

**FCC DATA FOR A
CLASS II PERMISSIVE CHANGE
ON THE 7820 INTEGRATED
RADIO TRANSMITTER**

TESTS PERFORMED:

RF POWER OUTPUT, PART 101, 2.985

FREQUENCY STABILITY, PART 101, 2.995

OCCUPIED BANDWIDTH, PART 101, 2.989

SPURIOUS EMISSIONS AT ANTENNA TERMINALS, PART 101, 2.991

TRANSMITTER SPURIOUS CASE EMISSIONS, PART 101, 2.993

ALARM DEVICE MANUFACTURING COMPANY
160 EILEEN WAY SYOSSET, N.Y. 11791

TABULAR DATA SHEET

TEST METHOD

RF POWER OUTPUT

TEST SAMPLE

INTEGRATED RADIO TRANSMITTER

MODEL NO.

7820

SERIAL NO.

FCC ID. NO. CFS7820

TEST
SPECIFICATION

FCC RULES AND REGULATIONS, PART 101

PARAGRAPH

2.985

OPERATING
MODE

POWER ON, TRANSMITTING

TECHNICIAN

T. MOTT

DATE

11/11/98

NOTES

PEAK POWER

SUPPLY VOLTAGE (VDC)	POWER OUTPUT (dbm)	POWER OUTPUT (WATTS)	LIMIT (WATTS)
11.5	35.5	3.5	5.0
13.5	35.5	3.5	5.0
15.5	35.5	3.5	5.0

ALARM DEVICE MANUFACTURING COMPANY
160 EILEEN WAY SYOSSET, N.Y. 11791

TABULAR DATA SHEET

TEST METHOD

FREQUENCY STABILITY, TEMPERATURE VARIATION

TEST SAMPLE

INTEGRATED RADIO TRANSMITTER

MODEL NO.

7820

SERIAL NO.

FCC ID. NO. CFS7820

TEST
SPECIFICATION

FCC RULES AND REGULATIONS, PART 101

PARAGRAPH

2.995

OPERATING
MODE

POWER ON, TRANSMITTING

TECHNICIAN

T. MOTT

DATE

11/09/98 - 11/11/98

NOTES

TEMPERATURE ° C	LOWER LIMIT (MHZ)	MEASURED FREQUENCY (MHZ)	UPPER LIMIT (MHZ)
- 30	928.23286	928.23931	928.24214
-20	928.23286	928.23881	928.24214
-10	928.23286	928.23820	928.24214
0	928.23286	928.23776	928.24214
+10	928.23286	928.23794	928.24214
+20	928.23286	928.23755	928.24214
+30	928.23286	928.23686	928.24214
+40	928.23286	928.23599	928.24214
+50	928.23286	928.23705	928.24214
+60	928.23286	928.23804	928.23214

ALARM DEVICE MANUFACTURING COMPANY

160 EILEEN WAY SYOSSET, N.Y. 11791

TABULAR DATA SHEET

TEST METHOD	FREQUENCY STABILITY, VOLTAGE VARIATION		
TEST SAMPLE	INTEGRATED RADIO TRANSMITTER		
MODEL NO.	7820	SERIAL NO.	FCC ID. NO. CFS7820
TEST SPECIFICATION	FCC RULES AND REGULATIONS, PART 101	PARAGRAPH	2.995
OPERATING MODE	POWER ON, TRANSMITTING		
TECHNICIAN	T. MOTT	DATE	11/11/98
NOTES			

SUPPLY VOLTAGE (VDC)	LOWER LIMIT (MHZ)	MEASURED FREQUENCY (MHZ)	UPPER LIMIT (MHZ)
11.5	928.23286	928.23750	928.24214
13.5	928.23286	928.23744	928.24214
15.5	928.23286	928.23745	928.24214

ALARM DEVICE MANUFACTURING COMPANY
160 Eileen Way Syosset, NY 11791

TABULAR DATA SHEET

TEST METHOD :	TRANSMITTER SPURIOUS CASE EMISSIONS		
TEST SAMPLE :	INTEGRATED RADIO TRANSMITTER		
MODEL No.:	7820	SERIAL No.:	FCC ID: CFS7820
TEST SPECIFICATION :	FCC RULES AND REGULATIONS PART 101	PARAGRAPH :	2.993
OPERATING MODE :	POWER ON, TRANSMITTING		
TECHNICIAN :	T. MOTT	DATE :	9/11/98
NOTES :	Test Distance : 3 meters Detector Function : Peak ** Denotes measurement taken at 1 meter		

Frequency	Antenna Polarization	DUT Polarization	Meter Reading	Antenna Factor	Amp Gain & Cable Loss	Duty Cycle	Converted Reading	Limit at 3 meters
GHz	H / V	X,Y,Z	dBu	dB/m	dB	%	dBuV/m	dBuV/m
4.6411875	V	X	29.0	33.3	-8.9		71.2	84.4
		Y	32.1				74.3	
		Z	34.0				76.2	
	H	X	33.6				75.8	
		Y	29.8				72.0	
		Z	27.6	↓	↓		69.8	
5.5694250	V	X	25.5	34.5	-10.1		70.1	
		Y	29.6				74.2	
		Z	28.8				73.4	
	H	X	31.8				76.4	
		Y	29.7				74.3	
		Z	25.3	↓	↓		69.9	
6.4976625	V	X	52.1	34.6	+16.2		70.5	
		Y	50.1				68.5	
		Z	50.0				68.4	
	H	X	52.3				70.7	
		Y	51.5				69.9	
		Z	46.6	↓	↓		65.0	↓

EMISSIONS OBSERVED FROM THE D.U.T. DO NOT EXCEED THE SPECIFIED LIMIT. THE FREQUENCY RANGE WAS SCANNED FROM 30MHz TO 10 GHz . ALL EMISSIONS NOT RECORDED WERE MORE THAN 20 dB BELOW THE SPECIFIED LIMIT.

TABULAR DATA SHEET

** Denotes measurement taken at 1 meter

3

ALARM DEVICE MANUFACTURING COMPANY

160 EILEEN WAY SYOSSET, N.Y. 11791

TEST METHOD

OCCUPIED BANDWIDTH

TEST SAMPLE

INTEGRATED RADIO TRANSMITTER

MODEL NO.

7820

SERIAL NO.

FCC ID. NO. CFS7820

TEST SPECIFICATION

FCC RULES AND REGULATIONS, PART 101

PARAGRAPH

2.989

OPERATING MODE

TRANSMITTING, PSUEDO RANDOM FM

TECHNICIAN

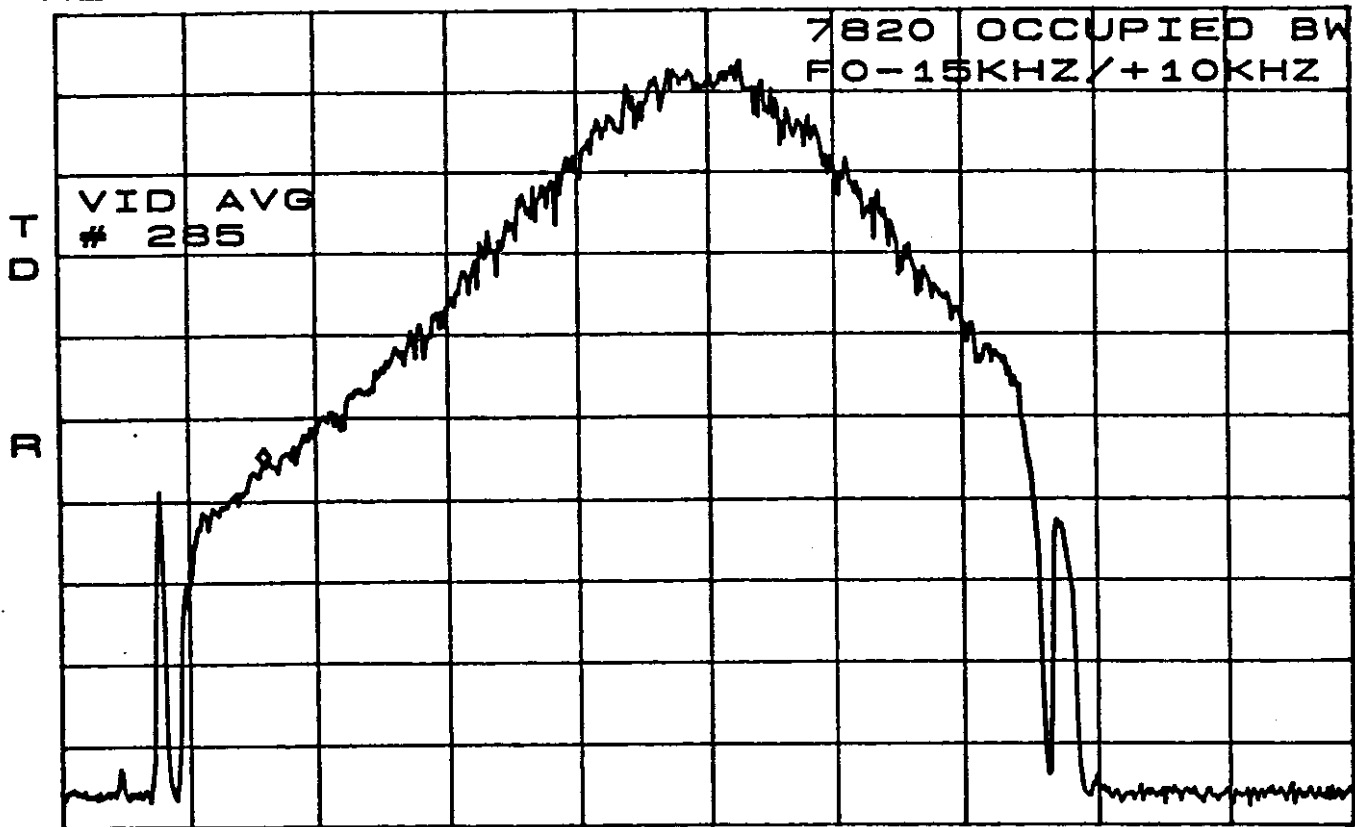
T. MOTT

DATE

11/12/98

NOTES

ATTEN 30dB VAVG 285 MKR -20.17dBm
RL 35.5dBm 10dB/ 928.22050MHz



CENTER 928.23750MHz SPAN 50.00kHz
*RBW 3.0kHz VBW 3.0kHz SWP 67.0ms

ALARM DEVICE MANUFACTURING COMPANY

160 EILEEN WAY SYOSSET, N.Y. 11791

TEST METHOD

OCCUPIED BANDWIDTH

TEST SAMPLE

INTEGRATED RADIO TRANSMITTER

MODEL NO.

7820

SERIAL NO.

