VULCAN PORTALS, INC. TEST REPORT

FOR THE

FLIPSTART E-1000 SERIES

FCC PART 22 AND RSS-132 EXCLUDING CONDUCTED EMISSIONS AND FREQUENCY STABILITY TESTING

COMPLIANCE

DATE OF ISSUE: DECEMBER 11, 2006

PREPARED FOR:

Vulcan Portals, Inc.
505 5th Ave. South, Ste. 900
Seattle, WA 98104

P.O. No.: 20185-00778
W.O. No.: 85535

PREPARED BY:

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CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Date of test: August 29 – November 9, 2006

Report No.: FC06-066

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ADMINISTRATIVE INFORMATION

DATE OF TEST:	August 29 - November 9, 2006
DATE OF RECEIPT:	August 29, 2006
FREQUENCY RANGE TESTED:	9 kHz-9 GHz
MANUFACTURER:	Universal Scientific Industrial Co., Ltd. 141, Lane 351, Taiping Road, Sec. 1 Tsao Tuen, Nan-Tou, Taiwan
REPRESENTATIVE:	Daniel Oar
TEST LOCATION:	CKC Laboratories, Inc. 22116 23rd Drive S.E., Suite A Bothell, WA 98021-4413
TEST METHOD:	FCC Part 22 and RSS-132
PURPOSE OF TEST:	To demonstrate the compliance of the , FlipStart E-1000 series with the requirements for FCC Part 22 and RSS-132 devices excluding conducted emissions and frequency stability testing.

CONDITIONS FOR COMPLIANCE

RF Output power was lowered for final certification in order to pass band edge limits. CKC Laboratories was not contracted to test conducted emissions or frequency stability for this device.

APPROVALS

Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:

Joyce Walker, Quality Assurance Administrative Manager

Katie Molina, Senior EMC Engineer/Lab Manager

TEST PERSONNEL:

Eddie Wong, EMC Engineer

Ryan Rutledge, Test Technologist

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The customer declares the EUT tested by CKC Laboratories was representative of a production unit.

The following description has been provided by the customer: FlipStart is a Microsoft Windows XP-based computer in a small form factor. Designed for mobile professionals who require serious business tools and want to leave the PDA and MP3 player home, FlipStart is the first generation of personal devices that deliver powerful functionality without compromise. Unique features such as the FlipStart® InfoPane and FlipStart® Navigator revolutionize the Windows experience for the user. Built on the Intel platform, FlipStart has a QWERTY thumb keypad, 1024 X 600 high-resolution 5.6" display in a protective clamshell design. Built-in WiFi and Bluetooth®, and multiple carrier 3G WAN support allow users to stay connected.

The following model was tested by CKC Laboratories: **Ultra Portable Computer, Flipstart 1000 Series. (The actual model tested was E-1001s per the customer.)**

Since the time of testing the manufacturer has chosen to use the following model name in its place. Any differences between the names does not affect their EMC characteristics and therefore complies to the level of testing equivalent to the tested model name shown on the data sheets: **FlipStart E-1000 series**

The manufacturer states that the following additional models are identical electrically to the one which was tested, or any differences between them do not affect their EMC characteristics, and therefore they comply to the level of testing equivalent to the tested models.

Main unit Model numbers					
Model #	DESCRIPTION	BT/Wi-Fi	EV-DO WAN	HSDPA-NA WAN	CAMERA
E-1000	FlipStart Enterprise w/o camera & w/o WAN	X			
E-1001	FlipStart Enterprise w/camera & w/o WAN	X			X
E-1000v	FlipStart Enterprise w/o camera & w/Verizon EV-DO	X	MC5720		
E-1001v	FlipStart Enterprise w/camera & w/Verizon EV-DO	X	MC5720		X
E-1000s	FlipStart Enterprise w/o camera & w/Sprint EV-DO	X	MC5720		
E-1001s	FlipStart Enterprise w/camera & w/Sprint EV-DO	X	MC5720		X

EQUIPMENT UNDER TEST

FlipStart

Manuf: Vulcan Portals, Inc.
Model: E-1000 series
Serial: 003401-A068G01T
FCC ID: pending

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

FlipStart Extended-Life Battery 5000 Capacity in mAH

Manuf: Vulcan Portals, Inc.
Model: E-5000
Serial: NA

TEMPERATURE AND HUMIDITY DURING TESTING
The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

FCC 2.1033(c)(3) USER'S MANUAL
The necessary information is contained in a separate document.

FCC 2.1033 (c)(4) TYPE OF EMISSIONS
F9W

FCC 2.1033 (c)(5) FREQUENCY RANGE
825 MHz – 849 MHz

FCC 2.1033 (c)(6) OPERATING POWER
0.163 Watts

FCC 2.1033 (c)(7) MAXIMUM POWER RATING
6.3 Watts

FCC 2.1033 (c)(8) DC VOLTAGES
The necessary information is contained in a separate document.

FCC 2.1033 (c)(9) TUNE-UP PROCEDURE
The necessary information is contained in a separate document.

FCC 2.1033(c)(10) SCHEMATICS AND CIRCUITRY DESCRIPTION
The necessary information is contained in a separate document.

FCC 2.1033(c)(11) LABEL AND PLACEMENT
The necessary information is contained in a separate document.

FCC 2.1033(c)(12) SUBMITTAL PHOTOS
The necessary information is contained in a separate document.

FCC 2.1033 (c)(13) MODULATION INFORMATION
CDMA

FCC 2.1033(c)(14)/2.1046/22.913 - RF POWER OUTPUT

Frequency	Polarity	Ant. Gain (dBi)	ERP (W)	Limit (W)	Pass/Fail
825 MHz	Vertical	(-) 0.89	0.112751	6.3	Pass
825 MHz	Horizontal	(-) 0.89	0.138714	6.3	Pass
837 MHz	Vertical	(-) 0.89	0.141945	6.3	Pass
837 MHz	Horizontal	(-) 0.89	0.159265	6.3	Pass
848 MHz	Vertical	(-) 0.89	0.152097	6.3	Pass
848 MHz	Horizontal	(-) 0.89	0.162975	6.3	Pass

Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02673	Agilent	E4446A	US44300437	061606	061608
Cable	P05206	Pasterneck	NA	NA	020805	020807
2.4 GHz HPF	02745	K&L	11SH10-3000	2	030806	030808
2.4 GHz LPF	02747	K&L	11SL10-20000	7	030706	030708

Test Location:	CKC Laboratories •22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717		
Customer:	**Vulcan Portals, Inc.**		
Specification:	**Part 22 RF Power and Block Edge Block C (Radiated)**		
Work Order #:	**85535**	Date:	11/9/2006
Test Type:	**Radiated Scan**	Time:	09:01:42
Equipment:	**Ultra Portable Computer**	Sequence#:	1
Manufacturer:	Vulcan Portals, Inc.	Tested By:	Ryan Rutledge
Model:	Flipstart 1000 Series		
S/N:	003401-A068G01T		

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Ultra Portable Computer*	Vulcan Portals, Inc.	Flipstart 1000 Series	003401-A068G01T

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The EUT is placed on the wooden table. Evaluation of RF Output Power and Band Edges is performed without peripherals attached to the EUT. Frequency: 825MHz. Modulation: CDMA, 1xRTT. RF Output Power RBW=3 MHz, VBW=3 MHz Band Edge RBW=15 kHz, VBW=43 kHz 110Vac, 60 Hz, 22°C, 38% relative humidity.

