

TIMCO ENGINEERING INC.

849 NW State Road 45

Newberry, Florida 32669

<http://www.timcoengr.com>

888.472.2424 F 352.472.2030 email: tei@timcoengr.com



Part 22, 74, 80, and 90 Type Approval Test Report

Product Name: VHF TRANSCEIVER

FCC ID: K95DMH599

Applicant

BK RADIO INC.
C/O RELM COMMUNICATIONS
7505 TECHNOLOGY DRIVE
WEST MELBOURNE FL 32904 USA

Date Receipt: 4/1/2005

Date Tested: 4/11/2005

Note: This test report is specially limited to the above client company and the product model only. It may not be duplicated without prior written consent of Timco Engineering. This report **must not** be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

APPLICANT: BK RADIO INC.

FCC ID: K95DMH599

REPORT #: B\BK RADIO_K95\674AUT55\674AUT55TestReport.doc

COVER SHEET

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EXHIBITS CONTAINING

BLOCK DIAGRAM
SCHEMATIC
PARTS LIST
USERS MANUAL
LABEL SAMPLE
LABEL LOCATION
EXTERNAL PHOTOGRAPHS
INTERNAL PHOTOGRAPHS
TUNING PROCEDURE
OPERATIONAL DESCRIPTION
TEST SET UP PHOTOGRAPH

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GENERAL INFORMATION REQUIRED **FOR CERTIFICATION OF A LICENSED TRANSMITTER**

Part 2.1033(c)(1)(2) BK RADIO INC. will manufacture the
FCCID: K95DMH599 VHF
TRANSCIVER in quantity, for use under FCC
RULES PART 22, PART 74, PART 80, and PART 90

BK RADIO INC.
C/O RELM COMMUNICATIONS
7505 TECHNOLOGY DRIVE
WEST MELBOURNE, FL 32904 USA

Part 2.1033(c) TECHNICAL DESCRIPTION

Part 2.1033(c)(3) Instruction book. A draft copy of the instruction manual is included.

Part 2.1033(c) (4) Type of Emission: 16K0F3E
Part 22 Bn = 2M + 2DK
Part 74 M = 3000
Part 80 D = 5000
Part 90.209 Bn = 2(3000)+2(5000) = 16.0k
Part 90.207

Part 2.1033(c) (4) Type of Emission: 11K0F3E
Part 90.209
Part 90.207 Bn = 2M + 2DK
M = 3000
D = 2500
Bn = 2(3000)+2(2500) = 11.0k

Part 2.1033(c) (4) Type of Emission: 8K10F1D
Part 90.209
Part 90.207 Bn = 2M + 2DK
M = 3000 bps
D = 1050
Bn = 2(3000)+2(1050) = 8.1k

Part 2.1033(c) (4) Type of Emission: 8K10F1E
Part 22 Bn = 2M + 2DK
Part 74 M = 3000
Part 80 D = 1050
Part 90.209 Bn = 2(3000)+2(1050) = 8.1k
Part 90.207

Part 2.1033(c)(5) Frequency Range: 136-174 MHz

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Part 2.1033(c)(6)(7) Power Output shall not exceed 59 Watts into a 50 ohm
Part 22 resistive load. There are no user power controls.
Part 74.461
Part 80.215
Part 90.205

Part 2.1033(c)(8) DC Voltages and Current into Final Amplifier:
POWER INPUT:

FINAL AMPLIFIER ONLY

INPUT POWER - HIGH: $(13.6V)(10.4A) = 141.44$ Watts

INPUT POWER - LOW: $(13.6V)(6.3A) = 85.68$ Watts

Part 2.1033(c)(9) Tune-up procedure. The tune-up procedure is included.

Part 2.1033(c)(10) Complete Circuit Diagrams: The circuit diagram is included. The block diagram is included.

Part 2.1033(c)(10): Description of all circuitry and devices provided for determining and stabilizing frequency is included in the circuit description.

Part 2.1033(c)(11): A photograph or drawing of the equipment identification label is included.

Part 2.1033(c)(12): Photographs of the equipment of sufficient clarity to reveal equipment construction and layout and label location are included.

Part 2.1033(c)(13): For equipment employing digital modulation, a detailed description of the modulation technique. This UUT uses FSK to modulate the transmitter.

Part 2.1033(c)(14): The data required for 2.1046 through 2.1057 is submitted below.

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Part 2.1046(a) RF POWER OUTPUT

Part 22

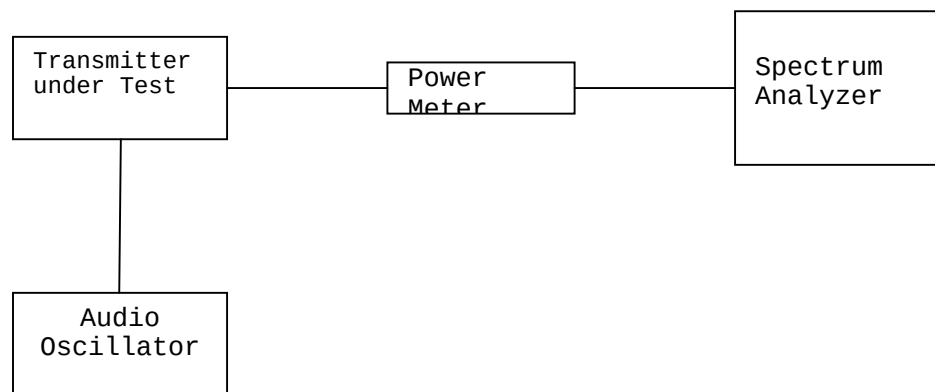
Part 74.461

Part 80.215

Part 90.205

RF power is measured by connecting a 50-ohm, resistive wattmeter to the RF output connector. With a nominal battery voltage, and the transmitter properly adjusted the RF output measures:

OUTPUT POWER: HIGH - 50 Watts
 LOW - 25 Watts



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Part 2.1047(a)(b) Modulation characteristics:

Part 74.463

Part 80.213

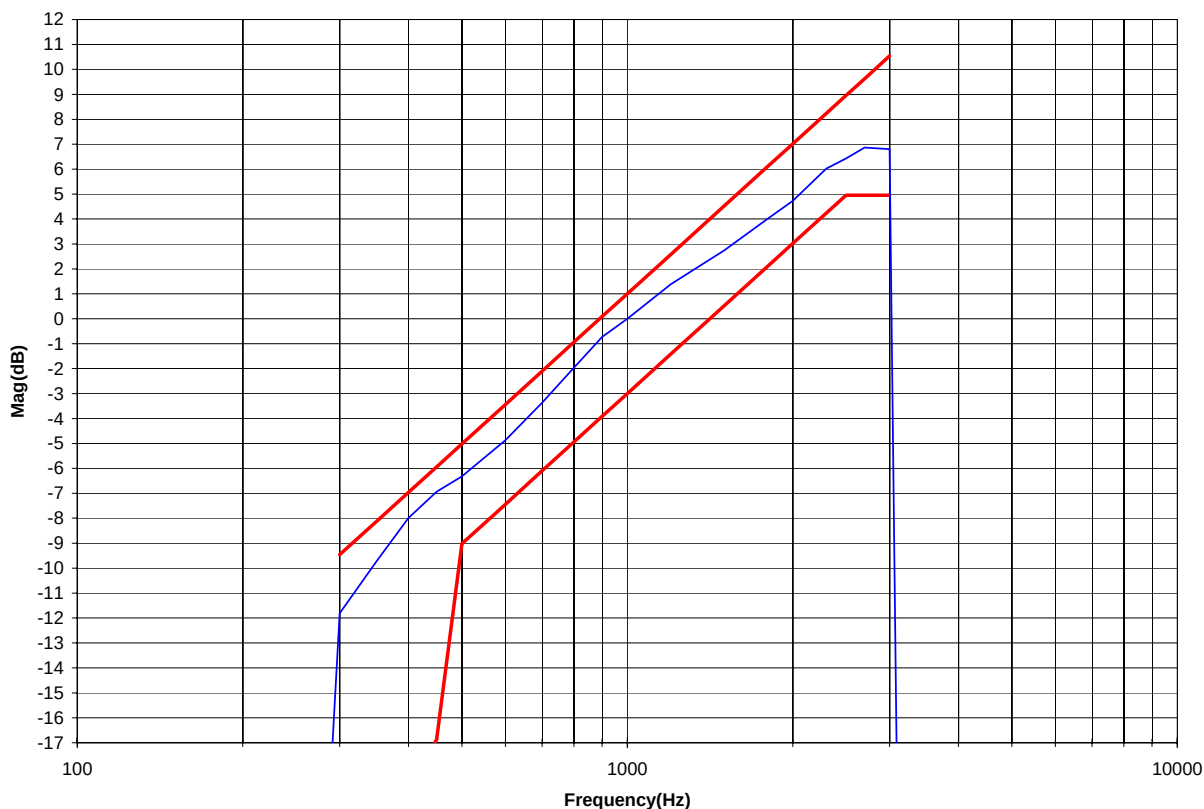
Part 90.205

AUDIO FREQUENCY RESPONSE

The audio frequency response was measured in accordance with TIA/EIA Specification 603. A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 - 5000Hz shall be submitted. The audio frequency response curve is shown below.

