



Nemko

Test Report: 3W06867

Applicant: VTech Engineering Canada Ltd.
Suite 200 – 7671 Alderbridge Way
Richmond, B.C., Canada
V6X 1Z9

**Equipment Under Test:
(EUT)** VTECH 5825 & VTECH 5850, 5.8/2.4GHz FHSS
Cordless Telephones

Handset FCC ID: EW780-5348-01
Base Station FCC ID: EW780-5348-00

In Accordance With: **FCC Part 15, Subpart C**
Frequency Hopping Transmitters

Tested By: Nemko Canada Inc.
303 River Road, R.R. 5
Ottawa, Ontario K1V 1H2

Authorized By: 
Glen Westwell, Wireless Technologist

Date: 13 May 2003

Total Number of Pages: 49

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Table of Contents

Section 1.	Summary of Test Results	3
Section 2.	General Equipment Specification.....	5
Section 3.	Powerline Conducted Emissions.....	6
Section 4.	Channel Separation	12
Section 5.	Number of Hopping Channels	14
Section 6.	Time of Occupancy	20
Section 7.	Occupied Bandwidth	25
Section 8.	Peak Power Output.....	32
Section 9.	Spurious Emissions (Radiated).....	34
Section 10.	Block Diagrams	48
Section 11.	Test Equipment List	49

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Section 1. Summary of Test Results

General

All measurements are traceable to national standards.

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, Subpart C, Paragraph 15.247 for Frequency Hopping Spread Spectrum devices. Radiated tests were conducted in accordance with ANSI C63.4-1992. Radiated emissions are made on an open area test site. A description of the test facility is on file with the FCC.

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE
TEST SPECIFICATIONS HAVE BEEN MADE.

See " Summary of Test Data".



TESTED BY: _____ DATE: 12 May 2003
Kevin Carr, EMC Specialist

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This report applies only to the items tested.

EQUIPMENT: VTECH 5825 & VTECH 5850 5.8/2.4 GHz
FHSS Cordless Telephones

Summary Of Test Data

Name Of Test	Para. No.	Result
Powerline Conducted Emissions	15.207(a)	Complied
Channel Separation	15.247(a)(1)	Complied
Time of Occupancy	15.247(a)(1)(iii)	Complied
20 dB Occupied Bandwidth	15.247(a)(1)	Complied
Number of Hopping Channels	15.247(a)(1)(iii)	Complied
Peak Power Output	15.247(b)(1)	Complied
Spurious Emissions (Antenna Conducted)	15.247(c)	N/A
Spurious Emissions (Radiated)	15.247(c)	Complied

Footnotes For N/A: No Access Port

Test Conditions:

Indoor Temperature: 21°C
Humidity: 15%

Outdoor Temperature: 9°C
Humidity: 43%

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Section 2. General Equipment Specification

Manufacturer:	VTech (Dongguan) Electronics and Communications Ltd. Xia Ling Bei Management Zone, Liaobu, Dongguan, guangdong, China 523411		
Model No.:	5825 & 5850		
Serial No.:	None		
Date Received In Laboratory:	21 March 2003		
Nemko Identification No.:	1, 5, 6, 7, 13 and 14		
Frequency Range:	BS TX	5744.736 - 5825.952	MHz
	HS TX	2401.056 - 2482.272	MHz
	HS RX	5744.736 - 5825.952	MHz
	BS RX	2401.056 - 2482.272	MHz
Modulation:	GFSK		
Tunable Bands:	1		
Number of Channels:	2.4GHz Link (HS - BS) is a 17 channel system 5.8GHz Link (BS - HS) is a 85 channel system		
Channel Spacing:	Handset	870 kHz	
	Base Station	840 kHz	
Emissions Designator:	Base Station	683KF1D	
	Handset	675KF1D	
User Frequency Adjustment:	None		
Measured Output Power:	BS	29.4dBm (0.871W)	
	HS	20.3dBm (0.107W)	

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Section 3. Powerline Conducted Emissions

Para. No.: 15.207 (a)

Test Performed By: Kevin Carr	Date of Test: 3 April 2003
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Test Results: Complied

Measurement Data: See attached graph(s).

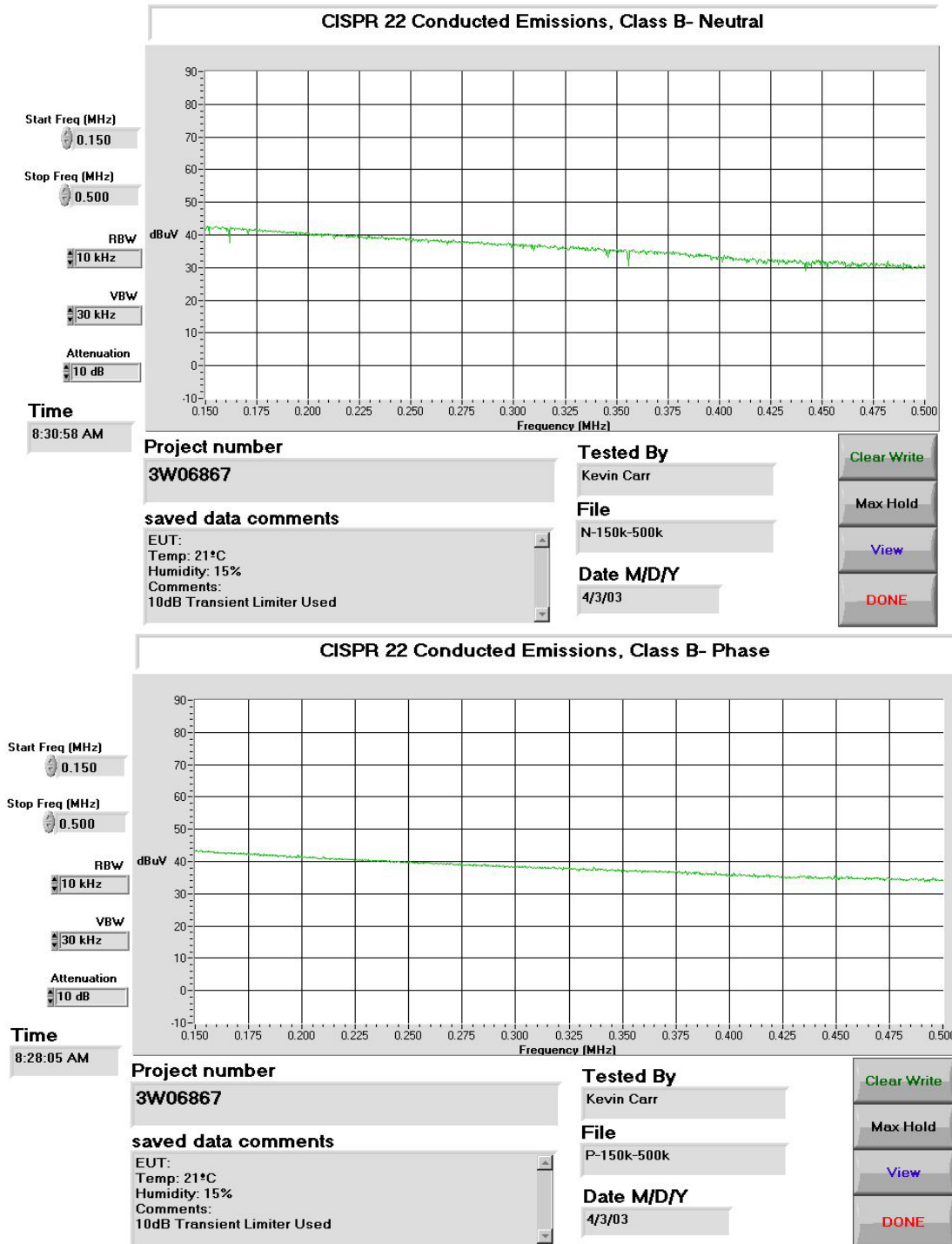
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Conducted Disturbance at Mains Port Test Data:

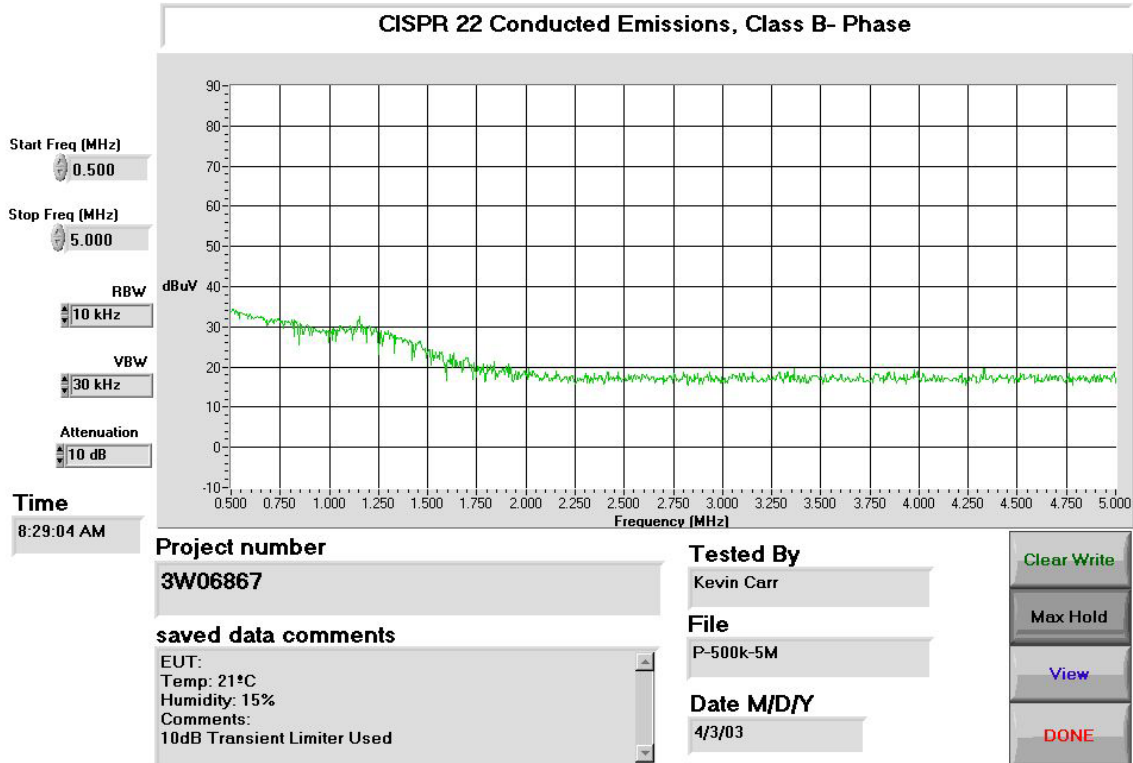
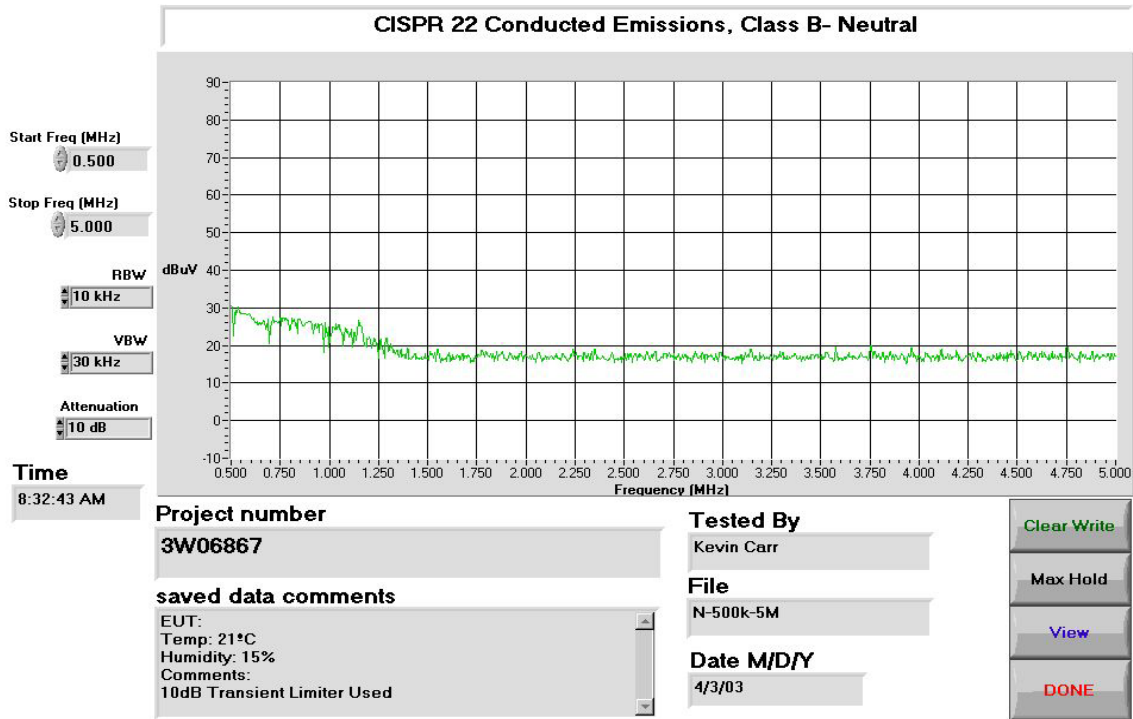
Test Date: 3 April 2003					
Engineer's Name: Kevin Carr					
Temperature (C°):21			Humidity %: 15		
Tested as per (Table Top/Floor Standing): Table Top					
Spectrum plots for each frequency band can be found at the back of this section. Any Emissions that were above or within 5 dB of the average limits were remeasured with a receiver and recorded. . *All plots were generated with a peak detector.					
Port under test: AC Input			Test Voltage: 120VAC, 60Hz		
Receiver Results (if applicable) :					
Conductor	Frequency (MHz)	Detector	Level dB(μV)	Limit dB(μV)	Margin dB
Phase	0.15	Quasi-Peak	43.7	66.0	22.3
Phase	0.15	Average	2.1	56.0	53.9
Phase	0.325	Quasi-Peak	38	59.6	21.6
Phase	0.325	Average	3.5	49.6	46.1
Phase	0.5	Quasi-Peak	34.4	56.0	21.6
Phase	0.5	Average	-0.1	46.0	46.1
Neut.	0.15	Quasi-Peak	6.8	66.0	59.2
Neut.	0.15	Average	-2.5	56.0	58.5
Neut.	0.325	Quasi-Peak	1.9	59.6	57.7
Neut.	0.325	Average	-2.9	49.6	52.5
Neut.	0.5	Quasi-Peak	2.2	56.0	53.8
Neut.	0.5	Average	-2	46.0	48.0
Notes:					