FCC ID. NO. CFS7820

TEST SPECIFICATION

FCC RULES AND REGULATIONS, PART 101

PARAGRAPH

2.988

OPERATING MODE

TRANSMITTING, PSUEDO RANDOM FM

TECHNICIAN

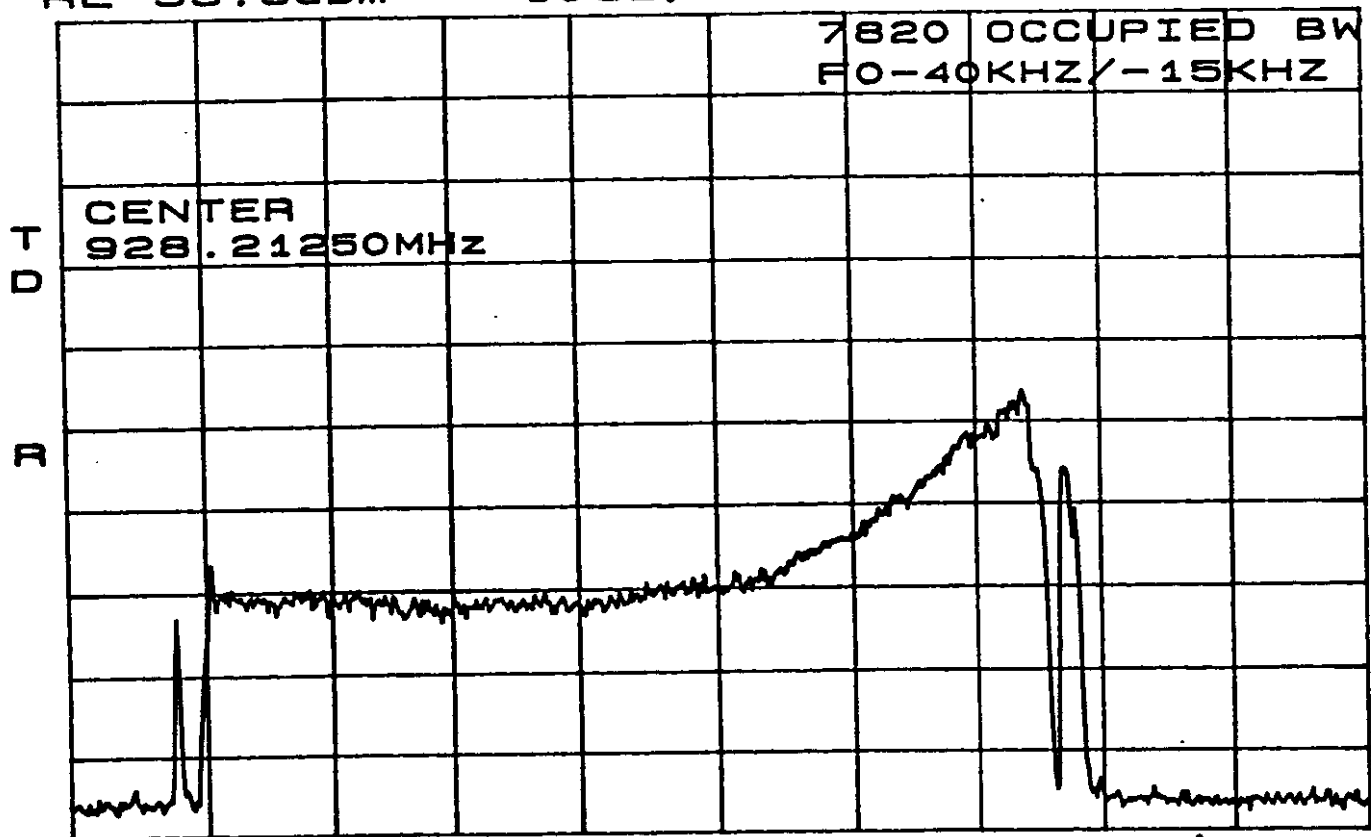
T. MOTT

DATE

11/12/88

NOTES

ATTEN 30dB VAVG 285
RL 35.5dBm 10dB/



CENTER 928.21250MHZ SPAN 50.00KHZ
*RBW 3.0KHZ VBW 3.0KHZ SWP 67.0ms

ALARM DEVICE MANUFACTURING COMPANY

160 EILEEN WAY SYOSSET, N.Y. 11791

TEST METHOD

OCCUPIED BANDWIDTH

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FCC ID. NO. CFS7820

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FCC RULES AND REGULATIONS, PART 101

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OPERATING MODE

TRANSMITTING, PSEUDO RANDOM FM

TECHNICIAN

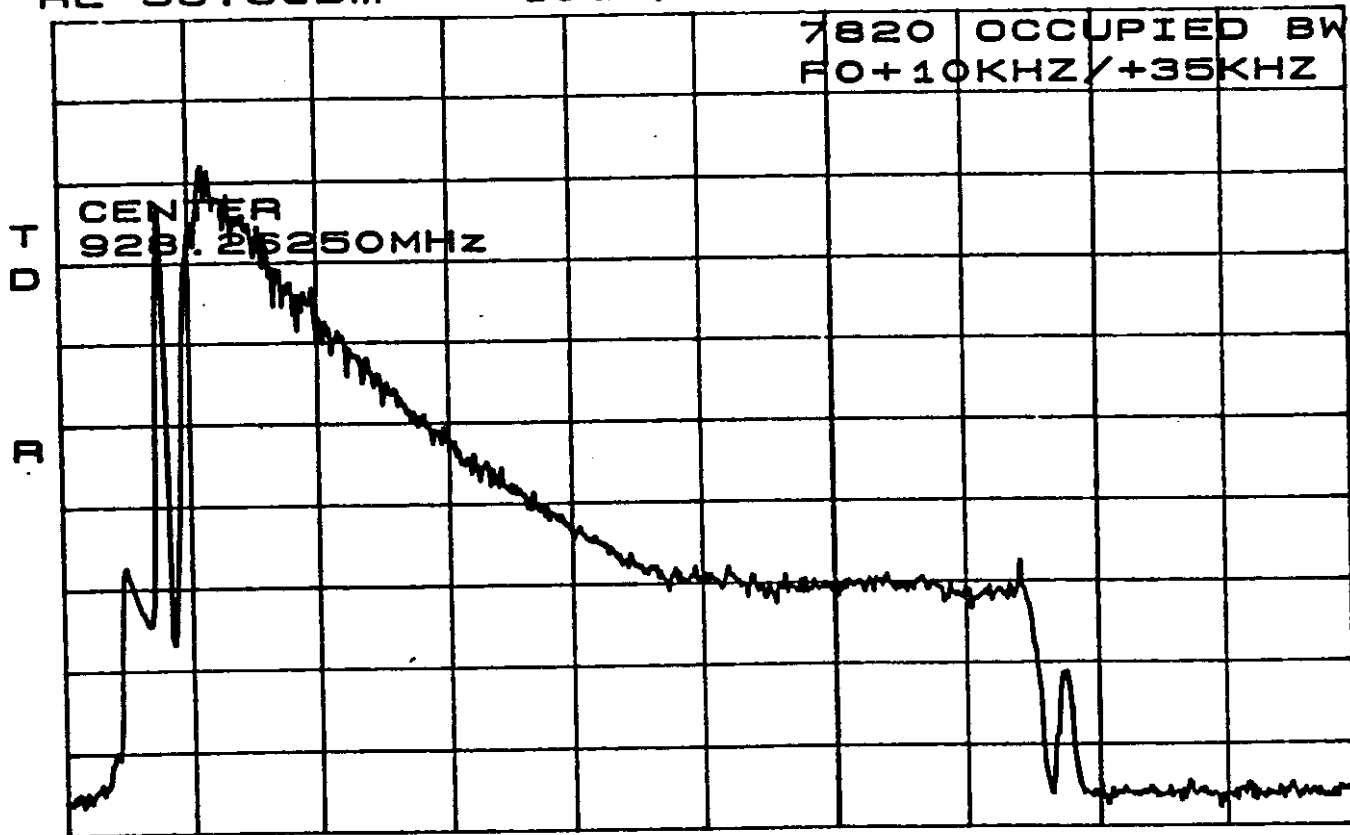
T. MOTT

DATE

11/12/98

NOTES

ATTEN 30dB VAVG 285
RL 35.5dBm 10dB/



CENTER 928.26250MHZ
*RBW 3.0KHZ VBW 3.0KHZ

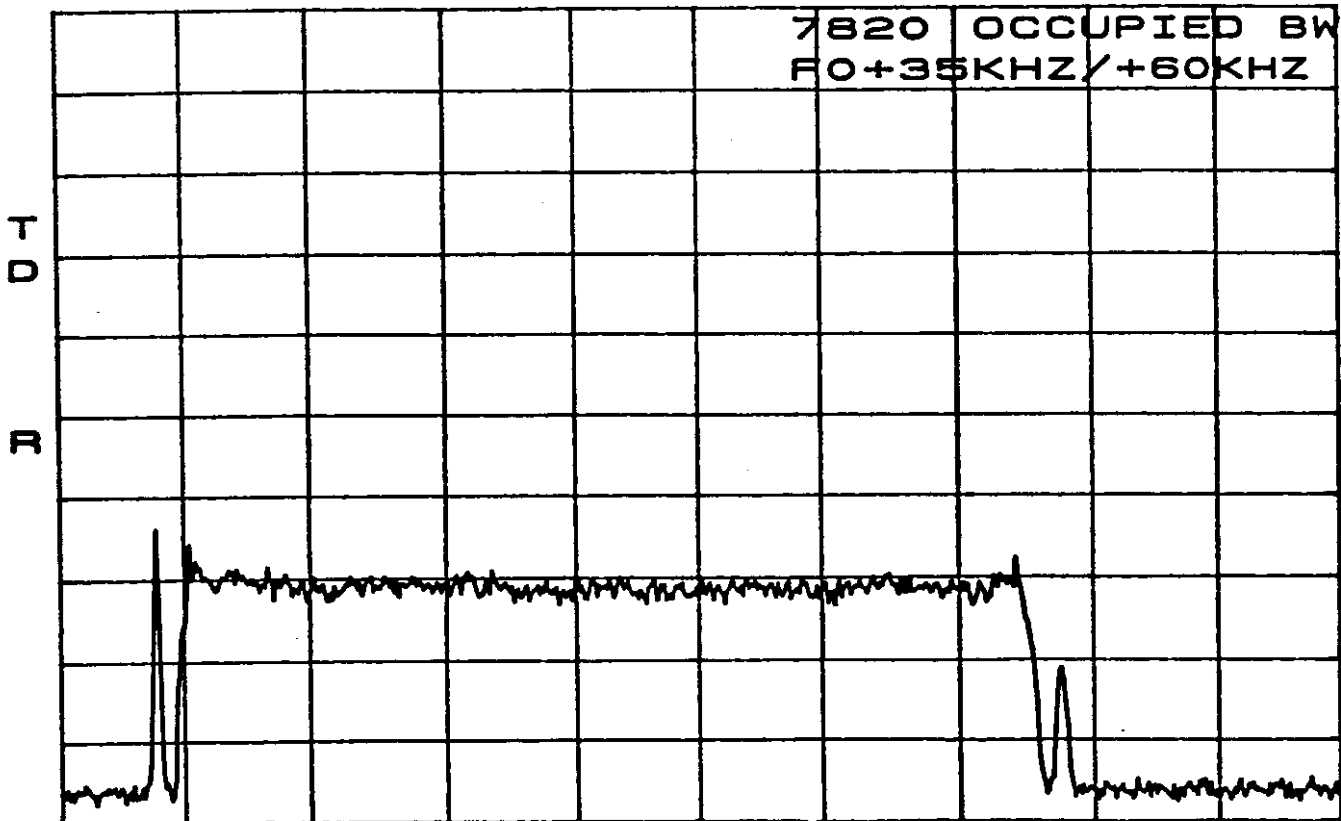
SPAN 50.00KHZ
SWP 67.0ms

ALARM DEVICE MANUFACTURING COMPANY

160 EILEEN WAY SYOSSET, N.Y. 11791

TEST METHOD	OCCUPIED BANDWIDTH		
TEST SAMPLE	INTEGRATED RADIO TRANSMITTER		
MODEL NO.	7820	SERIAL NO.	FCC ID. NO. CFS7820
TEST SPECIFICATION	FCC RULES AND REGULATIONS, PART 101	PARAGRAPH	2.989
OPERATING MODE	TRANSMITTING, PSUEDO RANDOM FM		
TECHNICIAN	T. MOTT	DATE	11/12/98
NOTES			

ATTEN 30dB VAVG 285
RL 35.5dBm 10dB/



CENTER 928.28750MHZ SPAN 50.00KHZ
*RBW 3.0KHZ VBW 3.0KHZ SWP 67.0ms

ALARM DEVICE MANUFACTURING COMPANY

160 EILEEN WAY SYOSSET, N.Y. 11791

TEST METHOD

OCCUPIED BANDWIDTH

TEST SAMPLE

INTEGRATED RADIO TRANSMITTER

MODEL NO.

7820

SERIAL NO.

