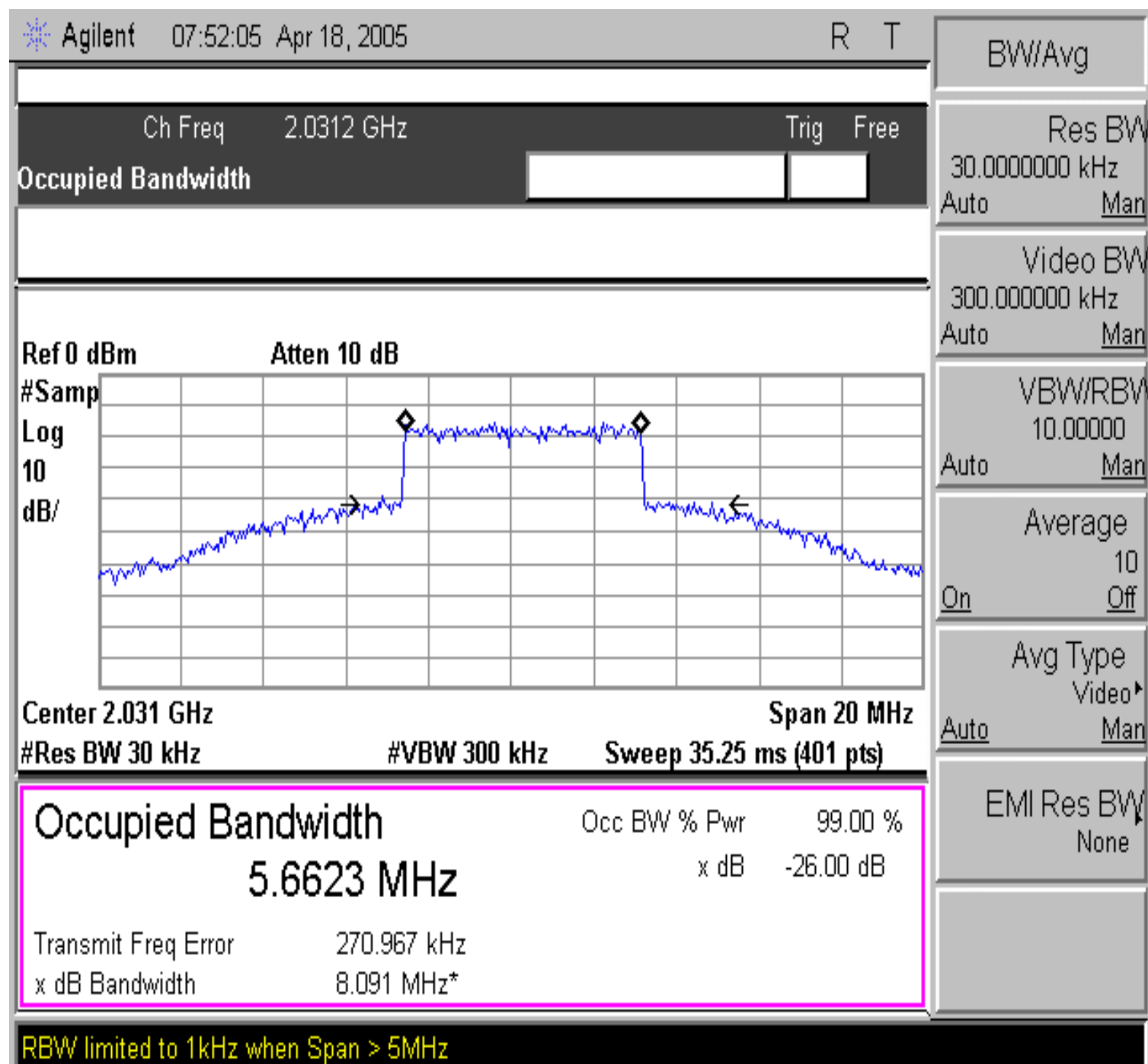


6MHZ BANDWIDTH SETTING



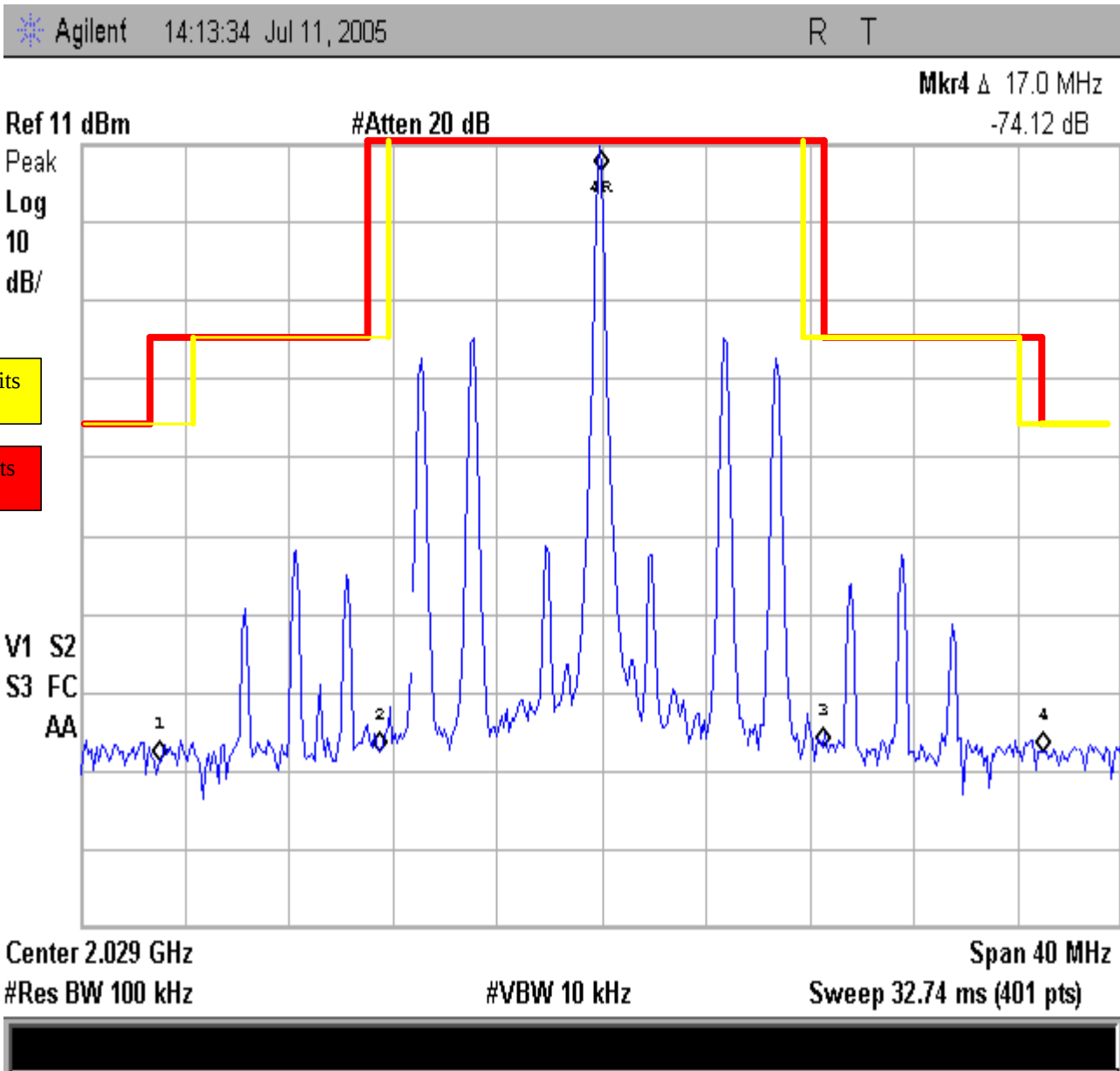
Analog spectral plots

Analog Application:

“When using frequency modulation:

(i) On any frequency removed from the assigned (center) frequency by more than 50 % up to and including 100 % of the authorized bandwidth: At least 25 db in any 100 KHz reference bandwidth (Bref):

(ii) On any frequency removed from the assigned (center) frequency by more than 100% up to and including 250% of the authorized bandwidth: At least 35 db in any 100 KHz reference bandwidth.



*Digital/Analog Emission
Bandwidth Measurements*

Developing the Spectral Mask for an Analog Application

