

EXHIBIT H

Paragraph 2.983(e)

Test Data and Measurement Procedures



Retlif Testing Laboratories

Test Report Number R-8034-2
FCC ID: CCRH32M

EXHIBIT H

Paragraph 2.985(a)

Effective Radiated Power (Power Output)



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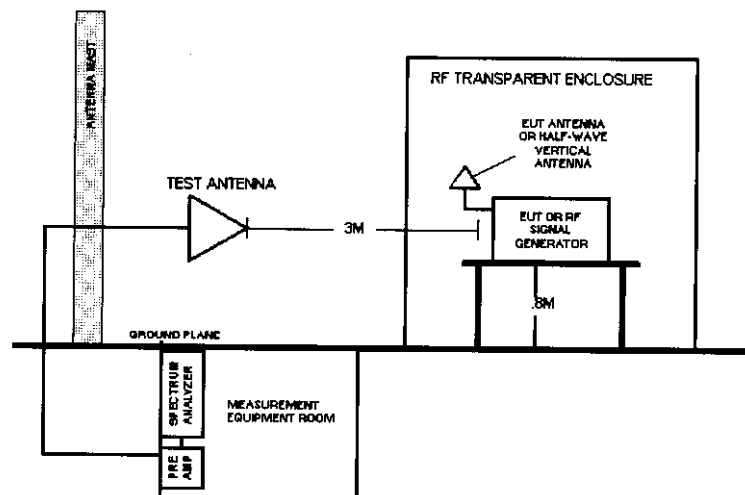
Test Report Number R-8034-2
FCC ID: CCRH32M

EFFECTIVE RADIATED POWER (POWER OUTPUT) (Para. 2.985(a))

A. Measurement Procedure:

The transmitter under test was placed on an 80cm high turntable located on an Open Air Test Site (OATS). The antenna of the transmitter under test was vertically polarized. A dipole antenna (also vertically polarized) was placed 3 Meters away. The dipole antenna was raised and lowered and the turntable rotated until the maximum field strength was measured. The transmitter under test was then removed and was replaced with a dipole antenna and signal generator. The output of the signal generator was then adjusted until the field strength matched that of the transmitter under test. The input of the dipole from the signal generator was then measured and this was the level determined to be the effective radiated power. This test was performed on the lower and upper areas of the device's operating frequency range.

Setup of the test is shown below:



B. Test Results:

The results for the above test are shown of the following single data sheet.



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Test Report Number R-8034-2
FCC ID: CCRH32M

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	Retlif Job Number R-8034-2

EXHIBIT H

Paragraph 2.987

Modulation Characteristics



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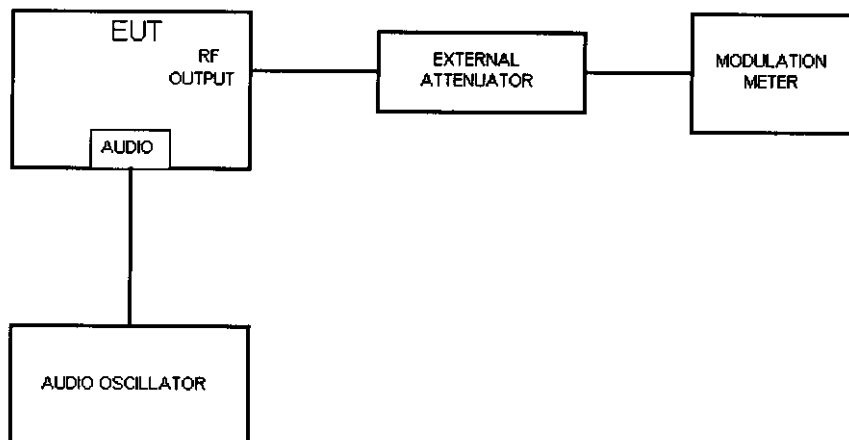
Test Report Number R-8034-2
FCC ID: CCRH32M

MODULATION CHARACTERISTICS (2.987)

A. Measurement Procedure:

An Audio Oscillator was coupled to the Audio Input of the transmitter under test. The RF Output at the antenna terminals was loosely coupled to a modulation meter as shown below. The Audio Input level was adjusted from -60dBm to +10dBm at each frequency listed herein. At each test frequency and level, the FM modulation was recorded.

Setup of the above test is shown below:



C. Test Results:

The results for the above test are shown in the following two data sheets.



Retlif Testing Laboratories

Test Report Number R-8034-2
FCC ID: CCRH32M



Test Method:	MODULATION CHARACTERISTICS, Para 2.987						
Customer:	Samson Technologies				Job No.	R-8034-2	
Test Sample:	Wireless Handheld Transmitter				FCC ID	CCRH32M	
Model No.:	H32M				Serial No.	N/A	
Operating Mode:	EUT continuously transmitting 803 Mhz signal						
Test Specification:	FCC part 74; Experimental Radio, Auxiliary, Special broadcast and other program distributional services paragraph: 74.861						
Technician:	Dennis Cortes				Date:	April 18, 1999	
Notes:	Level adjustment set at maximum. Temp:23C Humidity:21C						

