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SECTION 1**RF POWER OUTPUT**

2.985 (A) The RF Power measured at the output terminals:

AXATR-382-A2

4 Watts

Method: The measurement was made per TIA/EIA-603 using the following equipment::

A 50 ohm load is attached to the output terminal through a directional coupler.. The power is measured on a HP436A power meter.

SECTION 2**Modulation Characteristics**

Ref. Par. 2.987 (a, b, d) the frequency and amplitude response to audio inputs measured per TIA/EIA 603 are shown on the following sheet

403-512 Mhz

Section 2B Audio Frequency Response(25 ,12.5kHz)

Section 2C Modulation Characteristics (25 ,12.5kHz)

Equipment used was:

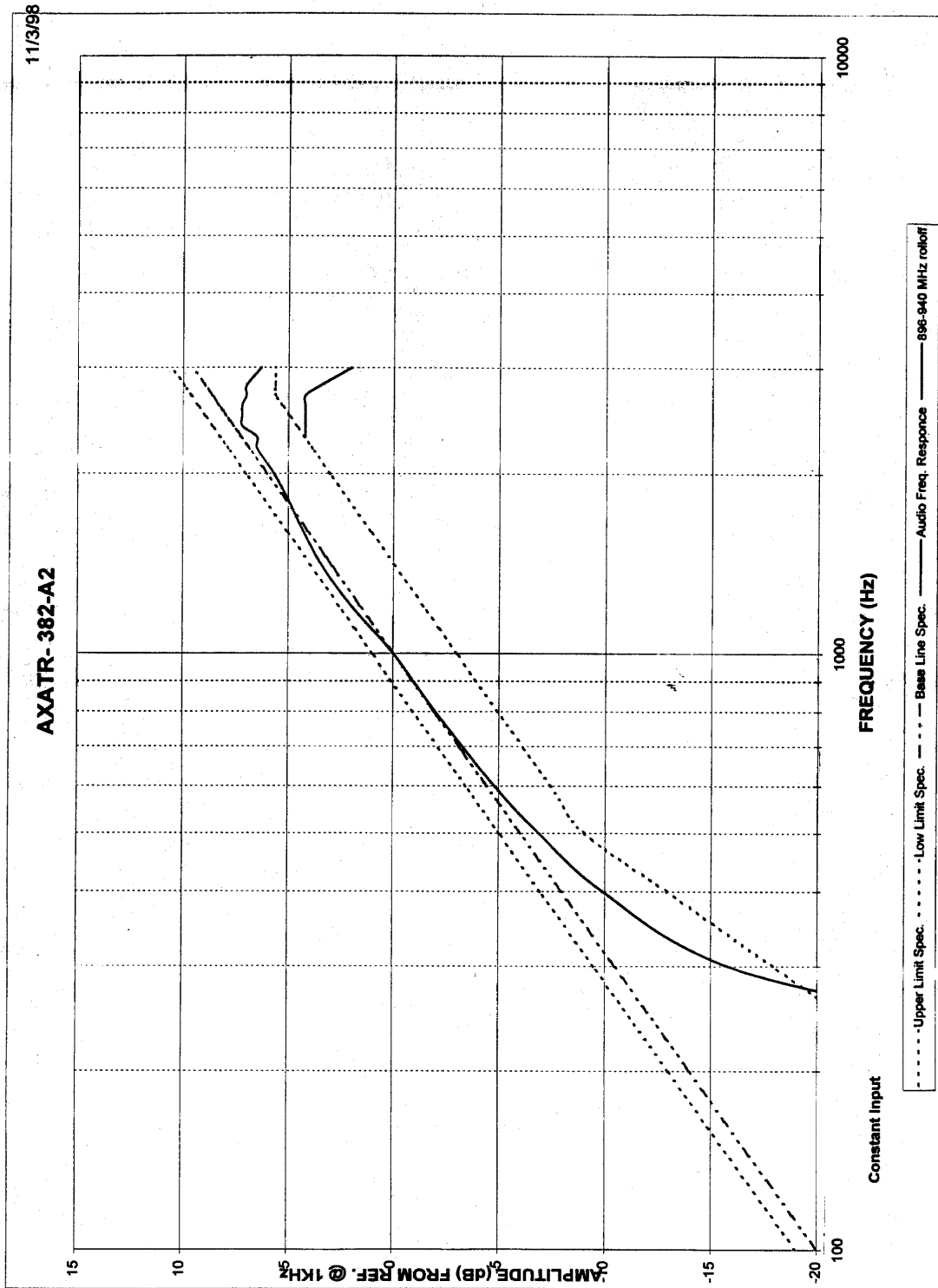
Marconi Instruments Ltd. FM/AM Modulation Meter TF2300B

Hewlett Packard Audio Signal Generator 204D

Hewlett Packard Distortion Analyzer 333A

At those modulation frequencies at which the transmitter is not capable of producing 30% of system deviation, audio response is calculated from measurement of input voltage producing a lesser deviation.

TRANSMITTER AUDIO FREQUENCY RESPONSE



Section 2 B1

AUDIO FREQUENCY RESPONSE

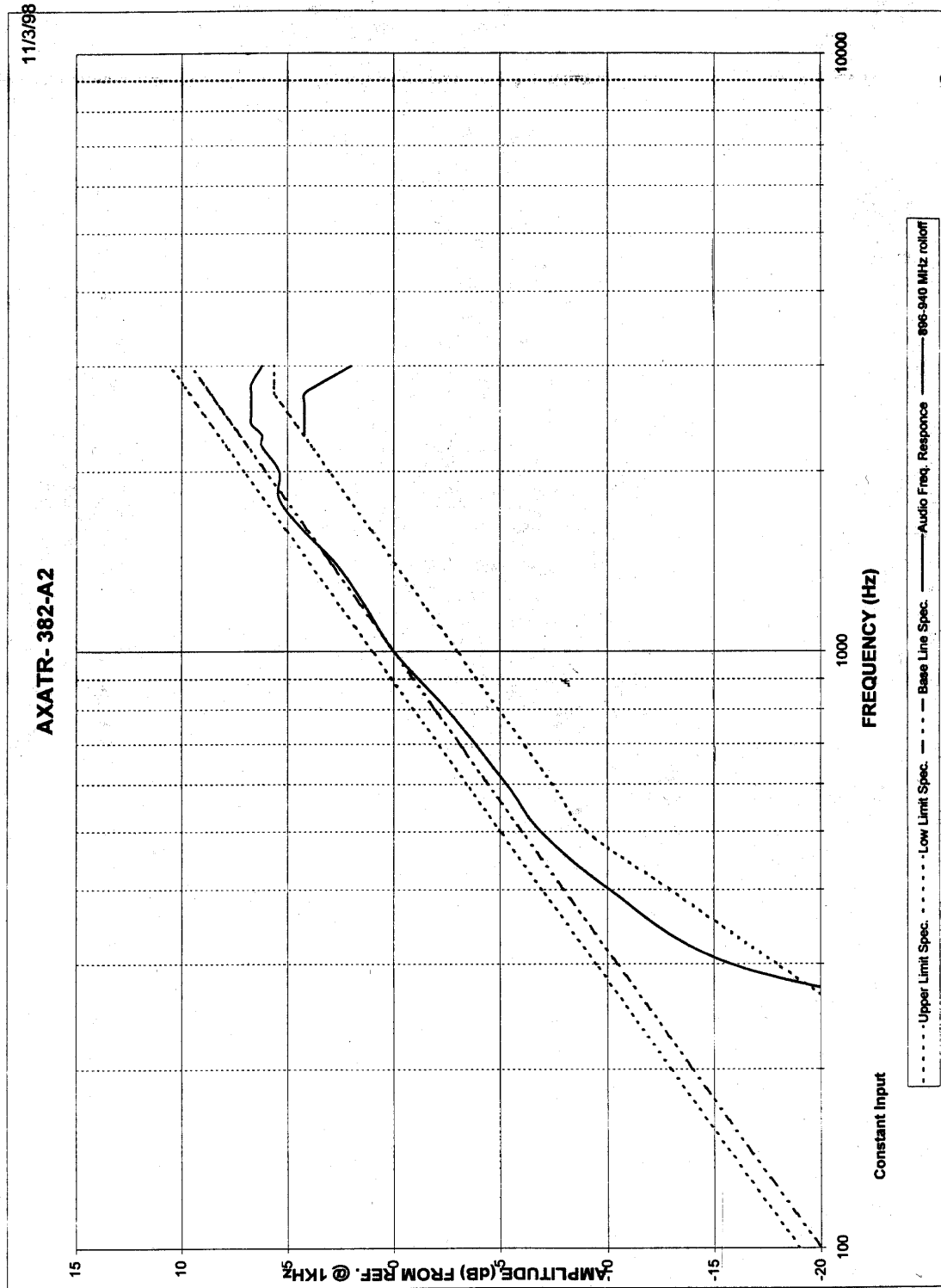
	A	B	C	D	E	F
1	Audio Frequency Response					
2	AXATR-382-A2	25KHZ CH SPC				
3						
4						
5	Enter Data					
6	FREQ	AFR	UPPER SPEC	BASE LINE	LOWER SPEC	
7	100	-35.00	-19.00	-20.00	-37.00	
8	200	-32.70	-12.98	-13.98	-24.96	
9	300	-15.80	-9.46	-10.46	-17.92	
10	400	-9.90	-6.96	-7.96	-12.92	
11	500	-6.90	-5.02	-6.02	-9.02	
12	600	-4.80	-3.44	-4.44	-7.44	
13	800	-2.00	-0.94	-1.94	-4.94	
14	1000	1.00	1.00	0.00	-3.00	
15	1200	2.00	2.58	1.58	-1.42	
16	1400	3.40	3.92	2.92	-0.08	
17	1600	4.30	5.08	4.08	1.08	
18	1800	5.00	6.11	5.11	2.11	
19	2000	5.70	7.02	6.02	3.02	
20	2200	6.50	7.85	6.85	3.85	
21	2300	6.50	8.23	7.23	4.23	
22	2400	7.20	8.60	7.60	4.60	
23	2500	7.20	8.96	7.96	4.96	
24	2600	7.20	9.30	8.30	5.30	
25	2700	7.00	9.63	8.63	5.63	
26	2800	7.00	9.94	8.94	5.63	
27	3000	6.30	10.54	9.54	5.63	
28	3200					
29	3400					
30	3600					
31	3800					
32	4000					
33	4500					
34	5000					
35	FORMULA AUDIO FREQ. RESPONSE					
36	20 LOG of DEV SPEC / DEV BEN					
37	896-940 MHz rolloff					
38	4.20					
39	4.20					
40	4.20					
41	4.20					
42	3.50					
43	2.00					

