



FCC Test Report for FCC standard 47CFR15, Subpart C for Intentional Radiators

on
**2.4 GHz DSS Cordless Telephone
(Digital Spread Spectrum Technology)
FCC ID: DXACL2200**

For the
**CL1200, CL2200 and CL2400
Series Telephone**

Report No.
20031028-01-FC15

Judgement
Complies as tested

Provided for evaluation by
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Lab Code 200172-0

**EN45001 Accredited Compliance Laboratory (RES -GmbH)
Registration number: TTI-P-G 159/98-00 (RES -GmbH)**

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PART 1: DOCUMENTATION

General Information

Product Name Model(s)	2.4GHZ DSS Cordless Telephone CL1205, CL1210, CL2205 & CL2210	
Manufacturer's Name Manufacturer's Address Contact	Teledex Corporation 6311 San Ignacio Ave San Jose, CA 95119 United States Tel: +1(408) 363-3100 Maxim Bakaleynik	Fax: +1(408) 363-3136 max@teledex.com
Test Laboratory	ITC Engineering Services, Inc. 9959 Calaveras Road, PO Box 543 Sunol, CA 94586-0543 Email: docs@itcemc.com Web Site: http://www.itcemc.com	Tel: +1(925) 862-2944 Fax: +1(925) 862-9013
Test Number and Report Numbers	20031028-01	20031028-01-FC15
Test Date(s) & Issue Date	November 4, 5, 11 & 14, 2003	January 23, 2004
Test Engineer(s)	Lan Vu and Bandele Adepoju	
Documentation	Gurjit Khosa	
Test Results	☒ Complies as tested	☐ Fail
Total Number of Pages	54	

The electromagnetic interference tests, which this report describes, were performed by an independent electromagnetic compatibility consultant, ITC Engineering Services, Inc. (ITC), in accordance with the emissions requirements specified in the FCC rules, 47CFR Part 15, Subpart C.

The CL1200 and CL2200 Series Telephones include the following configurations:

- CL2210 Cordless 2.4GHz 2 line with 10 speed dial buttons (Color Ash).
- CL2205 Cordless 2.4GHz 2 line with 5 speed dial buttons (Color Ash).
- CL1210 Cordless 2.4GHz 1 line with 10 speed dial buttons (Color Ash).
- CL1205 Cordless 2.4GHz 1 line with 5 speed dial buttons (Color Ash).
- CL2210 Cordless 2.4GHz 2 line with 10 speed dial buttons (Color Black).
- CL2205 Cordless 2.4GHz 2 line with 5 speed dial buttons (Color Black).
- CL1210 Cordless 2.4GHz 1 line with 10 speed dial buttons (Color Black).
- CL1205 Cordless 2.4GHz 1 line with 5 speed dial buttons (Color Black).

The electronics circuitry is identical for all of models.

The CL2400 series telephone is the OEM version of the CL2200 series telephone. There is no difference in electronics circuitry between the two telephones. All models are identical.

It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics. Any modifications specified in this report for compliance must be implemented in all production units for compliance to be maintained.

General Information (cont.)**Accuracy of Test Data**

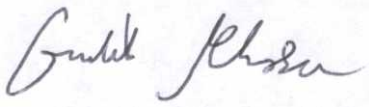
The test results contained in this report accurately represent the emissions generated by the sample equipment under test. ITC as an independent testing laboratory declares that the equipment, as tested, complies with the functional requirements of:

1. FCC standard 47CFR §15.247.

Tests Performed on Base and Handset Units:

RF Requirements:

- BANDEDGE MEASUREMENT in accordance with FCC 47 CFR 15.247.
- 6dB BANDWIDTH MEASUREMENT in accordance with FCC 47 CFR §15.247 (a)(2).
- MAXIMUM PEAK OUTPUT POWER OF FUNDAMENTAL per 47 CFR §15.247 (b)
- SPECTRAL DENSITY OF FUNDAMENTAL in accordance with 47 CFR §15.247(d).
- HARMONIC, SPURIOUS and RESTRICTED BANDS in accordance with the FCC 47 CFR 15.247(c).
- POWER LINE CONDUCTED Emissions per FCC 47 CFR Part §15.207.
- ANTENNA REQUIREMENTS in accordance with FCC 47 CFR §15.203.



Gurjit Khosa
Technical Author



Bandele Adepoju
Project Engineer

General Information (cont.)**Declaration/Disclaimer**

ITC Engineering Services, Inc. reports apply only to the specific samples tested under stated test conditions. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. ITC Engineering Services, Inc. shall have no liability for any deductions, inferences or generalizations drawn by the client or others from ITC Engineering Services, Inc. issued reports.

This report is the confidential property of the client. As a mutual protection to our clients, the public and ourselves, extracts from the test report shall not be reproduced except in full with our written approval. The applicant/manufacturer shall not use this report to claim product endorsement by NIST, NVLAP or any US Government agency.

ITC Engineering Services, Inc. is:

Accepted by the Federal Communications Commission (FCC) for FCC Methods, CISPR Methods and AUSTEL Technical Standards (Ref: NVLAP Lab Code 200172-0)

Approved by the Industry Canada for Telecom Testing

Certified by Rockford Engineering Services GmbH for EMC Testing according to the European EMC Directive 89/336/EEC per EN45001

Certified by Reg. TP for EMC Testing according to the European EMC Directive 89/336/EEC per EN45001 for RES GmbH (DAR-Registration number: TTI-P-G 159/98-00)

Certified by the Voluntary Control Council for Interference by Information Technology Equipment (VCCI) for EMC testing, in accordance with the Regulations for Voluntary Control Measures, Article 8, Registration Numbers - Site 1: C-1582 and R-1497.

General Information (cont.)**Test Equipment (EUT)**

The Equipment Under Test, Teledex Model CL2210, also referred to herein as the EUT, is a two-line 2.4 GHz digital cordless phone.

Test Methodology

The electromagnetic interference tests, which this report describes, were performed by an independent electromagnetic compatibility consultant, ITC Engineering Services, Inc., in accordance with the FCC test procedure ANSI C63.4 (1992).

Test Facility

The open area test site, the conducted measurement facility, and the test equipment used to collect the emissions data is located in Sunol, California, and is fully described in site attenuation report. The approved site attenuation description is on file at the Federal Communications Commission.

Table 1 Measurement Uncertainty

RF frequency	$\pm 1 \times 10^{-7}$ HP8565E
RF power, conducted	± 1.5 dB
Adjacent channel power	± 3 dB
Conducted emission of transmitter, valid up to 1 GHz	± 1.5 dB
Conducted emission of transmitter, valid up to 18 GHz	± 1.5 dB
Conducted emission of receivers	± 1.5 dB
Radiated emission of transmitter, valid up to 1 GHz	± 1.5 dB
Radiated emission of transmitter, valid up to 18 GHz	± 1.5 dB
Radiated emission of transmitter, valid up to 26 GHz	± 3 dB
Radiated emission of transmitter, valid up to 40 GHz	± 3 dB
Radiated emission of transmitter, valid up to 75 GHz	± 3 dB

PART 3 : RF MEASUREMENTS

Test Setup Configurations

Teledex's Model CL2210, or the EUT, was set up on a wooden table, 80cm above the ground reference plane in an anechoic chamber and in an open field. It was powered and tested in normal continuous mode.

Test Equipment – RF Measurements

Equipment Description	Manufacturer	Model Name	Serial Number	Calibration Date
Preamplifier	Hewlett-Packard	8449B	3008A00101	N/A
Preselector	Hewlett-Packard	85685A	2620A00265	12-11-2004
Biconical Antenna	EMCO	3104	9111-4463	01-16-2004
I.p. Ant (200 -1000MHz)	EMCO	3146	2261	01-22-2004
Quasi Peak Adapter	Hewlett-Packard	85650A	2521A00737	12-11-2004
Spectrum Analyzer	Hewlett-Packard	8566B	2618A02909	12-11-2004
Spectrum Analyzer Display	Hewlett-Packard			12-11-2004
Horn. Ant (Below 18GHz)	EMCO	3115	8812-3050	01-19-2004
Horn. Ant (Below 28GHz)	HP	3115	11966 E	12-18-2003
Spectrum Analyzer	Hewlett-Packard	8569A	2128A00270	04-23-2004

Data Table Legend and Field Strength Calculation

Detector mode: Peak (P) or Quasi-Peak (QP) or Average (A)

	Polarization	Antenna	Freq Range (in MHz)
VB	Vertical	EMCO 3104/sn 9111-4463 Biconical	30 – 200
HB	Horizontal	EMCO 3104/sn 9111-4463 Biconical	30 – 200
VL	Vertical	EMCO 3146/sn. 2261 Log Periodic	200 – 1000
HL	Horizontal	EMCO 3146/sn. 2261 Log Periodic	200 – 1000
VH1	Vertical	EMC 3115/sn. 8812-3050 Horn	Below 18000
HH1	Horizontal	EMC 3115/sn. 8812-3050 Horn	Below 18000
VH2	Vertical	EMC 3116/sn. 11966 E Horn	Below 26500
HH2	Horizontal	EMC 3116/sn. 11966 E Horn	Below 26500
VH4	Vertical	S&D DBD-520 Horn	Below 75000
HH4	Horizontal	S&D DBD-520 Horn	Below 75000

BANDEDGE MEASUREMENT per 47 CFR 15.247**Band-Edge Measurement (HandSet Unit)**

The EUT was set up on a wooden, non-conductive tabletop, 80 cm above the ground plane on an Open Area Test Site (OATS) at 3 meters. The measurement instrumentation used was a receiver with bandwidth parameters as stipulated in ANSI C63.4-1992. The EUT running in continuous mode was rotated 360 degrees azimuth and was also rotated in its x-y-z axis positions. The search antenna was varied 1 to 4m and rotated in its horizontal and vertical polarities while operating the spectrum analyzer in fixed tuned mode to determine the precise amplitude of the emission. The trace was allowed to stabilize. The EUT signal was captured in "max hold" mode on the analyzer and measurements of the signal were taken. The marker was set on the emission at the band-edge. The marker-delta function was enabled, and the marker-to-peak function was then used to move the marker to the peak of the in-band emission. The marker-delta value displayed was plotted.

Site Used –Band-Edge Measurement (HandSet Unit)

- ☐ Test Site 1 - Shielded Room: 16' x 12' x 9'
☒ Test Site 1 - 3m Open Field Radiated Site
☐ Test Site 1 - 10m Open Field Radiated Site
☐ Test Site 2 - Environmental Lab
☐ EMC Lab 1 - Test Laboratory
☐ Semi-Anechoic Absorber Lined Shielded Room
☐ Other: _____

Administrative Details – Band-Edge Measurement (HandSet Unit)

Test Date(s):	November 11, 2003
Test Engineer(s):	Bandele Adepoju

Environmental Conditions – Band-Edge Measurement (HandSet Unit)

Temperature	16.2°C
Humidity	61%

Spectrum Analyzer Configuration (during swept frequency scans) –Bandwidth Measurement

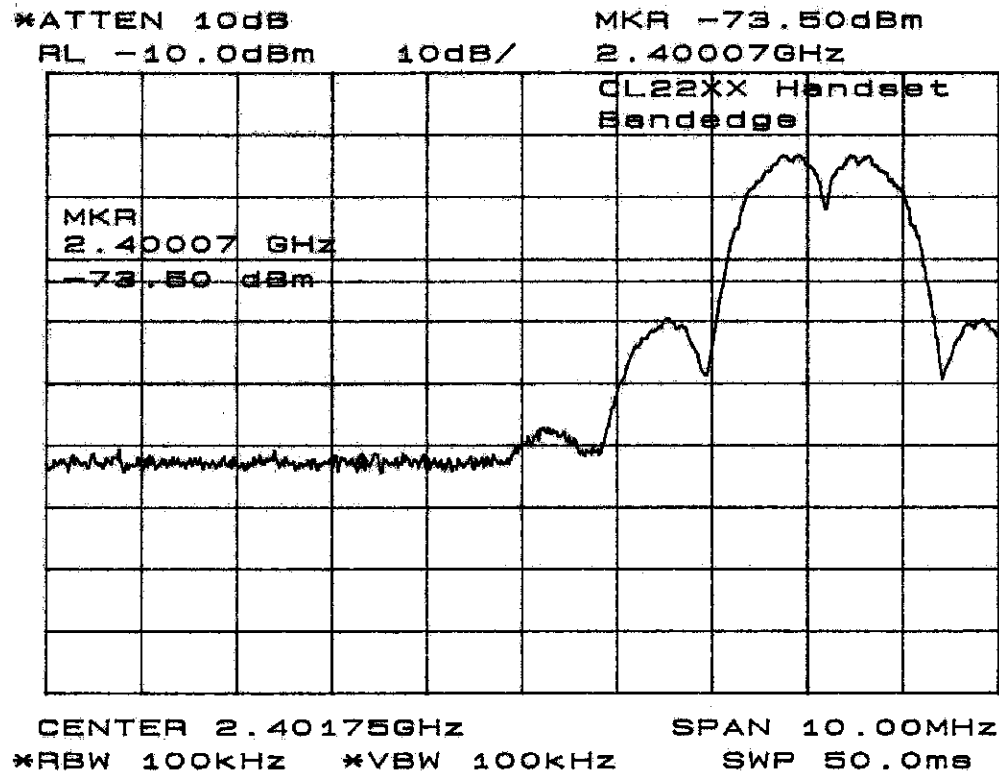
Center Frequency (See Applicable Plot Below)
 Span 10.00 MHz
 Sweep Speed 50 mSecs
 RES Bandwidth 100 kHz
 Video Bandwidth 100 kHz
 Quasi Peak Adapter Mode Bypass
 Quasi peak Adapter Bandwidth Disabled
 Average Detector Disabled
 Display Line 6dB down from Peak

Test Equipment –Band-Edge Tests

Equipment Description	Manufacturer	Model Name	Serial Number	Cal Due Date
Spectrum Analyzer	Hewlett-Packard	8565E	2618A02909	02/18/2003
Pre-amplifier	Hewlett-Packard	8449B	3008A00101	02/25/2003
Pre-amplifier	Hewlett-Packard	8447F	2805A02491	12/15/2003
Antenna Cable	Hewlett-Packard (OPTK45)	RG8/u	-	
Antenna Cable (high freq)	Specialty Cable Corp.	M17/60-RG142	-	
Horn Antenna	EMCO	3115	4663	12/18/2003

BANDEDGE MEASUREMENT (cont.)**Plot – Lower End Band-Edge Measurement @ 2404.8MHz (HandSet Unit)**

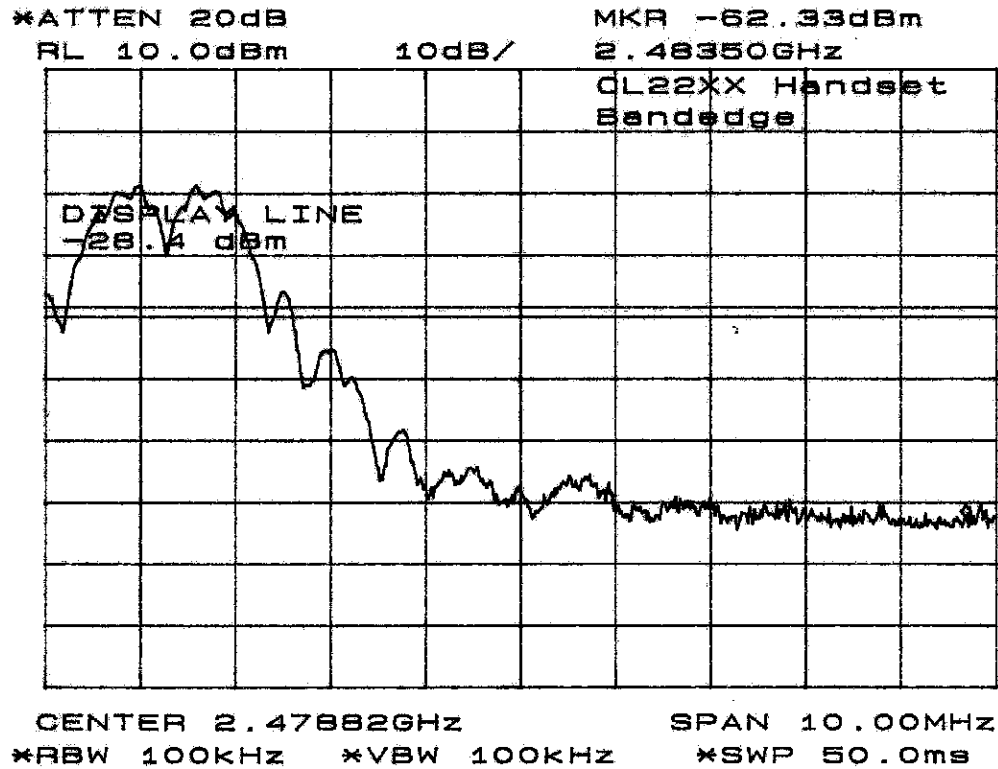
The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

**Plot Summary – HandSet Unit @ 2404.8MHz:**

Fundamental Frequency = 2404.8 MHz
Display Line = 20dB below peak
Marker = 2400 MHz

BANDEDGE MEASUREMENT (cont.)**Plot – Upper End Band-Edge Measurement @ 2475MHz (HandSet Unit)**

The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

**Plot Summary – HandSet Unit @ 2475MHz:**

Fundamental Frequency = 2475 MHz
Display Line = 20dB below peak
Marker Line = 2483.5 MHz

BANEDGE MEASUREMENT (cont.)**Band-Edge Measurement (Base Unit)**

The EUT was set up on a wooden, non-conductive tabletop, 80 cm above the ground plane on an Open Area Test Site (OATS) at 3 meters. The measurement instrumentation used was a receiver with bandwidth parameters as stipulated in ANSI C63.4-1992. The EUT running in continuous mode was rotated 360 degrees azimuth and was also rotated in its x-y-z axis positions. The search antenna was varied 1 to 4m and rotated in its horizontal and vertical polarities while operating the spectrum analyzer in fixed tuned mode to determine the precise amplitude of the emission. The trace was allowed to stabilize. The EUT signal was captured in "max hold" mode on the analyzer and measurements of the signal were taken. The marker was set on the emission at the band-edge. The marker-delta function was enabled, and the marker-to-peak function was then used to move the marker to the peak of the in-band emission. The marker-delta value displayed was plotted.

