	Report No: R2437		
	Issue No: 1		
	Test No: T2590	Test Report	Page: 1 of 78



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REPORT ON ELECTROMAGNETIC COMPATIBILITY TESTS

**Performed at:
TWENTY PENCE TEST SITE**

**Twenty Pence Road,
Cottenham,
Cambridge
U.K.
CB24 8PS**

on

Frontier Silicon Limited

Venice 6 - WiFi Module

dated


11th February 2008

Document History

Issue	Date	Affected page(s)	Description of modifications	Revised by	Approved by
1	11/02/08		Initial release		

Based on report template:
v071019

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	Report No: R2437	
	Issue No: 1	
Test No: T2590	Test Report	
		Page: 2 of 78

Equipment Under Test (EUT): Venice 6 - WiFi Module

Test Commissioned by: Frontier Silicon Limited
Gleneagles, The Belfry
Colonial Way
Watford
Herts.
WD24 4WH

Representative: Alan Morrison

Test Started: 11th January 2008

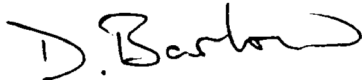
Test Completed: 11th January 2008

Test Engineer: Derek Barlow

Date of Report: 11th February 2008

Written by: Derek Barlow

Checked by: Dave Smith

Signature: 

Signature: 


Date: 4th February 2008

Date: 11th February 2008

dB Technology can only report on the specific unit(s) tested at its site. The responsibility for extrapolating this data to a product line lies solely with the manufacturer.


Test Standards Applied

CFR 47 : 2006	<i>Code of Federal Regulations: Pt 15 Subpart C - Radio Frequency Devices - Intentional Radiators</i>
---------------	---

	Report No: R2437	Test Report	Page: 3 of 78
	Issue No: 1		
	Test No: T2590		


Emissions Test Results Summary

FCC Part	Parameter	
15.207	Conducted Emissions	Not tested - the EUT was a module that did not include its own mains power supply.
15.209	Radiated Emissions	PASS (for frequencies in the Restricted Bands list of 15.205 - all other parts of this section are not applicable - 15.247 takes precedence.)
15.247(a)(2)	6dB bw must be > 500kHz	PASS
15.247(b)(3)	Peak power must be < 1W	PASS
15.247(b)(4)	Antenna gain must be < 6dBi	Not tested - anyone incorporating this module into a final product must ensure this requirement is met.
15.247(b)(5)	Exposure to RF	Not tested
15.247(d)	All spurious in 100kHz bw must be 20dB below maximum carrier in 100kHz bw	PASS
	Radiated spurious must meet limits of 15.209 in Restricted Bands of 15.205	PASS
15.247(e)	Antenna conducted power must not exceed 8dBm in any 3kHz band	PASS


	Report No: R2437	Test Report	Page: 4 of 78
	Issue No: 1		
	Test No: T2590		

Contents

1 EUT Details	6
1.1 General	6
1.2 Details of Interconnecting Cables	6
1.3 Modifications to EUT and Peripherals	7
1.4 EUT Operating Modes	7
<i>Figure 1 General Arrangement of EUT and Peripherals</i>	7
<i>Photograph 1 Arrangement of EUT and Peripherals 1</i>	8
<i>Photograph 2 Arrangement of EUT and Peripherals 2</i>	8
<i>Photograph 3 Arrangement of EUT and Peripherals 3</i>	9
<i>Photograph 4 Arrangement of EUT and Peripherals 4</i>	9
2 Test Equipment	10
3 Test Methods	11
3.1 Radiated Emissions	11
3.2 Conducted Antenna Emissions	11
4 Test Results	11
4.1 Bandwidth - 15.247(a)(2)	12
4.2 Peak Power - 15.247(b)(3)	13
4.3 Radiated Emissions - 15.209	14
4.4 Antenna Conducted Spurious Emissions using 100kHz bw - 15.247(d)	15
4.5 Antenna Conducted In-Band Emissions using 3kHz bw - 15.247(e)	16
<i>PLOT 1 Radiated Emissions - 30MHz to 275MHz (FM mode)</i>	17
<i>PLOT 2 Radiated Emissions - 250MHz to 1GHz (FM mode)</i>	18
<i>PLOT 3 Radiated Emissions - 30MHz to 275MHz (WiFi Tx Ch6)</i>	19
<i>PLOT 4 Radiated Emissions - 250MHz to 1GHz (WiFi Tx Ch6)</i>	20
<i>PLOT 5 Radiated Emissions - 30MHz to 275MHz (WiFi Rx Ch6)</i>	21
<i>PLOT 6 Radiated Emissions - 250MHz to 1GHz (WiFi Rx Ch6)</i>	22
<i>PLOT 7 Radiated Emissions - 1MHz BW 1GHz to 2GHz WiFi Rx Ch6</i>	23
<i>PLOT 8 Radiated Emissions - 1MHz BW 1GHz to 2GHz WiFi Tx Ch6</i>	24
<i>PLOT 9 Radiated Emissions - 1MHz BW 1GHz to 2GHz FM 98MHz</i>	25
<i>PLOT 10 Radiated Emissions - 1MHz BW 1.5GHz to 2.5GHz Tx Ch6</i>	26
<i>PLOT 11 Radiated Emissions - 1MHz BW 1.5GHz to 2.5GHz Tx Ch6</i>	27
<i>PLOT 12 Radiated Emissions - 1MHz BW 1.5GHz to 2.5GHz Rx Ch6</i>	28
<i>PLOT 13 Radiated Emissions - 1MHz BW 3GHz to 8GHz WiFi Rx Ch6</i>	29
<i>PLOT 14 Radiated Emissions - 1MHz BW 3GHz to 8GHz WiFi Tx Ch6</i>	30
<i>PLOT 15 Radiated Emissions - 1MHz BW 8GHz to 13GHz WiFi Tx Ch6</i>	31
<i>PLOT 16 Radiated Emissions - 12.18GHz WiFi Tx Ch6 (Hi Gn Rx Ant)</i>	32
<i>PLOT 17 Radiated Emissions - 12.18GHz Hi Gain Rx Ant Avg + QP</i>	33
<i>PLOT 18 Radiated Emissions - 1MHz BW 8GHz to 13GHz WiFi Rx Ch6</i>	34
<i>PLOT 19 Radiated Emissions - 1MHz BW 13GHz to 18GHz WiFi Rx Ch6</i>	35
<i>PLOT 20 Radiated Emissions - 1MHz BW 13GHz to 18GHz WiFi Tx Ch6</i>	36
<i>PLOT 21 Radiated Emissions - 1MHz BW 18GHz to 22GHz WiFi Tx Ch6</i>	37
<i>PLOT 22 Radiated Emissions - 1MHz BW 18GHz to 22GHz WiFi Rx Ch6</i>	38
<i>PLOT 23 Radiated Emissions - 1MHz BW 22GHz to 26GHz WiFi Rx Ch6</i>	39
<i>PLOT 24 Radiated Emissions - 1MHz BW 22GHz to 26GHz WiFi Tx Ch6</i>	40
<i>PLOT 25 Antenna Conducted Emissions - Bandwidth - 801.11b Ch1</i>	41
<i>PLOT 26 Antenna Conducted Emissions Bandwidth - 801.11g Ch1</i>	42
<i>PLOT 27 Antenna Conducted Emissions - Bandwidth - 801.11g Ch6</i>	43
<i>PLOT 28 Antenna Conducted Emissions - Bandwidth - 801.11b Ch6</i>	44
<i>PLOT 29 Antenna Conducted Emissions - Bandwidth - 801.11b Ch11</i>	45
<i>PLOT 30 Antenna Conducted Emissions - Bandwidth - 801.11g Ch11</i>	46
<i>PLOT 31 Antenna Conducted Emissions - Peak Power 802.11g Ch11</i>	47
<i>PLOT 32 Antenna Conducted Emissions - Peak Power 802.11b Ch11</i>	48
<i>PLOT 33 Antenna Conducted Emissions - Peak Power 802.11b Ch6</i>	49
<i>PLOT 34 Antenna Conducted Emissions - Peak Power 802.11g Ch6</i>	50

	Report No: R2437	
	Issue No: 1	
Test No: T2590	Test Report	Page: 5 of 78

PLOT 35	Antenna Conducted Emissions - Peak Power 802.11g Ch1	51
PLOT 36	Antenna Conducted Emissions - Peak Power 802.11b Ch1	52
PLOT 37	Antenna Conducted - 100kHz BW in-band - to establish limits	53
PLOT 38	Antenna Cond - 30MHz to 1GHz 100kHz BW out-band Tx Ch1	54
PLOT 39	Antenna Cond - 30MHz to 1GHz 100kHz BW out-band Tx Ch6	55
PLOT 40	Antenna Cond - 30MHz to 1GHz 100kHz BW out-band Tx Ch11	56
PLOT 41	Antenna Cond - 1GHz to 2.4GHz 100kHz BW out-band Tx Ch11	57
PLOT 42	Antenna Cond - 1GHz to 2.4GHz 100kHz BW out-band Tx Ch6	58
PLOT 43	Antenna Cond - 1GHz to 2.4GHz 100kHz BW out-band Tx Ch1	59
PLOT 44	Antenna Cond - 2.4GHz Band Edge 100kHz BW out-band Tx Ch1	60
PLOT 45	Antenna Cond - 2.4GHz Band Edge 100kHz BW out-band Tx Ch6	61
PLOT 46	Antenna Cond - 2.483GHz Bnd Edge 100kHz BW out-band Tx Ch6	62
PLOT 47	Antenna Cond - 2.483GHz Bnd Edge 100kHz BW out-band Tx Ch11	63
PLOT 48	Antenna Cond - 2.483GHz to 8GHz 100kHz BW out-band Tx Ch11	64
PLOT 49	Antenna Cond - 2.483GHz to 8GHz 100kHz BW out-band Tx Ch6	65
PLOT 50	Antenna Cond - 2.483GHz to 8GHz 100kHz BW out-band Tx Ch1	66
PLOT 51	Antenna Cond - 8GHz to 13GHz 100kHz BW out-band Tx Ch1	67
PLOT 52	Antenna Cond - 8GHz to 13GHz 100kHz BW out-band Tx Ch6	68
PLOT 53	Antenna Cond - 8GHz to 13GHz 100kHz BW out-band Tx Ch11	69
PLOT 54	Antenna Cond - 13GHz to 18GHz 100kHz BW out-band Tx Ch11	70
PLOT 55	Antenna Cond - 13GHz to 18GHz 100kHz BW out-band Tx Ch6	71
PLOT 56	Antenna Cond - 13GHz to 18GHz 100kHz BW out-band Tx Ch1	72
PLOT 57	Antenna Cond - 18GHz to 25GHz 100kHz BW out-band Tx Ch1	73
PLOT 58	Antenna Cond - 18GHz to 25GHz 100kHz BW out-band Tx Ch6	74
PLOT 59	Antenna Cond - 18GHz to 25GHz 100kHz BW out-band Tx Ch11	75
PLOT 60	Antenna Conducted Spectral Density (3kHz BW) - Tx Ch11	76
PLOT 61	Antenna Conducted Spectral Density (3kHz BW) - Tx Ch6	77
PLOT 62	Antenna Conducted Spectral Density (3kHz BW) - Tx Ch1	78

	Report No: R2437	Test Report	Page: 6 of 78
	Issue No: 1		
	Test No: T2590		

1 EUT Details

1.1 General

The EUT was a DAB / FM / Wi-Fi radio module for use in domestic radio receivers. It is the Wi-Fi mode that is the main subject of this test as the communication is two way and the device is therefore an intentional radiator when operating in this mode

For the purposes of the test the unit was powered from a plugtop AC to DC power supply.

The operating frequency band of the device was 2400MHz to 2483.5MHz as defined in Part 15.247 of the FCC Rules and used digital modulation with a bandwidth greater than 500kHz.

Details of the EUT and associated peripherals used during the tests are listed below. Figure 1 shows the interconnections between the EUT and peripherals.

Item	Manufacturer	Model	Description	Serial No:	Notes
1	Frontier Silicon	Venice 6	Wi-Fi Module		
2a	Frontier Silicon	SixPax FS0049	Development board including antennas	RAD01261 RAD01264	#1
2b	Frontier Silicon	SixPax FS0049			#2
3a	Friwo	FW75550/06	6V DC Power Supply		#1
3b	Thurlby Thandar	TS3022S	Dual DC Power Supply		#2

#1 Used for radiated emissions testing.

#2 Used for antenna conducted emissions testing.


NOTE:

The SixPax platform contains such items as regulators, audio amplifiers and electrical-to-optical data interfaces to allow control without affecting EMC measurements. It also provides a physical mounting for the WiFi antenna, but the WiFi rf signal does not route through the SixPax – it has a pigtail which connects directly to the SMA connector on the Venice 6 module. The FM antenna connects directly to an SMA connector on Venice 6.

1.2 Details of Interconnecting Cables

The following table lists details of the cables connected to the EUT.

From	To	Cable Type	Length	Notes
DC Power Supply	EUT	Twin core DC Power Cable	1.5m	

	Report No: R2437	
	Issue No: 1	
	Test No: T2590	Test Report

1.3 Modifications to EUT and Peripherals

Details of any modifications that were required to achieve compliance are listed below. The modification numbers are referred to in the results sections as appropriate.

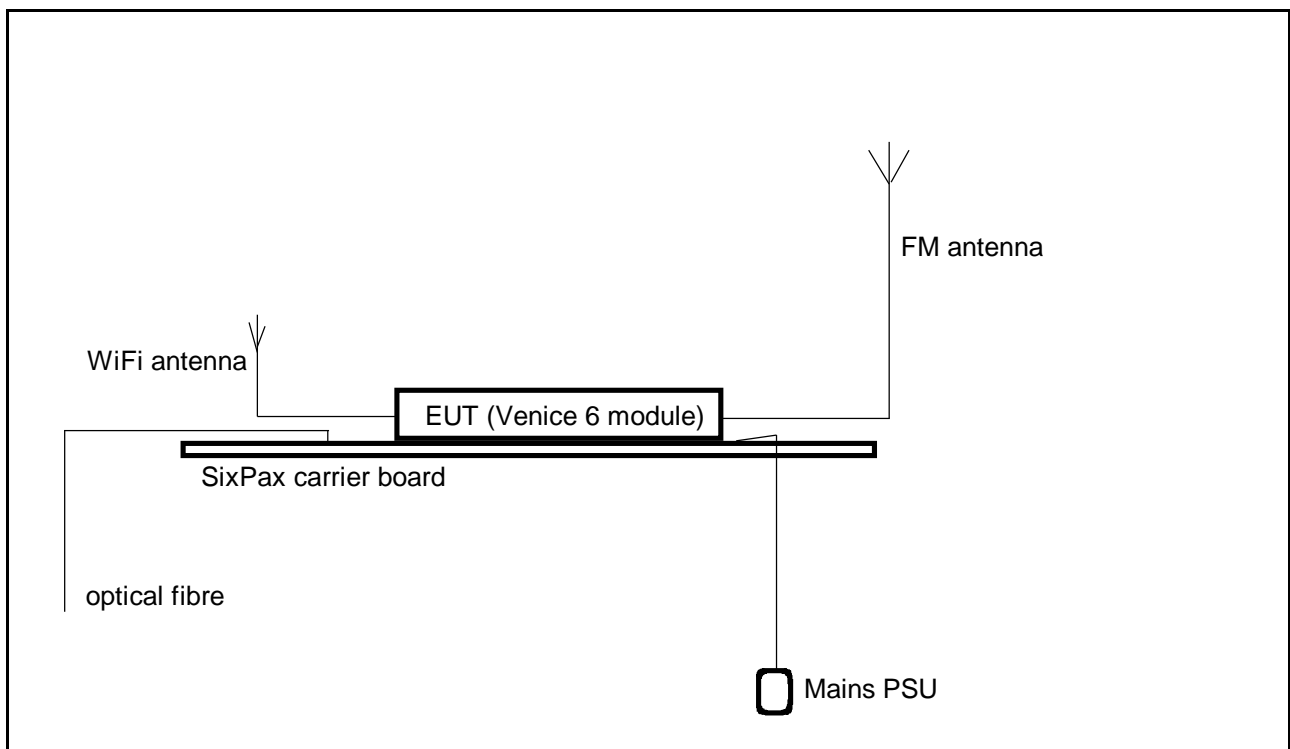
Mod No:	Details	Implemented for
0	As received for testing on 11th January 2008	

1.4 EUT Operating Modes

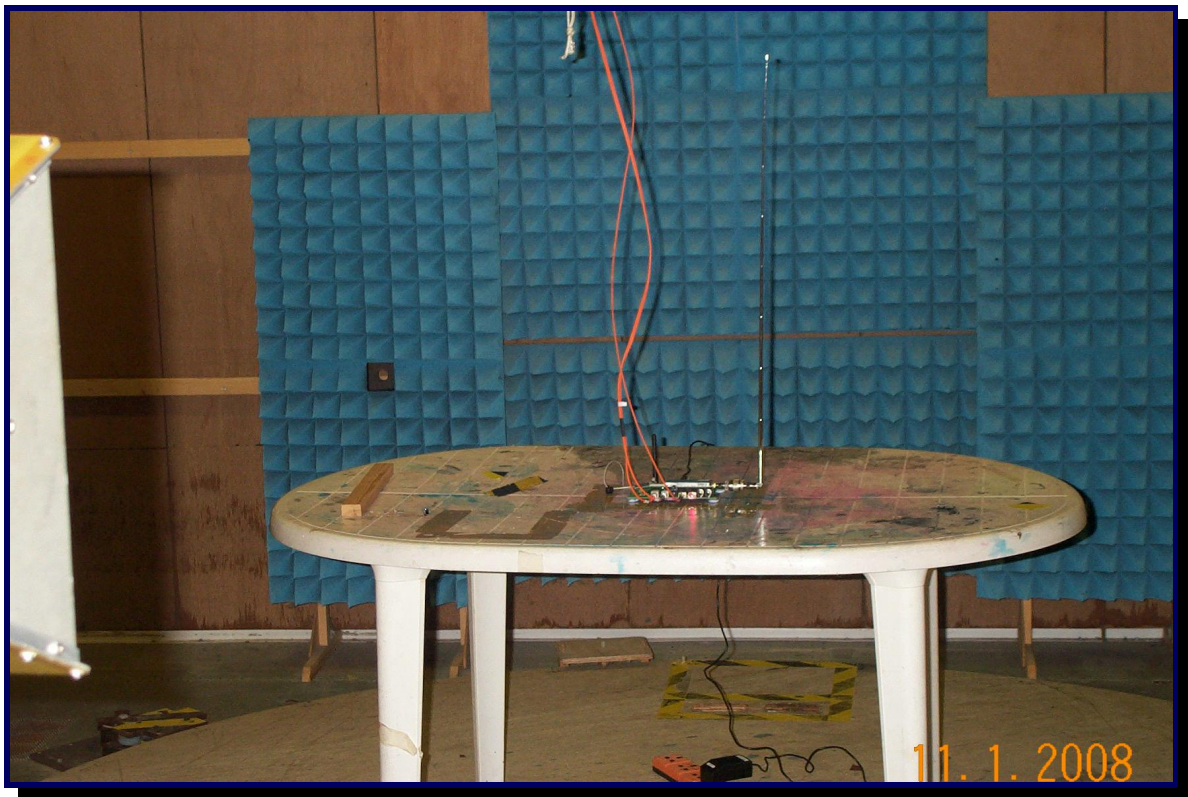
The EUT was tested in the following operating mode or modes. Generally, operating modes are chosen that will exercise the functions of the EUT as fully as possible and in a manner likely to produce maximum emission levels or susceptibility. Individual test result sheets reference the operating mode of the EUT.

Operating Mode	Details
1	Wi-Fi Receive in the 2.4GHz band.
2	Wi-Fi Transmit using digital modulation (> 500kHz bandwidth) in the 2.4GHz band.
3	FM Receive.

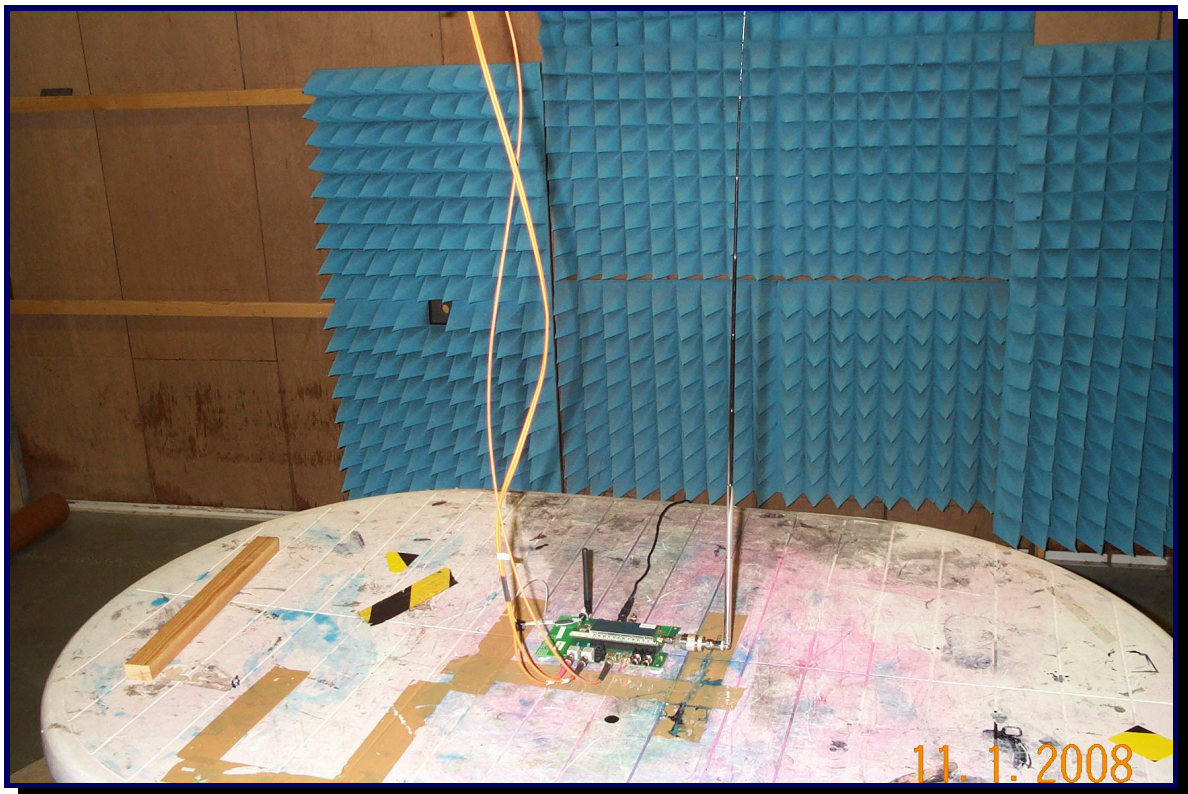
Figure 1 General Arrangement of EUT and Peripherals




Photograph 1 Arrangement of EUT and Peripherals 1



Photograph 2 Arrangement of EUT and Peripherals 2




	Report No: R2437	
	Issue No: 1	
	Test No: T2590	Test Report

Photograph 3 Arrangement of EUT and Peripherals 3



Photograph 4 Arrangement of EUT and Peripherals 4




	Report No: R2437	Test Report	Page: 10 of 78
	Issue No: 1		
	Test No: T2590		

2 Test Equipment

The test equipment used during the tests was one or more of the items listed below. Individual test result sheets indicate which items were used.

Ref No:	Details	Serial Number
A12	Chase Bilog CBL6111A	1012
A20	Alpha 61932500 Horn Antenna (18-26GHz)	50
A21	Alpha 61932400 Horn Antenna (12.4-18GHz)	43
A8	EMCO 3115 DR Guide	6070
PRE7	LUCIX 0.1GHz to 20GHz	24485
PRE8	LUCIX 18GHz to 26.5GHz	24486
R5	HP 8595E Spec. Analyser	3412A00701
R5B	dB Technology Pre-amp	dB001
RFF01	High Pass RF Filter 3GHz to 12.75GHz	1
RFF04	Low Pass RF Filter 0MHz to 2GHz	4

	Report No: R2437	Test Report	Page: 11 of 78
	Issue No: 1		
	Test No: T2590		

3 Test Methods

3.1 Radiated Emissions

This section describes the general method of performing this test. The specific method used and any deviations from this general method are listed in the appropriate results section.

Initial scans are performed in a semi-anechoic screened room at a distance of 3m. Scans are performed over the frequency range specified in the test standard with the antenna both horizontally and vertically polarised. During these scans the EUT and peripherals are rotated through 360°. Bench top EUTs are placed on a non-conducting bench at a height of 0.8m above the ground plane. Floor standing EUTs are placed 0.1m above the ground plane. The results of the scans are shown in the plots included at the end of the report.

Significant emissions identified by the scans are measured on an open area test site at the appropriate test distance using a CISPR16 quasi-peak receiver. Maximised readings are obtained by rotating the EUT through 360° and adjusting the height of the antenna from 1m to 4m. Measurements are made with the antenna both horizontally and vertically polarised and the results tabulated.


3.2 Conducted Antenna Emissions

This section describes the general method of performing this test. The specific method used and any deviations from this general method are listed in the appropriate results section.

The antenna port of the EUT was connected directly to the input of a spectrum analyser. Sweeps were made over the required frequency ranges with the specified detectors applied.

4 Test Results

The following sections contain tabulated test results. Plots of various scans are included at the back of this section.

	Report No: R2437	
	Issue No: 1	
Test No: T2590	Test Report	
		Page: 12 of 78

4.1 Bandwidth - 15.247(a)(2)

FCC Part	Mode	Freq Range MHz	Min MHz	Actual MHz	Notes	PASS / FAIL
15.247(a)(2)	802.11b	2483 - 25000	0.5	10	See plots 25,28,29 for Ch1, Ch6, Ch11	PASS
15.247(a)(2)	802.11g	2483 - 25000	0.5	16.5	See plots 26,27,30 for Ch1, Ch6, Ch11	PASS

Conducted antenna measurements were made.

In both modes the EUT complied with the requirement for bandwidth to be greater than 500kHz

4.2 Peak Power - 15.247(b)(3)

Mode	Peak Level in 5MHz bw dBuV	bw CF dB	Total dBuV	Limit dBuV	Notes	PASS / FAIL
802.11b	122	3.0	125.0	137	Plots 32, 33, 36	PASS
802.11g	123	5.2	128.2	137	Plots 31, 34, 35	PASS

Limit of 137dBuV is equivalent to 1W.
 Conducted antenna measurements were made.
 A 5MHz bandwidth peak detector was used (this is the maximum bandwidth available on the spectrum analyser).

The actual bandwidth of the signal exceeds 5MHz (see section 4.1) and therefore the measured results have to be corrected for the full occupied bandwidth. Assuming the peak power varies with bw in line with $10 * \log(bw1/bw2)$, the 5MHz bw results should be increased by:

3.0 dB for the 802.11b mode (which had a bw of 10 MHz)

5.19 dB for the 802.11g mode (which had a bw of 16.5 MHz)

This value has been added as the factor CF in the table above.

The tables below show that measurements indicate that this extrapolation is reasonable.

Comparison between measured and predicted increase in peak level with increase in measurement bandwidth

Mode 802.11b

BW1	L1	BW2	L2	actual increase	predicted increase using $10 * \log(BW2/BW1)$
kHz	dBuV	kHz	dBuV	dB	dB
3	98	10	100	2	5.2
10	100	100	112	12	10.0
100	112	5000	122	10	17.0

Mode 802.11g


BW1	L1	BW2	L2	actual increase	predicted increase using $10 * \log(BW2/BW1)$
kHz	dBuV	kHz	dBuV	dB	dB
3	95	10	100	5	5.2
10	100	100	108	8	10.0
100	108	5000	123	15	17.0

4.3 Radiated Emissions - 15.209

FCC Part	Parameter	Freq Range MHz	Limit dBuV/m	Actual dBuV/m (max)	Notes	PASS / FAIL
15.209 (a)	Spurious emissions	30 - 88	40qp	33.2pk	Plot3 - WiFi Tx	PASS
15.209 (a)	Spurious emissions	88 - 216	43.5qp	31.5pk	Plots 1, 3, 5 - All modes	PASS
15.209 (a)	Spurious emissions	216 - 960	46qp	38pk	Plot 4 - WiFi Tx	PASS
15.209 (a)	Spurious emissions	960 - 2000	54av	42pk	Plots 7, 8, 9 - All modes	PASS
15.209 (a)	Spurious emissions	2000 - 3000	54av	48pk	Plot 11 - WiFi Tx	PASS
15.209 (a)	Spurious emissions	3000 - 8000	54av	47pk	Plots 13, 14 - WiFi Rx, Tx	PASS
15.209 (a)	Spurious emissions	8000-13000	54av	50pk	Plots 15, 18 - WiFi Tx, Rx	PASS
15.209 (a)	Spurious emissions	12180	54av	39av	Plot 17	PASS
15.209 (a)	Spurious emissions	13000-18000	54av	42.5pk	Plots 19, 20 - Rx, Tx	PASS
15.209 (a)	Spurious emissions	18000-22000	54av	41pk	Plots 21, 22 - Tx, Rx	PASS
15.209 (a)	Spurious emissions	22000-26000	54av	44pk	Plots 23, 24 - Rx, Tx	PASS

15.247 (d) requires radiated spurious to be below the limits of 15.209 just for the Restricted Bands listed in 15.205. Sweeps were performed over the full range and, apart from the actual carrier, no emissions were found to exceed the limit of 15.209.

All results are shown in plots 1 to 24.


	Report No: R2437	
	Issue No: 1	
Test No: T2590	Test Report	
		Page: 15 of 78

4.4 Antenna Conducted Spurious Emissions using 100kHz bw - 15.247(d)

FCC Part	Freq Range MHz	Level below in-band			Notes	PASS / FAIL
		Limit	Actual			
15.247 (d)	30-2400	> 20	25		Plots 38 - 45	PASS
15.247 (d)	2483 - 25000	> 20	22		Plots 46 - 59	PASS

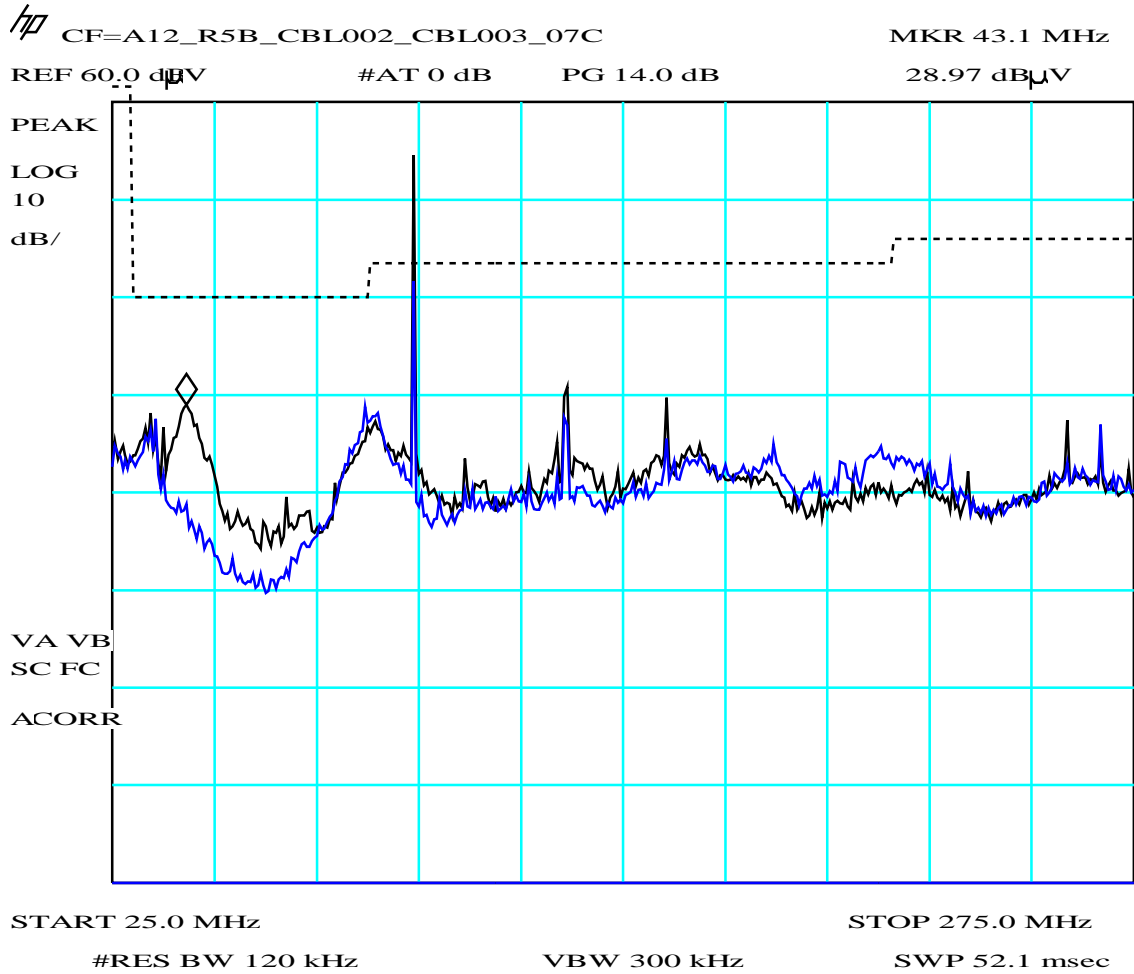
15.247 (d) requires spurious emissions on the antenna port to be at least 20dB below the in-band signal when using a 100kHz bw detector. Plot 37 shows the in-band measured with a 100kHz detector. This was used to establish the limit for the spurious.