Section 2 B1 Data

AXATR-382-A2

11/3 : 8

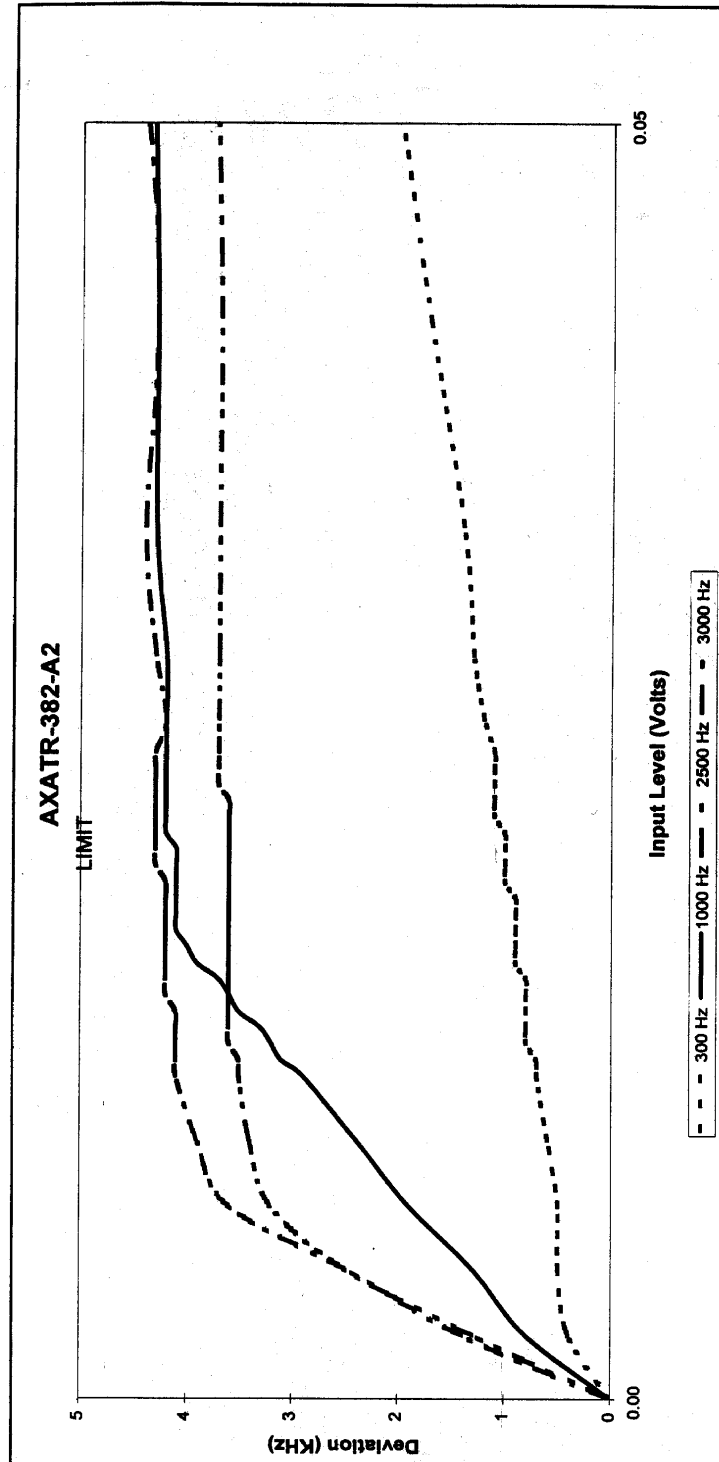
TRANSMITTER AUDIO FREQUENCY RESPONSE



Section 2 B2

Modulation Limiting

11/3/98



Section 2 C1

11/3/98

Modulation Limiting Curve Data

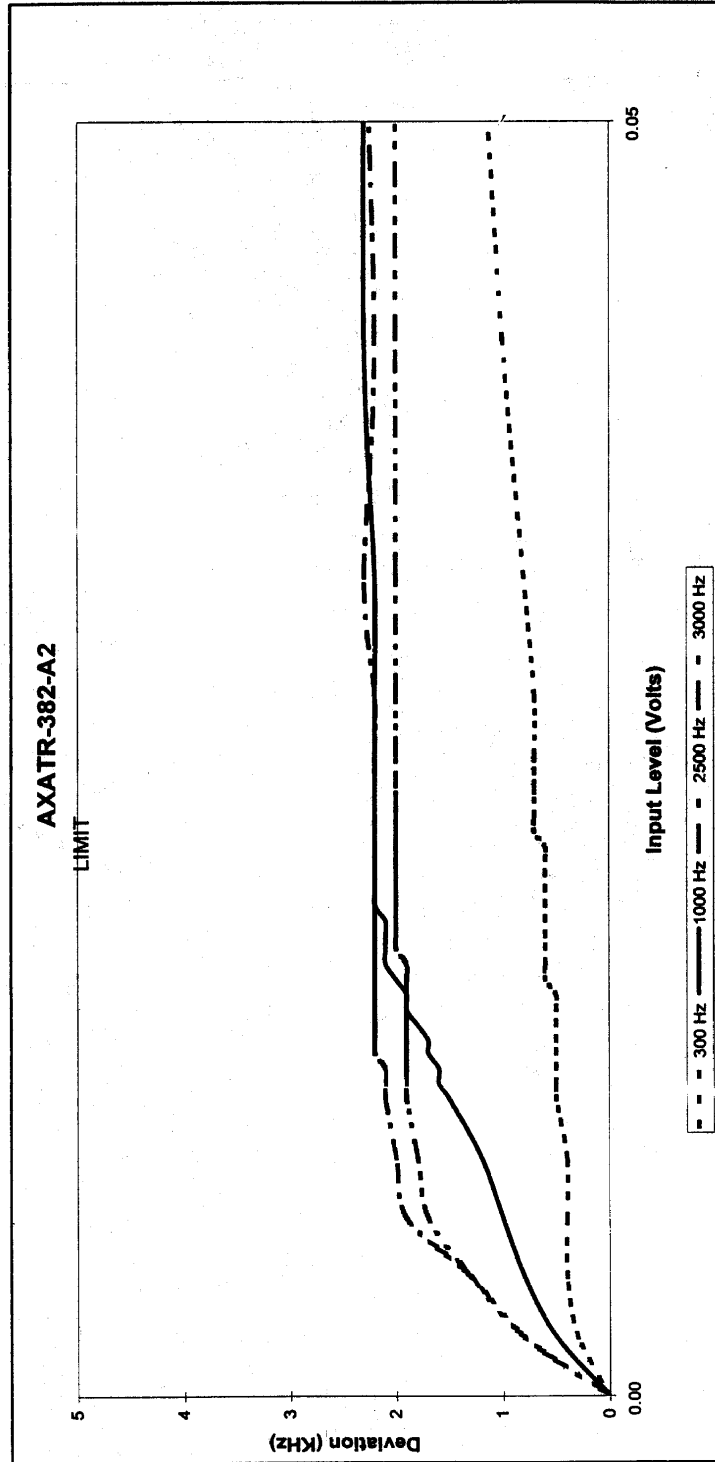
	A	B	C	D	E	F	G	H
1								
2	AXATR-382-A2		250Hz CH SPC	Modulation Limiting Curves				
3								
4		300 Hz		1000Hz	2500 Hz		3000Hz	
5	LEVEL	DEV	LEVEL	DEV	LEVEL	DEV	LEVEL	DEV
6	0	0	0	0	0	0	0	0
7	0.0025	0.4	0.0025	0.8	0.0025	1.4	0.0025	1.3
8	0.0051	0.5	0.0051	1.3	0.0051	2.5	0.0051	2.5
9	0.0076	0.5	0.0076	1.9	0.0076	3.6	0.0076	3.2
10	0.0102	0.6	0.0102	2.4	0.0102	3.9	0.0102	3.4
11	0.0127	0.7	0.0127	2.9	0.0127	4.1	0.0127	3.5
12	0.0133	0.7	0.0133	3.1	0.0133	4.1	0.0133	3.5
13	0.014	0.8	0.014	3.2	0.014	4.1	0.014	3.6
14	0.0146	0.8	0.0146	3.3	0.0146	4.1	0.0146	3.6
15	0.0152	0.8	0.0152	3.5	0.0152	4.1	0.0152	3.6
16	0.0159	0.8	0.0159	3.6	0.0159	4.2	0.0159	3.6
17	0.0165	0.8	0.0165	3.7	0.0165	4.2	0.0165	3.6
18	0.0171	0.9	0.0171	3.9	0.0171	4.2	0.0171	3.6
19	0.0178	0.9	0.0178	4	0.0178	4.2	0.0178	3.6
20	0.0184	0.9	0.0184	4.1	0.0184	4.2	0.0184	3.6
21	0.0191	0.9	0.0191	4.1	0.0191	4.2	0.0191	3.6
22	0.0197	0.9	0.0197	4.1	0.0197	4.2	0.0197	3.6
23	0.0203	1	0.0203	4.1	0.0203	4.2	0.0203	3.6
24	0.021	1	0.021	4.1	0.021	4.3	0.021	3.6
25	0.0216	1	0.0216	4.1	0.0216	4.3	0.0216	3.6
26	0.0222	1	0.0222	4.2	0.0222	4.3	0.0222	3.6
27	0.0229	1.1	0.0229	4.2	0.0229	4.3	0.0229	3.6
28	0.0235	1.1	0.0235	4.2	0.0235	4.3	0.0235	3.6
29	0.0241	1.1	0.0241	4.2	0.0241	4.3	0.0241	3.7
30	0.0248	1.1	0.0248	4.2	0.0248	4.3	0.0248	3.7
31	0.0254	1.1	0.0254	4.2	0.0254	4.3	0.0254	3.7
32	0.0267	1.2	0.0267	4.2	0.0267	4.2	0.0267	3.7
33	0.0282	1.3	0.0282	4.2	0.0282	4.3	0.0282	3.7
34	0.0343	1.4	0.0343	4.3	0.0343	4.4	0.0343	3.7
35	0.0445	1.8	0.0445	4.3	0.0445	4.3	0.0445	3.7
36	0.0648	2.5	0.0648	4.4	0.0648	4.6	0.0648	3.6
37	0.1054	3.9	0.1054	4.5	0.1054	4.5	0.1054	3.6
38	0.126	4.5	0.126	4.5	0.126	4.5	0.126	3.8
39	0.126	4.5	0.126	4.5	0.126	4.5	0.126	3.8
40								
41								
42								
43								

Section 2 C1 Data

AXATR-382-A2

11/3/98

Modulation Limiting



Section 2 C2

11/3/98

Modulation Limiting Curve Data

A	B	C	D	E	F	G	H
Modulation Limiting Curves							
1	AXATR-382-A2	12.5KHz CH SPC					
2							
3							
4	300 Hz						
5	LEVEL	DEV	1000Hz	2500 Hz	3000Hz		
6	0	0	0	0	0		
7	0.0023	0.3	0.0023	0.5	0.0023	0.8	0.8
8	0.0047	0.4	0.0047	0.8	0.0047	1.3	1.3
9	0.007	0.4	0.007	1	0.007	1.9	1.7
10	0.0094	0.4	0.0094	1.2	0.0094	2	1.8
11	0.0117	0.5	0.0117	1.5	0.0117	2.1	1.9
12	0.0123	0.5	0.0123	1.6	0.0123	2.1	1.9
13	0.0129	0.5	0.0129	1.6	0.0129	2.1	1.9
14	0.0135	0.5	0.0135	1.7	0.0135	2.2	1.9
15	0.014	0.5	0.014	1.7	0.014	2.2	1.9
16	0.0146	0.5	0.0146	1.8	0.0146	2.2	1.9
17	0.0152	0.5	0.0152	1.9	0.0152	2.2	1.9
18	0.0158	0.5	0.0158	1.9	0.0158	2.2	1.9
19	0.0164	0.6	0.0164	2	0.0164	2.2	1.9
20	0.017	0.6	0.017	2.1	0.017	2.2	1.9
21	0.0176	0.6	0.0176	2.1	0.0176	2.2	2
22	0.0181	0.6	0.0181	2.1	0.0181	2.2	2
23	0.0187	0.6	0.0187	2.1	0.0187	2.2	2
24	0.0193	0.6	0.0193	2.2	0.0193	2.2	2
25	0.0199	0.6	0.0199	2.2	0.0199	2.2	2
26	0.0205	0.6	0.0205	2.2	0.0205	2.2	2
27	0.0211	0.6	0.0211	2.2	0.0211	2.2	2
28	0.0216	0.6	0.0216	2.2	0.0216	2.2	2
29	0.0222	0.7	0.0222	2.2	0.0222	2.2	2
30	0.0228	0.7	0.0228	2.2	0.0228	2.2	2
31	0.0234	0.7	0.0234	2.2	0.0234	2.2	2
32	0.024	0.7	0.024	2.2	0.024	2.2	2
33	0.0252	0.7	0.0252	2.2	0.0252	2.2	2
34	0.0275	0.7	0.0275	2.2	0.0275	2.2	2
35	0.0322	0.8	0.0322	2.2	0.0322	2.3	2
36	0.0415	1	0.0415	2.3	0.0415	2.3	2
37	0.0603	1.3	0.0603	2.3	0.0603	2.3	2
38	0.0977	2	0.0977	2.3	0.0977	2.3	2
39	0.117	2.3	0.117	2.3	0.117	2.3	2
40							
41							
42							
43							

Section 2 C2 Data

AXATR-382-A2

SECTION 3

OCCUPIED BANDWIDTH

Per 2.989 (c, 1) the measurements were made per TIA/EIA 603.

455..025 Mhz

SECTION 3 B1, B2, C1, C2 (25 kHz, 50 & 150 kHz spans, Voice)

SECTION 3 B3, B4, C3, C4 (12.5 kHz, 50 & 150 kHz spans, Voice)

SECTION 3**OCCUPIED BANDWIDTH**

(FOR 25 kHz CHANNELIZATION)

Method of Measurement Per 2.989 (c,1) Data on Occupied Bandwidth is presented in the form of a spectrum analyzer plot which illustrates the transmitter sidebands. A plot is taken of the carrier sideband modulated with a 2500 Hz tone at a level 16 dB greater than that required to produce 50 percent modulation. (The spectrum analyzer grid indicates the reference level of the carrier unmodulated in all exhibits.)

SECTION B1,C1,B2,C2
Telephony

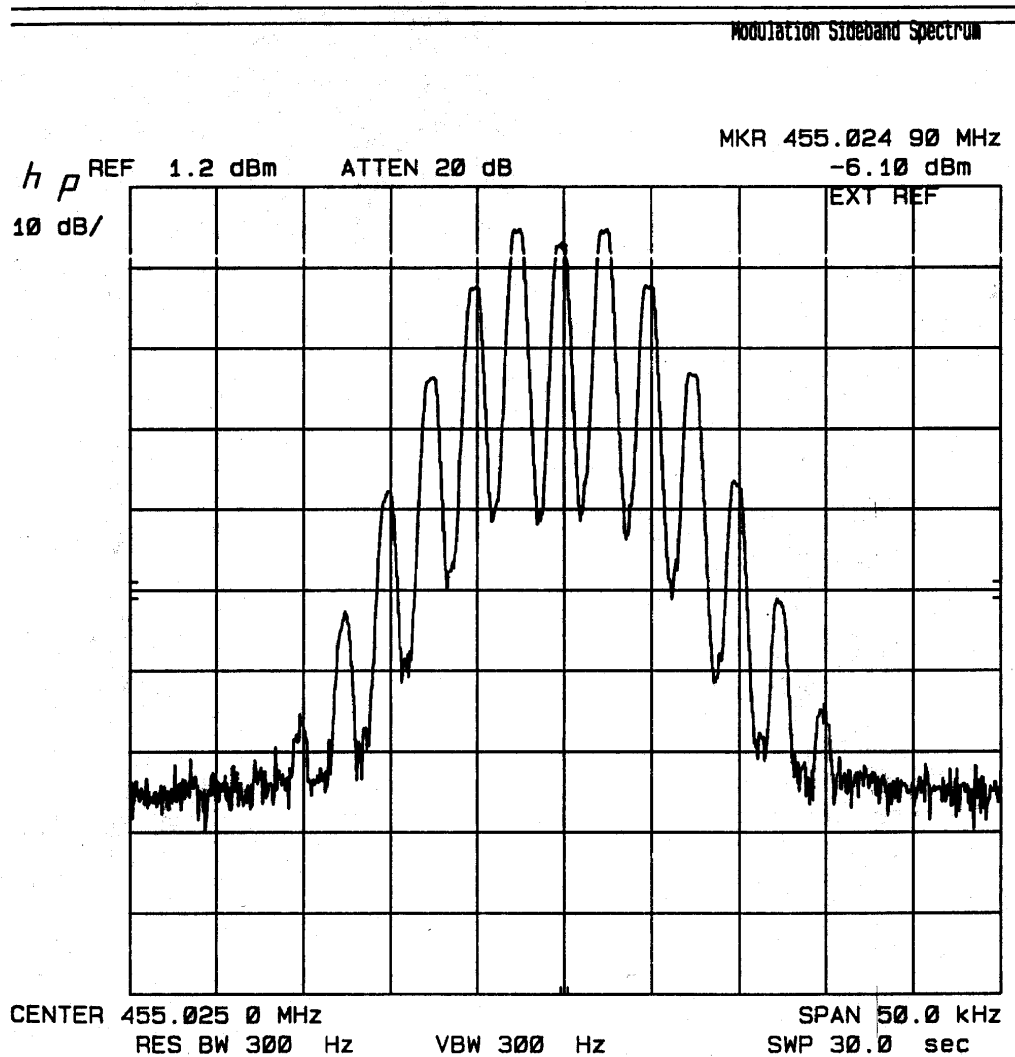
$$B_n = 2M + 2DK \text{ where}$$
$$M = 3000 \text{ Hz}$$
$$D = 4400 \text{ Hz}$$
$$K = 1(\text{assumed})$$
$$B_n = 144000 \text{ Hz}$$

Therefore, Emission Designator = 14K4F3E

APPLICANT: Ericsson Inc.

