

11/12/19
Powerwave Technologies
200 W

Occupied Bandwidth
TDMA
FCC 2.989 & 22.917
RSS-131, 6.2

SG1 = 6.04 dBm
f₀ = 869 MHz

10 dB/
REF 61.1 dBm ATTEN 20 dB

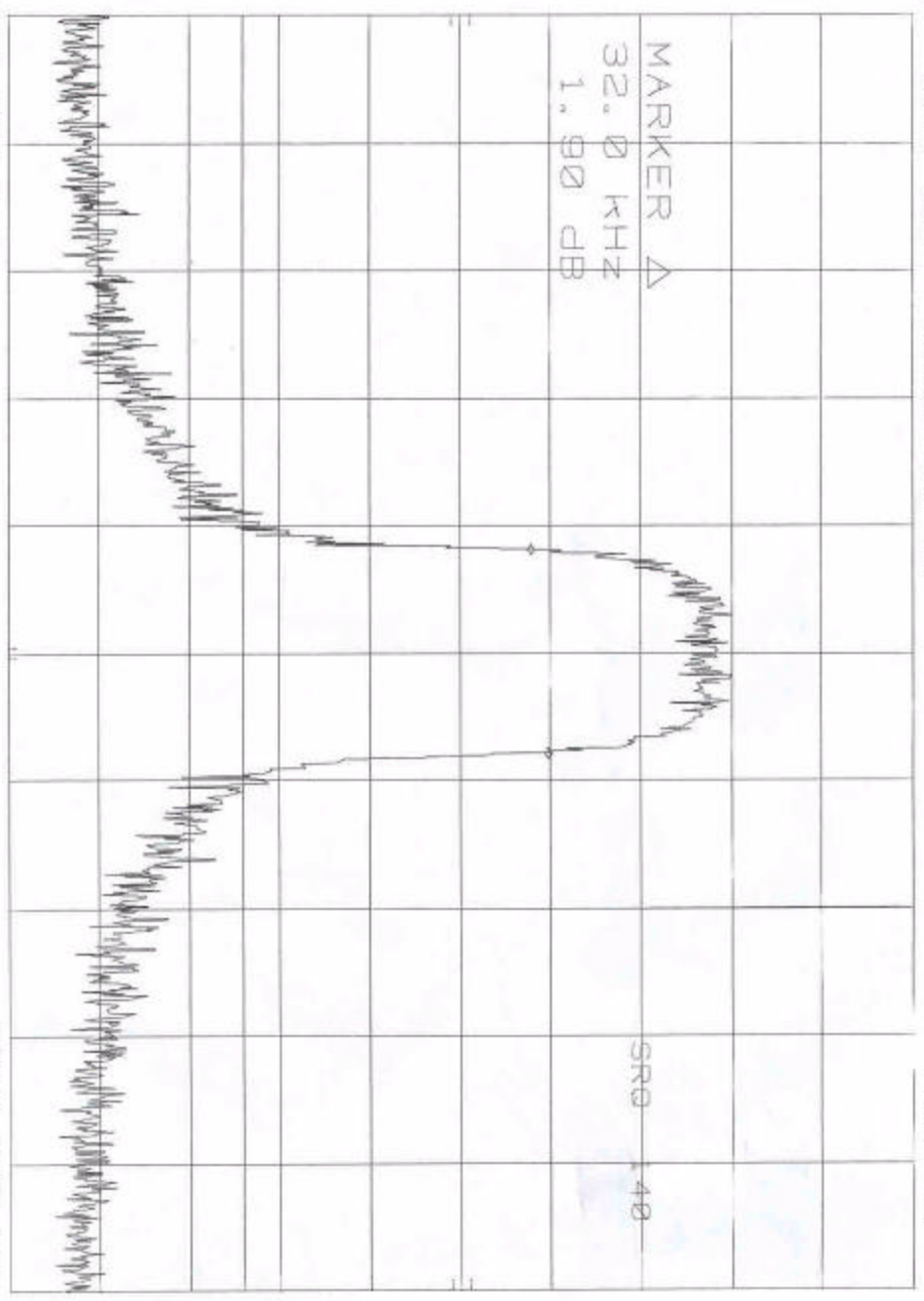
MKR Δ 32.0 kHz
1.90 dB

OFFSET
61.1
dB
DL
-13.0
dBm

MARKER Δ
32.0 kHz
1.90 dB

SRO 1.40

CENTER 869.000 MHz
RES BW 300 Hz
VBW 300 Hz
SPAN 200 kHz
SWP 6.00 sec



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Powerwave Technologies
200W

Input from signal generator
FCC 2.989 & 22.917 TDM
K55-131, 6.2
SG1 = 6.04 dBm
f₀ = 869 MHz