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

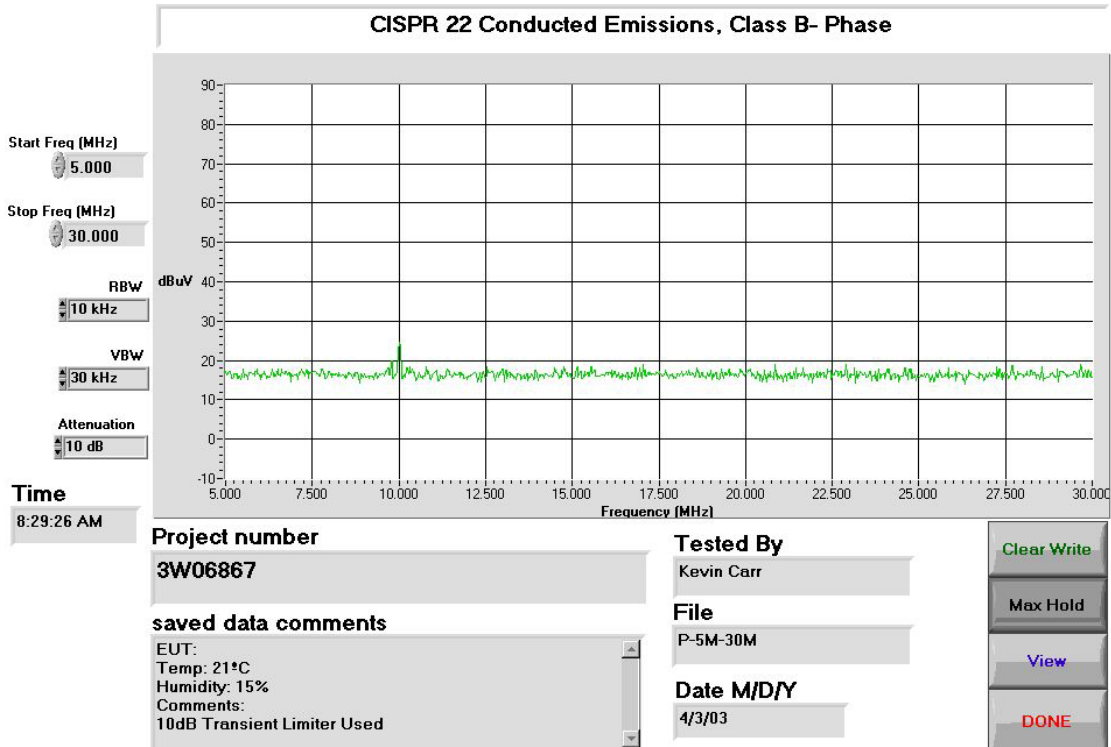
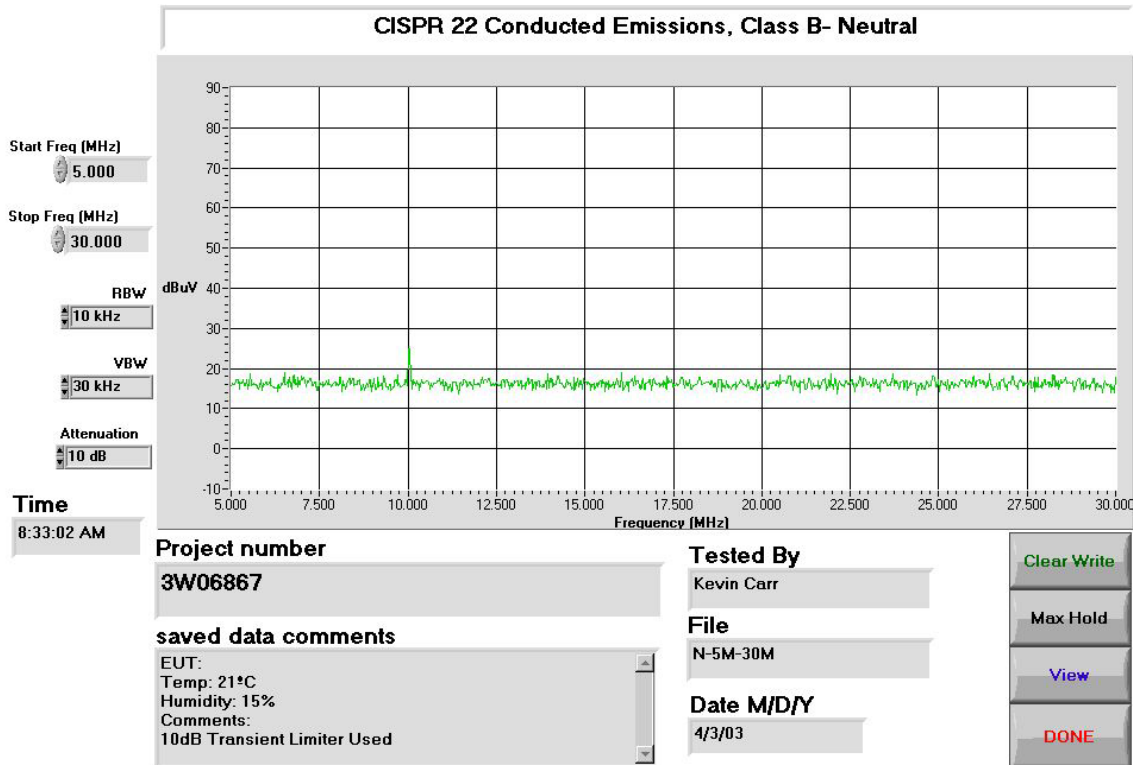
Powerline Conducted Emission Plots



EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
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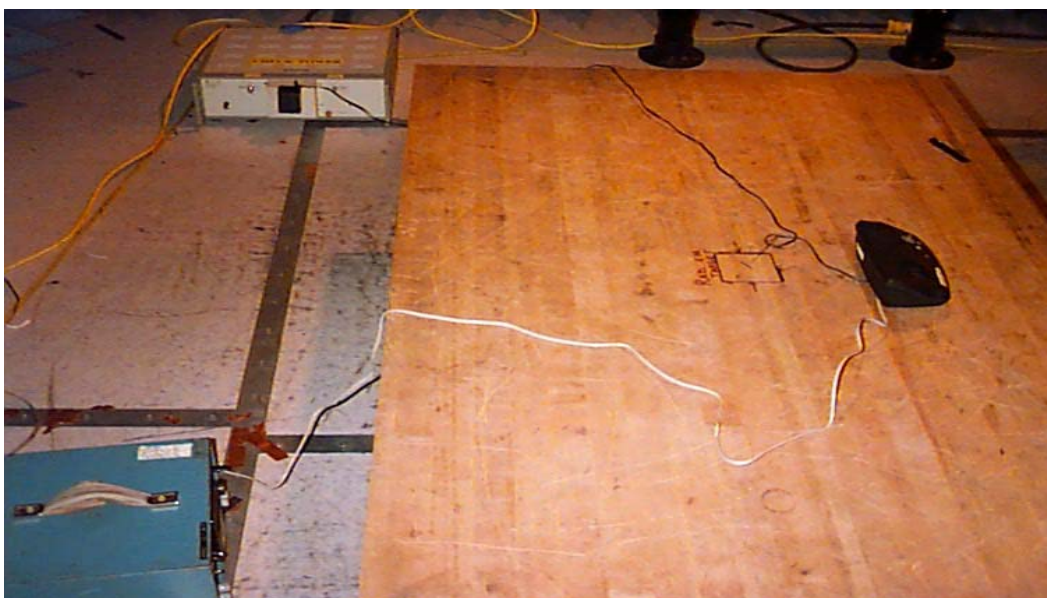


EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
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EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
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Set-up Photo:



EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Section 4. Channel Separation

Para. No.: 15.247 (a)(1)

Test Performed By: Kevin Carr	Date of Test: 29 April 2003
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Test Results: Complied

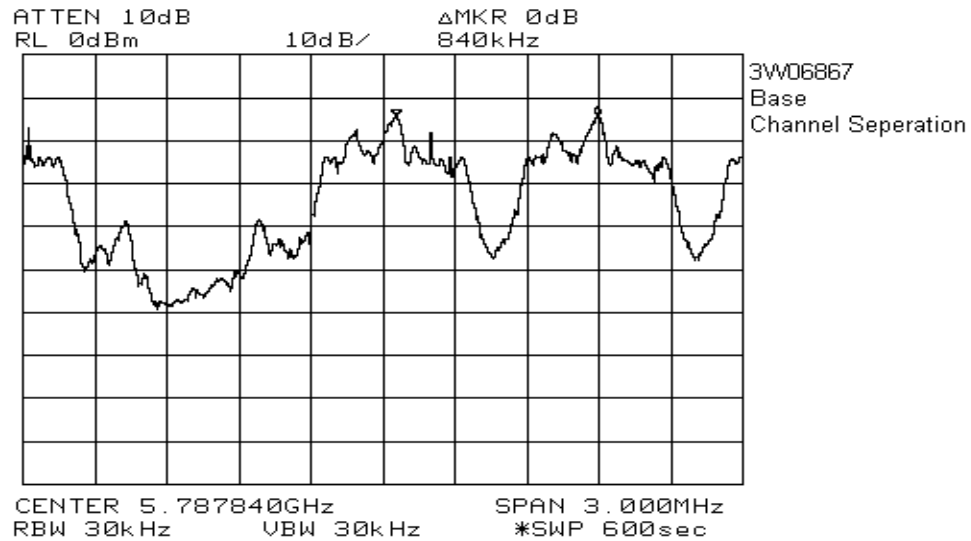
Measurement Data:

Channel Separation:
Base: 840kHz
Handset: 870 kHz

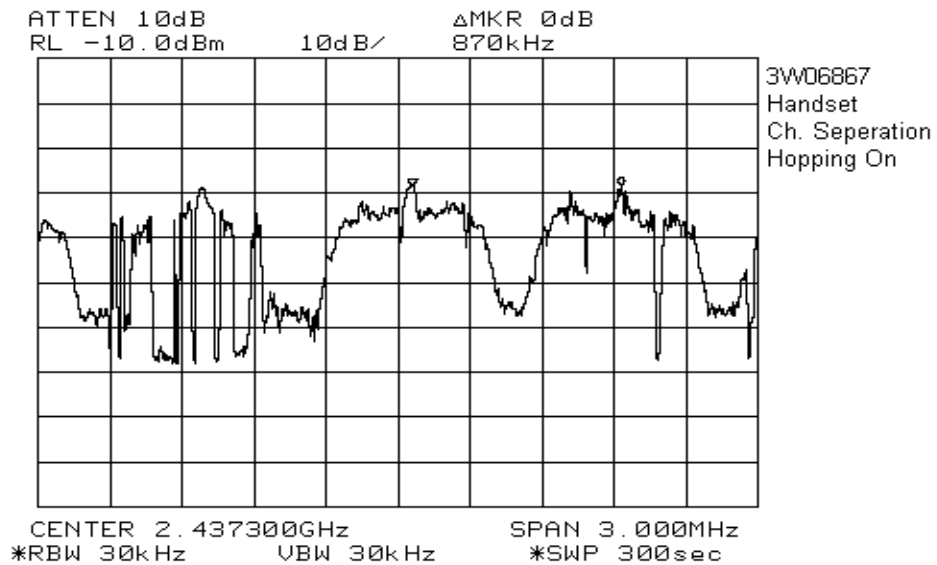
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FHSS Cordless Telephone

Channel Separation Plots:

Base



Handset



EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Section 5. Number of Hopping Channels

Para. No.: 15.247(a)(1)(ii)(iii)

Test Performed By: VTech supplied Data	Date of Test: 9 May 2003
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Test Results: Complied

Measurement Data:

Base
Number of Hopping Frequencies: 85

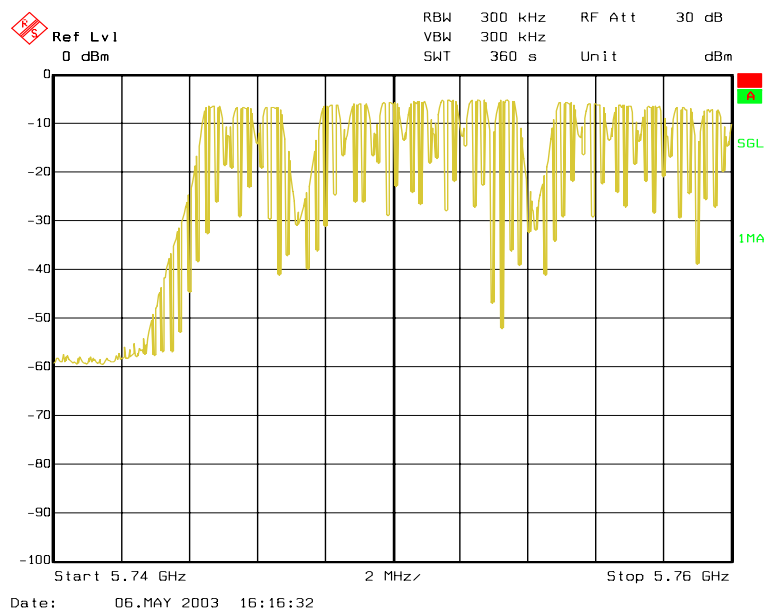
Handset
Number of Hopping Frequencies: 17

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

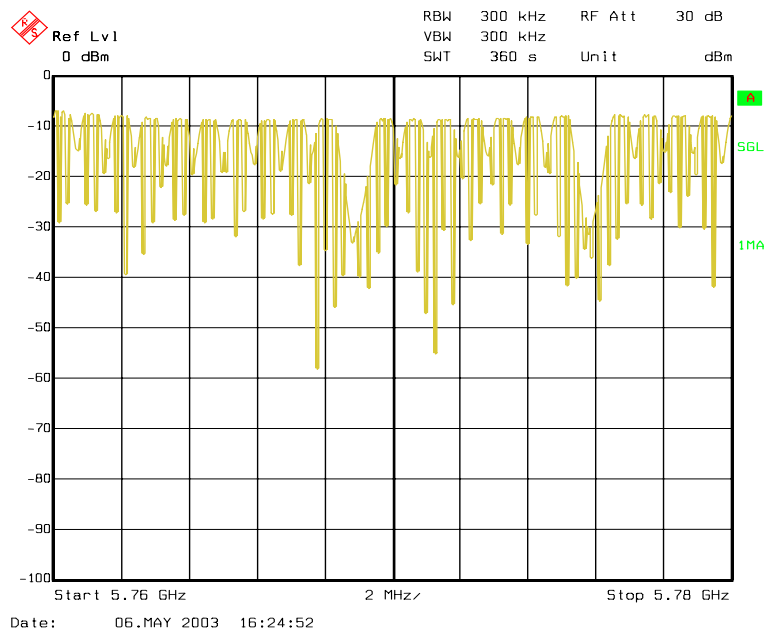
Number of Hopping Channel Plots:

Base Station

Base Station

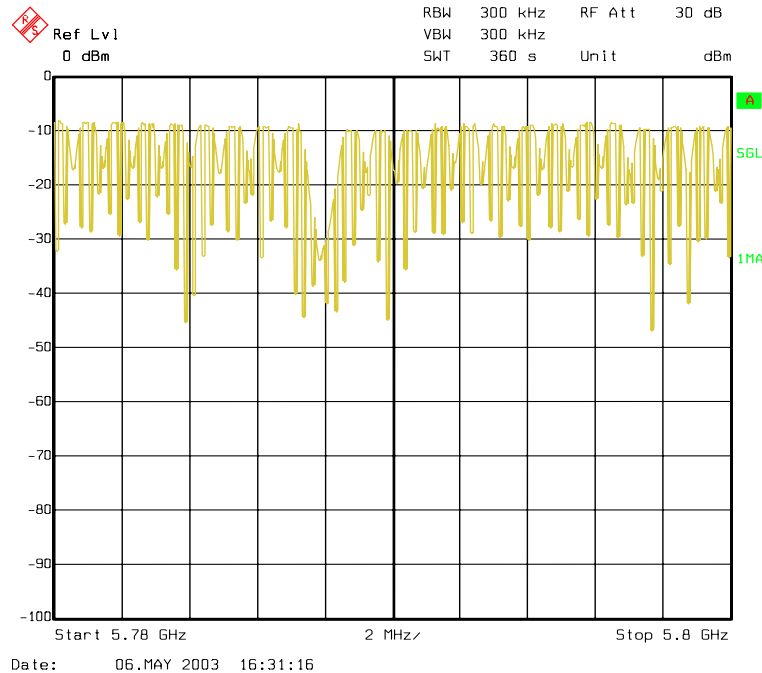


Band 1 showing 16 Channels

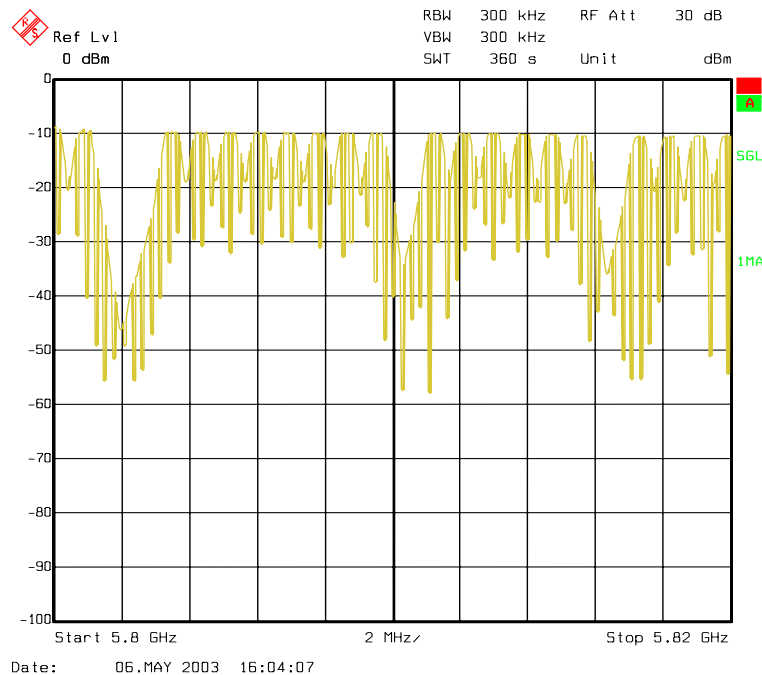


Band 2 Showing 21 Channels

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

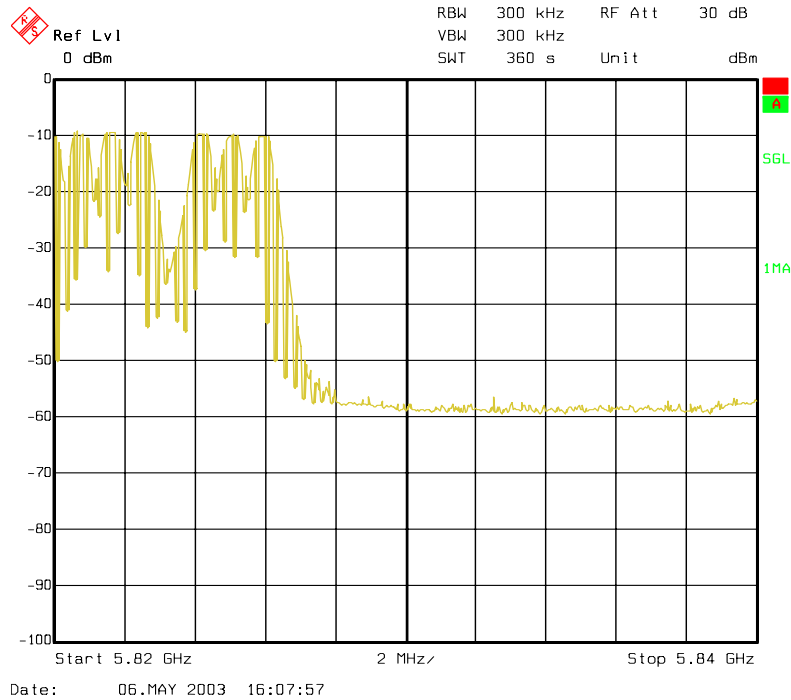


Band 3 Showing 23 Channels



Band 4 Showing 19 Channels

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
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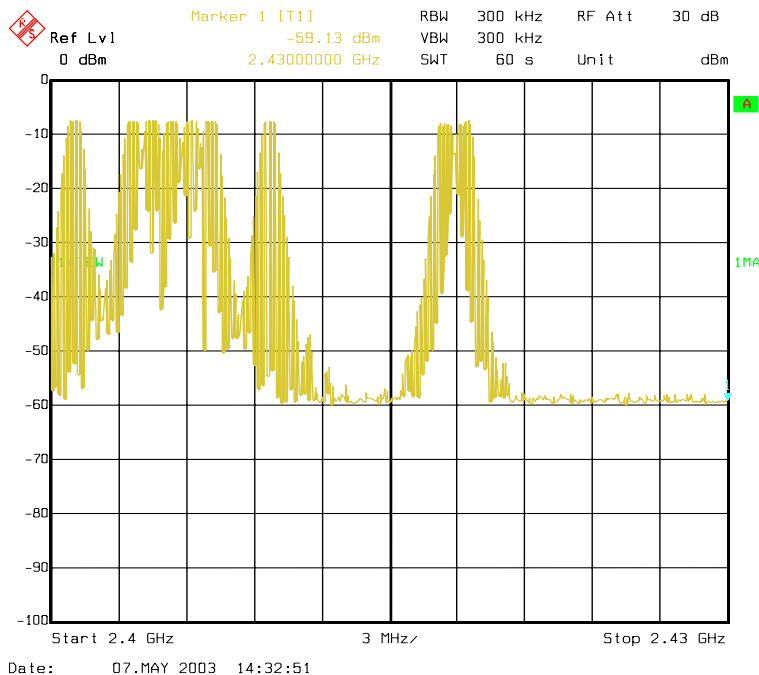


Band 5 Showing 6 Channels

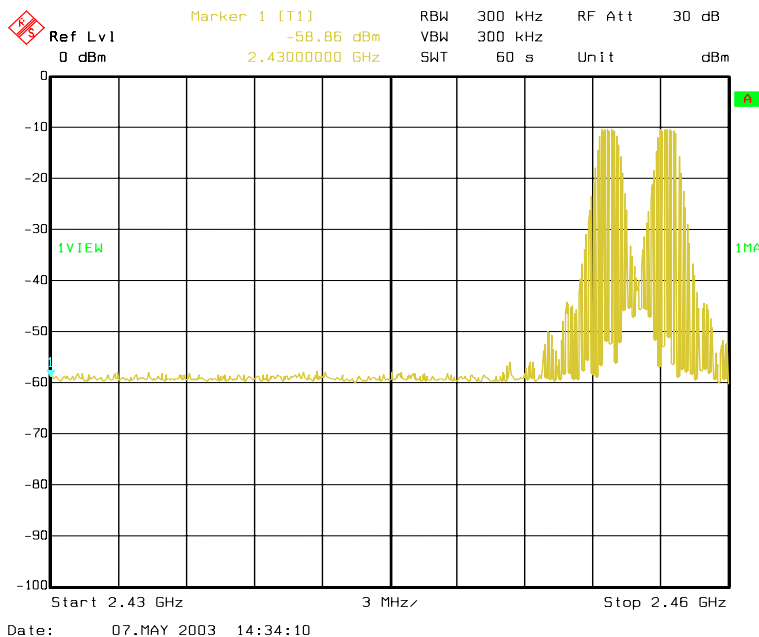
85 channels total

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Handset

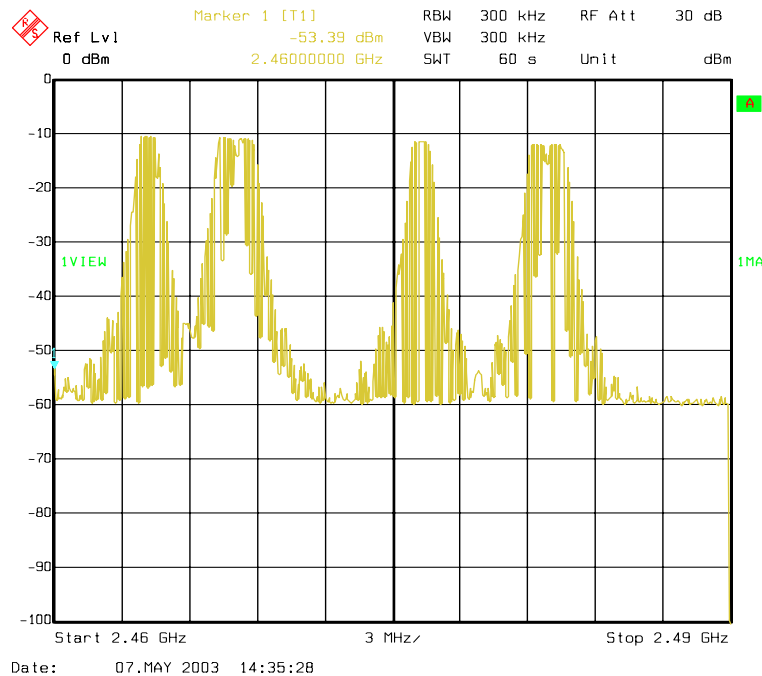


Lower band showing 9 Channels



Middle band showing 2 Channels

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
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Middle band showing 6 Channels

$9 + 2 + 6 = 17$ channels total

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Section 6. Time of Occupancy

Para. No.: 15.247 (a)(1)(ii)(iii)

Test Performed By: VTech supplied Data	Date of Test: 9 May 2003
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Test Results: Complied

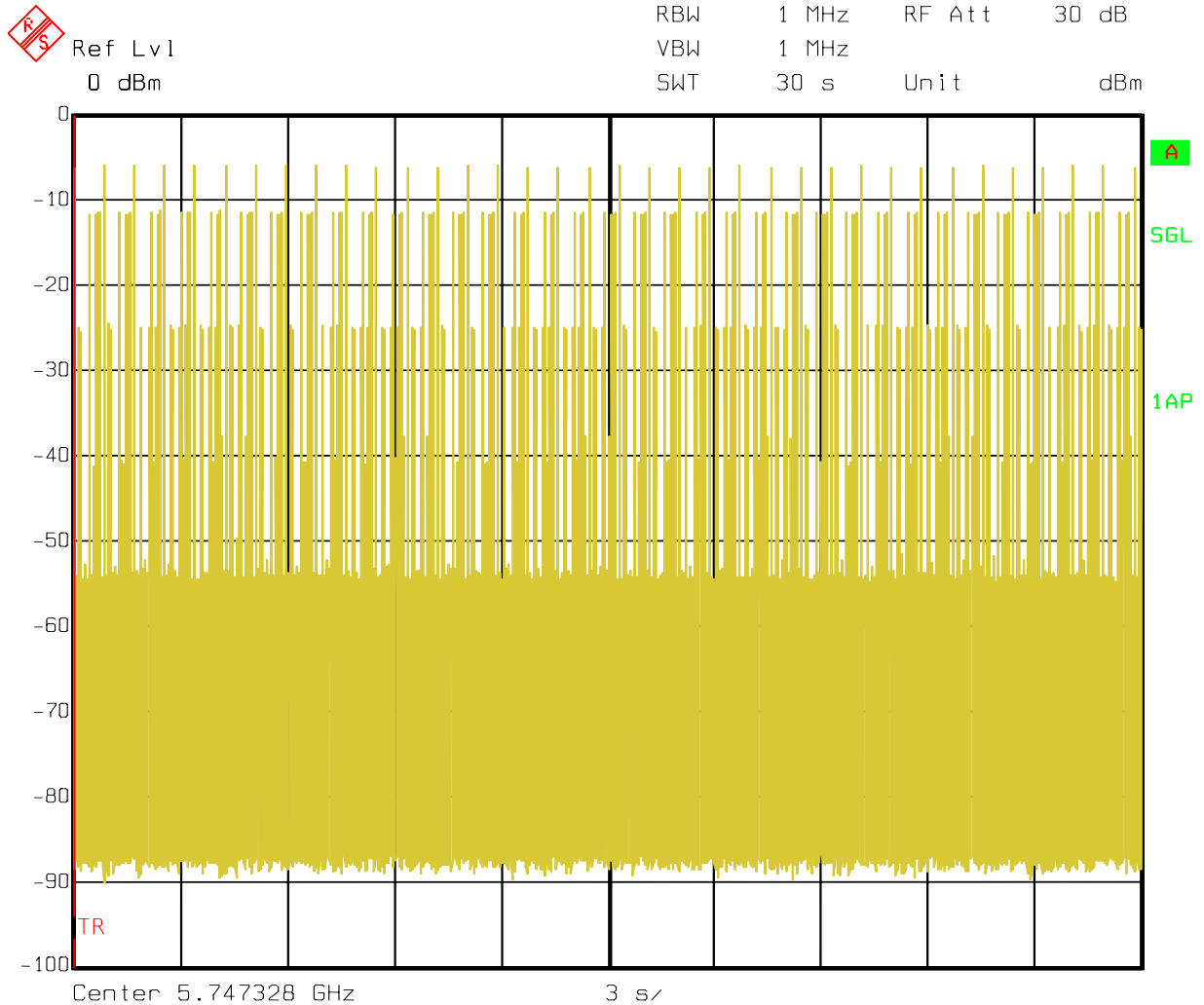
Measurement Data: Maximum Dwell Time On Any Channel:
See Plots.

