



Test Report: 4W08167, Issue3

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 (Class II Permissive Change)**
Frequency Hopping Transmitters

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

Authorized By: 
Glen Westwell, Wireless Specialist

Date: 28 July 2004

Total Number of Pages: 48

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

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EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
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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 C63.4-2001. 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: _____
Daxesh Thakker, Wireless Test Engineer

DATE: 27 July 2004



TESTED BY: _____
Kevin Carr, EMC/EMI/Wireless Specialist

DATE: 27 July 2004

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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

This submission is for Reassessment as a Class II Permissive Change. Please refer the following information provided by the customer.

1. Compare to the Base unit of Nemko project report 3W06867, VTECH 5825 and 5850 use the same RF circuitry and that the only difference is in the base answering machine circuitry.
2. Following circuitry changes have made to the Base unit and Handset unit of the Nemko project 3W06867.
 - Handset: a. replaces discrete VCO circuitry with PLL/VCO IC (Atmel ATR2807).
 - b. replaces mixer with down converter IC (Atmel ATR2809).
 - c. different TX filter after TX PA.
 - Base: a. replaces discrete VCO circuitry with PLL/VCO IC.
 - The RFIC is the same from the original 5.8 Bundle submission tested on report 3W06867.
3. Based upon above changes, some of the test results of base unit are used here from Nemko project report 3W06867.
4. The original FCC ID# of the Nemko project report 3W06867 is EW780-5348-00/01.
5. All Bench & OATS tests for the handset, AC power line Cond. Emissions, Digital emissions (with the base & the handset) and all OATS tests for the base were repeated for this application.

Test Conditions:

Indoor	Temperature: 21°C
	Humidity: 15%
Outdoor	Temperature: 22°C
	Humidity: 35%

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: 9 June 2004

Nemko Identification No.: 1, 6, and 9

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	708KF1D

User Frequency Adjustment: None

Measured Output Power:

BS	29.1dBm (0.807W)
HS	19.47dBm (0.0885W)

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

Section 3. Power line Conducted Emissions

Para. No.: 15.207 (a)

Test Performed By: Daxesh Thakker	Date of Test: 9 June 2004
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Minimum Standard: CISPR 22-96

Limits For Conducted Disturbance At The Mains Ports Of Class B

Frequency Range MHz	Limits dB(µV)		Result
	Quasi-Peak	Average	
0.15 to 0.50	66 to 56	56 to 46	Complies
0.5 to 5	56	46	
5 to 30	60	50	

Note:

1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50MHz.

Test Results: Complied

Measurement Data: The EUT was tested with flat batteries in the handset unit and the handset was on hook. This was deemed worst case. See attached graph(s).

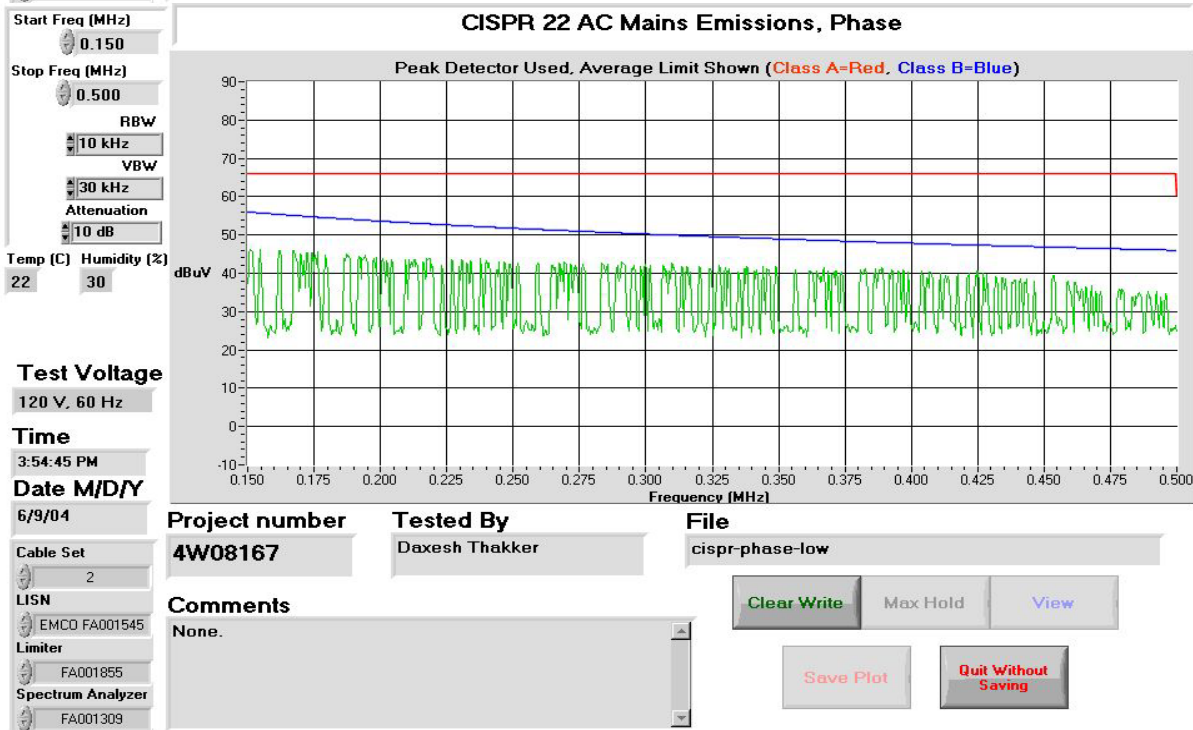
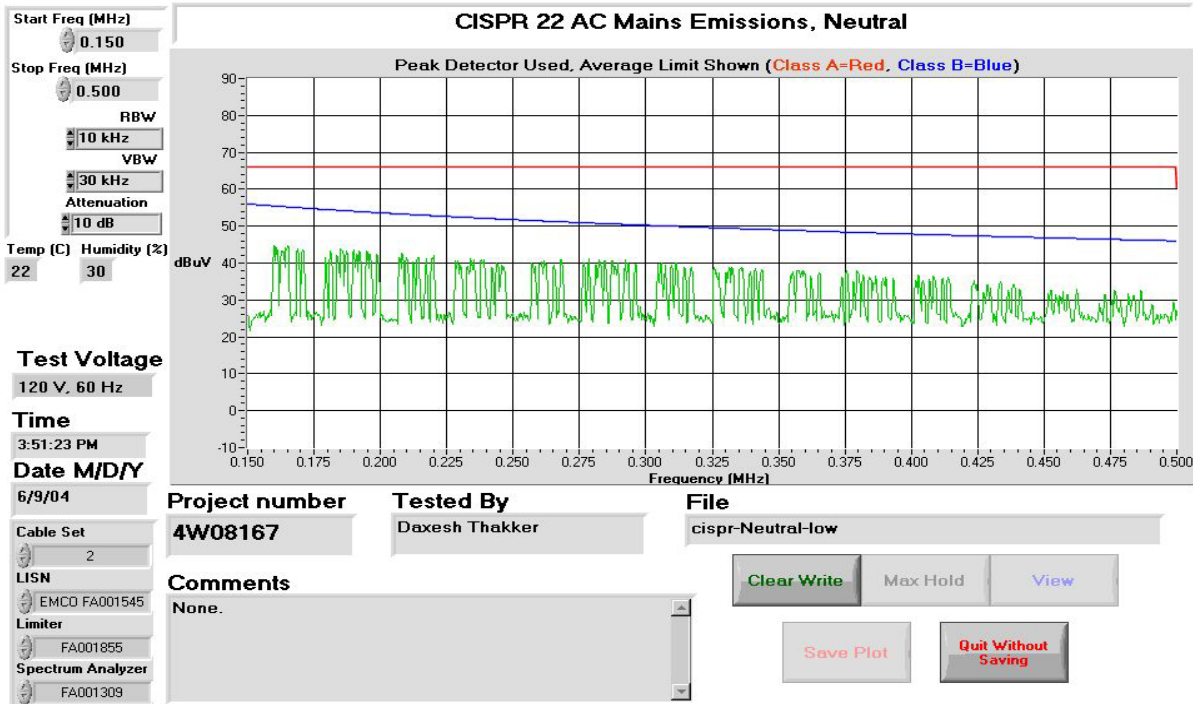
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
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Conducted Disturbance at Mains Port Test Data:

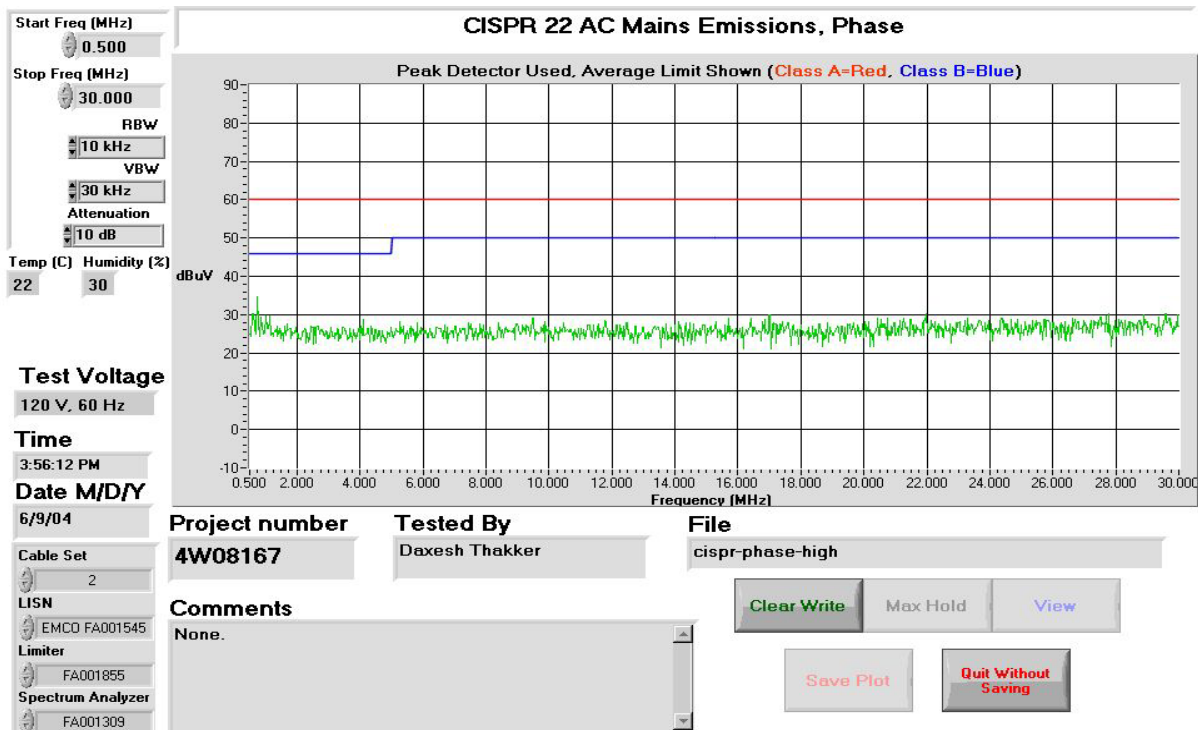
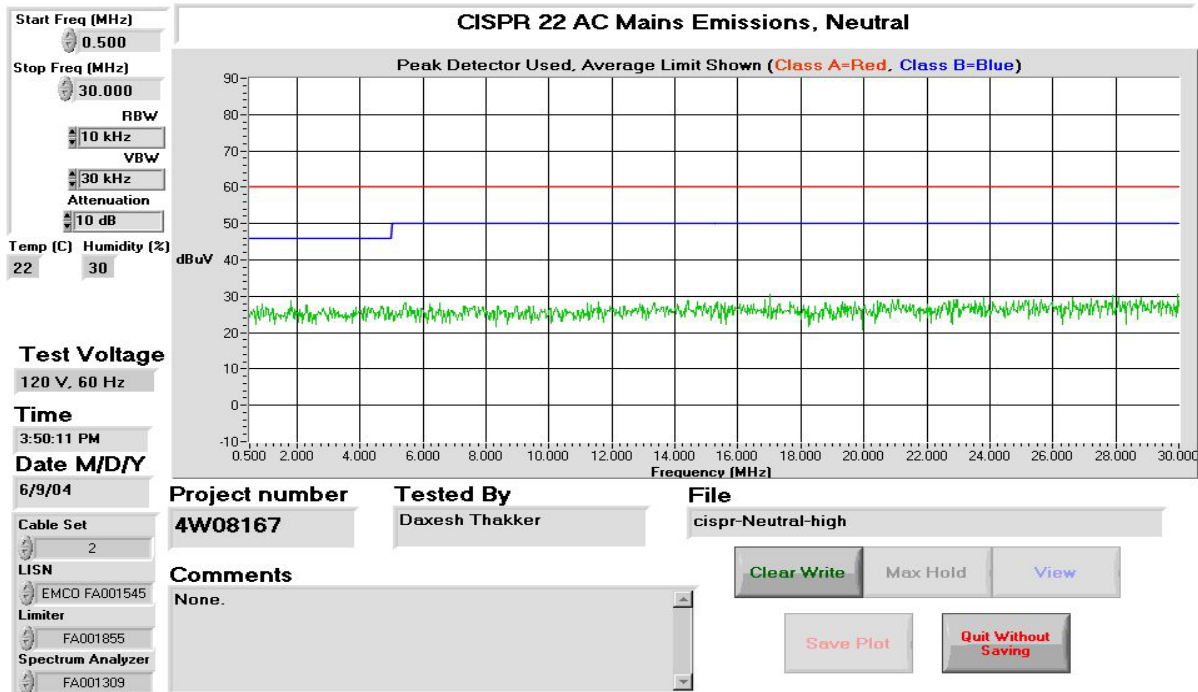
Test Date: June 9, 2004	
Engineer's Name: Daxesh Thakker	
Temperature (C°): 21	Humidity %: 30
Tested as per (Table Top/Floor Standing): Table Top	
Spectrum plots for each frequency band can be found at the back of this section. All plots were generated with a peak detector.	
Port under test: AC Input	Test Voltage: 120VAC, 60Hz
Notes:	