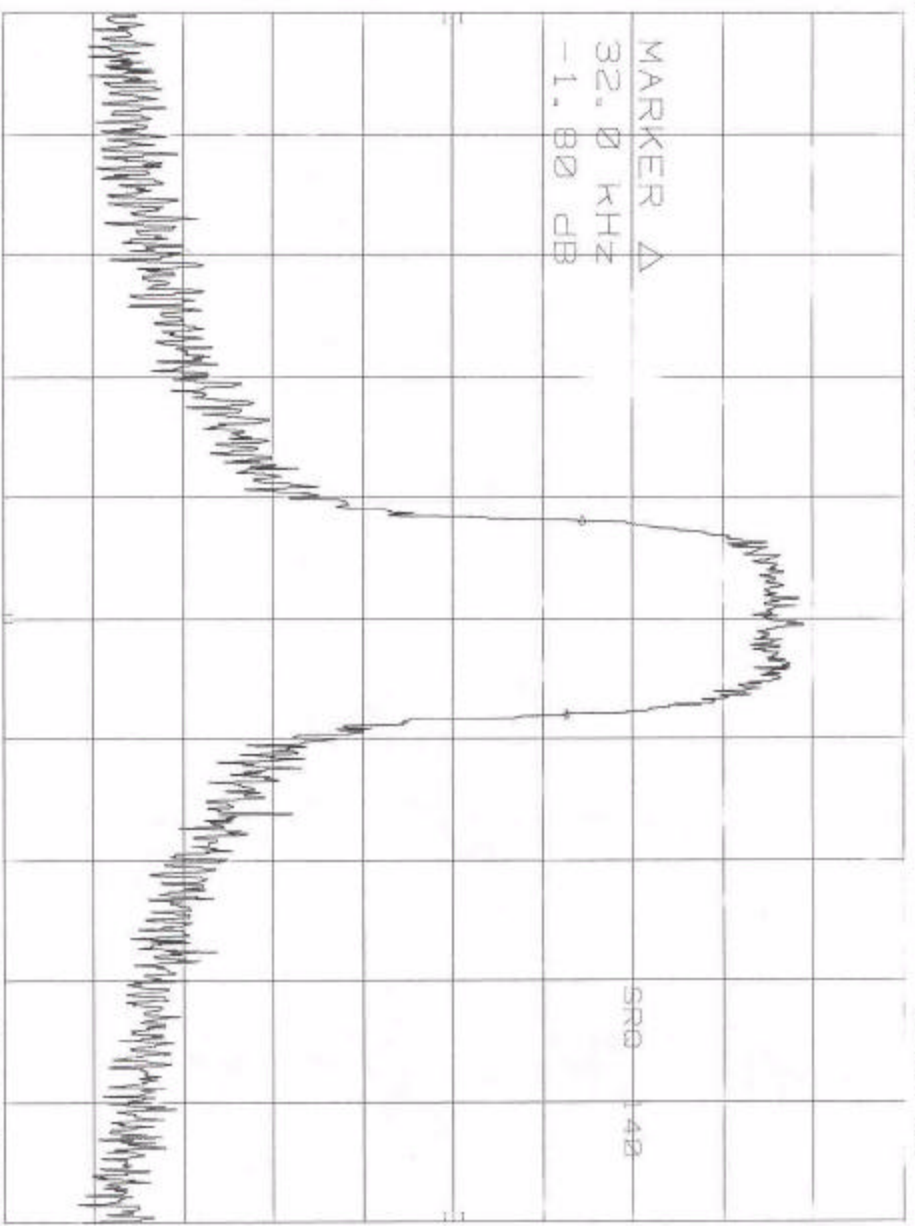
10 dB/

REF 0.0 dBm ATTEN 20 dB

MKR Δ 32.0 kHz
-1.80 dB

MARKER Δ
32.0 kHz
-1.80 dB

SRG 1.42



CENTER 869.000 MHz
RES BW 300 Hz
VBW 300 Hz
SPAN 200 kHz
SWP 6.00 sec

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Powerwave Technologies
200W

Intermodulation
TDM-A
 $f_1 = 869 \text{ MHz}$, $f_2 = 894 \text{ MHz}$

SG1 = 2.76 dBm
SG2 = 3.56 dBm

HP REF 61.1 dBm ATTN 20 dB

MKR 918.7 MHz
-14.20 dBm

10 dB/

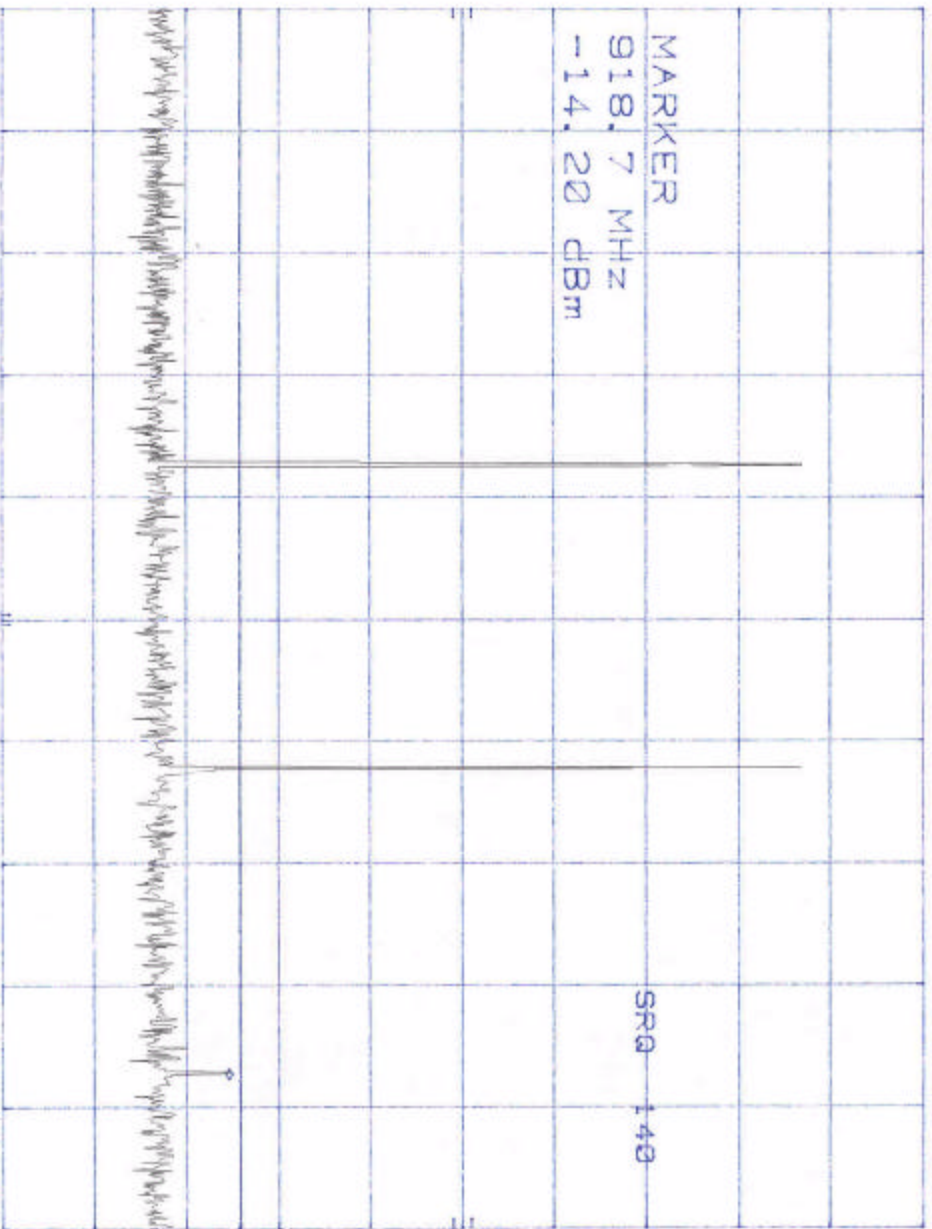
OFFSET
61.1
dB

DL
-13.0
dBm

MARKER
918.7 MHz
-14.20 dBm

SR0 1.40

CENTER 881 MHz RES BW 10 kHz VBW 10 kHz SPAN 100 MHz SWP 3.00 sec



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200W

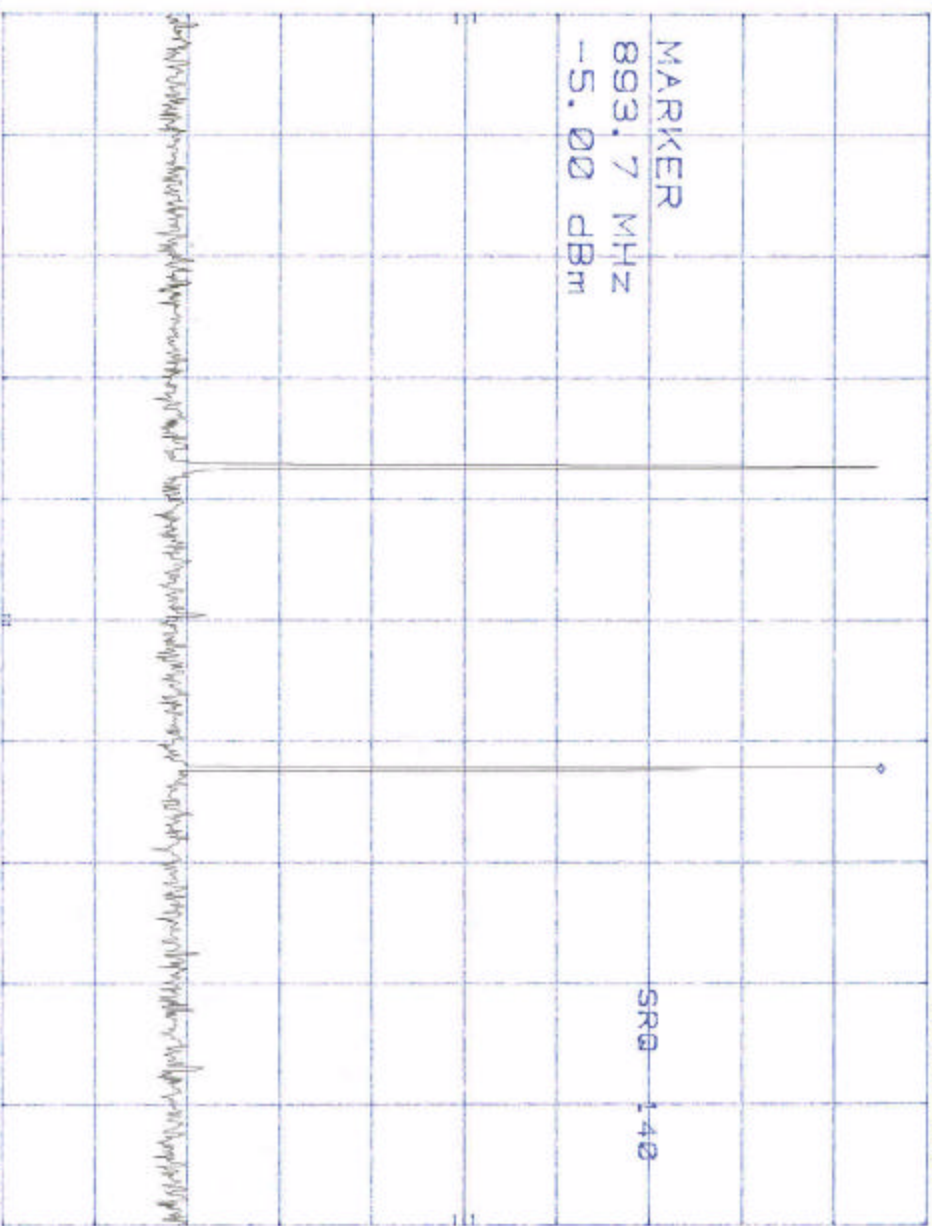
Input from signal generators
TDM A
 $f_1 = 869 \text{ MHz}$, $f_2 = 874 \text{ MHz}$