Base: 28.74mS
Handset: 148.14mS

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
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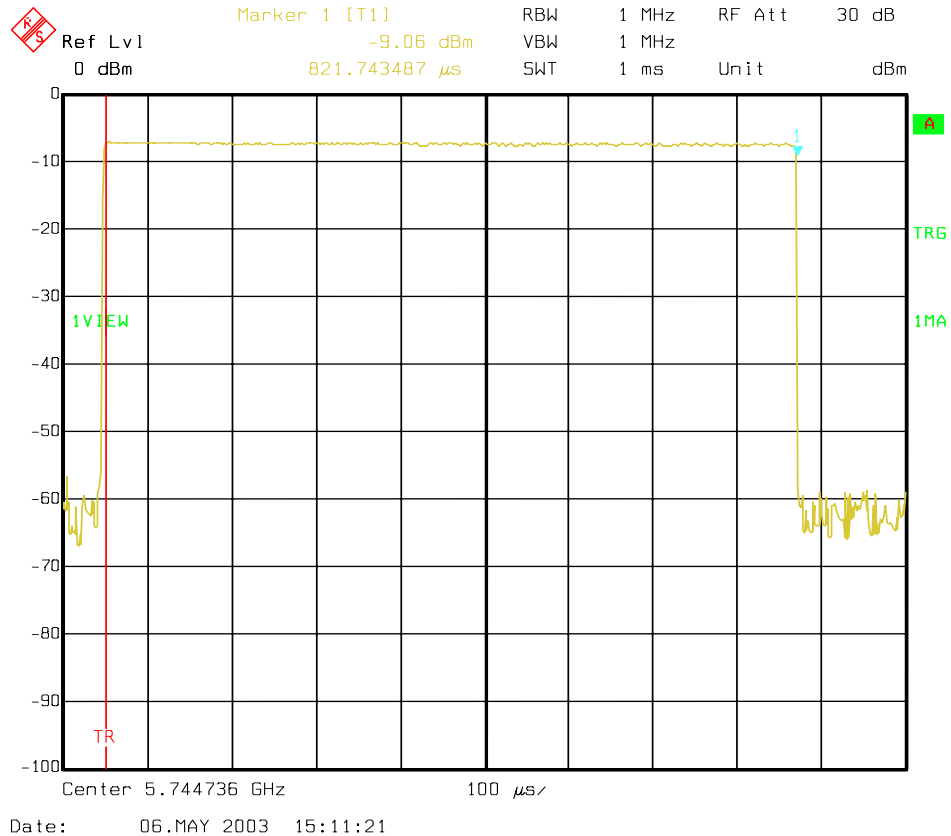
Time Of Occupancy Plots.

Base



Date: 06.MAY 2003 15:14:40

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
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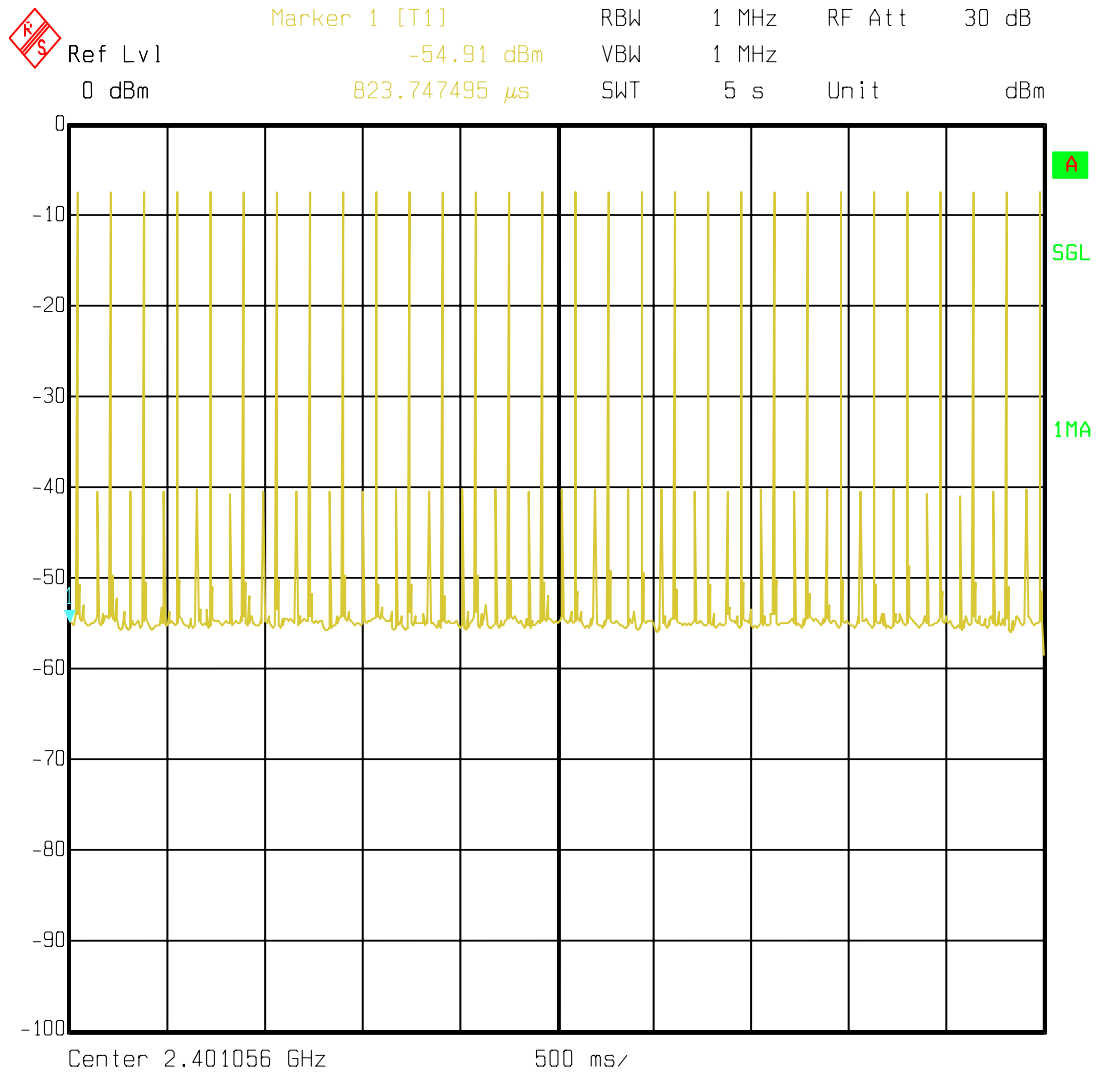
Active Slot showing 821us On-Time

Time of Occupancy showing 35 hits per 30sec

$$35 * 0.821 = 28.735\text{ms}$$

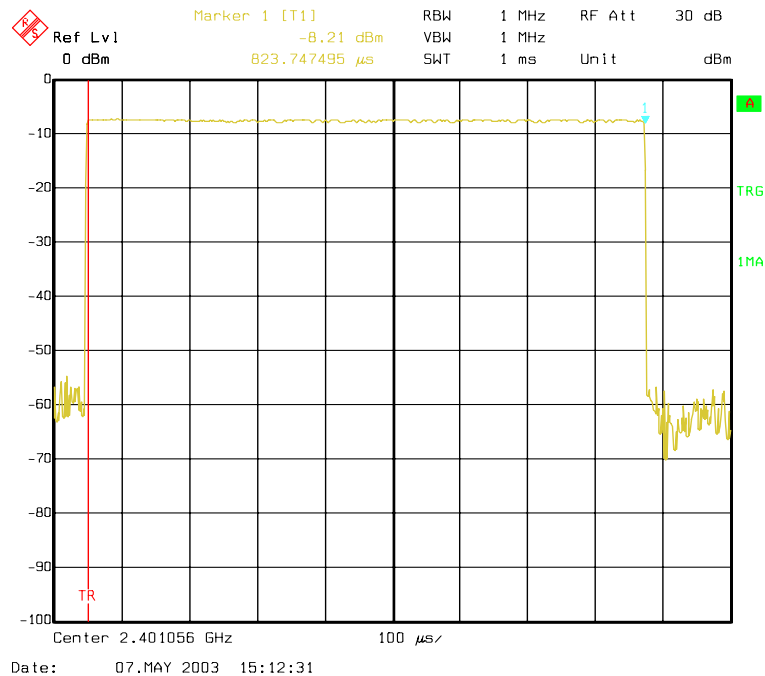
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Handset



Date: 07.MAY 2003 15:13:17

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone



Active Slot showing 823us On-Time

Time of Occupancy Showing 30 hit per 5 sec

$$(30 * 6) * 0.823 = 148.14\text{ms}$$

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Section 7. Occupied Bandwidth

Para. No.: 15.247 (a)(1)(ii)

Test Performed By: Kevin Carr	Date of Test: 2 April 2003
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Test Results: Complied

Measurement Data: See Plots

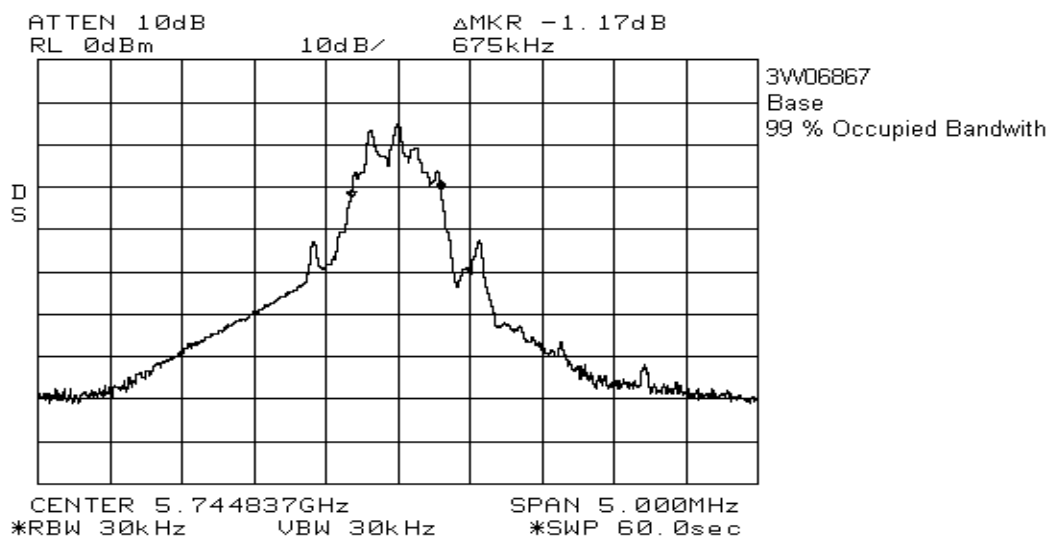
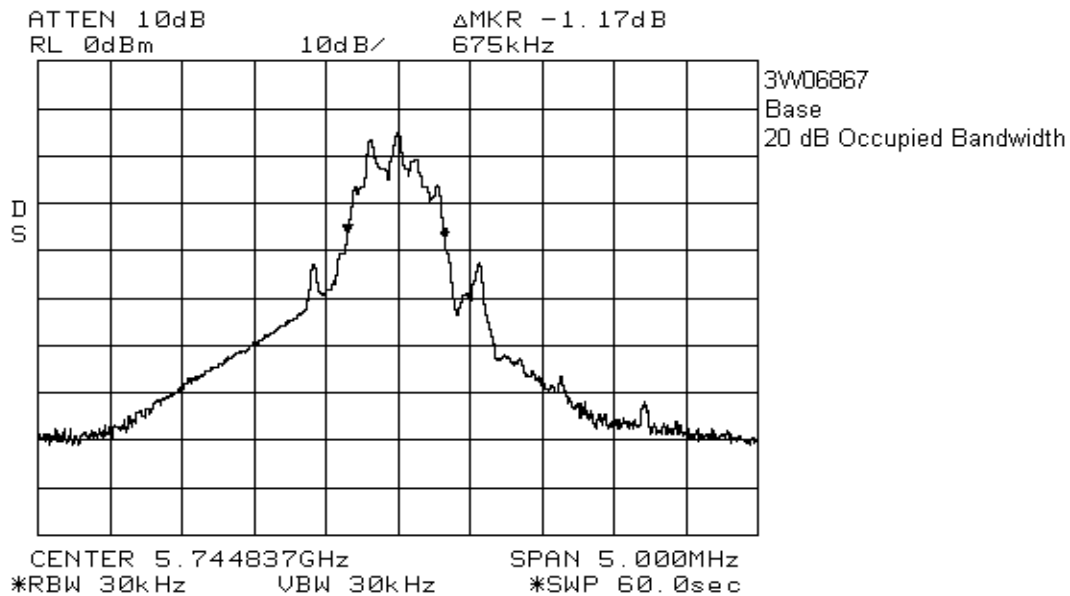
Base:
99%: 683kHz
20 dB: 683kHz

Handset
99%: 675kHz
20 dB: 692kHz

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

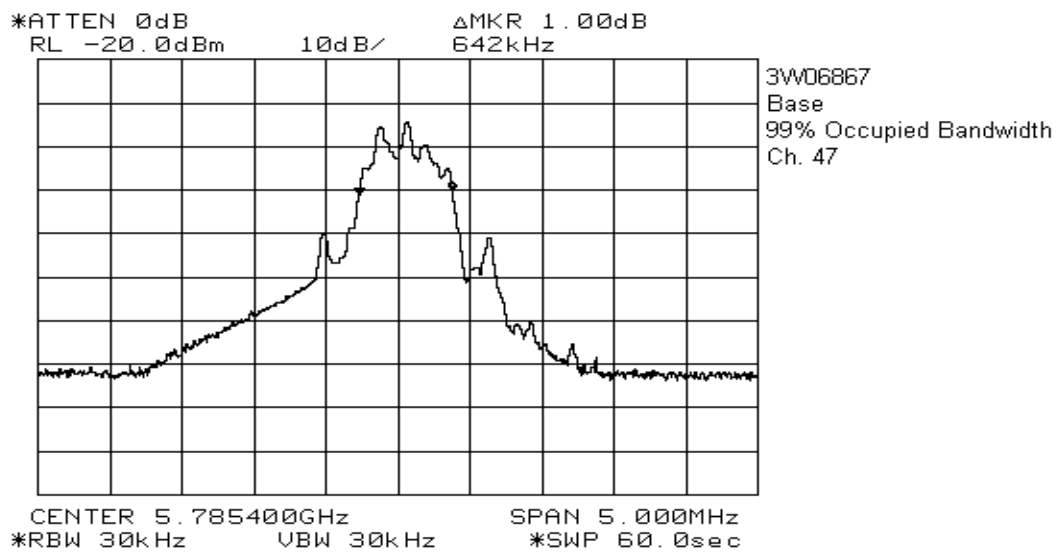
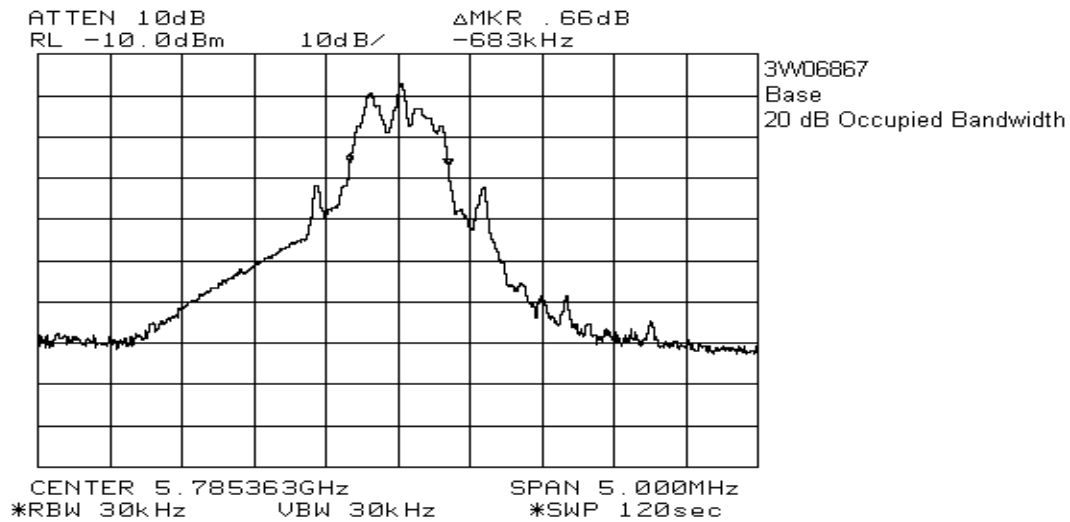
Occupied Bandwidth Plots:

Base, Low Channel



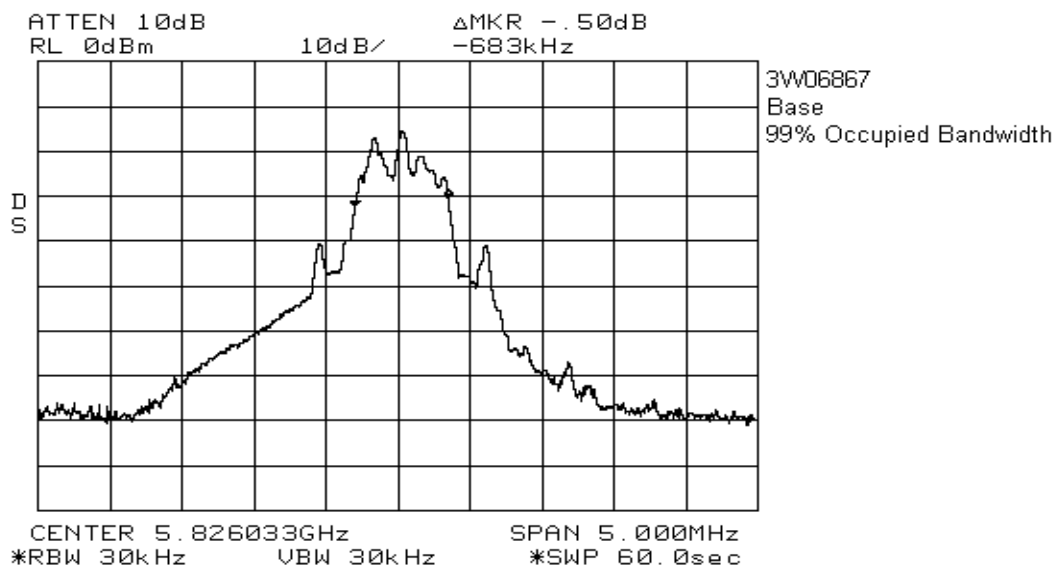
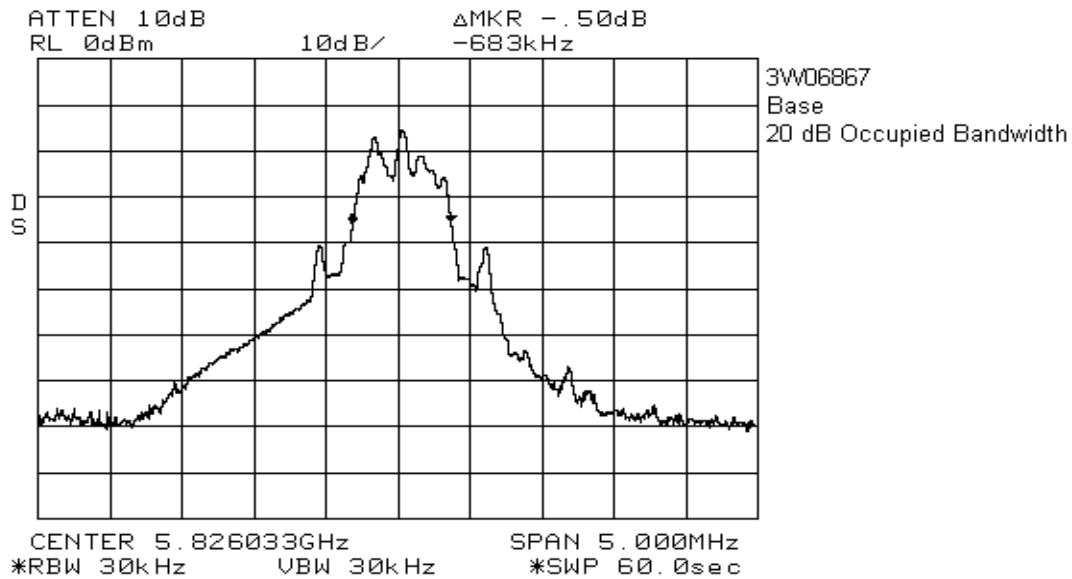
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Mid. Channel



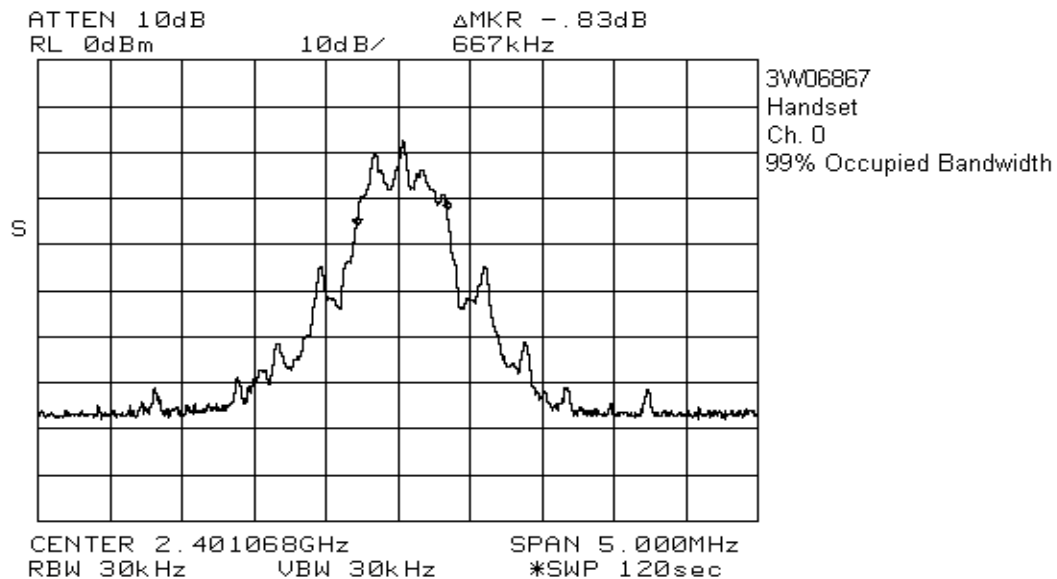
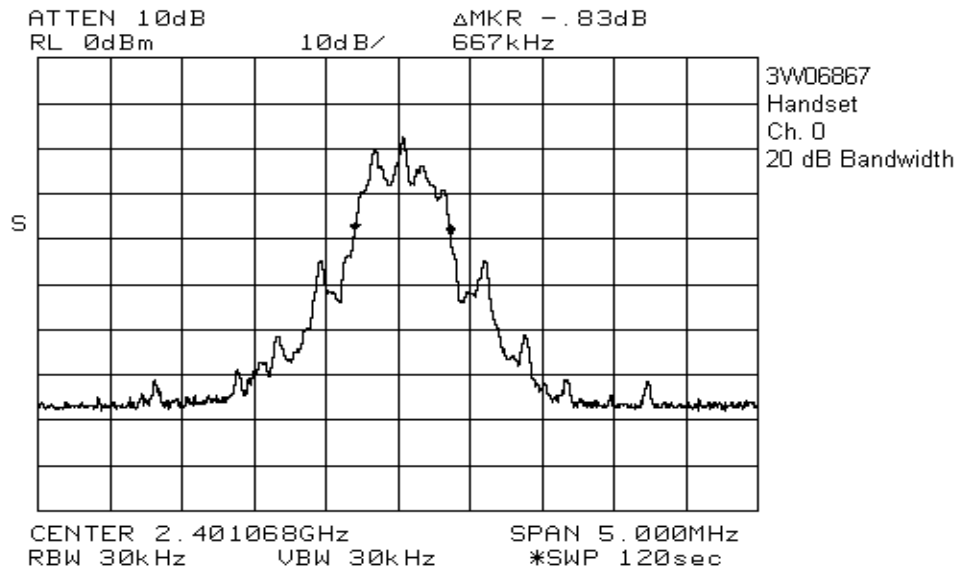
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

High Ch.



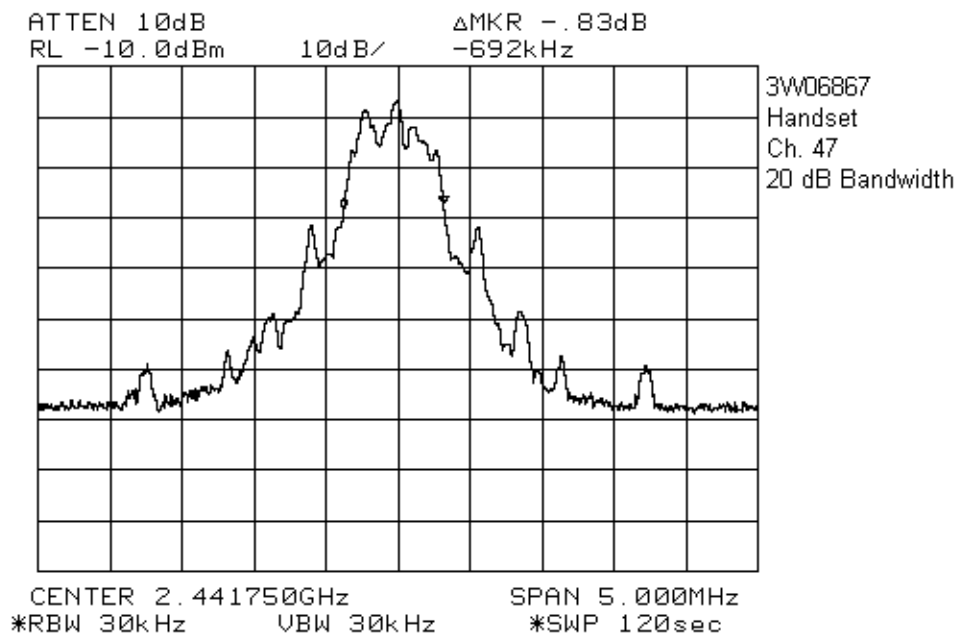
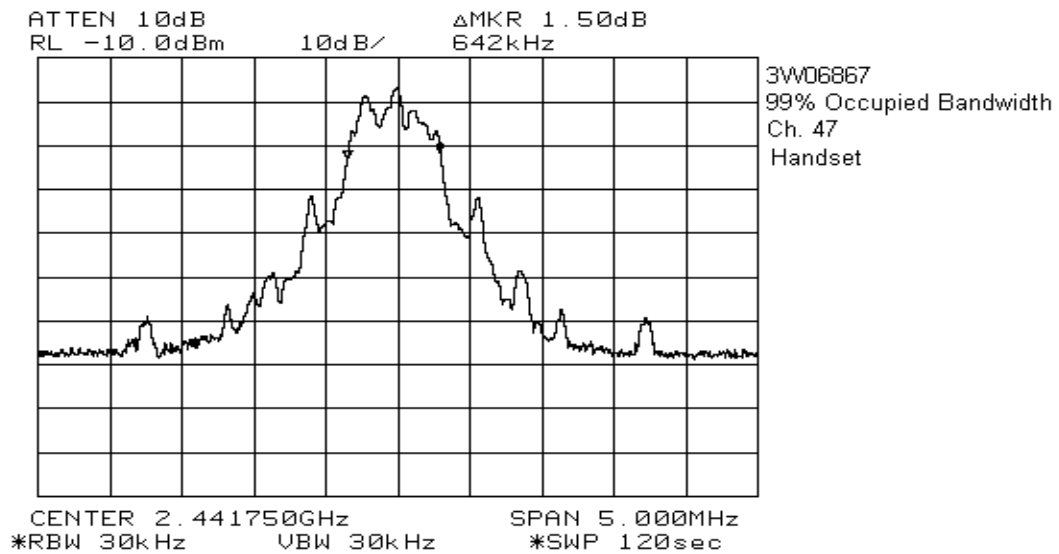
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
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Handset
Low Ch.



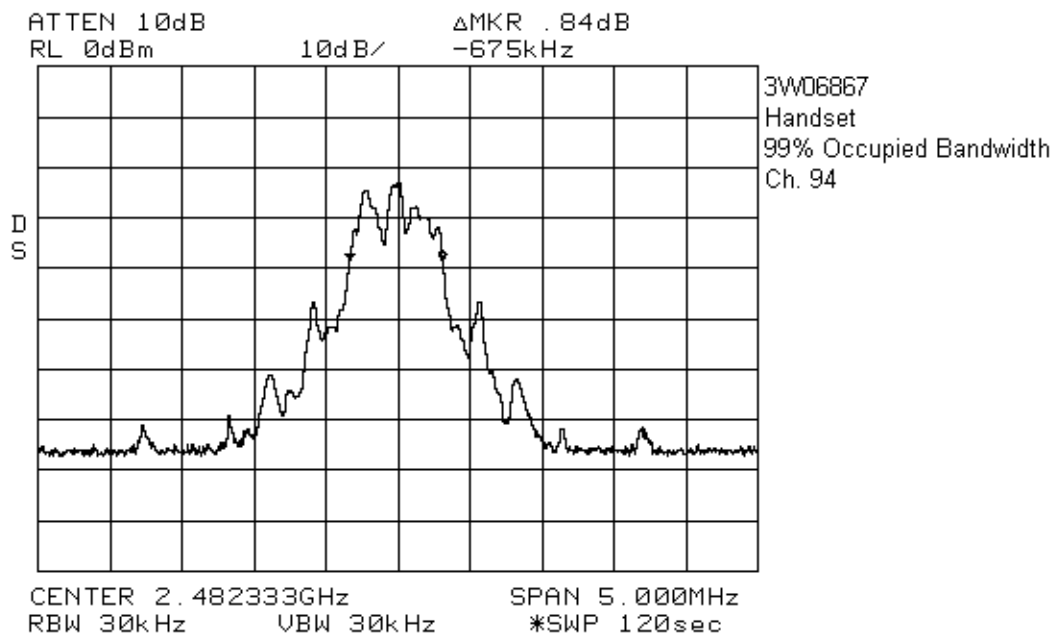
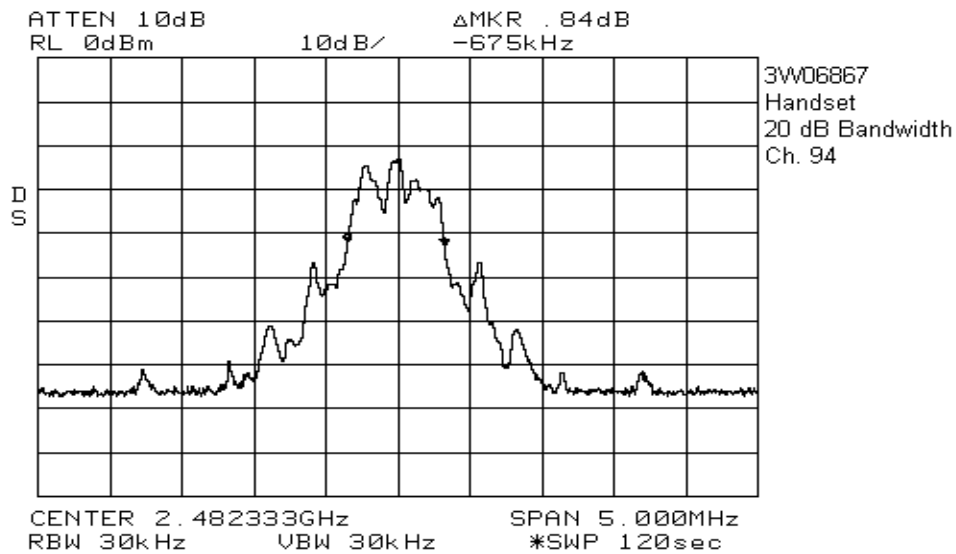
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Mid. Ch.



EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

High Ch.



EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Section 8. Peak Power Output

Para. No.: 15.247 (b)(1)

Test Performed By: Kevin Carr

Date of Test: 3 & 28 April 2003

Test Results: Complies. The maximum peak power output of the transmitter is

Base = 0.871W, 29.4dBm

Handset = 0.107W, 20.3dBm

The Base Station was tested at +/- 15% of AC line voltage. The received level did not change

The Handset was tested with a fresh battery.

This EUT was searched in 3 orthogonal axis to determine worst case emissions.

Measurement Data:

Detachable antenna?

☐

Yes

☒

No

Directional Gain of Antenna:

Base and Handset: 1.0 dBi or 1.26 Numeric.

Base (worst Case)

Field Strength: 125.6 dBμV/m @ 3m or 1.91 V/m @ 3m.

Handset (worst Case)

Field Strength: 116.5 dBμV/m @ 3m or 0.668 V/m @ 3m.

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone**Radiated Disturbance Test Data: Digital Emissions**

Test Date: 3 April 2003							
Engineer's Name: Kevin Carr							
Base Station							
Tested as per (Table Top/Floor Standing): Table Top							
Test Distance (meters): 3					Range: 1		
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBµV)	Ant. Factor (dB)	Amp. Gain (dB)	Cable Loss (dB)	Field Strength (dBµV/m)
5744.8210	Horn1	V	80.0	34.7	N/A	9.8	124.5
5744.8280	Horn1	H	77.0	34.5	N/A	9.8	121.3
5826.1900	Horn1	V	78.3	34.7	N/A	10.3	123.4
5826.1900	Horn1	H	76.7	34.6	N/A	10.3	121.6
5785.4900	Horn1	V	80.8	34.7	N/A	10.1	125.6
5785.4900	Horn1	H	76.6	34.6	N/A	10.1	121.2
Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole							
Note 2: Detector Legend: Q-Peak = 120 kHz RBW, Average = 1.0 MHz RBW							
Notes:		Measurement Receiver = H.P.8565E, RBW = 1MHz					

Test Date: 28 April 2003							
Engineer's Name: Kevin Carr							
Handset							
Tested as per (Table Top/Floor Standing): Table Top							
Test Distance (meters): 3					Range: 1		
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBµV)	Ant. Factor (dB)	Amp. Gain (dB)	Cable Loss (dB)	Field Strength (dBµV/m)
2441.5800	Horn1	V	76.2	29.1	N/A	5.3	110.6
2441.6600	Horn1	H	82.1	29.1	N/A	5.3	116.5
2400.9400	Horn1	V	72.9	29.0	N/A	4.8	106.7
2400.9100	Horn1	H	78.9	29.0	N/A	4.8	112.7
2482.4200	Horn1	V	79.8	29.2	N/A	5.9	114.9
2482.5900	Horn1	H	79.4	29.2	N/A	5.9	114.5
Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole							
Note 2: Detector Legend: Q-Peak = 120 kHz RBW, Average = 1.0 MHz RBW							
Notes:		Measurement Receiver = H.P.8565E, RBW = 1MHz					

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Section 9. Spurious Emissions (Radiated)

Para. No.: 15.247 (c)

Test Performed By: Kevin Carr	Date of Test: 31 April 2003
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Test Results: Complied.

The worst case emission level is 53.6 dB μ V/m @ m at 11489.47MHz. This is 0.4 dB below the specification limit.

Measurement Data: See attached table.

This EUT was searched in 3 orthogonal axis to determine worst case emissions.

Duty Cycle Calculation:

Base: $20\text{Log}\{(10 \times 0.820\text{mS})/100\} = 21.7\text{dB}$, max. allowed 20.0dB

Handset: $20\text{Log}\{(10 \times 0.917)/100\} = 20.8\text{dB}$, max. allowed 20.0dB

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone**Radiated Disturbance Test Data: Digital Emissions**

Test Date: 3 April 2003											
Engineer's Name: Kevin Carr											
Tested as per (Table Top/Floor Standing): Table Top											
Test Distance (meters): 3							Range: Dome 1				
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBµV)	Ant. Factor (dB)	Amp. Gain (dB)	Cable Loss (dB)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Amp.
311.0410	LP1	V	16.3	15.4	N/A	2.3	34.0	46.0	12.0	Q-Peak	None
311.0410	LP1	H	18.3	15.7	N/A	2.3	36.3	46.0	9.7	Q-Peak	None
331.7770	LP1	V	15.5	14.9	N/A	2.3	32.7	46.0	13.3	Q-Peak	None
331.7770	LP1	H	18.3	15.2	N/A	2.3	35.8	46.0	10.2	Q-Peak	None
352.5140	LP1	V	12.4	15.0	N/A	2.4	29.8	46.0	16.3	Q-Peak	None
352.5140	LP1	H	21.9	15.3	N/A	2.4	39.6	46.0	6.4	Q-Peak	None
518.4030	LP1	V	10.2	18.8	N/A	2.9	31.9	46.0	14.1	Q-Peak	None
518.4030	LP1	H	12.8	19.3	N/A	2.9	35.0	46.0	11.1	Q-Peak	None
393.9850	LP1	V	11.3	16.1	N/A	2.6	30.0	46.0	16.1	Q-Peak	None
393.9850	LP1	H	13.5	16.1	N/A	2.6	32.2	46.0	13.8	Q-Peak	None
342.1420	LP1	V	10.0	14.9	N/A	2.4	27.3	46.0	18.7	Q-Peak	None
342.1420	LP1	H	13.9	15.2	N/A	2.4	31.5	46.0	14.5	Q-Peak	None
1044.0000	Horn1	V	54.7	25.0	47.6	3.0	35.1	54.0	18.8	Peak	1-2GHz
1044.0000	Horn1	H	54.0	24.9	47.6	3.0	34.3	54.0	19.7	Peak	1-2GHz
1218.0000	Horn1	V	56.0	25.6	48.2	3.2	36.6	54.0	17.4	Peak	1-2GHz
1218.0000	Horn1	H	55.8	25.5	48.2	3.2	36.3	54.0	17.7	Peak	1-2GHz
1146.6980	Horn1	V	59.0	25.4	48.1	3.1	39.4	54.0	14.5	Peak	1-2GHz
1146.0000	Horn1	H	55.3	25.3	48.1	3.1	35.6	54.0	18.4	Peak	1-2GHz
Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole											
Note 2: Detector Legend: Q-Peak = 120 kHz RBW, Peak = 1.0 MHz RBW											
Notes:											

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Radiated Disturbance Test Data: Handset Harmonics, Average

Test Date: 3 & 28 April 2003											
Engineer's Name: Kevin Carr											
Tested as per (Table Top/Floor Standing):											
Test Distance (meters): 3								Range: 1			
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBµV)	Ant. Factor (dB)	Amp. Gain (-dB)	Duty Cycle Corr. Factor (-dB)	Cable Loss (dB)	Field Strength (dBµV/m)	Limit (dBµV/ m)	Margin (dB)	Amp.
Ch. 00											
4802.1400	Horn1	V	75.2	33.8	55.2	20	8.0	41.8	54.0	12.2	4-8GHz
4805.0600	Horn1	H	71.4	33.7	55.2	20	8.1	37.9	54.0	16.1	4-8GHz
7203.8500	Horn1	V	67.3	36.7	56.0	20	11.2	39.3	54.0	14.7	4-8GHz
7203.6800	Horn1	H	70.8	36.7	56.0	20	11.3	42.7	54.0	11.3	4-8GHz
Ch. 47											
4883.1100	Horn1	V	67.0	34.0	54.9	20	8.4	34.5	54.0	19.5	4-8GHz
4883.1900	Horn1	H	71.5	33.9	54.9	20	8.4	38.8	54.0	15.2	4-8GHz
7325.5100	Horn1	V	70.3	36.6	56.0	20	10.3	41.3	54.0	12.7	4-8GHz
7324.5700	Horn1	H	72.6	36.6	56.0	20	10.3	43.5	54.0	10.5	4-8GHz
Ch. 94											
4964.3000	Horn1	V	72.5	34.3	54.6	20	9.5	41.6	54.0	12.4	4-8GHz
4964.3000	Horn1	H	78.8	34.1	54.6	20	9.5	47.7	54.0	6.3	4-8GHz
7446.2000	Horn1	V	80.2	36.5	56.0	20	11.1	51.9	54.0	2.1	4-8GHz
7446.4000	Horn1	H	79.6	36.5	56.0	20	11.1	51.3	54.0	2.7	4-8GHz
Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole											
Note 2: Detector Legend: Q-Peak = 120 kHz RBW, Average = 1.0 MHz RBW											
Notes:		Measurement Receiver = H.P.8565E, RBW = 1MHz									

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone**Radiated Disturbance Test Data: Base Station, Harmonics, Average**

Test Date: 8 April 2003											
Engineer's Name: Kevin Carr											
Tested as per (Table Top/Floor Standing): Table Top											
Test Distance (meters): 1						Range: 1					
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBμV)	Ant. Factor (dB)	Amp. Gain (-dB)	Passband filter Loss (dB)	Duty Cycle Corr. (-dB)	Dist Corr. (dB)	Level (dBμV)	Limit (dBμV)	Margin (dB)
Low Ch.											
11489.47	Hrn 1	V	78.3	40.9	38.8	2.7	20	9.5	53.6	54	0.4
11489.47	Hrn 1	H	75	40.9	38.8	2.7	20	9.5	50.3	54	3.7
17234.21	Hrn 1	V	67	43.5	38.5	2.2	20	9.5	44.7	54	9.3
17234.21	Hrn 1	H	72.8	43.5	38.5	2.2	20	9.5	50.5	54	3.5
22978.94	Hrn 5	V	64.3	45.7	39.3	0	20	9.5	41.2	54	12.8
22978.94	Hrn 5	H	61	45.7	39.3	0	20	9.5	37.9	54	16.1
28723.68	Hrn 5	V	45.3	46.5	29.8	0	20	9.5	32.5	54	21.5
28723.68	Hrn 5	H	42.5	46.5	29.8	0	20	9.5	29.7	54	24.3
34468.42	Hrn 5	V	44	49.2	29.6	0	20	9.5	34.1	54	19.9
34468.42	Hrn 5	H	45.3	49.2	29.6	0	20	9.5	35.4	54	18.6
Mid Ch.											
11570.69	Hrn 1	V	78	40.9	38.8	2.7	20	9.5	53.3	54	0.7
11570.69	Hrn 1	H	72	40.9	38.8	2.7	20	9.5	47.3	54	6.7
17356.03	Hrn 1	V	64.2	43.5	38.5	2.2	20	9.5	41.9	54	12.1
17356.03	Hrn 1	H	70	43.5	38.5	2.2	20	9.5	47.7	54	6.3
23141.38	Hrn 5	V	64.5	45.7	39.3	0	20	9.5	41.4	54	12.6
23141.38	Hrn 5	H	60	45.7	39.3	0	20	9.5	36.9	54	17.1
28926.72	Hrn 5	V	52.2	46.5	29.8	0	20	9.5	39.4	54	14.6
28926.72	Hrn 5	H	41.5	46.5	29.8	0	20	9.5	28.7	54	25.3
34712.06	Hrn 5	V	39.5	49.2	29.6	0	20	9.5	29.6	54	24.4
34712.06	Hrn 5	H	42	49.2	29.6	0	20	9.5	32.1	54	21.9
Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole											
Note 2: Detector Legend: Q-Peak = 120 kHz RBW, Average = 1.0 MHz RBW											
Notes:		Measurement Receiver = H.P.8565E, RBW = 1MHz									

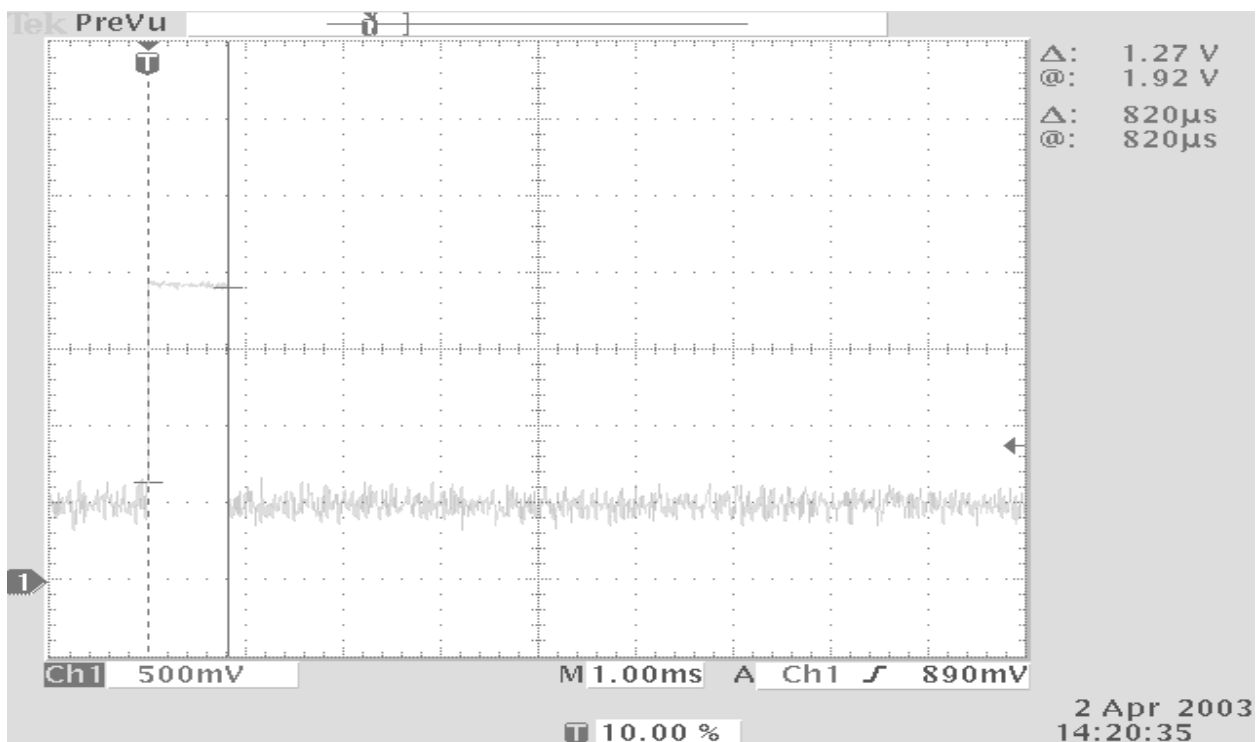
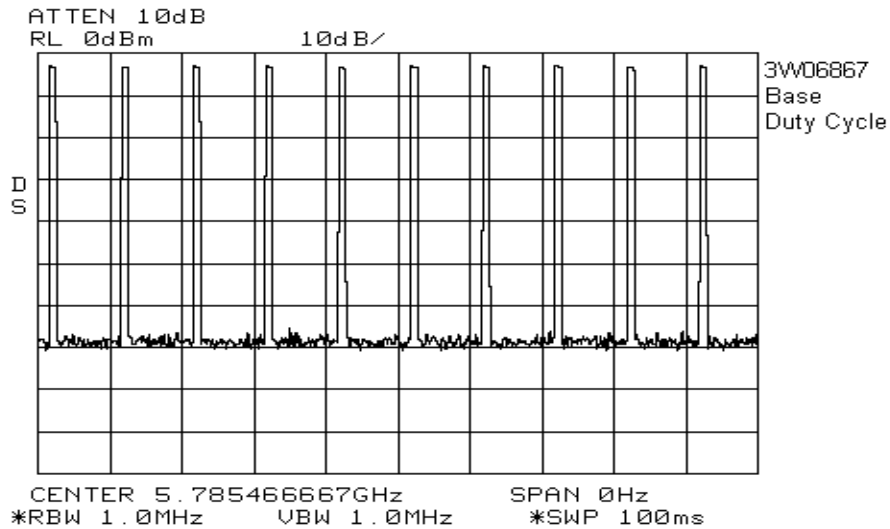
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Test Date: 8 April 2003											
Engineer's Name: Kevin Carr											
Tested as per (Table Top/Floor Standing): Table Top											
Test Distance (meters): 1						Range: 1					
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBμV)	Ant. Factor (dB)	Amp. Gain (-dB)	Passband filter Loss (dB)	Duty Cycle Corr. (-dB)	Dist Corr. (dB)	Level (dBμV)	Limit (dBμV)	Margin (dB)
High Ch.											
11651.9	Hrn 1	V	74	40.9	38.8	2.7	20	9.5	49.3	54	4.7
11651.9	Hrn 1	H	69.7	40.9	38.8	2.7	20	9.5	45	54	9
17477.86	Hrn 1	V	60.2	43.5	38.5	2.2	20	9.5	37.9	54	16.1
17477.86	Hrn 1	H	65.5	43.5	38.5	2.2	20	9.5	43.2	54	10.8
23303.81	Hrn 5	V	63.2	45.7	39.3	0	20	9.5	40.1	54	13.9
23303.81	Hrn 5	H	61.3	45.7	39.3	0	20	9.5	38.2	54	15.8
29129.76	Hrn 5	V	42.5	46.5	29.8	0	20	9.5	29.7	54	24.3
29129.76	Hrn 5	H	44.8	46.5	29.8	0	20	9.5	32	54	22
34955.71	Hrn 5	V	39.5	49.2	29.6	0	20	9.5	29.6	54	24.4
34955.71	Hrn 5	H	44.2	49.2	29.6	0	20	9.5	34.3	54	19.7
Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole											
Note 2: Detector Legend: Q-Peak = 120 kHz RBW, Average = 1.0 MHz RBW											
Notes:		Measurement Receiver = H.P.8565E, RBW = 1MHz									

EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

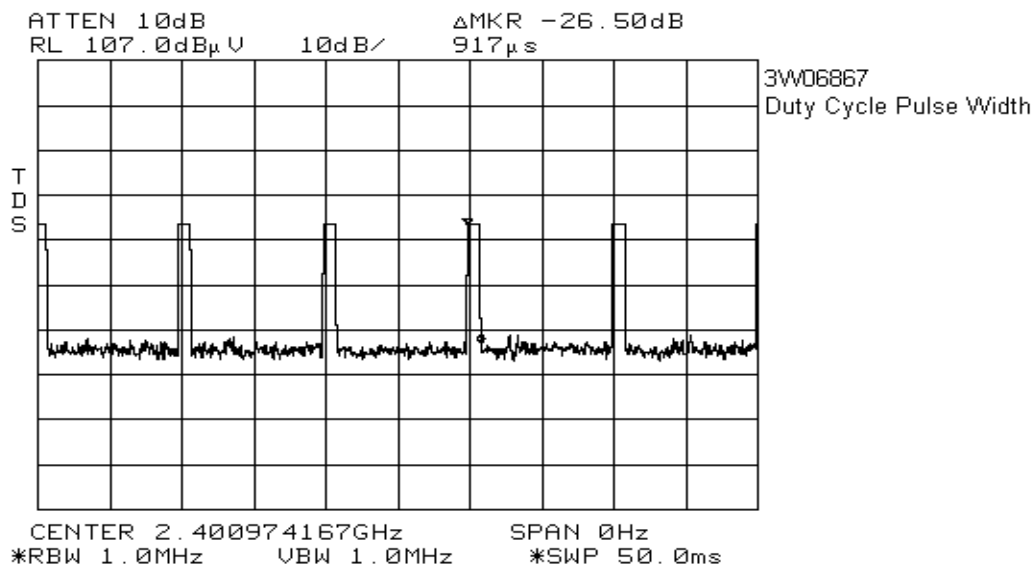
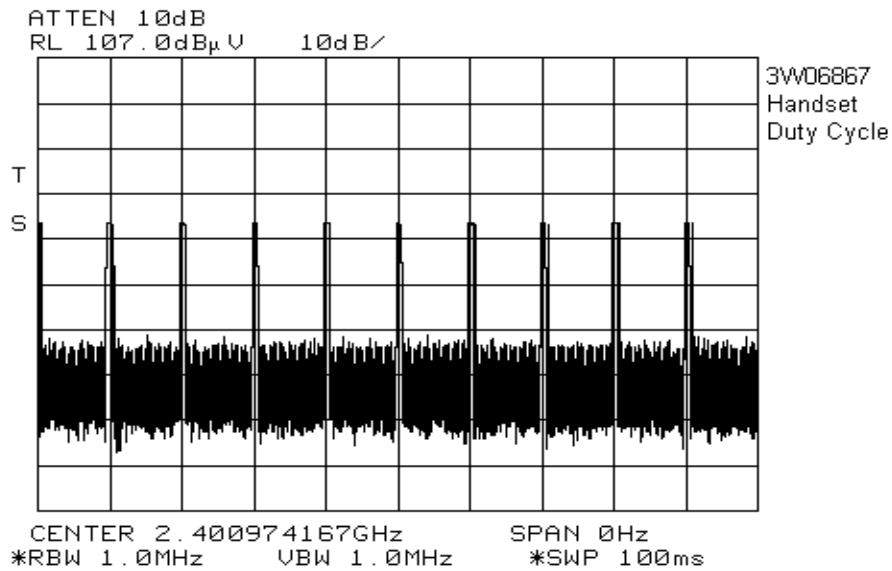
Duty Cycle Plots

Base



EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

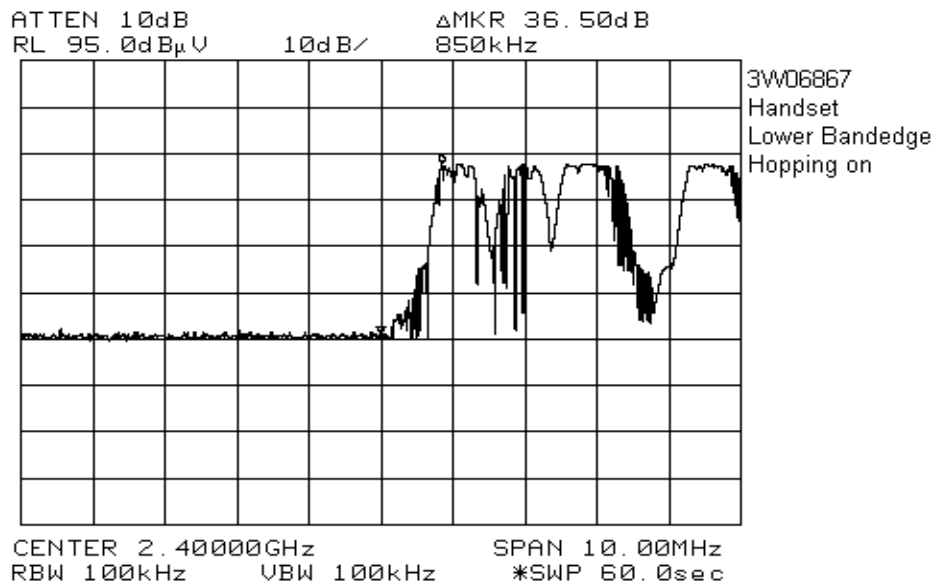
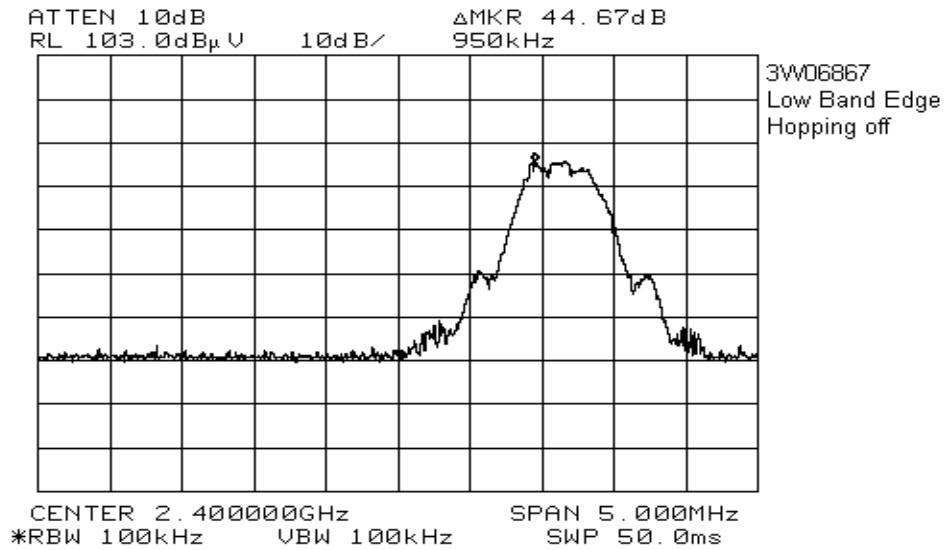
Handset



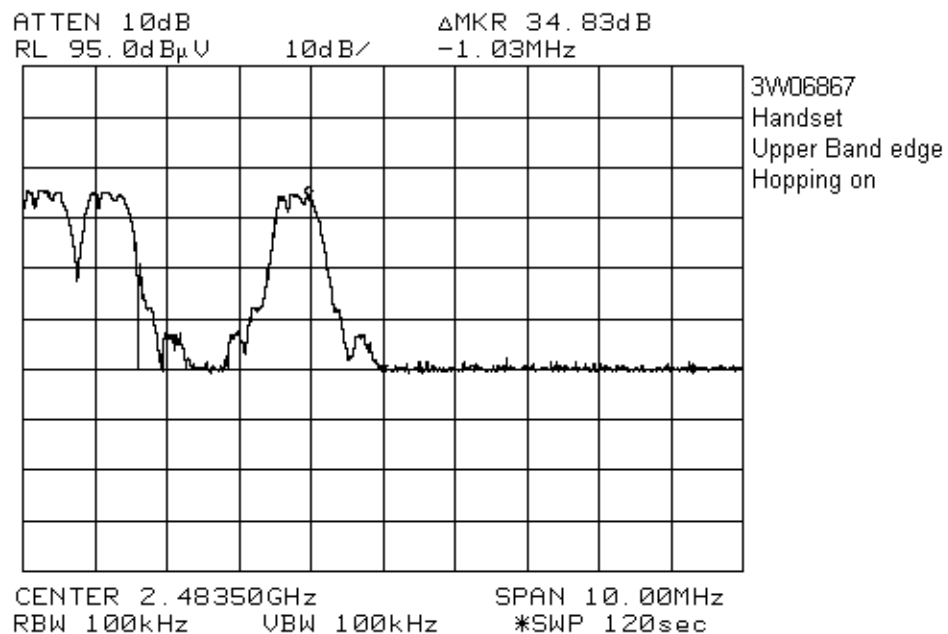
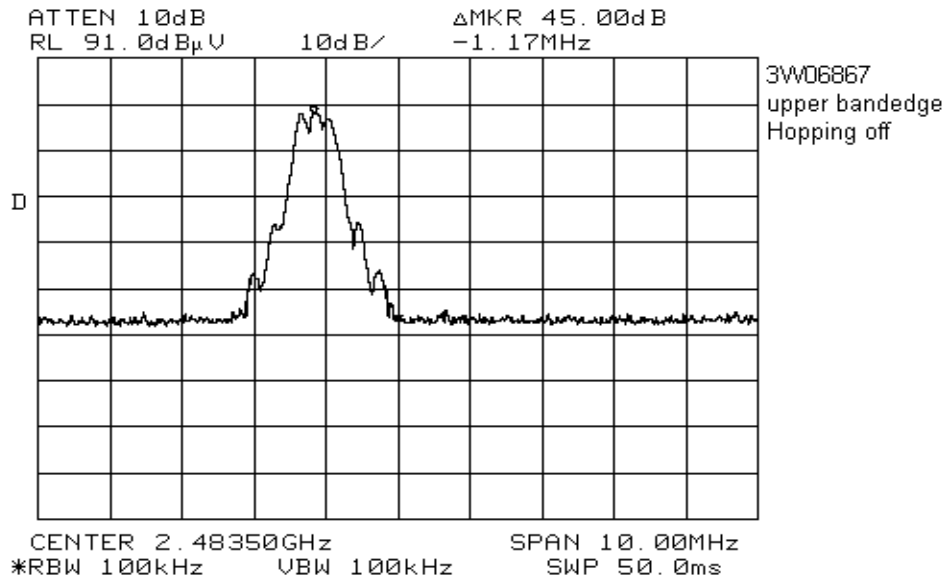
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20 dB Band Edge