The spurious results are shown in plots 38 to 59.

	Report No: R2437	
	Issue No: 1	
Test No: T2590	Test Report	
		Page: 16 of 78

4.5 Antenna Conducted In-Band Emissions using 3kHz bw - 15.247(e)

FCC Part	Parameter	Freq Range MHz	Limit dBuV	Actual dBuV (max)	Notes	PASS / FAIL
15.247 (e)	3kHz Spectral Density	2400 - 2483	115pk (8dBm)	100pk	Plots 60 - 62	PASS
<p>15.247 (e) in-band emissions on the antenna port to be limited to 8dBm when using a 3kHz detector.</p> <p>The 3kHz detector results are shown in plots 60 to 62.</p>						



PLOT 1 Radiated Emissions - 30MHz to 275MHz (FM mode)

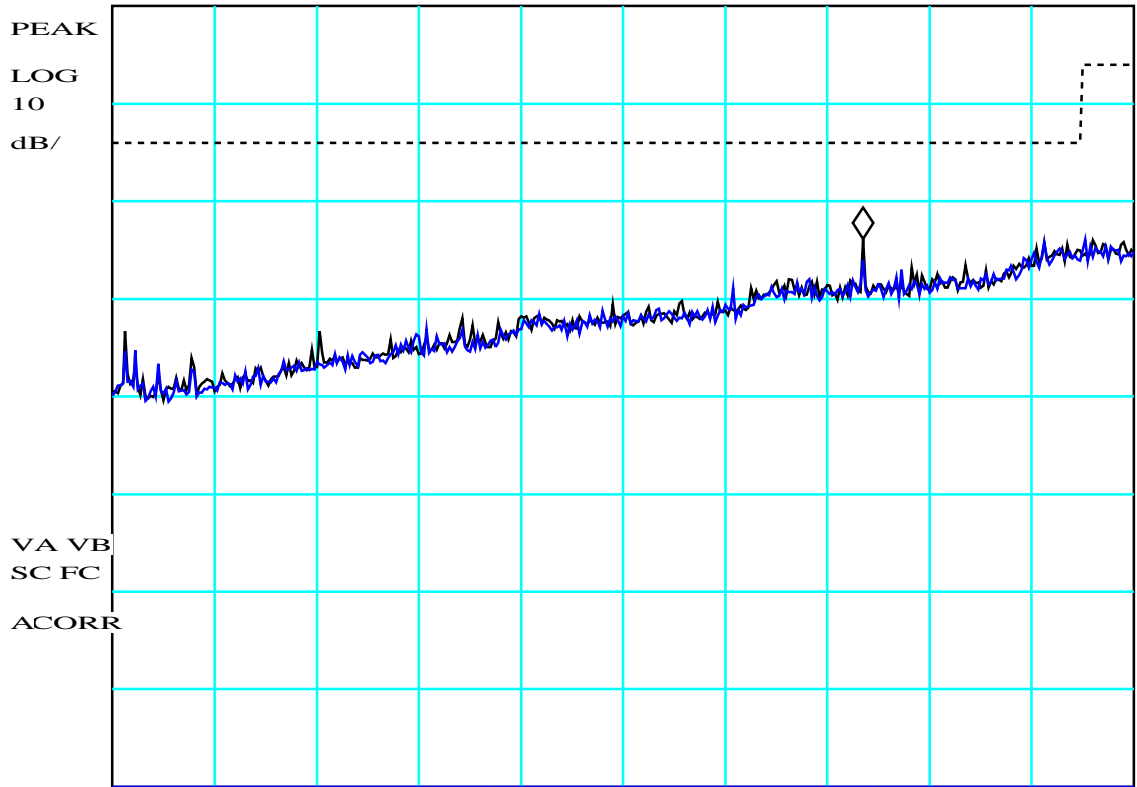
Company:	Frontier Silicon	Product:	Venice 6
Date:	11 Jan 08	Test Engineer:	Derek Barlow
Test:	FCC pt 15	Limit:	FCC (B)
Notes:			
Op mode 1 : FM			
Mod state 0 : as received for testing on 11/01/08			
NOTE: the peak at 98MHz is the FM signal injected into the room.			
Black trace - vertical polarisation. Blue trace - horizontal polarisation.			
Polarisation:	V + H	Orientation:	0 - 360°
Distance:	3m	Antenna:	Bilog
Height:	1m	Filename:	H8111488.plt
		Operating Mode:	1
		Mod. State:	0

Frequency List (MHz)

43.100	30.74 peak	23.77 QP			
98.000	Injected sig				
135.150					
159.730					

CF=A12_R5B_CBL002_CBL003_07C MKR 801.2 MHz

REF 60.0 dBµV #AT 0 dB PG 14.0 dB 36.18 dBµV



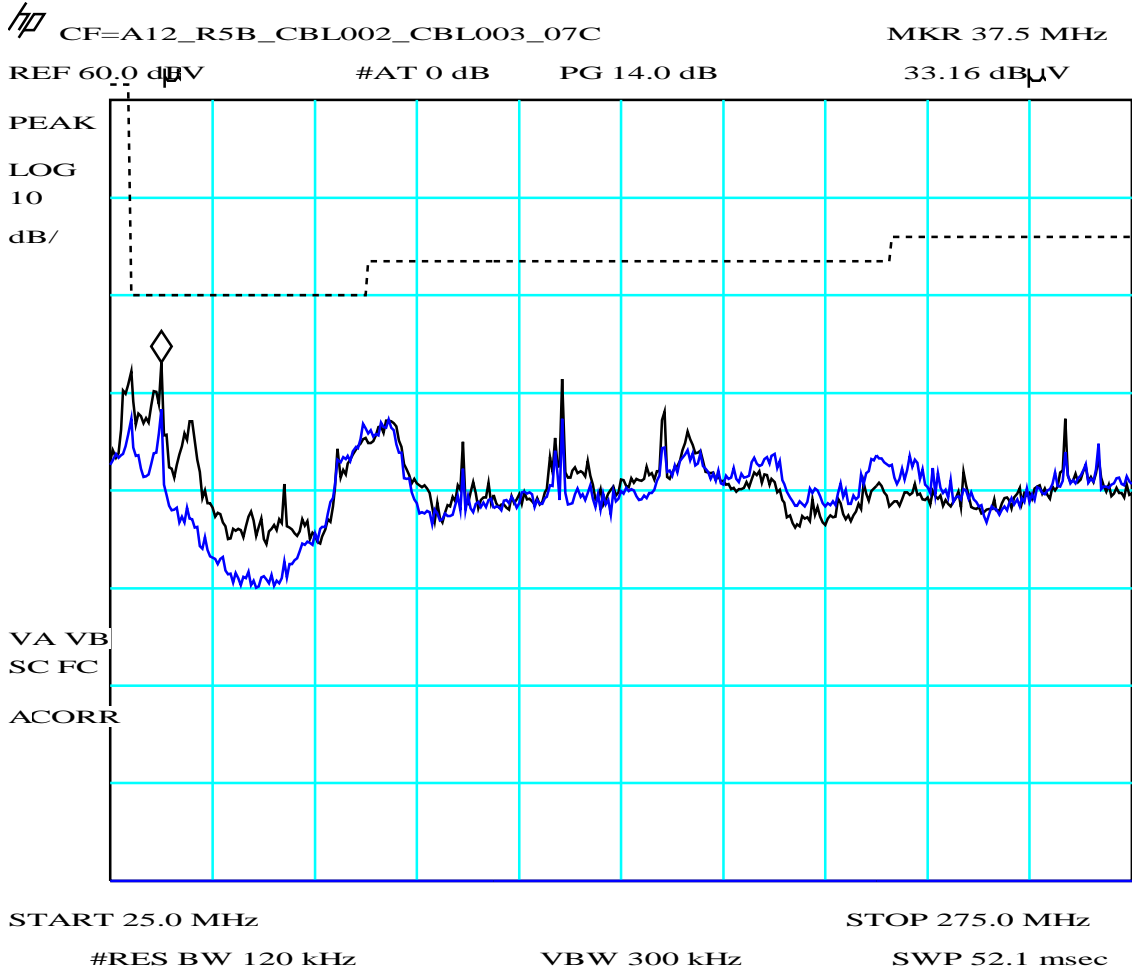
START 250.0 MHz STOP 1.0000 GHz
 #RES BW 120 kHz VBW 300 kHz SWP 156 msec

PLOT 2 Radiated Emissions - 250MHz to 1GHz (FM mode)

Company:	Frontier Silicon	Product:	Venice 6
Date:	11 Jan 08	Test Engineer:	Derek Barlow
Test:	FCC pt 15	Limit:	FCC (B)
Notes:			
Op mode 1 : FM			
Mod state 0 : as received for testing on 11/01/08			
Black trace - vertical polarisation. Blue trace - horizontal polarisation.			
Polarisation:	V + H	Orientation:	0 - 360°
Distance:	3m	Antenna:	Bilog
Height:	1m	Filename:	H81114A3.plt
Operating Mode:			1
Mod. State:			0

Frequency List (MHz)

798.700					



PLOT 3 Radiated Emissions - 30MHz to 275MHz (WiFi Tx Ch6)

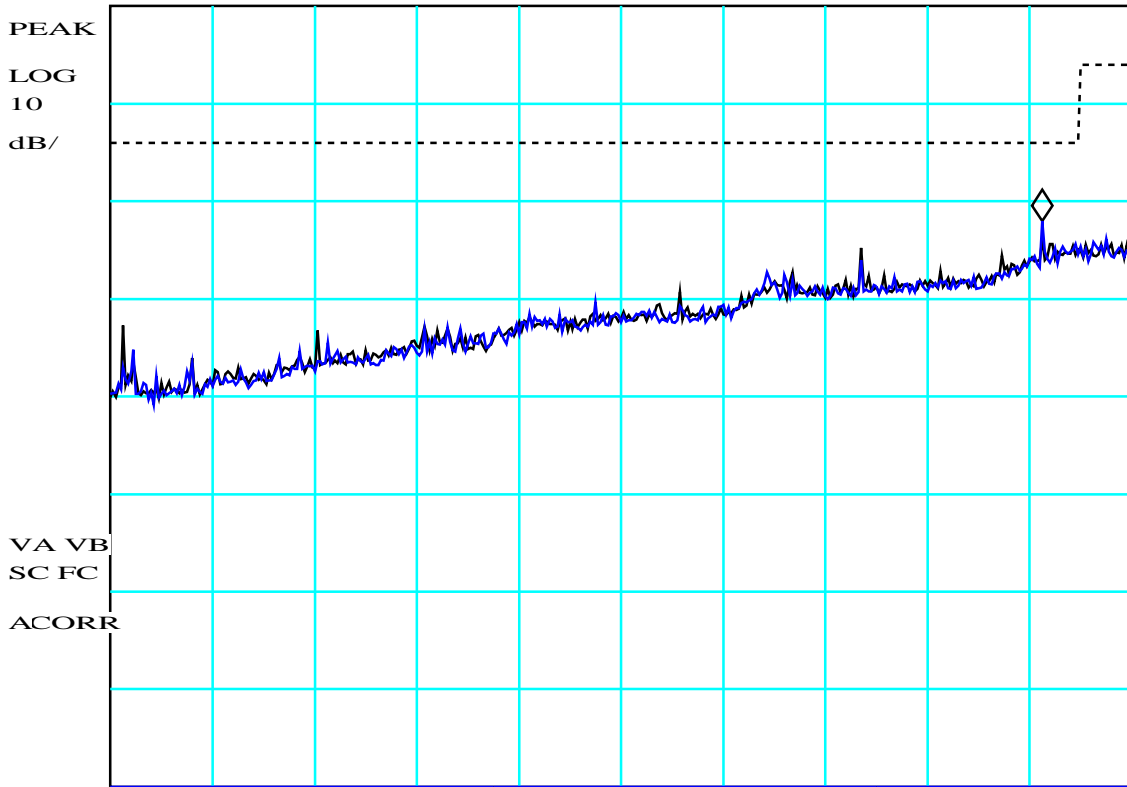
Company:	Frontier Silicon	Product:	Venice 6
Date:	11 Jan 08	Test Engineer:	Derek Barlow
Test:	FCC pt 15	Limit:	FCC (B)
Notes:			
Op mode 2 : WiFi Tx (54MBit/s Ch 6 Power 14dBm)			
Mod state 0 : as received for testing on 11/01/08			
Black trace - vertical polarisation. Blue trace - horizontal polarisation.			
Polarisation:	V + H	Orientation:	0 - 360°
Distance:	3m	Antenna:	Bilog
Height:	1m	Filename:	H81114D8.plt
		Operating Mode:	2
		Mod. State:	0

Frequency List (MHz)

32.240	-----				
37.500	36.820				
135.600	135.150				
160.600	159.730				

CF=A12_R5B_CBL002_CBL003_07C MKR 934.4 MHz

REF 60.0 dBµV #AT 0 dB PG 14.0 dB 37.98 dBµV



START 250.0 MHz STOP 1.0000 GHz
 #RES BW 120 kHz VBW 300 kHz SWP 156 msec

PLOT 4 Radiated Emissions - 250MHz to 1GHz (WiFi Tx Ch6)

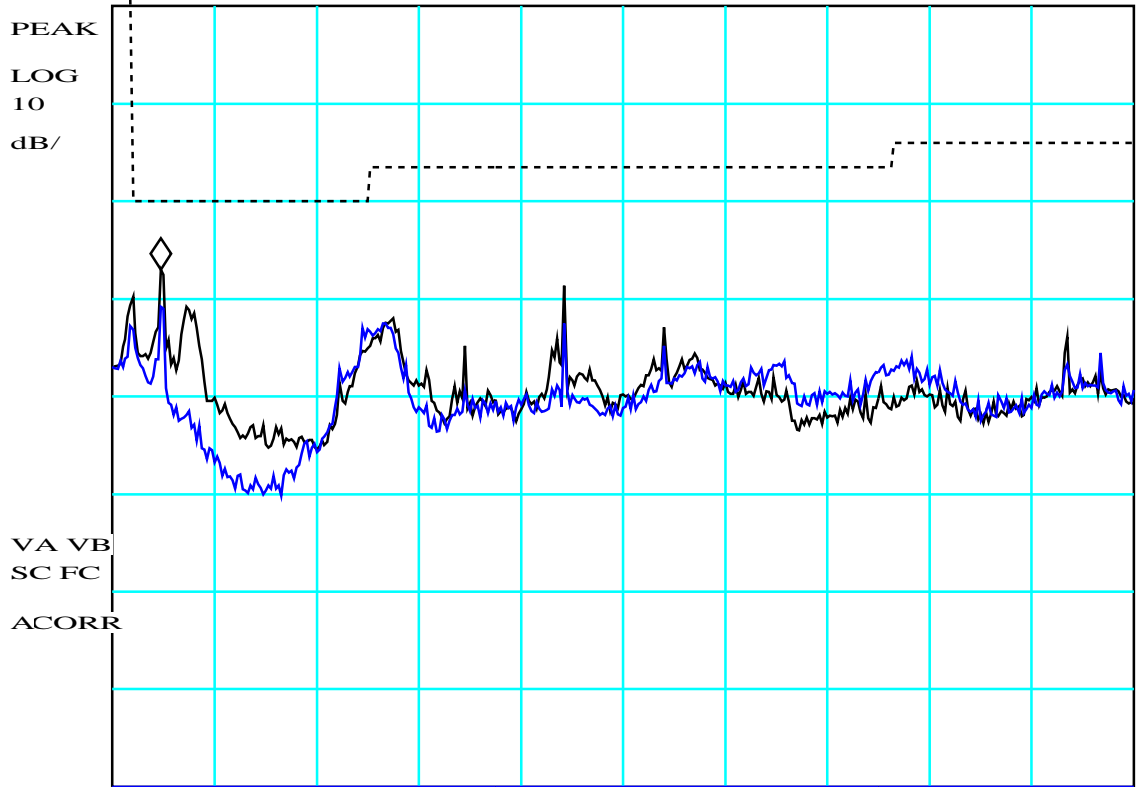
Company:	Frontier Silicon	Product:	Venice 6
Date:	11 Jan 08	Test Engineer:	Derek Barlow
Test:	FCC pt 15	Limit:	FCC (B)
Notes:			
Op mode 2 : WiFi Tx (54MBit/s Ch 6 Power 14dBm)			
Mod state 0 : as received for testing on 11/01/08			
Black trace - vertical polarisation. Blue trace - horizontal polarisation.			
Polarisation:	V + H	Orientation:	0 - 360°
Distance:	3m	Antenna:	Bilog
Height:	1m	Filename:	H81114EC.plt
		Operating Mode:	2
		Mod. State:	0

Frequency List (MHz)

798.650					
931.800					

CF=A12_R5B_CBL002_CBL003_07C MKR 36.9 MHz

REF 60.0 dBµV #AT 0 dB PG 14.0 dB 33.02 dBµV



START 25.0 MHz STOP 275.0 MHz
 #RES BW 120 kHz VBW 300 kHz SWP 52.1 msec

PLOT 5 Radiated Emissions - 30MHz to 275MHz (WiFi Rx Ch6)

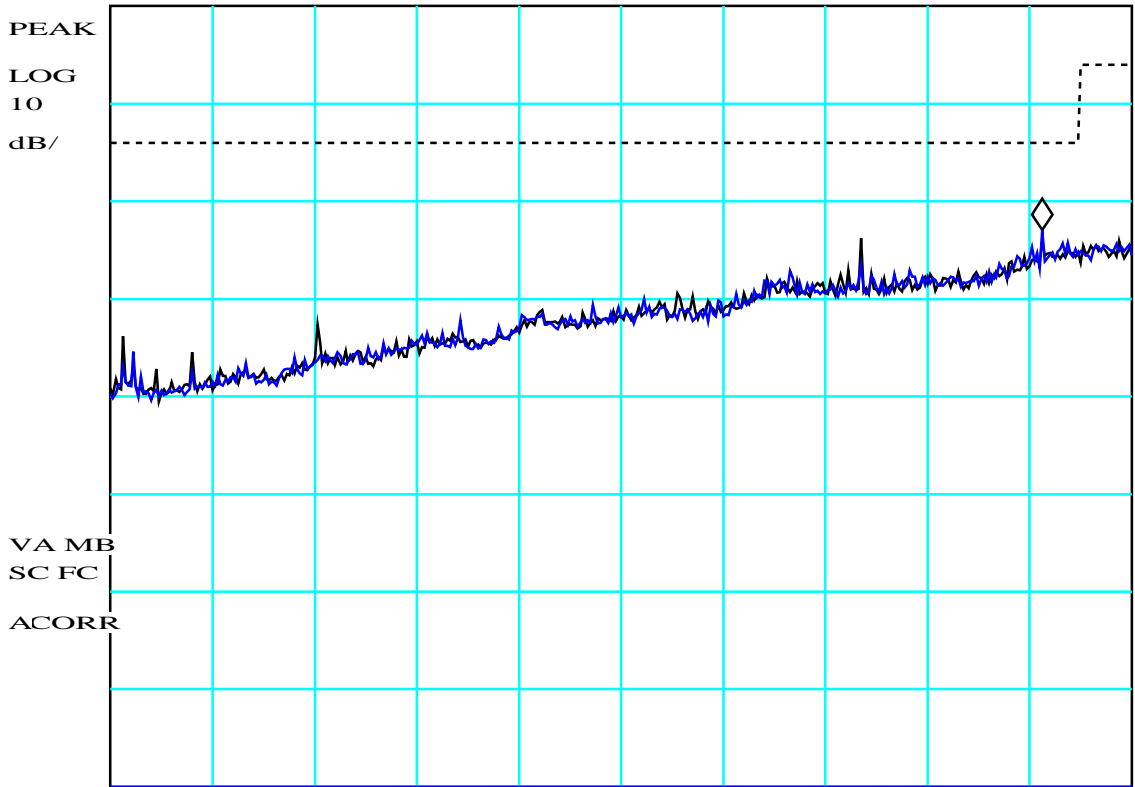
Company:	Frontier Silicon	Product:	Venice 6
Date:	11 Jan 08	Test Engineer:	Derek Barlow
Test:	FCC pt 15	Limit:	FCC (B)
Notes:			
Op mode 2 : WiFi Rx (Ch 6)			
Mod state 0 : as received for testing on 11/01/08			
Black trace - vertical polarisation. Blue trace - horizontal polarisation.			
Polarisation:	V + H	Orientation:	0 - 360°
Distance:	3m	Antenna:	Bilog
Height:	1m	Filename:	H811150C.plt
Operating Mode:			2
Mod. State:			0

Frequency List (MHz)

36.850					
135.150					

CF=A12_R5B_CBL002_CBL003_07C MKR 934.4 MHz

REF 60.0 dBµV #AT 0 dB PG 14.0 dB 37.05 dBµV



START 250.0 MHz STOP 1.0000 GHz
 #RES BW 120 kHz VBW 300 kHz SWP 156 msec

PLOT 6 Radiated Emissions - 250MHz to 1GHz (WiFi Rx Ch6)

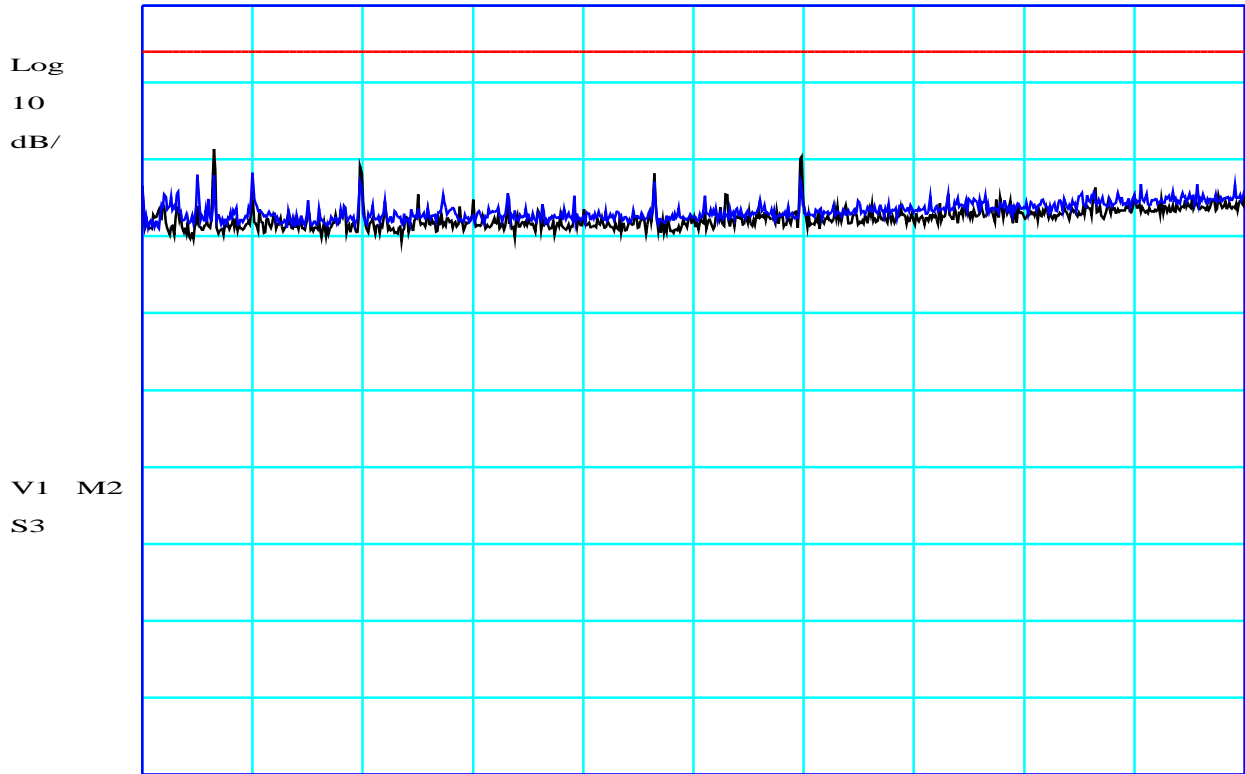
Company:	Frontier Silicon	Product:	Venice 6
Date:	11 Jan 08	Test Engineer:	Derek Barlow
Test:	FCC pt 15	Limit:	FCC (B)
Notes:			
Op mode 2 : WiFi Rx (Ch 6)			
Mod state 0 : as received for testing on 11/01/08			
Black trace - vertical polarisation. Blue trace - horizontal polarisation.			
Polarisation:	V + H	Orientation:	0 - 360°
Distance:	3m	Antenna:	Bilog
Height:	1m	Filename:	H8111526.plt
Operating Mode:			2
Mod. State:			0

Frequency List (MHz)

798.650					
931.770					

Ref 60 dBuV/m

Atten 5 dB



Start 1000MHz

Stop 2GHz

RBW 1 MHz

VBW 1 MHz

Sweep 7.99mS (800 pts)

CF1:A8 3m CF2:PRE7 RFF04 CBL053 CBL051

PLOT 7 Radiated Emissions - 1MHz BW 1GHz to 2GHz WiFi Rx Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.209	Limit2:	
Limit3		Limit4:	

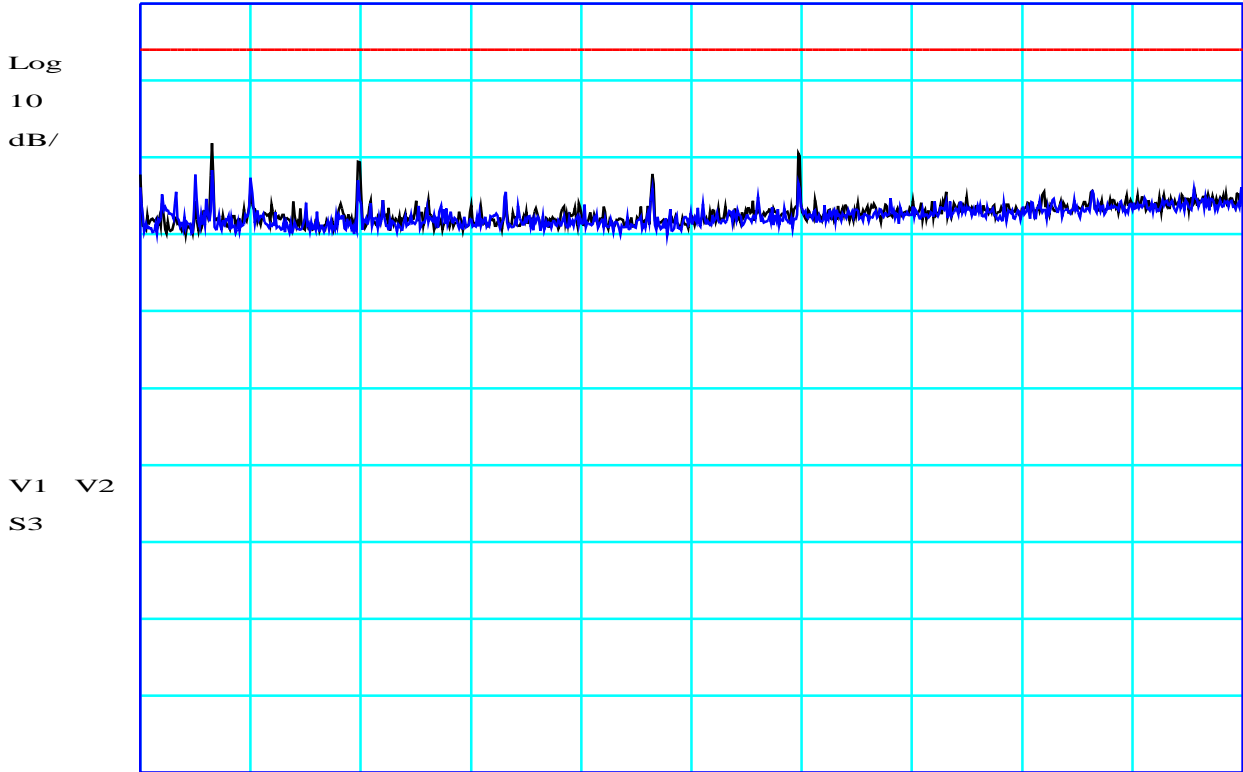
NOTE: 15.209 limit

Black trace - vertical polarisation. Blue trace - horizontal polarisation.