Audio Frequency	Input Level	Deviation	Deviation Limit		Audio Frequency	Input Level	Deviation	Deviation Limit
Hz	dBm	Khz	Khz		Hz	dBm	Khz	Khz
50	-60	2.1	75.0		2500	-60	2.8	75.0
50	-50	3.3			2500	-50	4.4	
50	-40	5.3			2500	-40	7.2	
50	-30	8.7			2500	-30	12.4	
50	-20	14.6			2500	-20	21.6	
50	-10	24.7			2500	-10	29.5	
50	0	32.7			2500	0	36.3	
50	10	30.0			2500	10	37.1	
100	-60	2.2			5000	-60	4.2	
100	-50	3.4			5000	-50	7.1	
100	-40	5.5			5000	-40	12.0	
100	-30	9.0			5000	-30	21.1	
100	-20	15.1			5000	-20	30.4	
100	-10	24.9			5000	-10	35.2	
100	0	31.0			5000	0	38.3	
100	10	32.5			5000	10	39.6	
500	-60	2.2			10000	-60	8.1	
500	-50	3.4			10000	-50	14.1	
500	-40	5.5			10000	-40	24.6	
500	-30	9.3			10000	-30	36.1	
500	-20	16.1			10000	-20	38.0	
500	-10	25.8			10000	-10	38.3	
500	0	30.1			10000	0	38.0	
500	10	38.2			10000	10	37.4	
1000	-60	2.3			15000	-60	11.2	
1000	-50	3.5			15000	-50	19.5	
1000	-40	5.6			15000	-40	33.8	
1000	-30	9.6			15000	-30	41.8	
1000	-20	16.7			15000	-20	44.5	
1000	-10	26.7			15000	-10	46.5	
1000	0	34.2	V		15000	0	46.2	V
1000	10	37.2	75.0		15000	10	46.0	75.0



Retlif Testing Laboratories

Retlif Job Number R-8034-2

EXHIBIT H

Paragraph 2.989

Occupied Bandwidth



Retlif Testing Laboratories

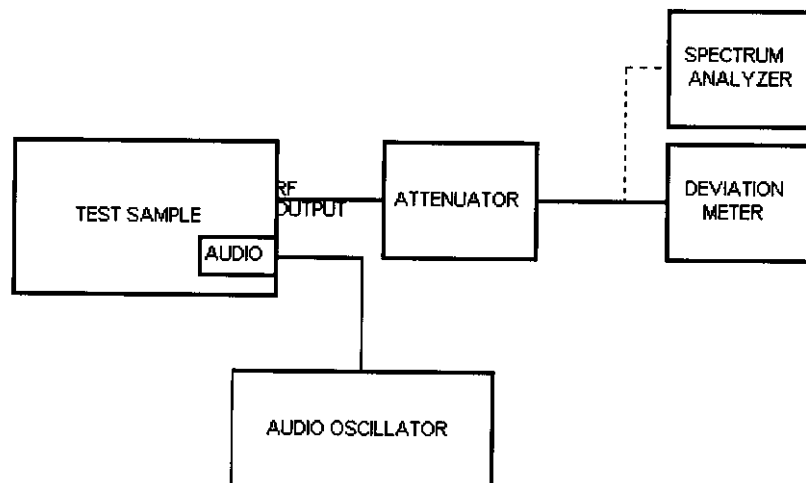
Test Report Number R-8034-2
FCC ID: CCRH32M

OCCUPIED BANDWIDTH (PARA.2.989)

A. Measurement Procedure:

An audio signal was electrically coupled to the audio input terminals of the test sample. The RF output was monitored using a deviation meter. The audio input level was increased to produce 50% modulation. The RF output was then loosely coupled through external attenuators to a spectrum analyzer and the audio level was increased by 16 dB. The occupied bandwidth of the RF carrier, modulated at 50% plus 16 dB, was then measured. The above procedure was performed with the audio input frequencies of 1000 Hz, 2500 Hz and 15 kHz applied to the unit. The modulated signal must be within the template as specified by the applicable paragraph in Part 74. The above was performed at the low and high frequencies.

Setup of the test is shown below:



B. Test Results:

The results for the above test are shown on the following six (6) data sheet.



