



849 NW State Road 45
PO Box 370
Newberry, FL 32669

TEST REPORT

STANDARD (s):

**FCC Part 15, Subparts B, C, and D
IC RSS-213 & ICES-003
UPCS / LE-PCS Isochronous Device
Base & Handset: 1921.536 – 1928.448 MHz
ANSI C63.17 - 1998 (or 2005 Draft where applicable)
ANSI C63.4 – 2003**

APPLICANT: UNIDEN AMERICA CORPORATION
ENGINEERING SERVICES OFFICE
181 N. COUNTRY CLUB ROAD P.O. BOX 580
LAKE CITY SOUTH CAROLINA 29560
UNITED STATES

MODEL NUMBER: PLANTRONICS CT14

**DESCRIPTION OF
PRODUCT:** UPCS HEADSET

FCC IDs: AMWUC577R

IC: -UC577R

**DATE SAMPLE
RECEIVED FOR TESTING:** 9/11/2008

DATE TESTED: 9/29/2008

TEST RESULTS: PASS FAIL

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GENERAL INFORMATION

The test results relate only to the items tested.

COMPLIANCE STATEMENT:

This equipment has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report and demonstrate that the equipment complies with the appropriate standards. No modifications were made to the equipment during testing in order to demonstrate compliance with these standards.

I attest that the necessary measurements were made, under my supervision, at TIMCO ENGINEERING, INC. located at 849 N.W. State Road 45, Newberry, Florida 32669.

Authorized Signatory Name: Mario de Aranzeta



Signature:

Mario de Aranzeta C.E.T.
Compliance Engineer/ Lab. Supervisor

Date: 10/9/2008

PLEASE NOTE: THE ATTACHED REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN APPROVAL OF TIMCO ENGINEERING, INC.

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EQUIPMENT UNDER TEST SPECIFICATION

Characterization of test item:

- Prototype
- Pre-production
- Production

Construction of equipment:

- Single unit
- Multiple units (If multiple units describe each one clearly)

TYPE OF EQUIPMENT:

- Fixed
- Mobile
- Portable Station

X	Transmitter		Simplex	X	Integral antenna (Handset and Base)
	Receiver	X	Duplex		Single antenna connector
	Transceiver				Two antenna connector
X	Battery charger				Vehicle battery adaptor
	Remote Control Head				

TRANSMITTER TECHNICAL CHARACTERISTICS

FREQUENCY CHARACTERISTICS (Method of frequency generation):

- CRYSTAL SYNTHESIZER OTHER

State the maximum number of channels over which the equipment can operate: _____

MAXIMUM RATED TRANSMITTER OUTPUT POWER: 0.058 W EIRP

POWER SOURCE (S)

AC SUPPLY: State voltage: _____ Single phase: ____ Three phase: ____

AC SUPPLY FREQUENCY (Hz) _____

EXTERNAL DC SUPPLY: Nominal voltage __2.4VDC NiMH rechargeable battery for Handset

BATTERY: Nickel Cadmium Lead acid Leclanche Nickel Metal Hydrid

RATIONAL FOR SELECTING TEST CONFIGURATION(S):

No deviation from technical specifications

DESCRIPTION ON HOW THE EUT WAS EXERCISED DURING TESTING:

(e.g software description, test signal, etc.)

The EUT was set in continuous transmit mode of operation.

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TEST STANDARDS

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IC RSS-213 & ICES-003
UPCS / LE-PCS Isochronous Device
Base & Handset: 1921.536 – 1928.448 MHz
ANSI C63.17 - 1998 (or 2005 Draft where applicable)
ANSI C63.4 - 2003

TEST ENVIRONMENT

Temperature

Normal test temperature (Tnom): 24°C

Relative Humidity 50 %

Details of power supply

Normal test voltage Handset (Vnom): 2.4 VDC

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ANTENNA REQUIREMENT

Clause: 15.319

DUT must meet the antenna requirements of FCC Rules 15.203.

This DUT uses a permanently attached antenna which is considered sufficient to comply with the provisions of this rule. Please refer to the internal photos for more details.

DIGITAL MODULATION TECHNIQUES

Clause: 15.319(b)

All transmissions must use only digital modulation techniques.

The requirements are made in accordance with ANSI C63.17 sub-clause 6.1.4.