Facility:	Anech_1	Height	1m	Mode:	WiFi Rx Ch6
Distance	3m	Polarisation	V+H	Modification State:	0
Angle	0-360°	File:	H80115AC		

Ref 60 dBuV/m

Atten 5 dB



Start 1000MHz

Stop 2GHz

RBW 1 MHz

VBW 1 MHz

Sweep 7.99mS (800 pts)

CF1:A8 3m CF2:PRE7 RFF04 CBL053 CBL051

PLOT 8 Radiated Emissions - 1MHz BW 1GHz to 2GHz WiFi Tx Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.209	Limit2:	
Limit3		Limit4:	

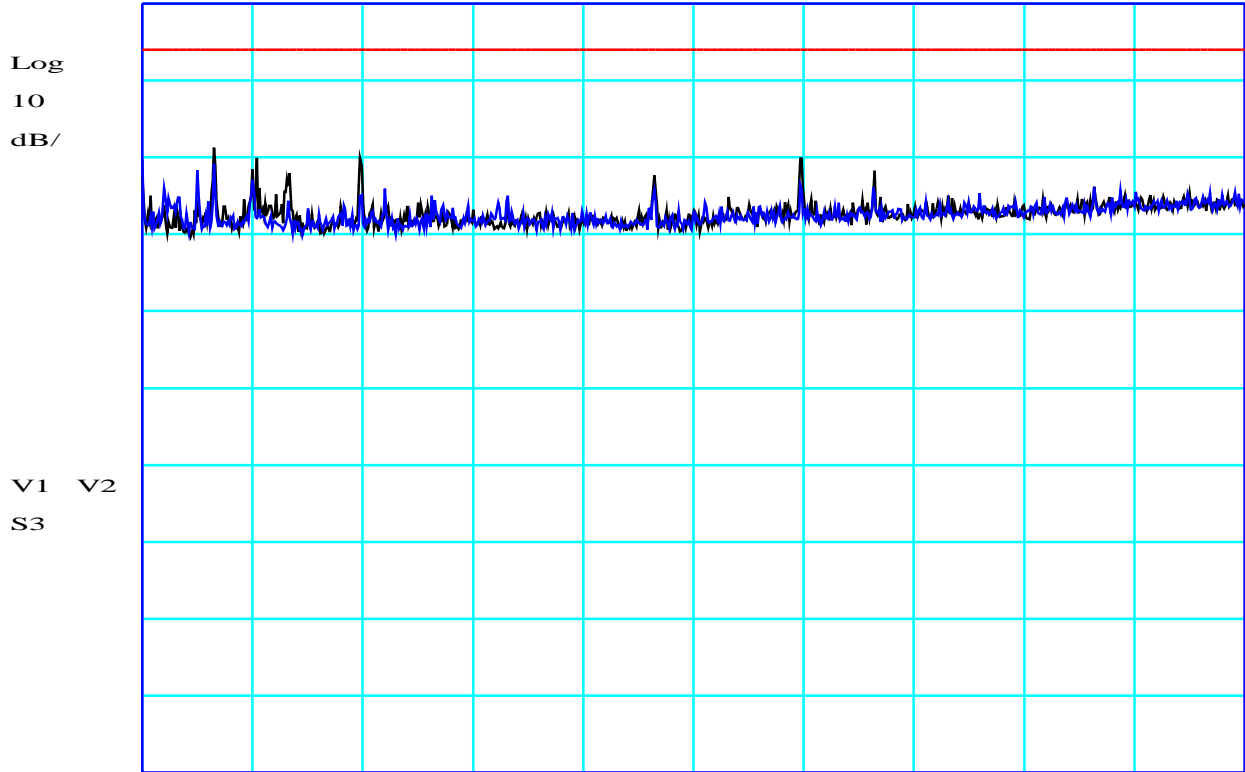
NOTE: 15.209 limit

Black trace - vertical polarisation. Blue trace - horizontal polarisation.

Facility:	Anech_1	Height	1m	Mode:	WiFi Tx Ch6
Distance	3m	Polarisation	V+H	Modification State:	0
Angle	0-360°	File:	H80115B4		

Ref 60 dBuV/m

Atten 5 dB



Start 1000MHz

Stop 2GHz

RBW 1 MHz

VBW 1 MHz

Sweep 7.99mS (800 pts)

CF1:A8 3m CF2:PRE7 RFF04 CBL053 CBL051

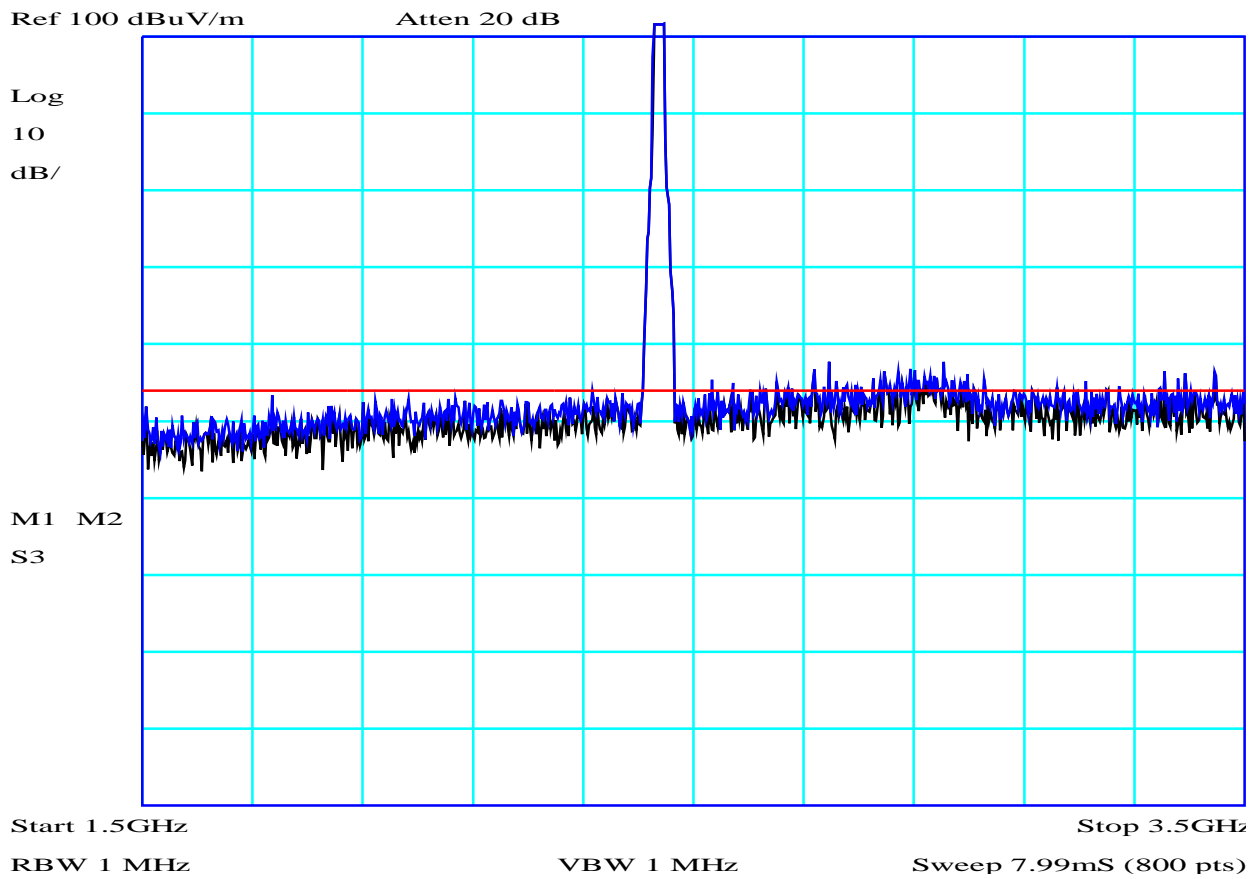
PLOT 9 Radiated Emissions - 1MHz BW 1GHz to 2GHz FM 98MHz

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.209	Limit2:	
Limit3:		Limit4:	

NOTE: 15.209 limit

Black trace - vertical polarisation. Blue trace - horizontal polarisation.

Facility:	Anech_1	Height	1m	Mode:	FM 98MHz
Distance	3m	Polarisation	V+H	Modification State:	0
Angle	0-360°	File:	H80115C0		



CF1:A8 3m CF2:PRE7 CBL053 CBL051 CF3:10dB Attenuator

PLOT 10 Radiated Emissions - 1MHz BW 1.5GHz to 2.5GHz Tx Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.209	Limit2:	
Limit3:		Limit4:	

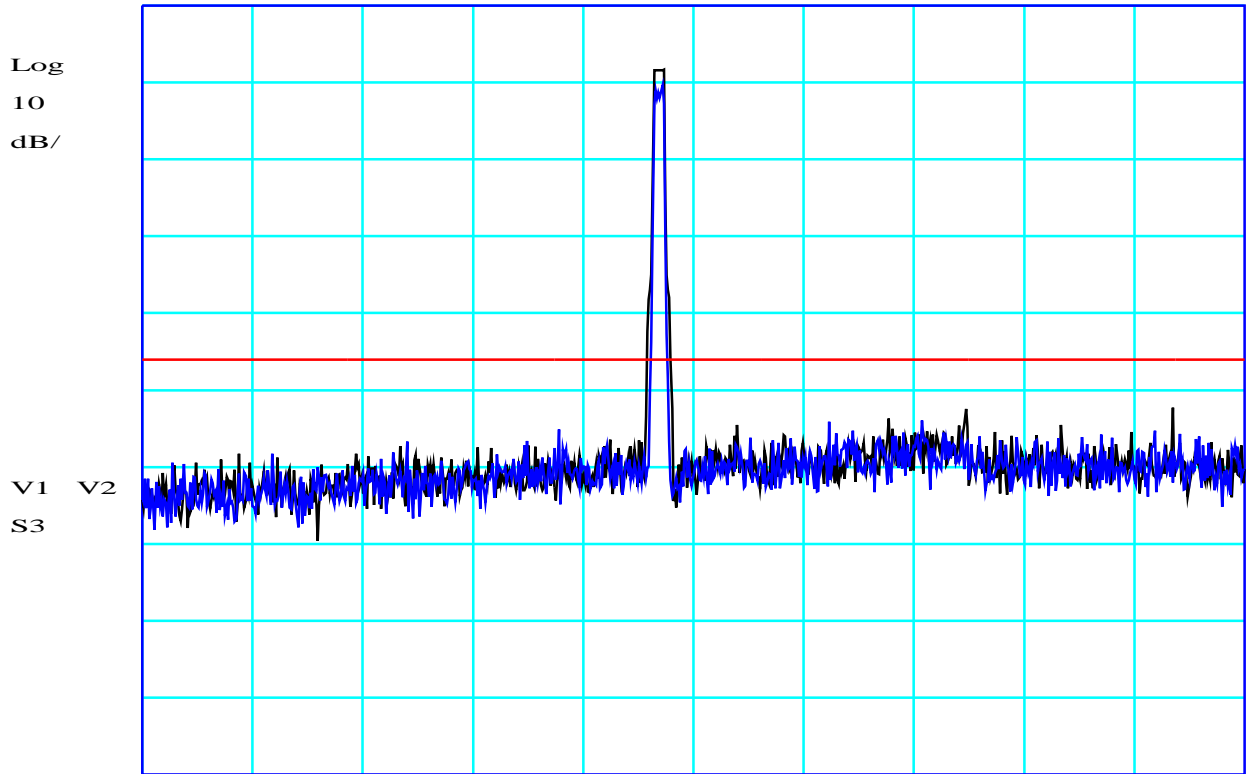
NOTE: 15.209 limit

Black trace - vertical polarisation. Blue trace - horizontal polarisation.

Facility:	Anech_1	Height	1m	Mode:	WiFi Tx Ch6
Distance	3m	Polarisation	V+H	Modification State:	0
Angle	0-360°	File:	H8011600		

Ref 100 dBuV/m

Atten 20 dB



Start 1.5GHz

Stop 3.5GHz

RBW 1 MHz

VBW 1 MHz

Sweep 7.99mS (800 pts)

CF1:A8 3m CF2:PRE7 CBL053 CBL051

PLOT 11 Radiated Emissions - 1MHz BW 1.5GHz to 2.5GHz Tx Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.209	Limit2:	
Limit3:		Limit4:	

10dB reduction in carrier power to enable attenuator to be removed from preamp input to check for spurious.

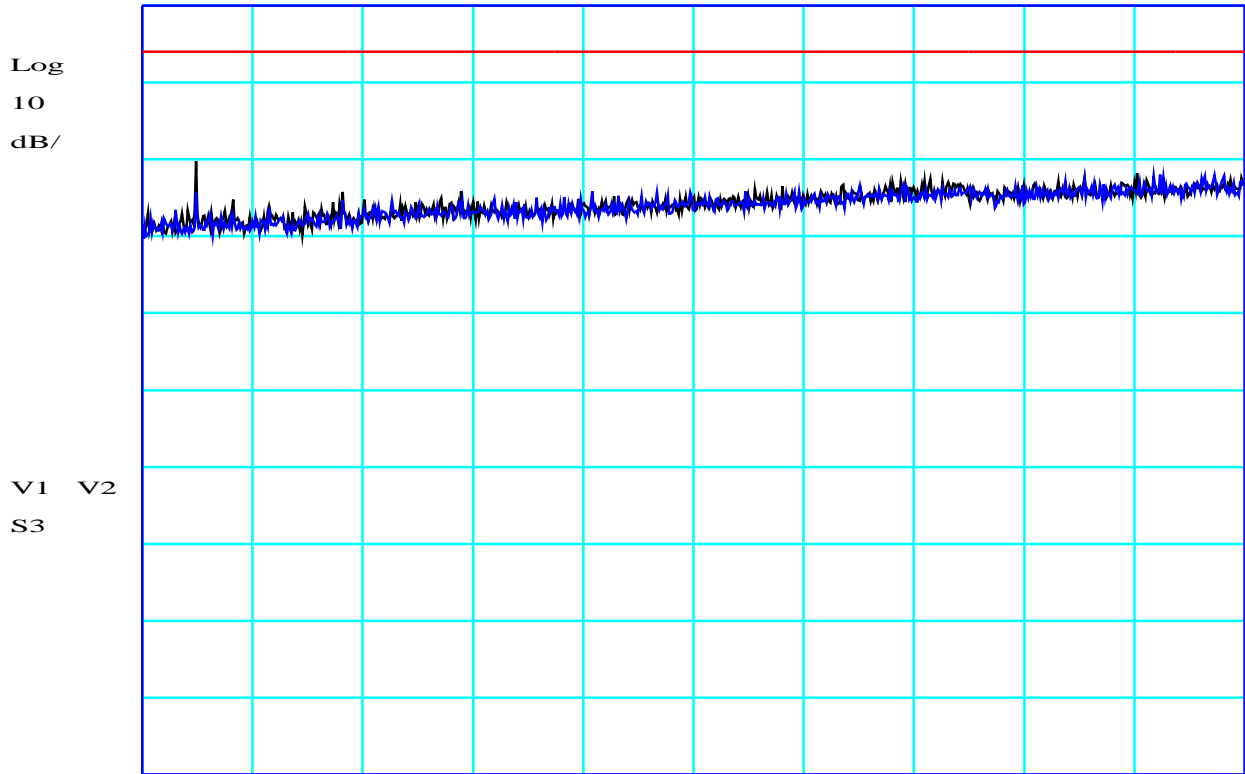
NOTE: 15.209 limit

Black trace - vertical polarisation. Blue trace - horizontal polarisation.

Facility:	Anech_1	Height	1m	Mode:	WiFi Tx Ch6 -10dB
Distance	3m	Polarisation	V+H	Modification State:	0
Angle	0-360°	File:	H801160A		

Ref 60 dBuV/m

Atten 5 dB



Start 1.5GHz

Stop 3.5GHz

RBW 1 MHz

VBW 1 MHz

Sweep 7.99mS (800 pts)

CF1:A8 3m CF2:PRE7 CBL053 CBL051

PLOT 12 Radiated Emissions - 1MHz BW 1.5GHz to 2.5GHz Rx Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.209	Limit2:	
Limit3		Limit4:	

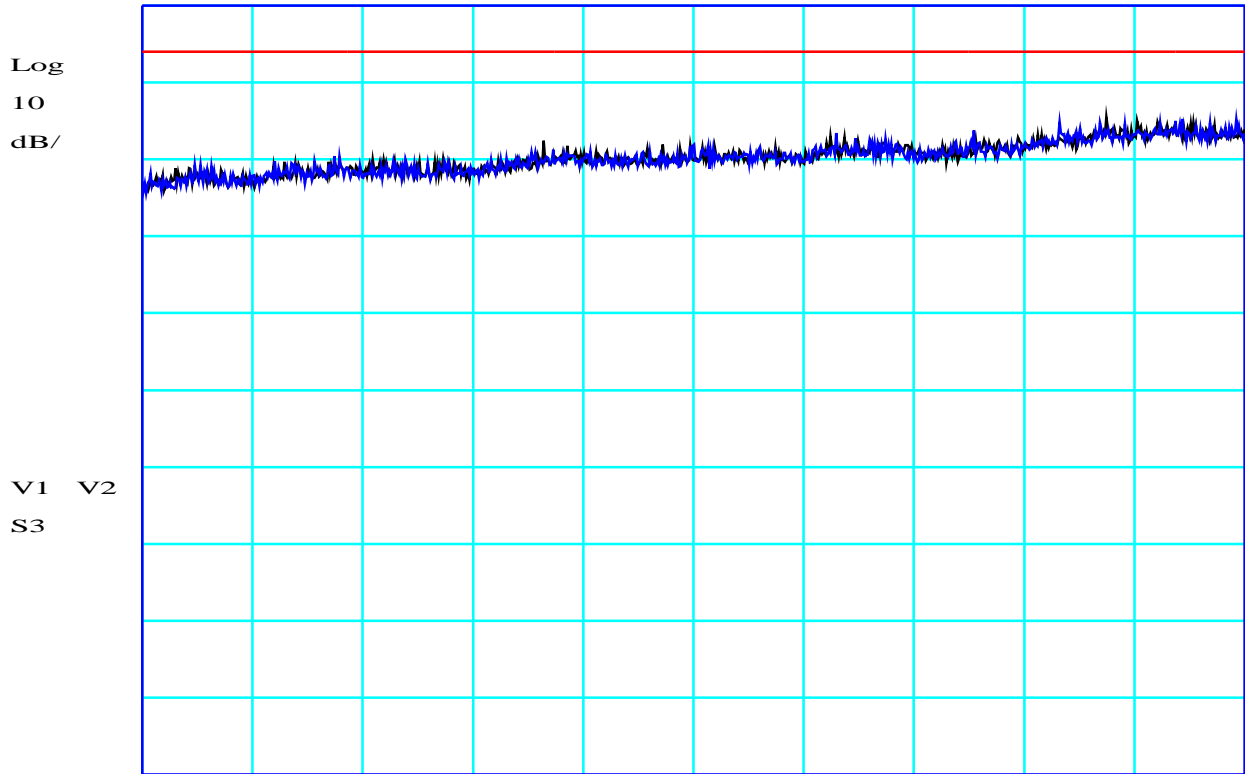
NOTE: 15.209 limit

Black trace - vertical polarisation. Blue trace - horizontal polarisation.

Facility:	Anech_1	Height	1m	Mode:	WiFi Rx Ch6
Distance	3m	Polarisation	V+H	Modification State:	0
Angle	0-360°	File:	H801162D		

Ref 60 dBuV/m

Atten 5 dB



Start 3GHz

Stop 8GHz

RBW 1 MHz

VBW 1 MHz

Sweep 12.5mS (800 pts)

CF1:A8 3m CF2:PRE7 RFF01 CBL053 CBL051

PLOT 13 Radiated Emissions - 1MHz BW 3GHz to 8GHz WiFi Rx Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.209	Limit2:	
Limit3		Limit4:	

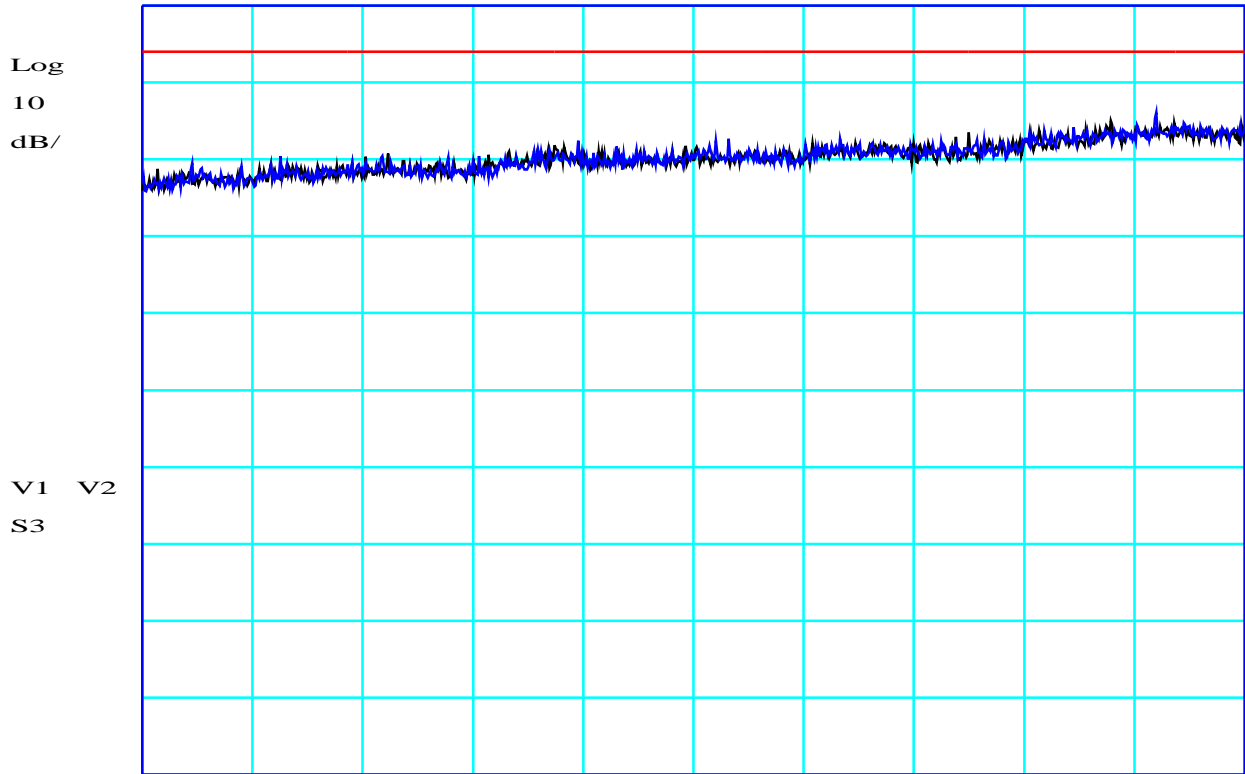
NOTE: 15.209 limit

Black trace - vertical polarisation. Blue trace - horizontal polarisation.

Facility:	Anech_1	Height	1m	Mode:	WiFi Rx Ch6
Distance	3m	Polarisation	V+H	Modification State:	0
Angle	0-360°	File:	H801163A		

Ref 60 dBuV/m

Atten 5 dB



Start 3GHz

Stop 8GHz

RBW 1 MHz

VBW 1 MHz

Sweep 12.5mS (800 pts)

CF1:A8 3m CF2:PRE7 RFF01 CBL053 CBL051

PLOT 14 Radiated Emissions - 1MHz BW 3GHz to 8GHz WiFi Tx Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.209	Limit2:	
Limit3:		Limit4:	

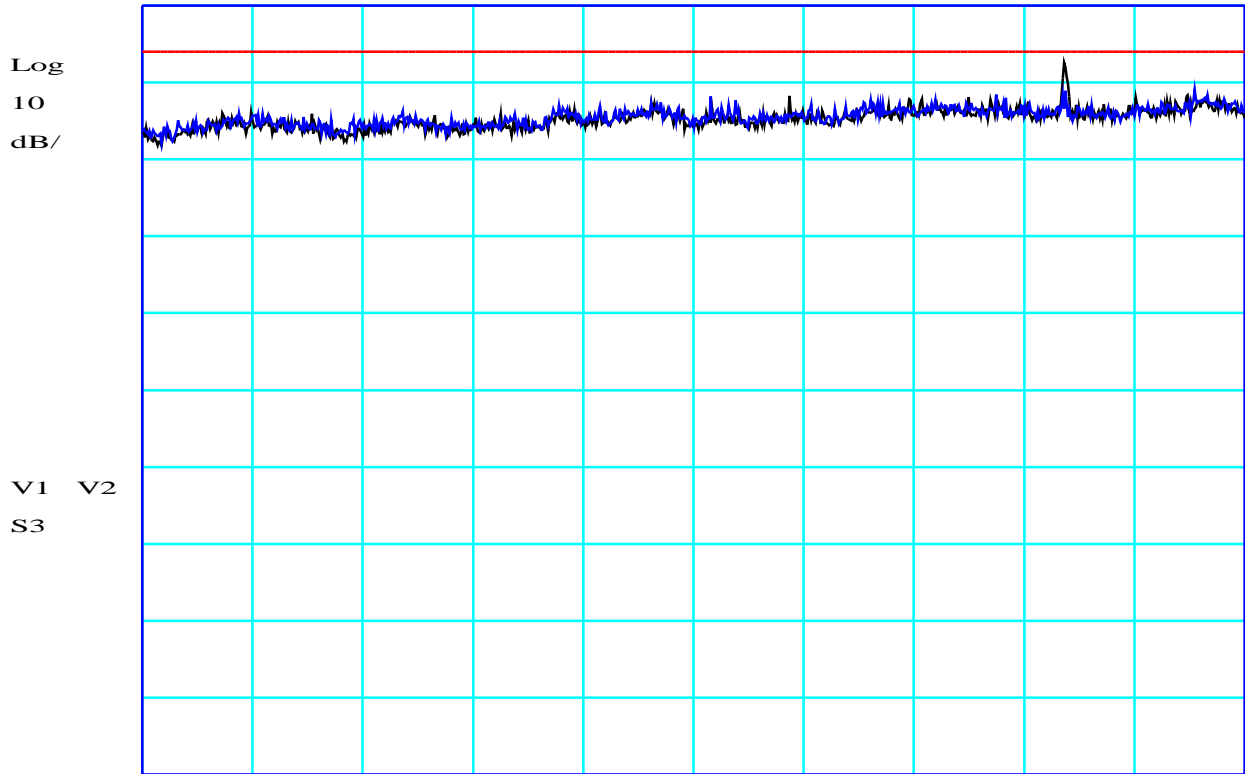
NOTE: 15.209 limit

Black trace - vertical polarisation. Blue trace - horizontal polarisation.

Facility:	Anech_1	Height	1m	Mode:	WiFi Tx Ch6
Distance	3m	Polarisation	V+H	Modification State:	0
Angle	0-360°	File:	H8011641		

Ref 60 dBuV/m

Atten 5 dB



Start 8GHz

Stop 13GHz

RBW 1 MHz

VBW 1 MHz

Sweep 12.5mS (800 pts)

CF1:A8 3m CF2:PRE7 RFF01 CBL053 CBL051

PLOT 15 Radiated Emissions - 1MHz BW 8GHz to 13GHz WiFi Tx Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.209	Limit2:	
Limit3		Limit4:	

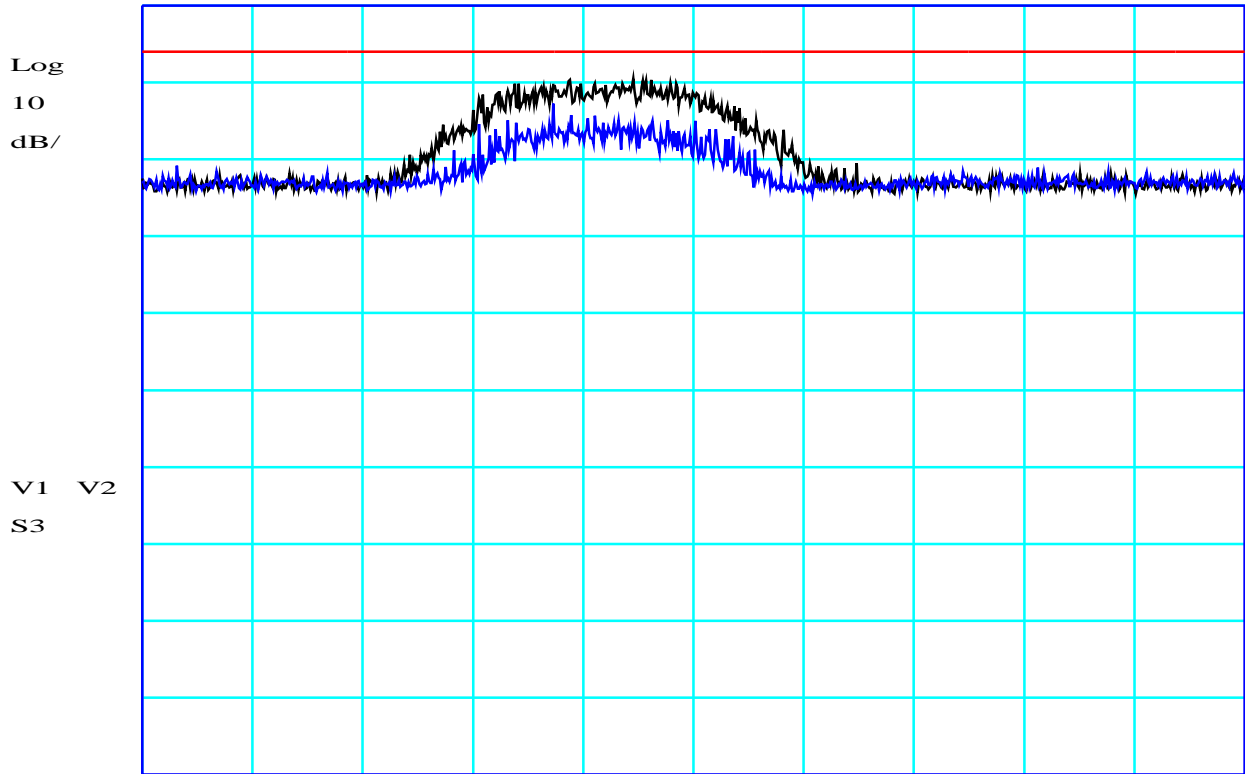
NOTE: 15.209 limit

Black trace - vertical polarisation. Blue trace - horizontal polarisation.

Facility:	Anech_1	Height	1m	Mode:	WiFi Tx Ch6
Distance	3m	Polarisation	V+H	Modification State:	0
Angle	0-360°	File:	H8011649		

Ref 60 dBuV/m

Atten 5 dB



Start 12.1GHz

Stop 12.3GHz

RBW 1 MHz

VBW 1 MHz

Sweep 7.99mS (800 pts)

CF1:A21 3m CF2:PRE7 RFF01 CBL053 CBL051

PLOT 16 Radiated Emissions - 12.18GHz WiFi Tx Ch6 (Hi Gn Rx Ant)

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.209	Limit2:	
Limit3:		Limit4:	

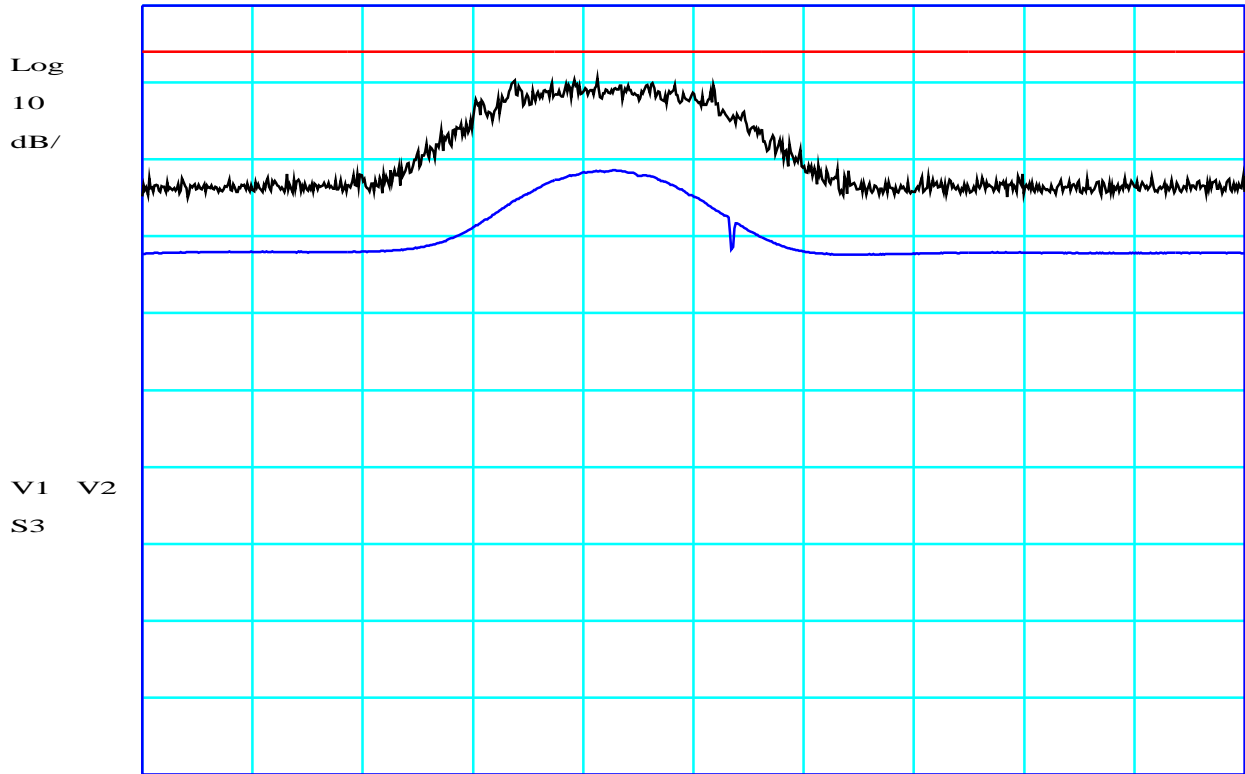
NOTE: 15.209 limit

Black trace - vertical polarisation. Blue trace - horizontal polarisation.

