 802.11b	Direct Sequence Spread Spectrum
	IEEE 802.11g/n	Orthogonal Frequency Division Multiplexing
Data Speed	IEEE 802.11b	1, 2, 5.5, 11Mbps
	IEEE 802.11g	6, 9, 18, 24, 36, 48,54Mbps
	IEEE 802.11n	Support a subset of the combination of GI, MCS 0~MCS 15 and bandwidth defined in 802.11n
Antenna Gain	Ant0: 1.95dBi, Ant1: 1.95dBi	
Antenna Type	Dipole Antenna	

Component	
Antenna	MAG. LAYERS, EDA-1313-25GR2-A2, 3 Pcs
LAN Cable	Non-Shielded, 3m
DSL Cable (2 to 1)	Non-Shielded, 0.13m
Analog Cable (2 to 1)	Non-Shielded, 0.15m
Power Adatper	HON-KW ANG, HK-AX-120A200-US I/P : 100-240V~50/60Hz 0.8A O/P : 12V⎓2.0A Cable Out: Non-Shielded, 1.85m

ANT-TX / RX & Bandwidth

ANT-TX / RX	TX		RX	
Mode/ Channel Bandwidth	20MHz	40MHz	20MHz	40MHz
IEEE802.11b	✓		✓	
IEEE802.11g	✓		✓	
IEEE802.11n	✓	✓	✓	✓

2TX / 2RX(2.4G); 3TX / 3RX(5G)



IEEE 802.11n

MCS Index	Modulation	R	N_{BPSCS}	N_{CBPS}		N_{DBPS}		Data Rate(Mb/s)			
				20MHz	40MHz	20MHz	40MHz	800ns GI		400ns GI	
								20MHz	40MHz	20MHz	40MHz
0	BPSK	1/2	1	52	108	26	54	6.5	13.5	7.2	15.0
1	QPSK	1/2	2	104	216	52	108	13.0	27.0	14.4	30.0
2	QPSK	3/4	2	104	216	78	162	19.5	40.5	21.7	45.0
3	16-QAM	1/2	4	208	432	104	216	26.0	54.0	28.9	60.0
4	16-QAM	3/4	4	208	432	156	324	39.0	81.0	43.3	90.0
5	64-QAM	2/3	6	312	648	208	432	52.0	108.0	57.8	120.0
6	64-QAM	3/4	6	312	648	234	486	58.5	121.5	65.0	135.0
7	64-QAM	5/6	6	312	648	260	540	65.0	135.0	72.2	150.0
Note 1: Support of 400ns GI is optional on transmit and receive.											

Table 1 – MCS parameters for TX Antenna number = 1

MCS Index	Modulation	R	N_{BPSCS}	N_{CBPS}		N_{DBPS}		Data Rate(Mb/s)			
				20MHz	40MHz	20MHz	40MHz	800ns GI		400ns GI	
								20MHz	40MHz	20MHz	40MHz
8	BPSK	1/2	1	104	216	52	108	13.0	27.0	14.4	30.0
9	QPSK	1/2	2	208	432	104	216	26.0	54.0	28.9	60.0
10	QPSK	3/4	2	208	432	156	324	39.0	81.0	43.3	90.0
11	16-QAM	1/2	4	416	864	208	432	52.0	108.0	57.8	120.0
12	16-QAM	3/4	4	416	864	312	648	78.0	162.0	86.7	180.0
13	64-QAM	2/3	6	624	1296	416	864	104.0	216.0	115.6	240.0
14	64-QAM	3/4	6	624	1296	468	972	117.0	243.0	130.0	270.0
15	64-QAM	5/6	6	624	1296	520	1080	130.0	270.0	144.4	300.0
Note 1: Support of 400ns GI is optional on transmit and receive.											

Table 2 – MCS parameters for TX Antenna number = 2

Symbol	Explanation
R	Code rate
N_{BPSC}	Number of coded bits per single carrier
N_{CBPS}	Number of coded bits per symbol
N_{DBPS}	Number of data bits per symbol
GI	guard interval

IEEE 802.11b/g & IEEE 802.11n (20MHz)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
001	2412 MHz	002	2417 MHz	003	2422 MHz	004	2427 MHz
005	2432 MHz	006	2437 MHz	007	2442 MHz	008	2447 MHz
009	2452 MHz	010	2457 MHz	011	2462 MHz		

IEEE 802.11n (40MHz)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
003	2422 MHz	004	2427 MHz	005	2432 MHz	006	2437 MHz
007	2442 MHz	008	2447 MHz	009	2452 MHz		

Note:

1. This device is a VDSL2 Security Firewall including 2.4GHz b/g/n(2x2) and 5G Band1,4 a/n/ac (3x3) transmitting and receiving function.
2. The different of the each model is shown as below:

Mode	Model-name	VDSL2 #1 (RJ11)	VDSL2 #2 (RJ11)	FXS (RJ11)	FXO (RJ11)	WLAN -1	WLAN -2	WLAN mode	WAN #1	RJ45 Port #1~6	USB 2.0 x 2
1	Vigor2860ac	V				V (2.4G)	V (5G/11ac)	3	RJ45	LAN#1~6 (RJ45)	V
2	Vigor2860Vac	V		V	V	V (2.4G)	V (5G/11ac)	3	RJ45	LAN#1~6 (RJ45)	V
3	Vigor2862ac	V	V(dual)			V (2.4G)	V (5G/11ac)	3	RJ45	LAN#1~6 (RJ45)	V
4	Vigor2862Vac	V	V(dual)	V	V	V (2.4G)	V (5G/11ac)	3	RJ45	LAN#1~6 (RJ45)	V
5	Vigor2925ac					V (2.4G)	V (5G/11ac)	3	RJ45	WAN#2/ LAN#1~5 (RJ45)	V
6	Vigor2925Vac			V	V	V (2.4G)	V (5G/11ac)	3	RJ45	WAN#2/ LAN#1~5 (RJ45)	V
7	Vigor2925Fac					V (2.4G)	V (5G/11ac)	3	SFP	WAN#2/ LAN#1~5 (RJ45)	V
8	Vigor2925FVac			V	V	V (2.4G)	V (5G/11ac)	3	SFP	WAN#2/ LAN#1~5 (RJ45)	V
9	Vigor2860Fac	V				V (2.4G)	V (5G/11ac)	3	SFP	LAN#1~6 (RJ45)	V
10	Vigor2860FVac	V		V	V	V (2.4G)	V (5G/11ac)	3	SFP	LAN#1~6 (RJ45)	V
11	VigorIPPBX2860 ac	V		V	V	V (2.4G)	V (5G/11ac)	3	RJ45	LAN#1~6 (RJ45)	V
12	IPOffice3860ac	V		V	V	V (2.4G)	V (5G)	2	RJ45	LAN#1~6 (RJ45)	V
13	IPOffice2860ac	V		V	V	V (2.4G)	V (5G)	2	RJ45	LAN#1~6 (RJ45)	V
14	Vigor3220ac					V (2.4G)	V (5G/11ac)	3	RJ45	LAN#2/ WAN#1~5 (RJ45)	V
15	Vigor3220Vac			V	V	V (2.4G)	V (5G/11ac)	3	RJ45	LAN#2/ WAN#1~5 (RJ45)	V
16	Vigor3220Fac					V (2.4G)	V (5G/11ac)	3	SFP	LAN#2/ WAN#1~5 (RJ45)	V
17	Vigor3220FVac			V	V	V (2.4G)	V (5G/11ac)	3	SFP	LAN#2/ WAN#1~5 (RJ45)	V

Mode	Model-name	VDSL2 #1 (RJ11)	VDSL2 #2 (RJ11)	FXS (RJ11)	FXO (RJ11)	WLAN -1	WLAN -2	WLAN mode	WAN #1	RJ45 Port #1~6	USB 2.0 x 2
18	Vigor2132n-plus					V (2.4G)	V (5G)	2	RJ45	WAN#2/ LAN#1~4 (RJ45)	V
19	Vigor2132Vn-plus			V	V	V (2.4G)	V (5G)	2	RJ45	WAN#2/ LAN#1~4 (RJ45)	V
20	Vigor2132Fn-plus					V (2.4G)	V (5G)	2	SFP	WAN#2/ LAN#1~4 (RJ45)	V
21	Vigor2132FVn-plus			V	V	V (2.4G)	V (5G)	2	SFP	WAN#2/ LAN#1~4 (RJ45)	V
22	Vigor2132ac					V (2.4G)	V (5G/11ac)	3	RJ45	LAN#2/ WAN#1~5 (RJ45)	V
23	Vigor2132Vac			V	V	V (2.4G)	V (5G/11ac)	3	RJ45	LAN#2/ WAN#1~5 (RJ45)	V
24	Vigor2132Fac					V (2.4G)	V (5G/11ac)	2	SFP	WAN#2/ LAN#1~4 (RJ45)	V
25	Vigor2132FVac			V	V	V (2.4G)	V (5G/11ac)	2	SFP	WAN#2/LAN#1~4 (RJ45)	V
26	VigorBX 2000ac	V		V	V	V (2.4G)	V(5G/11ac)	3	RJ45	LAN#1~6 (RJ45)	V
27	VigorBX 2000Fac	V		V	V	V (2.4G)	V(5G/11ac)	3	SFP	LAN#1~6 (RJ45)	V

3. These test results on a sample of the device are for the purpose of demonstrating Compliance with Part 15 Subpart C Paragraph 15.247.
4. Regards to the frequency band operation; the lowest、middle and highest frequency of channel were selected to perform the test, and then shown on this report.
5. The function of the 5GHz transmitting is measured and makes a test report of the report number: 1490454R-RFUSP59V00.
6. This device is a composite device in accordance with Part 15 regulations. The receiving function receiving was tested and its test report number is 134094R-RFUSP37V02 under Declaration of Conformity.

1.2. Test Mode

QuieTek has verified the construction and function in typical operation. The preliminary tests were performed in different data rate, and to find the worst condition, which was shown in this test report. The following table is the final test mode.

TX	Mode 1: Transmit

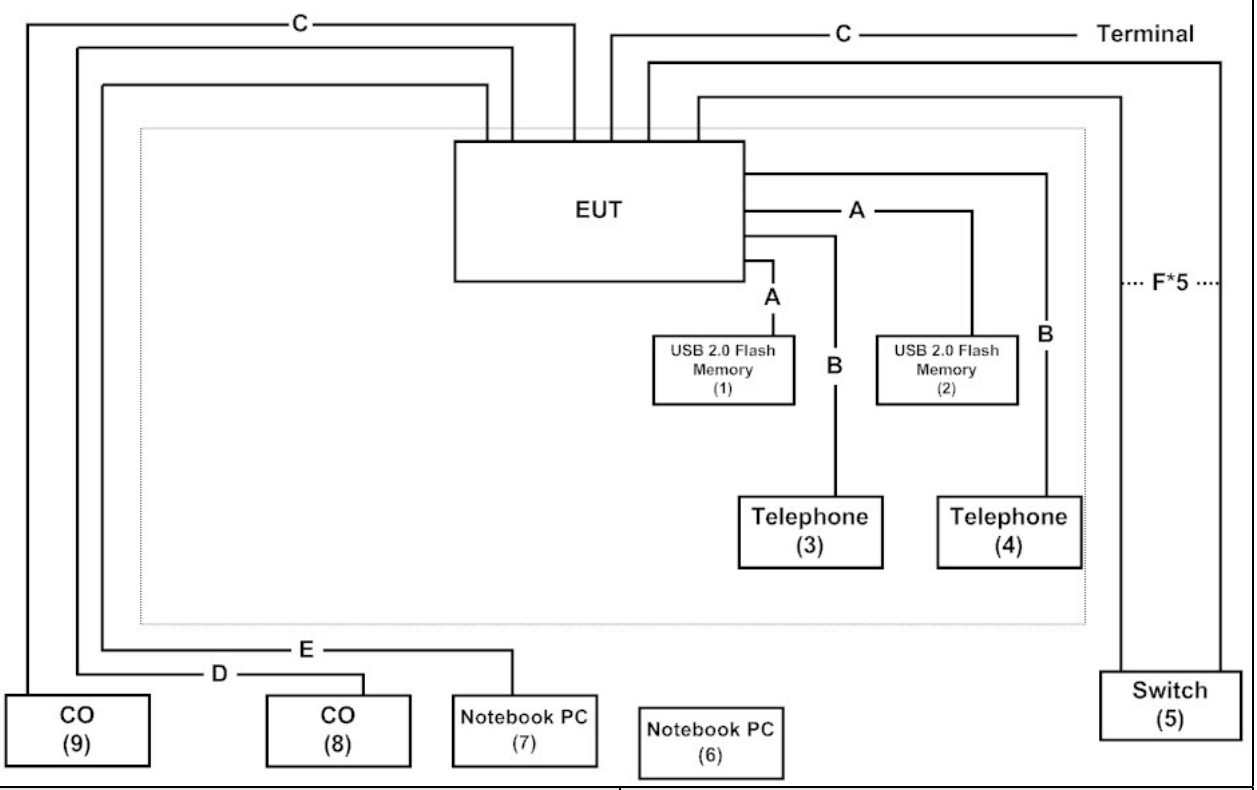
Test Items	Mode	Modulation	Channel	Antenna	Result
Conducted Emission	1	11n(40MHz)	6	0+1	Complies
Peak Power Output	1	11b/g	1/ 6/ 11	0	Complies
	1	11n(20MHz)	1/ 6/ 11	0+1	Complies
	1	11n(40MHz)	3/ 6/ 9	0+1	Complies
Radiated Emission	1	11b/g	1/ 6/ 11	0	Complies
	1	11n(20MHz)	1/ 6/ 11	0+1	Complies
	1	11n(40MHz)	3/ 6/ 9	0+1	Complies
RF antenna conducted test	1	11b/g	1/ 11	0	Complies
	1	11n(20MHz)	1/ 11	0/1	Complies
	1	11n(40MHz)	3/ 9	0/1	Complies
Radiated Emission Band Edge	1	11b/g	1/ 11	0	Complies
	1	11n(20MHz)	1/ 11	0+1	Complies
	1	11n(40MHz)	3/ 9	0+1	Complies
Occupied Bandwidth	1	11b/g	1/ 6/ 11	0	Complies
	1	11n(20MHz)	1/ 6/ 11	0/1	Complies
	1	11n(40MHz)	3/ 6/ 9	0/1	Complies
Power Density	1	11b/g	1/ 6/ 11	0	Complies
	1	11n(20MHz)	1/ 6/ 11	0+1	Complies
	1	11n(40MHz)	3/ 6/ 9	0+1	Complies

1.3. Tested System Details

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

Product		Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	USB 2.0 Flash Memory	Apacer	AH223	N/A	DoC	--
2	USB 2.0 Flash Memory	Apacer	AH223	N/A	DoC	--
3	Telephone	TENTEL	K-302	41230008000356	DoC	--
4	Telephone	TENTEL	K-302	50721005000518	DoC	--
5	Switch	D-Link	DGS1216T	F360298000042	DoC	Non-Shielded, 1.8m
6	Notebook PC	ACER	PAV70	LUSEW0D0371105FE221601	DoC	Non-Shielded, 2.5m one ferrite core bonded
7	Notebook PC	HP	HSTNN-146C	CNU8253S1X	DoC	Non-Shielded, 1.8m
8	CO	DrayTek	Vigor2750	N/A	DoC	--
9	CO	DrayTek	Vigor 3900	N/A	DoC	--

1.4. Configuration of tested System

Connection Diagram


Signal Cable Type		Signal cable Description
A	USB 2.0 Flash Memory Cable	Shielded, 1m, 2 Pcs
B	Telephone Cable	Non-Shielded, 1.5m, 2 Pcs
C	DSL Cable	Non-Shielded, 10m, 2 Pcs
D	LAN Cable	Non-Shielded, 10m
E	LAN Cable	Non-Shielded, 3m
F	LAN Cable	Non-Shielded, 10m, 5 Pcs

1.5. EUT Exercise Software

1	Setup the EUT as shown in Section 1.4.
2	Execute the Telnet command on the EUT.
3	Configure the test mode, the test channel, and the data rate.
4	Key in TX command to start the continuous transmitting.
5	Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	FCC PART 15 C 15.207 Conducted Emission	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Peak Power Output (DSSS)	15 - 35	25
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Radiated Emission (DSSS)	15 - 35	25
Humidity (%RH)		25 - 75	65
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 RF antenna conducted test (DSSS)	15 - 35	25
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Band Edge (DSSS)	15 - 35	25
Humidity (%RH)		25 - 75	48
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Occupied Bandwidth (DSSS)	15 - 35	25
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Power Density (DSSS)	15 - 35	25
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000

2. Conducted Emission

2.1. Test Equipment

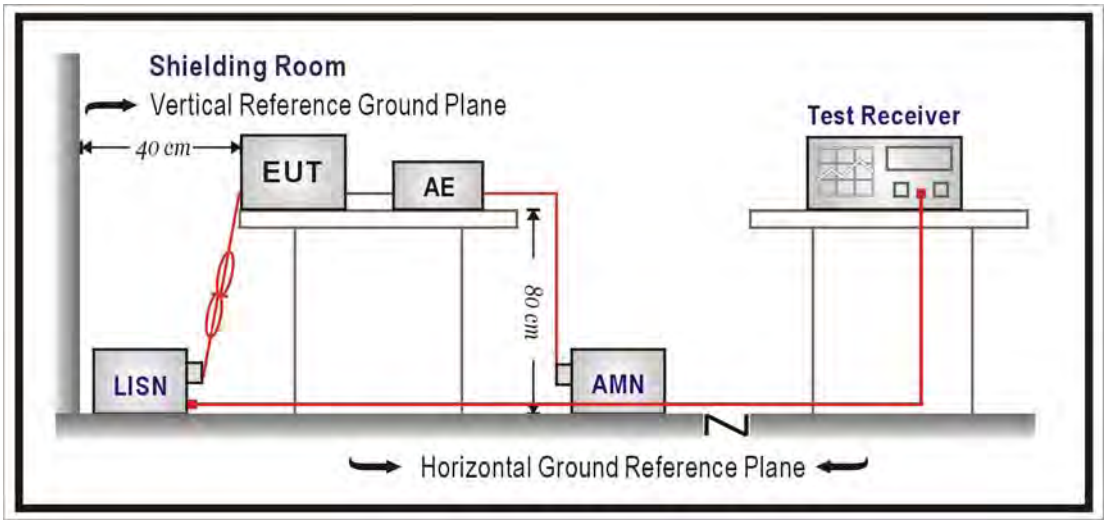
The following test equipments are used during the test:

Conducted Emission / SR3

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
LISN	R&S	ENV216	100096	2014/08/01
LISN	R&S	ESH3-Z5	836679/022	2014/01/20
Test Receiver	R&S	ESCS 30	825442/017	2014/01/01

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

2.2. Test Setup



2.3. Limits

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

Remarks: In the above table, the tighter limit applies at the band edges.

2.4. Test Procedure

The EUT was setup according to ANSI C63.4: 2009 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.
The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs.)
Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

2.5. Test Specification

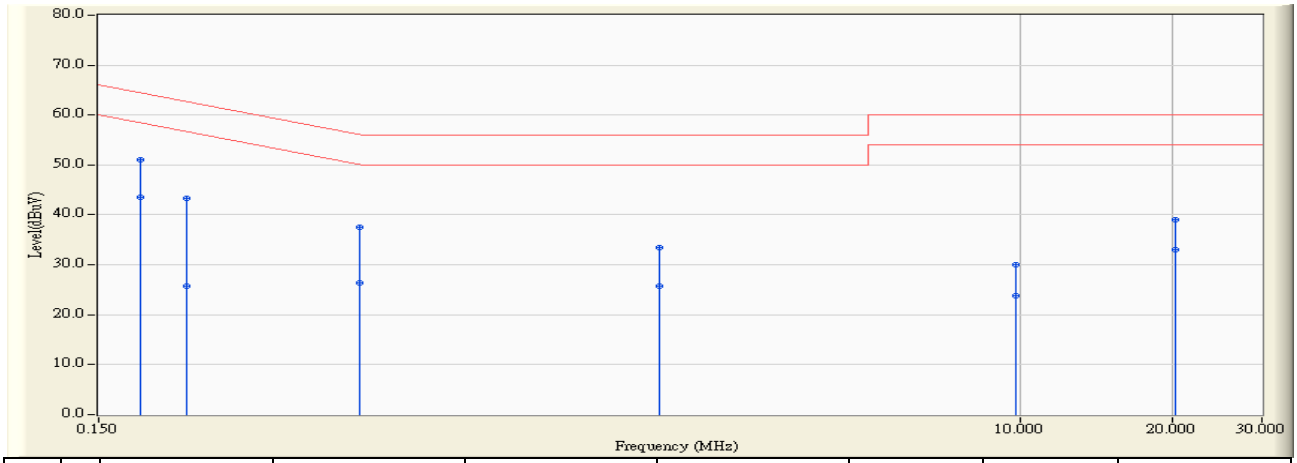
According to FCC Part 15 Subpart C Paragraph 15.207: 2012

2.6. Uncertainty

The measurement uncertainty is defined as ± 2.26 dB.

2.7. Test Result

Site : SR3	**Time : 2013/09/18 - 17:18**
Limit : CISPR_B_00M_QP	**Margin : 6**
Probe : SR3_LISN(16A)-3_0813 - Line1	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2437MHz**

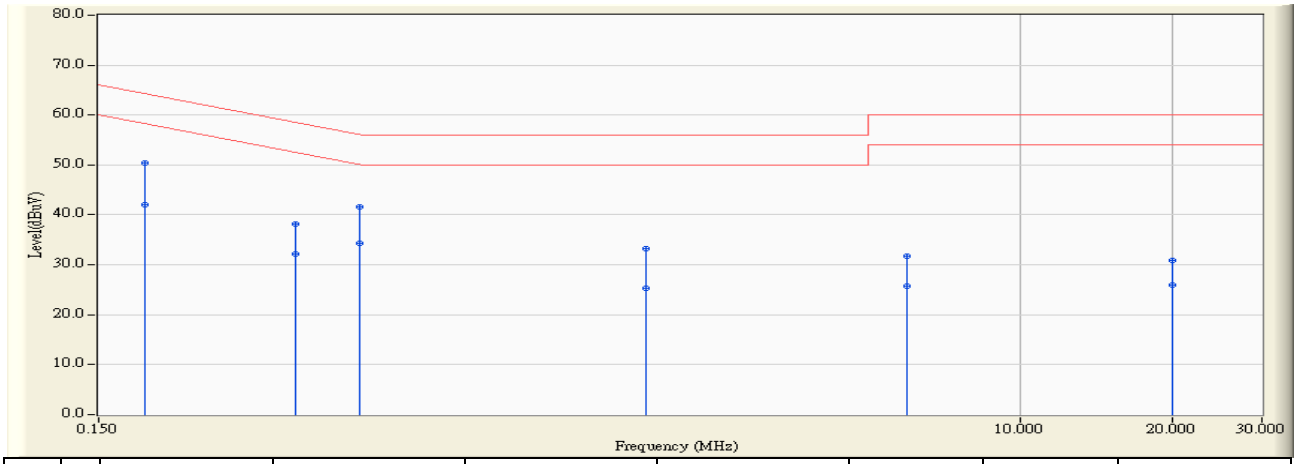


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.181	9.647	41.470	51.117	-13.311	64.428	QUASIPEAK
2	*	0.181	9.647	33.820	43.467	-10.961	54.428	AVERAGE
3		0.224	9.674	33.740	43.414	-19.248	62.661	QUASIPEAK
4		0.224	9.674	16.020	25.694	-26.968	52.661	AVERAGE
5		0.494	9.822	27.710	37.532	-18.573	56.104	QUASIPEAK
6		0.494	9.822	16.530	26.352	-19.753	46.104	AVERAGE
7		1.927	9.960	23.510	33.470	-22.530	56.000	QUASIPEAK
8		1.927	9.960	15.680	25.640	-20.360	46.000	AVERAGE
9		9.752	10.110	19.880	29.990	-30.010	60.000	QUASIPEAK
10		9.752	10.110	13.610	23.720	-26.280	50.000	AVERAGE
11		20.170	10.130	28.910	39.040	-20.960	60.000	QUASIPEAK
12		20.170	10.130	22.860	32.990	-17.010	50.000	AVERAGE

Note:

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

Site : SR3	**Time : 2013/09/18 - 17:20**
Limit : CISPR_B_00M_QP	**Margin : 6**
Probe : SR3_LISN(16A)-3_0813 - Line2	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2437MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.185	9.649	40.830	50.479	-13.772	64.251	QUASIPEAK
2		0.185	9.649	32.370	42.019	-12.232	54.251	AVERAGE
3		0.369	9.750	28.340	38.090	-20.439	58.529	QUASIPEAK
4		0.369	9.750	22.420	32.170	-16.359	48.529	AVERAGE
5		0.494	9.812	31.740	41.552	-14.553	56.104	QUASIPEAK
6	*	0.494	9.812	24.500	34.312	-11.793	46.104	AVERAGE
7		1.814	9.940	23.250	33.190	-22.810	56.000	QUASIPEAK
8		1.814	9.940	15.380	25.320	-20.680	46.000	AVERAGE
9		5.947	10.090	21.690	31.780	-28.220	60.000	QUASIPEAK
10		5.947	10.090	15.750	25.840	-24.160	50.000	AVERAGE
11		19.959	10.310	20.670	30.980	-29.020	60.000	QUASIPEAK
12		19.959	10.310	15.670	25.980	-24.020	50.000	AVERAGE

Note:

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

3. Peak Power Output

3.1. Test Equipment

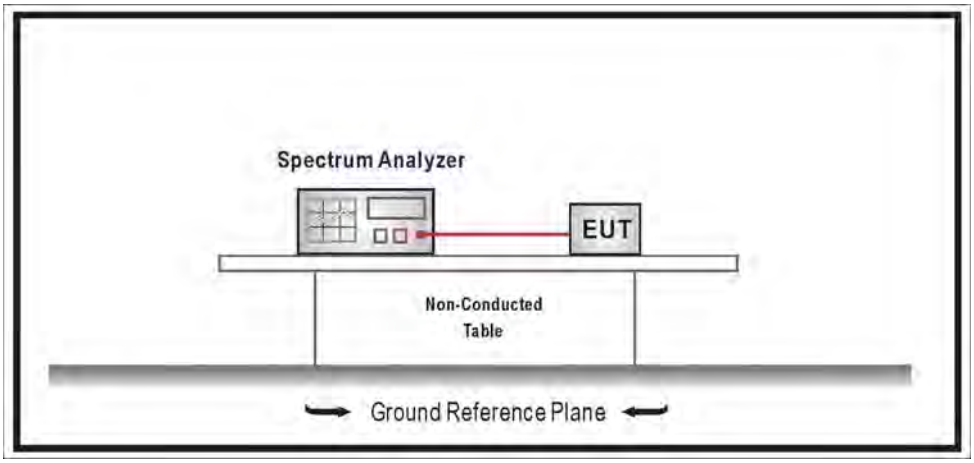
The following test equipments are used during the test:

Peak Power / SR

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2014/08/05

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

3.2. Test Setup



3.3. Test procedures

The EUT was tested according to DTS test procedure of KDB558074, Section 5.2.1.2 Measurement Procedure PK2 for compliance to FCC 47CFR 15.247 requirements.

3.4. Limits

The maximum peak power shall be less 1 Watt.

3.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2012

3.6. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB.

3.7. Test Result

Product	VDSL2 Security Firewall		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2013/07/31	Test Site	SR7

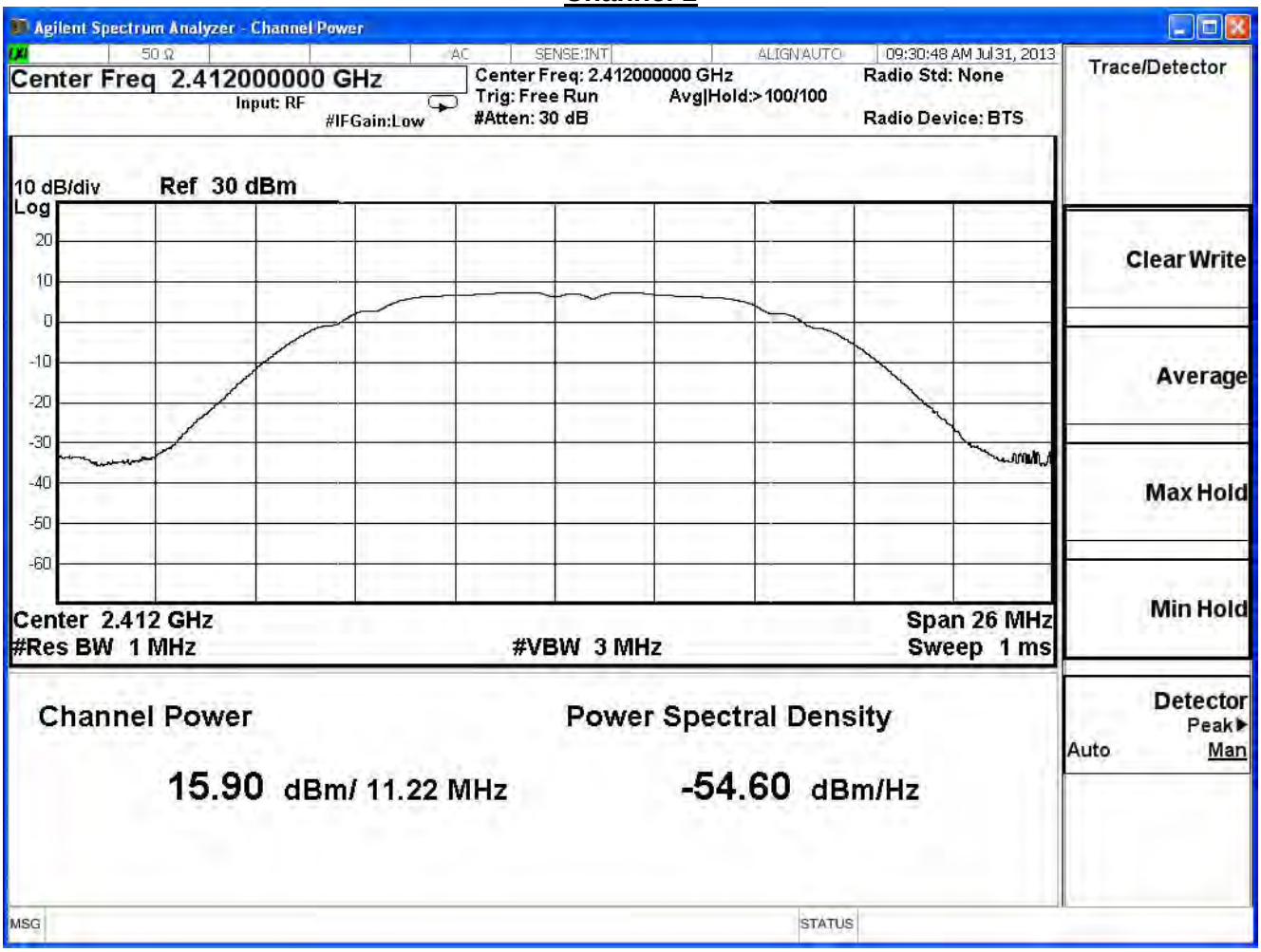
IEEE 802.11b				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	15.90	30	Pass
6	2437	15.58	30	Pass
11	2462	14.59	30	Pass

The worst emission of data rate is 6Mbps.

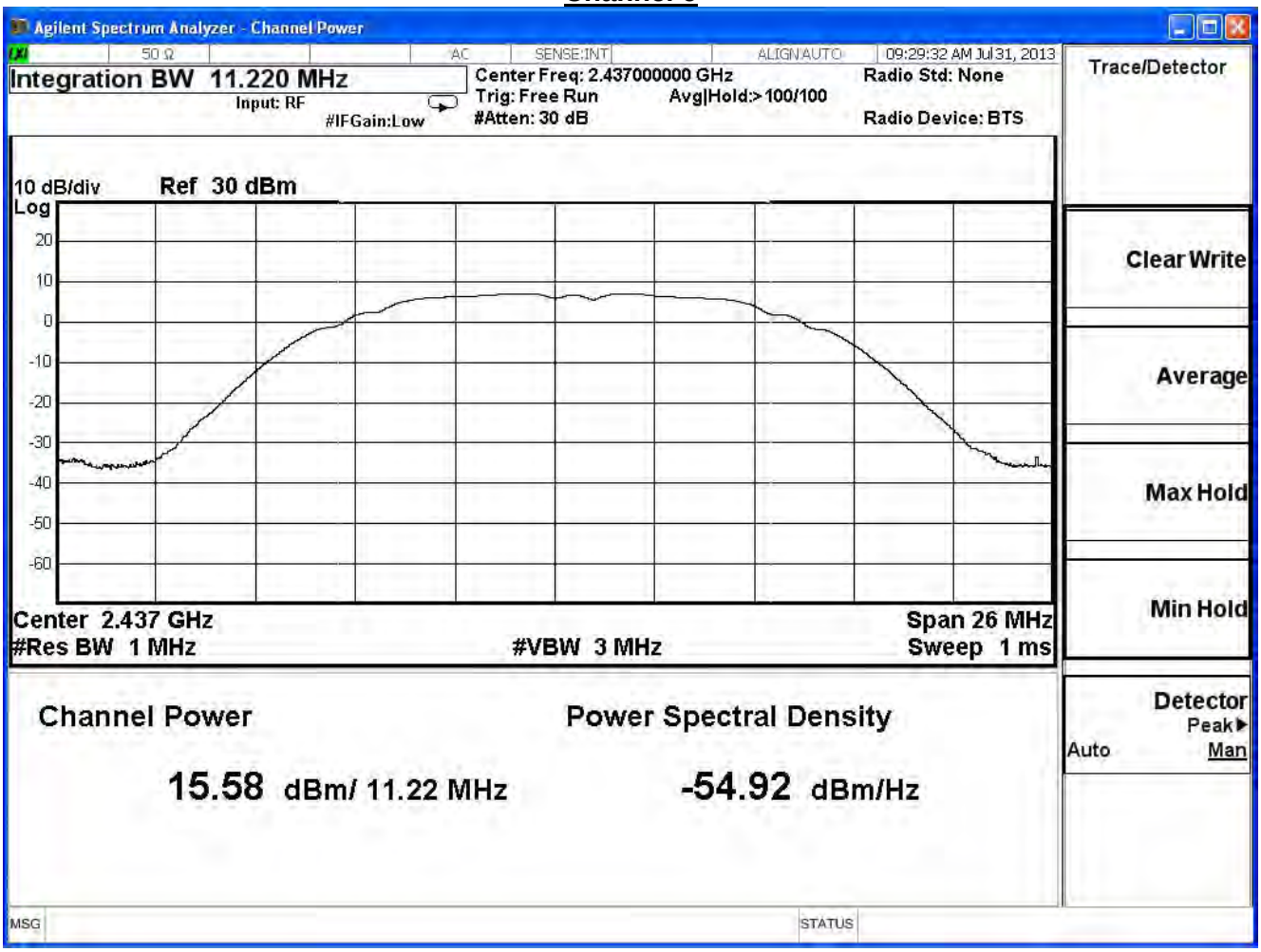
Peak Power Output (dBm)									
Channel No	Frequency (MHz)	Data Rate							Required Limit
		6	12	18	24	36	48	54	
1	2412	15.90	--	--	--	--	--	--	1 Watt=30dBm
6	2437	15.58	15.57	15.56	15.55	15.54	15.53	15.52	1 Watt=30dBm
11	2462	14.59	--	--	--	--	--	--	1 Watt=30dBm

Note: Measure Level =Reading value + cable loss

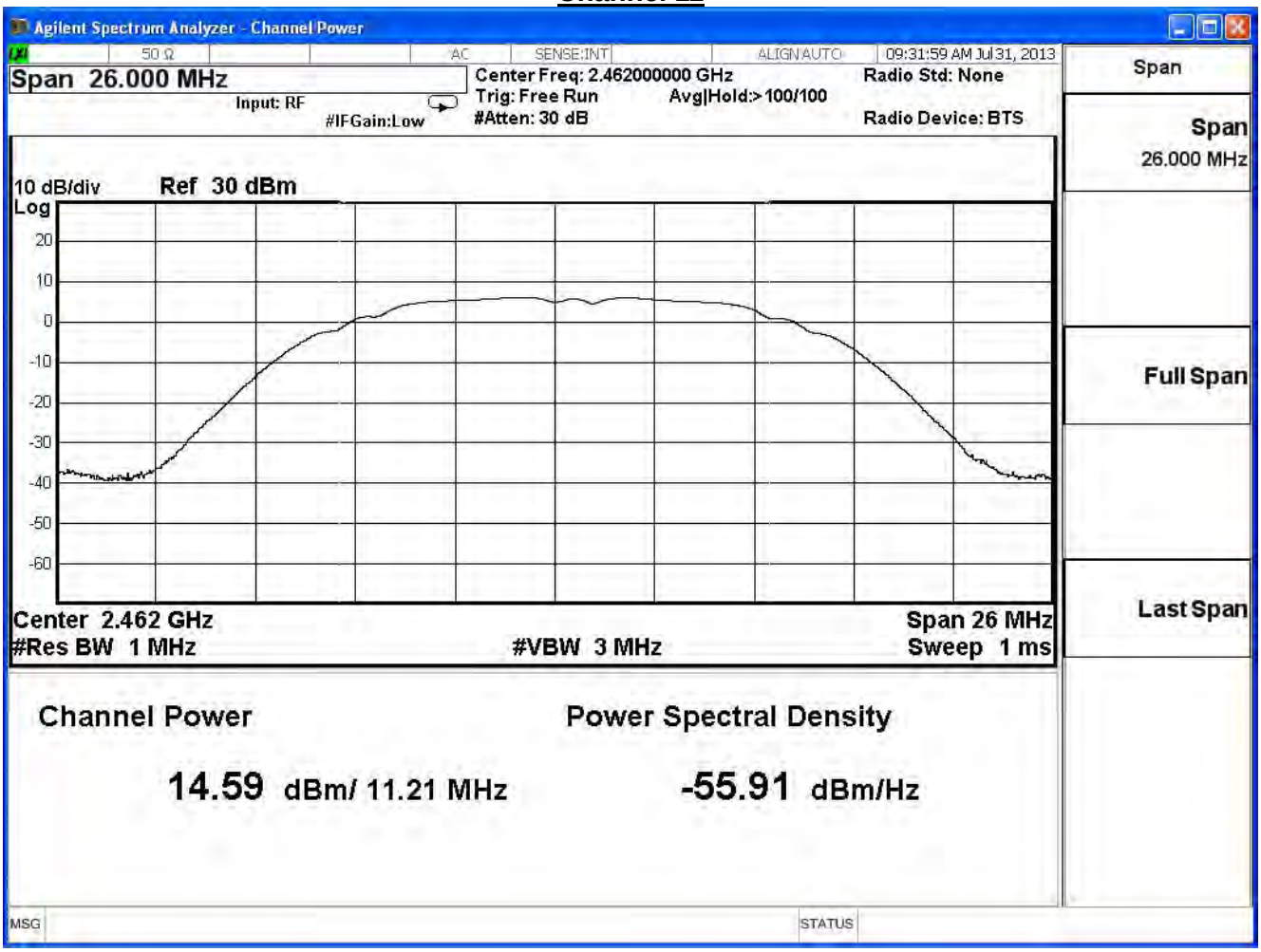
Channel 1


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:30:48 AM Jul 31, 2013
Center Freq 2.412000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.412000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center 2.412 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 26 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Detector
Peak
Auto
Man
Channel Power
15.90 dBm/ 11.22 MHz
Power Spectral Density
-54.60 dBm/Hz
MSG
STATUS

Channel 6


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:29:32 AM Jul 31, 2013
Integration BW 11.220 MHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center 2.437 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 26 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Detector
Peak
Auto
Man
Channel Power
15.58 dBm/ 11.22 MHz
Power Spectral Density
-54.92 dBm/Hz
MSG
STATUS

Channel 11


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:31:59 AM Jul 31, 2013
Span 26.000 MHz
Input: RF
#IFGain:Low
Center Freq: 2.462000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Span
Span
26.000 MHz
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Full Span
Last Span
Center 2.462 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 26 MHz
Sweep 1 ms
Channel Power
14.59 dBm/ 11.21 MHz
Power Spectral Density
-55.91 dBm/Hz
MSG
STATUS

Product	VDSL2 Security Firewall		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2013/07/31	Test Site	SR7

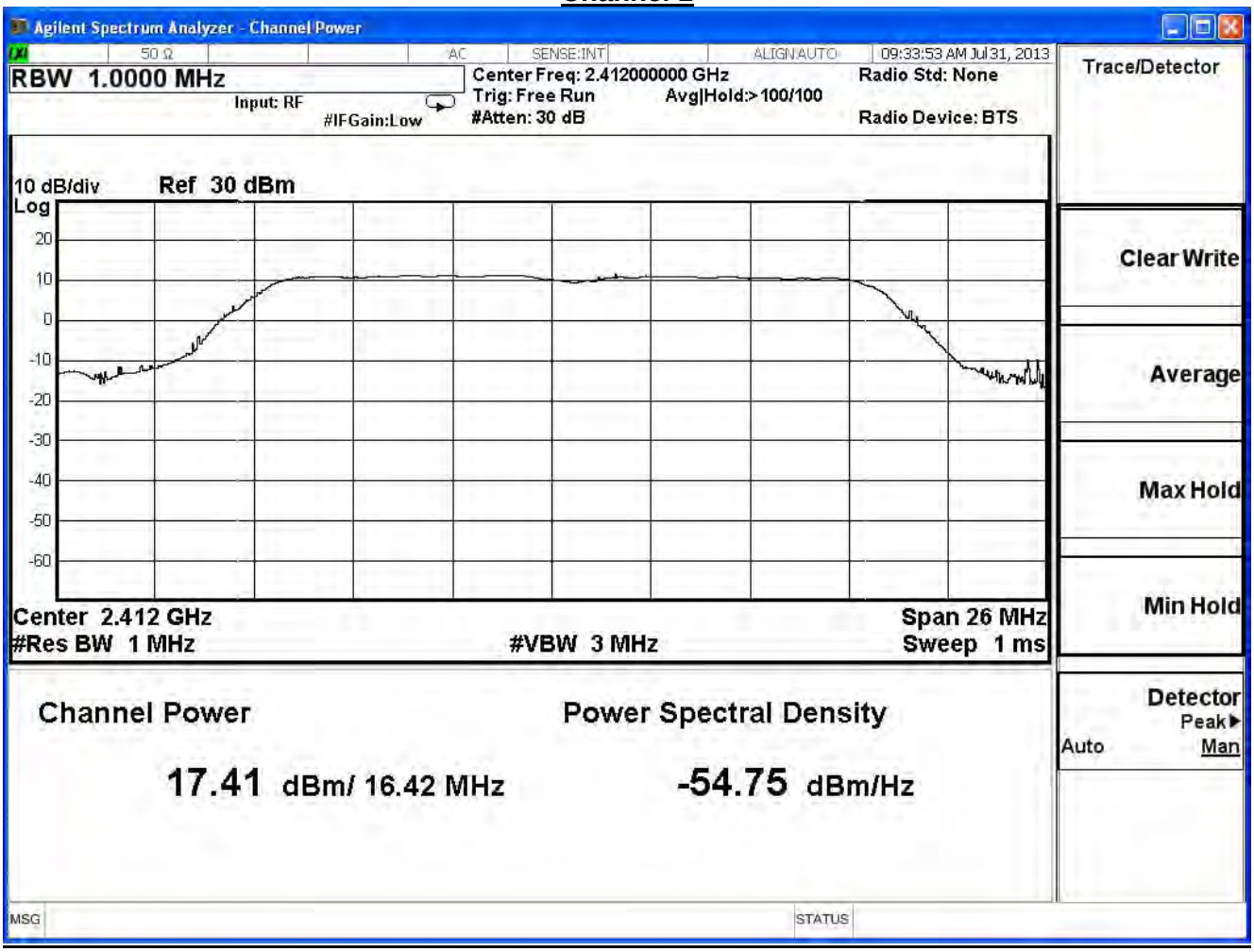
IEEE 802.11g				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	17.41	30	Pass
6	2437	17.13	30	Pass
11	2462	16.53	30	Pass

The worst emission of data rate is 6Mbps.

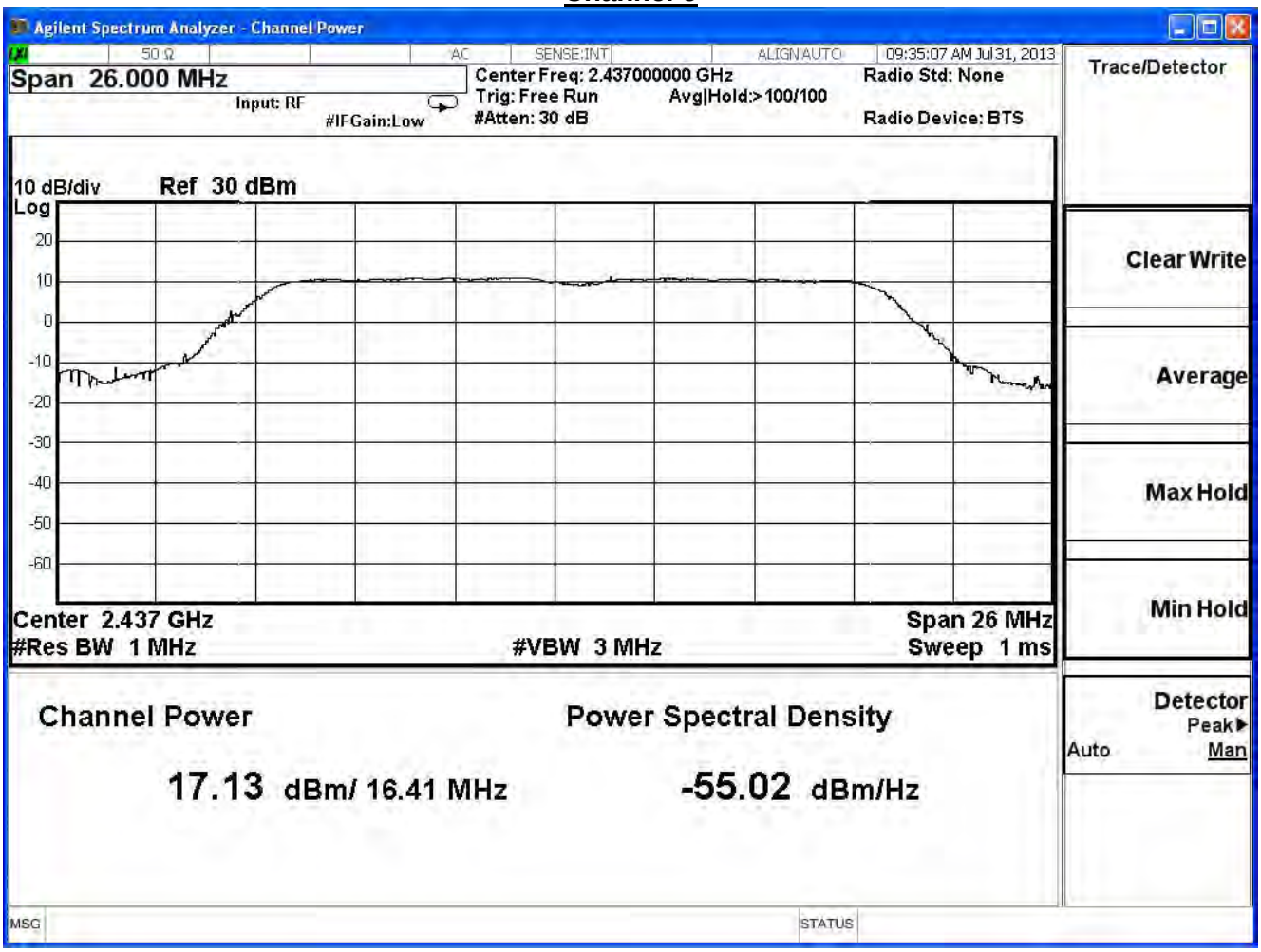
Peak Power Output (dBm)									
Channel No	Frequency (MHz)	Data Rate							Required Limit
		6	12	18	24	36	48	54	
1	2412	17.41	--	--	--	--	--	--	1 Watt=30dBm
6	2437	17.13	17.13	17.12	17.11	17.10	17.09	17.07	1 Watt=30dBm
11	2462	16.53	--	--	--	--	--	--	1 Watt=30dBm

Note: Measure Level =Reading value + cable loss

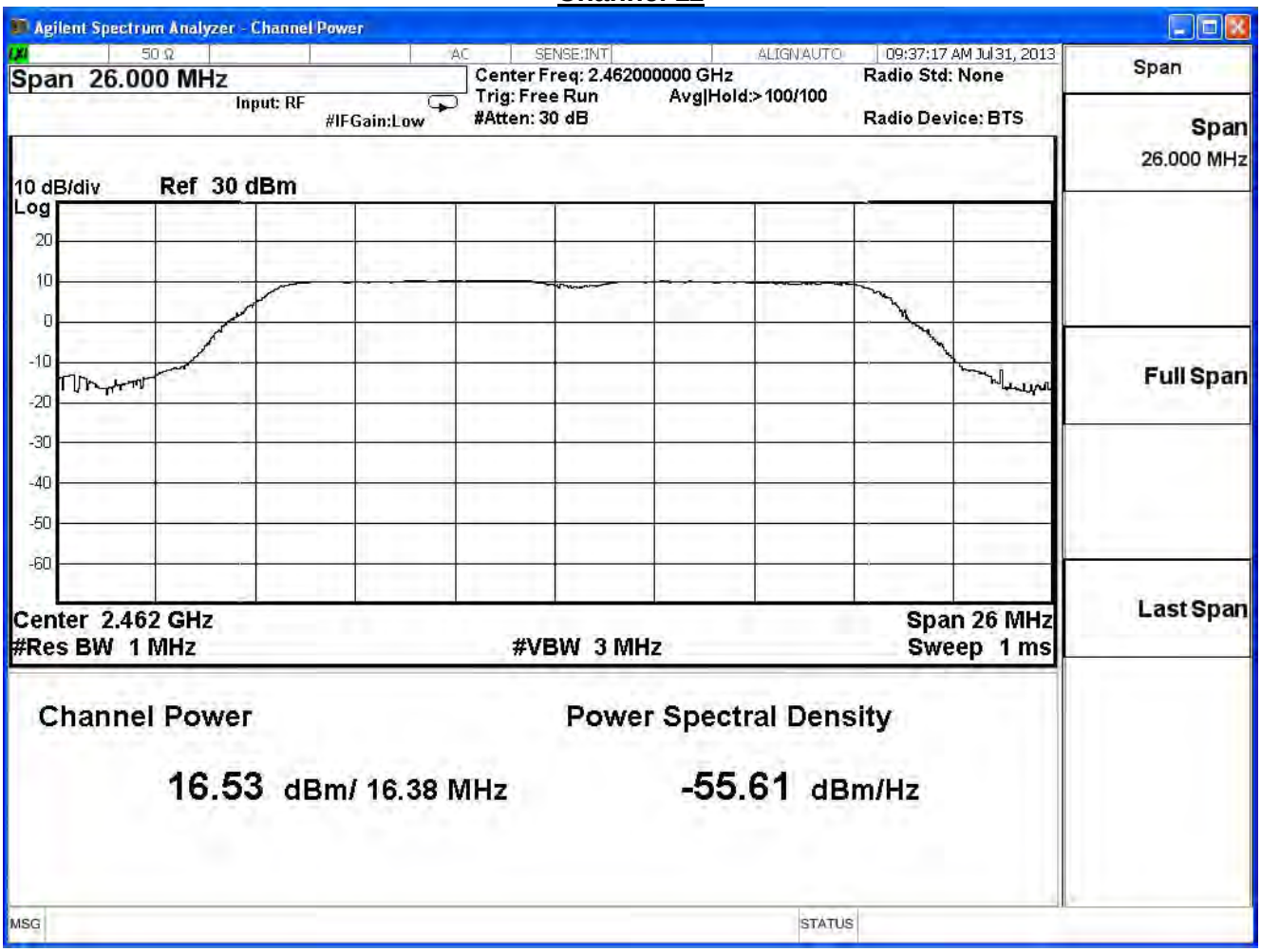
Channel 1


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:33:53 AM Jul 31, 2013
RBW 1.0000 MHz
Input: RF
#IFGain:Low
Center Freq: 2.412000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center 2.412 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 26 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Channel Power
17.41 dBm/ 16.42 MHz
Power Spectral Density
-54.75 dBm/Hz
Detector
Peak
Auto
Man
MSG
STATUS

Channel 6


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:35:07 AM Jul 31, 2013
Span 26.000 MHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center 2.437 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 26 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Detector
Peak
Auto
Man
Channel Power
17.13 dBm/ 16.41 MHz
Power Spectral Density
-55.02 dBm/Hz
MSG
STATUS

Channel 11


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:37:17 AM Jul 31, 2013
Span 26.000 MHz
Input: RF
#IFGain:Low
Center Freq: 2.462000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Span
Span
26.000 MHz
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Full Span
Last Span
Center 2.462 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 26 MHz
Sweep 1 ms
Channel Power
16.53 dBm/ 16.38 MHz
Power Spectral Density
-55.61 dBm/Hz
MSG
STATUS

Product	VDSL2 Security Firewall		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2013/07/31	Test Site	SR7

IEEE 802.11n20MHz (ANT 0)

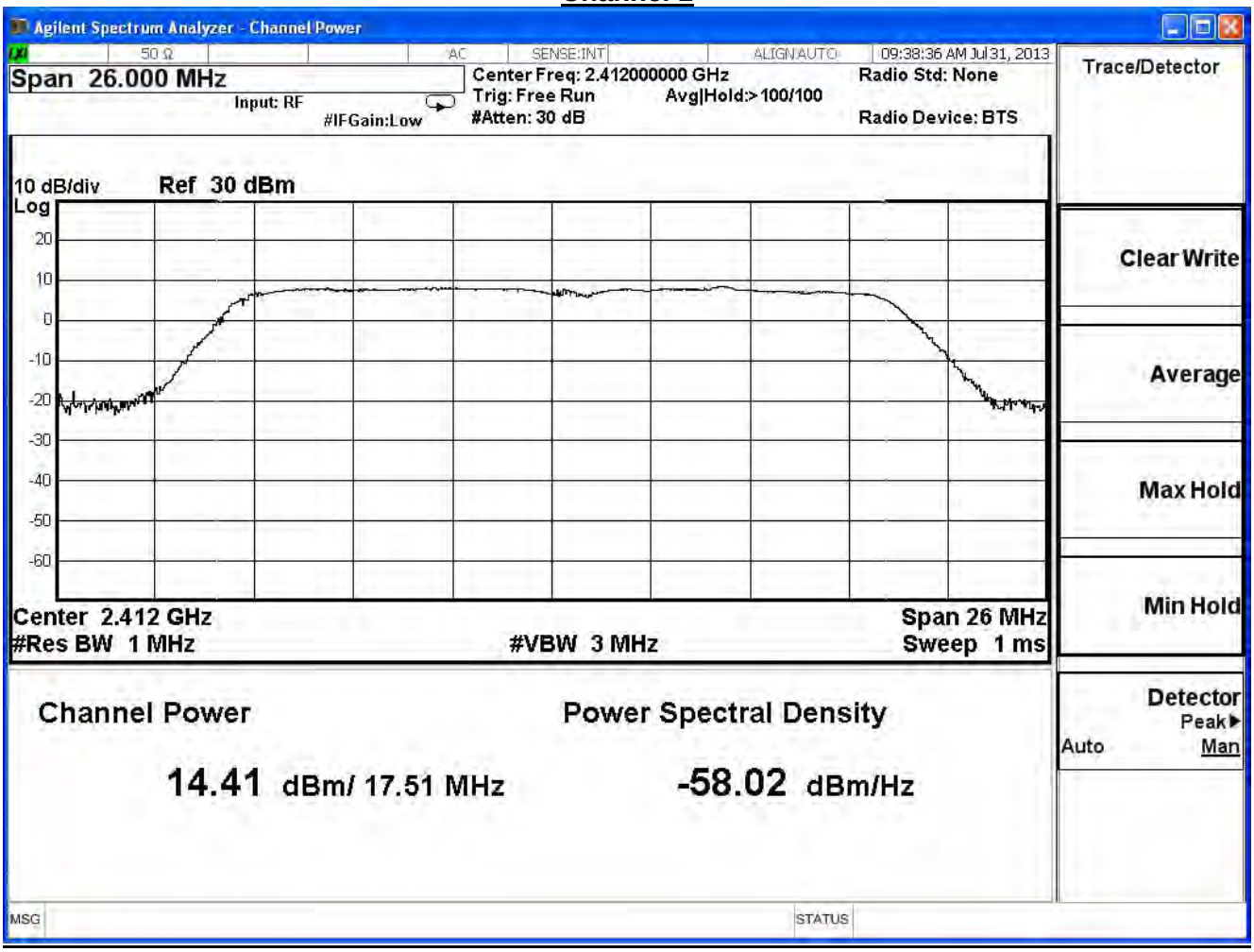
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	14.41	30	Pass
6	2437	12.78	30	Pass
11	2462	12.04	30	Pass

The worst emission of data rate is 19.5Mbps.