SG1 = 2.76 dBm
SG2 = 35.6 dBm

HP REF 0.0 dBm

ATTEN 20 dB

MKR 893.7 MHz
-5.00 dBm



CENTER 861 MHz
RES BW 10 kHz
VBW 10 kHz
SPAN 100 MHz
SWP 3.00 sec

11/12/19

Powerwave Technologies

200 W

2.991 & 22.917

Spurious Emissions
RSS-131.6.6

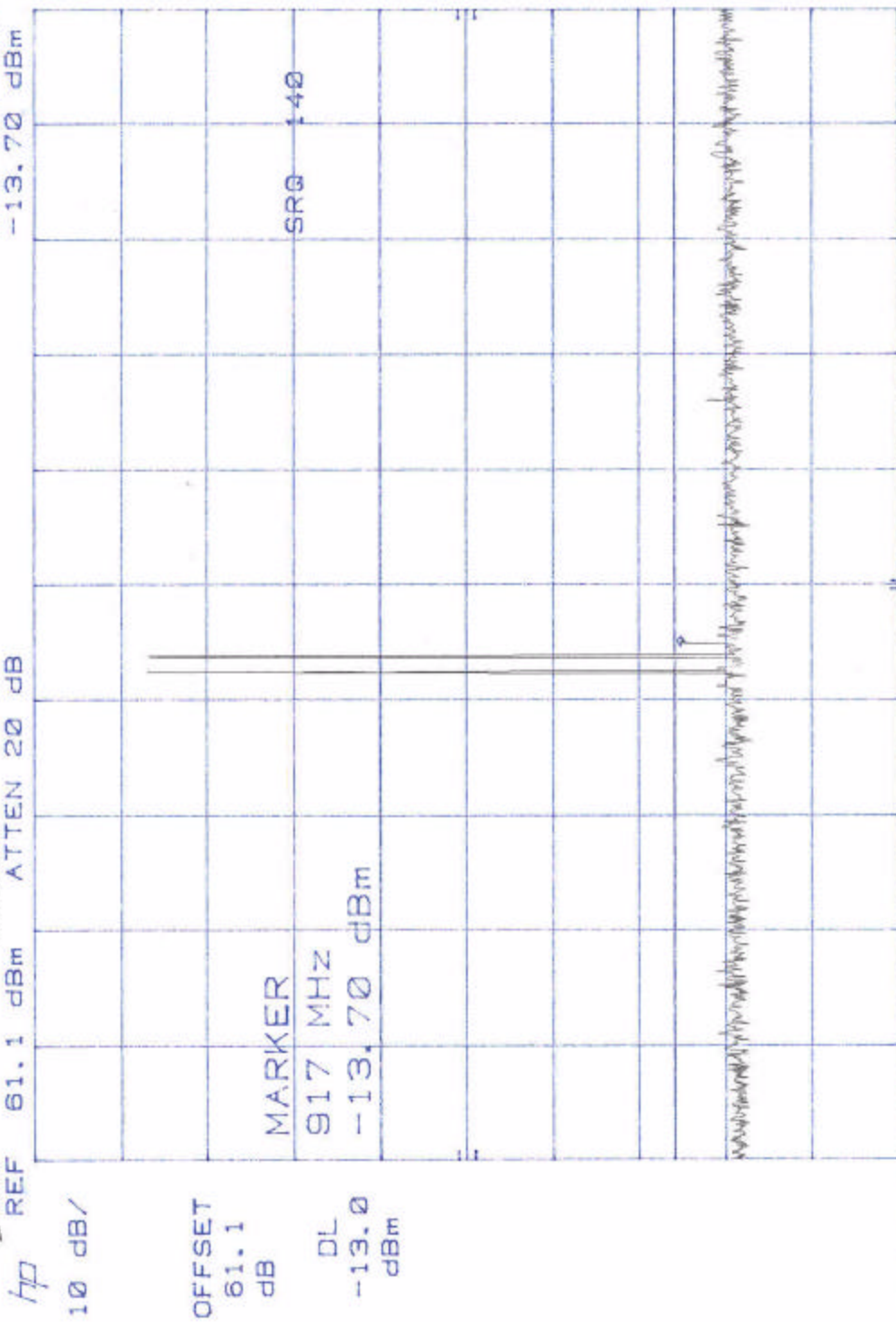
TDMA

$f_1 = 869 \text{ MHz}$
 $f_2 = 894 \text{ MHz}$

SG1 = 2.76 dBm

SG2 = 3.56 dBm

MKR 917 MHz
-13.70 dBm



10 dB/

OFFSET

61.1
dB

DL

-13.0
dBm

START 30 MHz

RES BW 10 kHz

VBW 10 kHz

STOP 2.00 GHz

SWP 59.1 sec

Powerware Technologies
200W

2.991 & 22.917
Spurious Emissions
RSS: 131, 6.6

TDMA
 $f_1 = 864 \text{ MHz}$
 $f_2 = 894 \text{ MHz}$

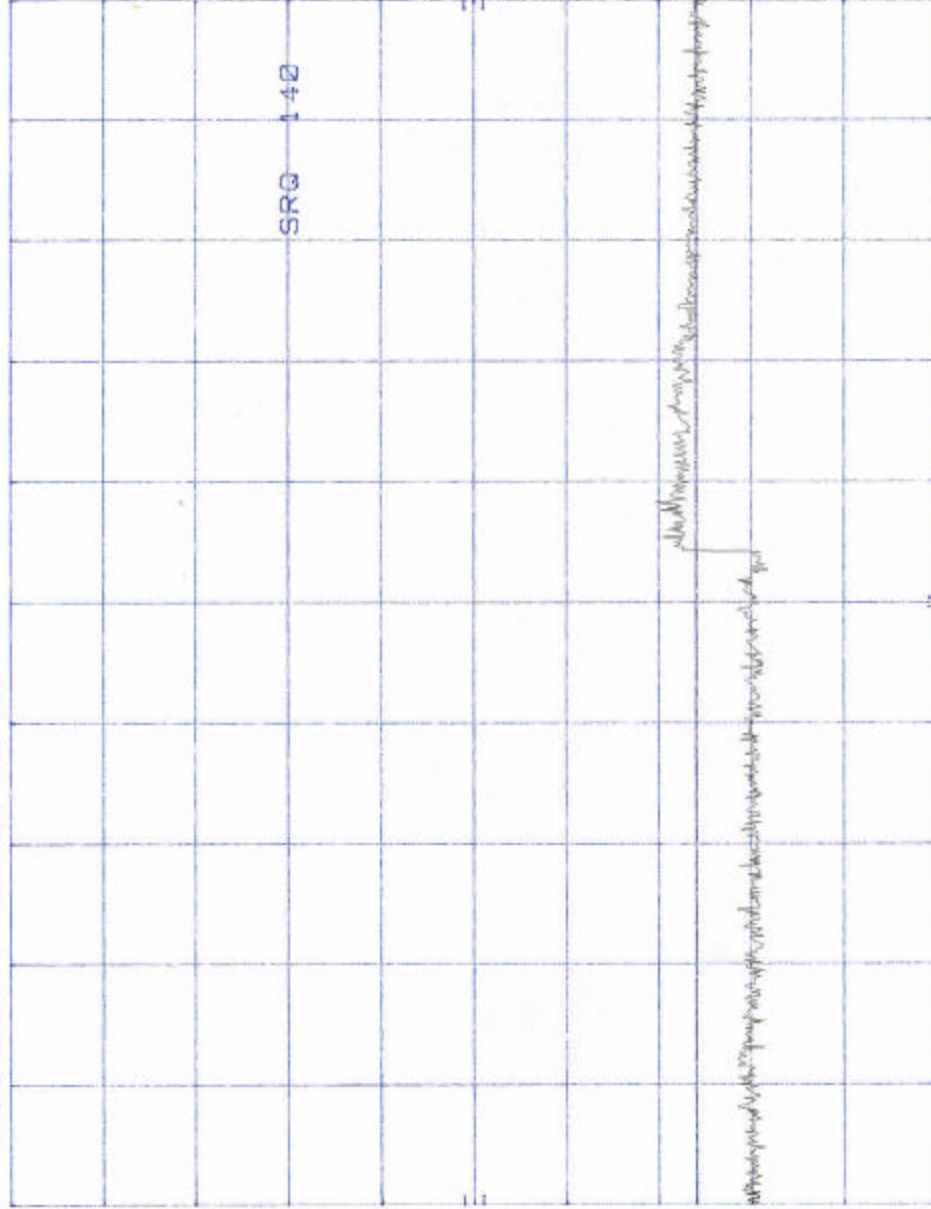
SG1 = 2.76 dBm
SG2 = 3.56 dBm

hp REF 61.1 dBm ATTN 20 dB

10 dB/

OFFSET
61.1
dB

DL
-13.0
dBm



START 2.00 GHz

RES BW 10 kHz

VBW 10 kHz

STOP 9.00 GHz

SWP 210 sec

11/12/99

PowerWave Technologies

200W

2.991 & 22.917

Spurious Emissions

RSS-131, 6.6

No input to spectrum analyzer

HP

REF 61.1 dBm

ATTEN 20 dB

10 dB/

OFFSET

61.1

dB

DL

-13.0

dBm

SRQ 140

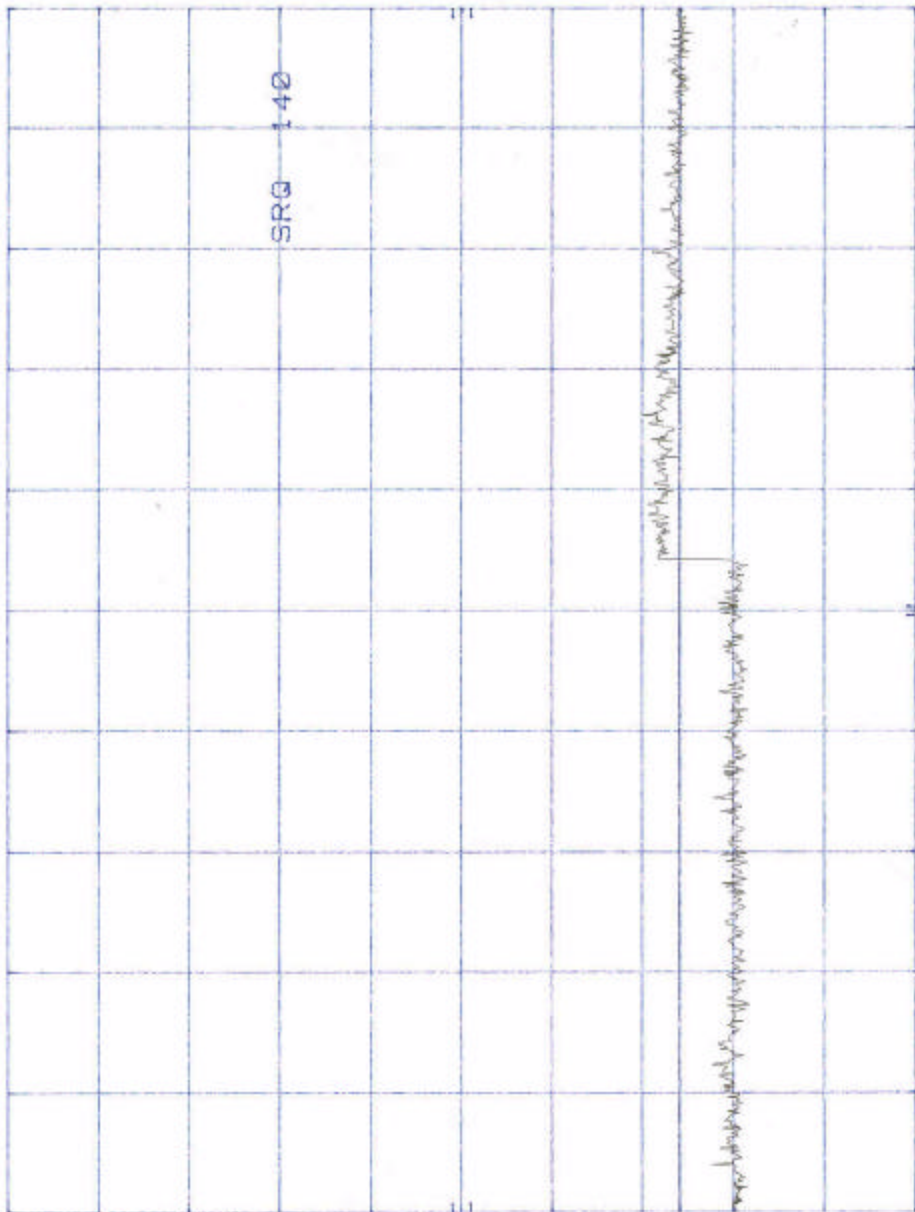
START 2.00 GHz

RES BW 10 kHz

VBW 10 kHz

STOP 9.00 GHz

SWP 210 sec



11/12/99
Powerwave Technologies
200W

Occupied Bandwidth
COMA
FCC 2.989 & 22.917
RSS-131, 6.2

$$f_0 = 869 \text{ MHz}$$

Δ 1.38 IN
 Δ 2.82 IN

REF 61.1 dB ATTEN 20 dB

12 48/

LESS 310

100

DL
--13.0
48m

MARKER Δ

N	00
I	(0)
2	1

[illegible]

925

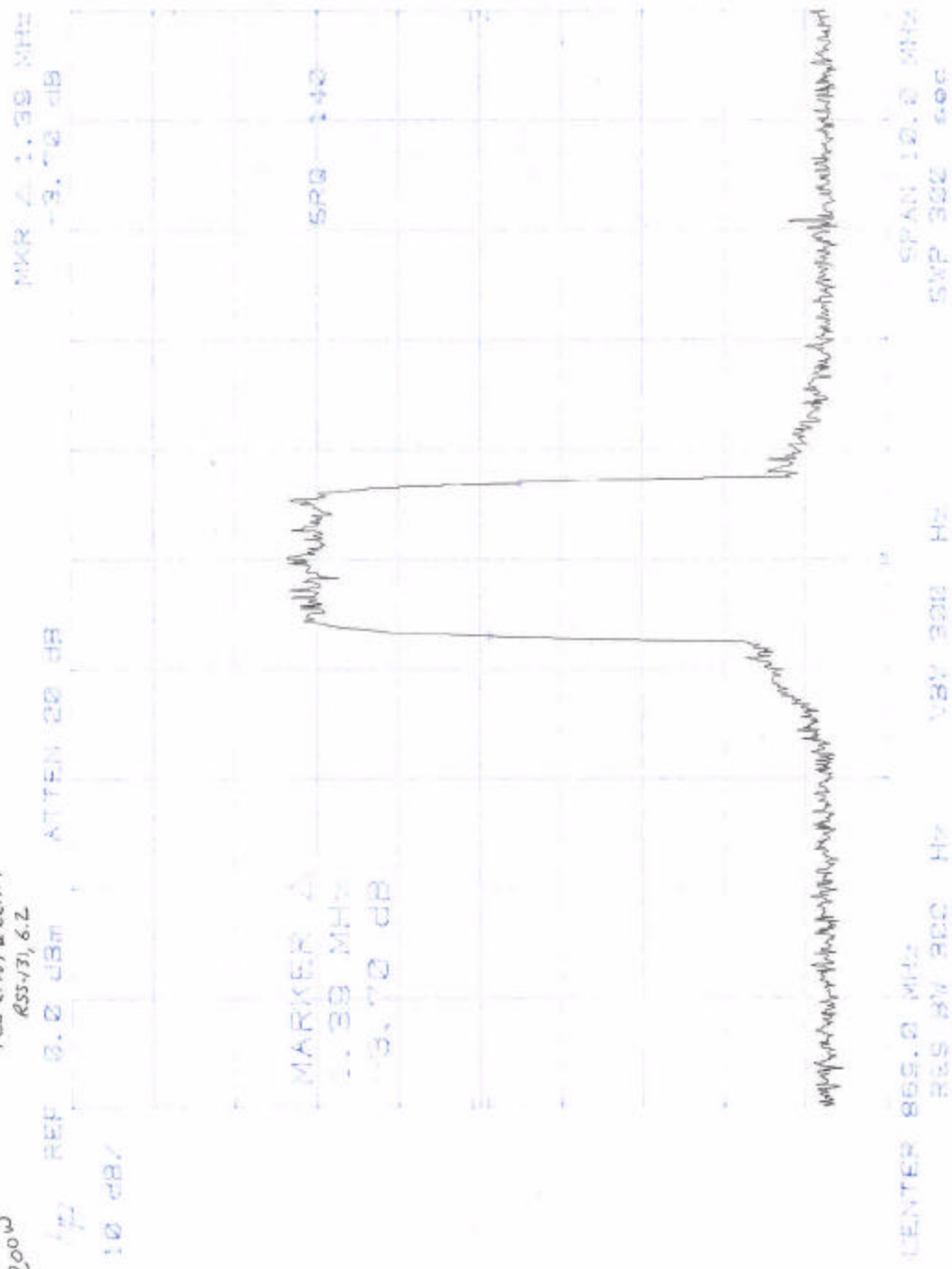
CENTER 855.0 MHz
RES BW 300 Hz

2H 00E 15A

```
SPAN 10.0 MHz
MOE DMS 600
SMP 300 sec
```

11/12/99
Powerware Technologies
200w

Input from signal generator
CDMA
FCC 2.989 & 2.917
RSSI 31.6.2
 $f_0 = 889 \text{ MHz}$
SG 1.6.00.18A

$$f_{\alpha} = 89.8 \text{ MHz}$$


11/2/99
Powerwave Technologies
200W

HP

Intermodulation
CDMA
 $f_1 = 869 \text{ MHz}$ $f_2 = 894 \text{ MHz}$
SG1: 2.92dBm
SG2: 3.88dBm
Video Averaging on

MR 918.7 MHz
-22.50 dBm

REF 61.1 dBm
ATTEN 20 dB

10 dB/

SAMPLE

OFFSET

61.1
dB

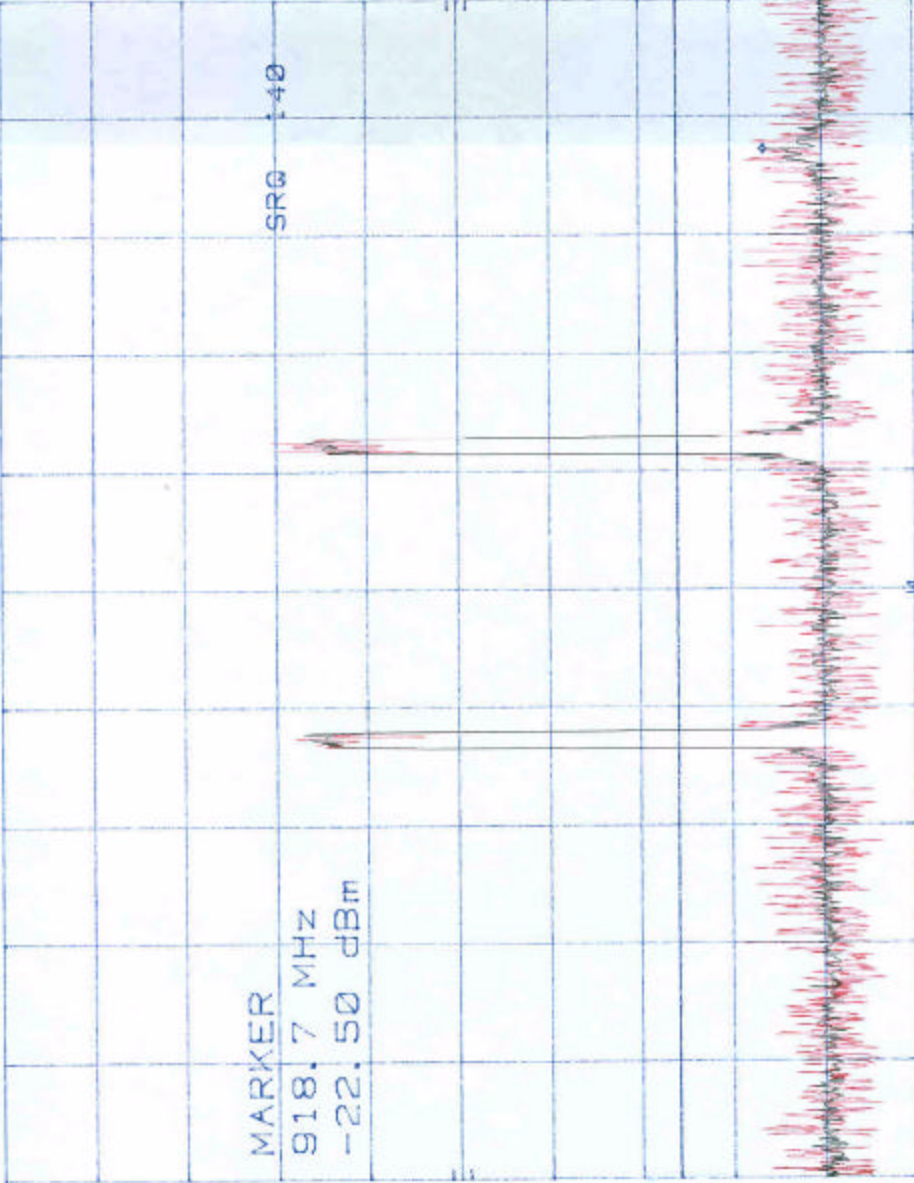
DL
-13.0
dBm

VID AVG
10

MARKER

918.7 MHz
-22.50 dBm

SRQ 140



CENTER 881 MHz

RES BW 10 kHz

VBW 10 kHz

SPAN 100 MHz

SWP 3.00 sec

11/12/19
Powerwave Technologies
200W

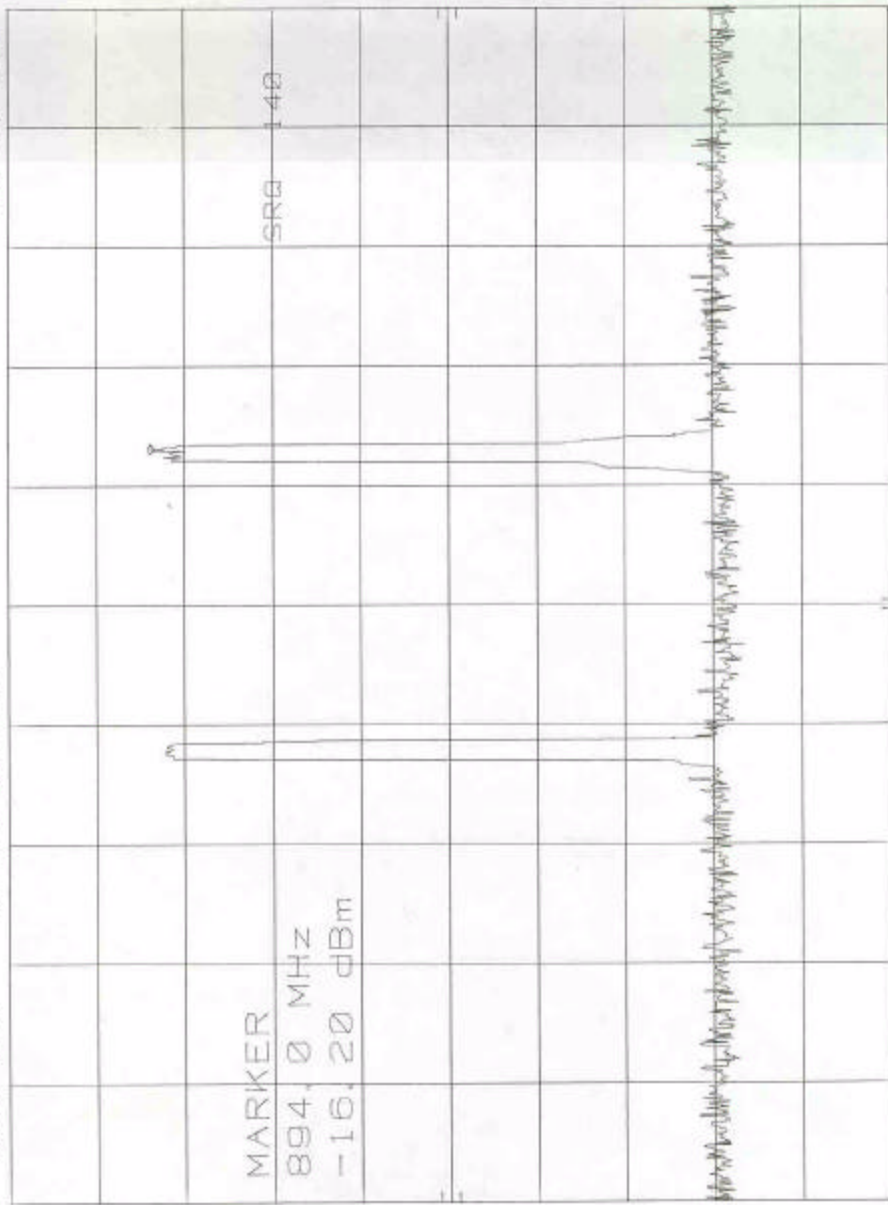
Input from Signal generators
CDMA
 $f_1 = 869 \text{ MHz}$ $f_2 = 894 \text{ MHz}$

