

**SECTION 1****RF POWER OUTPUT**

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

AXATR-391-A2

6-25 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

896-901 / 935-940 Mhz

Section 2B Audio Frequency Response

Section 2C Modulation Characteristics

Equipment used was:

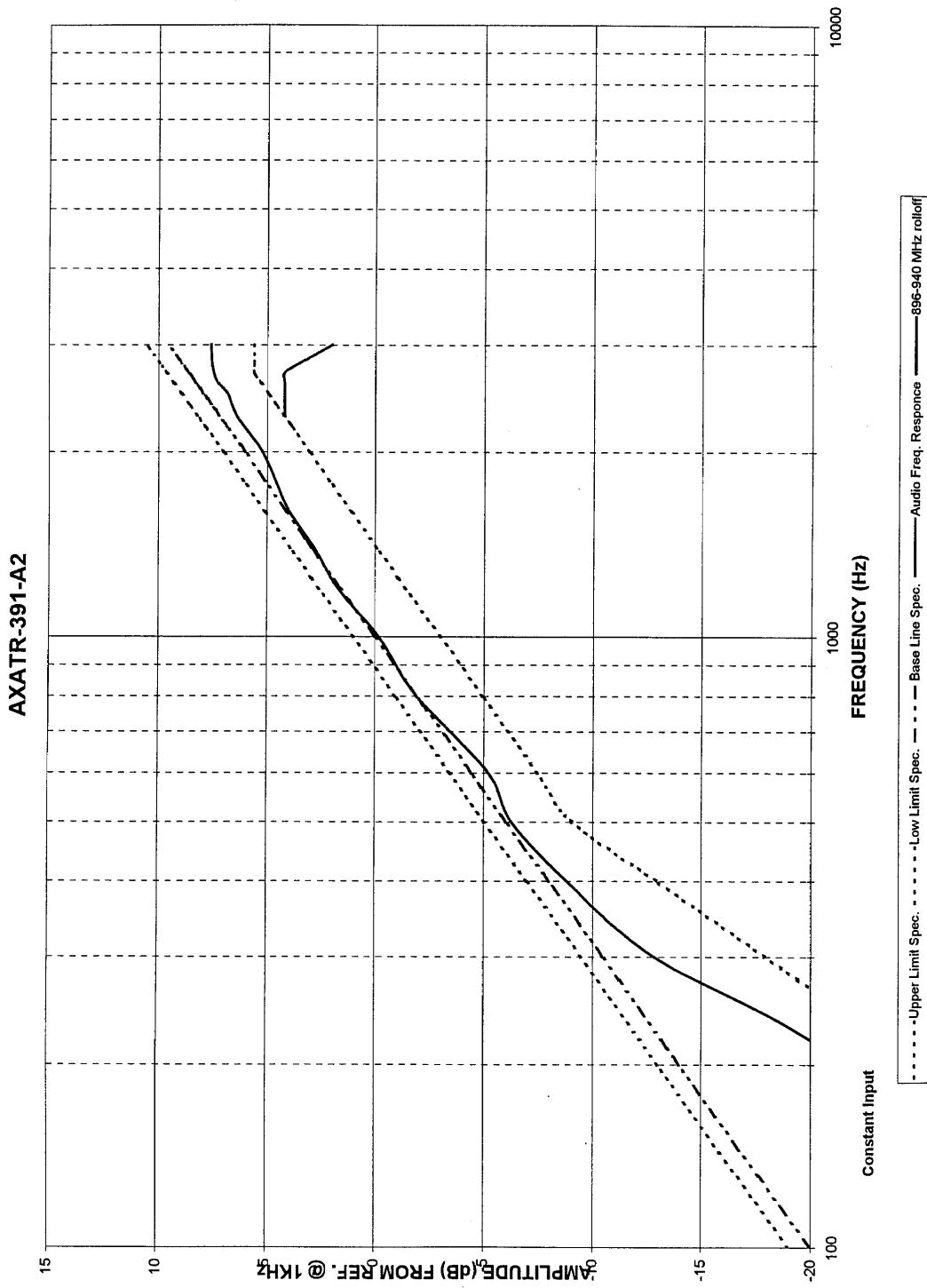
Marconi Instruments Ltd. FM/AM Modulation Meter TF2300B

