

TABLE OF CONTENTS LIST FOR PART 90 UHF DEVICE

APPLICANT: EVERYDAY WIRELESS LLC

FCC ID: QPL100

TEST REPORT:

PAGE 1.....	GENERAL INFORMATION & TECHNICAL DESCRIPTION
PAGE 2.....	TECHNICAL DESCRIPTION CONTINUED
	RF POWER OUTPUT
PAGE 3.....	MODULATION CHARACTERISTICS
	OCCUPIED BANDWIDTH
PAGE 4.....	OCCUPIED BANDWIDTH CONTINUED
PAGE 5.....	OCCUPIED BANDWIDTH PLOTS
PAGE 6.....	SPURIOUS EMISSIONS AT ANTENNA TERMINALS
PAGE 7.....	FIELD STRENGTH OF SPURIOUS EMISSIONS
	METHOD OF MEASURING RADIATED SPURIOUS EMISSIONS
PAGE 8.....	FREQUENCY STABILITY
PAGE 9-10.....	TRANSIENT FREQUENCY STABILITY
PAGE 11.....	TRANSIENT FREQUENCY RESPONSE PLOTS - 12.5 kHz
PAGE 12-15.....	LIST OF TEST EQUIPMENT

EXHIBITS CONTAINING:

TEST REPORT 2
CONFIDENTIALITY REQUEST LETTER
FCC ID LABEL SAMPLE AND SKETCH OF LOCATION
SCHEMATIC
BLOCK DIAGRAM
OPERATIONAL DESCRIPTION
EXTERNAL PHOTOGRAPHS
INTERNAL PHOTOGRAPHS
TUNING PROCEDURE
PARTS LIST
RF EXPOSURE INFORMATION
SPECTRUM EFFICIENCY LETTER
USE'S MANUAL
TEST SET UP PHOTOGRAPH

APPLICANT: EVERYDAY WIRELESS LLC
FCC ID: QPL100
REPORT #: T:\E\EverydayWireless_\716UT4\716UT4TestReport.doc
TABLE OF CONTENTS

GENERAL INFORMATION REQUIRED
FOR TYPE ACCEPTANCE

2.1033 EVERYDAY WIRELESS LLC will sell the FCC ID: QPL100
(c)(1)(2) VHF transceiver in quantity, for use under FCC RULES
PART 22 & 90.

2.1033 (c) TECHNICAL DESCRIPTION

2.1033 (3) User Manual - Included in the Exhibits.

2.1033 (4) Type of Emission: 11K2F1D For 12.5 kHz

For 25KHz & 12kHz

$B_n = 2M + 2DK$

$M = 9600$ Bits per second

$D = 850$ kHz (Peak Deviation)

$K = 1$

$B_n = 2(9600/2) + 2(825)(1) = 9600 + 1650 = 11.25k$

ALLOWED AUTHORIZED BANDWIDTH = 20.00 kHz.

For 12.5 kHz

ALLOWED AUTHORIZED BANDWIDTH = 11.25 kHz.

90.209(b)(5)

2.1033 (5) Frequency Range: 450-470 MHz

(6) Power Range and Controls: There are NO user Power
controls.

(7) Maximum Output Power Rating:
0.5 Watts, into a 50 ohm resistive load.

(8) DC Voltages and Current into Final Amplifier:

INPUT POWER: $(13.6V)(7.83A) = 106.49$ Watts

(9) Tune-up procedure. The tune-up procedure is given
in the Exhibits.

2.1033 (10) Complete Circuit Diagrams: The circuit diagram is
included in the Exhibits. The block diagram is
included in the Exhibits.

(11) Function of each electron tube or semiconductor
device or other active circuit device is included
in the Exhibits.