SG1 = 29.2 dBm
SG2 = 38.8 dBm

70
10 dB/

REF 0.0 dBm ATTN 20 dB

MR 894.0 MHz
-16.20 dBm



CENTER 881 MHz
RES BW 10 kHz

VBW 10 kHz

SPAN 100 MHz
SWP 3.00 sec

11/2/99 Powerwave Technologies

200W

Intermodulation

CDMA

$f_1 = 869 \text{ MHz}$ $f_2 = 894 \text{ MHz}$

$SG1 = 2.92 \text{ dBm}$

$SG2 = 3.88 \text{ dBm}$

MR 919.7 MHz
-13.30 dBm

REF 61.1 dBm

ATTEN 20 dB

10 dB/

10 dB/

OFFSET

61.1

dB

DL

-13.0

dBm

MARKER

919.7 MHz

-13.30 dBm

SR0 140

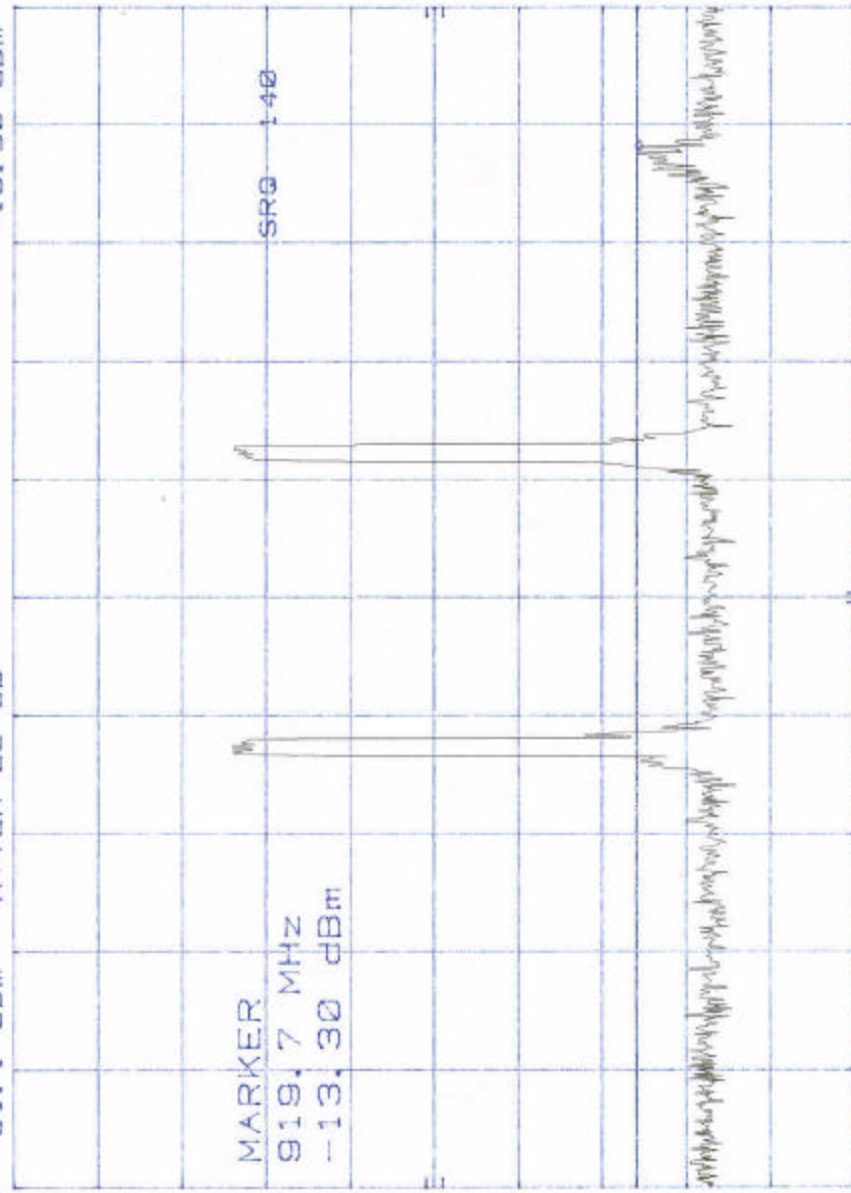
CENTER 881 MHz

RES BW 10 kHz

VBW 10 kHz

SPAN 100 MHz

SWP 3.00 sec



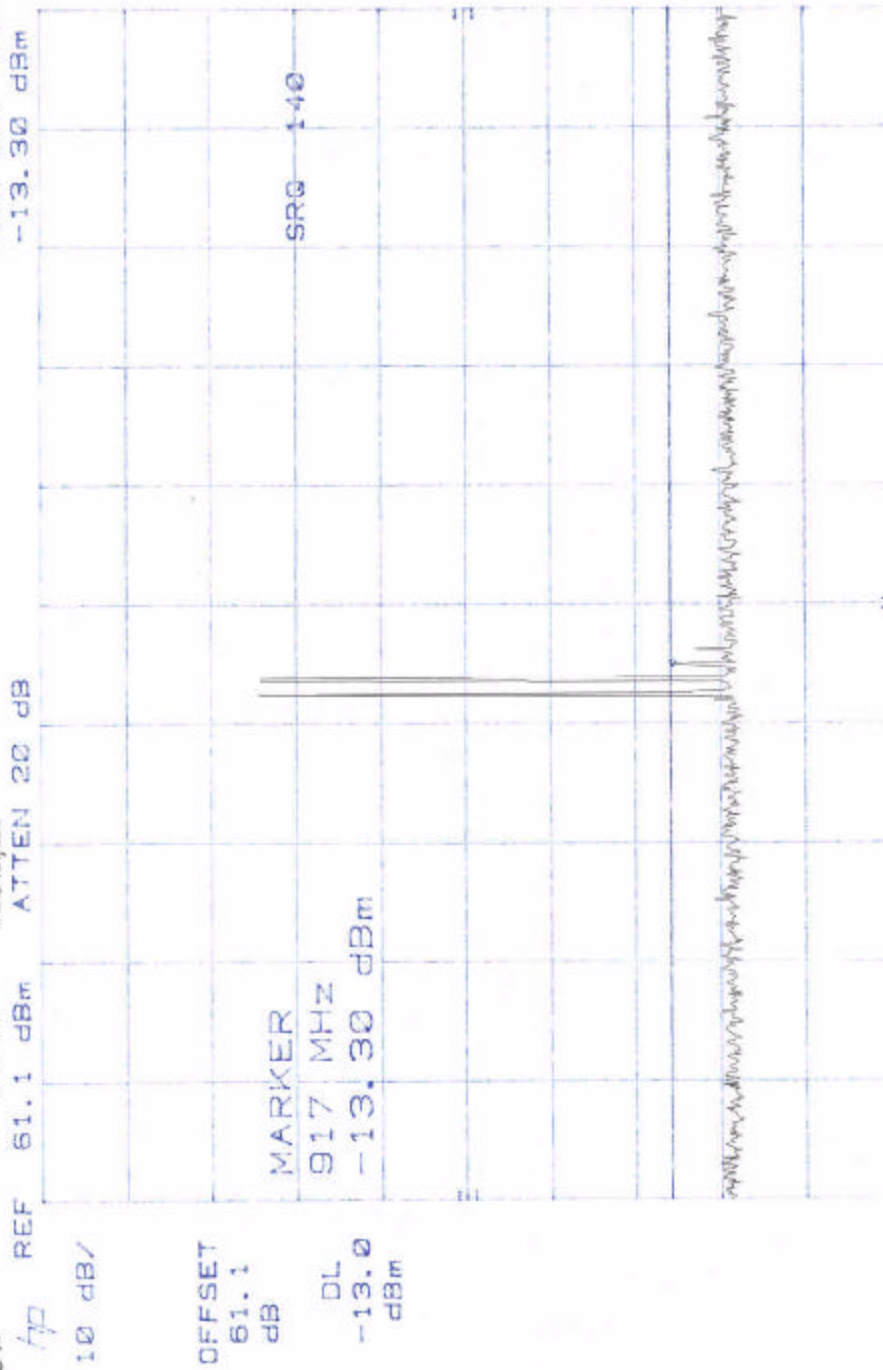
11/12/99
Powerwave Technologies
200W

Spurious Emissions
2.991 & 22.917
CDMA

$f_1 = 869 \text{ MHz}$
 $f_2 = 894 \text{ MHz}$
RSS-131.6.6

SG1 = 2.92 dBm
SG2 = 3.88 dBm

MARKER 917 MHz
-13.30 dBm



OFFSET
61.1
dB
DL
-13.0
dBm

START 30 MHz
RES BW 10 kHz
VBW 10 kHz
STOP 2.00 GHz
SWP 59.1 sec

11/12/99

Powerwave Technologies

200W

Spurious Emissions

2.991 & 22.917

CDMA

R55-131, 6.6

$f_1 = 817\text{ MHz}$

$f_2 = 894\text{ MHz}$

$SG1 = 2.92\text{ dBm}$

$SG2 = 3.88\text{ dBm}$

HP REF 61.1 dBm

ATTEN 20 dB

10 dB/

10 dB/

OFFSET

61.1

dB

DL

-13.0

dBm

SR0 140

START 2.00 GHz

RES BW 10 kHz

VBW 10 kHz

STOP 9.00 GHz

SWP 210 sec

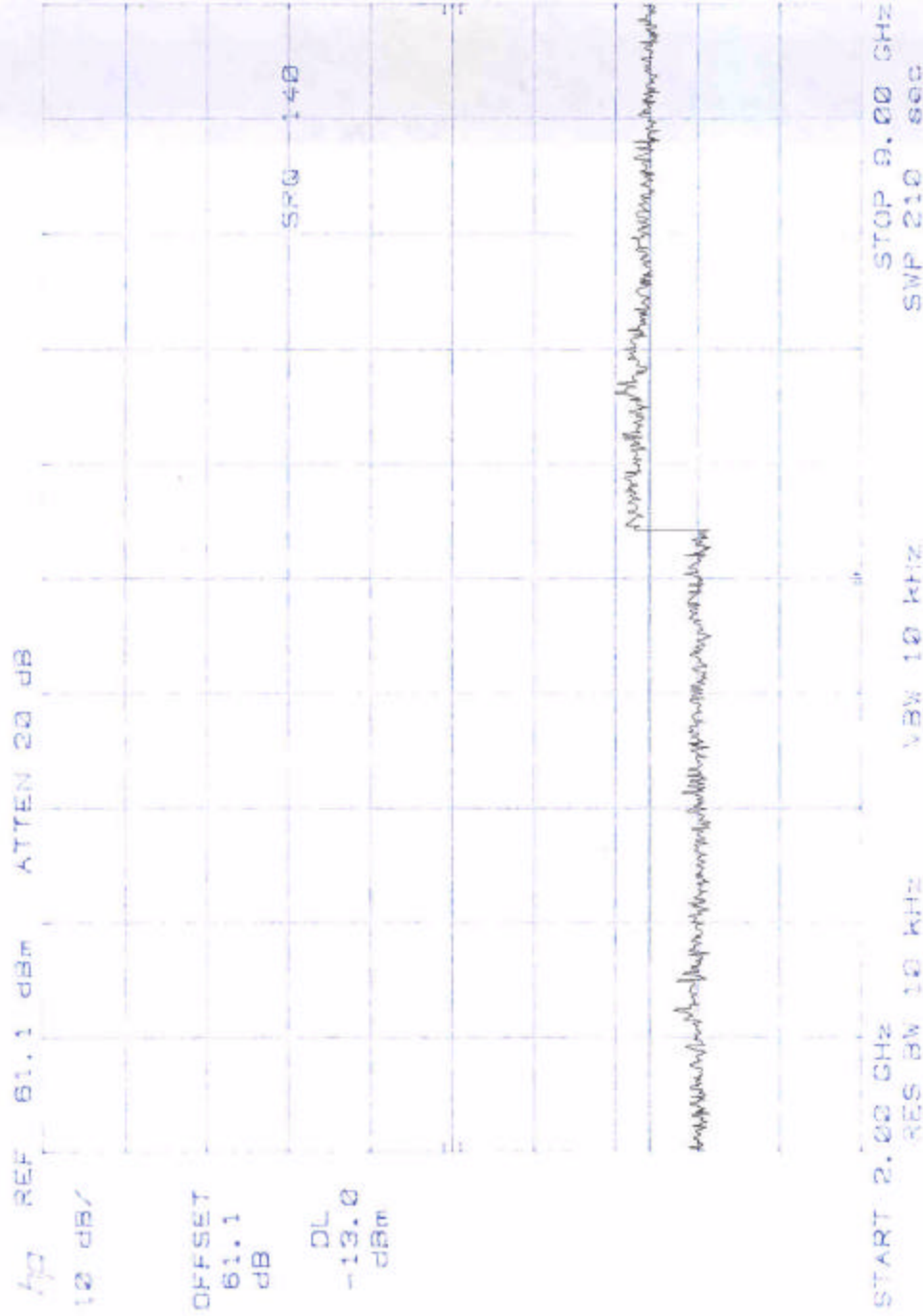
11/2/99