AUDIO FREQUENCY RESPONSE PLOT

25KHz TX Audio Response 155MHz



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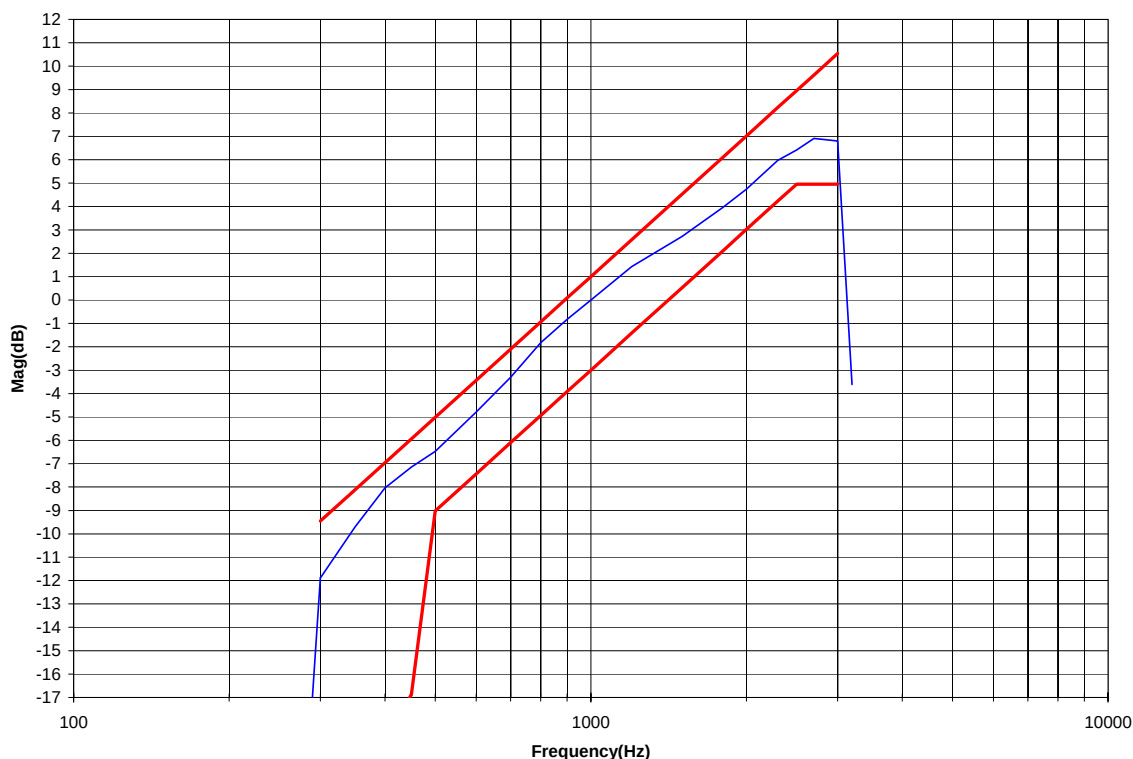
888.472.2424 F 352.472.2030 email: tei@timcoengr.com

AUDIO FREQUENCY RESPONSE

The audio frequency response was measured in accordance with TIA/EIA Specification 603. A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 - 5000Hz shall be submitted. The audio frequency response curve is shown below.

AUDIO FREQUENCY RESPONSE PLOT

12.5KHz TX Audio Response 155MHz



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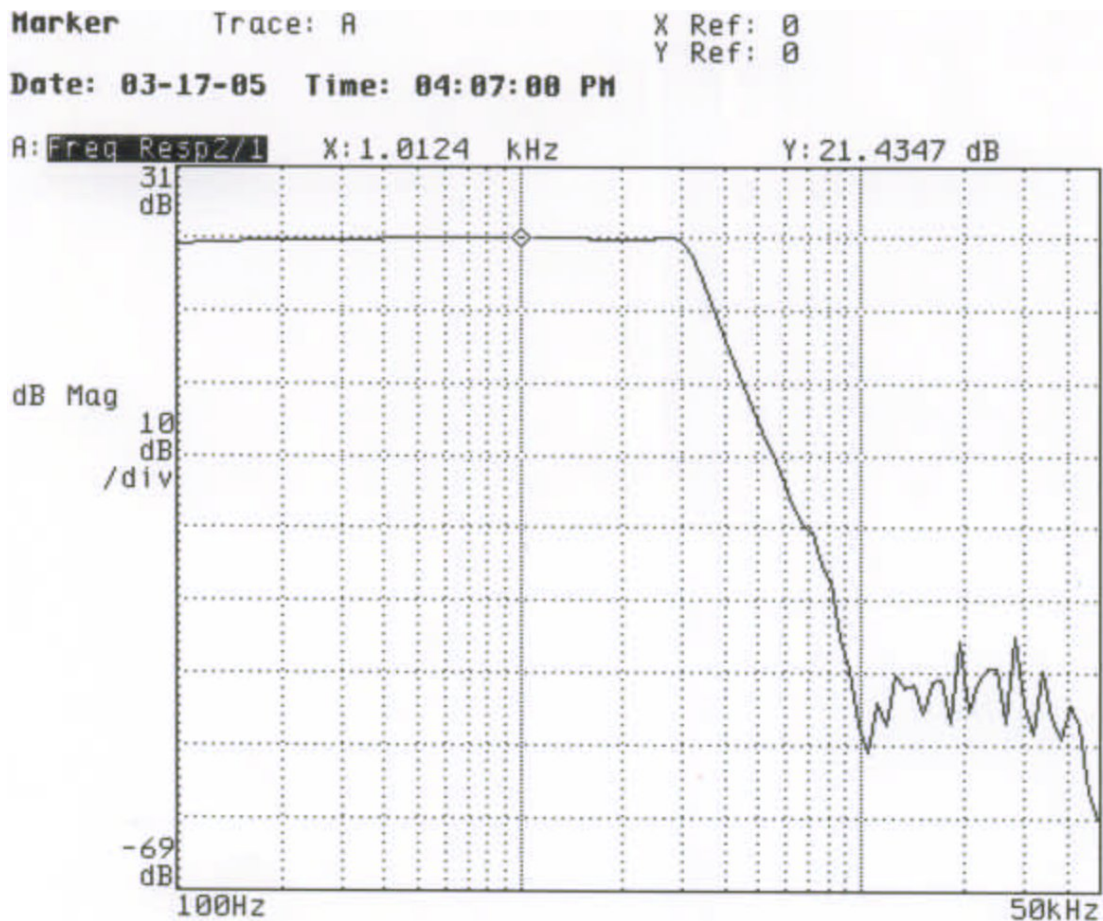
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Part 2.1047(a) Voice modulated communication equipment: For equipment required to have an audio low-pass filter, a curve showing the frequency response of the filter, or of all the circuitry installed between the modulation limiter and the modulated stage shall be submitted.