Facility:	Anech_1	Height	1m	Mode:	WiFi Tx Ch6
Distance	3m	Polarisation	V+H	Modification State:	0
Angle	0-360°	File:	H8011685		

Ref 60 dBuV/m

Atten 5 dB



Start 12.1GHz

Stop 12.3GHz

RBW 1 MHz

VBW 1 MHz

Sweep 7.99mS (800 pts)

CF1:A21 3m CF2:PRE7 RFF01 CBL053 CBL051

PLOT 17 Radiated Emissions - 12.18GHz Hi Gain Rx Ant Avg + QP

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.209	Limit2:	
Limit3:		Limit4:	

NOTE: 15.209 limit

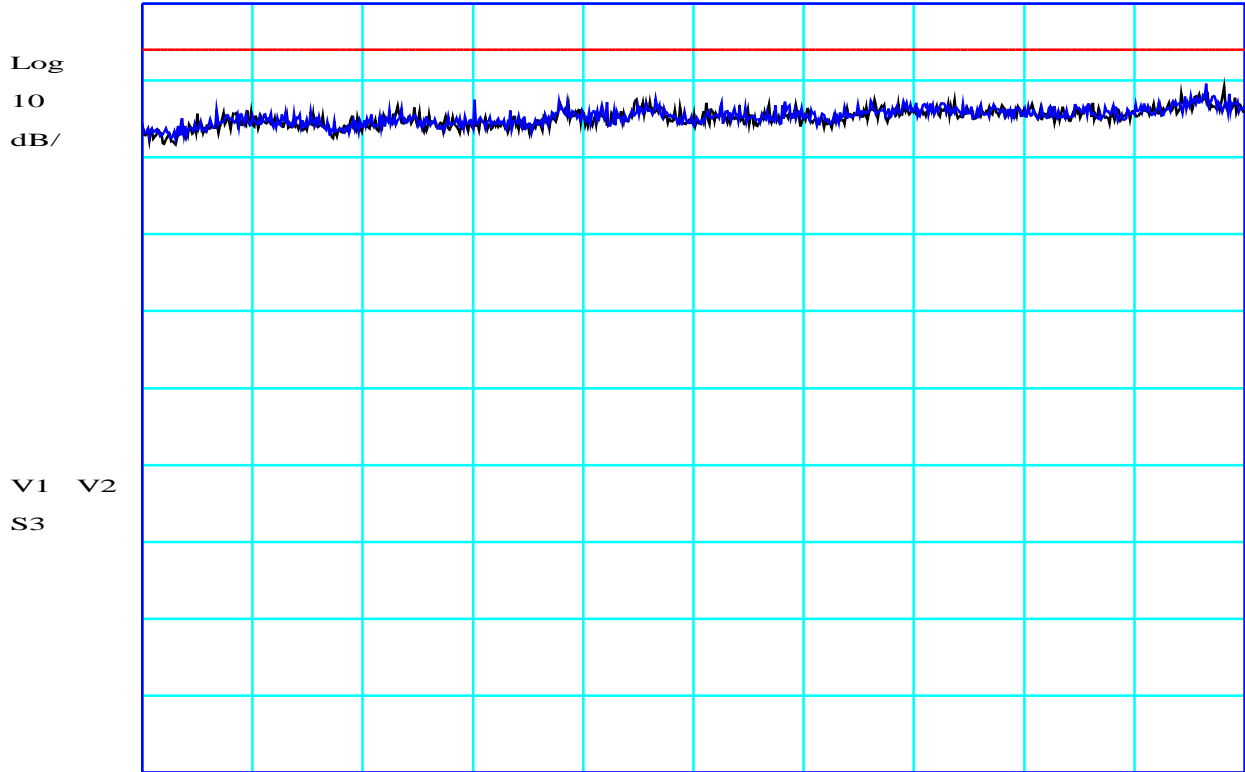
Vertical polarisation

Black trace - peak detector. Blue trace - average detector.

Facility:	Anech_1	Height	1m	Mode:	WiFi Tx Ch6
Distance	3m	Polarisation	V+H	Modification State:	0
Angle	0-360°	File:	H801169E		

Ref 60 dBuV/m

Atten 5 dB



Start 8GHz

Stop 13GHz

RBW 1 MHz

VBW 1 MHz

Sweep 12.5mS (800 pts)

CF1:A8 3m CF2:PRE7 RFF01 CBL053 CBL051

PLOT 18 Radiated Emissions - 1MHz BW 8GHz to 13GHz WiFi Rx Ch6

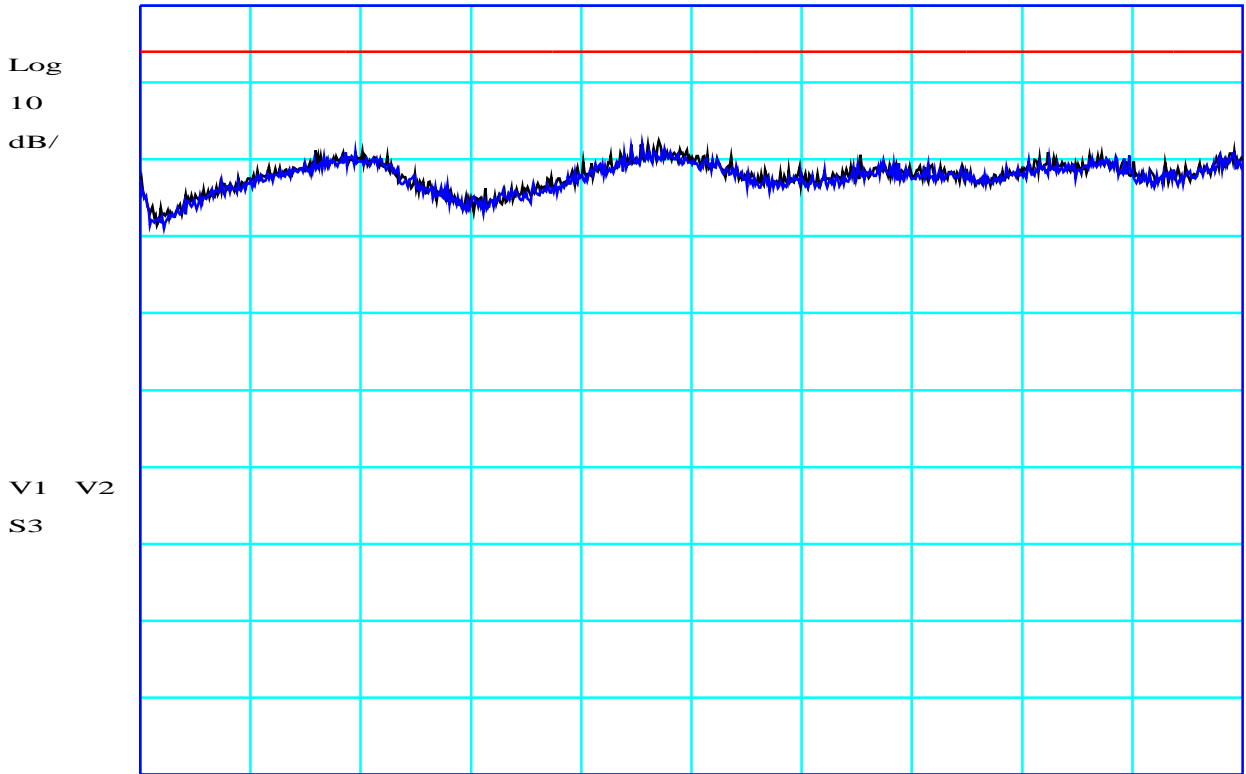
Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.209	Limit2:	
Limit3:		Limit4:	

NOTE: 15.209 limit

Facility:	Anech_1	Height	1m	Mode:	WiFi Rx Ch6
Distance	3m	Polarisation	V+H	Modification State:	0
Angle	0-360°	File:	H80116B2		

Ref 60 dBuV/m

Atten 5 dB



Start 13GHz

Stop 18GHz

RBW 1 MHz

VBW 1 MHz

Sweep 25mS (800 pts)

CF1:A21 3m CF2:PRE7 CBL053 CBL051

PLOT 19 Radiated Emissions - 1MHz BW 13GHz to 18GHz WiFi Rx Ch6

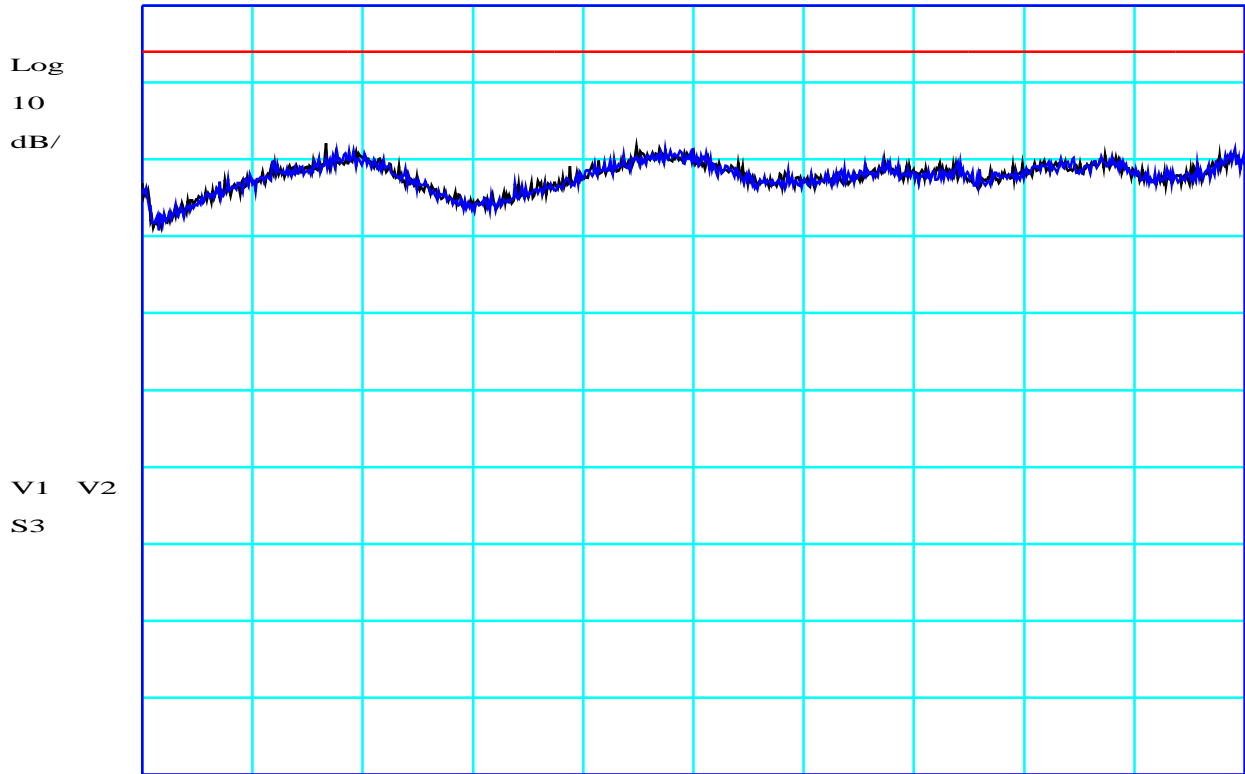
Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.209	Limit2:	
Limit3:		Limit4:	

NOTE: 15.209 limit

Facility:	Anech_1	Height	1m	Mode:	WiFi Rx Ch6
Distance	3m	Polarisation	V+H	Modification State:	0
Angle	0-360°	File:	H80116BF		

Ref 60 dBuV/m

Atten 5 dB



Start 13GHz

Stop 18GHz

RBW 1 MHz

VBW 1 MHz

Sweep 25mS (800 pts)

CF1:A21 3m CF2:PRE7 CBL053 CBL051

PLOT 20 Radiated Emissions - 1MHz BW 13GHz to 18GHz WiFi Tx Ch6

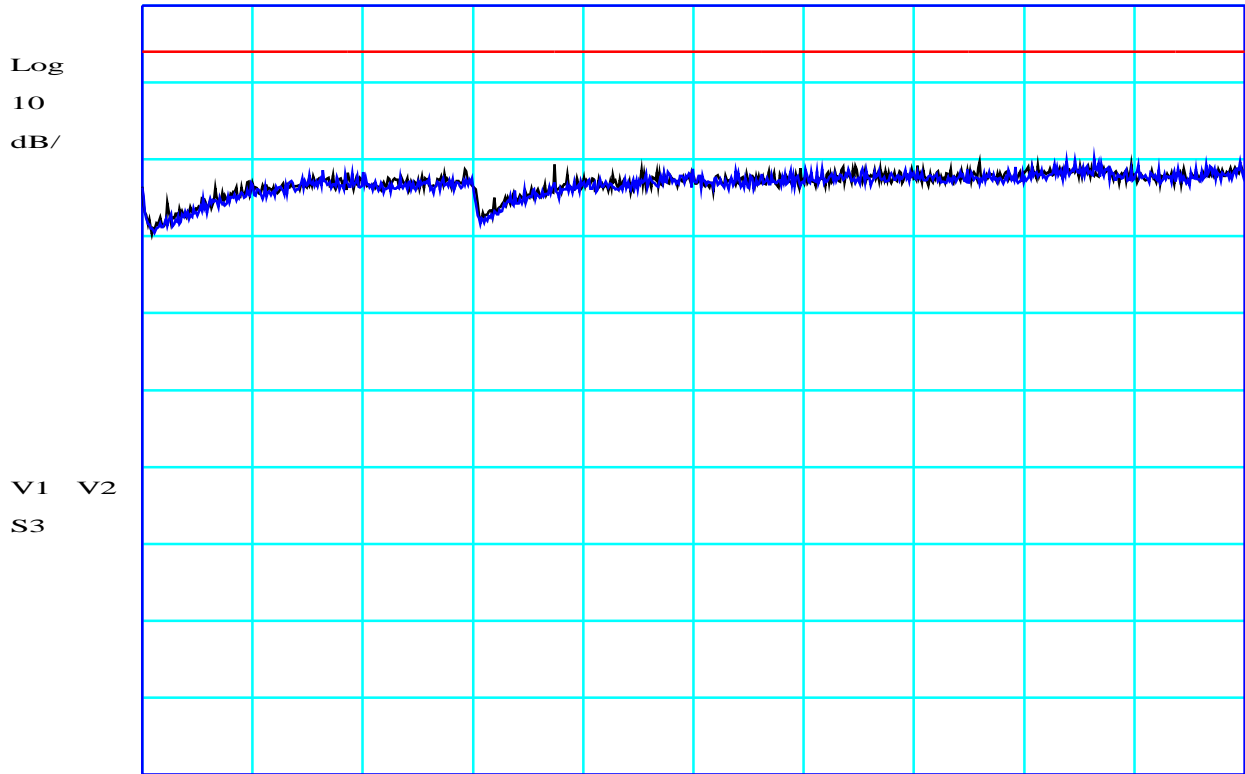
Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.209	Limit2:	
Limit3:		Limit4:	

NOTE: 15.209 limit

Facility:	Anech_1	Height	1m	Mode:	WiFi Tx Ch6
Distance	3m	Polarisation	V+H	Modification State:	0
Angle	0-360°	File:	H80116C5		

Ref 60 dBuV/m

Atten 5 dB



Start 18GHz

Stop 22GHz

RBW 1 MHz

VBW 1 MHz

Sweep 40mS (800 pts)

CF1:A20 3m CF2:PRE8 CBL053 CBL051

PLOT 21 Radiated Emissions - 1MHz BW 18GHz to 22GHz WiFi Tx Ch6

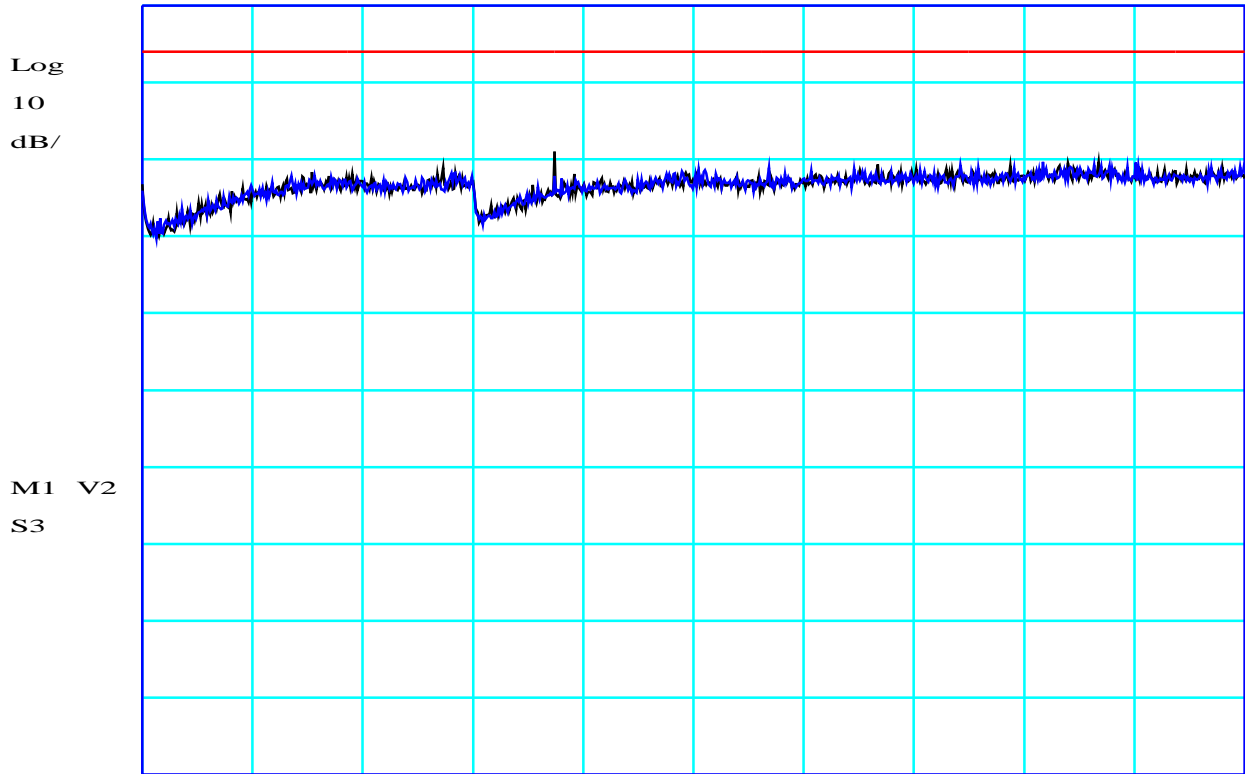
Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.209	Limit2:	
Limit3:		Limit4:	

NOTE: 15.209 limit

Facility:	Anech_1	Height	1m	Mode:	WiFi Tx Ch6
Distance	3m	Polarisation	V+H	Modification State:	0
Angle	0-360°	File:	H80116D8		

Ref 60 dBuV/m

Atten 5 dB



Start 18GHz

Stop 22GHz

RBW 1 MHz

VBW 1 MHz

Sweep 40mS (800 pts)

CF1:A20 3m CF2:PRE8 CBL053 CBL051

PLOT 22 Radiated Emissions - 1MHz BW 18GHz to 22GHz WiFi Rx Ch6

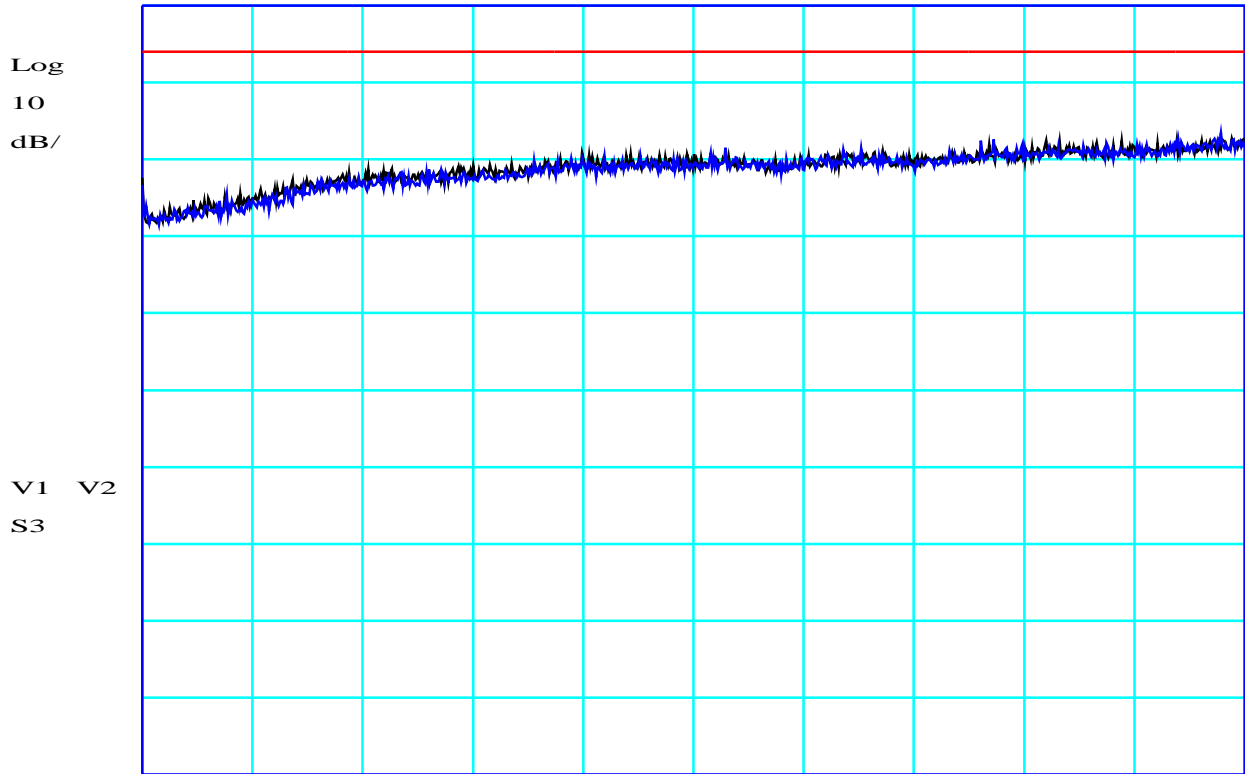
Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.209	Limit2:	
Limit3:		Limit4:	

NOTE: 15.209 limit

Facility:	Anech_1	Height	1m	Mode:	WiFi Rx Ch6
Distance	3m	Polarisation	V+H	Modification State:	0
Angle	0-360°	File:	H80116DE		

Ref 60 dBuV/m

Atten 5 dB



Start 22GHz

Stop 26GHz

RBW 1 MHz

VBW 1 MHz

Sweep 40mS (800 pts)

CF1:A20 3m CF2:PRE8 CBL053 CBL051

PLOT 23 Radiated Emissions - 1MHz BW 22GHz to 26GHz WiFi Rx Ch6

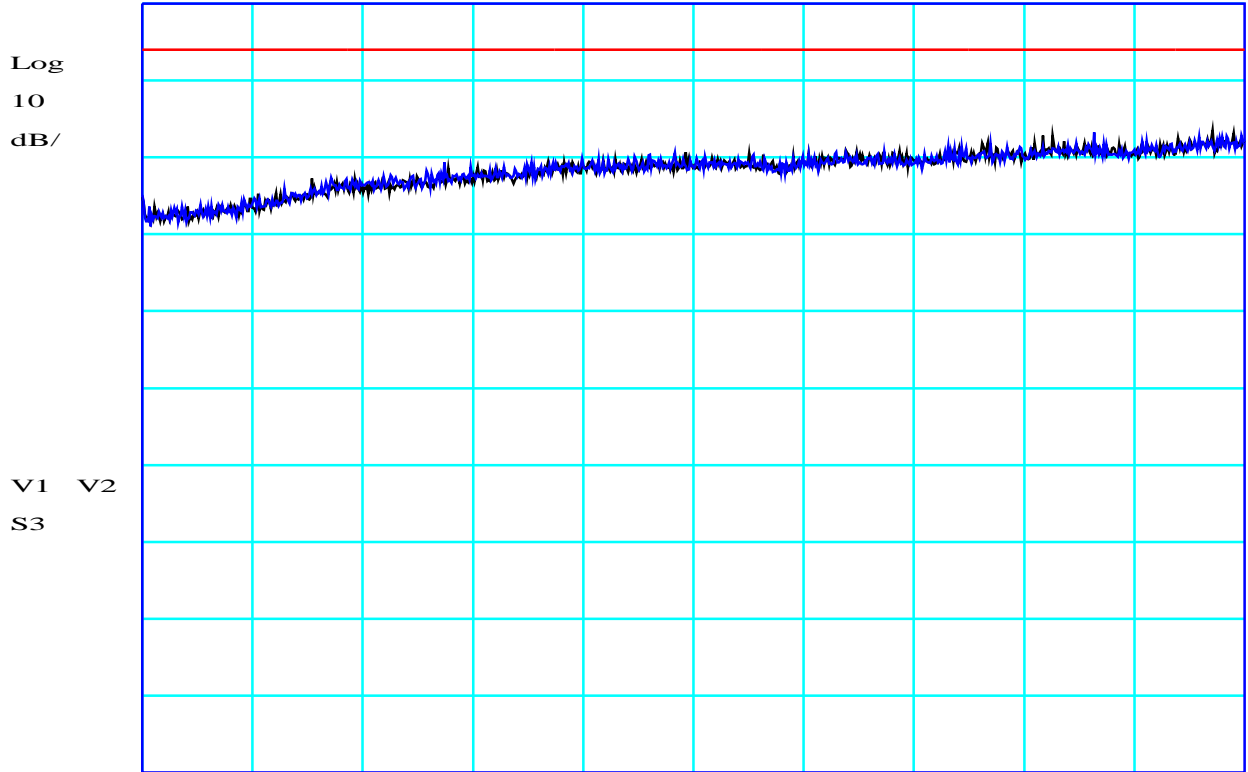
Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.209	Limit2:	
Limit3:		Limit4:	

NOTE: 15.209 limit

Facility:	Anech_1	Height	1m	Mode:	WiFi Rx Ch6
Distance	3m	Polarisation	V+H	Modification State:	0
Angle	0-360°	File:	H80116E4		

Ref 60 dBuV/m

Atten 5 dB



Start 22GHz

Stop 26GHz

RBW 1 MHz

VBW 1 MHz

Sweep 40mS (800 pts)

CF1:A20 3m CF2:PRE8 CBL053 CBL051

PLOT 24 Radiated Emissions - 1MHz BW 22GHz to 26GHz WiFi Tx Ch6

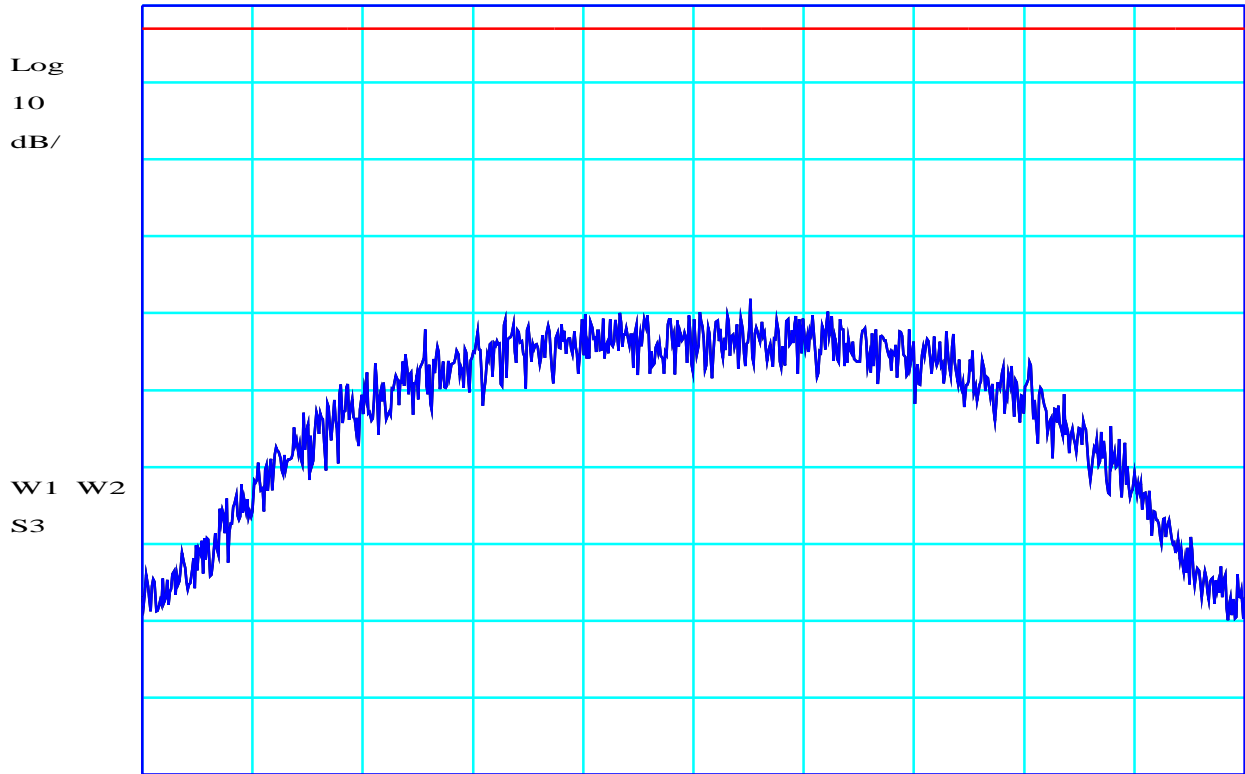
Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.209	Limit2:	
Limit3:		Limit4:	

NOTE: 15.209 limit

Facility:	Anech_1	Height	1m	Mode:	WiFi Tx Ch6
Distance	3m	Polarisation	V+H	Modification State:	0
Angle	0-360°	File:	H80116EA		