Given this equation, the following spectral mask can be generated in a graphical format per figure 3 below which is tabulated in table #2.

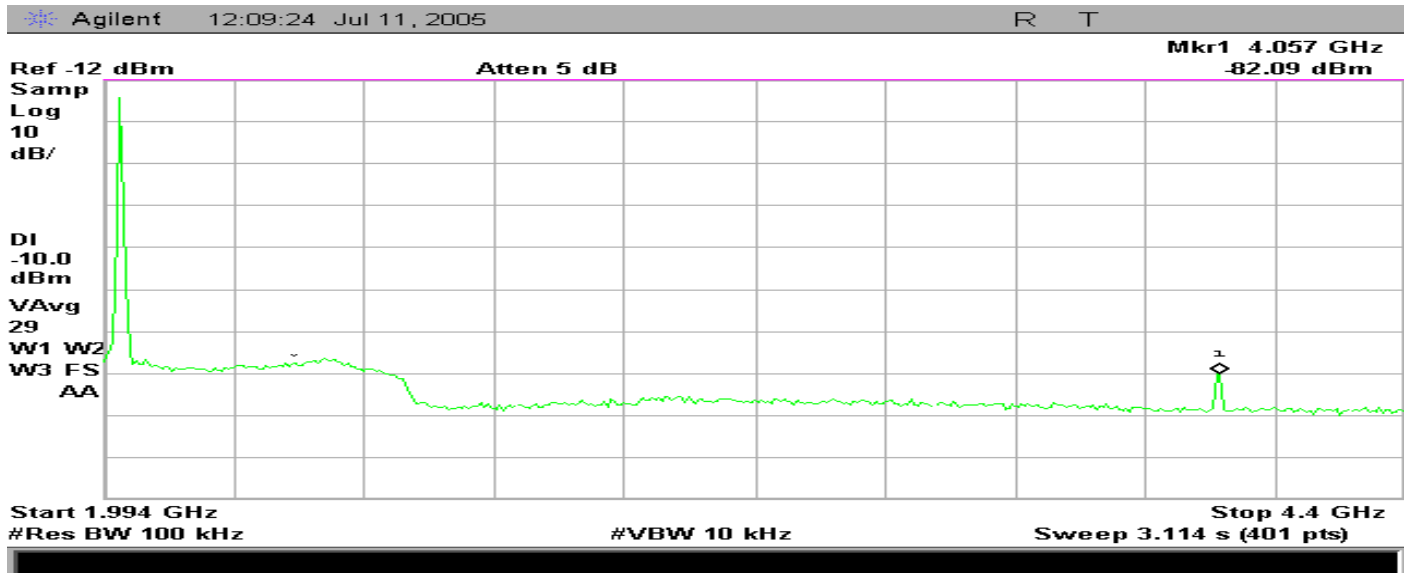
Figure 3 shows the relationship of the above equation as a function of frequency offset from the center of the 12 MHz channel. The x-axis shows the frequency delta in MHz while the y-axis shows the required attenuation below the 0 db mean output power reference in db.

Offset

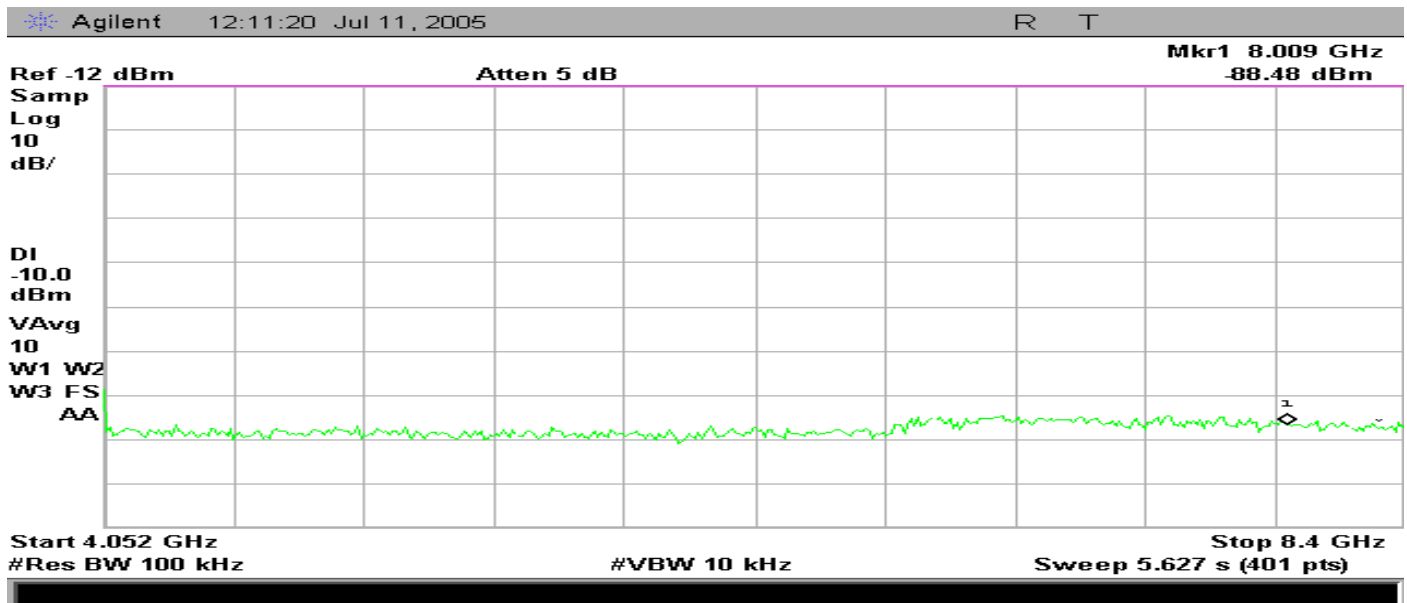
G(%)	Frequency (MHz)	A (db)
50	6.0	25.00
55	6.6	25.00
60	7.2	25.00
65	7.8	25.00
70	8.4	25.00
75	9.0	25.00
80	9.6	25.00
85	10.2	25.00
90	10.8	25.00
95	11.4	25.00
100	12.0	25.00
105	12.6	35.00
110	13.2	35.00