Powerwave Technologies
200W

Spurious Emissions

2.991 & 22.917 R53-31, 6.6
CDMA

No input to spectrum analyzer



11/12/19
Powerware Technologies
200W

Occupied Bandwidth
AMPS Voice
FCC 2.989 & 22.917
RSS-131.6.2

$f_0 = 819 \text{ MHz}$
 $SG1 = 6.06 \text{ dBm}$

MKR $\Delta 30.9 \text{ kHz}$
2.70 dB

ATTEN 20 dB

REF 61.1 dBm

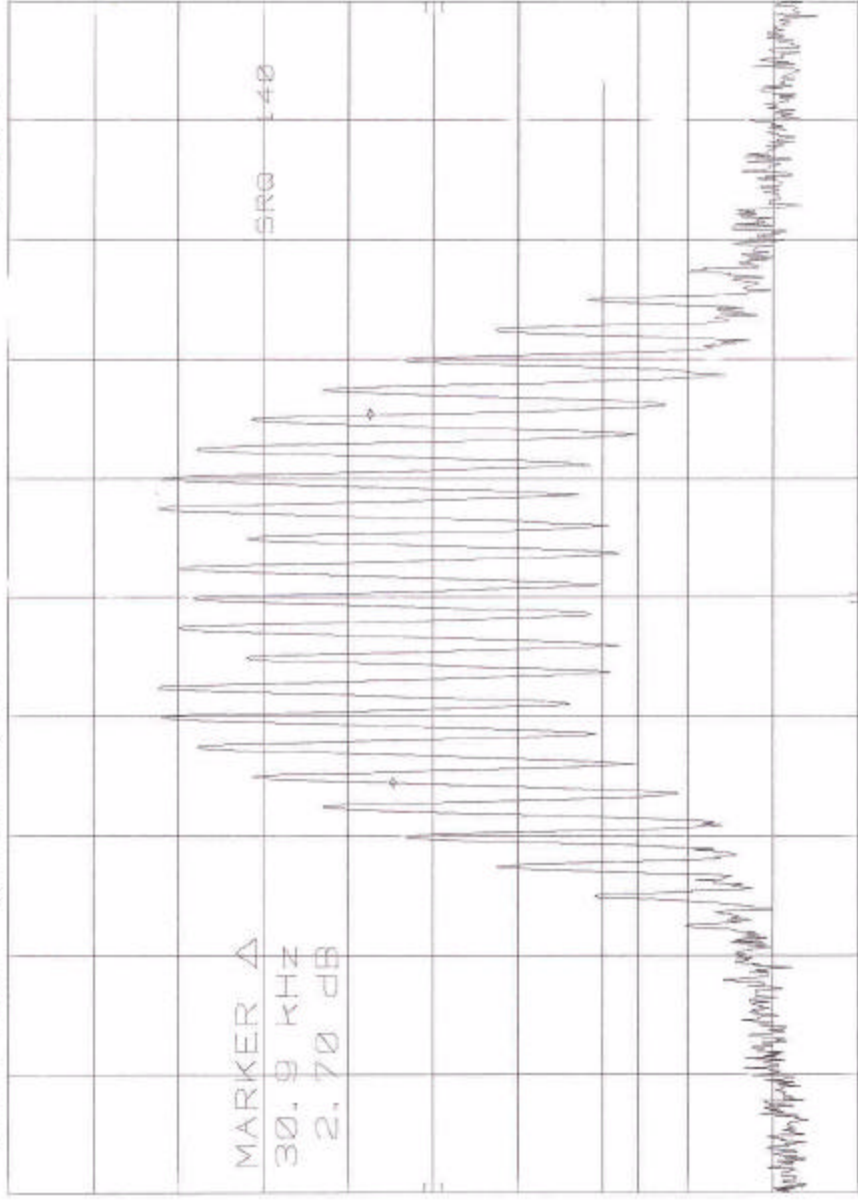
10 dB/

OFFSET
61.1
dB

DL
-13.0
dBm

MARKER Δ
30.9 kHz
2.70 dB

SRO 1.40



CENTER 869.000 MHz
RES BW 300 Hz

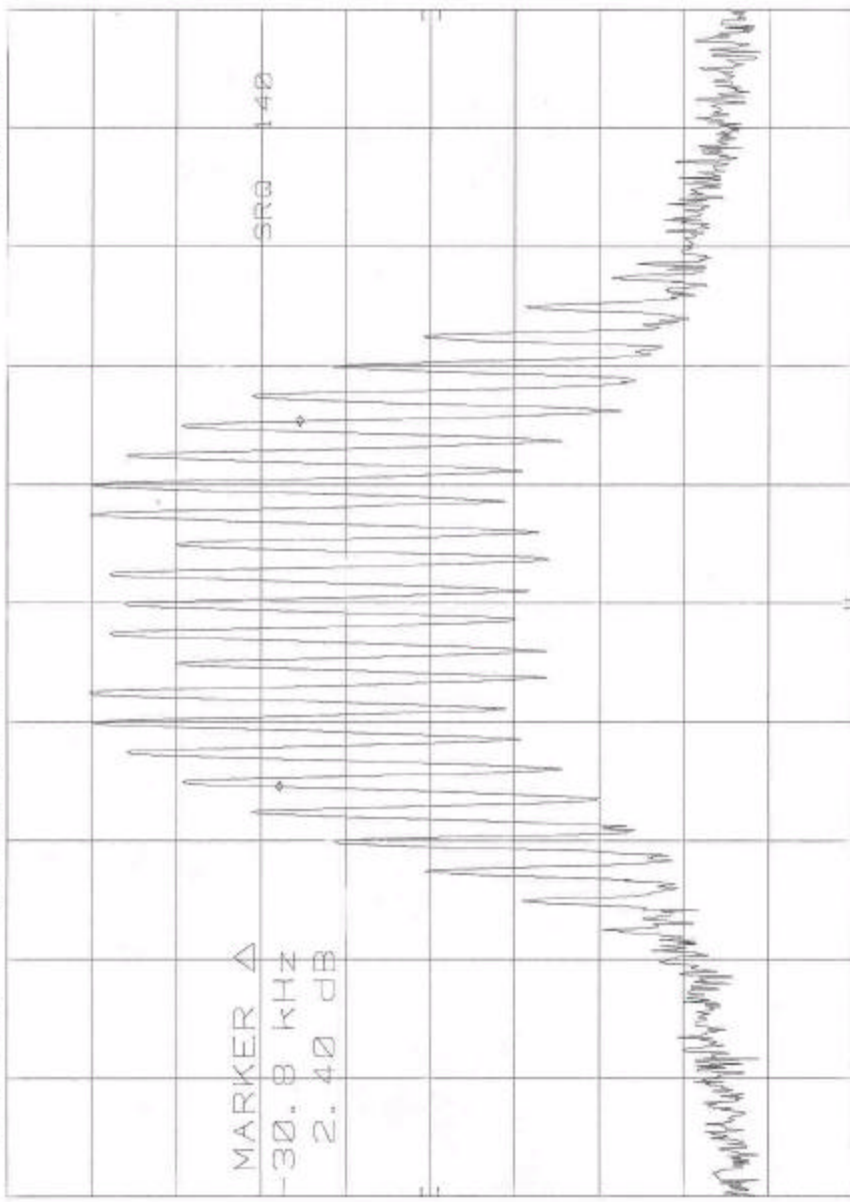
VBW 300 Hz

SPAN 100 kHz
SWP 3.00 sec

11/12/199
Powerwise Technologies
200 W

Input from signal generator
AMPS Voice
FCC 2.989 & 2.2.9.17
RSS-131, 6.2

MARKER Δ -30.8 KHz
2.40 dB



CENTER 869.000 MHz
RES BW 300 Hz
SPAN 100 kHz
SWP 3.00 sec

11/12/99
Powerwave Technologies
200W

Intermodulation
AMPS Voice
 $f_1 = 869 \text{ MHz}$ $f_2 = 894 \text{ MHz}$

SG1 = 3.06 dBm
SG2 = 3.88 dBm

MKR 918.7 MHz
-13.20 dBm

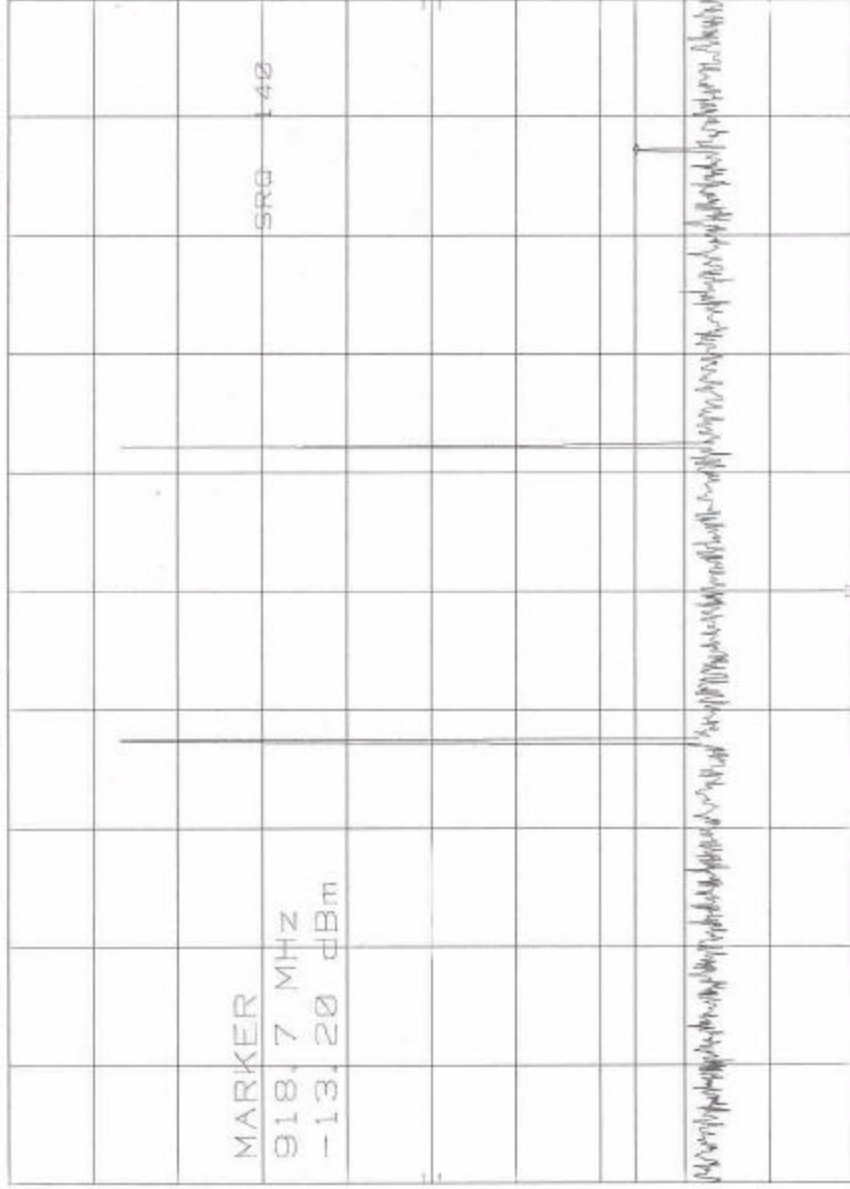
REF 61.1 dBm

ATTEN 20 dB

HP 10 dB/

OFFSET
61.1
dB

DL
-13.0
dBm



CENTER 881 MHz
RES BW 10 kHz
VBW 10 kHz
SPAN 100 MHz
SWP 3.00 sec

11/12/19
Powerwave Technologies
200W

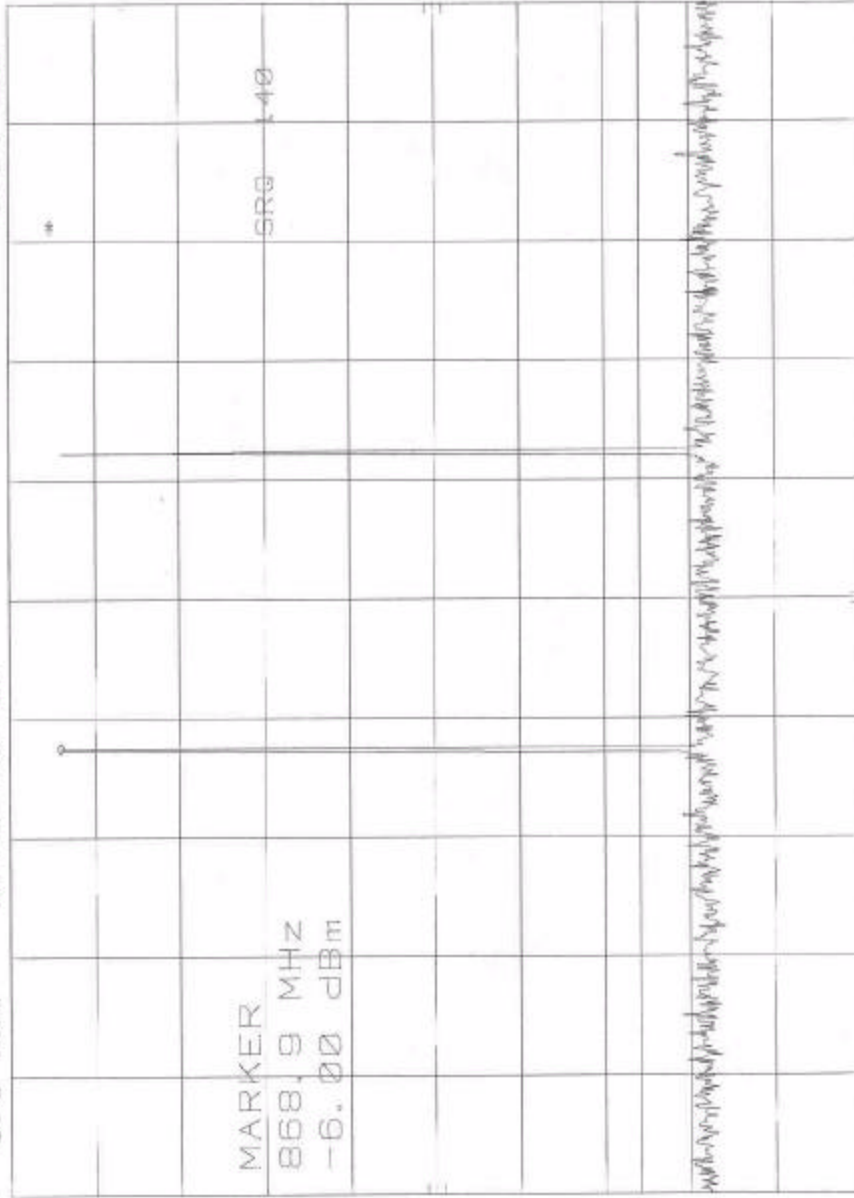
Input from Signal generators
AMPS Voice
 $f_1 = 869 \text{ MHz}$ $f_2 = 894 \text{ MHz}$
SG1 = 3.06 dBm
SG2 = 3.88 dBm