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



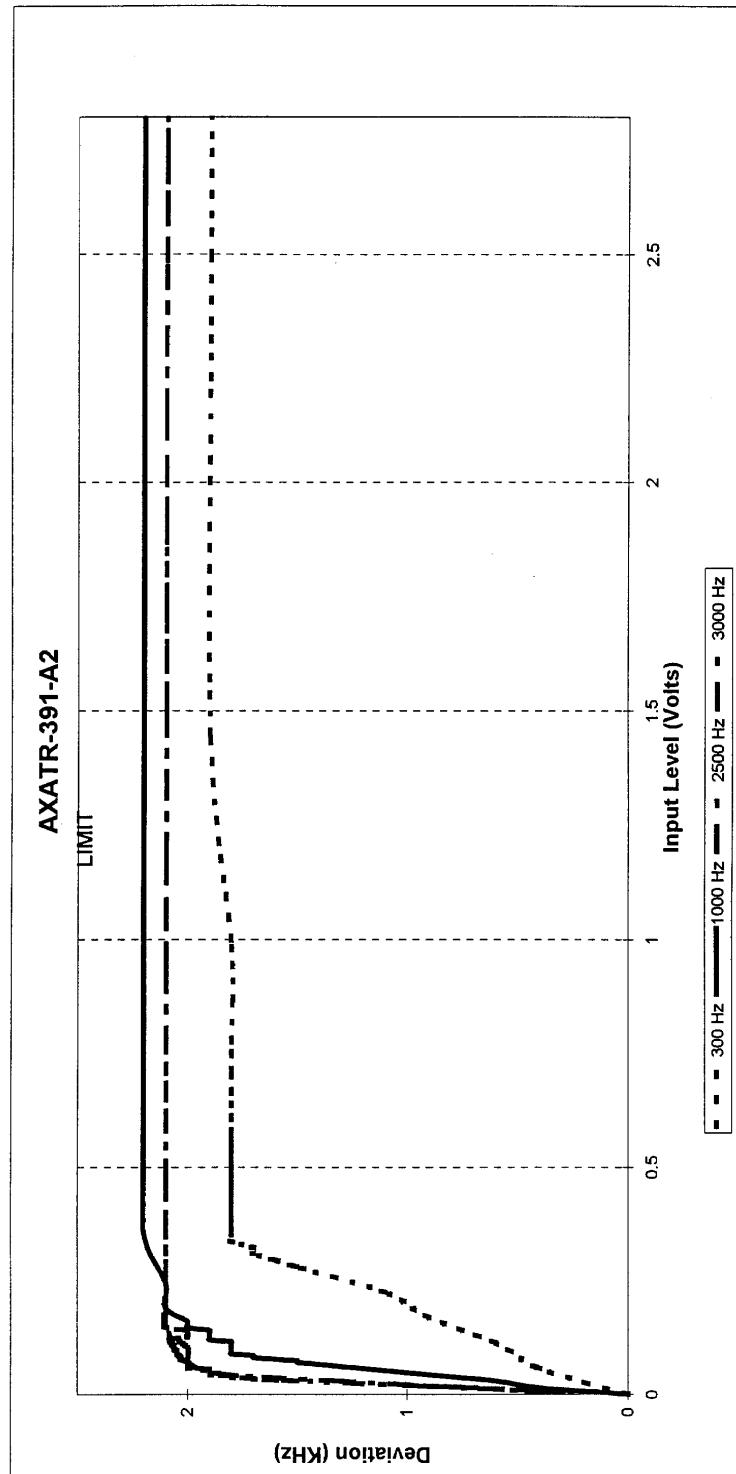
SECTION 2 B1

## AUDIO FREQUENCY RESPONSE

A	B	C	D	E	F
Audio Frequency Response				12.5 KHz DEVIATION	
2	AXATR-391-A2	3	4	Enter Data	5
FREQ	AFR	UPPER SPEC	BASE LINE	LOWER SPEC	
6 100	-27.33	-19.00	-20.00	-37.00	
7 200	-21.42	-12.98	-13.98	-24.96	
8 300	-12.82	-9.46	-10.46	-17.92	
9 400	-8.78	-6.96	-7.96	-12.92	
10 500	6.25	5.02	6.02	9.02	
11 600	-5.20	-3.44	-4.44	-7.44	
12 800	-1.92	-0.94	-1.94	-4.94	
13 1000	-0.17	1.00	0.00	3.00	
14 1200	1.70	2.58	1.58	1.42	
15 1400	2.80	3.92	2.92	-0.08	
16 1600	3.97	5.08	4.08	1.08	
17 1800	4.62	6.11	5.11	2.11	
18 2000	5.23	7.02	6.02	3.02	
19 2200	6.08	7.85	6.85	3.85	<b>896-940 MHz rolloff</b>
20 2300	6.45	8.23	7.23	4.23	4.20
21 2400	6.66	8.60	7.60	4.60	4.20
22 2500	6.85	8.96	7.96	4.96	4.20
23 2600	7.29	9.30	8.30	5.30	4.20
24 2700	7.47	9.63	8.63	5.63	4.20
25 2800	7.57	9.94	8.94	5.63	3.50
26 3000	7.61	10.54	9.54	5.63	2.00
27 3200					
28 3400					
29 3600					
30 3800					
31 4000					
32 4500					
33 5000					
34					
35	FORMULA AUDIO FREQ. RESPONSE				
36	20 LOG (10 DEV FREQ / DEV REF)				

**Modulation Limiting**

6/7/99



Section 2 C1

6/7/99

**Modulation Limiting  
Curve Data**

1	A	B	C	D	Modulation Limiting Curves									
					4	300 Hz	1000Hz	2500 Hz	3000Hz	5	LEVEL	DEV	LEVEL	
2	AXATR-391-A2				6	0	0	0	0	6	0	0	0	0
3					7	0.0563	0.4	0.0141	0.4	7	0.0563	0.69	0.0059	0.4
4					8	0.1125	0.6	0.0281	0.6	8	0.1125	1.3	0.0117	0.6
5					9	0.1688	0.9	0.0422	0.9	9	0.1688	1.81	0.0176	0.9
6					10	0.225	1.1	0.0562	1.2	10	0.225	1.95	0.0234	1.2
7					11	0.2813	1.5	0.0703	1.5	11	0.2813	2	0.0293	1.5
8					12	0.2854	1.6	0.0738	1.5	12	0.2954	2.01	0.0308	1.6
9					13	0.3094	1.7	0.0773	1.6	13	0.3094	2.03	0.0322	1.6
10					14	0.3235	1.7	0.0808	1.7	14	0.3235	2.03	0.0337	1.7
11					15	0.3376	1.8	0.0844	1.7	15	0.3376	2.04	0.0352	1.7
12					16	0.3516	1.8	0.0879	1.8	16	0.3516	2.05	0.0366	1.8
13					17	0.3657	1.8	0.0914	1.8	17	0.3657	2.05	0.0381	1.8
14					18	0.3798	1.8	0.0949	1.8	18	0.3798	2.05	0.0396	1.8
15					19	0.3938	1.8	0.0984	1.8	19	0.3938	2.06	0.041	1.8
16					20	0.4079	1.8	0.1019	1.8	20	0.4079	2.06	0.0425	1.9
17					21	0.4219	1.8	0.1055	1.8	21	0.4219	2.06	0.044	1.9
18					22	0.436	1.8	0.109	1.8	22	0.436	2.07	0.0454	1.9
19					23	0.4501	1.8	0.1125	1.8	23	0.4501	2.07	0.0469	1.9
20					24	0.4641	1.8	0.116	1.8	24	0.4641	2.08	0.0483	1.9
21					25	0.4782	1.8	0.1195	1.9	25	0.4782	2.08	0.0498	1.9
22					26	0.4923	1.8	0.123	1.9	26	0.4923	2.08	0.0513	1.9
23					27	0.5063	1.8	0.1265	1.9	27	0.5063	2	0.0527	1.9
24					28	0.5204	1.8	0.1301	1.9	28	0.5204	2	0.0542	1.9
25					29	0.5345	1.8	0.1336	1.9	29	0.5345	2	0.0557	1.9
26					30	0.5485	1.8	0.1371	1.9	30	0.5485	2	0.0571	2
27					31	0.5626	1.8	0.1406	1.9	31	0.5626	2	0.0586	2
28					32	0.5767	1.8	0.1476	2	32	0.5767	2.1	0.0615	2
29					33	0.6048	1.8	0.1617	2	33	0.6048	2.1	0.0674	2
30					34	0.6611	1.8	0.1898	2.1	34	0.6611	2.1	0.0791	2
31					35	0.7736	1.8	0.2461	2.1	35	0.7736	2.1	0.1026	2
32					36	0.9896	1.8	0.3585	2.2	36	0.9896	2.1	0.1494	2.1
33					37	1.4487	1.9	0.5835	2.2	37	1.4487	2.1	0.2432	2.1
34					38	2.3489	1.9	1.0334	2.2	38	2.3489	2.1	0.4307	2.1
35					39	2.812	1.9	2.812	2.2	39	2.812	2.1	2.812	2.1
36					40					40				
37					41					41				
38					42					42				
39					43					43				

AXATR-391-A2

**SECTION 3****OCCUPIED BANDWIDTH**

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

**898.9995 Mhz**

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

SECTION 3 D1, D2 ( 50 & 150 kHz spans, Data)