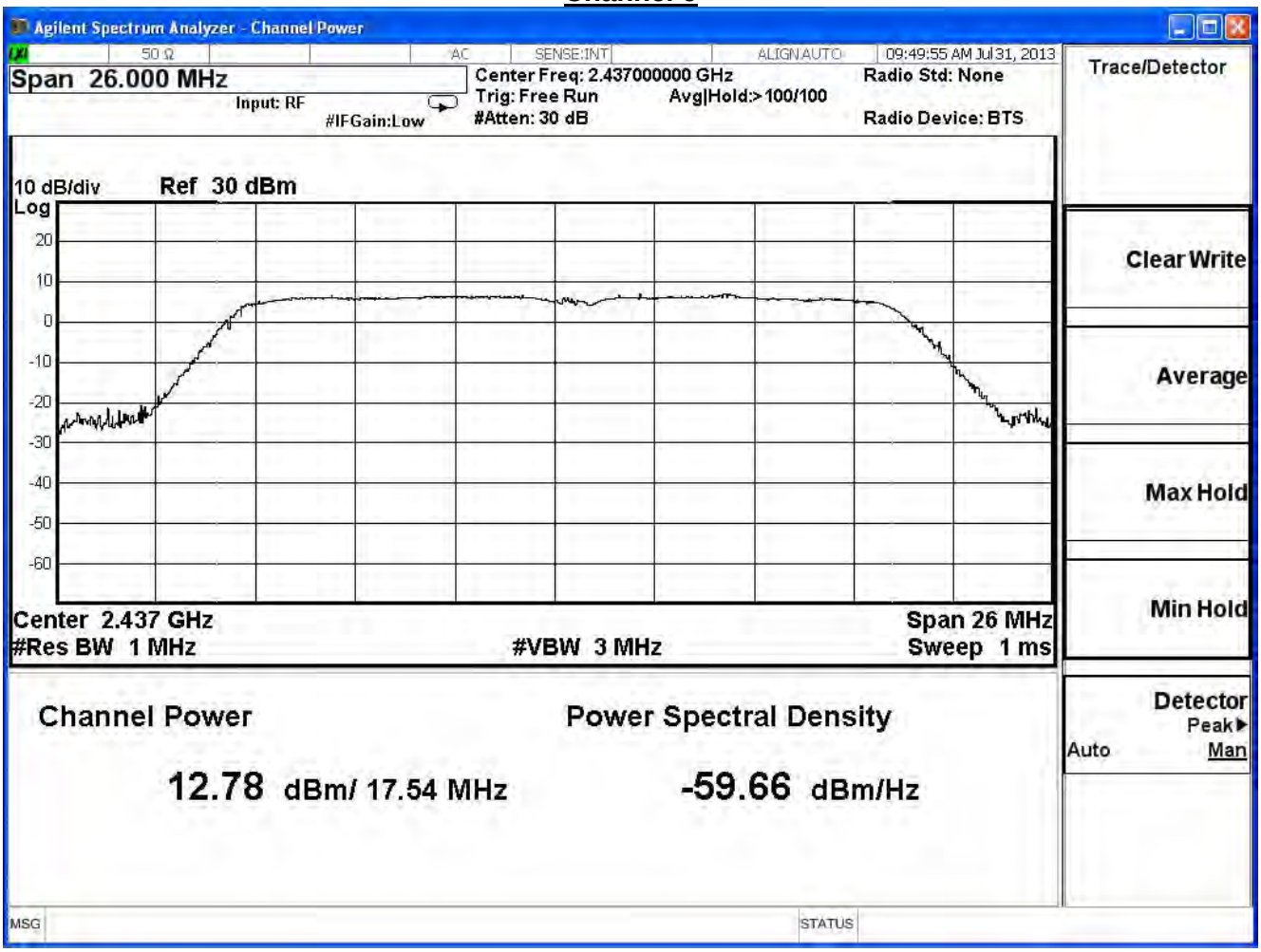
Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		19.5	39	58.5	78	117	156	175.5	195	
1	2412	14.41	--	--	--	--	--	--	--	30dBm
6	2437	12.78	12.77	12.76	12.75	12.74	12.73	12.72	12.71	30dBm
11	2462	12.04	--	--	--	--	--	--	--	30dBm

Note: Measure Level =Reading value + cable loss

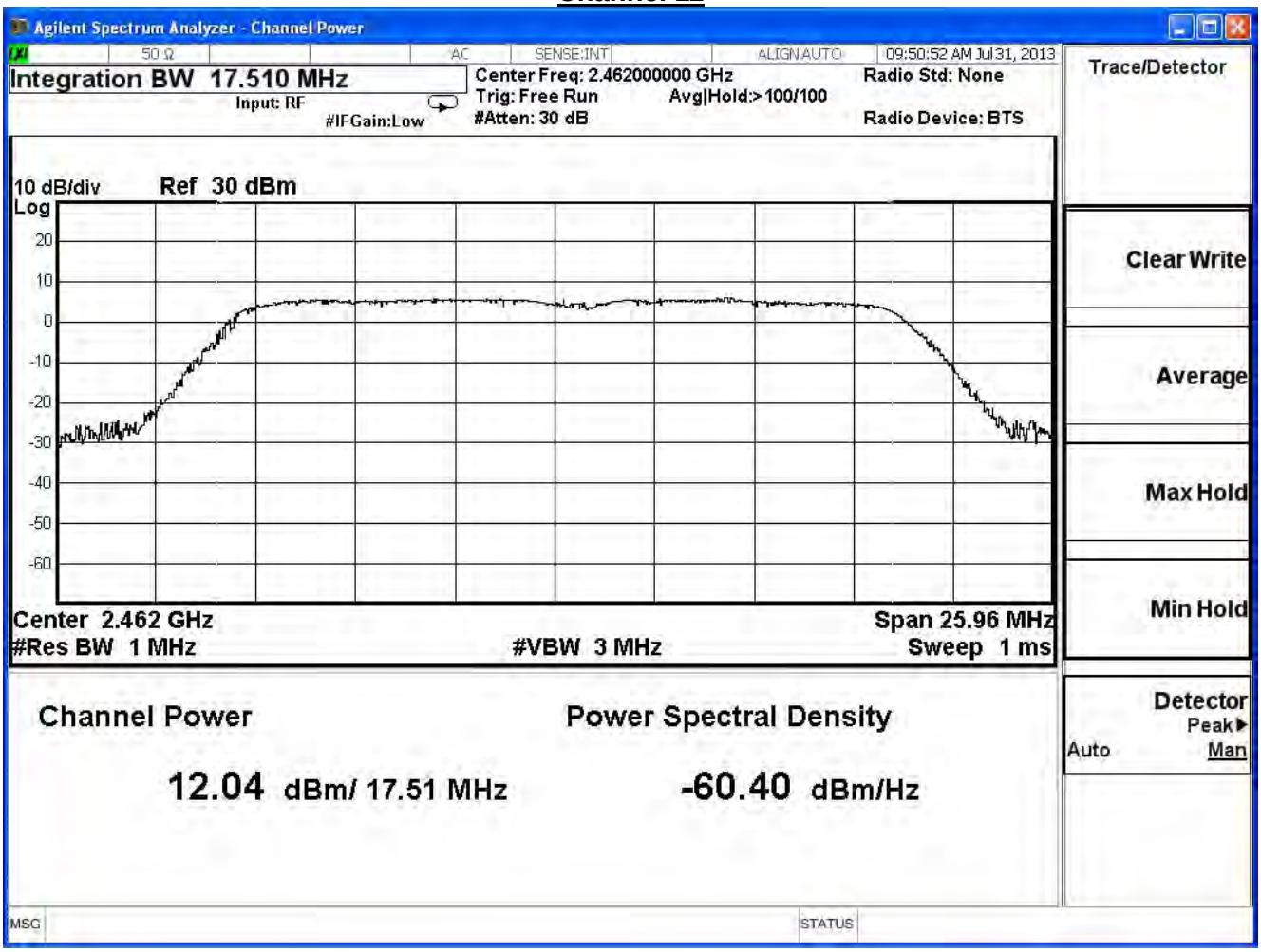
Channel 1


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:38:36 AM Jul 31, 2013
Span 26.000 MHz
Input: RF
#IFGain:Low
Center Freq: 2.412000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center 2.412 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 26 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Detector
Peak
Auto
Man
Channel Power
14.41 dBm/ 17.51 MHz
Power Spectral Density
-58.02 dBm/Hz
MSG
STATUS

Channel 6


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:49:55 AM Jul 31, 2013
Span 26.000 MHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center 2.437 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 26 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Detector
Peak
Auto
Man
Channel Power
12.78 dBm/ 17.54 MHz
Power Spectral Density
-59.66 dBm/Hz
MSG
STATUS

Channel 11


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:50:52 AM Jul 31, 2013
Integration BW 17.510 MHz
Input: RF
#IFGain:Low
Center Freq: 2.462000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center 2.462 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 25.96 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Detector
Peak
Auto
Man
Channel Power
12.04 dBm/ 17.51 MHz
Power Spectral Density
-60.40 dBm/Hz
MSG
STATUS

Product	VDSL2 Security Firewall		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2013/07/31	Test Site	SR7

IEEE 802.11n20MHz (ANT 1)

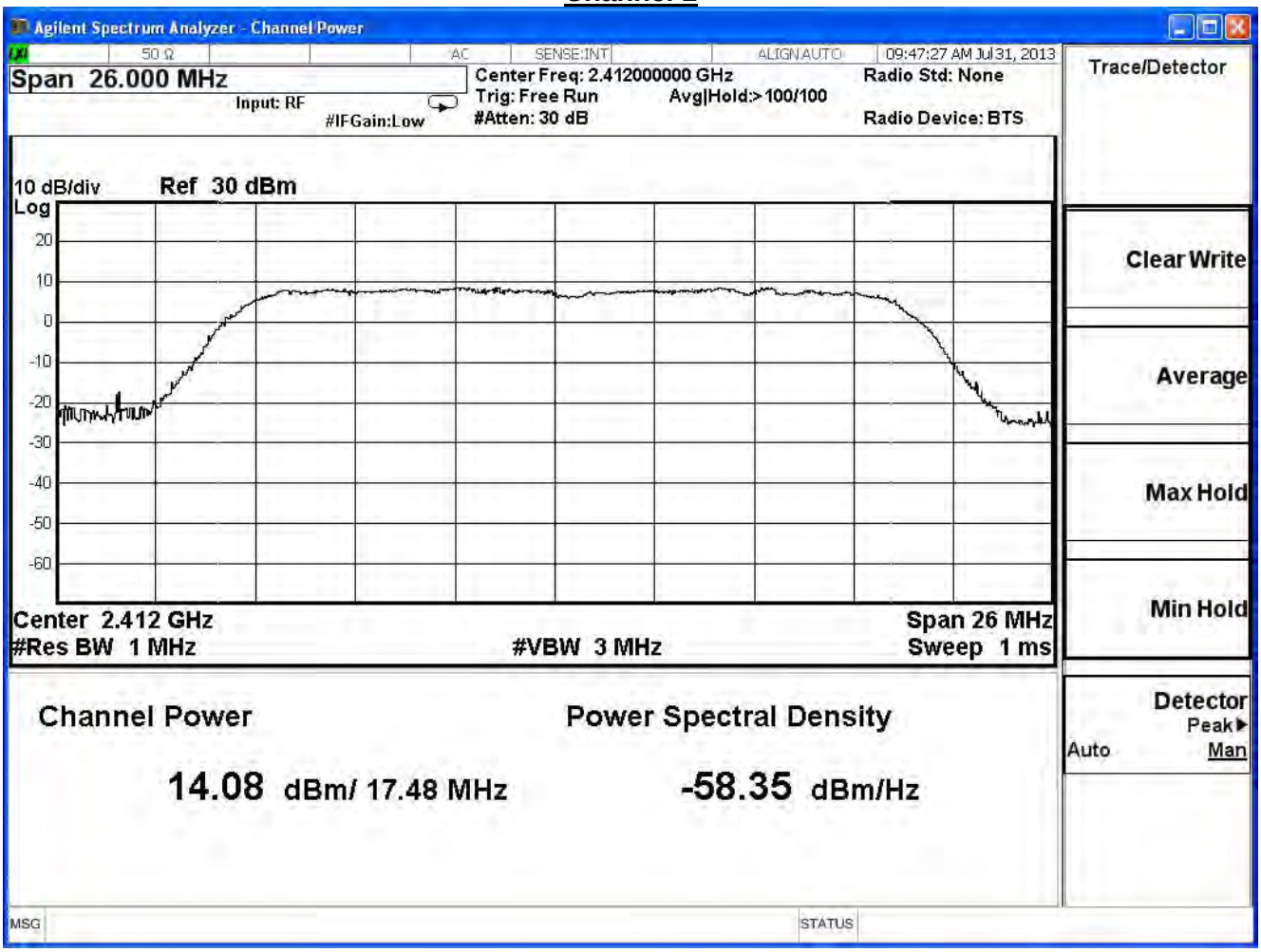
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	14.08	30	Pass
6	2437	14.36	30	Pass
11	2462	13.96	30	Pass

The worst emission of data rate is 19.5Mbps.

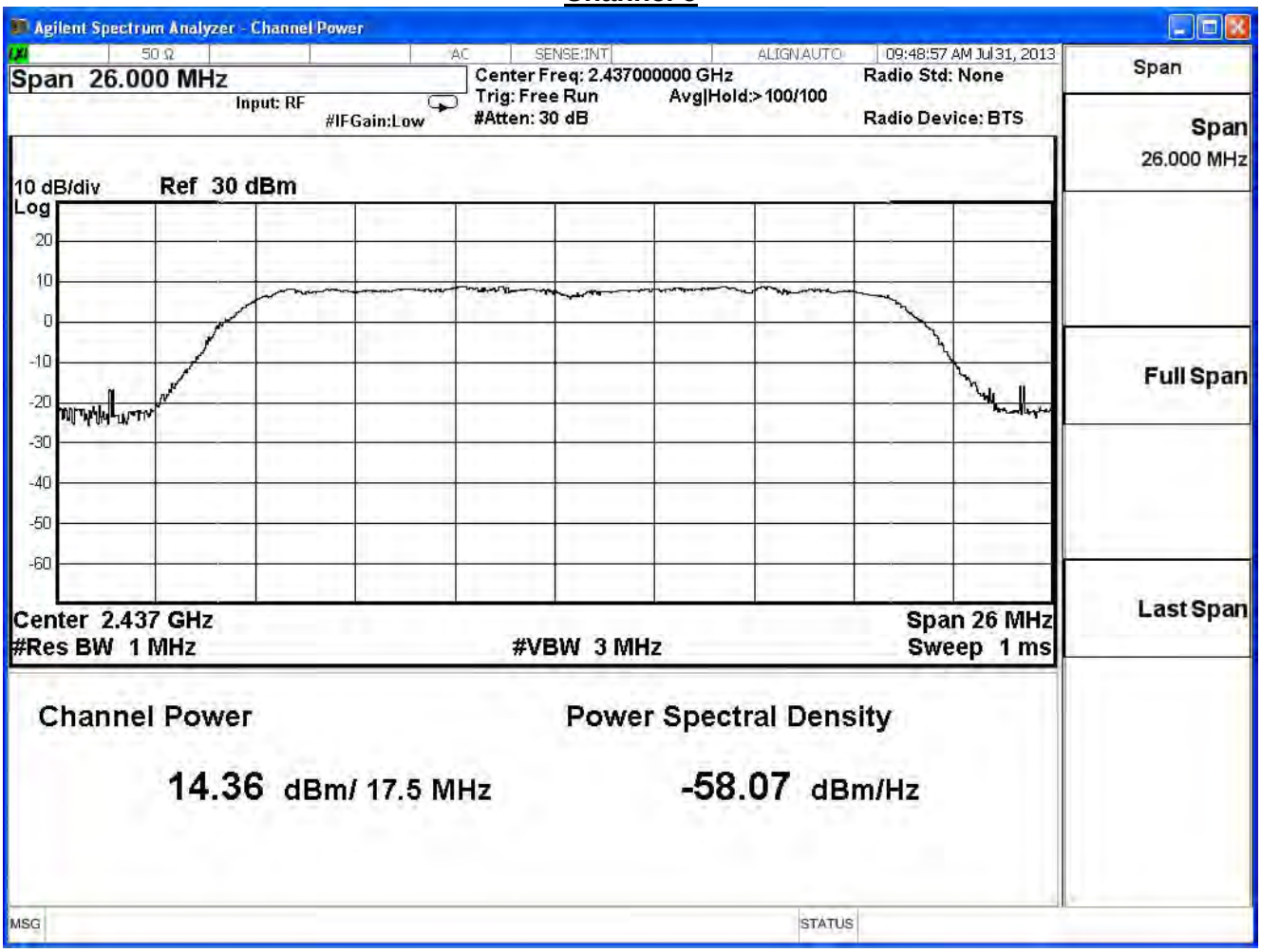
Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		19.5	39	58.5	78	117	156	175.5	195	
1	2412	14.08	--	--	--	--	--	--	--	30dBm
6	2437	14.36	14.35	14.34	14.33	14.32	14.31	14.30	14.29	30dBm
11	2462	13.96	--	--	--	--	--	--	--	30dBm

Note: Measure Level =Reading value + cable loss

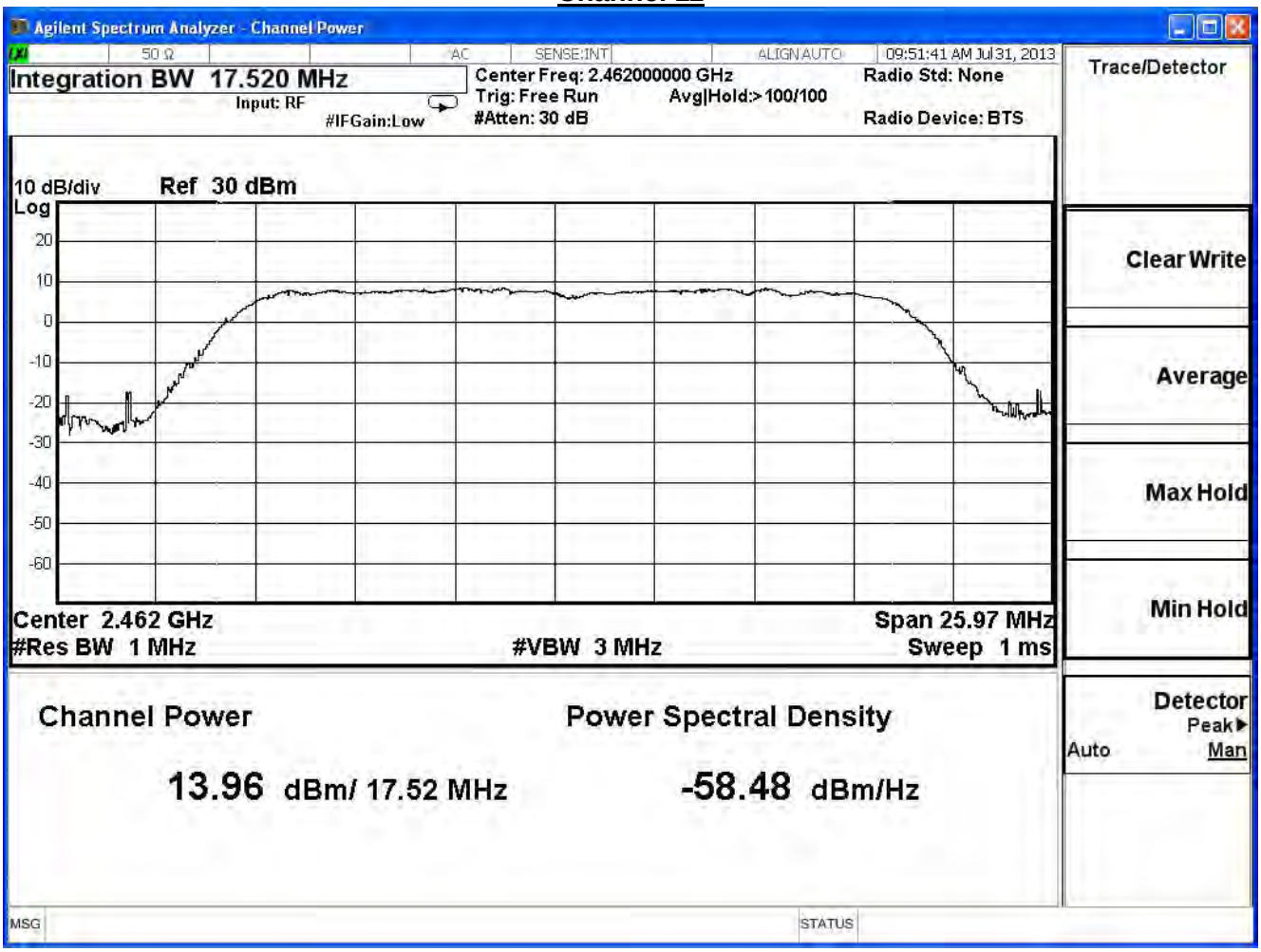
Channel 1


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:47:27 AM Jul 31, 2013
Span 26.000 MHz
Input: RF
#IFGain:Low
Center Freq: 2.412000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center 2.412 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 26 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Detector
Peak
Auto
Man
Channel Power
14.08 dBm/ 17.48 MHz
Power Spectral Density
-58.35 dBm/Hz
MSG
STATUS

Channel 6


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:48:57 AM Jul 31, 2013
Span 26.000 MHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Span
Span
26.000 MHz
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Full Span
Last Span
Center 2.437 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 26 MHz
Sweep 1 ms
Channel Power
14.36 dBm/ 17.5 MHz
Power Spectral Density
-58.07 dBm/Hz
MSG
STATUS

Channel 11


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:51:41 AM Jul 31, 2013
Integration BW 17.520 MHz
Input: RF
#IFGain:Low
Center Freq: 2.462000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center 2.462 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 25.97 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Detector
Peak
Auto
Man
Channel Power
13.96 dBm/ 17.52 MHz
Power Spectral Density
-58.48 dBm/Hz
MSG
STATUS

Product	VDSL2 Security Firewall		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2013/07/31	Test Site	SR7

IEEE 802.11n20MHz (ANT 0+1)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	17.26	30	Pass
6	2437	16.65	30	Pass
11	2462	16.12	30	Pass

Note: Measure Level =Reading value + cable loss

Product	VDSL2 Security Firewall		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2013/07/31	Test Site	SR7

IEEE802.11n40MHz(ANT 0)

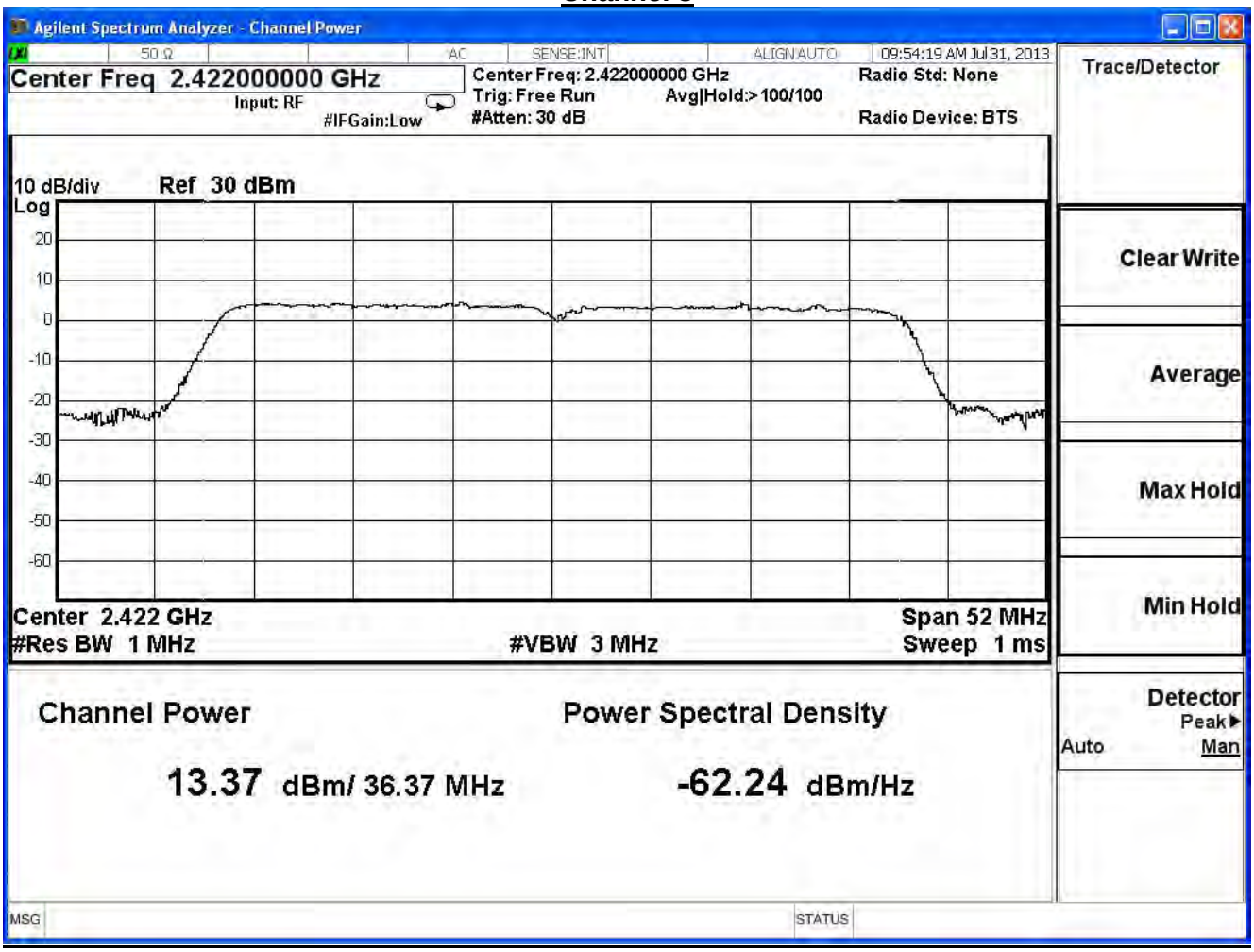
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
3	2422	13.37	30	Pass
6	2437	12.92	30	Pass
9	2452	12.57	30	Pass

The worst emission of data rate is 40.5Mbps

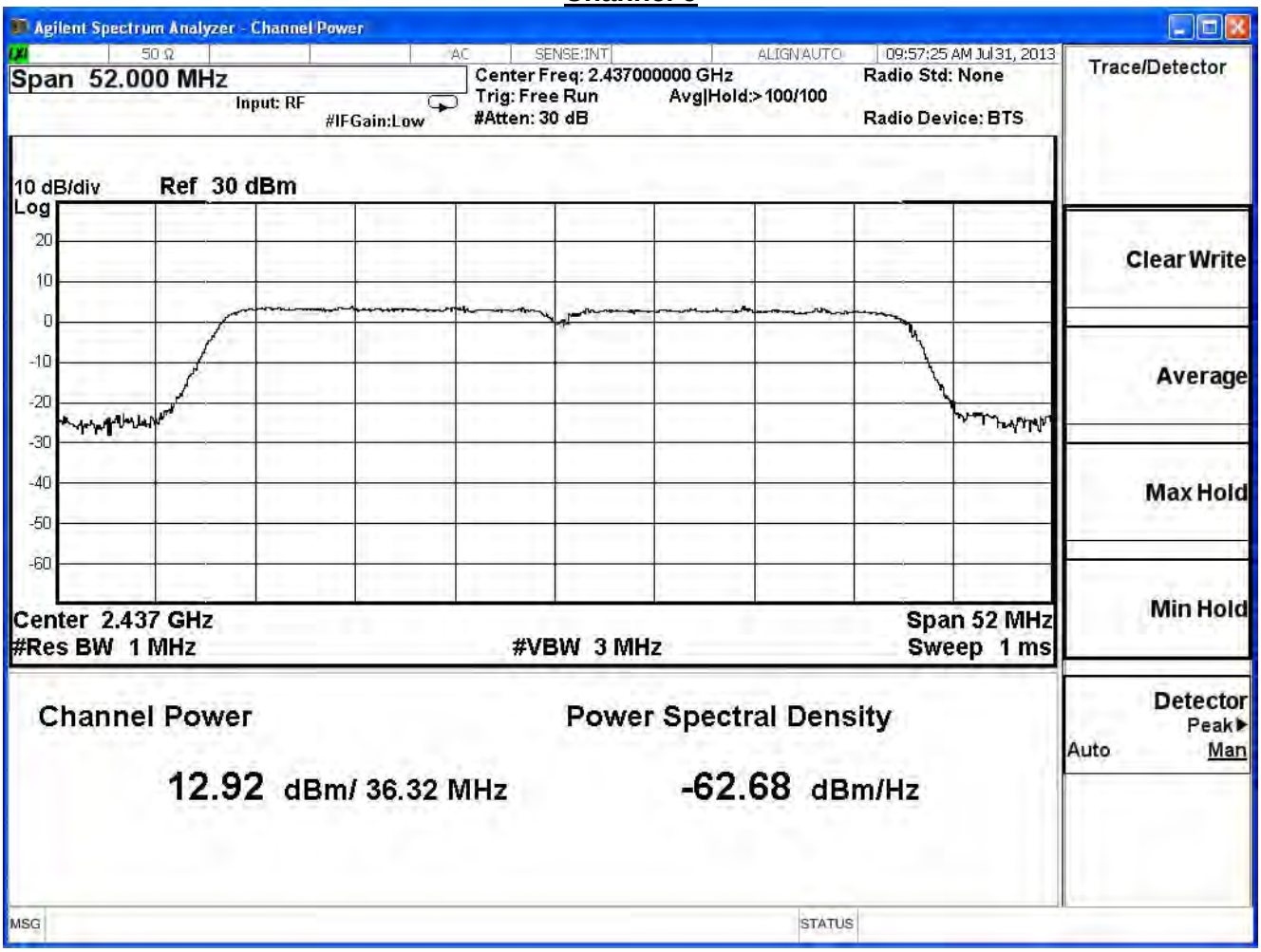
Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		40.5	81.0	121.5	162.0	243.0	324.0	364.5	405.0	
3	2422	13.37	--	--	--	--	--	--	--	1 Watt=30dBm
6	2437	12.92	12.91	12.90	12.89	12.88	12.87	12.86	12.85	1 Watt=30dBm
9	2452	12.57	--	--	--	--	--	--	--	1 Watt=30dBm

Note: Measure Level =Reading value + cable loss

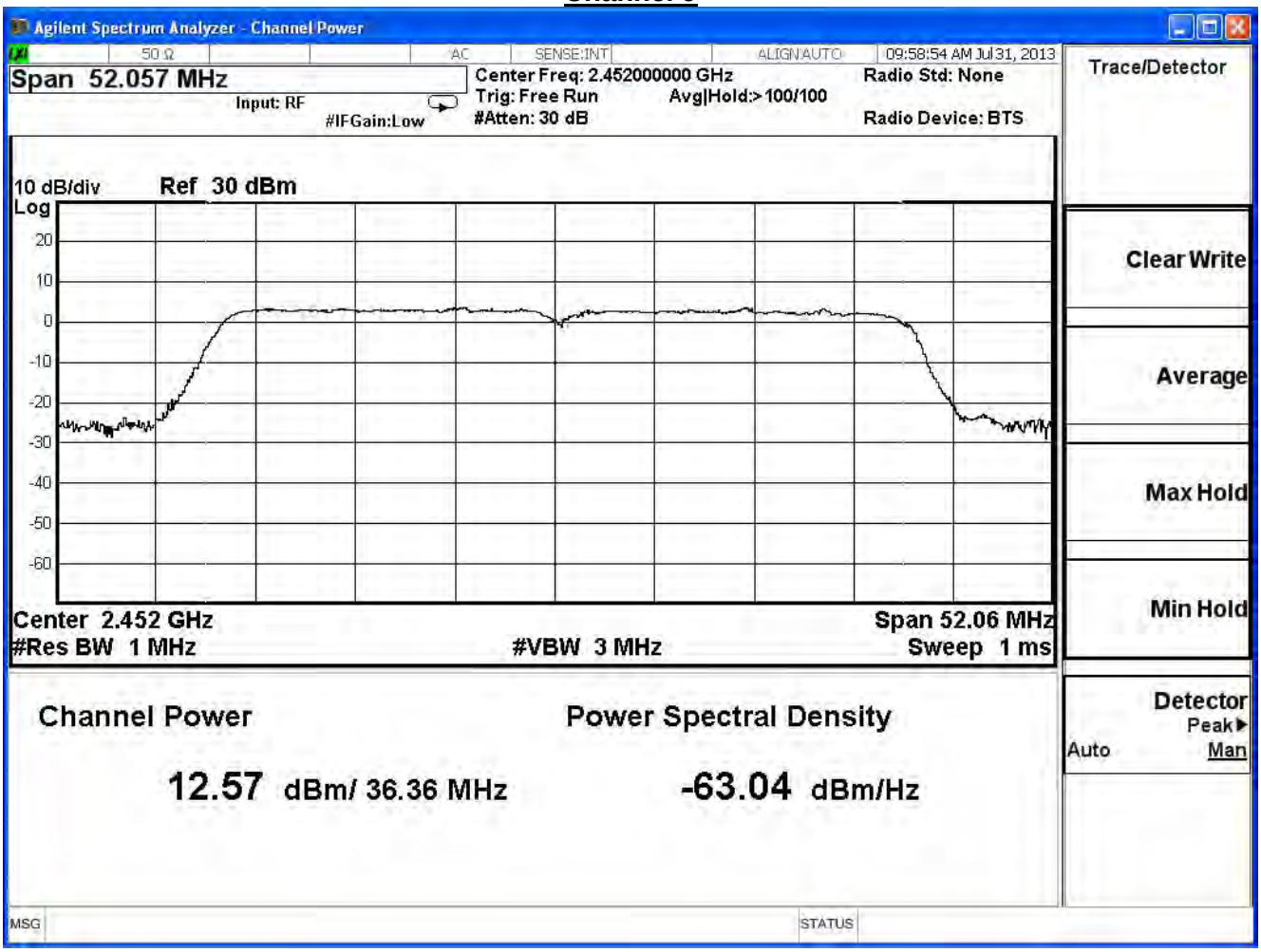
Channel 3


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:54:19 AM Jul 31, 2013
Center Freq 2.422000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.422000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center 2.422 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 52 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Detector
Peak
Auto
Man
Channel Power
13.37 dBm/ 36.37 MHz
Power Spectral Density
-62.24 dBm/Hz
MSG
STATUS

Channel 6


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:57:25 AM Jul 31, 2013
Span 52.000 MHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center 2.437 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 52 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Channel Power
12.92 dBm/ 36.32 MHz
Power Spectral Density
-62.68 dBm/Hz
Detector
Peak
Auto
Man
MSG
STATUS

Channel 9


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:58:54 AM Jul 31, 2013
Span 52.057 MHz
Input: RF
#IFGain:Low
Center Freq: 2.452000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center 2.452 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 52.06 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Detector
Peak
Auto
Man
Channel Power
12.57 dBm/ 36.36 MHz
Power Spectral Density
-63.04 dBm/Hz
MSG
STATUS

Product	VDSL2 Security Firewall		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2013/07/31	Test Site	SR7

IEEE802.11n40MHz(ANT 1)

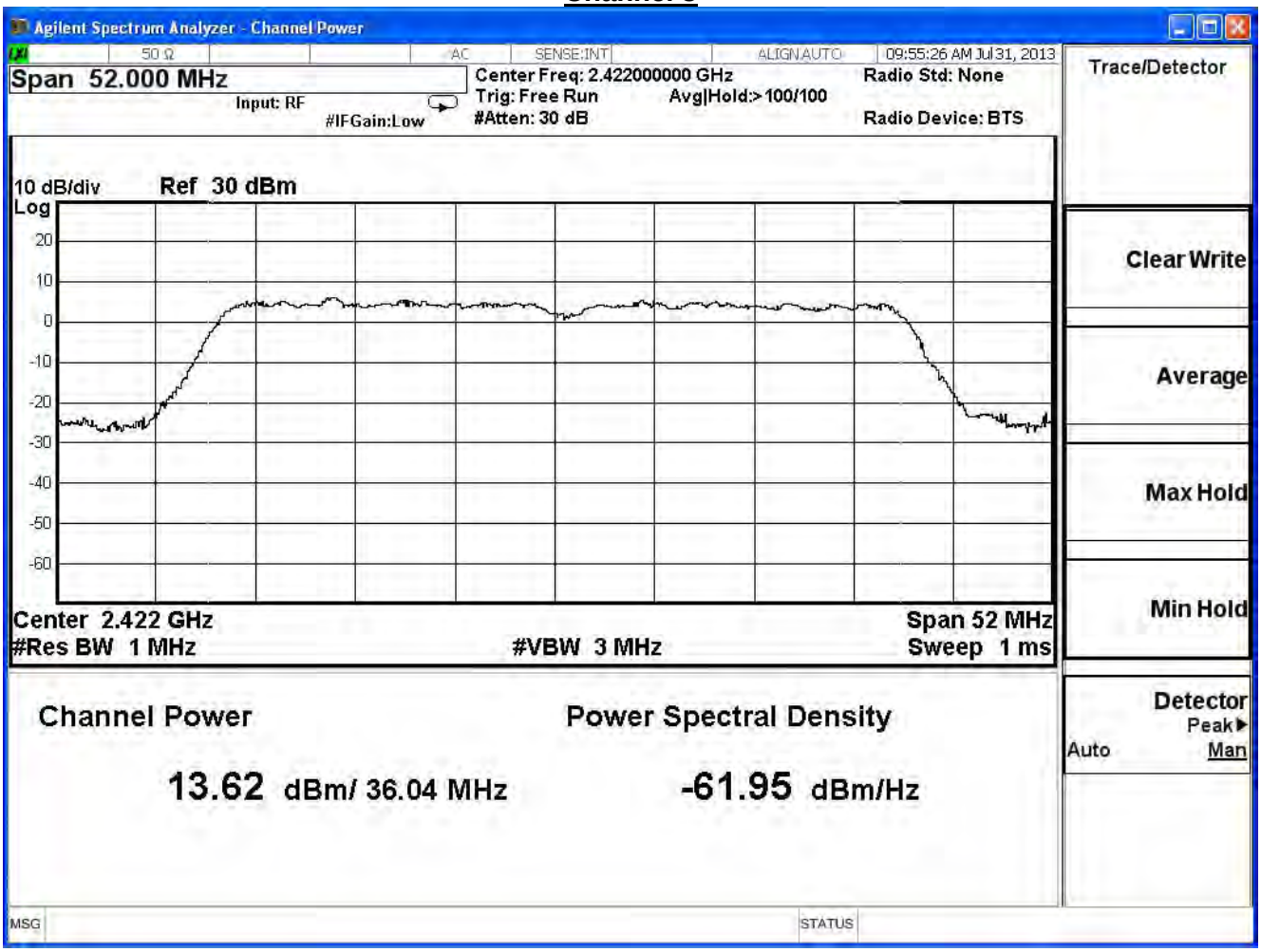
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
3	2422	13.62	30	Pass
6	2437	14.17	30	Pass
9	2452	14.05	30	Pass

The worst emission of data rate is 40.5Mbps

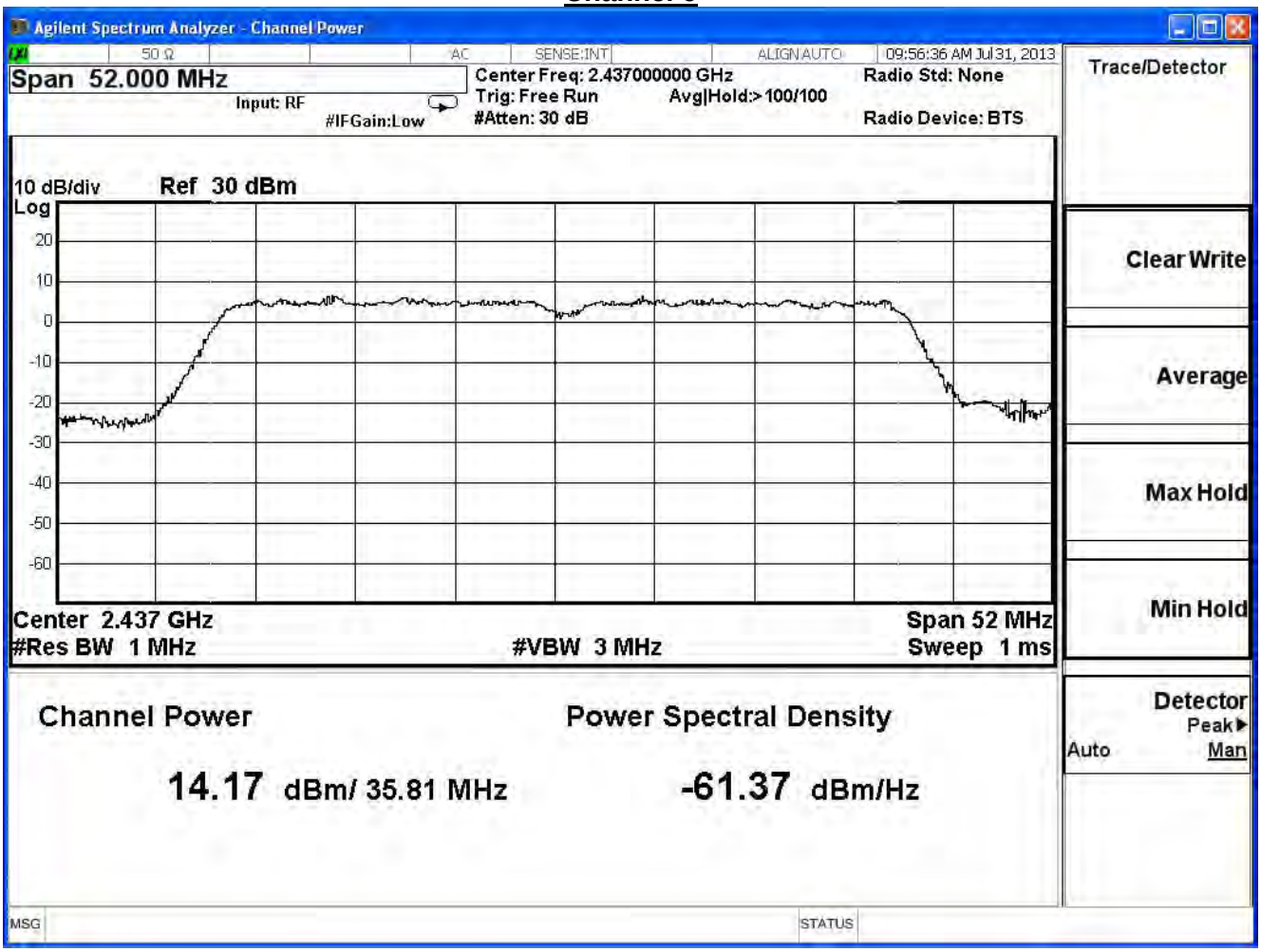
Peak Power Output (dBm)										
MCS Index		16	17	18	19	20	21	22	23	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		40.5	81.0	121.5	162.0	243.0	324.0	364.5	405.0	
3	2422	13.62	--	--	--	--	--	--	--	1 Watt=30dBm
6	2437	14.17	14.16	14.15	14.13	14.12	14.11	14.10	14.08	1 Watt=30dBm
9	2452	14.05	--	--	--	--	--	--	--	1 Watt=30dBm

Note: Measure Level =Reading value + cable loss

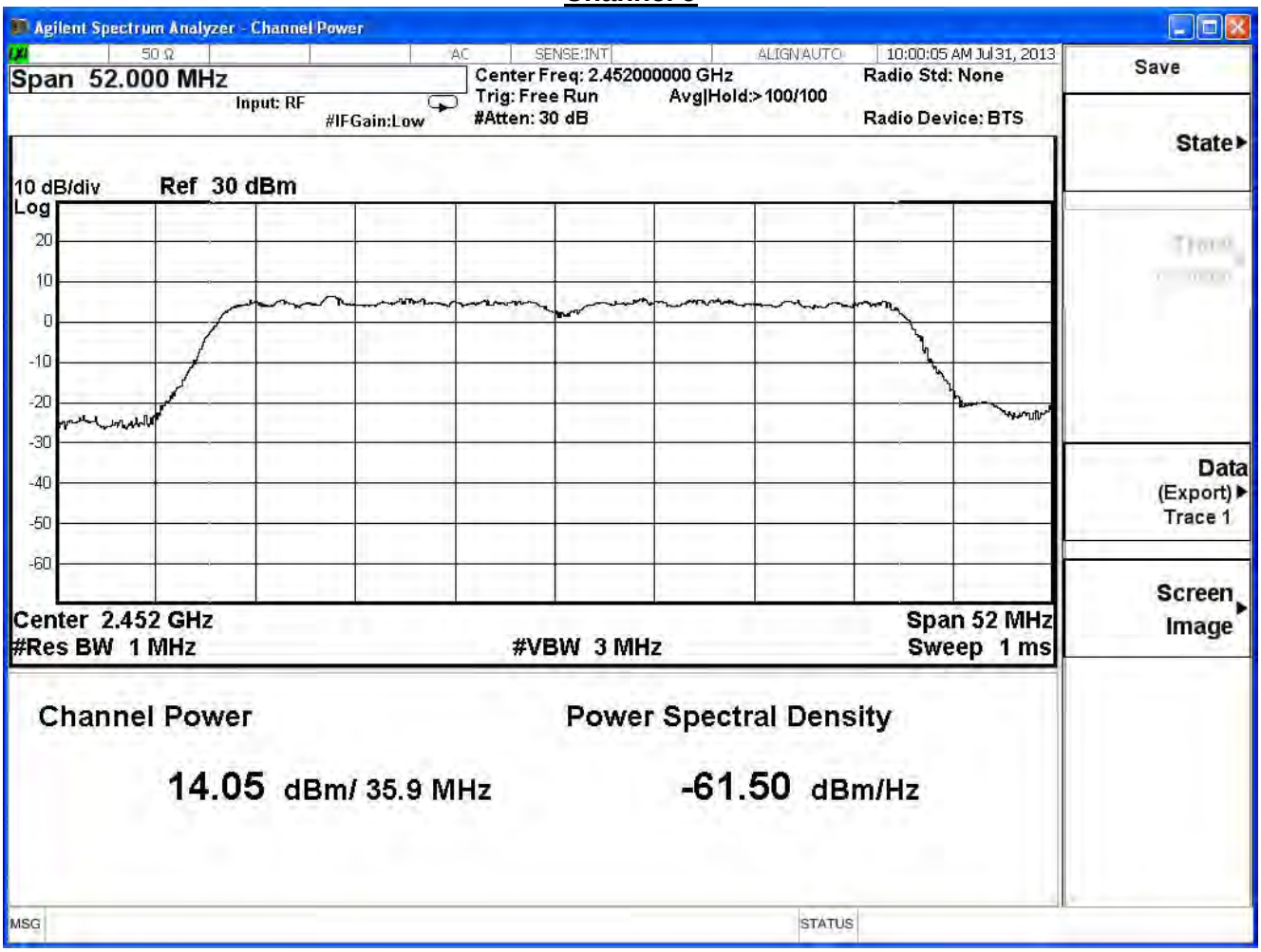
Channel 3


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:55:26 AM Jul 31, 2013
Span 52.000 MHz
Input: RF
#IFGain:Low
Center Freq: 2.422000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center 2.422 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 52 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Detector
Peak
Auto
Man
Channel Power
13.62 dBm/ 36.04 MHz
Power Spectral Density
-61.95 dBm/Hz
MSG
STATUS

Channel 6


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:56:36 AM Jul 31, 2013
Span 52.000 MHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center 2.437 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 52 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Channel Power
14.17 dBm/ 35.81 MHz
Power Spectral Density
-61.37 dBm/Hz
Detector
Peak
Auto
Man
MSG
STATUS

Channel 9


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:00:05 AM Jul 31, 2013
Span 52.000 MHz
Input: RF
#IFGain:Low
Center Freq: 2.452000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Save
State
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center 2.452 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 52 MHz
Sweep 1 ms
Data
(Export)
Trace 1
Screen
Image
Channel Power
14.05 dBm/ 35.9 MHz
Power Spectral Density
-61.50 dBm/Hz
MSG
STATUS

Product	VDSL2 Security Firewall		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2013/07/31	Test Site	SR7

IEEE802.11n40MHz(ANT 0+1)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
3	2422	16.51	30	Pass
6	2437	16.60	30	Pass
9	2452	16.38	30	Pass

Note: Measure Level =Reading value + cable loss

4. Radiated Emission

4.1. Test Equipment

The following test equipments are used during the test:

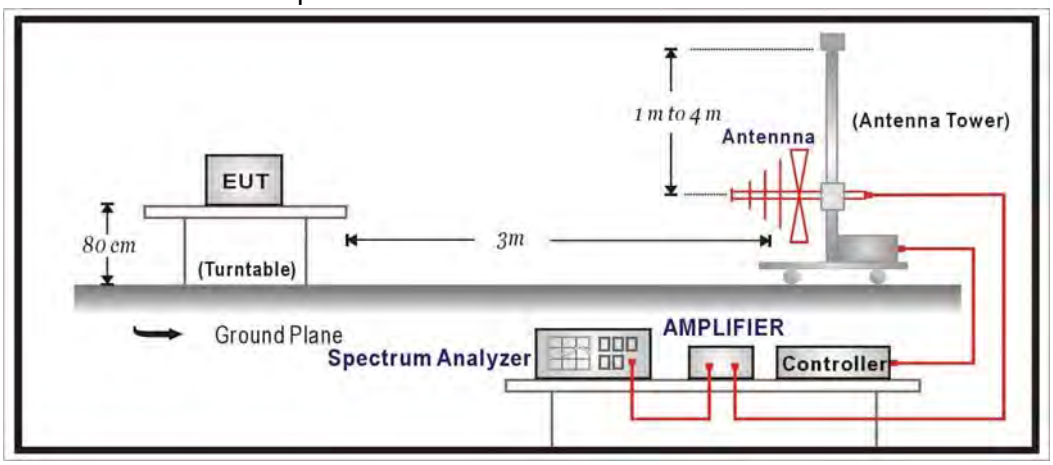
Radiated Emission / CB1

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Bilog Antenna	SCHAFFNER	CBL6112B	2895(CB1)	2014/08/14
Double Ridged Guide Horn Antenna	Schwarzback	BBHA 9120	D743	2014/02/17
Pre-Amplifier	MITEQ	AMF-4D-005180-24-10P	888003	2014/06/09
Pre-Amplifier	QuieTek	AP-025C	CHM-0706049	2014/02/19
Spectrum Analyzer	Agilent	E4440A	MY46187335	2014/01/27
k Type Cable	Huber Suhner	Sucoflex 102	25623/2	2014/02/21

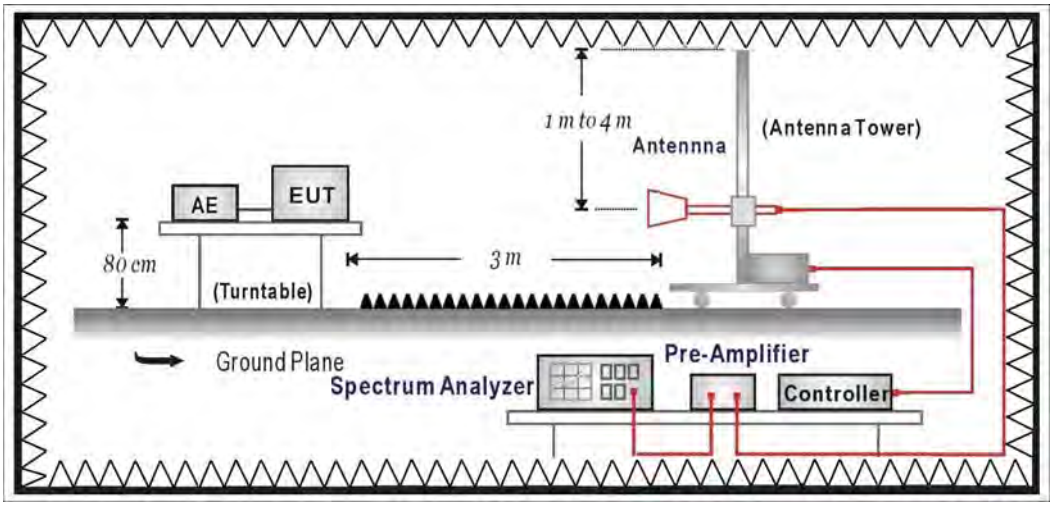
Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limits

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

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

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

4.4. Test Procedure

The EUT was setup according to ANSI C63.4: 2009 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.
The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4: 2009 on radiated measurement.
On any frequency or frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a quasi-peak detector function and on any frequency or frequencies above 1000 MHz the radiated limits shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission measurement are included emission measurement below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit. The bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

4.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2012

4.6. Uncertainty

The measurement uncertainty

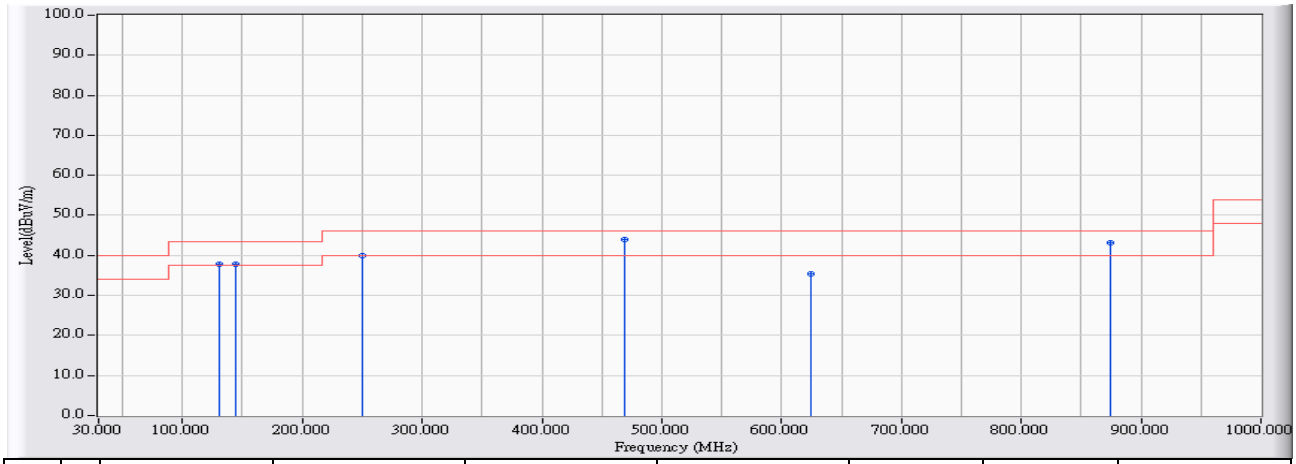
30MHz～1GHz as ±3.43dB

1GHz～26.5Ghz as ±3.65dB

4.7. Test Result

30MHz-1GHz Spurious

Site : CB1	**Time : 2013/09/04 - 10:23**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11b_2437MHz**

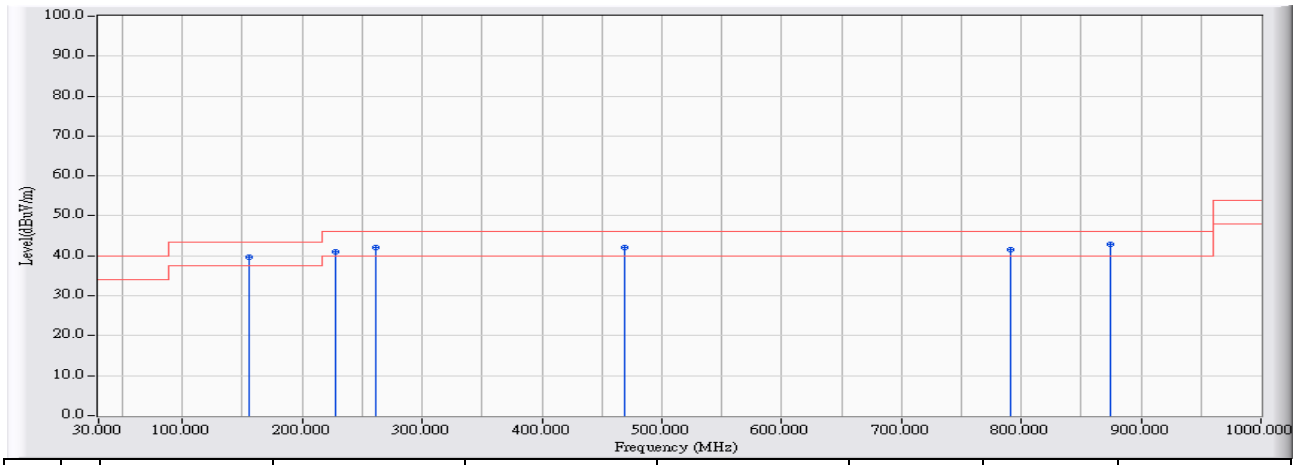


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		130.880	-22.541	60.448	37.907	-5.593	43.500	QUASIPEAK
2		144.460	-23.061	60.860	37.799	-5.701	43.500	QUASIPEAK
3		250.190	-20.538	60.422	39.884	-6.116	46.000	QUASIPEAK
4	*	468.440	-16.078	60.103	44.025	-1.975	46.000	QUASIPEAK
5		624.610	-15.161	50.652	35.491	-10.509	46.000	QUASIPEAK
6		874.870	-13.068	56.130	43.062	-2.938	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2013/09/04 - 10:29**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11b_2437MHz**

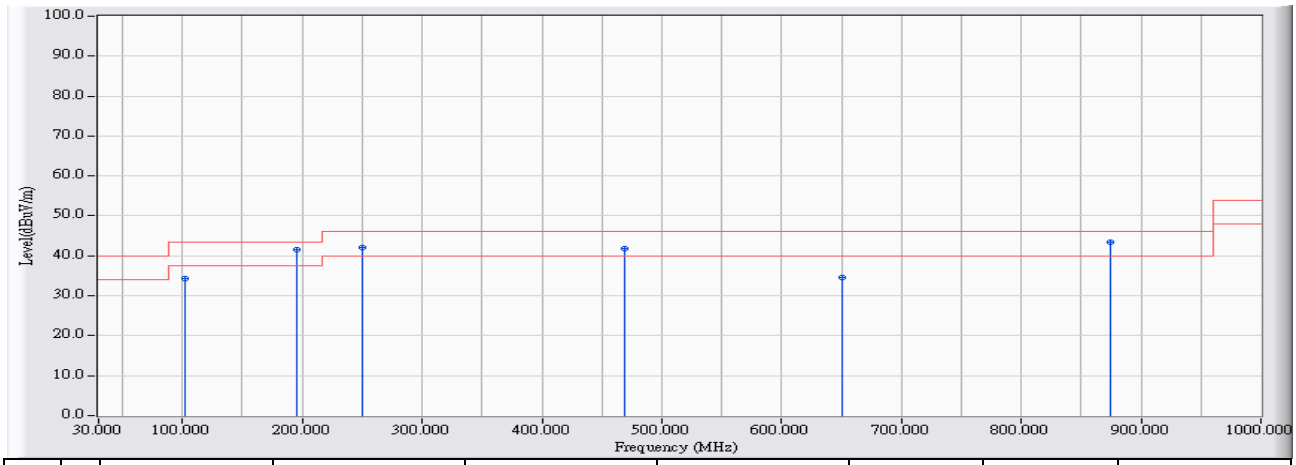


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		156.100	-23.629	63.417	39.788	-3.712	43.500	QUASIPEAK
2		227.880	-22.417	63.481	41.064	-4.936	46.000	QUASIPEAK
3		261.830	-20.399	62.524	42.125	-3.875	46.000	QUASIPEAK
4		468.440	-16.078	58.074	41.996	-4.004	46.000	QUASIPEAK
5		791.450	-13.419	54.873	41.454	-4.546	46.000	QUASIPEAK
6	*	874.870	-13.068	55.942	42.874	-3.126	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2013/09/04 - 10:34**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11g_2437MHz**

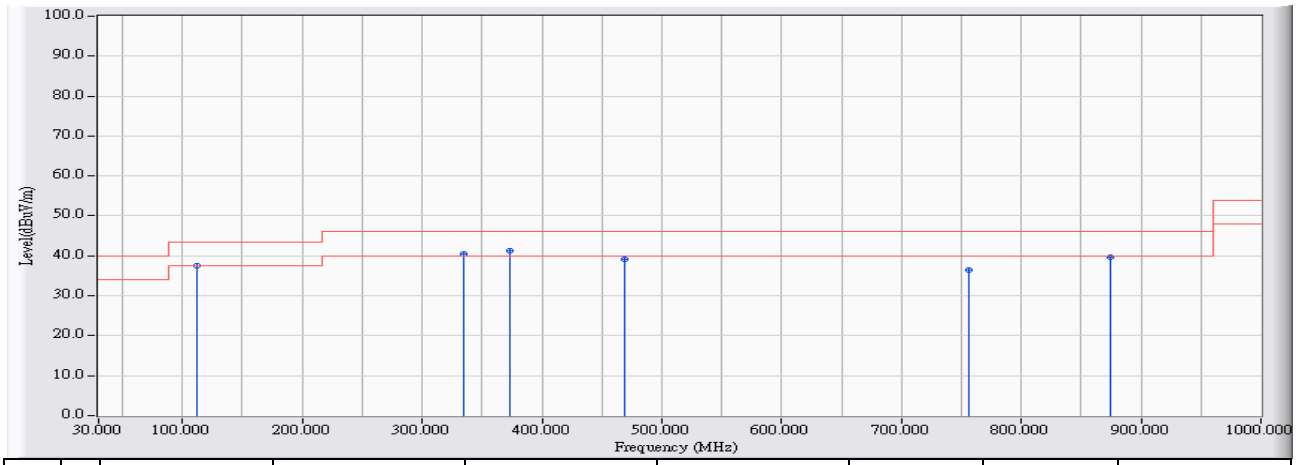


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		102.750	-23.040	57.313	34.273	-9.227	43.500	QUASIPEAK
2	*	194.900	-24.756	66.219	41.463	-2.037	43.500	QUASIPEAK
3		250.190	-20.538	62.527	41.989	-4.011	46.000	QUASIPEAK
4		468.440	-16.078	57.923	41.845	-4.155	46.000	QUASIPEAK
5		650.800	-14.992	49.590	34.598	-11.402	46.000	QUASIPEAK
6		874.870	-13.068	56.410	43.342	-2.658	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2013/09/04 - 10:39**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11g_2437MHz**

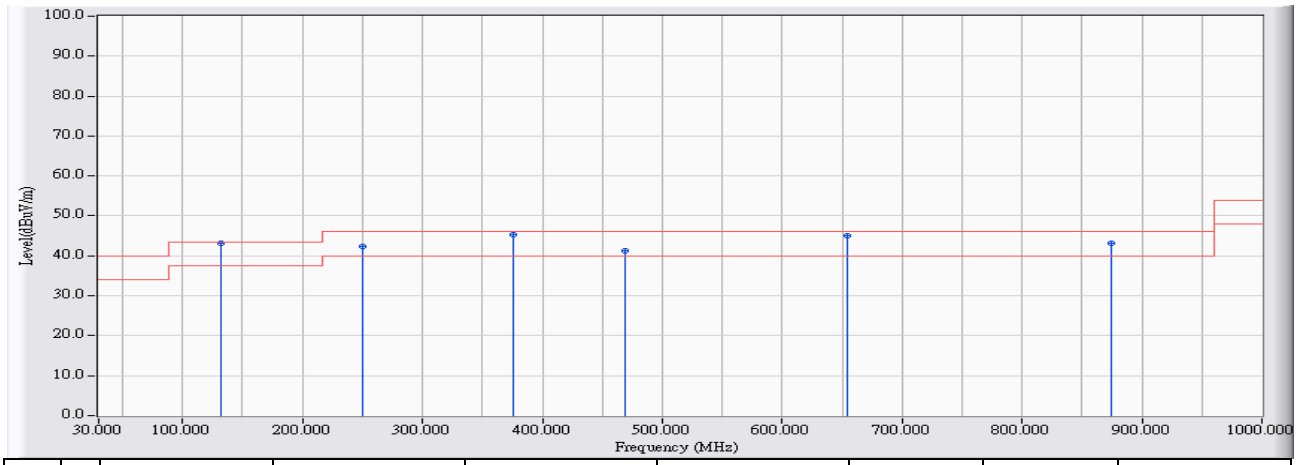


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		111.480	-22.604	60.224	37.619	-5.881	43.500	QUASIPEAK
2		334.580	-19.069	59.496	40.427	-5.573	46.000	QUASIPEAK
3	*	373.380	-18.087	59.405	41.319	-4.681	46.000	QUASIPEAK
4		468.440	-16.078	55.179	39.101	-6.899	46.000	QUASIPEAK
5		756.530	-13.899	50.243	36.344	-9.656	46.000	QUASIPEAK
6		874.870	-13.068	52.810	39.742	-6.258	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2013/09/04 - 10:44**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n20MHz_2437MHz**