Ref 140 dBuV

Atten 60 dB



Centre 2.412GHz

Span 20MHz

*RBW 10 kHz

VBW 10 kHz

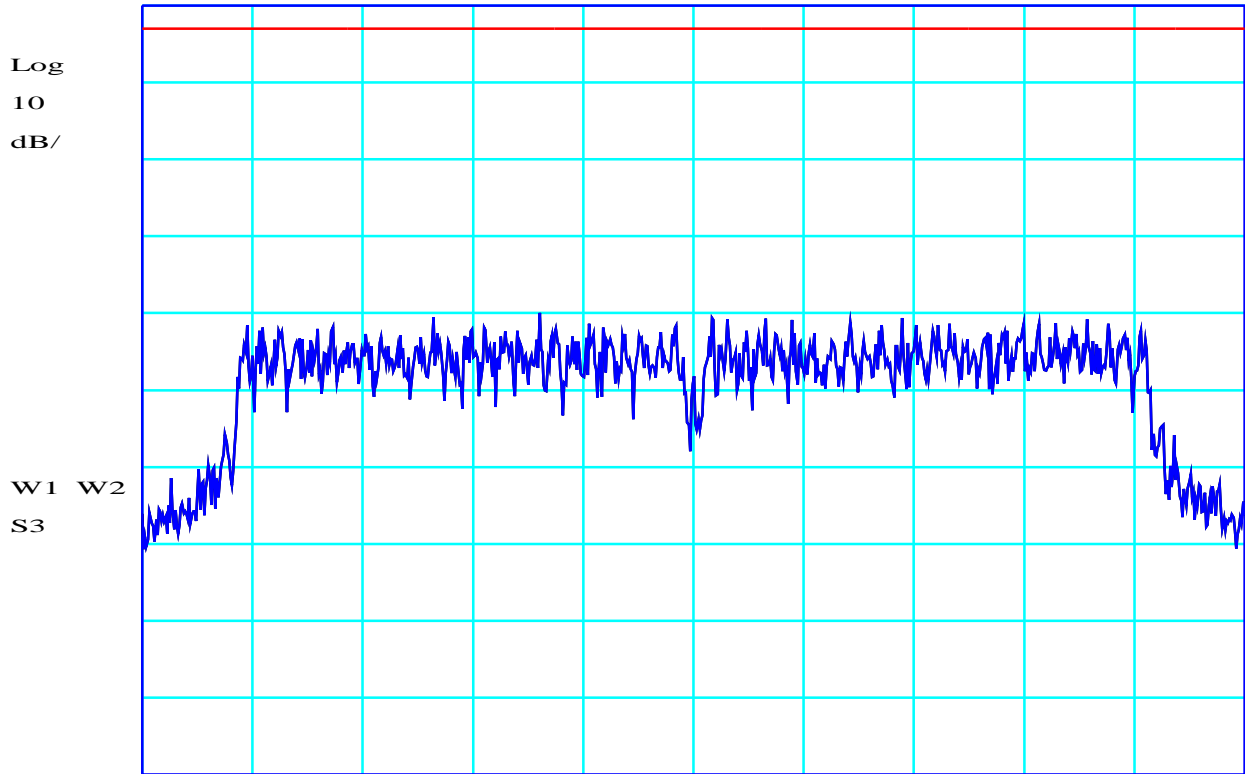
Sweep 257.7mS (800 pts)

PLOT 25 Antenna Conducted Emissions - Bandwidth - 801.11b Ch1

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247(b)(3)	Limit2:	
Limit3:		Limit4:	
<p>Mode 802.11b at 11Mbits/s. Maximum power.</p> <p>NOTE: The limit line at 137dBuV level is equivalent to the 1W limit.</p> <p>The 6dB bandwidth exceeds the 500kHz minimum bandwidth requirement of 15.247 (a)(2) Actual 6dB bandwidth is around 10MHz</p>			
Facility:	SCN_1	Mode:	WiFi Tx Ch1
		Modification State:	0
File:	H801172F		

Ref 140 dBuV

Atten 60 dB



Centre 2.412GHz

Span 20MHz

*RBW 10 kHz

VBW 10 kHz

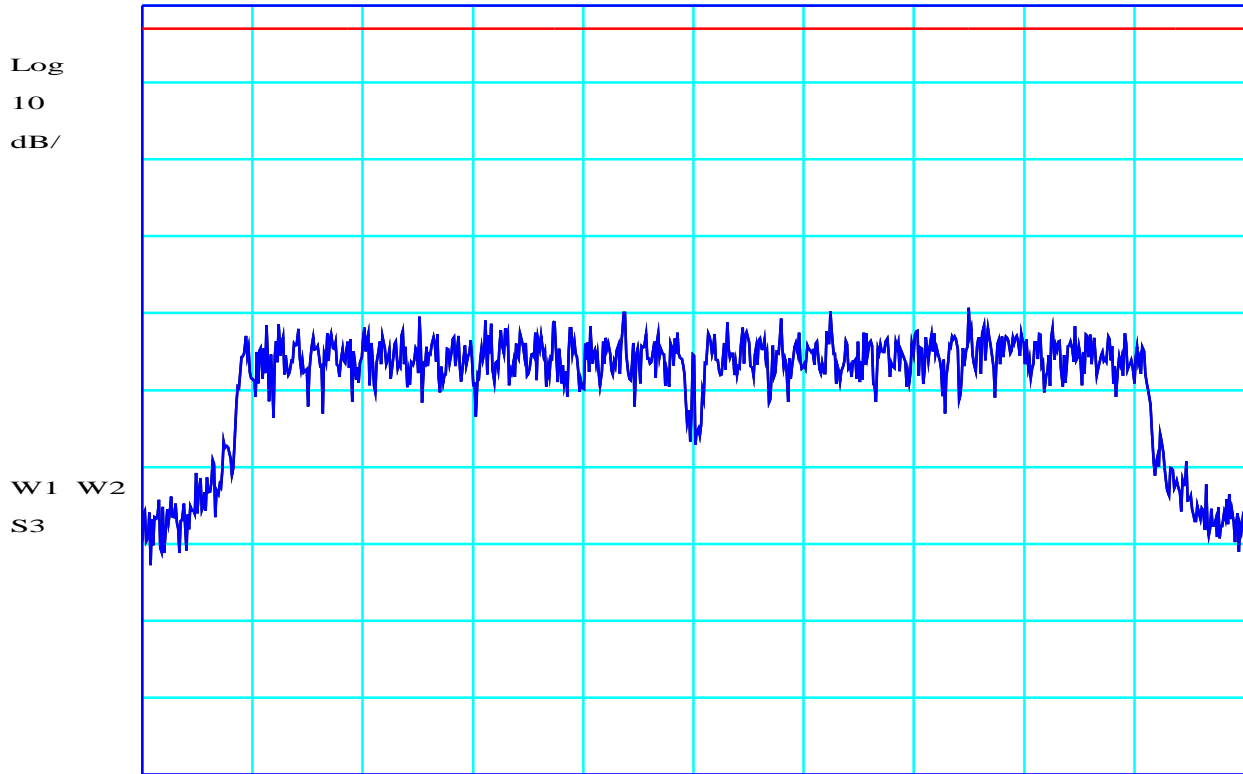
Sweep 257.7mS (800 pts)

PLOT 26 Antenna Conducted Emissions Bandwidth - 801.11g Ch1

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247(b)(3)	Limit2:	
Limit3:		Limit4:	
<p>Mode 802.11g at 54Mbits/s. Maximum power.</p> <p>NOTE: The limit line at 137dBuV level is equivalent to the 1W limit.</p> <p>The 6dB bandwidth exceeds the 500kHz minimum bandwidth requirement of 15.247 (a)(2) Actual 6dB bandwidth is around 16.5MHz</p>			
Facility:	SCN_1	Mode:	WiFi Tx Ch1
		Modification State:	0
Angle	0-360°	File:	H8011731

Ref 140 dBuV

Atten 60 dB



Centre 2.437GHz

Span 20MHz

*RBW 10 kHz

VBW 10 kHz

Sweep 257.7mS (800 pts)

PLOT 27 Antenna Conducted Emissions - Bandwidth - 801.11g Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247(b)(3)	Limit2:	
Limit3:		Limit4:	

Mode 802.11g at 54Mbits/s. Maximum power.

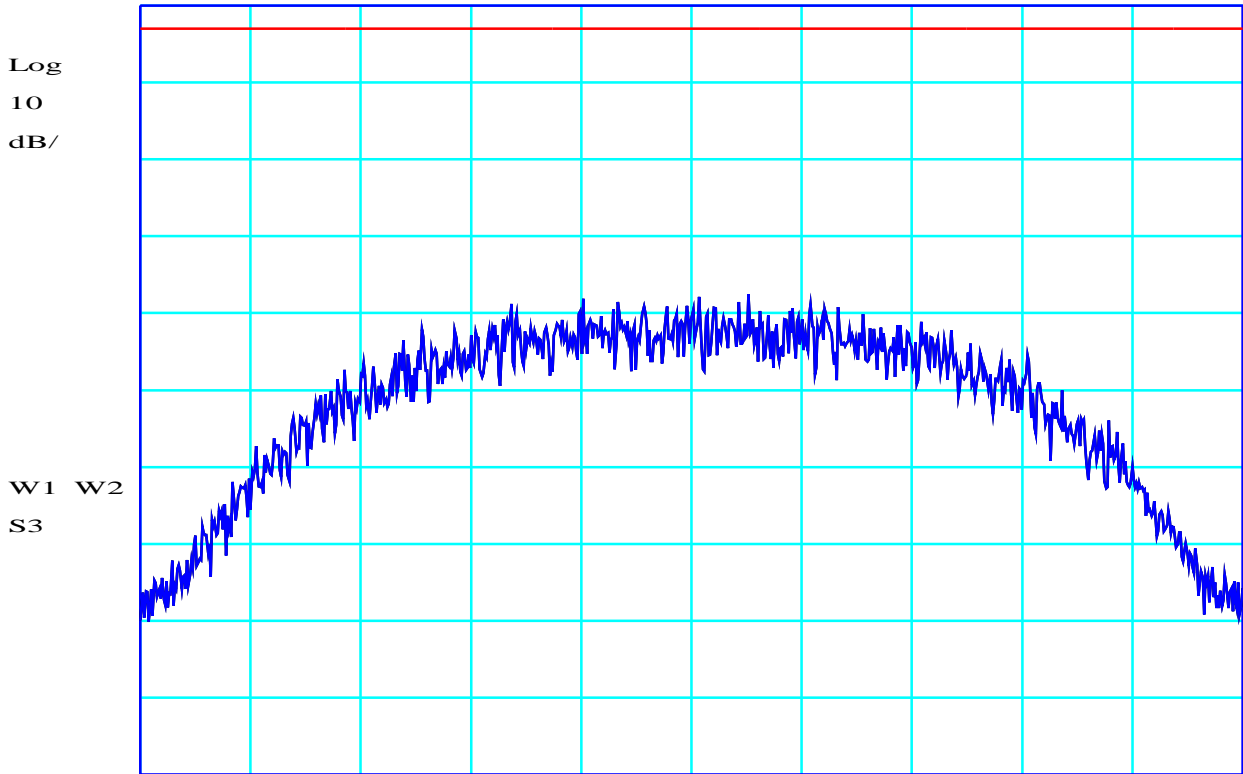
NOTE: The limit line at 137dBuV level is equivalent to the 1W limit.

The 6dB bandwidth exceeds the 500kHz minimum bandwidth requirement of 15.247 (a)(2)
Actual 6dB bandwidth is around 16.5MHz

Facility:	SCN_1	Mode:	WiFi Tx Ch6 (mid)
		Modification State:	0
File:	H8011734		

Ref 140 dBuV

Atten 60 dB



Centre 2.437GHz

Span 20MHz

*RBW 10 kHz

VBW 10 kHz

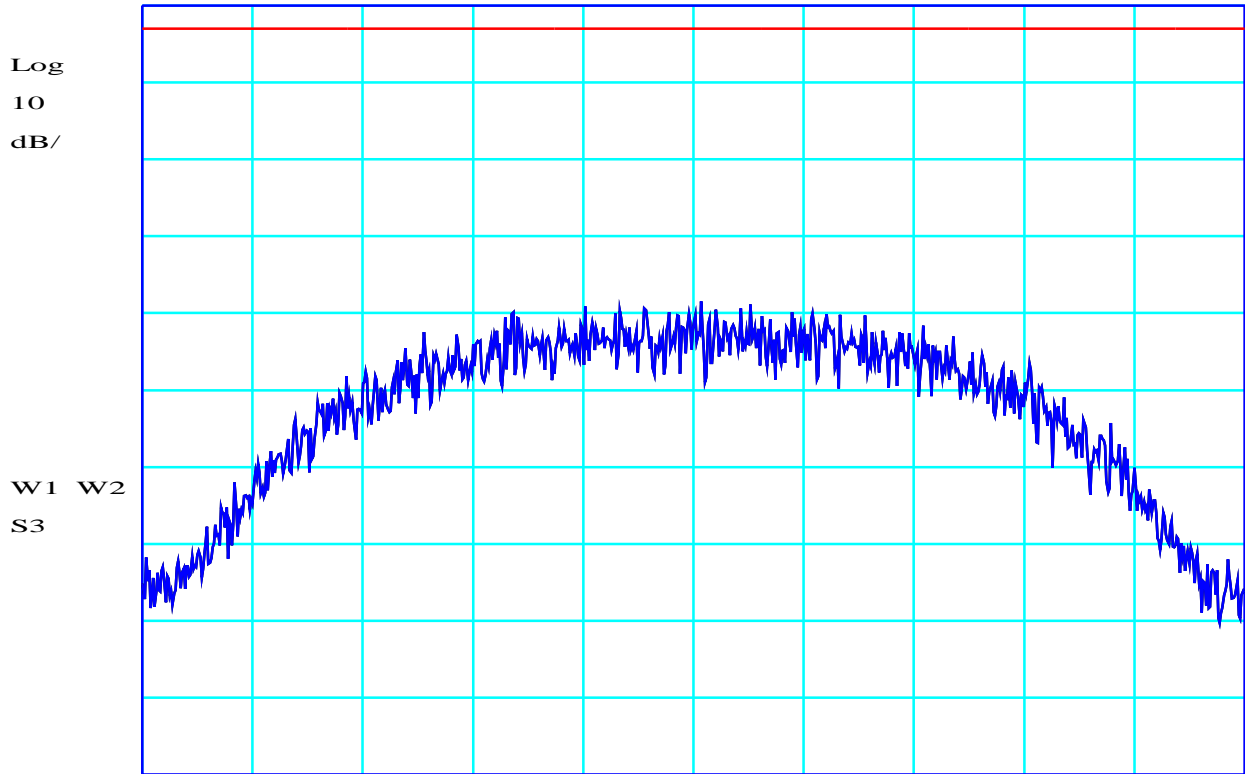
Sweep 257.7mS (800 pts)

PLOT 28 Antenna Conducted Emissions - Bandwidth - 801.11b Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247(b)(3)	Limit2:	
Limit3:		Limit4:	
<p>Mode 802.11b at 11Mbits/s. Maximum power.</p> <p>NOTE: The limit line at 137dBuV level is equivalent to the 1W limit.</p> <p>The 6dB bandwidth exceeds the 500kHz minimum bandwidth requirement of 15.247 (a)(2) Actual 6dB bandwidth is around 10MHz</p>			
Facility:	SCN_1	Mode:	WiFi Tx Ch6 (mid)
		Modification State:	0
File:	H8011735		

Ref 140 dBuV

Atten 60 dB



Centre 2.462GHz

Span 20MHz

*RBW 10 kHz

VBW 10 kHz

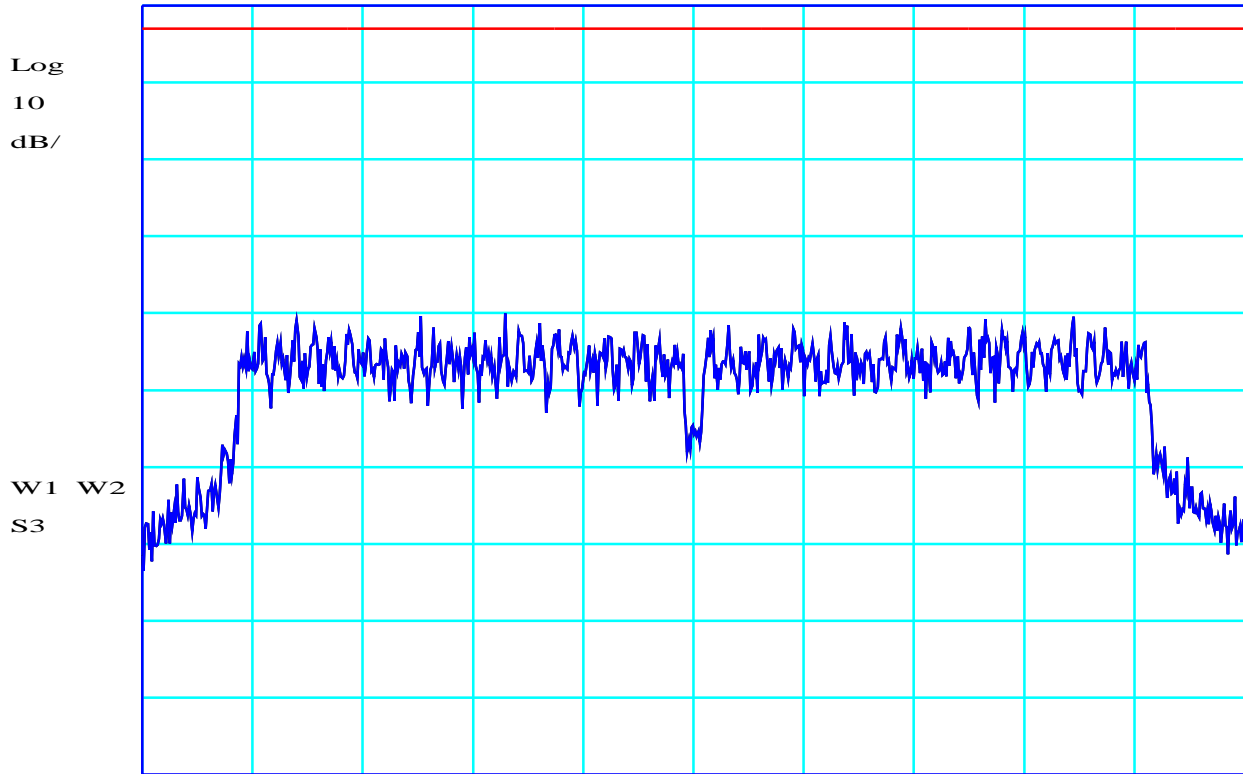
Sweep 257.7mS (800 pts)

PLOT 29 Antenna Conducted Emissions - Bandwidth - 801.11b Ch11

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247(b)(3)	Limit2:	
Limit3:		Limit4:	
<p>Mode 802.11b at 11Mbits/s. Maximum power.</p> <p>NOTE: The limit line at 137dBuV level is equivalent to the 1W limit.</p> <p>The 6dB bandwidth exceeds the 500kHz minimum bandwidth requirement of 15.247 (a)(2) Actual 6dB bandwidth is around 10MHz</p>			
Facility:	SCN_1	Mode:	WiFi Tx Ch11 (top)
		Modification State:	0
File:	H8011737		

Ref 140 dBuV

Atten 60 dB



Centre 2.462GHz

Span 20MHz

*RBW 10 kHz

VBW 10 kHz

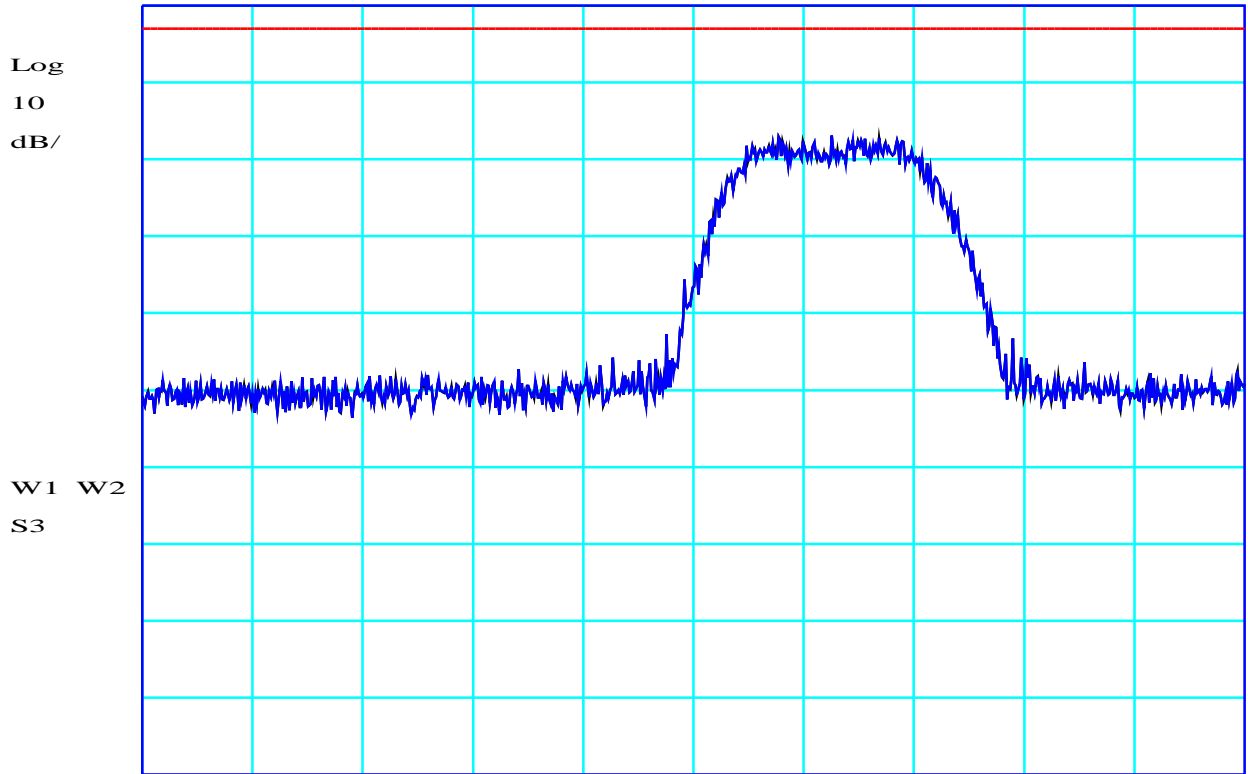
Sweep 257.7mS (800 pts)

PLOT 30 Antenna Conducted Emissions - Bandwidth - 801.11g Ch11

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247(b)(3)	Limit2:	
Limit3:		Limit4:	
<p>Mode 802.11g at 54Mbits/s. Maximum power.</p> <p>NOTE: The limit line at 137dBuV level is equivalent to the 1W limit.</p> <p>The 6dB bandwidth exceeds the 500kHz minimum bandwidth requirement of 15.247 (a)(2) Actual 6dB bandwidth is around 16.5MHz</p>			
Facility:	SCN_1	Mode:	WiFi Tx Ch11 (top)
		Modification State:	0
File:	H8011739		

Ref 140 dBuV

Atten 60 dB



Start 2.4GHz

Stop 2.5GHz

*RBW 5 MHz

VBW 3 MHz

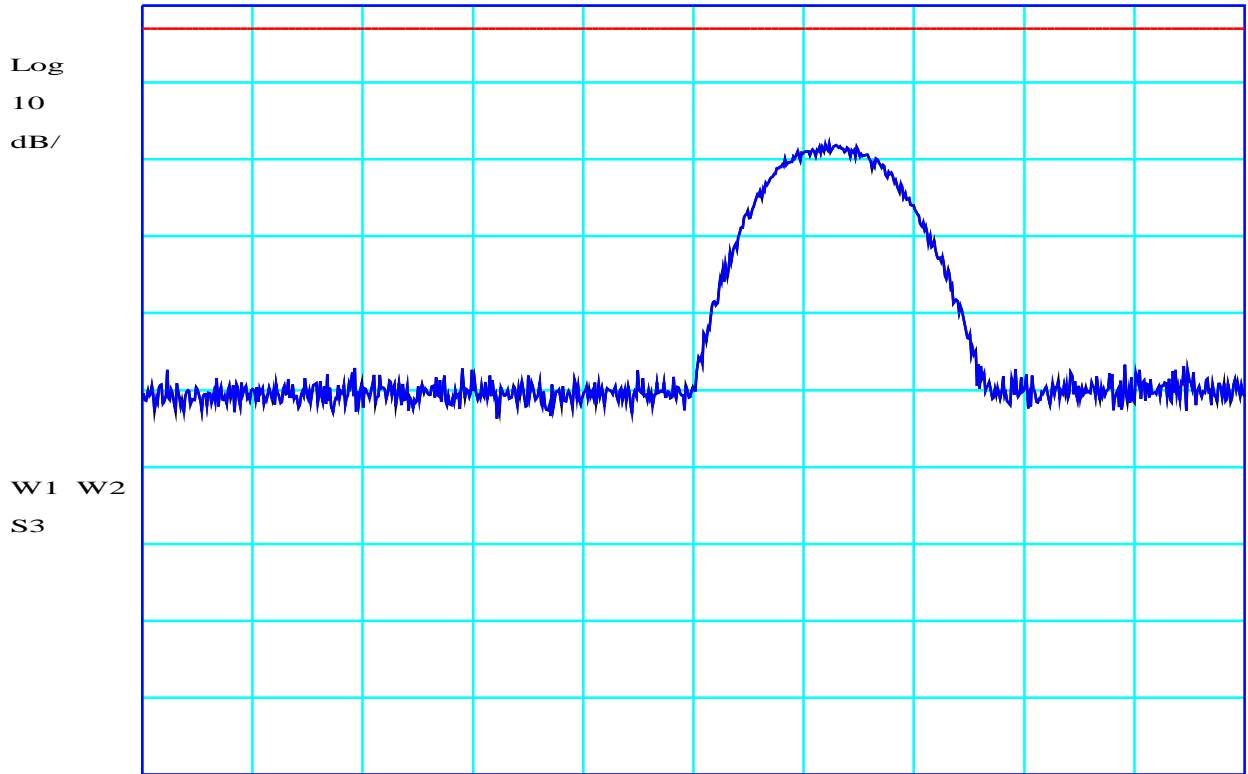
Sweep 7.99mS (800 pts)

PLOT 31 Antenna Conducted Emissions - Peak Power 802.11g Ch11

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247(b)(3)	Limit2:	
Limit3:		Limit4:	
Mode 802.11g at 54Mbits/s. Maximum power.			
NOTE: The limit line at 137dBuV level is equivalent to the 1W limit.			
Facility:	SCN_1	Mode:	WiFi Tx Ch11 (top)
		Modification State:	0
File:	H801173D		

Ref 140 dBuV

Atten 60 dB



Start 2.4GHz

Stop 2.5GHz

*RBW 5 MHz

VBW 3 MHz

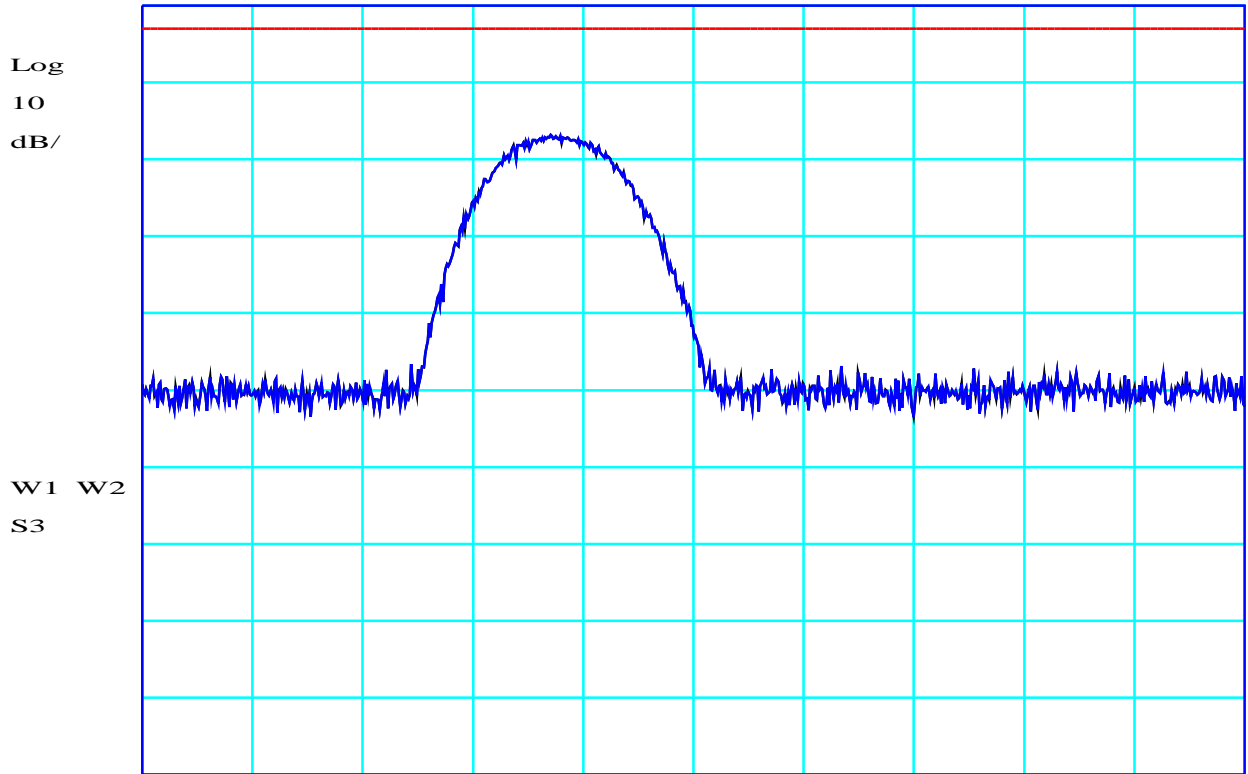
Sweep 7.99mS (800 pts)

PLOT 32 Antenna Conducted Emissions - Peak Power 802.11b Ch11

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247(b)(3)	Limit2:	
Limit3:		Limit4:	
Mode 802.11b at 11Mbits/s. Maximum power.			
NOTE: The limit line at 137dBuV level is equivalent to the 1W limit.			
Facility:	SCN_1	Mode:	WiFi Tx Ch11 (top)
		Modification State:	0
File:	H801173E		

Ref 140 dBuV

Atten 60 dB



Start 2.4GHz

Stop 2.5GHz

*RBW 5 MHz

VBW 3 MHz

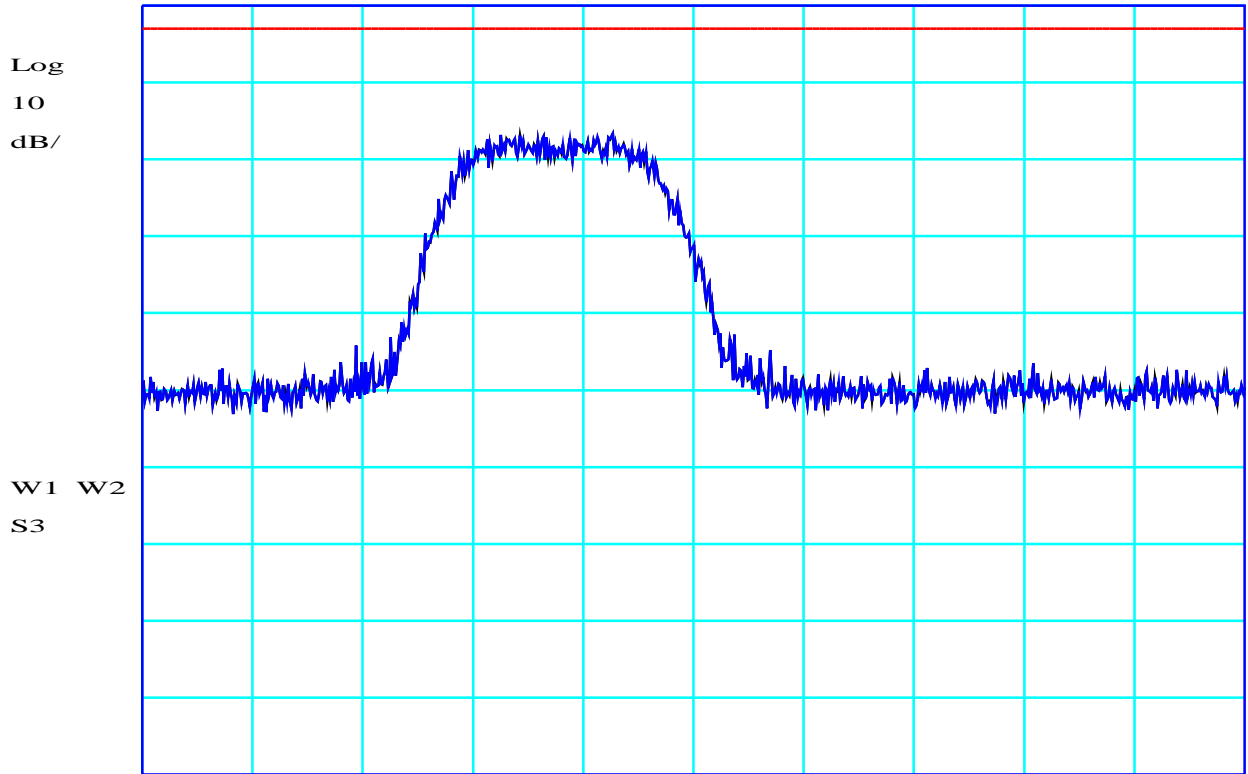
Sweep 7.99mS (800 pts)