Site Used – Band-Edge Measurement (Base Unit)

- ☐ Test Site 1 - Shielded Room: 16' x 12' x 9'
☒ Test Site 1 - 3m Open Field Radiated Site
☐ Test Site 1 - 10m Open Field Radiated Site
☐ Test Site 2 - Environmental Lab
☐ EMC Lab 1 - Test Laboratory
☐ Semi-Anechoic Absorber Lined Shielded Room
☐ Other: _____

Administrative Details – Band-Edge Measurement (Base Unit)

Test Date(s):	November 11, 2003
Test Engineer(s):	Bande Adepouju

Environmental Conditions – Band-Edge Measurement (Base Unit)

Temperature	16.6°C
Humidity	59%

Spectrum Analyzer Configuration (during swept frequency scans) –Bandwidth Measurement

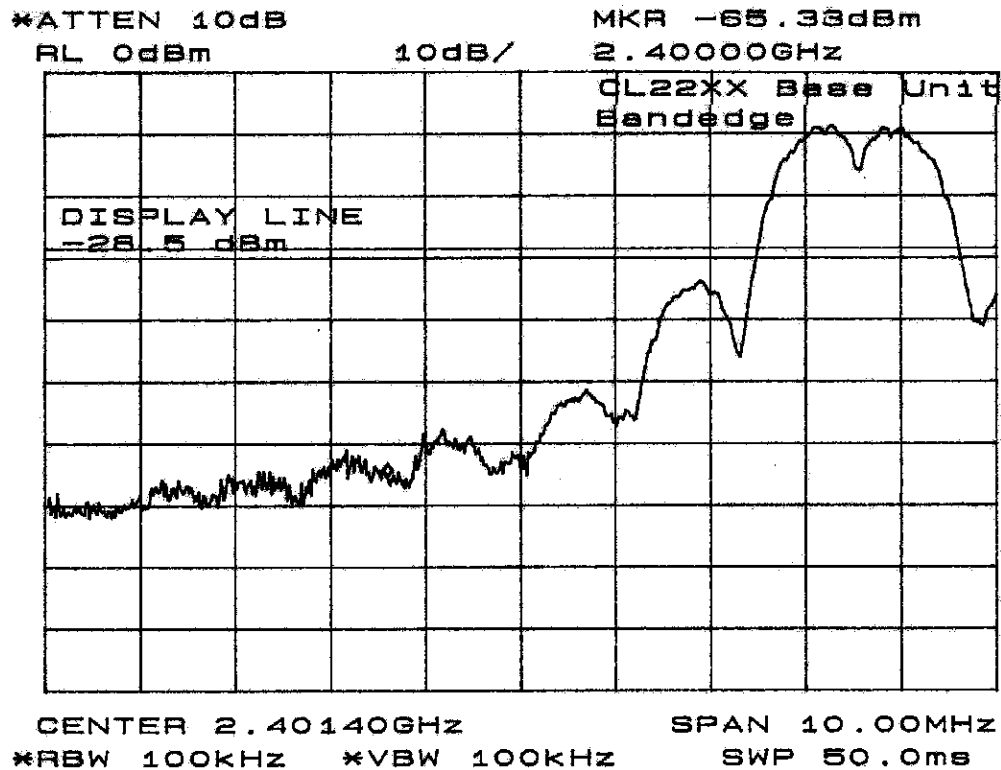
Center Frequency (See Applicable Plot Below)
 Span 10.00 MHz
 Sweep Speed 50 mSecs
 RES Bandwidth 100 kHz
 Video Bandwidth 100 kHz
 Quasi Peak Adapter Mode Bypass
 Quasi peak Adapter Bandwidth Disabled
 Average Detector Disabled
 Display Line 6dB down from Peak

Test Equipment –Band-Edge Tests

Equipment Description	Manufacturer	Model Name	Serial Number	Cal Due Date
Spectrum Analyzer	Hewlett-Packard	8565E	2618A02909	02/18/2003
Pre-amplifier	Hewlett-Packard	8449B	3008A00101	02/25/2003
Pre-amplifier	Hewlett-Packard	8447F	2805A02491	12/15/2003
Antenna Cable	Hewlett-Packard (OPTK45)	RG8/u	-	
Antenna Cable (high freq)	Specialty Cable Corp.	M17/60-RG142	-	
Horn Antenna	EMCO	3115	4663	12/18/2003

BANDEDGE MEASUREMENT (cont.)**Plot – Lower End Band-Edge Measurement @ 2404.8MHz (Base Unit)**

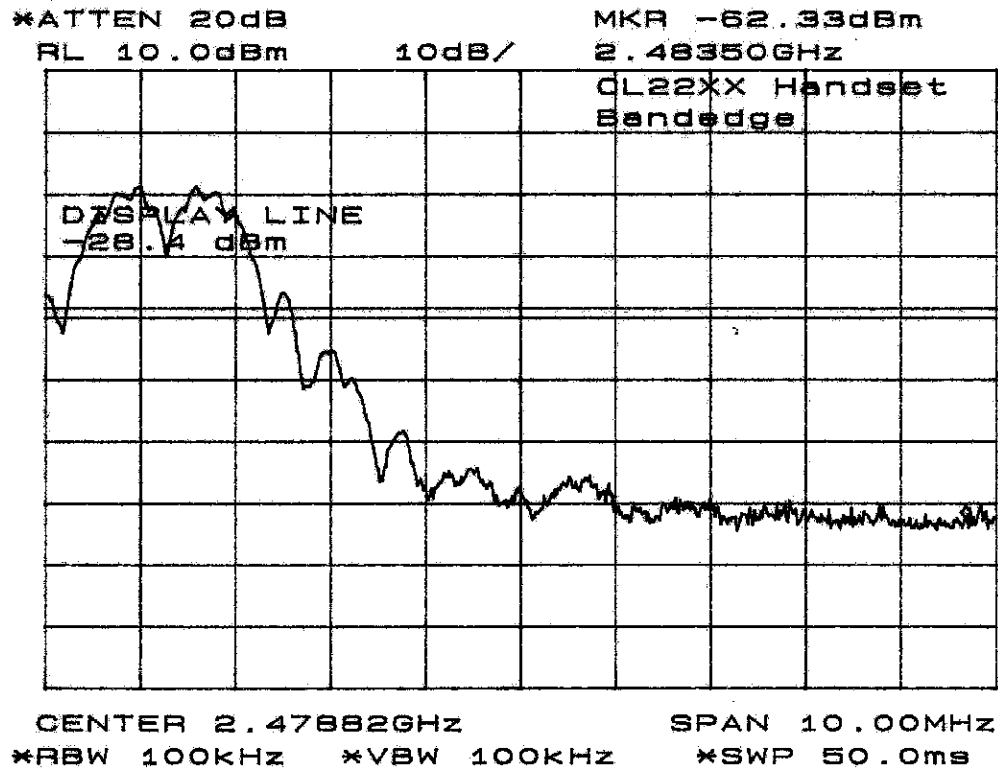
The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

**Plot Summary – Base Unit @ 2404.8MHz:**

Fundamental Frequency = 2404.8 MHz
Display Line = 20dB below peak
Marker = 2400 MHz

BANDEDGE MEASUREMENT (cont.)**Plot – Upper End Band-Edge Measurement @ 2475MHz (Base Unit)**

The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

**Plot Summary – HandSet Unit @ 2475MHz:**

Fundamental Frequency = 2475 MHz
Display Line = 20dB below peak
Marker Line = 2483.5 MHz

6 dB BANDWIDTH MEASUREMENT per 47 CFR 15.247(a)(2)**6dB Bandwidth Measurement (HandSet Unit)**

The EUT was set up on a wooden non-conductive tabletop, 80 cm above the ground plane on an Open Area Test Site (OATS) at 3 meters. The measurement instrumentation used was a receiver with bandwidth parameters as stipulated in ANSI C63.4-1992. The EUT transmitting in continuous mode at maximum data rate was rotated 360 degrees azimuth and was also rotated in its x-y-z axis positions. The search antenna was varied 1 to 4m and rotated in its horizontal and vertical polarities while operating the spectrum analyzer in fixed tuned mode to determine the precise amplitude of the emission. The trace was allowed to stabilize. The EUT signal was captured in "max hold" mode on the analyzer and measurements of the signal were taken. The marker-to-peak function was set to the peak of the emission. The marker-delta function was used to measure 6 dB down one side of the emission. The marker-delta function was then reset, and the marker moved to the other side of the emission, until it was as close as possible to delta- 0 level (as even as possible with the reference marker level). The marker-delta reading was then recorded as the 6 dB bandwidth of the emission.

Site Used – 6dB Bandwidth Measurement of Fundamental (HandSet Unit)

- ☐ Test Site 1 - Shielded Room: 16' x 12' x 9'
☒ Test Site 1 - 3m Open Field Radiated Site
☐ Test Site 1 - 10m Open Field Radiated Site
☐ Test Site 2 - Environmental Lab
☐ EMC Lab 1 - Test Laboratory
☐ Semi-Anechoic Absorber Lined Shielded Room
☐ Other: _____

Administrative Details – 6dB Bandwidth Measurement of Fundamental (HandSet Unit)

Test Date(s):	November 11, 2003
Test Engineer(s):	Bande Adepouj

Environmental Conditions – 6dB Bandwidth Measurement of Fundamental (HandSet Unit)

Temperature	16.7°C
Humidity	50%

Spectrum Analyzer Configuration (during swept frequency scans) – 6dB bandwidth Measurement

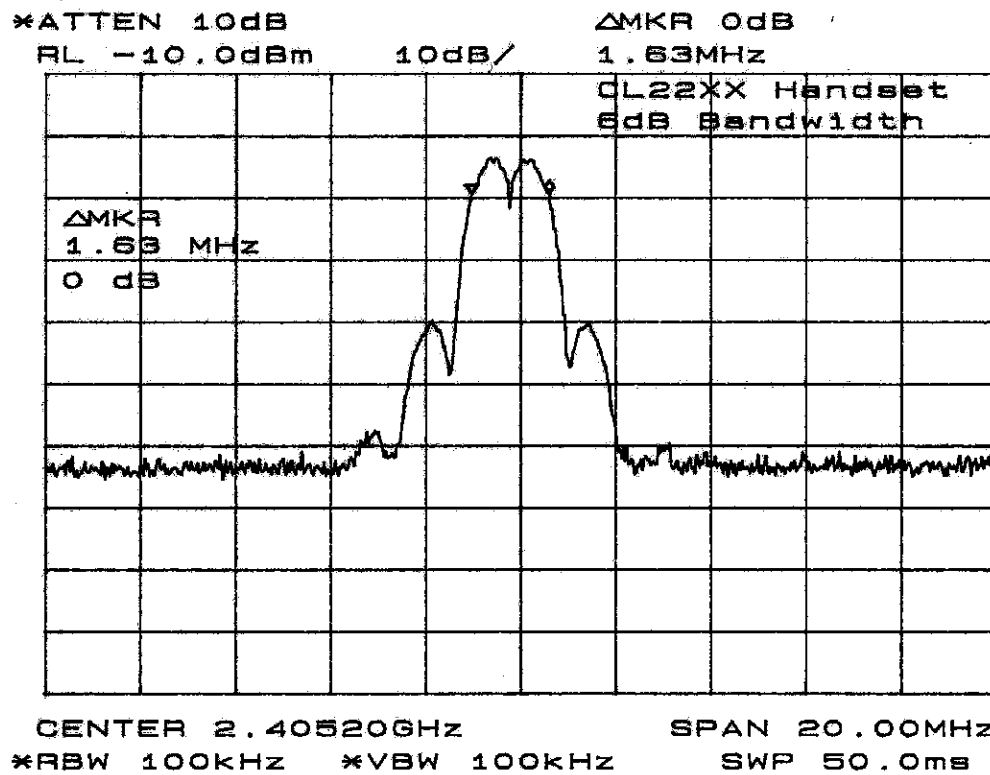
Center Frequency See Applicable Plot Below
 Span..... 20.00 MHz
 Sweep Speed..... Manual
 RES Bandwidth 100 kHz
 Video Bandwidth 100 kHz
 Quasi Peak Adapter Mode Bypass
 Quasi peak Adapter Bandwidth Disabled
 Average Detector Disabled

Test Equipment – 6dB Bandwidth Tests

Equipment Description	Manufacturer	Model Name	Serial Number	Cal Due Date
Spectrum Analyzer	Hewlett-Packard	8565E	2618A02909	02/18/2003
Pre-amplifier	Hewlett-Packard	8449B	3008A00101	02/25/2003
Pre-amplifier	Hewlett-Packard	8447F	2805A02491	12/15/2003
Antenna Cable	Hewlett-Packard (OPTK45)	RG8/u	-	
Antenna Cable (high freq)	Specialty Cable Corp.	M17/60-RG142	-	
Horn Antenna	EMCO	3115	4663	12/18/2003

6dB BANDWIDTH MEASUREMENT (cont.)**Plot – 6dB Bandwidth (HandSet Unit @ 2404.8MHz)**

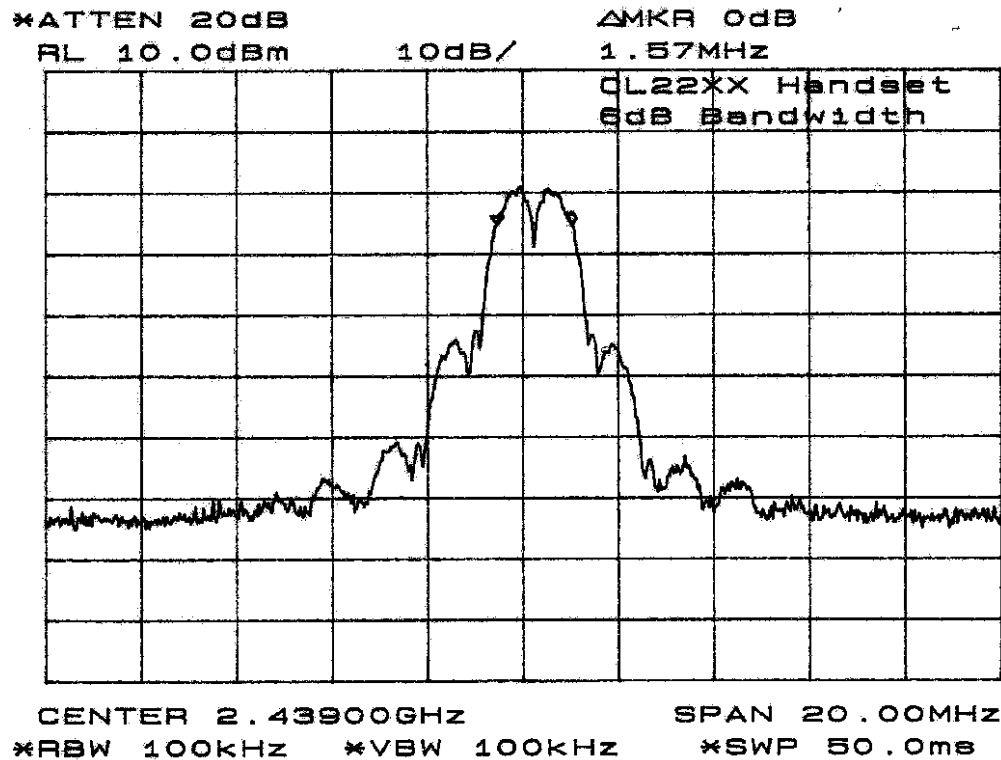
The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

**Plot Summary – HandSet Unit @ 2404.8MHz:**

Center Frequency = 2404.8 MHz
Measured 6dB Bandwidth = 1.63 MHz
Limit (15.247a2) = 500 kHz minimum

6dB BANDWIDTH MEASUREMENT (cont.)**Plot – 6dB Bandwidth (HandSet Unit @ 2439MHz)**

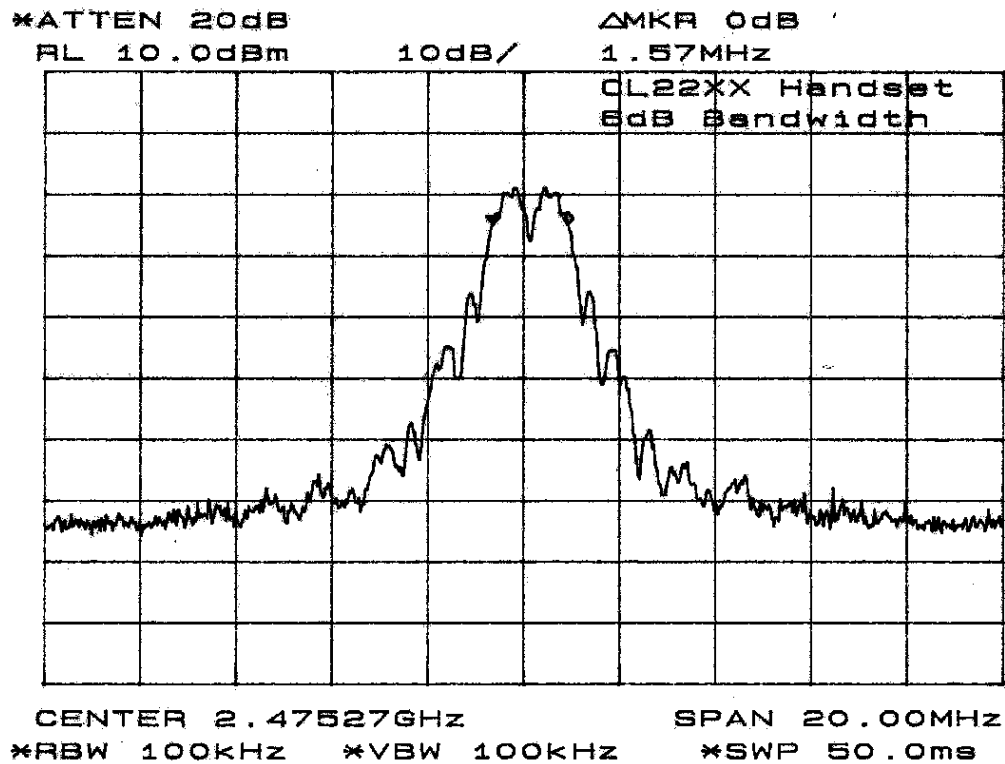
The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

**Plot Summary – HandSet Unit @ 2439 MHz:**

Center Frequency	=	2439 MHz
Measured 6dB Bandwidth	=	1.57 MHz
Limit (15.247a2)	=	500 kHz minimum

6dB BANDWIDTH MEASUREMENT (cont.)**Plot – 6dB Bandwidth (HandSet Unit @ 2475MHz)**

The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

**Plot Summary – HandSet Unit @ 2475 MHz:**

Center Frequency	=	2475 MHz
Measured 6dB Bandwidth	=	1.57 MHz
Limit (15.247a2)	=	500 kHz minimum

6dB BANDWIDTH MEASUREMENT (cont.)**6dB Bandwidth Measurement (Base Unit)**

The EUT was set up on a wooden non-conductive tabletop, 80 cm above the ground plane on an Open Area Test Site (OATS) at 3 meters. The measurement instrumentation used was a receiver with bandwidth parameters as stipulated in ANSI C63.4-1992. The EUT running in continuous mode was rotated 360 degrees azimuth and was also rotated in its x-y-z axis positions. The search antenna was varied 1 to 4m and rotated in its horizontal and vertical polarities while operating the spectrum analyzer in fixed tuned mode to determine the precise amplitude of the emission. The trace was allowed to stabilize. The EUT signal was captured in "max hold" mode on the analyzer and measurements of the signal were taken. The marker-to-peak function was set to the peak of the emission. The marker-delta function was used to measure 6 dB down one side of the emission. The marker-delta function was then reset, and the marker moved to the other side of the emission, until it was as close as possible to delta- 0 level (as even as possible with the reference marker level). The marker-delta reading was then recorded as the 6 dB bandwidth of the emission. The EUT signal was captured in "max hold" mode on the analyzer and measurements of the signal were taken.