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



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

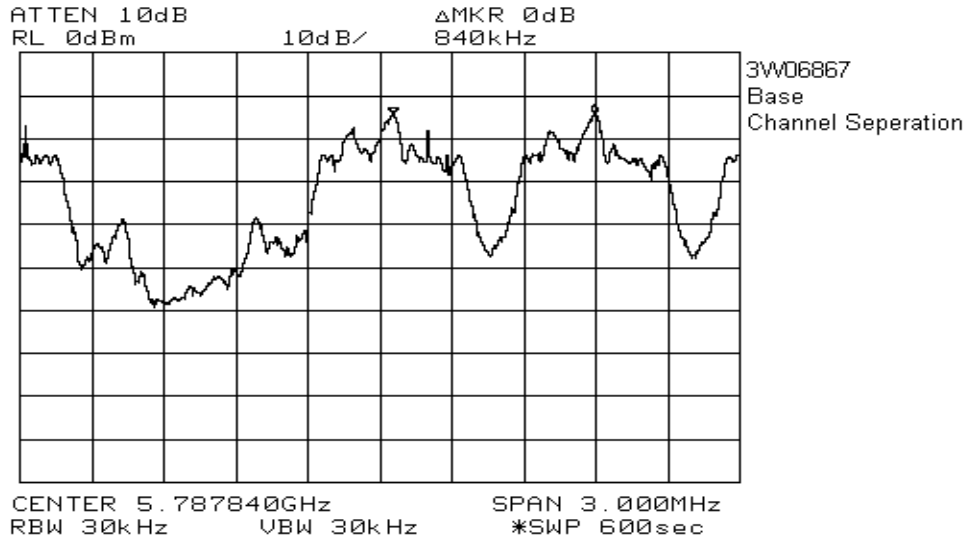
Measurement Data:

Channel Separation:
Base: 840kHz
Handset: 870 kHz

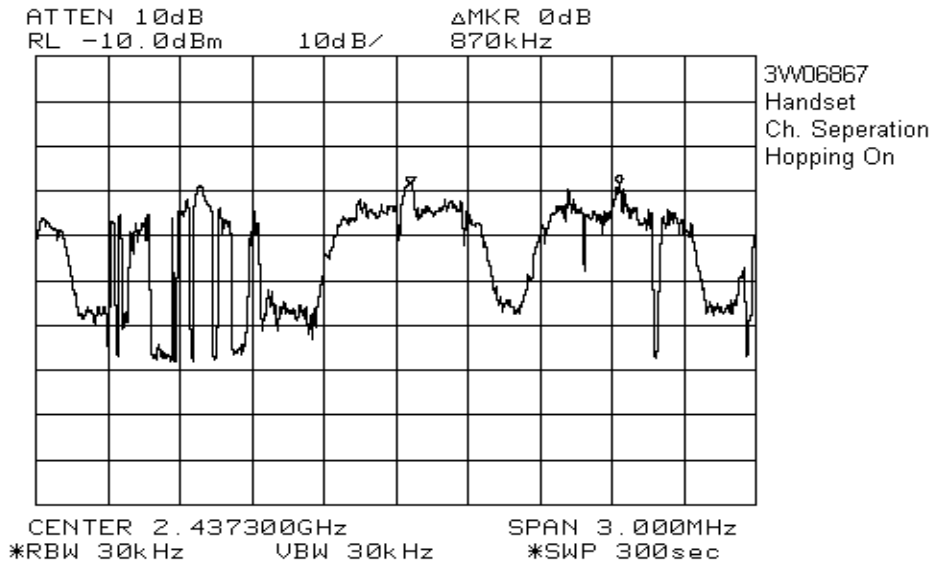
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Channel Separation Plots:

Base



Handset



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

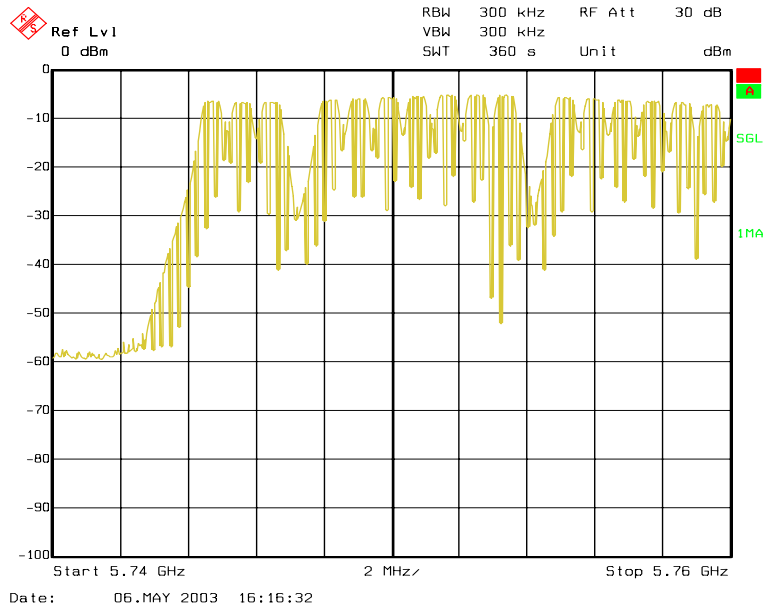
Base
Number of Hopping Frequencies: 85

Handset
Number of Hopping Frequencies: 17

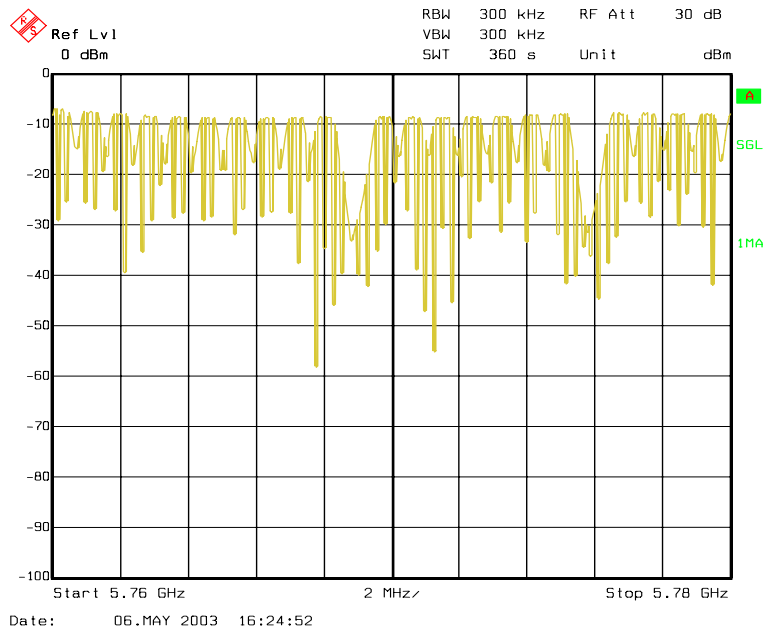
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
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Number of Hopping Channel Plots:

Base Station
Base Station

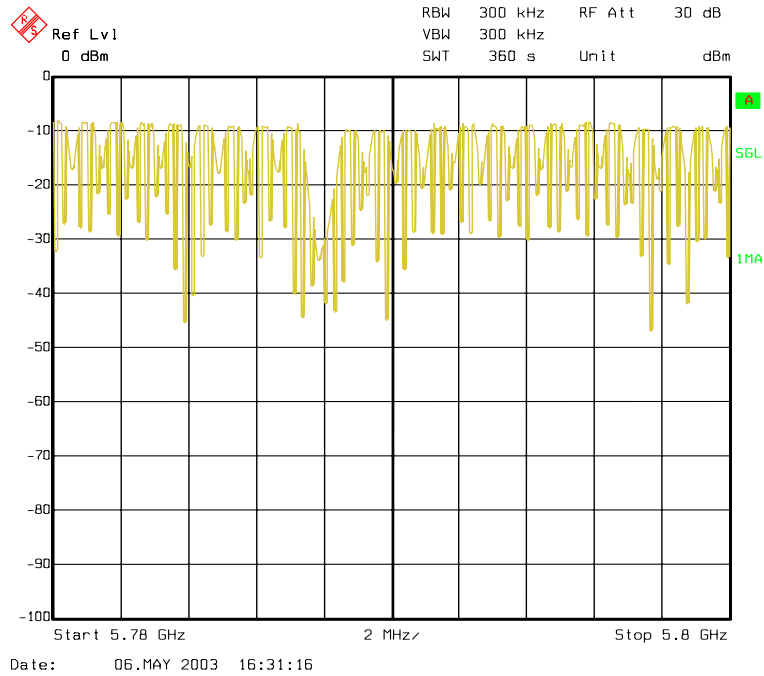


Band 1 showing 16 Channels

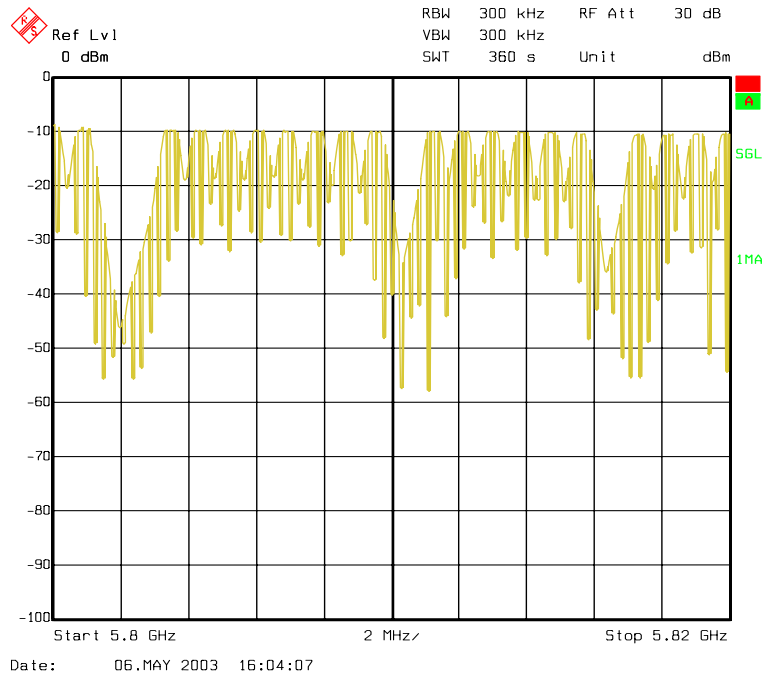


Band 2 Showing 21 Channels

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

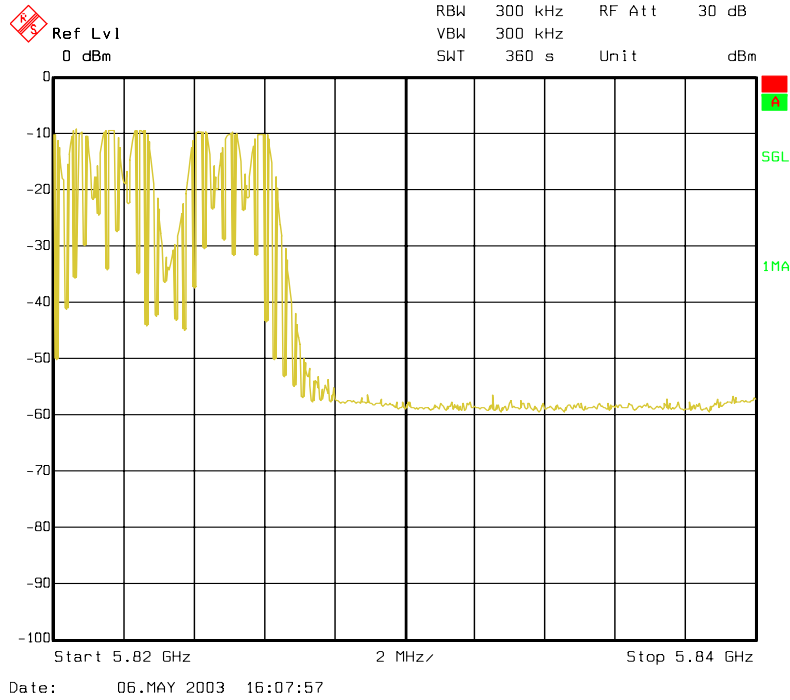


Band 3 Showing 23 Channels



Band 4 Showing 19 Channels

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

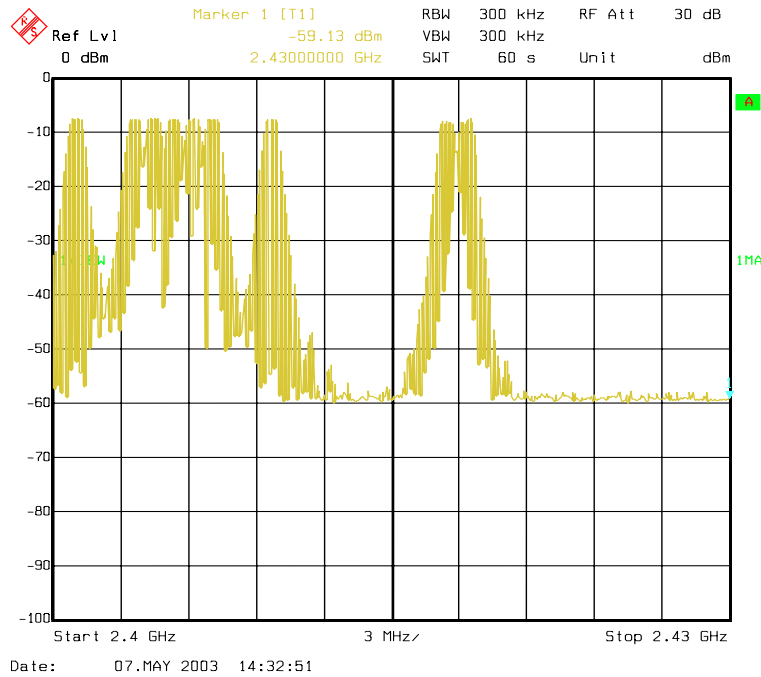


Band 5 Showing 6 Channels

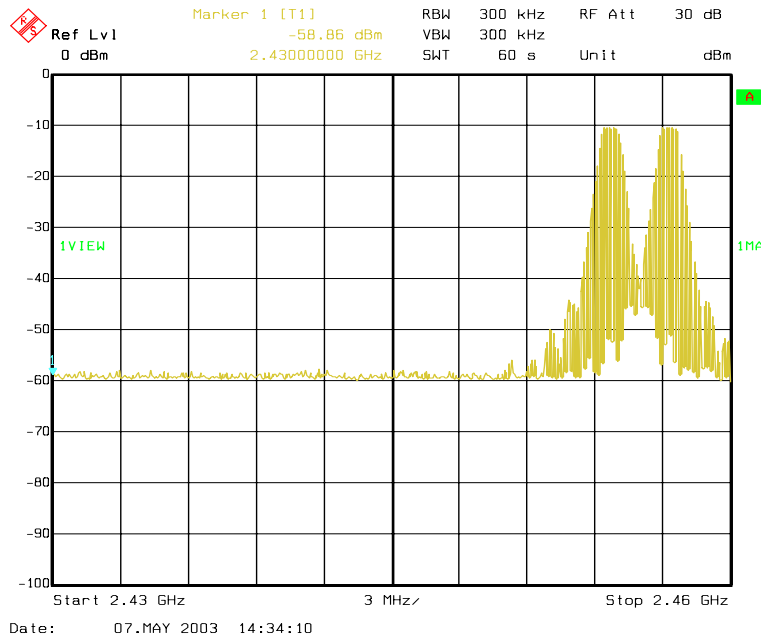
85 channels total

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

Handset

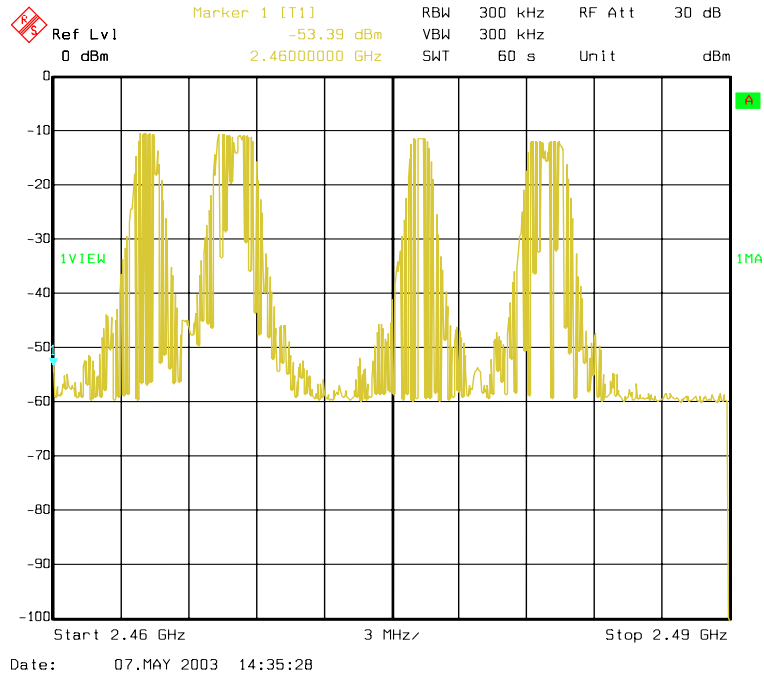


Lower band showing 9 Channels



Middle band showing 2 Channels

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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

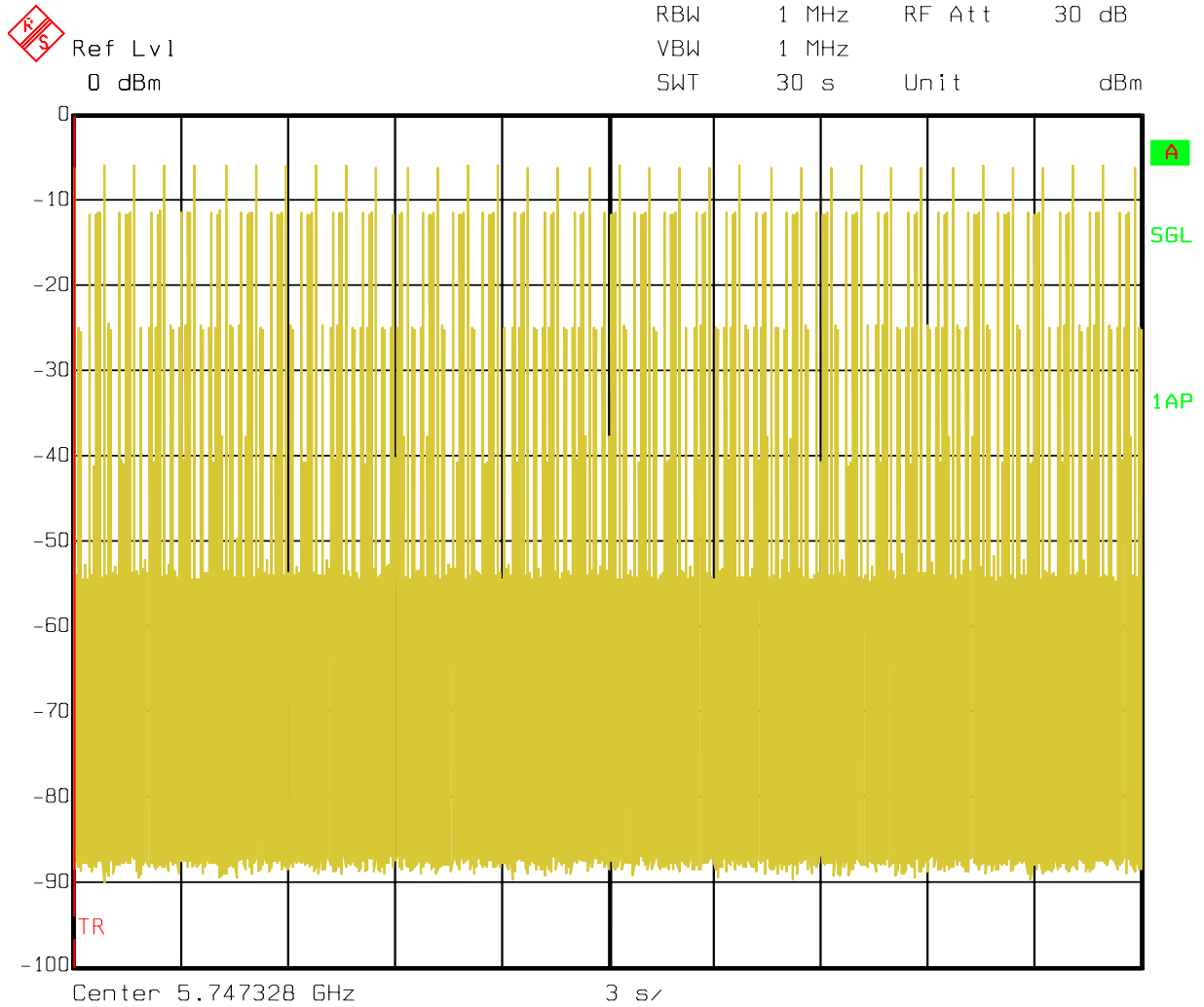
Measurement Data: Maximum Dwell Time On Any Channel:
See Plots.

Base: 28.74mS
Handset: 148.14mS

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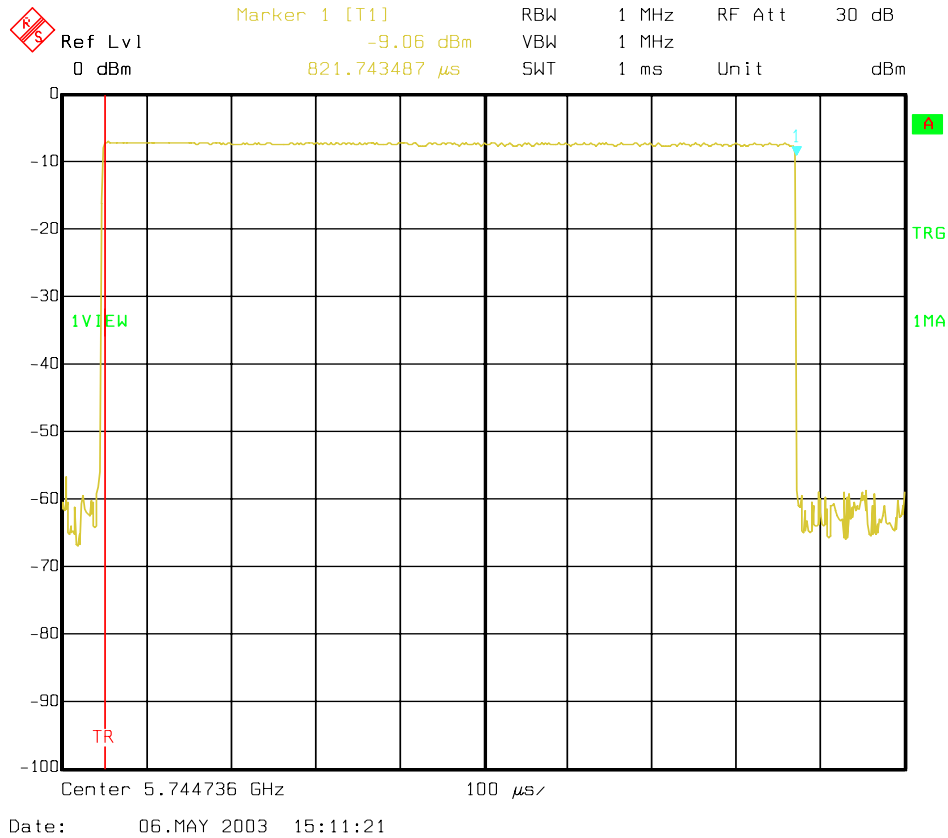
Time Of Occupancy Plots.

Base



Date: 06.MAY 2003 15:14:40

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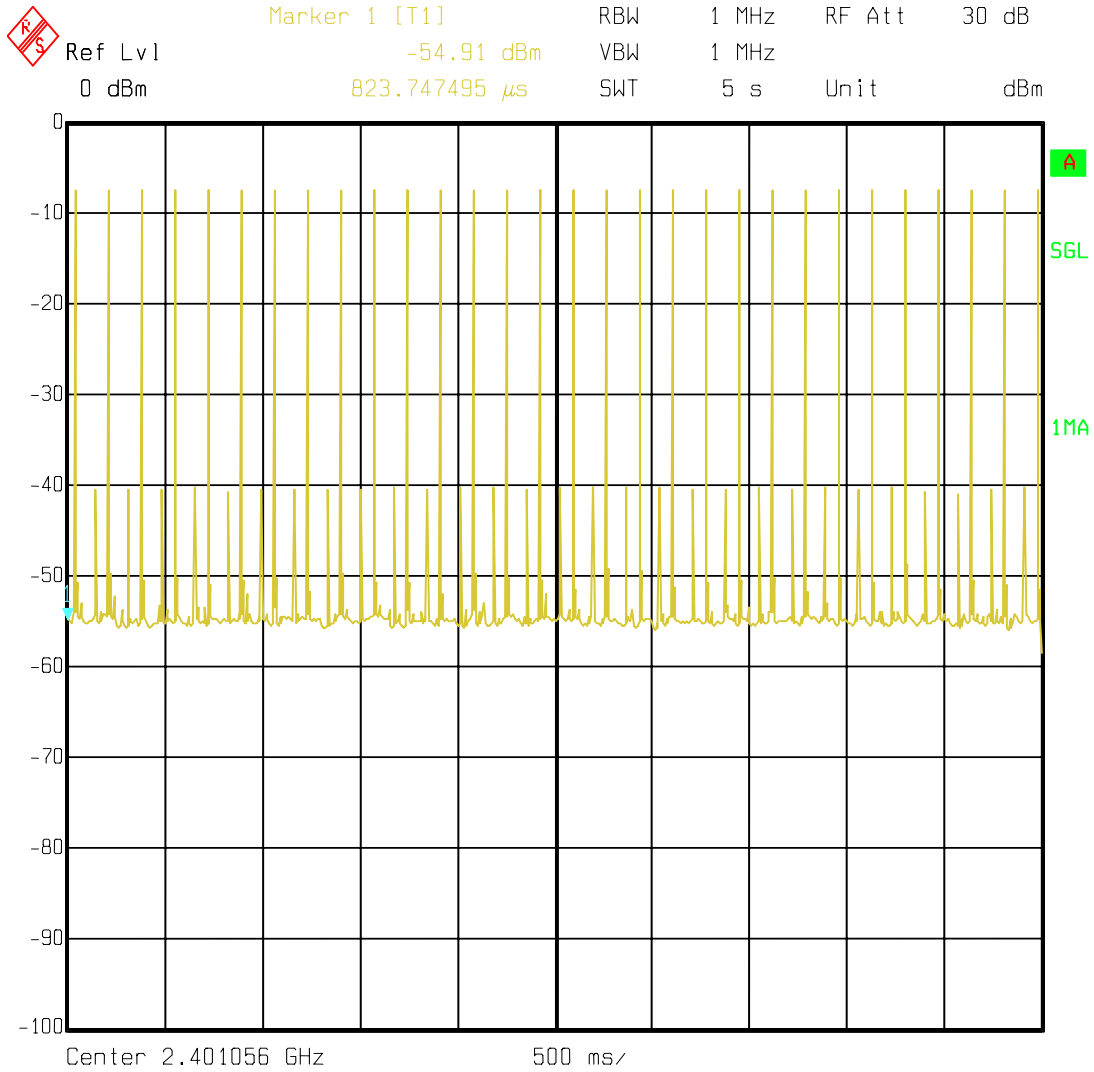
Active Slot showing 821us On-Time