FCC ID. NO. CFS7820

TEST SPECIFICATION

FCC RULES AND REGULATIONS, PART 101

PARAGRAPH

2.989

OPERATING MODE

TRANSMITTING, PSUEDO RANDOM FM

TECHNICIAN

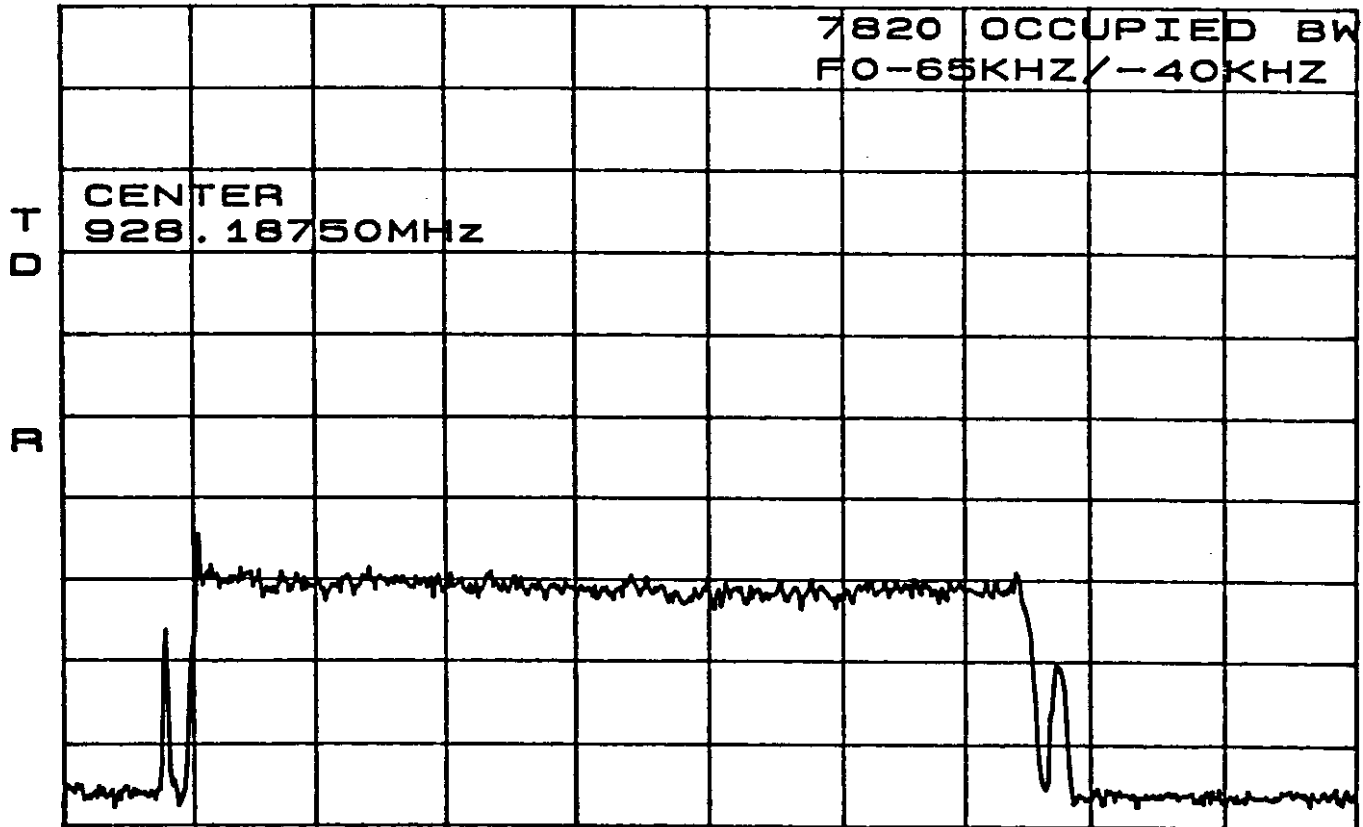
T. MOTT

DATE

11/12/98

NOTES

ATTEN 30dB VAVG 285
RL 35.5dBm 10dB/



CENTER 928.18750MHZ
*RBW 3.0KHZ VBW 3.0KHZ

SPAN 50.00KHZ
SWP 67.0ms

ALARM DEVICE MANUFACTURING COMPANY

160 EILEEN WAY SYOSSET, N.Y. 11791

TEST METHOD

OCCUPIED BANDWIDTH

TEST SAMPLE

INTEGRATED RADIO TRANSMITTER

MODEL NO.

7820

SERIAL NO.

FCC ID. NO. CFS7820

TEST SPECIFICATION

FCC RULES AND REGULATIONS, PART 101

PARAGRAPH

2.989

OPERATING MODE

TRANSMITTING, PSUEDO RANDOM FM

TECHNICIAN

T. MOTT

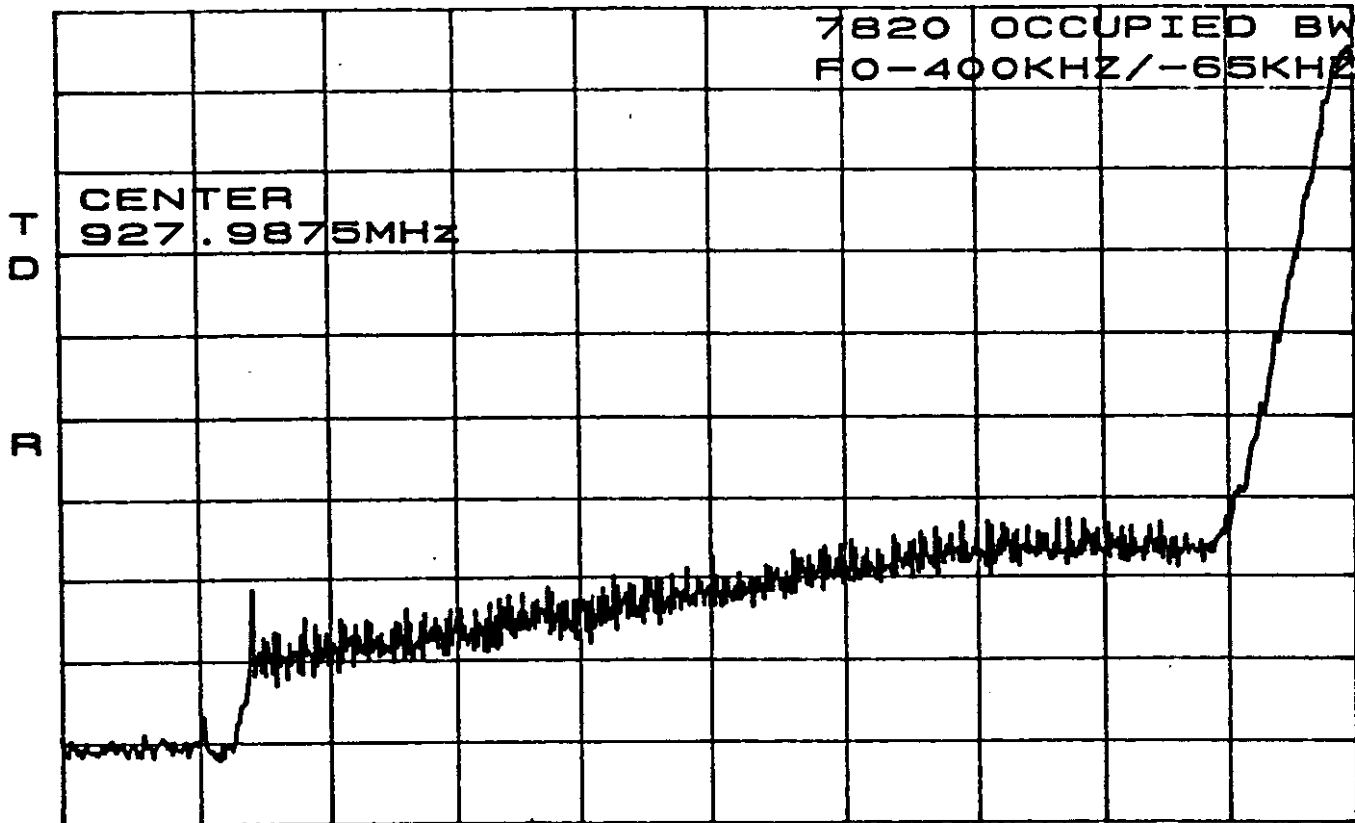
DATE

11/12/98

NOTES

ATTEN 30dB VAVG 285

RL 35.5dBm 10dB/



CENTER 927.9875MHZ

SPAN 500.0KHZ

*RBW 10KHZ

VBW 10KHZ

SWP 50.0ms

ALARM DEVICE MANUFACTURING COMPANY

160 EILEEN WAY SYOSSET, N.Y. 11791

TEST METHOD

OCCUPIED BANDWIDTH

TEST SAMPLE

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SERIAL NO.