AUDIO LOW PASS FILTER



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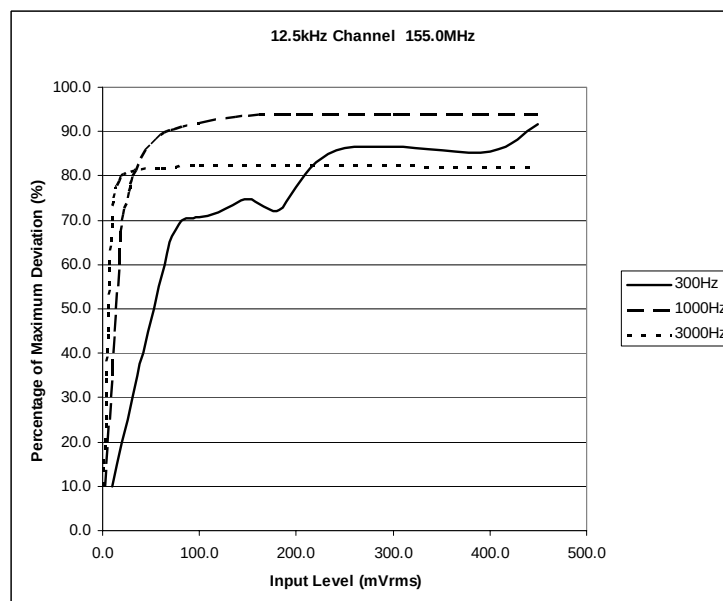
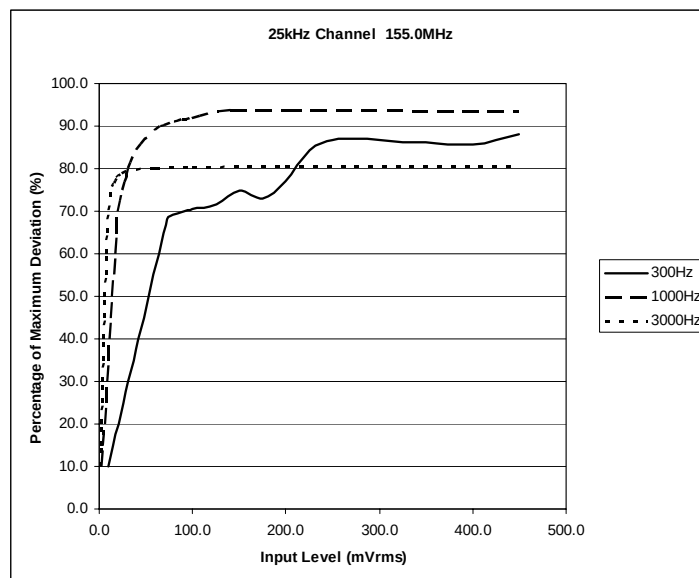
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Part 2.1047(b) Audio input versus modulation

The audio input level needed for a particular percentage of modulation was measured in accordance with TIA/EIA Specification 603. The audio input curves versus modulation are shown below. Curves are provided for audio input frequencies of 300, 1000, and 2500 Hz.

MODULATION LIMITING PLOTS



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Part 2.1049 Occupied bandwidth

Part 2.1049(c) EMISSION BANDWIDTH Emission Mask B - 25kHz Channel Spacing

Part 22.359

Part 74.462

Part 80.211

Part 90.210(b)

Data in the plots show that on any frequency removed from the assigned frequency by more than 50%, but not more than 100%: At least 25dB. On any frequency removed from the assigned frequency by more than 100%, but not more than 250%: At least 35 dB. On any frequency removed from the assigned frequency by more than 250%, of the authorized bandwidth: At least $43 + 10\log(P)$ dB.

Part 90.210(d) Emission Mask D - 12.5 kHz channel BW 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.

Part 90.210(e) Emission Mask E - 6.25 kHz channel BW equipment.

For transmitters designed to operate with a 6.25 kHz 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 3.0 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 3.0 kHz but no more than 4.6 kHz: At least $30 + 16.67(f_d - 3.0 \text{ kHz})$ or $55 + 10 \log(P)$ or 65, whichever is the lesser attenuation.
- (3) On any frequency removed from the center of the authorized bandwidth by more than 4.6 kHz: At least $55 + 10\log(P)$ dB or 65 dB, whichever is the lesser attenuation.

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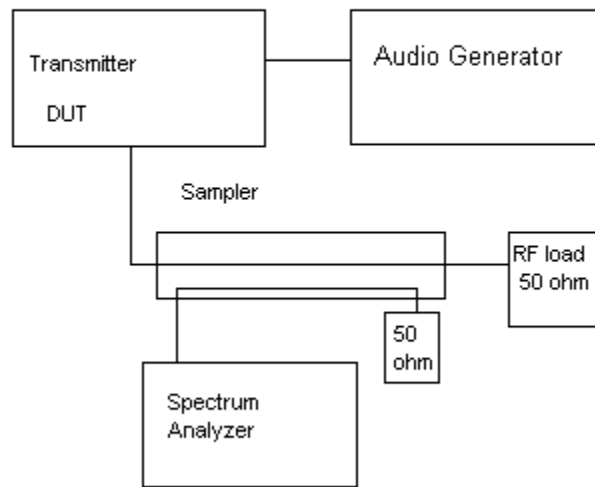
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Radiotelephone transmitter with modulation limiter:

Test procedure diagram

OCCUPIED BANDWIDTH MEASUREMENT

Occupied BW Test Equipment Setup



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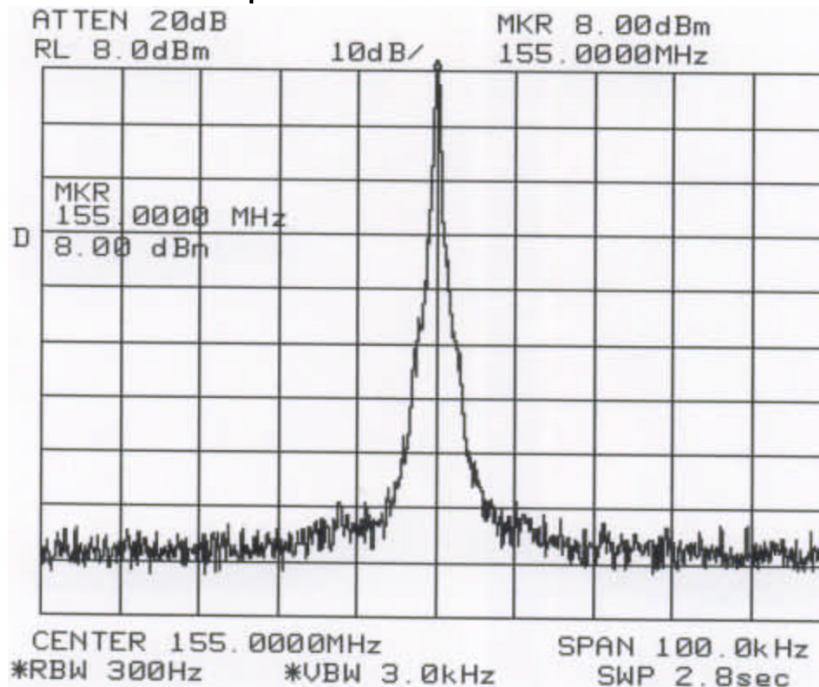
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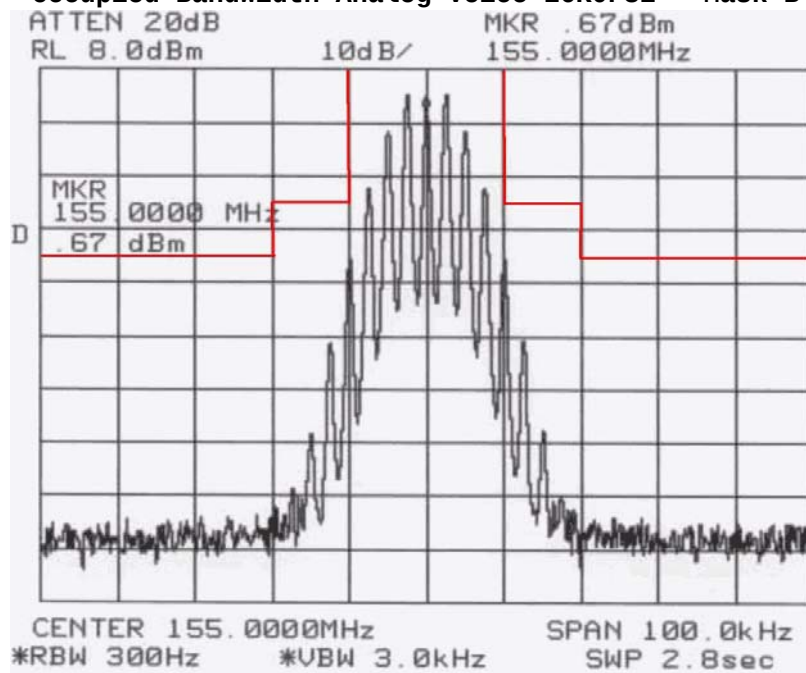
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OCCUPIED BANDWIDTH PLOT Occupied Bandwidth No Modulation