Transducer Legend:

T1=Chase AN 1993 SN 2458 2/2/05-2/2/07	T2=Bothell 5 meter cable set
T3=AMP-AN01517-071006	

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	824.000M Ave	78.4	+22.3	+4.4	-28.3		+0.0 149	76.8	82.3 Bandedge reading 100 sweep average 15 kHz RBW	-5.5	Vert 120
2	824.000M Ave	73.4	+22.3	+4.4	-28.3		+0.0 348	71.8	82.3 Bandedge reading 100 sweep average 15 kHz RBW	-10.5	Horiz 110
3	824.670M	119.3	+22.3	+4.5	-28.2		+0.0 347	117.9	130.1 Peak Power Reading 3 MHz RBW	-12.2	Horiz 110
4	824.610M	118.6	+22.3	+4.4	-28.3		+0.0 84	117.0	130.1 Peak Power Reading 3 MHz RBW	-13.1	Vert 120

Test Location: CKC Laboratories •22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **Vulcan Portals, Inc.**
Specification: **Part 22 RF Power and Block Edge Block C (Radiated)**
Work Order #: **85535** Date: 11/9/2006
Test Type: **Radiated Scan** Time: 12:05:34
Equipment: **Ultra Portable Computer** Sequence#: 3
Manufacturer: Vulcan Portals, Inc. Tested By: Ryan Rutledge
Model: Flipstart 1000 Series
S/N: 003401-A068G01T

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Ultra Portable Computer*	Vulcan Portals, Inc.	Flipstart 1000 Series	003401-A068G01T

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The EUT is placed on the wooden table. Evaluation of RF Output Power is performed without peripherals attached to the EUT. Frequency: 837MHz. Modulation: CDMA, 1xRTT. RF Output Power RBW=3 MHz, VBW=3 MHz 110Vac, 60 Hz, 22°C, 38% relative humidity.

Transducer Legend:

T1=Chase AN 1993 SN 2458 2/2/05-2/2/07 T2=Bothell 5 meter cable set
T3=AMP-AN01517-071006

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	836.520M	119.6	+22.5	+4.5	-28.1		+0.0 155	118.5	130.1 Peak Power Reading 3 MHz RBW	-11.6	Horiz 100
2	836.250M	119.1	+22.5	+4.5	-28.1		+0.0 138	118.0	130.1 Peak Power Reading 3 MHz RBW	-12.1	Vert 100

Test Location: CKC Laboratories •22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **Vulcan Portals, Inc.**
Specification: **Part 22 RF Power and Block Edge Block C (Radiated)**
Work Order #: **85535** Date: 11/9/2006
Test Type: **Radiated Scan** Time: 11:53:42
Equipment: **Ultra Portable Computer** Sequence#: 2
Manufacturer: Vulcan Portals, Inc. Tested By: Ryan Rutledge
Model: Flipstart 1000 Series
S/N: 003401-A068G01T

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Ultra Portable Computer*	Vulcan Portals, Inc.	Flipstart 1000 Series	003401-A068G01T

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The EUT is placed on the wooden table. Evaluation of RF Output Power and Band Edges is performed without peripherals attached to the EUT. Frequency: 848MHz. Modulation: CDMA, 1xRTT. RF Output Power RBW=3 MHz, VBW=3 MHz Band Edge RBW=15 kHz, VBW=43 kHz 110Vac, 60 Hz, 22°C, 38% relative humidity.

Transducer Legend:

T1=Chase AN 1993 SN 2458 2/2/05-2/2/07 T2=Bothell 5 meter cable set
T3=AMP-AN01517-071006

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	849.000M Ave	83.0	+22.6	+4.5	-28.0		+0.0 160	82.1	82.3 Bandedge reading 1000 sweep average 15 kHz RBW	-0.2	Horiz 100
2	849.000M Ave	80.6	+22.6	+4.5	-28.0		+0.0 152	79.7	82.3 Bandedge reading 100 sweep average 15 kHz RBW	-2.6	Vert 120
3	848.220M	119.5	+22.6	+4.5	-28.0		+0.0 160	118.6	130.1 Peak Power Reading 3 MHz RBW	-11.5	Horiz 100
4	848.260M	119.2	+22.6	+4.5	-28.0		+0.0 152	118.3	130.1 Peak Power Reading 3 MHz RBW	-11.8	Vert 120

FCC 22.913 Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02673	Agilent	E4446A	US44300437	061606	061608
Cable	P05206	Pasterneck	NA	NA	020805	020807
2.4 GHz HPF	02745	K&L	11SH10-3000	2	030806	030808
2.4 GHz LPF	02747	K&L	11SL10-20000	7	030706	030708