ID NO. AXATR-382-A2

OCCUPIED BANDWIDTH



Referenced to the Unmodulated Carrier

Modulated with 2500 Hz

Analyzer: Vertical = 10 dB/Div.

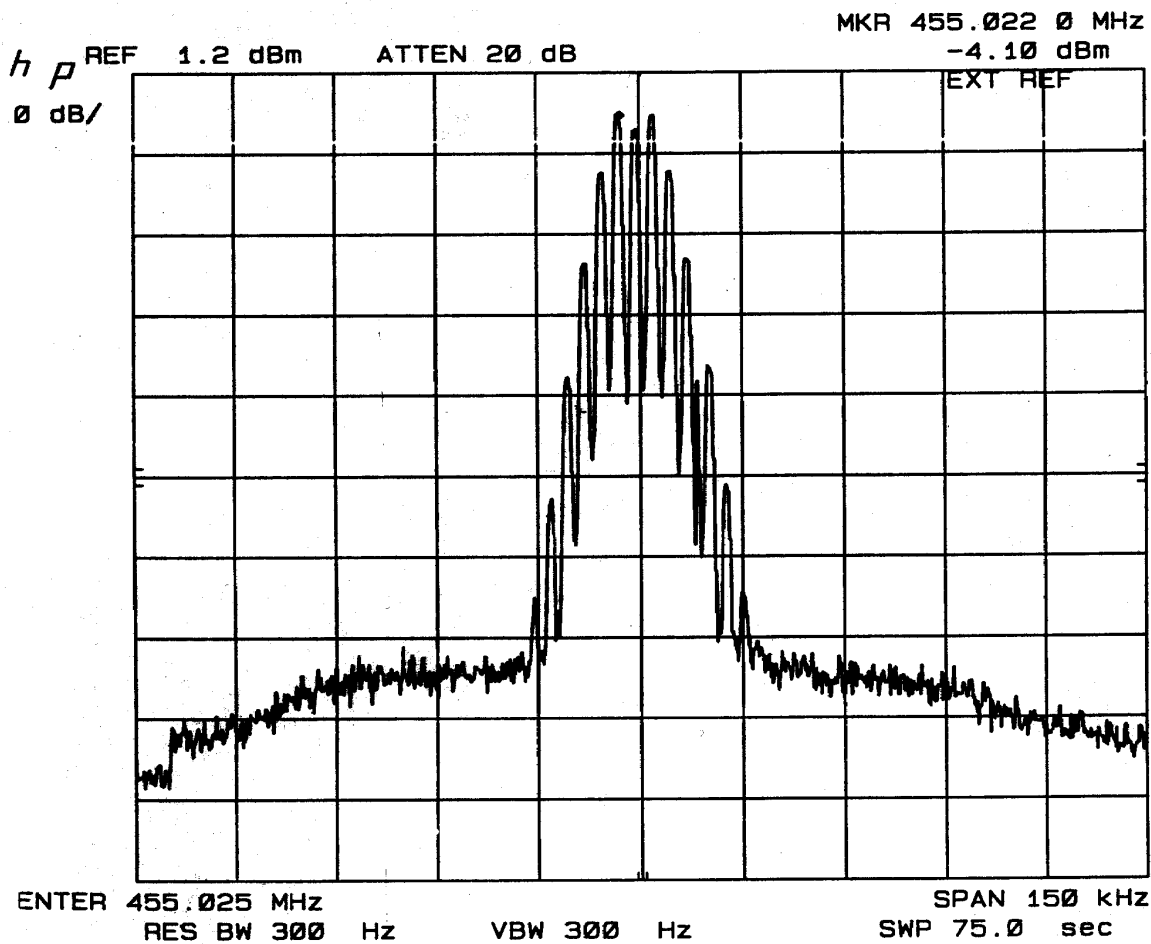
Section 3 B1

APPLICANT: Ericsson Inc.

ID NO. AXATR-382-A2

OCCUPIED BANDWIDTH

Modulation Sideband Spectrum



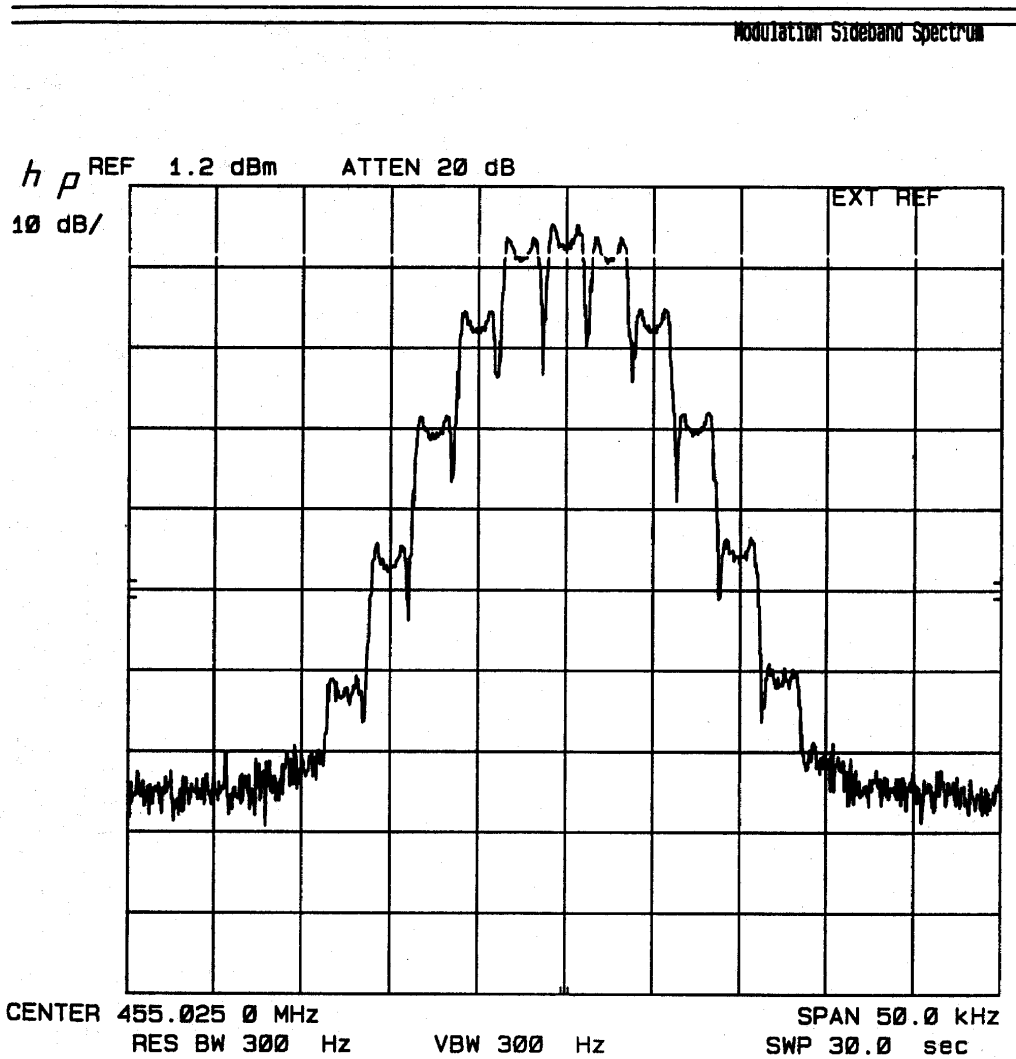
referenced to the Unmodulated Carrier
modulated with 2500 Hz
analyzer: Vertical = 10 dB/Div.

Section 3 B2 Data

APPLICANT: Ericsson Inc.

ID NO. AXATR-382-A2

OCCUPIED BANDWIDTH



Referenced to the Unmodulated Carrier

Modulated with 2500 Hz + 150 BPS

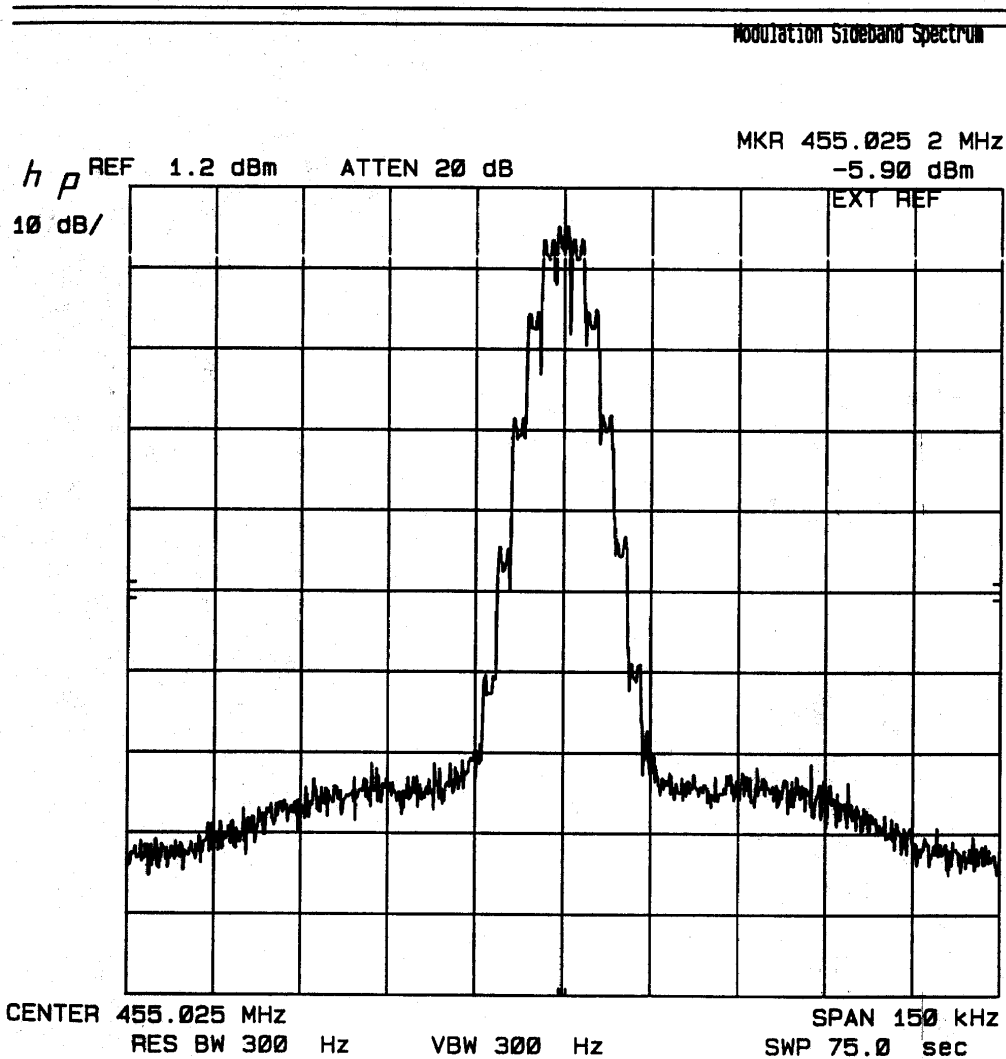
Analyzer: Vertical = 10 dB/Div.

Section 3 C1

APPLICANT: Ericsson Inc.

ID NO. AXATR-382-A2

OCCUPIED BANDWIDTH



Referenced to the Unmodulated Carrier
Modulated with 2500 HZ + 150 BPS
Analyzer: Vertical = 10 dB/Div.

Section 3 C2

SECTION 3**OCCUPIED BANDWIDTH**

(FOR 12.5 kHz CHANNELIZATION)

Method of Measurement Per Data on Occupied Bandwidth is presented in the form of a spectrum analyzer plot which illustrates the transmitter sidebands. A plot is taken of the carrier sideband modulated with a 2500 Hz tone at a level 16 dB greater than that required to produce 50 percent modulation. (The spectrum analyzer grid indicates the reference level of the carrier unmodulated in all exhibits.)