Occupied Bandwidth Analog Voice 16K0F3E Mask B



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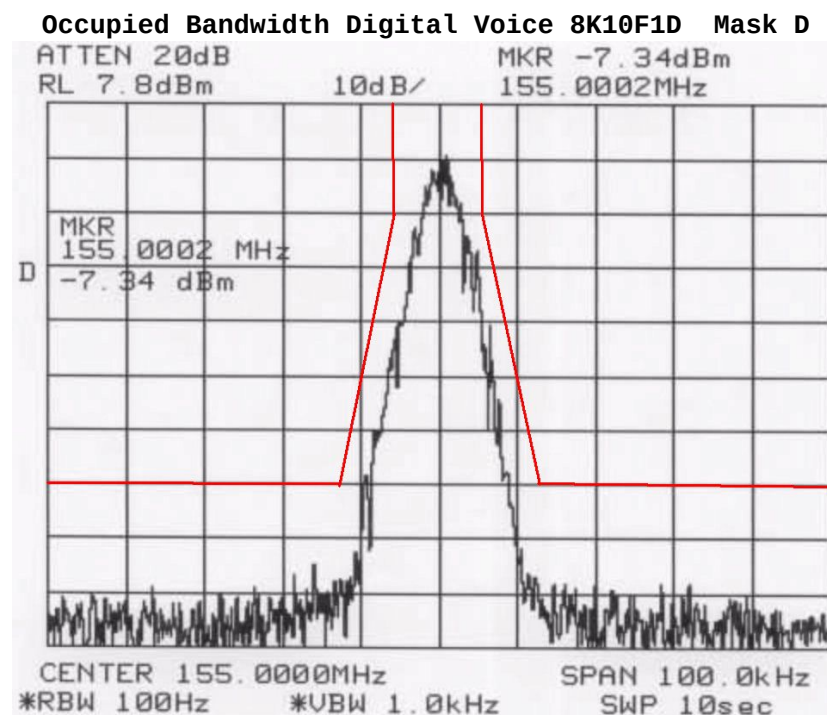
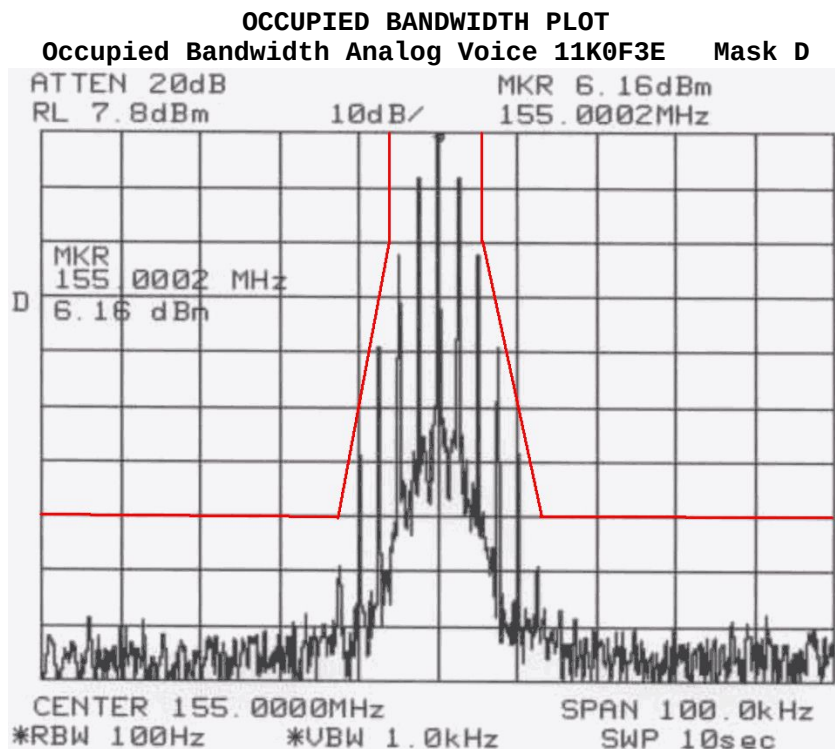
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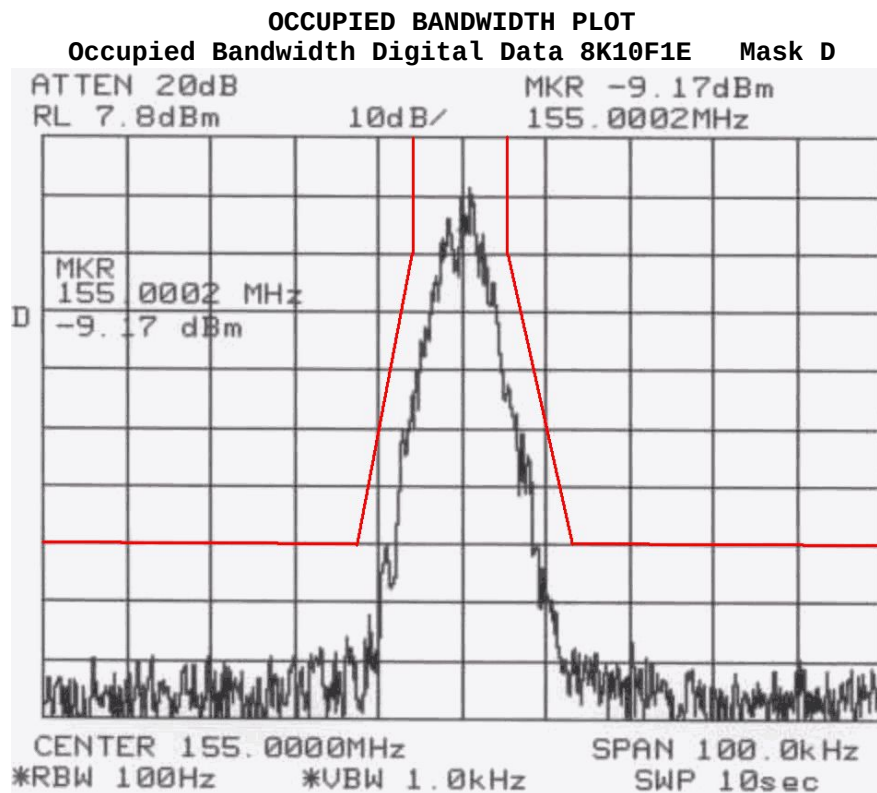
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Part 2.1051(a) Spurious emissions at antenna terminals (conducted)

Part 22.359

Part 74.462

Part 80.211

Part 90.210

Data below 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.

FCC Limit for:

25kHz Channel Spacing = (High Power) $43+10\log(50)= 59.98$ dB

(Low Power) $43+10\log(25)= 56.98$ dB

12.5kHz Spacing = (High Power) $50+10\log(50)= 66.99$ dB

(Low Power) $50+10\log(25)= 63.98$ dB

TF		dB below	TF		dB below
HIGH POWER	EF	carrier	LOW POWER	EF	carrier
136	136	0	136	136	0
	272	81.5		272	76.1
	408	72.7		408	76.1
	544	108.8		544	106.8
	680	110.1		680	94.2
	816	112.6		816	110.3
	952	108.8		952	102.6
				1088	109.8
				1224	108.4

TF		dB below	TF		dB below
HIGH POWER	EF	carrier	LOW POWER	EF	carrier
174	174	0	174	174	0
	348	75.2		348	83.1
	522	67.8		522	75.9
	696	100.8		696	104.5
	870	100.4		870	98
	1044	102.5		1044	100.4
	1218	103.9		952	99
	1392	104.7		1088	101.1
	1566	104.4		1566	100.1

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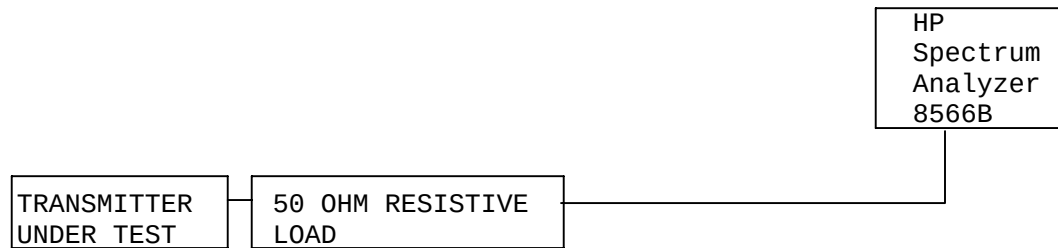
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Method of Measuring Conducted Spurious Emissions



METHOD OF MEASUREMENT: The procedure used was TIA/EIA-603 STANDARD without any exceptions. The measurements were made at TIMCO ENGINEERING INC. 849 N.W. State Road 45, Newberry, Florida 32669.