Time of Occupancy showing 35 hits per 30sec

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

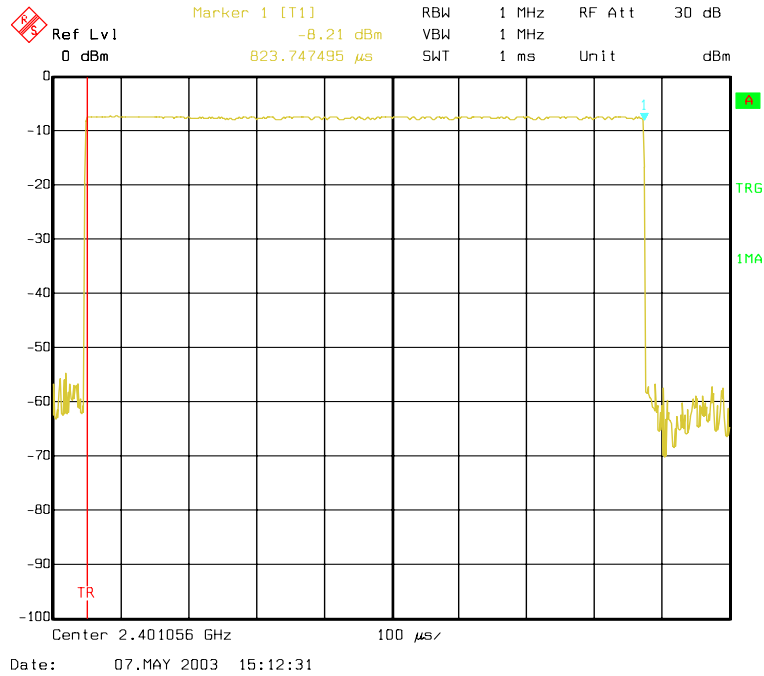
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

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

$$(30 * 6) * 0.823 = 148.14ms$$

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 & Daxesh Thakker	Date of Test: 2 April 2003, 9 June 2004
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Test Results: Complied

Measurement Data: See Plots

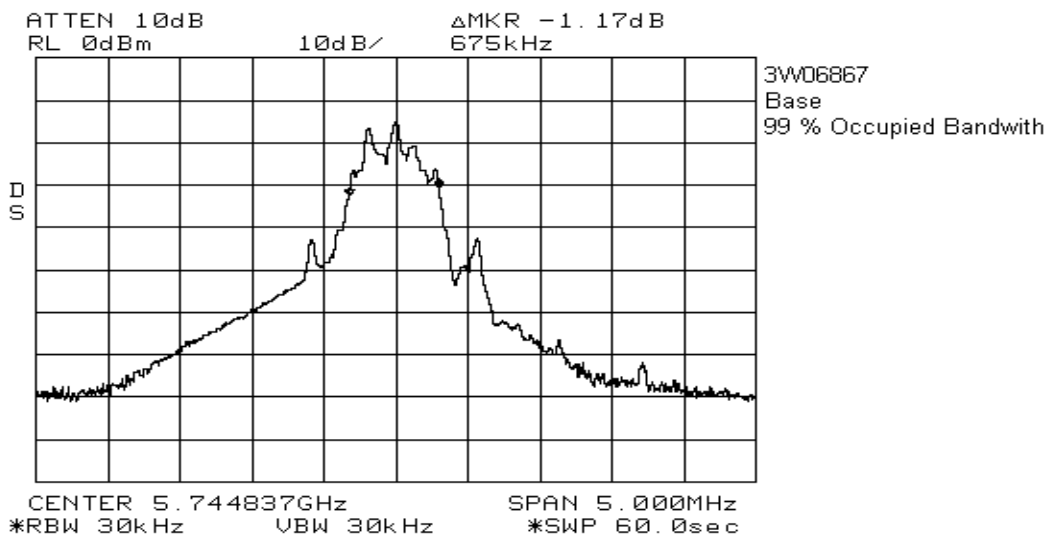
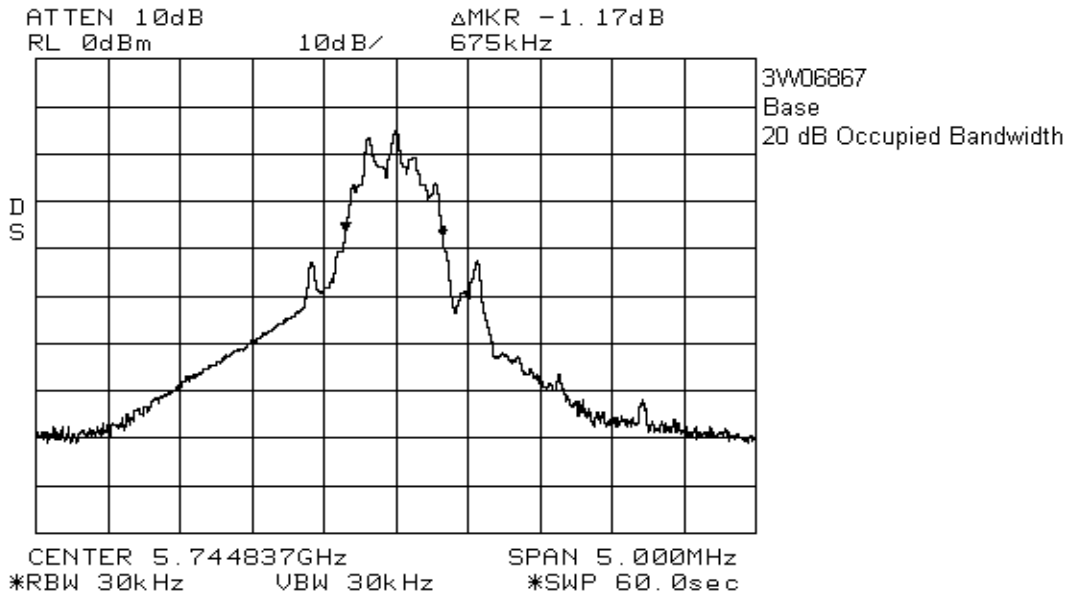
Base:
99%: 683kHz
20 dB: 683kHz

Handset
99%: 708kHz
20 dB: 692kHz

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

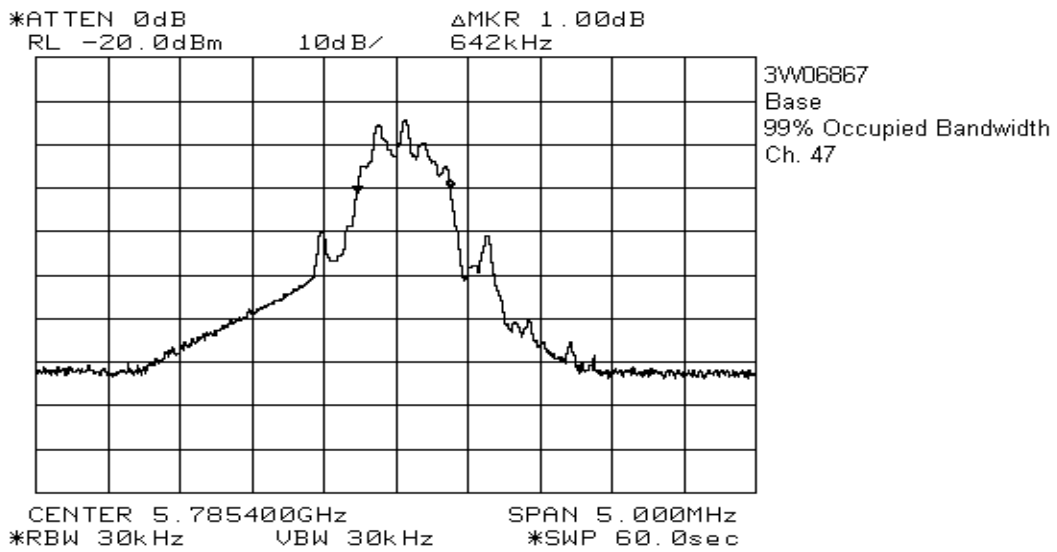
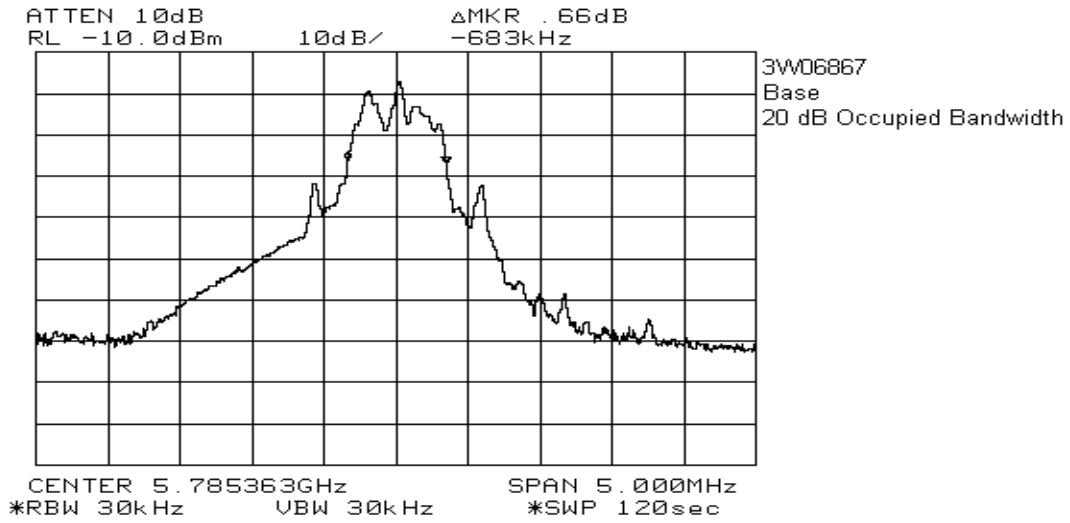
Occupied Bandwidth Plots:

Base, Low Channel



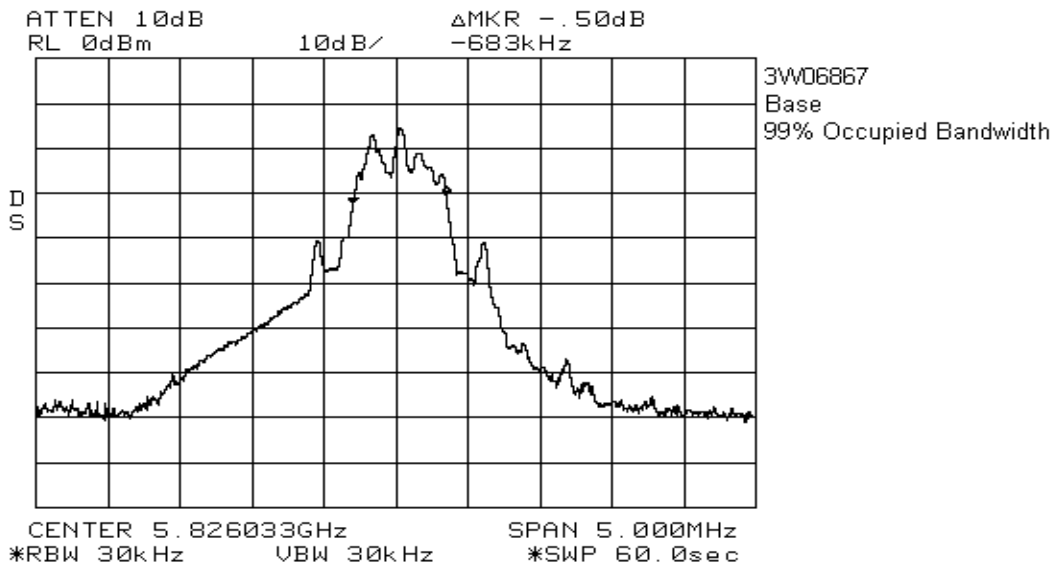
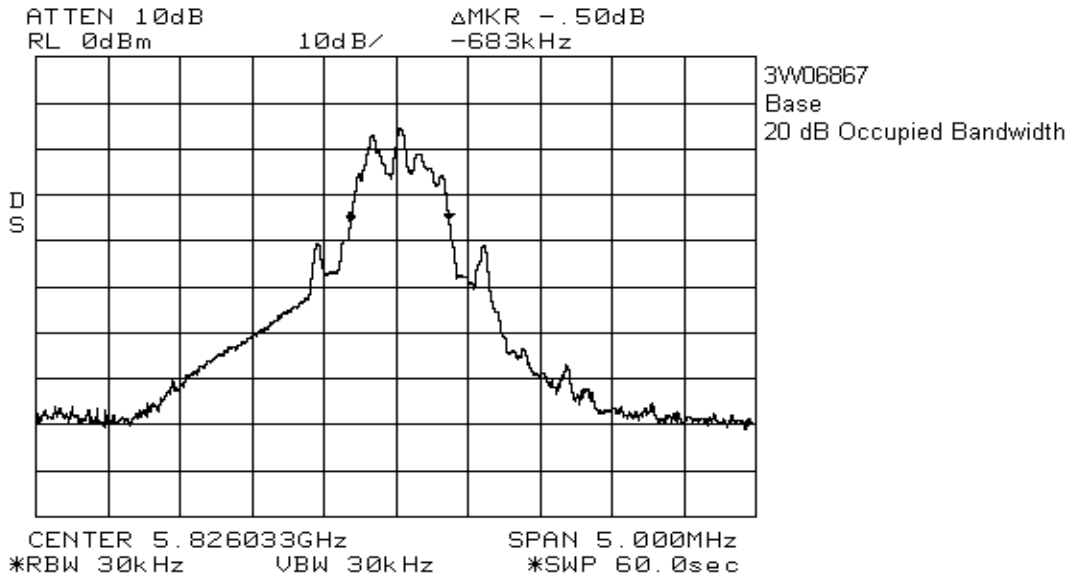
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
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Mid. Channel