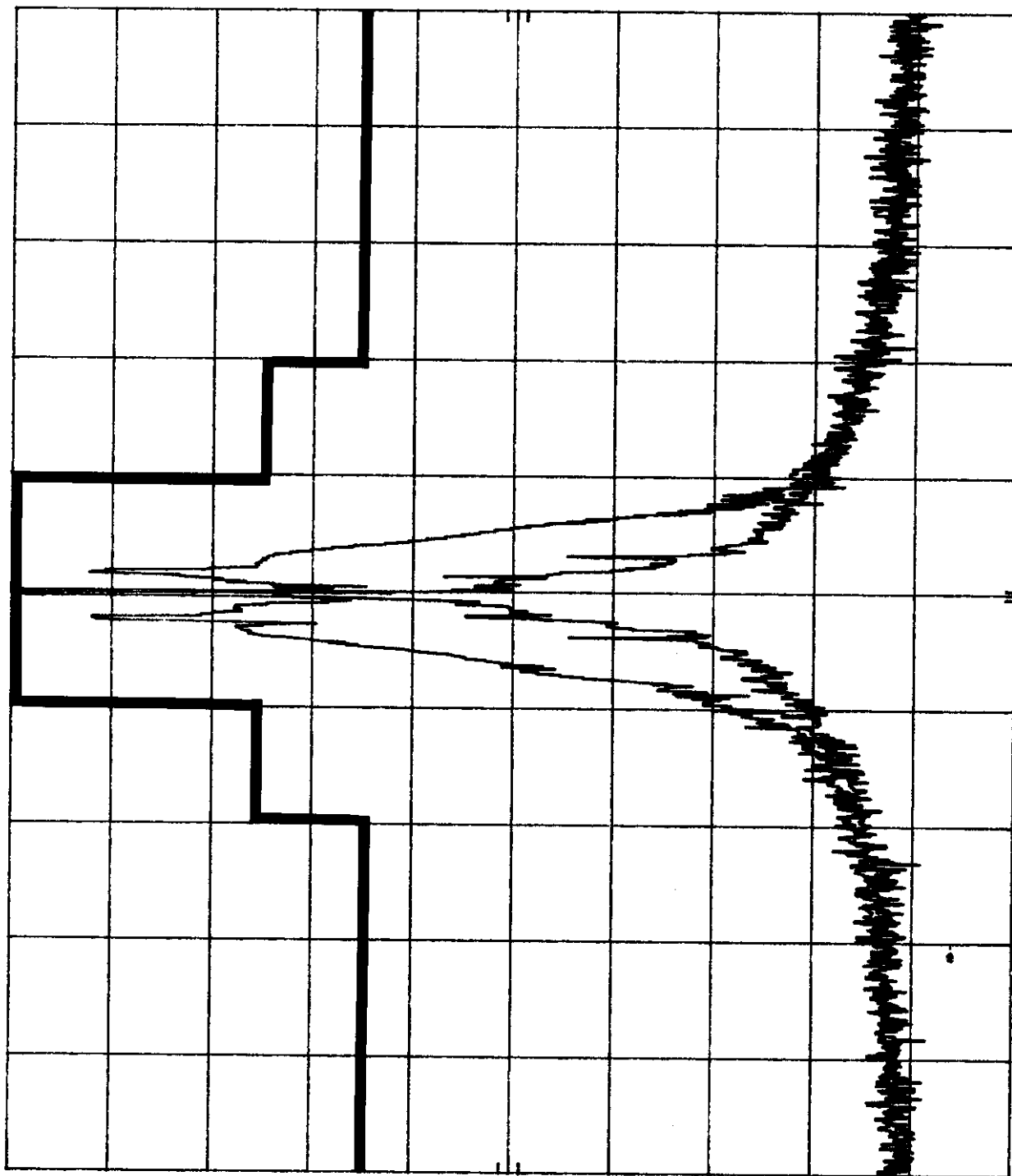
Retlif Testing Laboratories

Test Report Number R-8034-2

FCC ID: CCRH32M

R-8034 SAMSON OCC BW 4/19/99 DC
REF -13.0 dBm ATTEN 10 dB

hp
10 dB/



CENTER 801.12 MHz
RES BW 300 Hz
VBW 1 kHz
SPAN 1.00 MHz
SWP 30.0 sec

Customer:	Samson Technologies
Test Sample:	Wireless Handheld Transmitter <i>T.C.</i>
Model No:	H32M <i>HANDHELD</i> FCC ID: CCRH32M
Test Method:	Occupied Bandwidth FCC 74.861(5)
Notes:	Carrier Frequency: 801.125 Mhz
	Audio input: 1000Hz @ 50% Modulation 16dBm
Date:	April 20, 1999
Tech:	Dennis Cortes <i>DC</i>
Sheet	1 of 6