Table #2

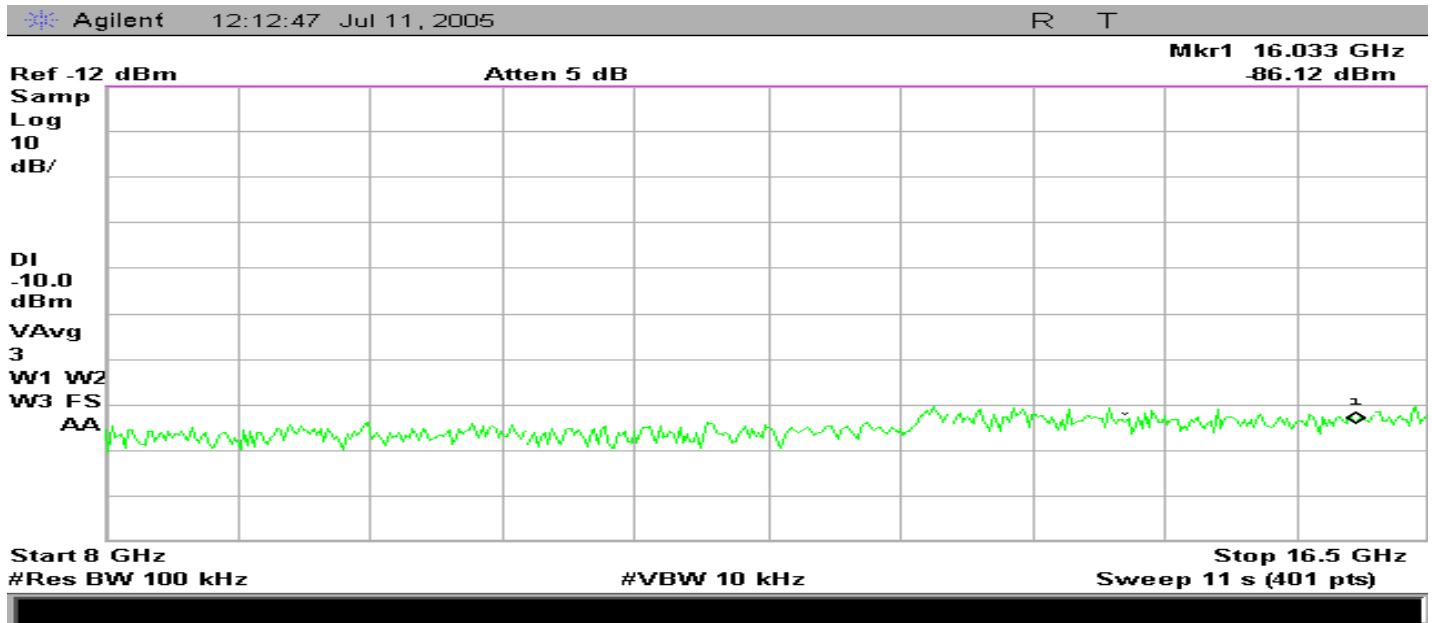
SPURIOUS OUTPUT AT THE ANTENNA PORT- conducted