Section B3,B4,C3,C4
Voice

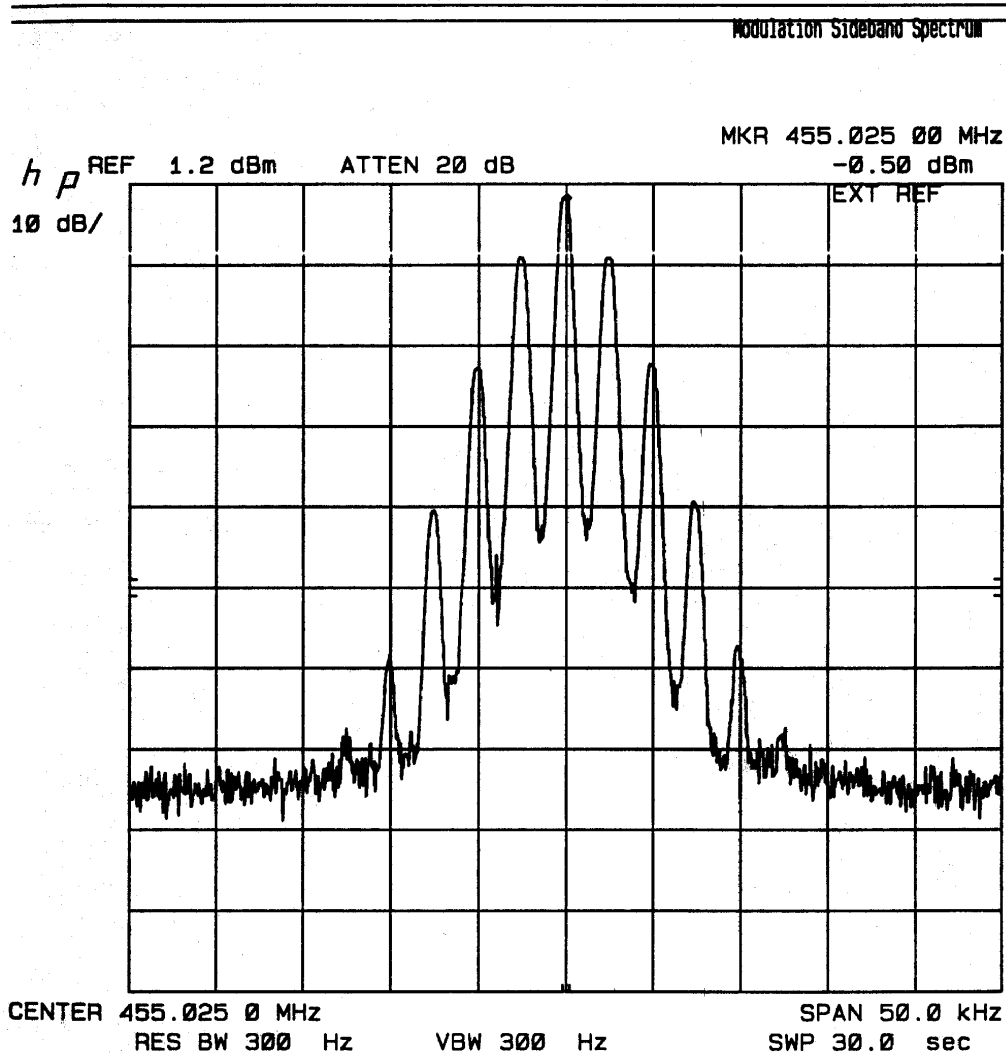
$$B_n = 2M + 2DK \text{ where}$$
$$M = 3000 \text{ Hz}$$
$$D = 2200 \text{ Hz}$$
$$K = 1 \text{ (assumed)}$$
$$B_n = 10400 \text{ Hz}$$

Therefore, Emission Designator = 10K4F3E

APPLICANT: Ericsson Inc.

ID NO. AXATR-382-A2

OCCUPIED BANDWIDTH



Referenced to the Unmodulated Carrier
Modulated with 2500 Hz

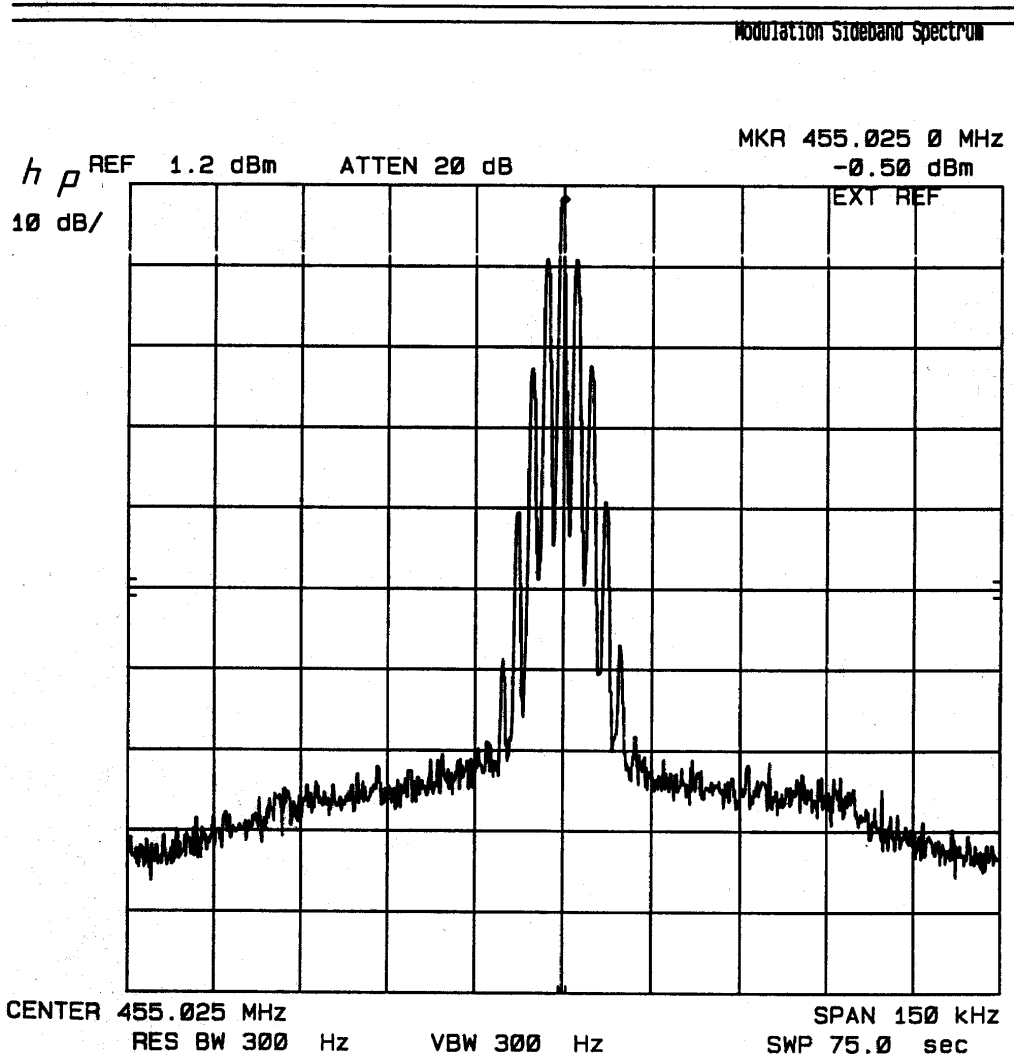
Analyzer: Vertical = 10 dB/Div.

Section 3 B3

APPLICANT: Ericsson Inc.

ID NO. AXATR-382-A2

OCCUPIED BANDWIDTH



Referenced to the Unmodulated Carrier

Modulated with 2500 Hz

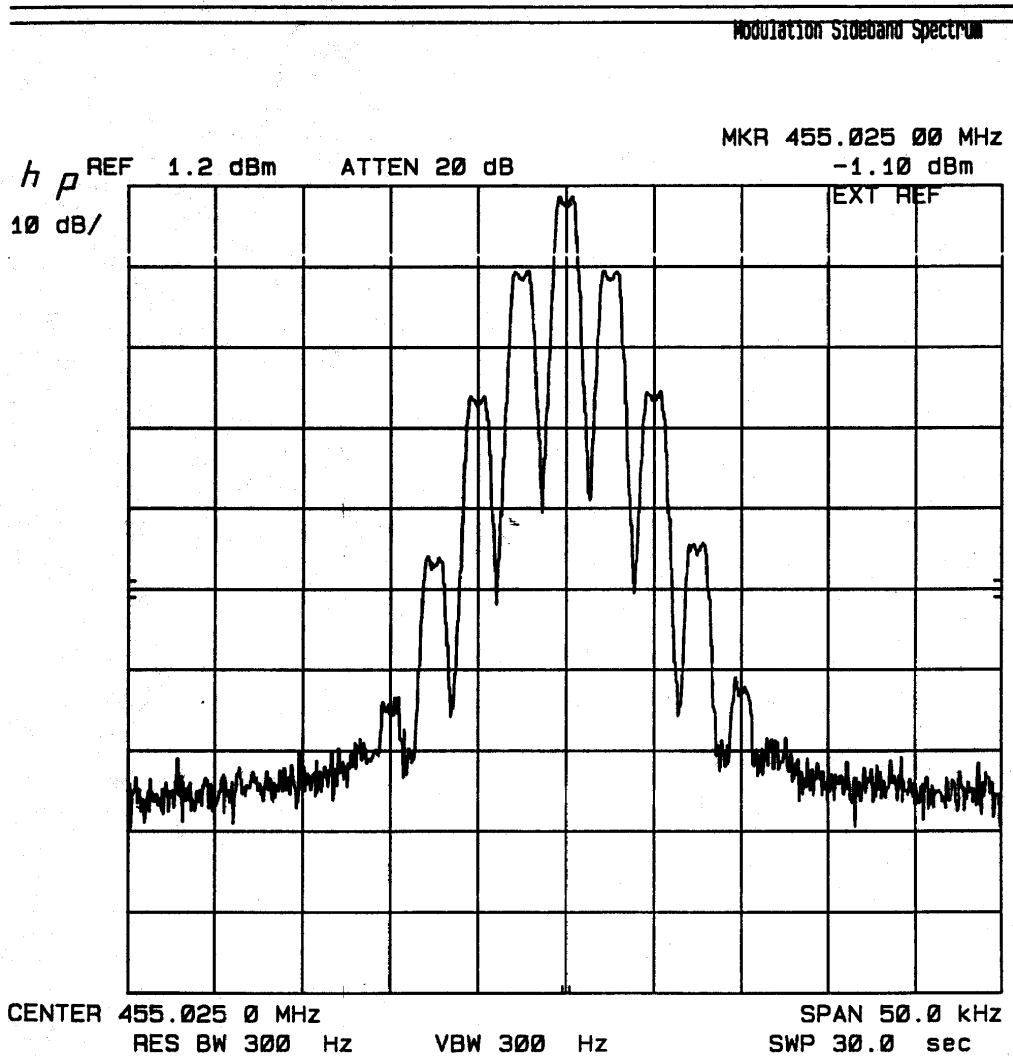
Analyzer: Vertical = 10 dB/Div.

Section 3 B4

APPLICANT: Ericsson Inc.

ID NO. AXATR-382-A2

OCCUPIED BANDWIDTH



Referenced to the Unmodulated Carrier

Modulated with 2500 Hz + 150 BPS

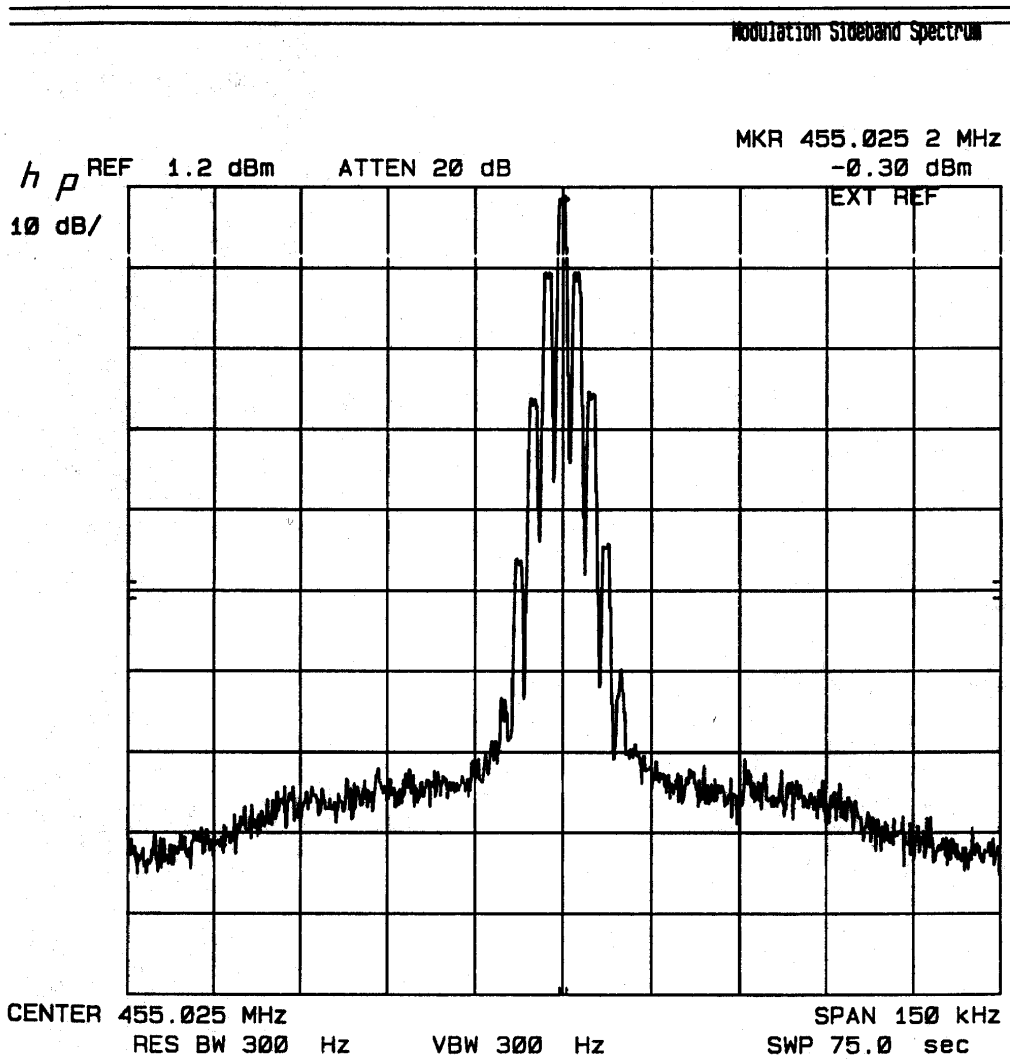
Analyzer: Vertical = 10 dB/Div.

Section 3 C3

APPLICANT: Ericsson Inc.