APPLICANT: EVERYDAY WIRELESS LLC

FCC ID: QPL100

REPORT #: T:\E\EverydayWireless_\716UT4\716UT4TestReport.doc

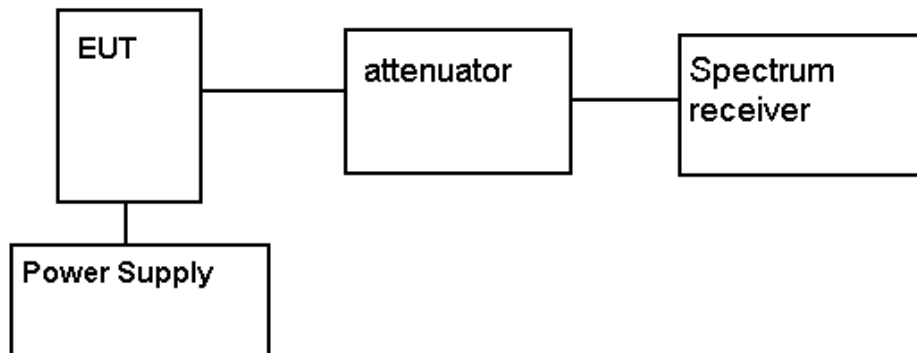
PAGE #: 1 of 15

- (8) Instruction book. The instruction manual is Included in the Exhibits.
- (9) Description of all circuitry and devices provided For determining and stabilizing frequency is included in the circuit description in the users manual.
- 2.1033(c) (11) A photograph or drawing of the equipment identification label is shown in the Exhibits.
- 2.1033(c) (12) Photographs of the equipment of sufficient clarity to reveal equipment construction and layout and label location are shown in the Exhibits.
- 2.1033(c) (13) For equipment employing digital modulation, a detail description of the modulation technique. This UUT uses FSK to modulate the transmitter.
- 2.1033(c) (14) data required for 2.1046 to 2.1057 See Below
- 2.1046(a) RF power output.
RF power is measured by connecting a 50-ohm, resistive wattmeter to the RF output connector. With a nominal battery voltage of 13.6 VDC, and the transmitter properly adjusted the RF output measures:

POWER OUTPUT

OUTPUT POWER: 45 Watts

METHOD OF MEASURING RF POWER OUTPUT



APPLICANT: EVERYDAY WIRELESS LLC

FCC ID: QPL100

REPORT #: T:\E\EverydayWireless_\716UT4\716UT4TestReport.doc

PAGE #: 2 of 15

2.1047(a) Voice Modulation characteristics:
NOT APPLICABLE, F1 type of emission.

2.1049 Audio Low Pass Filter
This UUT does not have a low pass filter.

2.1049 Occupied bandwidth:
90.210(c,)

For transmitters that are not equipped with an audio low pass filter pursuant to S90.211 (b), the power of any emission must be attenuated below the unmodulated carrier output power as follows;

- (1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 5 kHz but not more than 10 kHz: At least $83 \log (f_d/5)$ dB;
- (2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 10 kHz, but not more than 250% of the authorized bandwidth: At least $29 \log(f_d/11)$ dB or 50 dB, whichever is the lesser attenuation;
- (3) On any frequency removed from the center of the authorized bandwidth by more than 250% of the authorized bandwidth: At least $43 + 10 \log(P_o)$ dB.

90.210(d) Emission Mask D - 12.5 kHz channel bandwidth equipment.
For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

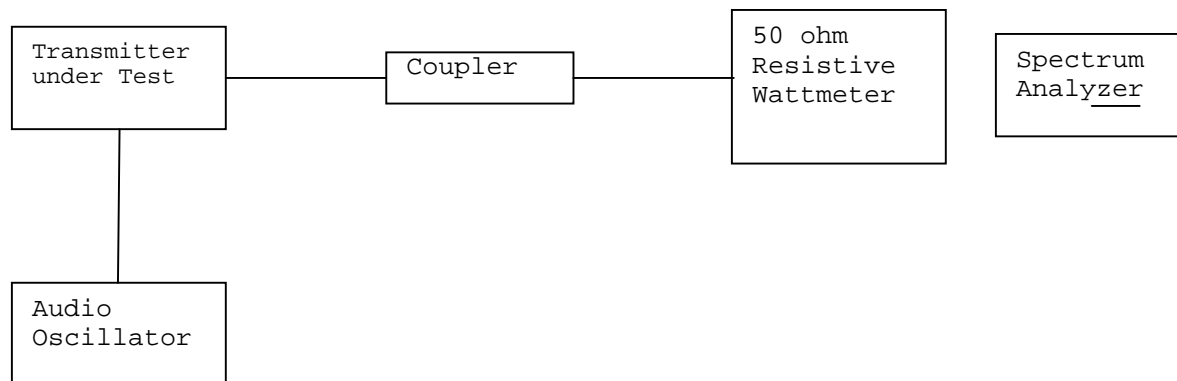
- (1) On any frequency from the center of the authorized bandwidth f_0 to 5.625 kHz removed from f_0 : Zero dB.
- (2) On any frequency from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 5.625 kHz but no more than 12.5 kHz: At least $7.27 (f_d - 2.88 \text{ kHz})$ dB.
- (3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 12.5 kHz: At least $50 + 10 \log (P)$ dB or 70 dB, whichever is the lesser attenuation.