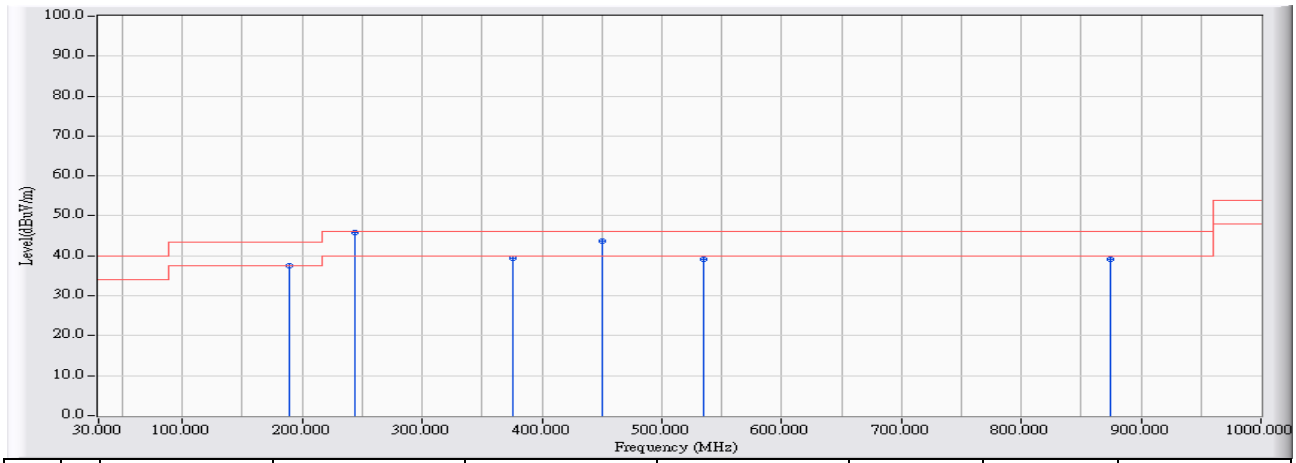


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	131.850	-22.574	65.800	43.227	-0.273	43.500	QUASIPEAK
2		250.190	-20.538	62.830	42.292	-3.708	46.000	QUASIPEAK
3		375.320	-18.037	63.305	45.268	-0.732	46.000	QUASIPEAK
4		468.440	-16.078	57.288	41.210	-4.790	46.000	QUASIPEAK
5		654.680	-14.967	60.118	45.150	-0.850	46.000	QUASIPEAK
6		874.870	-13.068	56.157	43.089	-2.911	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2013/09/04 - 10:48**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n20MHz_2437MHz**

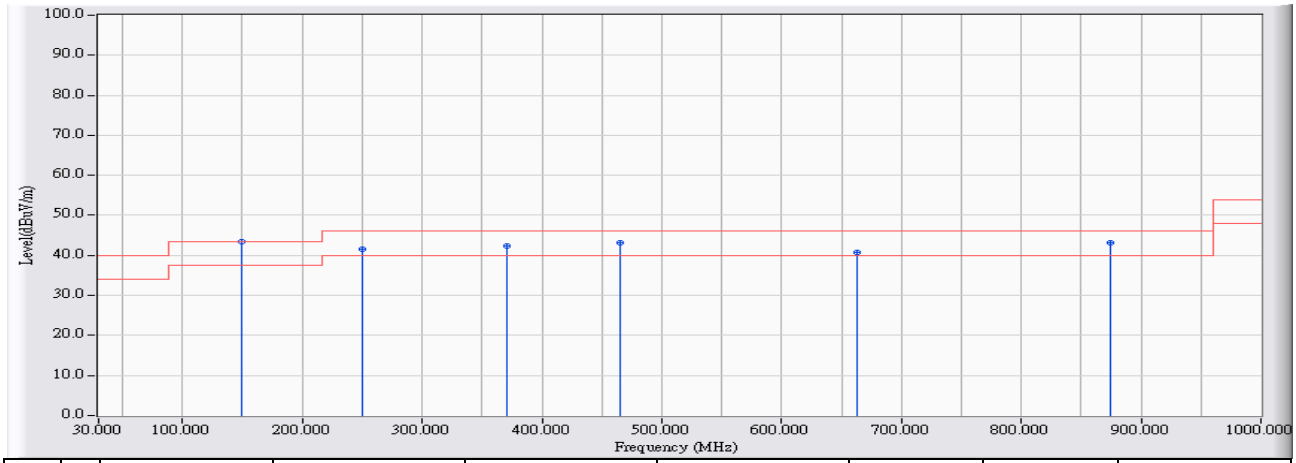


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		189.080	-24.727	62.356	37.629	-5.871	43.500	QUASIPEAK
2	*	244.370	-21.020	66.997	45.977	-0.023	46.000	QUASIPEAK
3		375.320	-18.037	57.458	39.421	-6.579	46.000	QUASIPEAK
4		450.010	-16.438	60.016	43.579	-2.421	46.000	QUASIPEAK
5		535.370	-15.412	54.472	39.060	-6.940	46.000	QUASIPEAK
6		874.870	-13.068	52.329	39.261	-6.739	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2013/09/04 - 10:48**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note :802.11n40MHz_2437MHz**

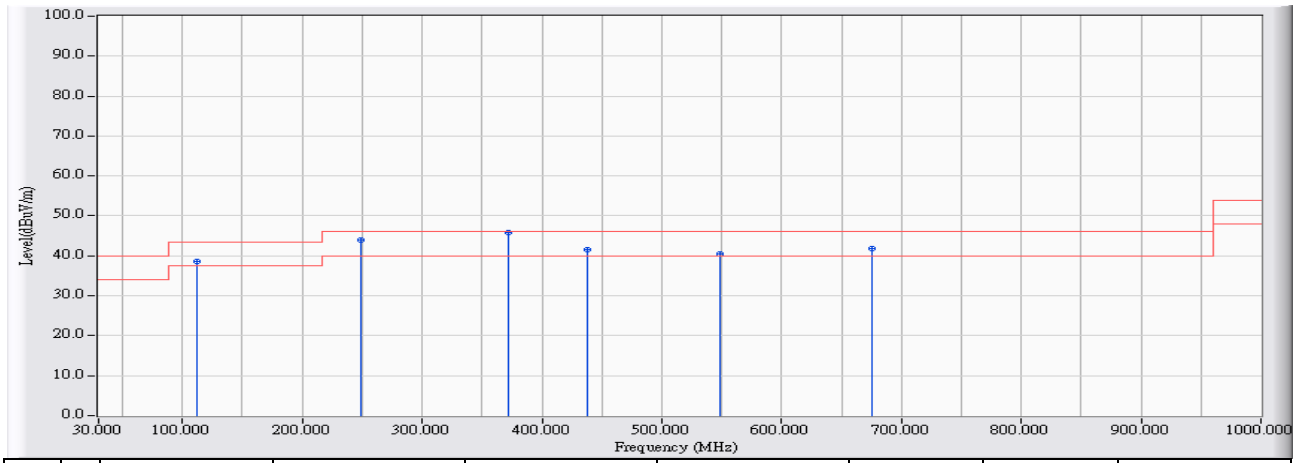


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	149.310	-23.298	66.734	43.436	-0.064	43.500	QUASIPEAK
2		250.190	-20.538	62.213	41.675	-4.325	46.000	QUASIPEAK
3		370.470	-18.160	60.581	42.421	-3.579	46.000	QUASIPEAK
4		465.530	-16.135	59.423	43.288	-2.712	46.000	QUASIPEAK
5		662.440	-14.917	55.604	40.686	-5.314	46.000	QUASIPEAK
6		874.870	-13.068	56.274	43.206	-2.794	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2013/09/04 - 10:49**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2437MHz**



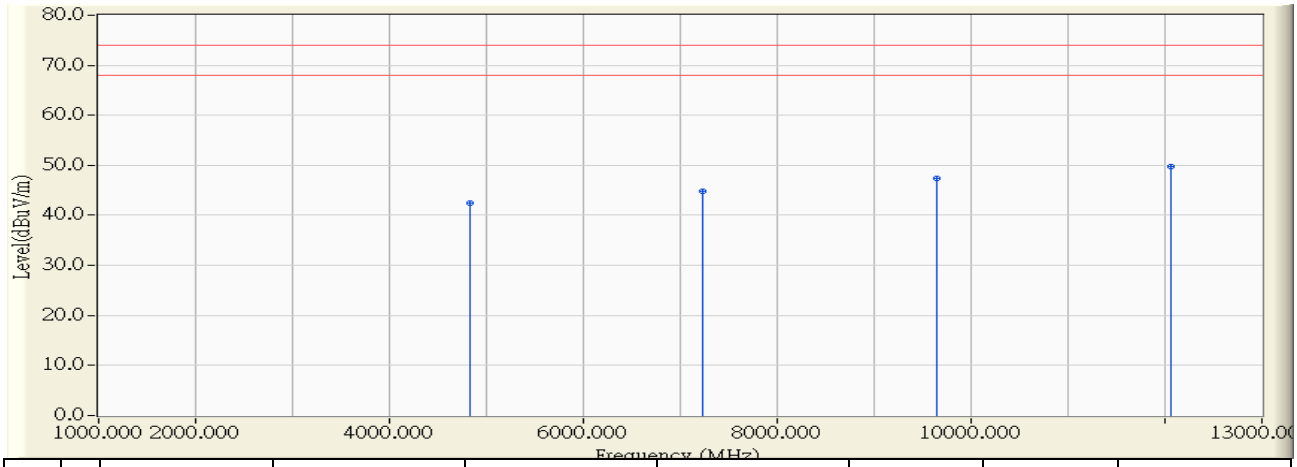
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		111.480	-22.604	61.332	38.727	-4.773	43.500	QUASIPEAK
2		248.250	-20.690	64.532	43.841	-2.159	46.000	QUASIPEAK
3	*	371.440	-18.136	64.004	45.868	-0.132	46.000	QUASIPEAK
4		437.400	-16.683	58.365	41.682	-4.318	46.000	QUASIPEAK
5		548.950	-15.392	55.832	40.440	-5.560	46.000	QUASIPEAK
6		675.050	-14.837	56.736	41.899	-4.101	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Above 1GHz Spurious

Site : CB1	**Time : 2013/08/21 - 10:12**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11b_2412MHz**

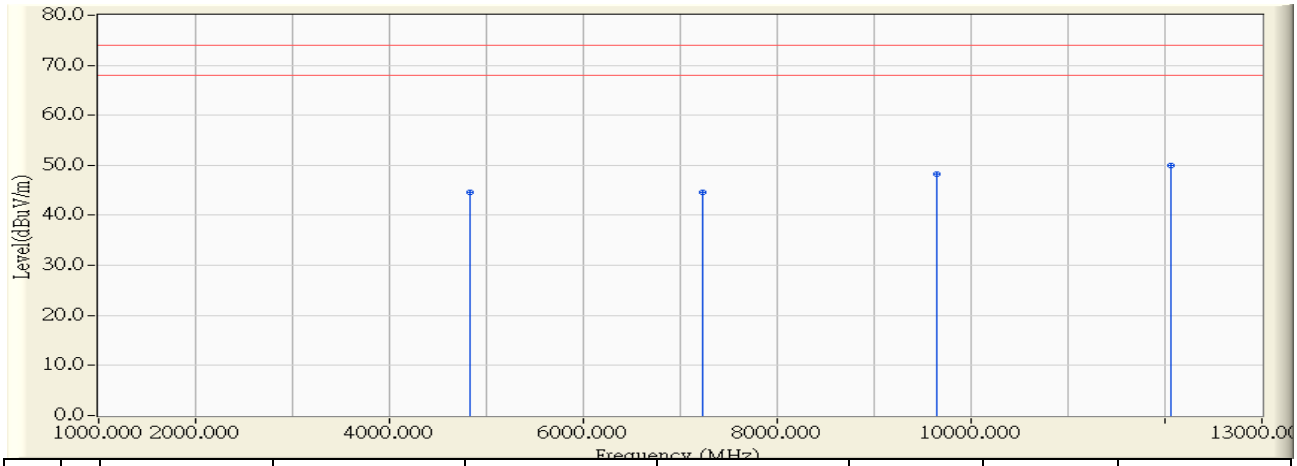


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.725	-0.801	43.230	42.429	-31.571	74.000	PEAK
2		7237.908	5.501	39.380	44.881	-29.119	74.000	PEAK
3		9648.733	9.235	38.190	47.426	-26.574	74.000	PEAK
4	*	12061.583	11.525	38.230	49.755	-24.245	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/21 - 10:18**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11b_2412MHz**

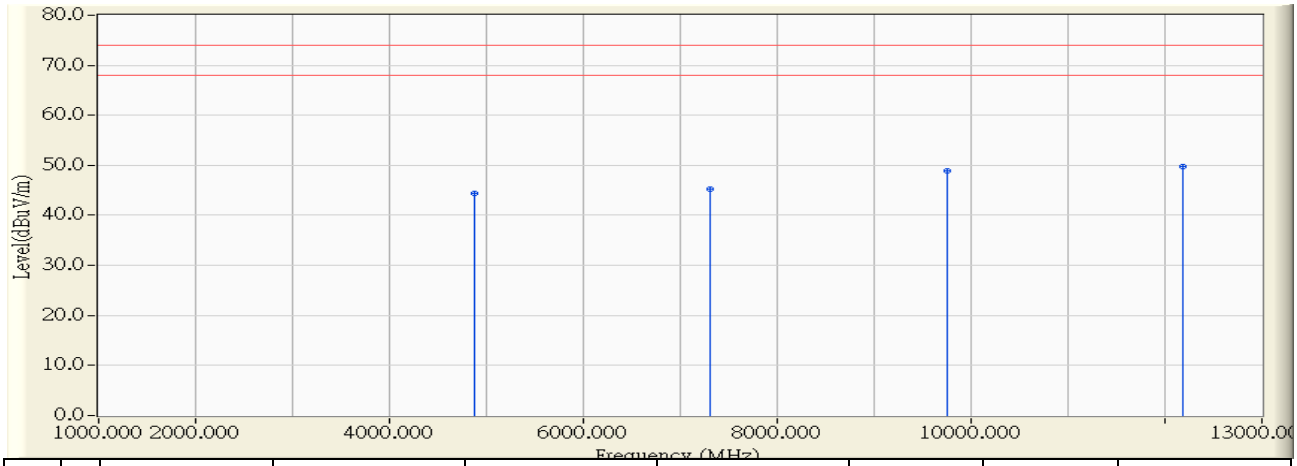


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.975	-0.801	45.510	44.709	-29.291	74.000	PEAK
2		7233.758	5.491	39.190	44.681	-29.319	74.000	PEAK
3		9646.392	9.219	39.130	48.349	-25.651	74.000	PEAK
4	*	12060.117	11.525	38.350	49.875	-24.125	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/21 - 10:46**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11b_2437MHz**

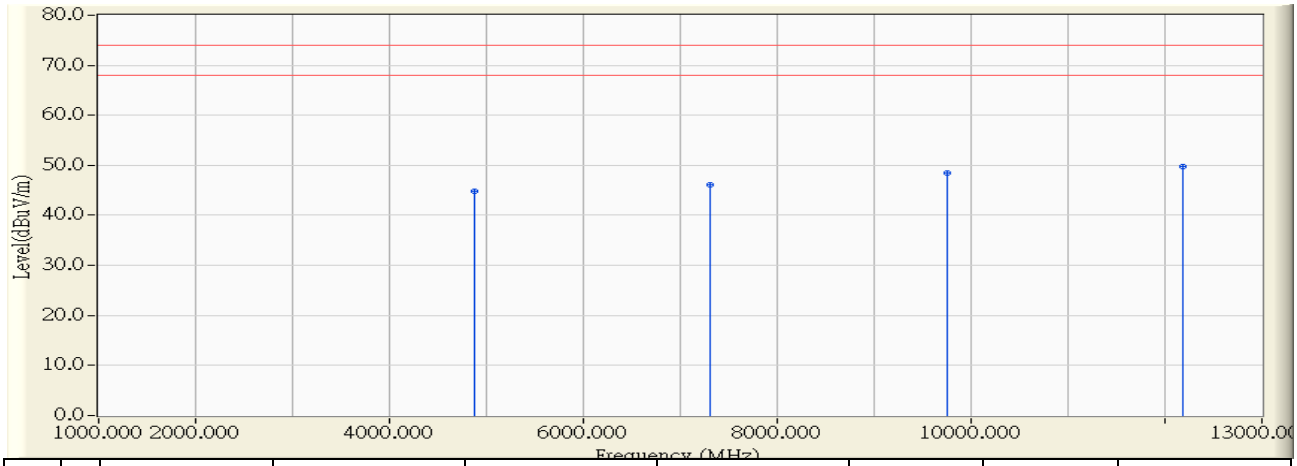


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4875.167	-0.669	45.170	44.501	-29.499	74.000	PEAK
2		7311.325	5.679	39.610	45.288	-28.712	74.000	PEAK
3		9749.050	9.963	38.840	48.803	-25.197	74.000	PEAK
4	*	12182.608	11.482	38.170	49.652	-24.348	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/21 - 11:09**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11b_2437MHz**

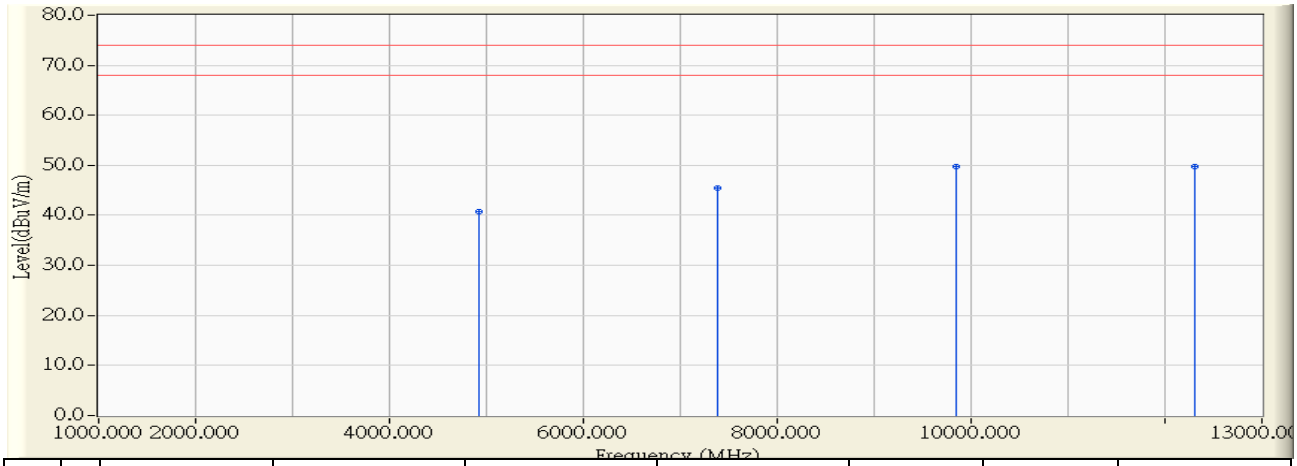


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4875.000	-0.669	45.500	44.831	-29.169	74.000	PEAK
2		7309.258	5.674	40.500	46.173	-27.827	74.000	PEAK
3		9748.833	9.962	38.580	48.542	-25.458	74.000	PEAK
4	*	12183.150	11.483	38.180	49.662	-24.338	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/21 - 11:17**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11b_2462MHz**

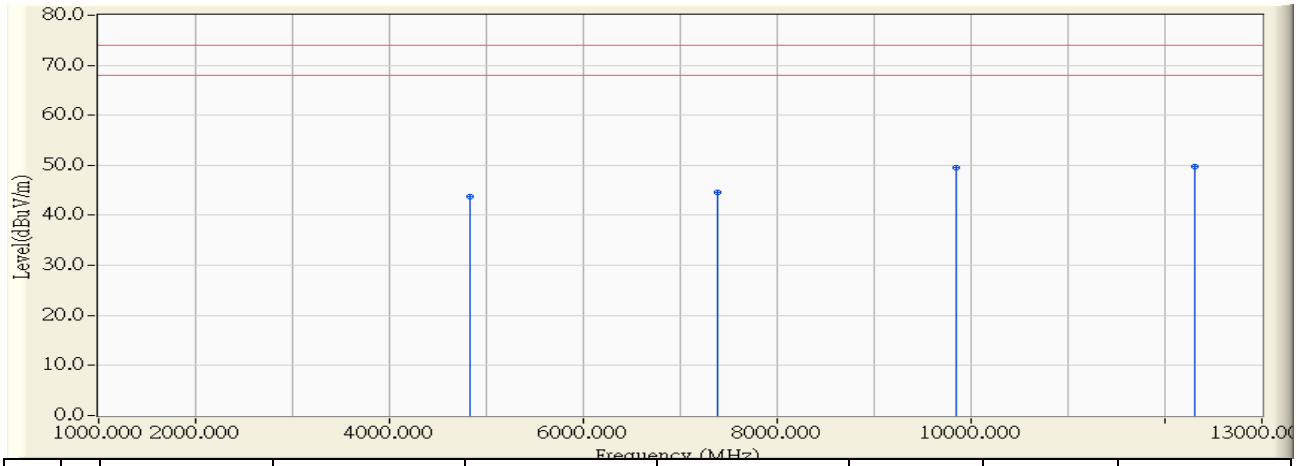


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4925.008	-0.538	41.300	40.762	-33.238	74.000	PEAK
2		7383.583	5.852	39.600	45.453	-28.547	74.000	PEAK
3		9846.750	10.671	39.020	49.691	-24.309	74.000	PEAK
4	*	12310.658	11.437	38.410	49.847	-24.153	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/21 - 11:22**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11b_2462MHz**

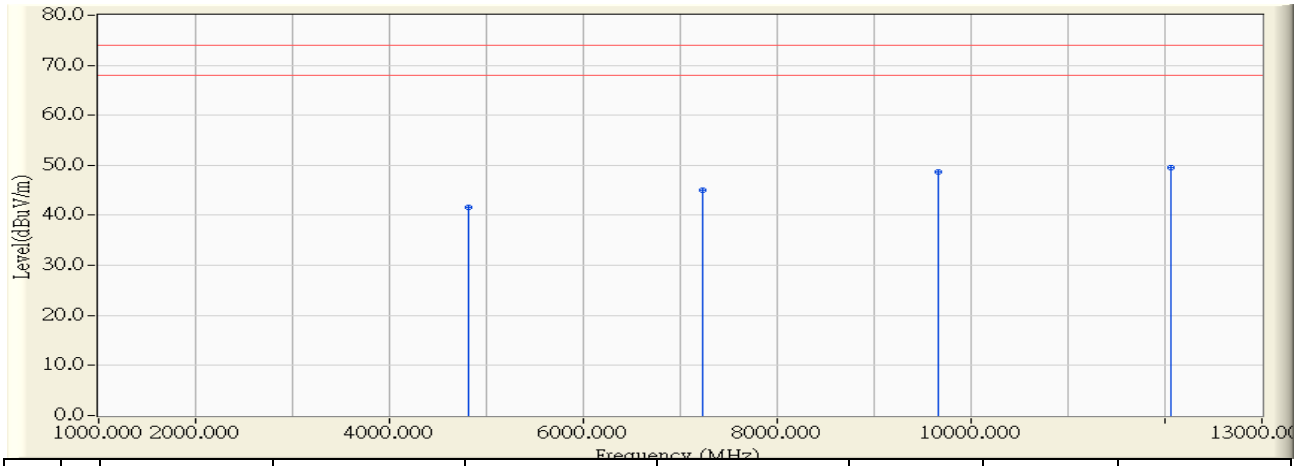


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.983	-0.801	44.490	43.689	-30.311	74.000	PEAK
2		7386.058	5.859	38.830	44.688	-29.312	74.000	PEAK
3		9848.050	10.680	38.910	49.591	-24.409	74.000	PEAK
4	*	12308.900	11.438	38.330	49.767	-24.233	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/21 - 11:28**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11g_2412MHz**

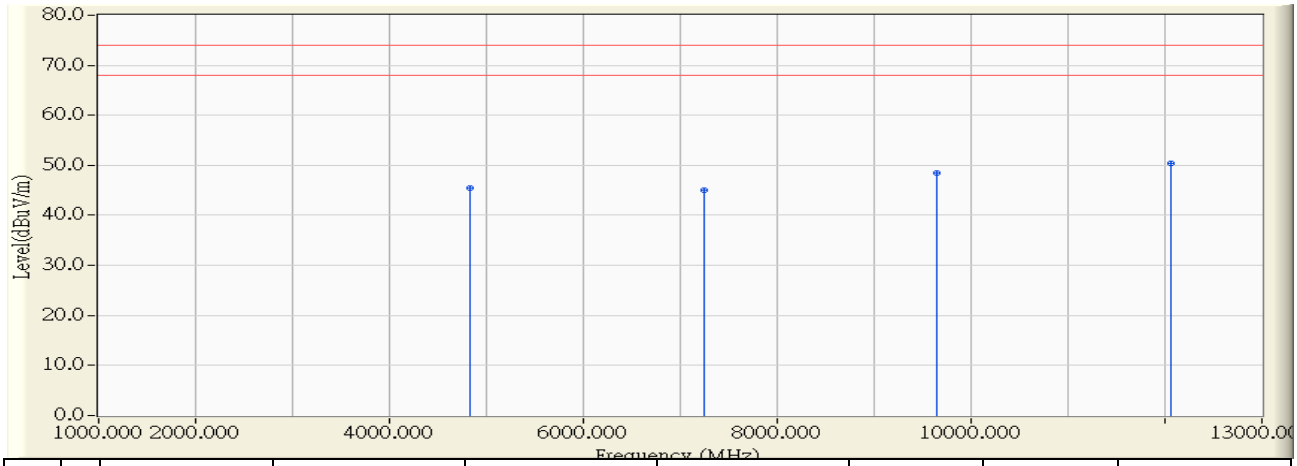


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4822.870	-0.806	42.330	41.524	-32.476	74.000	PEAK
2		7234.870	5.494	39.510	45.004	-28.996	74.000	PEAK
3		9657.500	9.300	39.340	48.640	-25.360	74.000	PEAK
4	*	12057.700	11.526	37.990	49.516	-24.484	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/21 - 11:33**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11g_2412MHz**

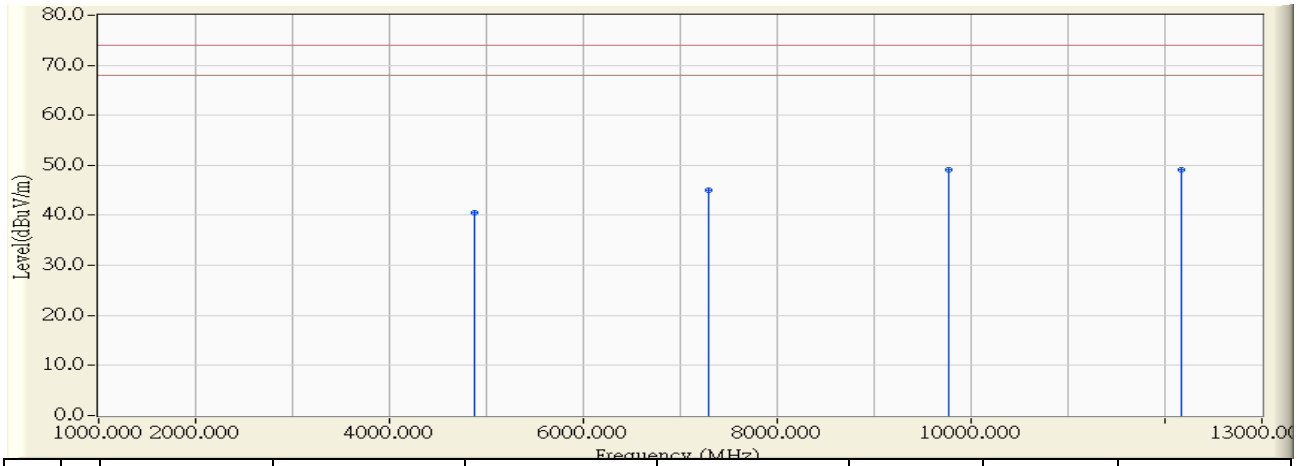


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4823.080	-0.805	46.350	45.544	-28.456	74.000	PEAK
2		7242.200	5.511	39.460	44.971	-29.029	74.000	PEAK
3		9645.970	9.216	39.270	48.486	-25.514	74.000	PEAK
4	*	12058.400	11.526	38.890	50.416	-23.584	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/21 - 11:38**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11g_2437MHz**

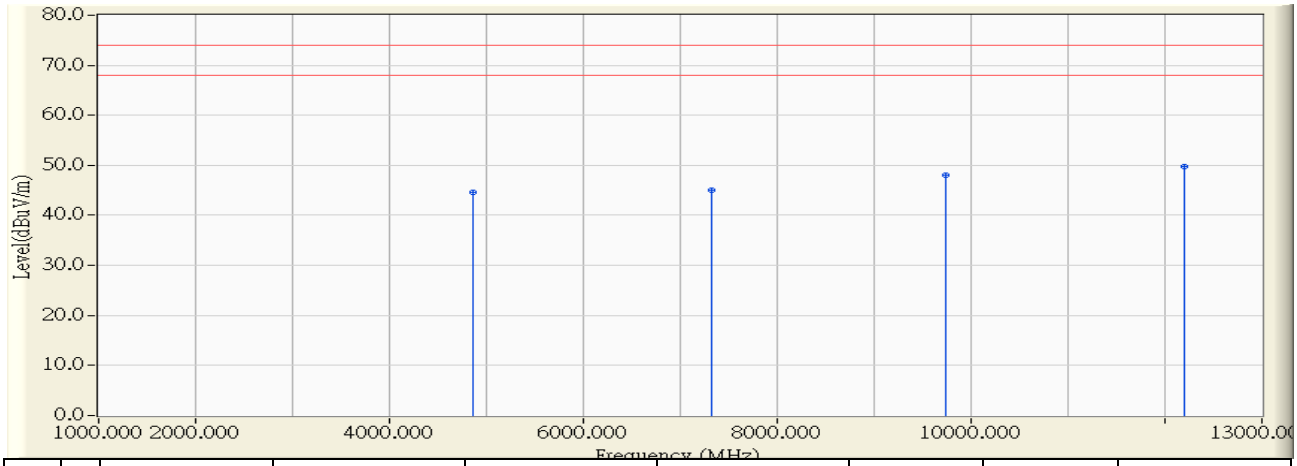


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4875.250	-0.669	41.250	40.581	-33.419	74.000	PEAK
2		7297.830	5.646	39.340	44.986	-29.014	74.000	PEAK
3		9766.250	10.087	39.120	49.208	-24.792	74.000	PEAK
4	*	12171.830	11.485	37.730	49.216	-24.784	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/21 - 11:41**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11g_2437MHz**

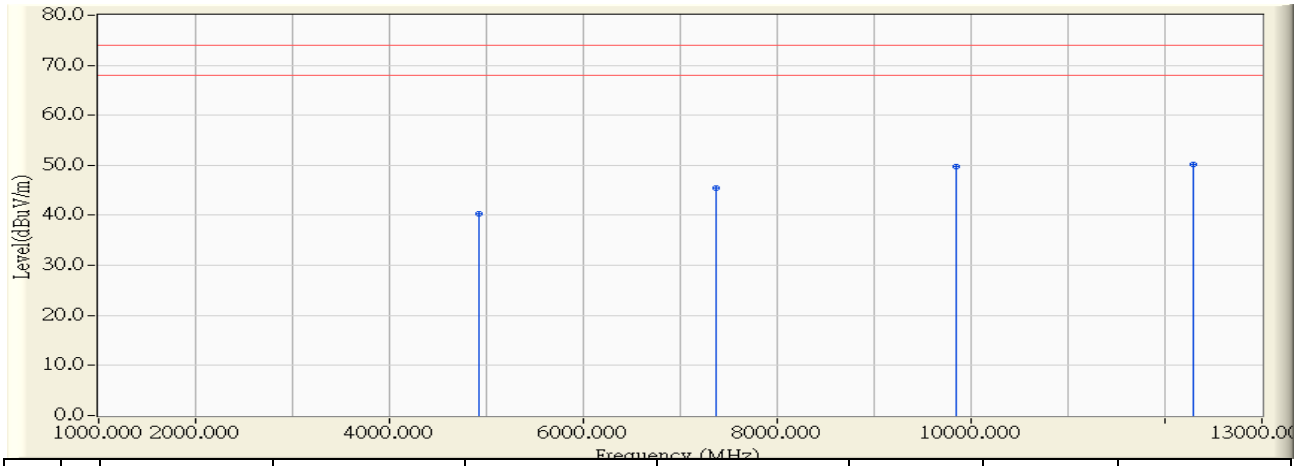


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4868.830	-0.685	45.250	44.564	-29.436	74.000	PEAK
2		7328.750	5.720	39.390	45.110	-28.890	74.000	PEAK
3		9738.420	9.886	38.220	48.106	-25.894	74.000	PEAK
4	*	12192.330	11.479	38.210	49.689	-24.311	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/21 - 11:46**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11g_2462MHz**

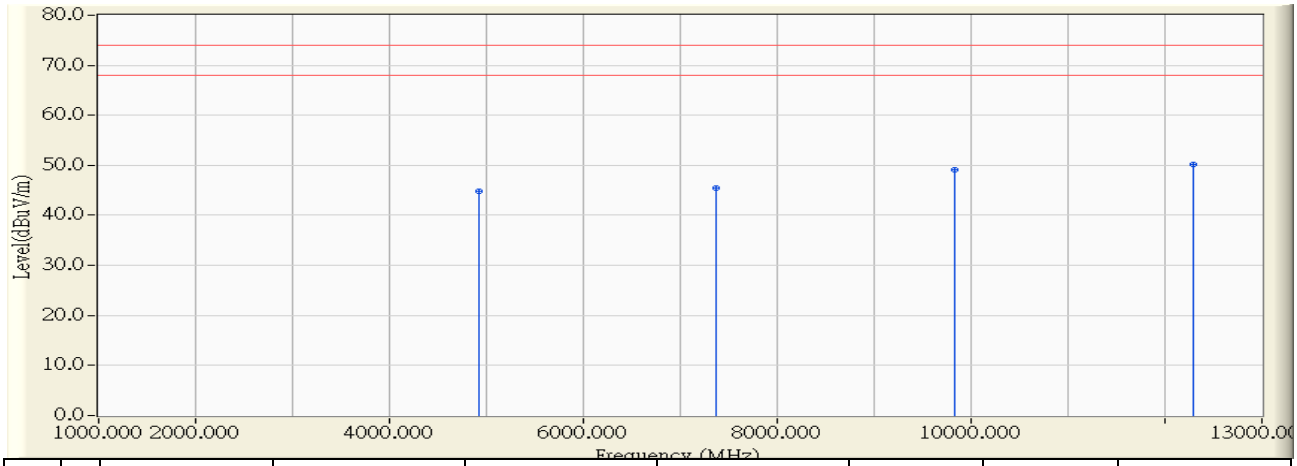


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4922.830	-0.543	40.970	40.426	-33.574	74.000	PEAK
2		7369.750	5.820	39.730	45.549	-28.451	74.000	PEAK
3		9846.830	10.672	39.100	49.772	-24.228	74.000	PEAK
4	*	12295.420	11.441	38.660	50.102	-23.898	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/21 - 11:49**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11g_2462MHz**

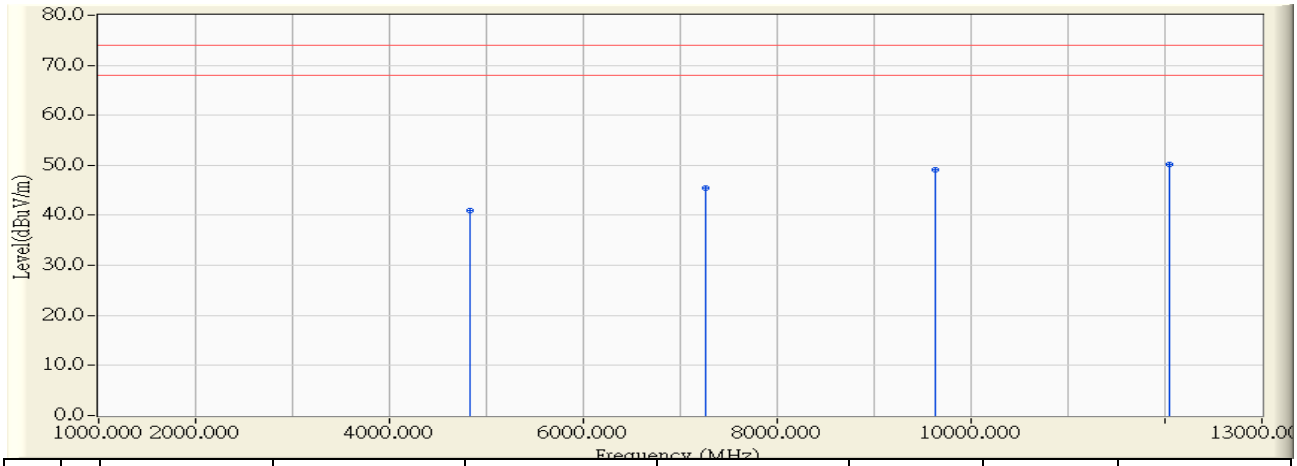


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4919.080	-0.554	45.390	44.836	-29.164	74.000	PEAK
2		7362.830	5.802	39.670	45.472	-28.528	74.000	PEAK
3		9833.170	10.573	38.480	49.053	-24.947	74.000	PEAK
4	*	12295.420	11.441	38.660	50.102	-23.898	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/23 - 17:03**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n20MHz_2412MHz**

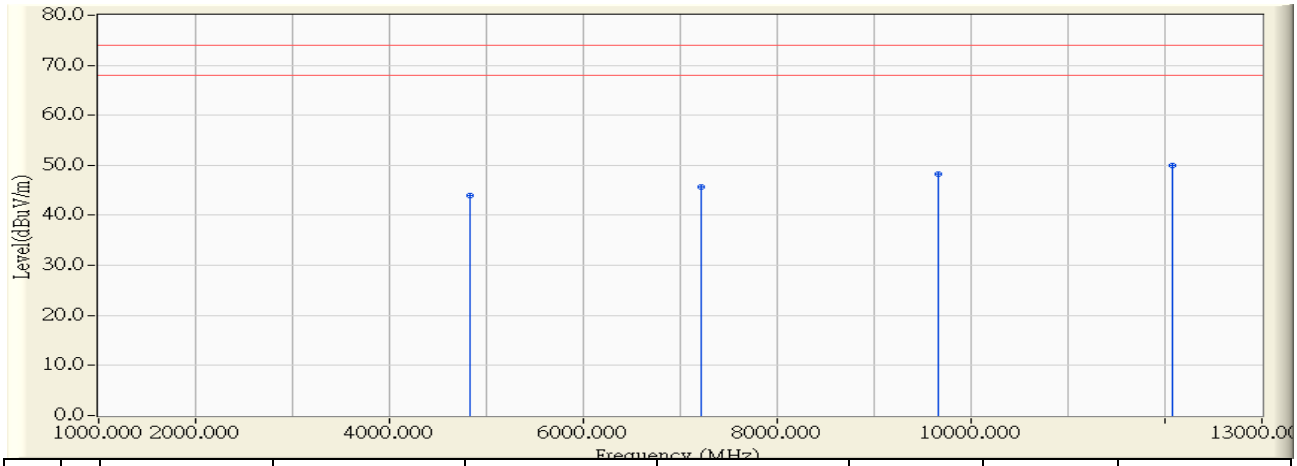


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4828.330	-0.791	41.720	40.928	-33.072	74.000	PEAK
2		7261.000	5.557	39.900	45.457	-28.543	74.000	PEAK
3		9636.080	9.143	39.900	49.044	-24.956	74.000	PEAK
4	*	12041.830	11.531	38.690	50.222	-23.778	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/23 - 17:08**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n20MHz_2412MHz**

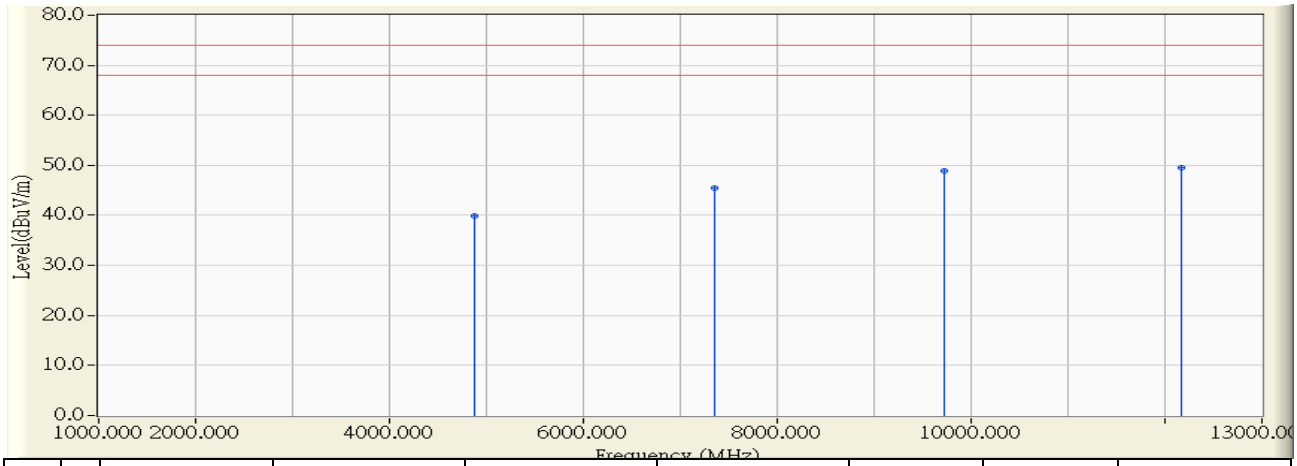


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4828.580	-0.791	44.660	43.869	-30.131	74.000	PEAK
2		7213.330	5.442	40.300	45.742	-28.258	74.000	PEAK
3		9668.500	9.379	38.810	48.189	-25.811	74.000	PEAK
4	*	12070.580	11.521	38.370	49.891	-24.109	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/23 - 17:14**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n20MHz_2437MHz**

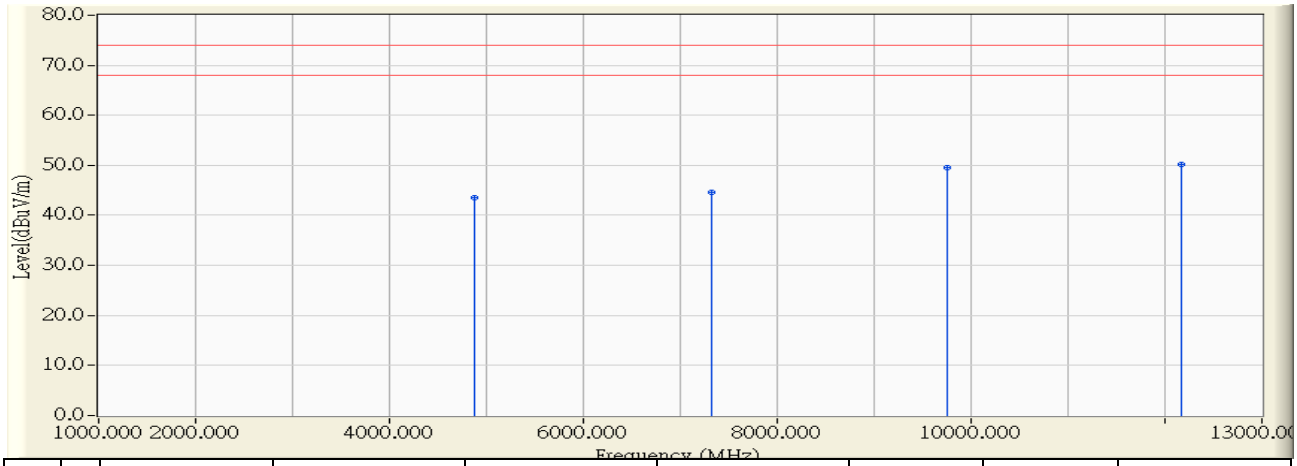


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4882.170	-0.651	40.570	39.920	-34.080	74.000	PEAK
2		7346.330	5.763	39.620	45.383	-28.617	74.000	PEAK
3		9716.670	9.729	39.110	48.838	-25.162	74.000	PEAK
4	*	12174.330	11.485	38.010	49.495	-24.505	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/23 - 17:17**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n20MHz_2437MHz**

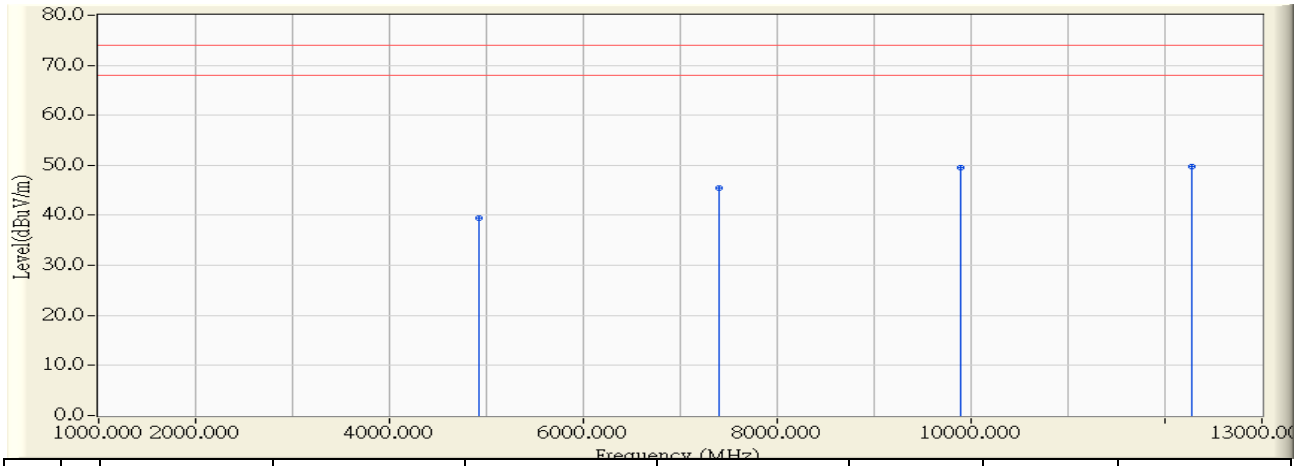


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4875.330	-0.668	44.140	43.472	-30.528	74.000	PEAK
2		7326.500	5.715	38.880	44.595	-29.405	74.000	PEAK
3		9746.330	9.944	39.570	49.513	-24.487	74.000	PEAK
4	*	12162.170	11.490	38.780	50.269	-23.731	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/23 - 17:22**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n20MHz_2462MHz**

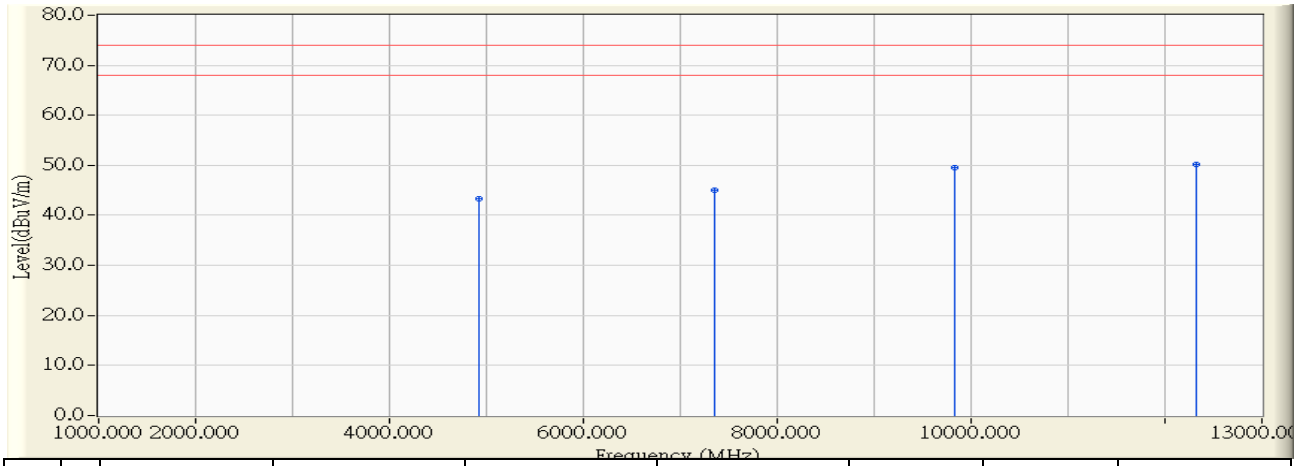


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4918.500	-0.555	39.920	39.365	-34.635	74.000	PEAK
2		7406.830	5.909	39.660	45.569	-28.431	74.000	PEAK
3		9885.830	10.954	38.510	49.464	-24.536	74.000	PEAK
4	*	12278.000	11.448	38.360	49.808	-24.192	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/23 - 17:25**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n20MHz_2462MHz**

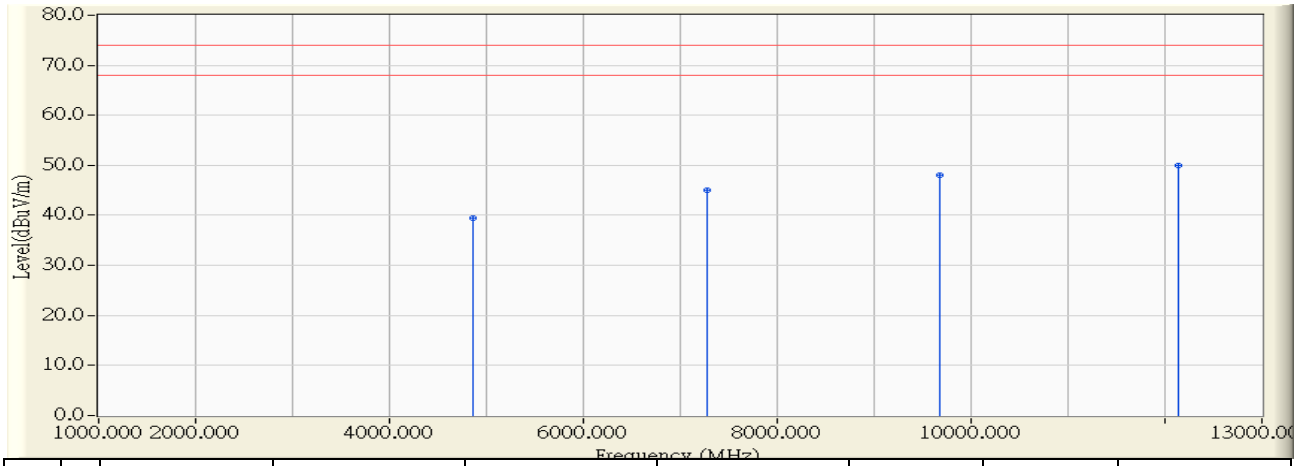


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4922.500	-0.544	43.920	43.375	-30.625	74.000	PEAK
2		7351.170	5.774	39.260	45.034	-28.966	74.000	PEAK
3		9836.330	10.596	38.950	49.546	-24.454	74.000	PEAK
4	*	12321.170	11.433	38.700	50.133	-23.867	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/23 - 17:30**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2422MHz**

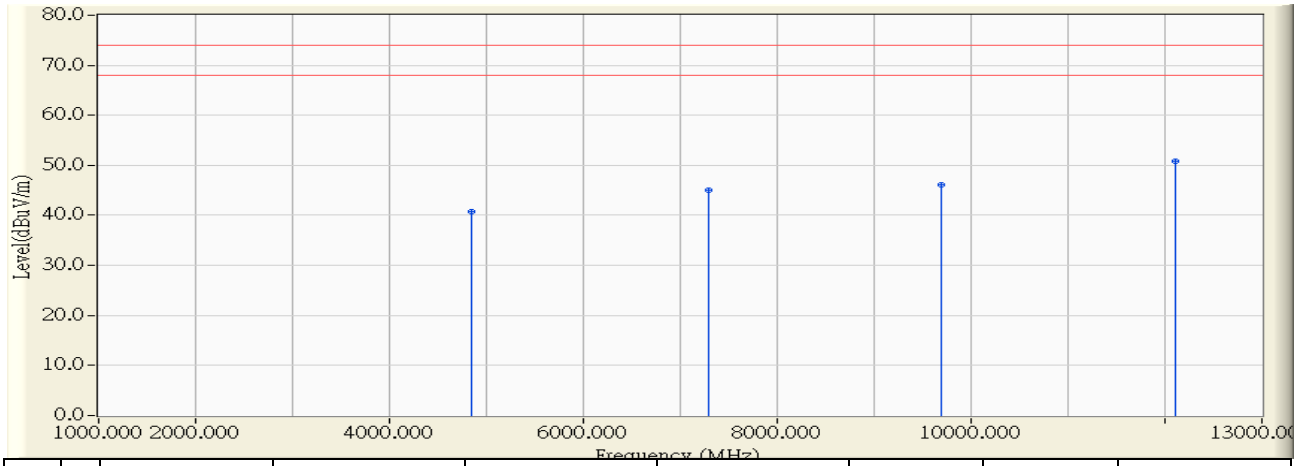


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4854.500	-0.723	40.160	39.437	-34.563	74.000	PEAK
2		7271.670	5.582	39.450	45.032	-28.968	74.000	PEAK
3		9683.000	9.484	38.570	48.054	-25.946	74.000	PEAK
4	*	12138.000	11.498	38.480	49.978	-24.022	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/23 - 17:32**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2422MHz**

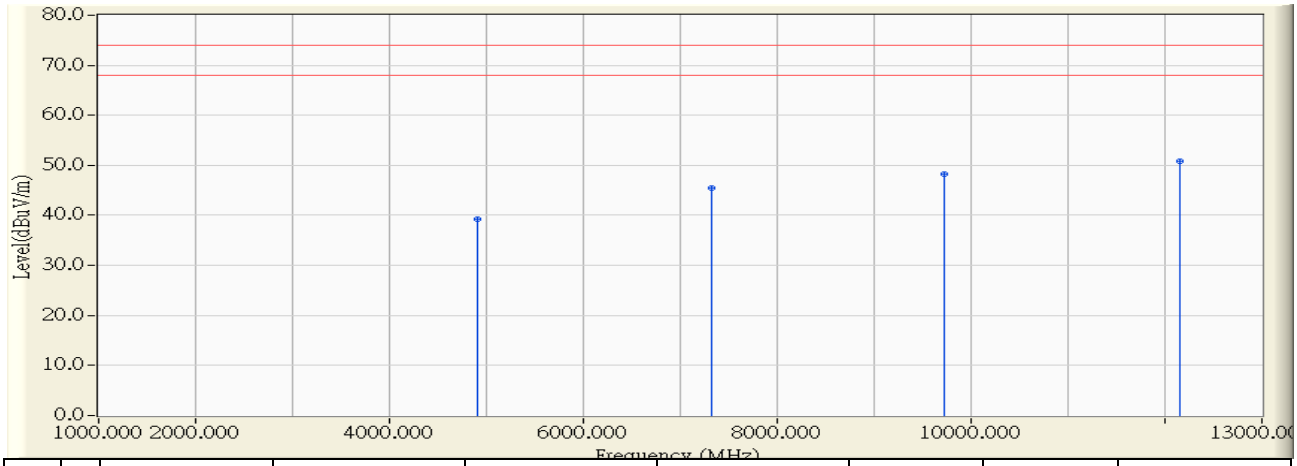


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4841.500	-0.757	41.490	40.733	-33.267	74.000	PEAK
2		7287.670	5.620	39.320	44.941	-29.059	74.000	PEAK
3		9691.330	9.545	36.560	46.105	-27.895	74.000	PEAK
4	*	12113.330	11.506	39.340	50.846	-23.154	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/23 - 17:35**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2437MHz**

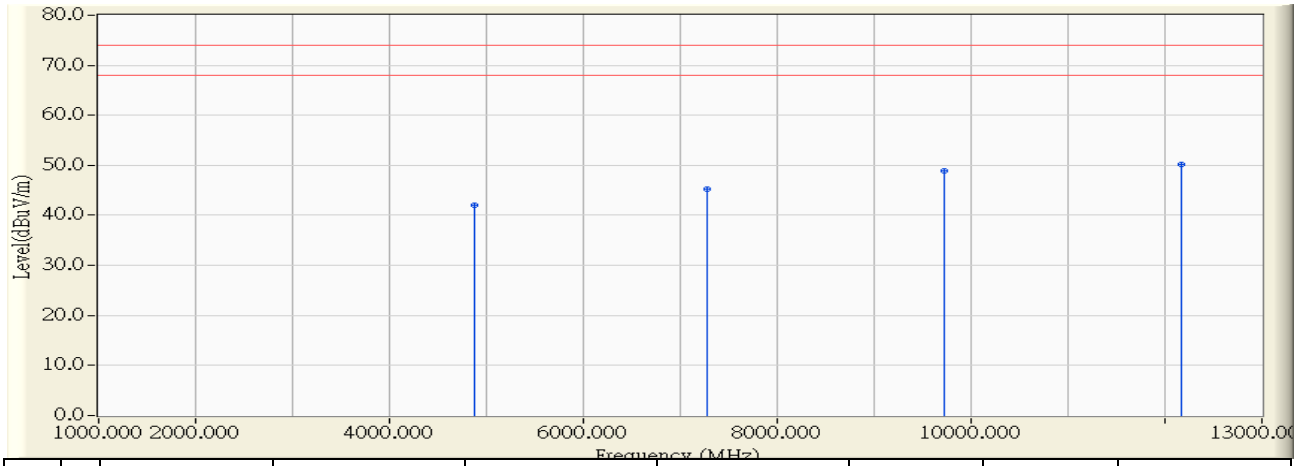


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4902.830	-0.596	39.900	39.304	-34.696	74.000	PEAK
2		7320.330	5.700	39.770	45.470	-28.530	74.000	PEAK
3		9728.170	9.811	38.550	48.362	-25.638	74.000	PEAK
4	*	12159.830	11.490	39.440	50.930	-23.070	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/23 - 17:39**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2437MHz**

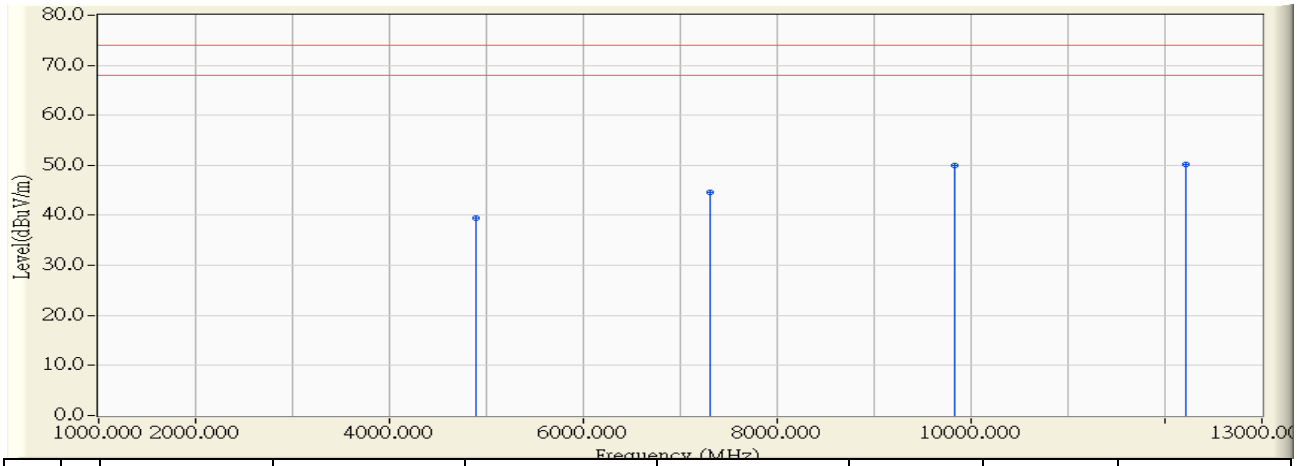


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	-0.672	42.640	41.968	-32.032	74.000	PEAK
2		7272.170	5.584	39.740	45.324	-28.676	74.000	PEAK
3		9730.000	9.825	38.980	48.805	-25.195	74.000	PEAK
4	*	12173.500	11.485	38.760	50.245	-23.755	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/23 - 17:43**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2452MHz**