RF OUTPUT POWER AND BANDEDGE

Front View

RF OUTPUT POWER AND BANDEDGE

Back View

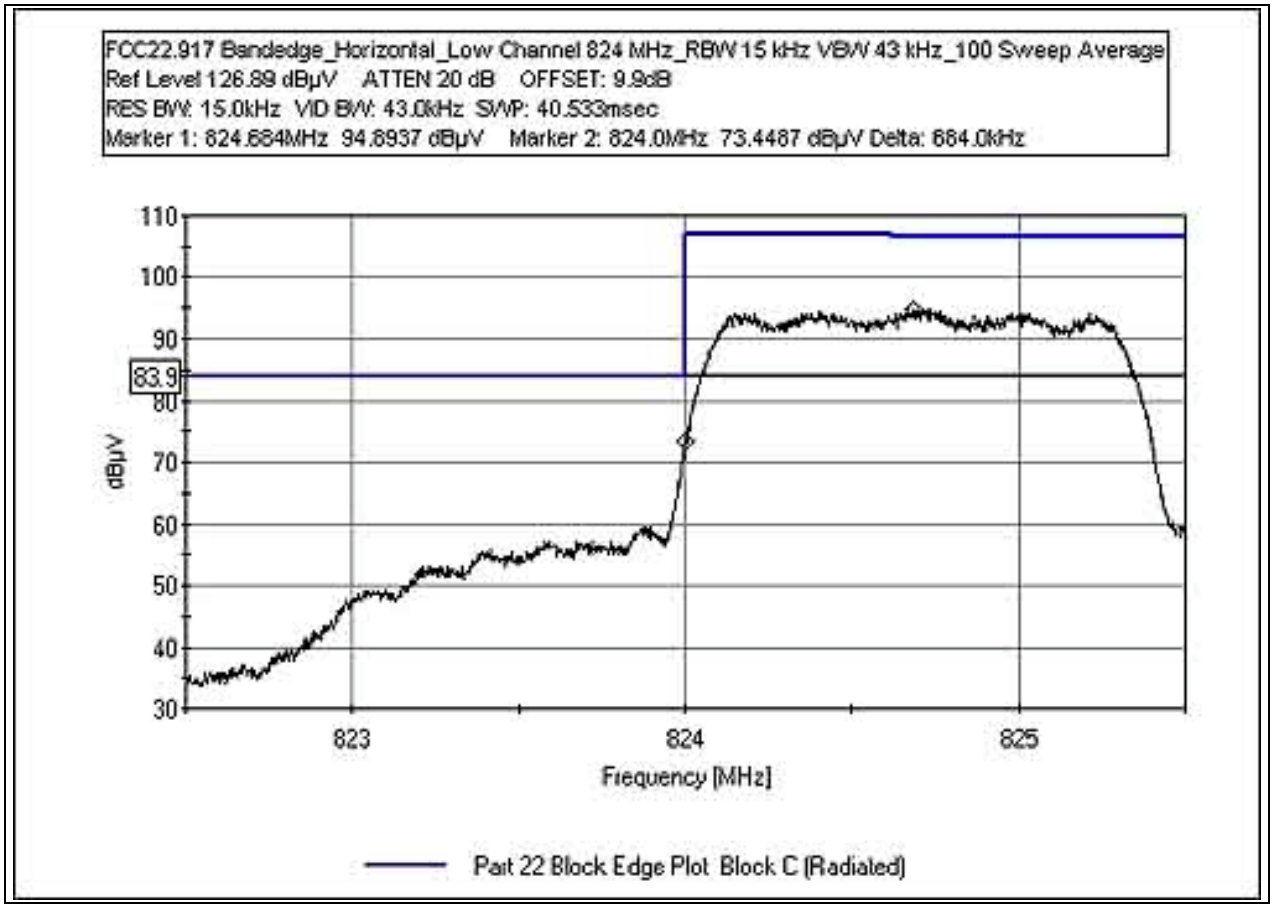
FCC 22.917 BANDEDGE HORIZONTAL 824 MHz

Test Setup: The EUT is placed on the wooden table. Evaluation of spurious emission is conducted without peripherals attached to the EUT. Measurement is identical to radiated spurious emission. Modulations: Bluetooth, 802.11 b, 802.11g

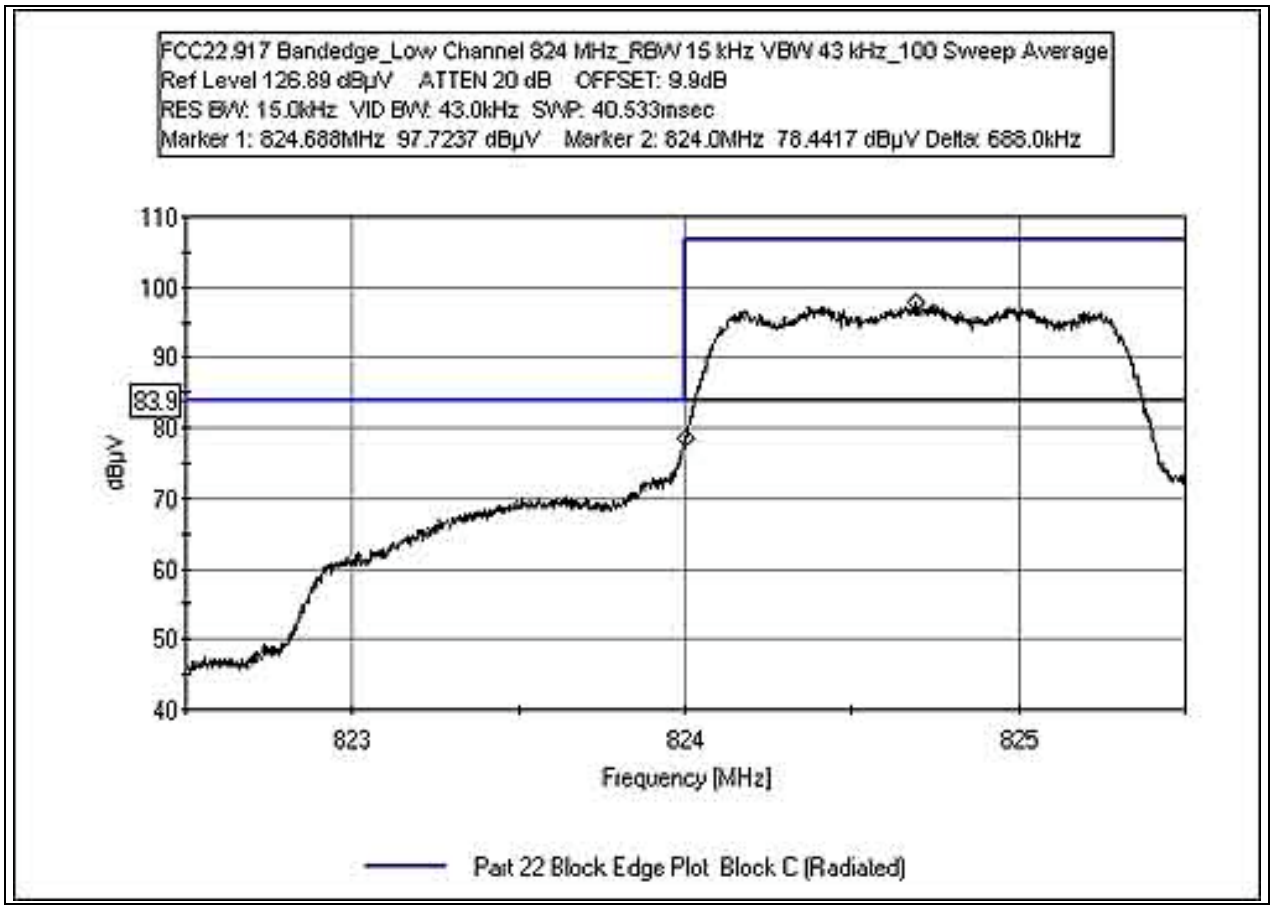
Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Bothell 5m Cable Set	P05444	NA	NA	P05444	112805	112807
PreAmp	01517	HP	8447D	2944A08601	071006	071008
BILOG	1993	Chase	CBL6111C	2456	021405	021407
Spectrum Analyzer	02673	Agilent	E4446A	US44300437	061606	061607
Wireless Communication Test Set	NA	Agilent	E5515C	NCR	NCR	NCR
Horn Antenna	1467	EMCO	3115	9012-3604	12/13/05	12/13/07
Cable	P05374	Beldon	RG-214	RG-214#27	11/29/04	11/29/06