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Part 2.1053 Field strength of spurious emissions

Part 22.359

Part 74.462

Part 80.211

Part 90.210

FCC Limit for:

25kHz Channel Spacing = (High Power) $43+10\log(50)= 59.98$ dB

(Low Power) $43+10\log(25)= 56.98$ dB

12.5kHz Spacing = (High Power) $50+10\log(50)= 66.99$ dB

(Low Power) $50+10\log(25)= 63.98$ dB

TEST DATA: Low Power

High Power

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)	Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
136.00	0	0	136.00	0	0
272.00	H	91.52	272.00	H	95.12
408.00	H	84.45	408.00	H	83.15
544.00	H	89.52	544.00	H	93.72
680.00	H	94.5	680.00	H	104
816.00	H	100.39	816.00	H	101.09
952.00	H	100.44	952.00	V	102.44
1088.00	V	91.39	1088.00	V	93.29
1224.00	H	91.36	1224.00	H	94.96
1360.00	H	92.95	1360.00	H	95.15

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Part 2.1053 Field strength of spurious emissions (Continued)

FCC Limit for:

25kHz Channel Spacing = (High Power) $43+10\log(50)= 59.98$ dB

(Low Power) $43+10\log(25)= 56.98$ dB

12.5kHz Spacing = (High Power) $50+10\log(50)= 66.99$ dB

(Low Power) $50+10\log(25)= 63.98$ dB

TEST DATA: Low Power

High Power

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)	Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
174.00	0	0	174.00	0	0
348.00	H	83.12	348.00	H	78.12
522.00	H	84.93	522.00	H	83.13
696.00	H	91.24	696.00	H	94.24
870.00	H	86.66	870.00	H	93.56
1044.00	H	93.45	1044.00	H	96.95
1218.00	H	96.09	1218.00	H	99.19
1392.00	H	93.83	1392.00	H	96.13
1566.00	H	93.29	1566.00	H	95.09

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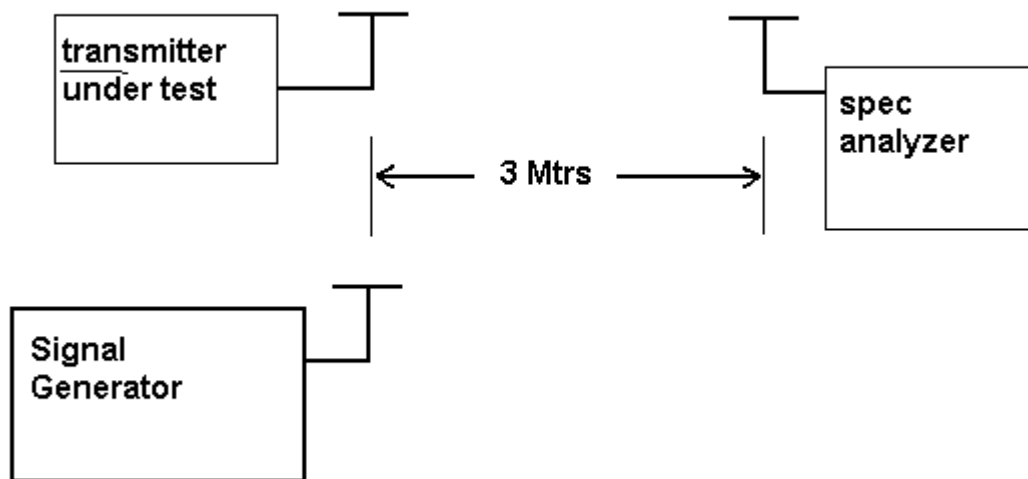
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Method of Measuring Radiated Spurious Emissions



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.

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Part 2.1055 Frequency stability

Part 22.355

Part 74.464

Part 80.209

Part 90.213

Frequency Stability Requirement:

Temperature range requirements: -30 to +50° C.

Voltage Variation +, - 15%.

Measurement procedure per TIA/EIA 603

MEASUREMENT DATA

Assigned Frequency (Ref. Frequency): 136.000000 MHz

TEMPERATURE °C	FREQUENCY MHz	PPM
-30C	136.000022	-0.05
-20C	136.000082	0.39
-10C	136.000148	0.87
0C	136.000130	0.74
10C	136.000075	0.34
20C	136.000029	0.00
30C	136.000018	-0.08
40C	136.000023	-0.04
50C	136.000015	-0.10

Batt. Volts	Batt. Data	PPM
-15%	136.000027	-0.01
+15%	136.000030	0.01

RESULTS OF MEASUREMENTS: The test results indicates that the EUT meets the requirements.

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Part 2.1055(a)(1) Frequency stability

Part 90.214 Transient Frequency Behavior

REQUIREMENTS: Transmitters designed to operate in the 150-174 MHz and 421-512 MHz frequency bands must maintain transient frequencies within the maximum transient frequencies within the maximum frequency difference limits during the time intervals indicated:

Time Intervals	Maximum frequency Difference	All Equipment	
		150-174 MHz	421-512 MHz

Transient Frequency Behavior for Equipment Designed to Operate on 25 kHz Channels

t_1^4	± 25.0 kHz	5.0 mS	10.0 mS
t_2	± 12.5 kHz	20.0 mS	25.0 mS
t_3^4	± 25.0 kHz	5.0 mS	10.0 mS

Transient Frequency Behavior for Equipment Designed to Operate on 12.5 kHz Channels

t_1^4	± 12.5 kHz	5.0 mS	10.0 mS
t_2	± 6.25 kHz	20.0 mS	25.0 mS
t_3^4	± 12.5 kHz	5.0 mS	10.0 mS

Transient Frequency Behavior for Equipment Designed to Operate on 6.25 kHz Channels

t_1^4	± 6.25 kHz	5.0 mS	10.0 mS
t_2	± 3.125 kHz	20.0 mS	25.0 mS
t_3^4	± 6.25 kHz	5.0 mS	10.0 mS

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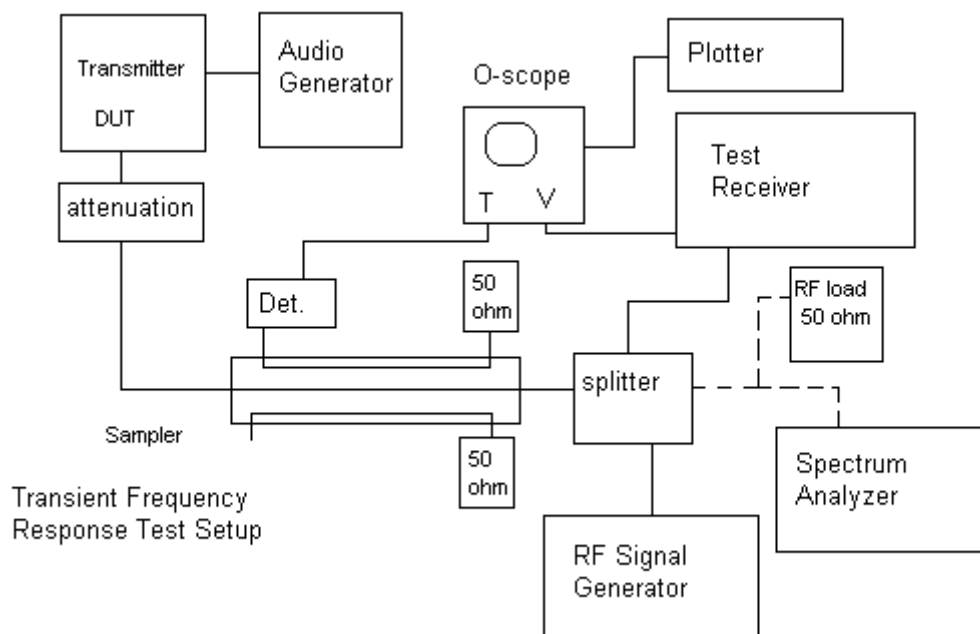
Newberry, Florida 32669

<http://www.timcoengr.com>

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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.