ID NO. AXATR-382-A2

OCCUPIED BANDWIDTH



Referenced to the Unmodulated Carrier
Modulated with 2500 Hz + 150 BPS
Analyzer: Vertical = 10 dB/Div.

Section 3 C4

SECTION 4**SPURIOUS EMISSIONS**

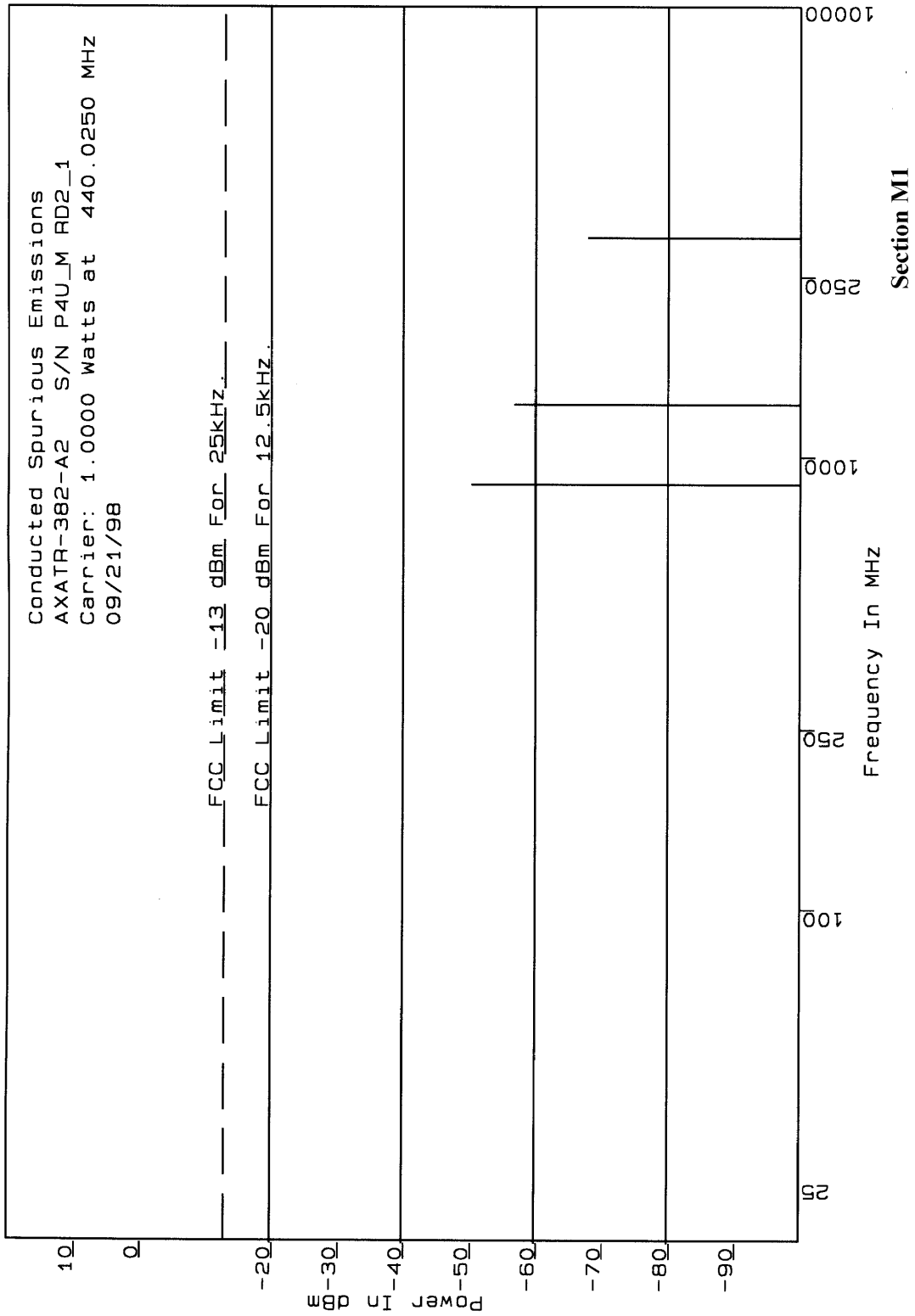
Reference 2.993 field strength of spurious radiation was measured on our three meter range. The site and equipment are described in the site description and attenuation measurements for the Ericsson Inc. three meter radiation site #2 filed with the FCC in Columbia, Maryland, in November of 1990. The measurement procedure is per TIA/EIA 603, but done on a three meter test site. Results are shown on the following exhibits

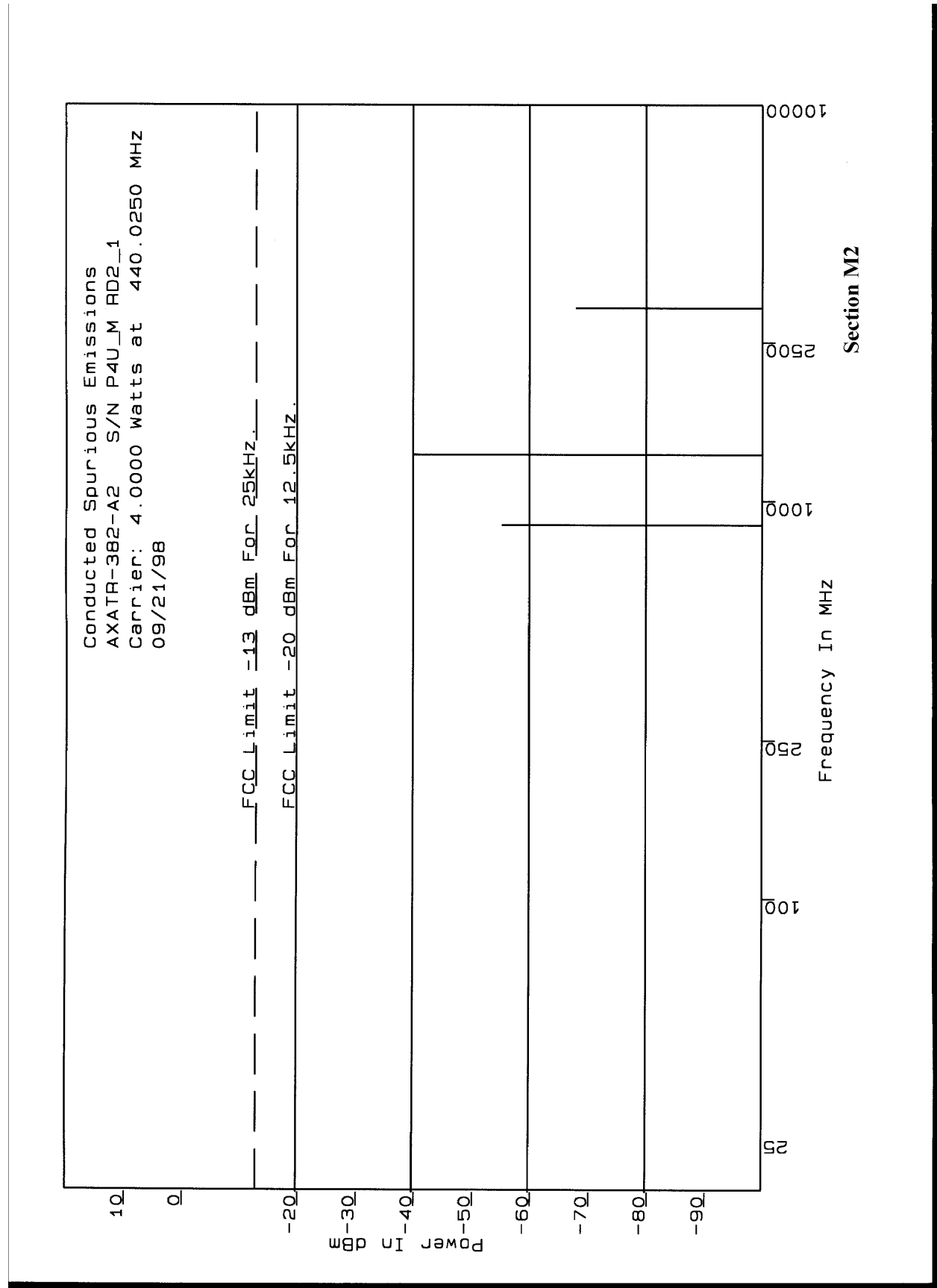
Results are as shown in the following Sections

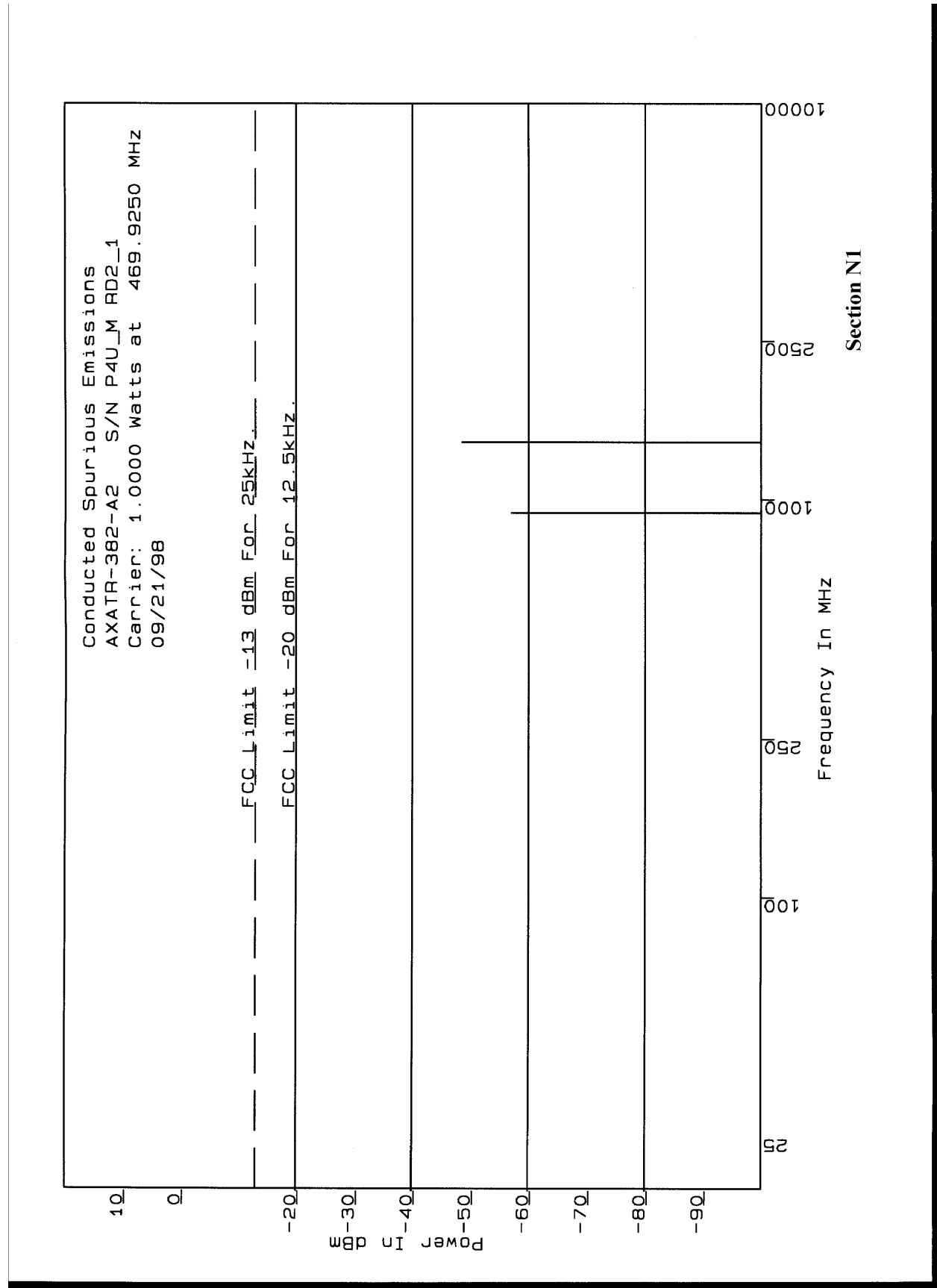
Tx Radiated Emissions		
Sections	Frequency Mhz	Power in Watts
M1	440.025	1
M2	440.025	4
N1	469.925	1
N2	469.925	4