Attestation: Please refer to relevant DECT standards for details

PEAK TRANSMIT POWER

Clause: 15.319(c)

The peak transmit power (P_{EUT}) shall not exceed $100\mu W$ multiplied by the square root of the emission bandwidth (B) in Hz or $5 \log_{10} B - 10$ dBm. The peak transmit power shall be reduced by the amount in dB that the maximum directional gain of the antenna exceeds 3 dBi.

Measurements are made in accordance with ANSI C63.17 sub-clause 6.1.2.

Calculation of Peak Transmit Power Limit (P_{max}):

$$(P_{max}) = 5 \log_{10} B - 10 \text{ dBm} \qquad \text{when } G_A < 3 \text{ dBi}$$

Where G_A = EUT Antenna Gain: 0 dBi

Channel	Channel Frequency (MHz)	Measured Peak Transmit Power (dBm)	Limit (dBm)	Results
Lowest	1921.536	18.1	20.85	Pass
Highest	1928.448	18.4	20.88	Pass

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TEST RESULTS

RADIATED PEAK TRANSMIT POWER

Clause: 15.319 (c)

Test procedure: ANSI C63.17 section 6.1.2

Technical requirements/Limits:

The peak transmit power shall not exceed 100 μ W multiplied by the square root of the emission bandwidth in hertz measured at 26dBc.

The measured emissions bandwidth is 1.5 MHz max

Limit = $100\mu\text{W} * \sqrt{\text{BW in Hz}} = 0.122\text{W} = 20.8 \text{ dBm}$

and Radiated limit $\leq 118 \text{ dB}\mu\text{V/m}$ at 3m by radiated measurement derived from Friis formula as follows $P = (E*d)^2/30G$, where $P = 0.122 \text{ W} = 20.8 \text{ dBm}$

This assumes a $G = \text{Numeric gain of TX antenna} = 1.585$ (2.0 dBi) worst-case across band
 $d = 3 \text{ m}$

Notes: The calculated limit of 118 dB μ V/m assumes free space conditions. This device was measured on a typical test site (OATS) with a reference ground plane as described in ANSI C63.4. This maximum value was obtained with the EUT set up at a height of 80cm. Placing the EUT at a height of 100cm reduces the maximum amplitude measured by about 3-4dB.

Test Conditions:

Power output measurements were performed on an Open Area Test Site at a distance of 3meter. The antenna for this device is integral.

SA Settings:

RBW \geq Emission BW (or increased until no more than 0.5 dB change in power), VBW $\geq 3 \times$ RBW

Span = zero, centered on channel center, Sweep: fast enough to resolve transmit pulse

Detection: Peak

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Results:

HANDSET:

HANDSET	UNIDEN AMERICA CORPORATION					
2133UT8	9/29/2008					
Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity	Coax Loss dB	Correction Factor dB/m	Field Strength dBuV/m
1,921.50	1,921.54	76.2	V	2.84	30.70	109.74
1,921.50	1,921.54	70.4	H	2.84	30.70	103.94
1,928.50	1,928.45	79.3	V	2.84	30.74	112.88
1,928.50	1,928.45	68.2	H	2.84	30.74	101.78

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POWER SPECTRAL DENSITY

Clause: 15.319(d)

Power spectral density shall not exceed 3 mW (4.8dBm) in any 3 kHz bandwidth as measured with a spectrum analyser having a resolution bandwidth of 3 kHz.

Measurements are made in accordance with ANSI C63.17 sub-clause 6.1.5.

1. Traffic Carrier

Channel	Channel Frequency (MHz)	Measured Power Spectral Density (dbm/3kHz)	Limit (dBm/3 kHz)	Results
Lowest	1921.536	3.77	4.8	Pass
Highest	1928.448	1.33	4.8	Pass

Please refer to the following plots.