Site Used – 6dB Bandwidth Measurement of Fundamental (Base Unit)

- ☐ Test Site 1 - Shielded Room: 16' x 12' x 9'
☒ Test Site 1 - 3m Open Field Radiated Site
☐ Test Site 1 - 10m Open Field Radiated Site
☐ Test Site 2 - Environmental Lab
☐ EMC Lab 1 - Test Laboratory
☐ Semi-Anechoic Absorber Lined Shielded Room
☐ Other: _____

Administrative Details – 6dB Bandwidth Measurement of Fundamental (Base Unit)

Test Date(s):	November 11, 2003
Test Engineer(s):	Bande Adepouju

Environmental Conditions – 6dB Bandwidth Measurement of Fundamental (Base Unit)

Temperature	12.8°C
Humidity	50%

Spectrum Analyzer Configuration (during swept frequency scans) – 6dB Bandwidth Measurement

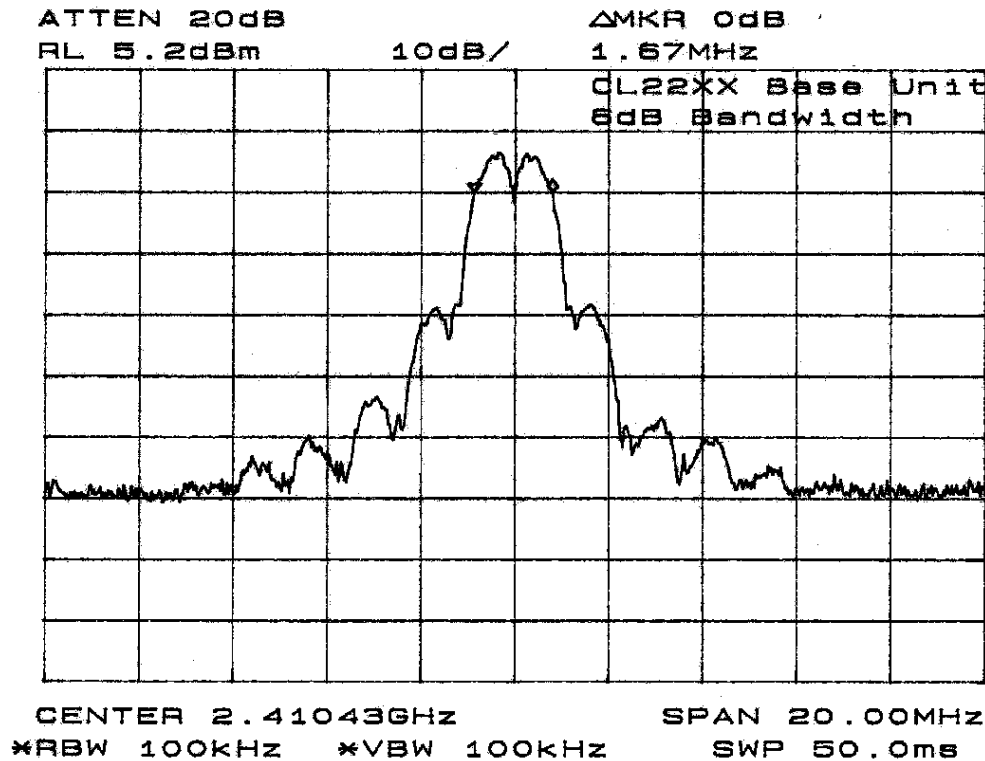
Center Frequency See Applicable Plot Below
 Span 20.00 MHz
 Sweep Speed Manual
 RES Bandwidth 100 kHz
 Video Bandwidth 100 kHz
 Quasi Peak Adapter Mode Bypass
 Quasi peak Adapter Bandwidth Disabled
 Average Detector Disabled

Test Equipment – 6dB Bandwidth Tests

Equipment Description	Manufacturer	Model Name	Serial Number	Cal Due Date
Spectrum Analyzer	Hewlett-Packard	8565E	2618A02909	02/18/2003
Pre-amplifier	Hewlett-Packard	8449B	3008A00101	02/25/2003
Pre-amplifier	Hewlett-Packard	8447F	2805A02491	12/15/2003
Antenna Cable	Hewlett-Packard (OPTK45)	RG8/u	-	
Antenna Cable (high freq)	Specialty Cable Corp.	M17/60-RG142	-	
Horn Antenna	EMCO	3115	4663	12/18/2003

6dB BANDWIDTH MEASUREMENT (cont.)**Plot – 6dB Bandwidth (Base Unit @ 2410MHz)**

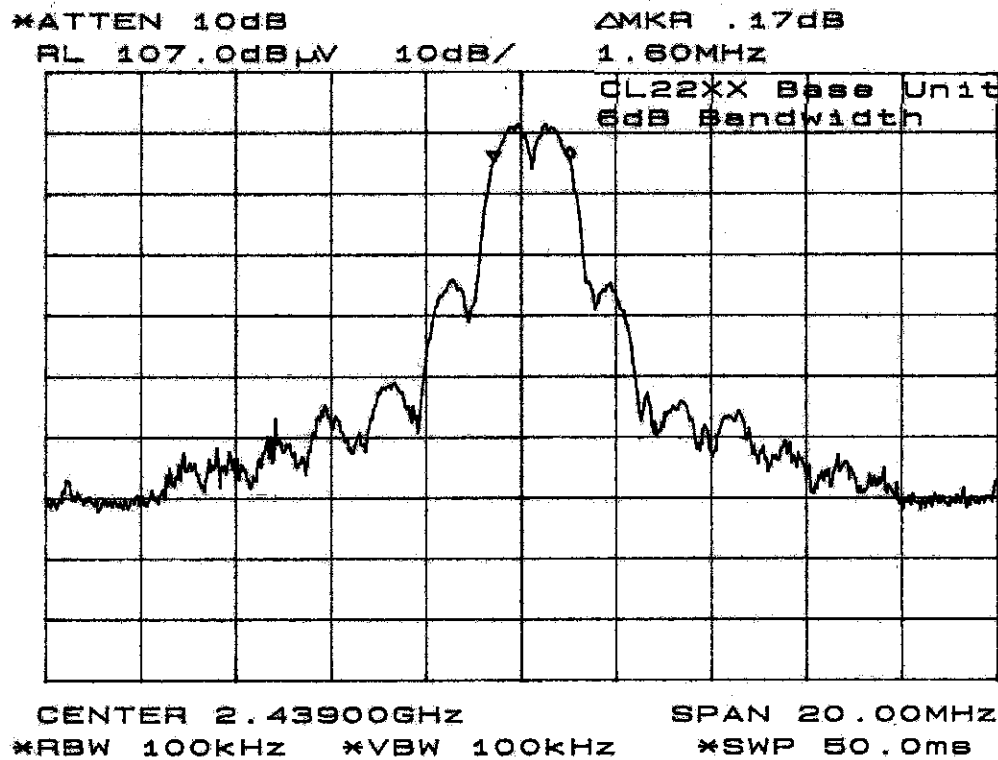
The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

**Plot Summary – Base Unit @ 2410 MHz:**

Center Frequency	=	2404.8 MHz
Measured 6dB Bandwidth	=	1.67 MHz
Limit (15.247a2)	=	500 kHz minimum

6dB BANDWIDTH MEASUREMENT (cont.)**Plot – 6dB Bandwidth (Base Unit @ 2439MHz)**

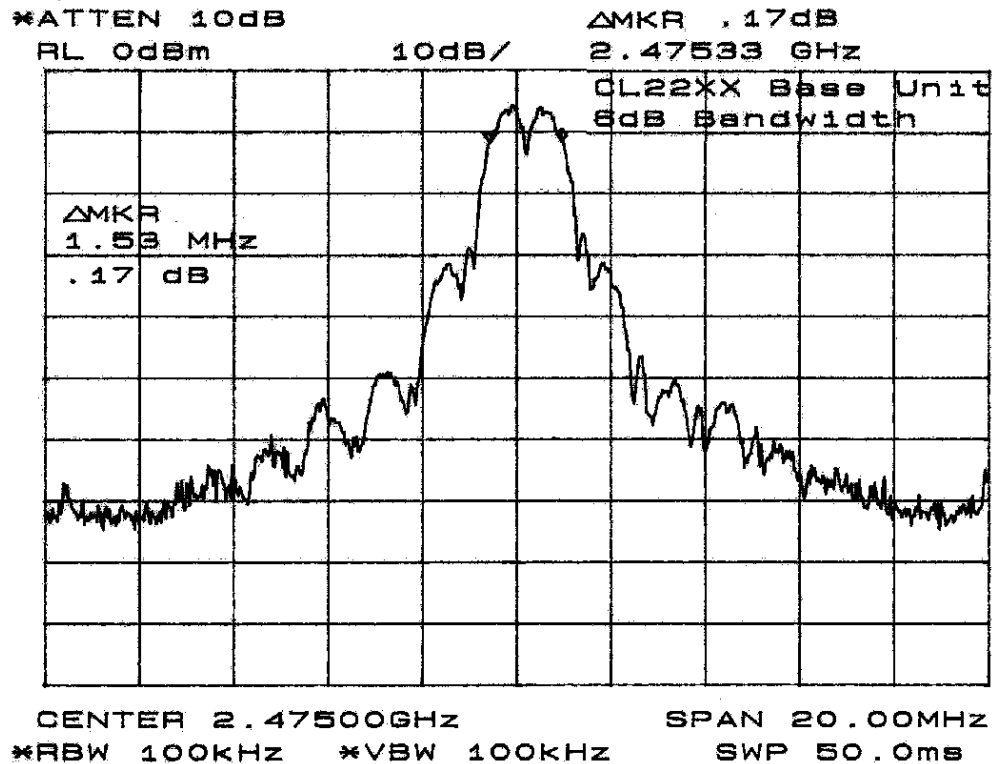
The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

**Plot Summary – Base Unit @ 2439 MHz:**

Center Frequency = 2439 MHz
 Measured 6dB Bandwidth = 1.60 MHz
 Limit (15.247a2) = 500 kHz minimum

6dB BANDWIDTH MEASUREMENT (cont.)**Plot – 6dB Bandwidth (Base Unit @ 2475MHz)**

The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

**Plot Summary – Base Unit @ 2475 MHz:**

Center Frequency = 2475 MHz
 Measured 6dB Bandwidth = 1.53 MHz
 Limit (15.247a2) = 500 kHz minimum

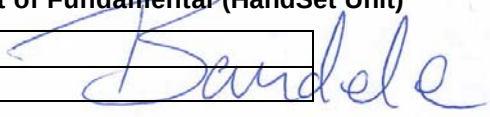
MAXIMUM PEAK OUTPUT POWER OF FUNDAMENTAL per 47 CFR 15.247(b)**Maximum Power Measurement (HandSet Unit)**

The EUT was set up on a wooden non-conductive tabletop, 80 cm above the ground plane on an Open Area Test Site (OATS) at 3 meters. The measurement instrumentation used was a receiver with bandwidth parameters as stipulated in ANSI C63.4-1992. The EUT running in continuous mode, was rotated 360 degrees azimuth and was also rotated in its x-y-z axis positions. The search antenna was varied 1 to 4m and rotated in its horizontal and vertical polarities while operating the spectrum analyzer in fixed tuned mode to determine the precise amplitude of the emission. The EUT signal was captured in "max hold" mode to trace "A" on the analyzer. The EUT was then replaced by a signal generator which sent out an unmodulated signal which was captured to trace "B". The output frequency of the signal in trace "B" was made equal to the center of the frequency range occupied by the EUT signal in trace "A". The reading on the signal generator RF meter display was recorded.

Site Used – Maximum Power Measurement of Fundamental (HandSet Unit)

- ☐ Test Site 1 - Shielded Room: 16' x 12' x 9'
☒ Test Site 1 - 3m Open Field Radiated Site
☐ Test Site 1 - 10m Open Field Radiated Site
☐ Test Site 2 - Environmental Lab
☐ EMC Lab 1 - Test Laboratory
☐ Semi-Anechoic Absorber Lined Shielded Room
☐ Other: _____

Administrative Details – Maximum Power Measurement of Fundamental (HandSet Unit)

Test Date(s):	November 11, 2003
Test Engineer(s):	Bande Adepou 

Environmental Conditions – Maximum Power Measurement of Fundamental (HandSet Unit)

Temperature	17.2°C
Humidity	54%

Spectrum Analyzer Configuration (during swept frequency scans) – Maximum Power Measurement

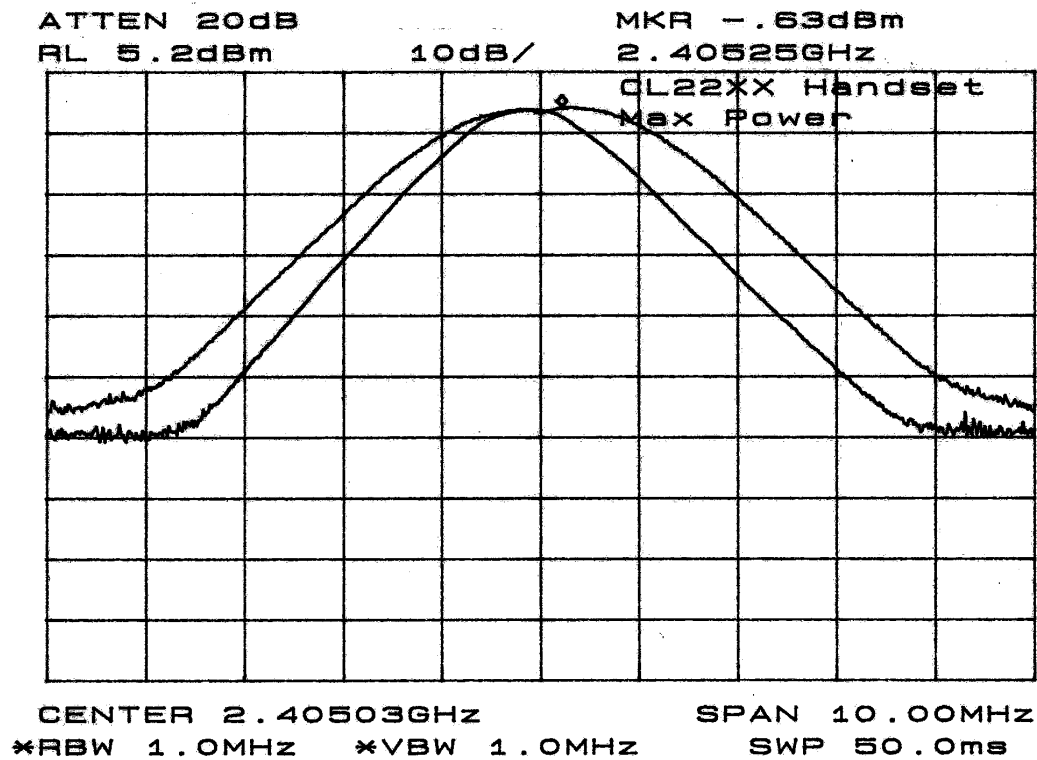
Center Frequency See Applicable Plot Below
 Span 10.00 MHz
 Sweep Speed Manual
 RES Bandwidth 1000 kHz
 Video Bandwidth 1000 kHz
 Quasi Peak Adapter Mode Bypass
 Quasi peak Adapter Bandwidth Disabled
 Average Detector Disabled

Test Equipment – Maximum Power Tests (HandSet Unit)

Equipment Description	Manufacturer	Model Name	Serial Number	Cal Due Date
Spectrum Analyzer	Hewlett-Packard	8565E	2618A02909	02/18/2003
Pre-amplifier	Hewlett-Packard	8449B	3008A 00101	02/25/2003
Pre-amplifier	Hewlett-Packard	8447F	2805A02491	12/15/2003
Antenna Cable	Hewlett-Packard (OPTK45)	RG8/u	-	
Antenna Cable (high freq)	Specialty Cable Corp.	M17/60-RG142	-	
Horn Antenna	EMCO	3115	8812-3050	01/15/2003
Horn Antenna	EMCO	3115	4663	12/18/2003