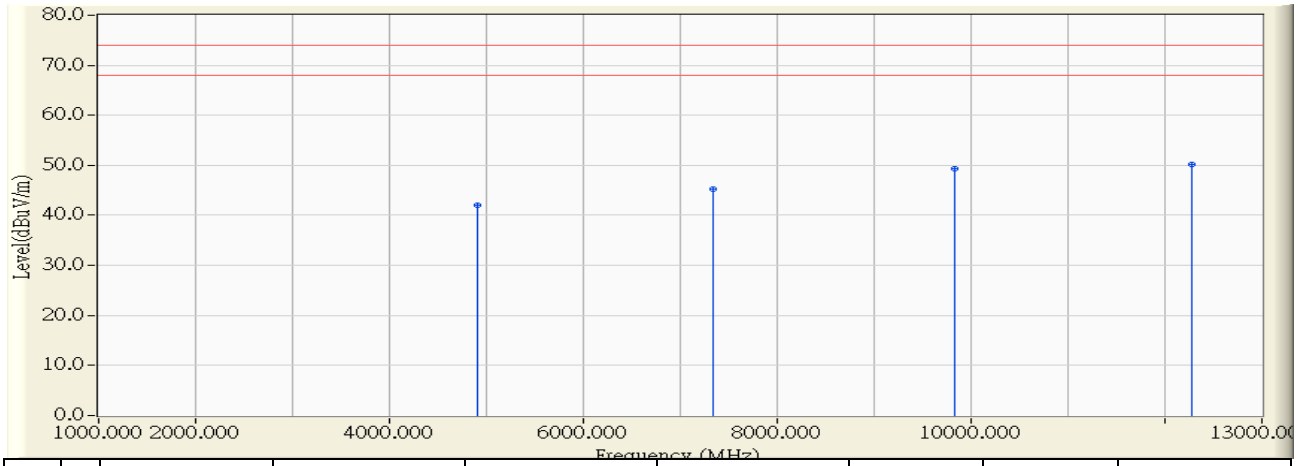


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4885.000	-0.643	40.050	39.407	-34.593	74.000	PEAK
2		7309.170	5.673	38.980	44.653	-29.347	74.000	PEAK
3		9834.670	10.584	39.430	50.014	-23.986	74.000	PEAK
4	*	12215.670	11.471	38.640	50.110	-23.890	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/23 - 17:47**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2452MHz**

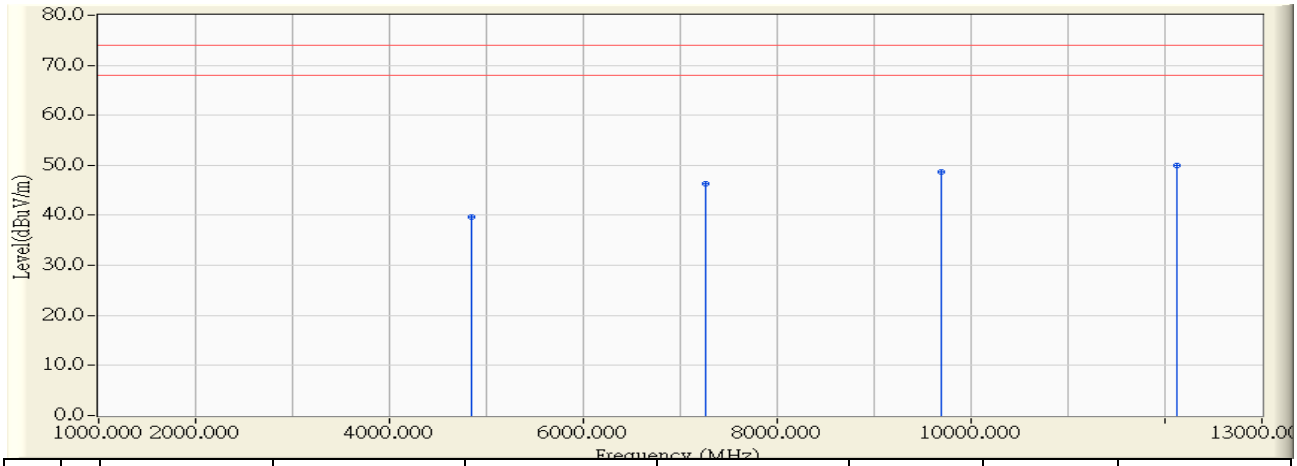


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4900.000	-0.604	42.610	42.006	-31.994	74.000	PEAK
2		7345.330	5.761	39.390	45.150	-28.850	74.000	PEAK
3		9829.830	10.549	38.700	49.249	-24.751	74.000	PEAK
4	*	12281.000	11.448	38.700	50.147	-23.853	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/23 - 18:49**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2422MHz_Co-location**

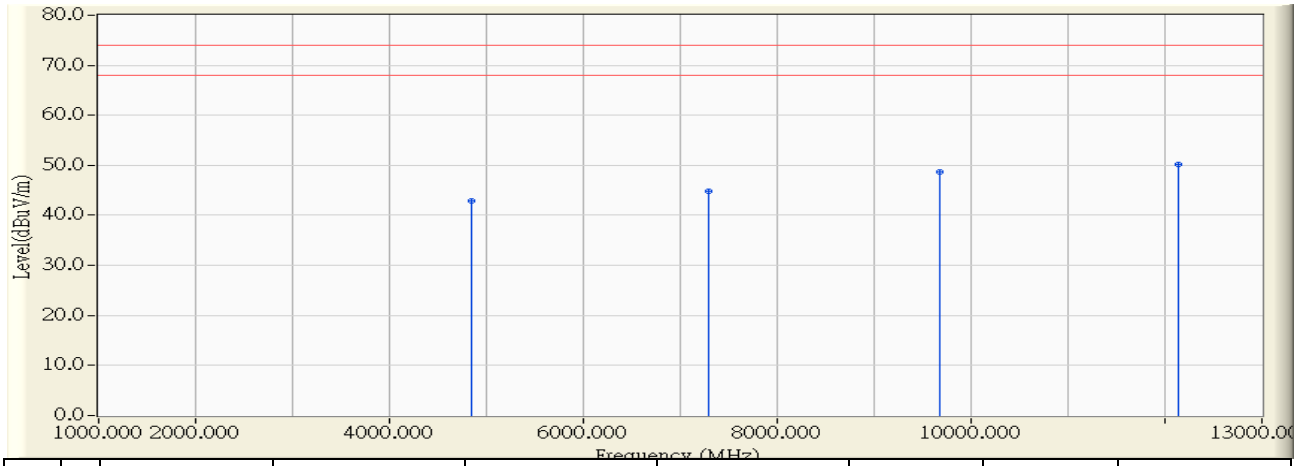


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4850.750	-0.733	40.410	39.677	-34.323	74.000	PEAK
2		7268.080	5.573	40.820	46.394	-27.606	74.000	PEAK
3		9687.000	9.514	39.070	48.583	-25.417	74.000	PEAK
4	*	12117.330	11.505	38.430	49.935	-24.065	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2013/08/23 - 18:54**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2422MHz_Co-location**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4839.830	-0.761	43.700	42.938	-31.062	74.000	PEAK
2		7285.830	5.617	39.270	44.887	-29.113	74.000	PEAK
3		9672.330	9.407	39.300	48.707	-25.293	74.000	PEAK
4	*	12130.920	11.501	38.770	50.270	-23.730	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

5. RF antenna conducted test

5.1. Test Equipment

The following test equipments are used during the test:

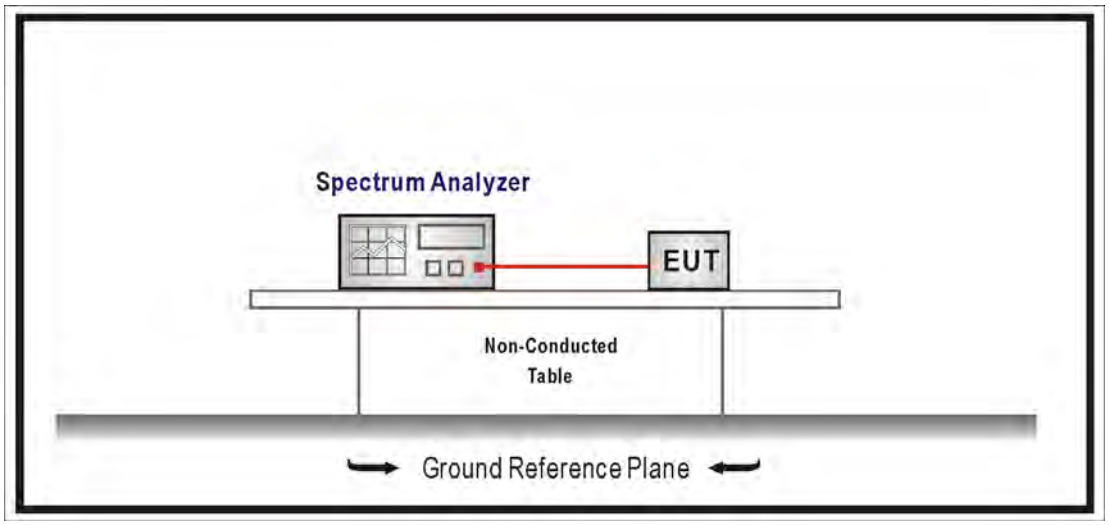
RF antenna conducted test / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2014/08/05

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

5.2. Test Setup

RF Antenna Conducted Measurement:



5.3. Limits

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

5.4. Test Procedure

The EUT was setup according to ANSI C63.4: 2009 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements
Set RBW = 100 kHz, Set VBW> RBW, scan up through 10th harmonic.

5.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2012

5.6. Uncertainty

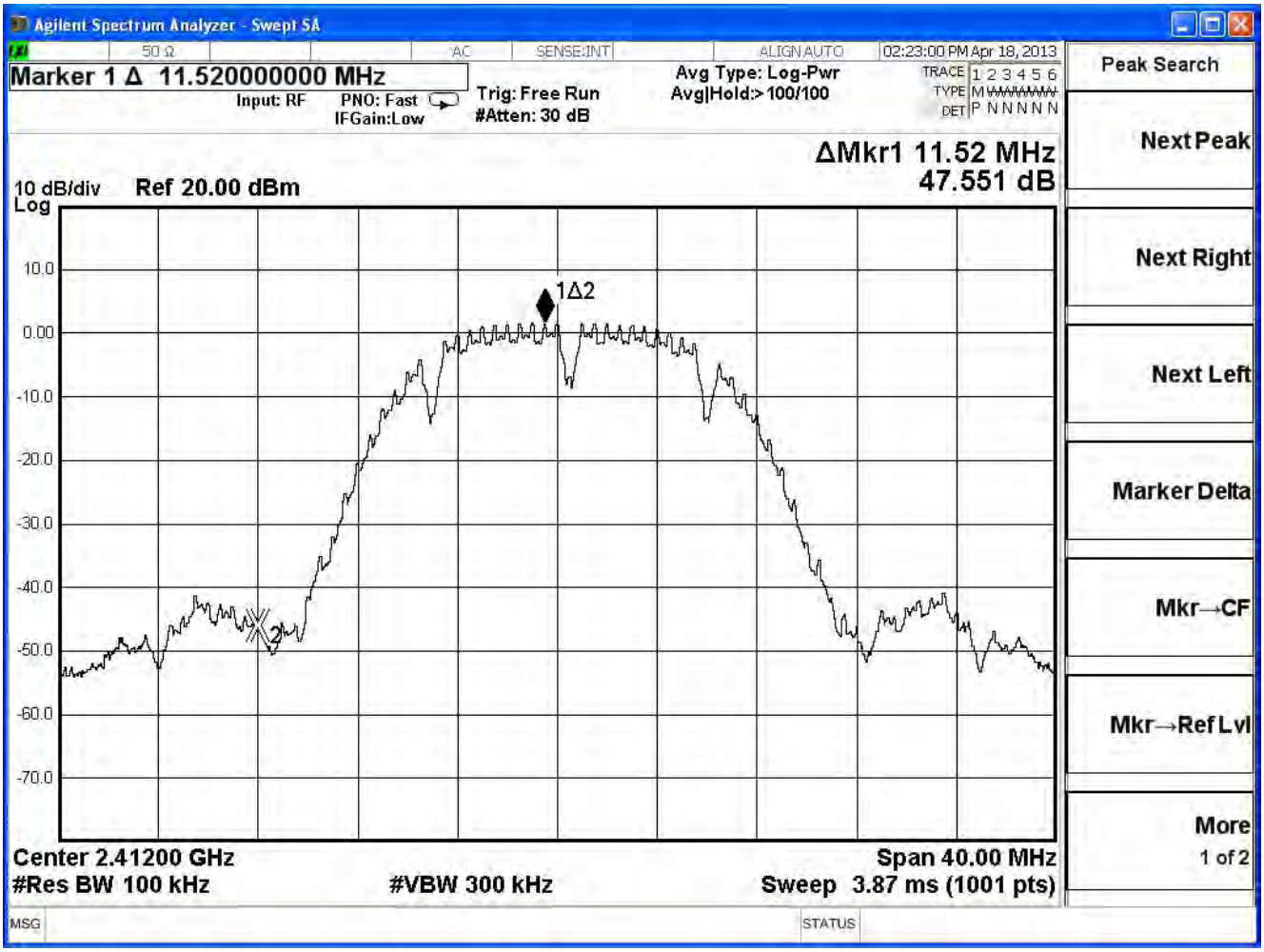
Conducted is defined as ± 1.27dB

5.7. Test Result

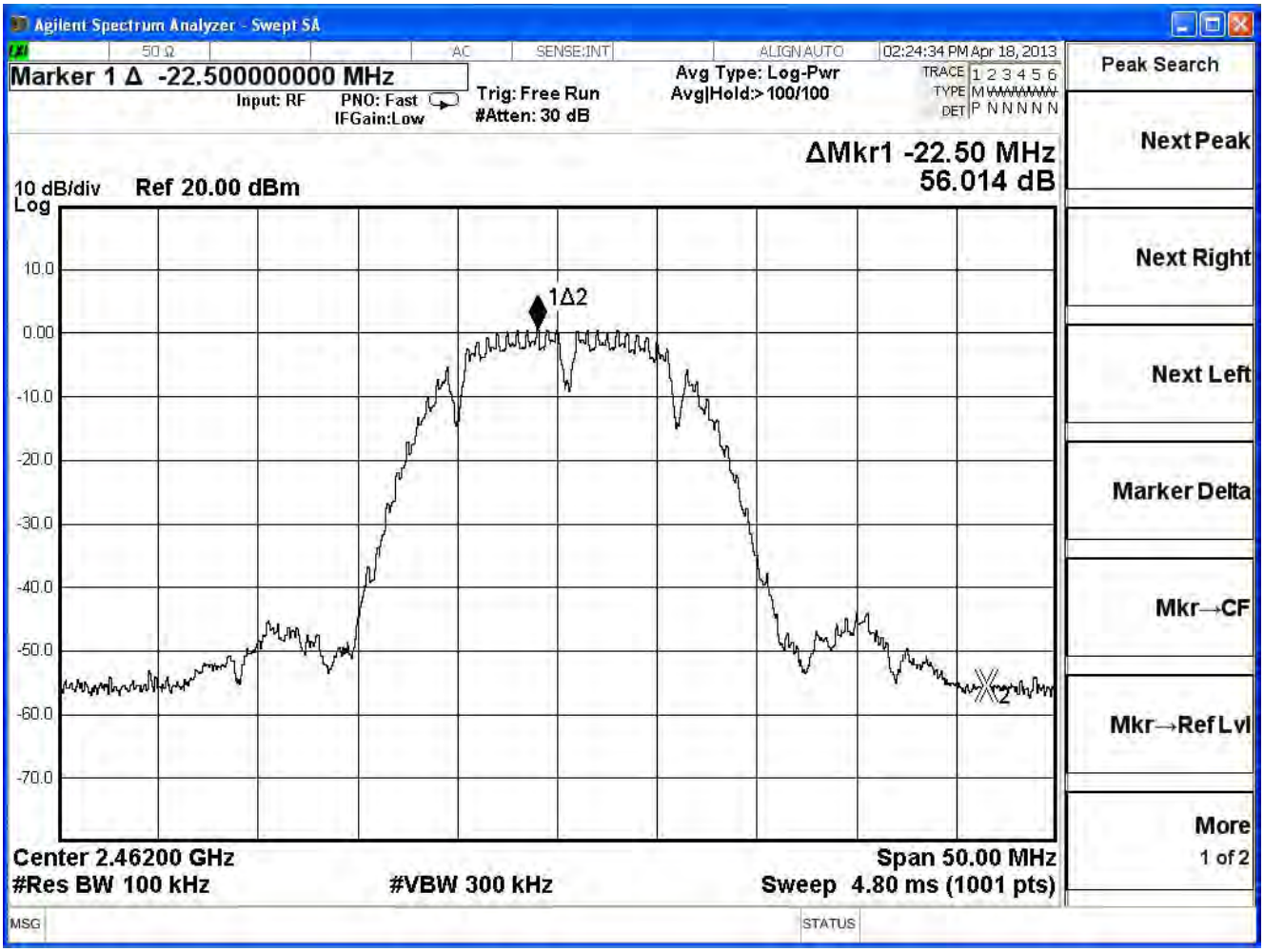
Product	VDSL2 Security Firewall		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/18	Test Site	SR7

IEEE 802.11b, Duty Cycle: 1				
Channel No.	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)	Result
1	2412	47.551	≧20	Pass
11	2462	56.014	≧20	Pass

Channel 01 (2412MHz)



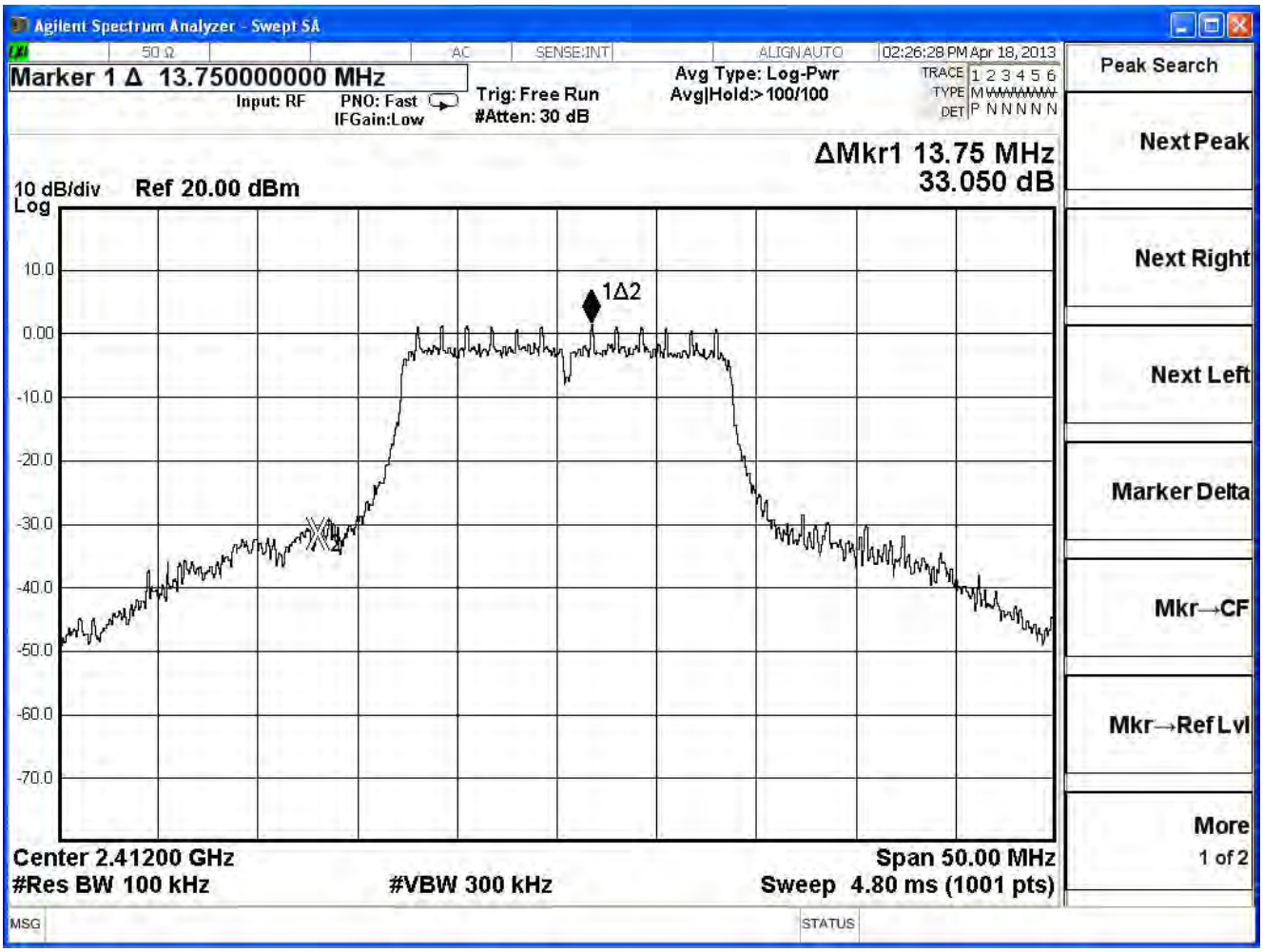
Channel 11 (2462MHz)



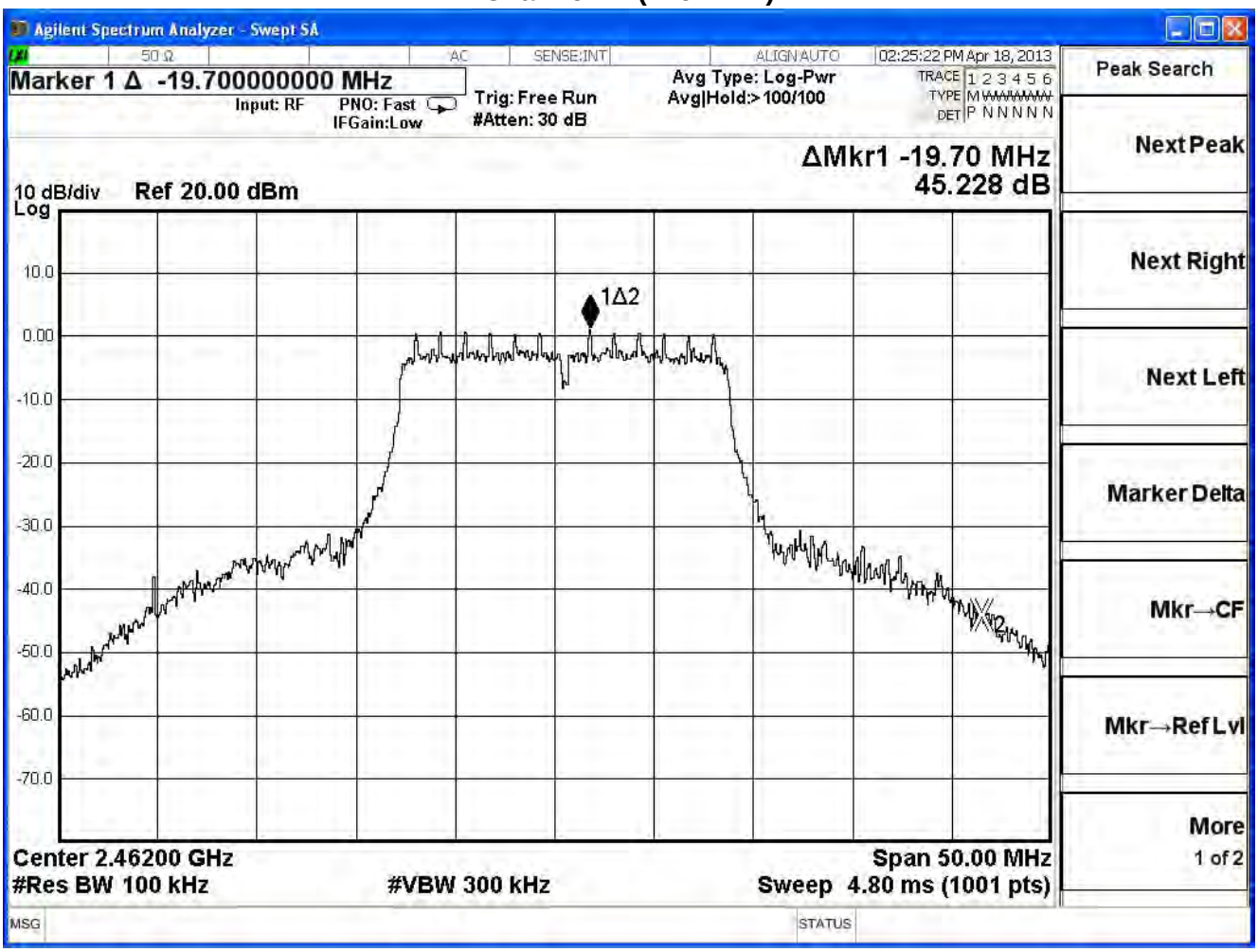
Product	VDSL2 Security Firewall		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/18	Test Site	SR7

IEEE 802.11g, Duty Cycle: 1				
Channel No.	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)	Result
1	2412	33.050	≧20	Pass
11	2462	45.228	≧20	Pass

Channel 01 (2412MHz)



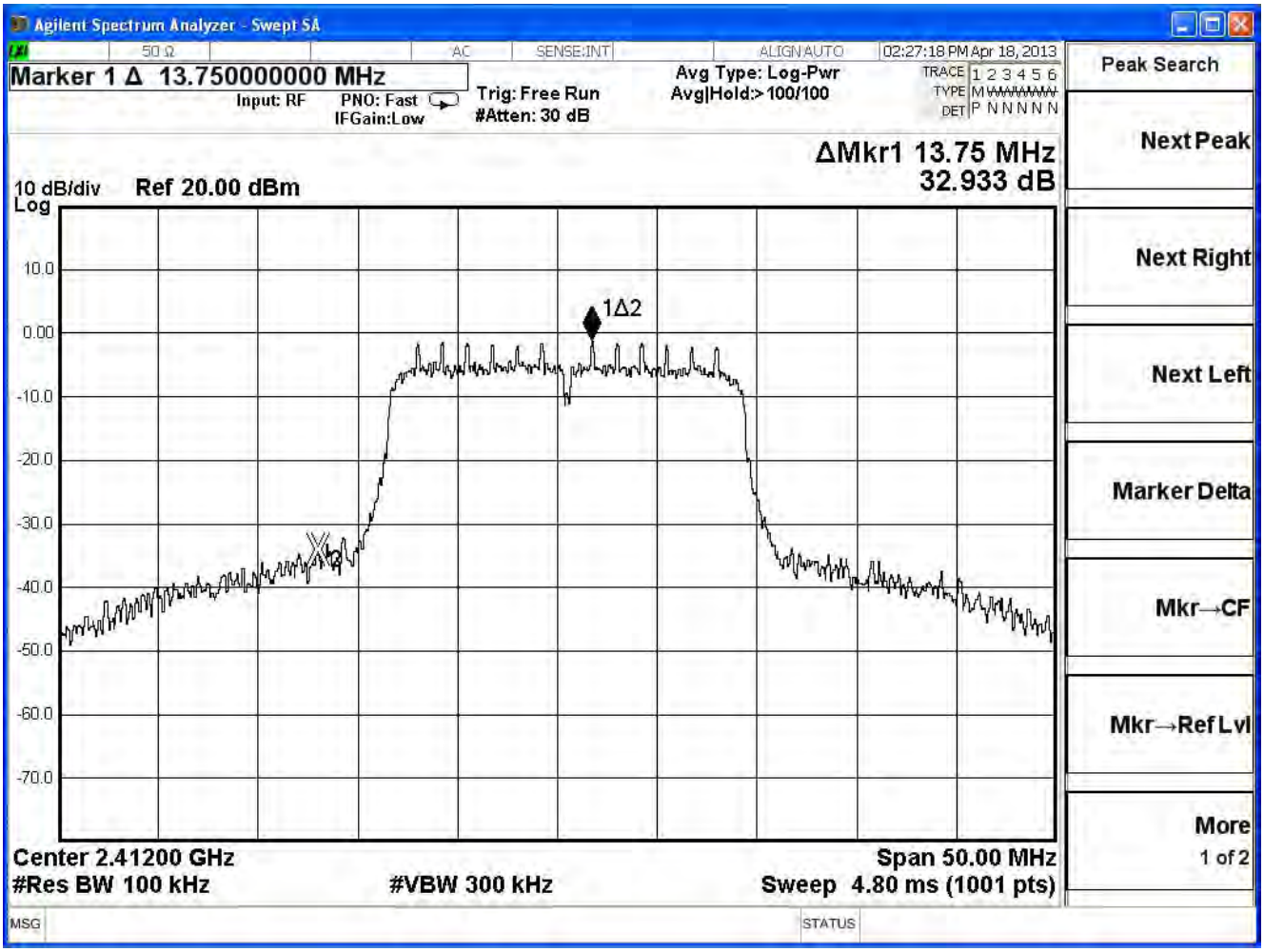
Channel 11 (2462MHz)



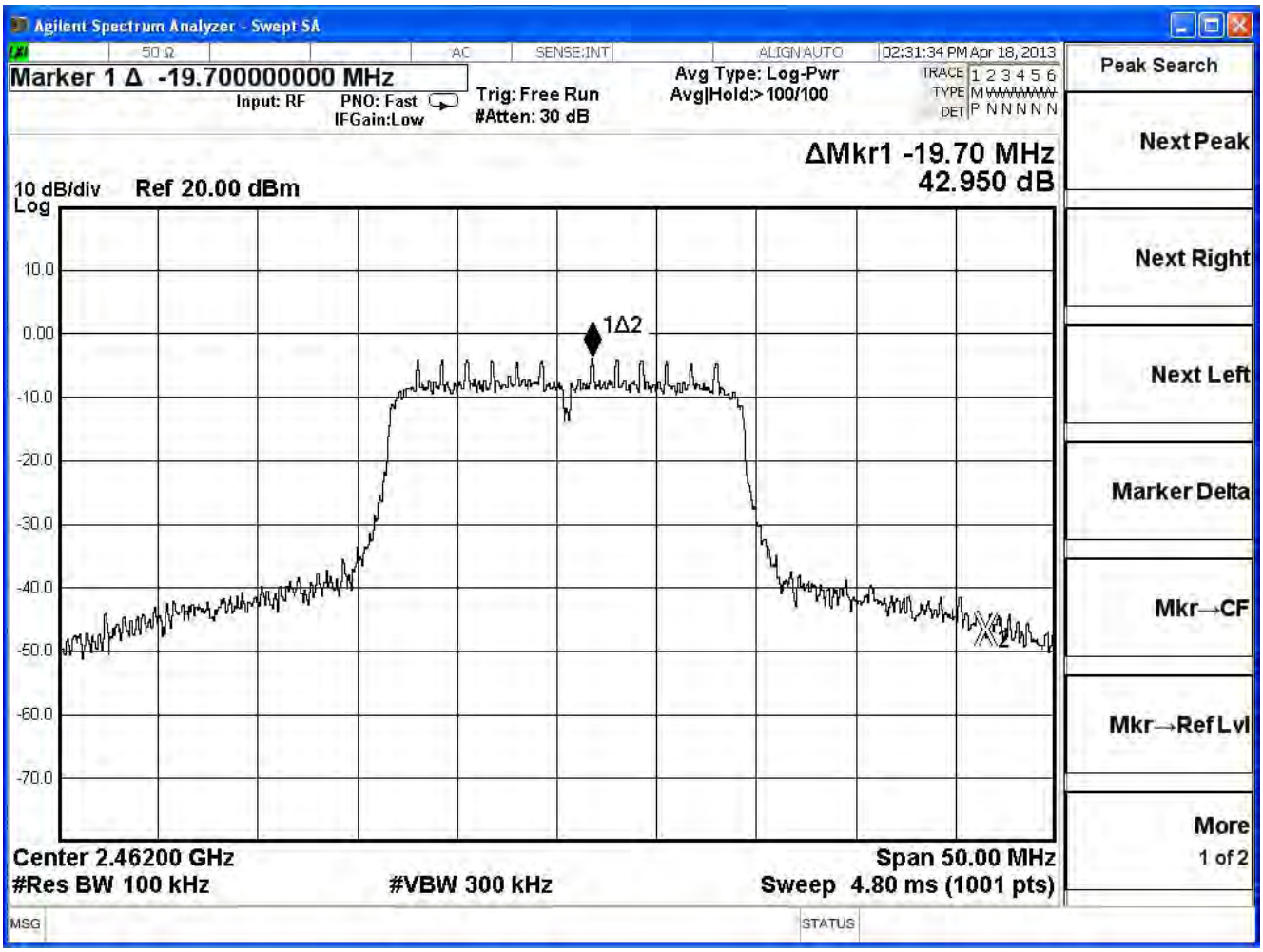
Product	VDSL2 Security Firewall		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/18	Test Site	SR7

IEEE 802.11n (20MHz), (ANT 0) , Duty Cycle: 1				
Channel No.	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)	Result
1	2412	32.933	≧20	Pass
11	2462	42.950	≧20	Pass

Channel 1 (2412MHz)



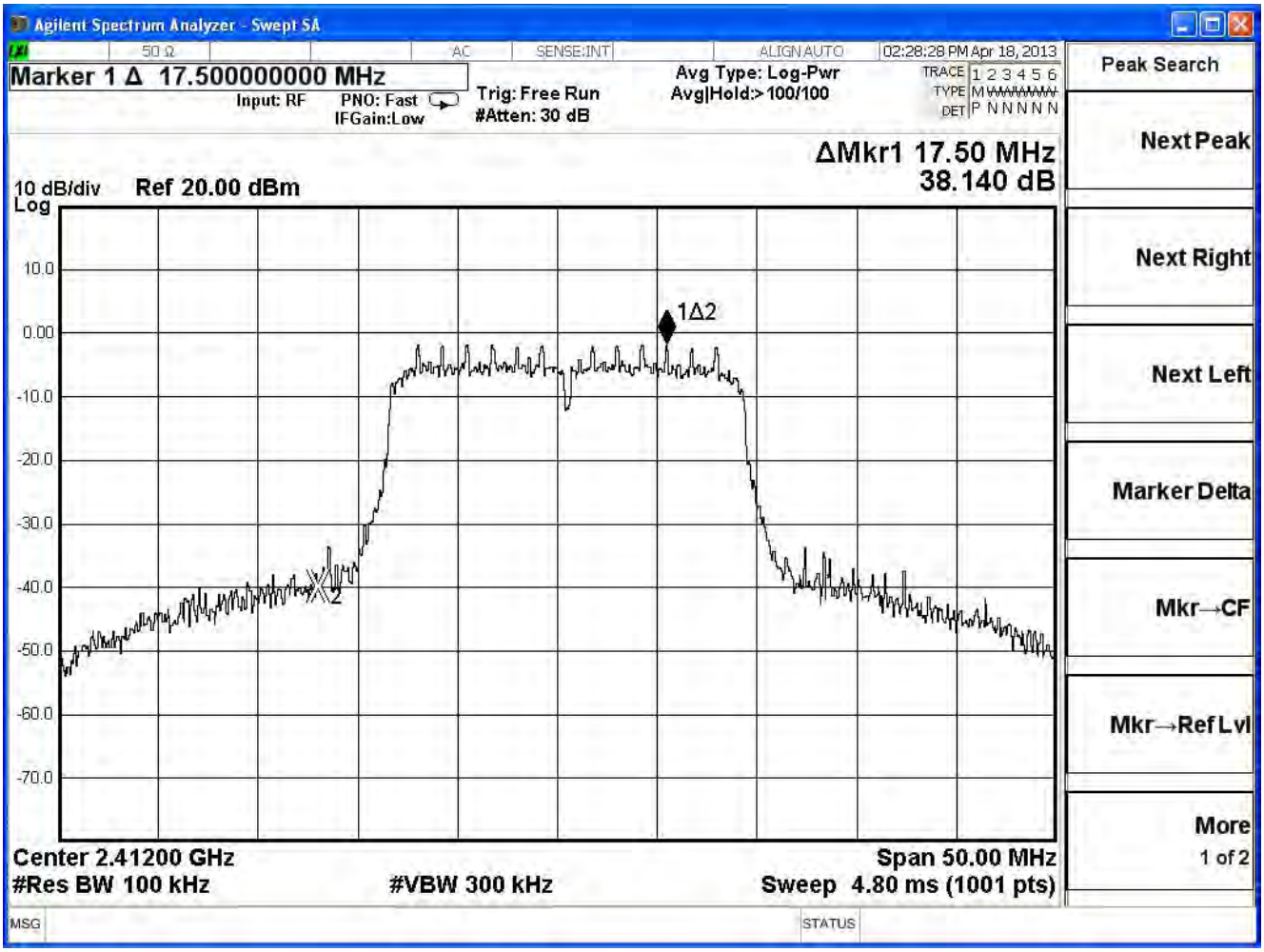
Channel 11 (2462MHz)



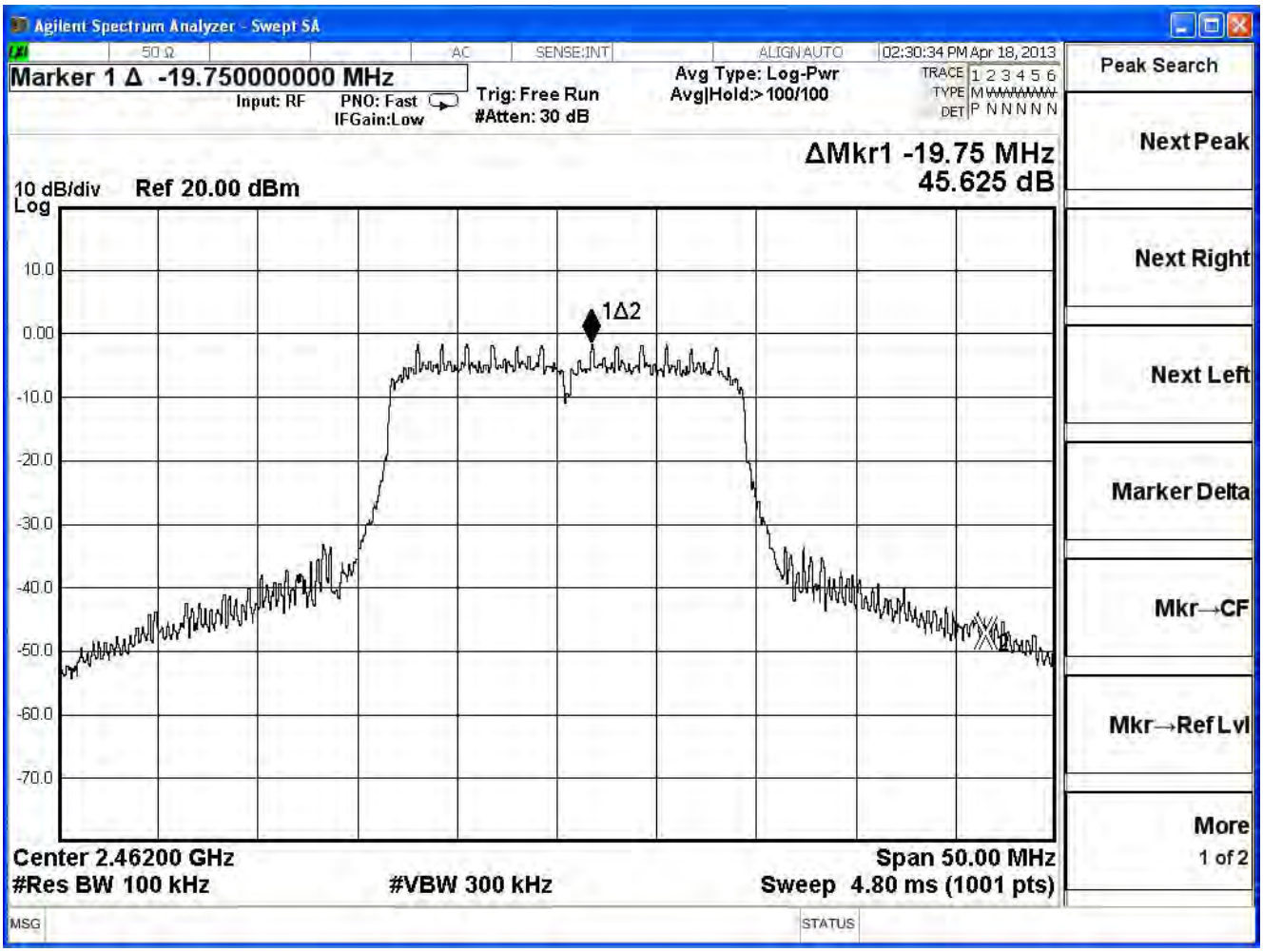
Product	VDSL2 Security Firewall		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/18	Test Site	SR7

IEEE 802.11n (20MHz), (ANT 1) , Duty Cycle: 1				
Channel No.	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)	Result
1	2412	38.140	≧20	Pass
11	2462	45.625	≧20	Pass

Channel 1 (2412MHz)



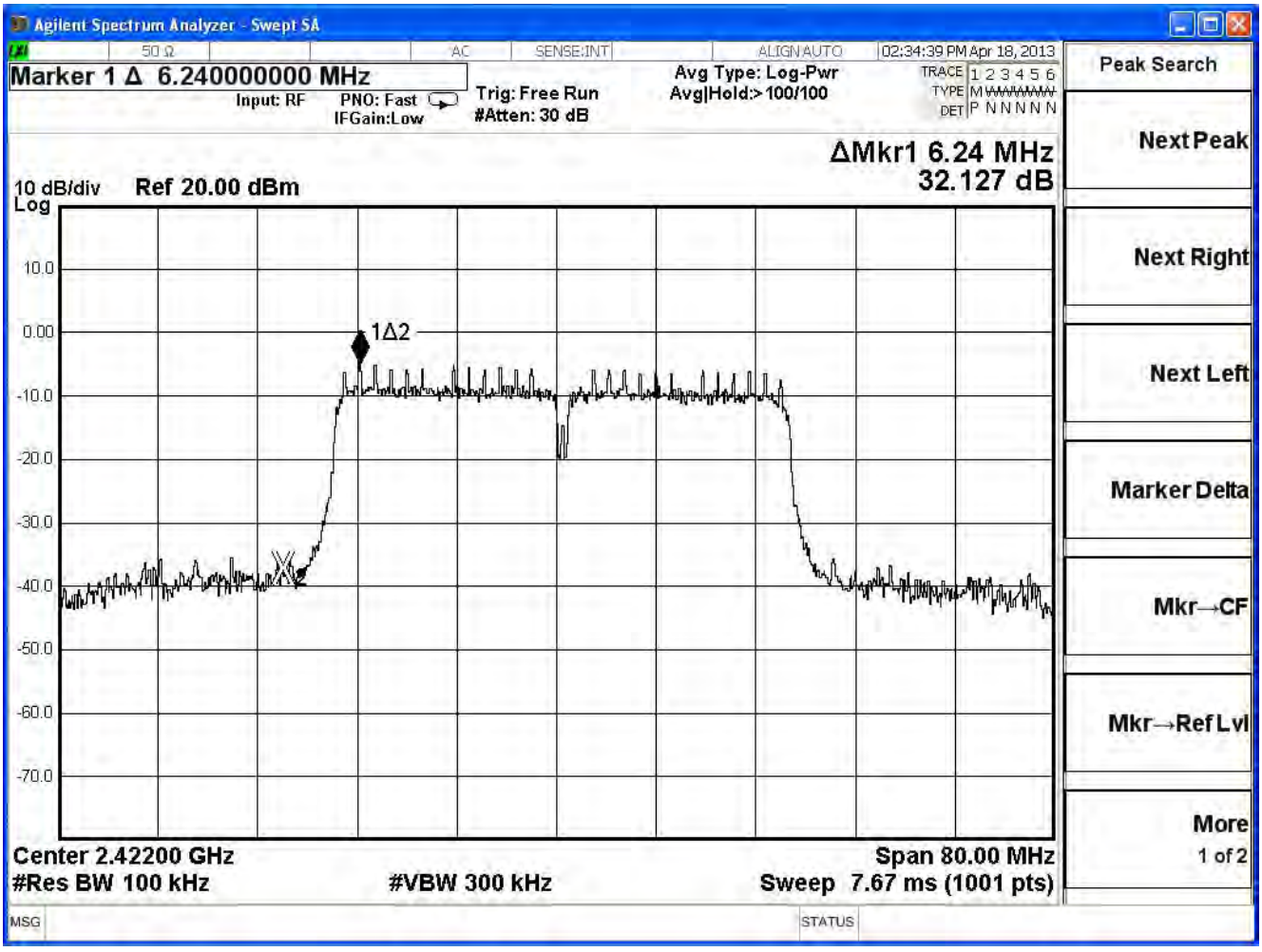
Channel 11 (2462MHz)



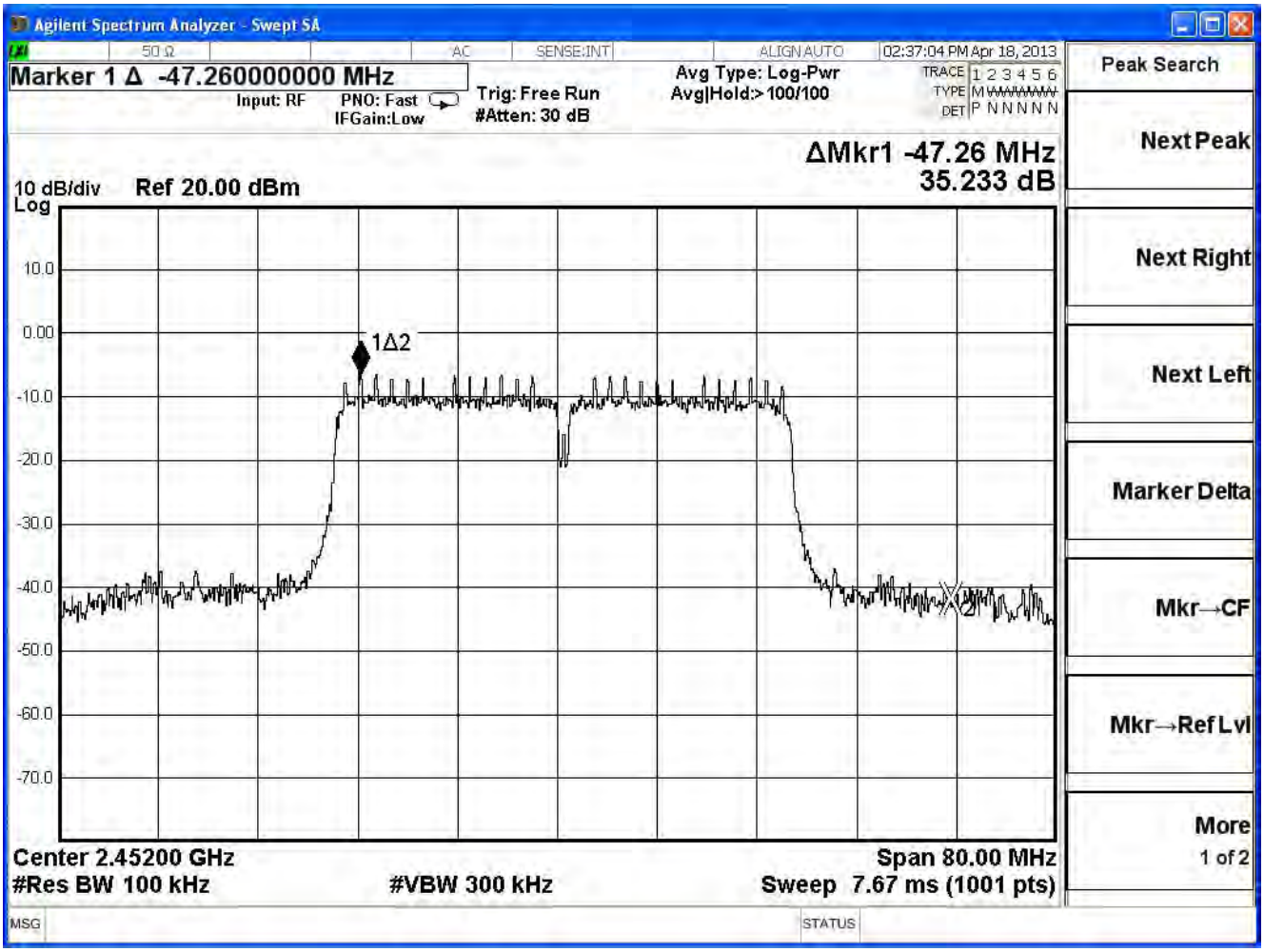
Product	VDSL2 Security Firewall		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/18	Test Site	SR7

IEEE 802.11n (40MHz), (ANT 0) , Duty Cycle: 1				
Channel No.	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)	Result
3	2422	32.127	≧20	Pass
9	2452	35.233	≧20	Pass

Channel 3 (2422MHz)



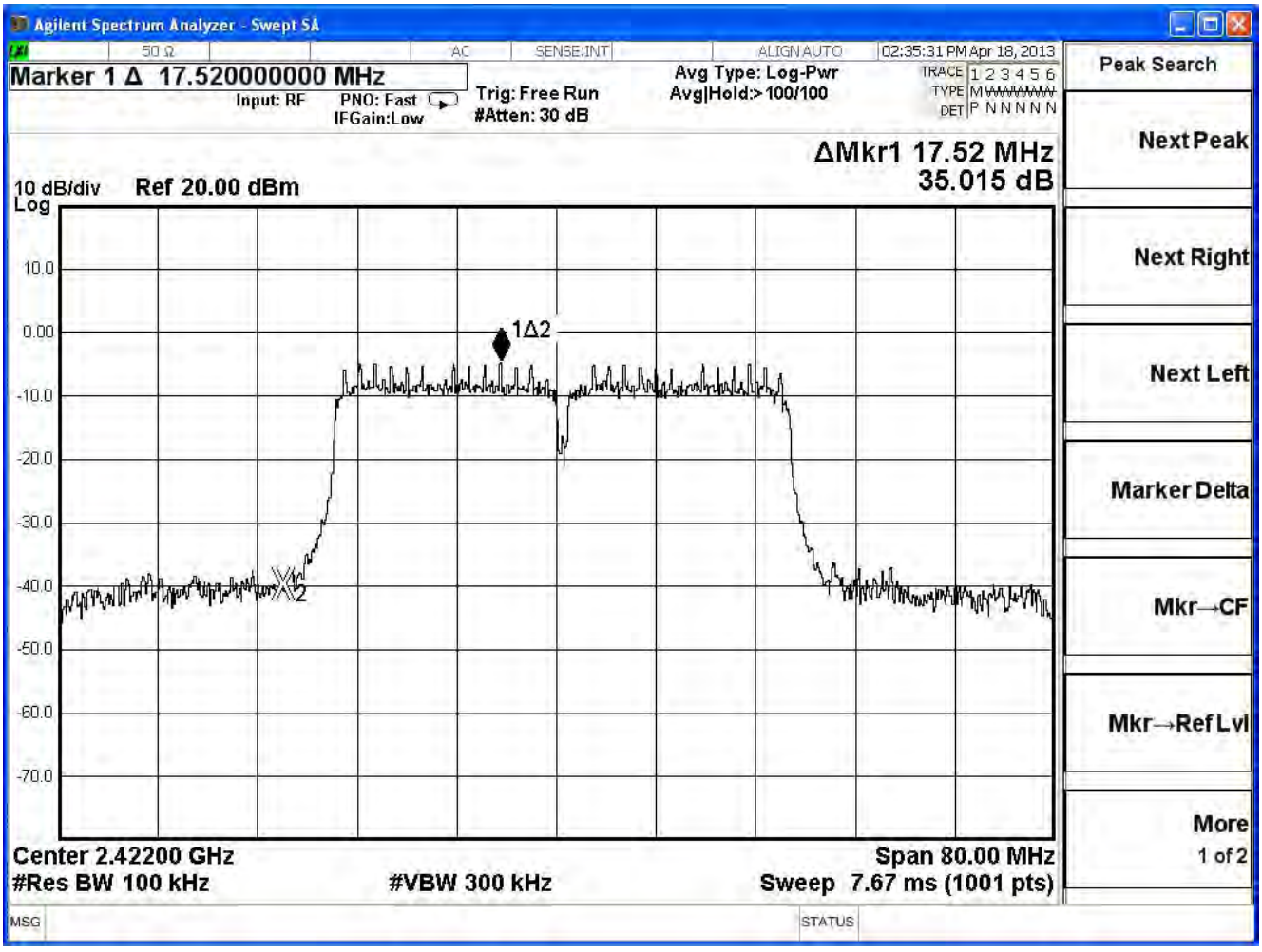
Channel 9 (2452MHz)



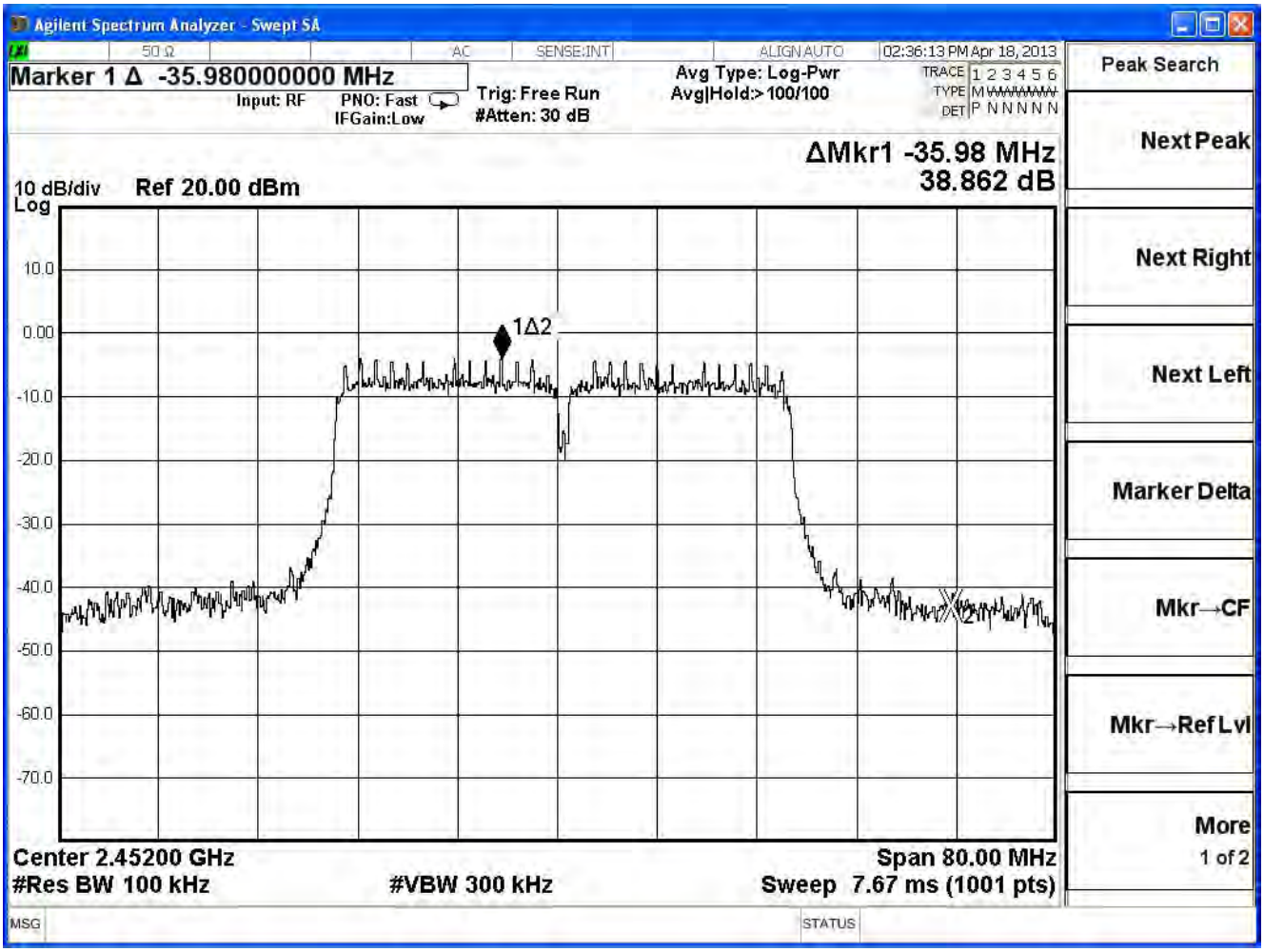
Product	VDSL2 Security Firewall		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/18	Test Site	SR7

IEEE 802.11n (40MHz), (ANT 1), Duty Cycle: 1				
Channel No.	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)	Result
3	2422	35.015	≧20	Pass
9	2452	38.862	≧20	Pass

Channel 3 (2422MHz)

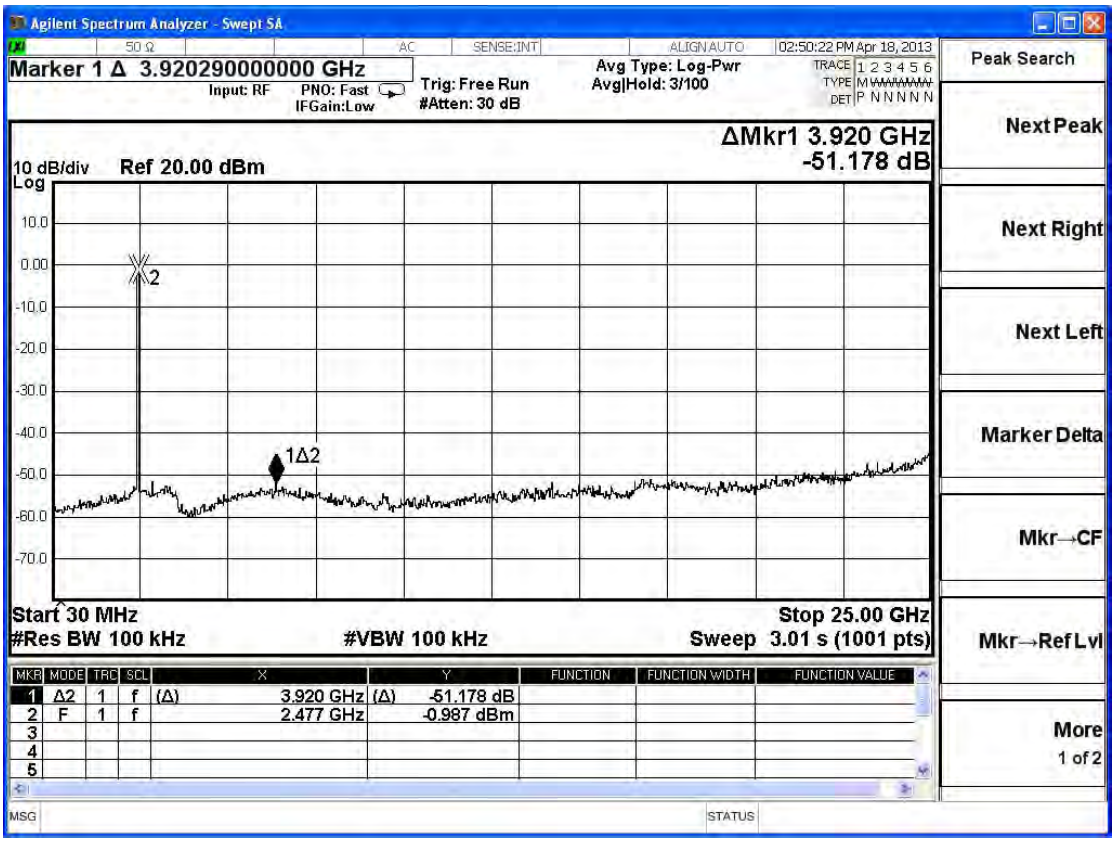


Channel 9 (2452MHz)