PLOT 33 Antenna Conducted Emissions - Peak Power 802.11b Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247(b)(3)	Limit2:	
Limit3:		Limit4:	
Mode 802.11b at 11Mbits/s. Maximum power.			
NOTE: The limit line at 137dBuV level is equivalent to the 1W limit.			
Facility:	SCN_1	Mode:	WiFi Tx Ch6 (mid)
		Modification State:	0
File:	H801173F		

Ref 140 dBuV

Atten 60 dB



Start 2.4GHz

Stop 2.5GHz

*RBW 5 MHz

VBW 3 MHz

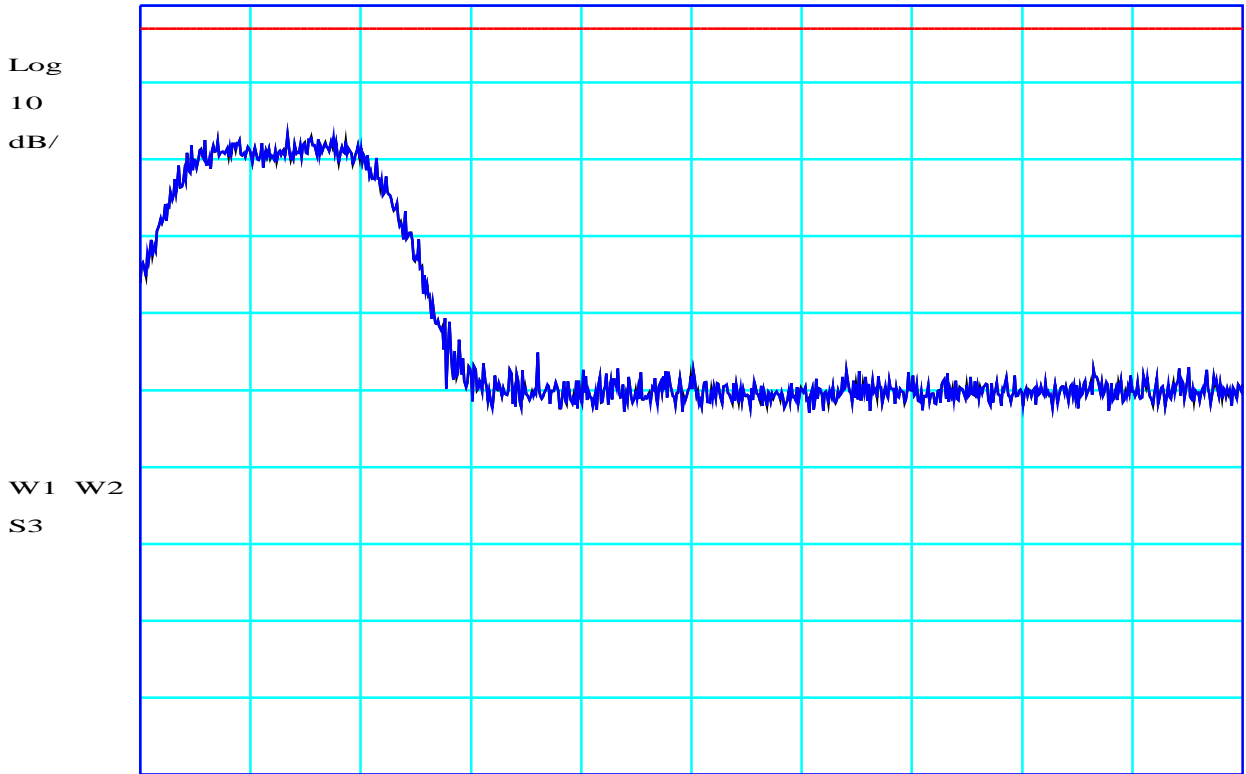
Sweep 7.99mS (800 pts)

PLOT 34 Antenna Conducted Emissions - Peak Power 802.11g Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247(b)(3)	Limit2:	
Limit3:		Limit4:	
Mode 802.11g at 54Mbits/s. Maximum power.			
NOTE: The limit line at 137dBuV level is equivalent to the 1W limit.			
File: H8011741		Mode:	WiFi Tx Ch6 (mid)
		Modification State:	0

Ref 140 dBuV

Atten 60 dB



Start 2.4GHz

Stop 2.5GHz

*RBW 5 MHz

VBW 3 MHz

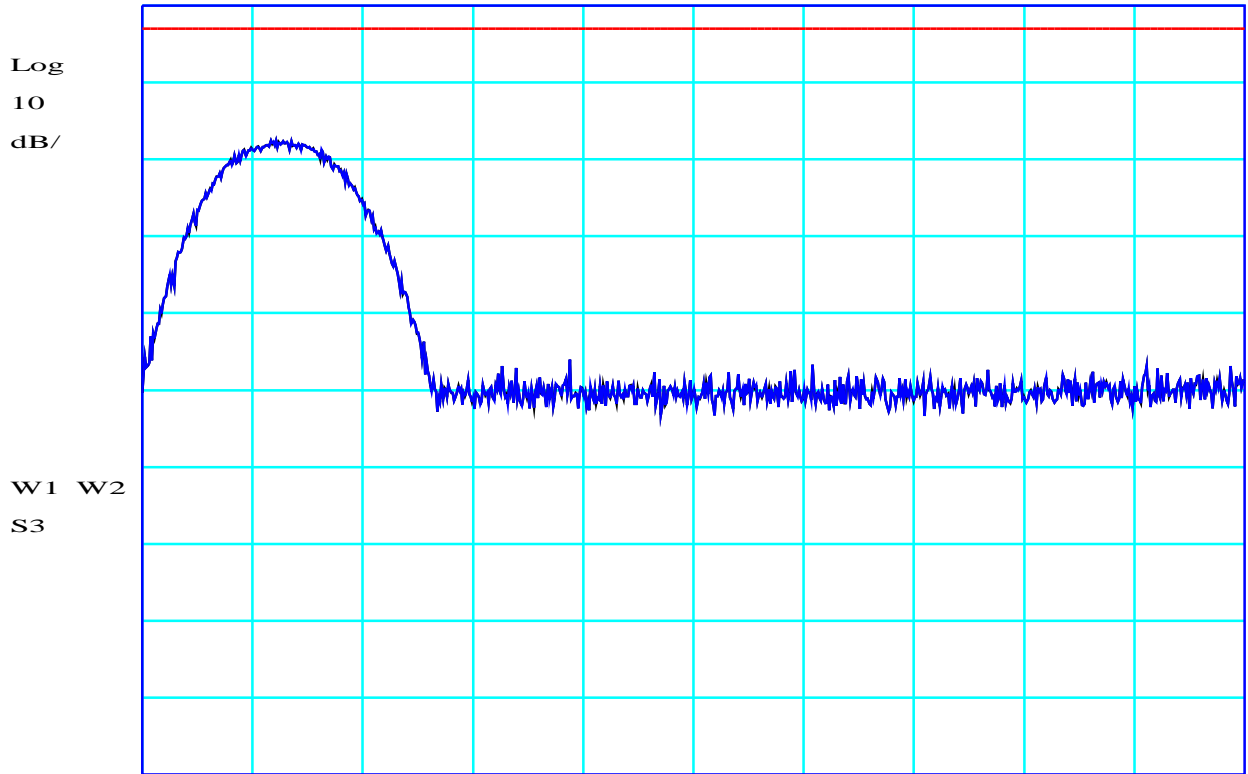
Sweep 7.99mS (800 pts)

PLOT 35 Antenna Conducted Emissions - Peak Power 802.11g Ch1

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247(b)(3)	Limit2:	
Limit3:		Limit4:	
Mode 802.11g at 54Mbits/s. Maximum power.			
NOTE: The limit line at 137dBuV level is equivalent to the 1W limit.			
Facility:	SCN_1	Mode:	WiFi Tx Ch1 (bot)
		Modification State:	0
File:	H8011743		

Ref 140 dBuV

Atten 60 dB



Start 2.4GHz

Stop 2.5GHz

*RBW 5 MHz

VBW 3 MHz

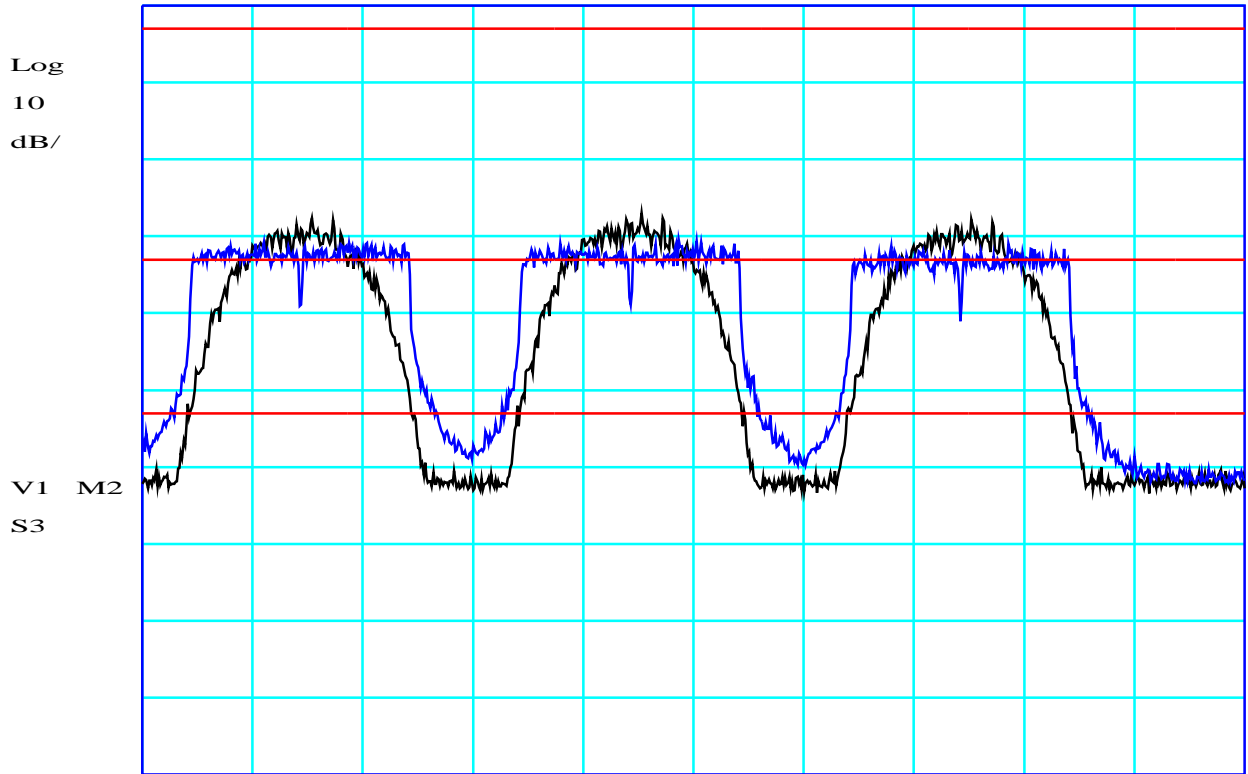
Sweep 7.99mS (800 pts)

PLOT 36 Antenna Conducted Emissions - Peak Power 802.11b Ch1

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247(b)(3)	Limit2:	
Limit3:		Limit4:	
Mode 802.11b at 11Mbits/s. Maximum power.			
NOTE: The limit line at 137dBuV level is equivalent to the 1W limit.			
Facility:	SCN_1	Mode:	WiFi Tx Ch1 (bot)
		Modification State:	0
File:	H8011744		

Ref 140 dBuV

Atten 60 dB



Start 2.4GHz

Stop 2.483GHz

*RBW 100 kHz

VBW 100 kHz

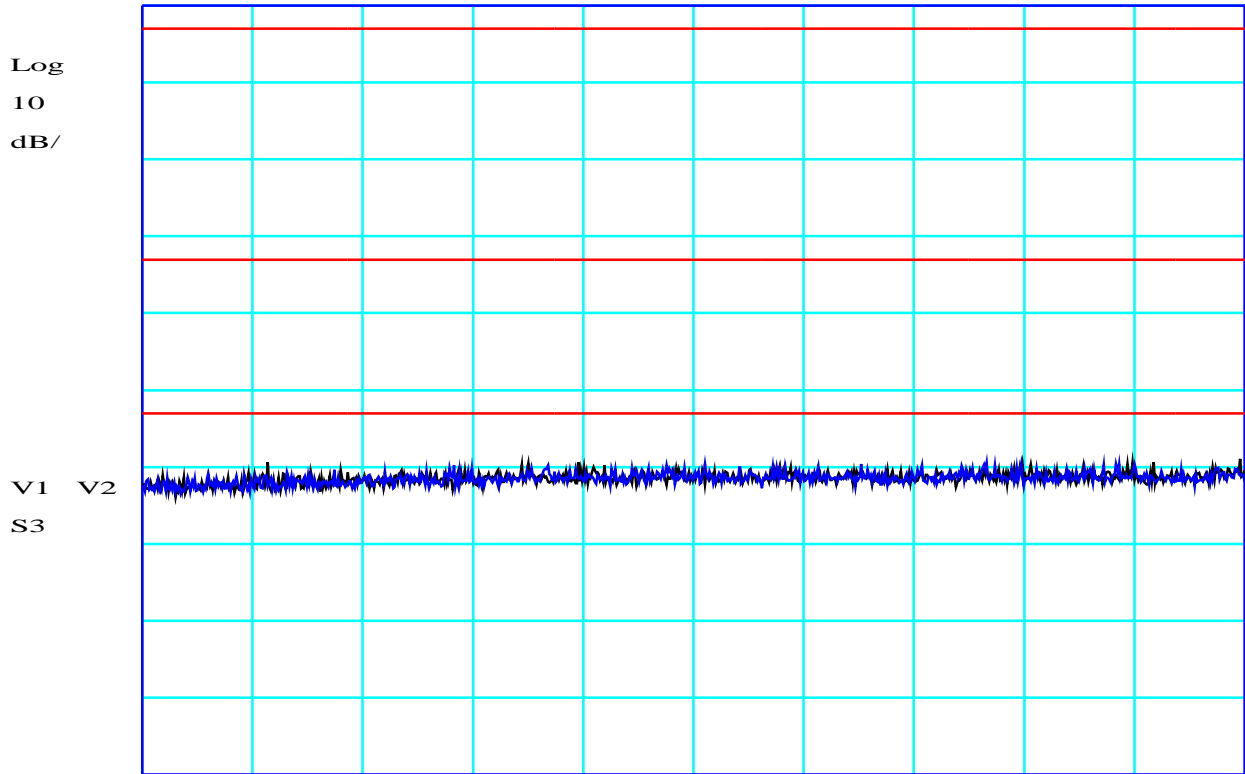
Sweep 10.76mS (800 pts)

PLOT 37 Antenna Conducted - 100kHz BW in-band - to establish limits

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
All modes, all frequencies. 100kHz bandwidth.			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch1
Distance:	3m	Modification State:	0
File:		H801175A	

Ref 140 dBuV

Atten 60 dB



Start 30MHz

Stop 1000MHz

*RBW 100 kHz

VBW 100 kHz

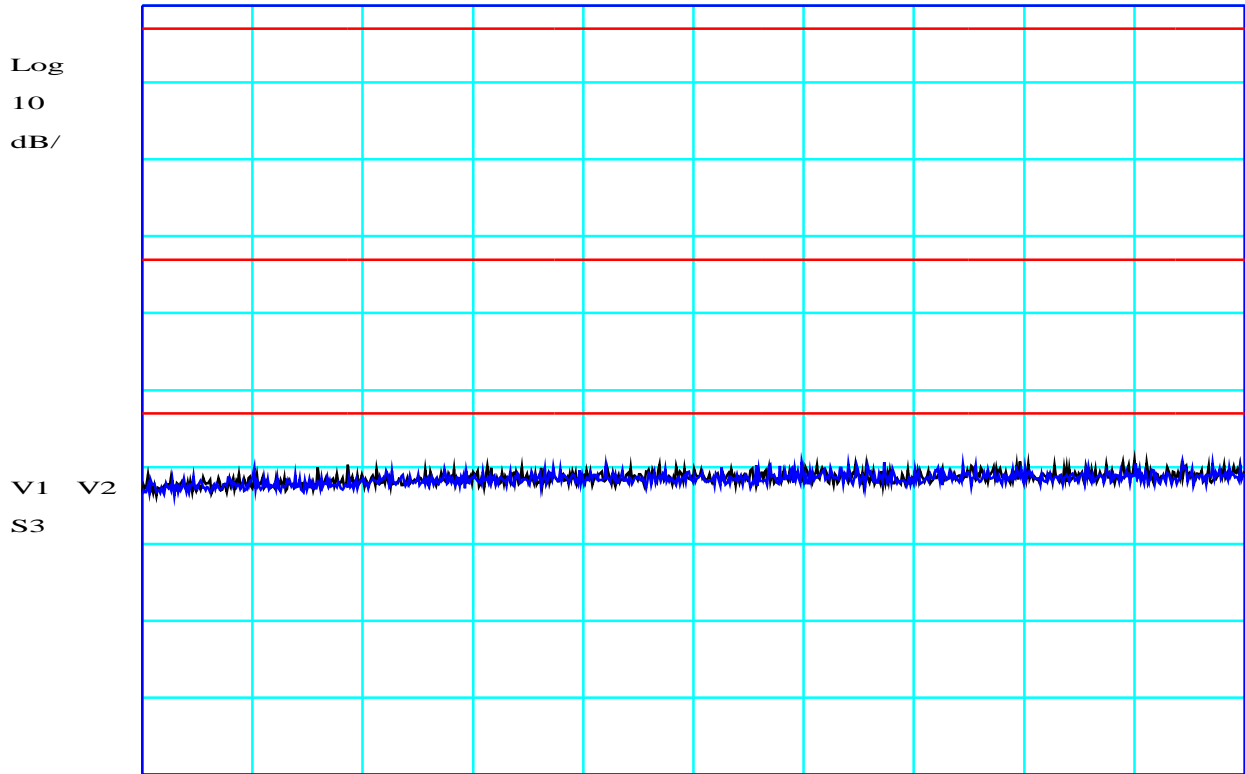
Sweep 125mS (800 pts)

PLOT 38 Antenna Cond - 30MHz to 1GHz 100kHz BW out-band Tx Ch1

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch1 (bot)
		Modification State:	0
File:	H8011762		

Ref 140 dBuV

Atten 60 dB



Start 30MHz

Stop 1000MHz

*RBW 100 kHz

VBW 100 kHz

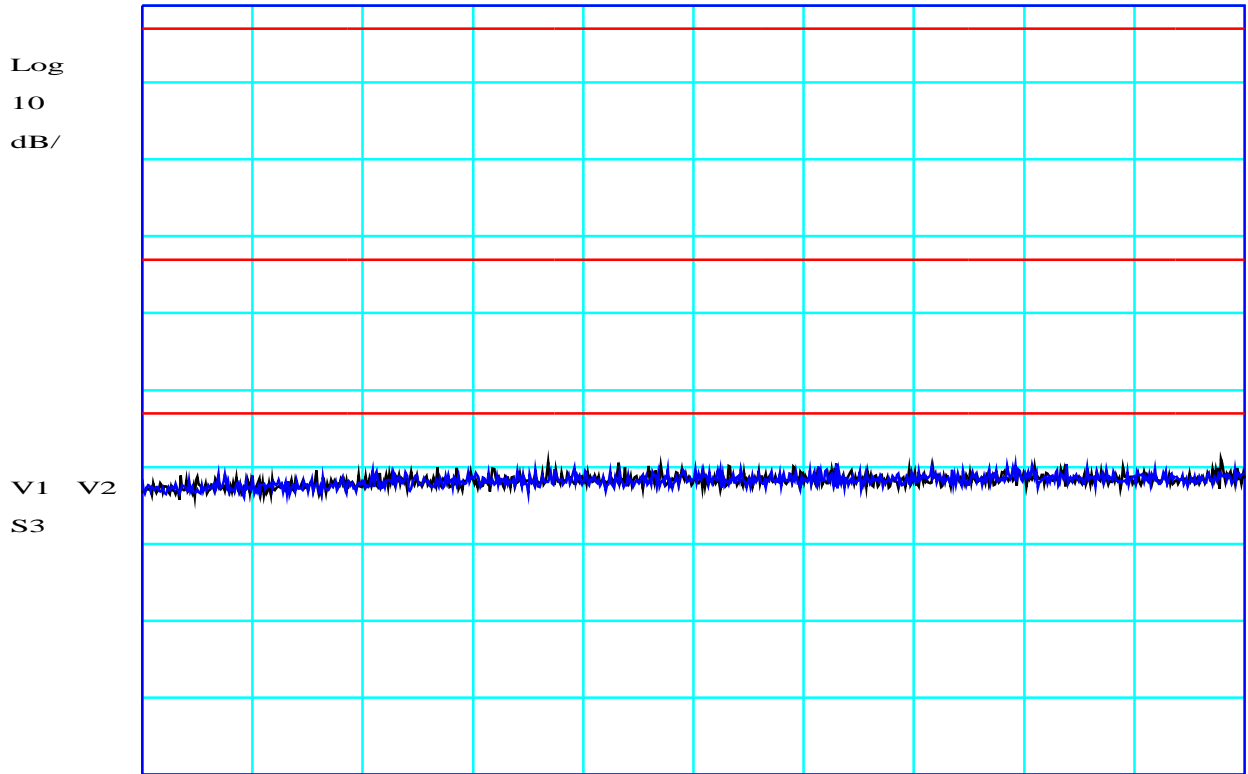
Sweep 125mS (800 pts)

PLOT 39 Antenna Cond - 30MHz to 1GHz 100kHz BW out-band Tx Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch6 (mid)
		Modification State:	0
File:	H8011765		

Ref 140 dBuV

Atten 60 dB



Start 30MHz

Stop 1000MH

*RBW 100 kHz

VBW 100 kHz

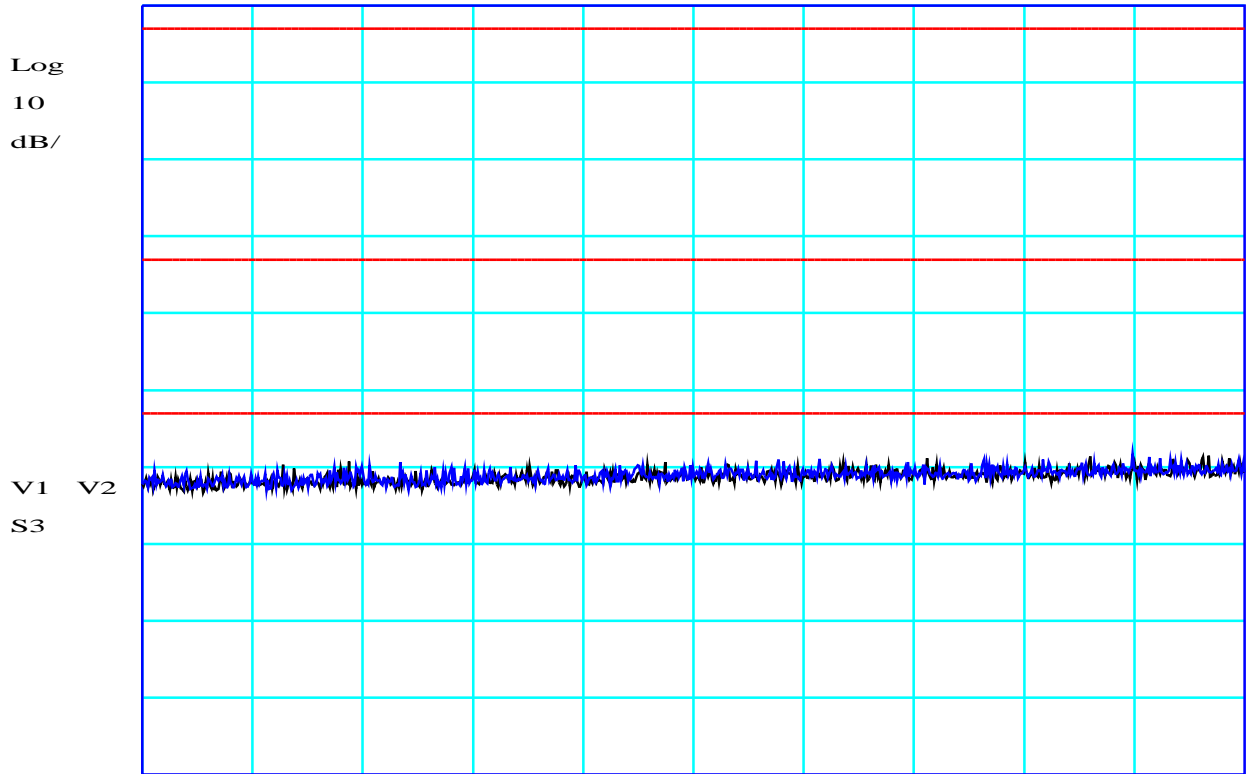
Sweep 125mS (800 pts)

PLOT 40 Antenna Cond - 30MHz to 1GHz 100kHz BW out-band Tx Ch11

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch11 (top)
		Modification State:	0
File:	H8011768		

Ref 140 dBuV

Atten 60 dB



Start 1000MHz

Stop 2.4GHz

*RBW 100 kHz

VBW 100 kHz

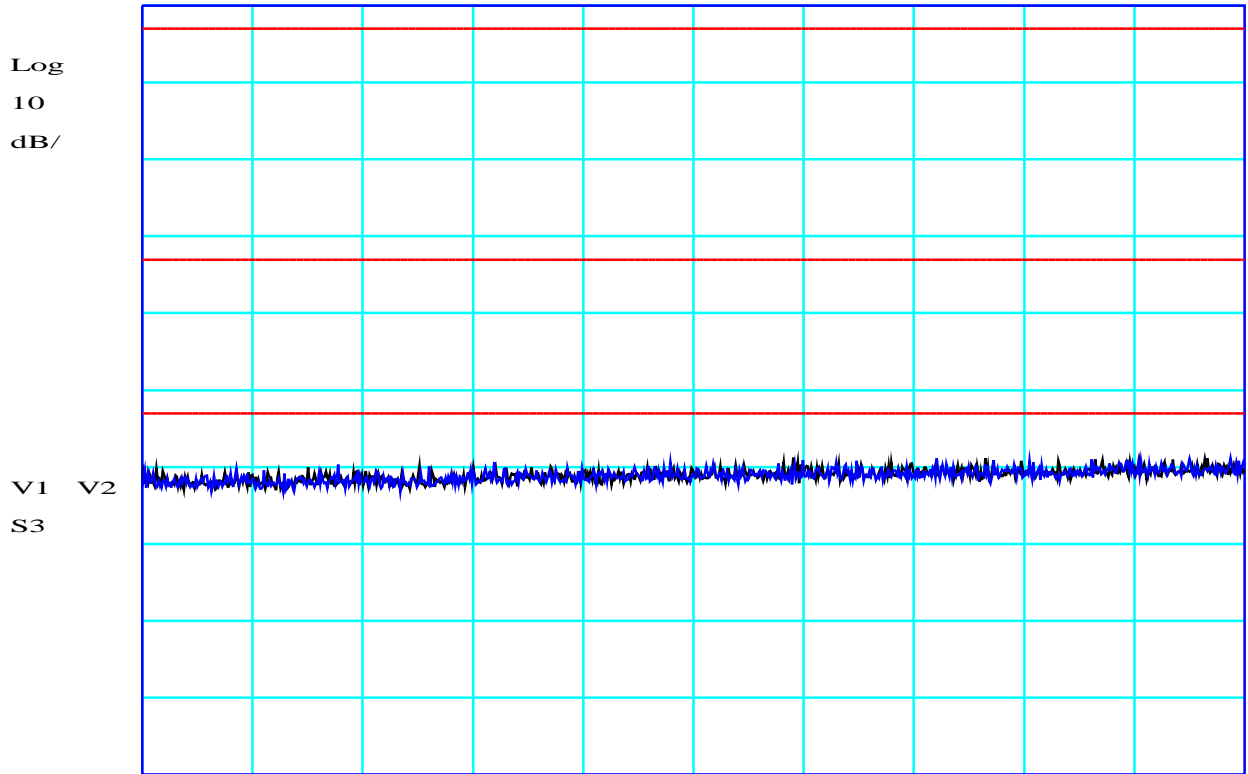
Sweep 180.4mS (800 pts)

PLOT 41 Antenna Cond - 1GHz to 2.4GHz 100kHz BW out-band Tx Ch11

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch11 (top)
		Modification State:	0
File:	H801176F		

Ref 140 dBuV

Atten 60 dB



Start 1000MHz

Stop 2.4GHz

*RBW 100 kHz

VBW 100 kHz

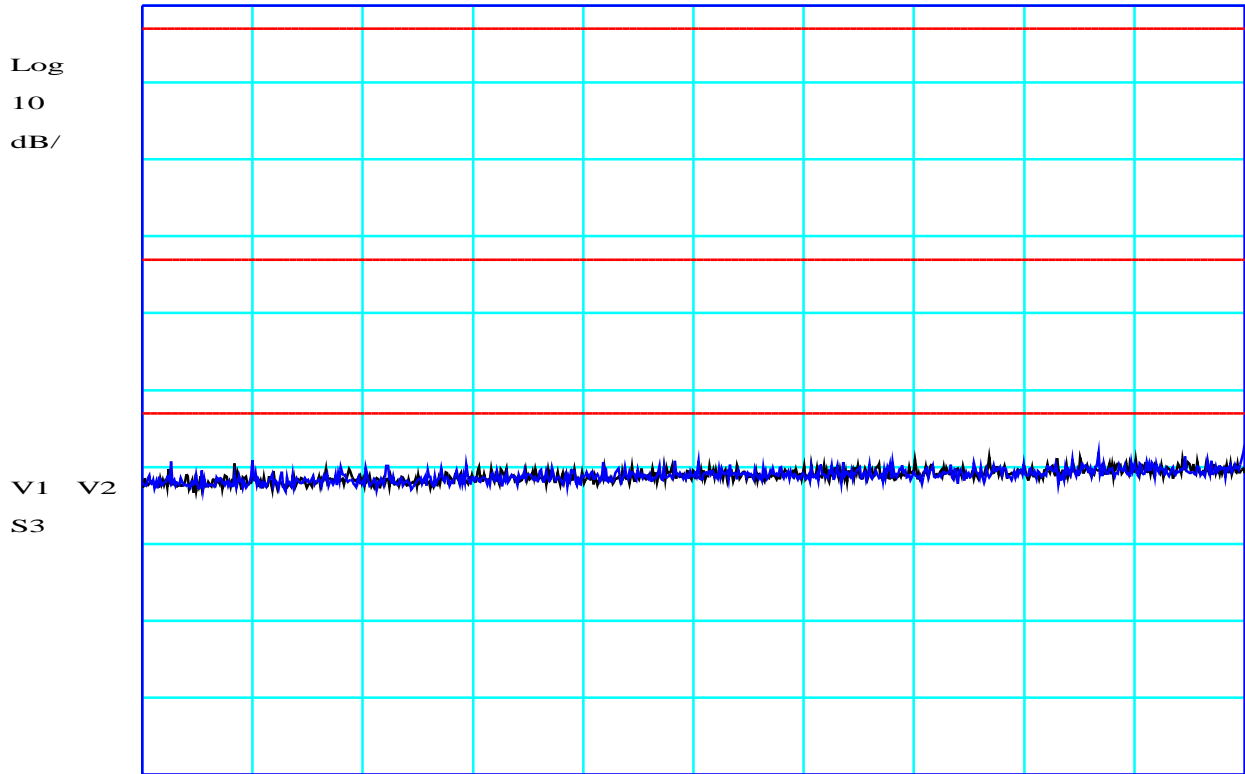
Sweep 180.4mS (800 pts)