MAXIMUM PEAK OUTPUT POWER OF FUNDAMENTAL (cont.)**Test Data – Maximum Power of Fundamental (HandSet Unit @ 2404.8MHz)**

The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

**Table 2: Maximum Power Test Data – 2404.8MHz Signal Generator HandSet Measurement @ 3 meters**

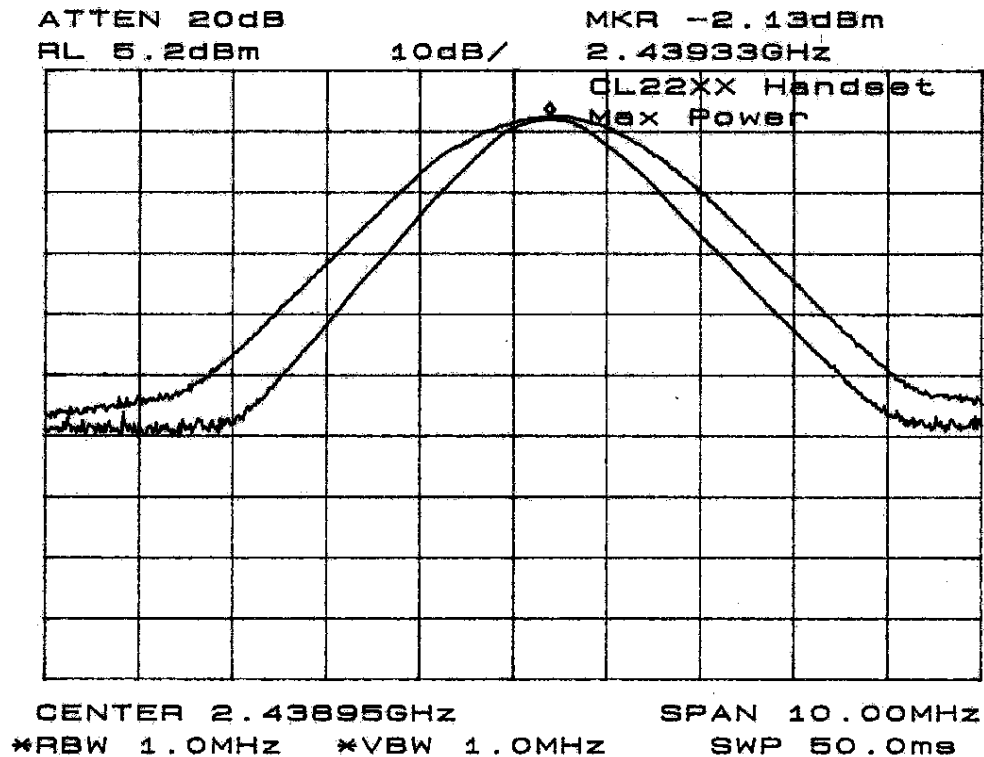
SIG-GEN		CORRECTION			CORR	ANT ORIENTATION		Limit		
FREQ	AMPL	ANT	CAB	PreAMP	AMPL	HT	POL	AMPL	MARG	DET
MHz	dBm	dB	dB	dB	dBuV/m	m	-	dBm	dB	MODE
2404.8MHz	6.50	30.1	4.83	24.17	17.26	1.2	VH1	30	-12.74	P

Test-Data Summary – HandSet Unit @ 2404.8MHz:

Center Frequency = 2404.8 MHz
Measured Peak Level = 17.26dBm
Limit (15.247b1) = 30dBm (1 watt)

MAXIMUM PEAK OUTPUT POWER OF FUNDAMENTAL (cont.)**Test Data – Maximum Power of Fundamental (HandSet Unit @ 2439MHz)**

The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

**Table 3: Maximum Power Test Data – 2439MHz Signal Generator HandSet Measurement @ 3 meters**

SIG-GEN		CORRECTION			CORR	ANT ORIENTATION		Limit		DET
FREQ	AMPL	ANT	CAB	PreAMP	AMPL	HT	POL	AMPL	MARG	MODE
MHz	dBm	dB	dB	dB	dBm	m	-	dBm	dB	
2439MHz	4.95	30.1	4.83	24.33	15.55	1.2	VH1	30	-14.45	P

Test-Data Summary – HandSet Unit @ 2439MHz:

Center Frequency = 2439 MHz
Measured Peak Level = 15.55dBm
Limit (15.247b1) = 30dBm (1 watt)

MAXIMUM PEAK OUTPUT POWER OF FUNDAMENTAL (cont.)**Test Data – Maximum Power of Fundamental (HandSet Unit @ 2475MHz)**

The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

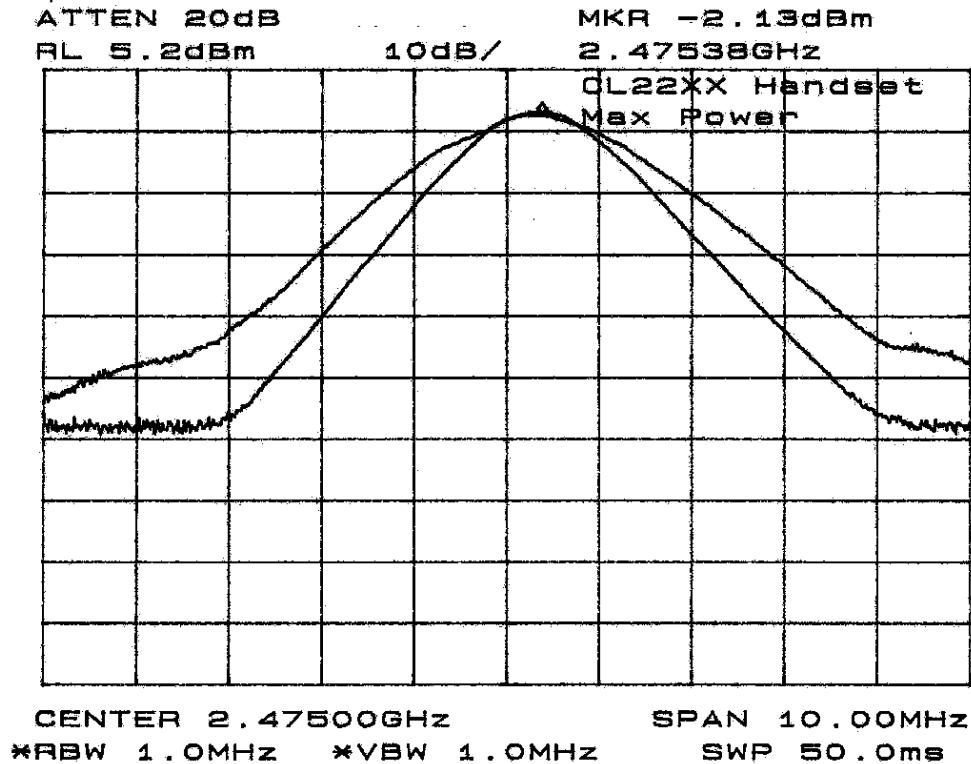


Table 4: Maximum Power Test Data – 2475MHz Signal Generator HandSet Measurement @ 3 meters

SIG-GEN		CORRECTION			CORR	ANT ORIENTATION		Limit		
FREQ	AMPL	ANT	CAB	PreAMP	AMPL	HT	POL	AMPL	MARG	DET
MHz	dBm	dB	dB	dB	dBm	m	-	dBm	dB	MODE
2475MHz	4.50	30.1	5.67	24.50	15.77	1.2	VH1	30	-14.23	P

Test-Data Summary – HandSet Unit @ 2475MHz:

Center Frequency = 2475 MHz
 Measured Peak Level = 15.77dBm
 Limit (15.247b1) = 30dBm (1 watt)

MAXIMUM PEAK OUTPUT POWER OF FUNDAMENTAL (cont.)**Test Data – Maximum Power of Fundamental (Base Unit)****Maximum Power Measurement**

The EUT was set up on a wooden non-conductive tabletop, 80 cm above the ground plane on an Open Area Test Site (OATS) at 3 meters. The measurement instrumentation used was a receiver with bandwidth parameters as stipulated in ANSI C63.4-1992. The EUT running in continuous mode, was rotated 360 degrees azimuth and was also rotated in its x-y-z axis positions. The search antenna was varied 1 to 4m and rotated in its horizontal and vertical polarities while operating the spectrum analyzer in fixed tuned mode to determine the precise amplitude of the emission. The EUT signal was captured in "max hold" mode to trace "A" on the analyzer. The EUT was then replaced by a signal generator which sent out an unmodulated signal which was captured to trace "B". The output frequency of the signal in trace "B" was made equal to the center of the frequency range occupied by the EUT signal in trace "A". The reading on the signal generator RF meter display was recorded.

Site Used – Maximum Power Measurement of Fundamental (Base Unit)

- ☐ Test Site 1 - Shielded Room: 16' x 12' x 9'
☒ Test Site 1 - 3m Open Field Radiated Site
☐ Test Site 1 - 10m Open Field Radiated Site
☐ Test Site 2 - Environmental Lab
☐ EMC Lab 1 - Test Laboratory
☐ Semi-Anechoic Absorber Lined Shielded Room
☐ Other: _____

Administrative Details – Maximum Power Measurement of Fundamental (Base Unit)

Test Date(s):	November 14, 2003
Test Engineer(s):	Bande Adepouju

Environmental Conditions – Maximum Power Measurement of Fundamental (Base Unit)

Temperature	15.6°C
Humidity	69%

Spectrum Analyzer Configuration (during swept frequency scans) – Maximum Power Measurement

Center Frequency See Applicable Plot Below
 Span 10.00 MHz
 Sweep Speed Manual
 RES Bandwidth 1000 kHz
 Video Bandwidth 1000 kHz
 Quasi Peak Adapter Mode Bypass
 Quasi peak Adapter Bandwidth Disabled
 Average Detector Disabled

Test Equipment – Maximum Power Tests (Base Unit)

Equipment Description	Manufacturer	Model Name	Serial Number	Cal Due Date
Spectrum Analyzer	Hewlett-Packard	8565E	2618A02909	02/18/2003
Pre-amplifier	Hewlett-Packard	8449B	3008A00101	02/25/2003
Pre-amplifier	Hewlett-Packard	8447F	2805A02491	12/15/2003
Antenna Cable	Hewlett-Packard (OPTK45)	RG8/u	-	
Antenna Cable (high freq)	Specialty Cable Corp.	M17/60-RG142	-	
Horn Antenna	EMCO	3115	8812-3050	01/15/2003
Horn Antenna	EMCO	3115	4663	12/18/2003

MAXIMUM PEAK OUTPUT POWER OF FUNDAMENTAL (cont.)

Test Data – Maximum Power of Fundamental (Base Unit @ 2410.13MHz)

The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

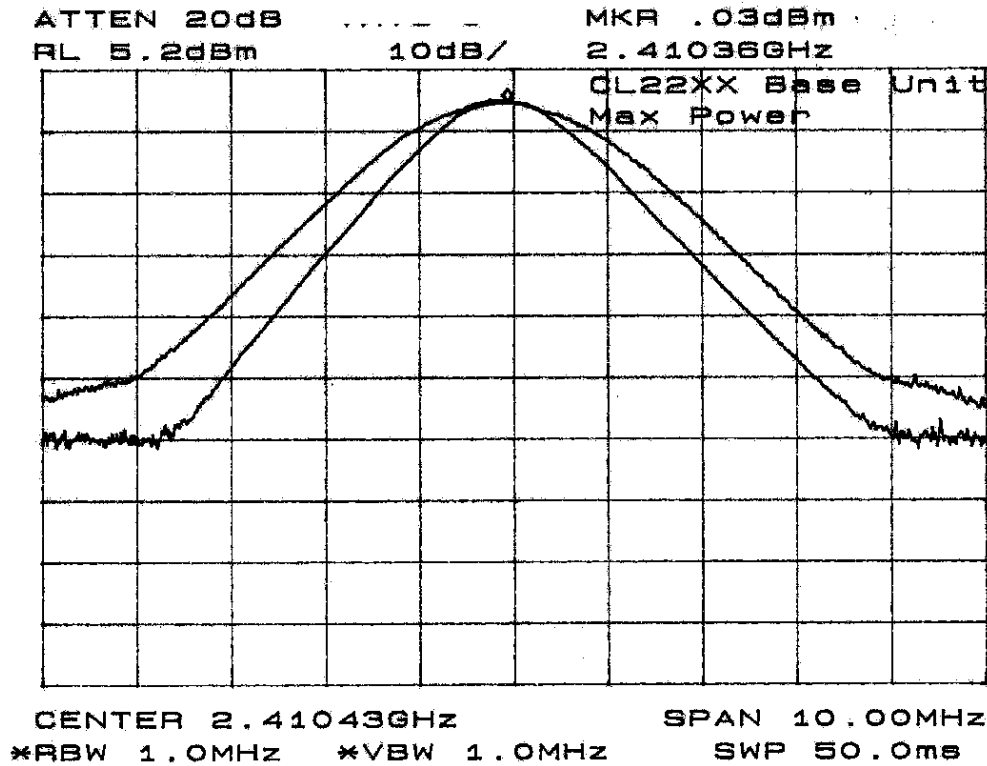


Table 5: Maximum Power Test Data – 2410.13MHz Signal Generator Base Unit Measurement @ 3 meters

SIG-GEN		CORRECTION			CORR	ANT ORIENTATION		Limit		
FREQ	AMPL	ANT	CAB	PreAMP	AMPL	HT	POL	AMPL	MARG	DET
MHz	dBm	dB	dB	dB	dB/m	m	-	dBm	dB	MODE
2410.13MHz	8.80	30.1	5.00	24.33	19.57	1.2	VH1	30	-10.43	P

Test-Data Summary – Base Unit @ 2410.13MHz:

Center Frequency = 2410.13 MHz
Measured Peak Level = 19.57dBm
Limit (15.247b1) = 30dBm (1 watt)

MAXIMUM PEAK OUTPUT POWER OF FUNDAMENTAL (cont.)

Test Data – Maximum Power of Fundamental (Base Unit @ 2439MHz)

The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

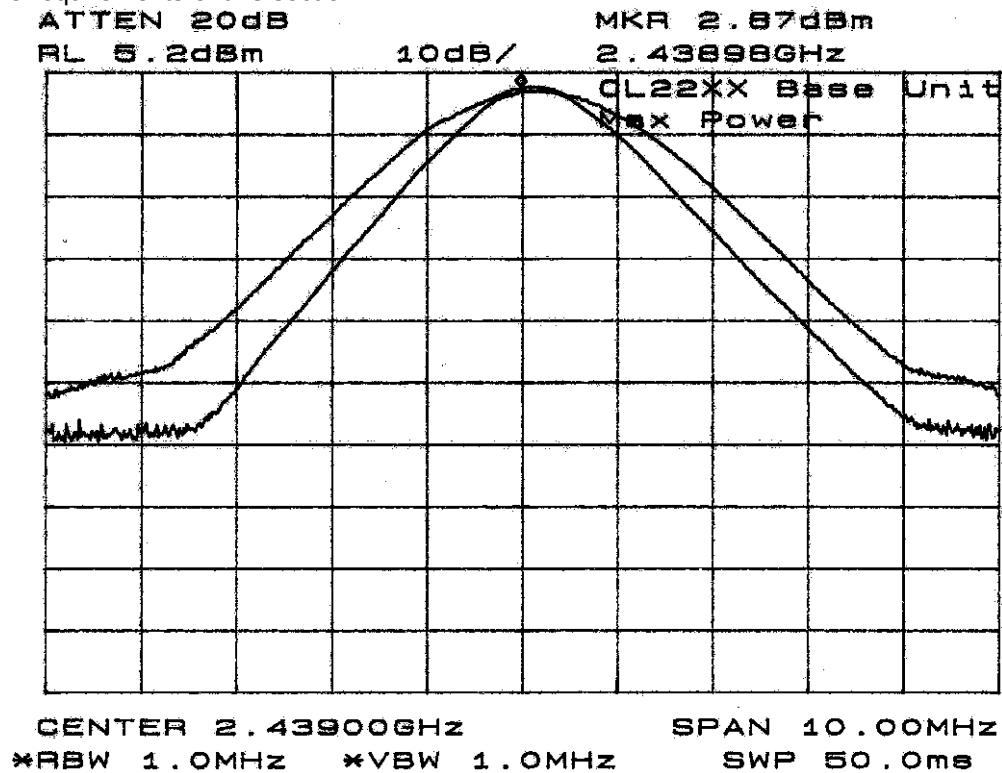


Table 6: Maximum Power Test Data – 2439MHz Signal Generator Base Unit Measurement @ 3 meters

SIG-GEN		CORRECTION			CORR	ANT ORIENTATION		Limit		
FREQ	AMPL	ANT	CAB	PreAMP	AMPL	HT	POL	AMPL	MARG	DET
MHz	dBm	dB	dB	dB	dBm	m	-	dBm	dB	MODE
2439MHz	10.5	30.1	5.67	24.33	21.94	1.2	VH1	30	-8.06	P

Test-Data Summary – Base Unit @ 2439 MHz:

Center Frequency = 2439 MHz
Measured Peak Level = 21.94dBm
Limit (15.247b1) = 30dBm (1 watt)

MAXIMUM PEAK OUTPUT POWER OF FUNDAMENTAL (cont.)