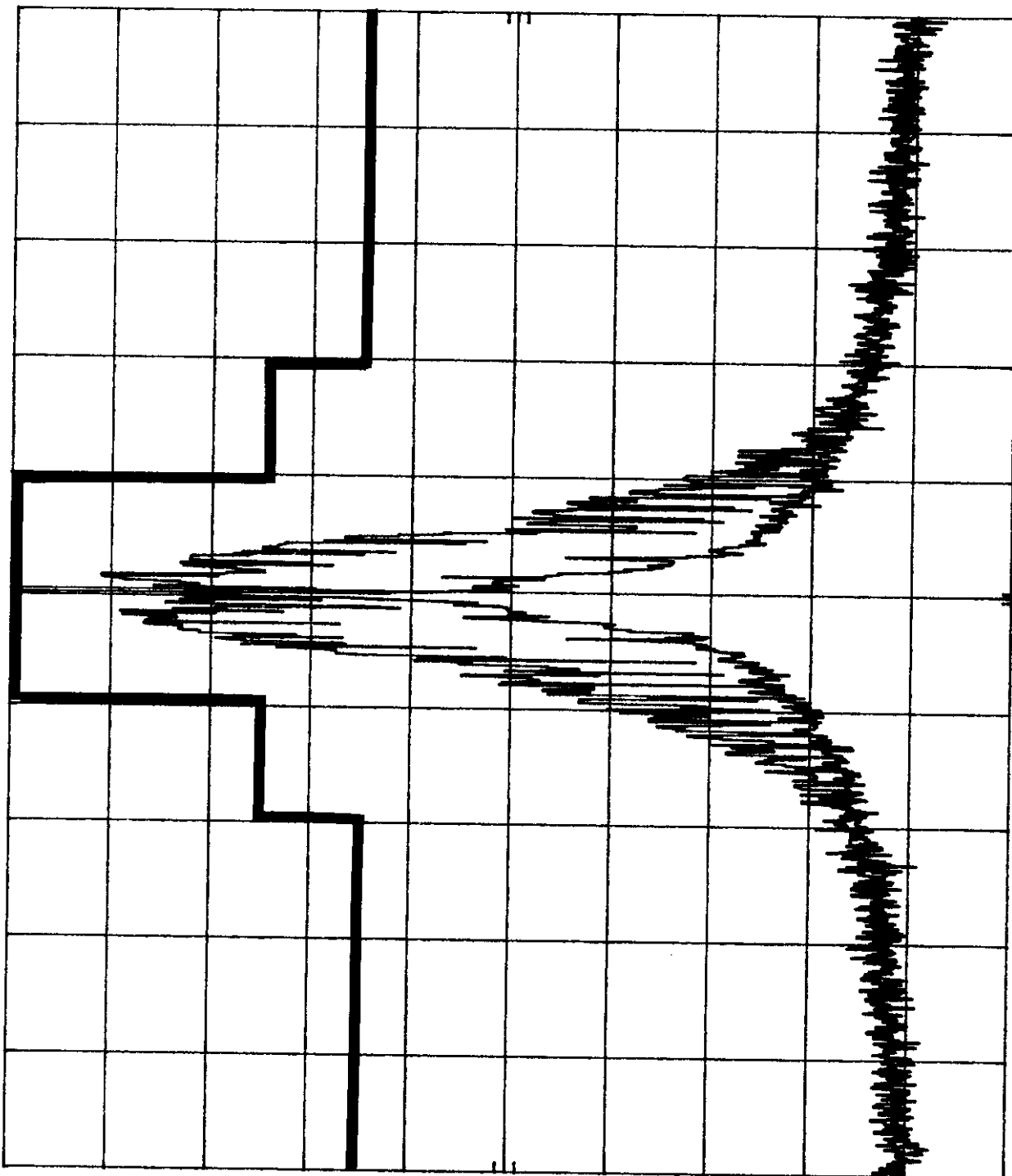


Retlif Testing Laboratories

Report No. R-8034-2

R-8034 SAMSON OCC BW 4/19/99 DC
 REF -13.0 dBm ATTEN 10 dB

hp
 10 dB/



CENTER 801.12 MHz

RES BW 300 Hz

VBW 1 kHz

SPAN 1.00 MHz
 SWP 30.0 sec

Customer:	Samson Technologies				
Test Sample:	Wireless Bluetooth Transmitter <i>T.C.</i>				
Model No:	H32M	FCC ID: CCRH32M			
Test Method:	Occupied Bandwidth FCC 74.861(5)				
Notes:	Carrier Frequency: 801.125 Mhz				
	Audio input: 2500Hz @ 50% Modulation 16dBm				
Date:	April 20, 1999	Tech:	Dennis Cortes	Sheet	2 of 6