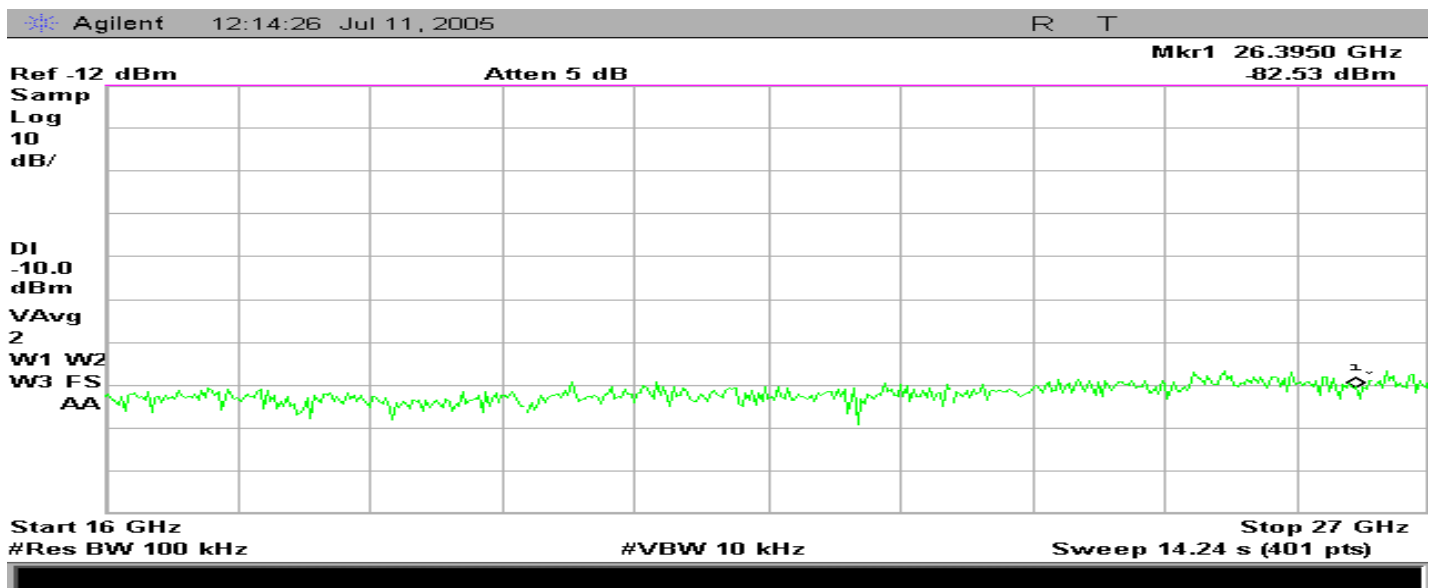
4 to 8 GHz conducted



to 16 GHz conducted



6 to 27 GHz conducted



BASE RADIATED EMISSIONS

set up courtesy of Curtis Straus

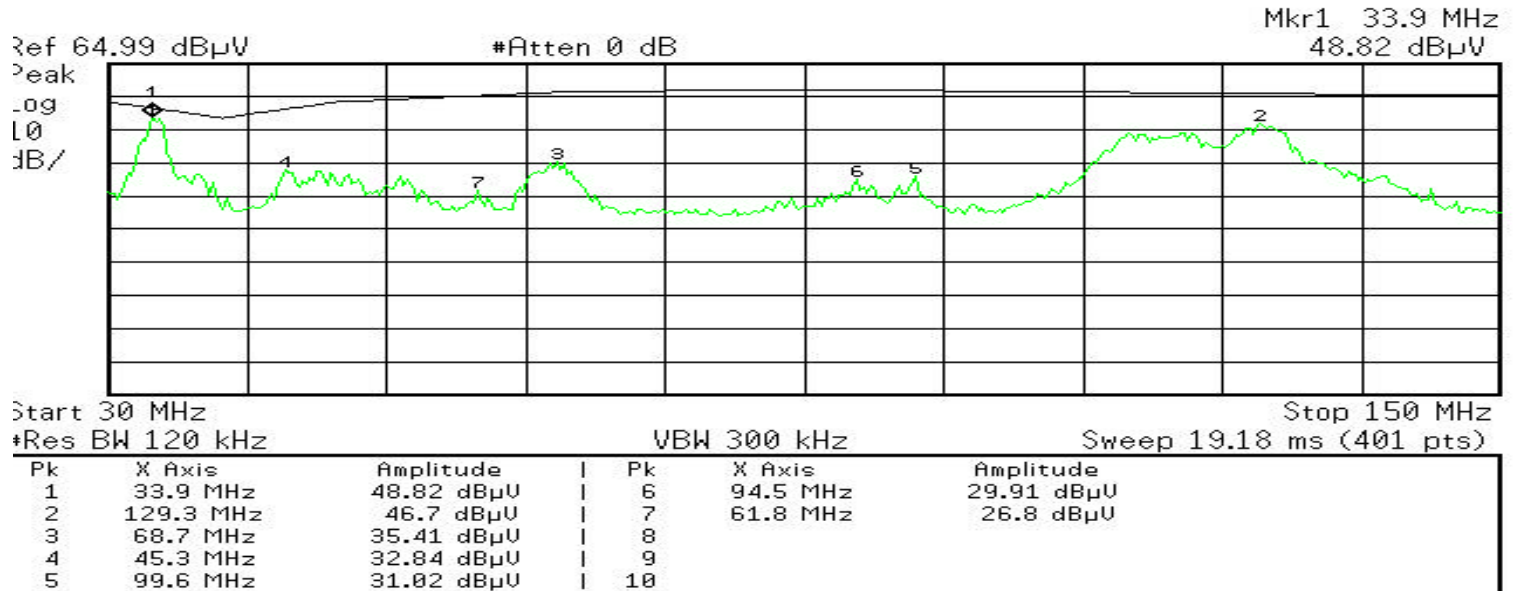


**2 GHz Coderunner RF unit antenna port terminated with 30dbm 50 ohm load
IDU outside shielded chamber**

0 to 150 MHz vertically polarized