Test Data – Maximum Power of Fundamental (Base Unit @ 2475MHz)

The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

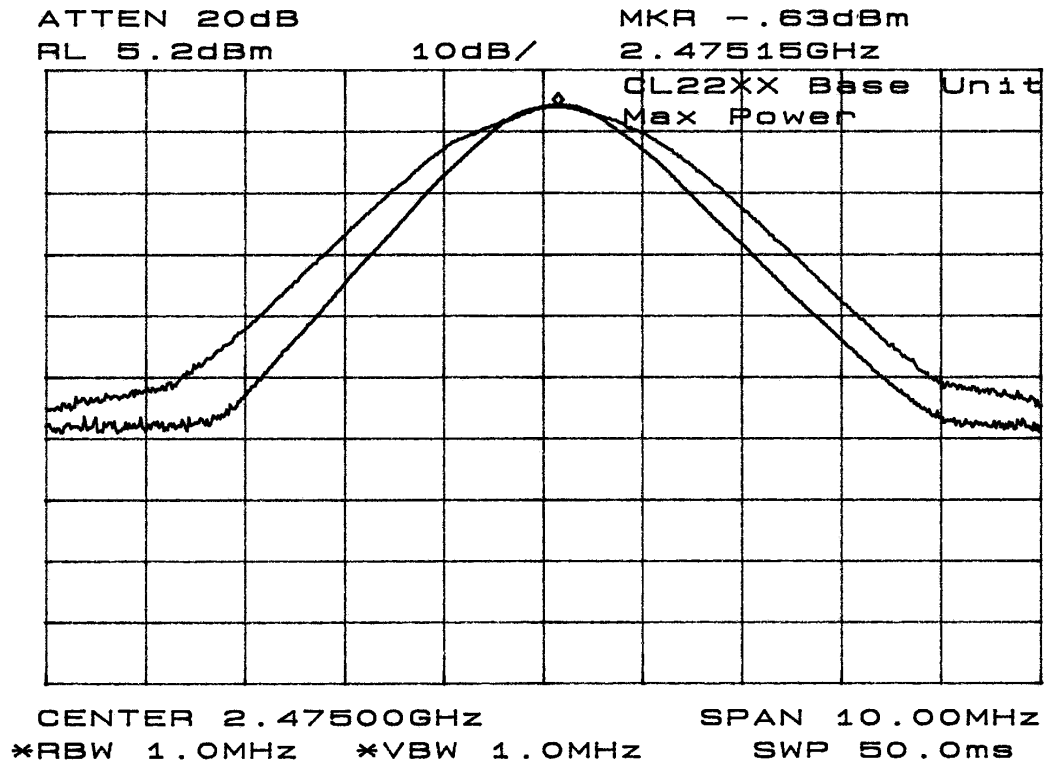


Table 7: Maximum Power Test Data – 2475MHz Signal Generator Base Unit Measurement @ 3 meters

SIG-GEN		CORRECTION			CORR	ANT ORIENTATION		Limit		
FREQ	AMPL	ANT	CAB	PreAMP	AMPL	HT	POL	AMPL	MARG	DET
MHz	dBm	dB	dB	dB	dBm	m	-	dBm	dB	MODE
2475MHz	7.00	30.1	5.67	24.50	18.27	1.2	VH1	30	-11.13	P

Test-Data Summary – Base Unit @ 2475 MHz:

Center Frequency = 2475 MHz
Measred Peak Level: = 18.27dBm
Limit (15.247b1) = 30dBm (1 watt)

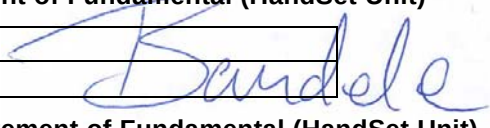
SPECTRAL DENSITY OF FUNDAMENTAL per 47 CFR 15.247(d)**Spectral Density Measurement (HandSet Unit)**

The EUT was set up on a wooden non-conductive tabletop, 80 cm above the ground plane on an Open Area Test Site (OATS) at 3 meters. The measurement instrumentation used was a receiver with bandwidth parameters as stipulated in ANSI C63.4-1992. The EUT running in continuous mode was rotated 360 degrees azimuth and was also rotated in its x-y-z axis positions. The search antenna was varied 1 to 4m and rotated in its horizontal and vertical polarities while operating the spectrum analyzer in fixed tuned mode to determine the precise amplitude of the emission. The EUT signal was captured in "max hold" mode on the analyzer and measurements of the signal were taken.

Site Used – Spectral Density Measurement of Fundamental (HandSet Unit)

- ☐ Test Site 1 - Shielded Room: 16' x 12' x 9'
☒ Test Site 1 - 3m Open Field Radiated Site
☐ Test Site 1 - 10m Open Field Radiated Site
☐ Test Site 2 - Environmental Lab
☐ EMC Lab 1 - Test Laboratory
☐ Semi-Anechoic Absorber Lined Shielded Room
☐ Other: _____

Administrative Details – Spectral Density Measurement of Fundamental (HandSet Unit)

Test Date(s):	November 14, 2003
Test Engineer(s):	Bande Adepouju 

Environmental Conditions – Spectral Density Measurement of Fundamental (HandSet Unit)

Temperature	16.3°C
Humidity	67%

Spectrum Analyzer Configuration (during swept frequency scans) – Spectral Density Measurement

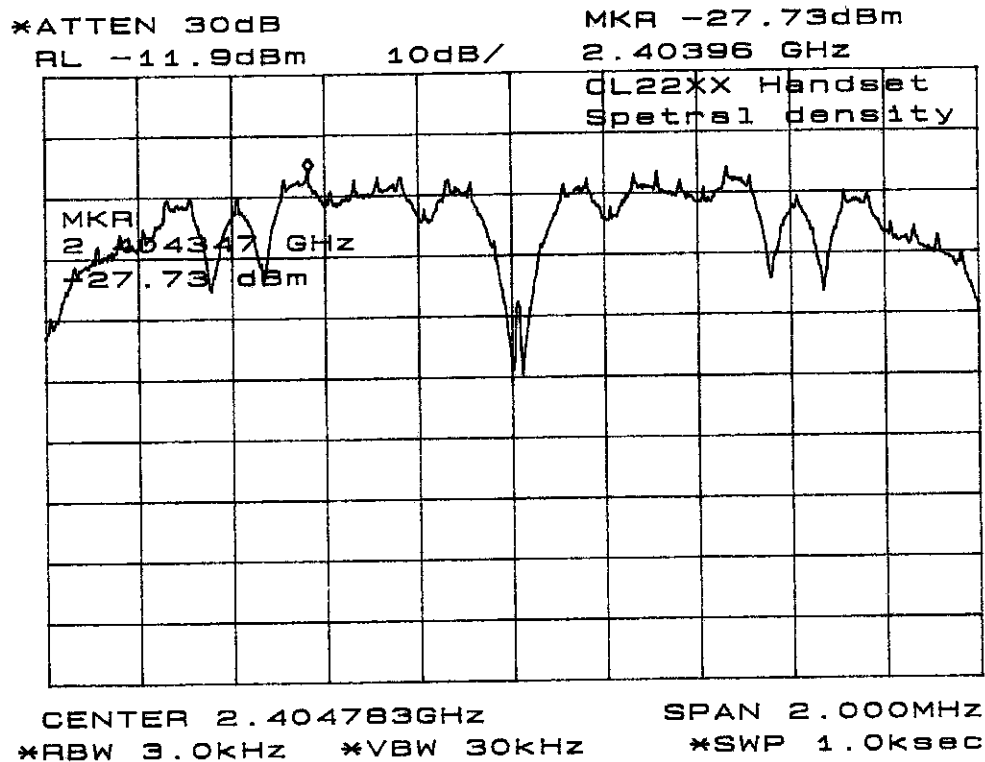
Center Frequency See Applicable Plot Below
 Span 2 MHz
 Sweep Speed 1.0ksec
 RES Bandwidth 3 kHz
 Video Bandwidth 30 kHz
 Quasi Peak Adapter Mode Bypass
 Quasi peak Adapter Bandwidth Disabled
 Average Detector Disabled

Test Equipment – Spectral Density Tests (HandSet Unit Measurement)

Equipment Description	Manufacturer	Model Name	Serial Number	Cal Due Date
Spectrum Analyzer	Hewlett-Packard	8565E	2618A02909	02/18/2003
Pre-amplifier	Hewlett-Packard	8449B	3008A00101	02/25/2003
Pre-amplifier	Hewlett-Packard	8447F	2805A02491	12/15/2003
Antenna Cable	Hewlett-Packard (OPTK45)	RG8/u	-	
Antenna Cable (high freq)	Specialty Cable Corp.	M17/60-RG142	-	
Horn Antenna	EMCO	3115	4663	12/18/2003

SPECTRAL DENSITY OF FUNDAMENTAL (cont.)**Test Data – Spectral Density of Fundamental (HandSet Unit @ 2404.8MHz)**

The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

**Table 8: Spectral Density Test Data – 2404MHz HandSet Measurement @ 3 meters**

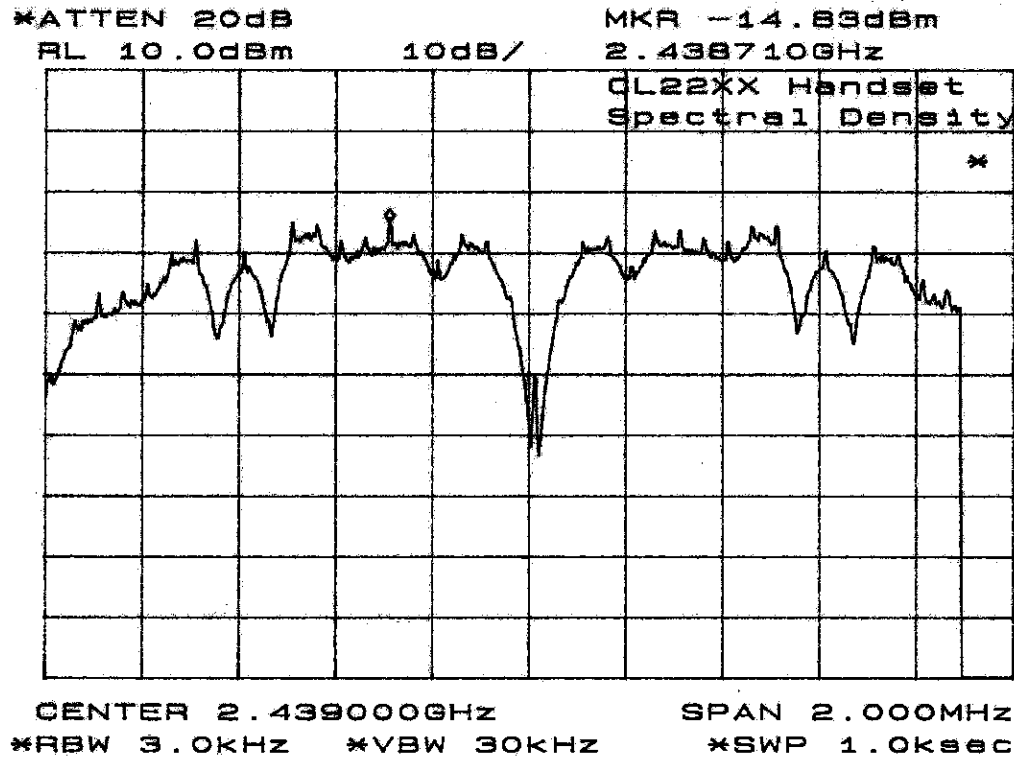
INDICATED		CORRECTION		CORR	ANT ORIENTATION		Limit		
FREQ	AMPL	ANT	CAB/PreAMP	AMPL	HT	POL	AMPL	MARG	DET
MHz	dBm	dB	dB	dBm	m	-	dBm	dB	MODE
2404.8MHz	-27.73	30.7	20.00	-17.03	1.2	VH1	8.0	-25.83	P

Test-Data Summary – HandSet Unit @ 2404.8MHz:

Center Frequency = 2404.8 MHz
 Measured Peak Level = -17.03dBm
 Limit (15.247d) = 8dBm

SPECTRAL DENSITY OF FUNDAMENTAL (cont.)**Test Data – Spectral Density of Fundamental (HandSet Unit @ 2439MHz)**

The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

**Table 9: Spectral Density Test Data – 2439MHz HandSet Measurement @ 3 meters**

INDICATED		CORRECTION		CORR	ANT ORIENTATION		Limit		DET
FREQ	AMPL	ANT	CAB/PreAMP	AMPL	HT	POL	AMPL	MARG	MODE
MHz	dBm	dB	dB	dBm	m	-	dBm	dB	
2439MHz	-14.83	30.7	20.00	-4.13	1.2	VH1	8.0	-3.86	P

Test-Data Summary – HandSet Unit @ 2439MHz:

Center Frequency = 2439 MHz
 Measured Peak Level = -4.13 dBm
 Limit (15.247d) = 8dBm

SPECTRAL DENSITY OF FUNDAMENTAL (cont.)

Test Data – Spectral Density of Fundamental (HandSet Unit @ 2475MHz)

The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

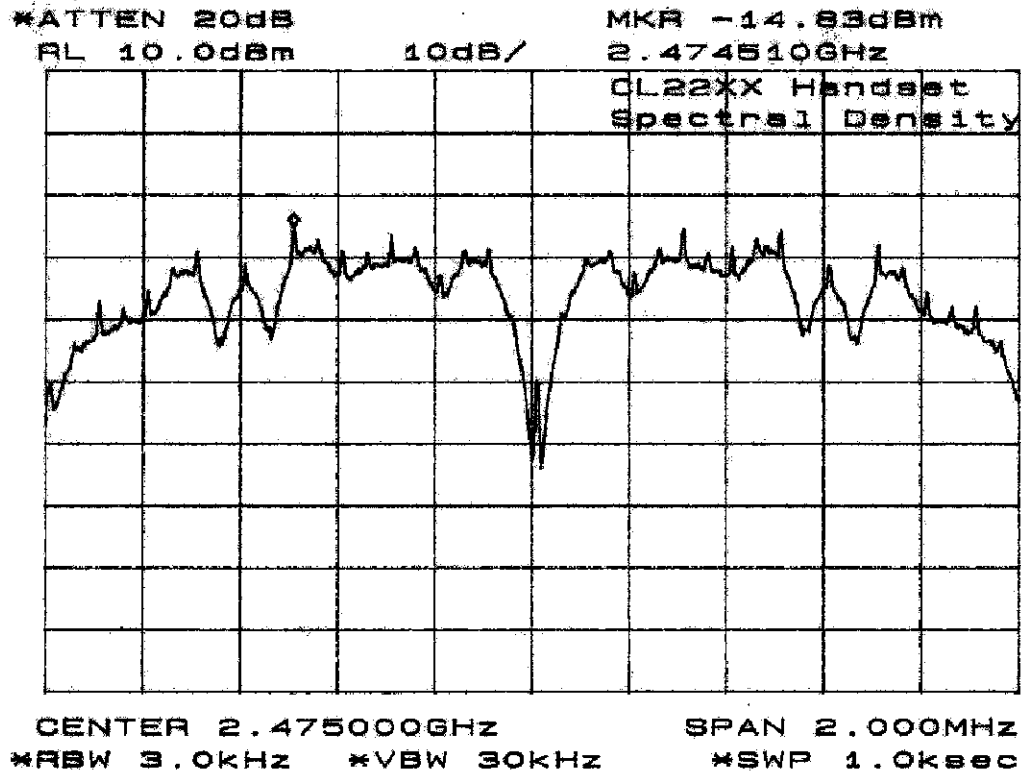


Table 10: Spectral Density Test Data – 2475MHz HandSet Measurement @ 3 meters

INDICATED		CORRECTION		CORR	ANT ORIENTATION		Limit		
FREQ	AMPL	ANT	CAB/PreAMP	AMPL	HT	POL	AMPL	MARG	DET
MHz	dBm	dB	dB	dBm	m	-	dBm	dB	MODE
2475MHz	-14.83	30.7	20.00	-4.13	1.2	VH1	8.0	-3.86	P

Test-Data Summary – HandSet Unit @ 2475MHz:

Center Frequency = 2475 MHz
Measured Peak Level = -4.13
Limit (15.247d) = 8dBm

SPECTRAL DENSITY OF FUNDAMENTAL (cont)**Spectral Density Measurement (Base Unit)**

The EUT was set up on a wooden non-conductive tabletop, 80 cm above the ground plane on an Open Area Test Site (OATS) at 3 meters. The measurement instrumentation used was a receiver with bandwidth parameters as stipulated in ANSI C63.4-1992. The EUT running in continuous mode was rotated 360 degrees azimuth and was also rotated in its x-y-z axis positions. The search antenna was varied 1 to 4m and rotated in its horizontal and vertical polarities while operating the spectrum analyzer in fixed tuned mode to determine the precise amplitude of the emission. The EUT signal was captured in "max hold" mode on the analyzer and measurements of the signal were taken.