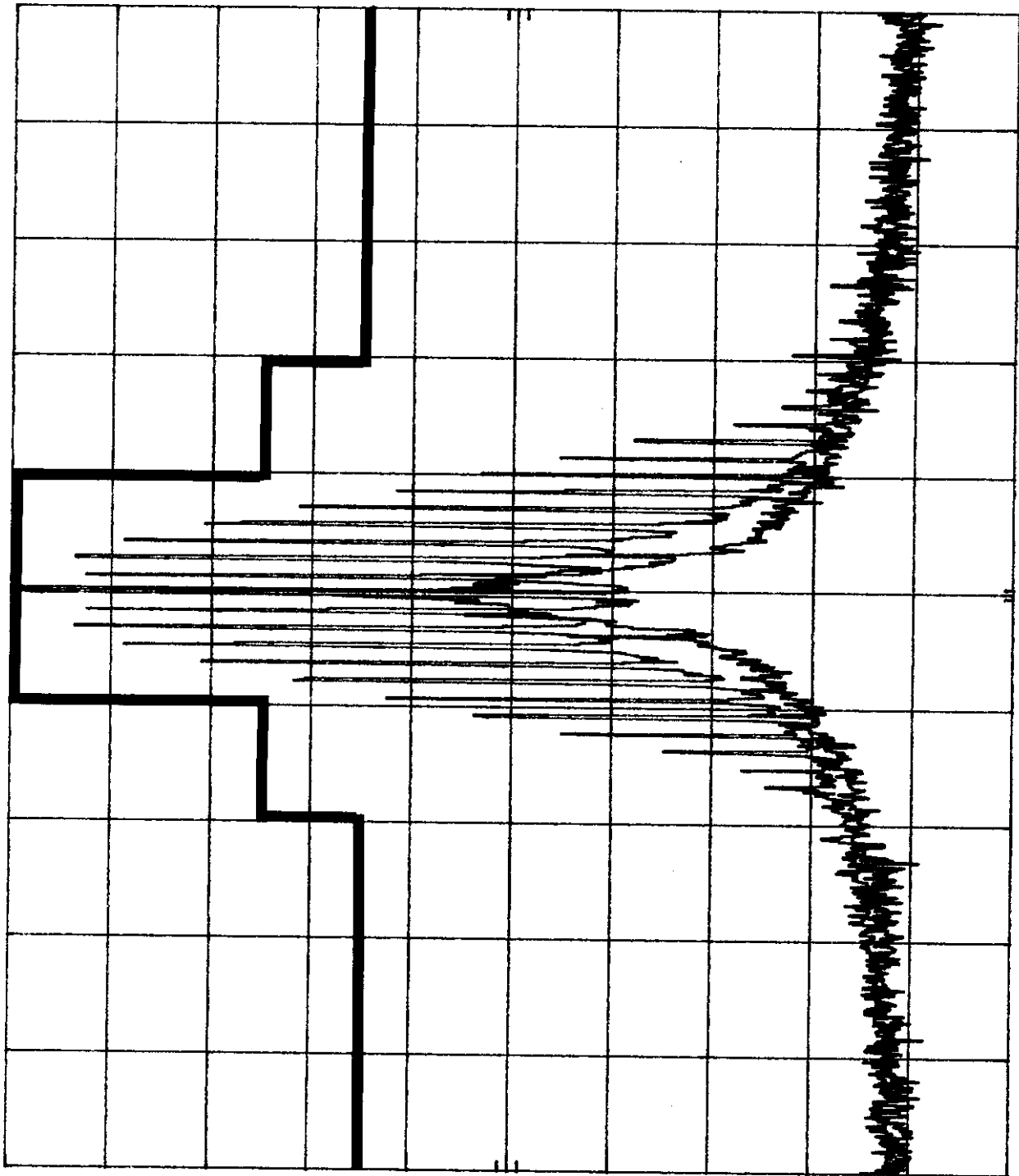
Retlif Testing Laboratories

Report No. R-8034-2

R-8034 SAMSON OCC BW 4/19/99 DC
 REF -13.0 dBm ATTEN 10 dB

hp

10 dB/



CENTER 801.12 MHz
 RES BW 300 Hz
 VBW 1 kHz
 SPAN 1.00 MHz
 SWP 30.0 sec

Customer:	Samson Technologies
Test Sample:	Wireless Setpeak Transmitter <i>T.C.</i>
Model No:	H32M HANDHELD FCC ID: CCRH32M
Test Method:	Occupied Bandwidth FCC 74.861(5)
Notes:	Carrier Frequency: 801.125 Mhz
	Audio input: 15000Hz @ 50% Modulation 16dBm
Date:	April 20, 1999
Tech:	Dennis Cortes <i>DC</i>
Sheet	3 of 6



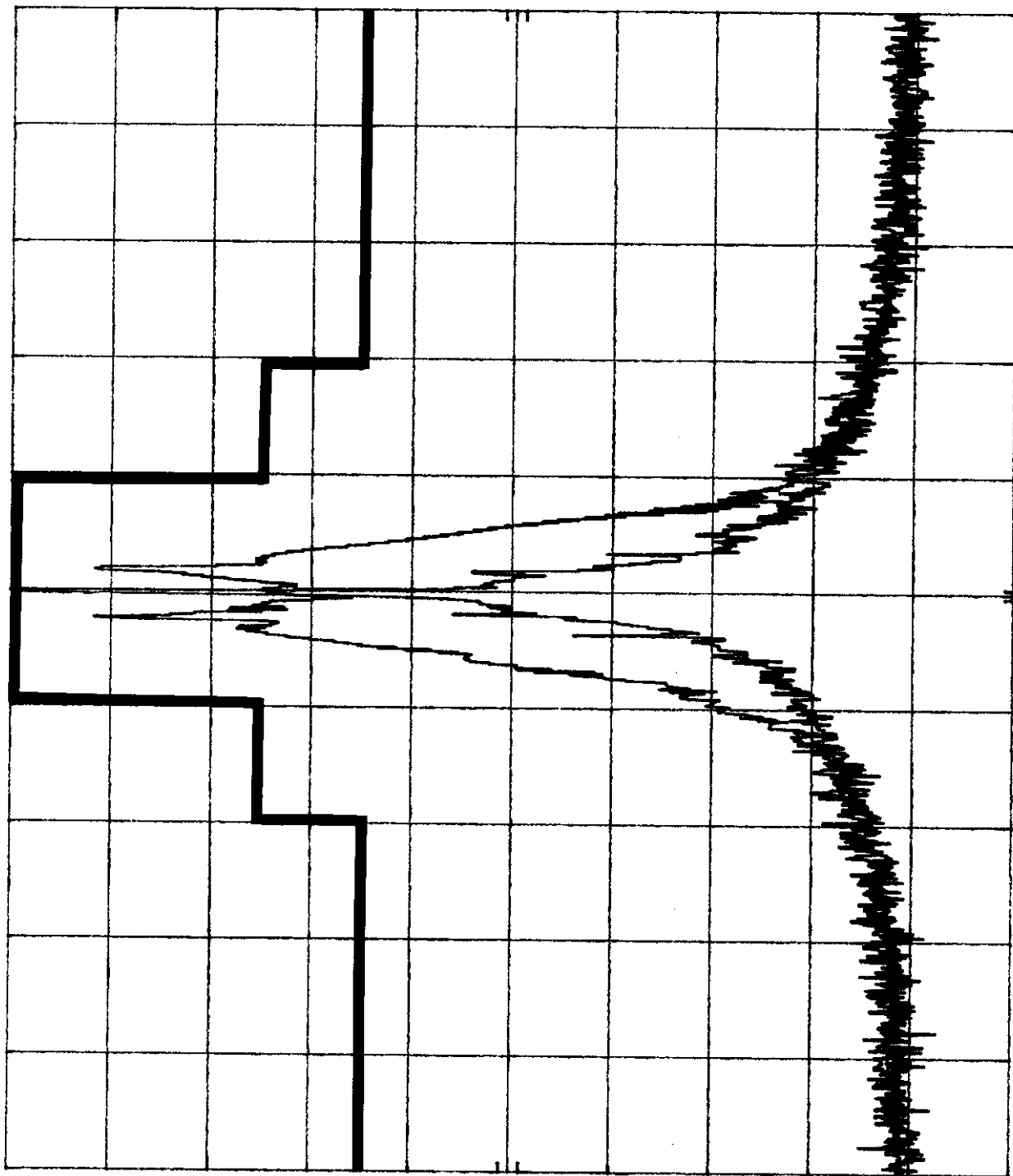
Retlif Testing Laboratories

Report No. R-8034-2

R-8034 SAMSON OCC BW 4/19/99 DC
 REF -13.0 dBm ATTEN 10 dB

hp

10 dB/



CENTER 805.00 MHz
 RES BW 300 Hz
 SPAN 1.00 MHz
 SWP 30.0 sec
 VBW 1 kHz

Customer:	Samson Technologies
Test Sample:	Wireless Beltpack Transmitter <i>TC</i>
Model No:	H32M <i>HANDHELD</i> FCC ID: CCRH32M
Test Method:	Occupied Bandwidth FCC 74.861(5)
Notes:	Carrier Frequency: 805 Mhz
	Audio input: 1000Hz @ 50% Modulation + 16dBm
Date:	April 20, 1999
Tech:	Dennis Cortes <i>4</i>
Sheet	4 of 6