**938.00 MHz**

SECTION 3 H1,H2 ( 50 & 150 kHz spans, talkaround Voice)

SECTION 3 I1,I2 ( 50 & 150 kHz spans, talkaround Data)

**SECTION 3****OCCUPIED BANDWIDTH**

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 3B,C,H  
Telephony

$$Bn = 2M + 2DK \text{ where}$$

$$M = 3000 \text{ Hz}$$

$$D = 2000 \text{ Hz}$$

$$K = 1 \text{ (assumed)}$$

$$Bn = 10000$$

Therefore, Emission Designator are,

10K0F3E

SECTION 3D & I  
Data, Digital Voice

$$Bn = 2(B/2) + 2DK \text{ where}$$

$$B = 9600 \text{ Hz}$$

$$D = 2000 \text{ Hz}$$

$$K = 1 \text{ (assumed)}$$

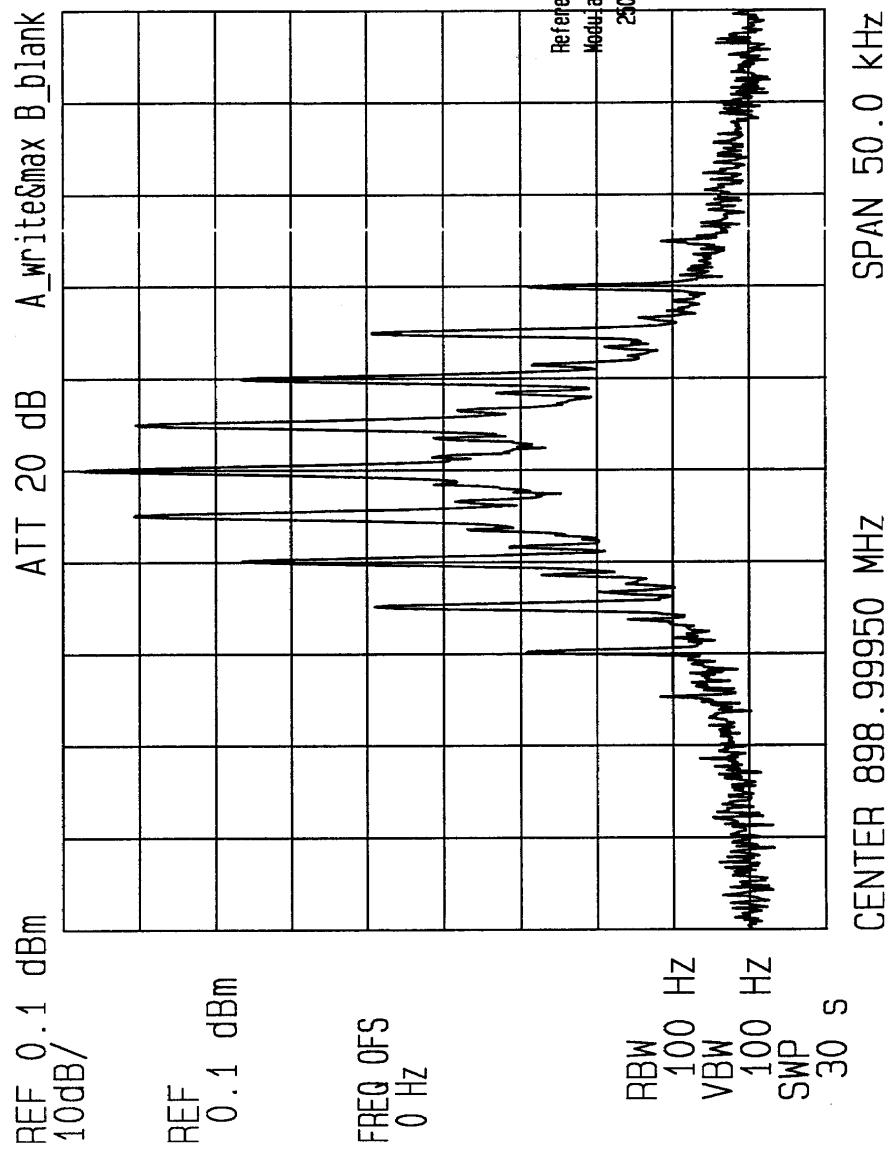
$$Bn = 13600$$

Therefore, Emission Designators are,

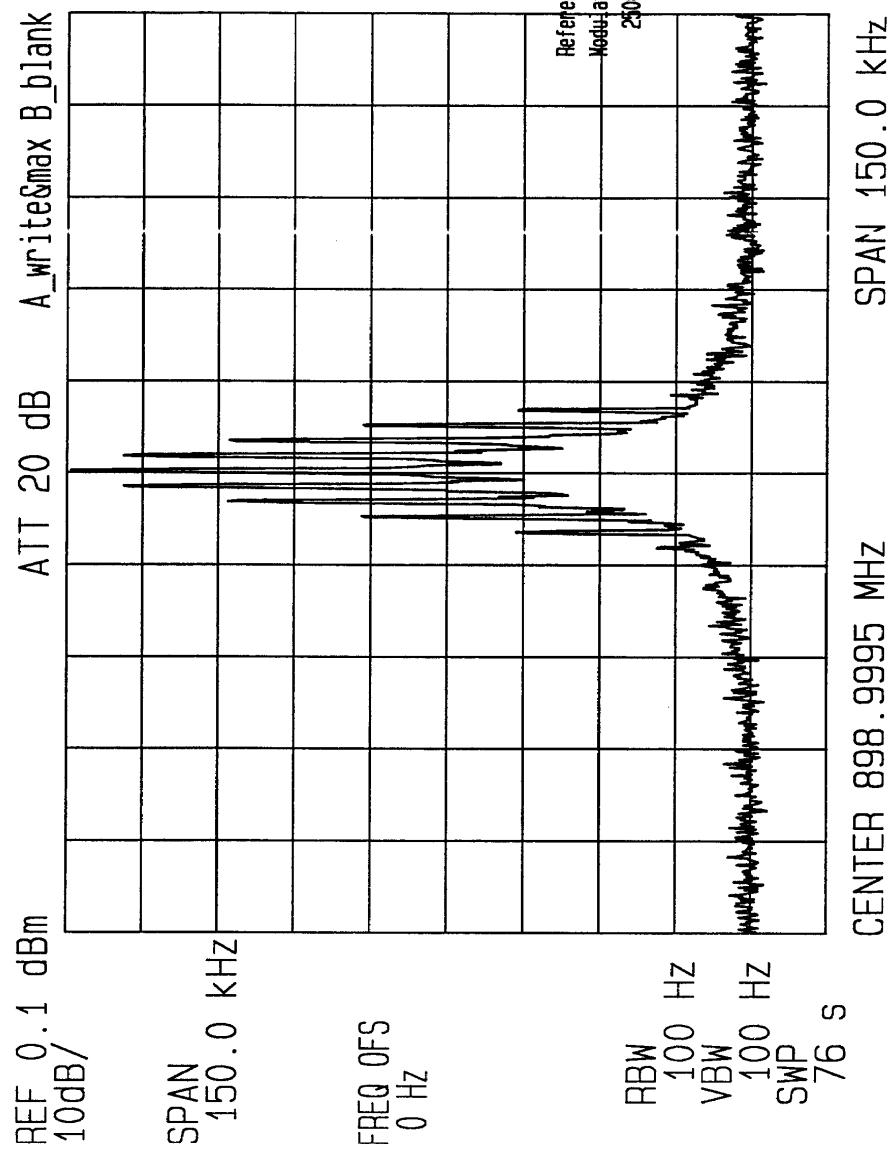
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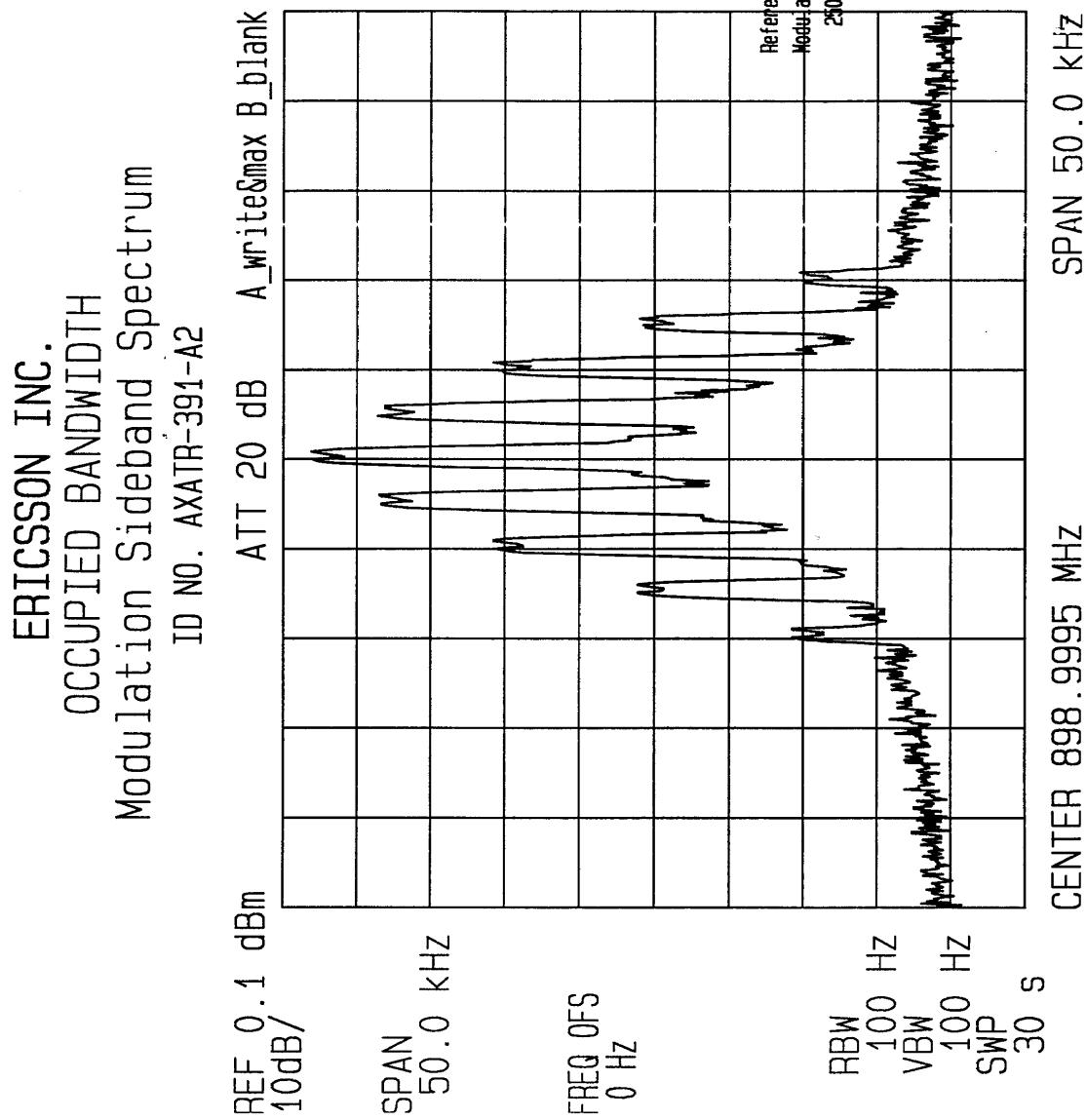
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OCCUPIED BANDWIDTH  
Modulation Sideband Spectrum  
ID NO. AXATR-391-A2