Site Used – Spectral Density Measurement of Fundamental (Base Unit)

- ☐ Test Site 1 - Shielded Room: 16' x 12' x 9'
☒ Test Site 1 - 3m Open Field Radiated Site
☐ Test Site 1 - 10m Open Field Radiated Site
☐ Test Site 2 - Environmental Lab
☐ EMC Lab 1 - Test Laboratory
☐ Semi-Anechoic Absorber Lined Shielded Room
☐ Other: _____

Administrative Details – Spectral Density Measurement of Fundamental (Base Unit)

Test Date(s):	November 14, 2003
Test Engineer(s):	Bande Adepju

Environmental Conditions – Spectral Density Measurement of Fundamental (Base Unit)

Temperature	16.2°C
Humidity	65%

Spectrum Analyzer Configuration (during swept frequency scans) – Base Unit Measurement

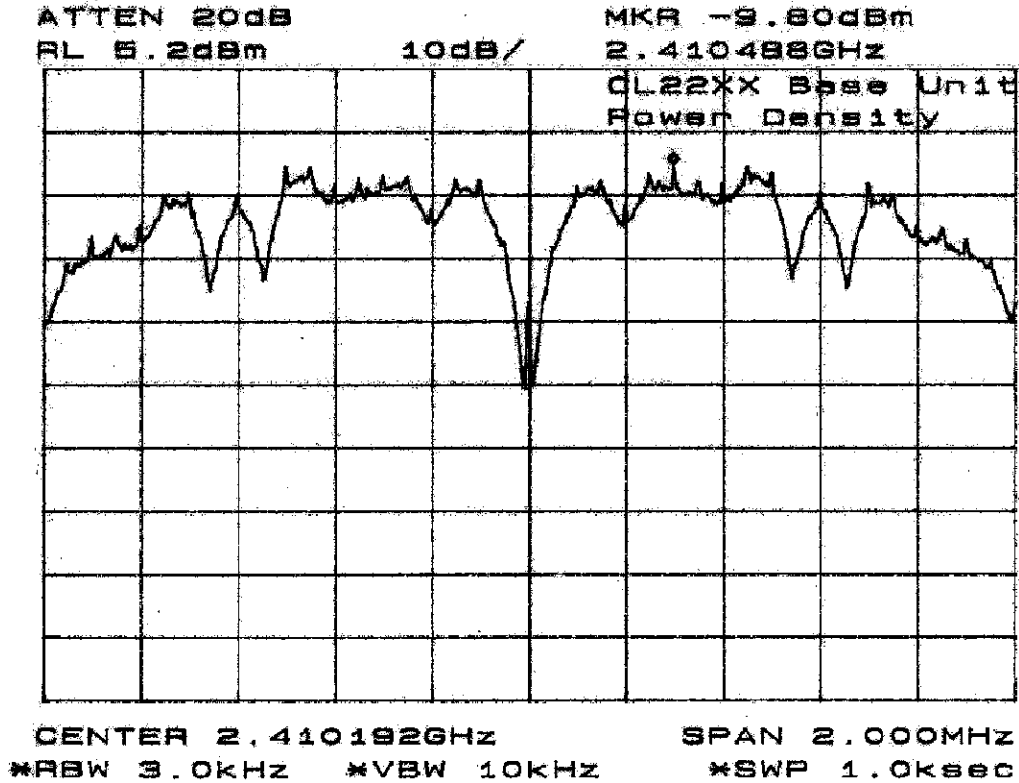
Center Frequency See Applicable Plot Below
 Span 2 MHz
 Sweep Speed 1.0ksec
 RES Bandwidth 3 kHz
 Video Bandwidth 30 kHz
 Quasi Peak Adapter Mode Bypass
 Quasi peak Adapter Bandwidth Disabled
 Average Detector Disabled

Test Equipment – Spectral Density Tests (Base Unit Measurement)

Equipment Description	Manufacturer	Model Name	Serial Number	Cal Due Date
Spectrum Analyzer	Hewlett-Packard	8565E	2618A02909	02/18/2003
Pre-amplifier	Hewlett-Packard	8449B	3008A00101	02/25/2003
Pre-amplifier	Hewlett-Packard	8447F	2805A02491	12/15/2003
Antenna Cable	Hewlett-Packard (OPTK45)	RG8/u	-	
Antenna Cable (high freq)	Specialty Cable Corp.	M17/60-RG142	-	
Horn Antenna	EMCO	3115	4663	12/18/2003

SPECTRAL DENSITY OF FUNDAMENTAL (cont.)**Test Data – Spectral Density of Fundamental (Base Unit @ 2410.13MHz)**

The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

**Table 11: Spectral Density Test Data – 2410.13MHz Base Unit Measurement @ 3 meters**

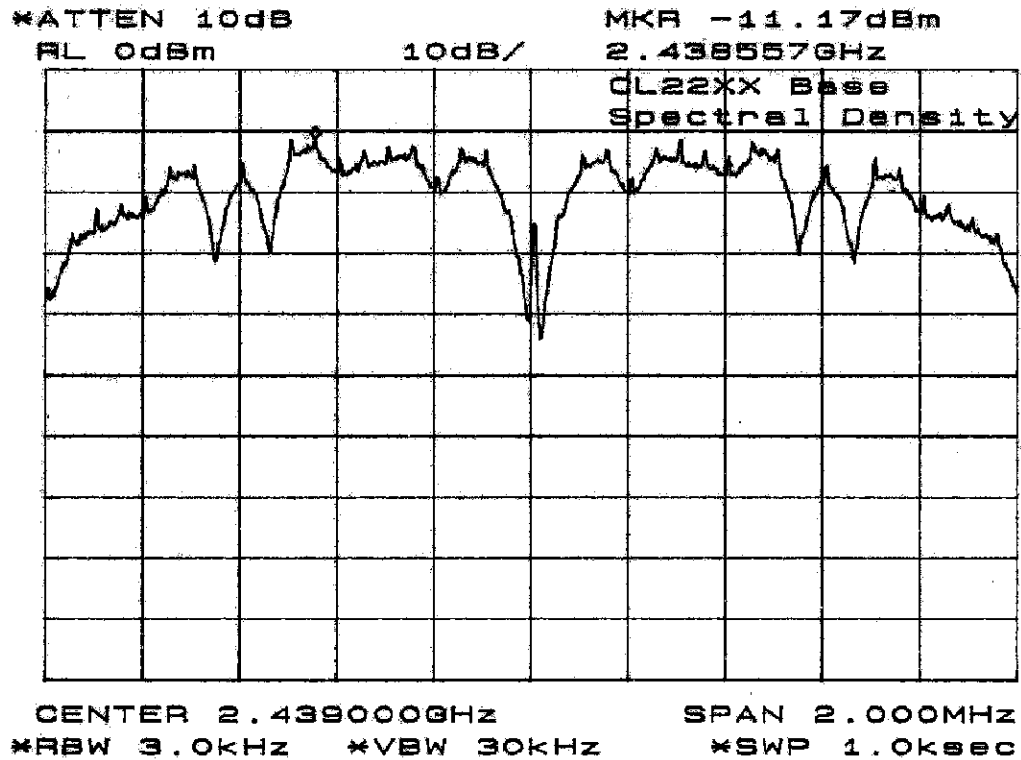
INDICATED		CORRECTION		CORR	ANT ORIENTATION		Limit		
FREQ	AMPL	ANT	CAB/PreAMP	AMPL	HT	POL	AMPL	MARG	DET
MHz	dBm	dB	dB	dBm	m	-	dBm	dB	MODE
2410.13MHz	-9.80	30.7	20.00	0.90	1.2	VH1	8.0	-7.10	P

Test-Data Summary – Base Unit @ 2410.13MHz:

Center Frequency = 2404.8 MHz
 Measured Peak Level = 0.90dBm
 Limit (15.247d) = 8dBm

SPECTRAL DENSITY OF FUNDAMENTAL (cont.)**Test Data – Spectral Density of Fundamental (Base Unit @ 2439MHz)**

The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

**Table 12: Spectral Density Test Data – 2439MHz Base Unit Measurement @ 3 meters**

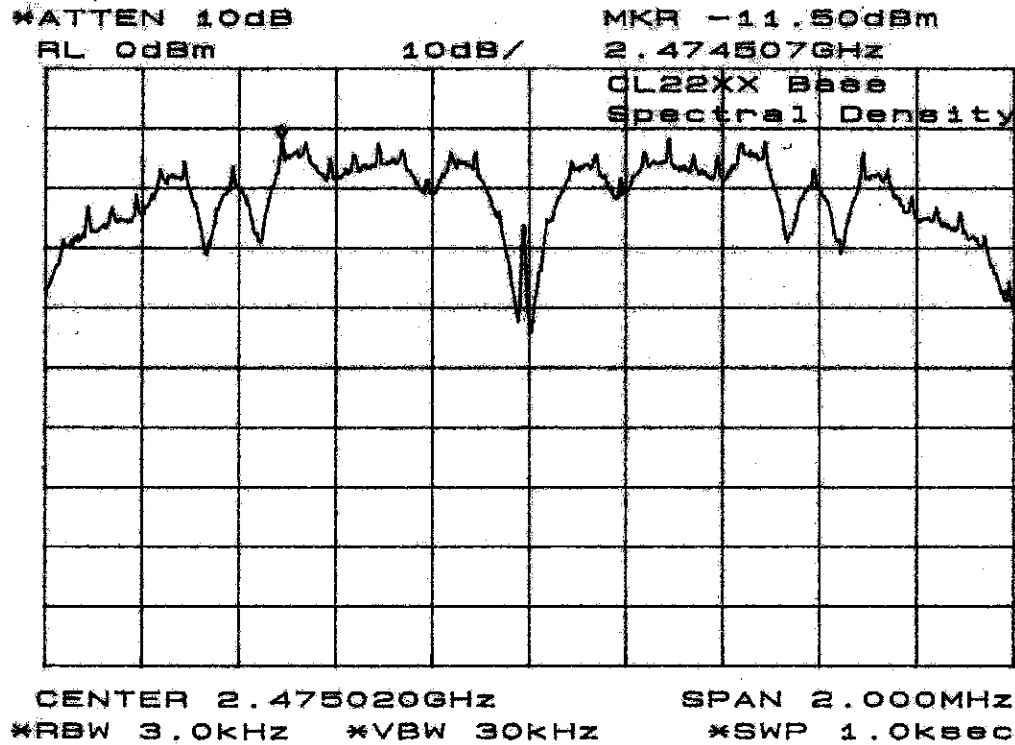
INDICATED		CORRECTION		CORR	ANT ORIENTATION		Limit		
FREQ	AMPL	ANT	CAB/PreAMP	AMPL	HT	POL	AMPL	MARG	DET
MHz	dBm	dB	dB	dBm	m	-	dBm	dB	MODE
2439MHz	-11.17	30.7	20.00	-0.47	1.2	VH1	8.0	-8.47	P

Test-Data Summary – Base Unit @ 2439MHz:

Center Frequency = 2439 MHz
 Measured Peak Level = -0.47dBm
 Limit (15.247d) = 8dBm

SPECTRAL DENSITY OF FUNDAMENTAL (cont.)**Test Data – Spectral Density of Fundamental (Base Unit @ 2475MHz)**

The measurement plot below represents the maximum worst-case result from the measurement performed in accordance to the requirements of this section.

**Table 13: Spectral Density Test Data – 2475MHz Base Unit Measurement @ 3 meters**

INDICATED		CORRECTION		CORR	ANT ORIENTATION		Limit		
FREQ	AMPL	ANT	CAB/PreAMP	AMPL	HT	POL	AMPL	MARG	DET
MHz	dBm	dB	dB	dBm	m	-	dBm	dB	MODE
2475MHz	-11.50	30.7	20.00	-0.80	1.2	VH1	8.0	-12.13	P

Test-Data Summary – Base Unit @ 2475MHz:

Center Frequency = 2475 MHz
 Measured Peak Level = -0.80dBm
 Limit (15.247d) = 8dBm

HARMONIC, SPURIOUS AND RESTRICTED BANDS per FCC 47 CFR Part §15.247(c)

EUT Configuration and Test Procedure

The EUT, CL2210, two-line 2.4 GHz digital cordless phone, was set up on a screened platform that was flush with a ground reference in an open field. The EUT was set up on a wooden table, 80cm above the ground reference plane at 3 or 10 meters. Functionality was exercised by using software provided by the manufacturer. Excess cords of the EUT were bundled and shortened to appropriate length.

Test Equipment Used

Equipment Description	Manufacturer	Model Name	Serial Number	Calibration Date
Spectrum Analyzer	Hewlett-Packard	8566B	2618A02909	12-11-2004
Spectrum Analyzer Display	Hewlett-Packard	85662A	2848A17028	12-11-2004
Quasi Peak Adapter	Hewlett-Packard	85650	2521A00871	12-11-2004
Preselector	Hewlett-Packard	85685A	2620A00265	12-11-2004
Antenna Cable (OPTK45)	RG8/u	-	-	12-09-2004
Biconical Antenna	EMCO	3104	3549	01-22-2004
L. P. Ant. (200-1000 MHz)	EMCO	3146	2075	01-19-2004
Horn. Ant. (Above 1000 MHz)	EMCO	3115	8812-3050	12-18-2003

Test Software Used

Description	Manufacturer	Model Name	Version Number	Calibration/Validation Date
Spectrum Analyzer	ITC Engineering	1.04b1	3	01-16-2004

Spectrum Analyzer Settings

IF Bandwidth.....120 kHz
 Measurements below 1000 MHz (unless stated otherwise)
 Analyzer Mode (for Peak Measurements).....Peak/Log
 Resolution Bandwidth.....100 kHz
 Video Bandwidth.....100 kHz
 Analyzer Mode (for Quasi-Peak Measurements)
 Quasi-Peak/Linear Resolution Bandwidth.....1000 kHz
 Video Bandwidth.....1000 kHz
 Measurements above 1000 MHz (unless stated otherwise)
 Quasi-Peak Adapter Mode.....Disabled
 Analyzer Mode (for Peak Measurements).....Peak
 Resolution Bandwidth.....1000 kHz
 Video Bandwidth.....1000 kHz
 Analyzer Mode (for Average Measurements).....Video Filter
 Resolution Bandwidth.....1000 kHz
 Video Bandwidth.....10 Hz

Data Table Legend and Field Strength Calculation

Detector mode: Peak (P) or Quasi-Peak (QP) or Average (A)

	Polarization	Antenna	Freq Range (MHz)
VB	Vertical	EMCO 3104/sn 3549 Biconical	30 – 200
HB	Horizontal	EMCO 3104/sn 3549 Biconical	30 – 200
VL	Vertical	EMCO 3146/sn. 2075 Log Periodic	200 – 1000
HL	Horizontal	EMCO 3146/sn. 2075 Log Periodic	200 – 1000
VH	Vertical	EMCO 3115/sn. 8812-3050 Horn	Above 1000
HH	Horizontal	EMCO 3115/sn. 8812-3050 Horn	Above 1000

The margin is calculated as follows:

Margin = Corrected Amplitude - Limit; where Corrected Amplitude = Amplitude + Cable Loss + Antenna Factor.

Harmonic, Spurious, and Restricted Bands (cont.)**Harmonic, Spurious, and Restricted Bands Test Results****Site Used**

- ☐ Test Site 1: Shielded Room: 16' x 12' x 9'
☒ Test Site 1 - 3m Open Field Radiated Site
☐ Test Site 1 - 10m Open Field Radiated Site
☐ Test Site 2 - Environmental Lab
☐ EMC Lab 1 - Test Laboratory
☐ Semi-Anechoic Absorber Lined Shielded Room
☐ Other

Administrative Details

Test Date:	November 4, 2003
Test Engineer:	Lan Vu

Environmental Conditions

Temperature:	17°C
Humidity:	60%

Spurious and Restricted Bands Test Results**(Transmitter – Headset - Channel 1 – 2404.8MHz, 30MHz to 1GHz)**

INDICATED		CORRECTION		CORR	TURNTABLE ANT			CLASS A		CLASS B		
FREQ	AMPL	ANT	CAB	AMPL	ANG	HT	POL	AMPL	MARG	AMPL	MARG	DET
MHz	dBuV/m	dB	dB	dBuV/m	DEG	m	-	dBuV/m	dB	dBuV/m	dB	MODE
38.45	8.4	7.8	0.5	16.7	90	1.0	HB	-	-	40.0	-23.3	P
38.47	17.6	10.9	0.5	29.0	90	1.0	VB	-	-	40.0	-11.0	P
48.03	22.0	11.3	0.7	34.0	90	1.0	VB	-	-	40.0	-6.0	P
48.06	12.8	7.8	0.7	21.3	90	1.0	HB	-	-	40.0	-18.7	P
77.10	12.1	7.6	2.1	21.7	90	1.0	VB	-	-	40.0	-18.3	P
86.50	12.7	7.6	2.5	22.8	90	2.0	HB	-	-	40.0	-17.2	P
117.80	9.8	15.8	3.3	28.9	0	1.5	VB	-	-	43.0	-14.1	P
152.00	11.9	13.7	2.6	28.2	90	1.0	VB	-	-	43.0	-14.8	P
206.10	10.6	11.7	3.6	25.9	90	1.0	VL	-	-	43.0	-17.1	P
246.60	19.5	12.6	3.9	36.0	0	1.0	VL	-	-	46.0	-10.0	P
246.80	18.6	12.5	3.9	35.1	90	1.0	HL	-	-	46.0	-10.9	P
292.50	10.1	14.1	5.2	29.4	0	1.0	VL	-	-	46.0	-16.6	P
336.00	10.5	14.6	5.0	30.1	90	1.0	VL	-	-	46.0	-15.9	P

No emissions of significant level were observed in the ranges 30MHz to 38.45MHz and 336MHz and 1000MHz.

Harmonic, Spurious, and Restricted Bands Test Results**(Transmitter – Headset, Channel 1 – 2404.8MHz, above 1GHz to 10th Harmonic)**

INDICATED		CORRECTION		CORR	TURNTABLE ANT			CLASS A		CLASS B		
FREQ	AMPL	ANT	CAB	AMPL	ANG	HT	POL	AMPL	MARG	AMPL	MARG	DET
GHz	dBuV/m	dB	dB	dBuV/m	DEG	m	-	dBuV/m	dB	dBuV/m	dB	MODE
1028.0	47.7	24.8	-36.0	36.5	90	1.0	HH	-	-	54.0	-17.5	P
1129.0	47.1	25.4	-36.0	36.5	90	1.0	VH	-	-	54.0	-17.5	P
1199.0	46.9	25.7	-36.0	36.6	90	1.0	VH	-	-	54.0	-17.4	P
1315.0	47.9	26.2	-36.0	38.1	180	1.0	VH	-	-	54.0	-15.9	P
1590.0	47.0	27.3	-35.0	39.3	90	1.0	VH	-	-	54.0	-14.7	P
1759.0	44.0	28.1	-27.0	45.1	90	1.0	VH	-	-	54.0	-8.9	P
4810.0	25.0	34.6	-19.0	40.6	90	1.0	HH	-	-	54.0	-13.4	P
4810.0	25.0	34.6	-19.0	40.6	90	1.0	VH	-	-	54.0	-13.4	P
7215.0	25.0	37.5	-16.0	46.5	90	1.0	VH	-	-	54.0	-7.5	P
7215.0	25.0	37.5	-16.0	46.5	90	1.0	HH	-	-	54.0	-7.5	P
9620.0	25.0	38.4	-22.0	41.4	90	1.0	HH	-	-	54.0	-12.6	P
9620.0	25.0	38.4	-22.0	41.4	90	1.0	VH	-	-	54.0	-12.6	P

No emissions of significant level were observed between 1000GHz and 1028GHz. And above 9620 MHz

Harmonic, Spurious and Restricted Bands (cont.)**Spurious, and Restricted Bands Test Results****(Transmitter Headset - Channel 20 – 2459 MHz, 30MHz to 1GHz)**

INDICATED		CORRECTION		CORR	TURNTABLE ANT			CLASS A		CLASS B		
FREQ	AMPL	ANT	CAB	AMPL	ANG	HT	POL	AMPL	MARG	AMPL	MARG	DET
MHz	dBuV/m	dB	DB	dBuV/m	DEG	m	-	dBuV/m	dB	dBuV/m	dB	MODE
41.16	15.1	9.8	1.0	25.9	90	1.0	VB	-	-	40.0	-14.1	P
52.40	13.7	10.4	1.3	25.4	90	1.0	VB	-	-	40.0	-14.6	P
66.86	11.7	9.9	1.8	23.4	0	1.0	VB	-	-	40.0	-16.6	P
78.85	13.3	7.3	2.2	22.8	90	1.0	VB	-	-	40.0	-17.2	P
87.50	11.8	7.8	2.5	22.2	90	1.0	HB	-	-	40.0	-17.8	P
118.85	10.2	16.5	3.2	29.9	0	1.0	VB	-	-	43.0	-13.1	P
142.80	9.8	12.5	4.5	26.8	90	1.0	VB	-	-	43.0	-16.2	P
204.90	10.1	11.8	3.6	25.4	90	1.0	VL	-	-	43.0	-17.6	P
235.00	21.4	12.0	2.8	36.2	90	1.0	VL	-	-	46.0	-9.8	P
247.50	19.8	12.6	4.0	36.4	90	1.0	VL	-	-	46.0	-9.6	P
248.00	18.8	12.6	4.0	35.4	90	1.0	HL	-	-	46.0	-10.6	P
293.00	17.3	14.1	5.2	36.6	90	1.0	VL	-	-	46.0	-9.4	P
337.80	11.0	14.6	4.9	30.6	90	1.0	VL	-	-	46.0	-15.4	P

No emissions of significant level were observed between 30MHz and 41.16MHz.