Radiotelephone Transmitter with Modulation Limiter

Test procedure: TIA/EIA-603 para 2.2.11 , with the exception that various tones were used.

Test procedure diagram

OCCUPIED BANDWIDTH MEASUREMENT



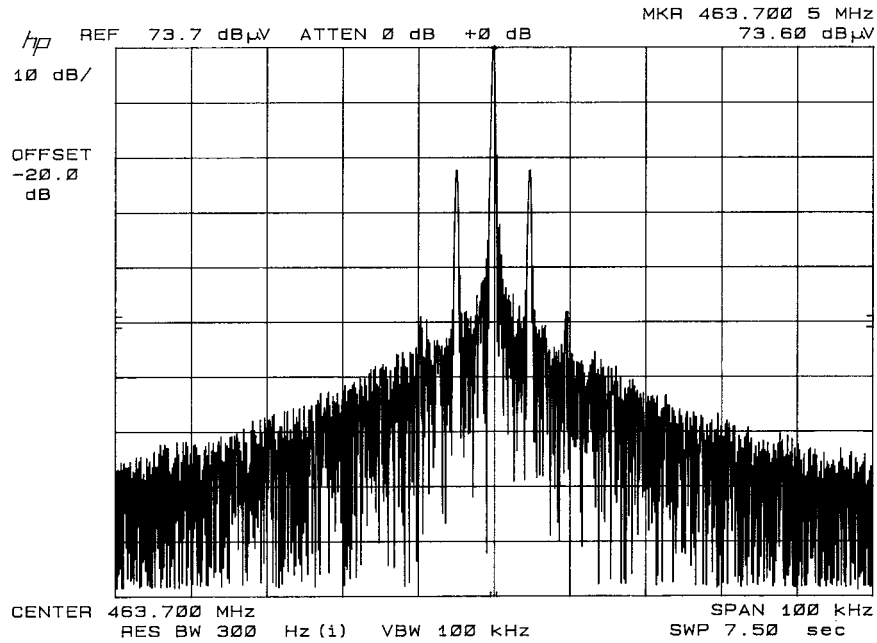
APPLICANT: EVERYDAY WIRELESS LLC

FCC ID: QPL100

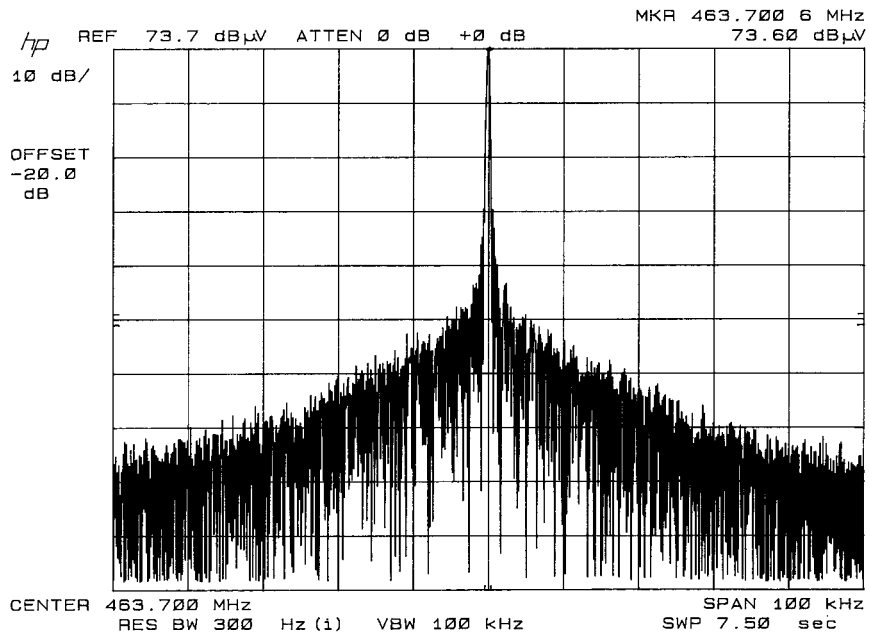
REPORT #: T:\E\EverydayWireless_\716UT4\716UT4TestReport.doc

PAGE #: 4 of 15

OCCUPIED BANDWIDTH PLOT



OCCUPIED BANDWIDTH CW PLOT



APPLICANT: EVERYDAY WIRELESS LLC

FCC ID: QPL100

REPORT #: T:\E\EverydayWireless_\716UT4\716UT4TestReport.doc

PAGE #: 5 of 15

2.1051 Spurious emissions at antenna terminals (conducted):
2.1052 Data on the following page shows the level of conducted
spurious responses. The carrier was modulated 100% using
a 2500 Hz tone. The spectrum was scanned from 0.4 to at
least the 10th harmonic of the fundamental. The
measurements were made in accordance with standard
TIA/EIA-603.