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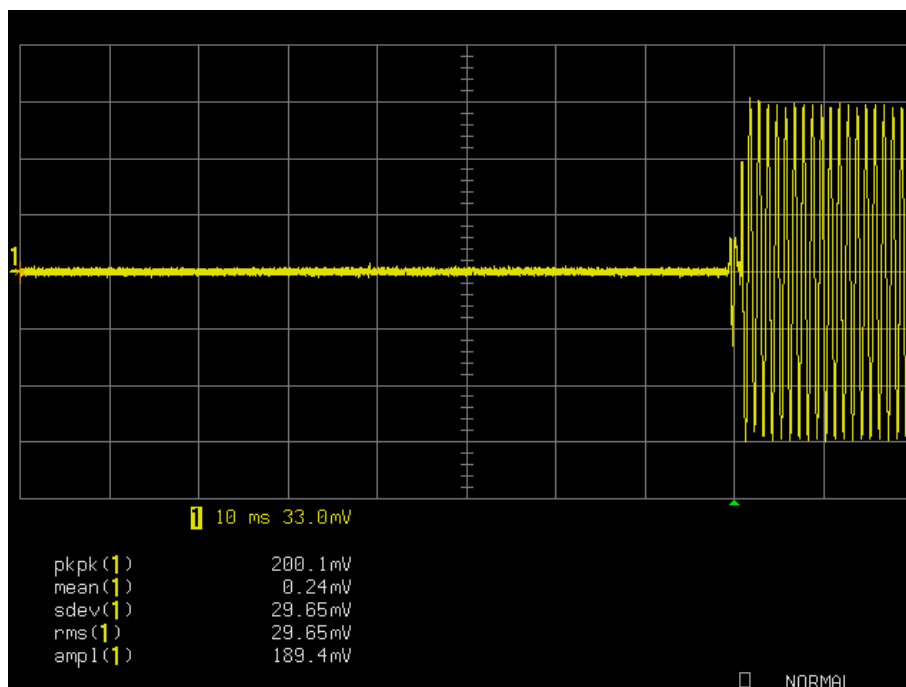
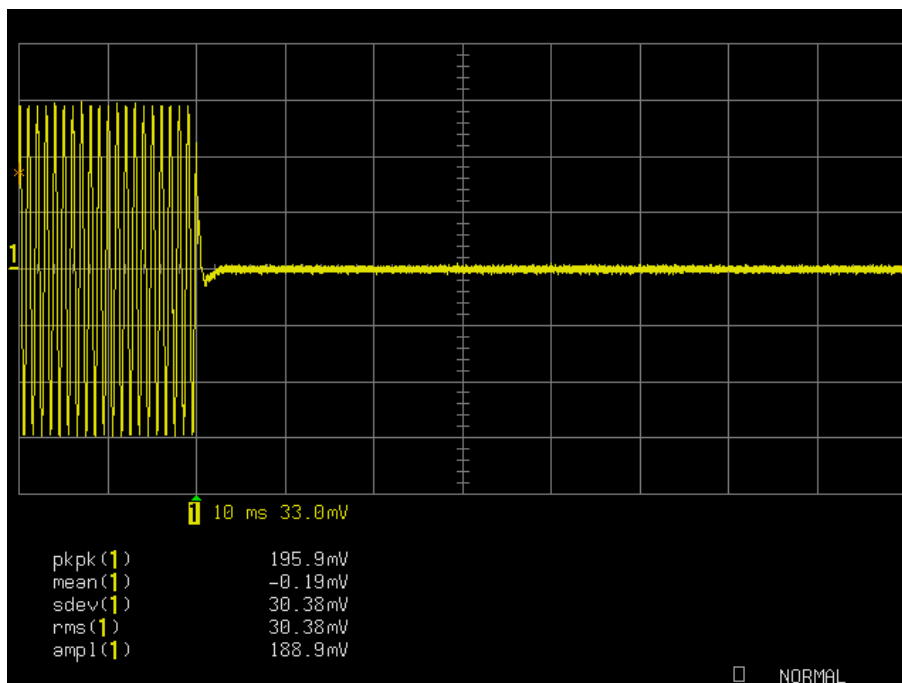
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HIGH POWER TRANSIENT FREQUENCY RESPONSE PLOT - 12.5 kHz



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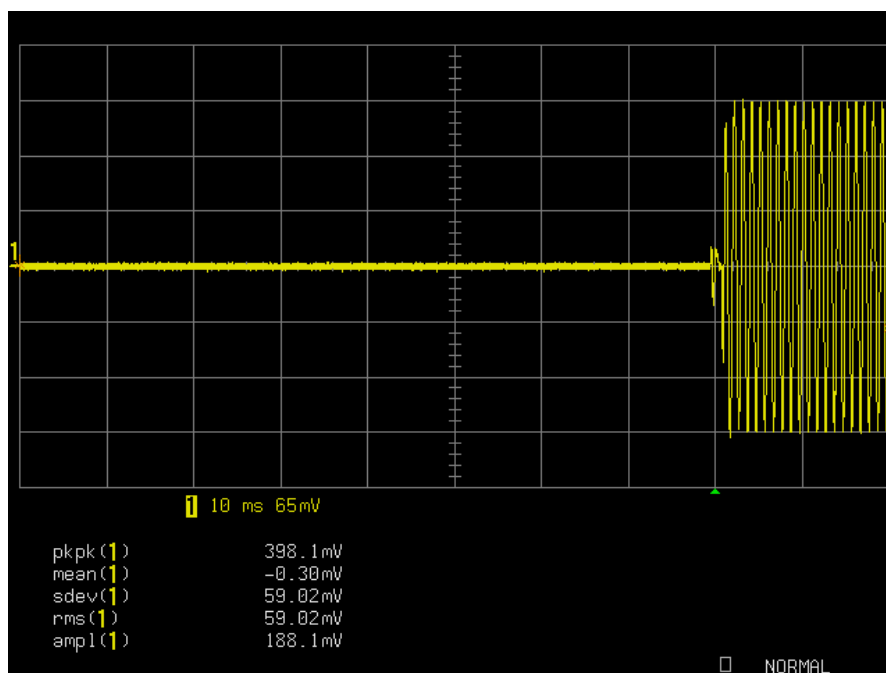
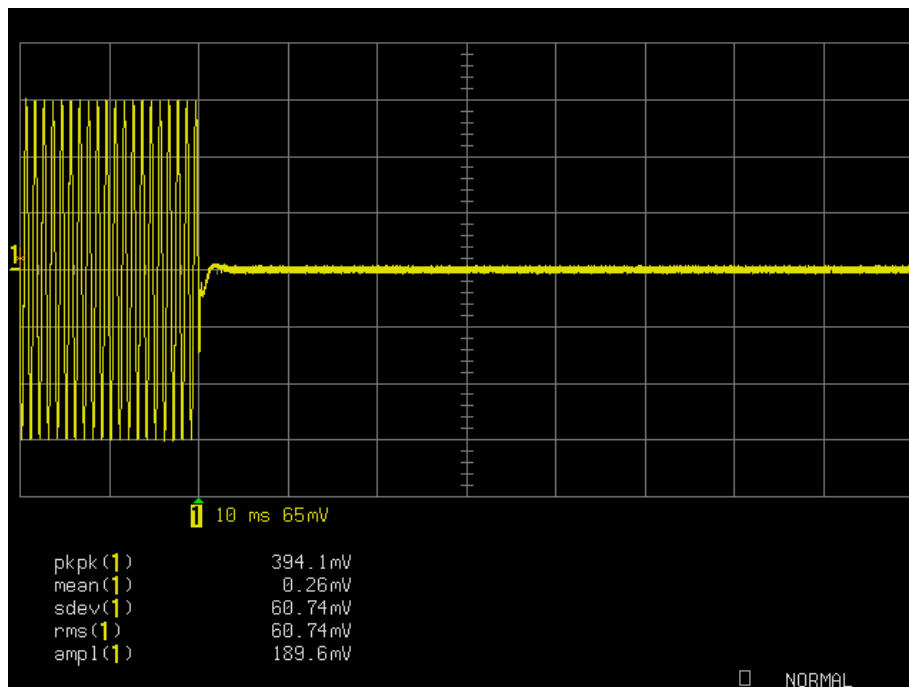
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HIGH POWER

TRANSIENT FREQUENCY RESPONSE PLOT - 25 kHz



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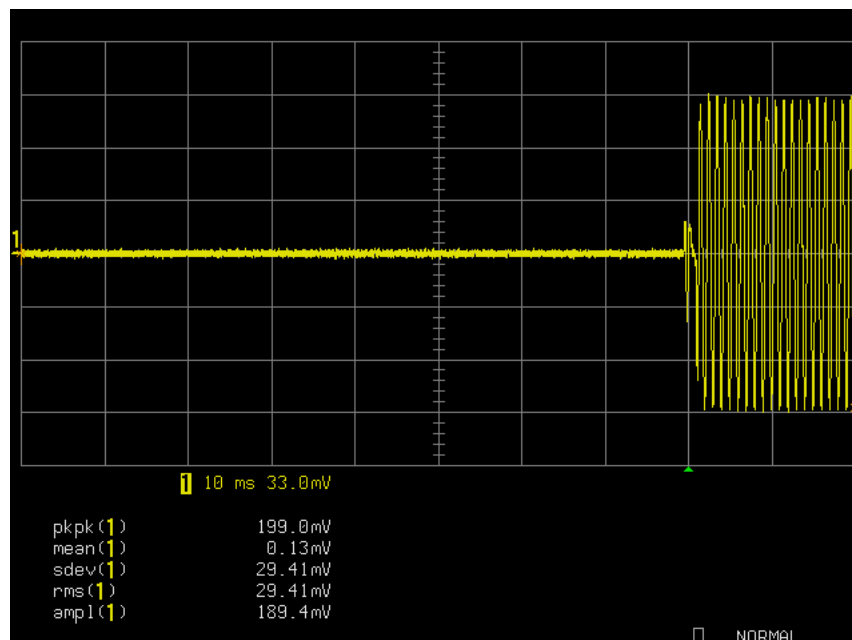
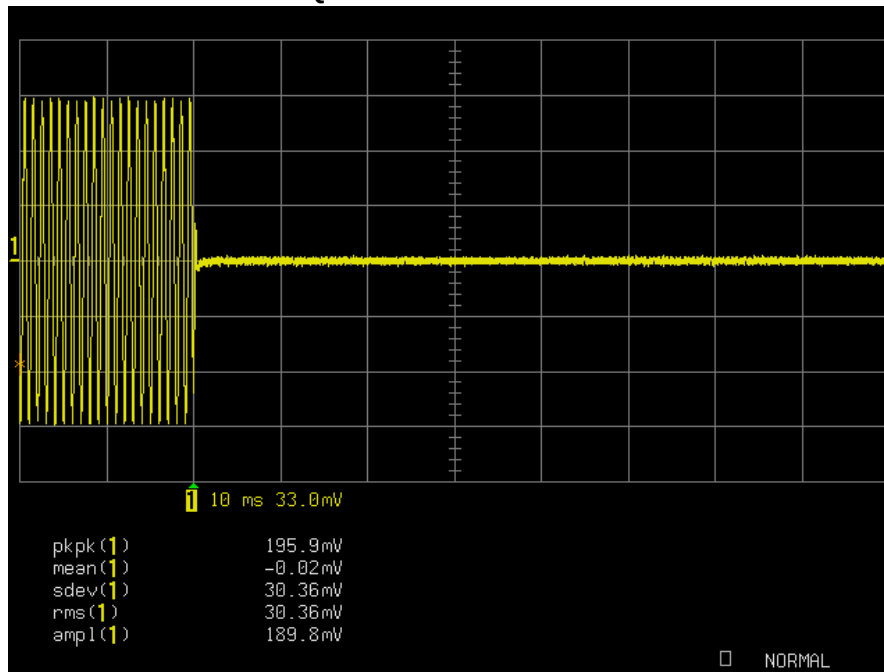
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LOW POWER TRANSIENT FREQUENCY RESPONSE PLOT - 12.5 kHz