APPLICANT: UNIDEN AMERICA CORPORATION

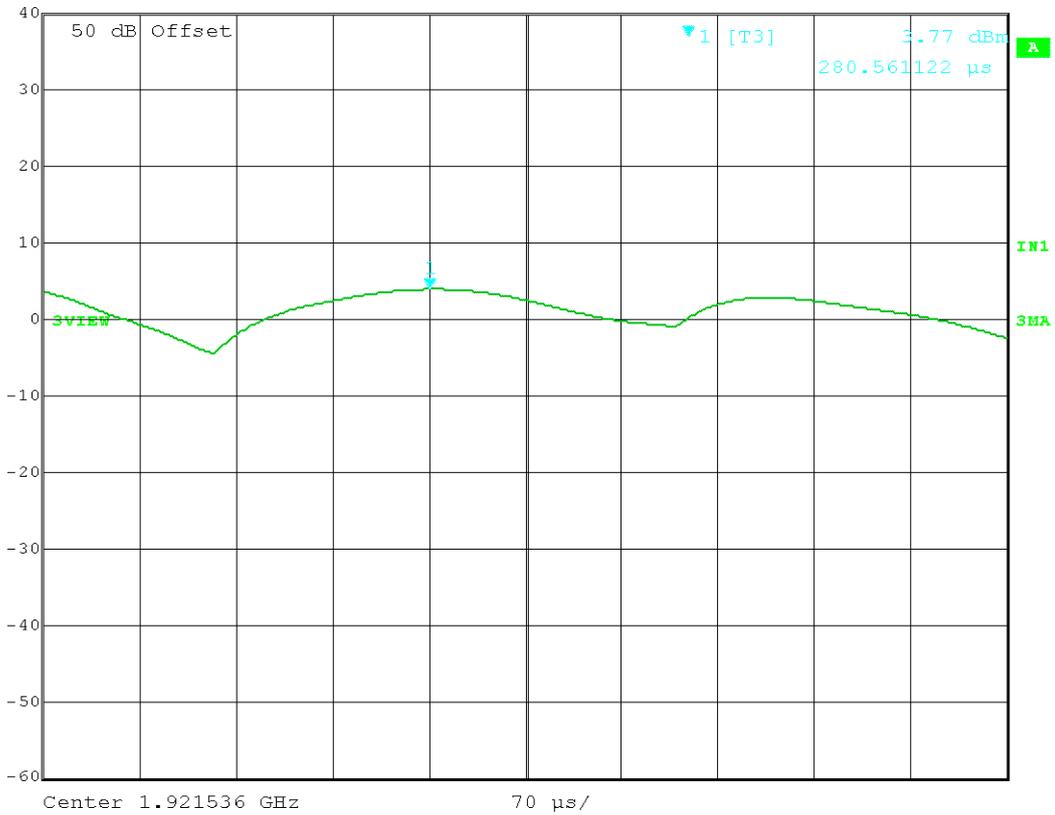
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Marker 1 [T3] RBW 3 kHz RF Att 10 dB
 Ref Lvl 3.77 dBm VBW 5 kHz
 40 dBm 280.561122 μ s SWT 700 μ s Unit dBm