PLOT 42 Antenna Cond - 1GHz to 2.4GHz 100kHz BW out-band Tx Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch6 (mid)
		Modification State:	0
File:	H8011773		

Ref 140 dBuV

Atten 60 dB



Start 1000MHz

Stop 2.4GHz

*RBW 100 kHz

VBW 100 kHz

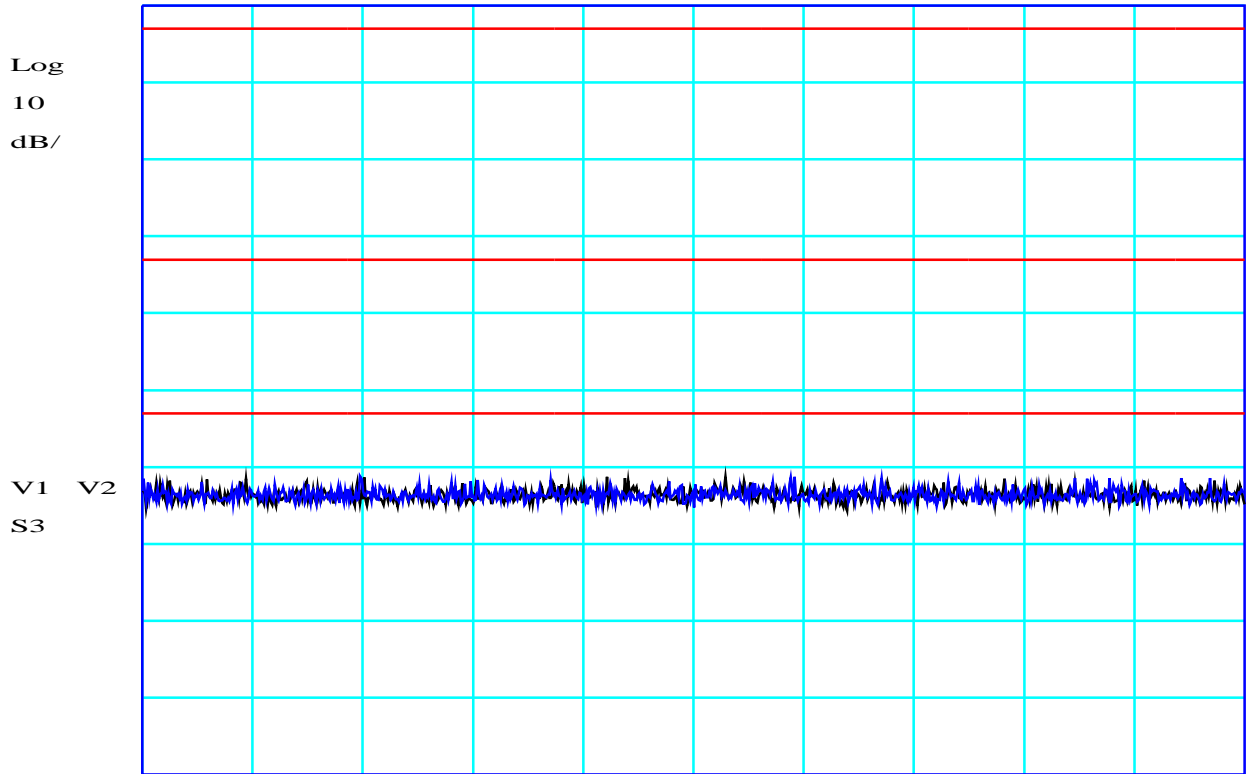
Sweep 180.4mS (800 pts)

PLOT 43 Antenna Cond - 1GHz to 2.4GHz 100kHz BW out-band Tx Ch1

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch1 (bot)
		Modification State:	0
File:	H8011776		

Ref 140 dBuV

Atten 60 dB



Centre 2.4GHz

Span 2MHz

*RBW 100 kHz

VBW 100 kHz

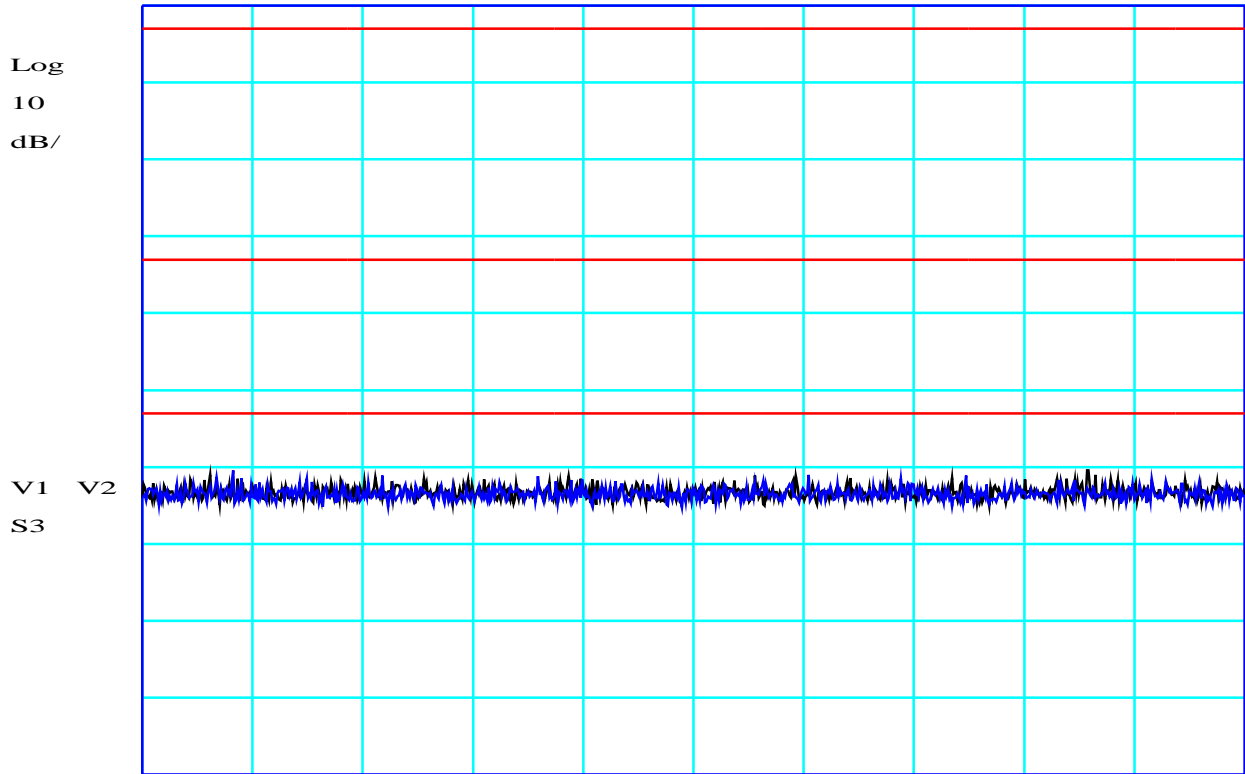
Sweep 7.99mS (800 pts)

PLOT 45 Antenna Cond - 2.4GHz Band Edge 100kHz BW out-band Tx Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch6 (mid)
		Modification State:	0
File:	H8011780		

Ref 140 dBuV

Atten 60 dB



Centre 2.483GHz

Span 2MHz

*RBW 100 kHz

VBW 100 kHz

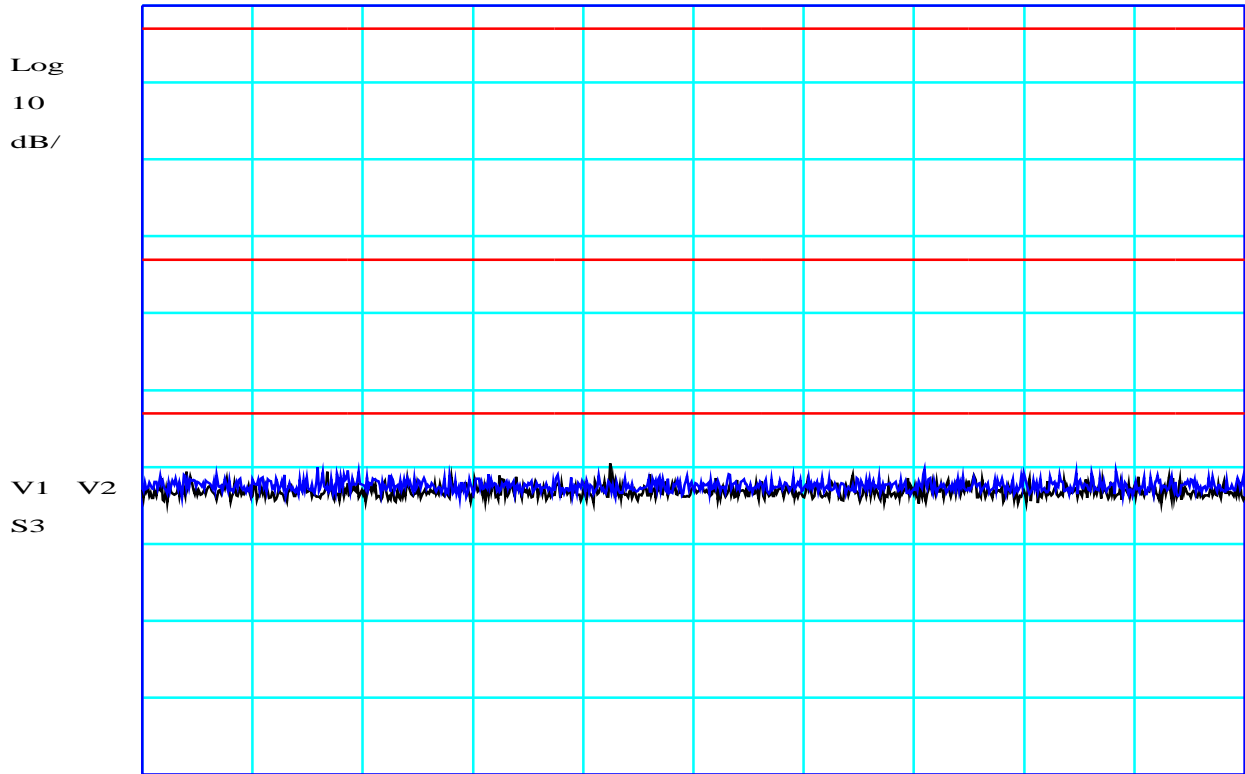
Sweep 7.99mS (800 pts)

PLOT 46 Antenna Cond - 2.483GHz Bnd Edge 100kHz BW out-band Tx Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch6 (mid)
		Modification State:	0
File:	H8011784		

Ref 140 dBuV

Atten 60 dB



Centre 2.483GHz

Span 2MHz

*RBW 100 kHz

VBW 100 kHz

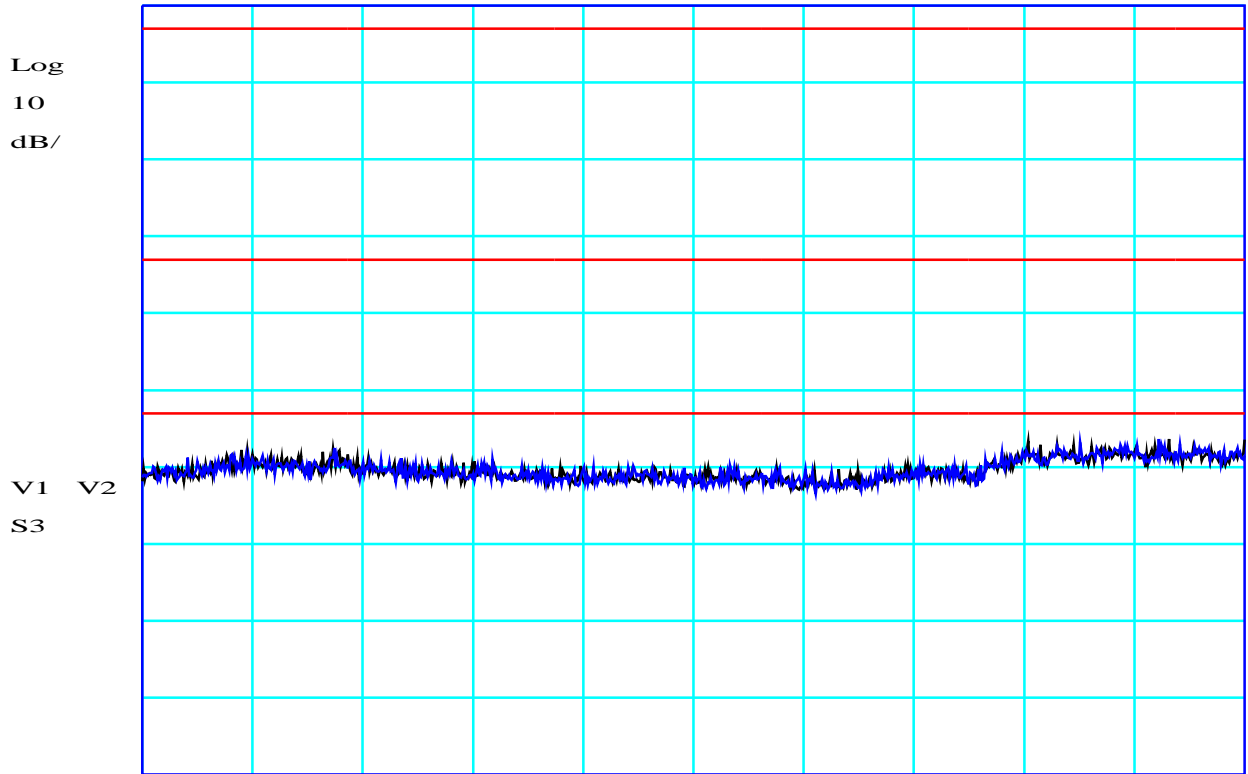
Sweep 7.99mS (800 pts)

PLOT 47 Antenna Cond -2.483GHz Bnd Edge 100kHz BW out-band Tx Ch11

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch11 (top)
		Modification State:	0
File:	H8011789		

Ref 140 dBuV

Atten 60 dB



Start 2.483GHz

Stop 8GHz

*RBW 100 kHz

VBW 100 kHz

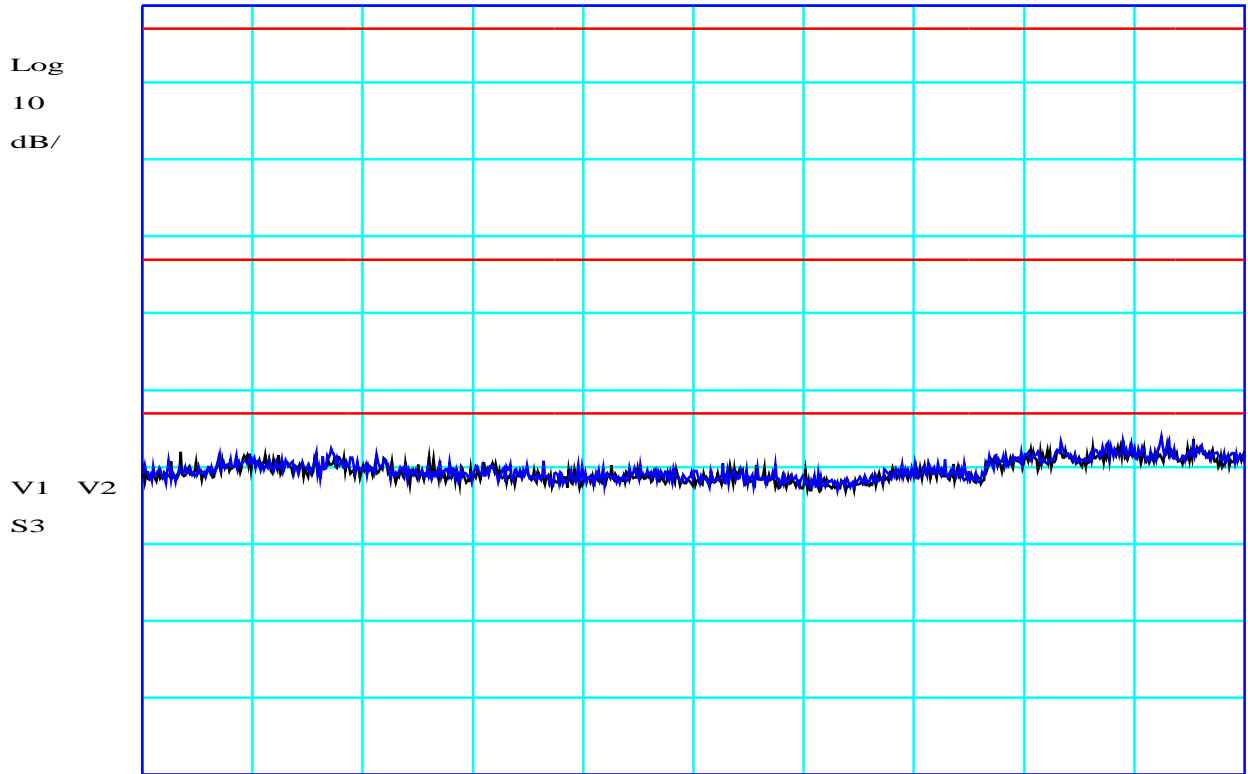
Sweep 710.8mS (800 pts)

PLOT 48 Antenna Cond - 2.483GHz to 8GHz 100kHz BW out-band Tx Ch11

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch11 (top)
		Modification State:	0
File:	H80117C1		

Ref 140 dBuV

Atten 60 dB



Start 2.483GHz

Stop 8GHz

*RBW 100 kHz

VBW 100 kHz

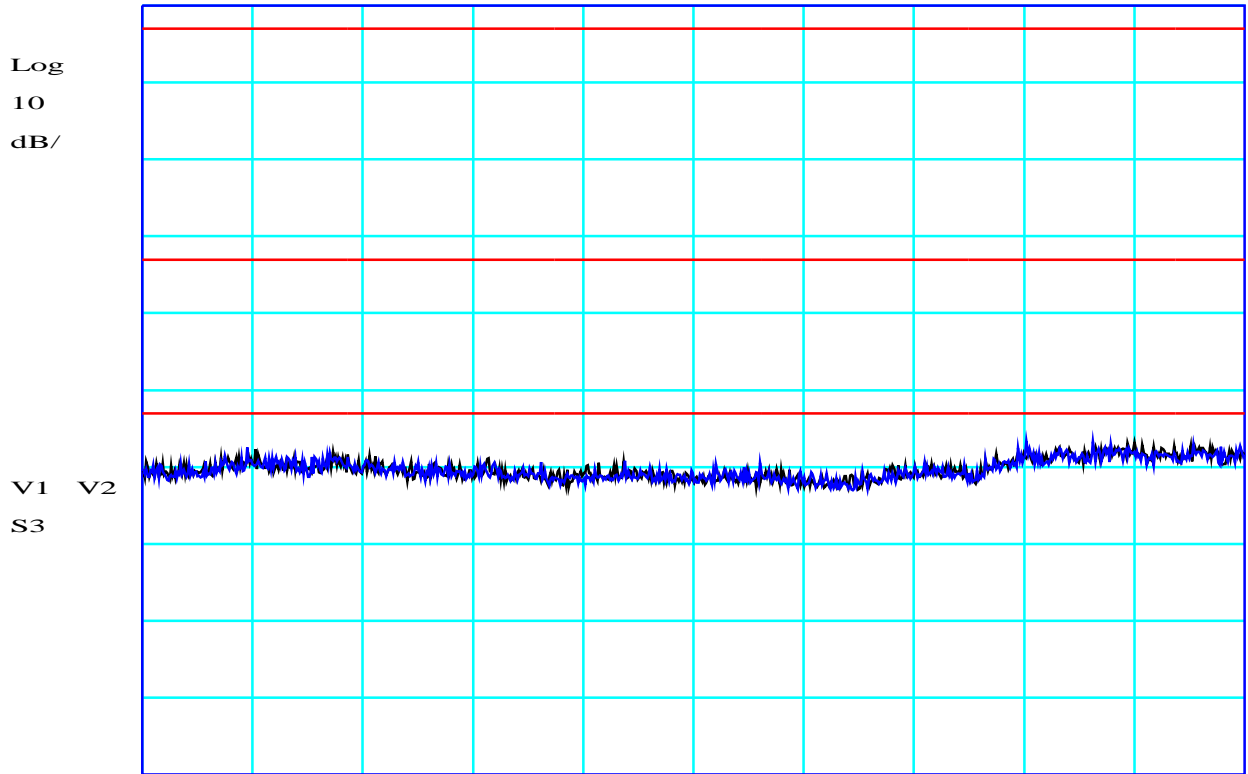
Sweep 710.8mS (800 pts)

PLOT 49 Antenna Cond - 2.483GHz to 8GHz 100kHz BW out-band Tx Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch6 (mid)
		Modification State:	0
File:	H80117C4		

Ref 140 dBuV

Atten 60 dB



Start 2.483GHz

Stop 8GHz

*RBW 100 kHz

VBW 100 kHz

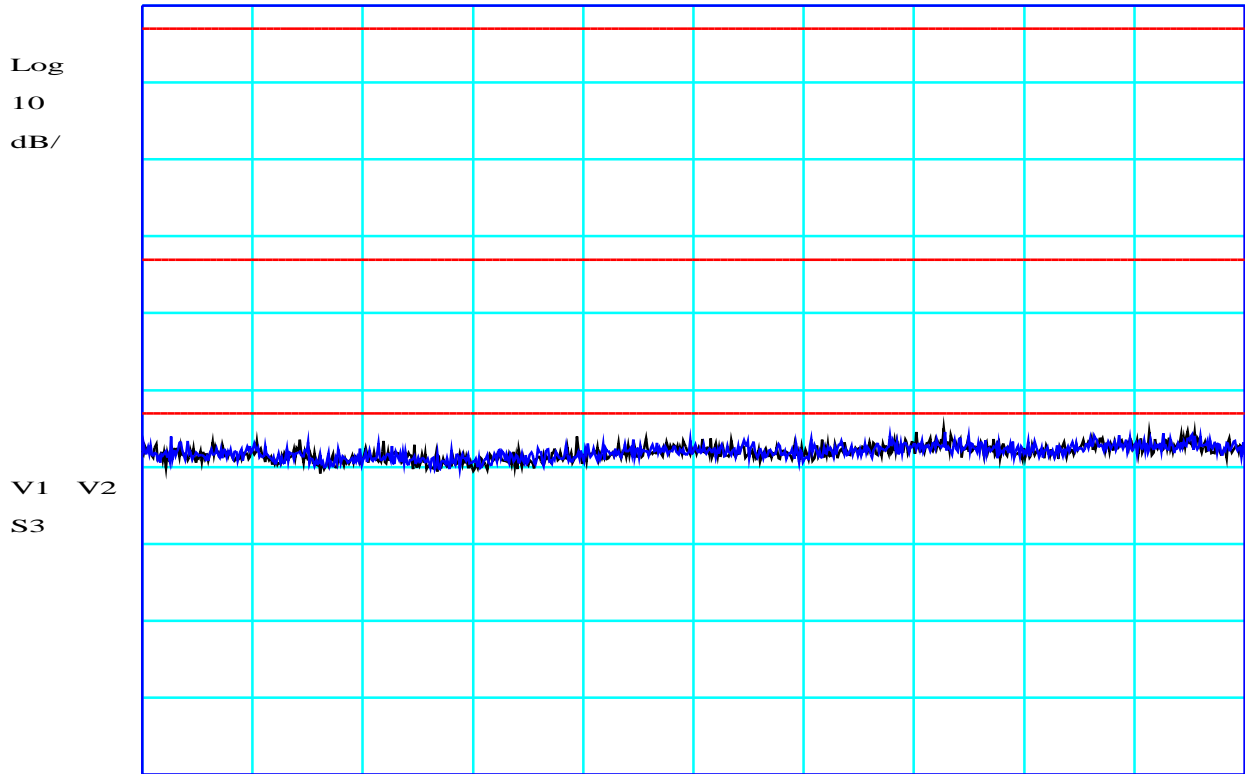
Sweep 710.8mS (800 pts)

PLOT 50 Antenna Cond - 2.483GHz to 8GHz 100kHz BW out-band Tx Ch1

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch1 (bot)
		Modification State:	0
File:	H80117C7		

Ref 140 dBuV

Atten 60 dB



Start 8GHz

Stop 13GHz

*RBW 100 kHz

VBW 100 kHz

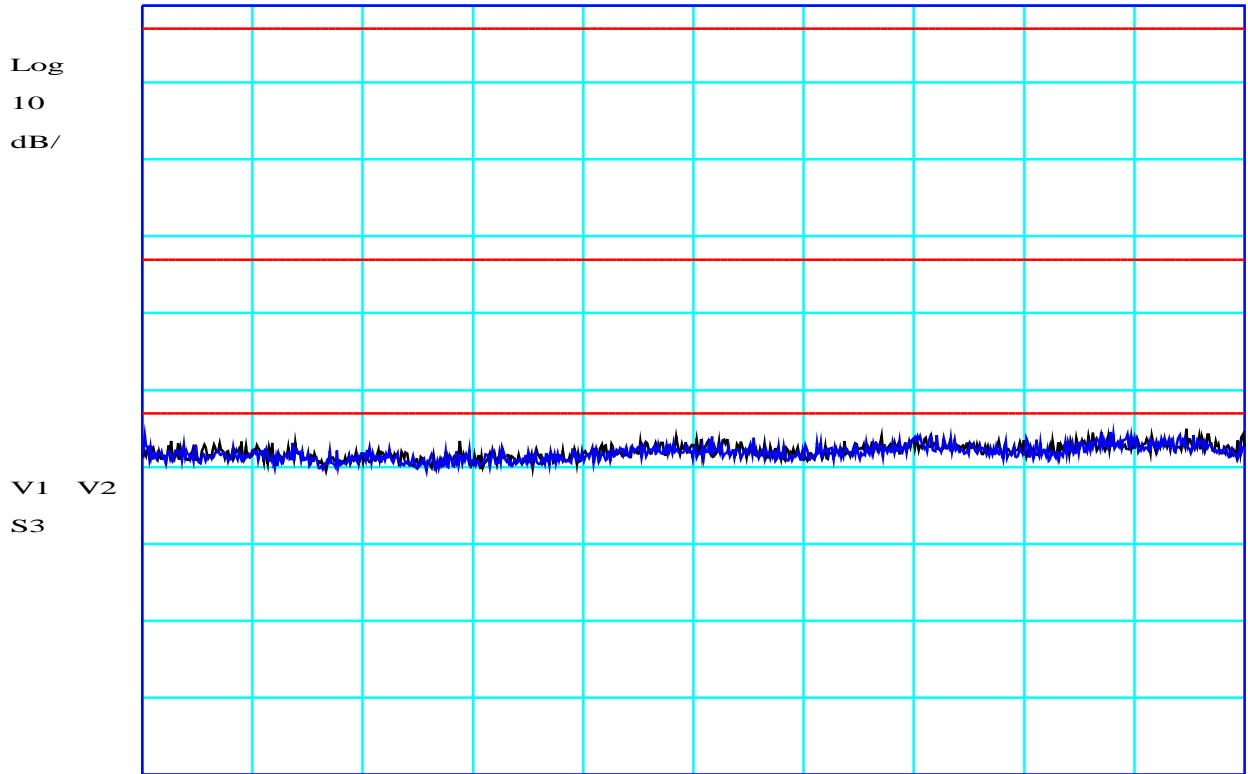
Sweep 644.2mS (800 pts)

PLOT 51 Antenna Cond - 8GHz to 13GHz 100kHz BW out-band Tx Ch1

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch1 (bot)
		Modification State:	0
File:	H80117CB		

Ref 140 dBuV

Atten 60 dB



Start 8GHz

Stop 13GHz

*RBW 100 kHz

VBW 100 kHz

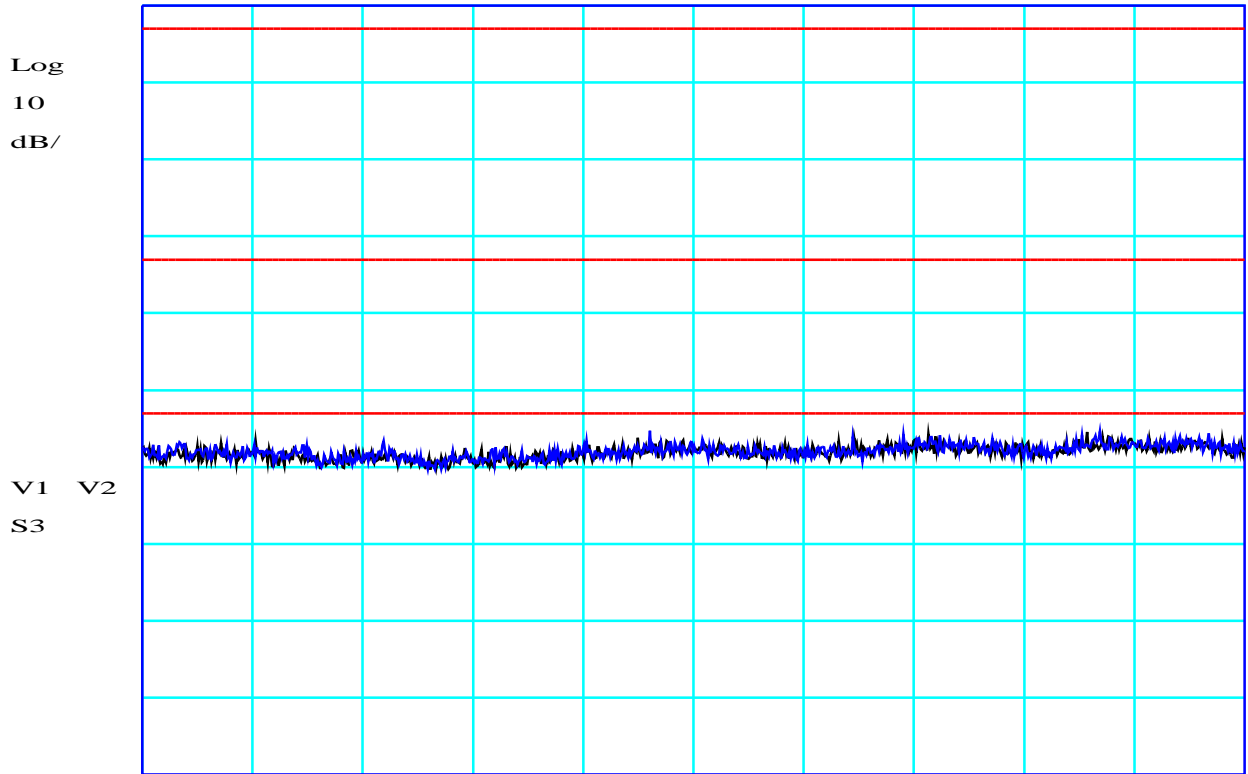
Sweep 644.2mS (800 pts)