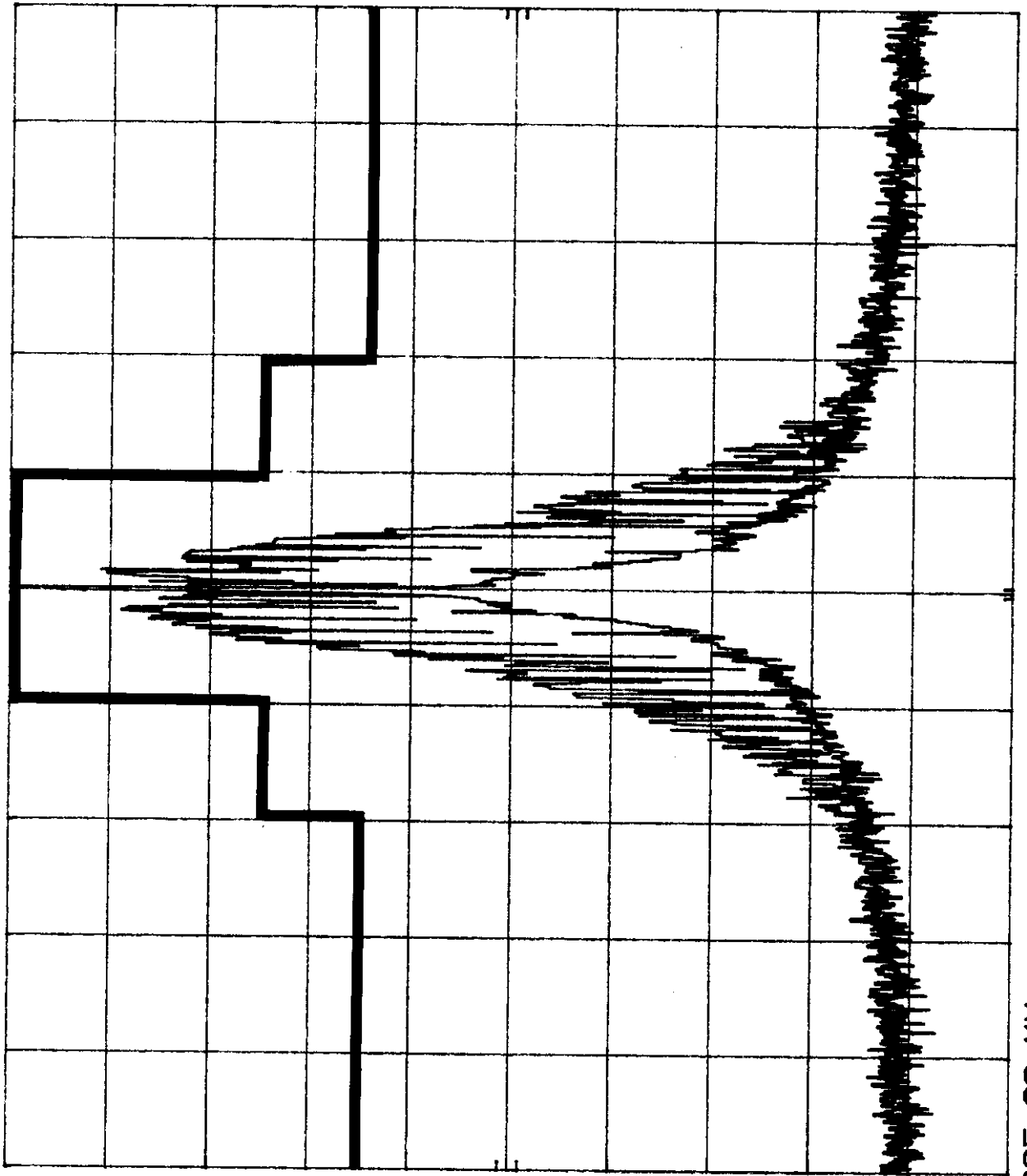
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Report No. R-8034-2

R-8034 SAMSON OCC BW 4/19/99 DC
 REF -13.0 dBm ATTEN 10 dB

hp

10 dB/



SPAN 1.00 MHz
 SWP 30.0 sec

VBW 1 kHz

Hz

CENTER 805.00 MHz
 RES BW 300

Customer:	Samson Technologies				
Test Sample:	Wireless Belt pack Transmitter				
Model No:	H32M	FCC ID: CCRH32M			
Test Method:	Occupied Bandwidth FCC 74.861(5)				
Notes:	Carrier Frequency: 805 Mhz				
	Audio Input: 2500Hz @ 50% Modulation 16dBm				
Date:	April 20, 1999	Tech:	Dennis Cortes	Sheet	5 of 6