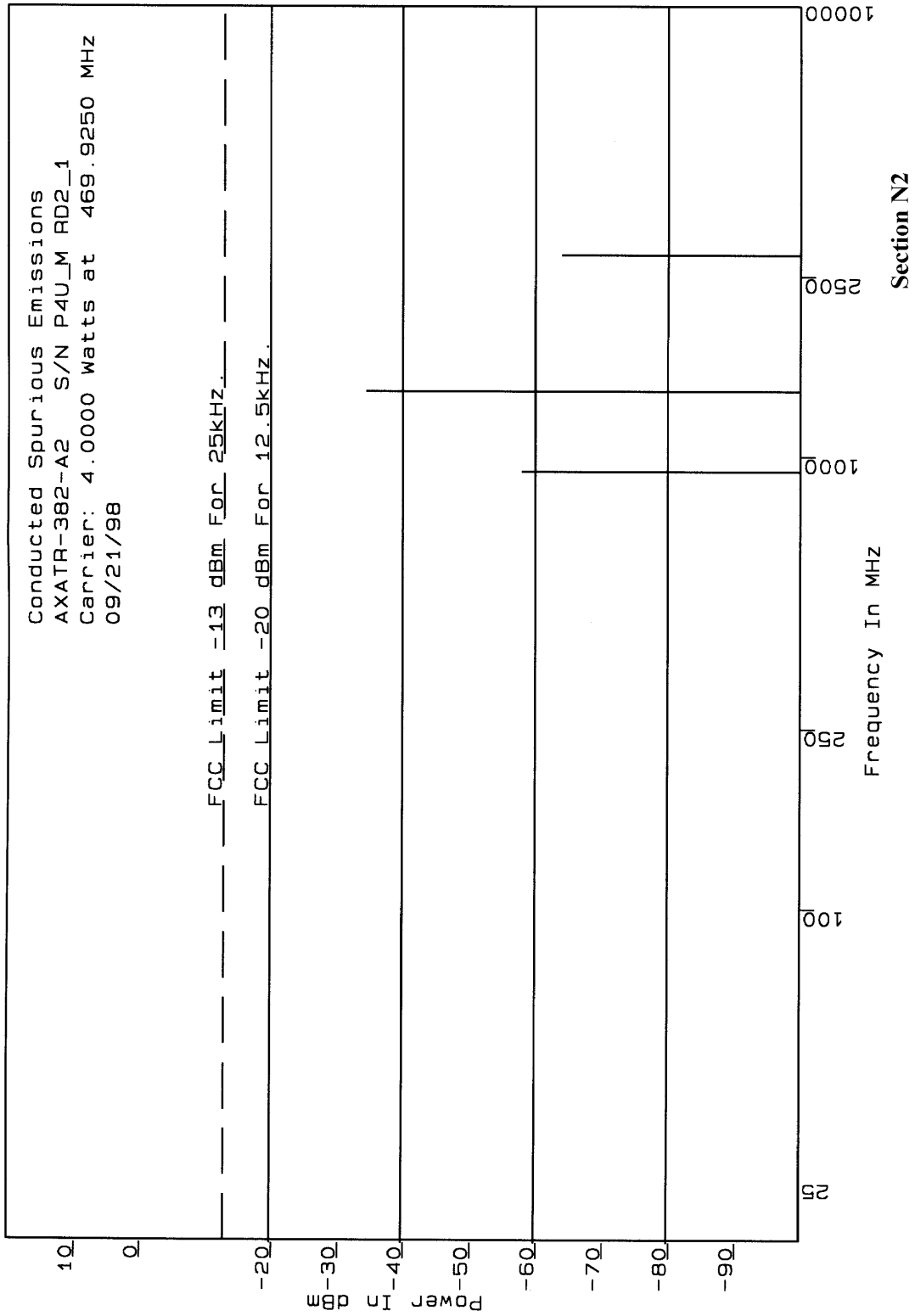
Equipment used was: Rohde & Swarz ESMI.

*SAME AS FOR 25 OR 12.5 kHz modes.









SECTION 4**SPURIOUS EMISSIONS**

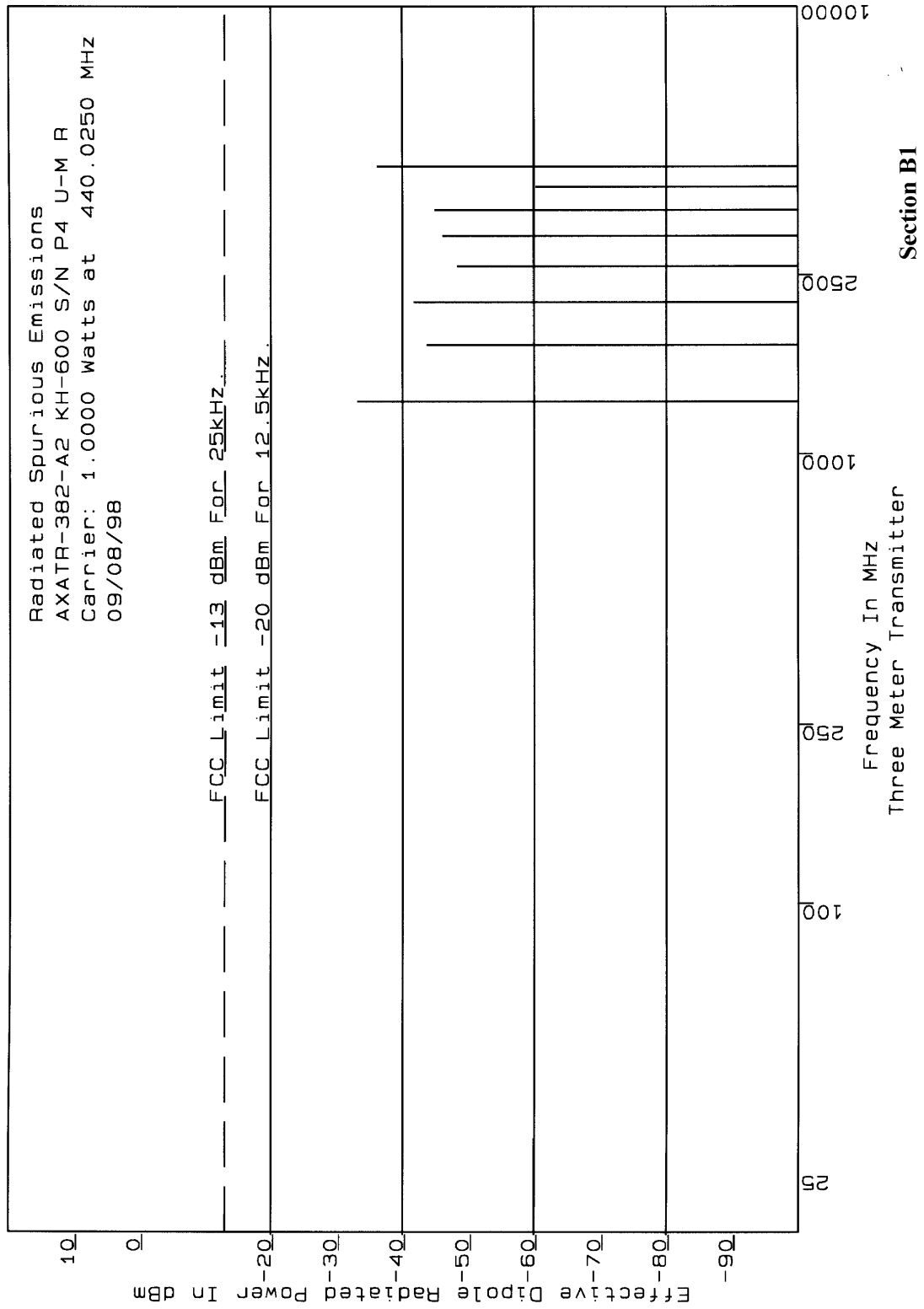
Reference 2.991 spurious emissions at the antenna terminals when properly loaded with an appropriate artificial antenna were measured per TIA/EIA 603.

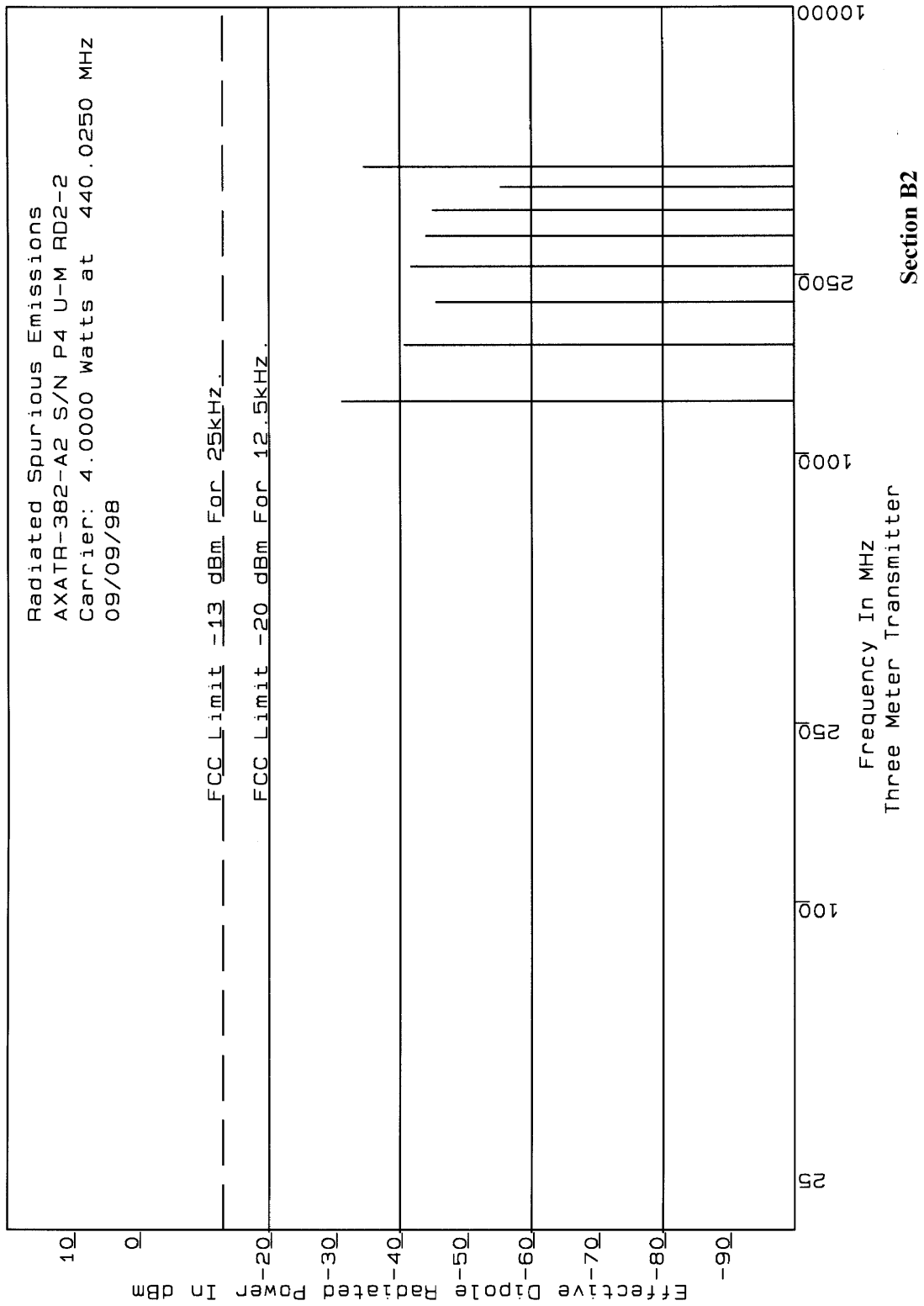
Results are as shown in the following Sections

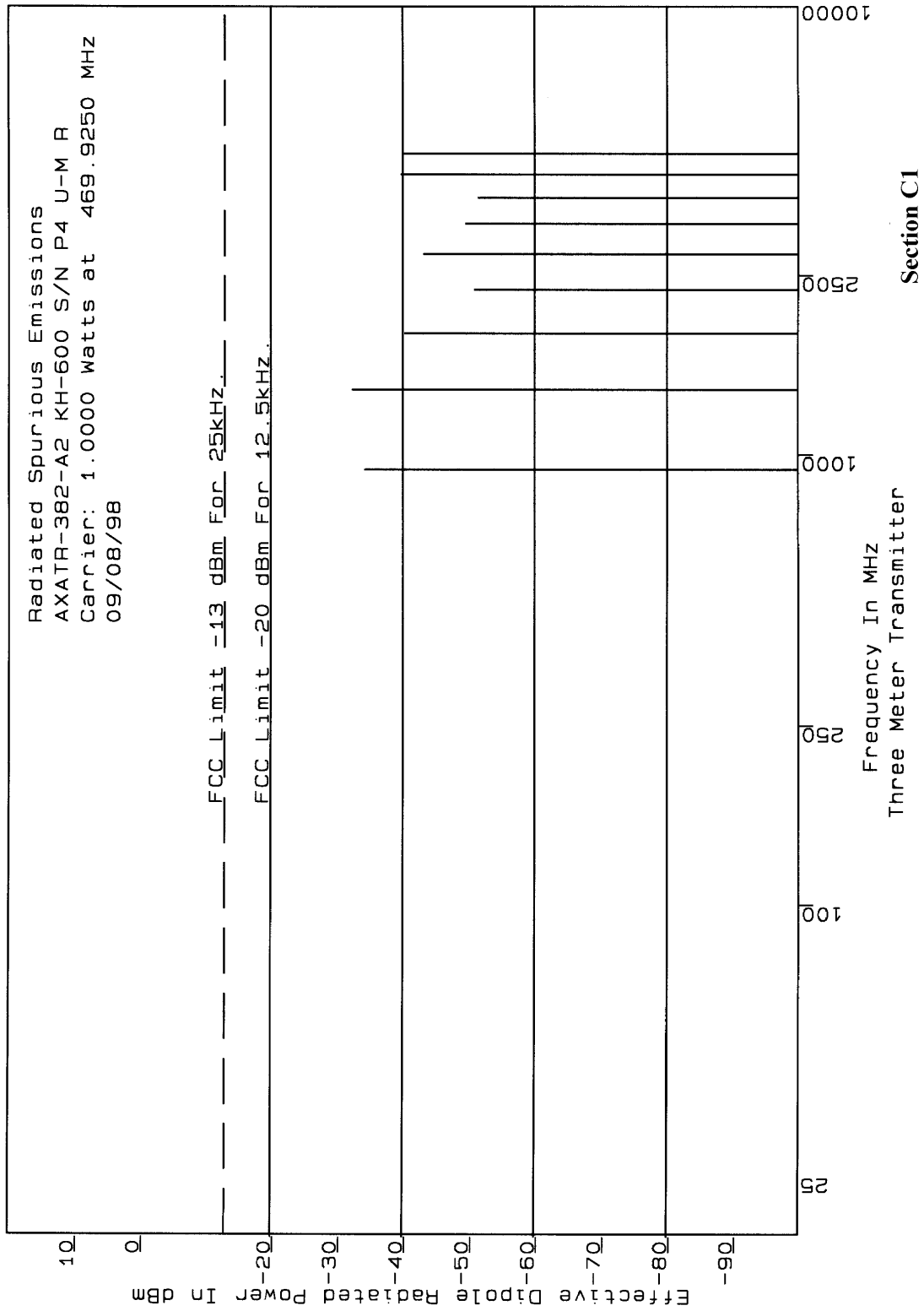
Tx Conducted Emissions		
Sections	Frequency Mhz	Power in Watts
B1	440.025	1
B2	440.025	4
C1	469.925	1
C2	469.925	4