REQUIREMENTS: Emissions must be $50 + 10\log(P_o)$ dB below the
mean power output of the transmitter.

See Separate Test Report.

METHOD OF MEASUREMENT: The procedure used was TIA/EIA-603 STANDARD without any exceptions. An audio generator was connected to the UUT through a dummy microphone circuit and the output of the transmitter connected to a standard load and from the standard load through a pre-selector filter of the spectrum analyzer. The spectrum was scanned from 400 kHz to at least the tenth harmonic of the fundamental using a HP model 8566B spectrum analyzer. The measurements were made using the shielded room located at TIMCO ENGINEERING INC. 849 N.W. State Road 45, Newberry, Florida 32669.

APPLICANT: EVERYDAY WIRELESS LLC
FCC ID: QPL100
REPORT #: T:\E\EverydayWireless_\716UT4\716UT4TestReport.doc
PAGE #: 6 of 15

2.1053 Field strength of spurious emissions:

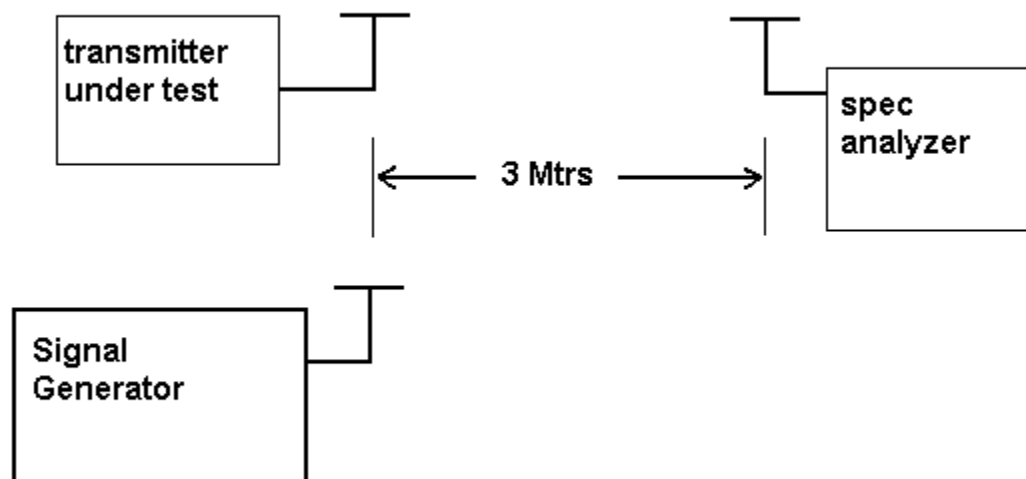
NAME OF TEST: RADIATED SPURIOUS EMISSIONS

REQUIREMENTS: Emissions must be 50 +10log(Po) dB below the
mean power output of the transmitter.

TEST DATA:

See Separate Test Report.

Method of Measuring Radiated Spurious Emissions



METHOD OF MEASUREMENTS: The tabulated data shows the results of the radiated field strength emissions test. The spectrum was scanned from 30 MHz to at least the tenth harmonic of the fundamental. This test was conducted per TIA/EIA STANDARD 603 using the substitution method. Measurements were made at the open field test site of TIMCO ENGINEERING, INC. located at 849 NW State Road 45, Newberry, FL 32669.

2.1055 Frequency stability:

90.213(a)(1)

Temperature and voltage tests were performed to verify that the frequency remains within the .00015%, 1.5 ppm specification limit, for 25 kHz spacing & 0.00025% for 12.5 kHz spacing. The test was conducted as follows: The transmitter was placed in the temperature chamber at 25°C and allowed to stabilize for one hour. The transmitter was keyed ON for one minute during which four frequency readings were recorded at 15 second intervals. The worse case number was taken for temperature plotting. The assigned channel frequency was considered to be the reference frequency. The temperature was then reduced to -30°C after which the transmitter was again allowed to stabilize for one hour. The transmitter was keyed ON for one minute, and again frequency readings were noted at 15 second intervals. The worst-case number was recorded for temperature plotting. This procedure was repeated in 10° increments up to + 50 degrees C. Readings were also taken at minus 15% of the battery voltage of 13.6 VDC, which we estimate to be the battery endpoint.