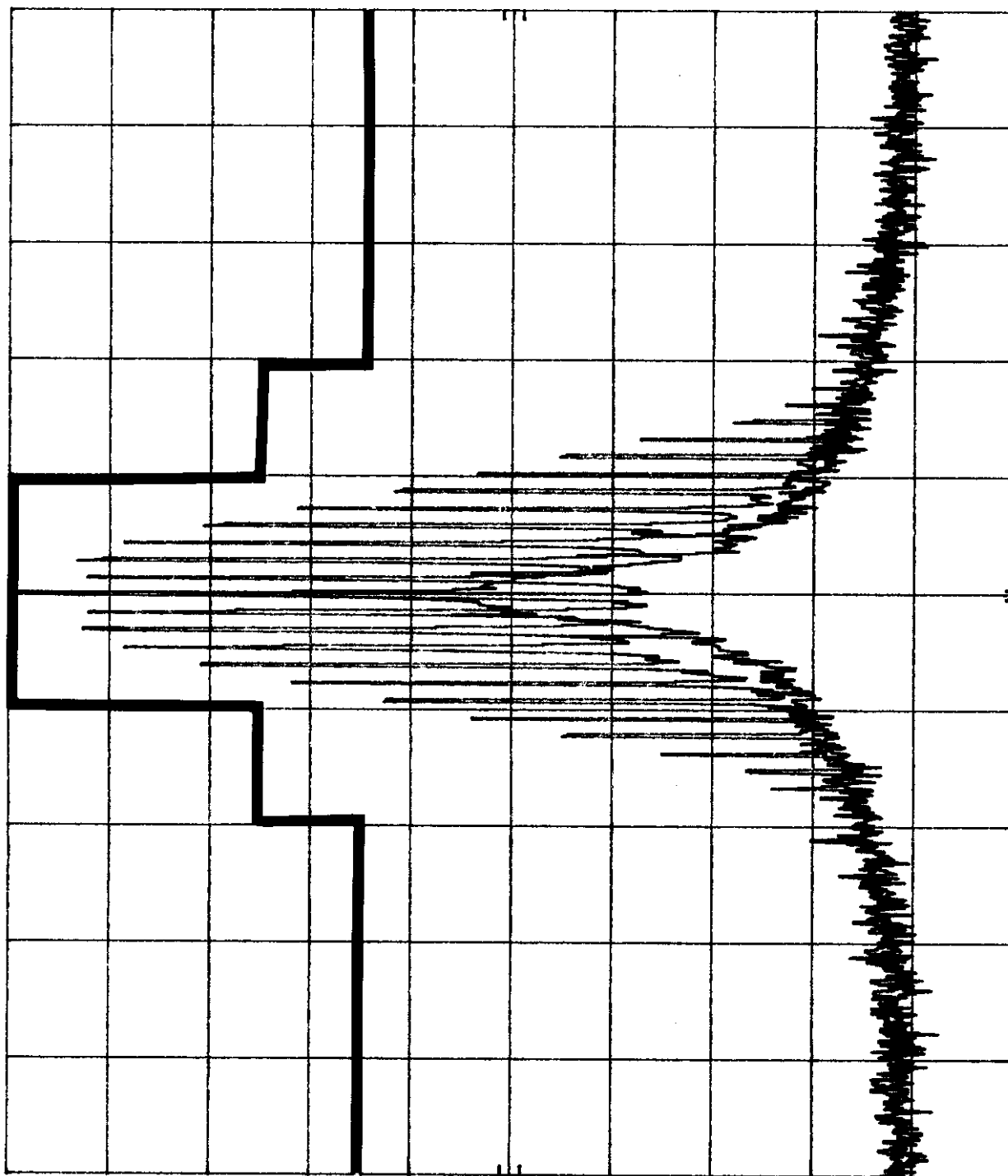
Retlif Testing Laboratories

Report No. R-8034-2

R-8034 SAMSON OCC BW 4/19/99 DC
 REF -13.0 dBm ATTEN 10 dB

hp

10 dB/



CENTER 805.00 MHz
 RES BW 300 Hz
 SPAN 1.00 MHz
 SWP 30.0 sec
 VBW 1 kHz

Customer:	Samson Technologies
Test Sample:	Wireless Beltpack Transmitter
Model No:	H32M HANDHELD FCC ID: CCRH32M
Test Method:	Occupied Bandwidth FCC 74.861(5)
Notes:	Carrier Frequency: 805 Mhz
	Audio input: 15000Hz @ 50% Modulation 16dBm
Date:	April 20, 1999
Tech:	Dennis Cortes
Sheet	6 of 6



Retlif Testing Laboratories

Report No. R-8034-2

EXHIBIT H

Para. 2.993

Field Strength of Spurious Radiation



Retlif Testing Laboratories

Test Report Number R-8034-2
FCC ID: CCRH32M

FIELD STRENGTH OF SPURIOUS RADIATION (PARA 2.993)

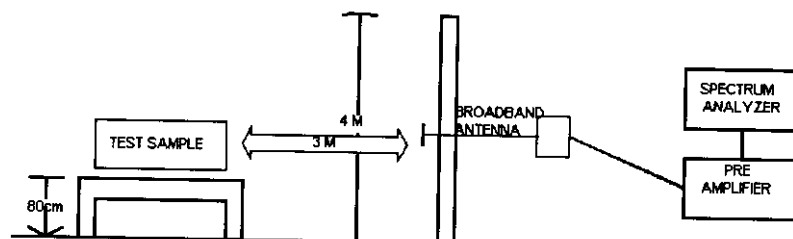
A. Measurement Procedure:

The test sample was then placed on an 80cm high wooden test stand which was located three meters from the test antenna on an FCC listed test site. The frequency range scanned was from the lowest frequency generated by the test sample to its tenth harmonic. In order to maximize the level of each emission observed from the test sample, the broadband antenna was tuned to the frequency of each emission and the test sample was rotated 360 degrees. To further maximize the each emission observed, the test antenna was both horizontally and vertically polarized, and then was raised and lowered from one to four meters from the ground plane. The limits for all of the spurious emissions was calculated utilizing the measured output power and the following equation:

$$\text{Limit } \langle \text{dB}\mu\text{V/M} \rangle = 20 \log [\{ (49.2 \times P_T)^{1/3} \} \times 10^6] - (43 + 10 \log P_T)$$

The above procedure was performed at the lower and upper frequencies of the device's operating frequency range.