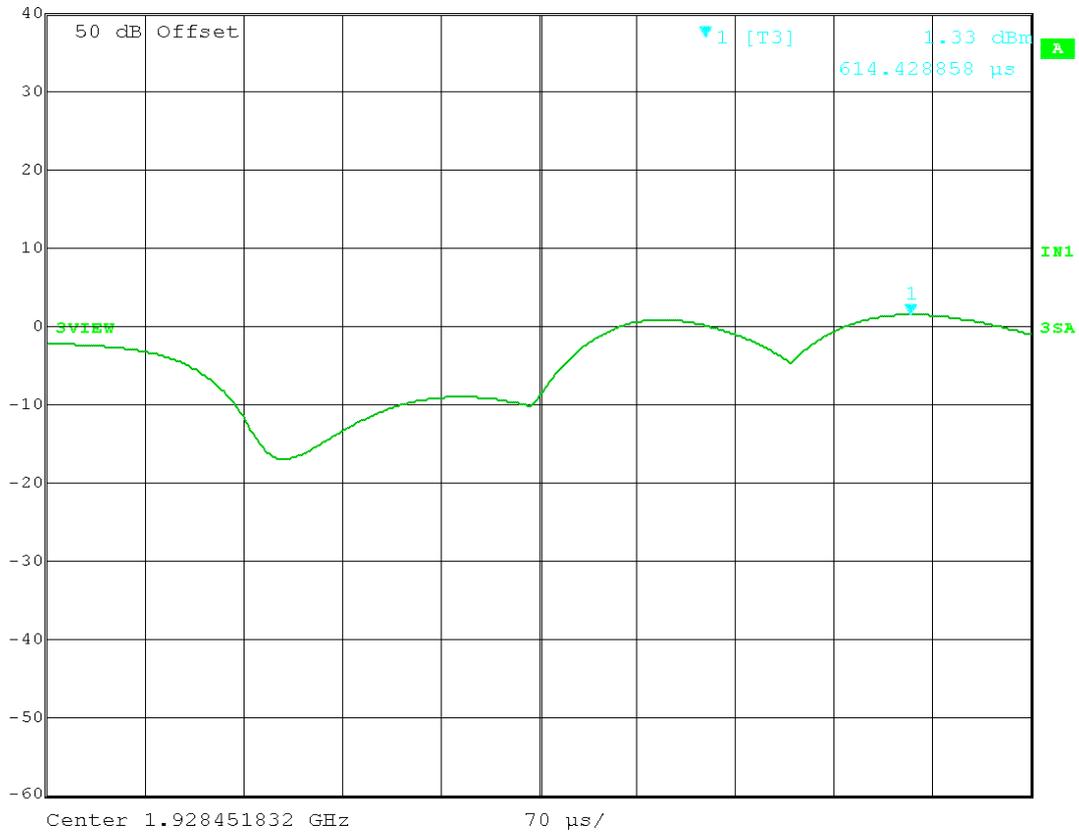


Date: 20.OCT.2008 10:50:17

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Marker 1 [T3] RBW 3 kHz RF Att 10 dB
 Ref Lvl 1.33 dBm VBW 5 kHz
 40 dBm 614.428858 μ s SWT 700 μ s Unit dBm



Date: 20.OCT.2008 10:02:15

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AUTOMATIC DISCONTINUATION OF TRANSMISSION

Clause: 15.319(f)

The DUT shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude transmission of control and signalling information or use of repetitive codes used by certain digital technologies to complete frame or burst intervals.

The manufacturer declares that the EUT can automatically discontinue transmission in case of either absent information to transmit or operational failure. The declaration is part of the filing.

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EMISSION BANDWIDTH

Clause: 15.323(a)

Operation shall be contained within the 1920-1930 MHz band. The emission bandwidth shall be less than 2.5 MHz and greater than 50 kHz.

Measurements are made in accordance with ANSI C63.17 sub-clause 6.1.3.

Test Results:

Channel	Channel Frequency (MHz)	Measuring Signal Level	Measured Emission Bandwidth (MHz)	Results
Lowest	1921.536	26 dB down	1.41	Pass
Highest	1928.448	26 dB down	1.42	Pass

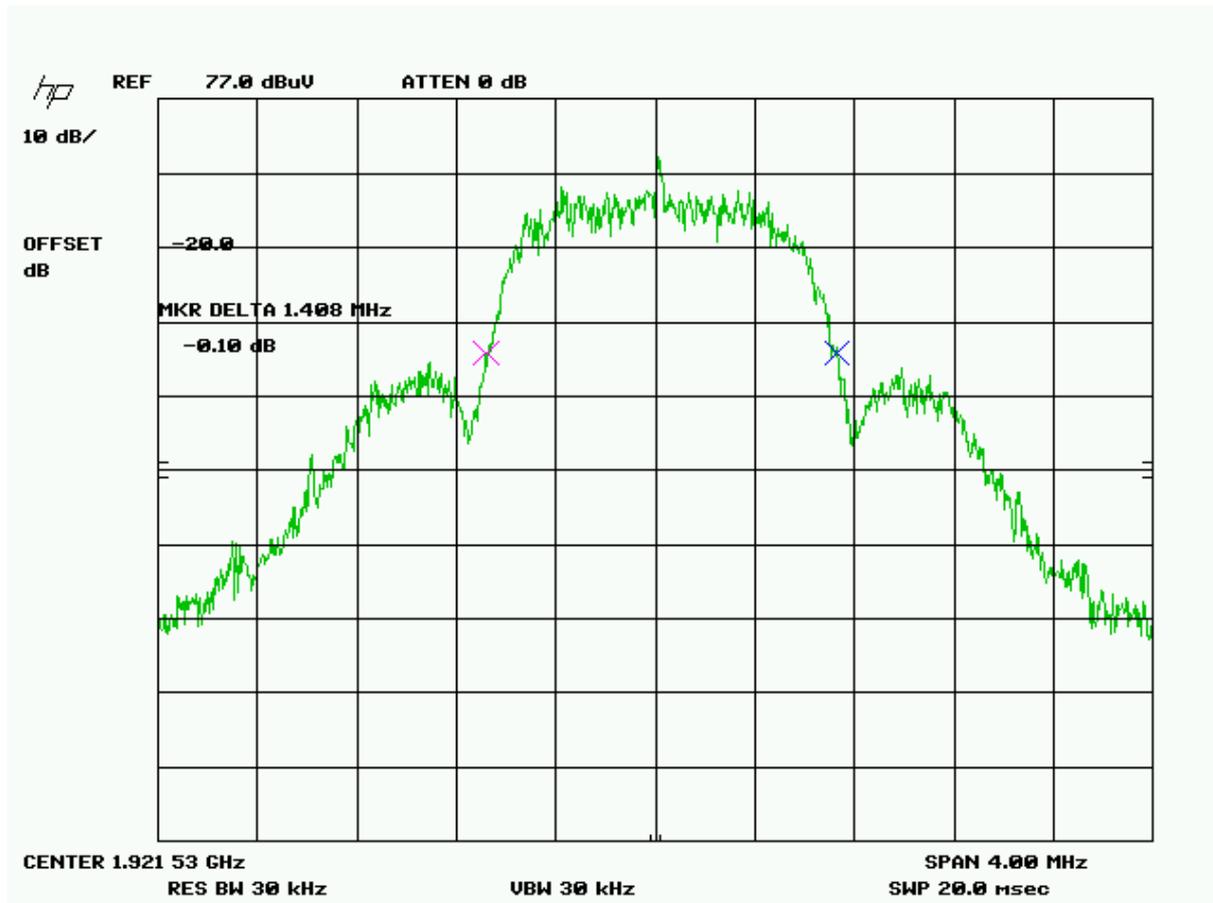
Please refer to the following plots for more details.