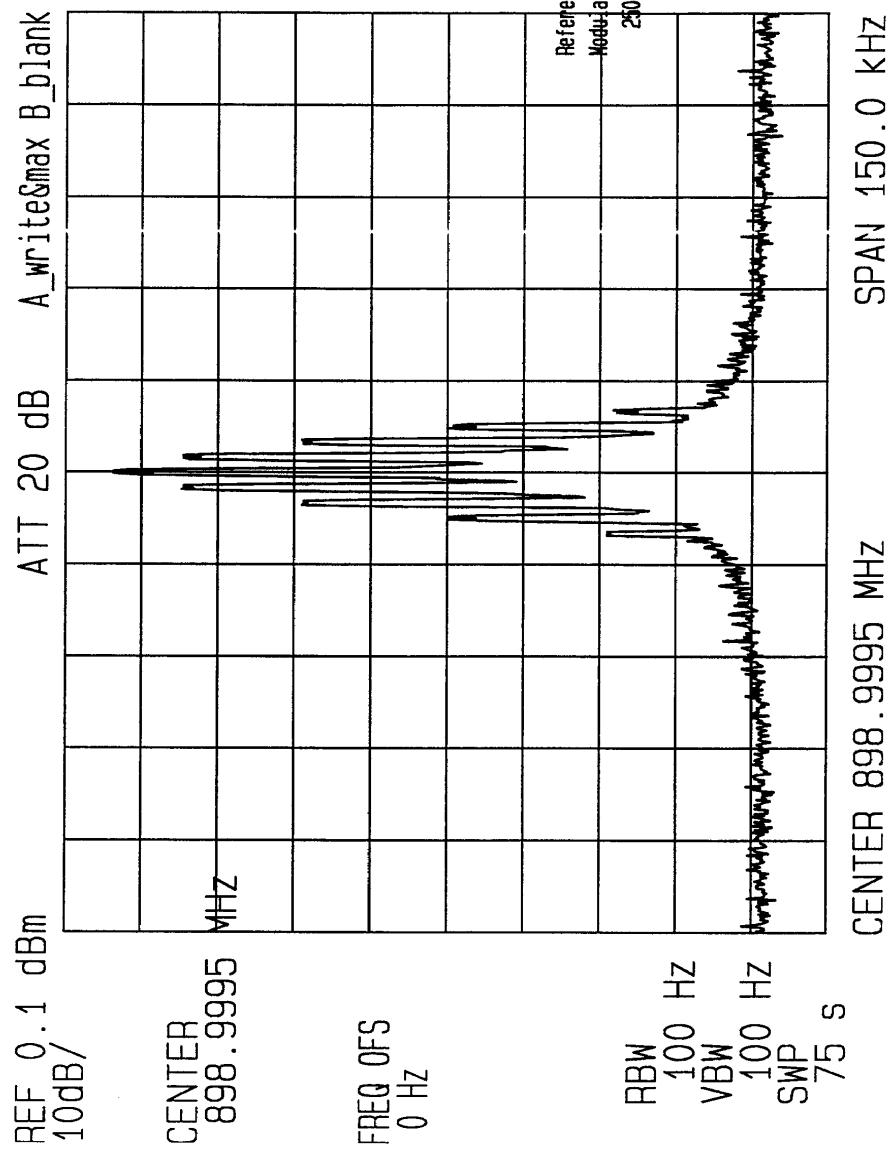


ERICSSON INC.  
OCCUPIED BANDWIDTH  
Modulation Sideband Spectrum  
ID NO. AXATR-391-A2