MEASUREMENT DATA:

Assigned Frequency (Ref. Frequency): 460.000 000 MHz

TEMPERATURE_°C	FREQUENCY_MHz	PPM
REFERENCE_____	460.000 000	00.0
-30_____	460.000 363	0.79
-20_____	460.000 374	0.81
-10_____	460.000 477	1.04
0_____	460.000 562	1.22
+10_____	460.000 510	1.11
+20_____	460.0 002	0.43
+30_____	459.999 822	-0.39
+40_____	459.999 633	-0.80
+50_____	459.999 429	-1.24

-15% Battery End-Point VDC 460.000 186 0.40

RESULTS OF MEASUREMENTS: The maximum frequency variation over the temperature range was +1.22 ppm.

APPLICANT: EVERYDAY WIRELESS LLC

FCC ID: QPL100

REPORT #: T:\E\EverydayWireless_\716UT4\716UT4TestReport.doc

PAGE #: 8 of 15

2.1055(a)(1) Frequency stability:
90.214 Transient Frequency Behavior

REQUIREMENTS: In the 450-500MHz frequency band, transient frequencies must be within the maximum frequency difference limits during the time interval indicated below for 12.5kHz Channels:

Time Interval	Maximum Frequency	Portable Radios 450-500 MHz
t1	+12.5 kHz	10.0 ms
t2	+6.25 kHz	25.0 ms
t3,t4	+12.5 kHz	10.0 ms

TEST PROCEEDURE: TIA/EIA TS603 PARA 2.2.19, the levels were set as follows;

1. Using the variable attenuator the transmitter level was set to 40 dB below the test receivers maximum input level, then the transmitter was turned off.
2. With the transmitter off the signal generator was set 20dB below the level of the transmitter in the above step, this level will be maintained with the signal generator through-out the test.
3. Reduce the attenuation between the transmitter and the RF detector by 30 dB.
4. With the levels set as above the transient frequency behavior was observed & recorded.