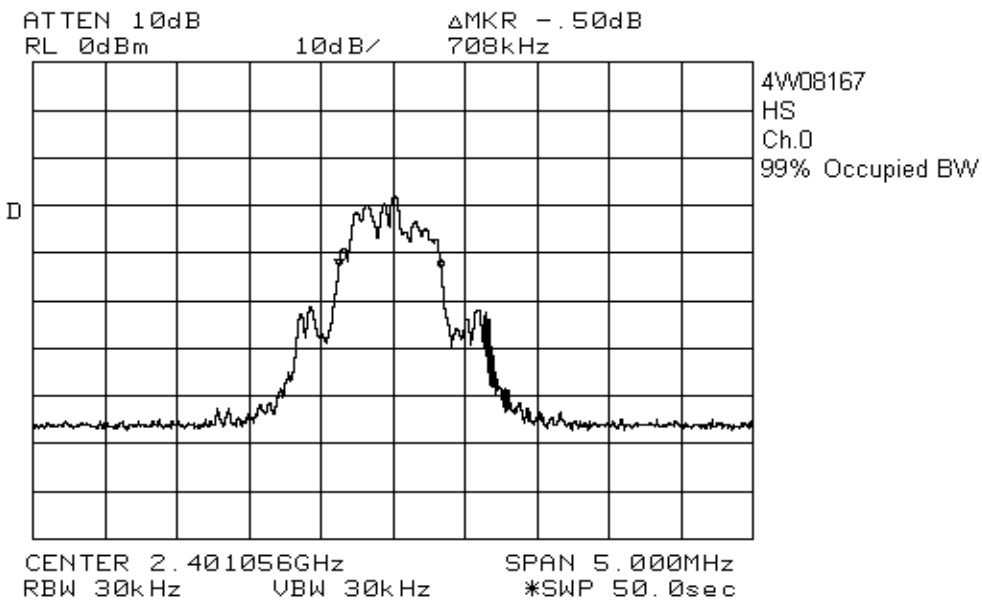
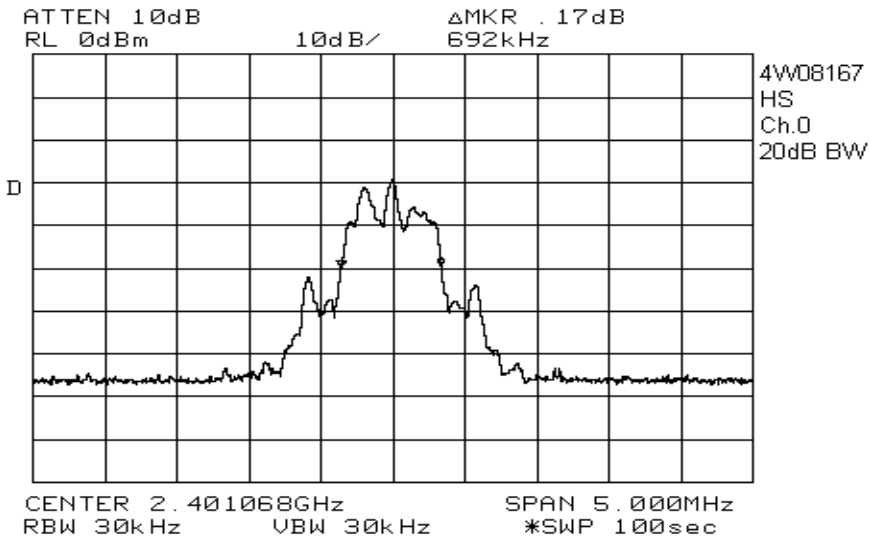
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

High Ch.



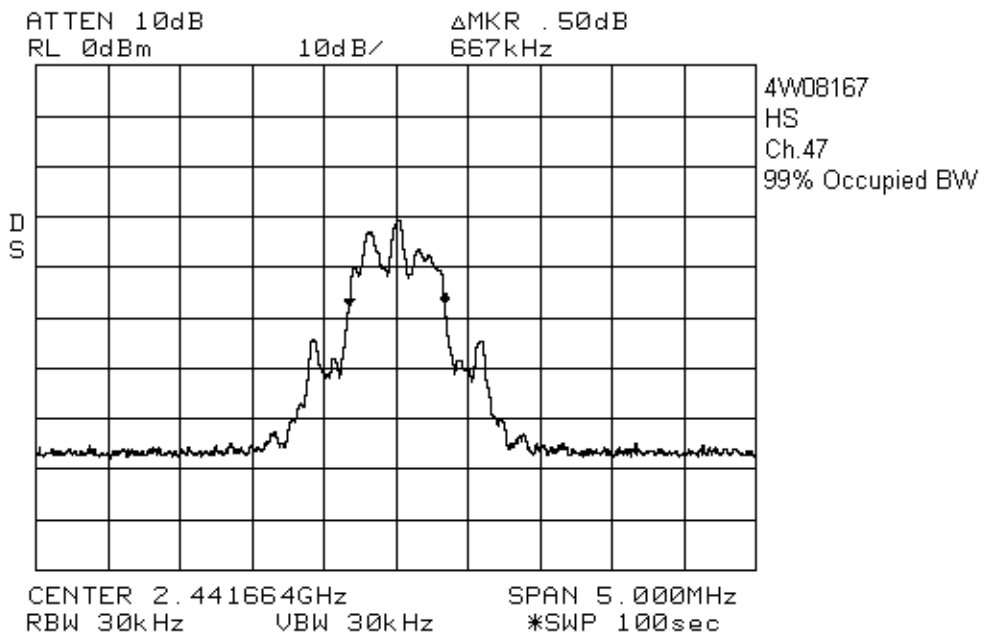
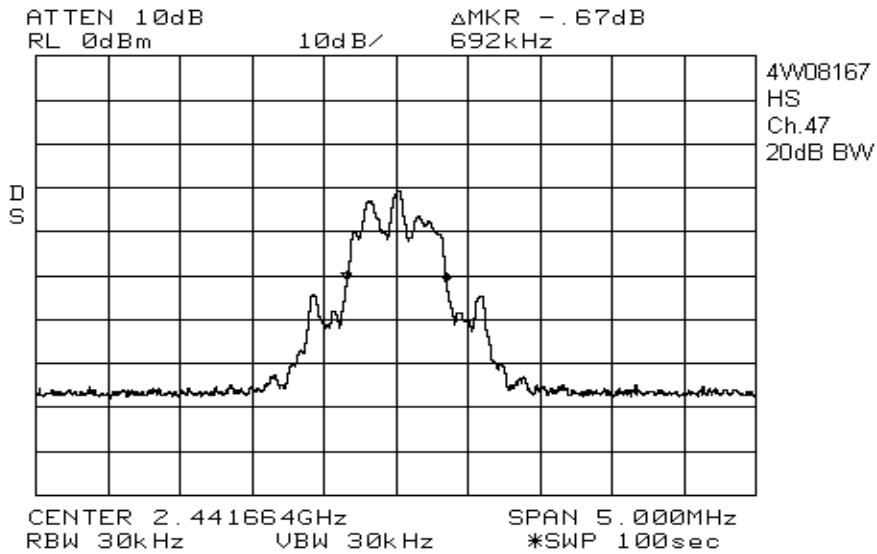
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
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Handset
Low Ch.



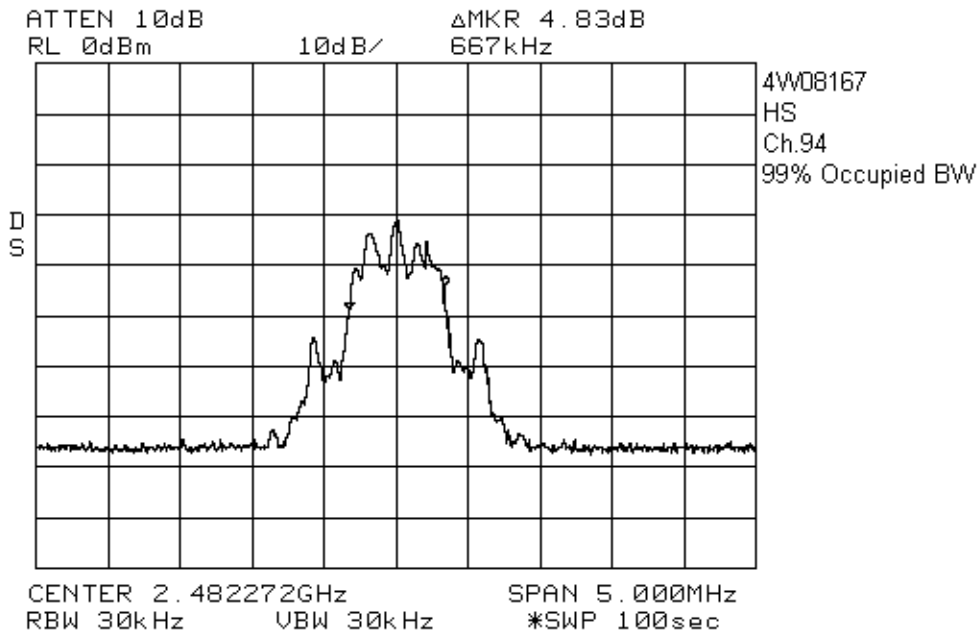
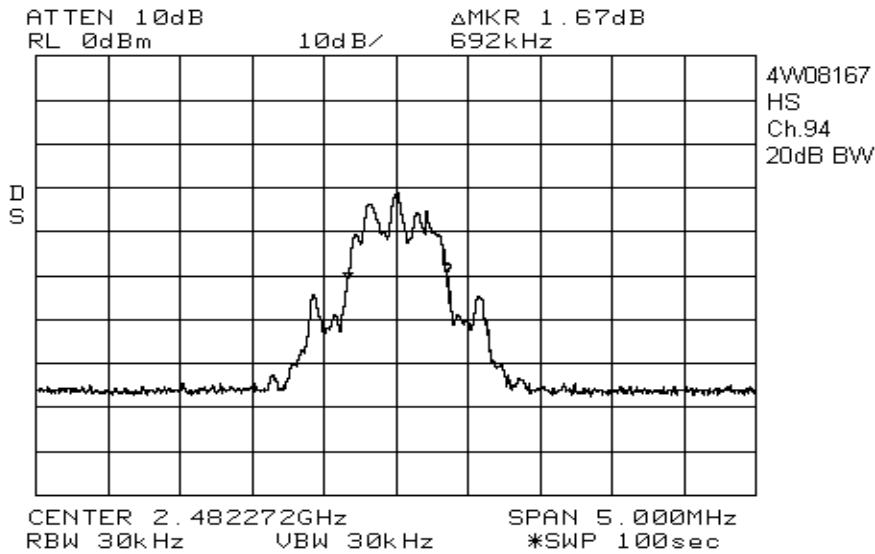
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

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: Daxesh Thakker	Date of Test: 9 June 2004 & 20,27 July 2004
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Test Results: Complies. The maximum peak power output of the transmitter is
 $P = \{E^2R^2/30G\}$ where

	E, V/mtr @ 3m	R, mtr	G
Base	1.84	3	1.26
Handset	0.609	3	1.26

Base = 0.807W, 29.1dBm
 Handset = 0.0885W, 19.47dBm

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 axes 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: 125.3 dBµV/m @ 3m or 1.84 V/m @ 3m.

Handset (worst Case)
 Field Strength: 115.7 dBµV/m @ 3m or 0.609 V/m @ 3m.

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

Radiated Disturbance Test Data:

Test Date: 20 July 2004							
Engineer's Name: Daxesh Thakker							
Base Station fundamental							
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	79.9	34.7	N/A	9.8	124.1
5744.8280	Horn1	H	76.5	34.5	N/A	9.8	120.9
5826.1900	Horn1	V	80.5	34.7	N/A	10.3	125.3
5826.1900	Horn1	H	76.0	34.6	N/A	10.3	121.0
5785.4900	Horn1	V	77.3	34.7	N/A	10.1	121.8
5785.4900	Horn1	H	76.5	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: 27 July, 2004							
Engineer's Name: Daxesh Thakker							
Handset fundamental							
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)
2441.6640	Horn2	V	75.3	28.9	N/A	5.3	109.5
2441.6640	Horn2	H	80.2	28.9	N/A	5.3	114.4
2401.0560	Horn2	V	74.8	28.8	N/A	4.8	108.5
2401.0560	Horn2	H	82.0	28.9	N/A	4.8	115.7
2482.2370	Horn2	V	73.2	28.9	N/A	5.9	108.0
2482.2370	Horn2	H	76.7	28.9	N/A	5.9	111.5
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: Daxesh Thakker	Date of Test: 9, 18 June, 2004 20,27 July 2004
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Test Results: Complied.

The worst-case emission level is 53 dB μ V/m @3m at 7203.68 MHz. This is 1.0 dB below the specification limit.

Measurement Data: See attached table.

This EUT was searched in 3 orthogonal axes 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: $20\text{Log}\{(10 \times 4 \times 0.801)/100\} = -9.9\text{dB}$.