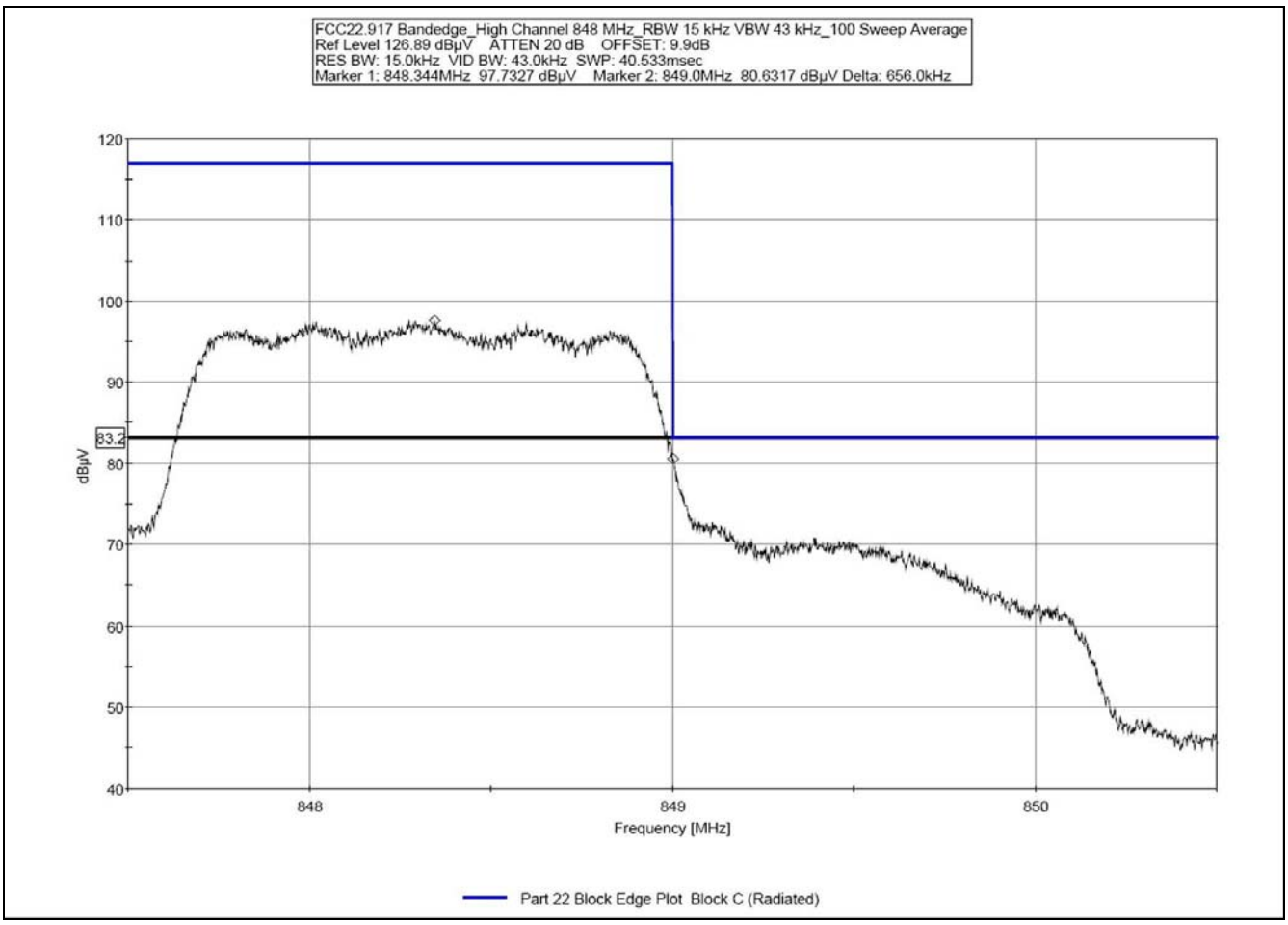
NCR = No Calibration Required



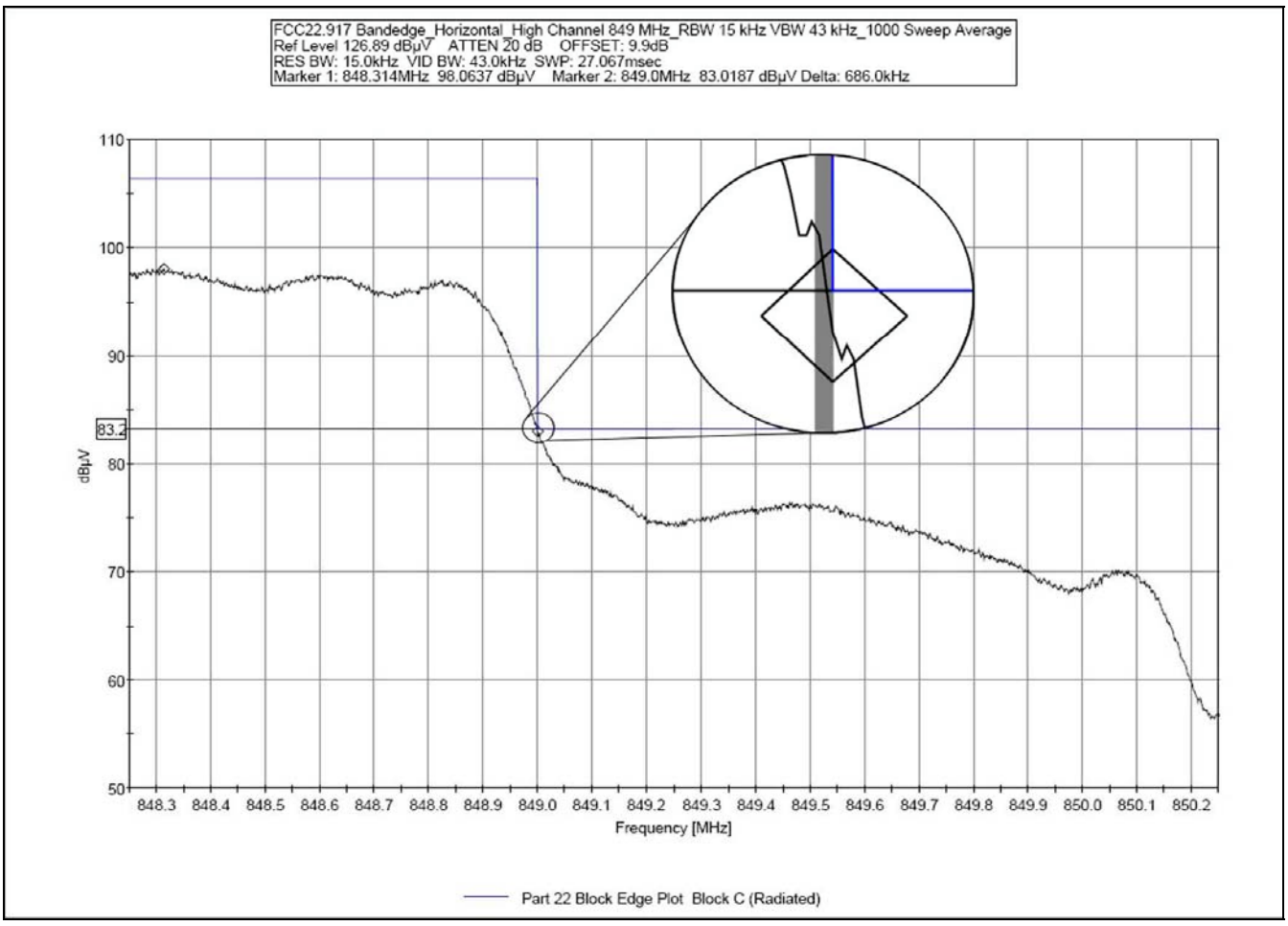
FCC 22.917 BANDEDGE VERTICAL 824 MHz



FCC 22.917 BANDEDGE VERTICAL 848 MHz

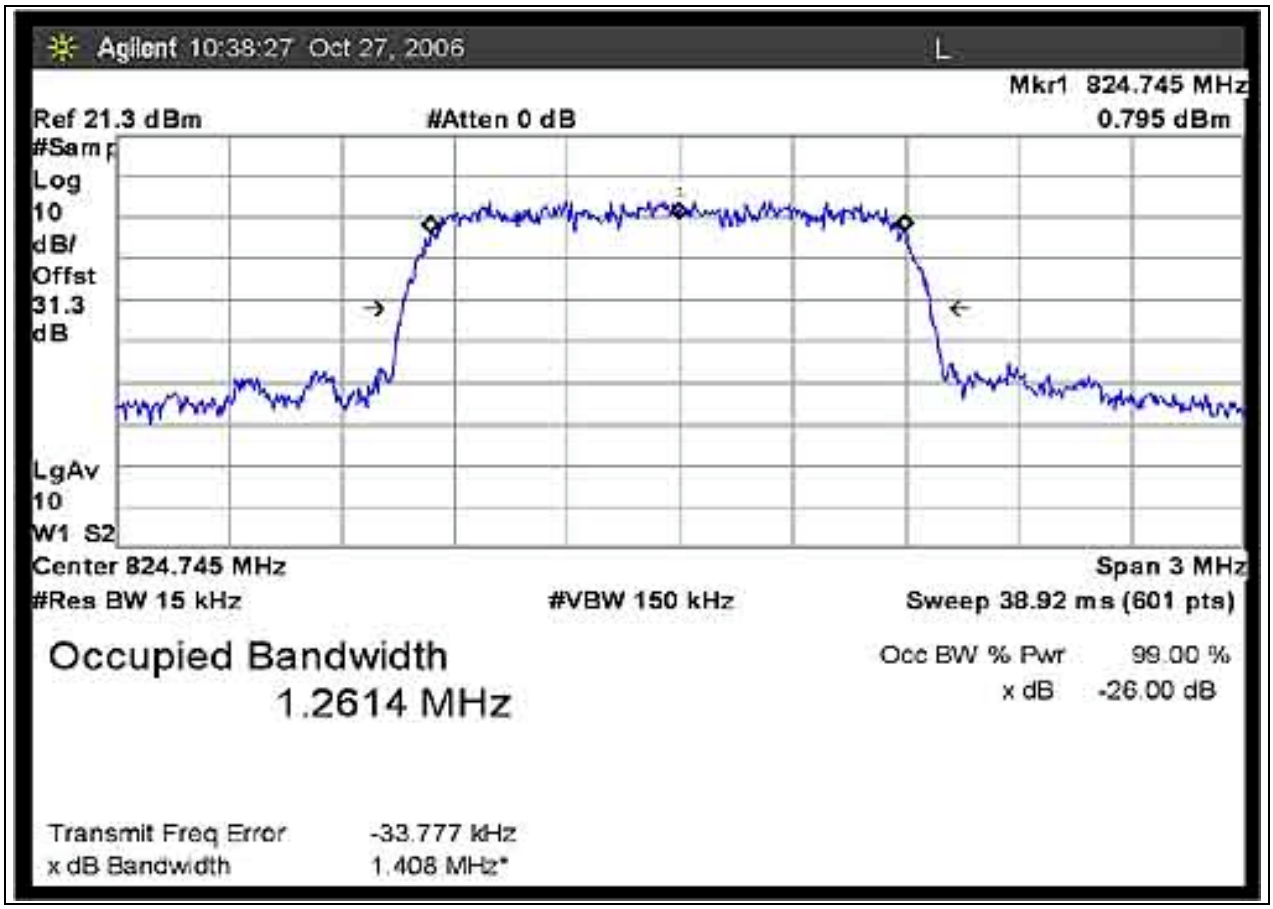


FCC 22.917 BANDEDGE HORIZONTAL 849 MHz

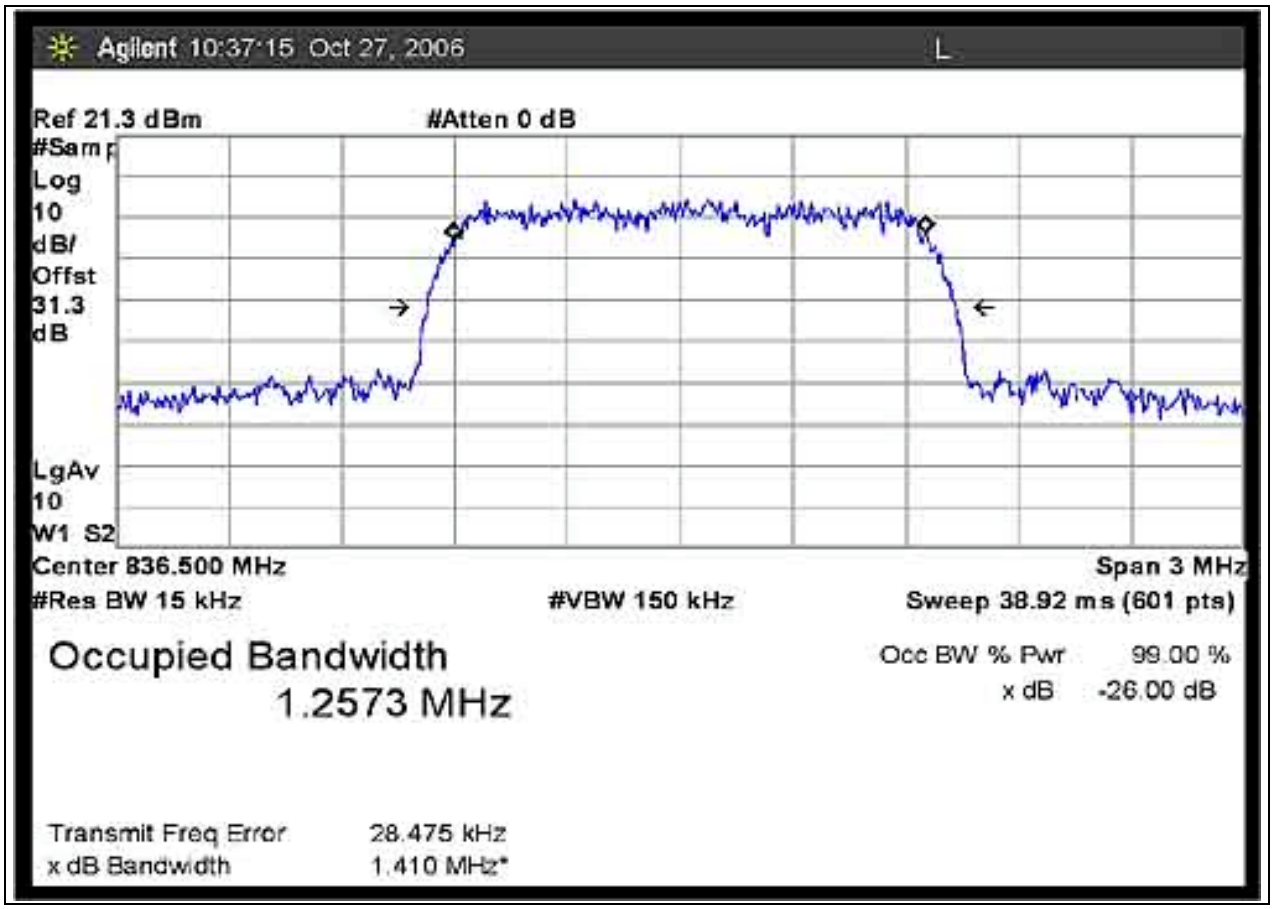