Setup of the test is shown below:



B. Test Results:

The results for the above test are shown on the following two (2) data sheets.



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Test Report Number R-8034-2
FCC ID: CCRH32M



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Retlif Job Number R-8034-2

EXHIBIT H

Para. 2.995

Frequency Stability



Retlif Testing Laboratories

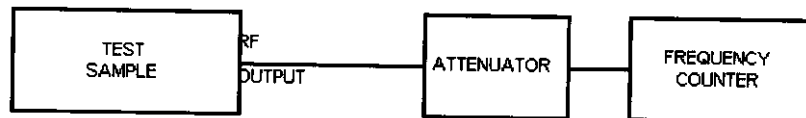
Test Report Number R-8034-2
FCC ID: CCRH32M

FREQUENCY STABILITY MEASUREMENTS (PARA 2.995)

A. Measurement Procedure (Frequency vs. Voltage):

The RF output of the test sample was coupled to a frequency counter through external attenuation. Using a Variable power supply and voltmeter, the input voltage was varied. Measurements were taken with the device being supplied with 85, 100, 115 percent and at the battery endpoint of its rated input voltage and set to transmit the unmodulated carrier frequency.

Setup of the test is shown below:



B. Test Results:

The results for the above test are shown of the following single data sheet.



Retlif Testing Laboratories

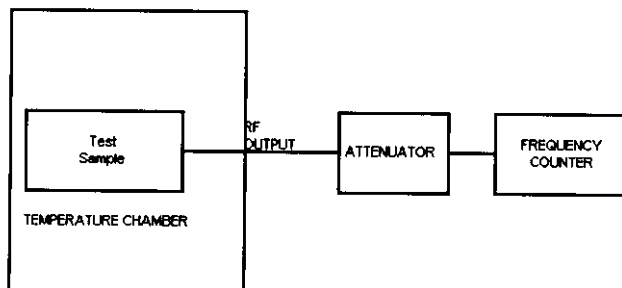
Test Report Number R-8034-2
FCC ID: CCRH32M

FREQUENCY STABILITY MEASUREMENTS (PARA 2.995)

A. Measurement Procedure (Frequency vs. Temperature)

The RF output of the test sample was coupled to a frequency counter through external attenuators. With the counter connected, the test sample was activated and placed into a temperature chamber. The temperature was then programmed to start at -30 degrees Celsius and reach +50 degrees Celsius in 10 degrees increments. Each increment was held for 30 minutes in order to let the test sample stabilize at that temperature.

Setup of the test is shown below:



B. Test Results:

The results for the above test are shown on the following single data sheet.



Retlif Testing Laboratories

Test Report Number R-8034-2
FCC ID: CCRH32M

TEST EQUIPMENT LIST



Retlif Testing Laboratories

Test Report Number R-8034-2
FCC ID: CCRH32M

EQUIPMENT LIST

FCC Part 74

EN	Type	Manufacturer	Frequency Range	Model No.	Cal Date	Due Date
067	Open Area Test Site	Retlif	3 Meter	RNY	8/30/97	8/30/99
128C	Double Ridge Guide	Eaton Corporation	1 GHz - 18 GHz	96001	10/6/98	10/6/99
133	Broadband Pre-Amplifier	Electro-Metrics	10 kHz - 1 GHz, 26dB	BPA-1000	6/22/98	6/22/99
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	3/16/99	9/16/99
141A	Graphics Plotter	Hewlett Packard	N/A	7470A	3/5/99	3/5/00
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	3/16/99	9/16/99
159	Frequency Counter	Leader	10 Hz - 1 GHz	LDC-825	9/18/98	9/18/99
206B	6.0 dB Attenuator	Texscan	0 - 1.0 GHz	FP-50 - 6 dB	6/22/98	6/22/99
302	Temperature Chamber	Tenney Engineering	N/A	TJR	11/23/98	11/23/99
379D	H.P. Filter	Microlab/FXR	N/A	2GHz H.P Filter	6/17/98	6/17/99
413	Temp/Altitude Chamber	Thermotron	0 - 100,000 ft	F-4-CHA-1-1	1/18/99	1/18/00
419	Modulation Meter	Boonton Electronics	.01 - 1.2 GHz	82AD	4/30/99	4/30/00
451C	Tuned Dipole Antenna	Empire Devices	400 - 1000 MHz	DM-105-T3	8/1/97	8/1/00
488	HP Test Oscillator	Hewlett Packard	10 Hz - 10 MHz	654A	4/30/99	4/30/00
523	Biconilog	Electro-Mechanics	26 - 2000 MHz	3142B	10/22/98	4/22/00
534	DC Power Supply	Lambda	N/A	DV-1827-2	5/11/98	5/11/99
543	Preamplifier	Hewlett Packard	1.0 GHz - 26.5 GHz	8449B	9/3/98	9/3/99
544	EMC Analyzer	Hewlett Packard	9.0 kHz - 1.8 GHz	8591EM	8/6/98	8/6/99



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