2412MHz (30MHz-25GHz)-802.11b

2462MHz (30MHz-25GHz) -802.11b

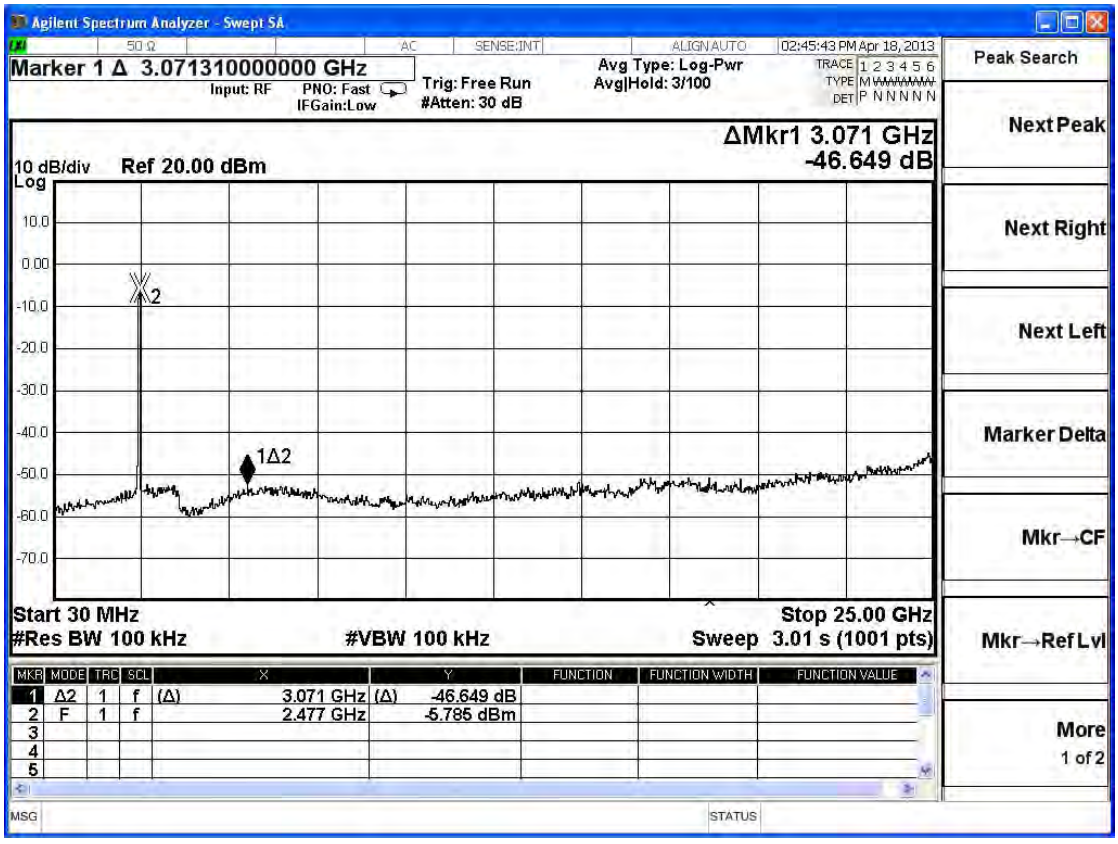


2412MHz (30MHz-25GHz)-802.11g

2462MHz (30MHz-25GHz) -802.11g

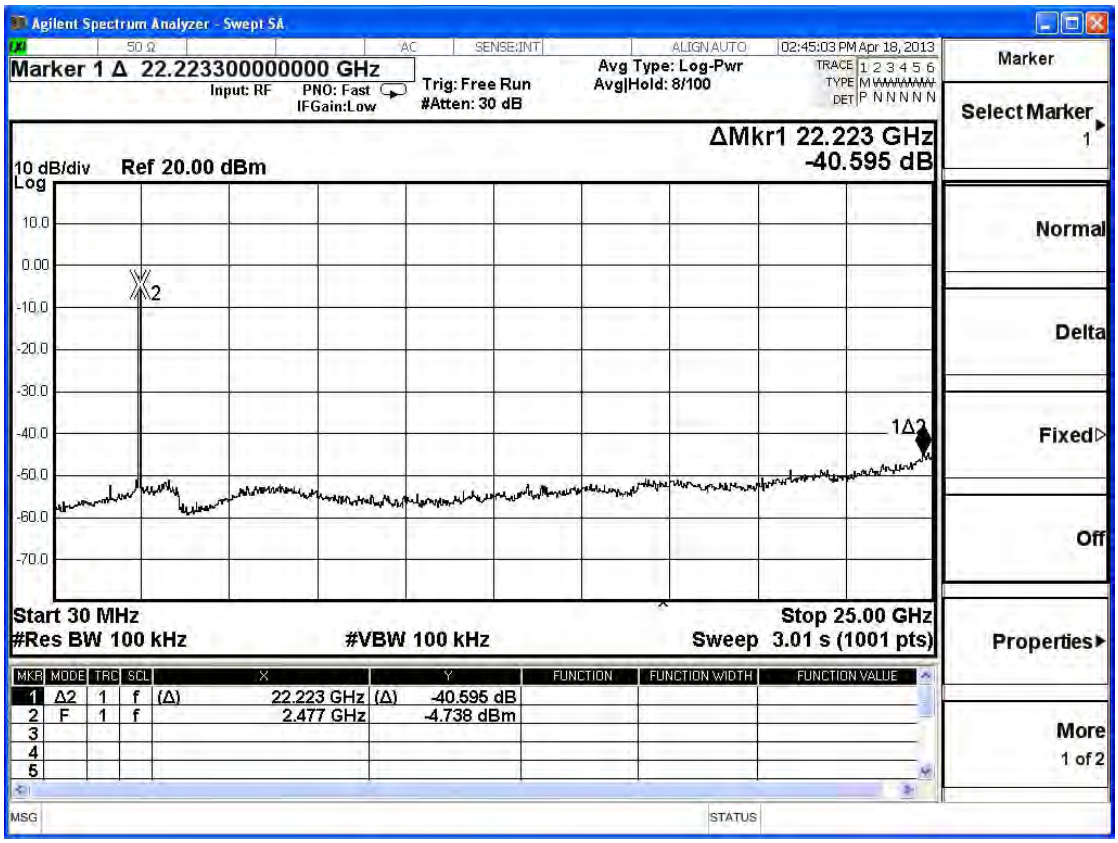
2412MHz (30MHz-25GHz)-802.11n(20MHz)-ANT 0

2462MHz (30MHz-25GHz) -802.11n(20MHz)-ANT 0

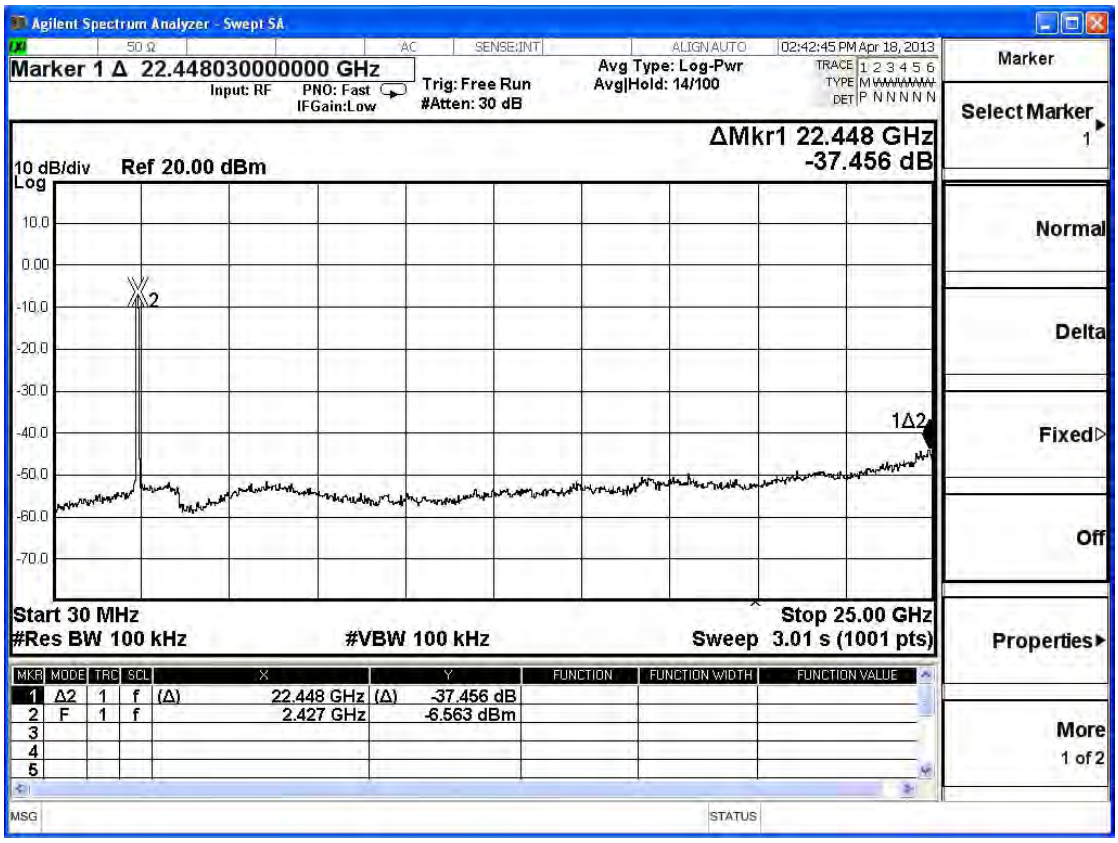


2412MHz (30MHz-25GHz)-802.11n(20MHz)-ANT 1

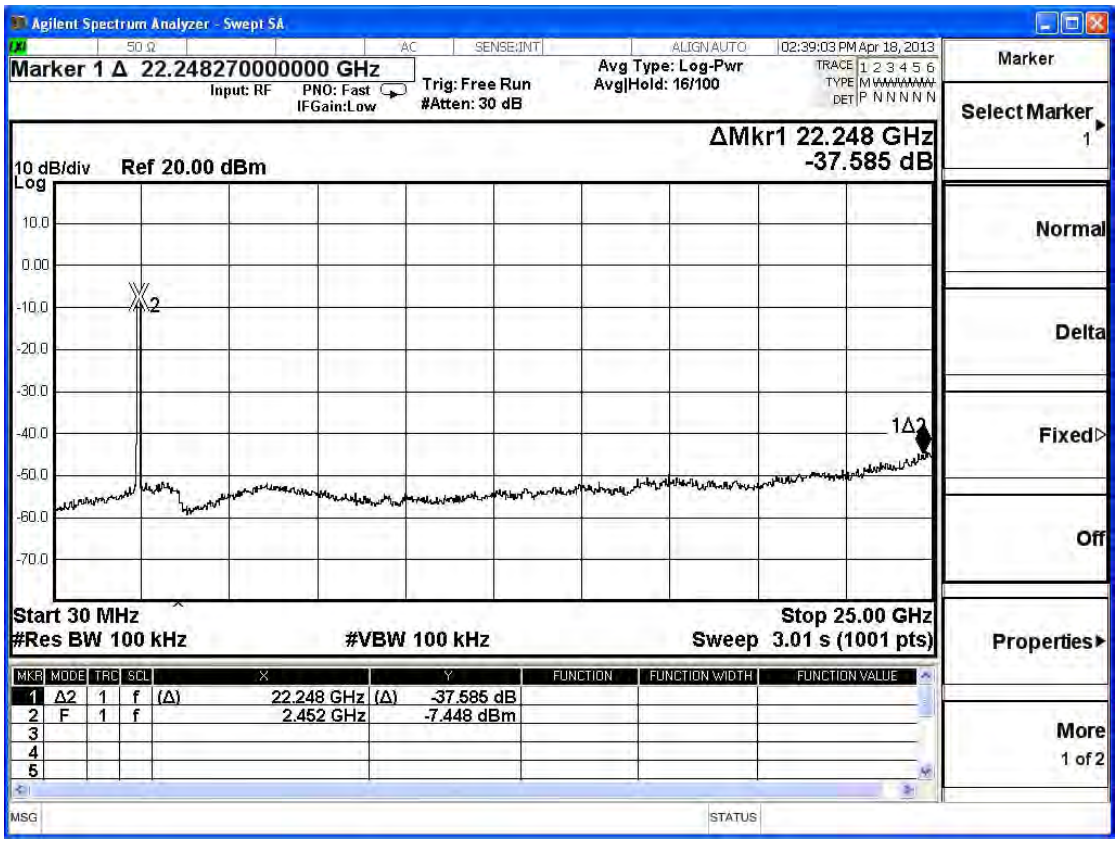
2462MHz (30MHz-25GHz) -802.11n(20MHz)-ANT 1



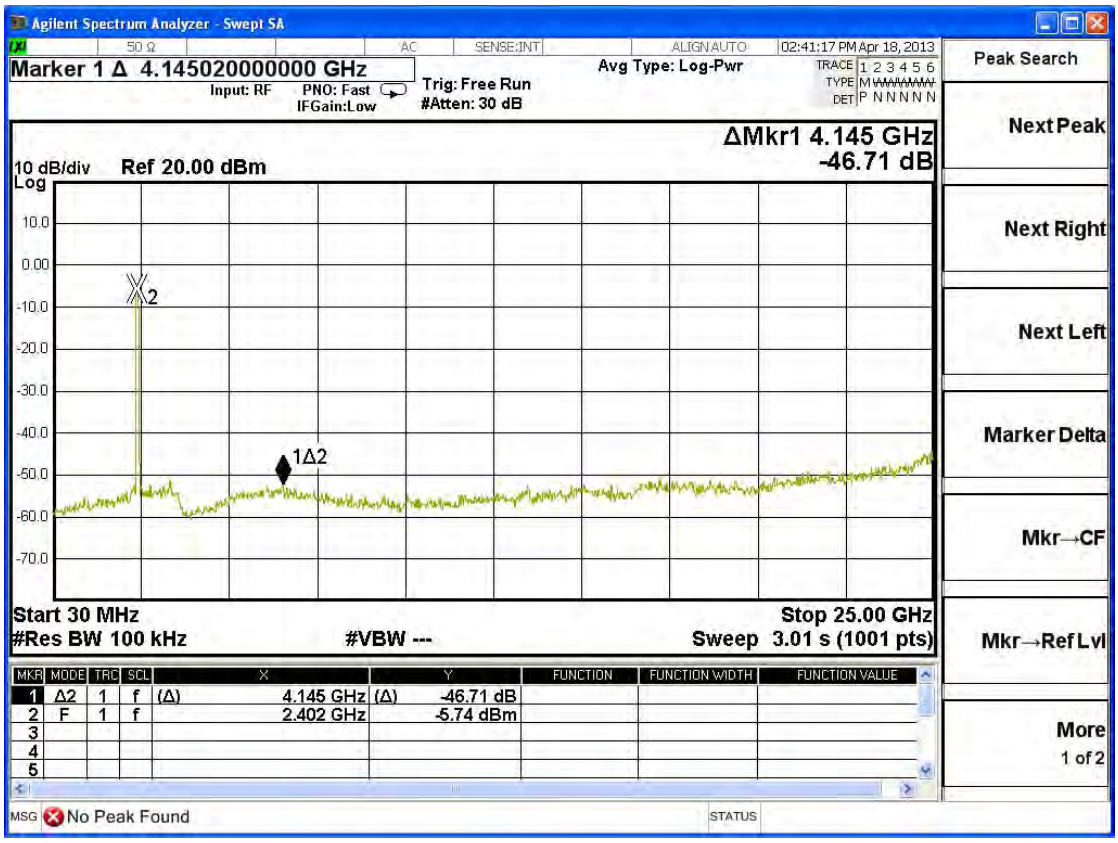
2422MHz (30MHz-25GHz)-802.11n(40MHz)-ANT 0



2452MHz (30MHz-25GHz) -802.11n(40MHz)-ANT 0



2422MHz (30MHz-25GHz)-802.11n(40MHz)-ANT 1



2452MHz (30MHz-25GHz) -802.11n(40MHz)-ANT 1

6. Radiated Emission Band Edge

6.1. Test Equipment

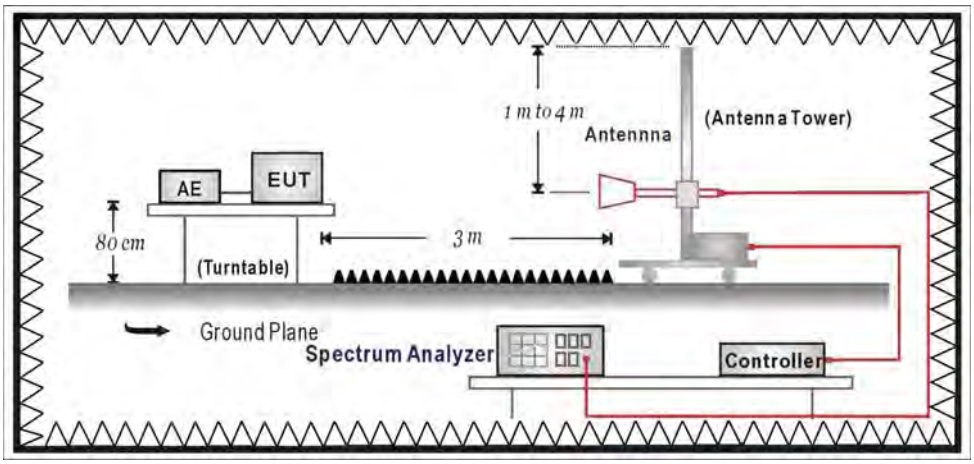
The following test equipments are used during the test:

Band Edge / CB1

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Double Ridged Guide Horn Antenna	Schwarzback	BBHA 9120	D743	2014/02/17
Spectrum Analyzer	Agilent	E4440A	MY46187335	2014/01/27
k Type Cable	Huber Suhner	Sucoflex 102	25623/2	2014/02/21

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

6.2. Test Setup



6.3. Limits

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

6.4. Test Procedure

The EUT was setup according to ANSI C63.4: 2009 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground.

The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

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

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4: 2009 on radiated measurement.

6.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2012

6.6. Uncertainty

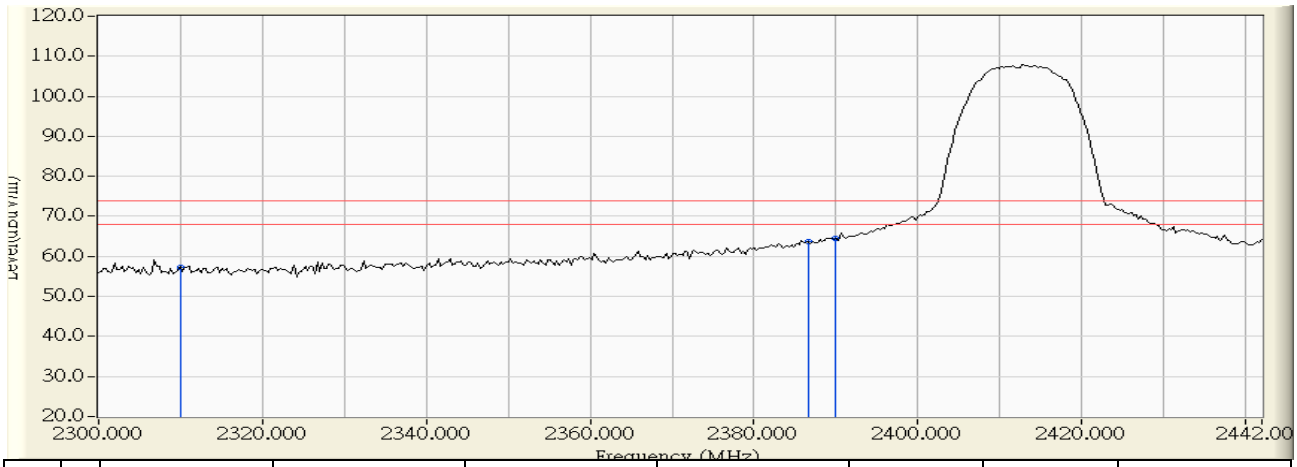
The measurement uncertainty

± 3.9 dB above 1GHz

6.7. Test Result

Radiated is defined as

Site : CB1	**Time : 2013/03/27 - 15:17**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11b_2412MHz**

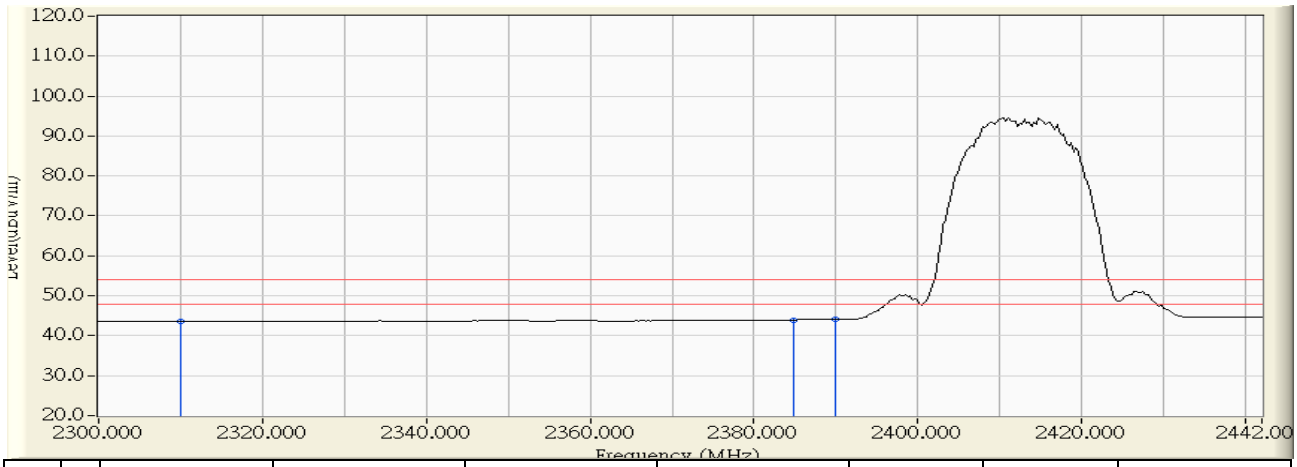


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.779	27.506	57.285	-16.715	74.000	PEAK
2		2386.620	30.544	33.230	63.774	-10.226	74.000	PEAK
3	*	2390.000	30.578	34.009	64.587	-9.413	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 15:18**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11b_2412MHz**

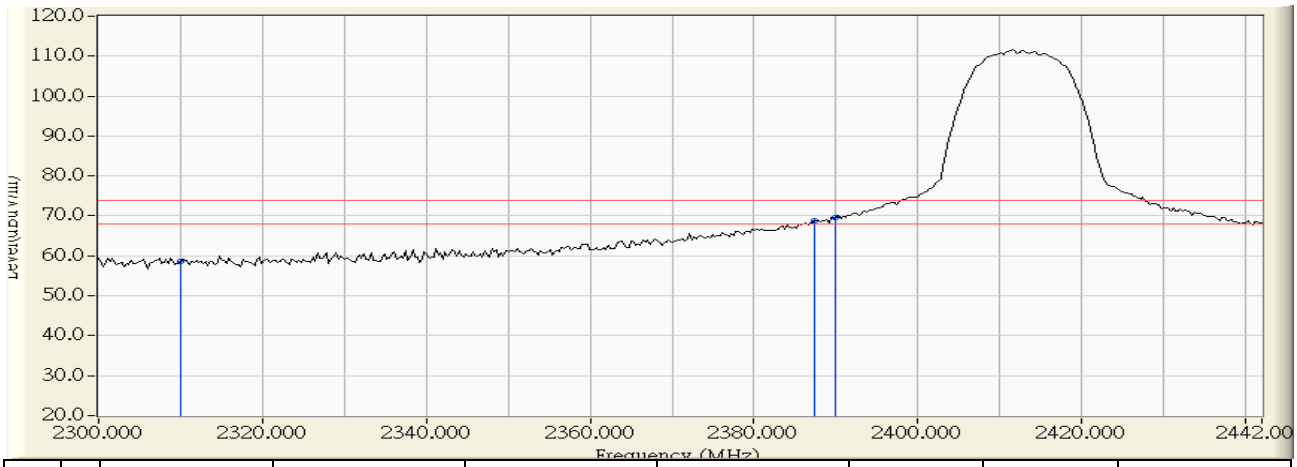


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.779	13.744	43.523	-10.477	54.000	AVERAGE
2		2384.916	30.527	13.441	43.968	-10.032	54.000	AVERAGE
3	*	2390.000	30.578	13.519	44.097	-9.903	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 15:21**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11b_2412MHz**

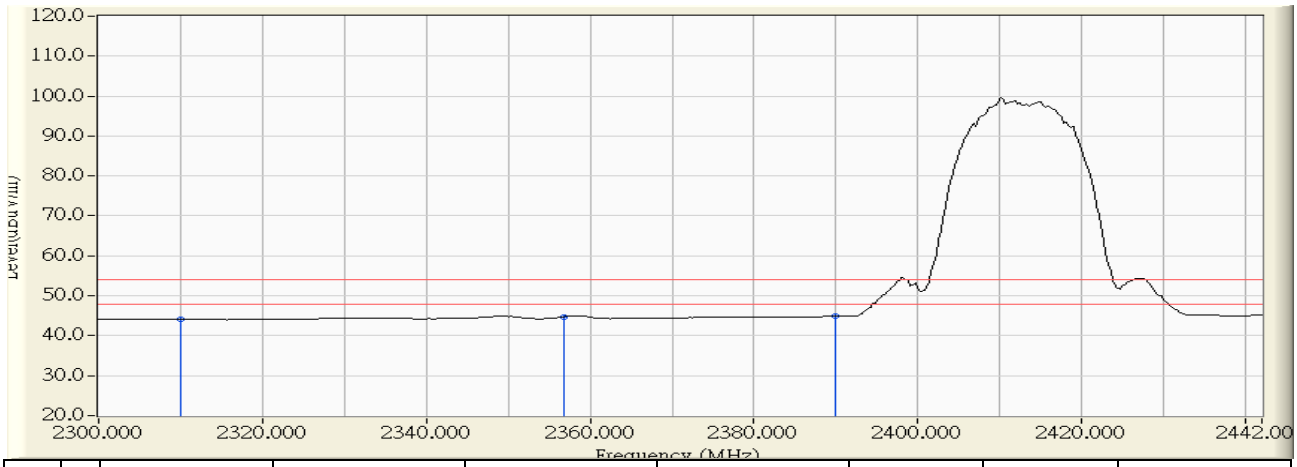


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.779	28.828	58.607	-15.393	74.000	PEAK
2		2387.472	30.553	38.240	68.793	-5.207	74.000	PEAK
3	*	2390.000	30.578	38.887	69.465	-4.535	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 15:22**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11b_2412MHz**

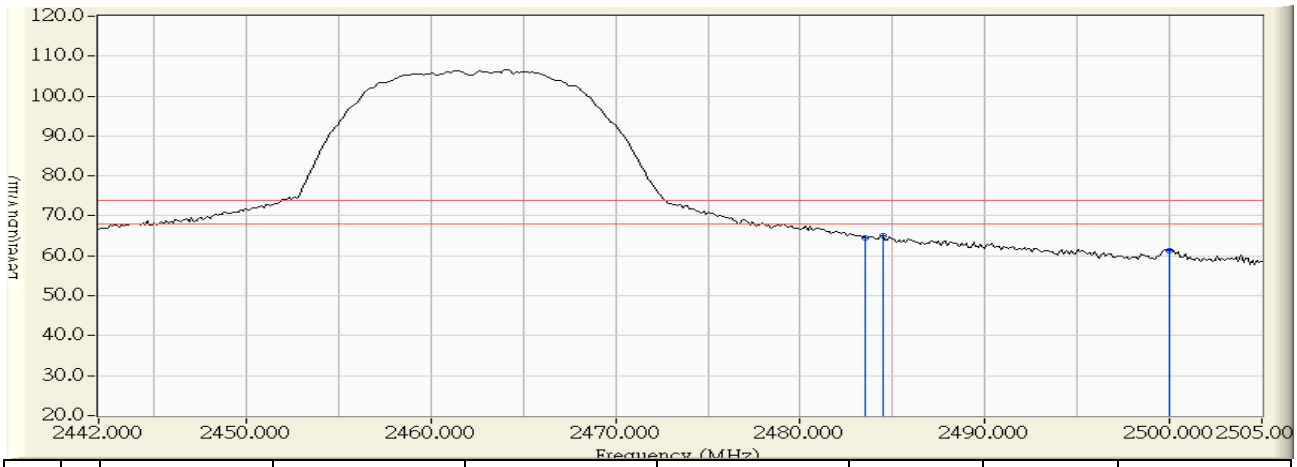


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.779	14.251	44.030	-9.970	54.000	AVERAGE
2		2356.800	30.247	14.549	44.795	-9.205	54.000	AVERAGE
3	*	2390.000	30.578	14.270	44.848	-9.152	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 15:06**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11b_2462MHz**

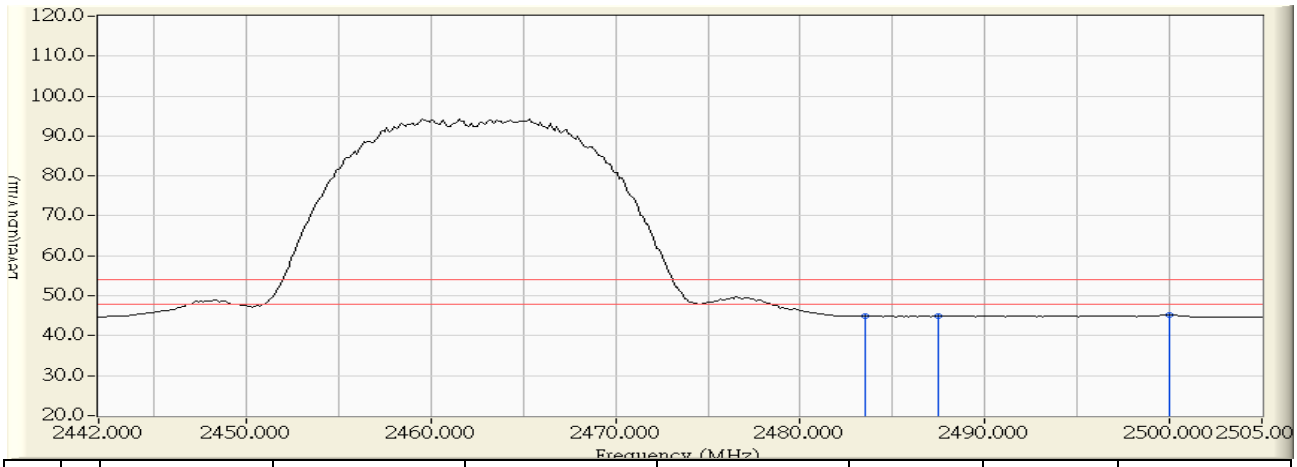


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2483.500	31.512	33.119	64.631	-9.369	74.000	PEAK
2	*	2484.462	31.521	33.463	64.984	-9.016	74.000	PEAK
3		2500.000	31.638	29.736	61.375	-12.625	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 15:07**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11b_2462MHz**

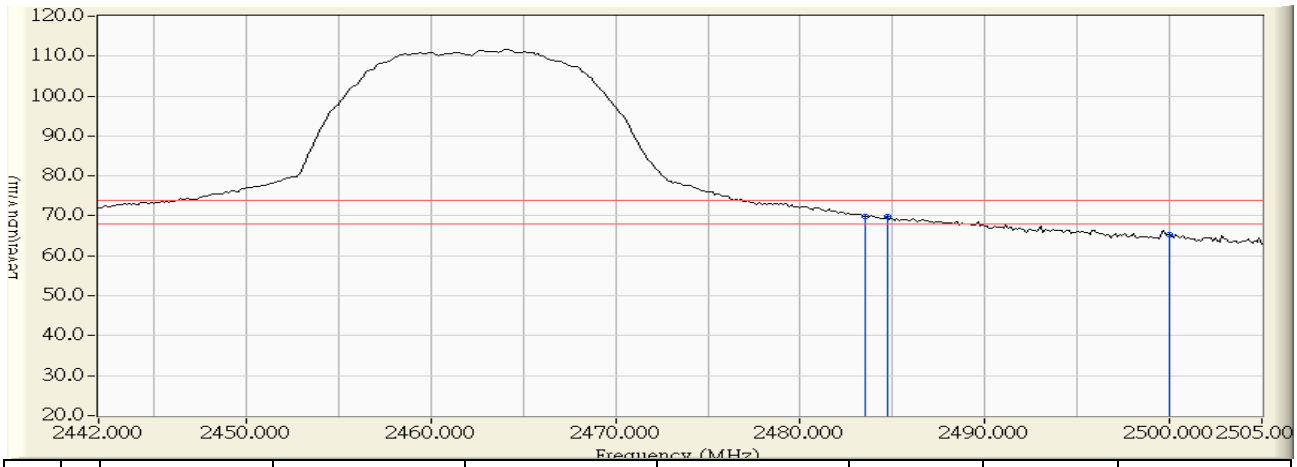


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2483.500	31.512	13.341	44.853	-9.147	54.000	AVERAGE
2		2487.486	31.552	13.285	44.837	-9.163	54.000	AVERAGE
3	*	2500.000	31.638	13.548	45.187	-8.813	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 15:09**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11b_2462MHz**

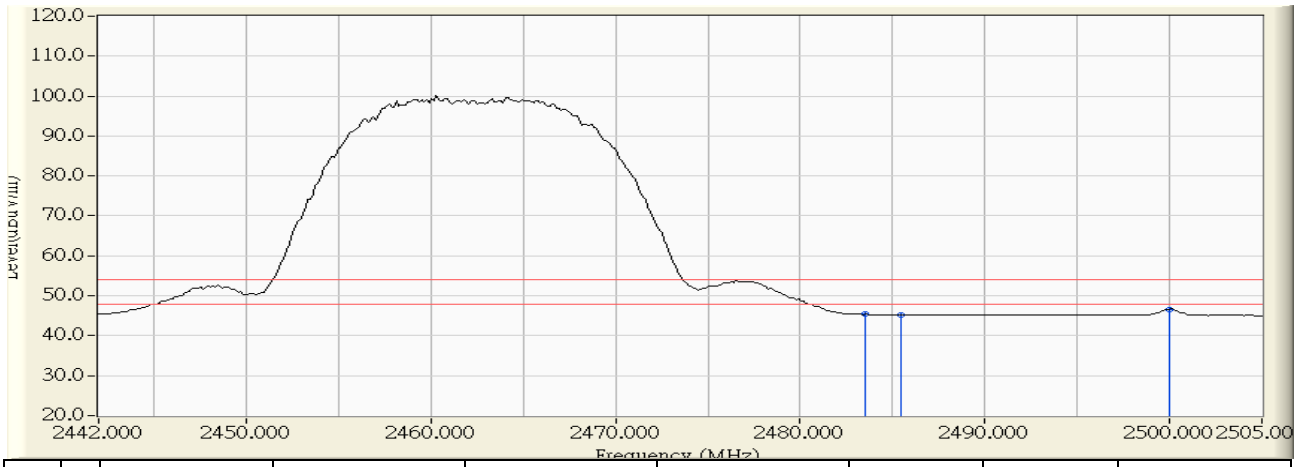


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2483.500	31.512	38.429	69.941	-4.059	74.000	PEAK
2		2484.714	31.524	38.359	69.883	-4.117	74.000	PEAK
3		2500.000	31.638	33.578	65.217	-8.783	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 15:11**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11b_2462MHz**

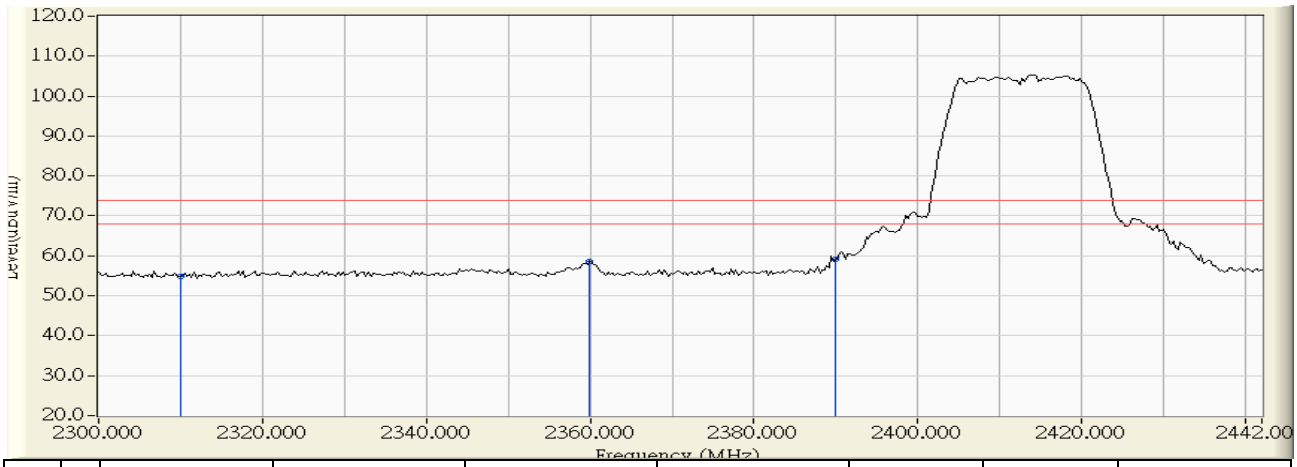


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2483.500	31.512	13.824	45.336	-8.664	54.000	AVERAGE
2		2485.470	31.531	13.704	45.236	-8.764	54.000	AVERAGE
3	*	2500.000	31.638	14.968	46.607	-7.393	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 14:49**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11g_2412MHz**

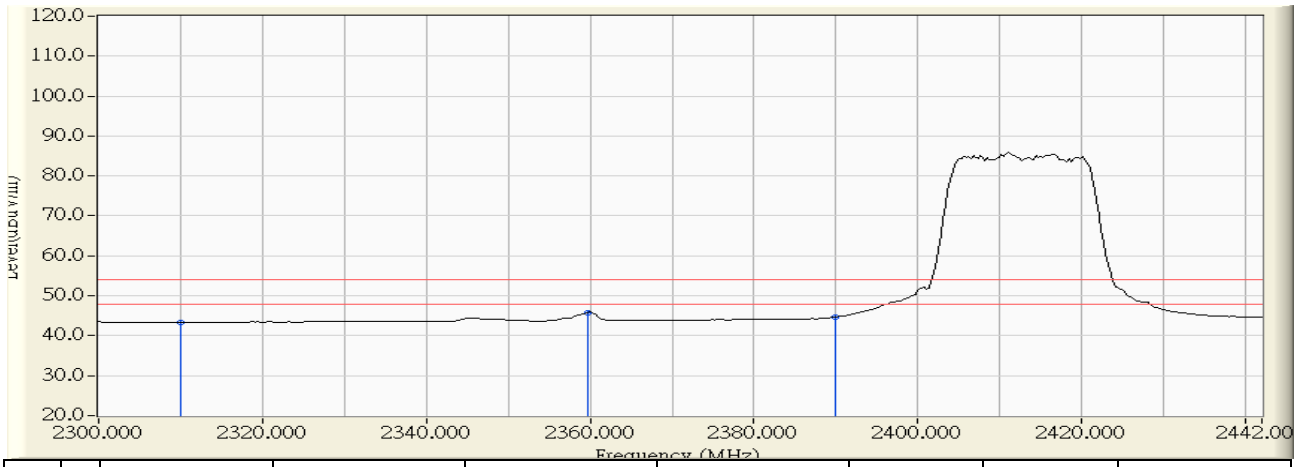


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.779	25.029	54.808	-19.192	74.000	PEAK
2		2359.924	30.277	28.304	58.582	-15.418	74.000	PEAK
3	*	2390.000	30.578	28.587	59.165	-14.835	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 14:51**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11g_2412MHz**

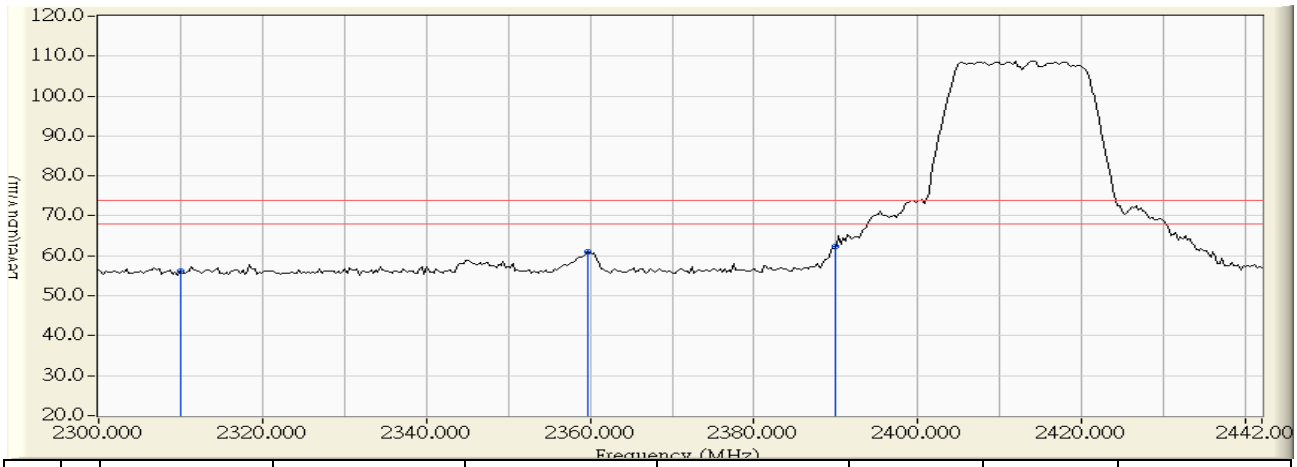


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.779	13.590	43.369	-10.631	54.000	AVERAGE
2	*	2359.640	30.275	15.528	45.803	-8.197	54.000	AVERAGE
3		2390.000	30.578	14.156	44.734	-9.266	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 14:53**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11g_2412MHz**

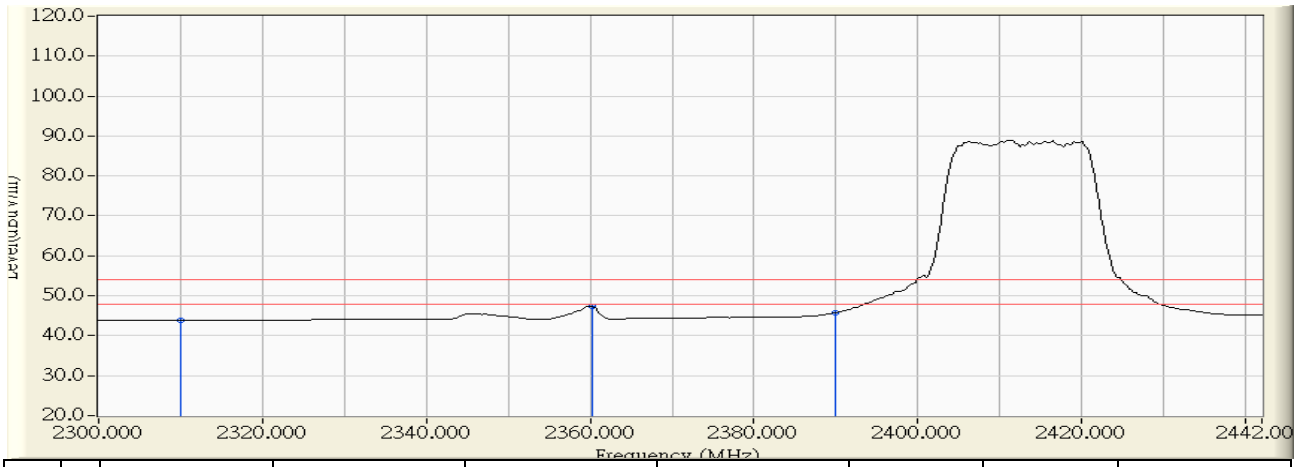


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.779	26.359	56.138	-17.862	74.000	PEAK
2		2359.640	30.275	30.792	61.067	-12.933	74.000	PEAK
3	*	2390.000	30.578	31.898	62.476	-11.524	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 14:54**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11g_2412MHz**

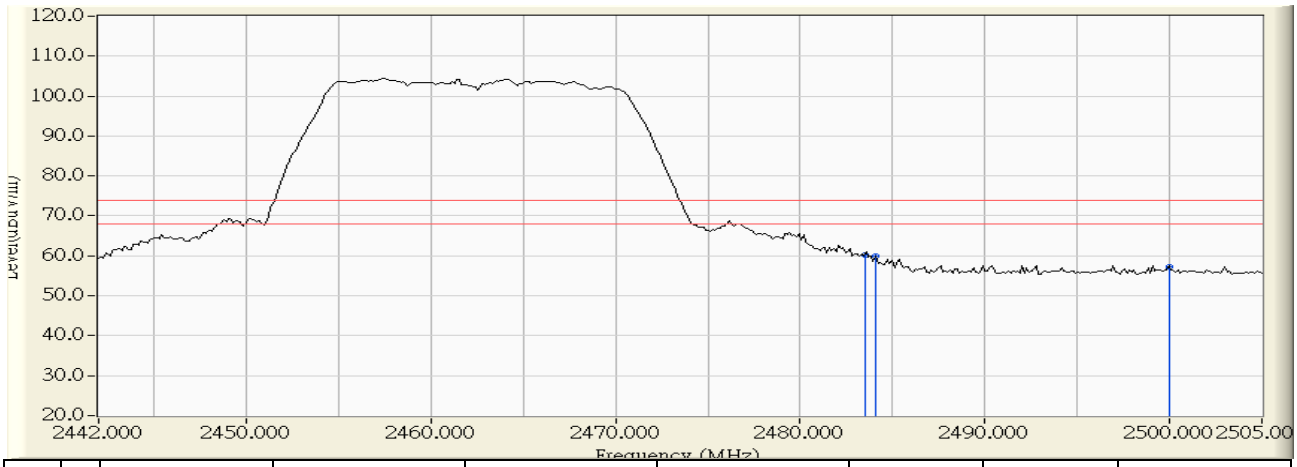


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.779	14.004	43.783	-10.217	54.000	AVERAGE
2	*	2360.208	30.280	17.018	47.298	-6.702	54.000	AVERAGE
3		2390.000	30.578	15.204	45.782	-8.218	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 14:58**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11g_2462MHz**

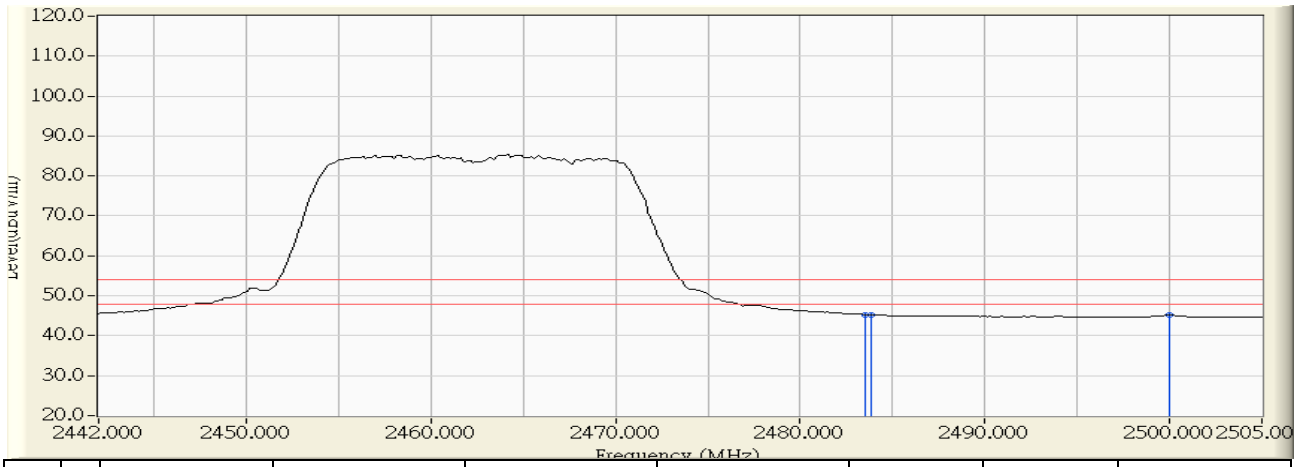


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2483.500	31.512	28.799	60.311	-13.689	74.000	PEAK
2		2484.084	31.518	28.509	60.027	-13.973	74.000	PEAK
3		2500.000	31.638	25.499	57.138	-16.862	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 14:59**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11g_2462MHz**

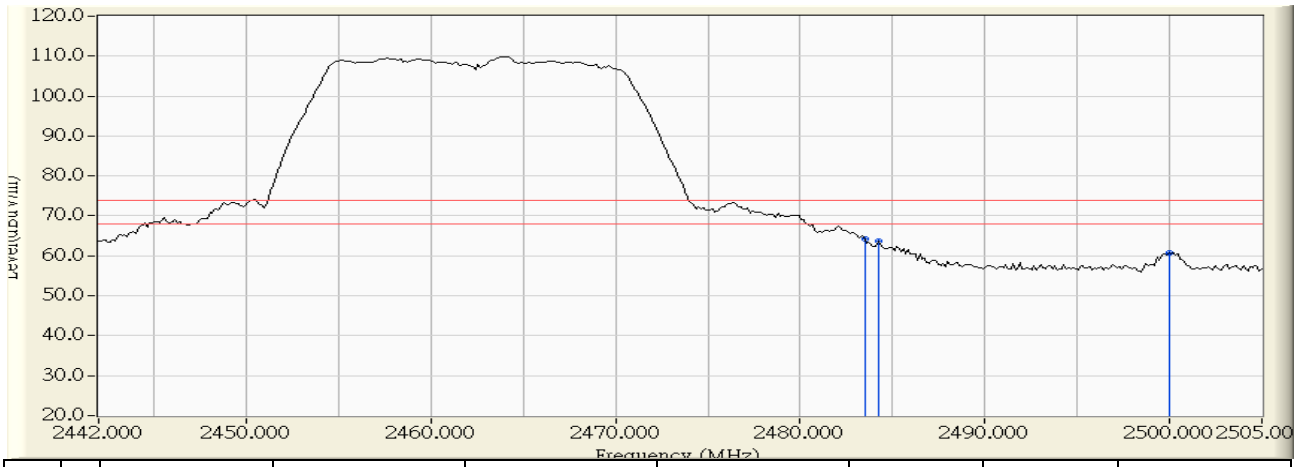


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2483.500	31.512	13.802	45.314	-8.686	54.000	AVERAGE
2		2483.832	31.515	13.695	45.210	-8.790	54.000	AVERAGE
3		2500.000	31.638	13.465	45.104	-8.896	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 15:01**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11g_2462MHz**

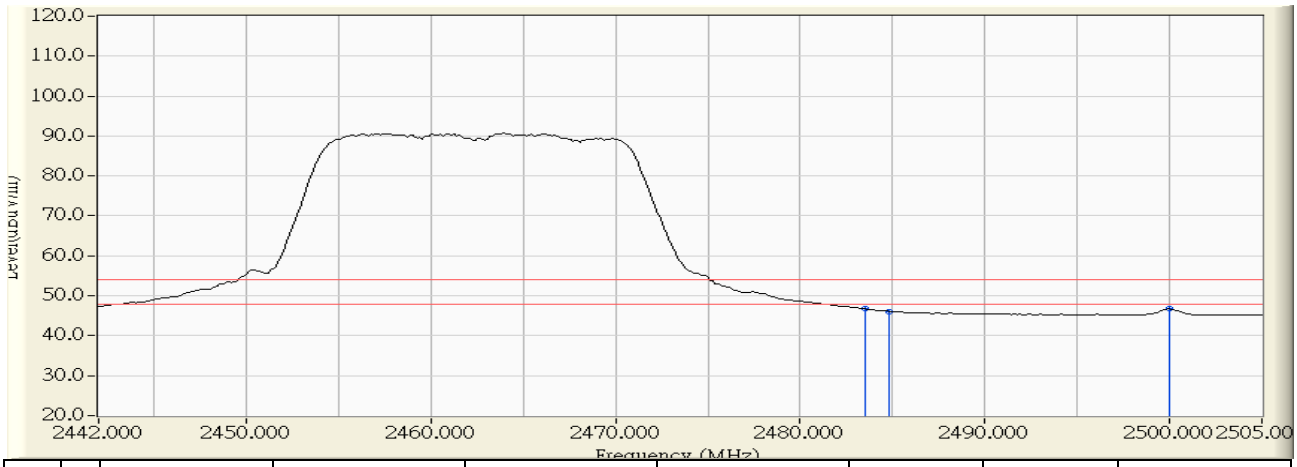


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2483.500	31.512	32.651	64.163	-9.837	74.000	PEAK
2		2484.210	31.519	32.128	63.647	-10.353	74.000	PEAK
3		2500.000	31.638	29.072	60.711	-13.289	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 15:02**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11g_2462MHz**

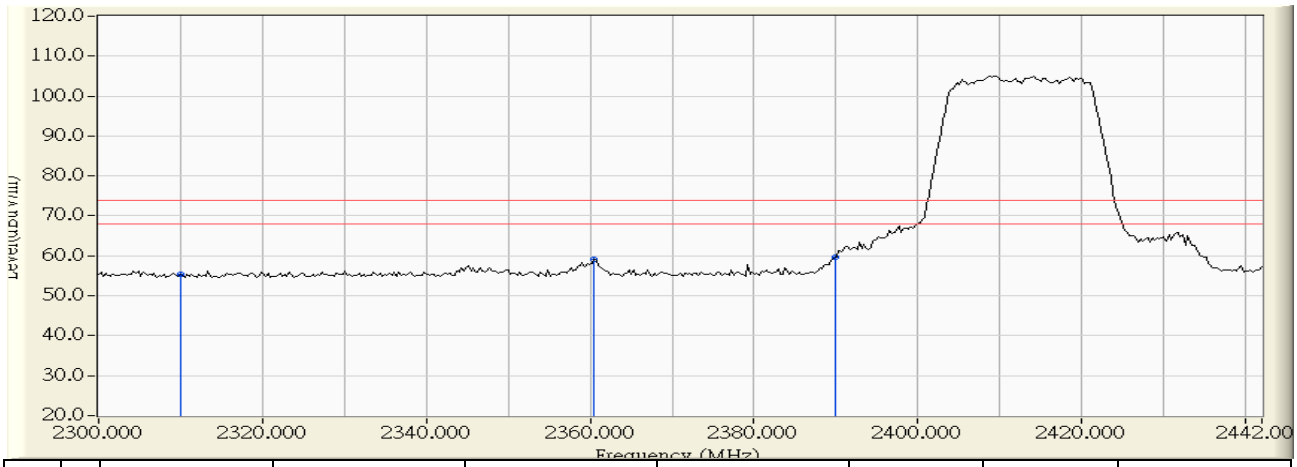


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2483.500	31.512	15.192	46.704	-7.296	54.000	AVERAGE
2		2484.840	31.526	14.577	46.102	-7.898	54.000	AVERAGE
3	*	2500.000	31.638	15.128	46.767	-7.233	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 15:26**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n20MHz_2412MHz**

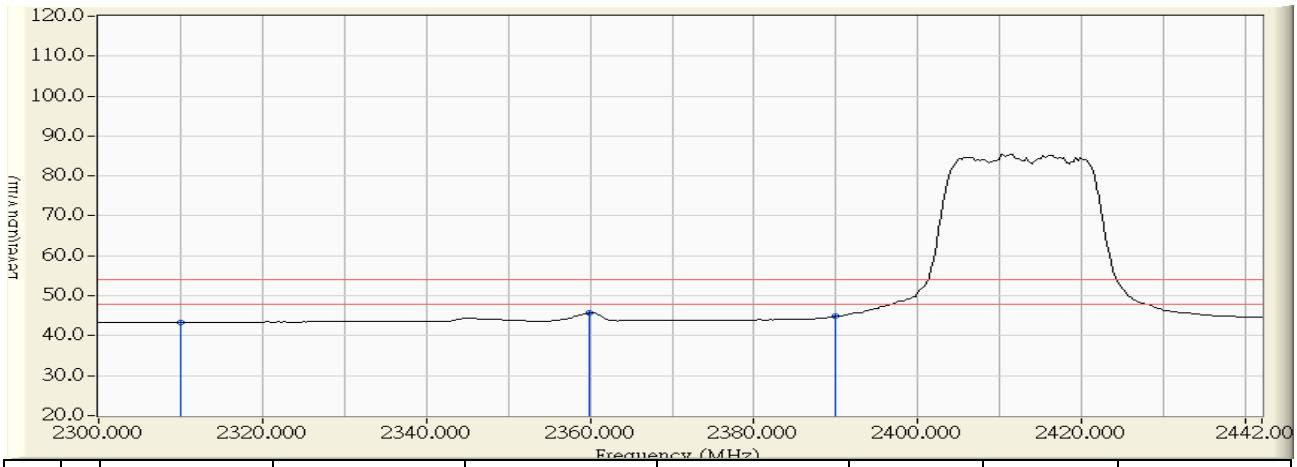


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.779	25.672	55.451	-18.549	74.000	PEAK
2		2360.492	30.284	28.825	59.108	-14.892	74.000	PEAK
3	*	2390.000	30.578	29.109	59.687	-14.313	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 15:27**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n20MHz_2412MHz**

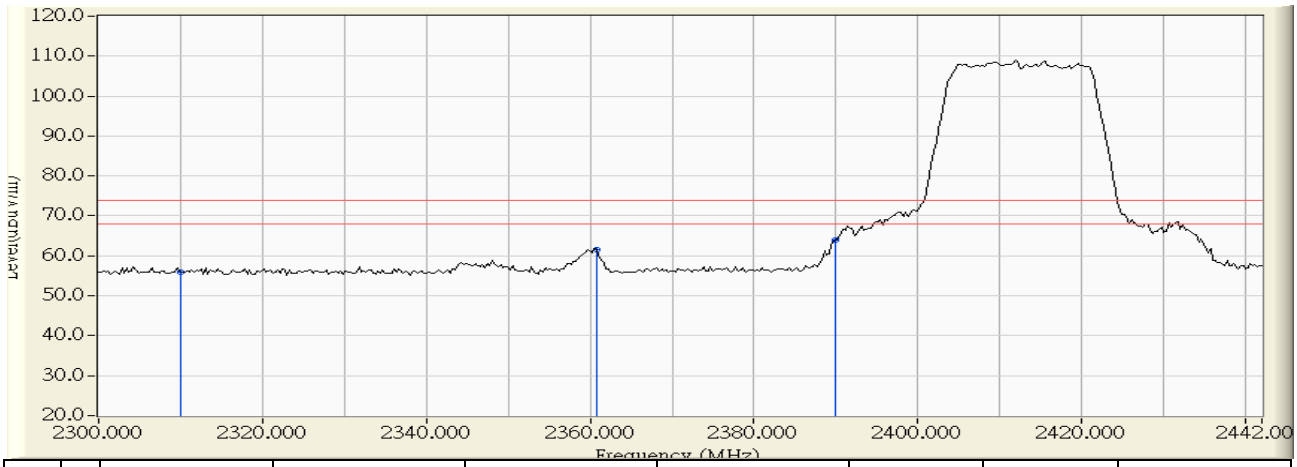


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.779	13.559	43.338	-10.662	54.000	AVERAGE
2	*	2359.924	30.277	15.372	45.650	-8.350	54.000	AVERAGE
3		2390.000	30.578	14.224	44.802	-9.198	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 15:29**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n20MHz_2412MHz**

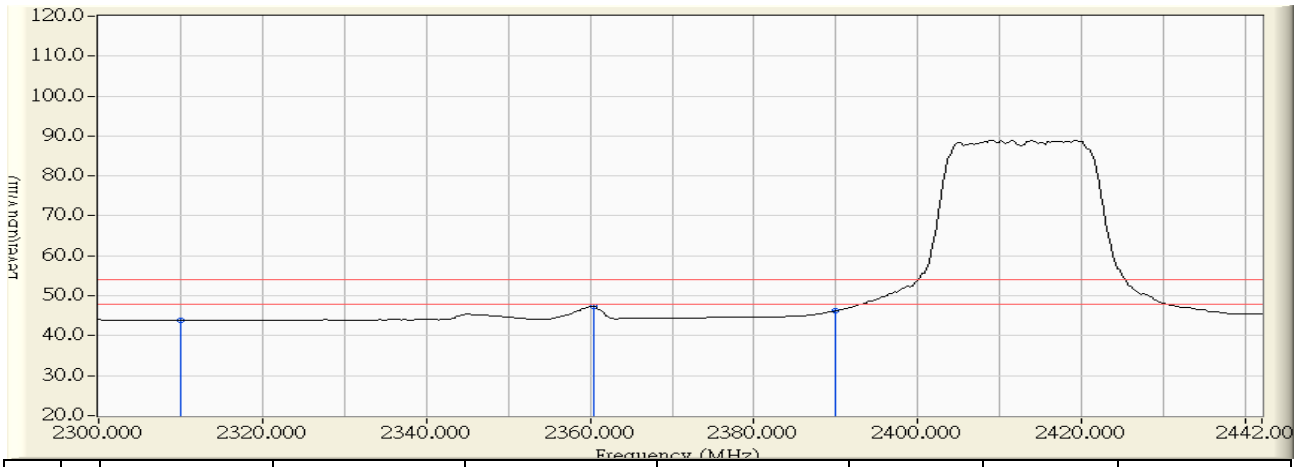


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.779	26.088	55.867	-18.133	74.000	PEAK
2		2360.776	30.286	31.269	61.555	-12.445	74.000	PEAK
3	*	2390.000	30.578	33.473	64.051	-9.949	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 15:30**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n20MHz_2412MHz**