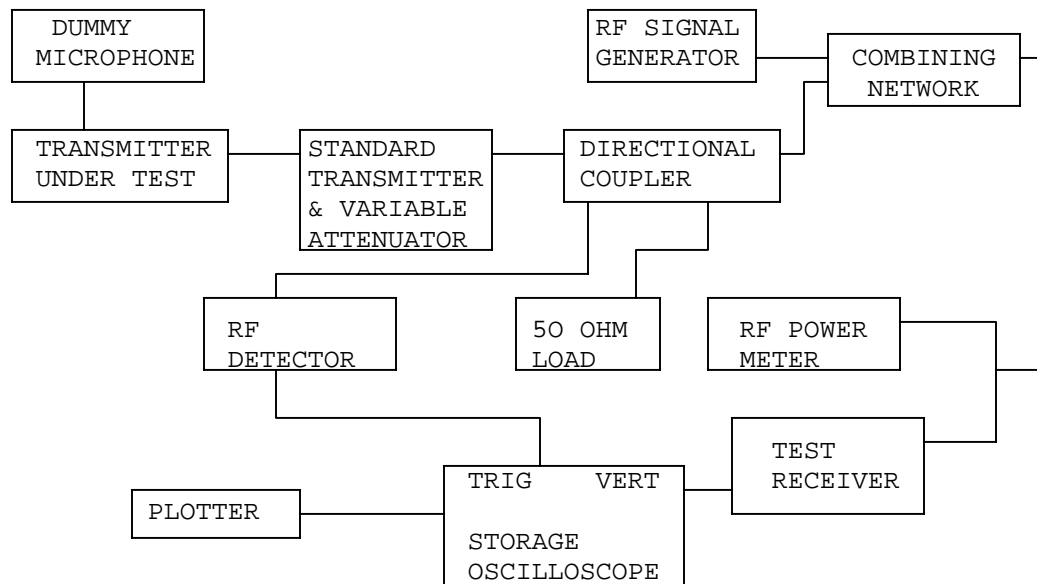
APPLICANT: EVERYDAY WIRELESS LLC

FCC ID: QPL100

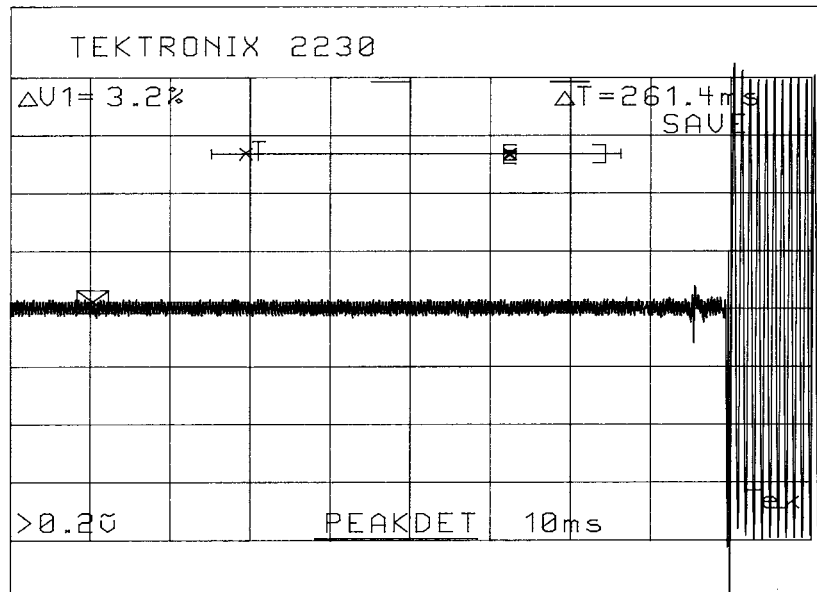
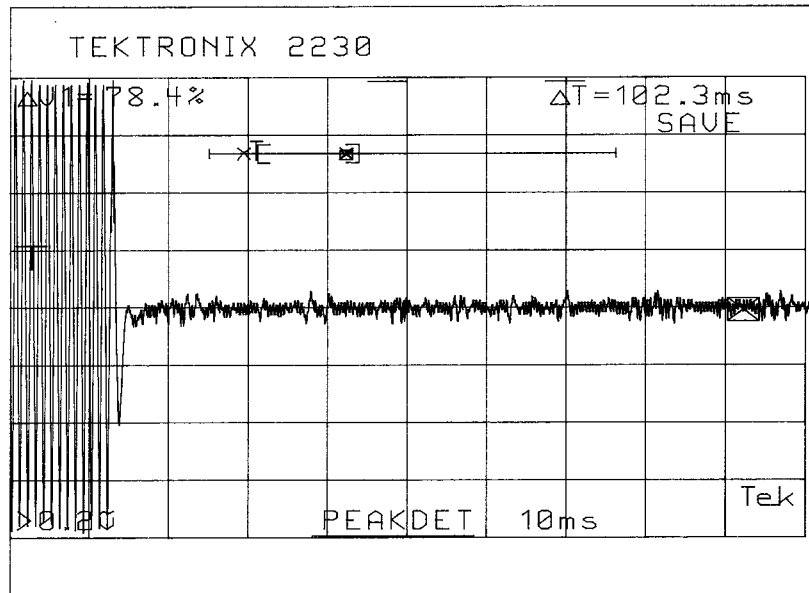
REPORT #: T:\E\EverydayWireless_\716UT4\716UT4TestReport.doc

PAGE #: 9 of 15

2.1055 Frequency stability:
90.214 Transient Frequency Behavior
(Continued)



TRANSIENT FREQUENCY RESPONSE GRAPH - 12.5



APPLICANT: EVERYDAY WIRELESS LLC

FCC ID: QPL100

REPORT #: T:\E\EverydayWireless_\716UT4\716UT4TestReport.doc

PAGE #: 11 of 15

EMC Equipment List

Last Update: 7/8/03

	DEVICE	MFGR	MODEL	SERNO	CAL/CHAR DATE	DUE DATE or STATUS
X	3-Meter OATS	TEI	N/A	N/A	Listed 1/13/03	1/13/06
	3/10-Meter OATS	TEI	N/A	N/A	Listed 3/26/01	3/26/04
	Receiver, Beige Tower Spectrum Analyzer	HP	8566B Opt 462	3138A07786 3144A20661	CAL 8/31/01	8/31/03
	RF Preselector	HP	85685A	3221A01400	CAL 8/31/01	8/31/03
	Quasi-Peak Adapter	HP	85650A	3303A01690	CAL 8/31/01	8/31/03
	Preamplifier	HP	8449B-H02	3008A00372	CHAR 3/4/01	3/4/03
	Receiver, Blue Tower Spectrum Analyzer	HP	8568B	2928A04729 2848A18049	CAL 4/15/03	4/15/05
	RF Preselector	HP	85685A	2926A00983	CAL 4/15/03	4/15/05
	Quasi-Peak Adapter	HP	85650A	2811A01279	CAL 4/15/03	4/15/05
X	Receiver, Silver/Grey Tower Spectrum Analyzer	HP	8566B Opt 462	3552A22064 3638A08608	CAL 10/14/02	10/14/04
X	RF Preselector	HP	85685A	2620A00294	CAL 10/14/02	10/14/04
X	Quasi-Peak Adapter	HP	85650A	3303A01844	CAL 10/14/02	10/14/04
X	Preamplifier	HP	8449B	3008A01075	CHAR 1/28/02	1/28/04
	Biconnical Antenna	Electro-Metrics	BIA-25	1171	CAL 4/26/01	4/26/03
X	Biconnical Antenna	Eaton	94455-1	1096	CAL 10/1/01	10/1/03
	Biconnical Antenna	Eaton	94455-1	1057	CAL 3/18/03	3/18/05
	BiconiLog Antenna	EMCO	3143	9409-1043		
	Log-Periodic Antenna	Electro-Metrics	LPA-25	1122	CAL 10/2/01	10/2/03
	Log-Periodic Antenna	Electro-Metrics	EM-6950	632	CHAR 10/15/01	10/15/03