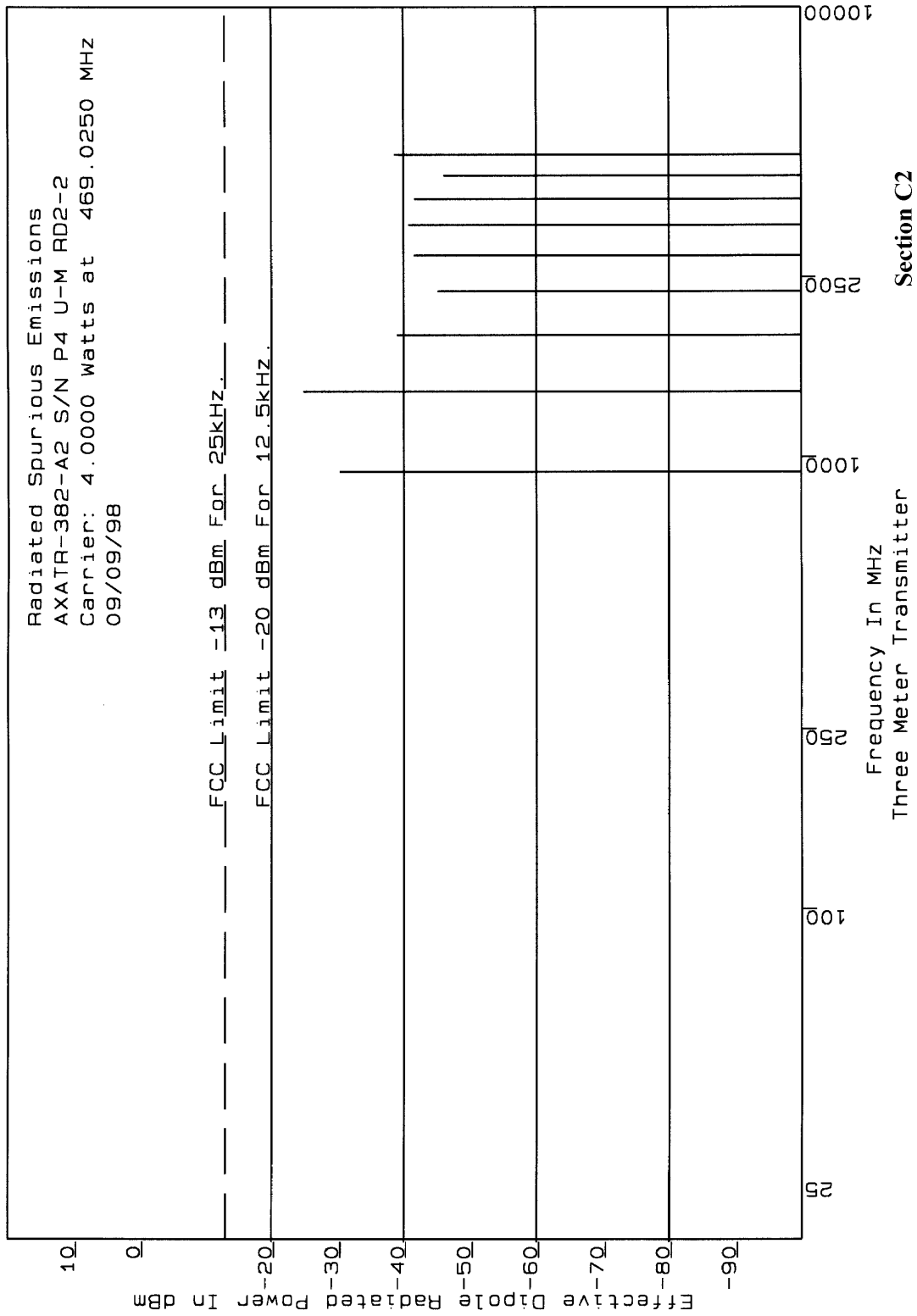
Equipment used was: Rohde & Shwarz ESMI.

*SAME AS FOR 25 OR 12.5 kHz modes









SECTION 5**FREQUENCY STABILITY**

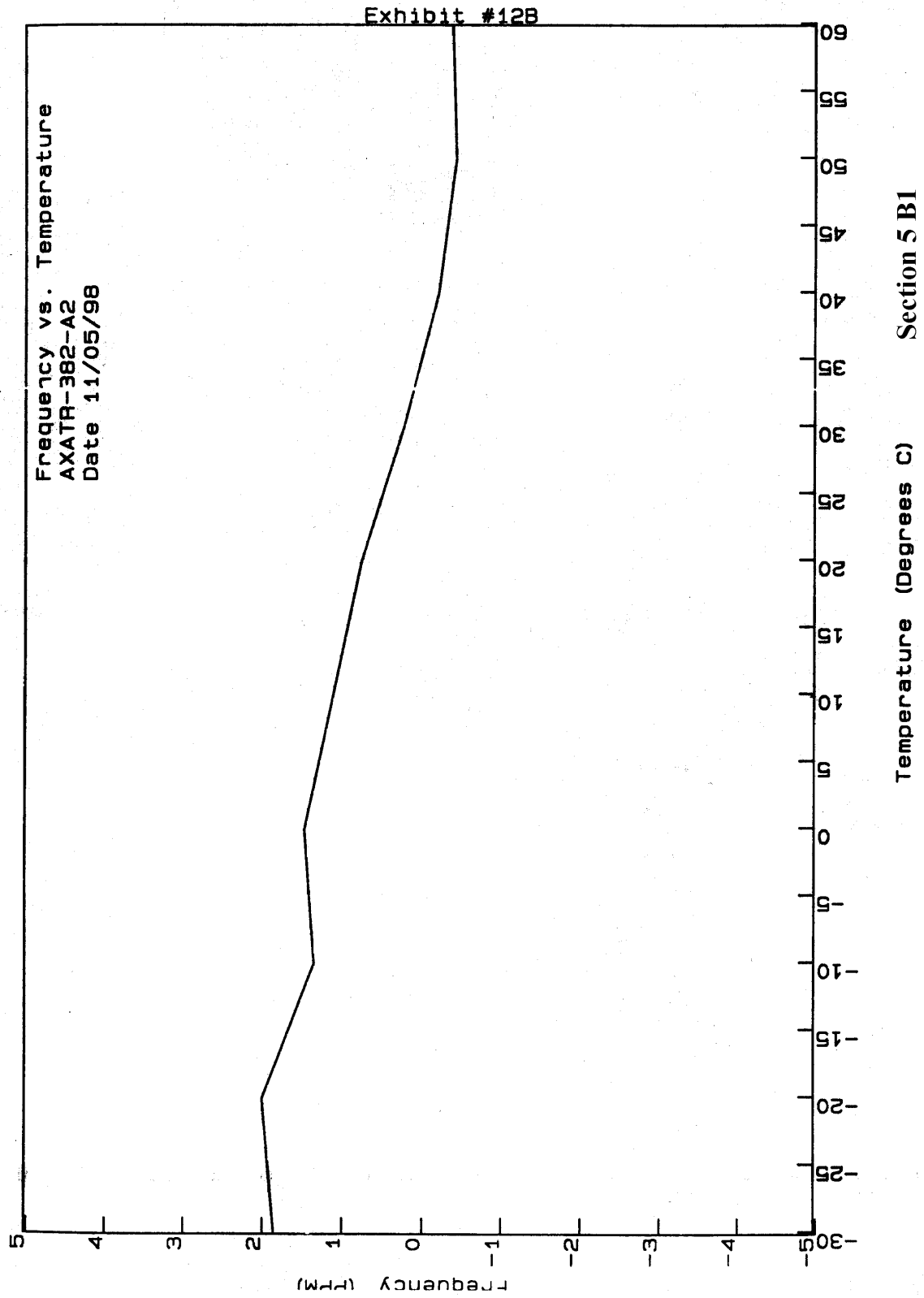
Par. 2.995 (a,1) (b) (d, 1) variation of output frequency as a result of either temperature or voltage variation is reported in the graphs on the following sheets: (The battery is rated from 6 to 9 volts.)

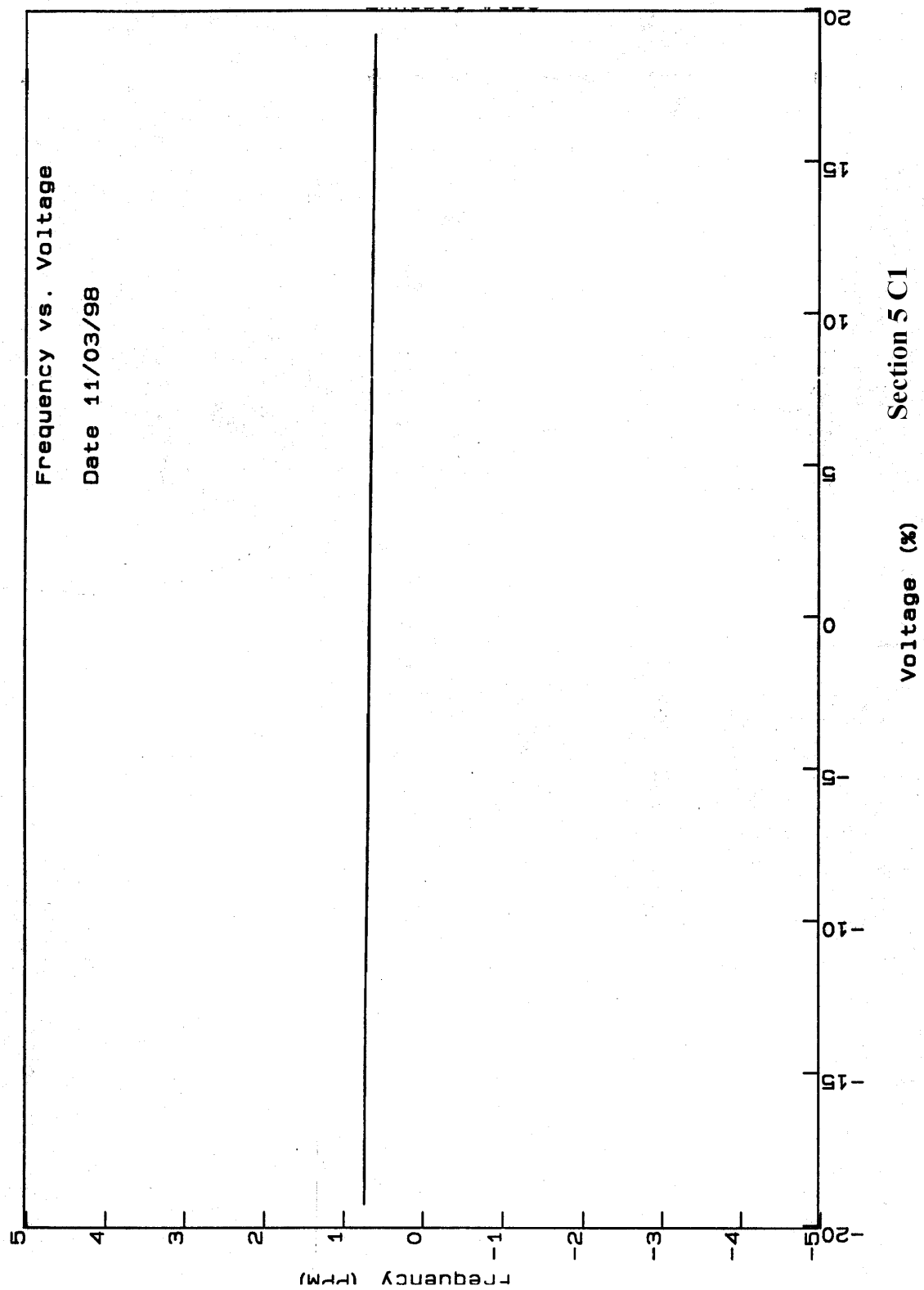
Exhibit 12B Carrier Frequency Vs Temperature

Exhibit 12C Carrier Frequency Vs. Voltage

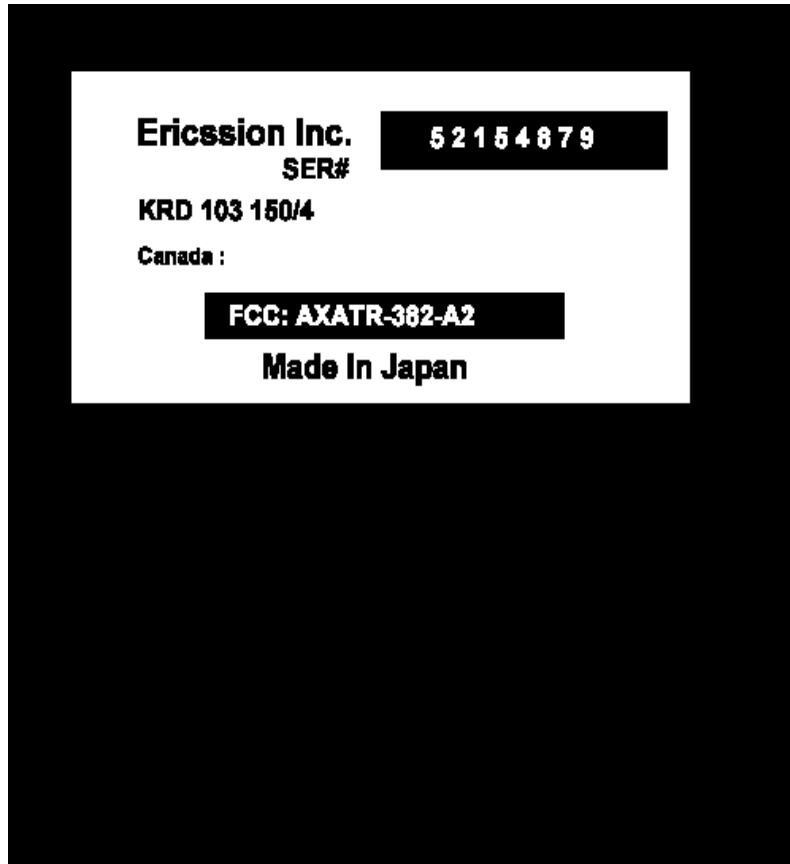
The Equipment used is:

Hewlett Packard QUARTZ Thermometer Model 2804A
Takeda Counter TR5823AK
Takeda Digital Multimeter TR6878
Tabai Temperature chamber PL-2G





IDENTIFICATION NAMEPLATE



SECTION 7**TRANSIENT FREQUENCY BEHAVIOR**

PER PT 90.214 USING EIA/TIA 603, THE FOLLOWING MEASUREMENTS WERE MADE:

SECTION	FREQUENCY	BANDWIDTH
7B	455.025	25 kHz
7C	455.025	12.5 kHz

The Measurements taken are representative of the entire frequency band.