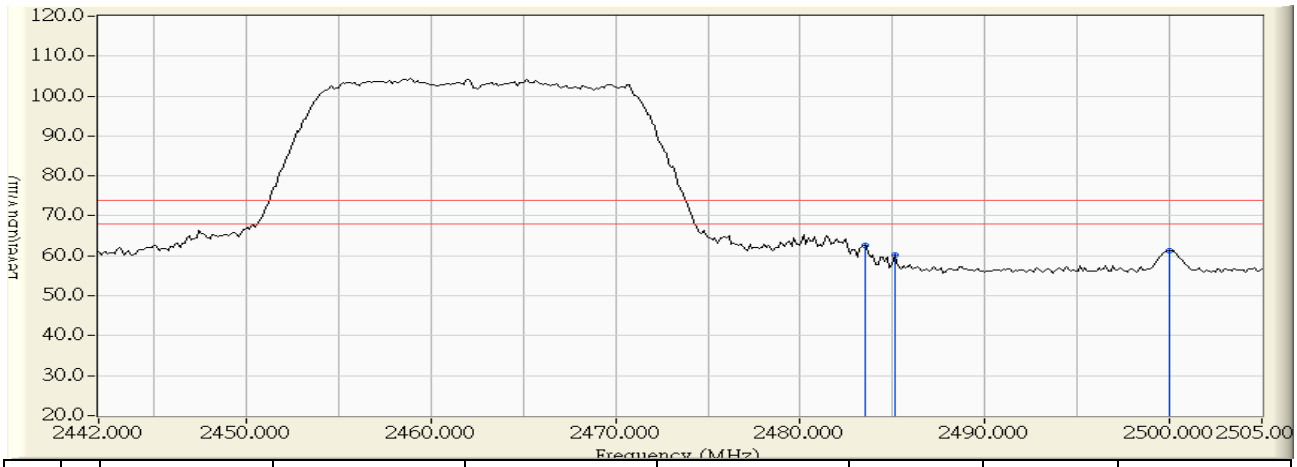


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.779	14.064	43.843	-10.157	54.000	AVERAGE
2	*	2360.492	30.284	17.106	47.389	-6.611	54.000	AVERAGE
3		2390.000	30.578	15.610	46.188	-7.812	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 15:34**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n20MHz_2462MHz**

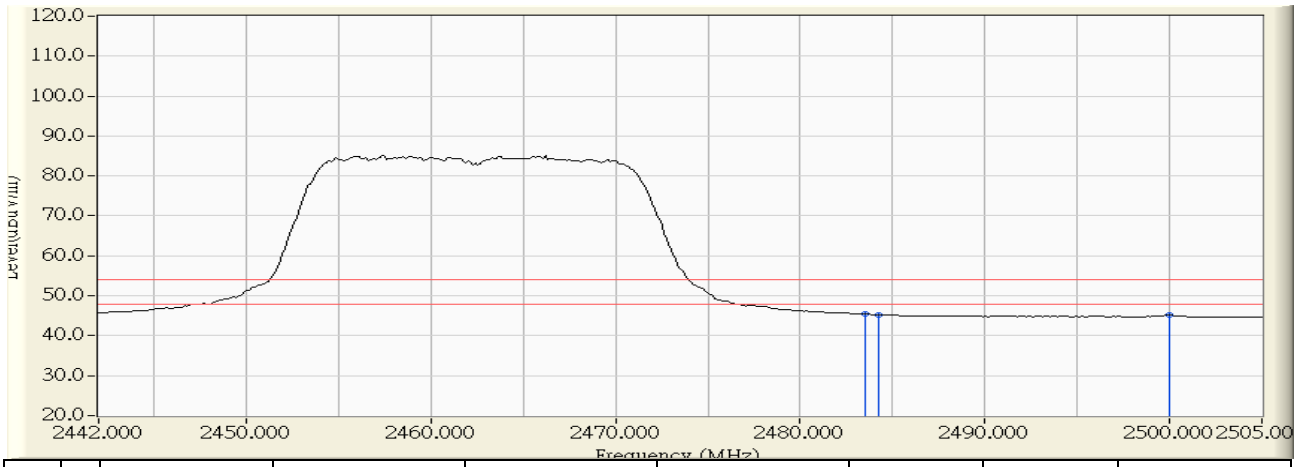


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2483.500	31.512	31.080	62.592	-11.408	74.000	PEAK
2		2485.092	31.528	28.801	60.329	-13.671	74.000	PEAK
3		2500.000	31.638	29.691	61.330	-12.670	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 15:35**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n20MHz_2462MHz**

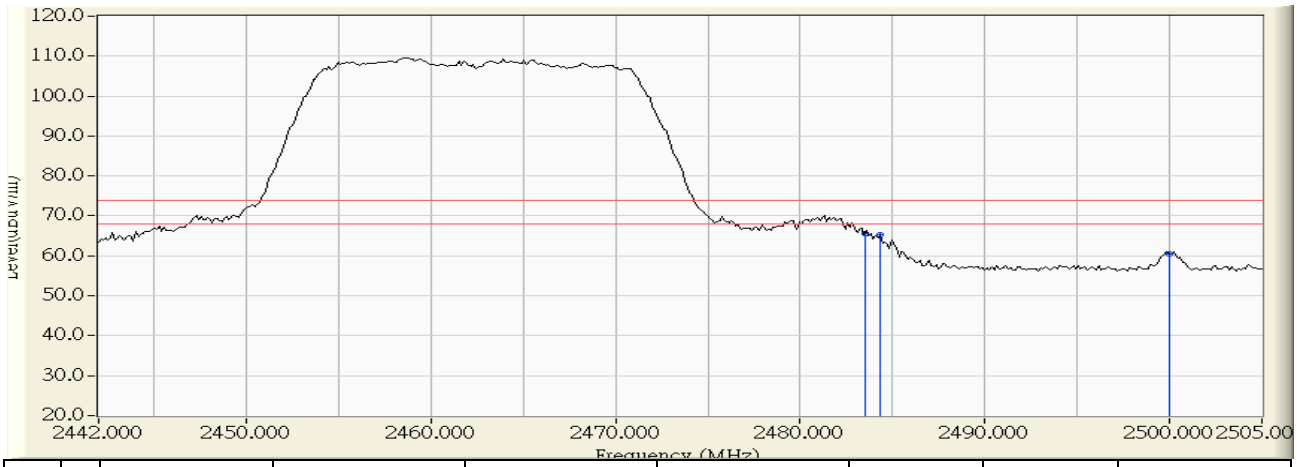


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2483.500	31.512	13.889	45.401	-8.599	54.000	AVERAGE
2		2484.210	31.519	13.698	45.217	-8.783	54.000	AVERAGE
3		2500.000	31.638	13.441	45.080	-8.920	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 15:37**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n20MHz_2462MHz**

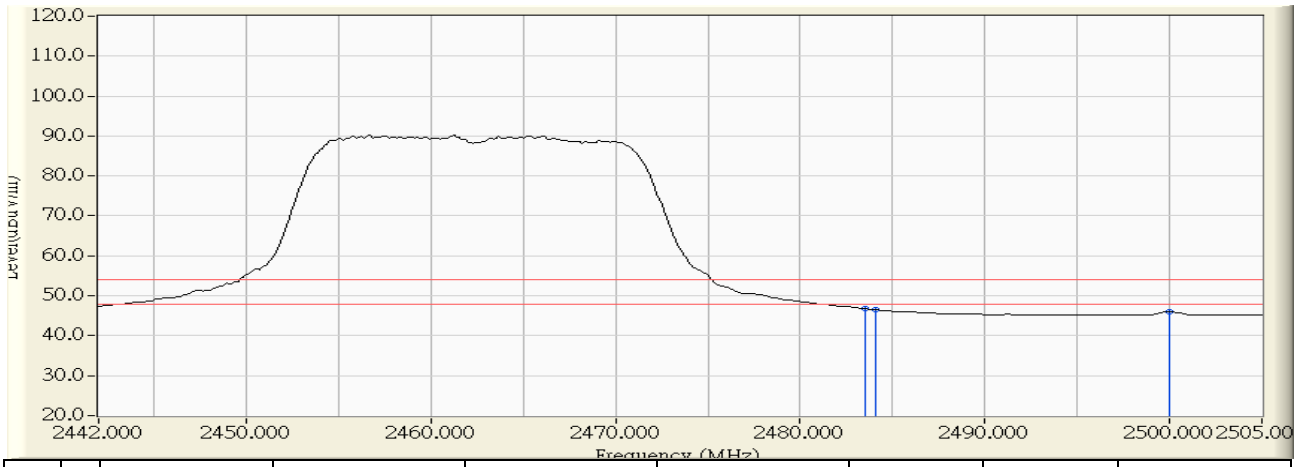


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2483.500	31.512	34.153	65.665	-8.335	74.000	PEAK
2		2484.336	31.520	33.722	65.242	-8.758	74.000	PEAK
3		2500.000	31.638	28.886	60.525	-13.475	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 15:37**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n20MHz_2462MHz**

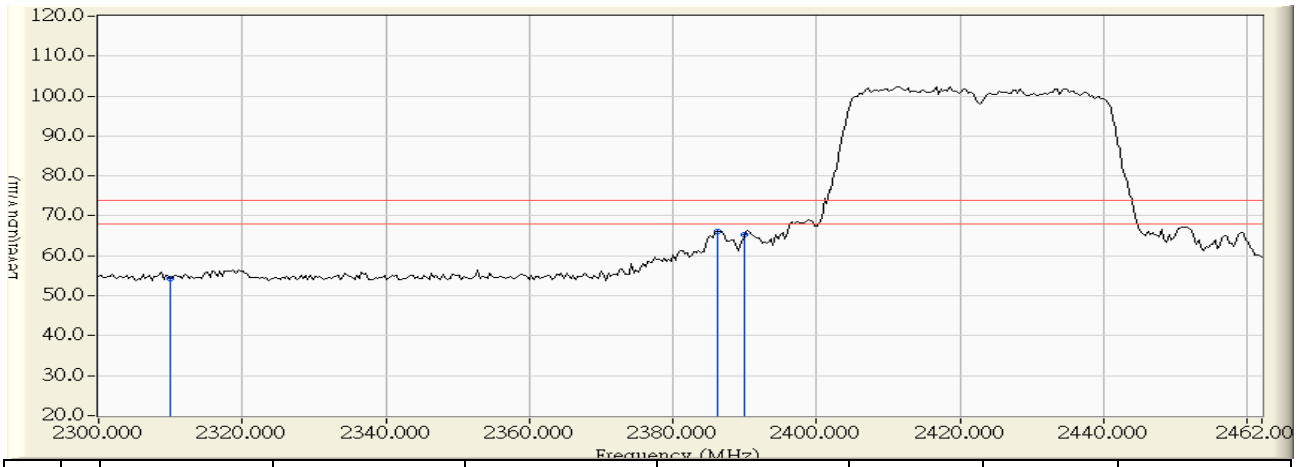


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2483.500	31.512	15.209	46.721	-7.279	54.000	AVERAGE
2		2484.084	31.518	14.967	46.485	-7.515	54.000	AVERAGE
3		2500.000	31.638	14.451	46.090	-7.910	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 14:23**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2422MHz**

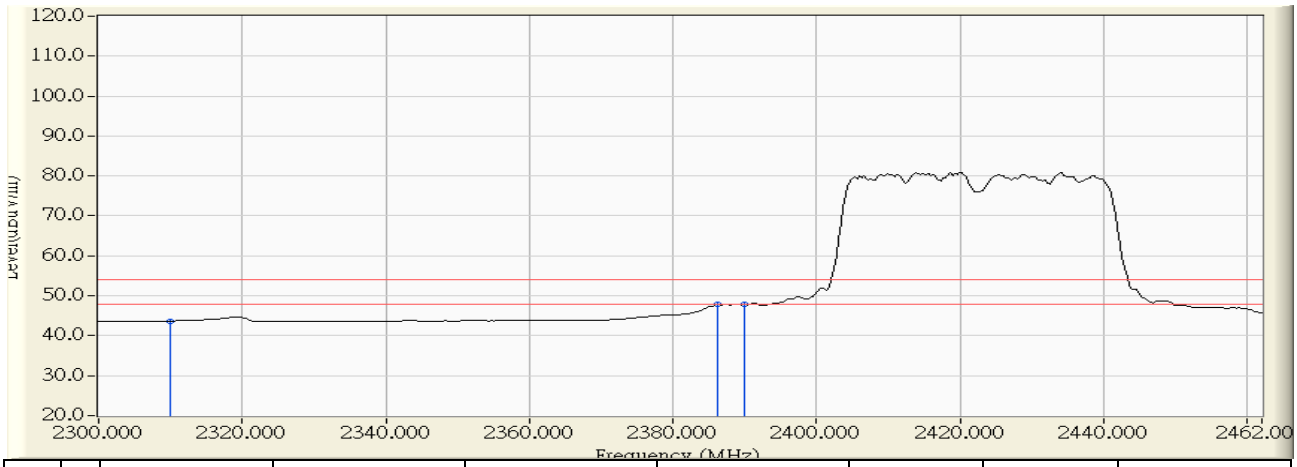


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.779	24.561	54.340	-19.660	74.000	PEAK
2	*	2386.184	30.540	35.670	66.210	-7.790	74.000	PEAK
3		2390.000	30.578	34.796	65.374	-8.626	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 14:23**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2422MHz**

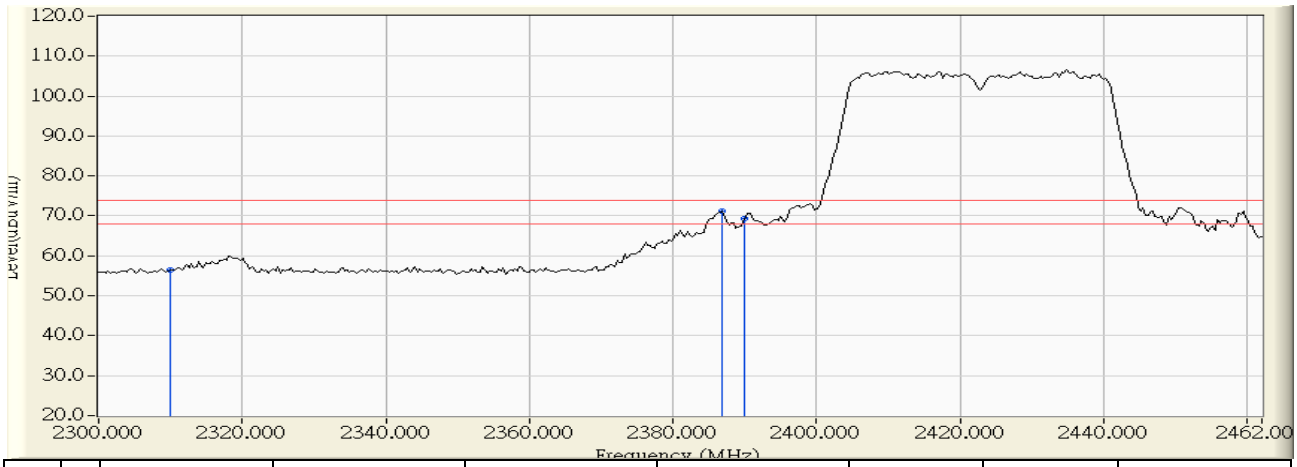


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.779	13.852	43.631	-10.369	54.000	AVERAGE
2		2386.184	30.540	17.291	47.831	-6.169	54.000	AVERAGE
3	*	2390.000	30.578	17.287	47.865	-6.135	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 14:44**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2422MHz**

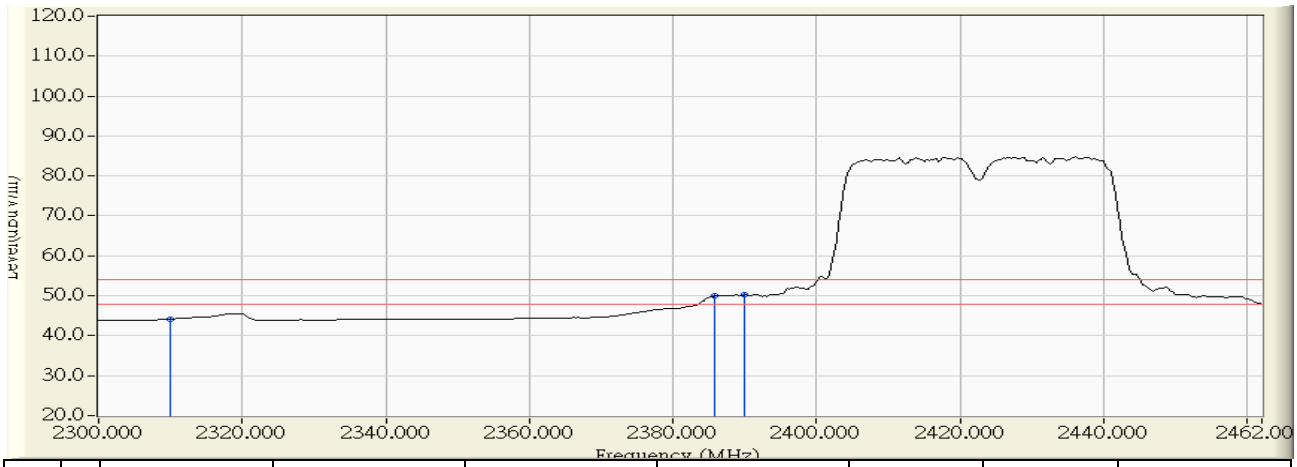


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.779	26.581	56.360	-17.640	74.000	PEAK
2	*	2386.832	30.546	40.564	71.110	-2.890	74.000	PEAK
3		2390.000	30.578	38.818	69.396	-4.604	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 14:45**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2422MHz**

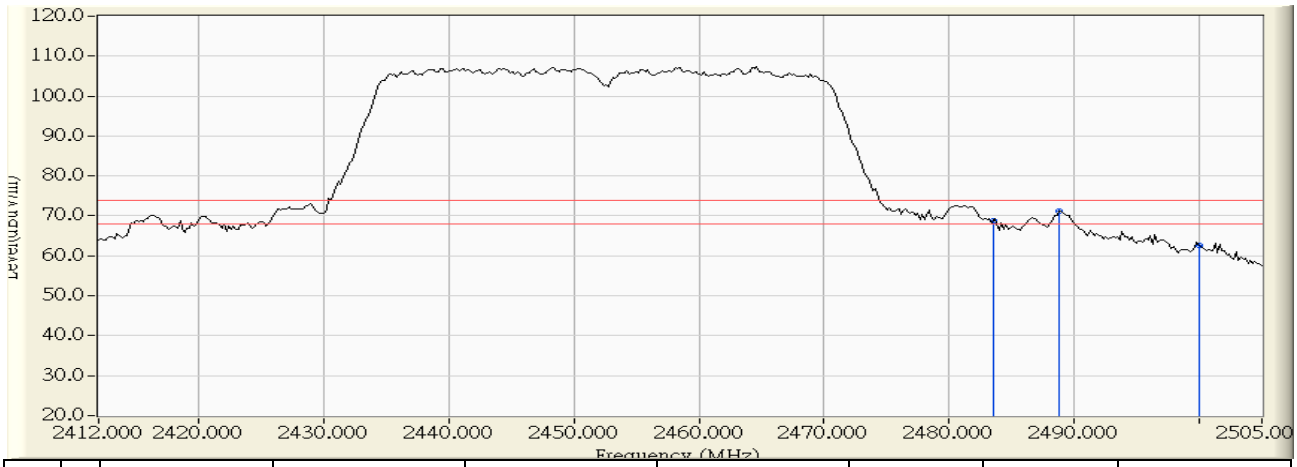


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.779	14.325	44.104	-9.896	54.000	AVERAGE
2		2385.860	30.537	19.363	49.900	-4.100	54.000	AVERAGE
3	*	2390.000	30.578	19.637	50.215	-3.785	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 14:35**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2452MHz**

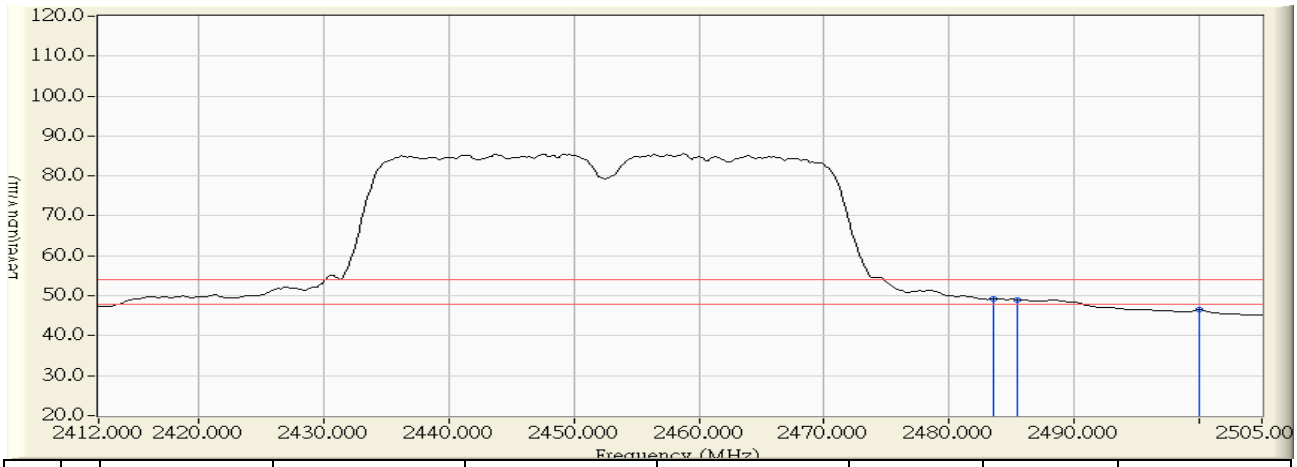


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2483.500	31.512	37.308	68.820	-5.180	74.000	PEAK
2	*	2488.818	31.565	39.549	71.114	-2.886	74.000	PEAK
3		2500.000	31.638	31.083	62.722	-11.278	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 14:36**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2452MHz**

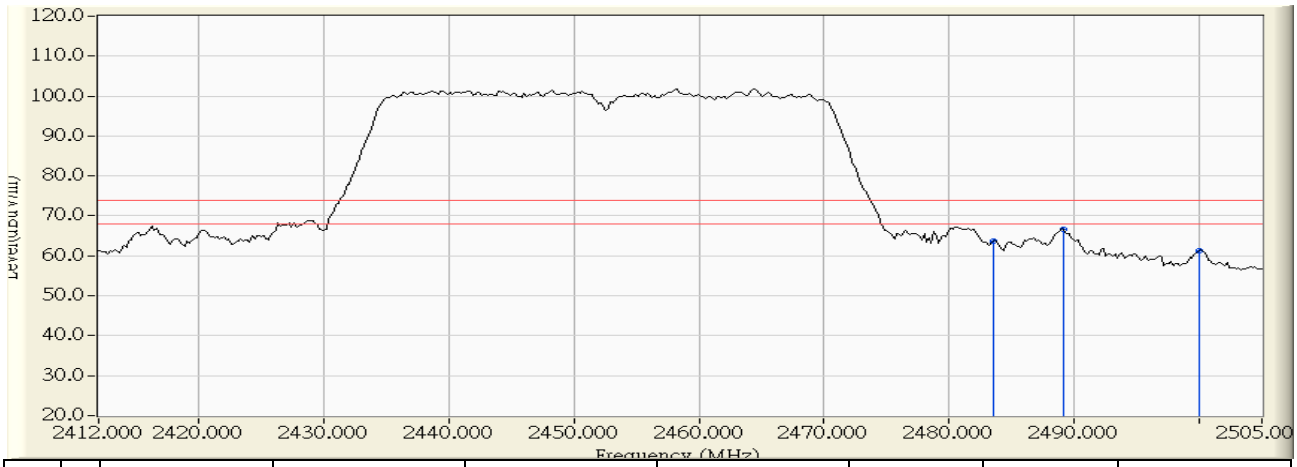


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2483.500	31.512	17.641	49.153	-4.847	54.000	AVERAGE
2		2485.470	31.531	17.502	49.034	-4.966	54.000	AVERAGE
3		2500.000	31.638	14.796	46.435	-7.565	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 14:39**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2452MHz**

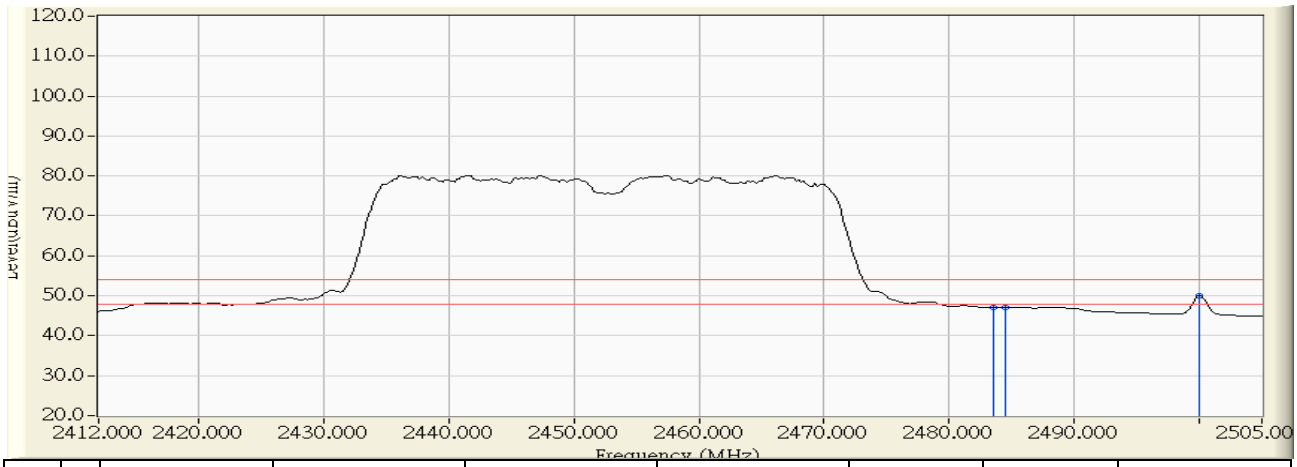


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2483.500	31.512	32.105	63.617	-10.383	74.000	PEAK
2	*	2489.190	31.569	35.033	66.602	-7.398	74.000	PEAK
3		2500.000	31.638	29.754	61.393	-12.607	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/03/27 - 14:40**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V/60Hz**
EUT : VDSL2 Security Firewall	**Note : 802.11n40MHz_2452MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2483.500	31.512	15.575	47.087	-6.913	54.000	AVERAGE
2		2484.540	31.522	15.573	47.095	-6.905	54.000	AVERAGE
3	*	2500.000	31.638	18.325	49.964	-4.036	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

7. Occupied Bandwidth

7.1. Test Equipment

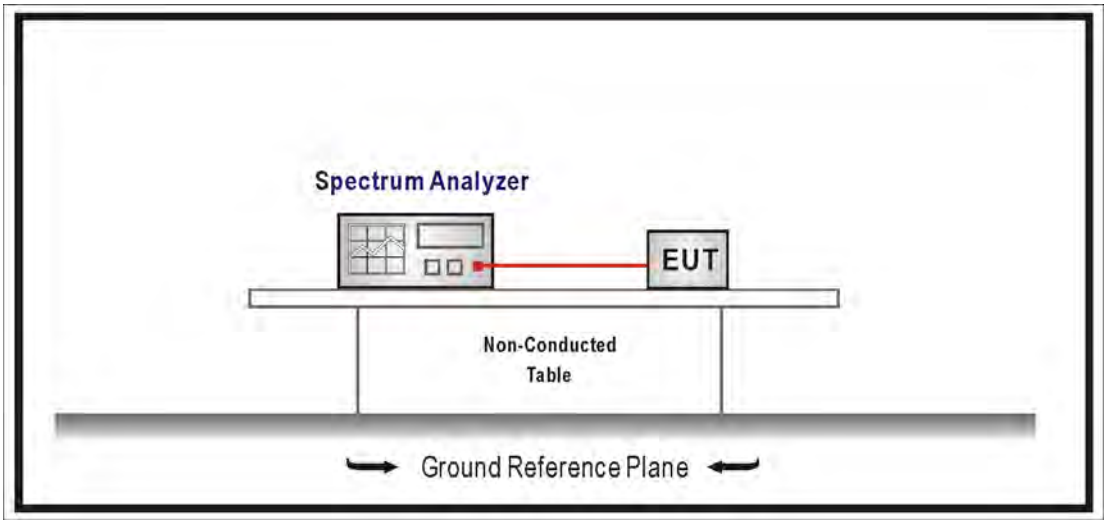
The following test equipments are used during the test:

Occupied Bandwidth / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2014/08/05

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

7.2. Test Setup



7.3. Test Procedures

The EUT was setup according to ANSI C63.4: 2009; tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 100 kHz, Span greater than RBW.

7.4. Limits

The 6 dB bandwidth must be greater than 500 kHz.

7.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2012

7.6. Uncertainty

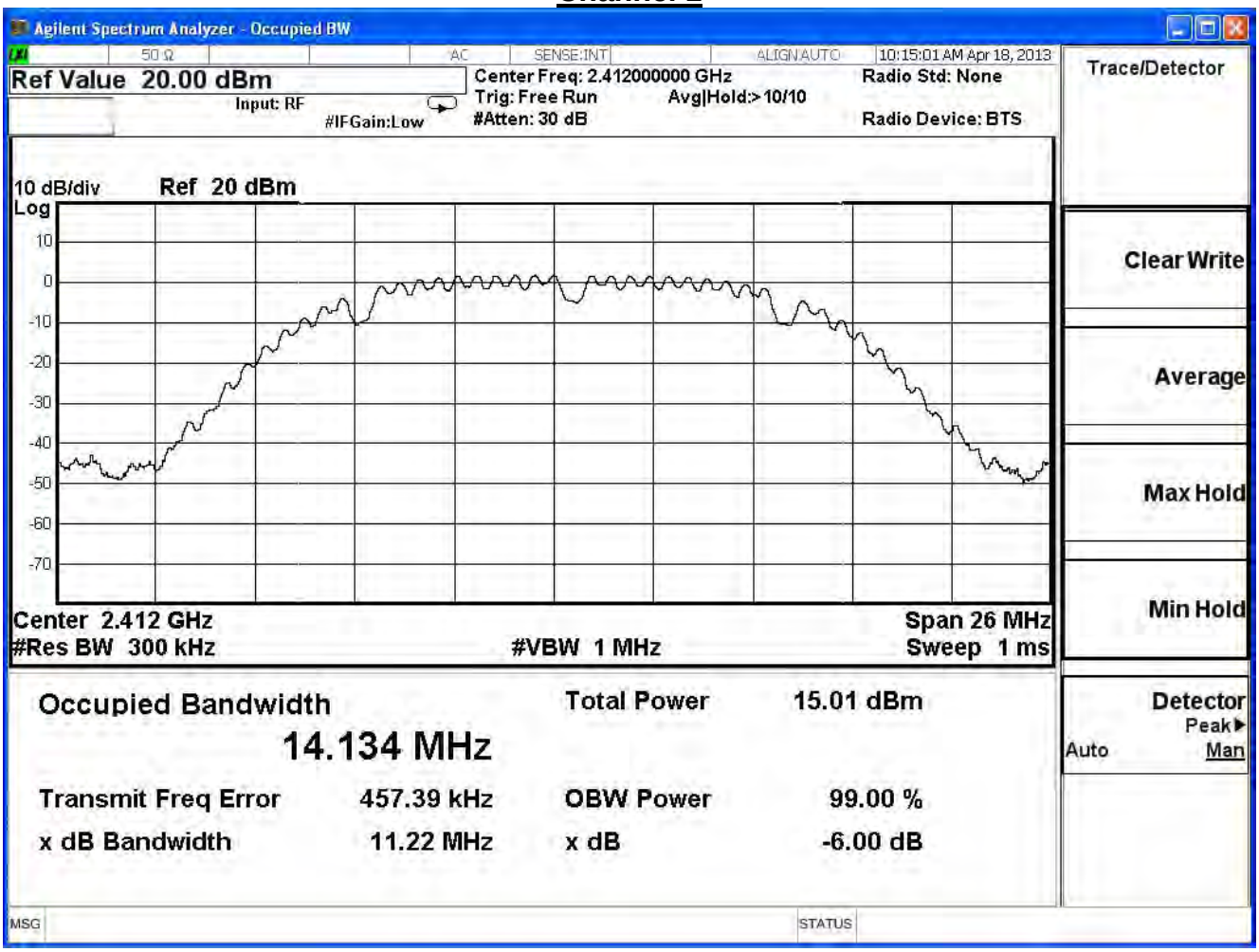
The measurement uncertainty is defined as ±150Hz

7.7. Test Result

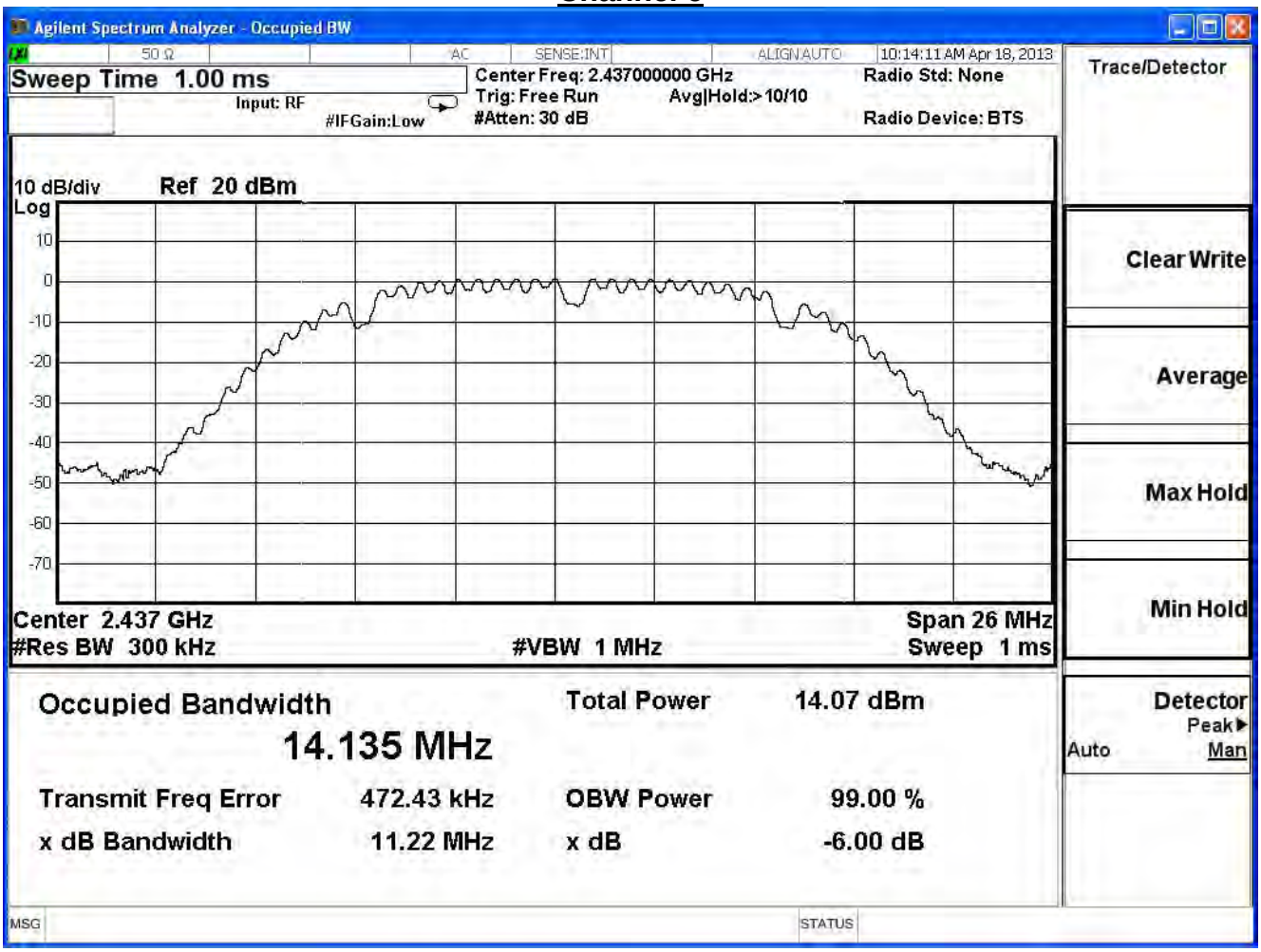
Product	VDSL2 Security Firewall		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/18	Test Site	SR7

802.11 b				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
1	2412	11.22	≧0.5	Pass
6	2437	11.22	≧0.5	Pass
11	2462	11.21	≧0.5	Pass

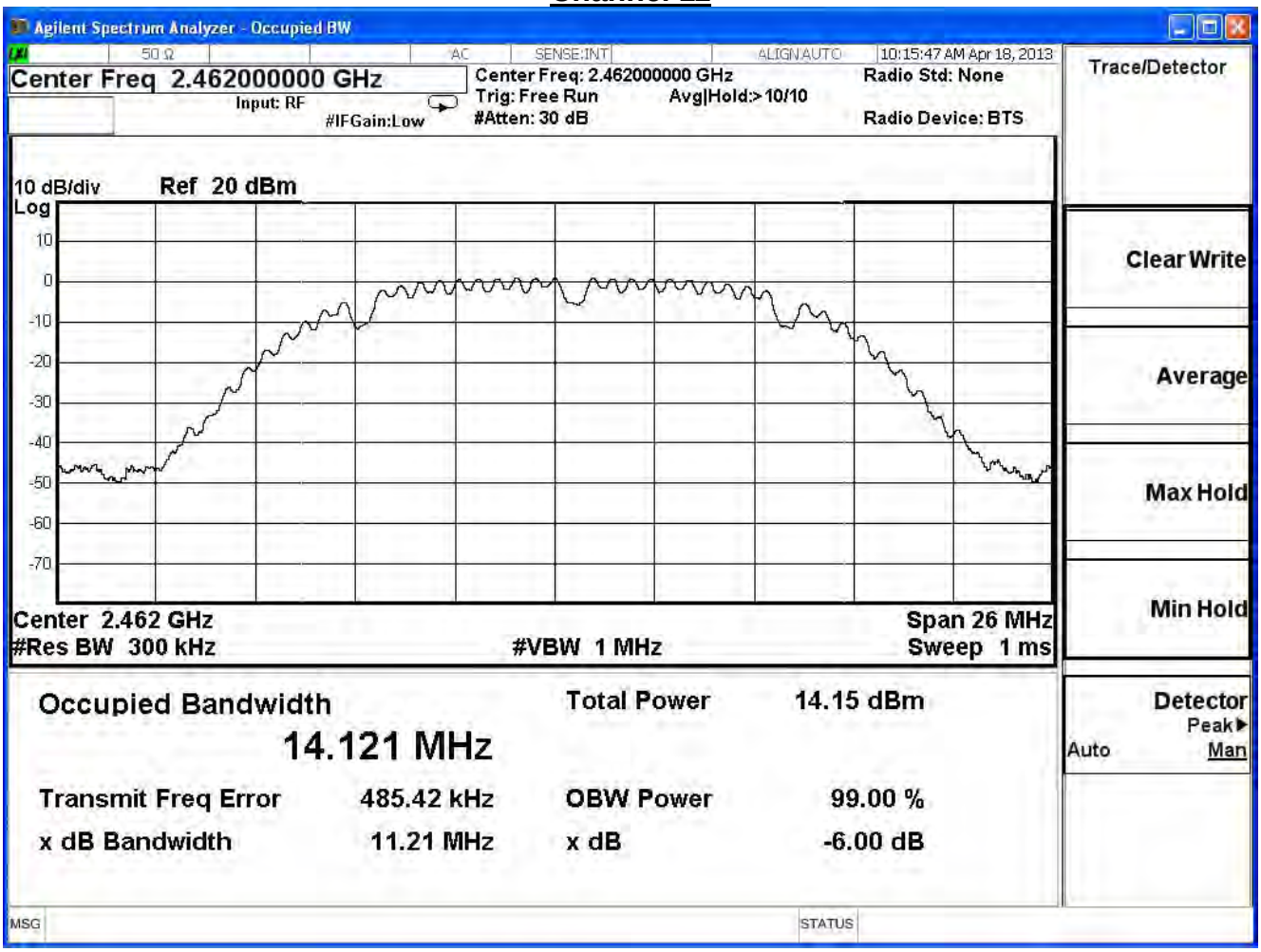
Channel 1



Channel 6


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:14:11 AM Apr 18, 2013
Sweep Time 1.00 ms
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center 2.437 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 26 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Occupied Bandwidth
14.135 MHz
Total Power
14.07 dBm
Transmit Freq Error
472.43 kHz
OBW Power
99.00 %
x dB Bandwidth
11.22 MHz
x dB
-6.00 dB
Detector
Peak
Auto
Man
MSG
STATUS

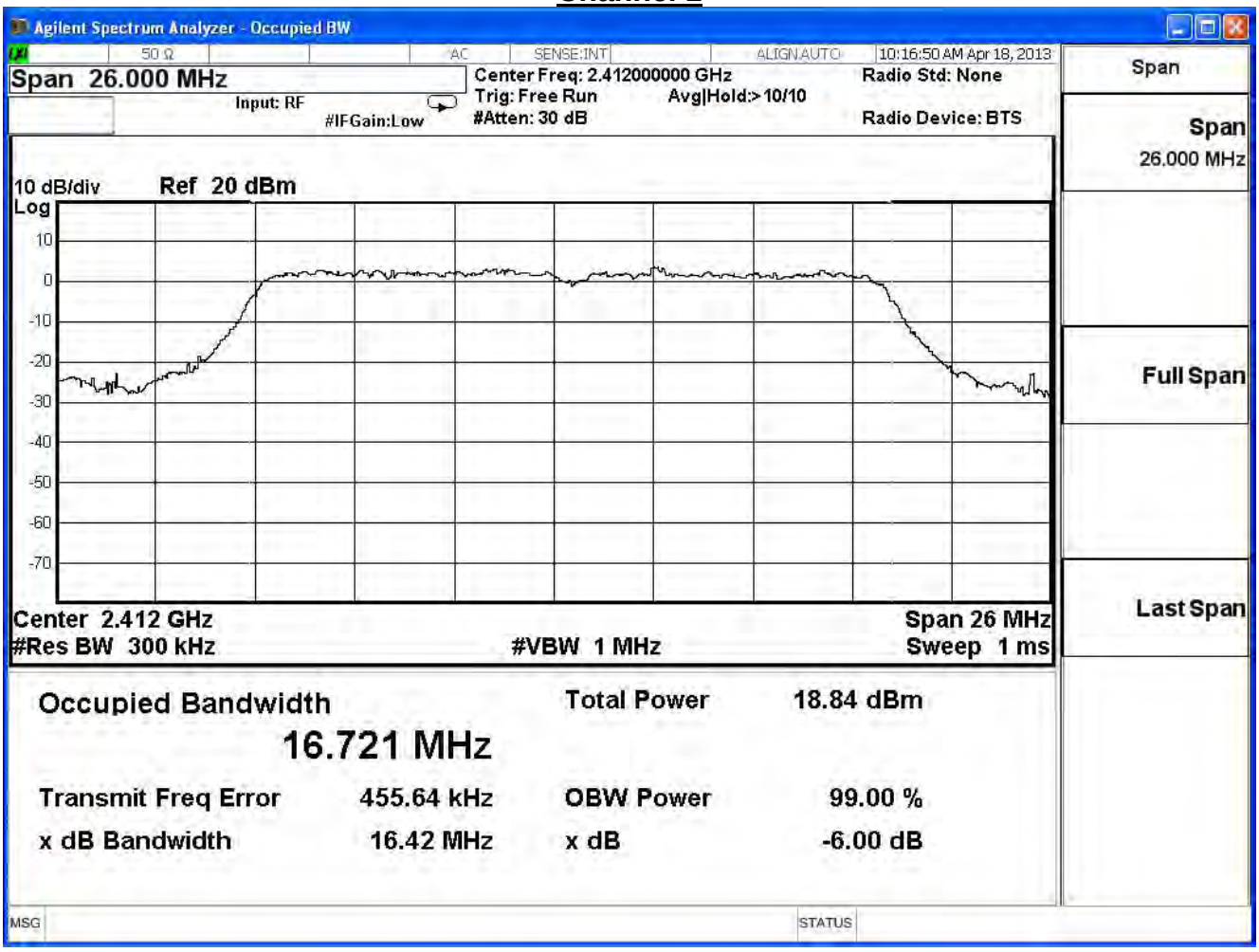
Channel 11


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:15:47 AM Apr 18, 2013
Center Freq 2.462000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.462000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center 2.462 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 26 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Occupied Bandwidth
14.121 MHz
Total Power
14.15 dBm
Transmit Freq Error
485.42 kHz
OBW Power
99.00 %
x dB Bandwidth
11.21 MHz
x dB
-6.00 dB
Detector
Peak
Auto
Man
MSG
STATUS

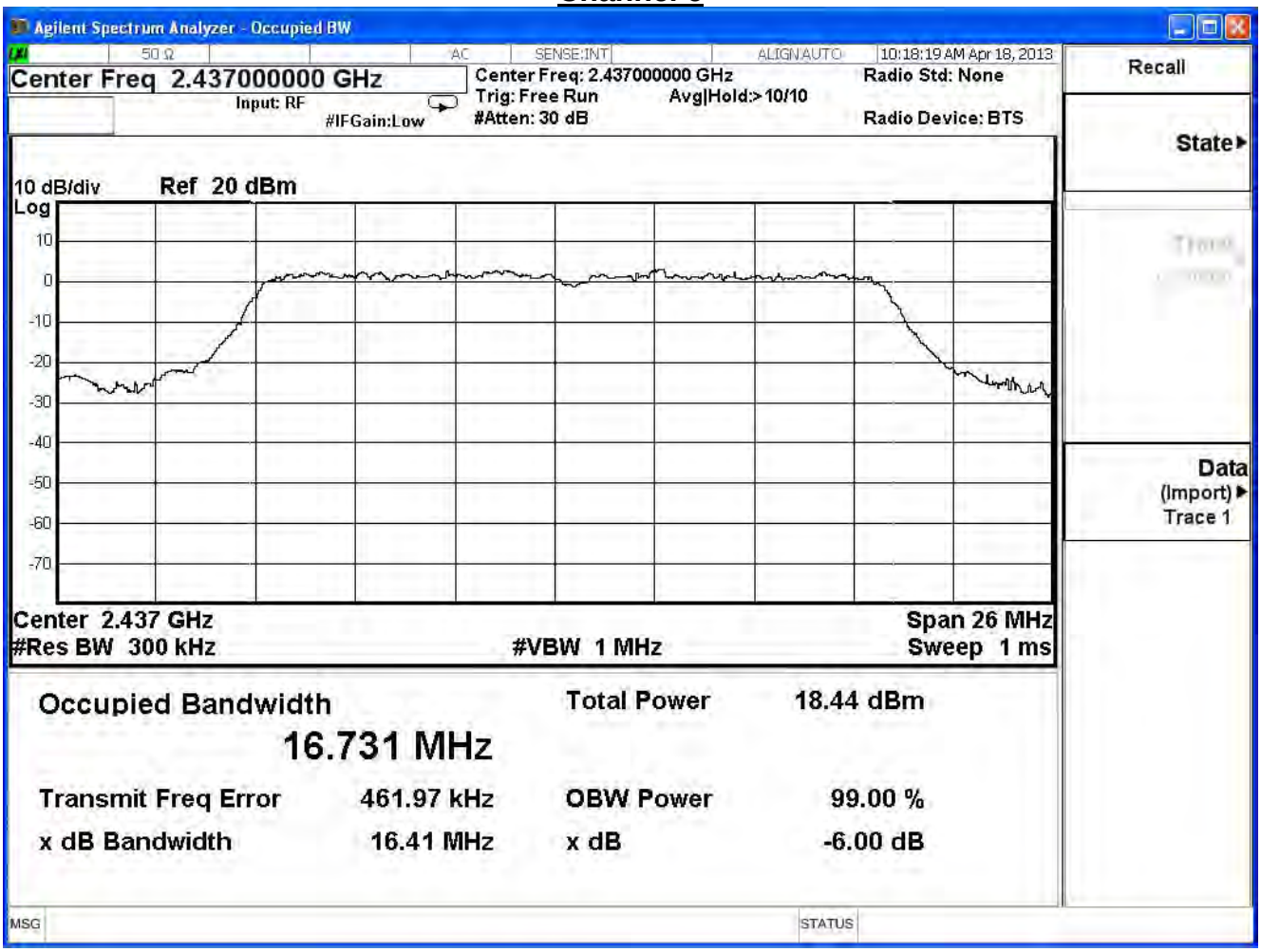
Product	VDSL2 Security Firewall		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/18	Test Site	SR7

IEEE 802.11g				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
1	2412	16.42	≧0.5	Pass
6	2437	16.41	≧0.5	Pass
11	2462	16.38	≧0.5	Pass

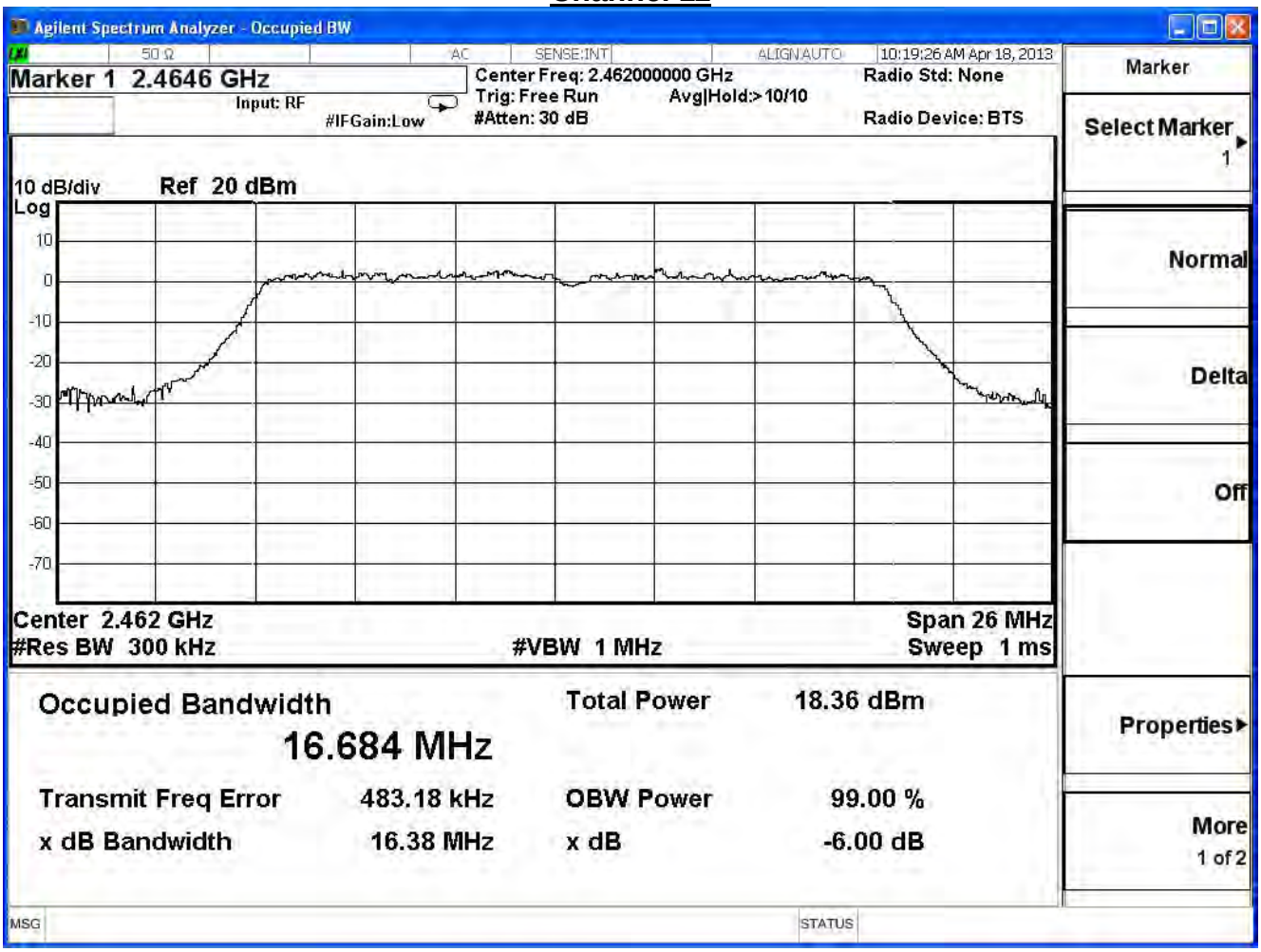
Channel 1



Channel 6


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:18:19 AM Apr 18, 2013
Center Freq 2.437000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Recall
State
10 dB/div
Ref 20 dBm
Log
10
0
-10
-20
-30
-40
-50
-60
-70
Center 2.437 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 26 MHz
Sweep 1 ms
Data
(Import)
Trace 1
Occupied Bandwidth
16.731 MHz
Total Power
18.44 dBm
Transmit Freq Error
461.97 kHz
OBW Power
99.00 %
x dB Bandwidth
16.41 MHz
x dB
-6.00 dB
MSG
STATUS

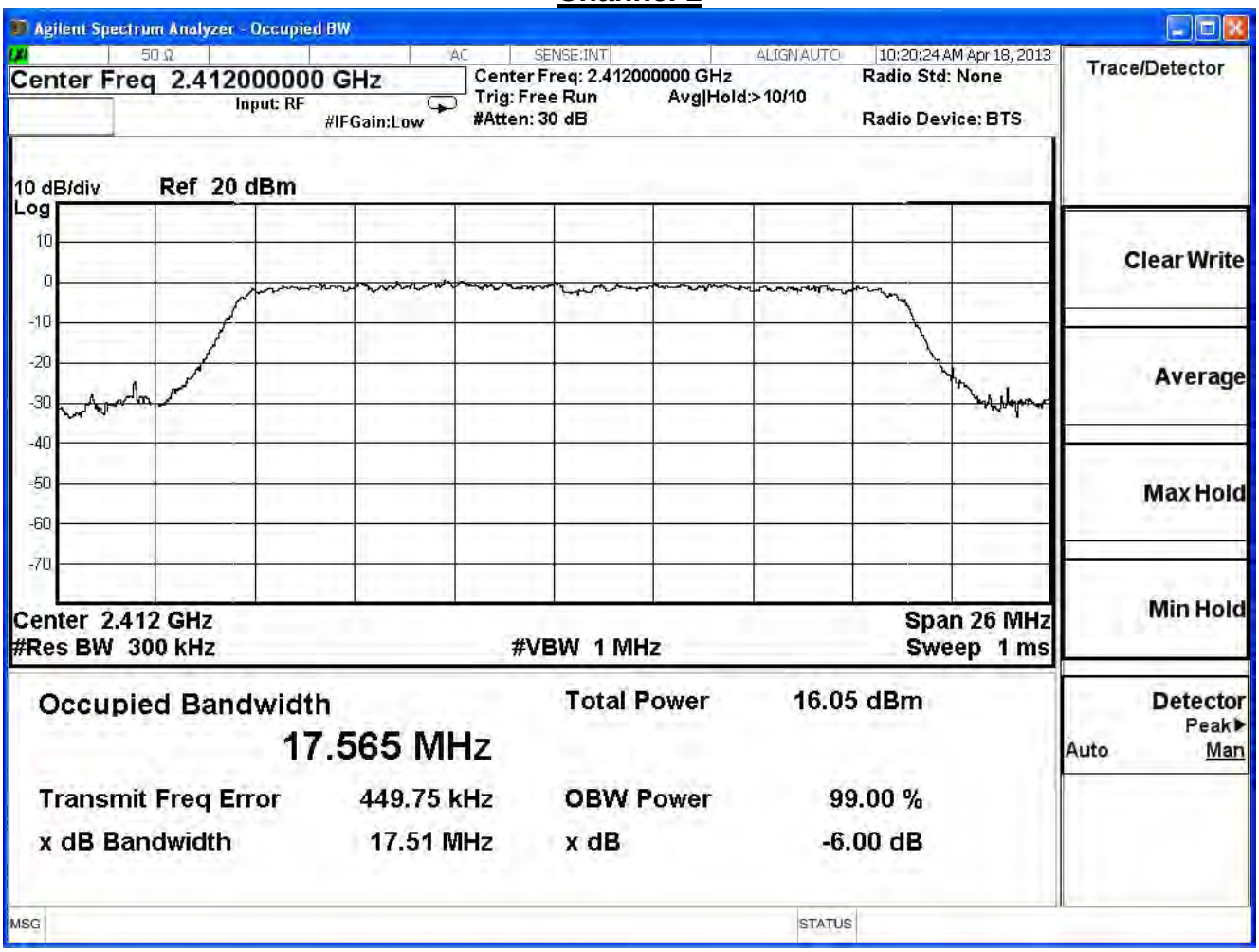
Channel 11


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:19:26 AM Apr 18, 2013
Marker 1 2.4646 GHz
Input: RF
#IFGain:Low
Center Freq: 2.462000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center 2.462 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 26 MHz
Sweep 1 ms
Occupied Bandwidth
16.684 MHz
Total Power
18.36 dBm
Transmit Freq Error
483.18 kHz
OBW Power
99.00 %
x dB Bandwidth
16.38 MHz
x dB
-6.00 dB
MSG
STATUS
Marker
Select Marker
1
Normal
Delta
Off
Properties
More
1 of 2

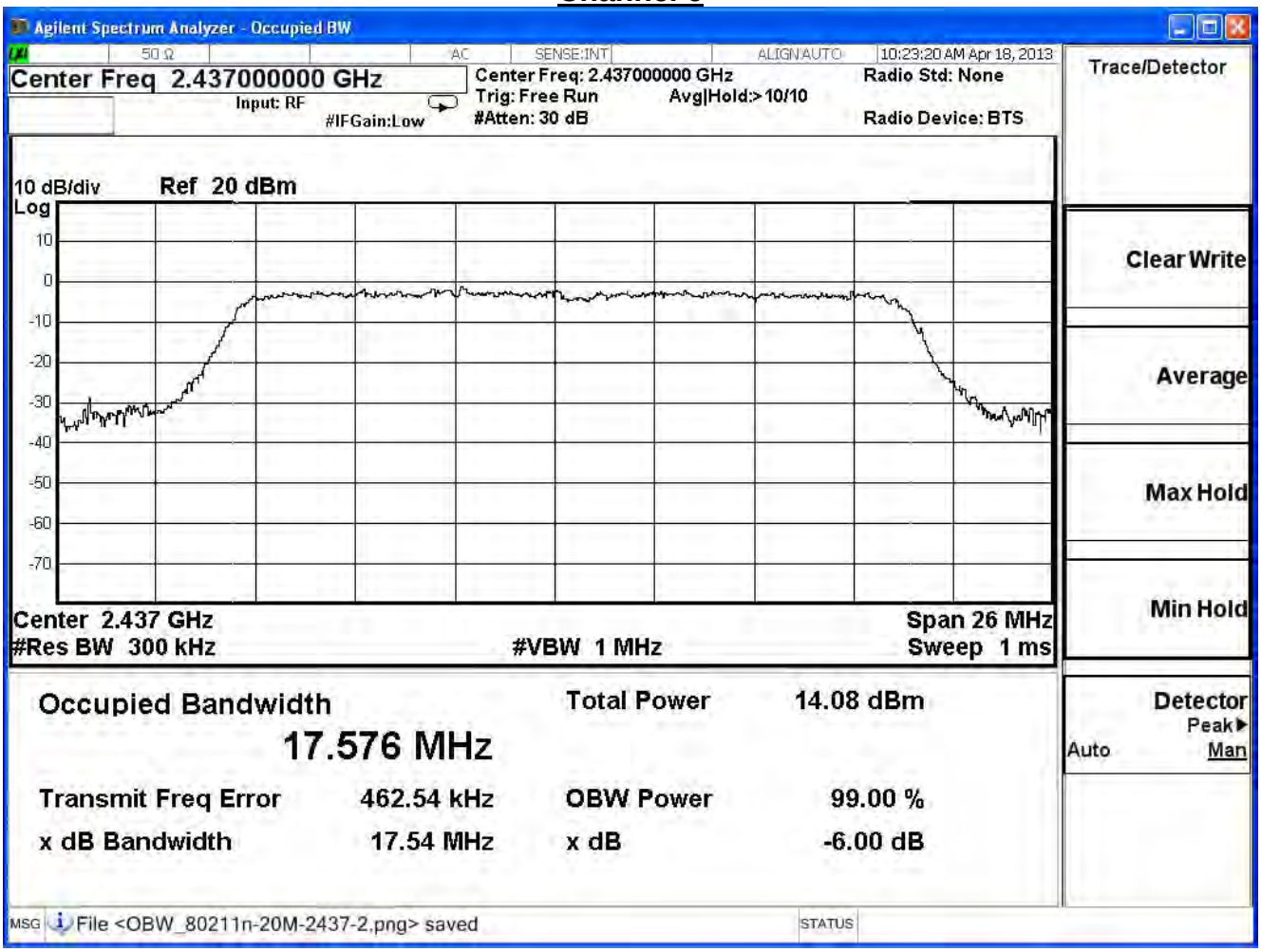
Product	VDSL2 Security Firewall		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/18	Test Site	SR7