Harmonic, Spurious, and Restricted Bands Test Results**(Transmitter – Headset, Channel 20 – 2439.0MHz, above 1GHz to 10th Harmonic)**

INDICATED		CORRECTION		CORR	TURNTABLE ANT			CLASS A		CLASS B		
FREQ	AMPL	ANT	CAB	AMPL	ANG	HT	POL	AMPL	MARG	AMPL	MARG	DET
GHz	dBuV/m	dB	DB	dBuV/m	DEG	m	-	dBuV/m	dB	dBuV/m	dB	MODE
1128.0	44.0	25.4	-36.0	33.4	0	1.0	VH	-	-	54.0	-20.6	P
1200.0	46.2	25.7	-36.0	35.9	90	1.0	VH	-	-	54.0	-18.1	P
1204.0	46.8	25.5	-36.0	36.3	90	1.0	HH	-	-	54.0	-17.7	P
1326.0	41.0	26.2	-36.0	31.2	180	1.0	VH	-	-	54.0	-22.8	P
1415.0	44.8	26.3	-36.0	35.1	90	1.0	HH	-	-	54.0	-18.9	P
1651.0	44.9	27.4	-29.0	43.3	90	1.0	HH	-	-	54.0	-10.7	P
4876.0	25.0	34.8	-20.0	39.8	90	1.0	HH	-	-	54.0	-14.2	P
4876.0	25.0	34.8	-20.0	39.8	90	1.0	VH	-	-	54.0	-14.2	P
7314.0	25.0	37.7	-18.0	44.7	90	1.0	VH	-	-	54.0	-9.3	P
7314.0	25.0	37.7	-18.0	44.7	90	1.0	HH	-	-	54.0	-9.3	P
9752.0	25.0	38.5	-22.0	41.5	90	1.0	HH	-	-	54.0	-12.5	P
9752.0	25.0	38.5	-22.0	41.5	90	1.0	VH	-	-	54.0	-12.5	P

No emissions of significant level were observed between 1000GHz and 1128GHz and above 9752 MHz

Harmonic, Spurious, and Restricted Bands Measurements (cont.)**Spurious, and Restricted Bands Test Results****(Transmitter- Headset - Channel 40 – 2475MHz, 30MHz to 1GHz)**

INDICATED		CORRECTION		CORR	TURNTABLE ANT			CLASS A		CLASS B		
FREQ	AMPL	ANT	CAB	AMPL	ANG	HT	POL	AMPL	MARG	AMPL	MARG	DET
MHz	dBuV/m	dB	DB	dBuV/m	DEG	m	-	dBuV/m	dB	dBuV/m	dB	MODE
38.45	10.0	7.8	0.5	18.3	90	1.0	HB	-	-	40.0	-21.7	P
38.47	17.6	10.9	0.5	29.0	90	1.0	VB	-	-	40.0	-11.0	P
40.00	15.4	9.8	1.0	26.2	90	1.0	VB	-	-	40.0	-13.8	P
48.03	22.0	11.3	0.7	34.0	90	1.0	VB	-	-	40.0	-6.0	P
48.06	12.8	7.8	0.7	21.3	90	1.0	HB	-	-	40.0	-18.7	P
52.50	12.9	10.4	1.4	24.7	90	1.0	VB	-	-	40.0	-15.3	P
67.00	13.3	9.8	1.8	24.9	0	1.0	VB	-	-	40.0	-15.1	P
78.50	12.6	7.3	2.2	22.1	90	1.0	VB	-	-	40.0	-17.9	P
86.90	10.7	7.7	2.5	20.9	90	1.0	HB	-	-	40.0	-19.1	P
118.50	10.6	16.2	3.3	30.1	90	1.0	VB	-	-	43.0	-12.9	P
142.60	10.2	12.2	4.5	26.9	0	1.0	VB	-	-	43.0	-16.1	P
204.10	11.8	11.8	3.4	27.0	90	1.0	VL	-	-	43.0	-16.0	P
236.20	20.8	12.1	3.1	35.9	90	1.0	VL	-	-	46.0	-10.1	P
247.10	20.5	12.6	3.9	37.0	90	1.0	VL	-	-	46.0	-9.0	P
248.20	18.5	12.6	4.0	35.1	90	2.0	HL	-	-	46.0	-10.9	P
293.00	17.3	14.1	5.2	36.6	90	1.0	VL	-	-	46.0	-9.4	P
337.30	16.4	14.6	5.0	36.0	90	1.0	VL	-	-	46.0	-10.0	P

No emissions of significant level were observed in the ranges 30MHz to 38.45MHz and 336MHz and 1000MHz.

Harmonic, Spurious, and Restricted Bands Test Results**(Transmitter – Headset, Channel 40 – 2475MHz, above 1GHz to 10th Harmonic)**

INDICATED		CORRECTION		CORR	TURNTABLE ANT			CLASS A		CLASS B		
FREQ	AMPL	ANT	CAB	AMPL	ANG	HT	POL	AMPL	MARG	AMPL	MARG	DET
GHz	dBuV/m	dB	DB	dBuV/m	DEG	m	-	dBuV/m	dB	dBuV/m	dB	MODE
1138.0	47.3	25.4	-36.0	36.7	90	1.0	VH	-	-	54.0	-17.3	P
1208.0	46.5	25.7	-36.0	36.2	90	1.0	VH	-	-	54.0	-17.8	P
1208.0	47.8	25.5	-36.0	37.3	0	1.0	HH	-	-	54.0	-16.7	P
1262.0	48.3	25.7	-36.0	38.0	90	1.0	HH	-	-	54.0	-16.0	P
1265.0	43.0	26.0	-36.0	33.0	180	1.0	VH	-	-	54.0	-21.0	P
1326.0	41.9	26.2	-36.0	32.1	90	1.0	VH	-	-	54.0	-21.9	P
4950.0	25.0	35.0	-20.0	40.0	90	1.0	HH	-	-	54.0	-14.0	P
4950.0	25.0	35.0	-20.0	40.0	90	1.0	VH	-	-	54.0	-14.0	P
7425.0	25.0	37.9	-18.0	44.9	90	1.0	VH	-	-	54.0	-9.1	P
7425.0	25.0	37.9	-18.0	44.9	90	1.0	HH	-	-	54.0	-9.1	P
9900.0	25.0	38.6	-22.0	41.6	90	1.0	HH	-	-	54.0	-12.4	P
9900.0	25.0	38.6	-22.0	41.6	90	1.0	VH	-	-	54.0	-12.4	P

No emissions of significant level were observed between 1000GHz and 1138GHz and above 9900 MHz

Harmonic, Spurious, and Restricted Bands Measurements (cont.)**Harmonic, Spurious, and Restricted Bands Test Results
(Transmitter Base - Channel 4 – 2410.2MHz, 30MHz to 1GHz)**

INDICATED		CORRECTION		CORR	TURNTABLE ANT			CLASS A		CLASS B		
FREQ	AMPL	ANT	CAB	AMPL	ANG	HT	POL	AMPL	MARG	AMPL	MARG	DET
MHz	dBuV/m	dB	dB	dBuV/m	DEG	m	-	dBuV/m	dB	dBuV/m	db	MODE
38.91	14.7	9.9	1.0	25.5	90	1.0	VB	-	-	40.0	-14.5	P
77.10	12.1	7.6	2.1	21.7	90	1.0	VB	-	-	40.0	-18.3	P
86.50	12.7	7.6	2.5	22.8	90	2.0	HB	-	-	40.0	-17.2	P
117.80	9.8	15.8	3.3	28.9	0	1.5	VB	-	-	43.0	-14.1	P
152.00	11.9	13.7	2.6	28.2	90	1.0	VB	-	-	43.0	-14.8	P
206.10	10.6	11.7	3.6	25.9	90	1.0	VL	-	-	43.0	-17.1	P
246.60	19.5	12.6	3.9	36.0	0	1.0	VL	-	-	46.0	-10.0	P
246.80	18.6	12.5	3.9	35.1	90	1.0	HL	-	-	46.0	-10.9	P
292.50	10.1	14.1	5.2	29.4	0	1.0	VL	-	-	46.0	-16.6	P
336.00	10.5	14.6	5.0	30.1	90	1.0	VL	-	-	46.0	-15.9	P

No emissions of significant level were observed between 30MHz and 38.91MHz and 336 MHz and 1000 MHz

**Harmonic, Spurious, and Restricted Bands Test Results
(Transmitter – Base, Channel 4 – 2410.2MHz, above 1GHz to 10th Harmonic)**

INDICATED		CORRECTION		CORR	TURNTABLE ANT			CLASS A		CLASS B		
FREQ	AMPL	ANT	CAB	AMPL	ANG	HT	POL	AMPL	MARG	AMPL	MARG	DET
GHz	dBuV/m	dB	dB	dBuV/m	DEG	m	-	dBuV/m	dB	dBuV/m	dB	MODE
1130.0	48.2	25.4	-36.0	37.6	90	1.0	VH	-	-	54.0	-16.4	P
1200.0	45.9	25.7	-36.0	35.6	90	1.0	VH	-	-	54.0	-18.4	P
1268.0	50.2	26.0	-36.0	40.2	0	1.0	VH	-	-	54.0	-13.8	P
1317.0	51.0	26.2	-36.0	41.1	180	1.0	VH	-	-	54.0	-12.9	P
1473.0	49.8	25.8	-36.0	39.6	90	1.0	VH	-	-	54.0	-14.4	P
1473.0	46.3	25.5	-36.0	35.8	0	1.0	HH	-	-	54.0	-18.2	P
1729.0	45.6	28.1	-28.6	45.1	90	1.0	VH	-	-	54.0	-7.3	P
1801.0	41.0	28.1	-27.0	42.1	90	1.0	VH	-	-	54.0	-11.9	P
4824.0	28.0	34.6	-19.0	43.6	90	1.0	HH	-	-	54.0	-10.4	P
4824.0	28.0	34.6	-19.0	43.6	90	1.0	VH	-	-	54.0	-10.4	P
7236.0	25.0	37.5	-16.0	46.5	90	1.0	VH	-	-	54.0	-7.5	P
7236.0	25.0	37.5	-16.0	46.5	90	1.0	HH	-	-	54.0	-7.5	P
9648.0	25.0	38.4	-22.0	41.4	90	1.0	HH	-	-	54.0	-12.6	P
9648.0	25.0	38.4	-22.0	41.4	90	1.0	VH	-	-	54.0	-12.6	P

No emissions of significant level were observed between 1000GHz and 1130GHz. And above 9648 MHz

Harmonic, Spurious, and Restricted Bands Measurements (cont.)**Harmonic, Spurious, and Restricted Bands Test Results
(Transmitter – Base, Channel 20 – 2439.0MHz, 30MHz to 1GHz)**

INDICATED		CORRECTION		CORR	TURNTABLE ANT			CLASS A		CLASS B		
FREQ	AMPL	ANT	CAB	AMPL	ANG	HT	POL	AMPL	MARG	AMPL	MARG	DET
MHz	dBuV/m	dB	dB	dBuV/m	DEG	m	-	dBuV/m	dB	dBuV/m	dB	MODE
40.06	16.1	9.8	1.0	26.9	90	1.0	VB	-	-	40.0	-13.1	P
52.40	13.7	10.4	1.3	25.4	90	1.0	VB	-	-	40.0	-14.6	P
66.86	11.7	9.9	1.8	23.4	0	1.0	VB	-	-	40.0	-16.6	P
78.85	13.3	7.3	2.2	22.8	90	1.0	VB	-	-	40.0	-17.2	P
87.50	11.8	7.8	2.5	22.2	90	1.0	HB	-	-	40.0	-17.8	P
118.85	10.2	16.5	3.2	29.9	0	1.0	VB	-	-	43.0	-13.1	P
142.80	9.8	12.5	4.5	26.8	90	1.0	VB	-	-	43.0	-16.2	P
204.90	10.1	11.8	3.6	25.4	90	1.0	VL	-	-	43.0	-17.6	P
235.00	21.4	12.0	2.8	36.2	90	1.0	VL	-	-	46.0	-9.8	P
247.50	19.8	12.6	4.0	36.4	90	1.0	VL	-	-	46.0	-9.6	P
248.00	18.8	12.6	4.0	35.4	90	1.0	HL	-	-	46.0	-10.6	P
293.00	17.3	14.1	5.2	36.6	90	1.0	VL	-	-	46.0	-9.4	P
337.80	11.0	14.6	4.9	30.6	90	1.0	VL	-	-	46.0	-15.4	P

No emissions of significant level were observed in the ranges 30MHz to 40.06MHz and 337.80MHz and 1000MHz.

**Harmonic, Spurious, and Restricted Bands Test Results
(Transmitter – Base, Channel 20 – 2439.0MHz, above 1GHz to 10th Harmonic)**

INDICATED		CORRECTION		CORR	TURNTABLE ANT			CLASS A		CLASS B		
FREQ	AMPL	ANT	CAB	AMPL	ANG	HT	POL	AMPL	MARG	AMPL	MARG	DETR
GHz	dBuV/m	dB	dB	dBuV/m	DEG	m	-	dBuV/m	dB	dBuV/m	dB	MODE
1119.0	46.2	25.4	-36.0	35.6	90	1.0	VH	-	-	54.0	-18.4	P
1205.0	48.9	25.7	-36.0	38.6	90	1.0	VH	-	-	54.0	-15.4	P
1255.0	50.2	26.0	-36.0	40.2	0	1.0	VH	-	-	54.0	-13.8	P
1327.0	48.0	26.2	-36.0	38.1	180	1.0	VH	-	-	54.0	-15.9	P
1473.0	48.1	25.8	-36.0	37.9	90	1.0	VH	-	-	54.0	-12.4	P
1473.0	45.8	25.5	-36.0	35.8	0	1.0	HH	-	-	54.0	-17.0	P
1730.0	46.0	28.1	-28.6	45.5	90	1.0	VH	-	-	54.0	-7.7	P
1802.0	41.9	28.1	-27.0	43.0	90	1.0	VH	-	-	54.0	-12.8	P
4878.0	30.0	34.6	-19.0	43.6	90	1.0	HH	-	-	54.0	-8.4	P
4878.0	30.0	34.6	-19.0	43.6	90	1.0	VH	-	-	54.0	-8.4	P
7314.0	25.0	37.5	-16.0	46.5	90	1.0	VH	-	-	54.0	-7.5	P
7314.0	25.0	37.5	-16.0	46.5	90	1.0	HH	-	-	54.0	-7.5	P
9752.0	25.0	38.4	-22.0	41.4	90	1.0	HH	-	-	54.0	-12.6	P
9752.0	25.0	38.4	-22.0	41.4	90	1.0	VH	-	-	54.0	-12.6	P

No emissions of significant level were observed between 1000GHz and 1119GHz. and above 9752 MHz

Harmonic, Spurious, and Restricted Bands Measurements (cont.)**Harmonic, Spurious, and Restricted Bands Test Results
(Transmitter- Base - Channel 40 – 2475MHz, 30MHz to 1GHz)**

INDICATED		CORRECTION		CORR	TURNTABLE ANT			CLASS A		CLASS B		
FREQ	AMPL	ANT	CAB	AMPL	ANG	HT	POL	AMPL	MARG	AMPL	MARG	DET
MHz	dBuV/m	dB	dB	dBuV/m	DEG	m	-	dBuV/m	dB	dBuV/m	dB	MODE
40.00	15.4	9.8	1.0	26.2	90	1.0	VB	-	-	40.0	-13.8	P
52.50	12.9	10.4	1.4	24.7	90	1.0	VB	-	-	40.0	-15.3	P
67.00	13.3	9.8	1.8	24.9	0	1.0	VB	-	-	40.0	-15.1	P
78.50	12.6	7.3	2.2	22.1	90	1.0	VB	-	-	40.0	-17.9	P
86.90	10.7	7.7	2.5	20.9	90	1.0	HB	-	-	40.0	-19.1	P
118.50	10.6	16.2	3.3	30.1	90	1.0	VB	-	-	43.0	-12.9	P
142.60	10.2	12.2	4.5	26.9	0	1.0	VB	-	-	43.0	-16.1	P
204.10	11.8	11.8	3.4	27.0	90	1.0	VL	-	-	43.0	-16.0	P
236.20	20.8	12.1	3.1	35.9	90	1.0	VL	-	-	46.0	-10.1	P
247.10	20.5	12.6	3.9	37.0	90	1.0	VL	-	-	46.0	-9.0	P
248.20	18.5	12.6	4.0	35.1	90	2.0	HL	-	-	46.0	-10.9	P
293.00	17.3	14.1	5.2	36.6	90	1.0	VL	-	-	46.0	-9.4	P
337.30	16.4	14.6	5.0	36.0	90	1.0	VL	-	-	46.0	-10.0	P

No emissions of significant level were observed between 30 MHz and 40 MHz and 337 MHz and 1000 MHz

**Harmonic, Spurious, and Restricted Bands Test Results
(Transmitter – Base, Channel 40 – 2475MHz, above 1GHz to 10th Harmonic)**

INDICATED		CORRECTION		CORR	TURNTABLE ANT			CLASS A		CLASS B		
FREQ	AMPL	ANT	CAB	AMPL	ANG	HT	POL	AMPL	MARG	AMPL	MARG	DET
GHz	dBuV/m	dB	dB	dBuV/m	DEG	m	-	dBuV/m	dB	dBuV/m	dB	MODE
1119.0	46.2	25.4	-36.0	35.6	90	1.0	VH	-	-	54.0	-18.4	P
1205.0	48.9	25.7	-36.0	38.6	90	1.0	VH	-	-	54.0	-15.4	P
1255.0	50.2	26.0	-36.0	40.2	0	1.0	VH	-	-	54.0	-13.8	P
1327.0	48.0	26.2	-36.0	38.1	180	1.0	VH	-	-	54.0	-15.9	P
1473.0	48.1	25.8	-36.0	37.9	90	1.0	VH	-	-	54.0	-12.4	P
1473.0	45.8	25.5	-36.0	35.8	0	1.0	HH	-	-	54.0	-17.0	P
1730.0	46.0	28.1	-28.6	45.5	90	1.0	VH	-	-	54.0	-7.7	P
1802.0	41.9	28.1	-27.0	43.0	90	1.0	VH	-	-	54.0	-12.8	P
4950.0	29.0	34.6	-19.0	42.6	90	1.0	HH	-	-	54.0	-9.4	P
4950.0	29.5	34.6	-19.0	43.1	90	1.0	VH	-	-	54.0	-8.9	P
7425.0	25.0	37.5	-16.0	46.5	90	1.0	VH	-	-	54.0	-7.5	P
7425.0	25.0	37.5	-16.0	46.5	90	1.0	HH	-	-	54.0	-7.5	P
9900.0	25.0	38.4	-22.0	41.4	90	1.0	HH	-	-	54.0	-12.6	P
9900.0	25.0	38.4	-22.0	41.4	90	1.0	VH	-	-	54.0	-12.6	P

No emissions of significant level were observed between 1000GHz and 1119GHz.