Agilent 09:58:17 Mar 18, 2005

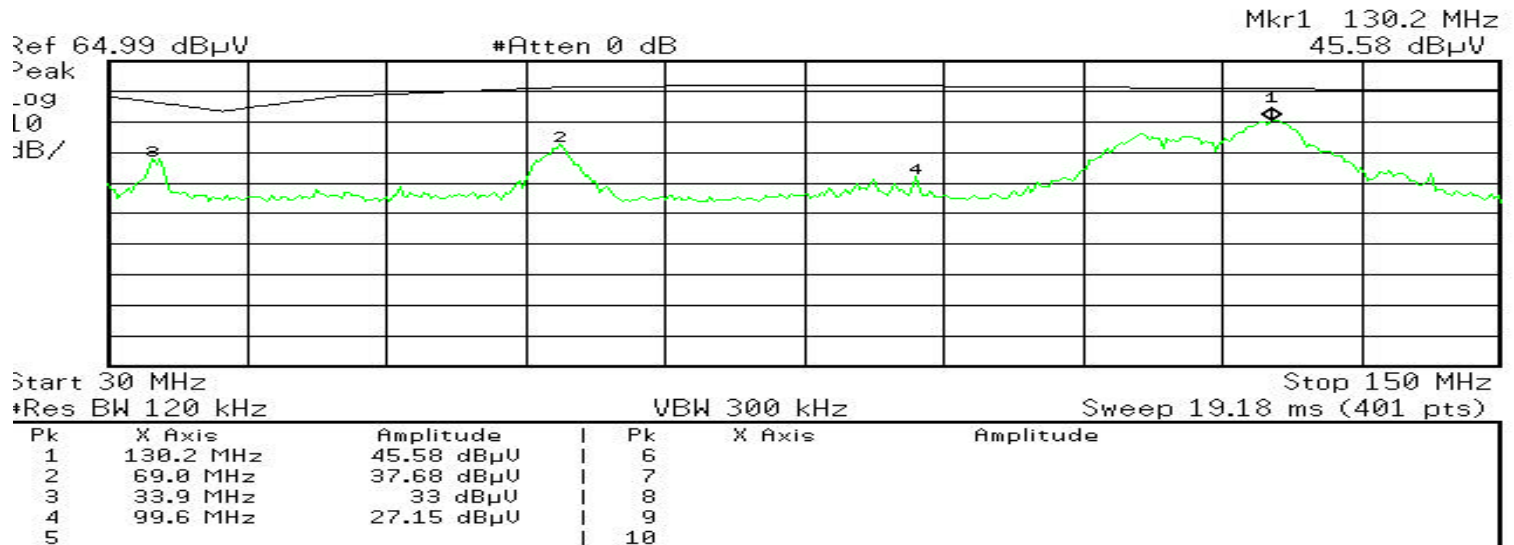
R L



horizontal polarization

Agilent 10:02:49 Mar 18, 2005

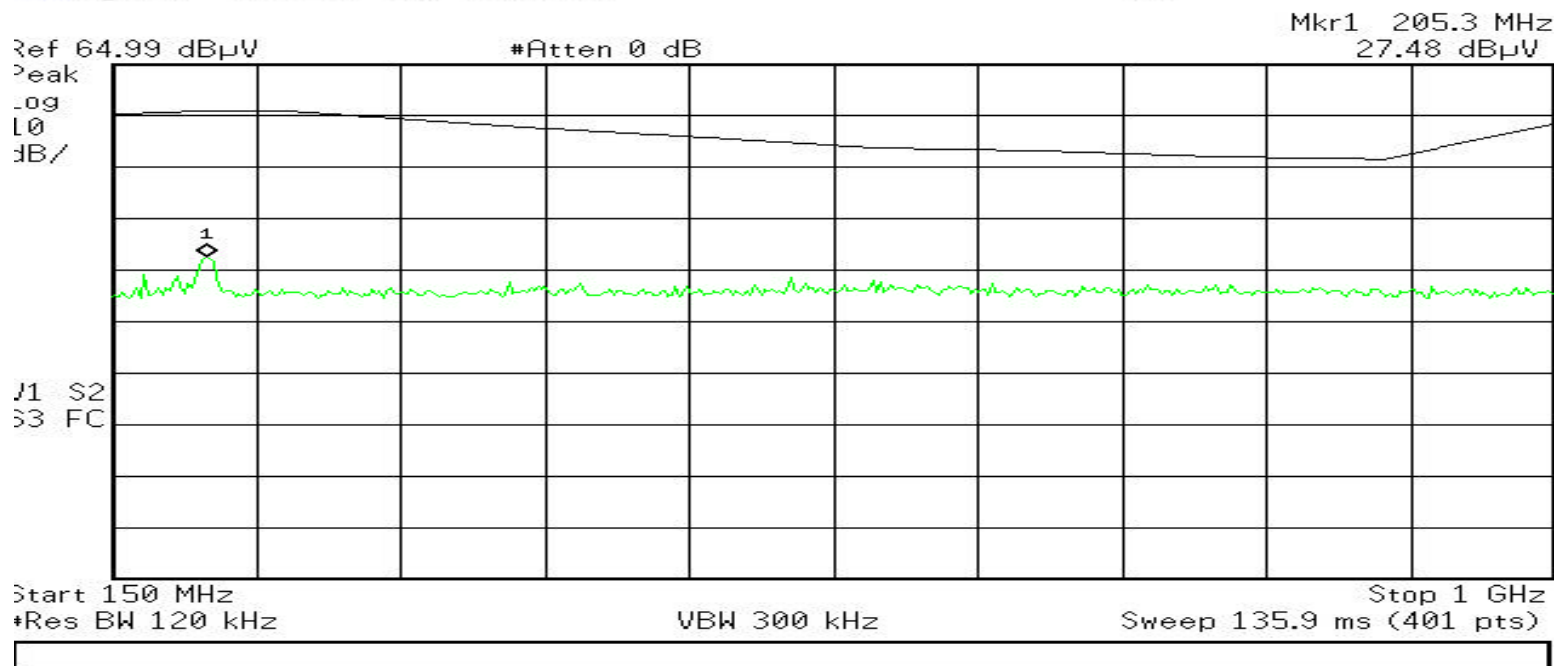
R L



50 MHz to 1GHz vertical polarization

Agilent 10:05:35 Mar 18, 2005

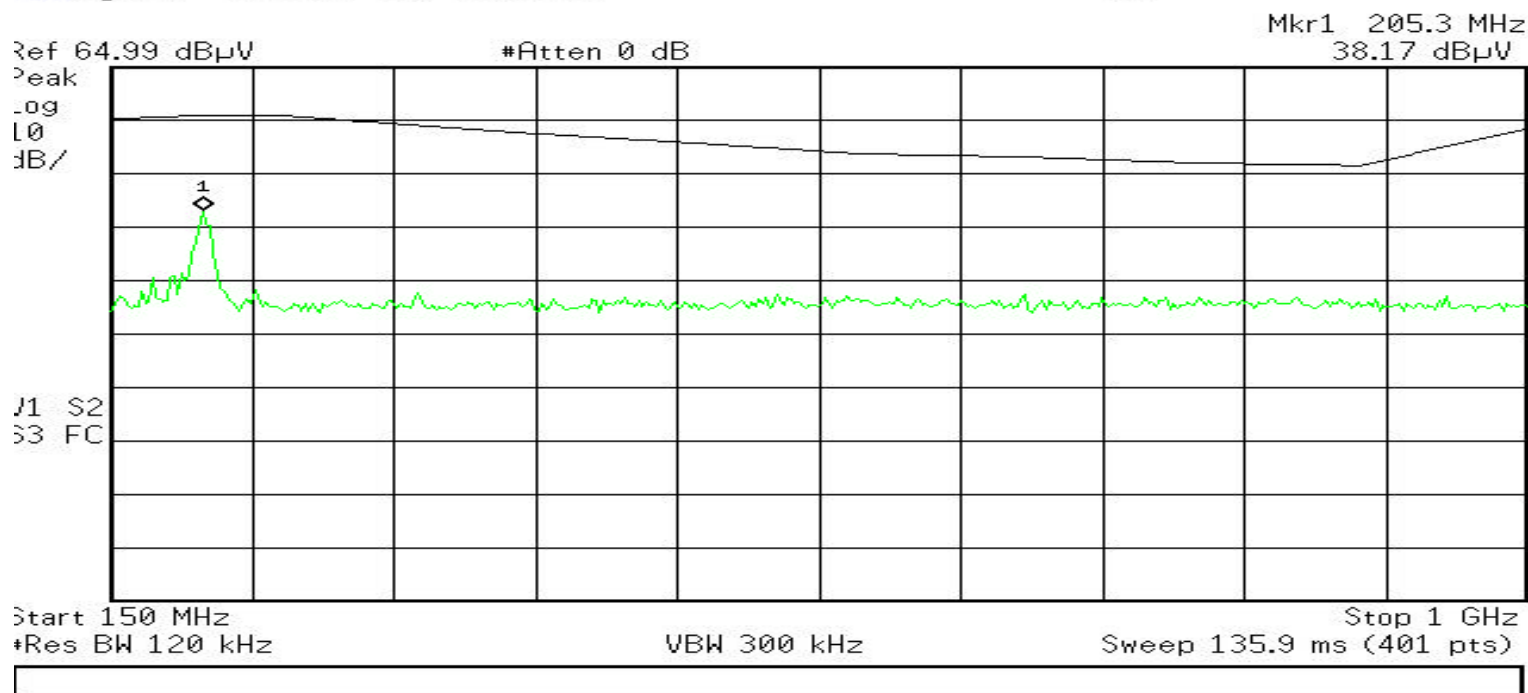
R L



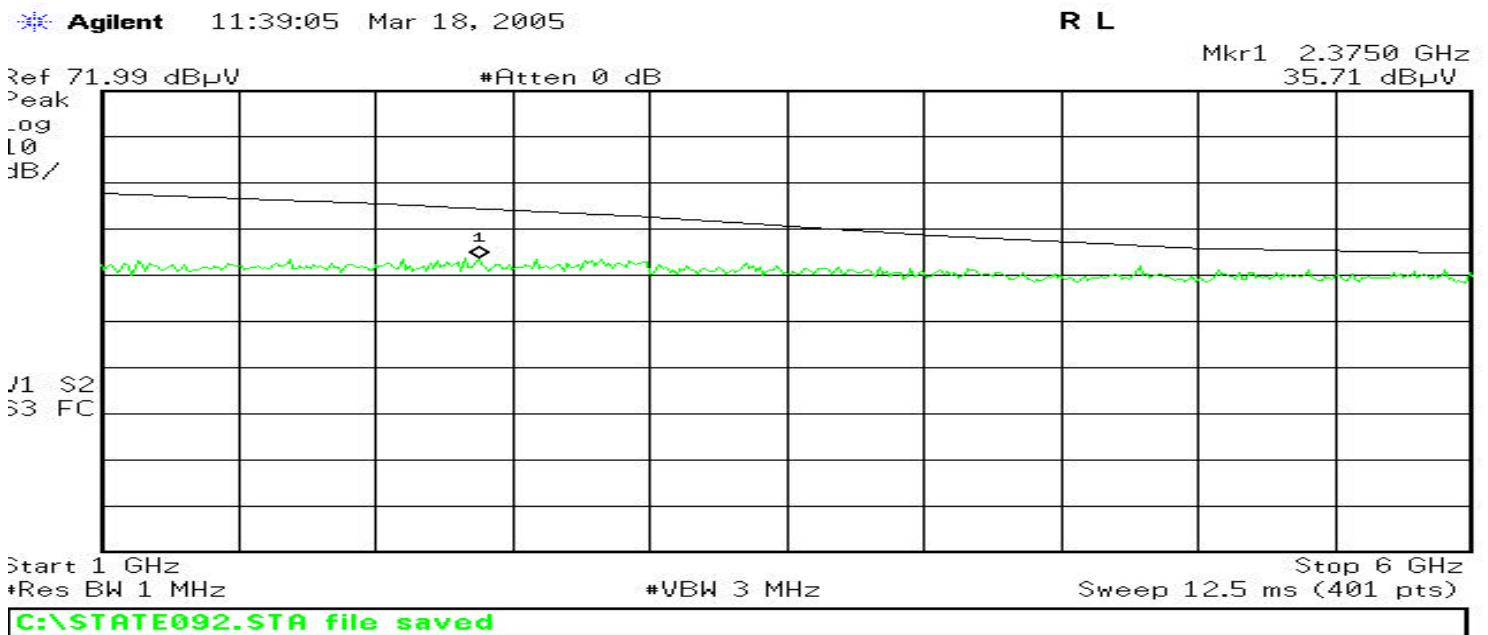