IEEE 802.11n (20MHz)(ANT 0)				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
1	2412	17.51	≧0.5	Pass
6	2437	17.54	≧0.5	Pass
11	2462	17.51	≧0.5	Pass

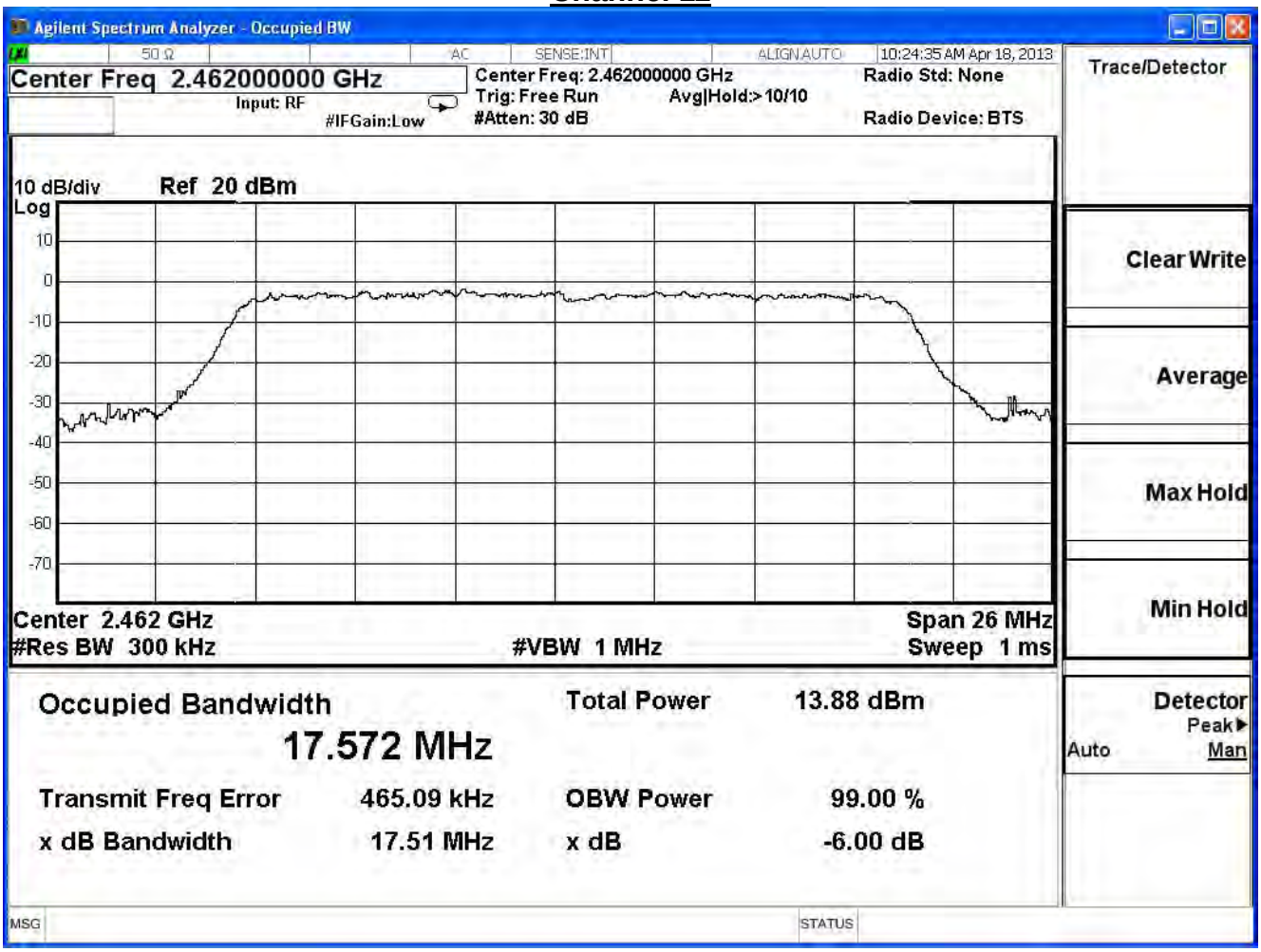
Channel 1



Channel 6


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:23:20 AM Apr 18, 2013
Center Freq 2.437000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center 2.437 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 26 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Occupied Bandwidth
17.576 MHz
Total Power
14.08 dBm
Transmit Freq Error
462.54 kHz
OBW Power
99.00 %
x dB Bandwidth
17.54 MHz
x dB
-6.00 dB
Detector
Peak
Auto
Man
MSG
File <OBW_80211n-20M-2437-2.png> saved
STATUS

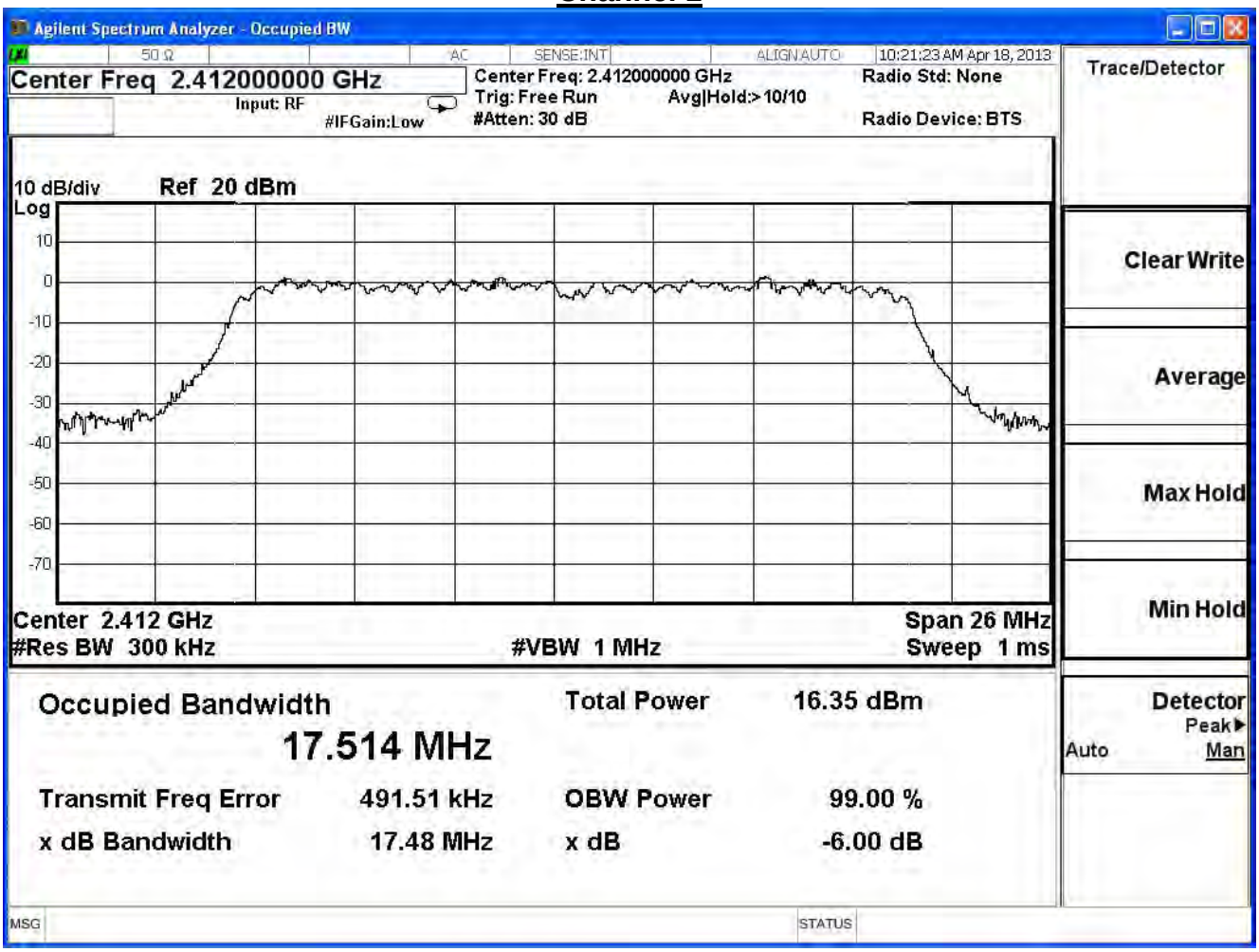
Channel 11


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:24:35 AM Apr 18, 2013
Center Freq 2.462000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.462000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center 2.462 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 26 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Occupied Bandwidth
17.572 MHz
Total Power
13.88 dBm
Transmit Freq Error
465.09 kHz
OBW Power
99.00 %
x dB Bandwidth
17.51 MHz
x dB
-6.00 dB
Detector
Peak
Auto
Man
MSG
STATUS

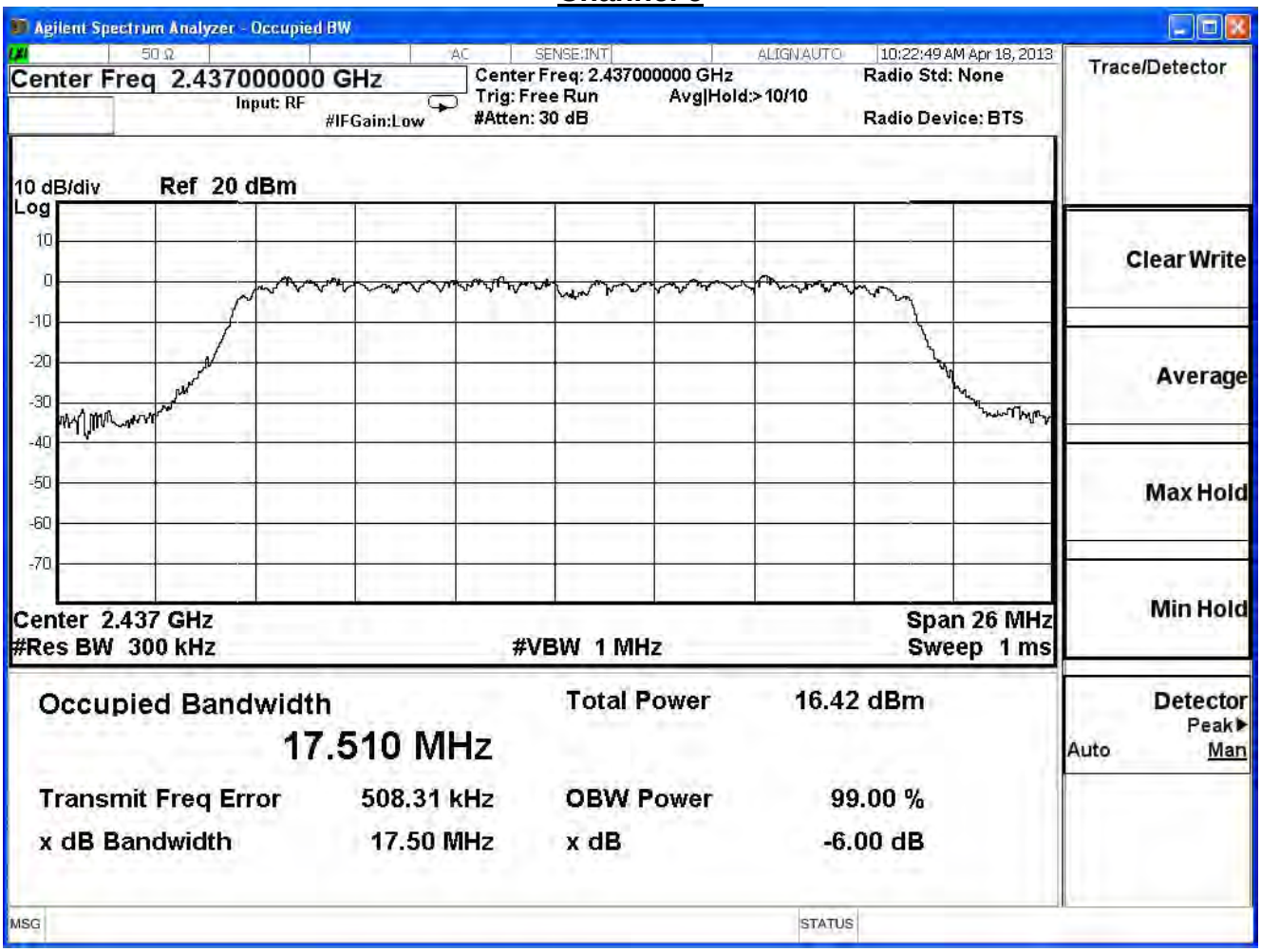
Product	VDSL2 Security Firewall		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/18	Test Site	SR7

IEEE 802.11n (20MHz)(ANT 1)				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
1	2412	17.48	≧0.5	Pass
6	2437	17.50	≧0.5	Pass
11	2462	17.52	≧0.5	Pass

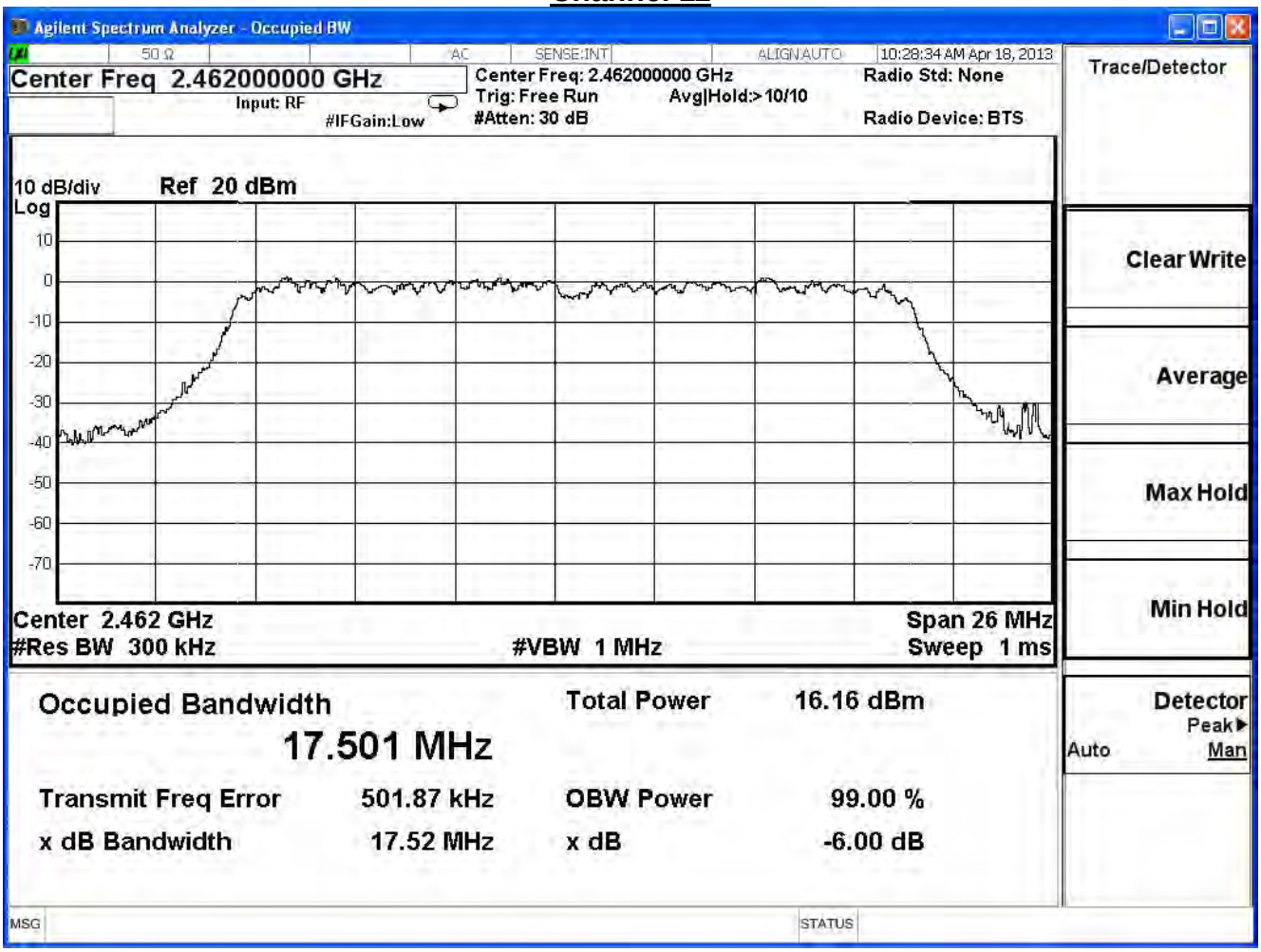
Channel 1



Channel 6


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:22:49 AM Apr 18, 2013
Center Freq 2.437000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center 2.437 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 26 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Occupied Bandwidth
17.510 MHz
Total Power
16.42 dBm
Transmit Freq Error
508.31 kHz
OBW Power
99.00 %
x dB Bandwidth
17.50 MHz
x dB
-6.00 dB
Detector
Peak
Auto
Man
MSG
STATUS

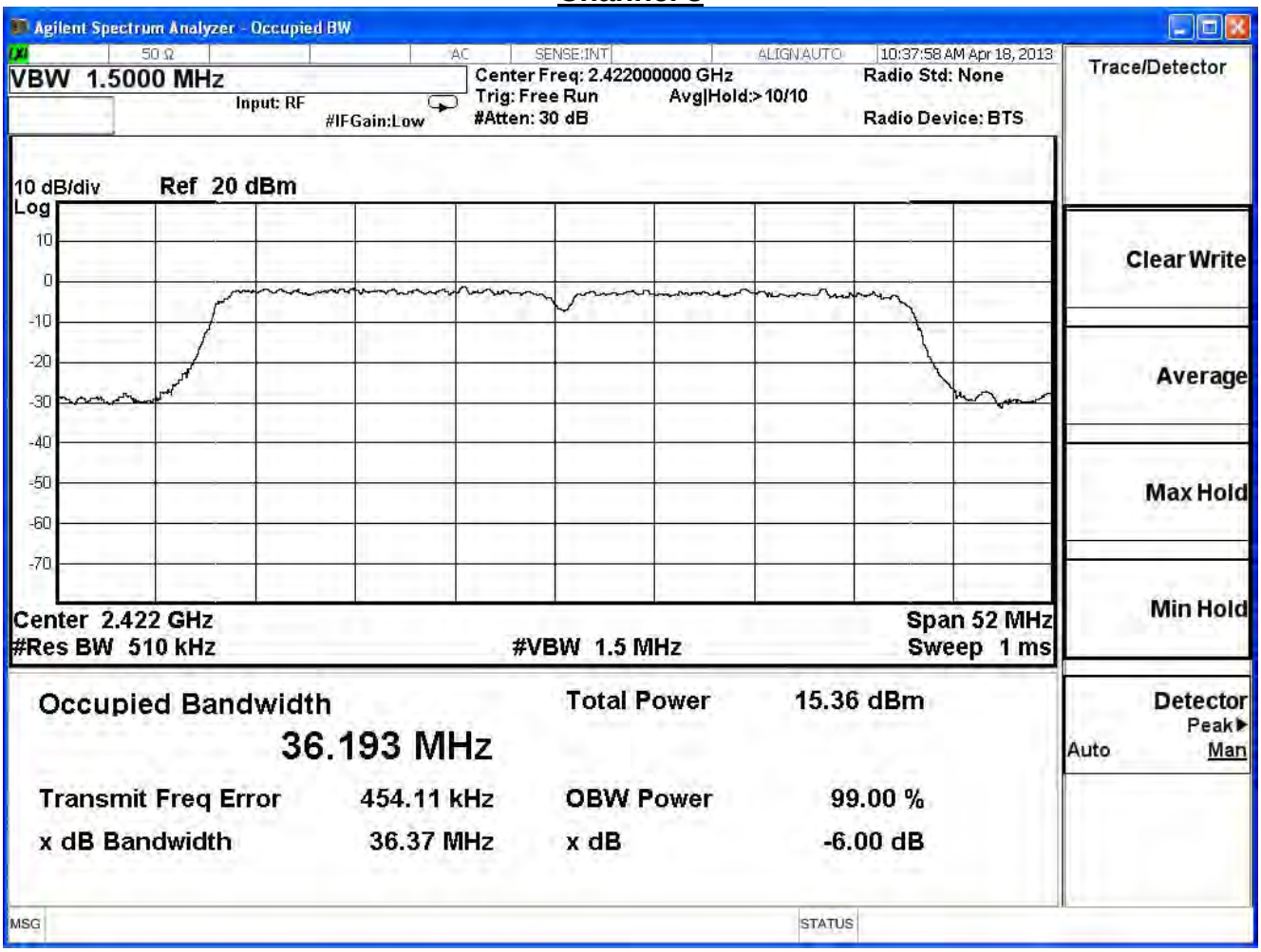
Channel 11


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:28:34 AM Apr 18, 2013
Center Freq 2.462000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.462000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center 2.462 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 26 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Occupied Bandwidth
17.501 MHz
Total Power
16.16 dBm
Transmit Freq Error
501.87 kHz
OBW Power
99.00 %
x dB Bandwidth
17.52 MHz
x dB
-6.00 dB
Detector
Peak
Auto
Man
MSG
STATUS

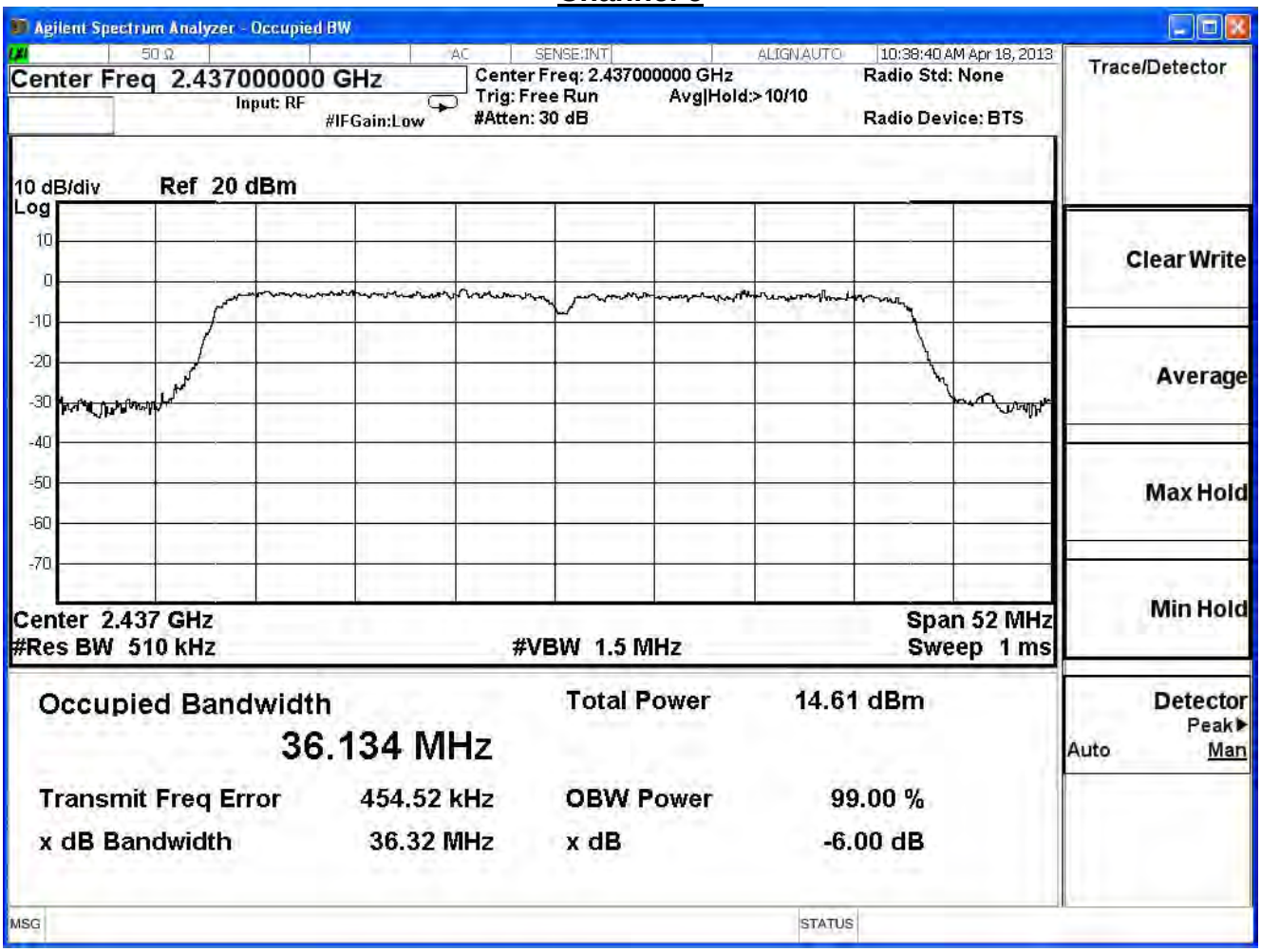
Product	VDSL2 Security Firewall		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/18	Test Site	SR7

IEEE 802.11n (40MHz)(ANT 0)				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
3	2422	36.37	≧0.5	Pass
6	2437	36.32	≧0.5	Pass
9	2452	36.36	≧0.5	Pass

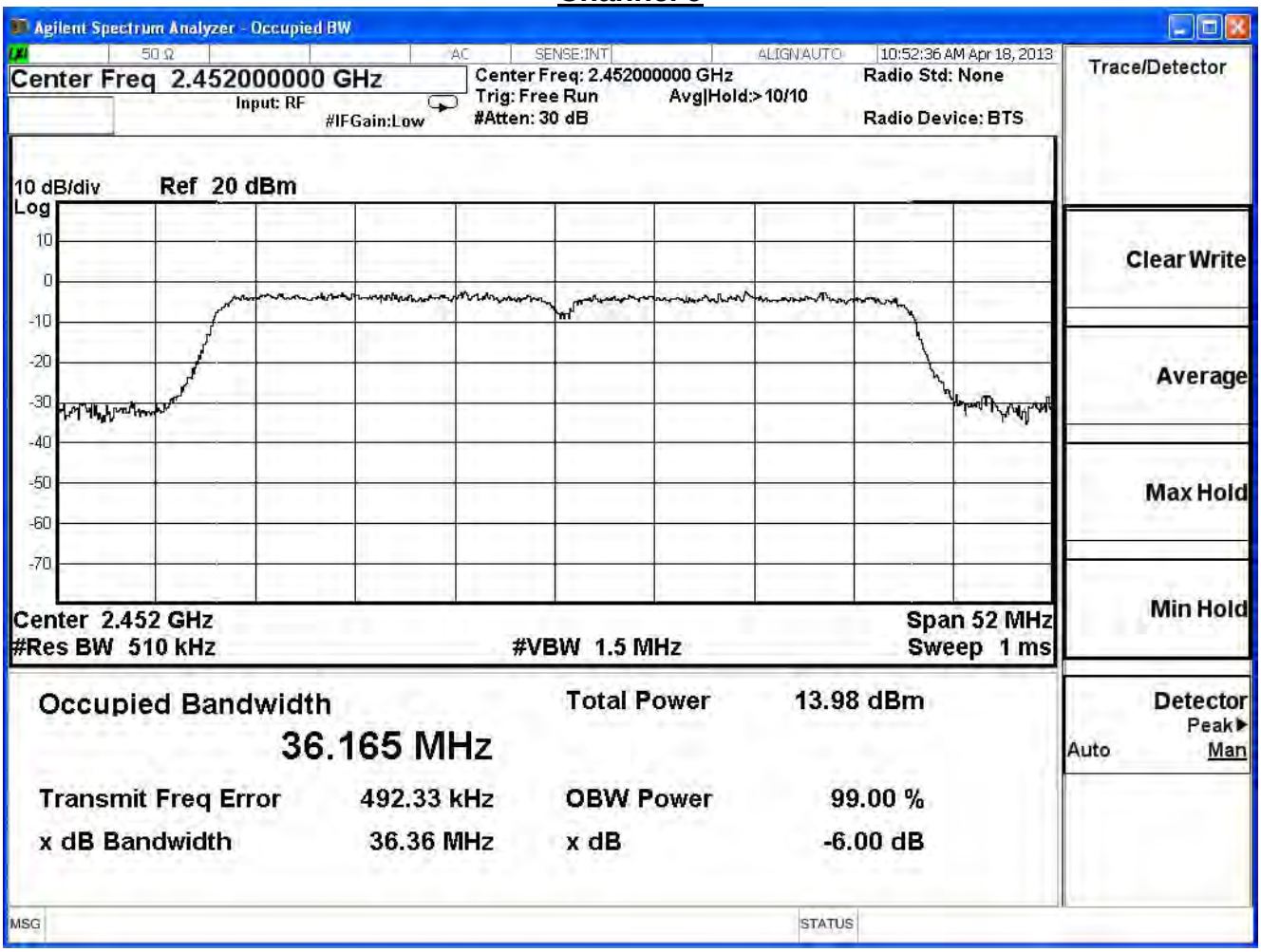
Channel 3


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:37:58 AM Apr 18, 2013
VBW 1.5000 MHz
Input: RF
#IFGain:Low
Center Freq: 2.422000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center 2.422 GHz
#Res BW 510 kHz
#VBW 1.5 MHz
Span 52 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Occupied Bandwidth
36.193 MHz
Total Power
15.36 dBm
Transmit Freq Error
454.11 kHz
OBW Power
99.00 %
x dB Bandwidth
36.37 MHz
x dB
-6.00 dB
Detector
Peak
Auto
Man
MSG
STATUS

Channel 6


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:38:40 AM Apr 18, 2013
Center Freq 2.437000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center 2.437 GHz
#Res BW 510 kHz
#VBW 1.5 MHz
Span 52 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Occupied Bandwidth
36.134 MHz
Total Power
14.61 dBm
Transmit Freq Error
454.52 kHz
OBW Power
99.00 %
x dB Bandwidth
36.32 MHz
x dB
-6.00 dB
Detector
Peak
Auto
Man
MSG
STATUS

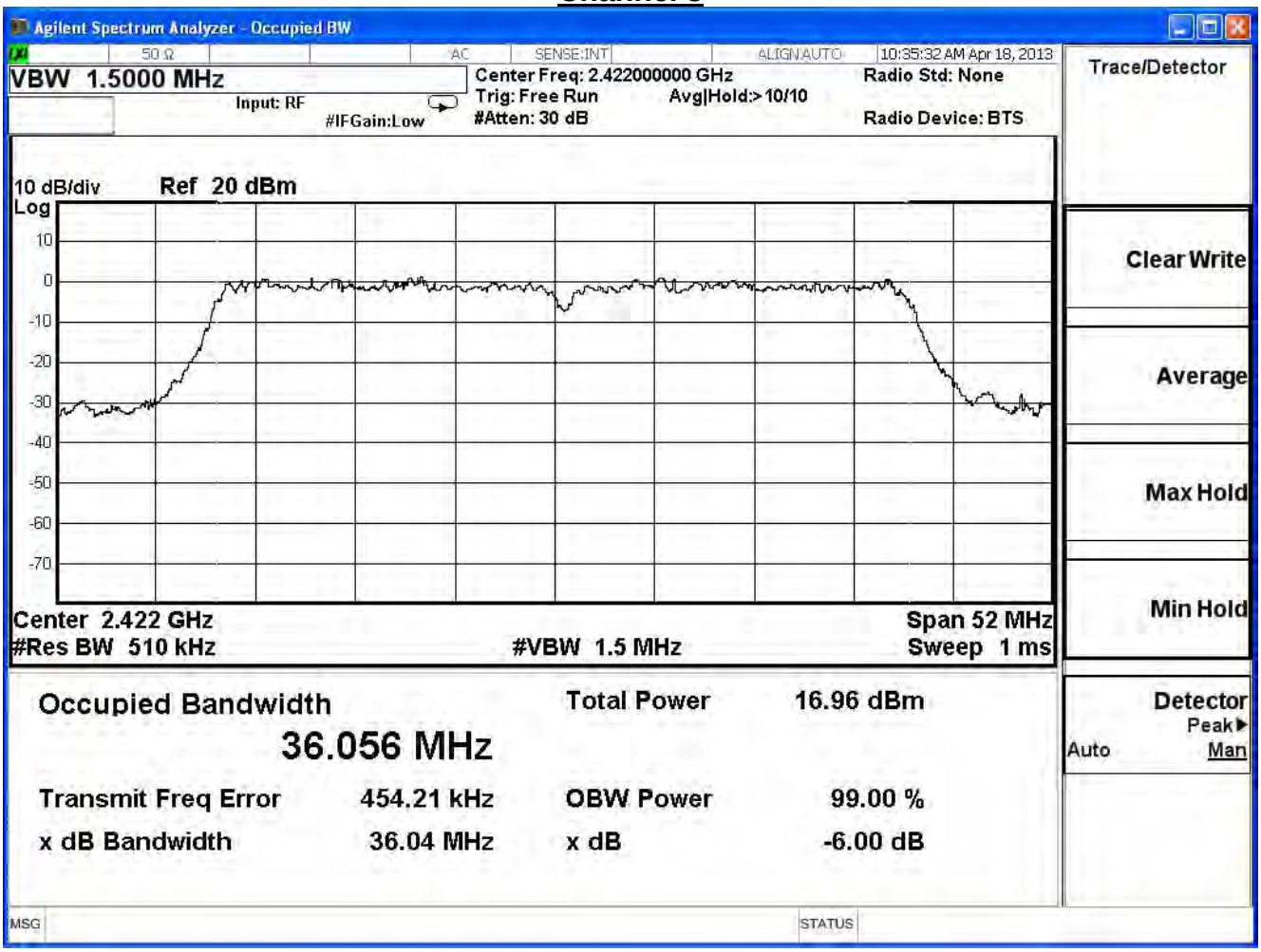
Channel 9


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:52:36 AM Apr 18, 2013
Center Freq 2.452000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.452000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center 2.452 GHz
#Res BW 510 kHz
#VBW 1.5 MHz
Span 52 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Occupied Bandwidth
36.165 MHz
Total Power
13.98 dBm
Transmit Freq Error
492.33 kHz
OBW Power
99.00 %
x dB Bandwidth
36.36 MHz
x dB
-6.00 dB
Detector
Peak
Auto
Man
MSG
STATUS

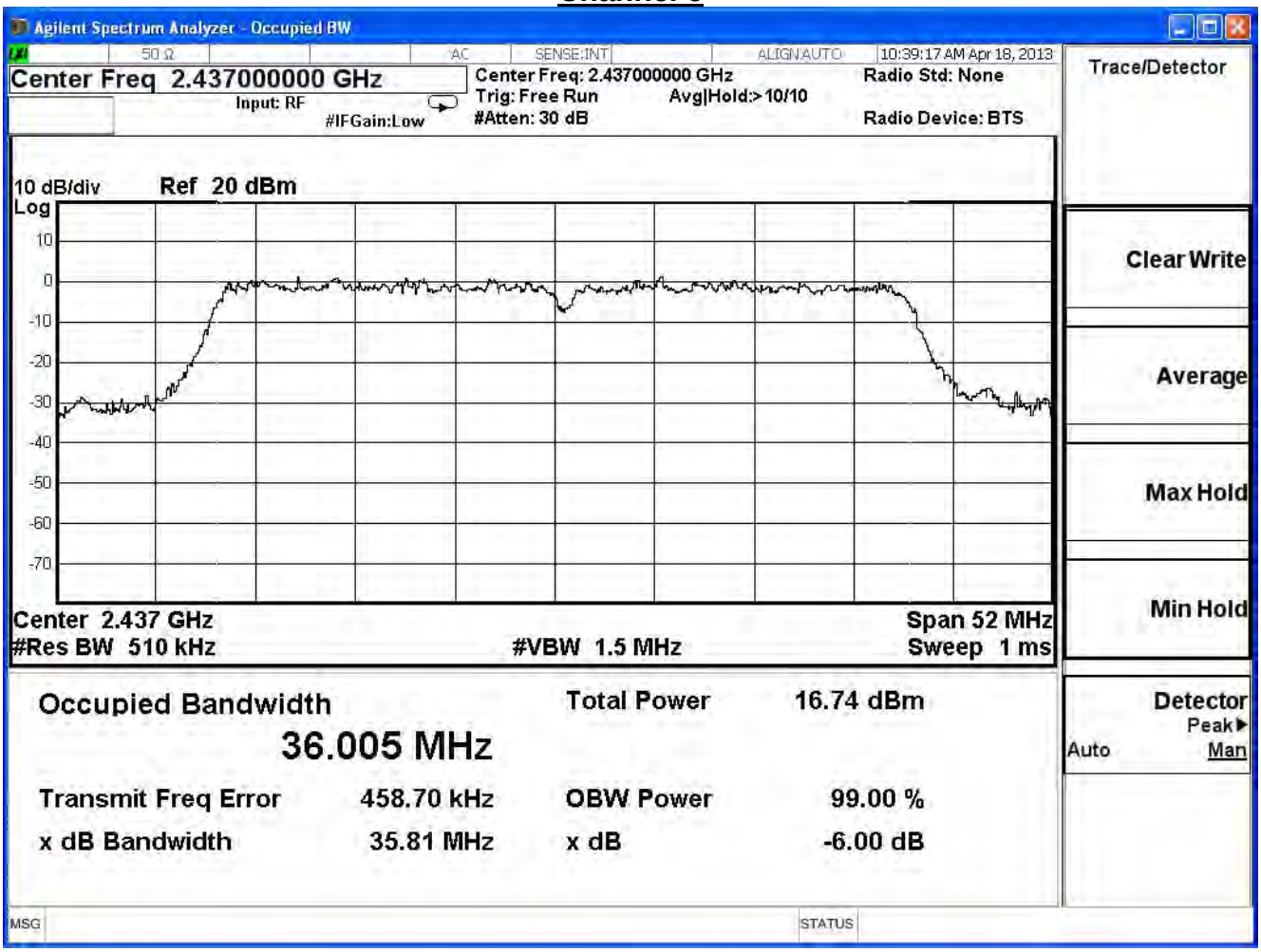
Product	VDSL2 Security Firewall		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/18	Test Site	SR7

EEE 802.11n (40MHz)(ANT 1)				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
3	2422	36.04	≧0.5	Pass
6	2437	35.81	≧0.5	Pass
9	2452	35.90	≧0.5	Pass

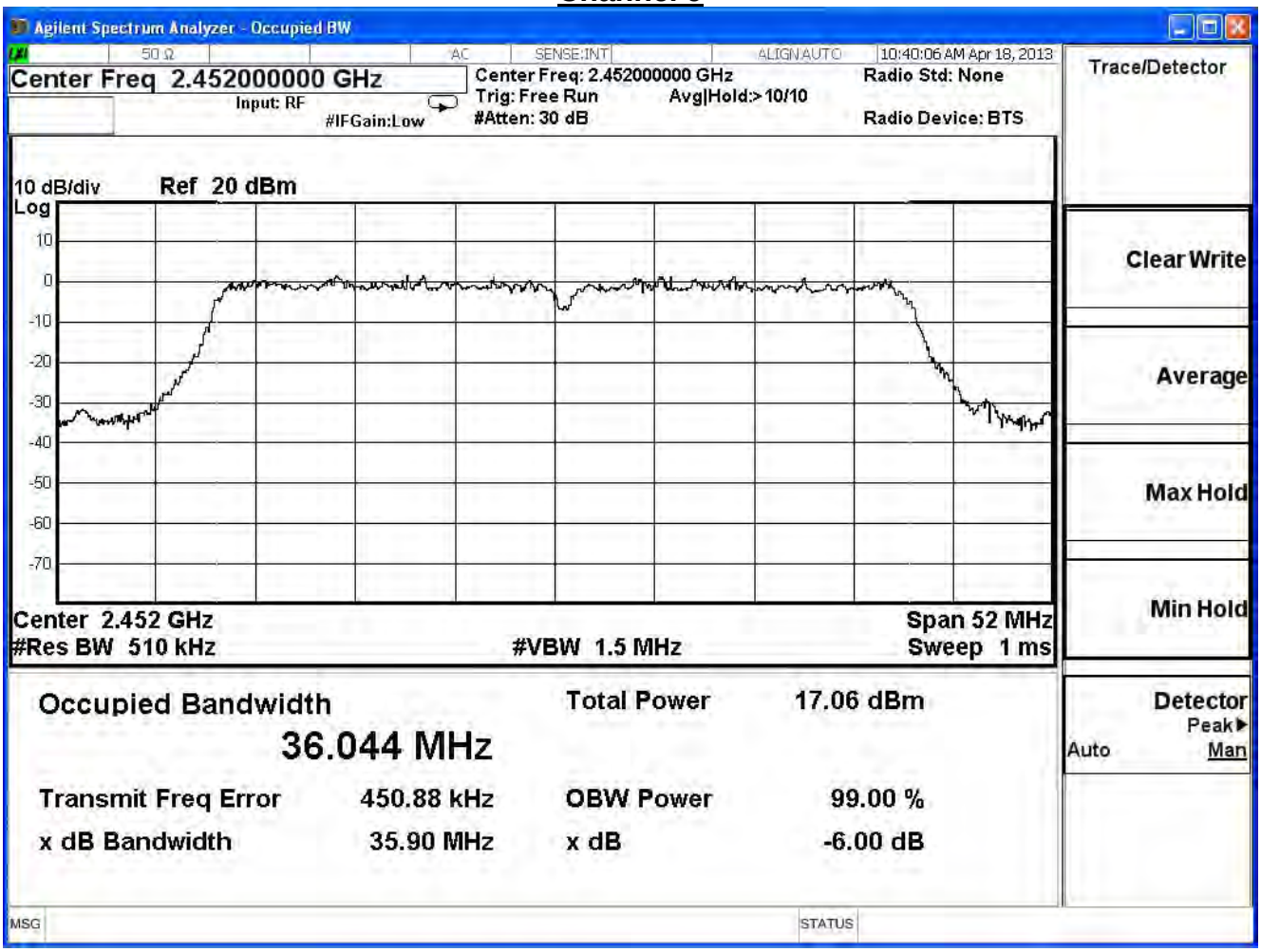
Channel 3


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:35:32 AM Apr 18, 2013
VBW 1.5000 MHz
Input: RF
#IFGain:Low
Center Freq: 2.422000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center 2.422 GHz
#Res BW 510 kHz
#VBW 1.5 MHz
Span 52 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Occupied Bandwidth
36.056 MHz
Total Power
16.96 dBm
Transmit Freq Error
454.21 kHz
OBW Power
99.00 %
x dB Bandwidth
36.04 MHz
x dB
-6.00 dB
Detector
Peak
Auto
Man
MSG
STATUS

Channel 6


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:39:17 AM Apr 18, 2013
Center Freq 2.437000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center 2.437 GHz
#Res BW 510 kHz
#VBW 1.5 MHz
Span 52 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Occupied Bandwidth
36.005 MHz
Total Power
16.74 dBm
Transmit Freq Error
458.70 kHz
OBW Power
99.00 %
x dB Bandwidth
35.81 MHz
x dB
-6.00 dB
Detector
Peak
Auto
Man
MSG
STATUS

Channel 9


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:40:06 AM Apr 18, 2013
Center Freq 2.452000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.452000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center 2.452 GHz
#Res BW 510 kHz
#VBW 1.5 MHz
Span 52 MHz
Sweep 1 ms
Clear Write
Average
Max Hold
Min Hold
Occupied Bandwidth
36.044 MHz
Total Power
17.06 dBm
Transmit Freq Error
450.88 kHz
OBW Power
99.00 %
x dB Bandwidth
35.90 MHz
x dB
-6.00 dB
Detector
Peak
Auto
Man
MSG
STATUS

8. Power Density

8.1. Test Equipment

The following test equipment is used during the test:

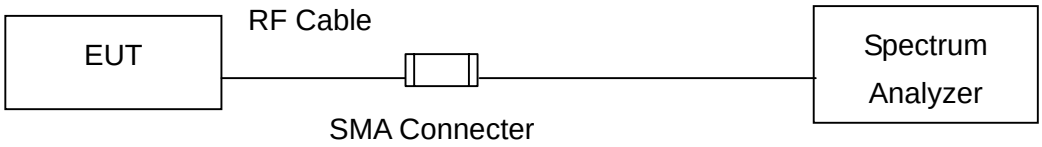
Power Density / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2014/08/05

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

8.2. Test Setup

IEEE 802.11 b / g / n (20M / 40M) MODE



8.3. Limits

The peak power spectral density conducted from the intentional radiated to the antenna shall not be greater than +8dBm in any 3kHz band during any time interval of continuous transmission.

8.4. Test Procedures

The EUT was setup according to ANSI C63.4: 2009; tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW= 100 kHz, Set VBW= 300 kHz, Sweep time=Auto, Set detector=Peak detector.
Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log (3 kHz/100 kHz = -15.2 dB).

8.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2012

8.6. Uncertainty

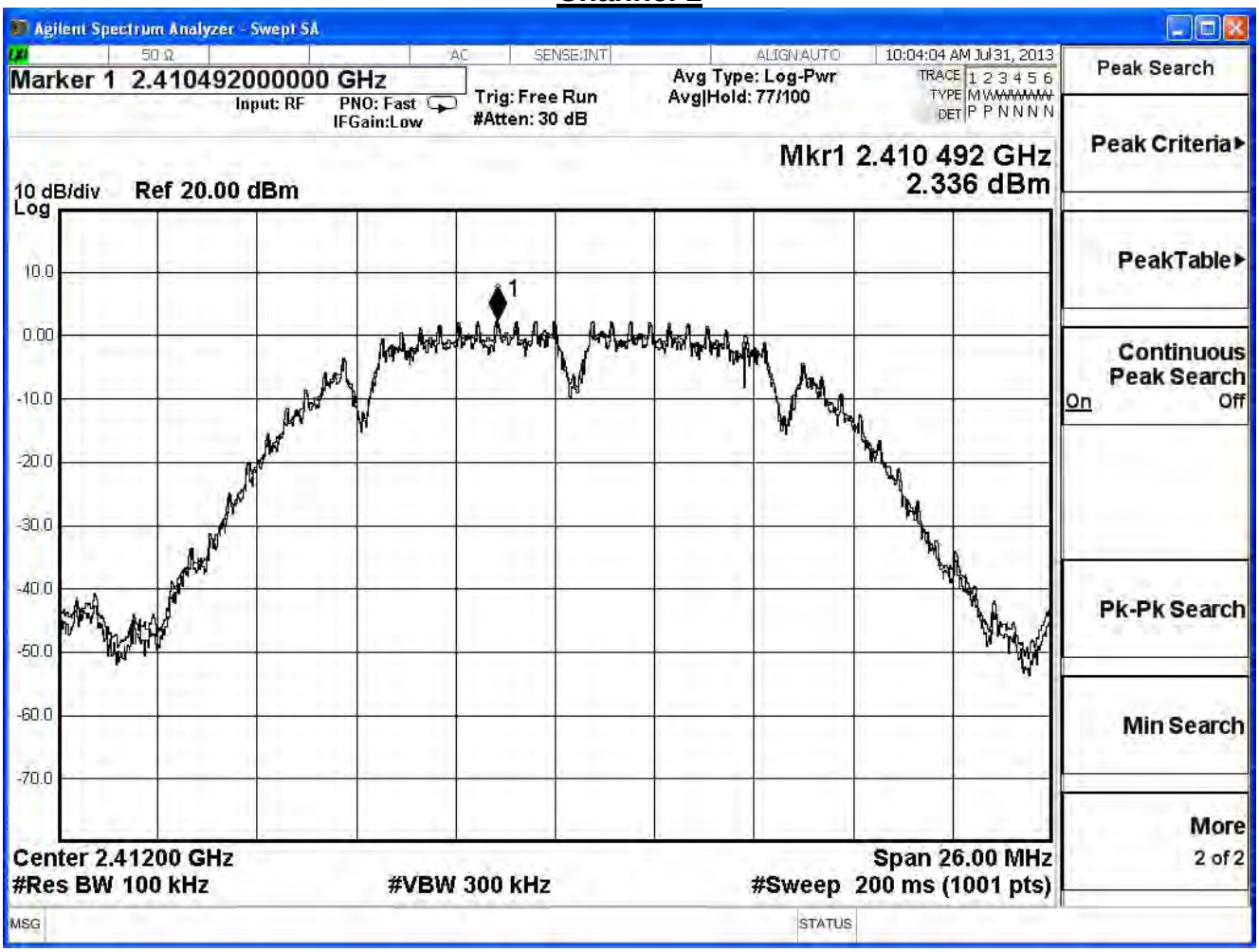
The measurement uncertainty is defined as ±1.27dB.

8.7. Test Result

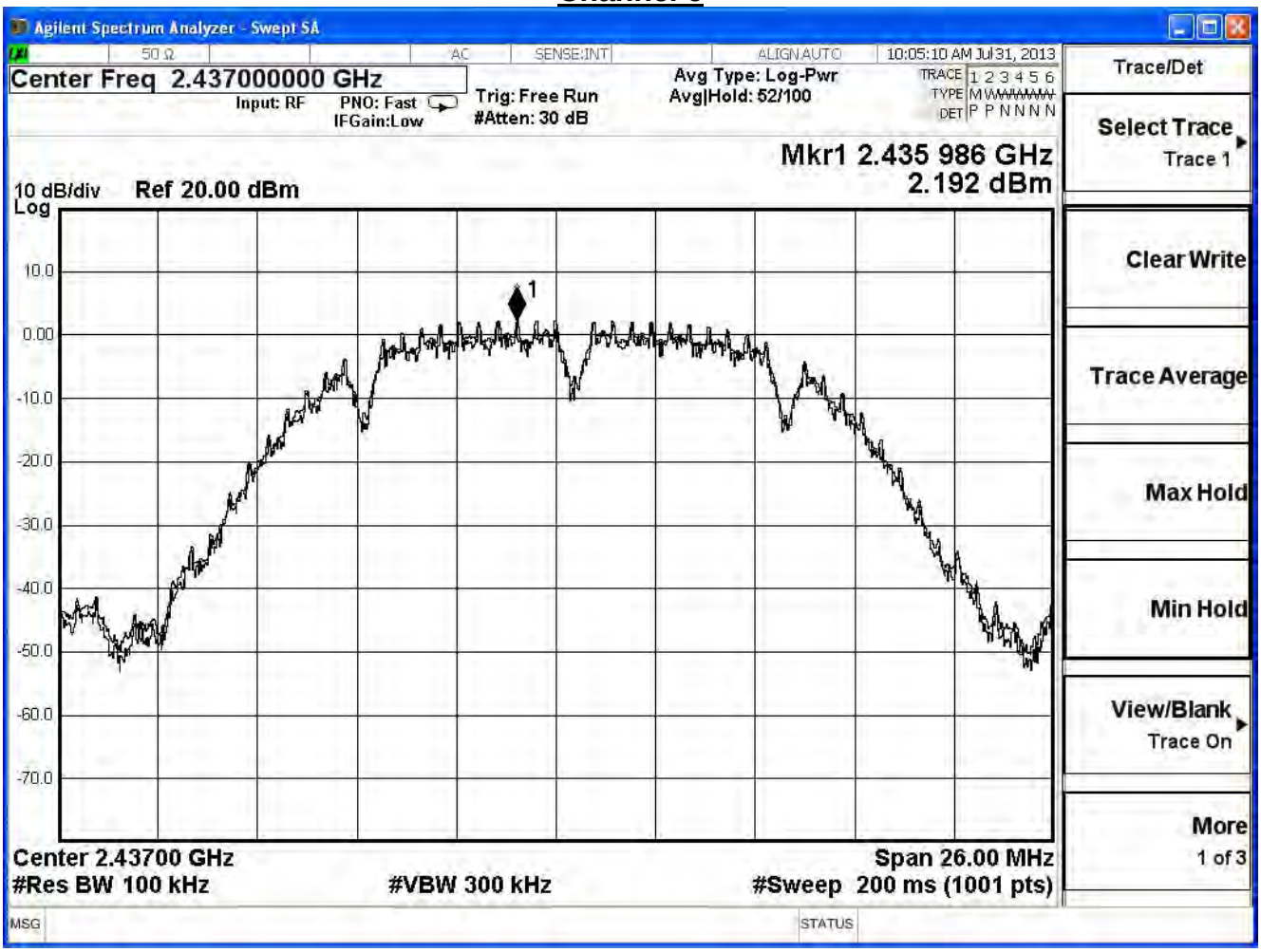
Product	VDSL2 Security Firewall		
Test Item	Power Density		
Test Mode	Mode 1: Transmit		
Date of Test	2013/07/31	Test Site	SR7

IEEE 802.11b					
Channel No.	Frequency (MHz)	Reading Level(dBm)	Measure Level(dBm)	Limit (dBm)	Result
1	2412	2.336	-12.864	≦8	Pass
6	2437	2.192	-13.008	≦8	Pass
11	2462	1.430	-13.770	≦8	Pass

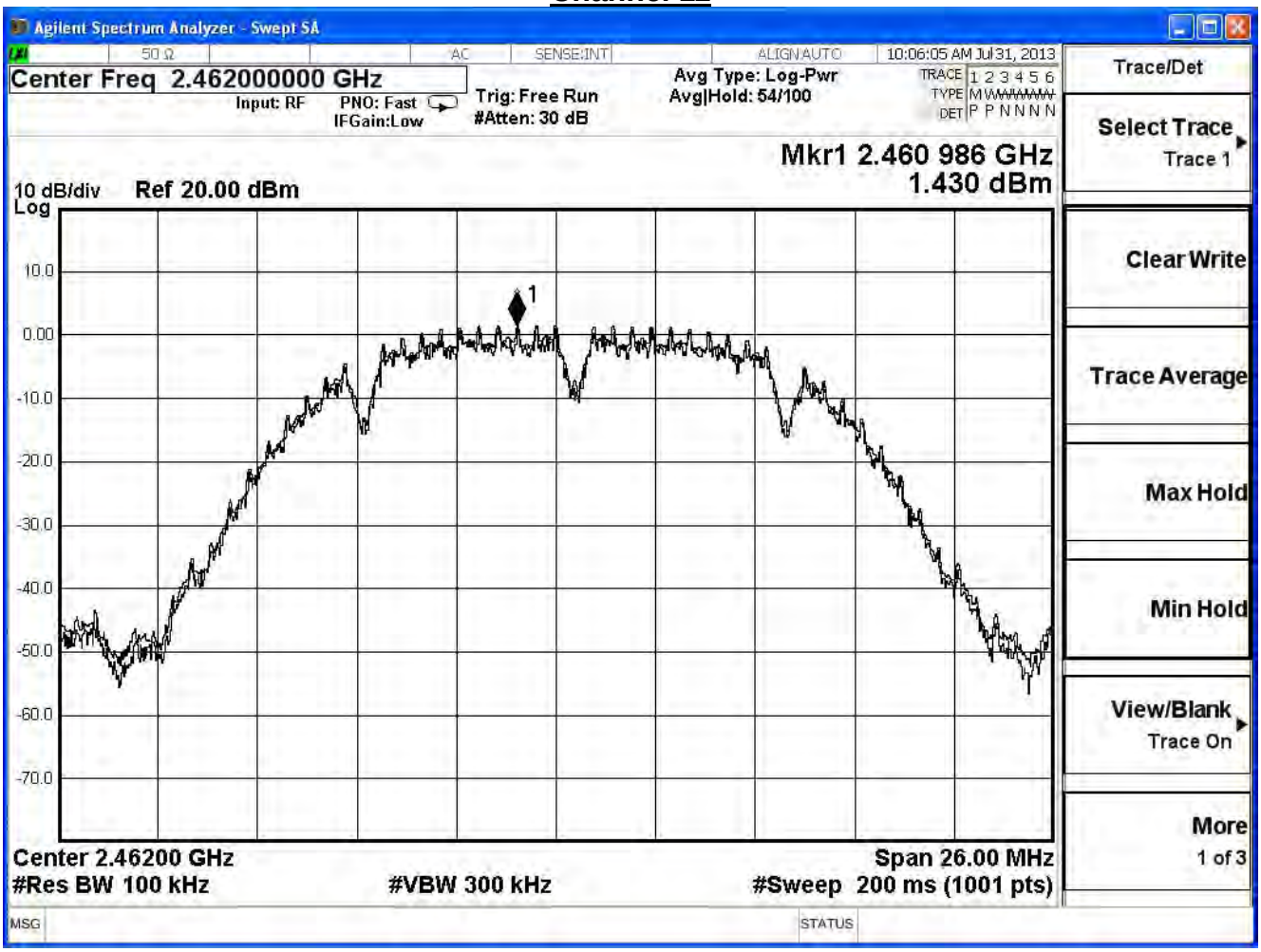
Channel 1



Channel 6


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:05:10 AM Jul 31, 2013
Center Freq 2.437000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 52/100
TRACE 1 2 3 4 5 6
TYPE M
DET P P N N N
Mkr1 2.435 986 GHz
2.192 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.43700 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 26.00 MHz
#Sweep 200 ms (1001 pts)
Trace/Det
Select Trace
Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View/Blank
Trace On
More
1 of 3
MSG
STATUS

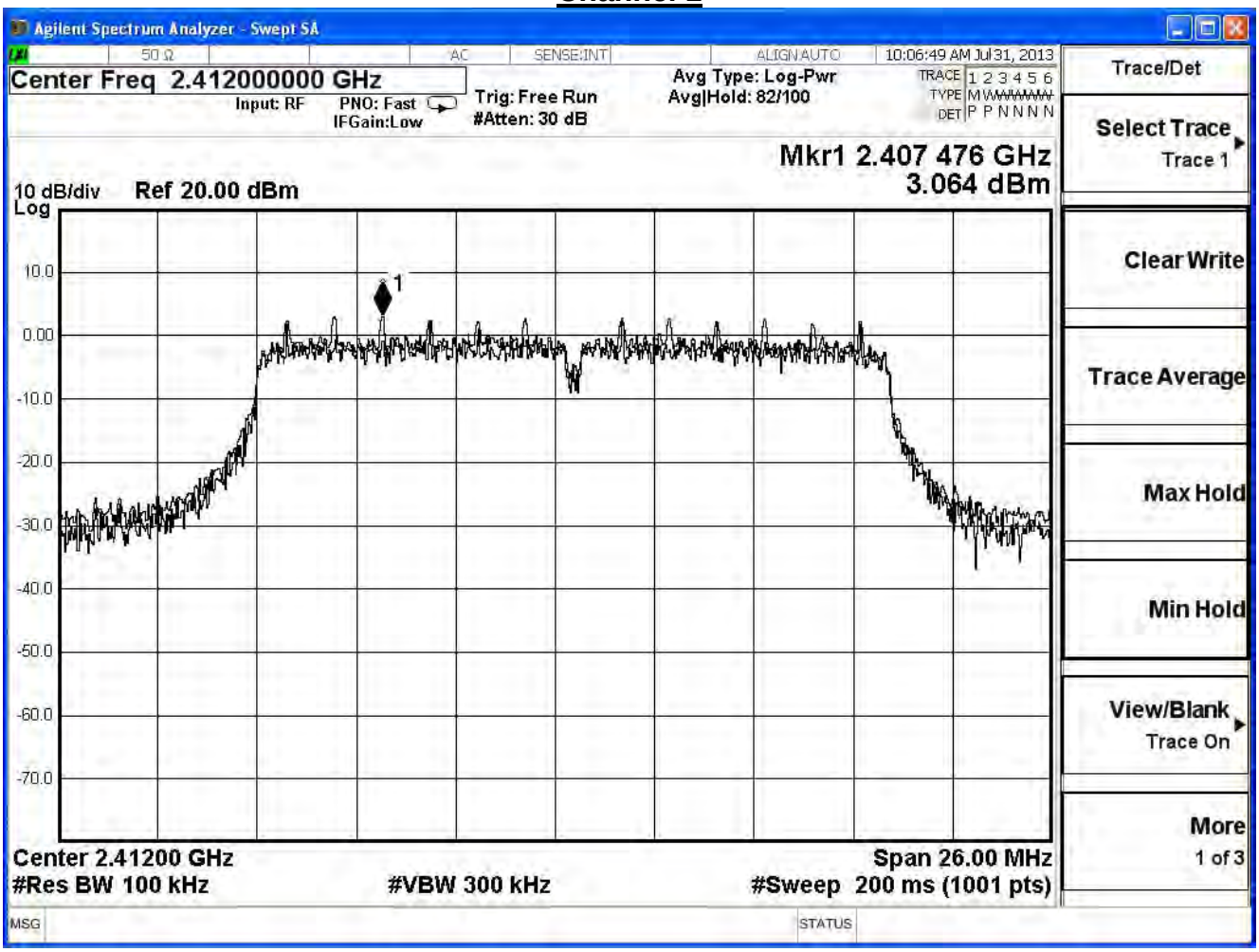
Channel 11


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:06:05 AM Jul 31, 2013
Center Freq 2.462000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 54/100
TRACE 1 2 3 4 5 6
TYPE M
DET P P N N N N
Mkr1 2.460 986 GHz
1.430 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.46200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 26.00 MHz
#Sweep 200 ms (1001 pts)
MSG
STATUS
Trace/Det
Select Trace
Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View/Blank
Trace On
More
1 of 3