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DIRECTIONAL GAIN OF THE ANTENNA

Clause: 15.319(e)

The peak transmit power shall be reduced by the amount in dB that the maximum directional gain of the antenna exceeds 3 dBi.

The requirements are made in accordance with ANSI C63.17 sub clause 4.3.1.

The manufacturer declares that the directional gain of the antenna is less than or equal to 3dBi. No peak transmit power reduction is required.

TRANSMITTER SPURIOUS EMISSIONS

Clause: 15.319 (g) and 15.323(d)

Test procedure: ANSI C63.17 section 6.1.1

Technical requirements/Limits:

15.319(g) Notwithstanding other technical requirements specified in this subpart, attenuation of emissions below the general emission limits in Section 15.209 is not required.

15.323(d) Emissions outside the sub-band shall be attenuated below a reference power of 112 milliwatts as follows: 30 dB between the sub-band and 1.25 MHz above or below the sub-band; 50 dB between 1.25 and 2.5 MHz above or below the sub-band; and 60 dB at 2.5 MHz or greater above or below the sub band. Compliance with the emission limits is based on the use of measurement instrumentation employing peak detector function with an instrument resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

Test Conditions:

Lowest and Highest channel only. Radiated on an Open Area Test Site at a distance of 3meter.

Results:

HANDSET:

HANDSET	UNIDEN AMERICA CORPORATION						
2133UT8	9/29/2008						
Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity	Coax & Filter Loss dB	Correction Factor dB/m	Field Strength dBuV/m	
1,921.50	3843.08	16.9	V	4.36	33.35	54.61	
1,921.50	3843.08	20.3	H	4.36	33.35	58.01	
1,921.50	5764.62	12.0	V	5.23	35.07	52.30	
1,921.50	5764.62	21.7	H	5.23	35.07	62.00	
1,928.50	3856.9	20.8	V	4.37	33.37	58.54	
1,928.50	3856.9	22.6	H	4.37	33.37	60.34	
1,928.50	5785.35	13.1	V	5.24	35.10	53.44	
1,928.50	5785.35	22.3	H	5.24	35.10	62.64	

- The limit for all harmonic emissions is 74 dBuV/m @ 3 Meters.

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GENERAL RADIATED SPURIOUS EMISSIONS

RADIATED SPURIOUS EMISSIONS

Clause: 15.109, 15.33, and 15.31

Test procedure: ANSI C63.4 - 2003

Technical requirements/Limits:

Emission Frequency (MHz)	Field Strength		At Distance (m)	Detector Type
	(μ V/m)	(dB μ V/m)		
0.009 – 0.490	2400/f (kHz)	67.6 / kHz	300	AV (9-90 kHz, 110-490 kHz) QP (others)
0.490 – 1.705	24000/f (kHz)	87.6 / kHz	30	QP
1.705 – 30.0	30	29.5	30	QP
30 – 88	100	40	3	QP
88 – 216	150	43.5	3	QP
216 – 960	200	46	3	QP
> 960	500	54	3	AV (> 1GHz)

Test Conditions:

Lowest and Highest channel only. Radiated on an Open Area Test Site at a distance of 3meter.