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TEST SPECIFICATION

FCC RULES AND REGULATIONS, PART 101

PARAGRAPH

2.989

OPERATING MODE

TRANSMITTING, PSUEDO RANDOM FM

TECHNICIAN

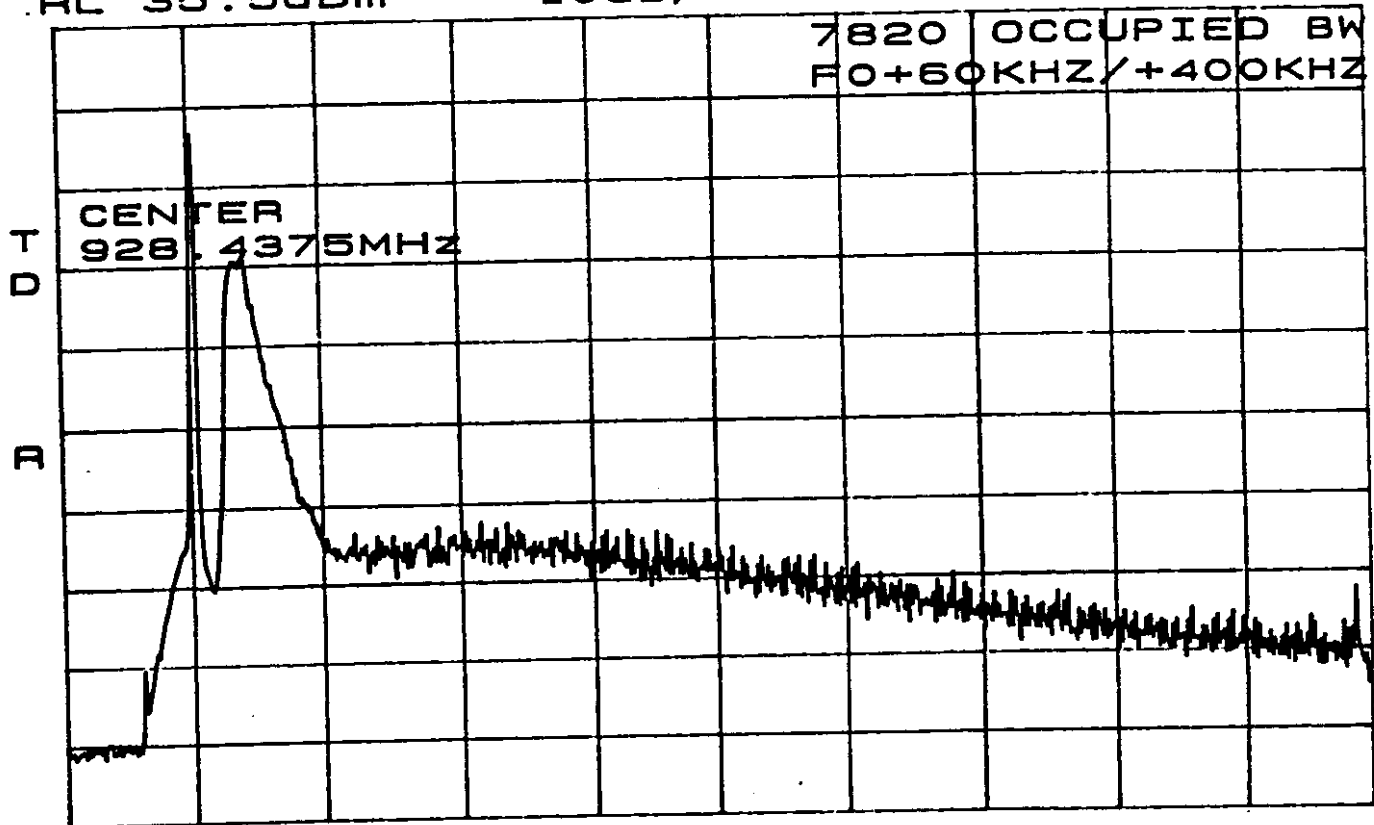
T. MOTT

DATE

11/12/98

NOTES

ATTEN 30dB VAVG 285
RL 35.5dBm 10dB/



CENTER 928.4375MHZ
*RBW 10KHZ VBW 10KHZ

SPAN 500.0KHZ
SWP 50.0ms

ALARM DEVICE MANUFACTURING COMPANY
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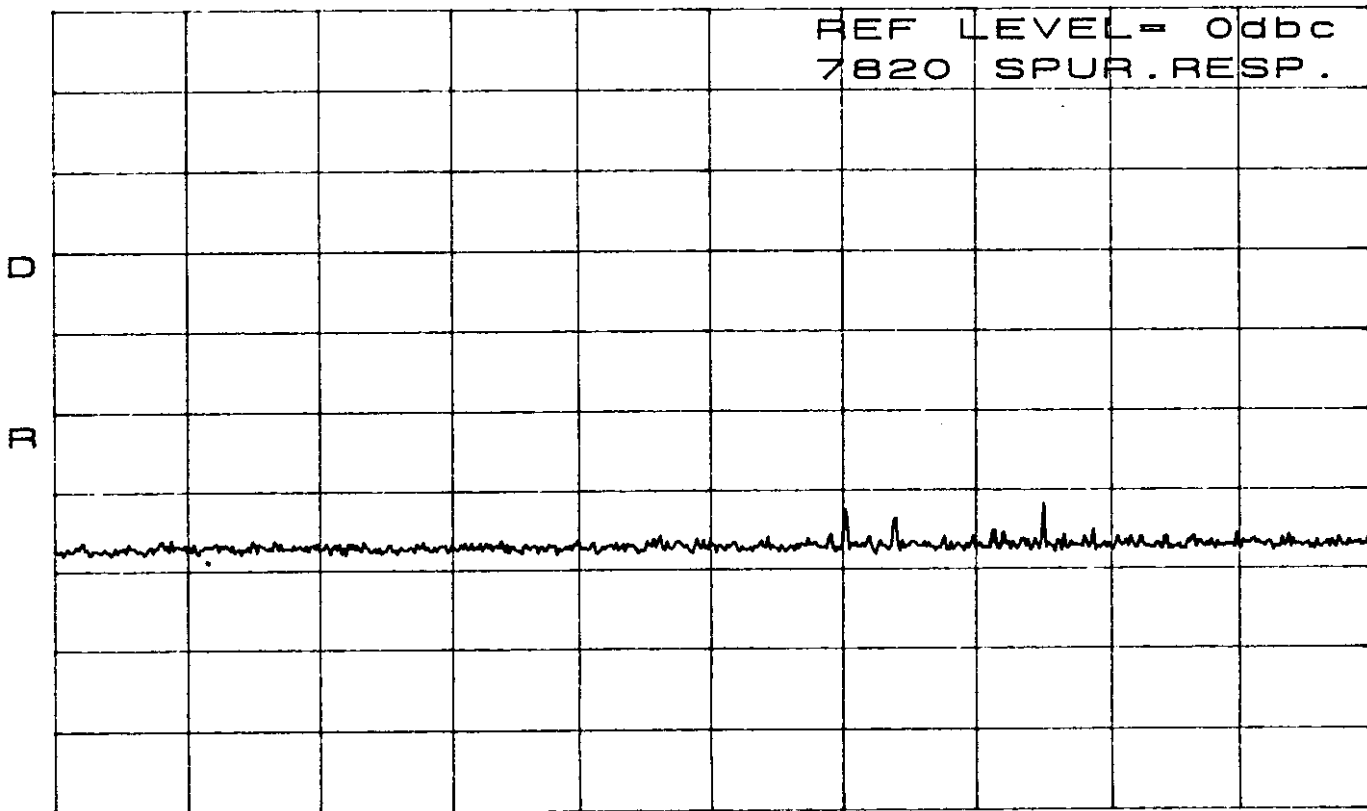
TABULAR DATA SHEET

TEST METHOD	SPURIOUS EMISSIONS AT ANTENNA TERMINALS		
TEST SAMPLE	INTEGRATED RADIO TRANSMITTER		
MODEL NO.	7820	SERIAL NO.	FCC ID. NO. CFS7820
TEST SPECIFICATION	FCC RULES AND REGULATIONS, PART 101	PARAGRAPH	2.991
OPERATING MODE	POWER ON, TRANSMITTING		
TECHNICIAN	T.MOTT	DATE	11/13/98
NOTES	SPECTRUM ANALYZER IN PEAK HOLD		

ATTEN 30dB

RL 35.5dBm

10dB/



START 10.0MHZ

STOP 400.0MHZ

*RBW 300KHZ

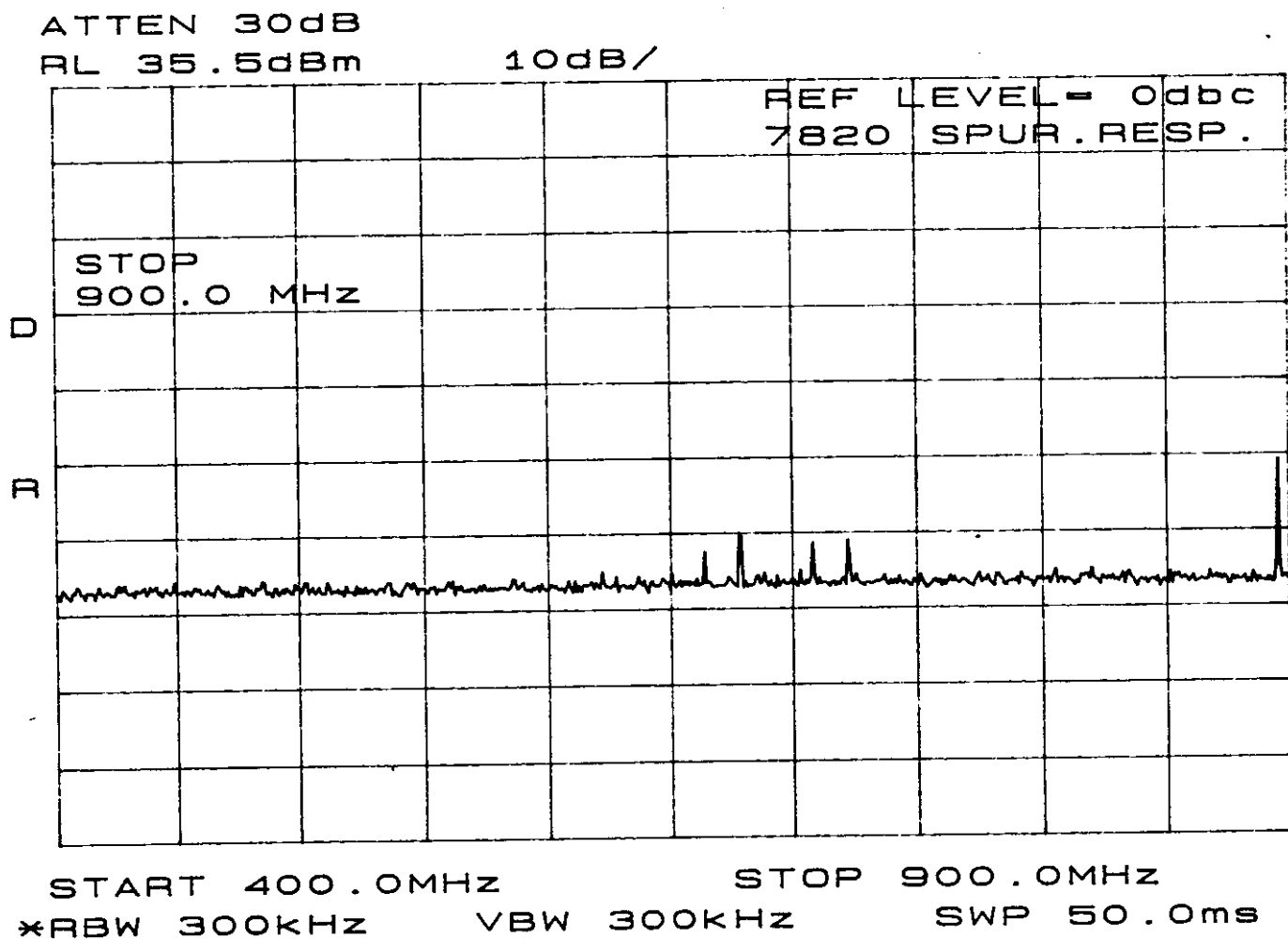
VBW 300KHZ

SWP 50.0ms

ALARM DEVICE MANUFACTURING COMPANY
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TABULAR DATA SHEET

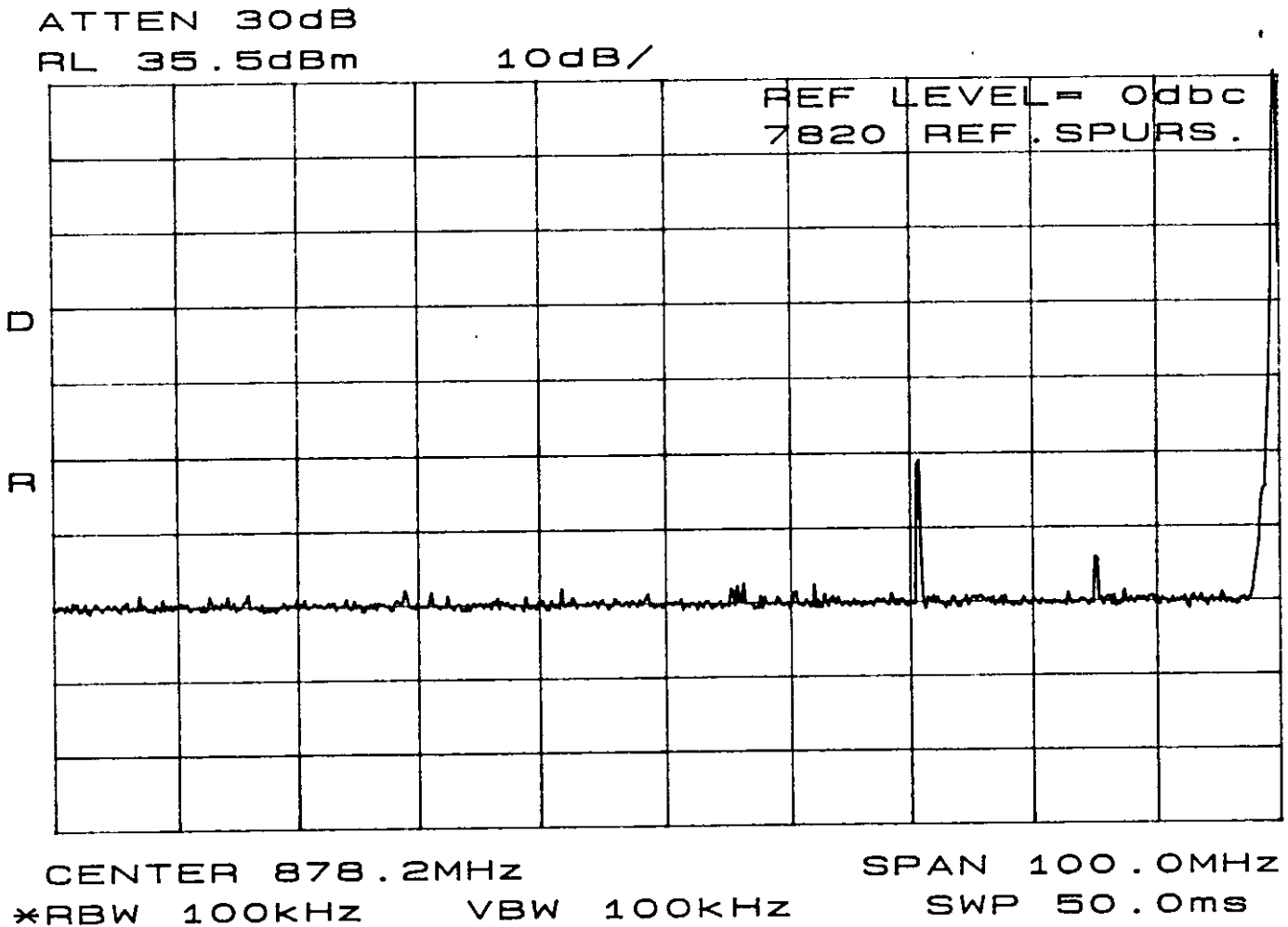
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NOTES	SPECTRUM ANALYZER IN PEAK HOLD		