MARK 868.9 MHz
-6.00 dBm

10 dB/

ATTEN 20 dB

REF 0.0 dBm



CENTER 881 MHz
RES BW 10 kHz

VBW 10 kHz

SPAN 100 MHz
SWP 3.00 sec

11/12/99
Powerwave Technologies
200W

Spurious Emissions
AMPS Voice
FCC 2.991 & 22.917
RSS-13, 6.6

$f_1 = 869$ MHz $SG1 = 3.06$ dBm
 $f_2 = 894$ MHz $SG2 = 3.88$ dBm

MARK 917 MHz
-13.70 dBm

REF 61.1 dBm

ATTEN 20 dB

10 dB/

OFFSET

61.1
dB

DL

-13.0
dBm

MARKER

917 MHz

-13.70 dBm

SR0 140

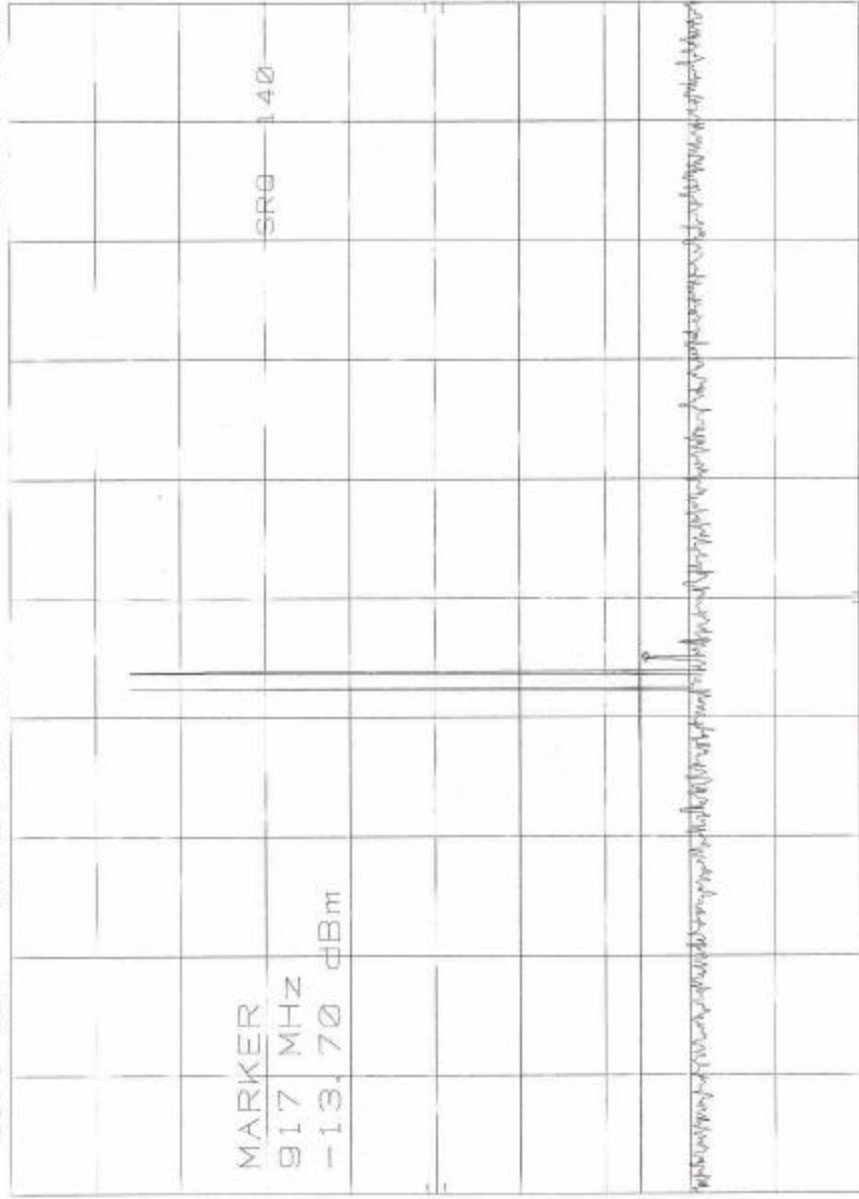
START 30 MHz

RES BW 10 kHz

VBW 10 kHz

STOP 2.00 GHz

SWP 59.1 sec



11/12/19
Powerwave Technologies
200 W

Spurious Emissions
AMPS Voice
FCC 2.491 & 2.2.917
RSS-131, 6.6
F1 = 869 MHz SG1 = 3.04 dBm
F2 = 894 MHz SG2 = 3.88 dBm

70 REF 61.1 dBm ATTN 20 dB

10 dB/

OFFSET

61.1
dB

DL

-13.0
dBm



START 2.00 GHz
RES BW 10 kHz

VBW 10 kHz

STOP 9.00 GHz
SWP 210 sec

Powerware Technologies
200W

AMPS Voice
2.991 & 22.917
RSS-131, 6.6

No input to spectrum analyzer

OF THE

ATTEN 20 PB

10 dB / BP 01

OFFSET
61.1
dB

DL
-13.0
dBm

START 2.00 GHz

RES BW 10 KHZ

VBW 10 kHz

STOP 9.00 GHz

SWP 210 sec

11/12/19
PowerWave Technologies
200W

Occupied Bandwidth
AMPS Wideband Data
FCC 2.989 & 22.917
RSS-131.6.2

$f_c = 869 \text{ MHz}$
SG1 = 6.06 dBm

MR Δ 40.0 kHz
0.00 dB

ATTEN 20 dB

REF 61.1 dBm

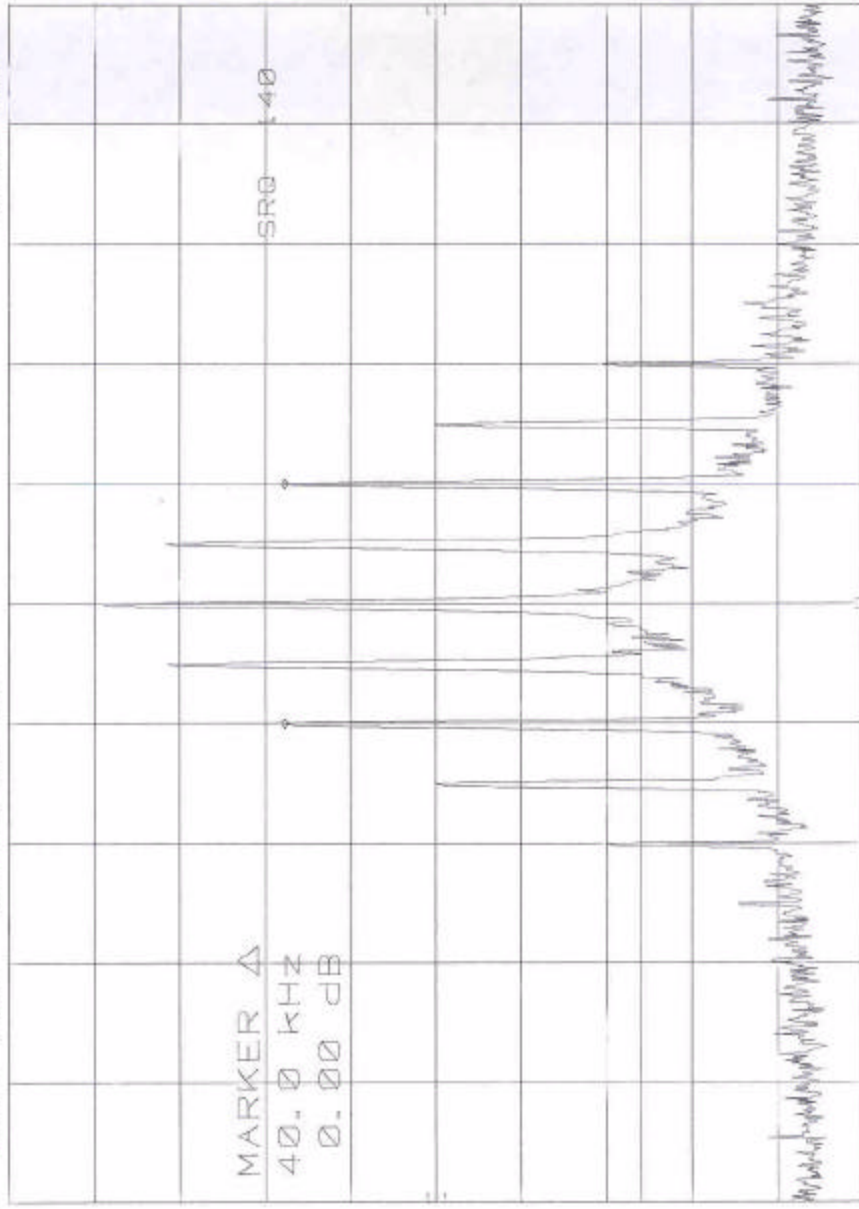
10 dB/

OFFSET
61.1
dB

DL
-13.0
dBm

MARKER Δ
40.0 kHz
0.00 dB

SR0 140



CENTER 869.000 MHz
RES BW 300 Hz
SPAN 200 kHz
SWP 6.00 sec
VBW 300 Hz

11/12/19
Powerwave Technologies
200W

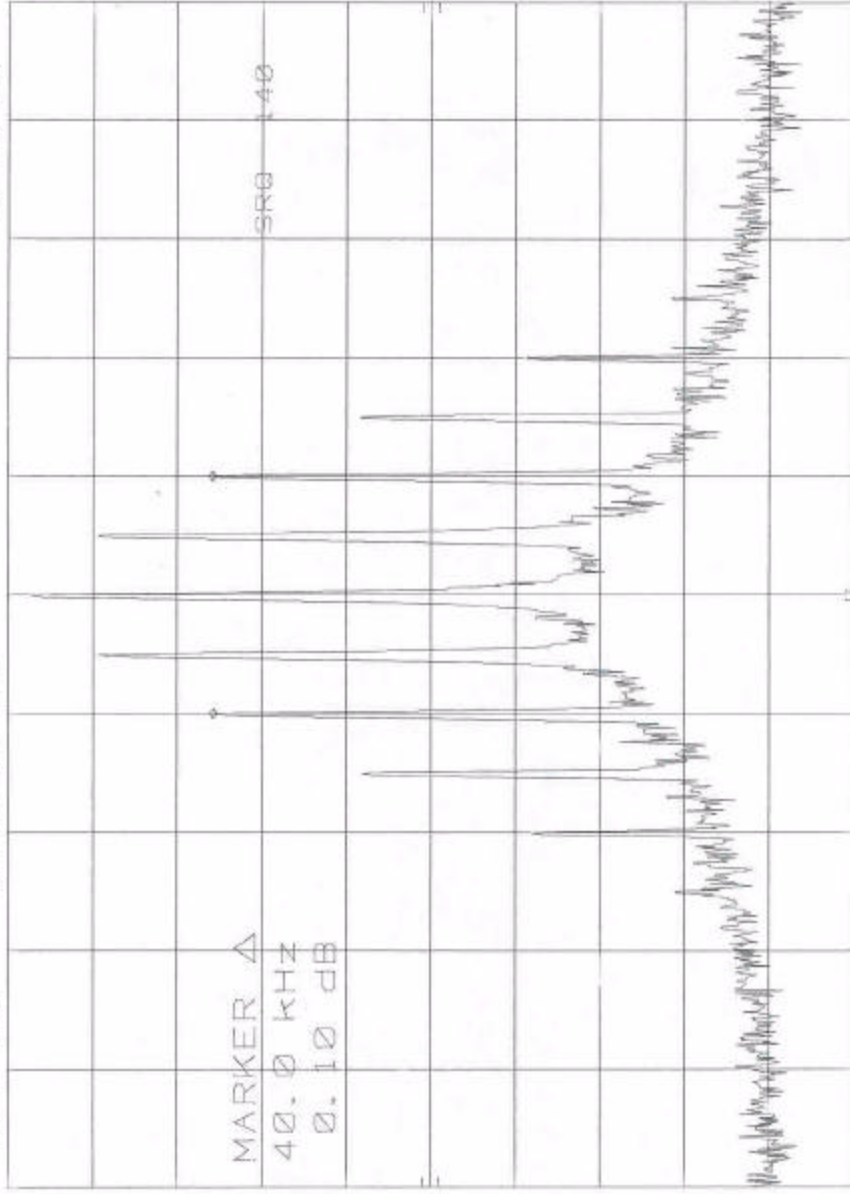
Input from signal generator
AMPS Wideband Data
FCC 2.989 & 22.917
RSS-131.6.2
FS = 869 MHz
SG1 = 6.06 dBm