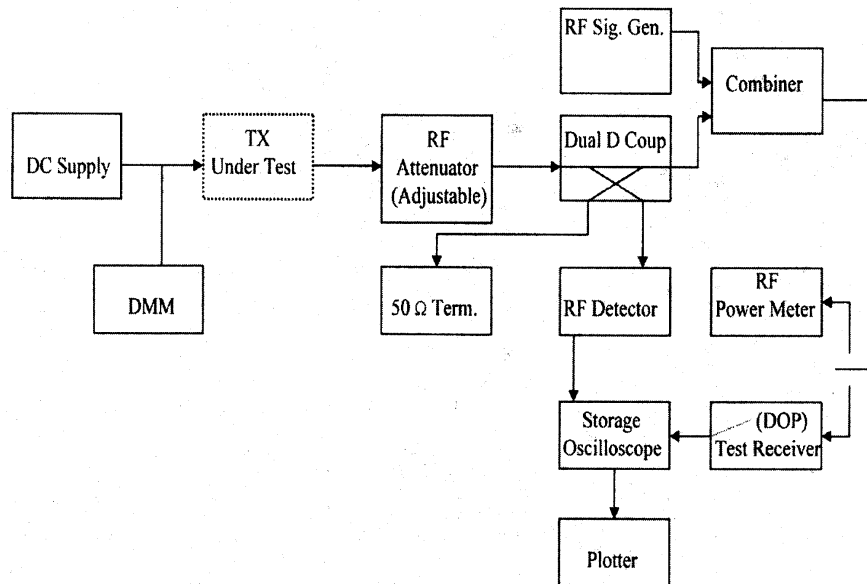
Table 1: List of Equipment

HP 778D DUAL DIRECTIONAL COUPLER	HP432A RF DETECTOR
TEKTRONIX 2232 OSCILLOSCOPE	HP8657A SIGNAL GENERATOR
HP 8901A MODULATION ANALYZER	HP436A POWER METER
HP 8482A POWER SENSOR	6261 DC POWER SUPPLY
KEITHLY 179 TRMS DIGITAL MULTIMETER	TEKTRONIX HC100 PLOTTER
NARDA ATTENUATORS	MINICIRCUITS 15542 ZFRSC-2050

SECTION 7

TRANSIENT FREQUENCY BEHAVIOR

Transient Frequency Behavior Measurement Per TIA/EIA 603.

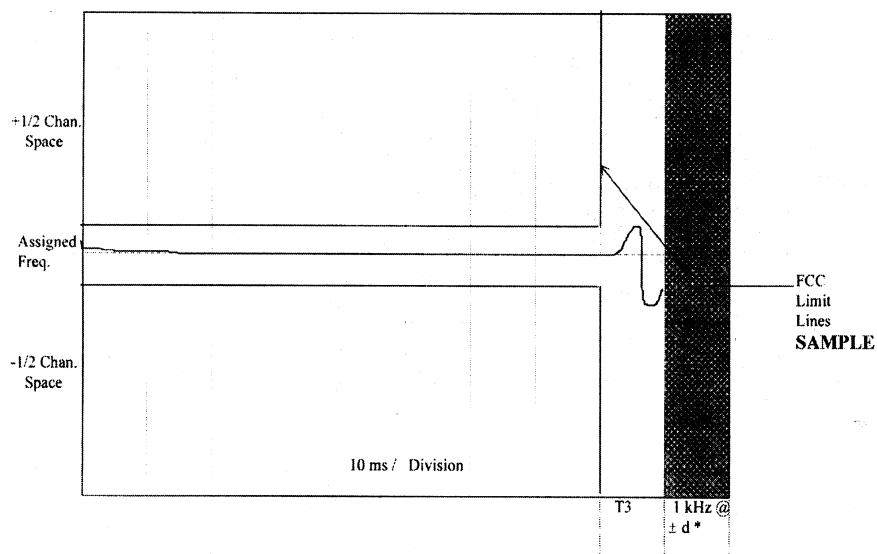
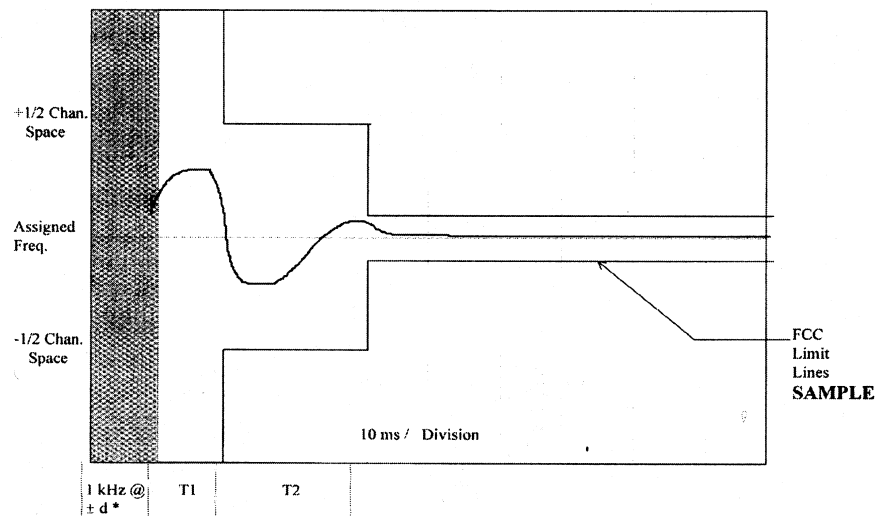


1. Equipment is connected as illustrated above.
2. Connect the test receiver's Demodulator Output Port (DOP) to the vertical input channel of the storage Oscilloscope. Connect the output of the RF detector the external trigger of the oscilloscope. Connect the output of the RF combiner the RF power meter.
3. Set the test receiver to measure FM deviation with the audio bandwidth set at ≈ 50 Hz to $\approx 15,000$ Hz and tune the RF frequency to the transmitter assigned frequency.
4. Turn on the TUT (Transmitter Under Test). Adjust the RF attenuator to provide an input level of 20 dBm which is 10 dB below the maximum allowed input power to the test receiver. (TIA/EIA 603 first sets the level to 40 dB below the maximum allowed input level of the test receiver, then increases the level by 30 dB to 10 dB below the maximum allowed input level. The maximum input level of our test receiver is 30 dBm.) Turn off the TUT.
5. Set the signal generator to the assigned TX frequency and modulate it with a 1 kHz tone at $\pm$ d, deviation equal to the Channel Spacing (i.e. 25, 12.5, or 6.25 kHz) and set its power to -30 dBm (50 dB below the level of the TUT).
6. Disconnect the RF power meter and connect the output of the RF combiner network to the input of the test receiver.

SECTION 7**TRANSIENT FREQUENCY BEHAVIOR**

7. Set the horizontal sweep rate on the storage oscilloscope to 10 milliseconds per division and adjust the display to continuously view the 1000 Hz tone from the DOP. Adjust the vertical amplitude control of the oscilloscope to display the 1000 Hz at +/-4 divisions vertically centered on the display.
8. Adjust the oscilloscope so it will trigger on an increasing magnitude from the RF peak detector at 1 division from the left side of the display, when the transmitter is turned on. Set the controls to store the display.
9. Turn on the TUT and observe the stored display. The output at the DOP, due to the change in ratio of power between the signal generator input power and the transmitter output power will, because of the capture effect of the test receiver, produce a change in display: For the first part of the sweep it will show the 1 kHz test signal. Then once the receiver's demodulator has been captured by the transmitter power, the display will show the frequency difference from the assigned frequency to the actual transmitter frequency versus time. The instant when the 1 kHz test signal is completely suppressed (including any capture time due to phasing) is considered to be "t on".
10. To test the transient frequency during the period of "t 3", the transmitter shall be switched on.
11. Adjust the oscilloscope so it will trigger on a decreasing magnitude from the RF peak detector at 1 division from the right side of the display, when the transmitter is turned off. Set the controls to store the display.
12. The transmitter shall be switched off.
13. Observe the display. The trace should remain within the allowed divisions during the period "t 3", according to the specifications in 90.213,90.214.

SECTION 7

TRANSIENT FREQUENCY BEHAVIOR

* NOTE: d is set equal to the channel spacing (i.e. 25, 12.5, or 6.25 kHz)

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Dokansv/Godk - Doc respons/Approved EUS/LT/V/ John Bavely	Kontr - Checked	Datum - Date	Rev A	File N:\...Tx_Freq_Behav.doc	

Transient Frequency Behavior of the Transmitter (Section 2.2.19) SEE THE FOLLOWING EIGHT PLOTS

Section # 15

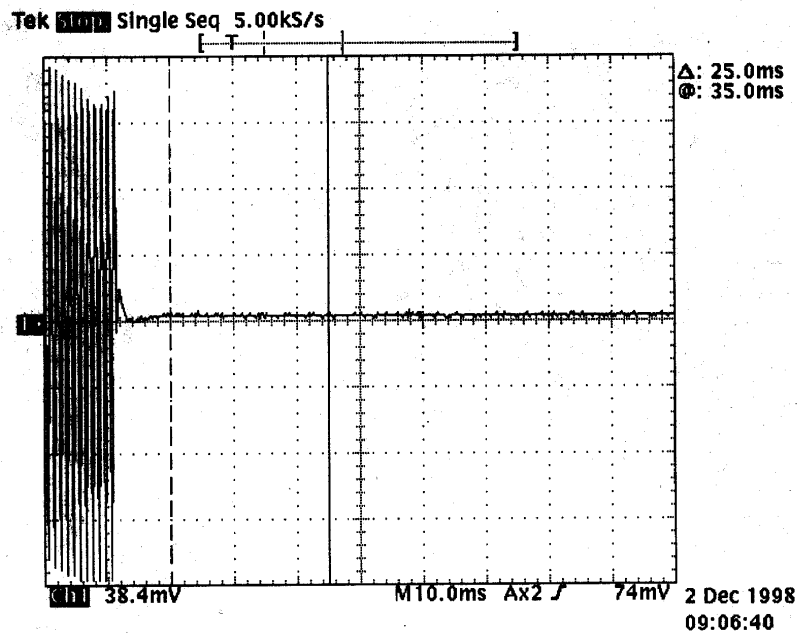
Normal, Exhibit Letter B1

Plot No. One; Switch-on behavior of channel number ____ of the transmitter.

Transmitter output Power = __4__ Watts.

Fo = 455.025 MHz.

Remarks: Frequency error: $f = 12.5 / 20 / 25 \text{ KHz} / \text{div}$.



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Transient Frequency Behavior of the Transmitter (Section 2.2.19)

Section # 15

Normal, Exhibit Letter B3

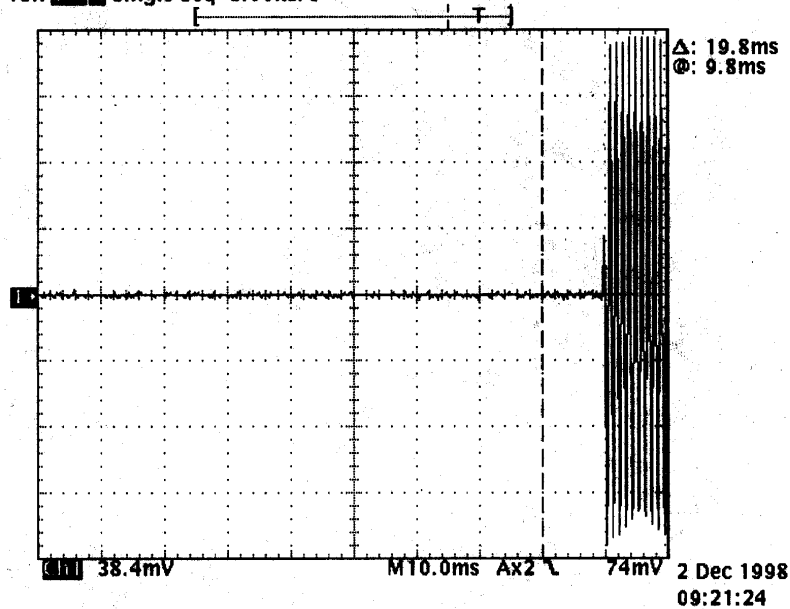
Plot No. Three; Switch-off behavior of channel number ____ of the transmitter

Transmitter output Power = 4 Watts.

Fo = 455.025 MHz.

Remarks: Frequency error: $f = 12.5 / 20 / 25 \text{ KHz} / \text{div.}$

Tek  Single Seq 5.00kS/s



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Transient Frequency Behavior of the Transmitter (Section 2.2.19)

Section # 15

Normal, Exhibit Letter C1

Plot No. Five; Switch-on behavior of channel number ____ of the transmitter.

Transmitter output Power = 4 Watts.

Fo = 455.025 MHz.

Remarks: Frequency error: f= 12.5 / 20 / 25 KHz / div.