ALARM DEVICE MANUFACTURING COMPANY
160 EILEEN WAY SYOSSET, N.Y. 11791

TABULAR DATA SHEET

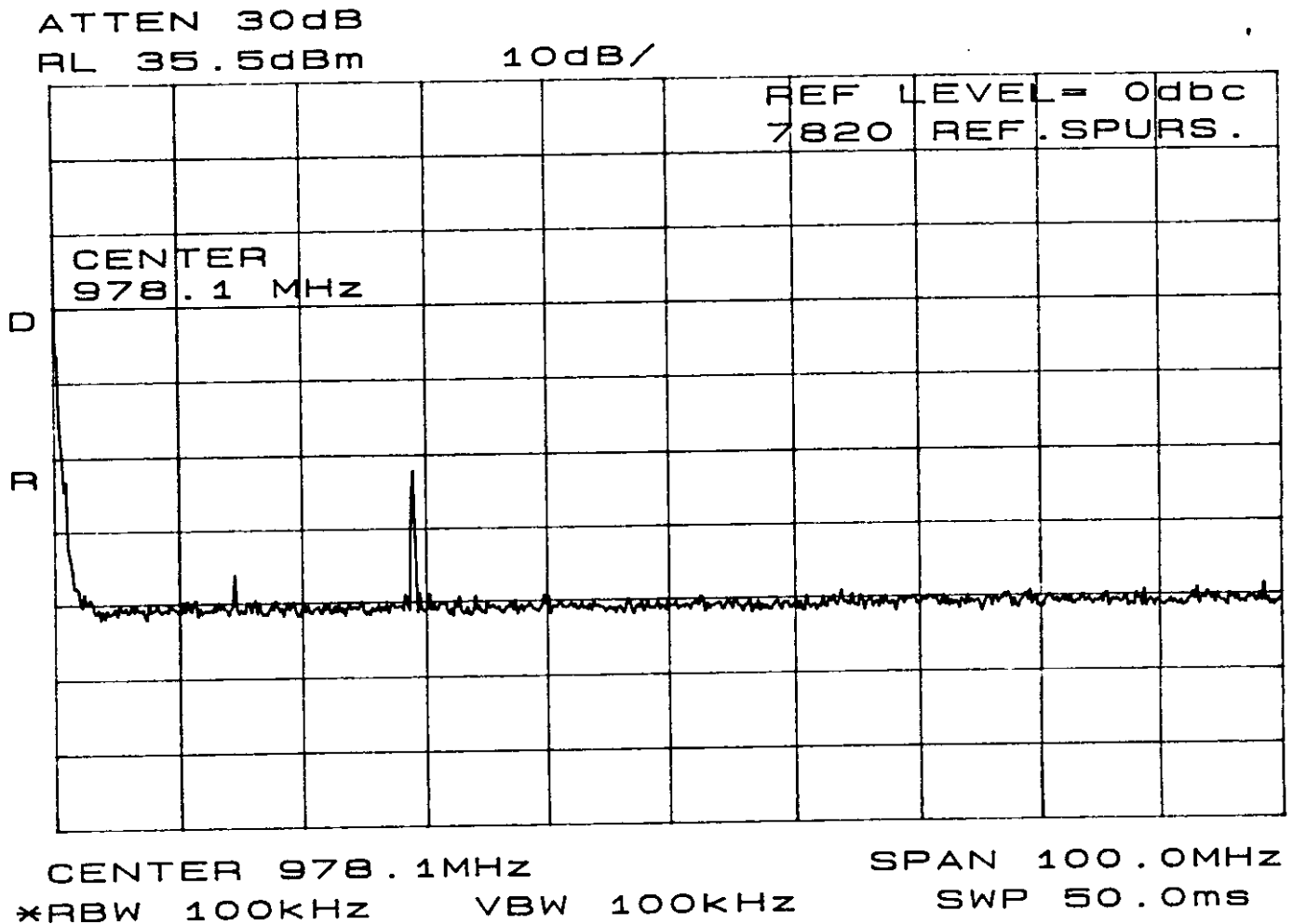
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MODEL NO.	7820	SERIAL NO.	FCC ID. NO. CFS7820
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NOTES	SPECTRUM ANALYZER IN PEAK HOLD		



ALARM DEVICE MANUFACTURING COMPANY
160 EILEEN WAY SYOSSET, N.Y. 11791

TABULAR DATA SHEET

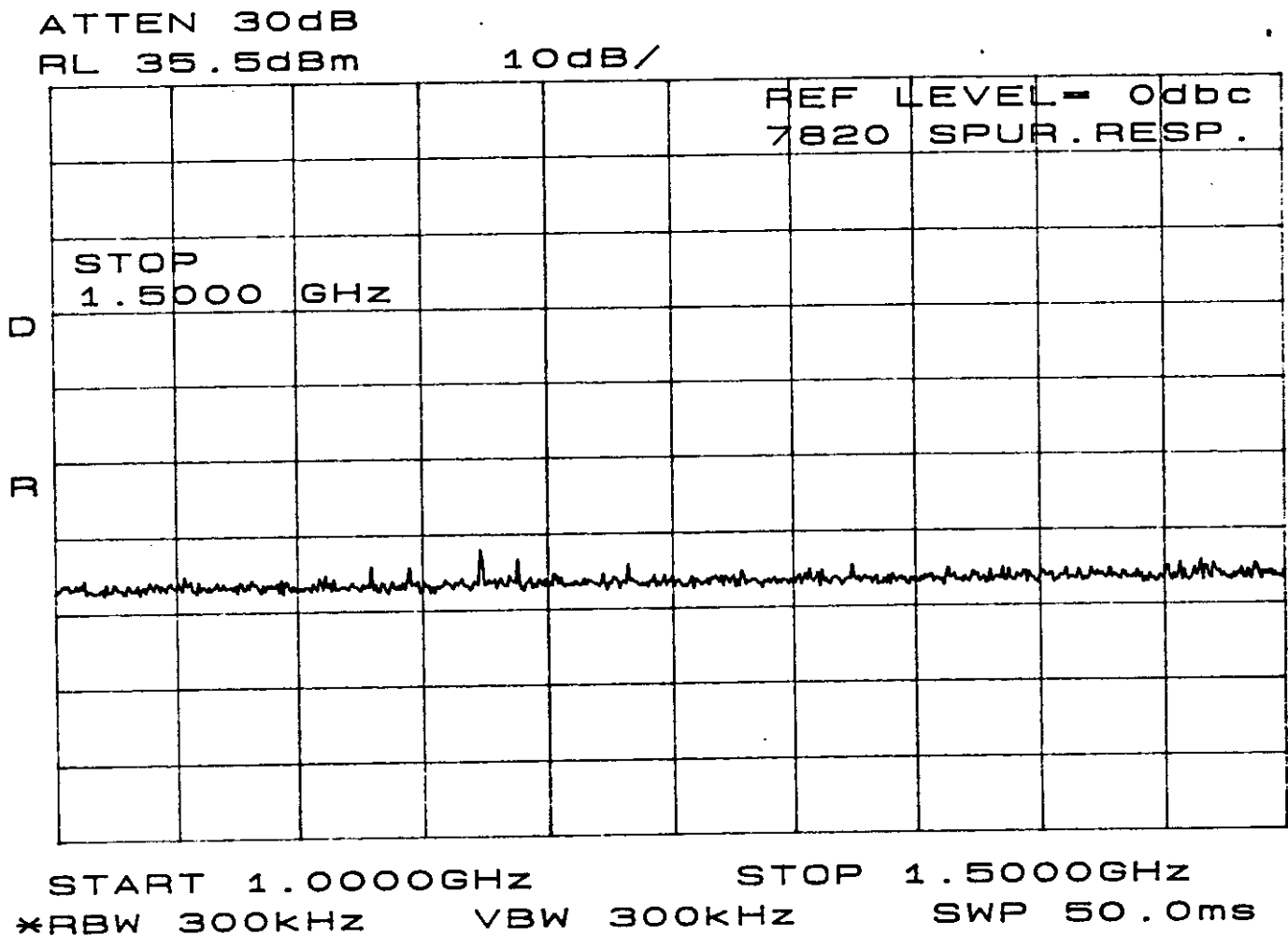
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TECHNICIAN	T.MOTT	DATE	11/13/98
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TECHNICIAN	T.MOTT	DATE	11/13/98
NOTES	SPECTRUM ANALYZER IN PEAK HOLD		



ALARM DEVICE MANUFACTURING COMPANY
160 EILEEN WAY SYOSSET, N.Y. 11791

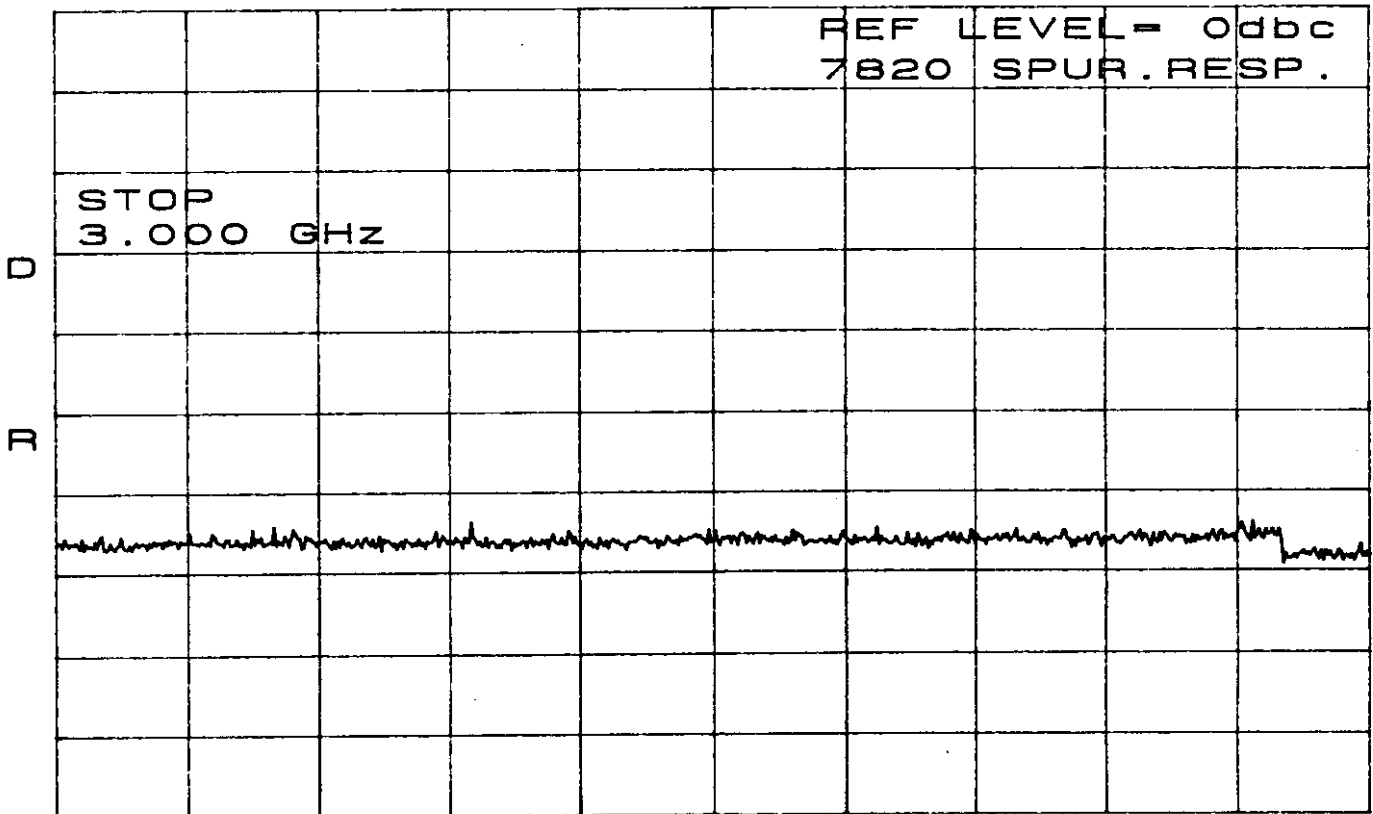
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MODEL NO.	7820	SERIAL NO.	FCC ID. NO. CFS7820
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OPERATING MODE	POWER ON, TRANSMITTING		
TECHNICIAN	T.MOTT	DATE	11/13/98
NOTES	SPECTRUM ANALYZER IN PEAK HOLD		