MR Δ 40.0 kHz
0.10 dB

hp REF

ATTEN 20 dB

10 dB/



CENTER 869.000 MHz
RES BW 300 Hz

VBW 300 Hz

SPAN 200 kHz
SWP 6.00 sec

11/12/19
Powerwave Technologies
200W

Intermodulation
AMPS Wideband Data
 $f_1 = 869 \text{ MHz}$ $f_2 = 894 \text{ MHz}$
 $SG1 = 3.08 \text{ dBm}$
 $SG2 = 3.88 \text{ dBm}$

HP REF 61.1 dBm

ATTEN 20 dB

10 dB/

OFFSET

61.1
dB

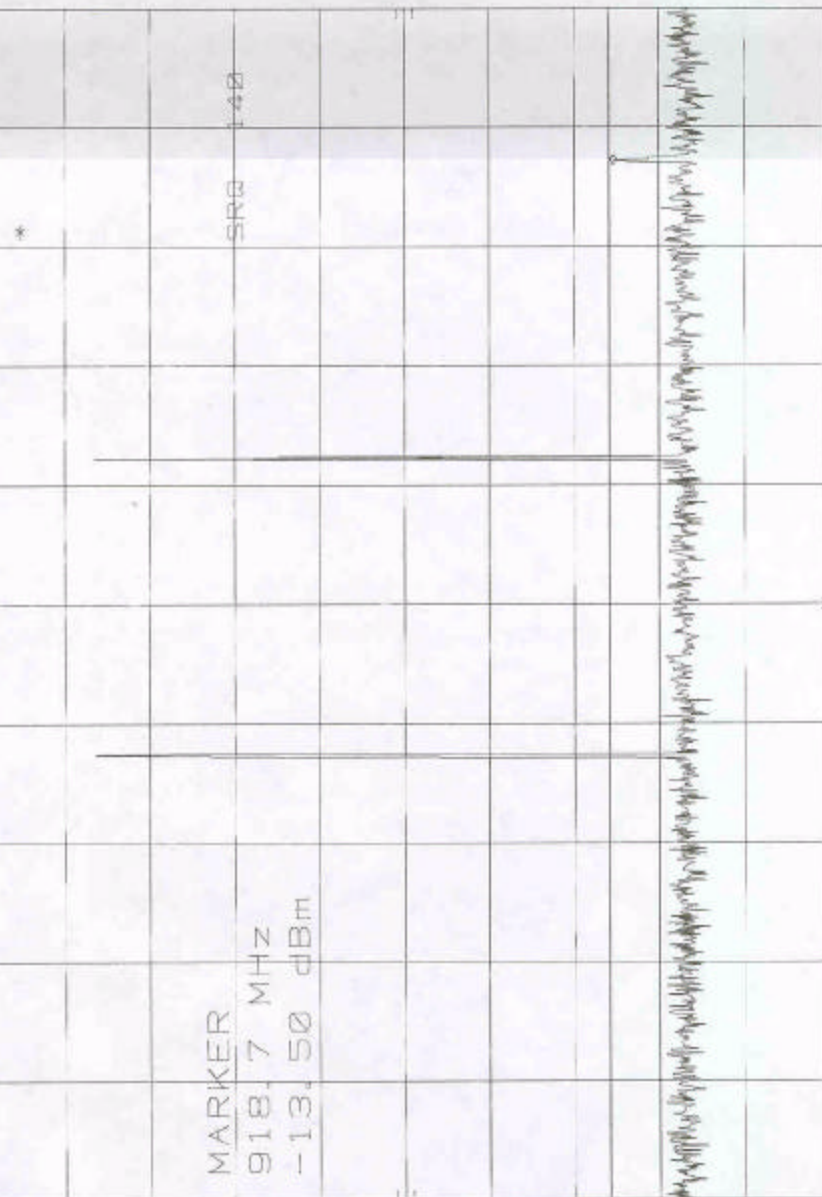
DL
-13.0
dBm

MARKER

918.7 MHz

-13.50 dBm

SRQ 140

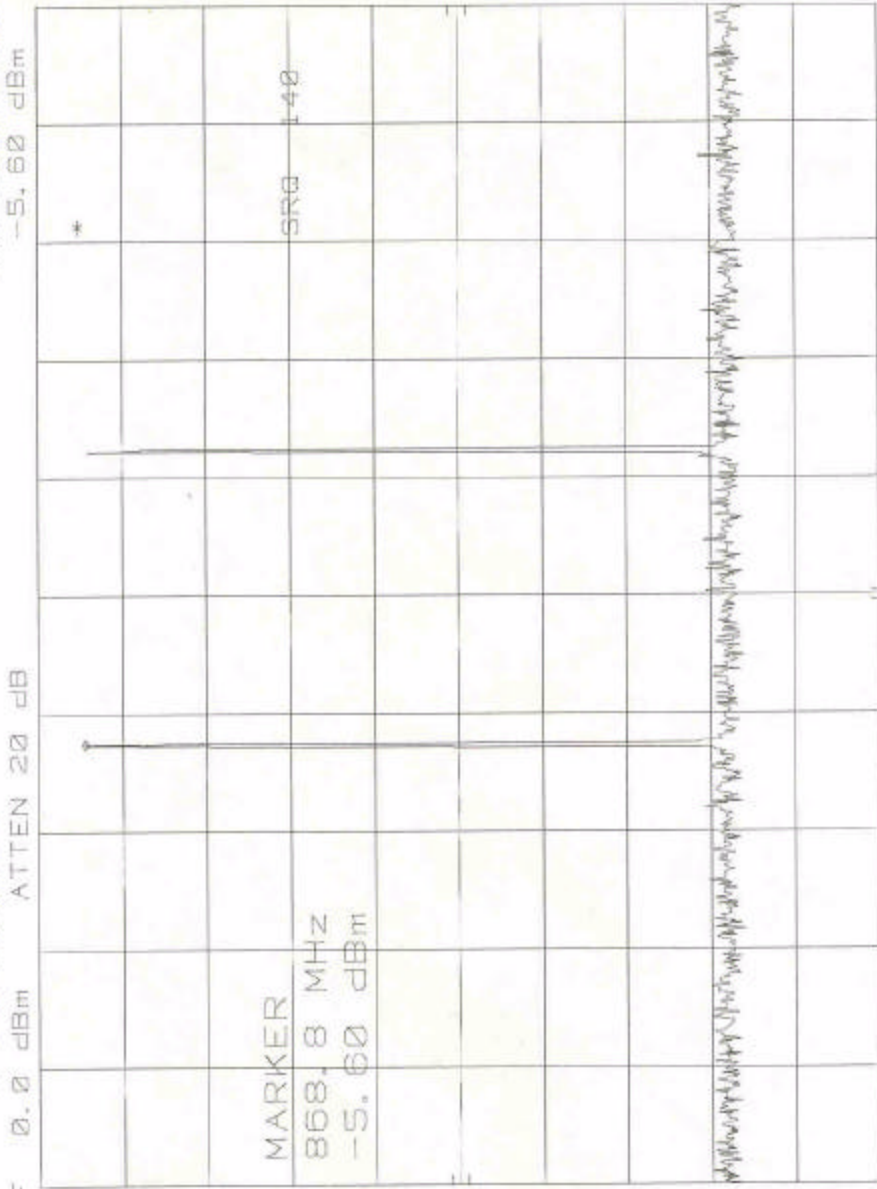


CENTER 881 MHz
RES BW 10 kHz
SPAN 100 MHz
SWP 3.00 sec

11/12/19
Powerwave Technologies
200W

Input from signal generators
AMPS Wideband Data
 $f_1 = 869 \text{ MHz}$ $f_2 = 894 \text{ MHz}$
SG1 = 3.06 dBm
SG2 = 3.88 dBm

MKR 868.8 MHz
-5.60 dBm



CENTER 861 MHz
RES BW 10 kHz
VBW 10 kHz
SPAN 100 MHz
SWP 3.00 sec

11/12/99
Powerwave Technologies
200W

Spurious Emissions
AMPS Wideband Data
 $f_1 = 869 \text{ MHz}$ $f_2 = 894 \text{ MHz}$