Horizontal

Agilent 10:08:05 Mar 18, 2005

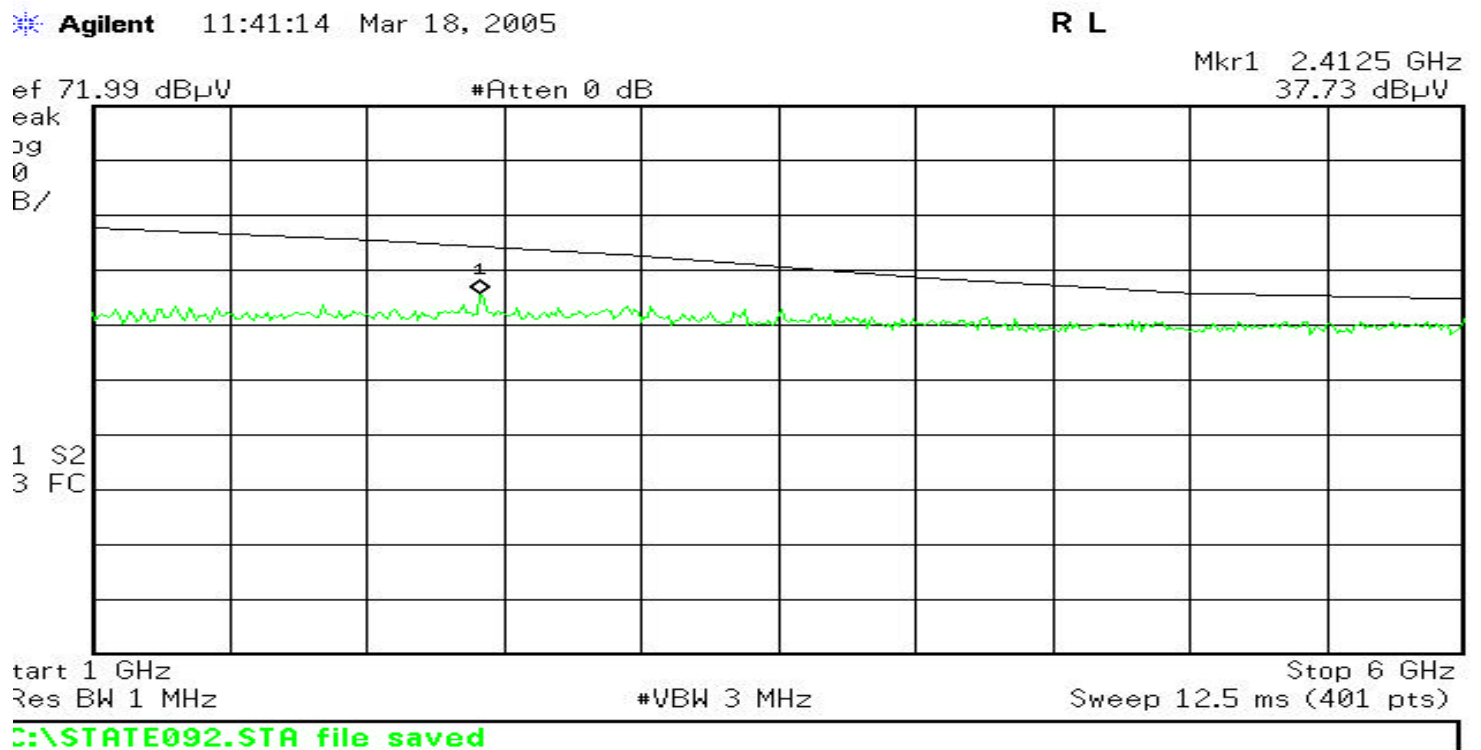
R L



to 6GHz horizontal



ertical



:

to 17GHz horizontal

Agilent 13:35:27 Mar 18, 2005

R L

Mkr1 6.3300 GHz
31.5 dB μ V

Ref 59.99 dB μ V

#Atten 0 dB

Peak
Log
LO
dB/

J1 S2
S3 FC

Start 6 GHz

#Res BW 1 MHz

#VBW 3 MHz

Stop 17 GHz
Sweep 55 ms (401 pts)