Remarks

The EUT meets the requirements of the test reference for Harmonic, Spurious, and Restricted Bands.

POWER LINE CONDUCTED Emissions per FCC 47 CFR Part §15.207

EUT Configuration and Test Procedure

The EUT, CL2210, two-line 2.4 GHz digital cordless phone, was set up on a wooden table, 80cm above the horizontal reference plane and 40cm away from the vertical reference plane in a shielded room, with the suggested configuration given in FCC Measurement Procedure ANSI C63.4-2001. Excess cord of the EUT was bundled in the center or shortened to appropriate length.

Test Equipment Used

Equipment Description	Manufacturer	Model Name	Serial Number	Calibration Date
Spectrum Analyzer	Hewlett-Packard	8566B	2618A02909	12-11-2004
Spectrum Analyzer Display	Hewlett-Packard	85662A	2848A17028	12-11-2004
Quasi Peak Adapter	Hewlett-Packard	85650	2521A00871	12-11-2004
Preselector	Hewlett-Packard	85685A	2620A00265	12-11-2004
LISN	EMCO	8901-1447	1188/1001	03-20-2004

Spectrum Analyzer Configuration (during swept frequency scans)

Analyzer Mode (for Peak Measurements)..... Peak
 Sweep Speed..... Manual
 IF Bandwidth..... 9 kHz
 Resolution Bandwidth..... 10 kHz
 Video Bandwidth..... 10 kHz
 Quasi Peak Adapter Mode..... Disabled
 Quasi Peak Adapter bandwidth..... 9 kHz
 Attenuation..... 0 dB
 Analyzer Mode (for Quasi-Peak Measurements)..... Quasi-Peak/Linear
 Resolution Bandwidth..... 100 kHz
 Video Bandwidth..... 100 kHz
 Quasi Peak Adapter Mode..... Normal
 Analyzer Mode (for Average Measurements)..... Video Averaging
 Resolution Bandwidth..... 100 kHz
 Video Bandwidth..... 100 kHz
 Quasi Peak Adapter Mode..... Disabled

Data Table Legend and Field Strength Calculation

Detector mode: Peak (P) or Quasi-Peak (QP) or Average (A)

	Polarization	Antenna	Freq Range (MHz)
VB	Vertical	EMCO 3104/sn 3549 Biconical	30 – 200
HB	Horizontal	EMCO 3104/sn 3549 Biconical	30 – 200
VL	Vertical	EMCO 3146/sn. 2075 Log Periodic	200 – 1000
HL	Horizontal	EMCO 3146/sn. 2075 Log Periodic	200 – 1000
VH	Vertical	EMCO 3115/sn. 8812-3050 Horn	Above 1000
HH	Horizontal	EMCO 3115/sn. 8812-3050 Horn	Above 1000

The margin is calculated as follows:

Margin = Corrected Amplitude - Limit; where Corrected Amplitude = Amplitude + Cable Loss + Antenna Factor.

POWER LINE CONDUCTED (cont.)**POWER LINE CONDUCTED Emissions Results****Site Used**

- ☒ Test Site 1: Shielded Room: 16' x 12' x 9'
☐ Test Site 1 - 3m Open Field Radiated Site
☐ Test Site 1 - 10m Open Field Radiated Site
☐ Test Site 2 - Environmental Lab
☐ EMC Lab 1 - Test Laboratory
☐ Semi-Anechoic Absorber Lined Shielded Room
☐ Other

Administrative Details

Test Date:	November 5, 2003
Test Engineer:	Lan Vu

Environmental Conditions

Temperature:	25°C
Humidity:	51%

Emissions Test Results @ 2410.2 MHz

The tables which follow show summaries of the highest conducted emissions on the current carrying conductors supplying power to the host device for the EUT.

INDICATED		CORRECTION		CORR	TURNABLE ANT			CLASS A		CLASS B			
FREQ	AMPL	ANT	CAB	AMPL	ANG	HT	POL	AMPL	MARG	AMPL	MARG	FILTER	
MHz	dBuV/m	dB	dB	dBuV/m	DEG	m	-	dBuV/m	dB	dBuV/m	db	MODE	NOTES
0.68	16.6	-	0.5	17.1	-	-		-	-	48.0	-30.9	A	Hot
0.68	12.1	-	0.5	12.6	-	-		-	-	48.0	-35.4	A	Neutral
1.22	10.5	-	0.5	11.0	-	-		-	-	48.0	-37.0	A	Hot
4.35	6.9	-	0.9	7.8	-	-		-	-	48.0	-40.2	A	Neutral
6.47	8.0	-	0.9	8.9	-	-		-	-	48.0	-39.1	A	Neutral
9.60	11.6	-	0.8	12.4	-	-		-	-	48.0	-35.6	A	Hot
9.60	12.3	-	0.8	13.1	-	-		-	-	48.0	-34.9	A	Neutral
11.30	7.1	-	0.9	8.0	-	-		-	-	48.0	-40.0	A	Hot
11.41	11.0	-	1.0	12.0	-	-		-	-	48.0	-36.0	A	Neutral
13.56	4.9	-	1.3	6.2	-	-		-	-	48.0	-41.8	A	Hot
14.38	15.5	-	1.4	16.9	-	-		-	-	48.0	-31.1	A	Neutral
19.20	20.0	-	1.1	21.1	-	-		-	-	48.0	-26.9	A	Neutral
19.20	15.0	-	1.1	16.1	-	-		-	-	48.0	-31.9	A	Hot
25.20	21.4	-	0.7	22.1	-	-		-	-	48.0	-25.9	A	Hot
25.66	18.3	-	0.7	19.0	-	-		-	-	48.0	-29.0	A	Neutral
28.80	42.1	-	0.6	42.7	-	-		-	-	48.0	-5.3	A	Neutral
28.80	40.3	-	0.6	40.9	-	-		-	-	48.0	-7.1	A	Hot

No Emissions of significant level were observed in the ranges 0.15MHz to 0.68 MHz and 28.80 to 30MHz

POWER LINE CONDUCTED (cont.)**Emissions Test Results @ 2439.0 MHz**

The tables which follow show summaries of the highest conducted emissions on the current carrying conductors supplying power to the host device for the EUT.

INDICATED		CORRECTION		CORR	TURNTABLE ANT			CLASS A		CLASS B		FILTER	
FREQ	AMPL	ANT	CAB	AMPL	ANG	HT	POL	AMPL	MARG	AMPL	MARG	MODE	NOTES
MHz	dBuV/m	dB	dB	dBuV/m	DEG	m	-	dBuV/m	dB	dBuV/m	db		
0.68	16.2	-	0.5	16.7	-	-	-	-	-	48.0	-31.3	A	Hot
0.69	14.9	-	0.5	15.4	-	-	-	-	-	48.0	-32.6	A	Neutral
1.22	7.5	-	0.5	8.0	-	-	-	-	-	48.0	-40.0	A	Neutral
1.22	11.9	-	0.5	12.4	-	-	-	-	-	48.0	-35.6	A	Hot
4.74	9.1	-	1.0	10.1	-	-	-	-	-	48.0	-37.9	A	Hot
4.93	9.3	-	1.0	10.3	-	-	-	-	-	48.0	-37.7	A	Neutral
6.47	9.4	-	0.9	10.3	-	-	-	-	-	48.0	-37.7	A	Hot
7.80	13.5	-	0.9	14.4	-	-	-	-	-	48.0	-33.6	A	Hot
9.60	13.8	-	0.8	14.6	-	-	-	-	-	48.0	-33.4	A	Hot
9.60	15.2	-	0.8	16.0	-	-	-	-	-	48.0	-32.0	A	Neutral
11.41	13.0	-	1.0	14.0	-	-	-	-	-	48.0	-34.0	A	Hot
12.73	14.2	-	1.2	15.4	-	-	-	-	-	48.0	-32.6	A	Hot
12.74	13.5	-	1.2	14.7	-	-	-	-	-	48.0	-33.3	A	Neutral
15.90	16.1	-	1.4	17.5	-	-	-	-	-	48.0	-30.5	A	Neutral
16.14	11.7	-	1.4	13.1	-	-	-	-	-	48.0	-34.9	A	Hot
19.20	16.3	-	1.1	17.4	-	-	-	-	-	48.0	-30.6	A	Hot
19.20	21.7	-	1.1	22.8	-	-	-	-	-	48.0	-25.2	A	Neutral
25.66	28.8	-	0.7	29.5	-	-	-	-	-	48.0	-18.5	A	Neutral
25.68	29.5	-	0.7	30.2	-	-	-	-	-	48.0	-17.8	A	Hot
28.80	41.9	-	0.6	42.5	-	-	-	-	-	48.0	-5.5	A	Neutral
28.80	40.5	-	0.6	41.1	-	-	-	-	-	48.0	-6.9	A	Hot

No Emissions of significant level were observed in the ranges 0.15MHz to 0.68MHz and 28.80 to 30MHz

Emissions Test Results @ 2475.0 MHz

The tables which follow show summaries of the highest conducted emissions on the current carrying conductors supplying power to the host device for the EUT.

INDICATED		CORRECTION		CORR	TURNTABLE ANT			CLASS A		CLASS B		FILTER	
FREQ	AMPL	ANT	CAB	AMPL	ANG	HT	POL	AMPL	MARG	AMPL	MARG	MODE	NOTES
MHz	dBuV/m	dB	dB	dBuV/m	DEG	m	-	dBuV/m	dB	dBuV/m	db		
0.68	17.0	-	0.5	17.5	-	-	-	-	-	48.0	-30.5	A	Hot
0.68	16.2	-	0.5	16.7	-	-	-	-	-	48.0	-31.3	A	Neutral
1.22	8.6	-	0.5	9.1	-	-	-	-	-	48.0	-38.9	A	Neutral
1.22	7.8	-	0.5	8.3	-	-	-	-	-	48.0	-39.7	A	Hot
4.74	8.8	-	1.0	9.8	-	-	-	-	-	48.0	-38.2	A	Neutral
6.59	11.0	-	0.9	11.9	-	-	-	-	-	48.0	-36.1	A	Neutral
6.67	9.7	-	0.9	10.6	-	-	-	-	-	48.0	-37.4	A	Hot
9.60	15.2	-	0.8	16.0	-	-	-	-	-	48.0	-32.0	A	Neutral
9.60	15.6	-	0.8	16.4	-	-	-	-	-	48.0	-31.6	A	Hot
12.53	10.7	-	1.1	11.8	-	-	-	-	-	48.0	-36.2	A	Neutral
14.38	15.9	-	1.4	17.3	-	-	-	-	-	48.0	-30.7	A	Neutral
14.43	15.2	-	1.4	16.6	-	-	-	-	-	48.0	-31.4	A	Hot
19.20	21.4	-	1.1	22.5	-	-	-	-	-	48.0	-25.5	A	Neutral
19.20	21.5	-	1.1	22.6	-	-	-	-	-	48.0	-25.4	A	Hot
25.16	24.5	-	0.7	25.2	-	-	-	-	-	48.0	-22.8	A	Neutral
25.67	28.0	-	0.7	28.7	-	-	-	-	-	48.0	-19.3	A	Hot
28.80	42.9	-	0.6	43.5	-	-	-	-	-	48.0	-4.5	A	Neutral
28.81	40.7	-	0.6	41.3	-	-	-	-	-	48.0	-6.7	A	Hot

No Emissions of significant level were observed in the ranges 0.15MHz to 0.68MHz and 28.81 to 30MHz

POWER LINE CONDUCTED (cont.)**Data Table Legend and Field Strength Calculation**

Detector mode: Peak (P) or Quasi-Peak (QP) or Average (A)

The margin is calculated as follows:

Margin = Corrected Amplitude - Limit; where Corrected Amplitude = Amplitude + Cable Loss + Antenna Factor.

Remarks

No emissions of significant levels were observed between 150kHz through 30MHz.

The EUT meets the requirements of the test reference for power line conducted emissions.

ANTENNA REQUIREMENTS per FCC 47 CFR §15.203

An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the applicant can be used with this device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with this requirement.

Remarks

The Teledex CL2210 unit complies with the requirement of FCC 47 CFR §15.203.

PART 3: APPENDICES**A. EUT Technical Specification**

Manufacturer		Teledex Corporation		
Product Specifications				
	2.4GHz 2-Line Digital Cordless Guestroom Telephone			
	Model Number(s)	CL22XX (XX is for number of memory)		
		AKA CL2205 & CL2210		
		CL24XX (XX is for number of memory and 24 is for OEM)		
		AKA CL2405 & CL2210		
	Trade Name		CL2200 Series	
	Serial Number(s)			
	Cable(s)		6-meter, 8-pin Flat Cable Telephone Cord. UnShielded	
	Base Unit	Model Number	CL 2910	
		Dimensions	150mm(l) x 225mm(w) x 45mm(h)	
	#1 Mainboard	Manufacturer	Teledex	
		Part Number	3251 PC-N168 rev 3a	
		Layers	2	
		Dimension	Approx. 130mm x 155mm	
		Processor	Conexant, RSST7504/C7504-12	
		Oscillators/Crystals	Y100	9.6 MHz
		Power Amplifier	U1	Conexant RF110
		DSS	U2	Conexant RF109
		Antenna	0.82mm Filament, 85mm long	
			Number	1
			Gain	0 dBi
			Type	Embedded
		#2 Keypad Board	Manufacturer	Teledex
Part Number			40-3252-0011	
Dimension			Approx. 185mm x 80mm	
Layers			2	
Processor	n/a			
Oscillators/Crystals	none			
Antenna	n/a			
	Number			
	Gain			
	Type			

A. EUT Technical Specification (cont)

	Base Unit	Operating Range	2400 MHz to 2483.5 MHz	
		Transmission Type	Continuous	
		Type of Modulation	ADPCM	
		Rated RF Output Power	18 dBm	
		Transmission Method	Duplex	
		Duty Cycle	100%	
		Receiver Frequency Band	2408 MHz to 2483.5 MHz	
		Connector(s)	One (1) RJ-11	
			One (1) RJ45	
		Power Supply(s)	Teledex,	Model AM-93009100
			Type	AC to DC Xfmr, Wall Mounting Type
			Input	120VAC
			Output	9VDC
	HandSet Unit	Model Number	CL 2410	
		Dimensions	52mm(l) x 230mm(w) x 57mm(h)	
		Keypad Board	Manufacturer	Teledex
			Part Number	3251 PC-N168 rev 3a
			Layers	2
			Dimension	Approx. 130mm x 155mm
			Processor	Conexant, RSST7504/C7504-12
			Oscillators/Crystals	Y101 9.6 MHz
			Power Amplifier	U1 Conexant RF110
			DSS	U2 Conexant RF109
			Antenna	0.82mm Filament, 85mm long
				Number 1
				Gain 0
				Type Embedded
		Operating Range	2400 MHz to 2483.5 MHz	
		Transmission Type	Continuous	
		Type of Modulation	ADPCM	
		Rated RF Output Power	18 dBm	
		Transmission Method	Duplex	
		Duty Cycle	100%	
		Receiver Frequency Band	2408 MHz to 2483.5 MHz	
		Connector(s)	None	
		Power Supply(s)	NiMH Battery	
			Type	Rechargeable DC Cell
			Input	n/a
			Output	3.6VDC

B. Modification Letter

To Whom It May Concern:

This is to certify that no modifications were necessary for the 2.4 GHz DSST Cordless Telephone, model CL2210, to comply with the Requirements of:

FCC Rules and Regulations per 47 CFR 15.247

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It is the manufacturer's responsibility to ensure that additional production units are manufactured with identical electrical and mechanical characteristics.

For further information, please contact the manufacturer at:

Teledex Corporation
6311 San Ignacio Drive
San Jose, CA 95119

Tel: +1 (408) 363-3100
Attention: Mr. Maxim Bakaleynik