Handset

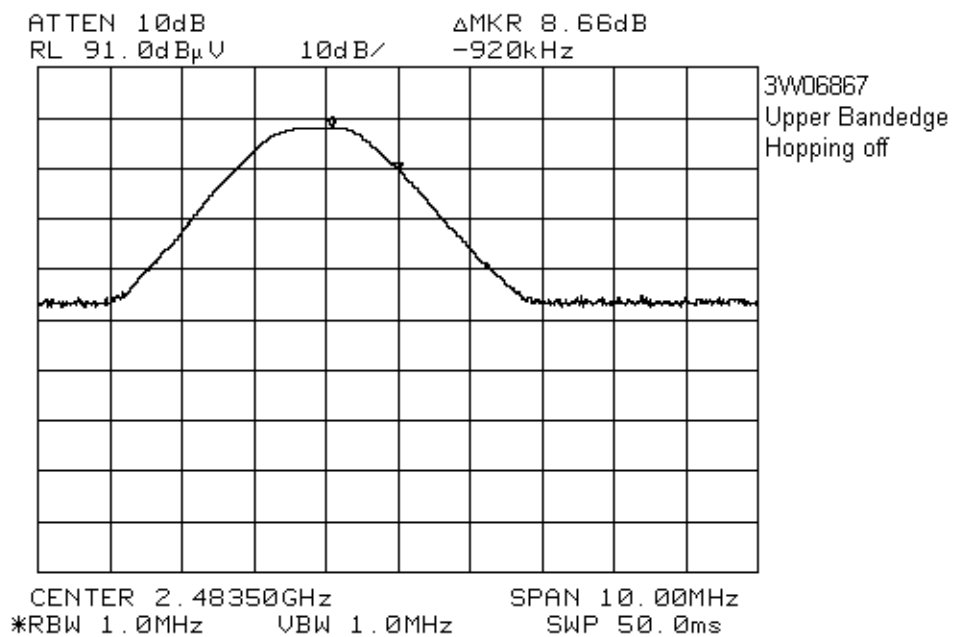


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EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
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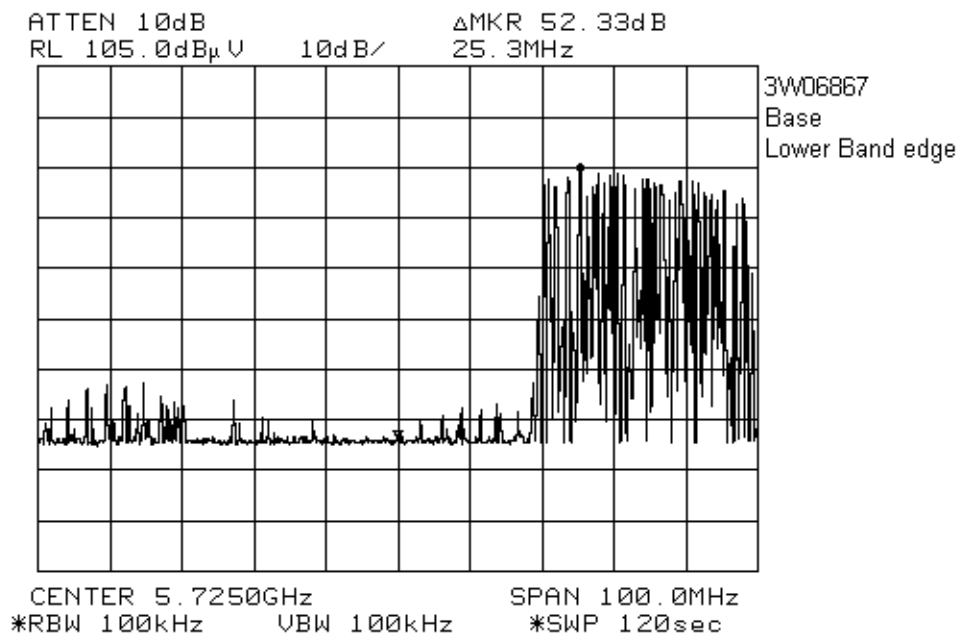
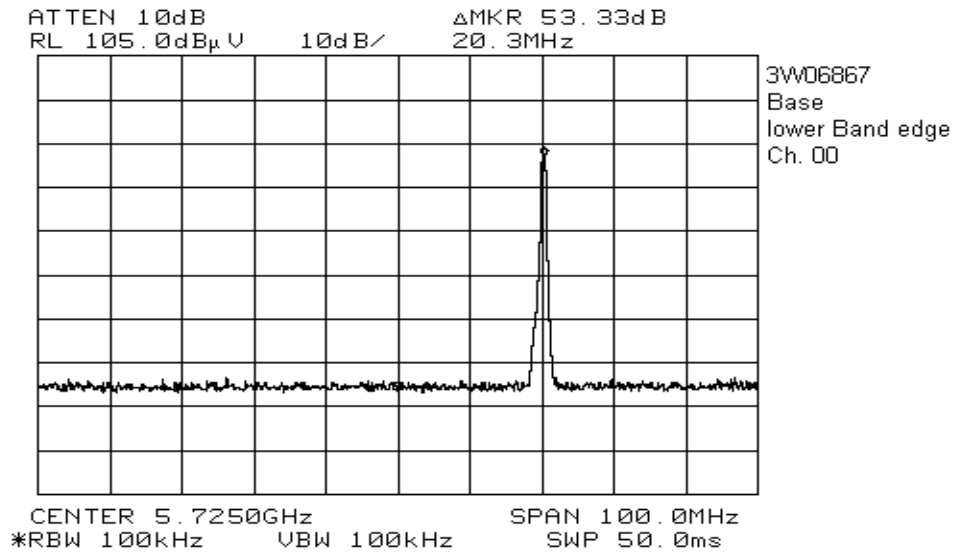
**Band Edge (Restricted Band)
Marker Delta Method**



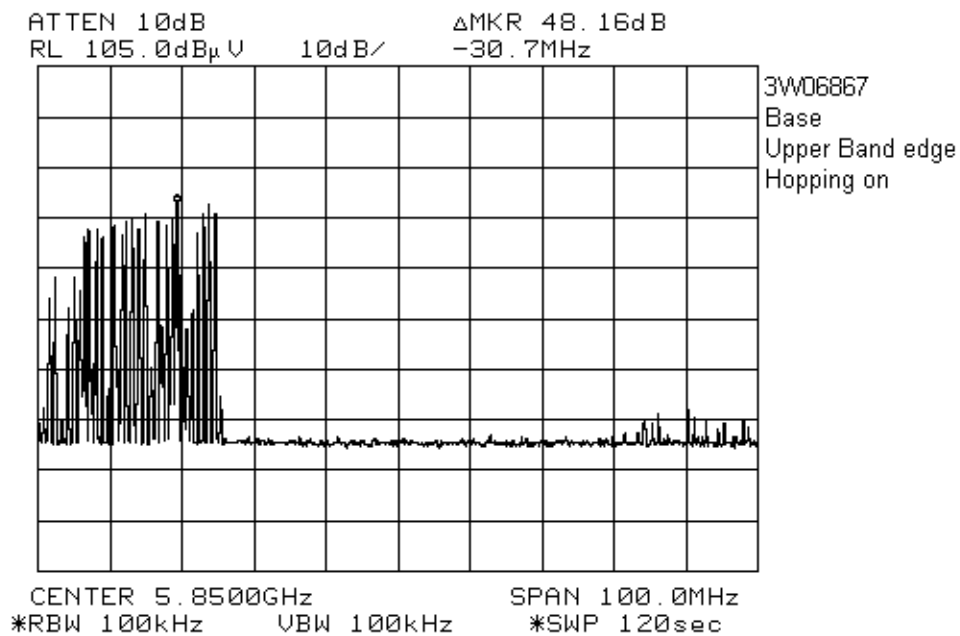
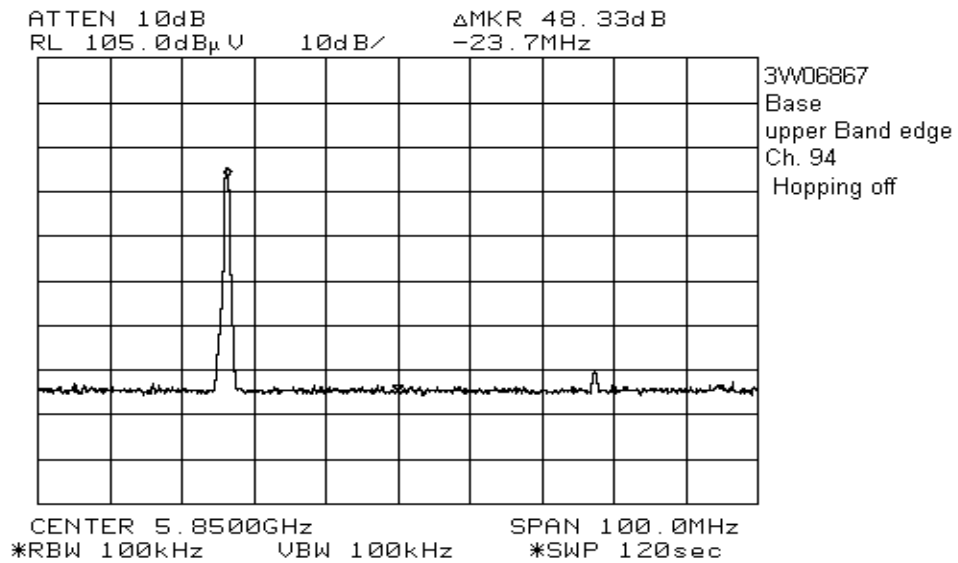
Peak Level, Band Edge = $79.8\text{dB}\mu\text{V} + 35.1\text{dB} - 8.7\text{dB} = 106.2\text{dB}\mu\text{V} @ 3\text{m}.$
Peak Band Edge Level (Marker Delta): $= 106.2 - 45 = 61.2\text{dB}\mu\text{V}/\text{m}$ at 3 m.
Average = $61.2 - 20 = 41.2\text{dB}\mu\text{V}/\text{m} @ 3\text{m}.$

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FHSS Cordless Telephone

20dB Band Edge, Base



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Set-up Photo:

Base



EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
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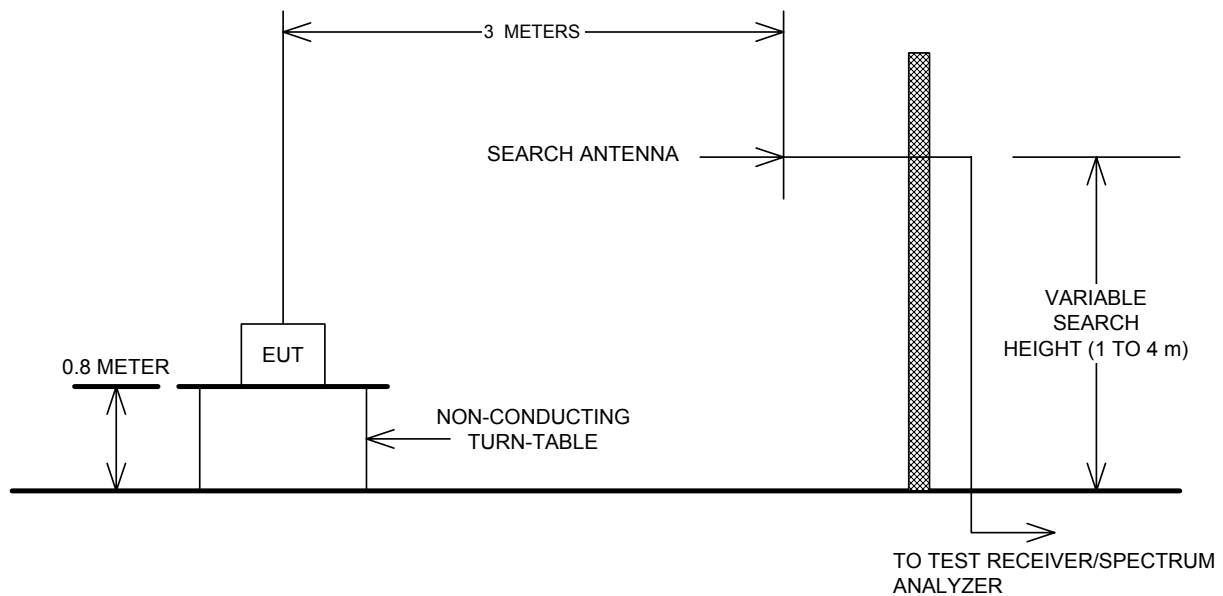
Handset



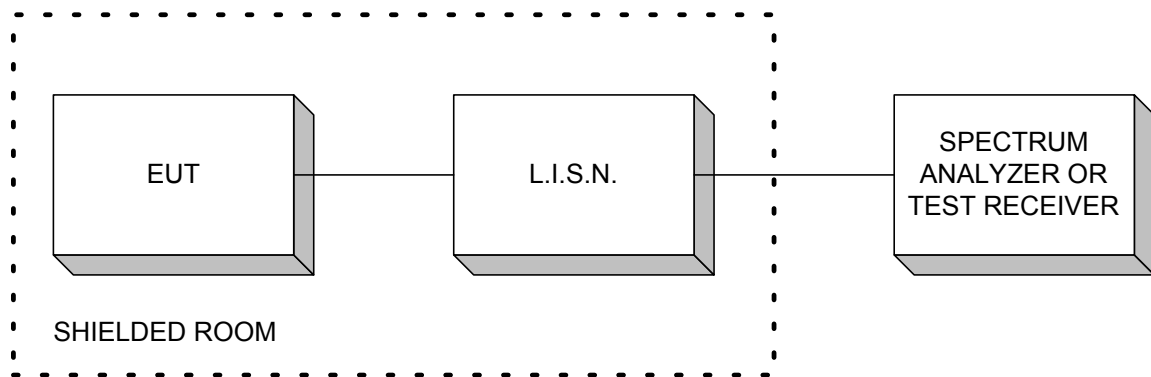
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
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Section 10. Block Diagrams

Test Site For Radiated Emissions



Conducted Emissions



EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Section 11. Test Equipment List

Conducted Disturbance at Mains Test Equipment Used:

CAL Cycle	Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
1 Year	LISN	EMCO	4825/2	FA001545	Oct. 25/02	Oct. 25/03
1 Year	Receiver	Rohde & Schwarz	ESH3	FA000872	Oct. 09/02	Oct. 09/03
Extended	Spectrum Analyzer	Hewlett-Packard	8566B	FA001309	Nov. 27/01	May. 27/03
Extended	Spectrum Analyzer Display	Hewlett-Packard	85662A	FA001309	Nov. 27/01	May. 27/03
1 Year	Transient Limiter	Hewlett-Packard	1194 7A	FA000975	Aug. 30/02	Aug. 30/03
Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use, OUT = Out For CAL/Repair						

Equipment List - Radiated Emissions

CAL Cycle	Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
1 Year	Receiver	Rohde & Schwarz	ESVS-30	FA001437	July. 04/02	July. 04/03
1 Year	Spectrum Analyzer	Hewlett-Packard	8565E	FA000981	July. 15/02	July. 15/03
1 Year	Biconical (1) Antenna	EMCO	3109	FA000805	Aug. 22/02	Aug. 22/03
1 Year	Horn Antenna #1	EMCO	3115	FA000649	Dec. 23/02	Dec. 23/03
1 Year	Log Periodic Antenna #1	EMCO	LPA-25	FA000477	Aug. 23/02	Aug. 23/03
1 Year	1.0 – 2.0 GHz Amplifier	JCA	12-400	FA001498	June. 04/02	June. 04/03
1 Year	2.0 – 4.0 GHz Amplifier	JCA	24-600	FA001496	June. 04/02	June. 04/03
1 Year	4.0 – 8.0 GHz Amplifier	JCA	48-600	FA001497	June. 04/02	June. 04/03
1 Year	18-40 GHz Horn Antenna #5	ETS	3116	FA001847	13 Feb. 2003	13 Feb. 2004
COU	8.2 – 12 GHz Passband Filter	Dorado	WA-90-S	-----	COU	COU
COU	12 – 18 GHz Passband Filter	Dorado	62-SMA	-----	COU	COU
COU	5.0 – 18.0 GHz Amplifier	NARDA	DWT-186N23U40	FA001409	COU	COU
COU	18.0 – 26.0 GHz Amplifier	NARDA	BBS-1826N612	FA001550	COU	COU
COU	26 – 40.0 GHz Amplifier	NARDA	DBL-2640N610	FA001556	COU	COU
Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use, OUT = Out For CAL/Repair						