C:\STATE092.STA file saved

Vertical

Agilent 13:39:17 Mar 18, 2005

R L

Mkr1 16.5875 GHz
36.25 dB μ V

Ref 59.99 dB μ V

#Atten 0 dB

Peak
Log
LO
dB/

J1 S2
S3 FC

Start 6 GHz

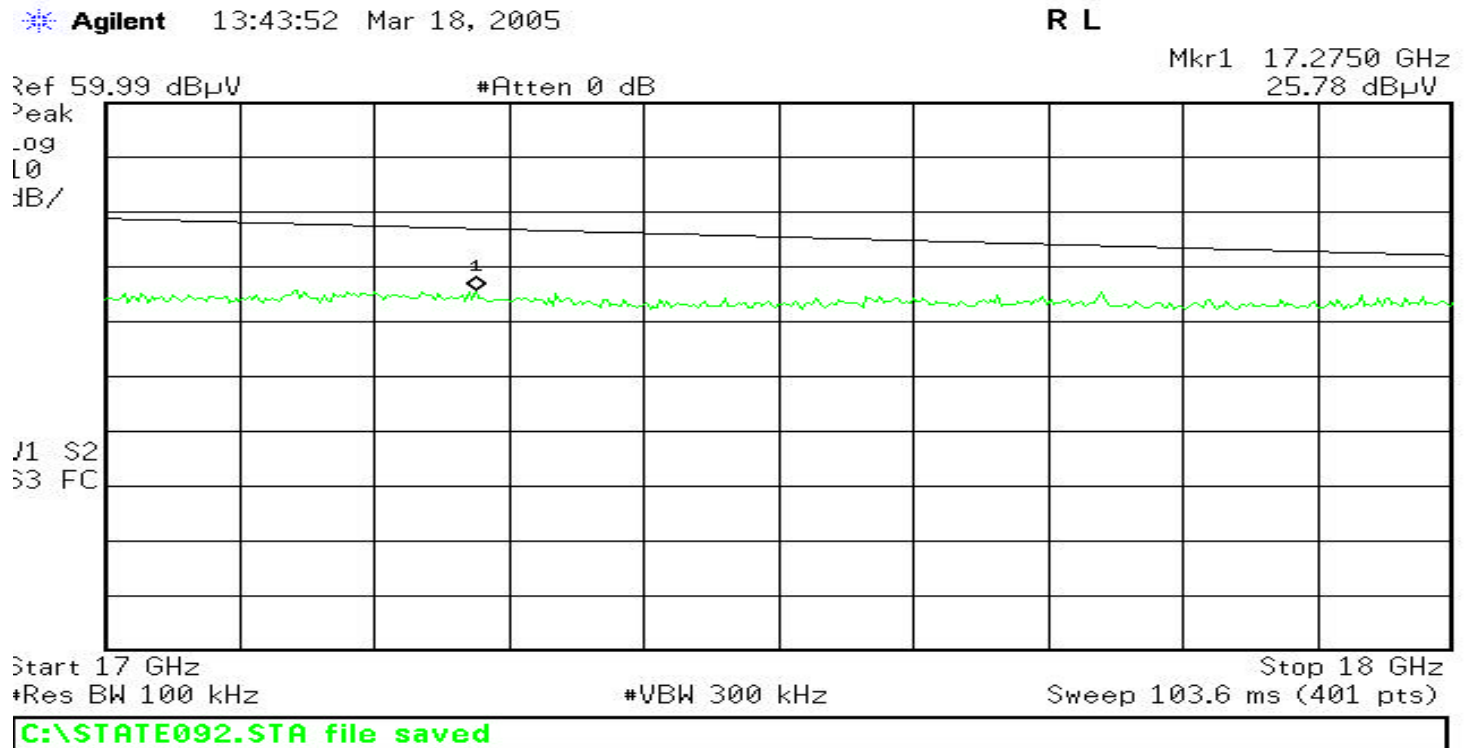
#Res BW 1 MHz

#VBW 3 MHz

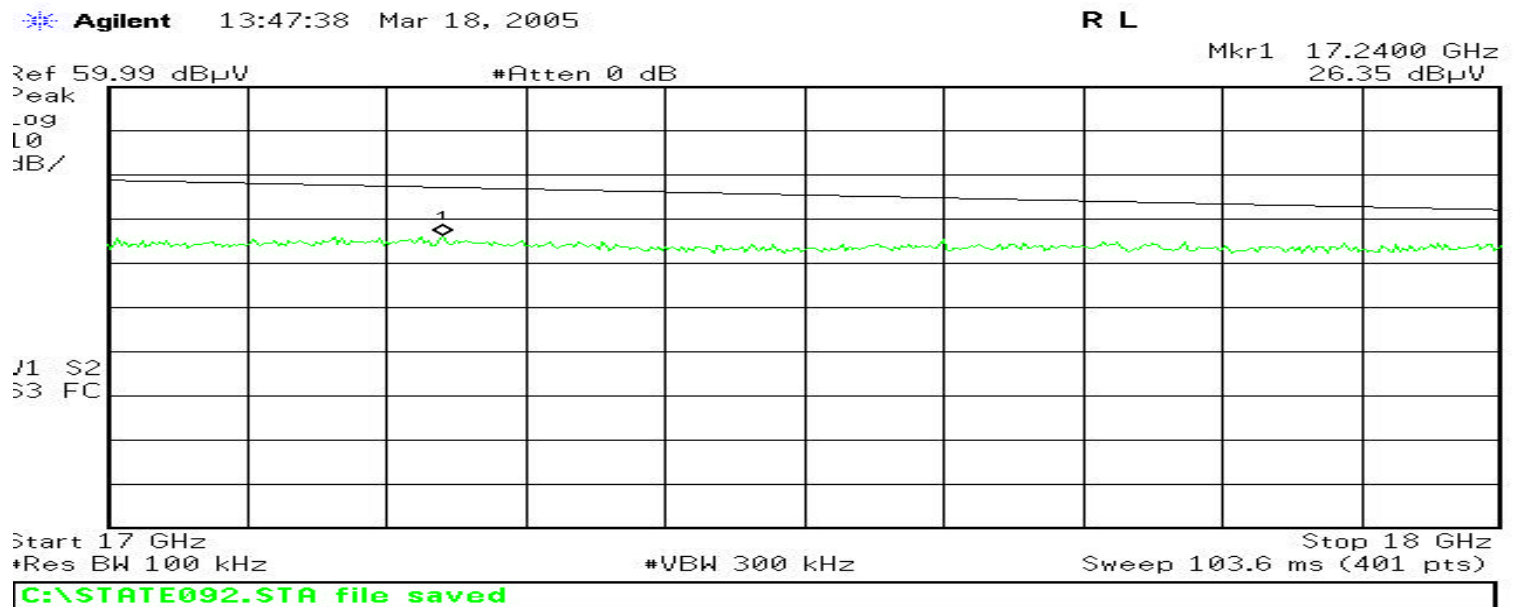
Stop 17 GHz
Sweep 55 ms (401 pts)

C:\STATE092.STA file saved

7 to 18GHz vertical



7 to 18GHz horizontal



et up for high frequency gain horn



8 to 24 GHz vertical

Agilent 15:07:35 Mar 18, 2005

R L

Mkr1 21.945 GHz
36.65 dB μ V

Ref 59.99 dB μ V

#Atten 0 dB

Peak
Log
LO
dB/

J1 S2
S3 FC

Start 18 GHz

*Res BW 1 MHz