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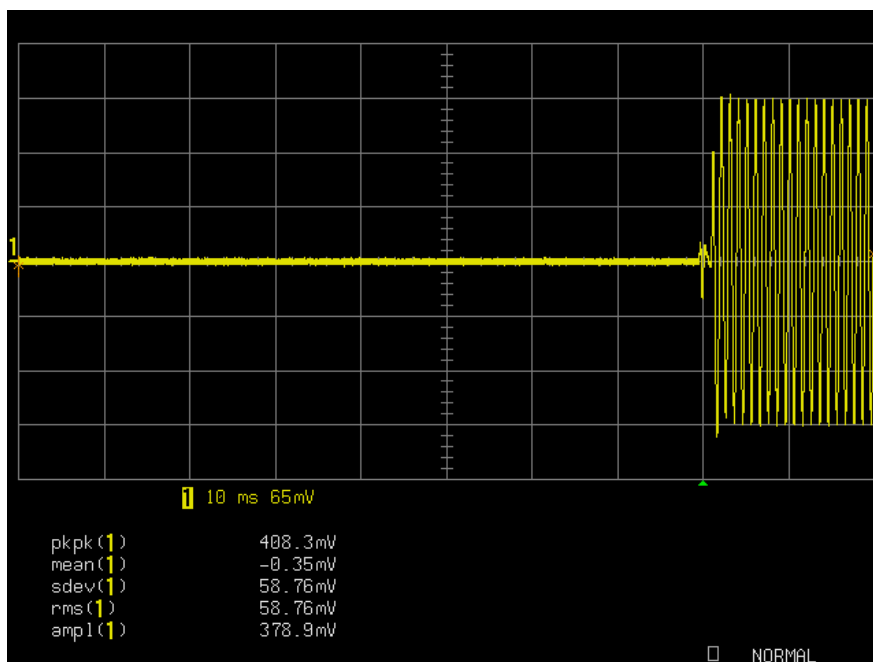
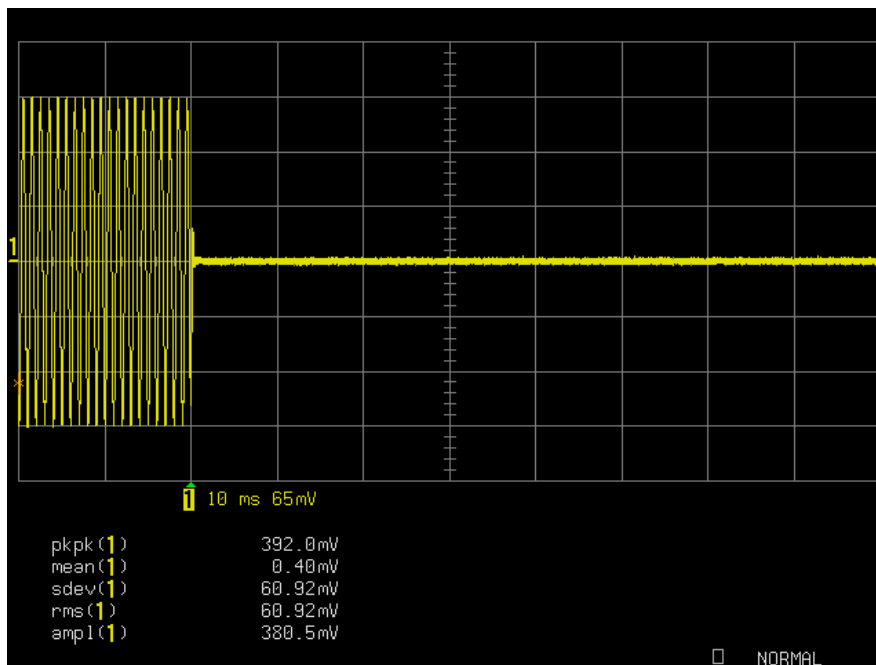
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LOW POWER

TRANSIENT FREQUENCY RESPONSE PLOT - 25 kHz



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Part 2.1091 RF Exposure Requirements **Part 2.1093**

General information

FCCID: K95DMH599
Device category: Mobile per Part 2.1091
Environment: Controlled Exposure

Mobile devices that operate under Part 90 of this chapter are subject to routine environmental evaluation for RF exposure prior to equipment authorization or use if they operate at frequencies of 1.5 GHz or below and their effective radiated power (ERP) is 1.5 watts or more. However, compliance with the power density limits of 1.1310 is not required.

Antenna

The manufacturer does not specify any antenna to be used with this device.

This device has provisions for operation in a vehicle, or a fixed location.

Configuration	Antenna p/n	Type	Max. Gain (dBi)
Passenger car	Any	-	3

Operating configuration and exposure conditions

The conducted output power is 45 watt. Typical use qualifies for a maximum duty cycle factor of 50%. Part 2.1091 states that devices are excluded from routine evaluation if the EIRP is less than 2.46Watt (or 1.5WERP).

- Vehicle Operation: The maximum antenna gain that can be used is 3dBi. A coaxial cable of the type RG 58 has a loss of 1dB for a length of 15 feet. Distance for compliance is 63 cm.

MPE Calculation

The minimum separation distance is calculated as follows:

$$E(V/m) = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power density: } P_d(mW/cm^2) = \frac{E^2}{3770}$$

The limit for general population/uncontrolled exposure environment below 300 MHz is 0.2mW/cm² for the worst-case frequency.

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EMC Equipment List

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date or Status
3-Meter OATS	TEI	N/A	N/A	Listed 1/13/03	1/12/06
3/10-Meter OATS	TEI	N/A	N/A	Listed 3/27/04	3/26/07
Tan Tower Spectrum Analyzer	HP	8566B Opt 462	3138A07786 3144A20661	CAL 9/23/03	9/23/05
Tan Tower RF Preselector	HP	85685A	3221A01400	CAL 9/23/03	9/23/05
Tan Tower Quasi-Peak Adapter	HP	85650A	3303A01690	CAL 9/23/03	9/23/05
Tan Tower Preamplifier	HP	8449B-H02	3008A00372	CAL 9/23/03	9/23/05
Blue Tower Spectrum Analyzer	HP	8568B	2928A04729 2848A18049	CAL 4/15/03	4/15/05
Blue Tower RF Preselector	HP	85685A	2620A00294	CAL 4/27/04	4/27/06
Blue Tower Quasi-Peak Adapter	HP	85650A	2811A01279	CAL 4/15/03	4/15/05
Silver Tower Spectrum Analyzer	HP	8566B Opt 462	3552A22064 3638A08608	CAL 3/22/04	3/22/06
Silver Tower RF Preselector	HP	85685A	2926A00983	CAL 3/22/04	3/22/06
Silver Tower Quasi-Peak Adapter	HP	85650A	3303A01844	CAL 3/22/04	3/22/06
Silver Tower Preamplifier	HP	8449B	3008A01075	CAL 3/22/04	3/22/06
Biconnical Antenna	Electro-Metrics	BIA-25	1171	CAL 4/26/01	4/26/03
Biconnical Antenna	Eaton	94455-1	1096	CAL 8/17/04	8/17/06
Biconnical Antenna	Eaton	94455-1	1057	CAL 3/18/05	3/18/07
BiconiLog Antenna	EMCO	3143	9409-1043	No Cal Required	
Log-Periodic Antenna	Electro-Metrics	LPA-25	1122	CAL 8/26/04	8/26/06
Log-Periodic Antenna	Electro-Metrics	LPA-30	409	CAL 3/4/05	3/4/07
Log-Periodic	Eaton	96005	1243	CAL	5/8/05