PLOT 52 Antenna Cond - 8GHz to 13GHz 100kHz BW out-band Tx Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch6 (mid)
		Modification State:	0
File:	H80117CE		

Ref 140 dBuV

Atten 60 dB



Start 8GHz

Stop 13GHz

*RBW 100 kHz

VBW 100 kHz

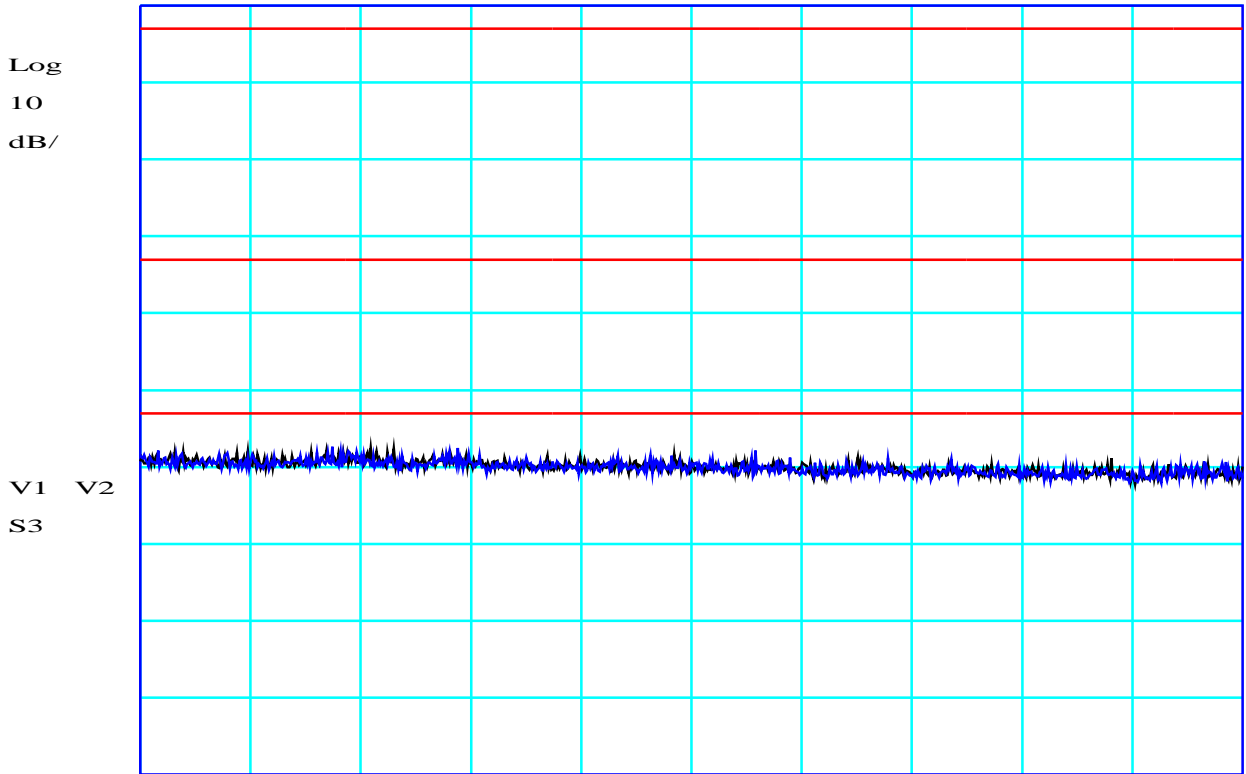
Sweep 644.2mS (800 pts)

PLOT 53 Antenna Cond - 8GHz to 13GHz 100kHz BW out-band Tx Ch11

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch11 (top)
		Modification State:	0
File:	H80117D1		

Ref 140 dBuV

Atten 55 dB



Start 13GHz

Stop 18GHz

*RBW 100 kHz

VBW 100 kHz

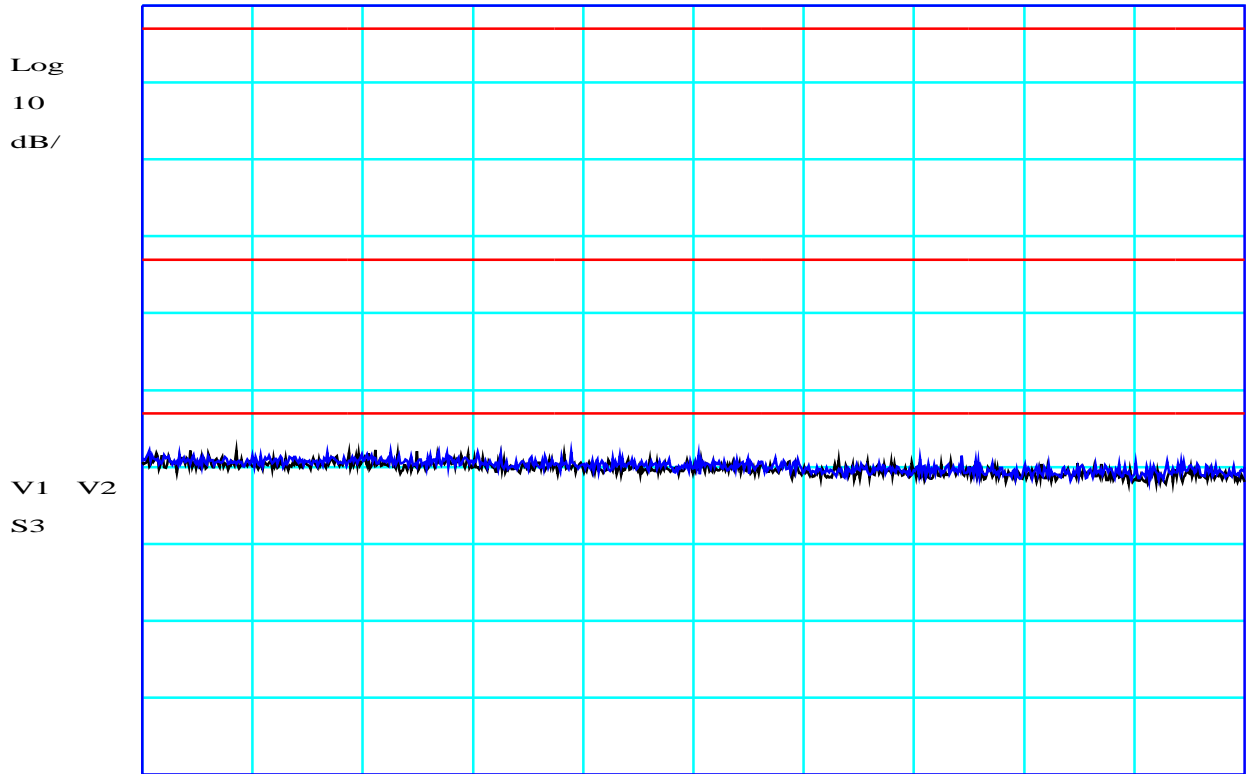
Sweep 644.2mS (800 pts)

PLOT 54 Antenna Cond - 13GHz to 18GHz 100kHz BW out-band Tx Ch11

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch11 (top)
		Modification State:	0
File:	H80117D6		

Ref 140 dBuV

Atten 55 dB



Start 13GHz

Stop 18GHz

*RBW 100 kHz

VBW 100 kHz

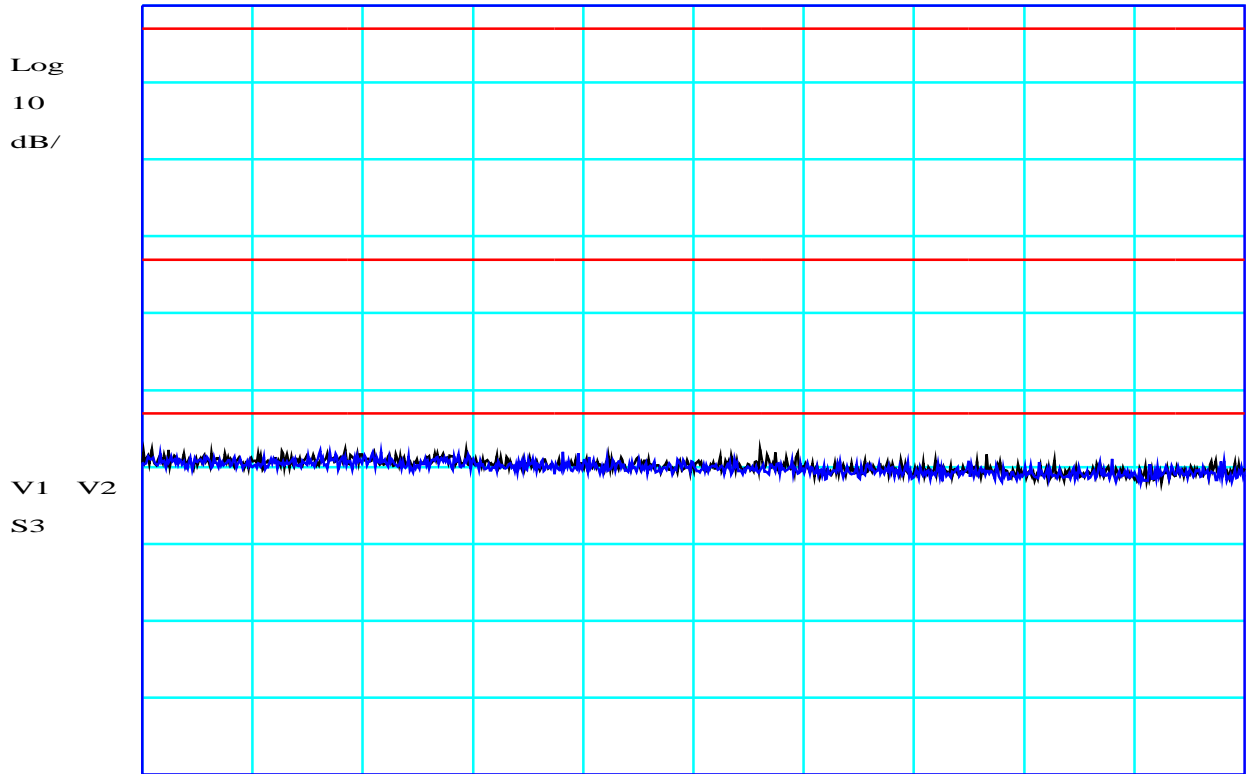
Sweep 644.2mS (800 pts)

PLOT 55 Antenna Cond - 13GHz to 18GHz 100kHz BW out-band Tx Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch6 (mid)
		Modification State:	0
File:	H80117DA		

Ref 140 dBuV

Atten 55 dB



Start 13GHz

Stop 18GHz

*RBW 100 kHz

VBW 100 kHz

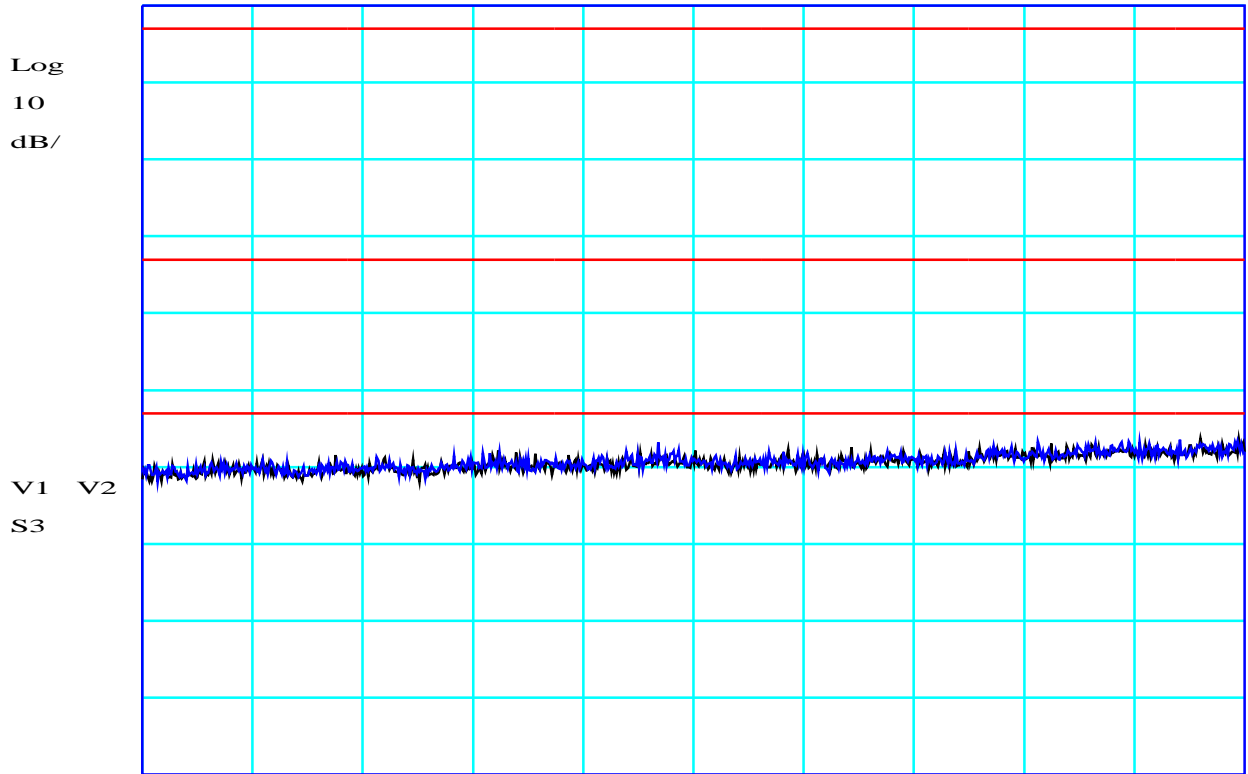
Sweep 644.2mS (800 pts)

PLOT 56 Antenna Cond - 13GHz to 18GHz 100kHz BW out-band Tx Ch1

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch1 (bot)
		Modification State:	0
File:	H80117DD		

Ref 140 dBuV

Atten 55 dB



Start 18GHz

Stop 25GHz

*RBW 100 kHz

VBW 100 kHz

Sweep 901.9mS (800 pts)

PLOT 57 Antenna Cond - 18GHz to 25GHz 100kHz BW out-band Tx Ch1

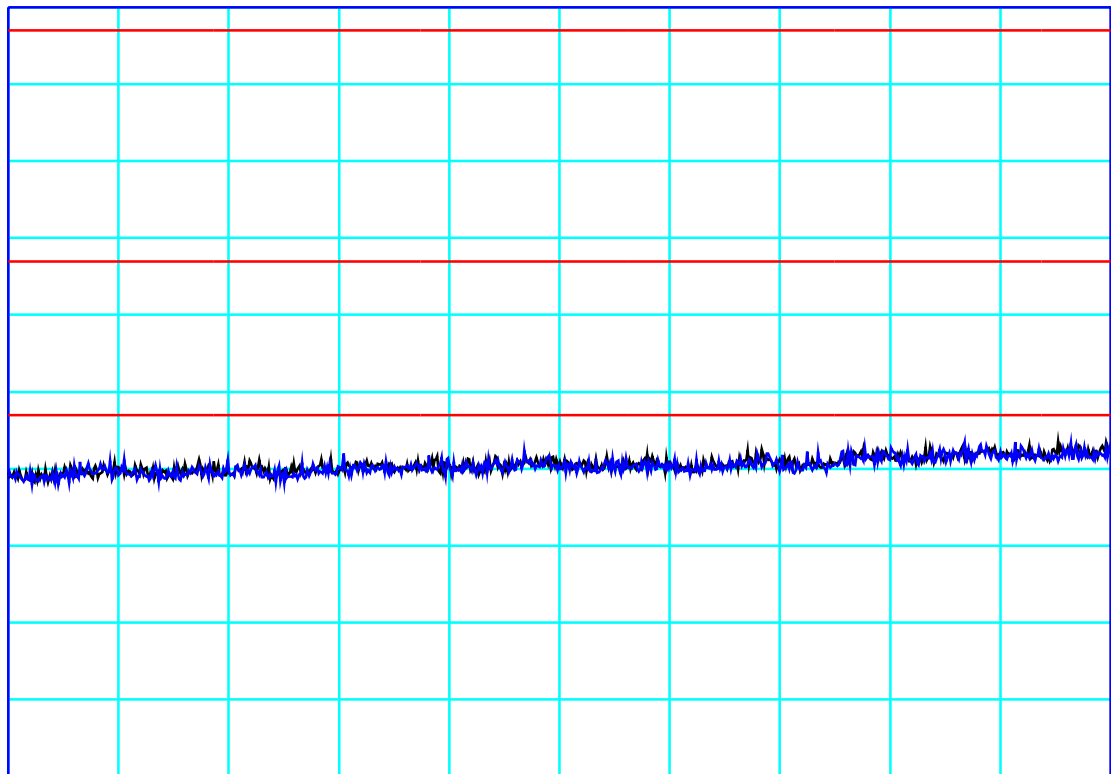
Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch1 (bot)
		Modification State:	0
File:	H80117E1		

Ref 140 dBuV

Atten 55 dB

Log
10
dB/

V1 V2
S3



Start 18GHz

Stop 25GHz

*RBW 100 kHz

VBW 100 kHz

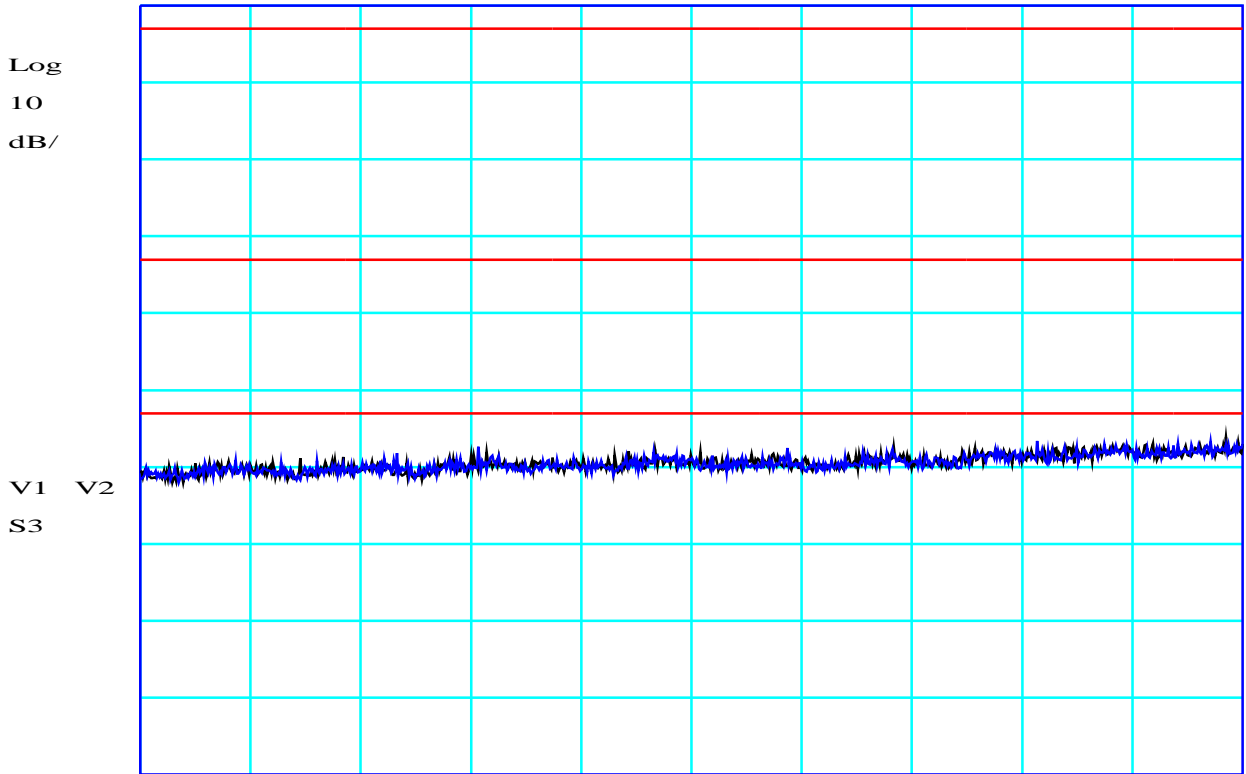
Sweep 901.9mS (800 pts)

PLOT 58 Antenna Cond - 18GHz to 25GHz 100kHz BW out-band Tx Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BW The top line is the 137dBuV level (equivalent to 1W)			
Facility:	SCN_1	Mode:	WiFi Tx Ch6 (mid)
		Modification State:	0
File:	H80117E5		

Ref 140 dBuV

Atten 55 dB



Start 18GHz

Stop 25GHz

*RBW 100 kHz

VBW 100 kHz

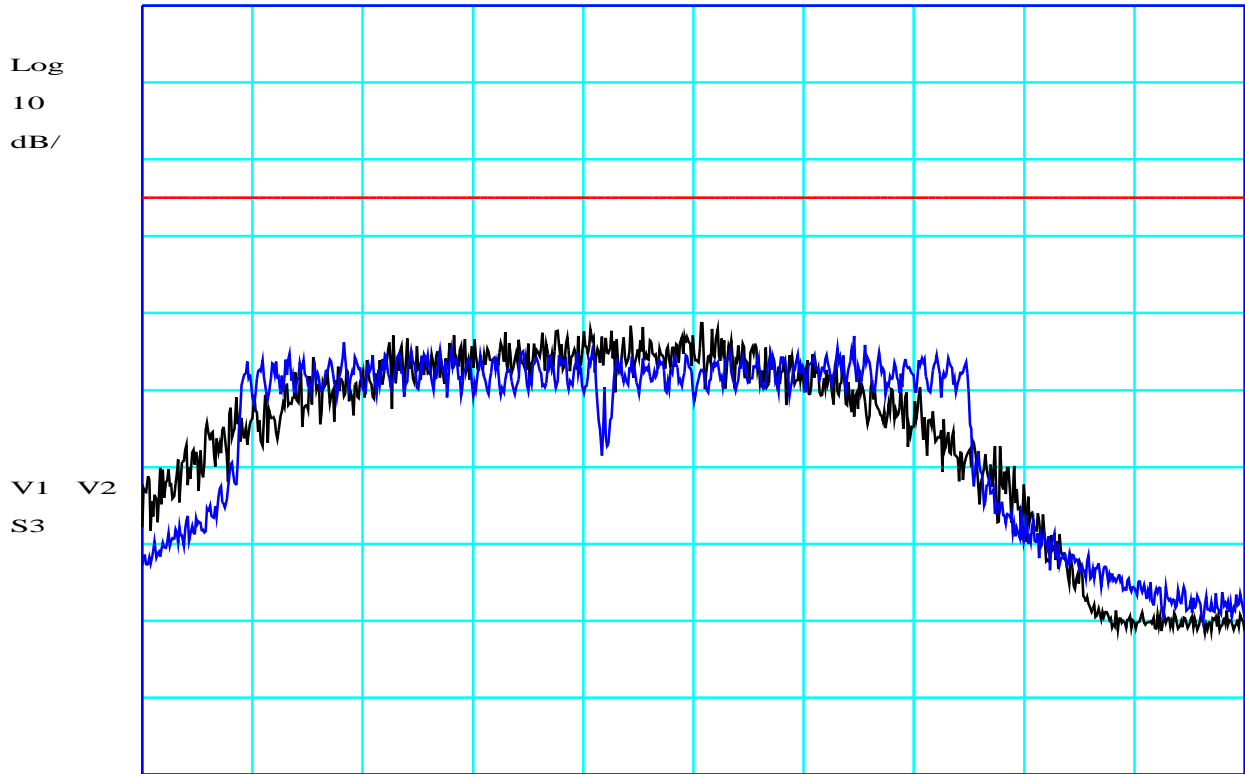
Sweep 901.9mS (800 pts)

PLOT 59 Antenna Cond - 18GHz to 25GHz 100kHz BW out-band Tx Ch11

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (d) (bottom line)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: The bottom line is 20dB below the in-band level (middle line) in 100kHz BWc			
Facility:	SCN_1	Mode:	WiFi Tx Ch11 (top)
		Modification State:	0
File:	H80117E9		

Ref 140 dBuV

Atten 55 dB



Centre 2.464GHz

Span 25MHz

*RBW 3 kHz

VBW 3 kHz

Sweep 3.579S (800 pts)

PLOT 60 Antenna Conducted Spectral Density (3kHz BW) - Tx Ch11

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (e)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: 115dBuV limit is equivalent to 8dBm (required limit in 3kHz BW)			
Facility:	SCN_1	Mode:	WiFi Tx Ch11 (top)
		Modification State:	0
File:	H80117F6		

Ref: 140 (dBu)

Axis: 51 dB

50

40

30

20

10

0

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

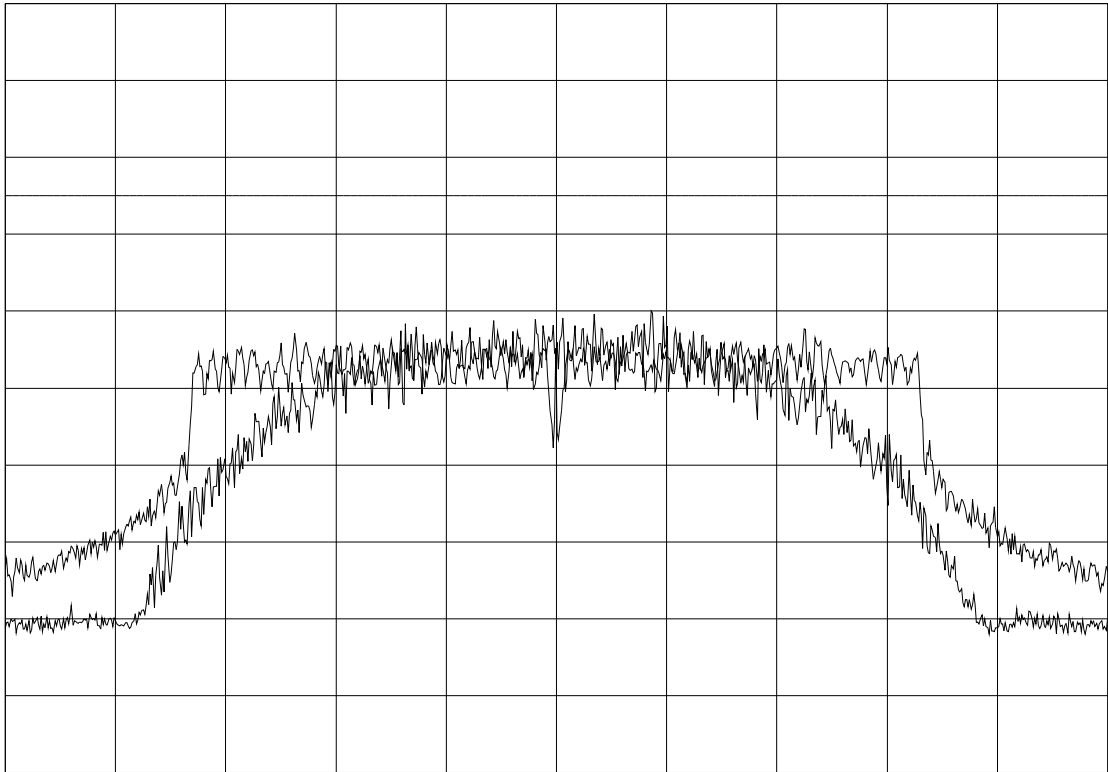
-110

-120

-130

-140

-150



Cursor 2: 4.07GHz

Span: 27MHz

RBW: 3 kHz

VBW: 3 kHz

Swamp: 2.2765 (800 pps)



PLOT 61 Antenna Conducted Spectral Density (3kHz BW) - Tx Ch6

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (e)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: 115dBuV limit is equivalent to 8dBm (required limit in 3kHz BW)			
Facility:	SCN_1	Mode:	WiFi Tx Ch6 (mid)
		Modification State:	0
File:	H80117FA		

Ref: 140 (dBu)

Axis: 51.00

50

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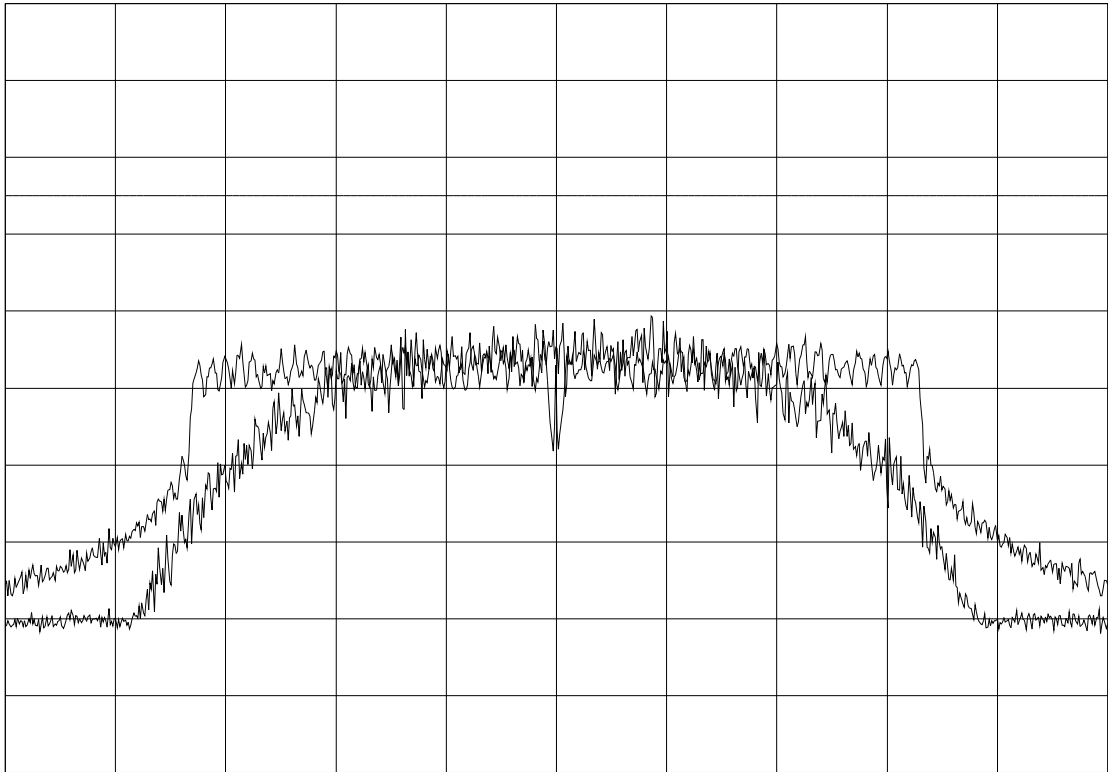
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Cursor 2: 4.000000

Span: 27.000000

100.000000

100.000000

Sample: 1.1765 (800.000)



PLOT 62 Antenna Conducted Spectral Density (3kHz BW) - Tx Ch1

Company:	Frontier Silicon	Product:	Venice 6
Date:	11th Jan 08	Test Eng:	Derek Barlow
Method:	FCC Subpart C	Method:	
Limit1:	CFR47 15.247 (e)	Limit2:	
Limit3:		Limit4:	
Blue trace 802.11g (54MBit/s), Black trace 802.11b (11MBit/s)			
NOTE: 115dBuV limit is equivalent to 8dBm (required limit in 3kHz BW)			
Facility:	SCN_1	Mode:	WiFi Tx Ch1 (bot)
Distance:	3m	Modification State:	0
File:	H80117FF		