ATTEN 30dB

RL 35.5dBm

10dB/



START 1.500GHZ STOP 3.000GHZ
*RBW 300KHZ VBW 300KHZ SWP 50.0ms

ALARM DEVICE MANUFACTURING COMPANY
160 EILEEN WAY SYOSSET, N.Y. 11791

TABULAR DATA SHEET

TEST METHOD

SPURIOUS EMISSIONS AT ANTENNA TERMINALS

TEST SAMPLE

INTEGRATED RADIO TRANSMITTER

MODEL NO.

7820

SERIAL NO.

FCC ID. NO. CFS7820

TEST
SPECIFICATION

FCC RULES AND REGULATIONS, PART 101

PARAGRAPH

2.991

OPERATING
MODE

POWER ON, TRANSMITTING

TECHNICIAN

T.MOTT

DATE

11/13/98

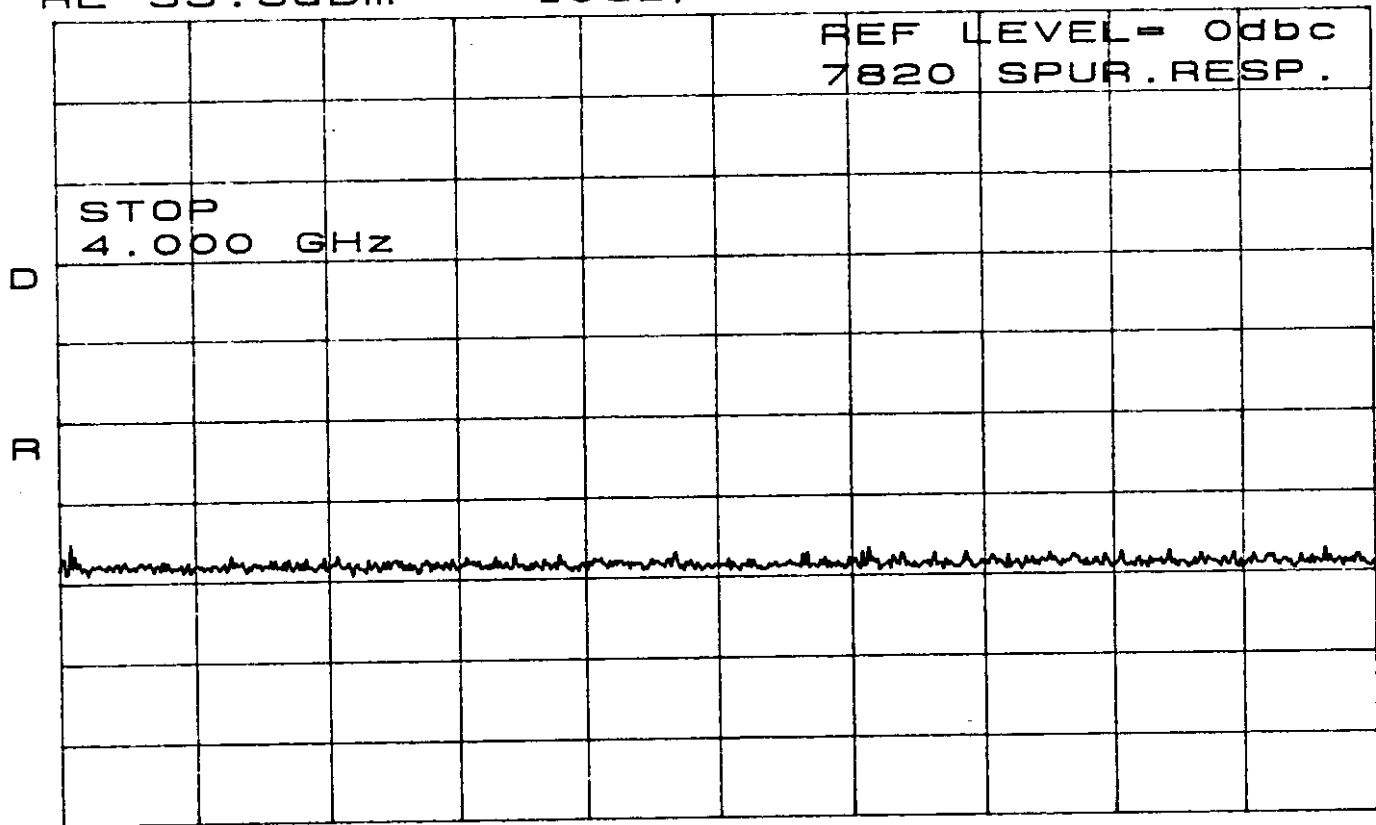
NOTES

SPECTRUM ANALYZER IN PEAK HOLD

ATTEN 30dB

RL 35.5dBm

10dB/



START 3.000GHz

STOP 4.000GHz

*RBW 300kHz

VBW 300kHz

SWP 50.0ms

ALARM DEVICE MANUFACTURING COMPANY

160 EILEEN WAY SYOSSET, N.Y. 11791

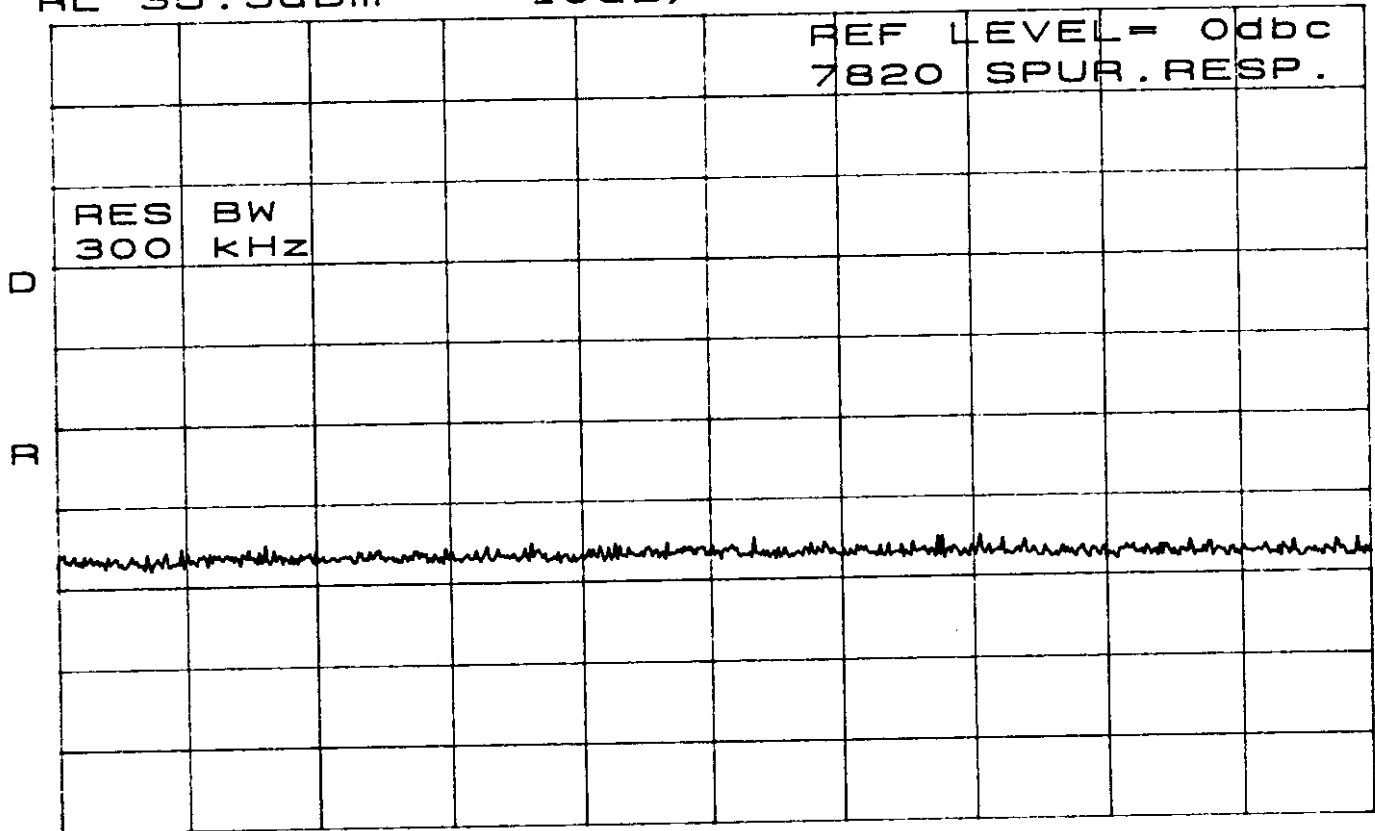
TABULAR DATA SHEET

TEST METHOD	SPURIOUS EMISSIONS AT ANTENNA TERMINALS		
TEST SAMPLE	INTEGRATED RADIO TRANSMITTER		
MODEL NO.	7820	SERIAL NO.	FCC ID. NO. CFS7820
TEST SPECIFICATION	FCC RULES AND REGULATIONS , PART 101	PARAGRAPH	2.991
OPERATING MODE	POWER ON, TRANSMITTING		
TECHNICIAN	T.MOTT	DATE	11/13/98
NOTES	SPECTRUM ANALYZER IN PEAK HOLD		