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

Radiated Disturbance Test Data: Digital Emissions - Base & Handset – Off hook

Test Date: 18 June, 2004											
Engineer's Name: Daxesh Thakker											
Temperature (C°): 22						Humidity %: 35					
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.
217.7280	BC1	V	25.0	15.5	N/A	1.8	42.3	46.0	3.7	Q-Peak	None
217.7280	BC1	H	26.8	15.0	N/A	1.8	43.6	46.0	2.4	Q-Peak	None
238.4640	BC1	V	25.4	16.2	N/A	2.0	43.6	46.0	2.4	Q-Peak	None
238.4640	BC1	H	27.5	15.4	N/A	2.0	44.9	46.0	1.1	Q-Peak	None
259.2000	BC1	V	25.1	16.8	N/A	2.1	44.0	46.0	2.0	Q-Peak	None
259.2000	BC1	H	26.5	16.2	N/A	2.1	44.8	46.0	1.2	Q-Peak	None
279.9340	BC1	V	25.5	16.8	N/A	2.0	44.3	46.0	1.7	Q-Peak	None
279.9340	BC1	H	26.0	17.0	N/A	2.0	45.0	46.0	1.0	Q-Peak	None
331.7740	LP1	V	23.0	14.6	N/A	2.3	39.9	46.0	6.1	Q-Peak	None
331.7740	LP1	H	25.5	15.2	N/A	2.3	43.0	46.0	3.0	Q-Peak	None
404.3500	LP1	V	24.2	16.1	N/A	2.6	42.9	46.0	3.1	Q-Peak	None
404.3500	LP1	H	25.2	16.3	N/A	2.6	44.1	46.0	1.9	Q-Peak	None
425.0880	LP1	V	24.4	16.1	N/A	2.7	43.2	46.0	2.8	Q-Peak	None
425.0880	LP1	H	25.0	16.5	N/A	2.7	44.1	46.0	1.9	Q-Peak	None
611.7080	LP1	V	17.3	19.3	N/A	3.3	39.9	46.0	6.1	Q-Peak	None
611.7080	LP1	H	16.0	20.1	N/A	3.3	39.4	46.0	6.6	Q-Peak	None
622.0780	LP1	V	16.0	19.8	N/A	3.3	39.1	46.0	6.9	Q-Peak	None
622.0780	LP1	H	13.7	20.3	N/A	3.3	37.3	46.0	8.7	Q-Peak	None
1406.000	Horn1	V	52.0	26.5	46.6	3.3	35.3	54.0	18.7	Peak	1-2GHz
1406.000	Horn1	H	52.3	26.5	46.6	3.3	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: 27 July, 2004											
Engineer's Name: Daxesh Thakker											
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	Horn2	V	74.3	33.6	55.2	-9.9	8.0	50.8	54.0	3.2	4-8GHz
4805.0600	Horn2	H	74.6	33.9	55.2	-9.9	8.1	51.4	54.0	2.6	4-8GHz
7203.8500	Horn2	V	68.2	36.6	56.0	-9.9	11.2	50.1	54.0	3.9	4-8GHz
7203.6800	Horn2	H	70.8	36.9	56.0	-9.9	11.3	53	54.0	1.0	4-8GHz
Ch. 47											
4882.8800	Horn2	V	71.5	33.8	54.9	-9.9	8.4	48.9	54.0	5.1	4-8GHz
4882.8800	Horn2	H	75.2	34.1	54.9	-9.9	8.4	52.8	54.0	1.2	4-8GHz
7325.5100	Horn2	V	67.2	36.7	56.0	-9.9	10.3	48.3	54.0	5.7	4-8GHz
7324.5700	Horn2	H	68.8	36.9	56.0	-9.9	10.3	50.1	54.0	3.9	4-8GHz
Ch. 94											
4964.5400	Horn2	V	68.9	34.1	54.6	-9.9	9.5	47.9	54.0	6.1	4-8GHz
4964.5400	Horn2	H	71.1	34.3	54.6	-9.9	9.5	50.3	54.0	3.7	4-8GHz
7446.2000	Horn2	V	67.6	36.8	56.0	-9.9	11.1	49.6	54.0	4.4	4-8GHz
7446.4000	Horn2	H	69.5	37.0	56.0	-9.9	11.1	51.7	54.0	2.3	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 Note 3: The EUT was searched up to 10th harmonic of the fundamental											
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: 20 July 2004										
Engineer's Name: Daxesh Thakker										
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)	Passband filter Loss (dB)	Duty Cycle Corr. (-dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)
Low Ch.										
11489.47	Hrn 1	V	61	40.9	38.8	2.7	20	45.8	54	8.2
11489.47	Hrn 1	H	57.17	40.9	38.8	2.7	20	42	54	12
17234.21	Hrn 1	V	56.17	43.5	38.5	2.2	20	43.37	54	10.6
17234.21	Hrn 1	H	54.83	43.5	38.5	2.2	20	42	54	12
22978.94	Hrn 5	V	55.3	45.7	39.3	0	20	41.7	54	12.3
22978.94	Hrn 5	H	53	45.7	39.3	0	20	39.4	54	14.6
28723.68	Hrn 5	V	35.8	46.5	29.8	0	20	32.5	54	21.5
28723.68	Hrn 5	H	33	46.5	29.8	0	20	29.7	54	24.3
34468.42	Hrn 5	V	34.5	49.2	29.6	0	20	34.1	54	19.9
34468.42	Hrn 5	H	35.8	49.2	29.6	0	20	35.4	54	18.6
Mid Ch.										
11570.69	Hrn 1	V	62.33	40.9	38.8	2.7	20	47.13	54	6.87
11570.69	Hrn 1	H	58.33	40.9	38.8	2.7	20	43.13	54	10.87
17356.03	Hrn 1	V	58.67	43.5	38.5	2.2	20	45.87	54	8.13
17356.03	Hrn 1	H	56.33	43.5	38.5	2.2	20	43.53	54	10.47
23141.38	Hrn 5	V	55	45.7	39.3	0	20	41.4	54	12.6
23141.38	Hrn 5	H	50.3	45.7	39.3	0	20	36.7	54	17.3
28926.72	Hrn 5	V	42.5	46.5	29.8	0	20	39.2	54	14.8
28926.72	Hrn 5	H	38.6	46.5	29.8	0	20	35.3	54	18.7
34712.06	Hrn 5	V	33	49.2	29.6	0	20	32.6	54	21.4
34712.06	Hrn 5	H	36	49.2	29.6	0	20	35.6	54	18.4
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										
Note 3: The EUT was searched up to 10th harmonic of the fundamental										
Notes:		Measurement Receiver = H.P.8565E, RBW = 1MHz								

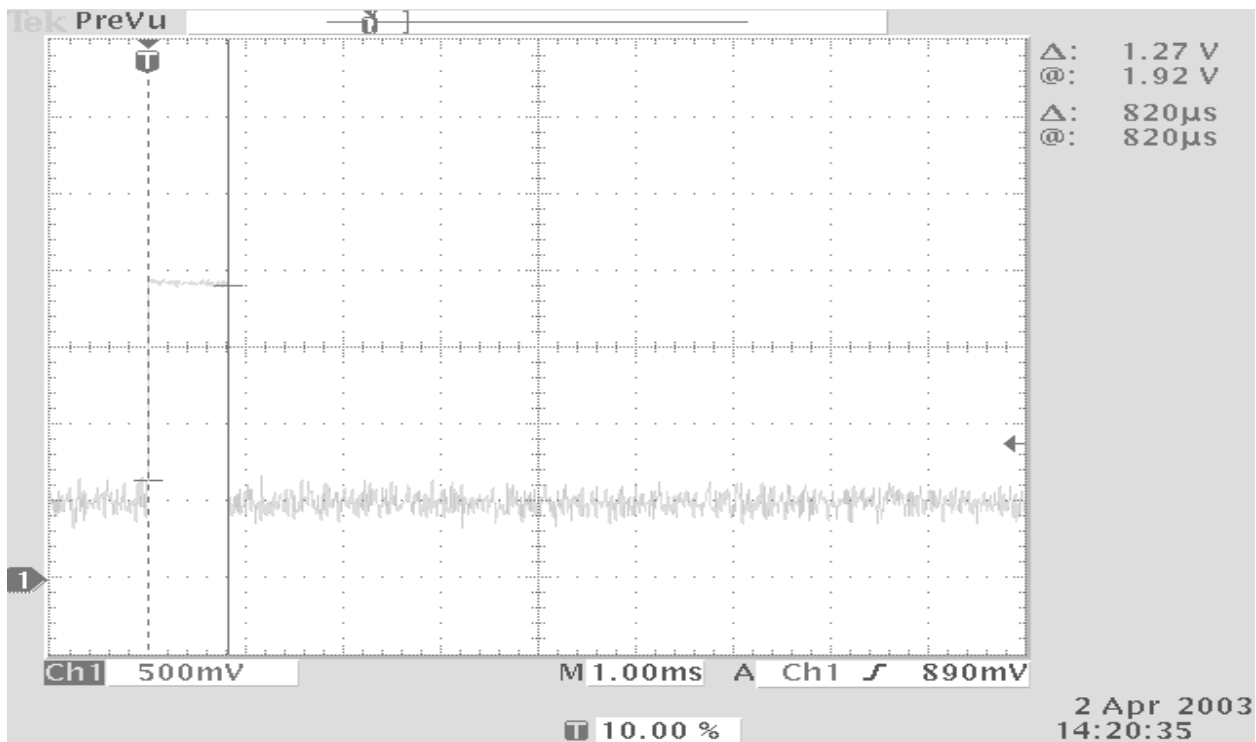
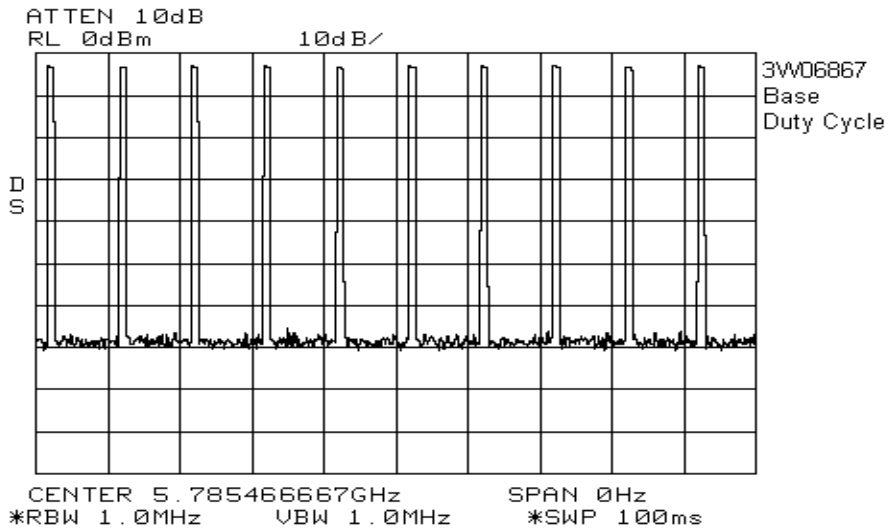
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
 FHSS Cordless Telephone

Test Date: 20 July 2004										
Engineer's Name: Daxesh Thakker										
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)	Passband filter Loss (dB)	Duty Cycle Corr. (-dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)
High Ch.										
11651.9	Hrn 1	V	61.5	40.9	38.8	2.7	20	46.3	54	7.7
11651.9	Hrn 1	H	55.83	40.9	38.8	2.7	20	40.63	54	13.37
17477.86	Hrn 1	V	57.33	43.5	38.5	2.2	20	44.53	54	9.47
17477.86	Hrn 1	H	54.5	43.5	38.5	2.2	20	41.7	54	12.3
23303.81	Hrn 5	V	54.2	45.7	39.3	0	20	40.6	54	13.4
23303.81	Hrn 5	H	52.3	45.7	39.3	0	20	38.7	54	15.3
29129.76	Hrn 5	V	34	46.5	29.8	0	20	30.7	54	23.3
29129.76	Hrn 5	H	36	46.5	29.8	0	20	32.7	54	21.3
34955.71	Hrn 5	V	34	49.2	29.6	0	20	33.6	54	20.4
34955.71	Hrn 5	H	39	49.2	29.6	0	20	38.6	54	15.4
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 Note 3: The EUT was searched up to 10th harmonic of the fundamental										
Notes:		Measurement Receiver = H.P.8565E, RBW = 1MHz								

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

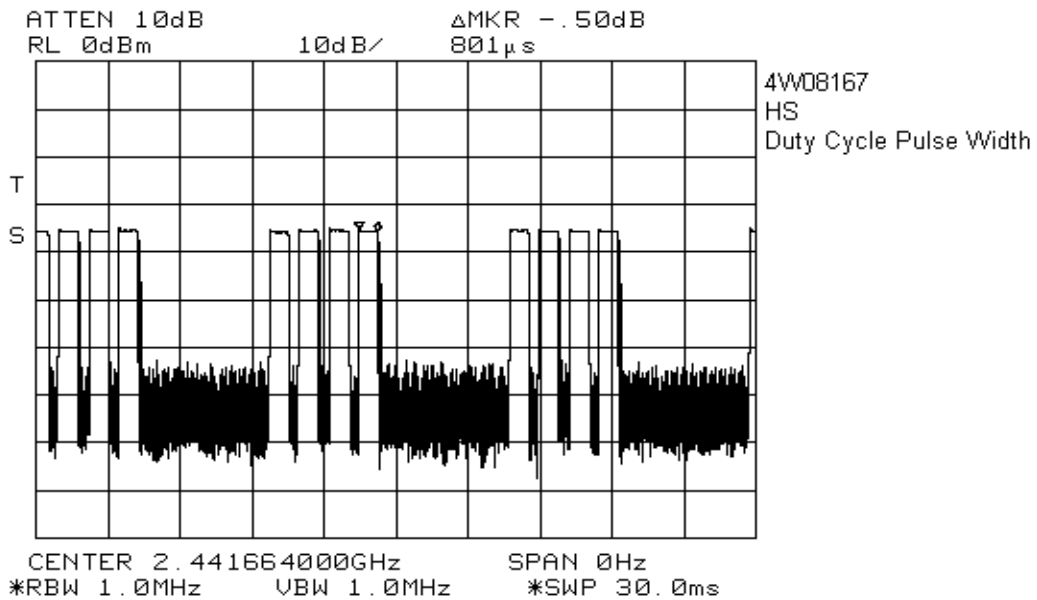
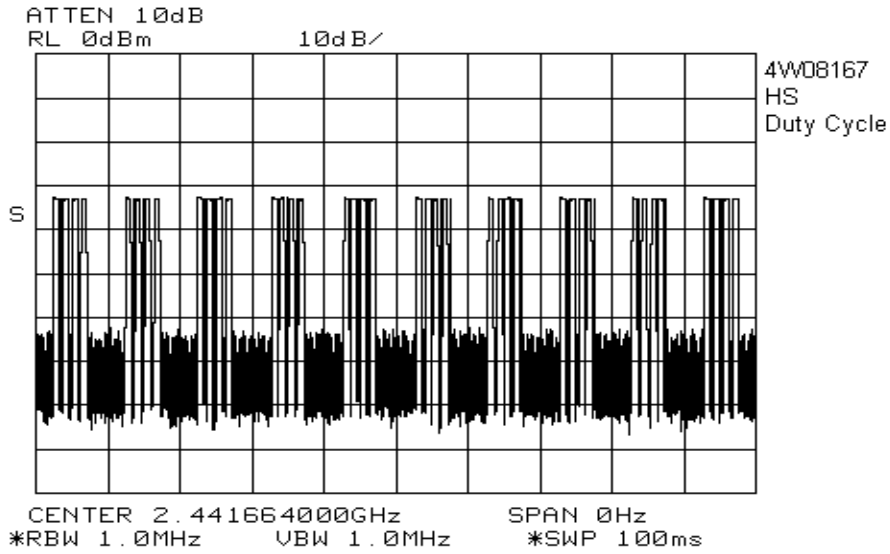
Duty Cycle Plots