APPLICANT: EVERYDAY WIRELESS LLC

FCC ID: QPL100

REPORT #: T:\E\EverydayWireless_\716UT4\716UT4TestReport.doc

PAGE #: 12 of 15

	DEVICE	MFGR	MODEL	SERNO	CAL/CHAR DATE	DUE DATE or STATUS
X	Log-Periodic Antenna	Electro-Metrics	LPA-30	409	CAL 3/4/03	3/4/05
	Log-Periodic Antenna	Eaton	96005	1243	CAL 5/8/03	5/8/05
	Dipole Antenna Kit	Electro-Metrics	TDA-30/1-4	152	CAL 3/21/01	3/21/04
	Dipole Antenna Kit	Electro-Metrics	TDA-30/1-4	153	CAL 9/26/02	9/26/05
	Double-Ridged Horn Antenna	Electro-Metrics	RGA-180	2319	CAL 2/17/03	2/17/05
	Horn Antenna *(at 3 meters)	Electro-Metrics	EM-6961	6246	CAL 3/31/03	3/31/05
X	Horn Antenna *(at 10 meters)	Electro-Metrics	EM-6961	6246	CAL 6/4/03	6/4/05
	Horn Antenna	ATM	19-443-6R	None	No Cal Required	
	Passive Loop Antenna	EMC Test Systems	EMCO 6512	9706-1211	CHAR 7/10/01	7/10/03
	Harmonic Mixer with Horn Antenna	Oleson Microwave Labs	M08HW/A	F30425-1	CHAR 4/25/03	4/25/05
	Harmonic Mixer with Horn Antenna	Oleson Microwave Labs	M12HW/A	E30425-1	CHAR 4/25/03	4/25/05
	Line Impedance Stabilization . . .	Electro-Metrics	ANS-25/2	2604	CAL 10/9/01	10/9/03
	Line Impedance Stabilization . . .	Electro-Metrics	EM-7820	2682	CAL 3/12/03	3/12/05
	Termaline Wattmeter	Bird Electronic Corporation	611	16405	CAL 5/25/99	5/25/01
X	Termaline Wattmeter	Bird Electronic Corporation	6104	1926	CHAR 9/7/01	9/7/03
X	Oscilloscope	Tektronix	2230	300572	CAL 7/3/03	7/3/05
	System One	Audio Precision	System One	SYS1-45868	CHAR 4/25/02	4/25/04
X	Temperature Chamber	Tenney Engineering	TTRC	11717-7	CHAR 1/22/02	1/22/04
	AC Voltmeter	HP	400FL	2213A14499	CAL 10/9/01	10/9/03
	AC Voltmeter	HP	400FL	2213A14261	CHAR 10/15/01	10/15/03
	AC Voltmeter	HP	400FL	2213A14728	CHAR 10/15/01	10/15/03
	Digital Multimeter	Fluke	77	35053830	CHAR 1/8/02	1/8/04