ATTEN 30dB

RL 35.5dBm

10dB/



START 6.000GHZ

STOP 8.000GHZ

*RBW 300KHZ

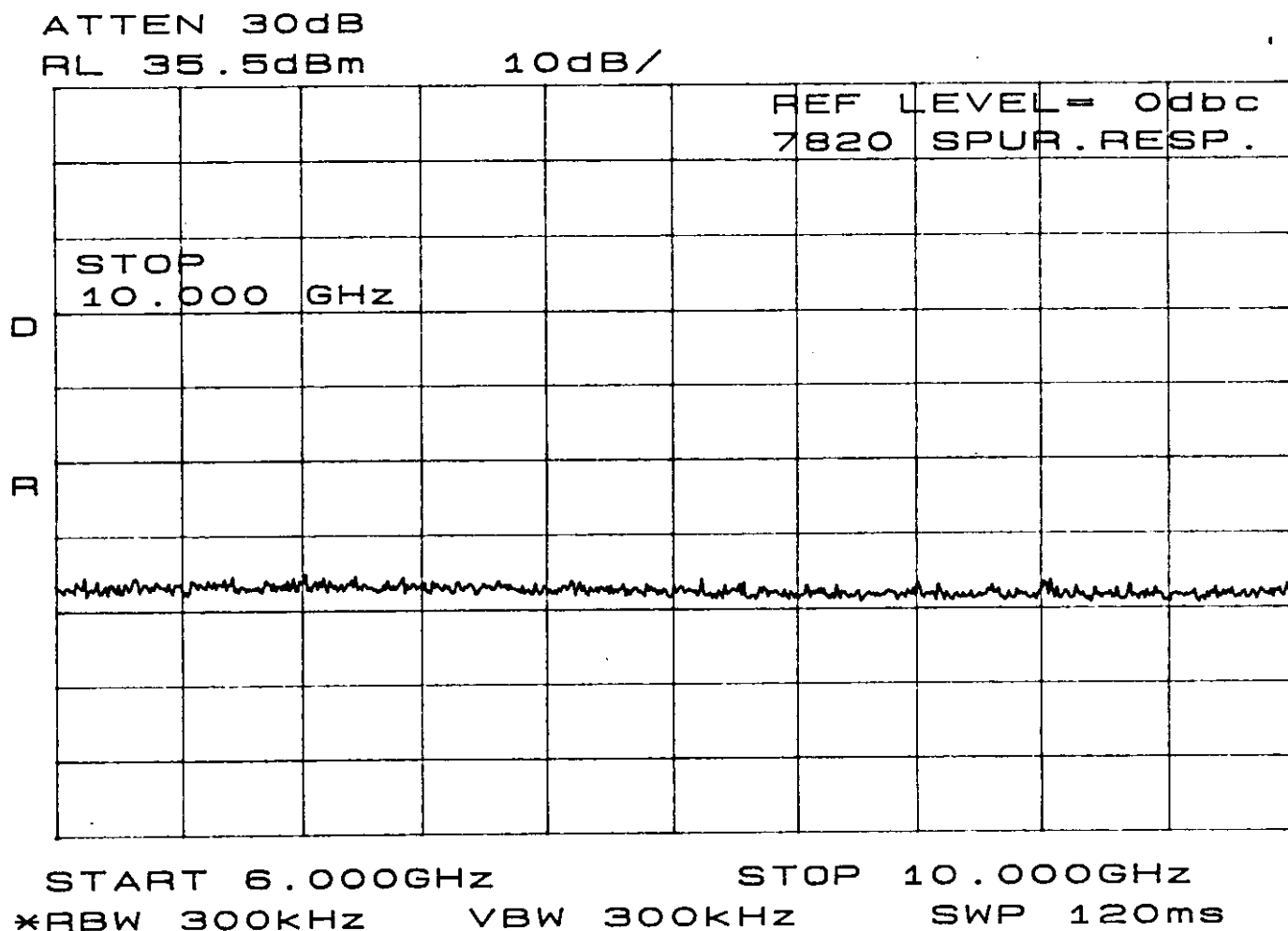
VBW 300KHZ

SWP 56.0ms

ALARM DEVICE MANUFACTURING COMPANY
160 EILEEN WAY SYOSSET, N.Y. 11791

TABULAR DATA SHEET

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MODEL NO.	7820	SERIAL NO.	FCC ID. NO. CFS7820
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TECHNICIAN	T.MOTT	DATE	11/13/98
NOTES	SPECTRUM ANALYZER IN PEAK HOLD		



ALARM DEVICE MANUFACTURING COMPANY
160 EILEEN WAY SYOSSET, NY 11791

FCC PART 101 TEST EQUIPMENT LIST

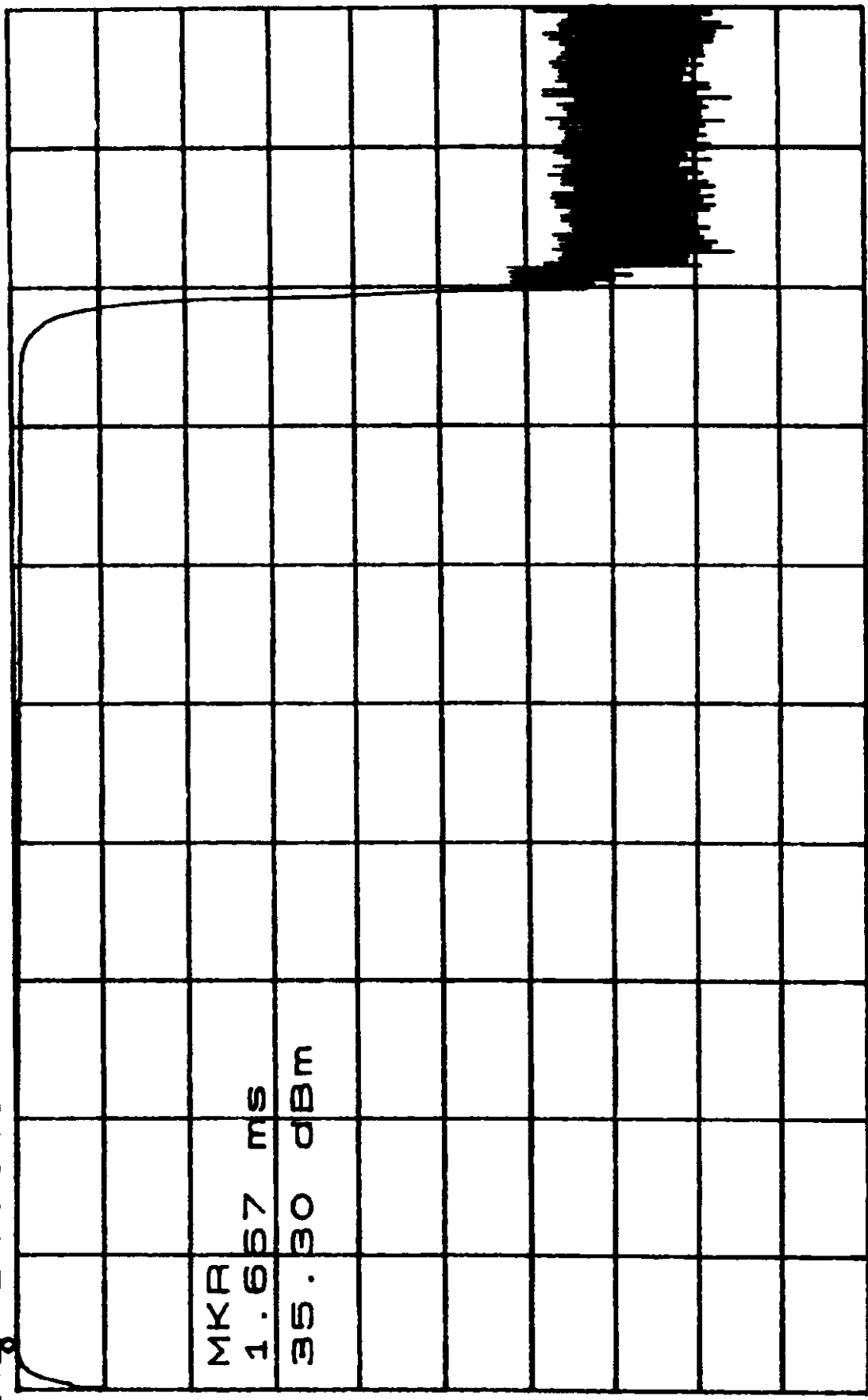
MODEL	EQUIPMENT TYPE	MANUFACTURER	FREQUENCY RANGE	SERIAL #	DATE CALIBRATED	DATE DUE CALIBRATION
8563E	SPECTRUM ANALYZER	HEWLETT PACKARD	30HZ - 26.5GHZ	3246A00232	1/14/98	1/14/00
4400	PEAK POWER METER	BOONTON	NA	124	4/13/98	4/13/99
56218	POWER SENSOR	BOONTON	0.03GHZ -18GHZ	162	9/30/98	9/30/99
4220	POWER METER	BOONTON	NA	127702BJ	4/16/98	4/16/99
51011	POWER SENSER	BOONTON	100KHZ - 12.4GHZ	24364	4/16/98	4/16/99
58503	GPS TIME STANDARD	HEWLETT PACKARD	10MHZ	3710A00863	GPS LOCKED	
34401	DIGITAL MULTIMETER	HEWLETT PACKARD	NA	US36061737	8/27/98	8/27/99
53310A	MODULATION DOMAIN ANALYZER	HEWLETT PACKARD	10HZ - 2.5GHZ	3121A00763	CALIBRATED @ USE	
51	DIGITAL THERMOMETER	FLUKE	NA	7104181	8/17/98	8/17/99
JR	TEMPERATURE CHAMBER	TENNEY	NA	11271-164	CALIBRATED @ USE	
23-10-34	ATTENUATOR	WEINSCHEL	DC - 18GHZ	AM6072	CALIBRATED @ USE	
23-10-34	ATTENUATOR	WEINSCHEL	DC - 18GHZ	AM6071	CALIBRATED @ USE	
8657A	SIGNAL GENERATOR	HEWLETT PACKARD	0.1 - 1040MHZ	2929A00990	CALIBRATED @ USE	
8672A	SIGNAL GENERATOR	HEWLETT PACKARD	2 - 18GHZ	2311A02895	CALIBRATED @ USE	
HD15N	HIGH PASS FILTER	MICROLAB/FXR	1.5 - 3.0 GHZ	NA	CALIBRATED @ USE	
HD20N	HIGH PASS FILTER	MICROLAB/FXR	2.0 - 4.0 GHZ	NA	CALIBRATED @ USE	
HD40N	HIGH PASS FILTER	MICROLAB/FXR	4.0 - 8.0 GHZ	NA	CALIBRATED @ USE	
HD60N	HIGH PASS FILTER	MICROLAB/FXR	6.0 -12.0 GHZ	NA	CALIBRATED @ USE	
RG60	DOUBLE RIDGED GUIDE ANTENNA	ELECTRO-METRICS	1 - 18GHZ	6127	7/24/98	7/24/99
	DIPOLE ANTENNAS	ROBERTS	30 - 1000MHZ	111	12/3/97	12/3/98
SAS200-510	LOG PERIODIC ANTENNA	A.H.SYSTEMS	300 - 1800MHZ	365	6/29/98	6/29/99

7020 17MAR99 ADEMCO

Peak Power RF Envelope, for
Reference level.