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Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date or Status
Antenna				5/8/03	
Dipole Antenna Kit	Electro-Metrics	TDA-30/1-4	152	CAL 3/21/04	3/21/07
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 3/31/05	3/31/07
Horn Antenna *(at 10 meters)	Electro-Metrics	EM-6961	6246	CAL 6/4/03	6/4/05
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
LISN	Electro-Metrics	ANS-25/2	2604	CAL 8/27/04	8/27/06
LISN	Electro-Metrics	EM-7820	2682	CAL 3/12/05	3/12/07
Termaline Wattmeter	Bird Electronic Corporation	611	16405	CAL 7/16/04	7/16/06
Termaline Wattmeter	Bird Electronic Corporation	6104	1926	CAL 7/16/04	7/16/06
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
Temperature Chamber	Tenney Engineering	TTRC	11717-7	CHAR 1/22/02	1/22/04
AC Voltmeter	HP	400FL	2213A14499	CAL 7/19/04	7/19/06
AC Voltmeter	HP	400FL	2213A14261	CHAR 10/15/03	10/15/05
AC Voltmeter	HP	400FL	2213A14728	CHAR 10/15/03	10/15/05
Digital Multimeter	Fluke	77	35053830	CHAR 1/8/04	1/8/06
Digital Multimeter	Fluke	77	43850817	CHAR 1/8/04	1/8/06

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Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date or Status
Digital Multimeter	HP	E2377A	2927J05849	CHAR 1/8/04	1/8/06
Multimeter	Fluke	FLUKE-77-3	79510405	CHAR 9/26/03	9/26/05
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 7/19/04	7/19/06
Thermometer	Traulsen	SK-128		CHAR 1/22/04	1/22/06
Thermometer	Extech	4028	14871-2	CAL 3/7/05	3/7/07
Hygro-Thermometer	Extech	445703	0602	CAL 10/4/02	10/4/04
Frequency Counter	HP	5352B	2632A00165	CAL 8/3/04	8/3/06
Frequency Counter	HP	5385A	2730A03025	CAL 3/7/05	3/7/07
Service Monitor	IFR	FM/AM 500A	5182	CAL 11/22/00	Out of Service
Comm. Serv. Monitor	IFR	FM/AM 1200S	6593	CAL 5/12/04	5/12/06
Signal Generator	HP	8640B	2308A21464	CAL 8/26/04	8/26/06
Sweep Generator	Wiltron	6648	101009	CAL 4/15/03	4/15/05
Sweep Generator	Wiltron	6669M	007005	CAL 3/3/05	3/3/07
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	Out of Service
BandReject Filter	Lorch	5BR4-	Z1	CHAR	4/17/05

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Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date or Status
	Microwave	2400/60-N		4/17/03	
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 12/17/04	12/17/06
High Pass Filter	Microlab	HA-10N		CHAR 11/17/04	11/17/06
High Pass Filter	Microlab	HA-20N		CHAR 12/17/04	12/17/06
Audio Oscillator	HP	653A	832-00260	CHAR 12/1/04	12/1/06
Audio Generator	B&K Precision	3010	8739686	CHAR 12/1/04	12/1/06
Frequency Counter	HP	5382A	1620A03535	CHAR 3/2/01	Out of Service
Frequency Counter	HP	5385A	3242A07460	CAL 3/7/05	3/7/07
Amplifier	HP	11975A	2738A01969	No Cal Required	
Egg Timer	Unk			CHAR 2/1/04	2/1/06
Measuring Tape-20M	Kraftixx	0631-20		CHAR 2/1/04	2/1/06
Measuring Tape-7.5M	Kraftixx	7.5M PROFI		CHAR 2/1/04	2/1/06
Coaxial Cable #51	Insulated Wire Inc.	NPS 2251-2880	Timco #51	CHAR 1/23/04	1/23/06
Coaxial Cable #64	Semflex Inc.	60637	Timco #64	CHAR 1/24/04	1/24/06
Coaxial Cable #65	General Cable Co.	E9917 RG233/U	Timco #65	CHAR 1/23/04	1/23/06
Coaxial Cable #106	Unknown	Unknown	Timco #106	CHAR 1/23/04	1/23/06
Injection Probe	Fischer Custom Communications	F-120-9A	270	CAL 6/1/03	6/1/05
Power Line Coupling/Decoupling Network	Fischer Custom Communications	FCC-801-M2-16A	01048	CAL 8/29/05	8/29/05
Power Line	Fischer Custom	FCC-801-M3-	01060	CAL	8/29/05

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Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date or Status
Coupling/Decoupling Network	Communications	16A		8/29/03	
VHF/UHF Current Probe	Fischer Custom Communications	F-52	130	CAL 8/30/03	8/30/05
Passive Impedance Adapter	Fischer Custom Communications	FCC-801-150-50-CDN	01117 & 01118	CAL 8/29/03	8/29/05
Radiating Field Coil	Fischer Custom Communications	F-1000-4-8/9/10-L-1M	9859	CAL 10/15/03	10/15/05
EMC Immunity Test System	Keytek	CEMASTER	9810210	CAL 2/1/04	2/1/05
Compliance Test System - AC Power Source	California Instruments	1251RP	L05865	CAL 2/25/04	2/25/06
Compliance Test System - PACS-1 Module	California Instruments	PACS-1	X71484	CAL 2/25/04	2/25/06
Isotropic Field Probe	Amplifier Research	FP5000	22839		
Isotropic Field Probe	Amplifier Research	FP5000	300103		
Capacitor Clamp	Keytek	CM-CCL	9811359	No Cal Required	
Amplifier	Amplifier Research	10W1000B	23117	No Cal Required	
Field Monitor	Amplifier Research	FM5004	22288	No Cal Required	
ELF Meter	F. W. Bell	4060	Not Serialized		Out of Service
Standard Gain Horn 1.0-2.4 GHz	Polarad	CA-L	235	No Cal Required	
Standard Gain Horn 2.14-4.34 GHz	Polarad	CA-S	203	No Cal Required	
Standard Gain Horn 3.95-5.85 GHz	Scientific-Atlanta Inc.	11A-3.9	8448CG	No Cal Required	
Standard Gain Horn 8.2-12.5 GHz	Systron Donner	DBG-520-20	Not Serialized	No Cal Required	
Standard Gain Horn 18.0-26.3 GHz	Systron Donner	DBE-520-20	Not Serialized	No Cal Required	
Standard Gain Horn 26.5-40.2 GHz	Systron Donner	DBD-520-20	Not Serialized	No Cal Required	
Standard Gain Horn 40.0-60.0 GHz	ATM	19-443-6R	Not Serialized	No Cal Required	
Double-Ridged Horn	EMCO	3116	9011-2145		Out of

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Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date or Status
Antenna					Service
Standard Gain Horn 12.4-18.0 GHz	ATM	62-442-6	D262108-01	No Cal Required	
Standard Gain Horn 5.85-8.2 GHz	ATM	137-442-2	D261908-01	No Cal Required	
AC Voltmeter	HP	400F	0950A05433	CAL 8/13/03	8/13/05
RF Power Amplifier	Ophir RF	5150F	1041 'X1'	No Cal Required	
Electric Field Sensor	Amplifier Research	FP6001	302504		
Electric Field Sensor	Amplifier Research	FP6001	302510	CAL 6/1/04	6/1/06
Surge Generator	Com-Power Corporation	SG-168	25802	CAL 2/27/04	2/27/06
RF Power Amplifier	Ophir RF, Inc.	5150F	1041	CHAR 10/31/03	10/31/05
3-Meter Anechoic Chamber	Panashield	N/A	N/A	Listed 5/12/04	5/11/07
Digital Multimeter	Fluke	77III	79510408	CAL 7/19/04	7/19/06
Open-Frame Tower Spectrum Analyzer	HP	8566B/85662A	2627A03154/2648A14276	CAL 7/9/04	7/9/06
Open-Frame Tower RF Preselector	HP	85685A	3107A01282	CAL 7/9/04	7/9/06
Open-Frame Tower Quasi-Peak Adapter	HP	85650A	2046A00305	CAL 7/9/04	7/9/06
Signal Generator	HP	8648C	3847A04696	CAL 9/27/04	9/27/06

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