OCCUPIED BANDWIDTH 825 MHz

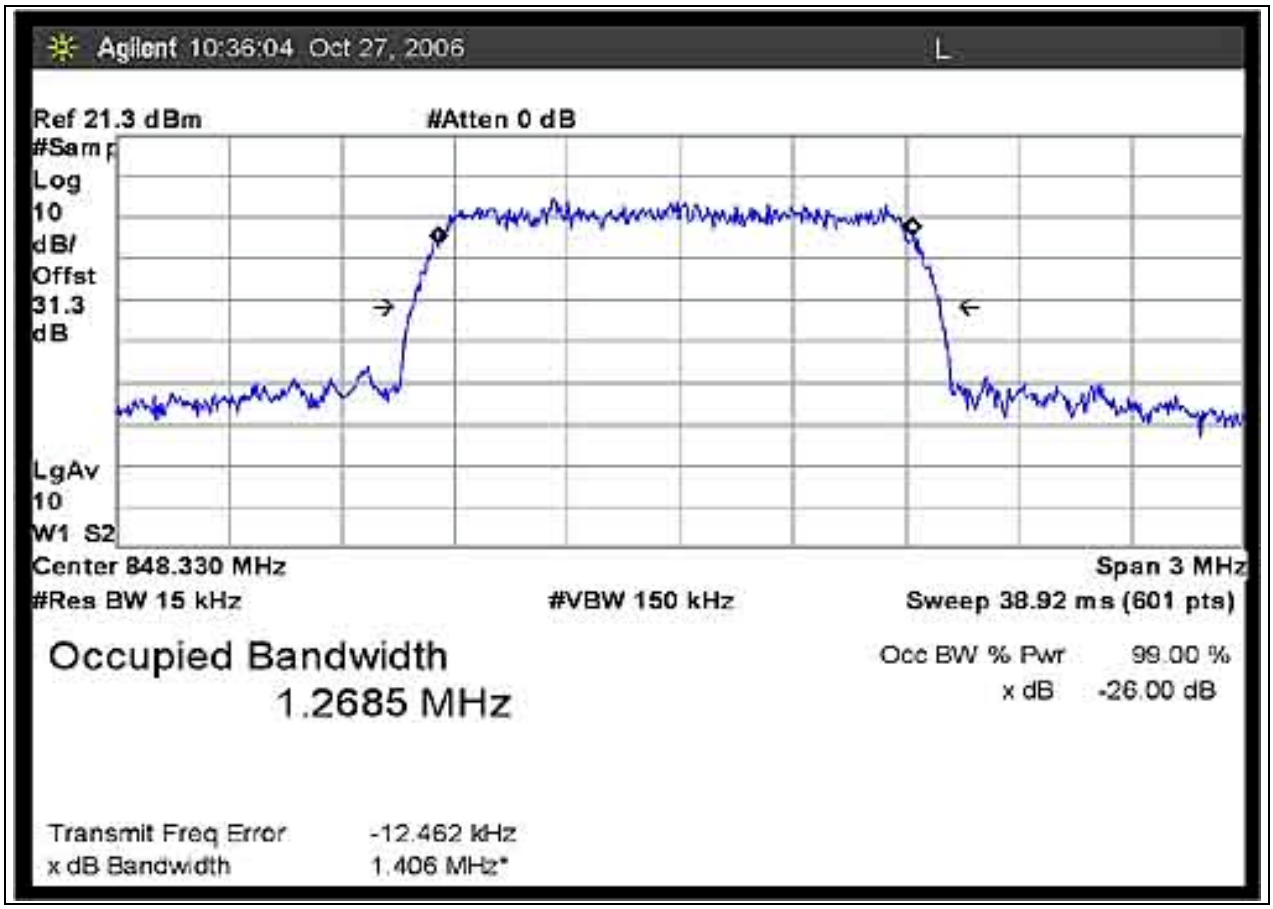
Test Conditions: The EUT is placed on the wooden table. Evaluation of 99% BW and occupied BW is conducted without peripherals attached to the EUT. evaluation performed at RF output port.



OCCUPIED BANDWIDTH 837 MHz



OCCUPIED BANDWIDTH 849 MHz