Base



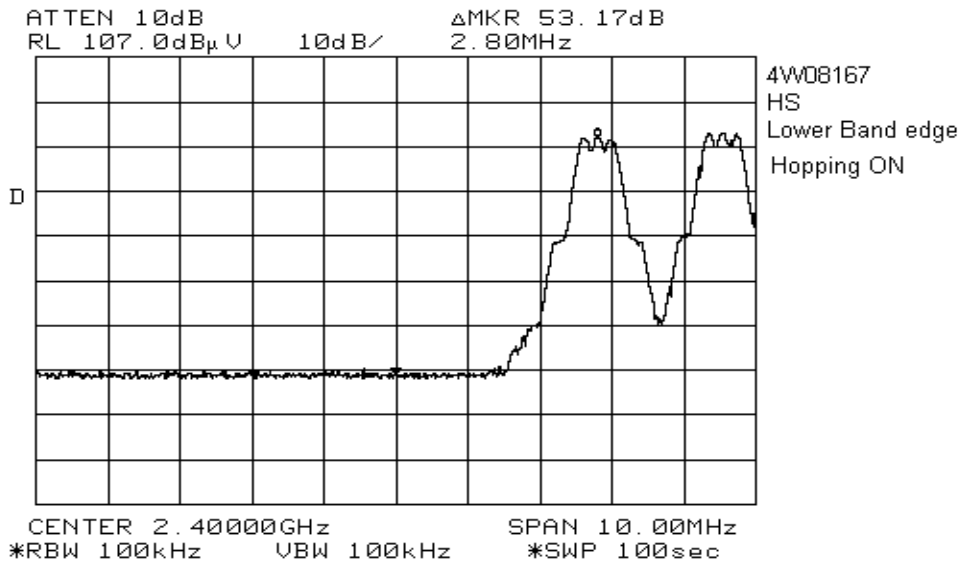
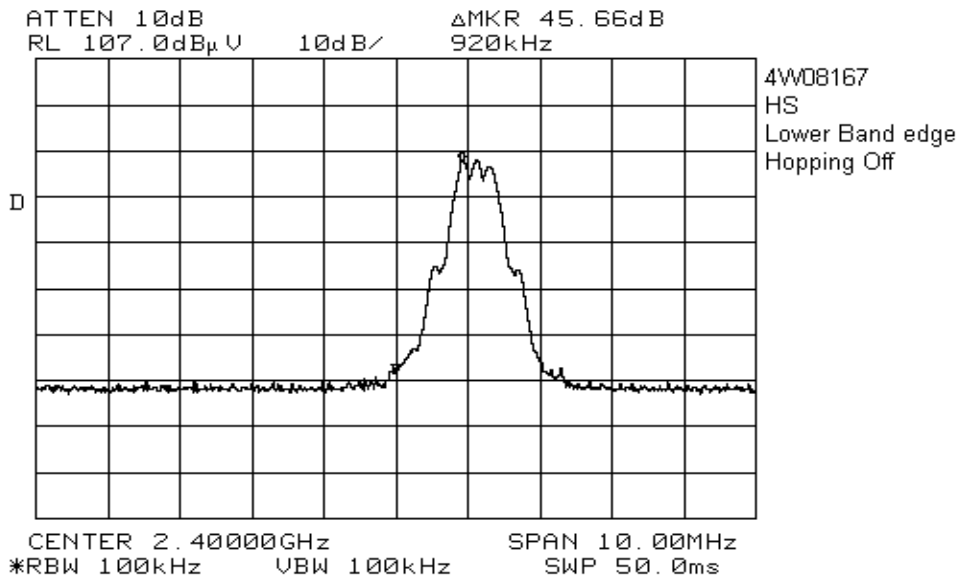
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Handset

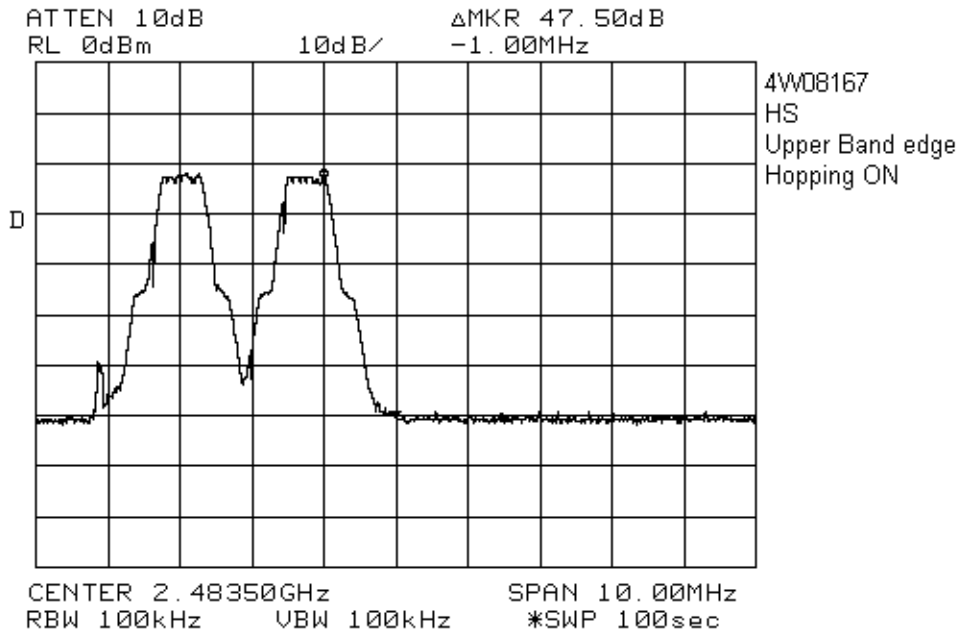
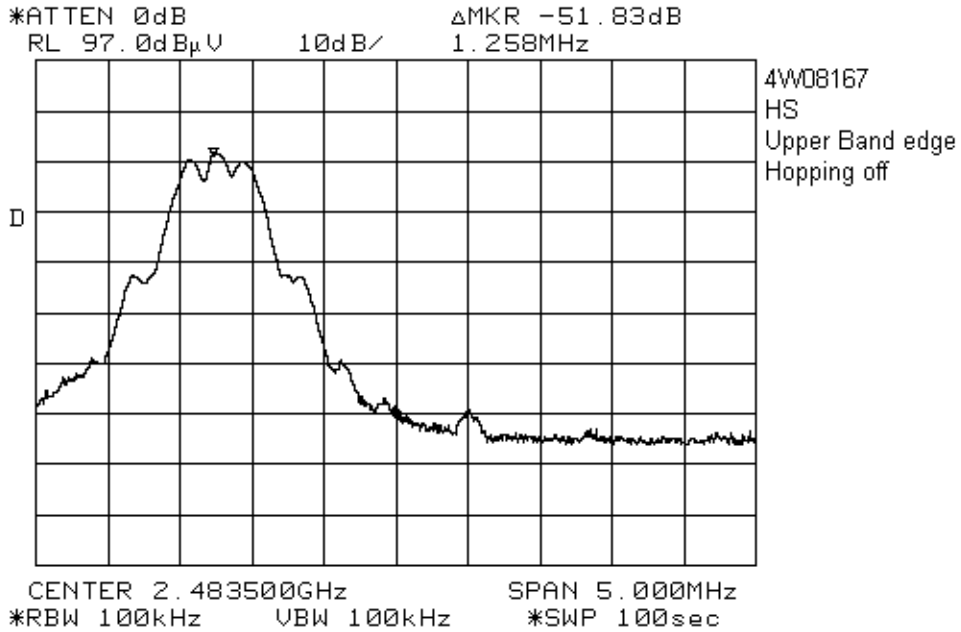


EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
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20 dB Band Edge
Handset

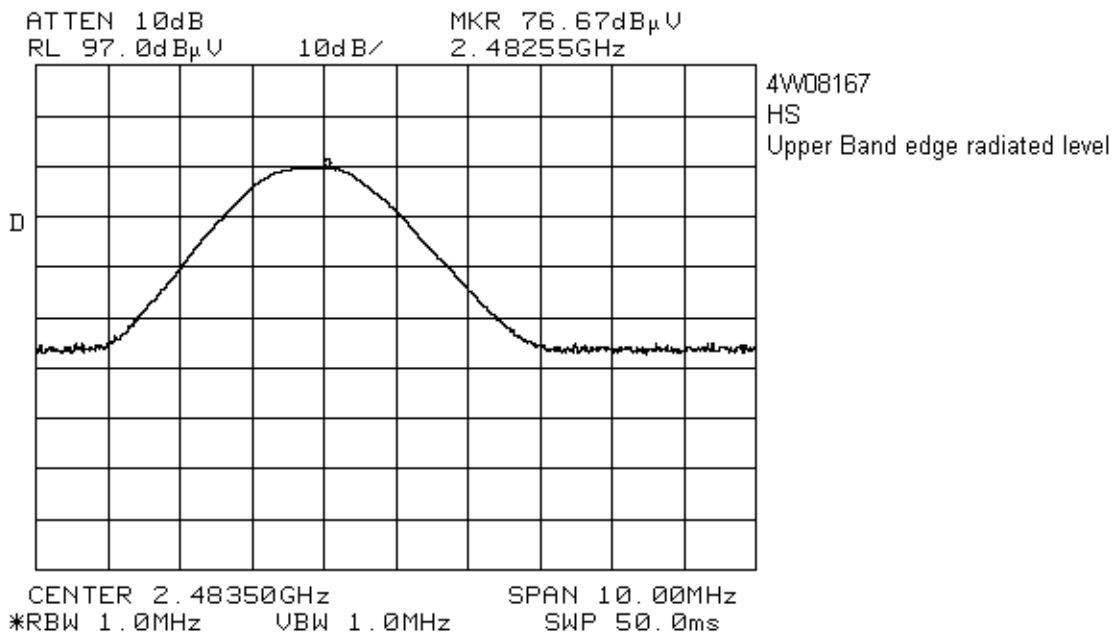


EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone



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

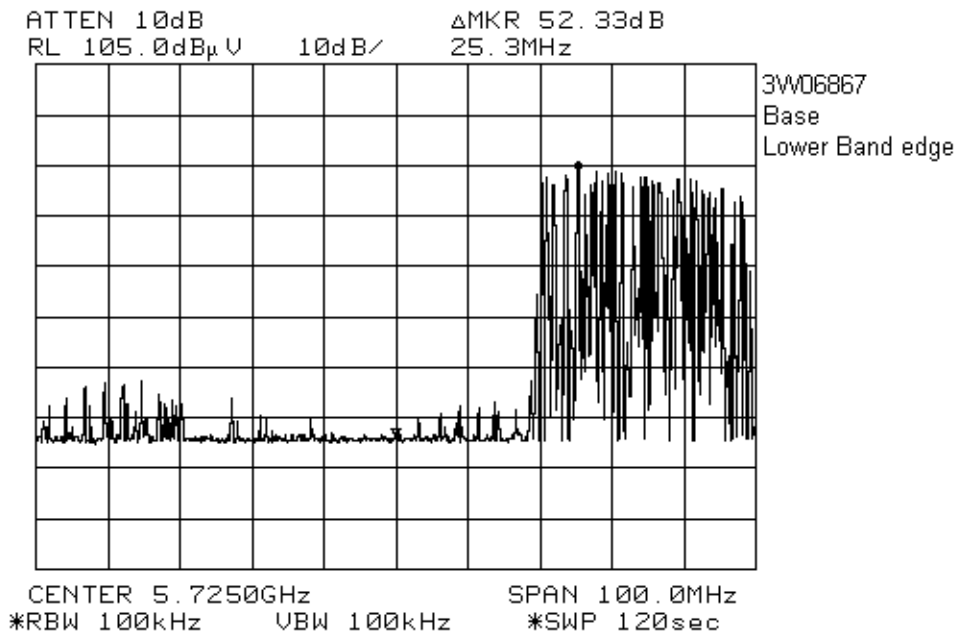
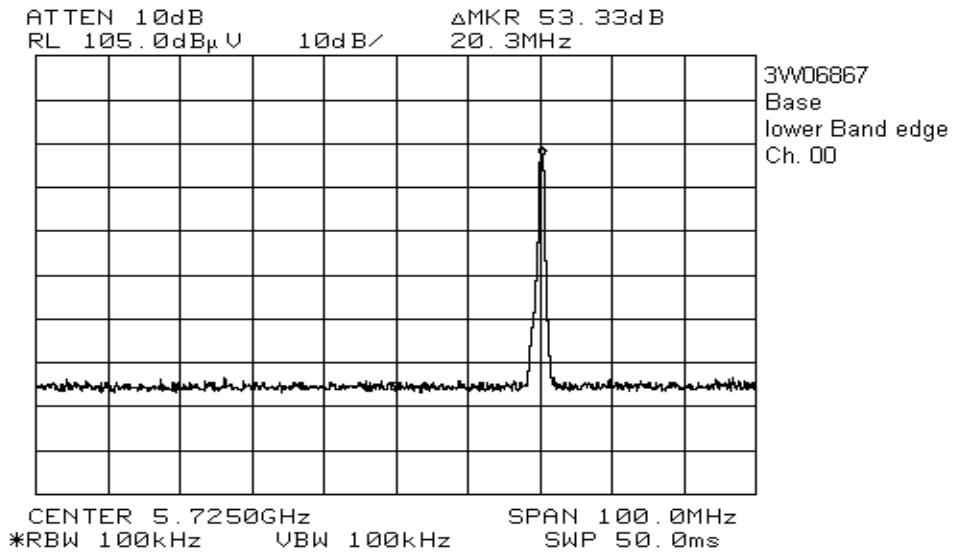
**Band Edge (Restricted Band)
Marker Delta Method calculation**