PK: RBW \geq 100 kHz for $f < 1$ GHz, 1 MHz for $f \geq 1$ GHz, VBW \geq RBW

Avg: RBW = 1 MHz for $f \geq 1$ GHz, VBW = 10Hz, Linear average. If the emission is pulsed, the device was modified for continuous operations, and the average level was calculated according to part 15.35(c)

Results:

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HANDSET IN STAND-BY MODE:

Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity	Coax Loss dB	Correction Factor dB/m	Field Strength dBuV/m	Margin dB
85.80	7.5	H	0.61	7.09	15.20	24.80
85.82	5.3	V	0.61	8.18	14.09	25.91
147.48	5.9	V	0.70	13.95	20.55	22.95
174.06	6.4	V	0.80	16.59	23.79	19.71
174.07	11.8	H	0.80	15.57	28.17	15.33
178.19	11.1	H	0.81	16.15	28.06	15.44
184.30	12.4	H	0.84	16.83	30.07	13.43
184.32	6.8	V	0.84	17.37	25.01	18.49
186.40	11.8	H	0.85	17.01	29.66	13.84
190.46	5.7	V	0.86	17.67	24.23	19.27
190.47	9.6	H	0.86	17.29	27.75	15.75
194.57	8.9	H	0.88	17.21	26.99	16.51
204.80	11.4	H	0.91	12.00	24.31	19.19
204.83	6.3	V	0.91	11.70	18.91	24.59
221.18	9.7	V	0.94	11.20	21.84	24.16
221.22	11.8	H	0.94	11.50	24.24	21.76
294.91	12.8	H	1.09	14.20	28.09	17.91
438.37	4.3	H	1.24	16.75	22.29	23.71
442.40	9.9	V	1.24	16.37	27.51	18.49
450.97	8.4	V	1.25	16.63	26.28	19.72
602.31	5.2	V	1.60	18.69	25.49	20.51

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TEST EQUIPMENT AND ANCILLARIES

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
3-Meter Semi-Anechoic Chamber	Panashield	N/A	N/A	Listed 5/11/07	5/10/10
AC Voltmeter	HP	400FL	2213A14499	CAL 12/29/06	12/29/08
Coaxial Cable #64	Semflex Inc.	60637	Timco #64	CHAR 3/30/07	3/30/09
Antenna: Dipole Kit	Electro-Metrics	TDA-30/1-4	152	CAL 3/3/06	3/3/09
Antenna: Dipole Kit	Electro-Metrics	TDA-30/1-4	153	CHAR 4/5/06	4/5/09
Frequency Counter	HP	5385A	2730A03025	CAL 7/6/07	7/6/09
Hygro-Thermometer	Extech	445703	0602	CAL 11/15/07	11/15/09
Antenna: Log-Periodic	Electro-Metrics	LPA-25	1122	CAL 12/1/06	12/1/08
Measuring Tape-7.5M	Kraftixx	7.5M PROFI		CHAR 11/13/07	11/13/09
Modulation Analyzer	HP	8901A	3435A06868	CAL 5/9/07	5/9/09
Digital Multimeter	Fluke	FLUKE-77-3	79510405	CAL 5/14/07	5/14/09
System One	Audio Precision	System One	SYS1-45868	CHAR 2/27/08	2/27/10
Analyzer Tan Tower Preamplifier	HP	8449B-H02	3008A00372	CAL 11/30/07	11/30/09
Analyzer Tan Tower Quasi-Peak Adapter	HP	85650A	3303A01690	CAL 11/30/07	11/30/09
Analyzer Tan Tower RF Preselector	HP	85685A	3221A01400	CAL 11/30/07	11/30/09
Analyzer Tan Tower Spectrum Analyzer	HP	8566B Opt 462	3138A07786 3144A20661	CAL 11/30/07	11/30/09

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TEST SETUP PHOTOGRAPHS

RADIATED TEST SET UP (HANDSET):



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EUT EXTERNAL PHOTOGRAPHS

The photos are provided in a separate exhibit

EUT INTERNAL PHOTOGRAPHS

The photos are provided in a separate exhibit

LABEL PHOTOGRAPHS

The label sample and location are provided in a separate exhibit