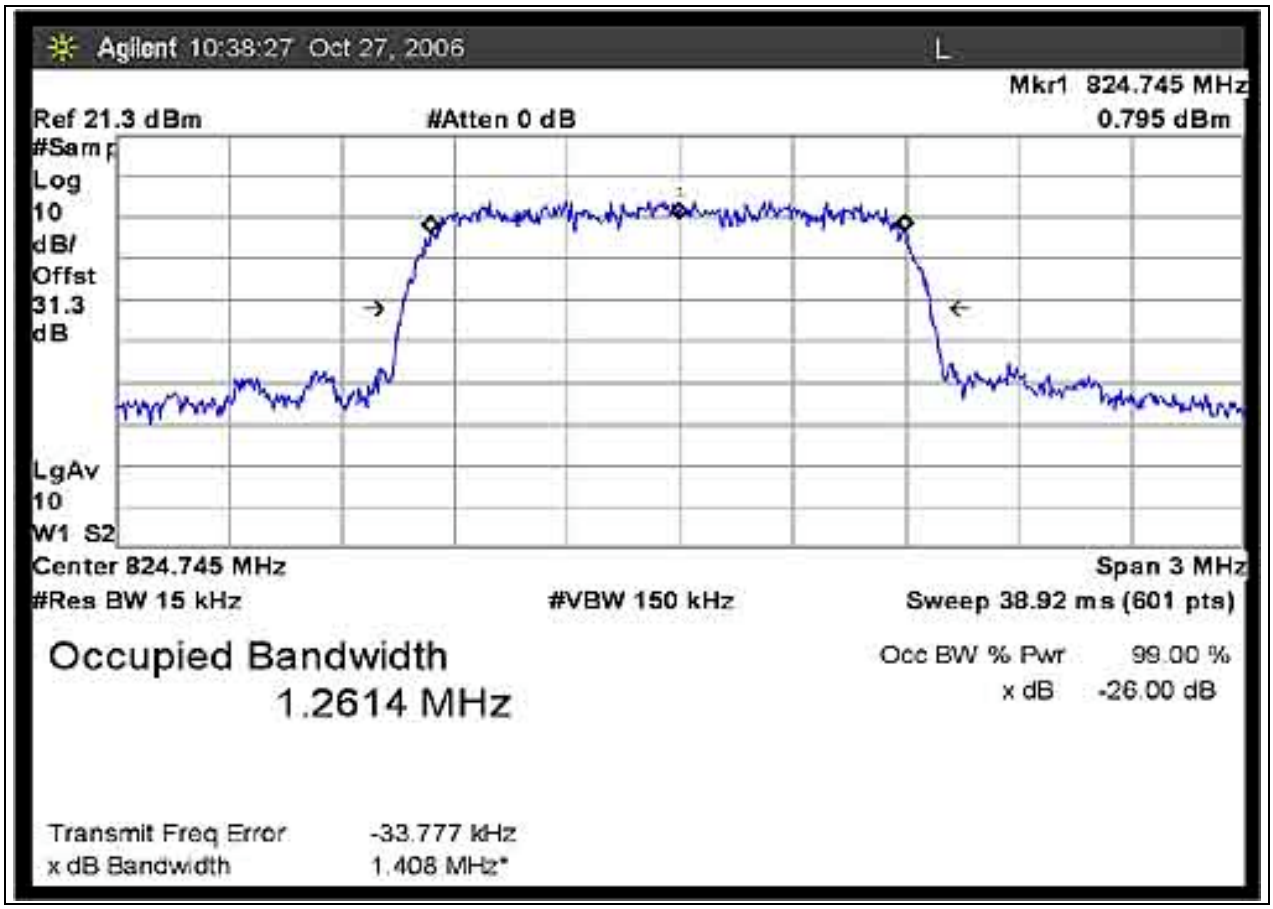
Test Equipment for all Direct Connect Testing

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02673	Agilent	E4446A	US44300437	061606	061608
Cable	P05206	Pasterneck	NA	NA	020805	020807
2.4 GHz HPF	02745	K&L	11SH10-3000	2	030806	030808
2.4 GHz LPF	02747	K&L	11SL10-20000	7	030706	030708