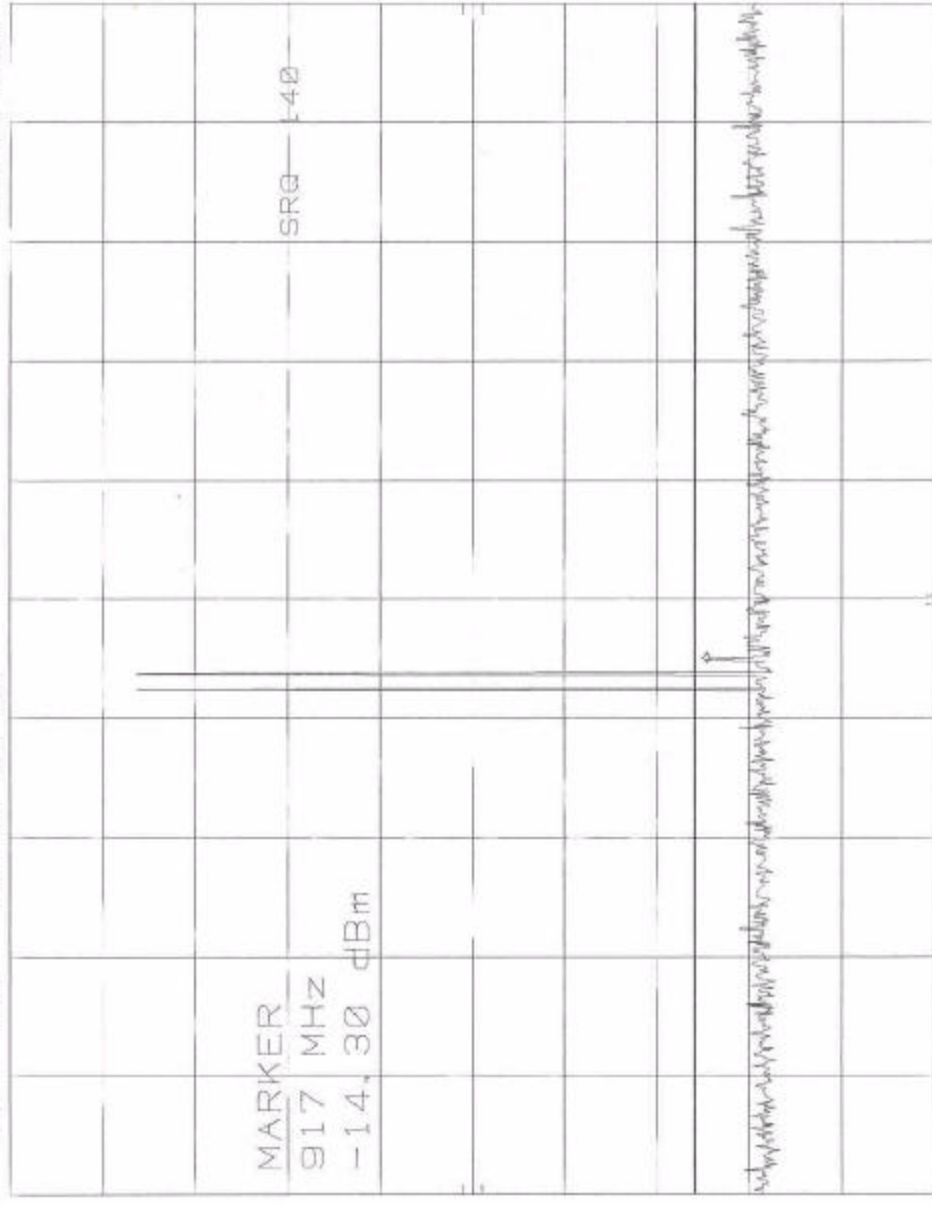
FCC 2.991 & 22.917
RSS-131, 2.6

SG1 = 3.06 dBm
SG2 = 3.88 dBm

MKR 917 MHz
-14.30 dBm

10 dB/

OFFSET
61.1
dB
DL
-13.0
dBm



START 30 MHz
RES BW 10 kHz
VBW 10 kHz
STOP 2.00 GHz
SWP 59.1 sec

11/12/99

Powerwave Technologies

200W

Spurious Emissions

ANPS Wideband Data

$f_1 = 869 \text{ MHz}$ $f_2 = 894 \text{ MHz}$

FCC 2991 & 22.917

R55-131, 6.6

SG1 = 306 dBm

SG2 = 388 dBm

HP REF 61.1 dBm

ATTEN 20 dB

10 dB/

OFFSET

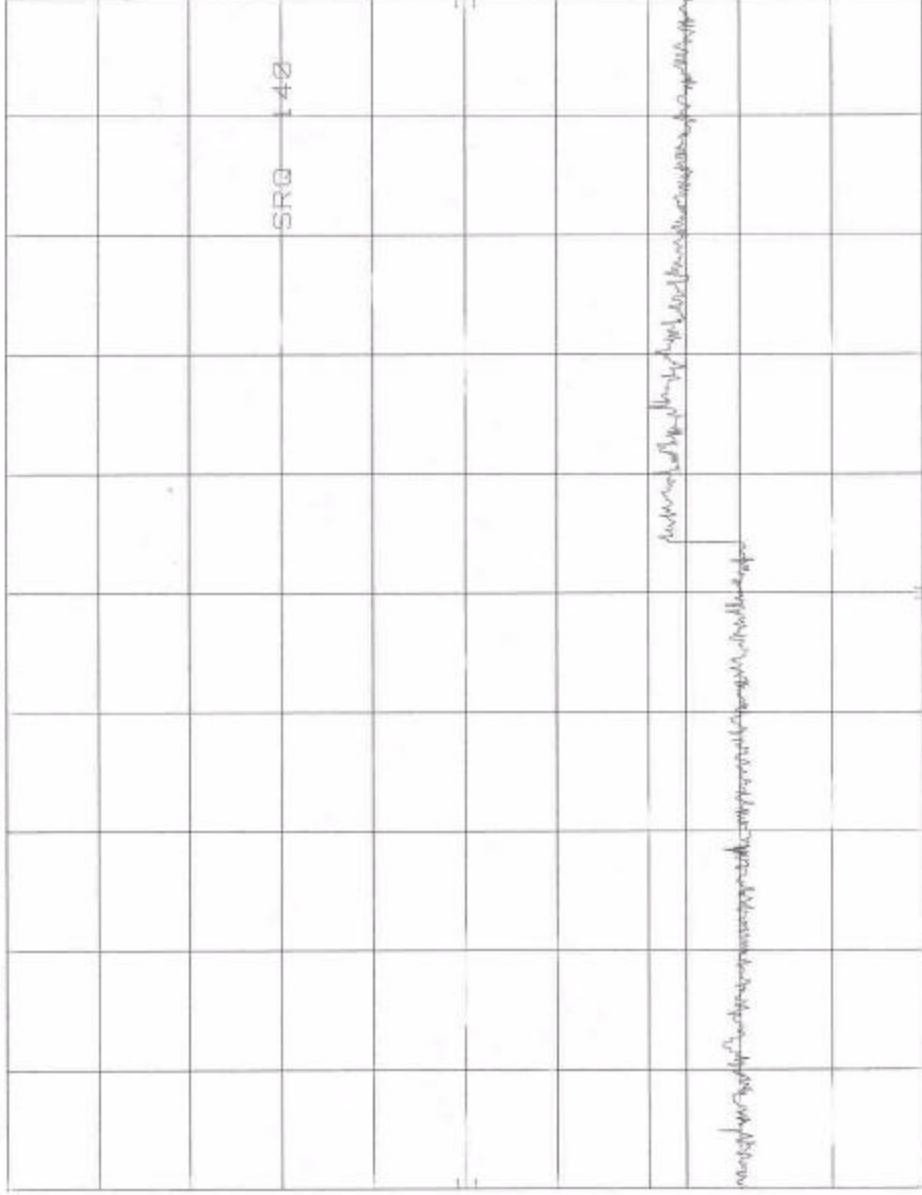
61.1

dB

DL

-13.0

dBm



START 2.00 GHz

RES BW 10 kHz

VBW 10 kHz

STOP 9.00 GHz

SWP 210 sec

11/2/99
Powerwave Technologies
200W

Spurious Emissions
AMPS Wideband Data
2.991 to 22.917
RSS-131.66

No input to spectrum analyzer

fp REF

61.1 dBm ATTN 20 dB

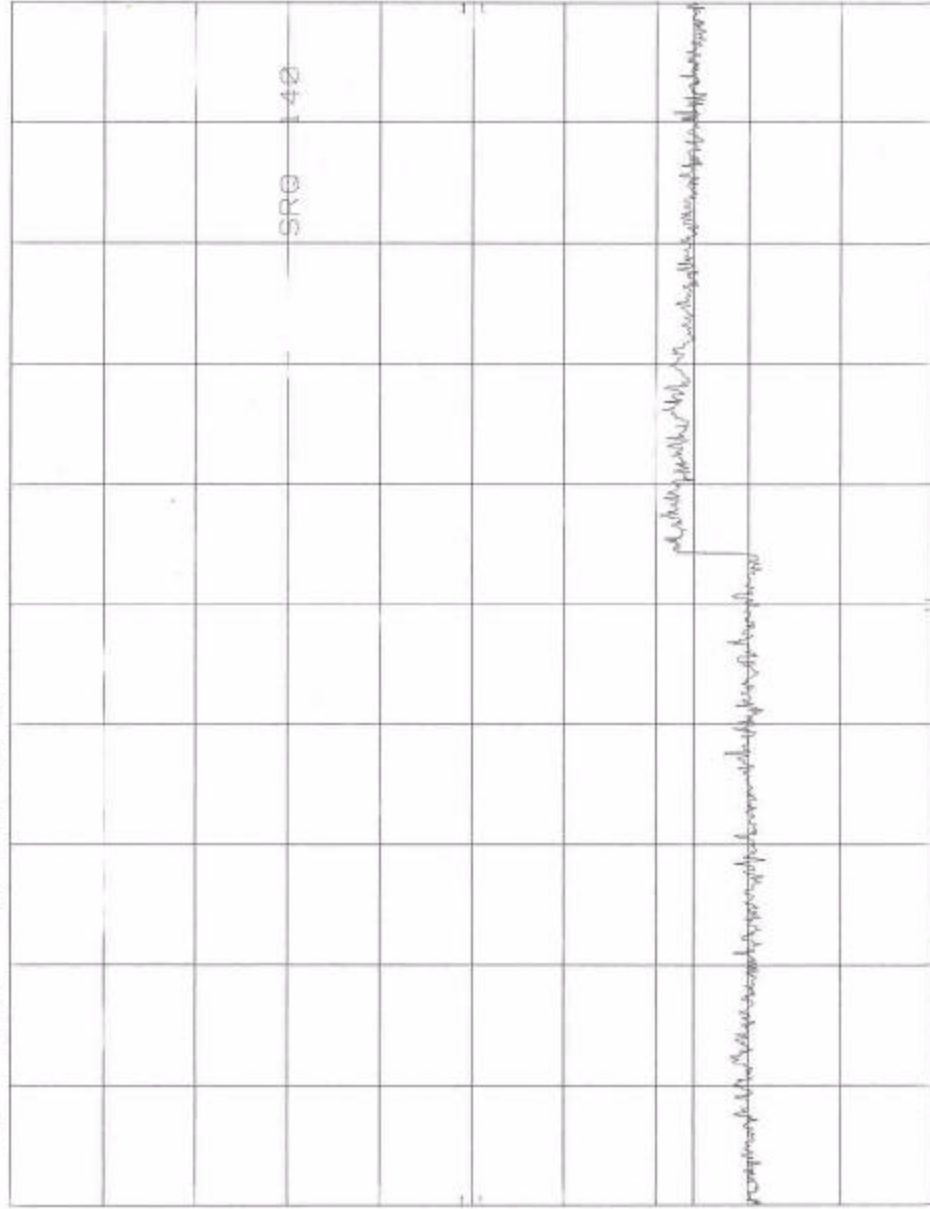
10 dB/

OFFSET

61.1
dB

DL

-13.0
dBm



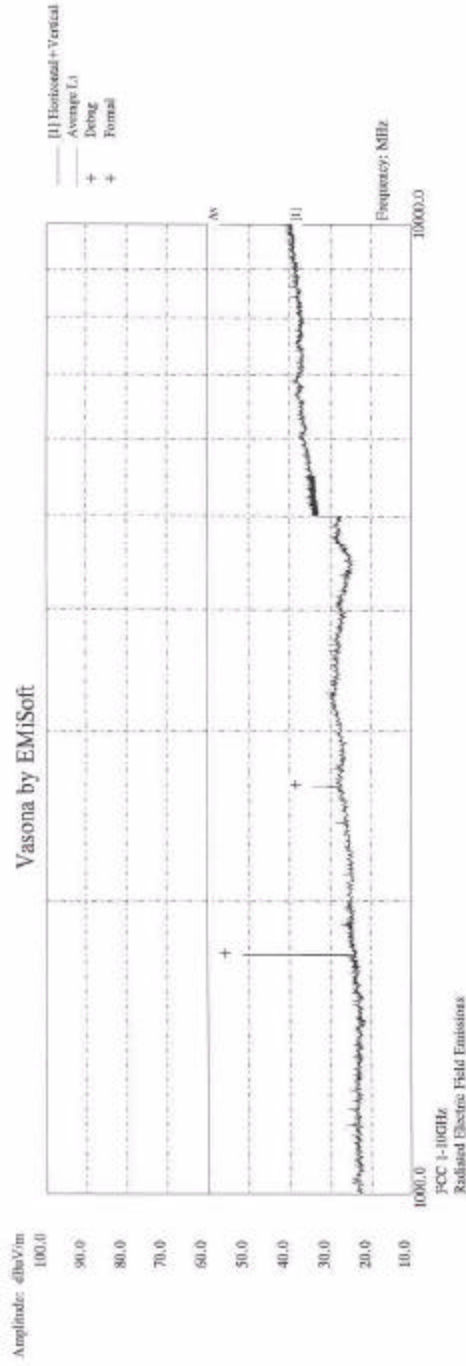
START 2.00 GHz

RES BW 10 kHz

VBW 10 kHz

STOP 9.00 GHz

SWP 210 sec



Results Title : FCC 1-10GHz
Test Laboratory : BABT Product Service Santa CI
Engineer/User : Kim Nguyen
Equipment [EUT] : NTL107AA & NTL107AC

Details

Powerwave Technologies Inc.

Configuration

881MHz carrier

Filed on : 11 Nov 99 at 13:30

Vasona is a trademark of EMiSoft Ltd
Another test and assessment product from EMiSoft !

Debug Data

No	Frequency MHz	Raw dBuV	Cable Loss dB	AF dB	Level dBuV/m	Emission Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1	1762.915	56.56	3.59	-8.56	51.39	Debug	V	97	13	60.0	-8.61		
2	2619.939	34.95	4.64	-5.3	34.29	Debug	V	97	13	60.0	-25.71		Pass

Pass

1
A
2

Version 1.0.3



Details

894MHz carrier

Vasonga is a trademark of EMI-Soft Ltd.
Another test and assessment product from EMI-Soft!

Debug Data											
No	Frequency MHz	Raw data	Cable Loss dB	AP dBm	Level dBmV/m	Fusion Type	Pol cm	Alt Deg	Limit dBmV/m	Margin Pass dB / fail	Comments

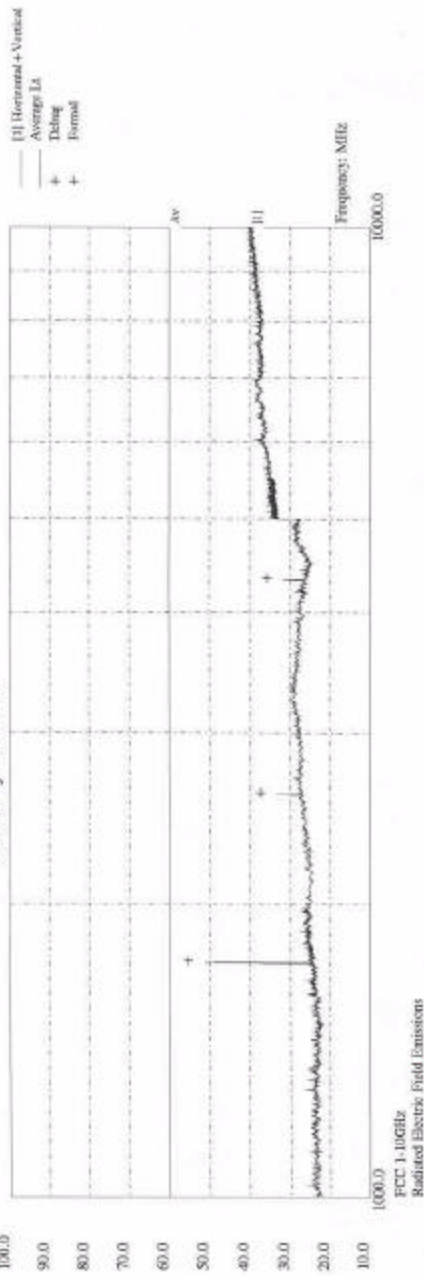
	I	II	V	Daug	V	97	13	60.0	-8.61	Poss.
1	1762.915	56.36	3.59	-8.56	51.39					
2	2668.191	35.12	4.68	-5.13						

34.67 Debug V 402 13 60.0 -21.33 Pass

Emission Measurement Software
Print Reference Time : 10:49:17

Print Reference Time: 10:49:17

Vasona by EMIsoft



Test Technician: Giep Kim Nguyen; Date = Nov - 11 - 1999

Results Title : FCC 1-10GHz
Test Laboratory : EMIsoft Test Laboratories
Engineer/User : Andy Griffin
Equipment [EUT]

Configuration

Vasova is a trademark of EMiSoft Ltd
Another test and assessment product from EMiSoft !

No	Frequency MHz	Power dBm	Cable Loss dB	AP dBm	Level dBm	Emission Type	Pol	Hgt cm	Ant Deg	Limit dBm	Margina dB	Pass /Fail	Comments
1	100	10	0.5	9.5	-100	Continuous	Horizontal	100	0	-100	10	Pass	
2	100	10	0.5	9.5	-100	Continuous	Vertical	100	0	-100	10	Pass	
3	100	10	0.5	9.5	-100	Continuous	Horizontal	100	0	-100	10	Pass	
4	100	10	0.5	9.5	-100	Continuous	Vertical	100	0	-100	10	Pass	
5	100	10	0.5	9.5	-100	Continuous	Horizontal	100	0	-100	10	Pass	
6	100	10	0.5	9.5	-100	Continuous	Vertical	100	0	-100	10	Pass	
7	100	10	0.5	9.5	-100	Continuous	Horizontal	100	0	-100	10	Pass	
8	100	10	0.5	9.5	-100	Continuous	Vertical	100	0	-100	10	Pass	
9	100	10	0.5	9.5	-100	Continuous	Horizontal	100	0	-100	10	Pass	
10	100	10	0.5	9.5	-100	Continuous	Vertical	100	0	-100	10	Pass	

[illegible]

4	4322.013	27.07	6.56	-2.24	32.9	Exhug	V	406	13	60.0	-27.1	Pass
					31.39	Exhug	V	406	13	60.0	-28.61	Pass

35.09 Debug V 104 26 60.0 -24.91 Pass

Wed 10/Nov/1999 19:21:26