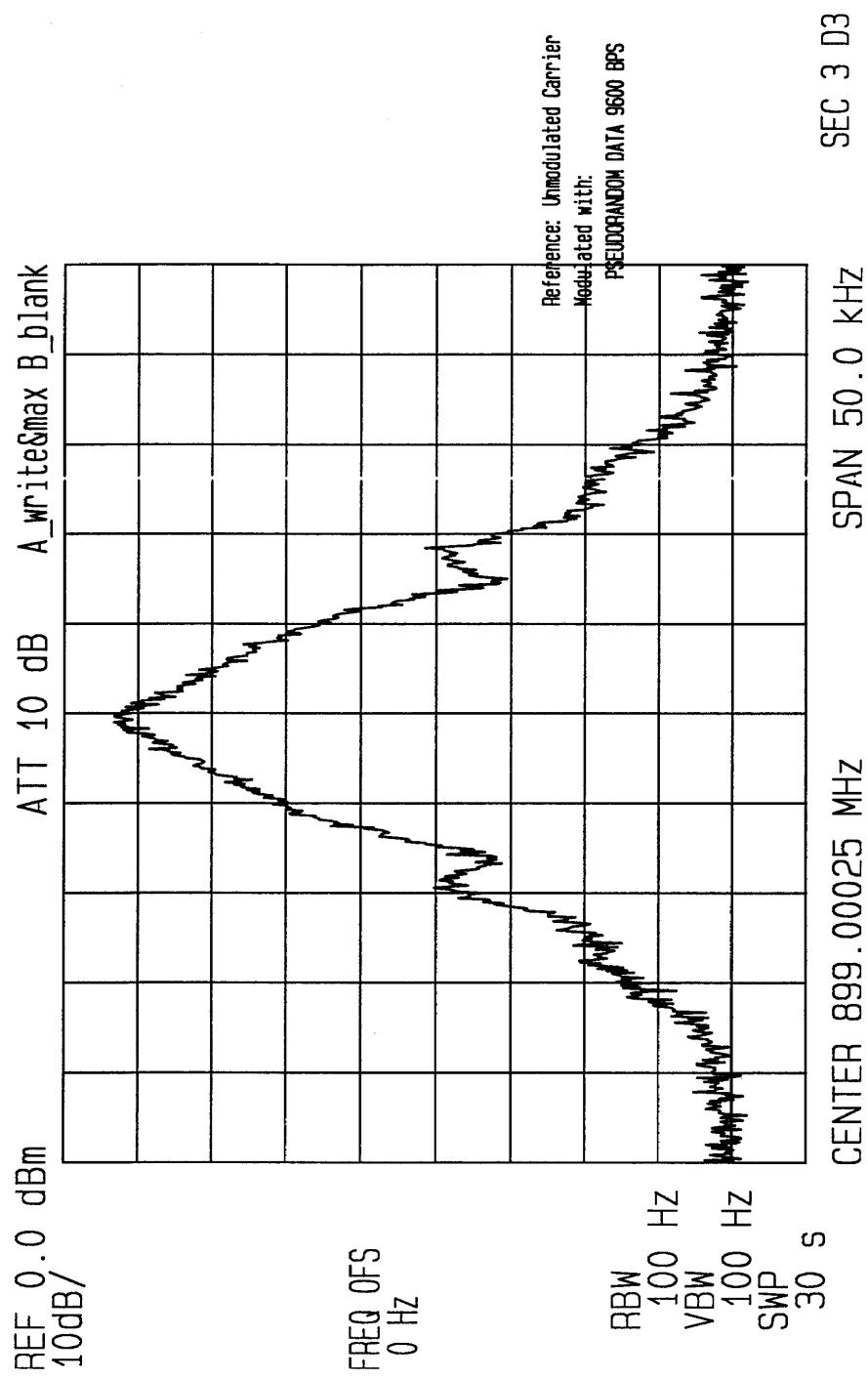




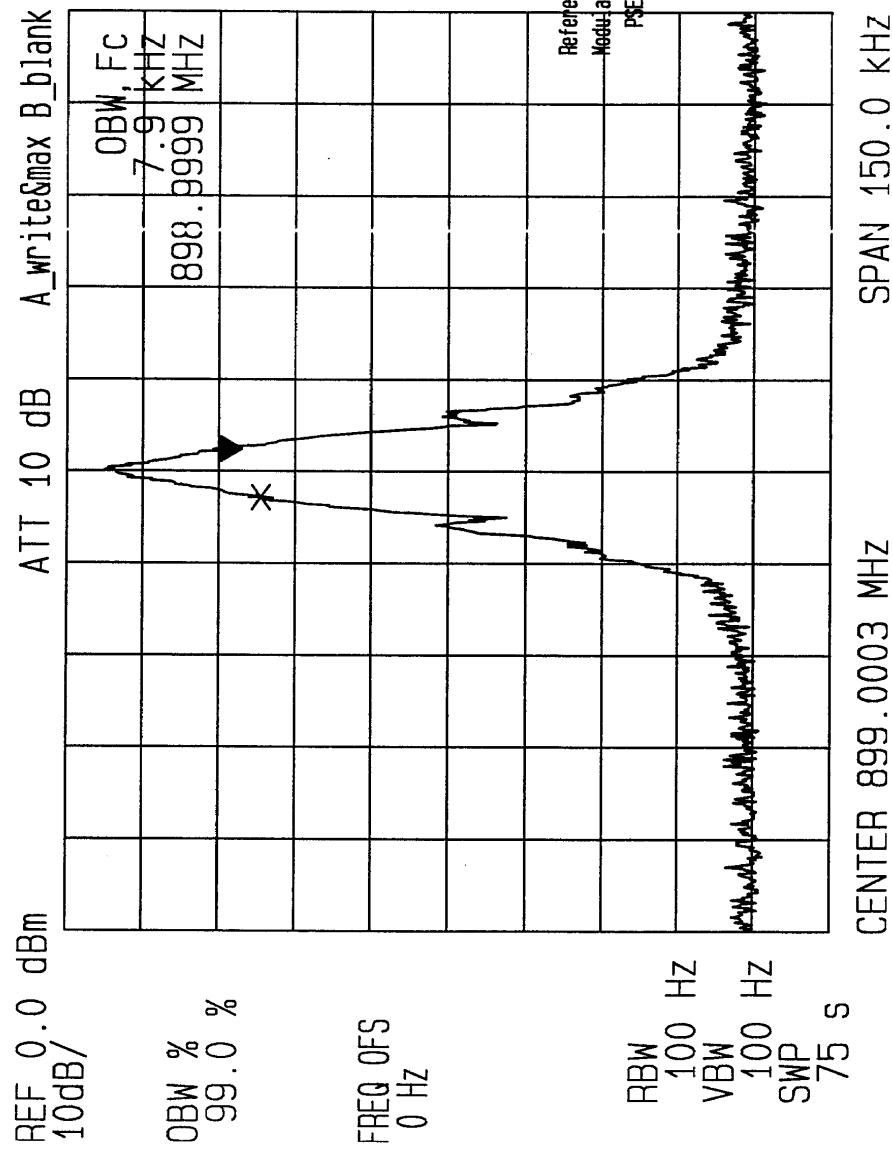
ERICSSON INC.  
 OCCUPIED BANDWIDTH  
 Modulation Sideband Spectrum  
 ID NO. AXATR-391-A2



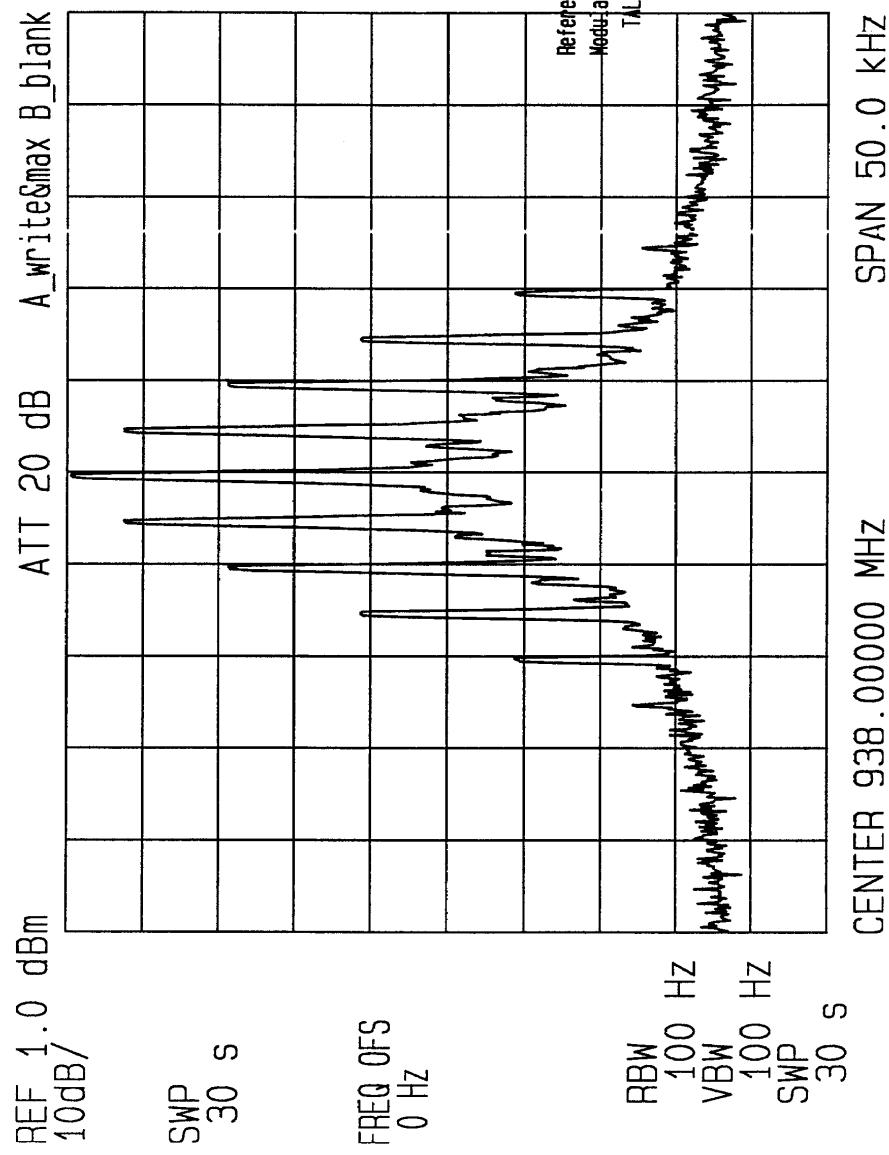
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OCCUPIED BANDWIDTH  
Modulation Sideband Spectrum  
ID NO. AXATR-391-A2