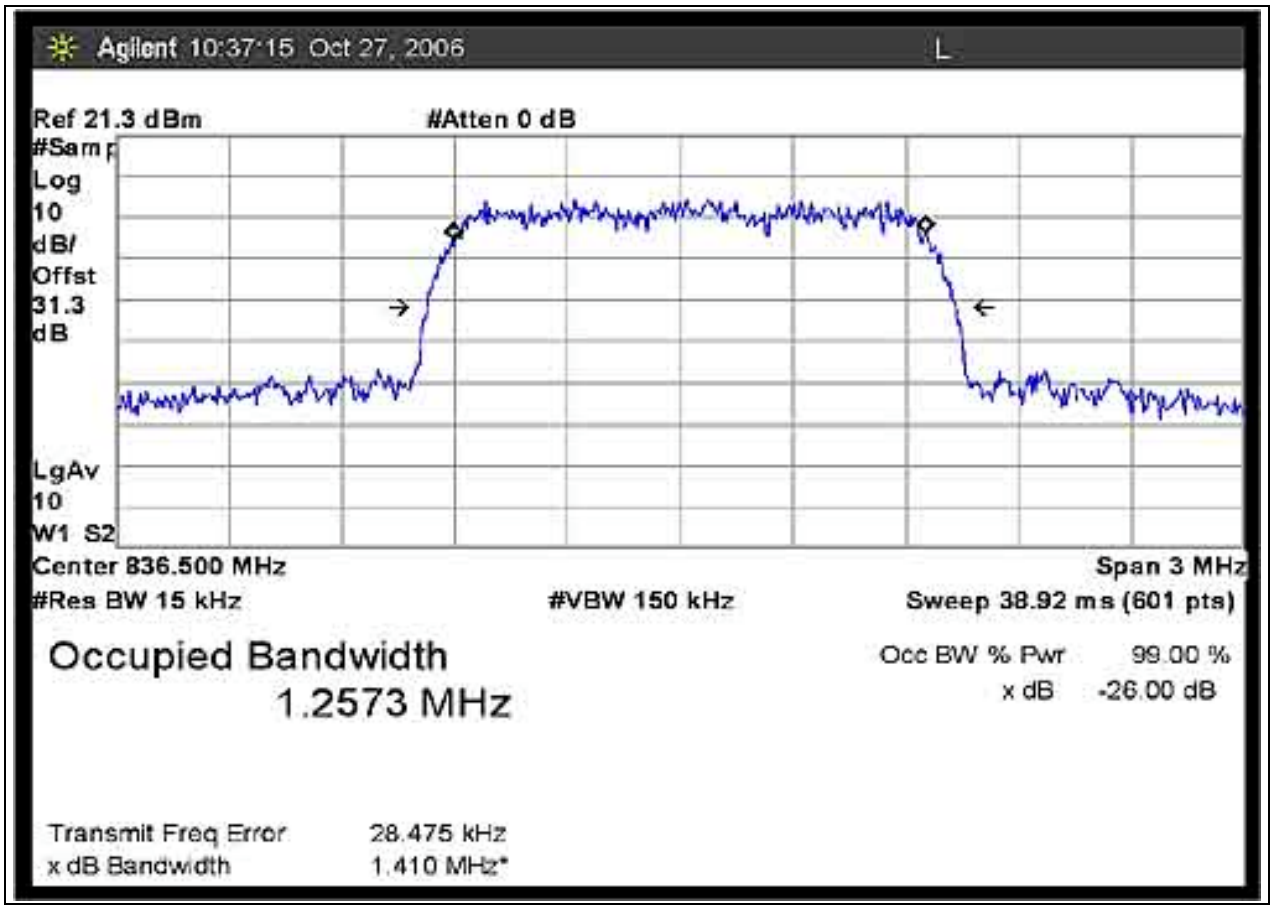
PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP

99% BANDWIDTH 825 MHz

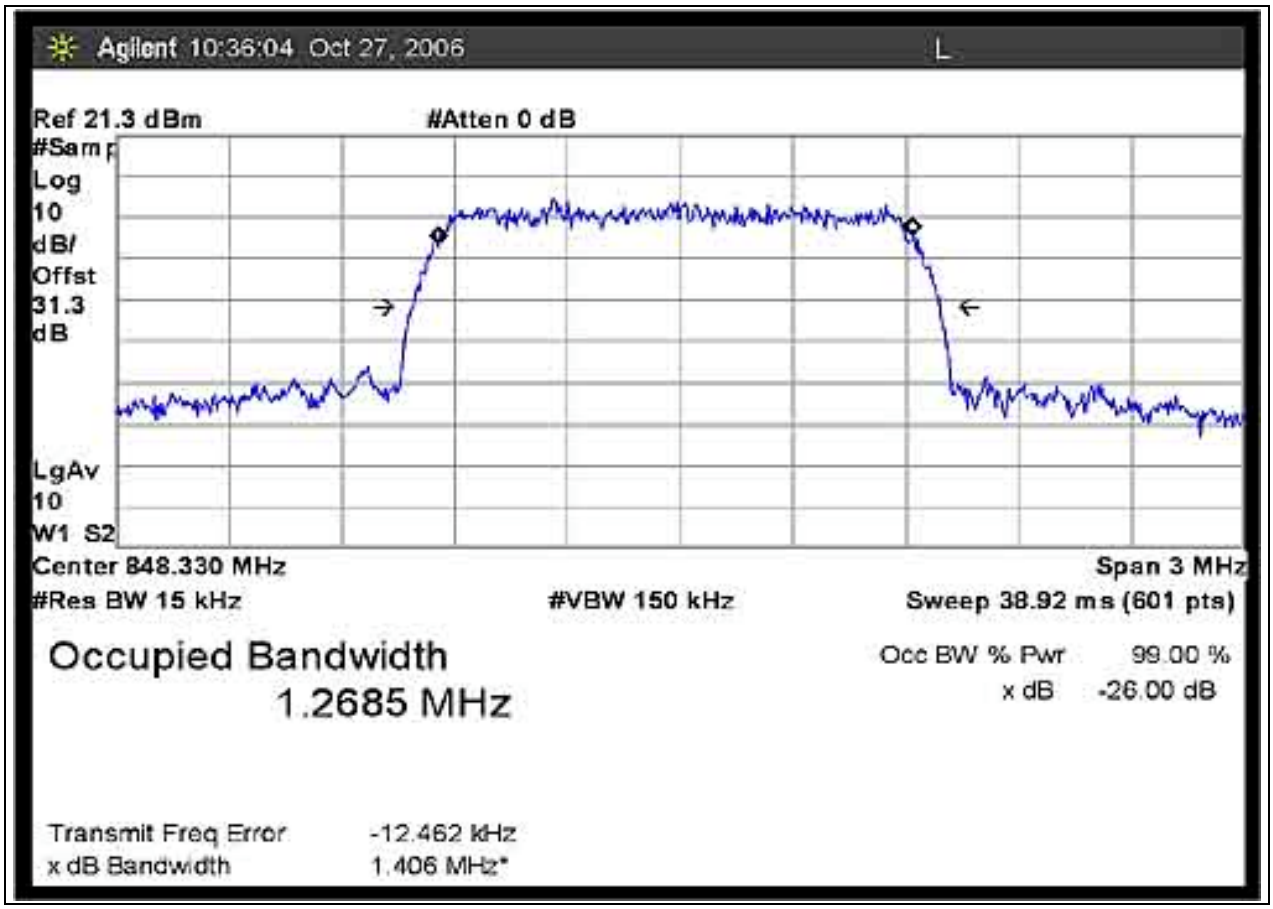
Test Conditions: The EUT is placed on the wooden table. Evaluation of 99% BW and occupied BW is conducted without peripherals attached to the EUT. evaluation performed at RF output port.