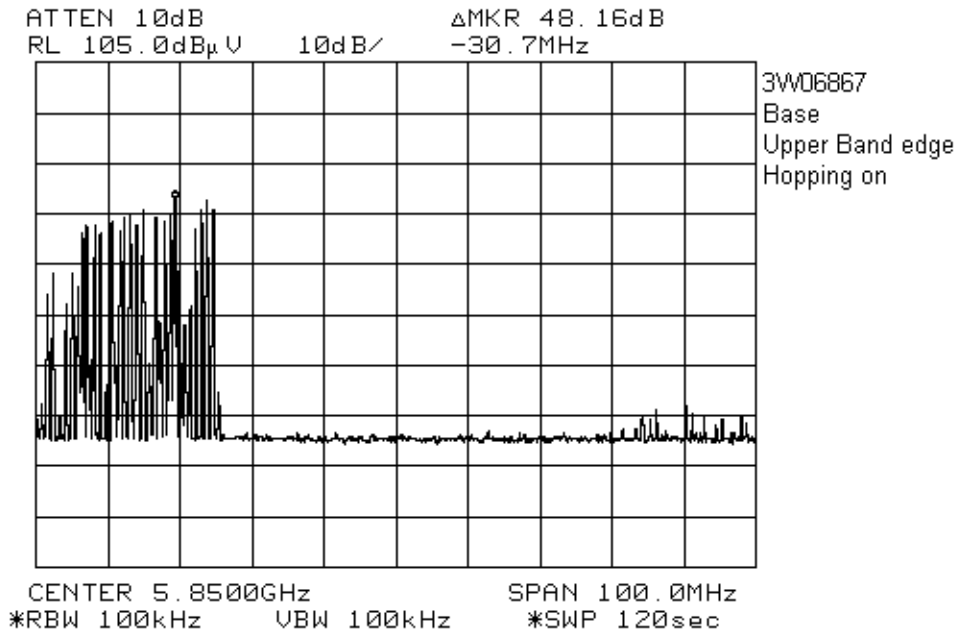
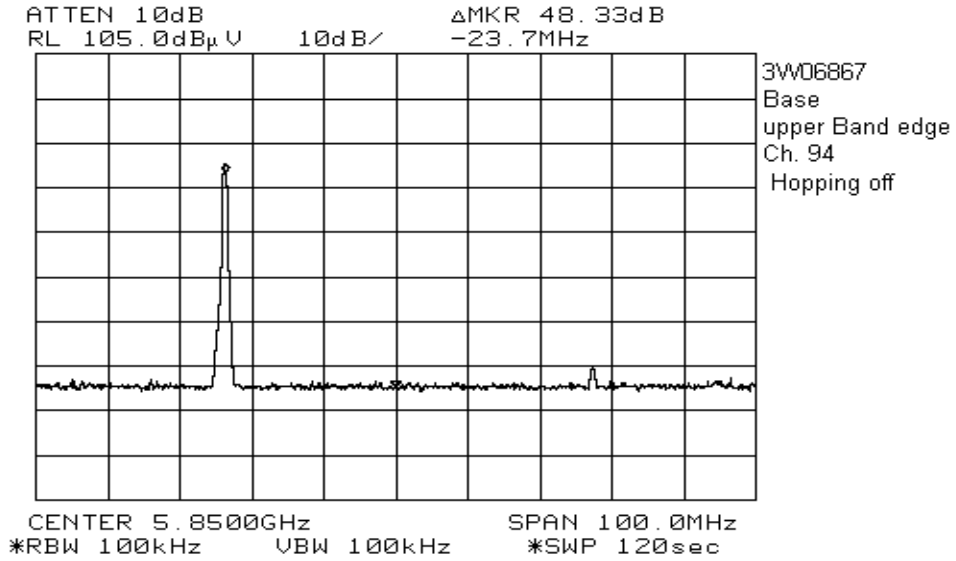
Peak Level, Band Edge = 76.7 dBuV + 28.9dB + 5.9 = 111.5dBuV @ 3m.
Peak Band Edge Level (Marker Delta): = 111.5 – 51.83 = 59.67dBuV/m at 3 m.
Average = 59.67 – 9.9 = 49.77 dBuV/m @ 3m.
Limit is 54 dBuV/m @ 3m.

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

20dB Band Edge, Base



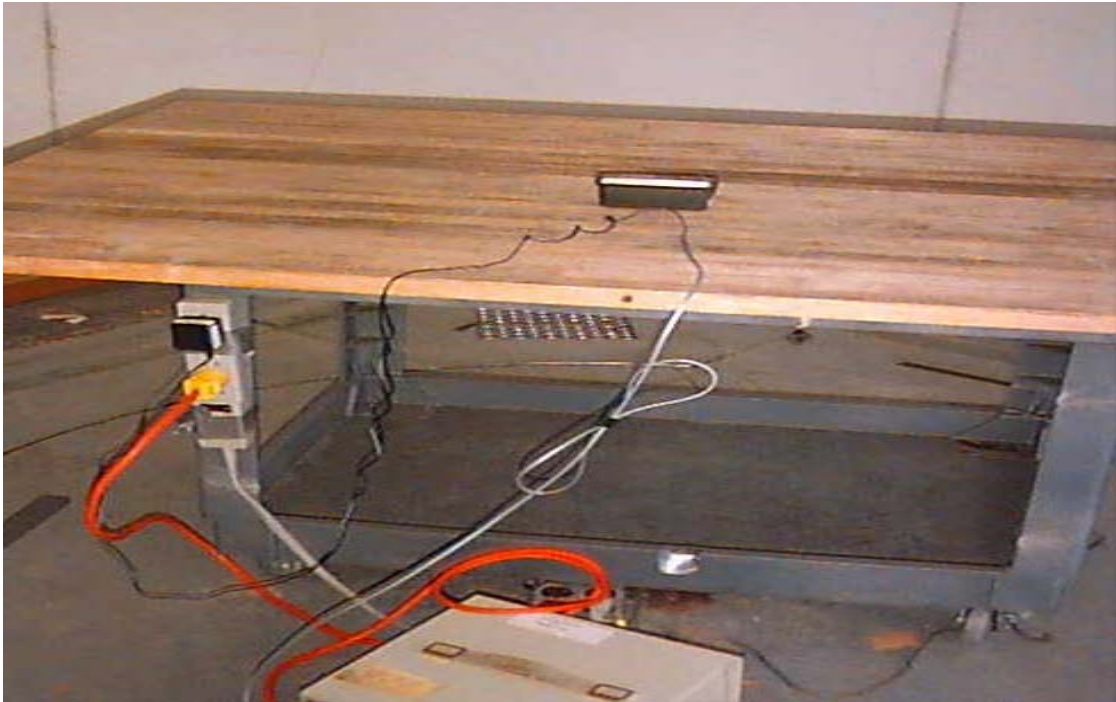
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone



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

Set-up Photo:

Base

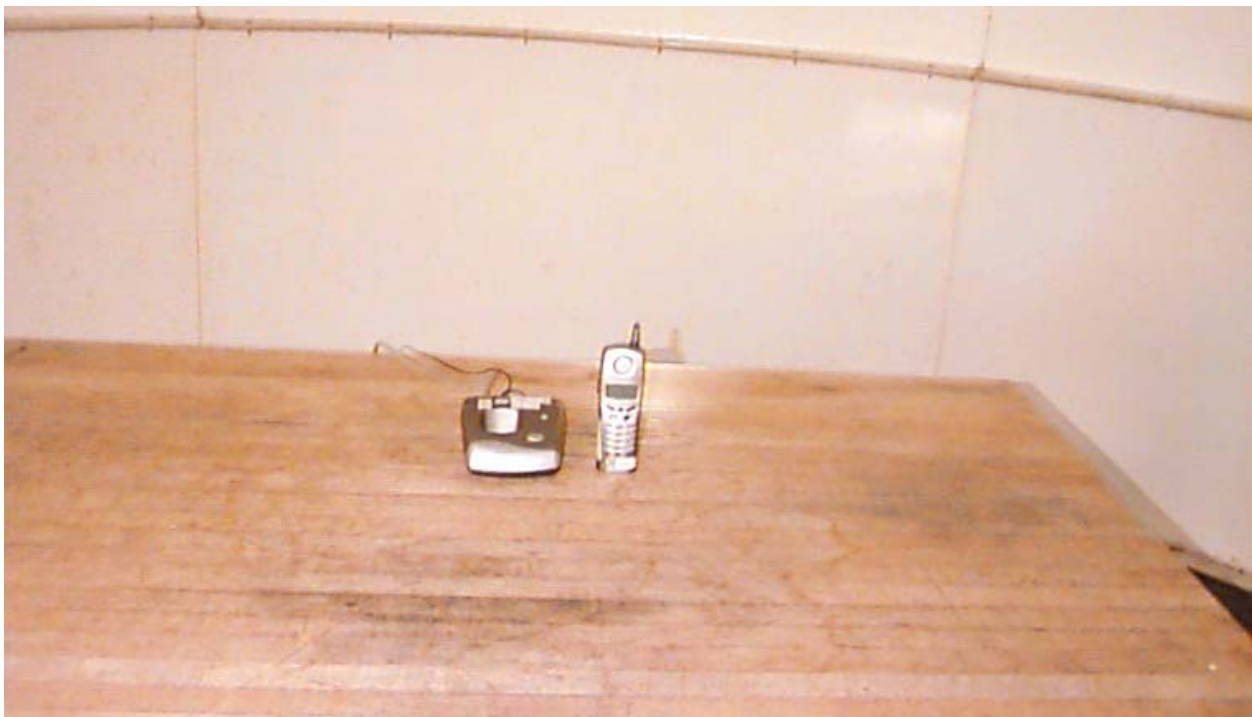


EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

Handset



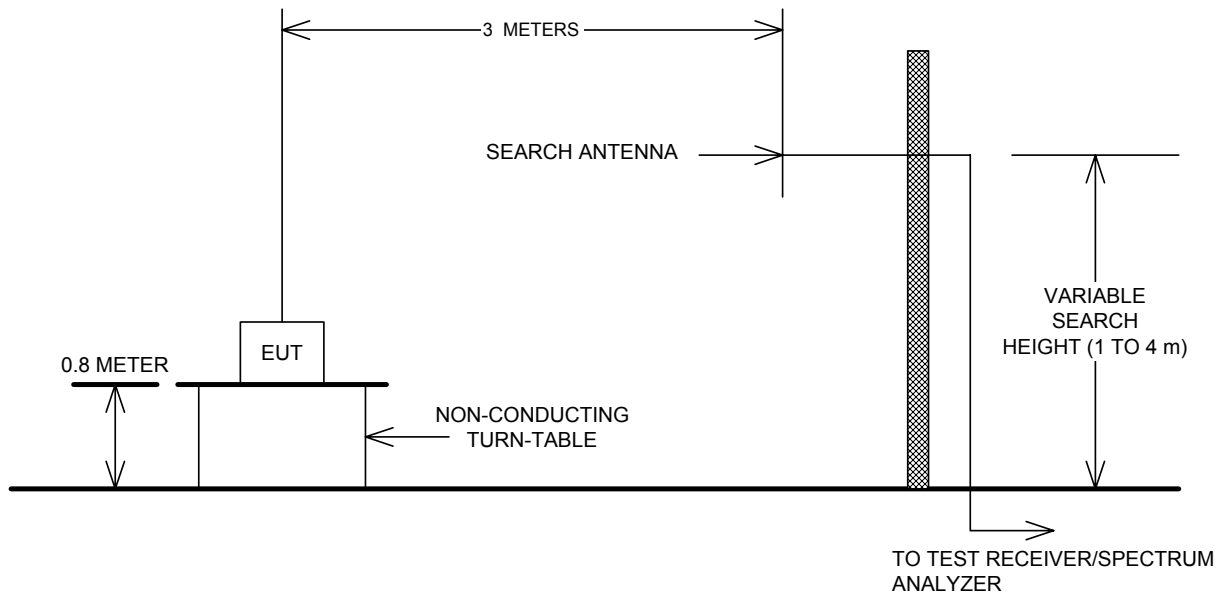
Setup photo - Digital Emissions – Off Hook



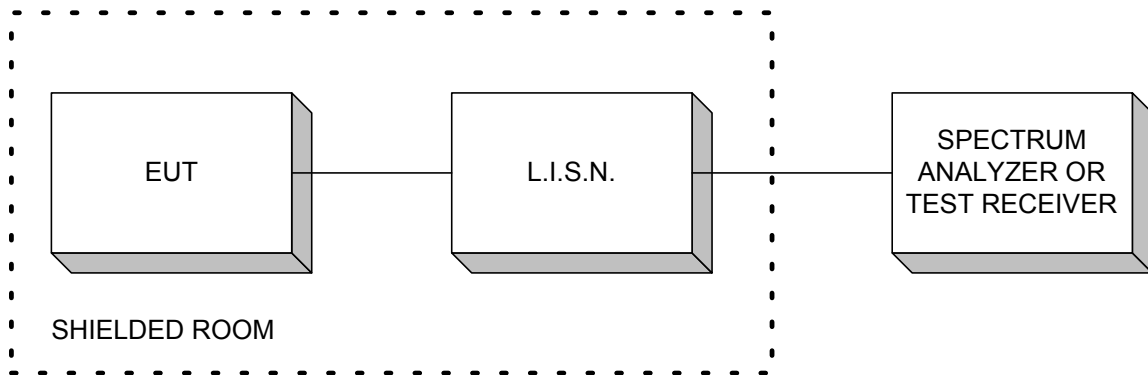
EQUIPMENT: VTECH 5825 & VTECH 5850, 5.8/2.4 GHz
FHSS Cordless Telephone

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. 30/03	Oct. 30/04
Extended	Spectrum Analyzer	Hewlett-Packard	8566B	FA001309	May 26/04	May. 26/05
Extended	Spectrum Analyzer Display	Hewlett-Packard	85662A	FA001309	May 26/04	May. 26/05
1 Year	Transient Limiter	Hewlett-Packard	1194 7A	FA000975	June. 16/03	June. 16/04

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. 24/03	July. 24/04
1 Year	Spectrum Analyzer	Hewlett-Packard	8565E	FA000981	May 31/04	May 31/05
1 Year	Biconical (1) Antenna	EMCO	3109	FA000805	Apr. 23/04	Apr. 23/05
1 Year	Horn Antenna #1	EMCO	3115	FA000649	Dec. 18/03	Dec. 18/04
1 Year	Log Periodic Antenna #1	EMCO	LPA-25	FA000477	Sept. 2/03	Sept. 2/04
1 Year	1.0 – 2.0 GHz Amplifier	JCA	12-400	FA001498	June. 18/03	June. 18/04
1 Year	2.0 – 4.0 GHz Amplifier	JCA	24-600	FA001496	June. 18/03	June. 18/04
1 Year	4.0 – 8.0 GHz Amplifier	JCA	48-600	FA001497	June. 18/04	June. 18/04
1 Year	18-40 GHz Horn Antenna #5	ETS	3116	FA001847	Jan. 19/04	Jan. 19/05
1 Year	Horn Antenna #2	EMCO	3115	FA000825	Dec. 10/03	Dec. 10/04
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