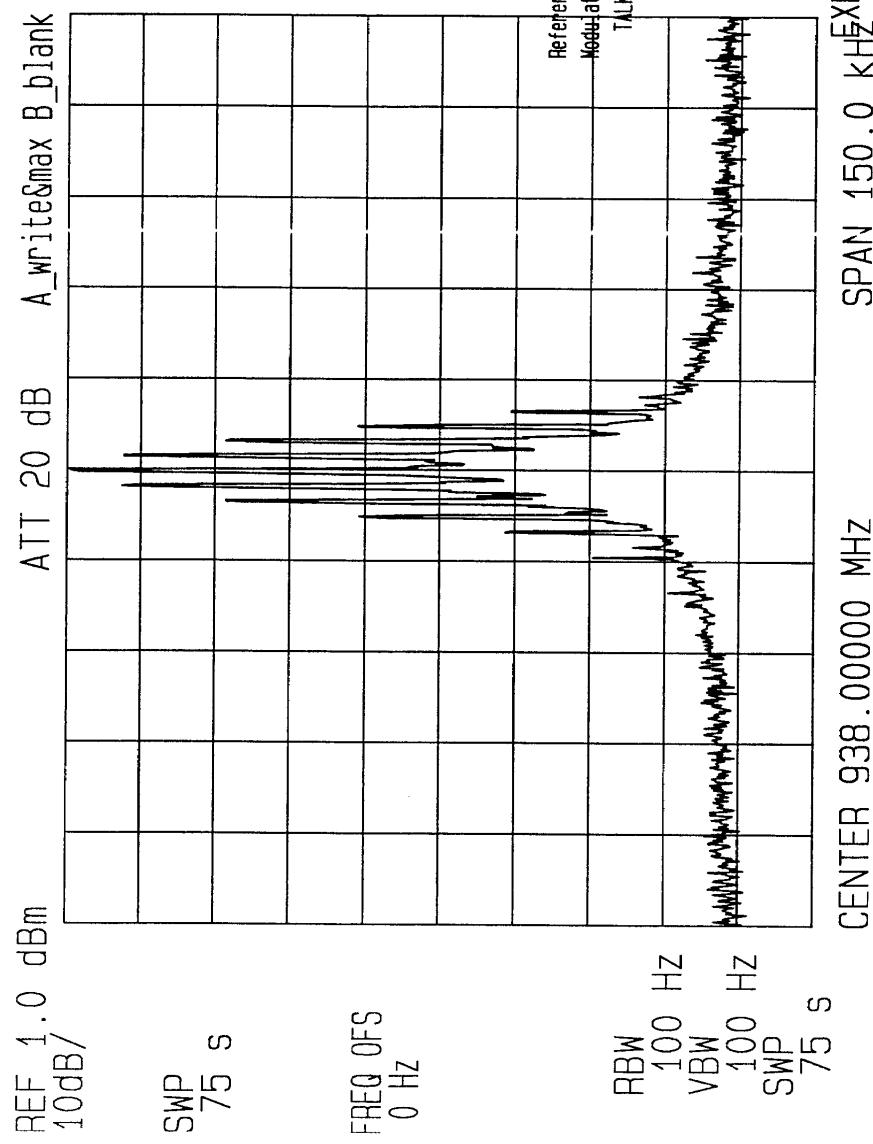
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Modulation Sideband Spectrum  
ID NO. AXATR-391-A2



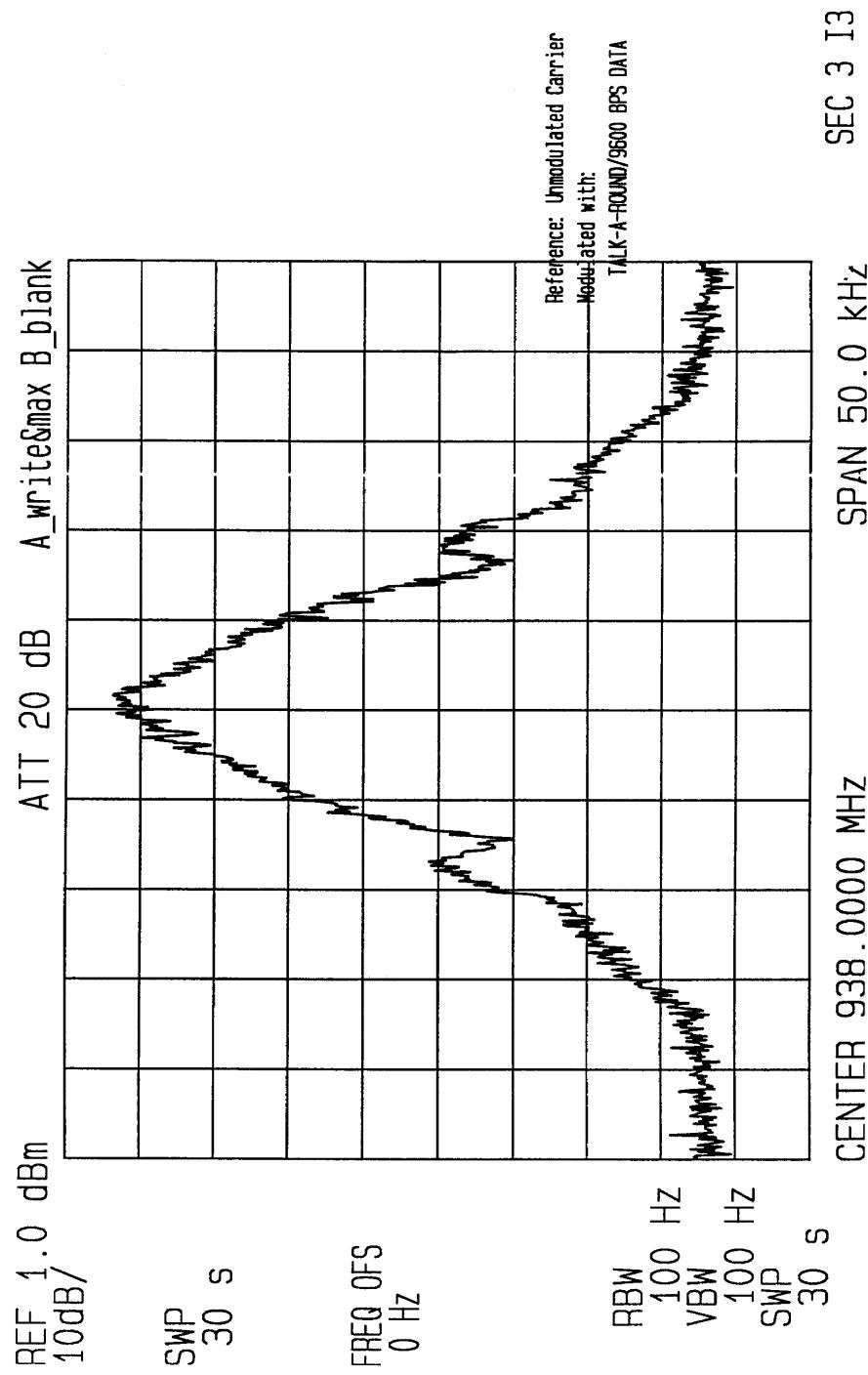
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Modulation Sideband Spectrum  
ID NO. AXATR-391-A2