99% BANDWIDTH 837 MHz



99% BANDWIDTH 849 MHz



FCC 2.1033(c)(14)/2.1053/22.917(a) - FIELD STRENGTH OF SPURIOUS RADIATION

Test Location:	CKC Laboratories •22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717		
Customer:	**Vulcan Portals, Inc.**		
Specification:	**FCC Part 22.917(a) Radiated Spurious Emissions**		
Work Order #:	**85535**	Date:	10/19/2006
Test Type:	**Radiated Scan**	Time:	10:43:30
Equipment:	**Ultra Portable Computer**	Sequence#:	2
Manufacturer:	Vulcan Portals, Inc.	Tested By:	Eddie Wong
Model:	Flipstart 1000 Series		
S/N:	003401-A068G01T		

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Ultra Portable Computer*	Vulcan Portals, Inc.	Flipstart 1000 Series	003401-A068G01T

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

NOTE: RF Output power was lowered for final certification in order to pass band edge limits. Spurious emissions measurements reported were taken before reducing power, and represent a worse case configuration. The EUT is placed on the wooden table. Evaluation of spurious emission is conducted without peripherals attached to the EUT. Frequency: 837 MHz. Modulation: CDMA, psuedo random. Frequency range of measurement = 9 kHz - 9 GHz. Frequency 9 kHz - 150 kHz RBW=200 Hz, VBW=200 Hz; 150 kHz - 30 MHz RBW=9 kHz, VBW=9 kHz; 30 MHz - 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz - 9000 MHz RBW=1 MHz, VBW=1 MHz. 110Vac, 60 Hz, 21°C, 43% relative humidity.

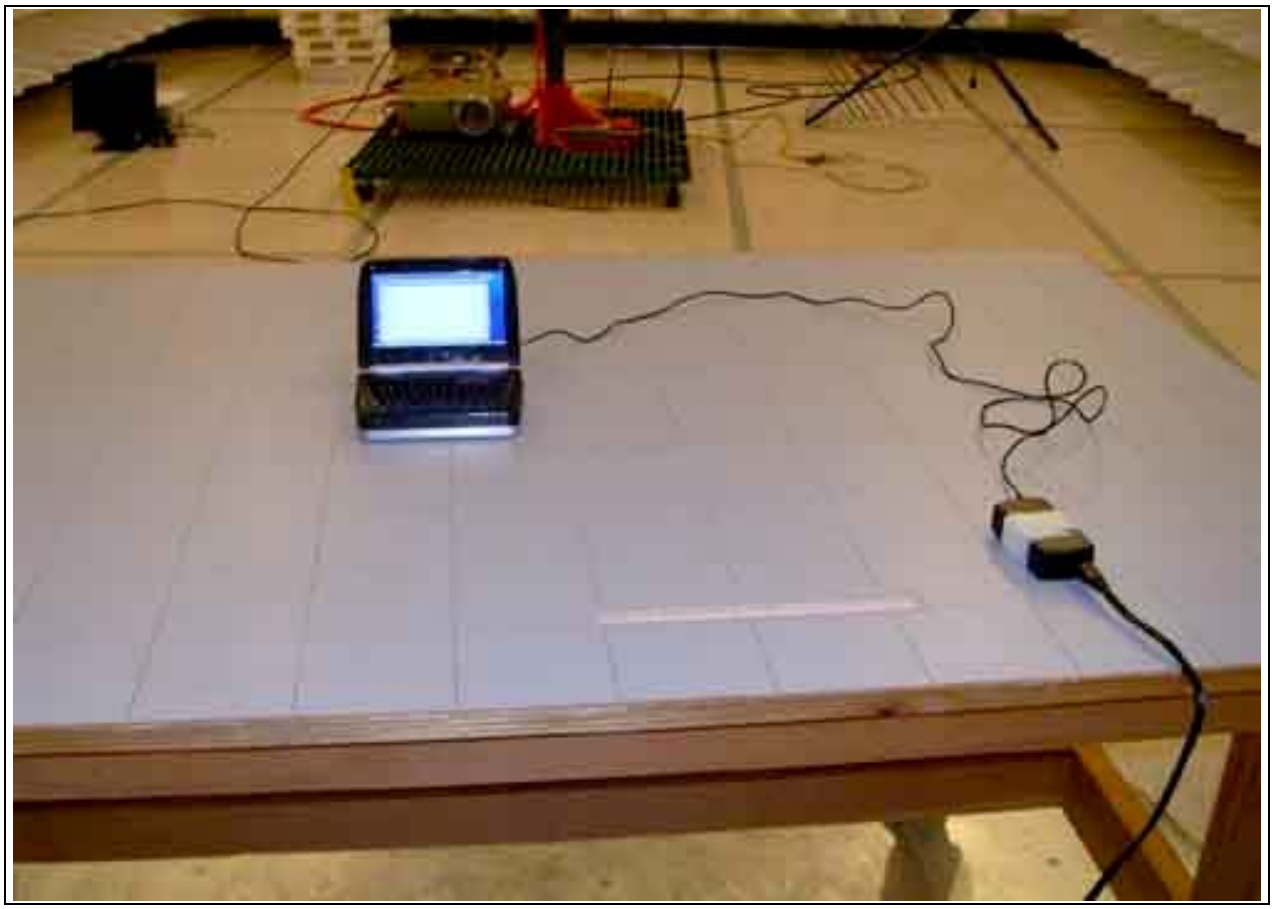
Operating Frequency: 825 MHz - 848 MHz
Channels: Low, Mid and High
Highest Measured Output Power: 22.12 ERP(dBm)= 0.163 ERP(Watts)
Distance: 3 meters
Limit: 43+10Log(P) 35.12 dBc

Freq. (MHz)	Reference Level (dBm)	Antenna Polarity (H/V)	dBc
1,649.38	-37.9	Vert	60.02
824.00	-41.1	Vert	63.22
1,649.38	-41.5	Horiz	63.62
824.39	-47.2	Vert	69.32
3,299.38	-52.5	Horiz	74.62
3,299.38	-56.8	Vert	78.92
824.00	-68.9	Vert	91.02
1,673.30	-52.7	Vert	74.82
3,345.60	-46.1	Vert	68.22
1,672.95	-50.8	Horiz	72.92
3,345.93	-48.2	Horiz	70.32
1,696.48	-49.4	Horiz	71.52
3,392.48	-53.5	Horiz	75.62
3,392.48	-51	Vert	73.12
1,696.48	-50	Vert	72.12

Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
9kHz-30MHz						
Active Loop ant	00052	Emco	6502	2156	022006	022008
30MHz-1000MHz						
Bothell 5m Cable Set	P05444	NA	NA	P05444	112805	112807
PreAmp	01517	HP	8447D	2944A08601	071006	071008
BILOG	1993	Chase	CBL6111C	2456	021405	021407
Spectrum Analyzer	02673	Agilent	E4446A	US44300437	061606	061607
1GHz-18GHz						
2.4 GHz HPF (Bothell's)	02745	K&L	11SH10-3000	2	030806	030808
2.4 GHz LPF (Bothell's)	02040	K&L	11SL10-20000	7	030706	030708
1 GHz HPG (Bothell's)	02750	K&L	9SH10-1000	2	030706	030708
Pre-amp	1271	HP	83017A	3123A00464	100305	100307
Cable Heliax	P04085	Andrew	NA	NA	031506	031508
Cable 30MHz-40GHz	P05422	Pasterneck	NA	NA	051106	051108
Cable 30MHz-40GHz	P05206	Pasterneck	NA	NA	020805	020807
Horn Antenna	1412	EMCO	3115	9006-4854	010605	010607

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Front View

PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Back View