ATTE 30dB MKR 35.30dBm

RL 35.30dBm 1.667ms



CENTER 928.237500MHZ SPAN 0HZ
*RBW 1.0MHZ VBW 1.0MHZ SWP 50.0ms

FIG. 1: RF ENVELOPE PEAK POWER MEASUREMENT

17-Mar-99
18:22:41

MEASURE

☐ Cursors
☐ Parameters

☐ 2 MS
100 MV

2 MS
1 10 MV DC ☒
2 .1 V DC ☒
3 50 MV DC
4 10 MV DC

BWL ← 5.2 MS



1 DC 2.000 V

2.5 MS/s

☐ STOPPED

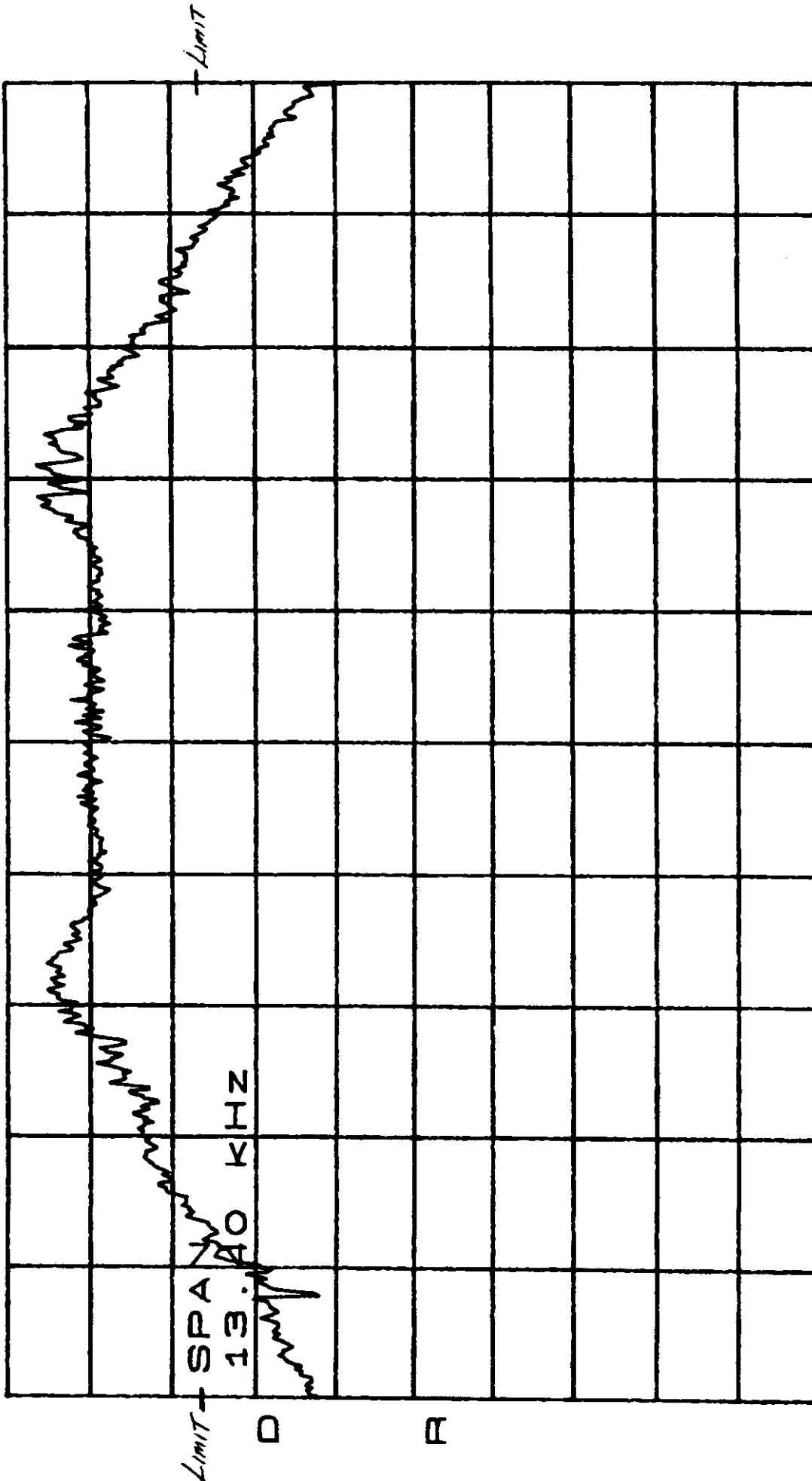
7820 MODULATING WAVE FORM (TYPICAL)

MARCH 17, 1999 ADEMCO

FIG. 2: PORTION OF PSEUDO RANDOM MODULATING WAVEFORM

7820 17MAR99 ADGEMCO

1008/



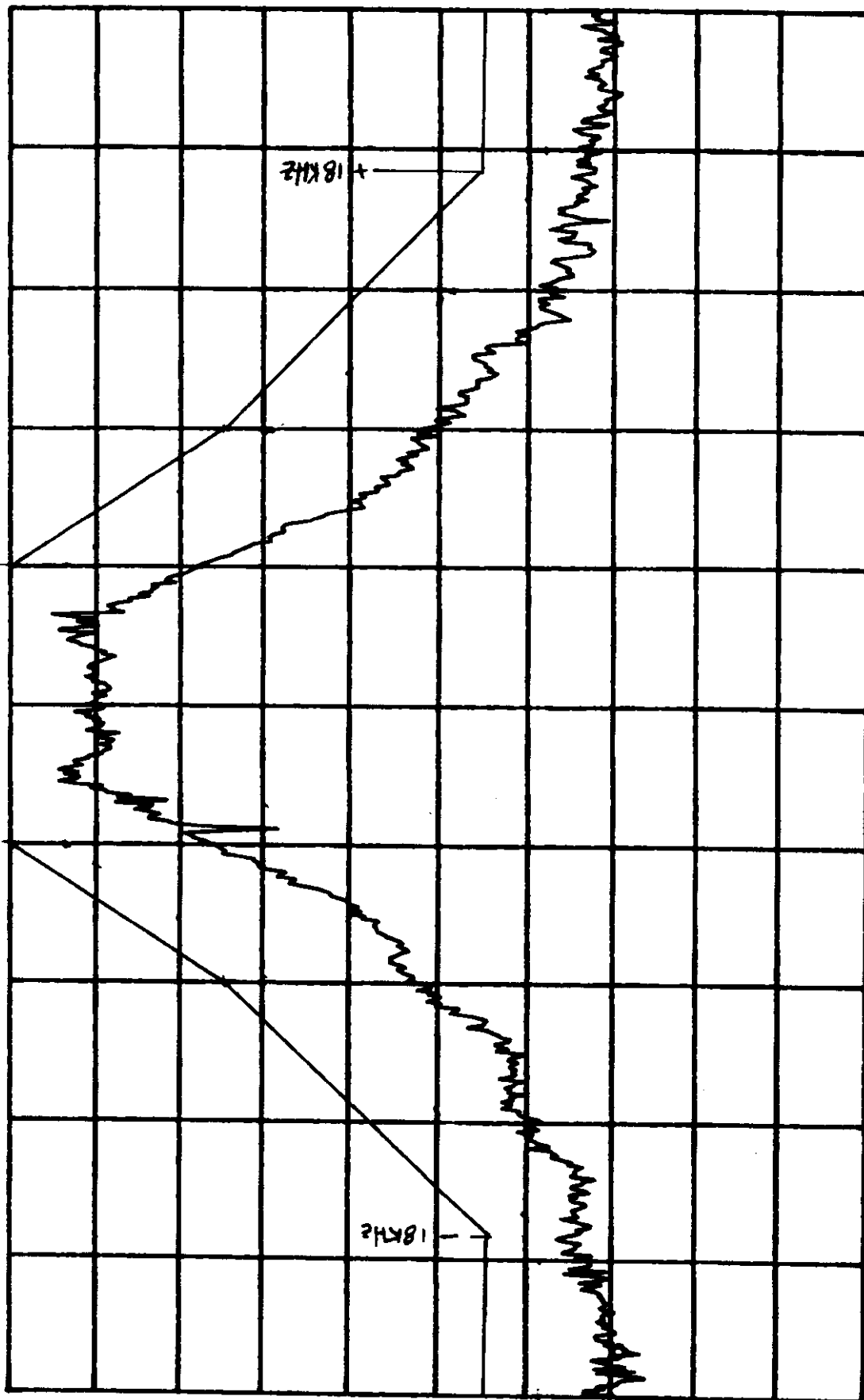
CENTER 928. 23750MHZ
*RBW 1. 0KHZ *VBW 100HZ

FIG. 3: OCCUPIED BANDWIDTH

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Detector: Peak Hold.

ATTEN 30dB RL 35.3dBm MKR -36.70dBm 928.21417MHZ



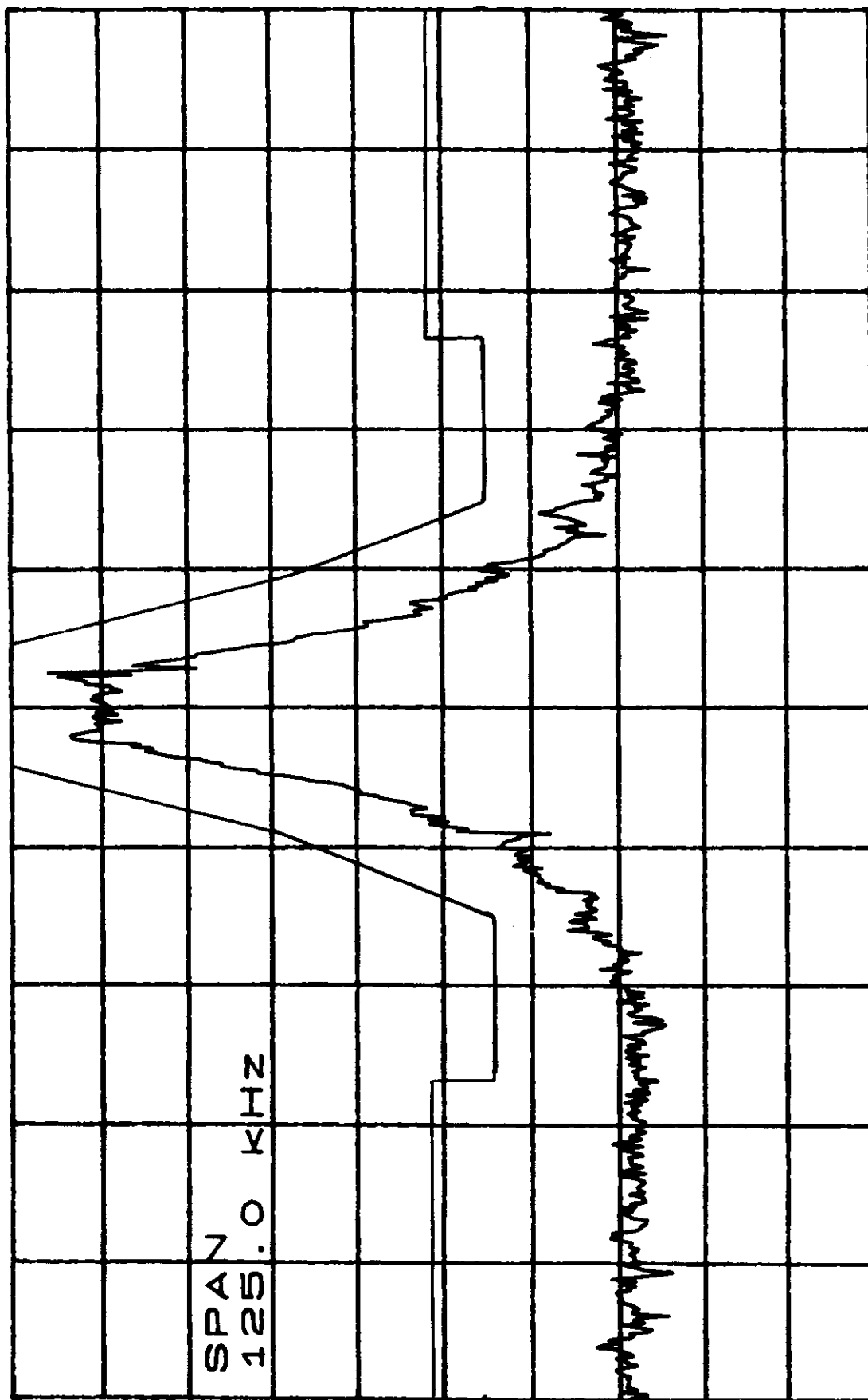
CENTER 928.23750MHZ SPAN 50.00KHZ
 *RBW 1.0KHZ *VBW 100HZ SWP 1.30sec
 FIG. 4: DIGITAL SPECTRAL MASK COMPLIANCE (+/- 25 KHz OFF CARRIER)

LIMIT AT ± 62.5 KHz
 $43 + 5.3 = 48.3$

Detector: Peak hold

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ATTEN 30dB
 RL 35.3dBm
 10dB/



CENTER 928.2375MHz
 *RBW 1.0KHz *VBW 100Hz
 SPAN 125.0KHz SWP 3.20sec
 (+/- 62.5 KHz OFF CARRIER)

FIG. 5: DIGITAL SPECTRAL MASK COMPLIANCE