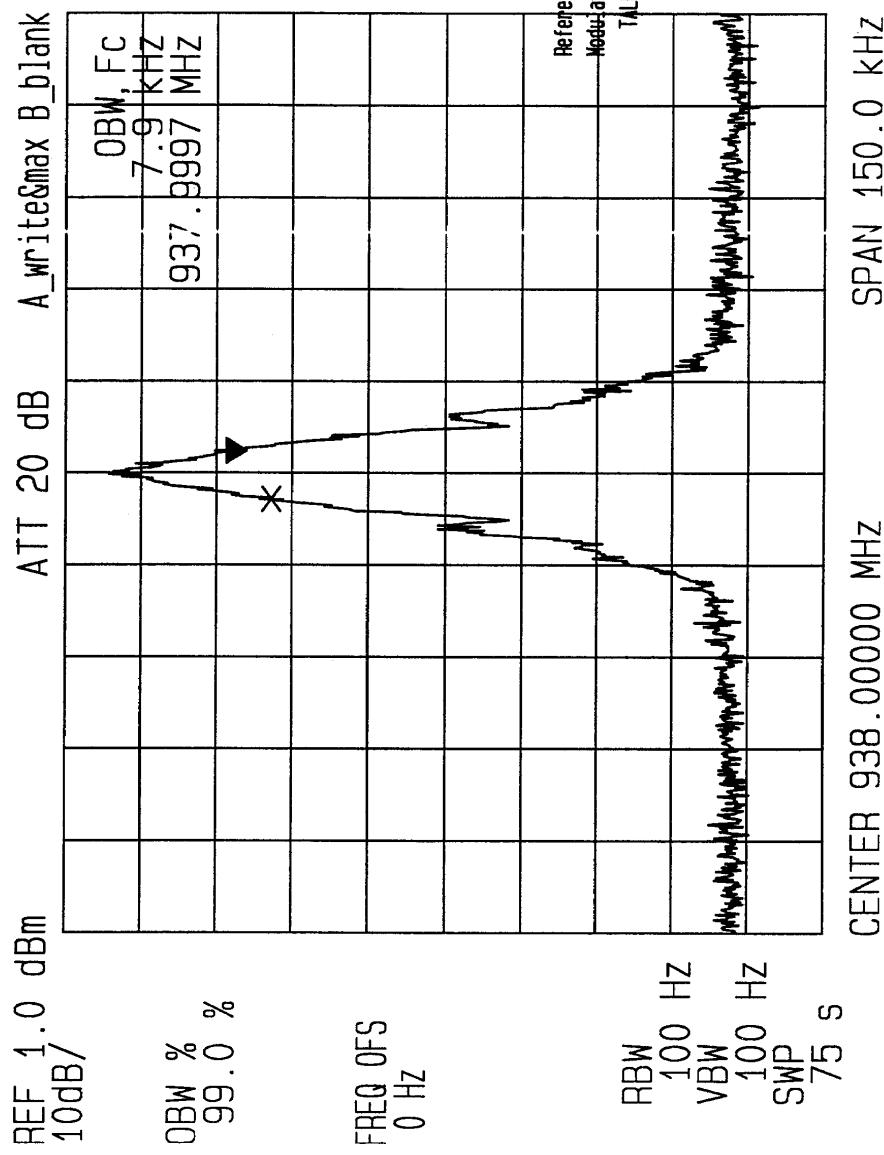
ERICSSON INC.  
OCCUPIED BANDWIDTH  
Modulation Sideband Spectrum  
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ERICSSON INC.  
 OCCUPIED BANDWIDTH  
 Modulation Sideband Spectrum  
 ID NO. AXATR-391-A2



**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

<b>Tx Radiated Emissions</b>		
Sections Page	Frequency Mhz	Power in Watts
20	896.0125	25
20	940.9875	25

Equipment used was:

Hewlett Placard Spectrum Analyzer 140T Display, 8554-B-RF, 8552B-IF.

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

<b>Tx Conducted Emissions</b>		
Sections Page	Frequency Mhz	Power in Watts
21	896.0125	6
21	896.0125	25
22	940..9875	6
21	940.9875	25

\*SAME AS FOR 25 OR 12.5 kHz modes.

**TRANSMITTER RADIATED****AXATR-391-A2****S/N ET290L10E****May 25, 1999****Front Mount****LIMITS:**

TX FCC: -20 dBm for 12.5kHz or -13 for 25kHz  
CEPT TX < 1GHz: -36 dBm

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Carrier Power = **25.000** Watts at **896.012500** MHz Date 05/25/99  
Device ID: AXATR-391-A2 S/N ET290L10E

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Frequency MHz	Antenna Polarization	Measured dBm	EDRP dBm
1792.025000		-83.4	-49.8
2688.037500		-78.6	-40.1
3584.050000		-83.4	-42.8
4480.062500		-78.4	-35.5

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Carrier Power = **25.000** Watts at **940.987500** MHz Date 05/25/99  
Device ID: AXATR-391-A2 S/N ET290L10E

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Frequency MHz	Antenna Polarization	Measured dBm	EDRP dBm
1881.975000		-81.1	-47.0
2822.962500		-81.8	-42.4
3763.950000		-80.5	-39.8
4704.937500		-79.4	-35.0

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**TRANSMITTER CONDUCTED****AXATR-391-A2****S/N ET290L10E****May 24, 1999****Front Mount****LIMITS:**

TX FCC: -20 dBm for 12.5kHz or -13 for 25kHz  
 CEPT TX < 1GHz: -36 dBm

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Carrier Power = **25.000** Watts at **896.012500** MHz Date 05/24/99  
 Device ID: AXATR-391-A2 S/N ET290L10E

Frequency MHz	Antenna Polarization	Measured dBm	EDRP dBm
1792.025000		-35.6	-35.6
2688.037500		-33.6	-33.6
3584.050000		-42.1	-42.1
4480.062500		-33.4	-33.4
5376.075000		-24.4	-24.4
6272.087500		-42.4	-42.4
7168.100000		-48.8	-48.8
8064.112500		-36.8	-36.8
8960.125000		-42.6	-42.6

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Carrier Power = **6.000** Watts at **896.012500** MHz Date 05/24/99  
 Device ID: AXATR-391-A2 S/N ET290L10E

Frequency MHz	Antenna Polarization	Measured dBm	EDRP dBm
1792.025000		-44.7	-44.7
2688.037500		-50.0	-50.0
3584.050000		-50.5	-50.5
4480.062500		-37.1	-37.1
5376.075000		-40.8	-40.8
6272.087500		-52.8	-52.8

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Carrier Power = **25.000** Watts at **940.987500** MHz Date 05/24/99  
 Device ID: AXATR-391-A2 S/N ET290L10E

Frequency MHz	Antenna Polarization	Measured dBm	EDRP dBm
1881.975000		-38.5	-38.5
2822.962500		-50.3	-50.3
3763.950000		-31.1	-31.1
4704.937500		-38.1	-38.1
5645.925000		-44.7	-44.7
6586.912500		-44.1	-44.1
7527.900000		-34.6	-34.6
8468.887500		-36.1	-36.1

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***TRANSMITTER CONDUCTED*****AXATR-391-A2****S/N ET290L10E****May 24, 1999**

Carrier Power = **6.000** Watts at **940.987500** MHz Date 05/24/99  
Device ID: AXATR-391-A2 S/N ET290L10E

Frequency MHz	Antenna Polarization	Measured dBm	EDRP dBm
1881.975000		-51.6	-51.6
2822.962500		-53.4	-53.4
3763.950000		-48.4	-48.4
6586.912500		-51.4	-51.4

-----End of Report-----

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ET290L10E.doc

**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