APPLICANT: EVERYDAY WIRELESS LLC

FCC ID: QPL100

REPORT #: T:\E\EverydayWireless_\716UT4\716UT4TestReport.doc

PAGE #: 13 of 15

	DEVICE	MFGR	MODEL	SERNO	CAL/CHAR DATE	DUE DATE or STATUS
X	Digital Multimeter	Fluke	77	43850817	CHAR 1/8/02	1/8/04
	Digital Multimeter	HP	E2377A	2927J05849	CHAR 1/8/02	1/8/04
	Multimeter	Fluke	FLUKE-77-3	79510405	CHAR 9/26/01	9/26/03
	Peak Power Meter	HP	8900C	2131A00545	CAL 7/2/03	7/2/05
	Power Sensor	Agilent Technologies	84811A	2551A02705	CAL 7/2/03	7/2/05
	Power Meter	HP	432A	1141A07655	CAL 4/15/03	4/15/05
	Power Sensor	HP	478A	72129	CAL 4/15/03	4/15/05
	Power Meter And Sensor	Bird	4421-107 4022	0166 0218	CAL 4/16/03	4/16/05
	Digital Thermometer	Fluke	2166A	42032	CAL 1/16/02	1/16/04
	Thermometer	Traulsen	SK-128		CHAR 1/22/02	1/22/04
	Thermometer	Extech	4028	14871-2	CAL 3/7/03	3/7/05
	Hygro-Thermometer	Extech	445703	0602	CAL 10/4/02	10/4/04
	Frequency Counter	HP	5352B	2632A00165	CAL 11/28/01	11/28/03
X	Frequency Counter	HP	5385A	2730A03025	CAL 3/7/03	3/7/05
	Service Monitor	IFR	FM/AM 500A	5182	CAL 11/22/00	11/22/02
X	Comm. Serv. Monitor	IFR	FM/AM 1200S	6593	CAL 5/12/02	5/12/04
X	Signal Generator	HP	8640B	2308A21464	CAL 2/15/02	2/15/04
	Sweep Generator	Wiltron	6648	101009	CAL 4/15/03	4/15/05
	Sweep Generator	Wiltron	6669M	007005	CAL 3/3/03	3/3/05
	Modulation Analyzer	HP	8901A	3435A06868	CAL 9/5/01	9/5/03
	Modulation Meter	Boonton	8220	10901AB	CAL 4/15/03	4/15/05
	Near Field Probe	HP	HP11940A	2650A02748	CHAR 2/1/01	2/1/03

APPLICANT: EVERYDAY WIRELESS LLC

FCC ID: QPL100

REPORT #: T:\E\EverydayWireless_\716UT4\716UT4TestReport.doc

PAGE #: 14 of 15

	DEVICE	MFGR	MODEL	SERNO	CAL/CHAR DATE	DUE DATE or STATUS
	BandReject Filter	Lorch Microwave	5BR4-2400/ 60-N	Z1	CHAR 4/17/03	4/17/05
	BandReject Filter	Lorch Microwave	6BR6-2442/ 300-N	Z1	CHAR 4/17/03	4/17/05
	BandReject Filter	Lorch Microwave	5BR4-10525/ 900-S	Z1	CHAR 4/12/03	4/12/05
	Notch Filter	Lorch Microwave	5BRX-850/ X100-N	AD-1	CHAR 4/17/03	4/17/05
	High Pass Filter	Unk	3768(5)-400	041	CHAR 12/17/02	12/17/04
X	High Pass Filter	Microlab	HA-10N		CHAR 11/17/02	11/17/04
	High Pass Filter	Microlab	HA-20N		CHAR 12/17/02	12/17/04
	Audio Oscillator	HP	653A	832-00260	CHAR 12/1/02	12/1/04
	Audio Generator	B&K Precision	3010	8739686	CHAR 12/1/02	12/1/04
	Frequency Counter	HP	5382A	1620A03535	CHAR 3/2/01	3/2/03
	Frequency Counter	HP	5385A	3242A07460	CAL 3/7/03	3/7/05
	Amplifier	HP	11975A	2738A01969	CHAR 3/1/01	3/1/03
	Egg Timer	Unk			CHAR 2/1/02	2/1/04
	Measuring Tape, 20M	Kraftixx	0631-20		CHAR 2/1/02	2/1/04
	Measuring Tape, 7.5M	Kraftixx	7.5M PROF1		2/1/02	2/1/04
X	Coaxial Cable #51	Insulated Wire Inc.	NPS 2251-2880	Timco #51	CHAR 1/23/02	1/23/04
	Coaxial Cable #64	Semflex Inc.	60637	Timco #64	CHAR 1/24/02	1/24/04
X	Coaxial Cable #65	General Cable Co.	E9917 RG233/U	Timco #65	CHAR 1/23/02	1/23/04
	Coaxial Cable #106	Unknown	Unknown	Timco #106	CHAR 1/23/02	1/23/04

APPLICANT: EVERYDAY WIRELESS LLC

FCC ID: QPL100

REPORT #: T:\E\EverydayWireless_\716UT4\716UT4TestReport.doc

PAGE #: 15 of 15