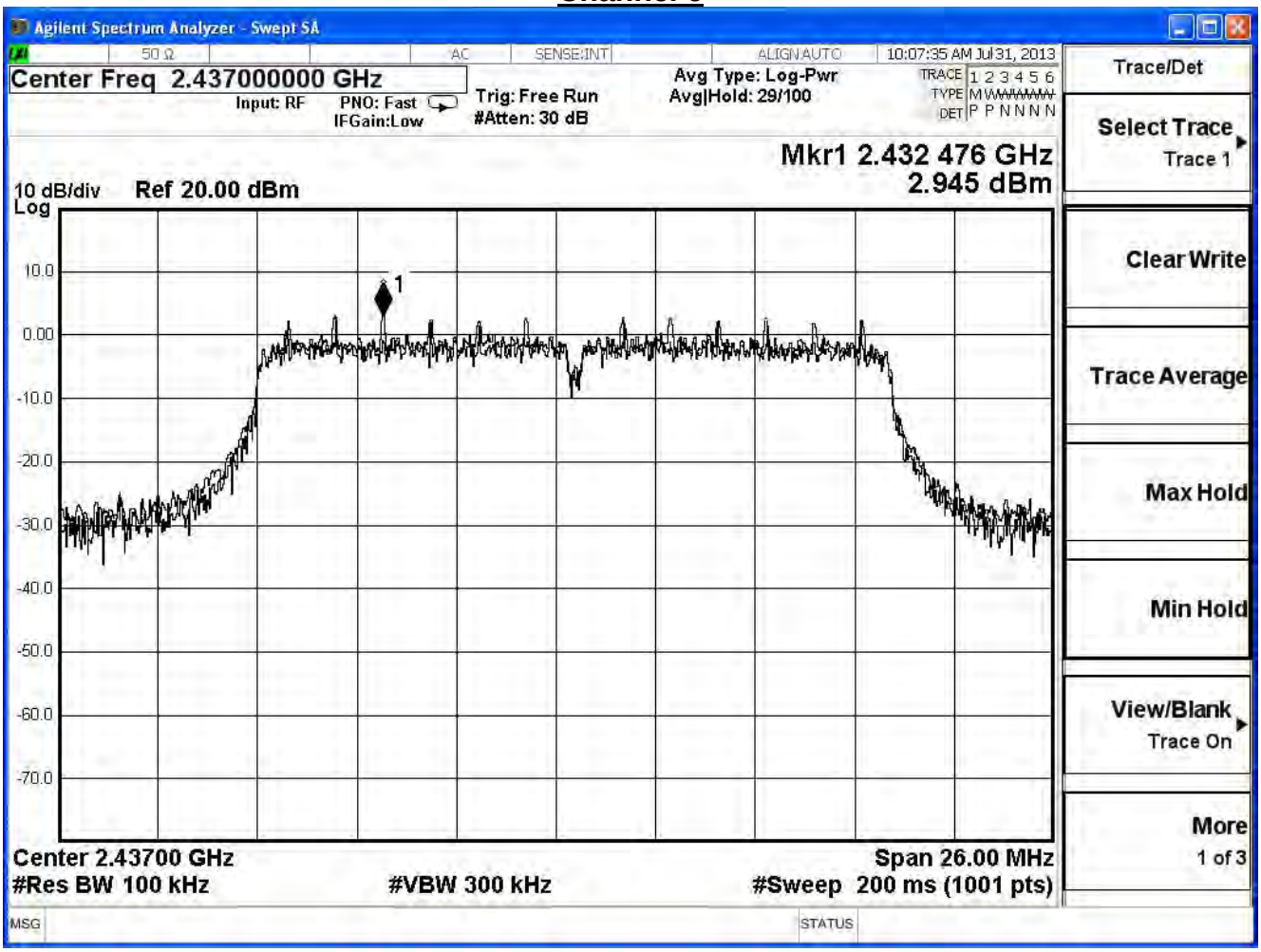
Product	VDSL2 Security Firewall		
Test Item	Power Density		
Test Mode	Mode 1: Transmit		
Date of Test	2013/07/31	Test Site	SR7

IEEE 802.11g					
Channel No.	Frequency (MHz)	Reading Level(dBm)	Measure Level(dBm)	Limit (dBm)	Result
1	2412	3.064	-12.136	≦8	Pass
6	2437	2.945	-12.255	≦8	Pass
11	2462	2.281	-12.919	≦8	Pass

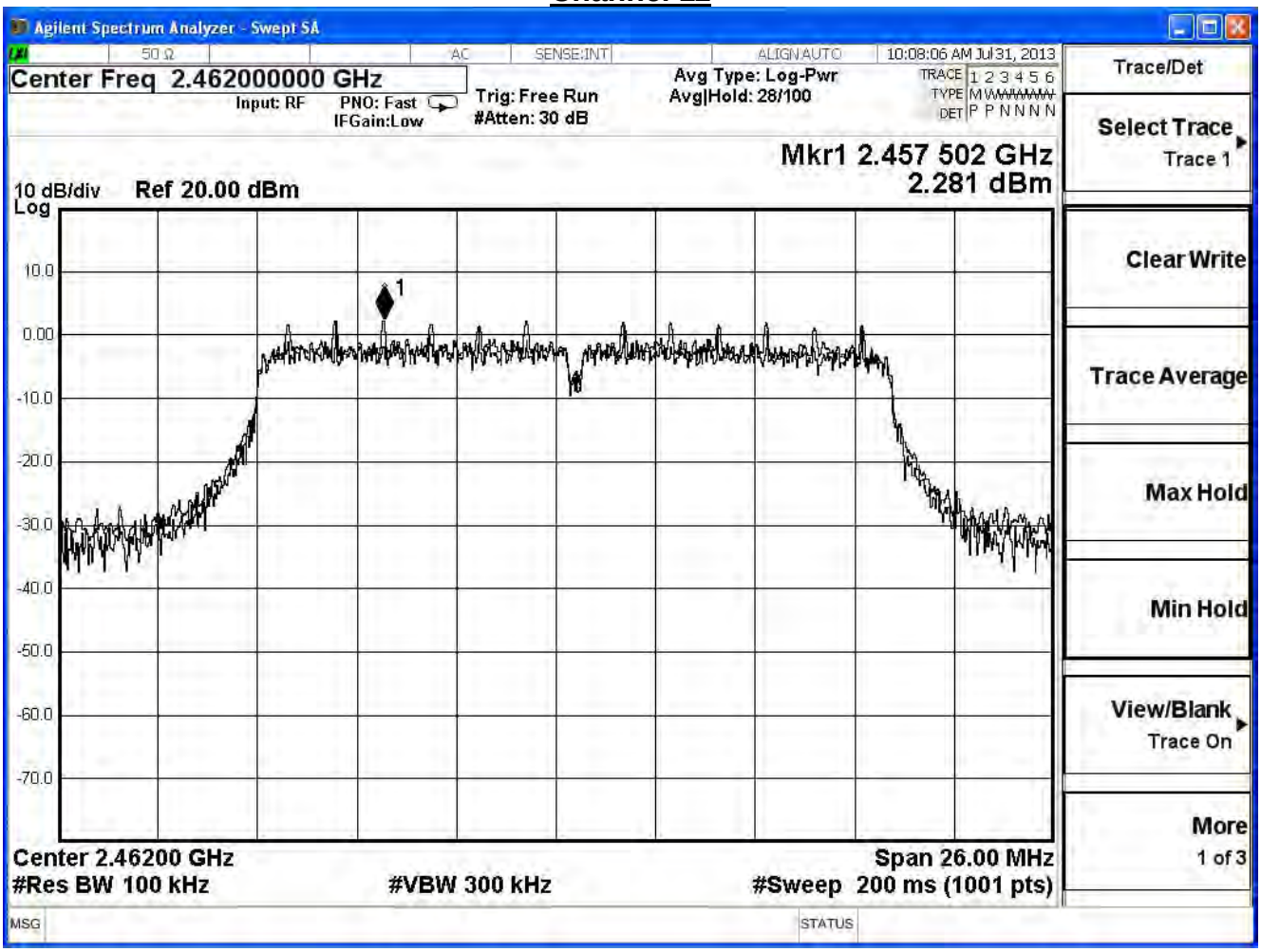
Channel 1



Channel 6


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:07:35 AM Jul 31, 2013
Center Freq 2.437000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 29/100
TRACE 1 2 3 4 5 6
TYPE M
DET P P N N N
Mkr1 2.432 476 GHz
2.945 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.43700 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 26.00 MHz
#Sweep 200 ms (1001 pts)
MSG
STATUS
Trace/Det
Select Trace
Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View/Blank
Trace On
More
1 of 3

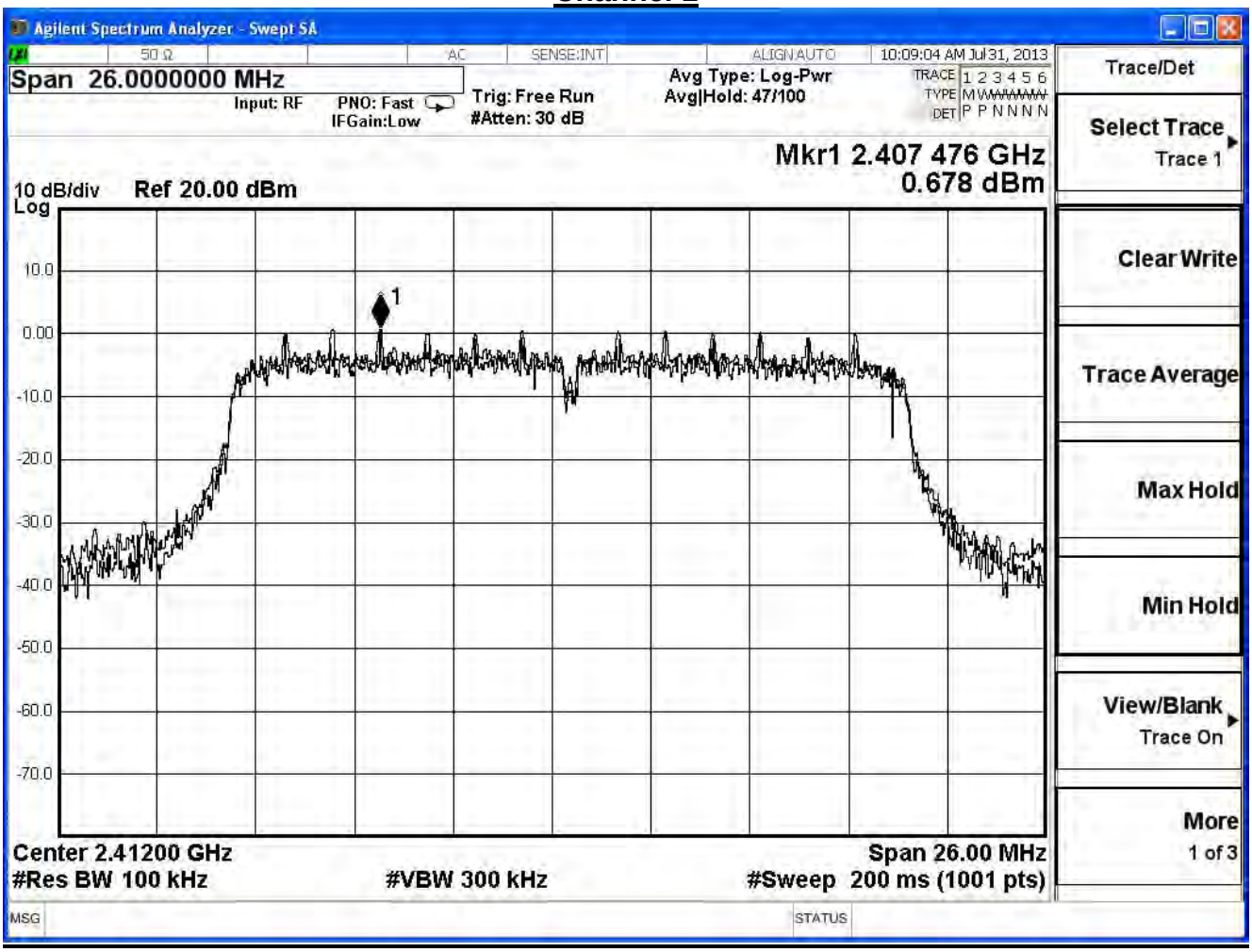
Channel 11


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:08:06 AM Jul 31, 2013
Center Freq 2.462000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 28/100
TRACE 1 2 3 4 5 6
TYPE M
DET P P N N N N
Mkr1 2.457 502 GHz
2.281 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.46200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 26.00 MHz
#Sweep 200 ms (1001 pts)
MSG
STATUS
Trace/Det
Select Trace
Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View/Blank
Trace On
More
1 of 3

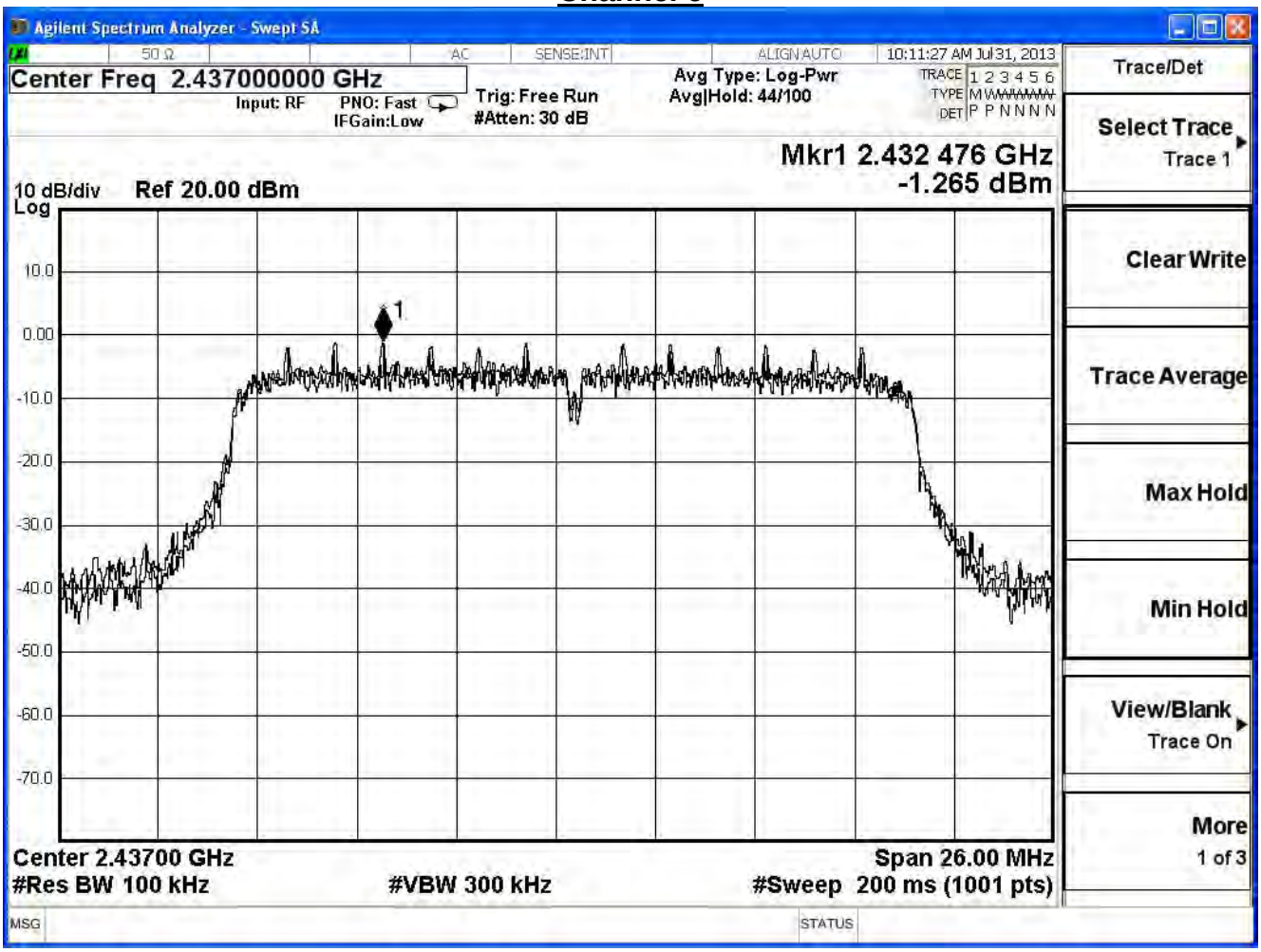
Product	VDSL2 Security Firewall		
Test Item	Power Density		
Test Mode	Mode 1: Transmit		
Date of Test	2013/07/31	Test Site	SR7

IEEE802.11n_20MHz_(ANT 0)					
Channel No.	Frequency (MHz)	Reading Level(dBm)	Measure Level(dBm)	Limit (dBm)	Result
1	2412	0.678	-14.522	≦8	Pass
6	2437	-1.265	-16.465	≦8	Pass
11	2462	-2.086	-17.286	≦8	Pass

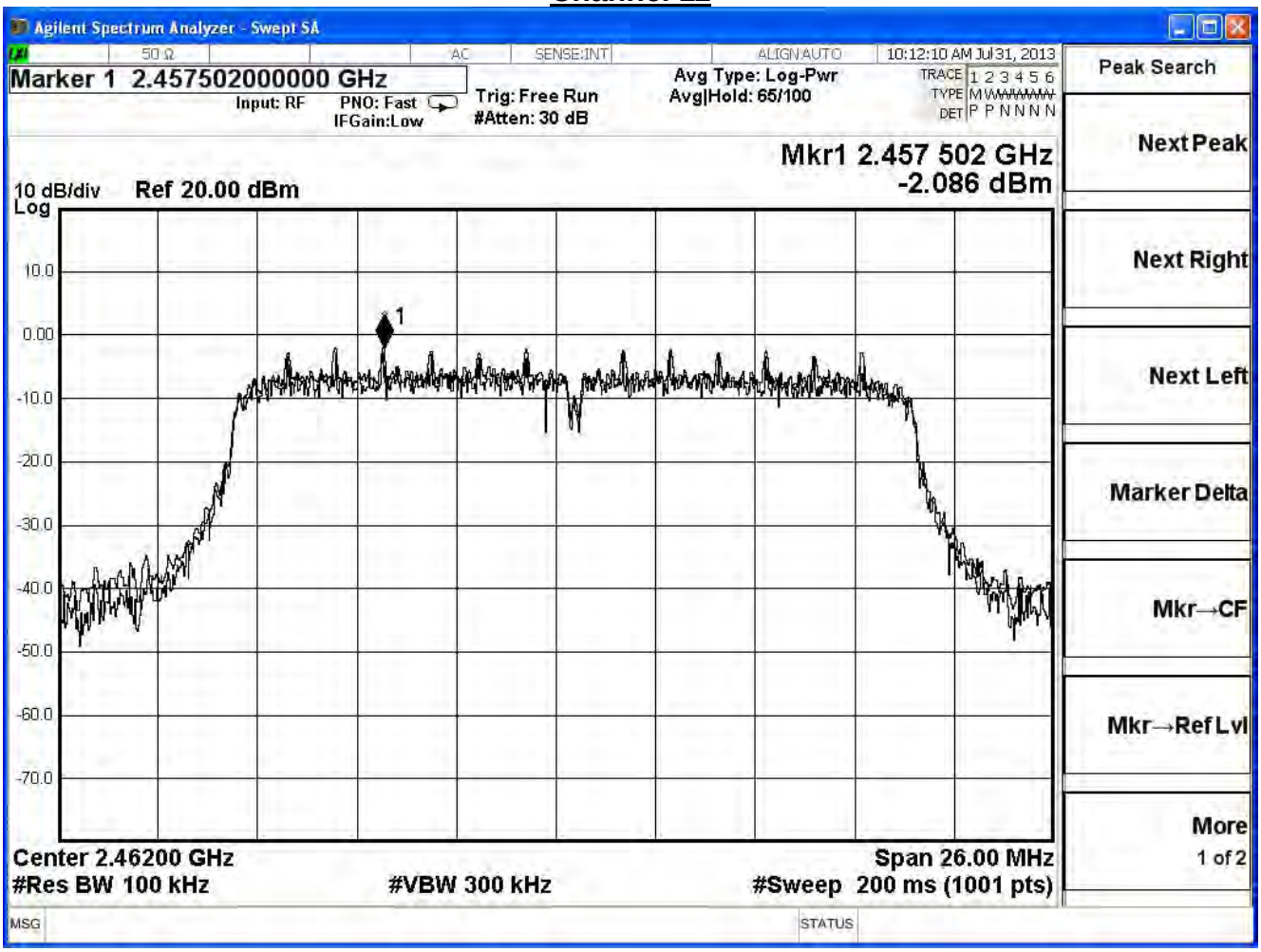
Channel 1



Channel 6


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:11:27 AM Jul 31, 2013
Center Freq 2.437000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 44/100
TRACE 1 2 3 4 5 6
TYPE M WWWWWW
DET P P N N N N
Mkr1 2.432 476 GHz
-1.265 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 2.43700 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 26.00 MHz
#Sweep 200 ms (1001 pts)
Trace/Det
Select Trace
Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View/Blank
Trace On
More
1 of 3
MSG
STATUS

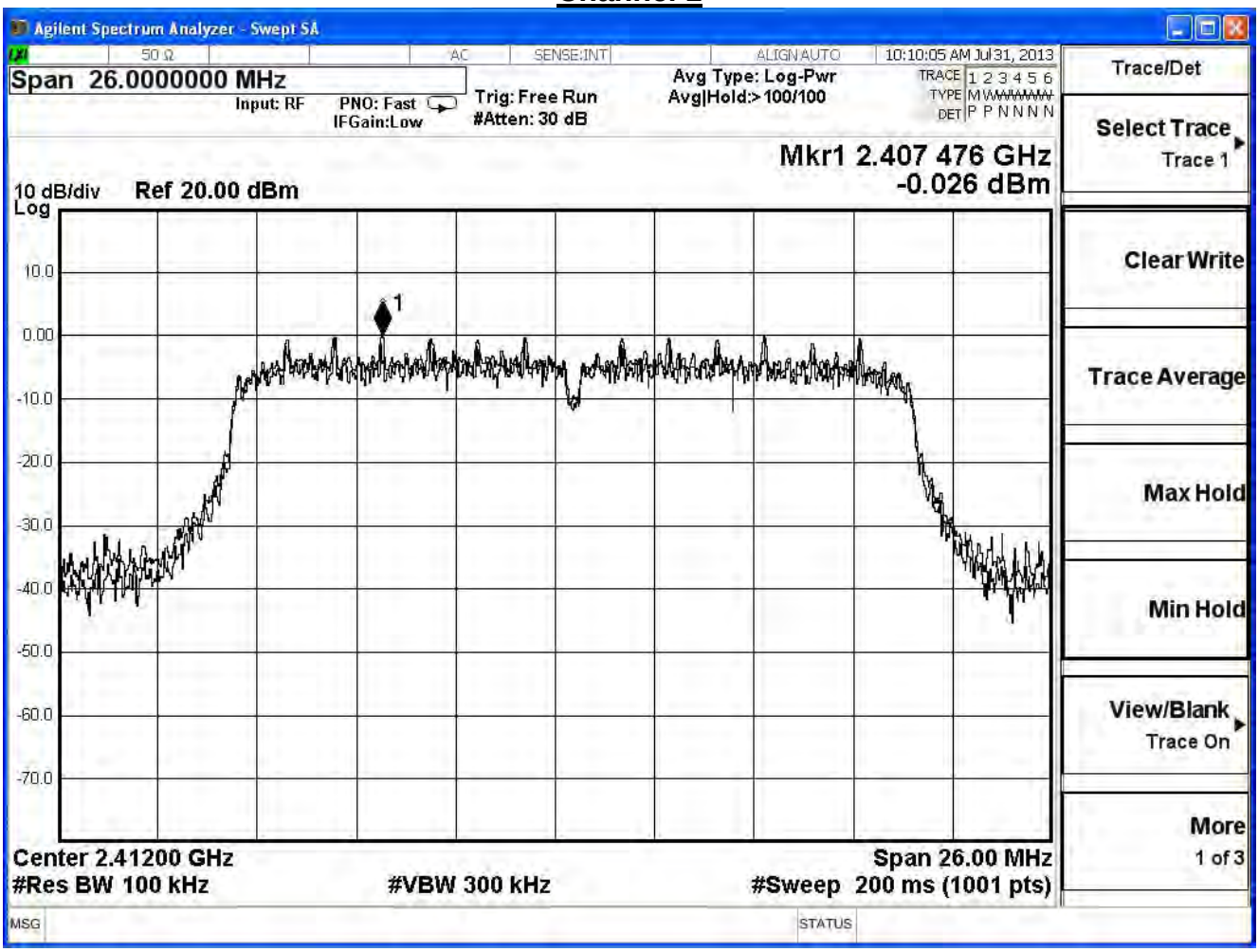
Channel 11


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:12:10 AM Jul 31, 2013
Marker 1 2.457502000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 65/100
TRACE 1 2 3 4 5 6
TYPE M
DET P P N N N N
Mkr1 2.457 502 GHz
-2.086 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.46200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 26.00 MHz
#Sweep 200 ms (1001 pts)
Peak Search
Next Peak
Next Right
Next Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

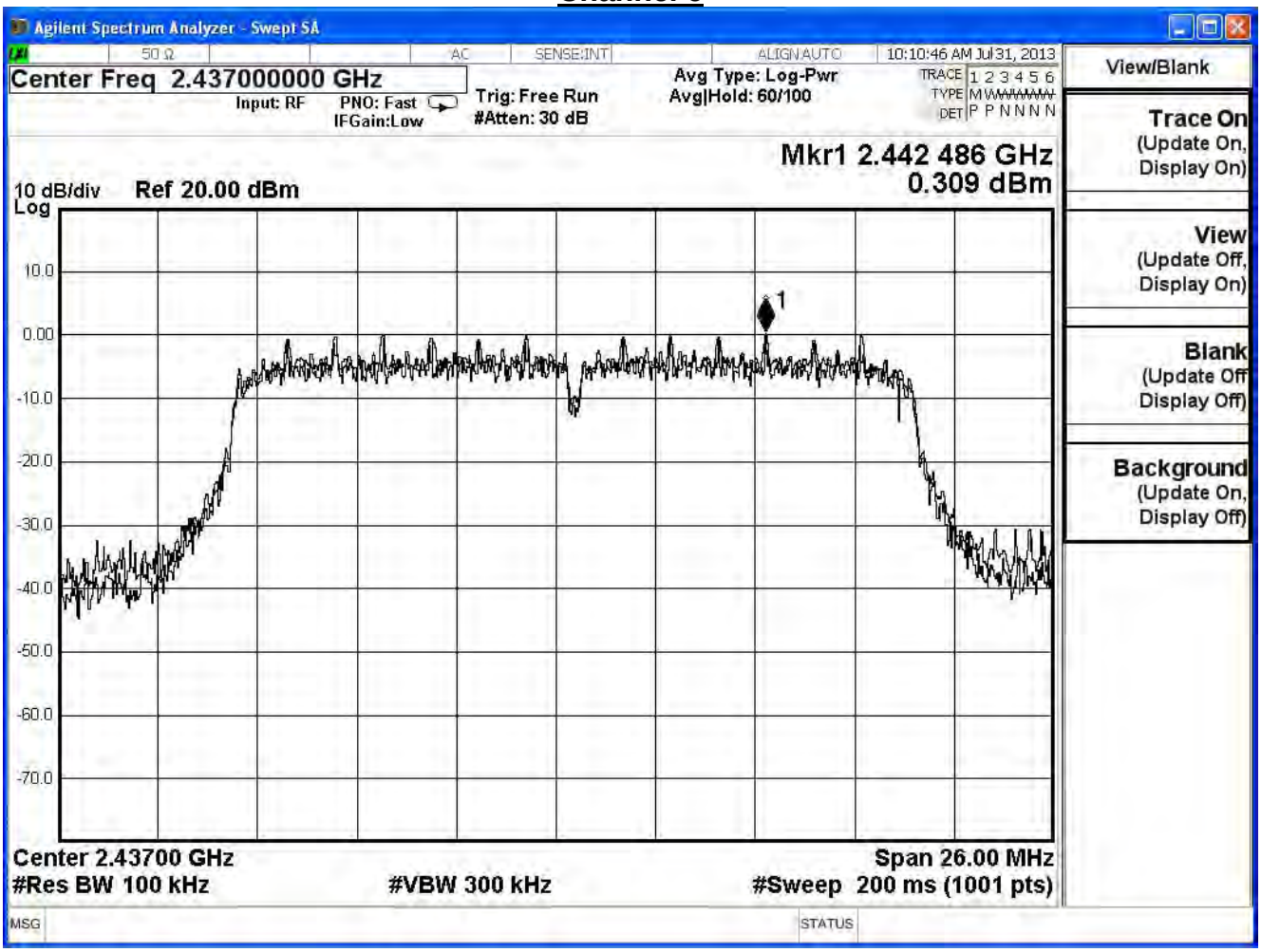
Product	VDSL2 Security Firewall		
Test Item	Power Density		
Test Mode	Mode 1: Transmit		
Date of Test	2013/07/31	Test Site	SR7

IEEE802.11n_20MHz_(ANT 1)					
Channel No.	Frequency (MHz)	Reading Level(dBm)	Measure Level(dBm)	Limit (dBm)	Result
1	2412	-0.026	-15.226	≦8	Pass
6	2437	0.309	-14.891	≦8	Pass
11	2462	0.413	-14.787	≦8	Pass

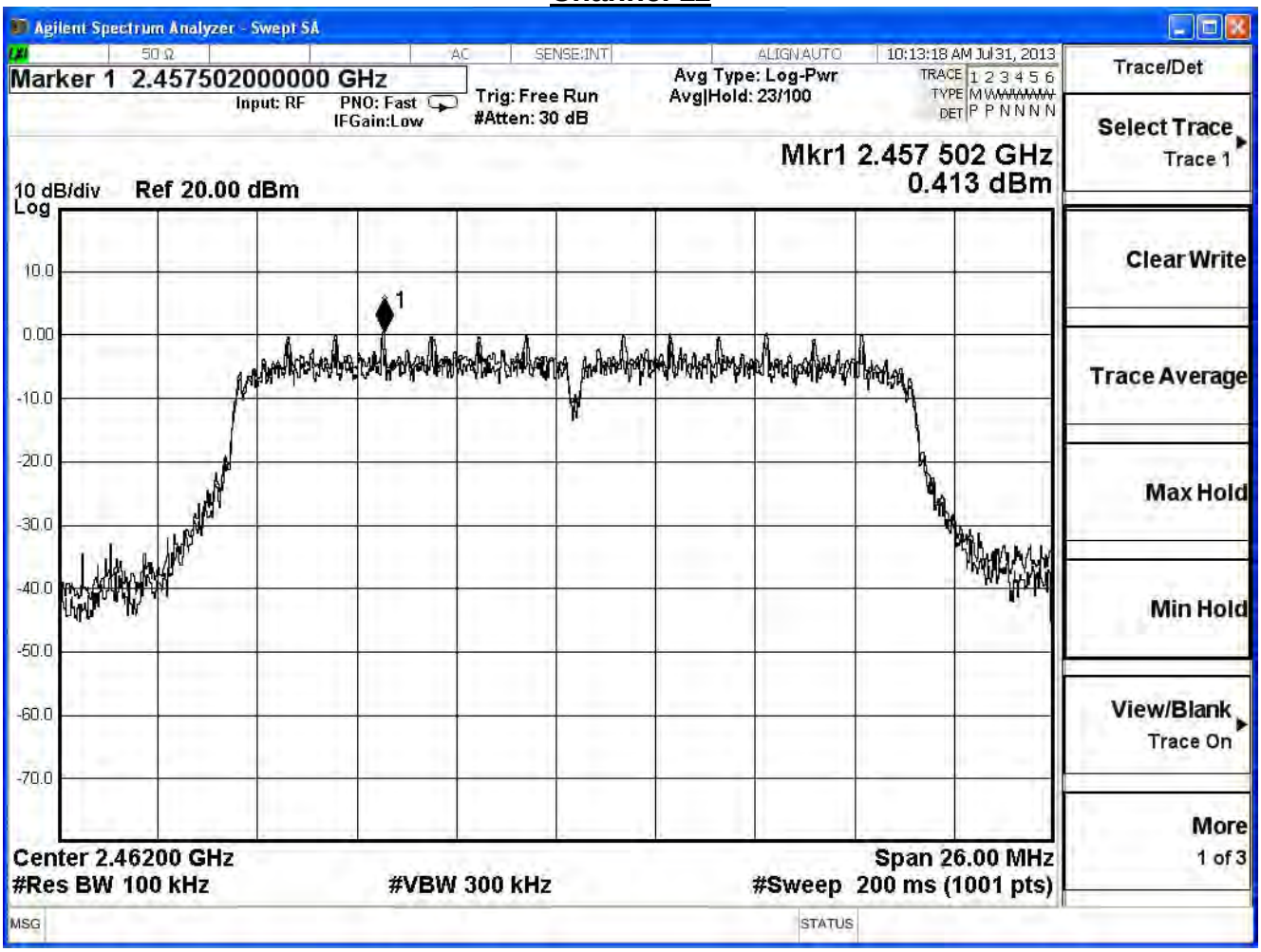
Channel 1



Channel 6


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:10:46 AM Jul 31, 2013
Center Freq 2.437000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 60/100
TRACE 1 2 3 4 5 6
TYPE M
DET P P N N N N
Mkr1 2.442 486 GHz
0.309 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.43700 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 26.00 MHz
#Sweep 200 ms (1001 pts)
MSG
STATUS
View/Blank
Trace On
(Update On,
Display On)
View
(Update Off,
Display On)
Blank
(Update Off
Display Off)
Background
(Update On,
Display Off)

Channel 11


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:13:18 AM Jul 31, 2013
Marker 1 2.457502000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 23/100
TRACE 1 2 3 4 5 6
TYPE M
DET P P N N N N
Mkr1 2.457 502 GHz
0.413 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.46200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 26.00 MHz
#Sweep 200 ms (1001 pts)
MSG
STATUS
Trace/Det
Select Trace
Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View/Blank
Trace On
More
1 of 3

Product	VDSL2 Security Firewall		
Test Item	Power Density		
Test Mode	Mode 1: Transmit		
Date of Test	2013/07/31	Test Site	SR7

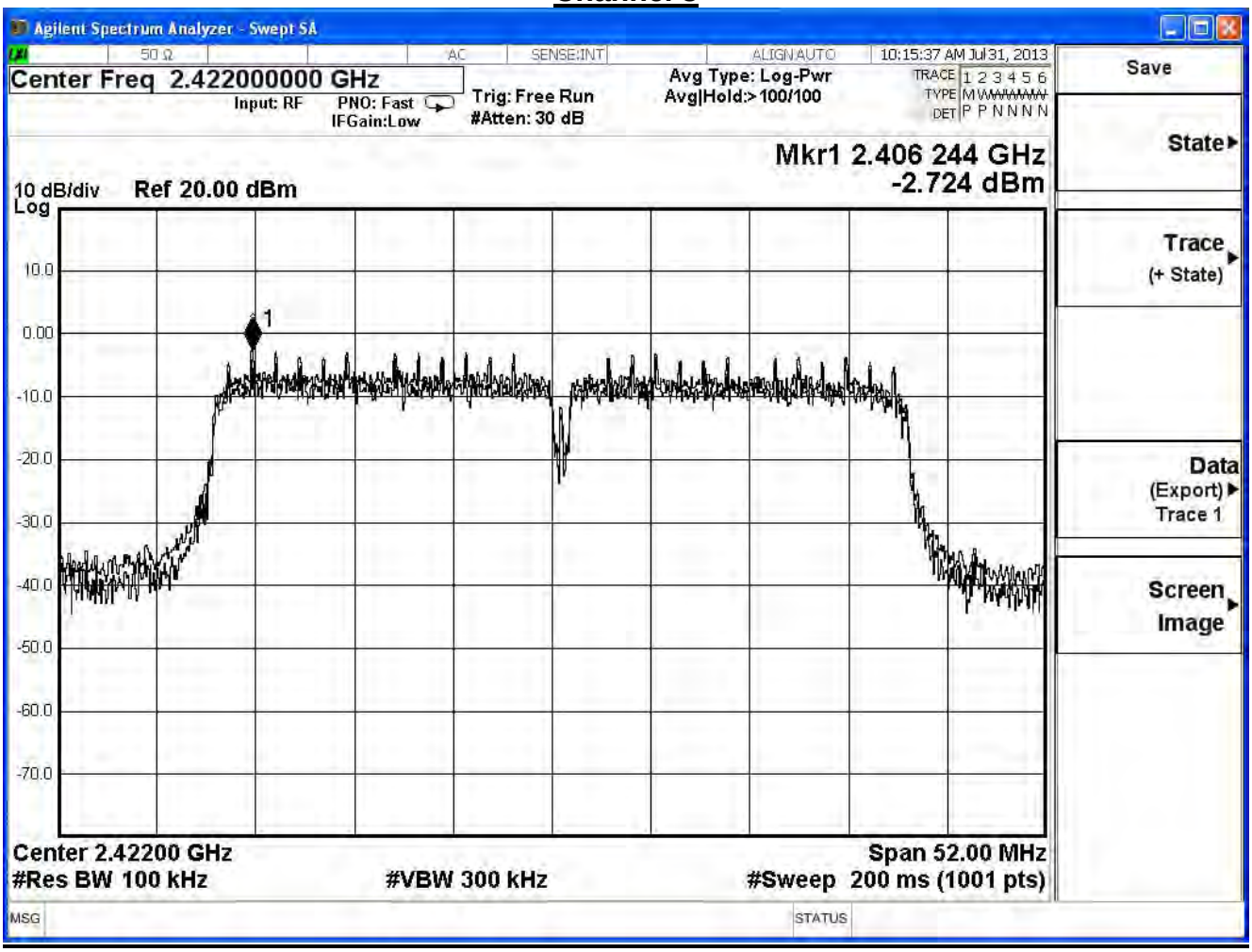
IEEE802.11n20MHz(ANT 0+1)

Channel No.	Frequency (MHz)	Measure Level(dBm)	Limit (dBm)	Result
1	2412	-11.85	≦8	Pass
6	2437	-12.60	≦8	Pass
11	2462	-12.85	≦8	Pass

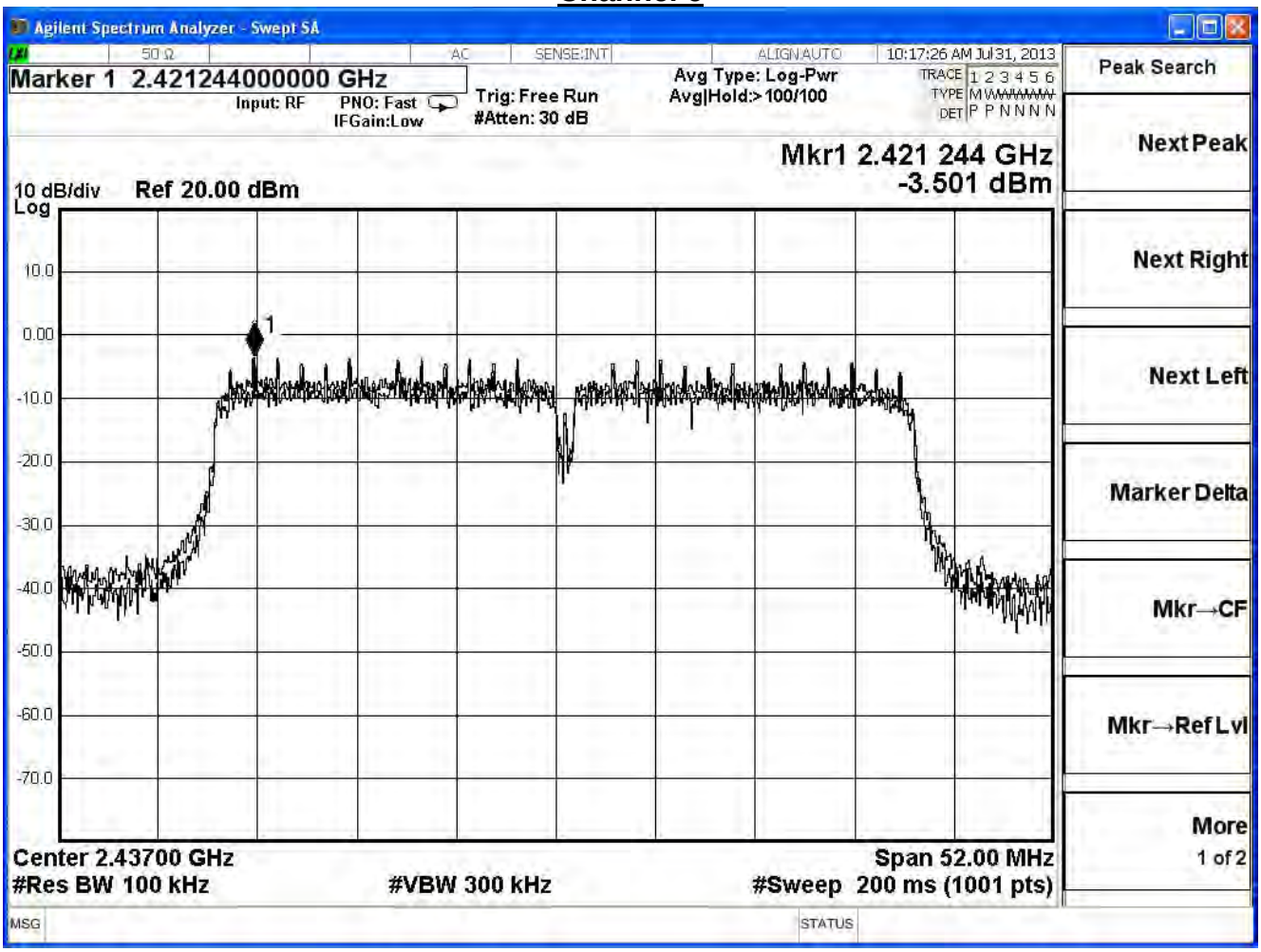
Product	VDSL2 Security Firewall		
Test Item	Power Density		
Test Mode	Mode 1: Transmit		
Date of Test	2013/04/26	Test Site	SR7

IEEE 802.11n_40MHz (ANT 0)					
Channel No.	Frequency (MHz)	Reading Level(dBm)	Measure Level(dBm)	Limit (dBm)	Result
3	2422	-2.724	-17.924	≦8	Pass
6	2437	-3.501	-18.701	≦8	Pass
9	2452	-4.359	-19.559	≦8	Pass

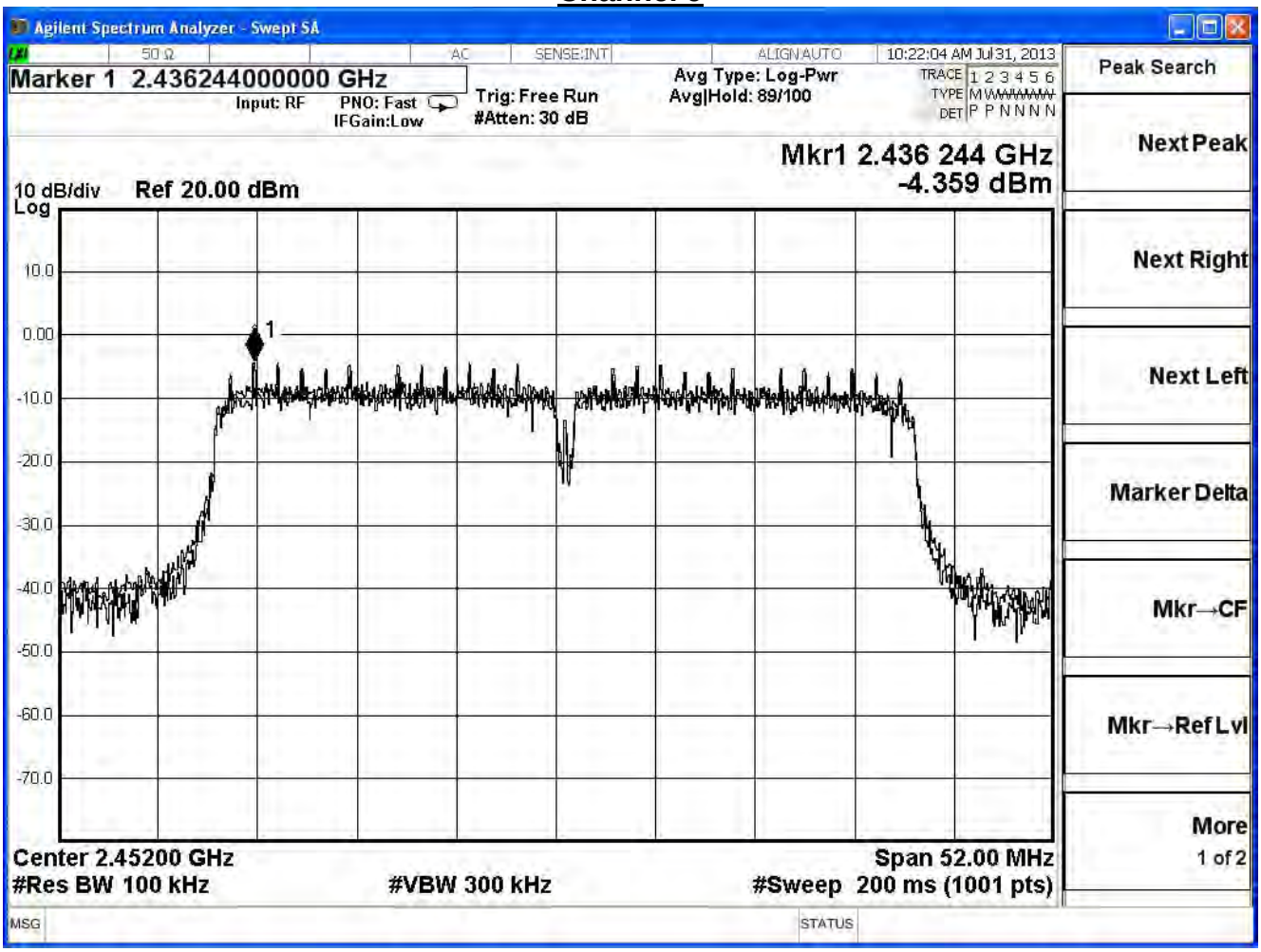
Channel 3



Channel 6


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:17:26 AM Jul 31, 2013
Marker 1 2.421244000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
TRACE 1 2 3 4 5 6
TYPE M WWWWWW
DET P P N N N N
Mkr1 2.421 244 GHz
-3.501 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.43700 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 52.00 MHz
#Sweep 200 ms (1001 pts)
Peak Search
Next Peak
Next Right
Next Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

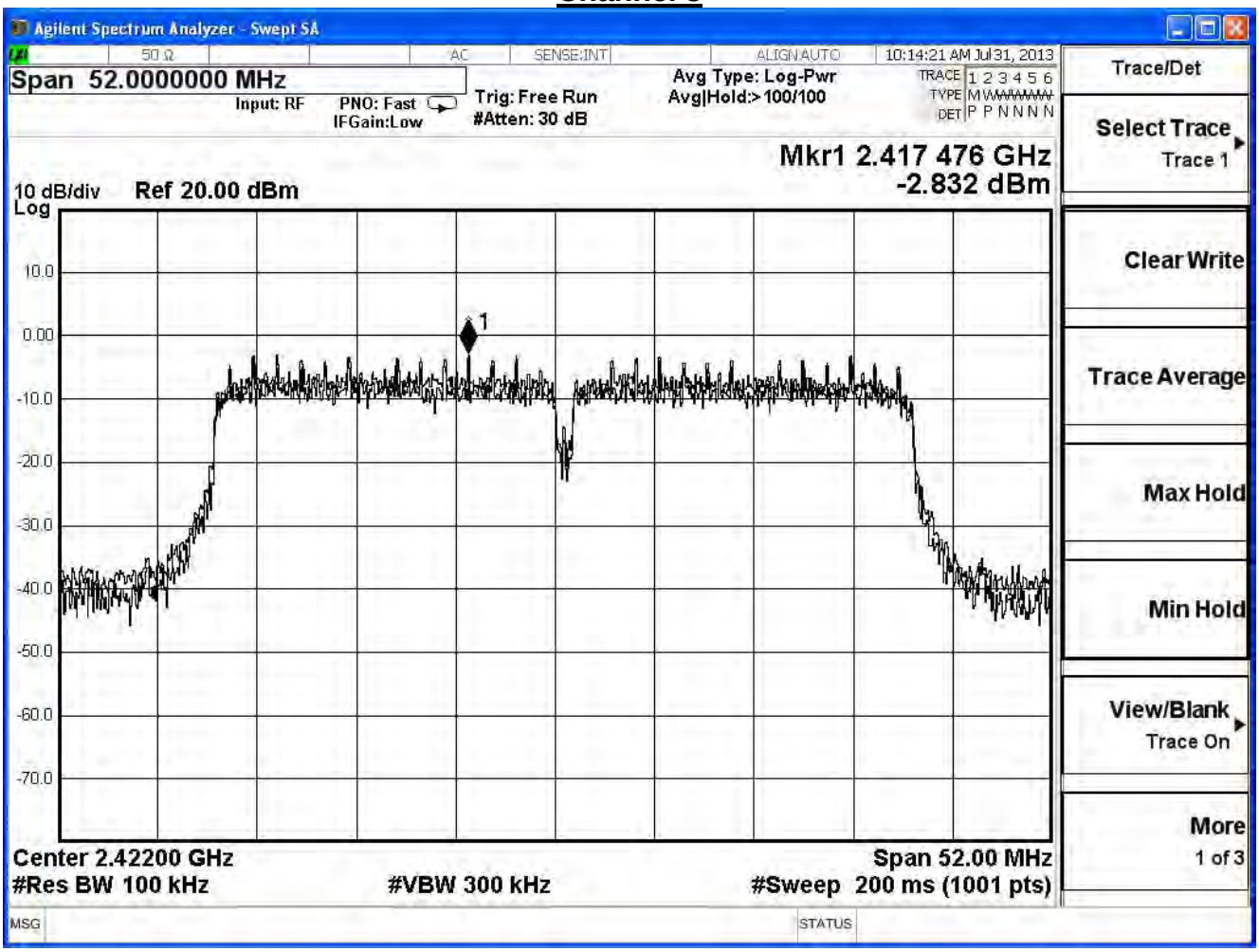
Channel 9


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:22:04 AM Jul 31, 2013
Marker 1 2.436244000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 89/100
TRACE 1 2 3 4 5 6
TYPE M
DET P P N N N N
Mkr1 2.436 244 GHz
-4.359 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 2.45200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 52.00 MHz
#Sweep 200 ms (1001 pts)
MSG
STATUS
Peak Search
Next Peak
Next Right
Next Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

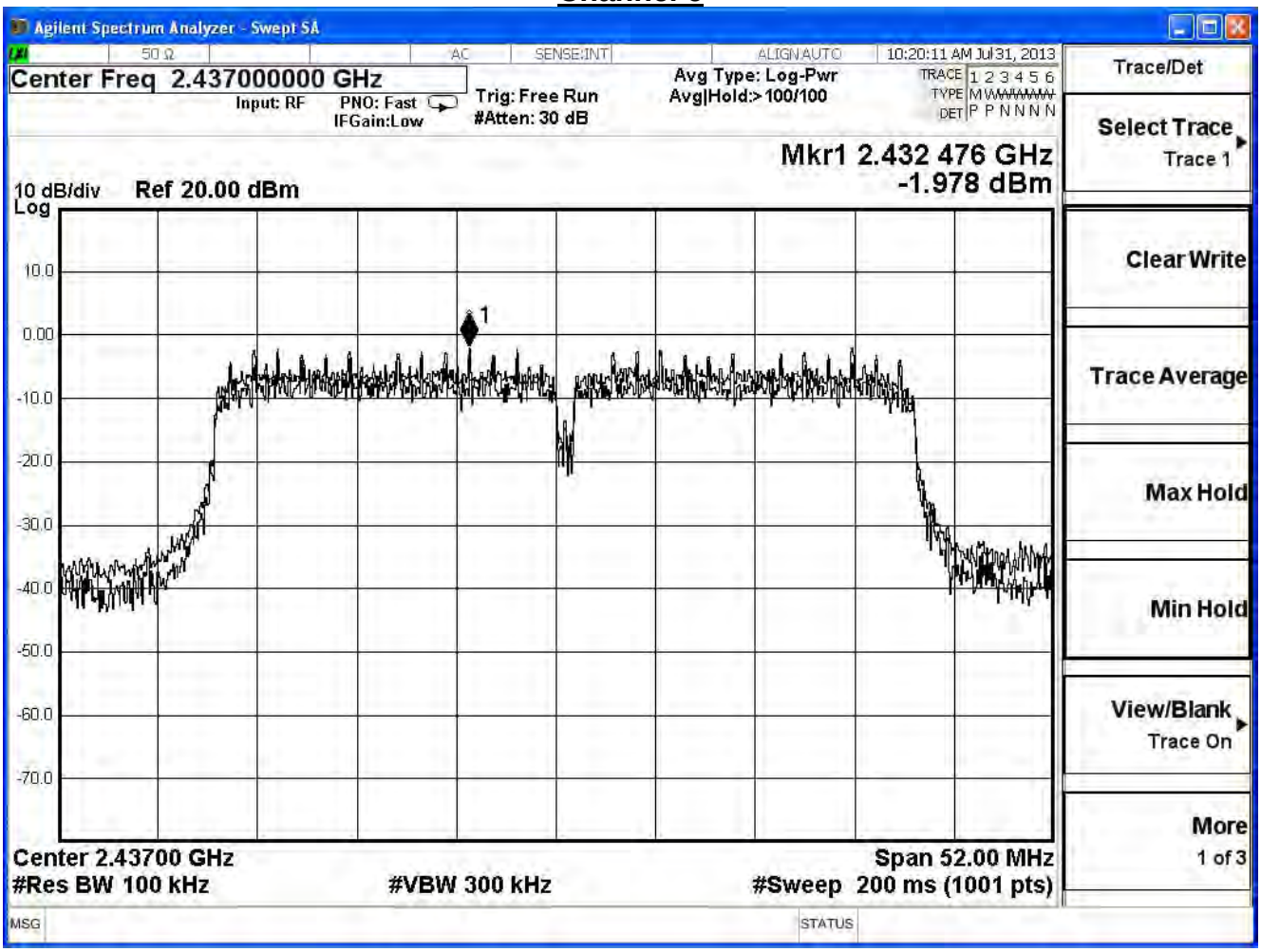
Product	VDSL2 Security Firewall		
Test Item	Power Density		
Test Mode	Mode 1: Transmit		
Date of Test	2013/07/31	Test Site	SR7

IEEE 802.11n_40MHz (ANT 1)					
Channel No.	Frequency (MHz)	Reading Level(dBm)	Measure Level(dBm)	Limit (dBm)	Result
3	2422	-2.832	-18.032	≦8	Pass
6	2437	-1.978	-17.178	≦8	Pass
9	2452	-2.593	-17.793	≦8	Pass

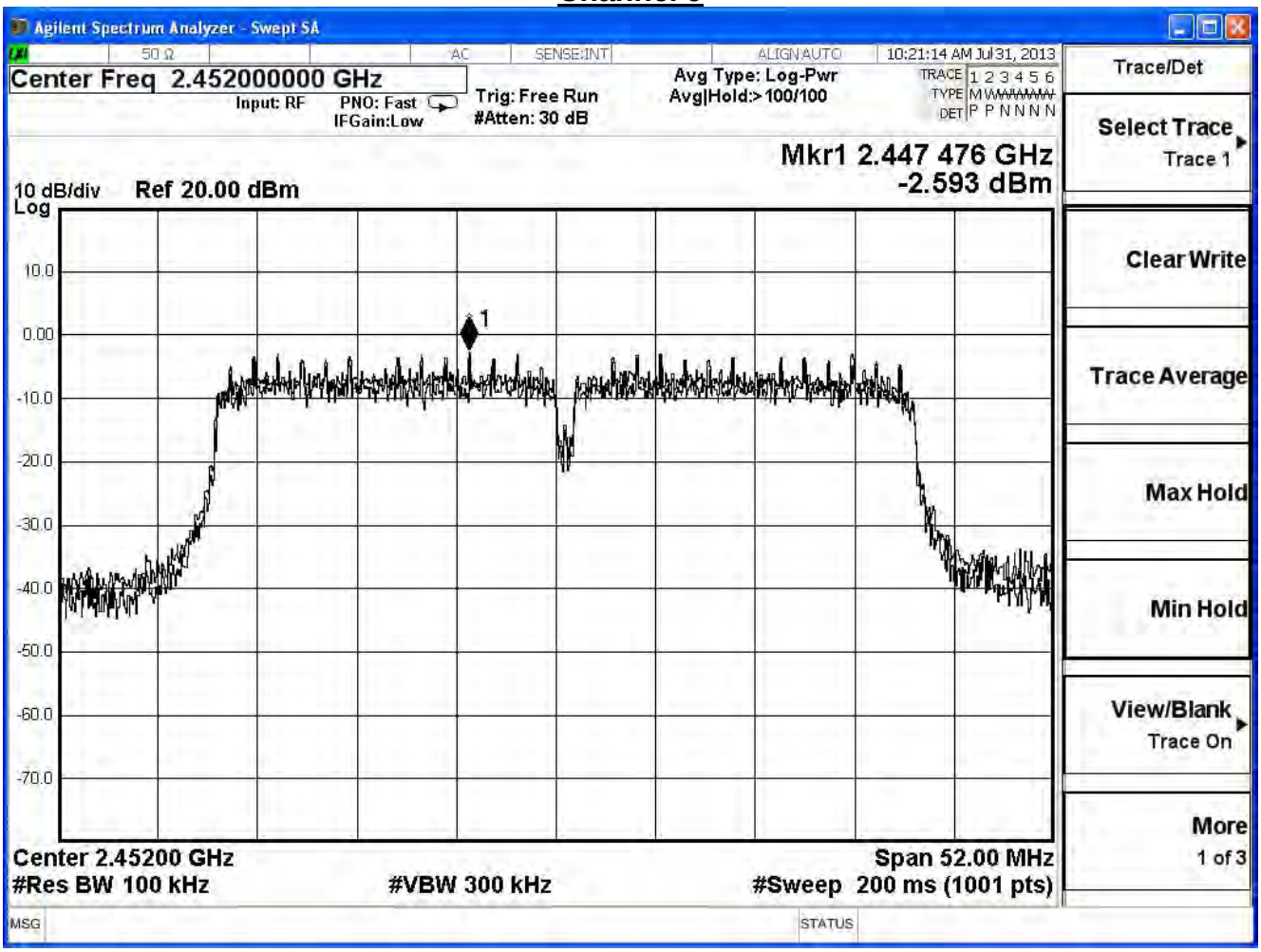
Channel 3



Channel 6


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:20:11 AM Jul 31, 2013
Center Freq 2.437000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
TRACE 1 2 3 4 5 6
TYPE M WWWWWW
DET P P N N N N
Mkr1 2.432 476 GHz
-1.978 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.43700 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 52.00 MHz
#Sweep 200 ms (1001 pts)
MSG
STATUS
Trace/Det
Select Trace
Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View/Blank
Trace On
More
1 of 3

Channel 9


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:21:14 AM Jul 31, 2013
Center Freq 2.452000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
TRACE 1 2 3 4 5 6
TYPE M
DET P P N N N N
Mkr1 2.447 476 GHz
-2.593 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.45200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 52.00 MHz
#Sweep 200 ms (1001 pts)
MSG
STATUS
Trace/Det
Select Trace
Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View/Blank
Trace On
More
1 of 3

Product	VDSL2 Security Firewall		
Test Item	Power Density		
Test Mode	Mode 1: Transmit		
Date of Test	2013/07/31	Test Site	SR7

IEEE802.11n40MHz(ANT 0+1)

Channel No.	Frequency (MHz)	Measure Level(dBm)	Limit (dBm)	Result
3	2422	-14.97	≦8	Pass
6	2437	-14.86	≦8	Pass
9	2452	-15.58	≦8	Pass