#VBW 3 MHz

Stop 24 GHz
Sweep 60 ms (401 pts)

C:\STATE092.STA file saved

8 to 24 horizontal

Agilent 15:11:11 Mar 18, 2005

R L

Mkr1 21.420 GHz
36.22 dB μ V

Ref 59.99 dB μ V

#Atten 0 dB

Peak
Log
LO
dB/

J1 S2
S3 FC

Start 18 GHz

*Res BW 1 MHz

#VBW 3 MHz

Stop 24 GHz
Sweep 60 ms (401 pts)

C:\STATE092.STA file saved

4 to 26 GHz vertical

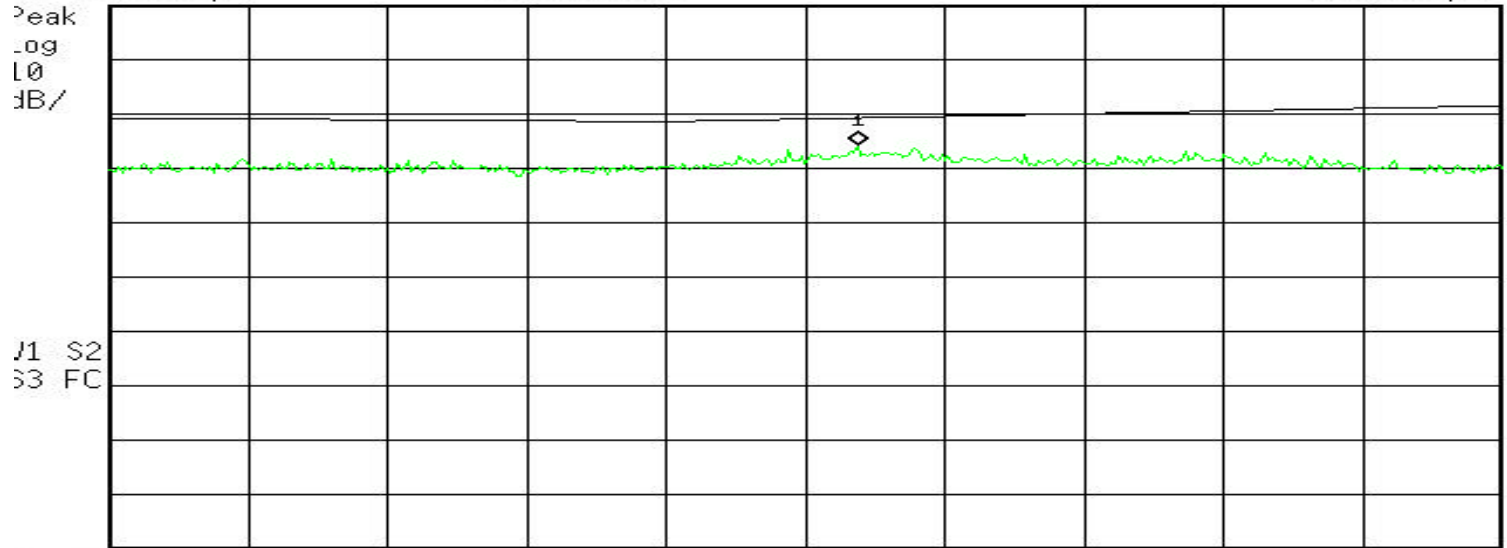
Agilent 15:14:20 Mar 18, 2005

R L

Mkr1 25.34375 GHz
34.35 dB μ V

Ref 59.99 dB μ V

#Atten 0 dB



Start 24 GHz

#Res BW 300 kHz

#VBW 1 MHz

Stop 26.5 GHz

Sweep 28.59 ms (401 pts)

C:\STATE092.STA file saved

4 to 26 GHz horizontal

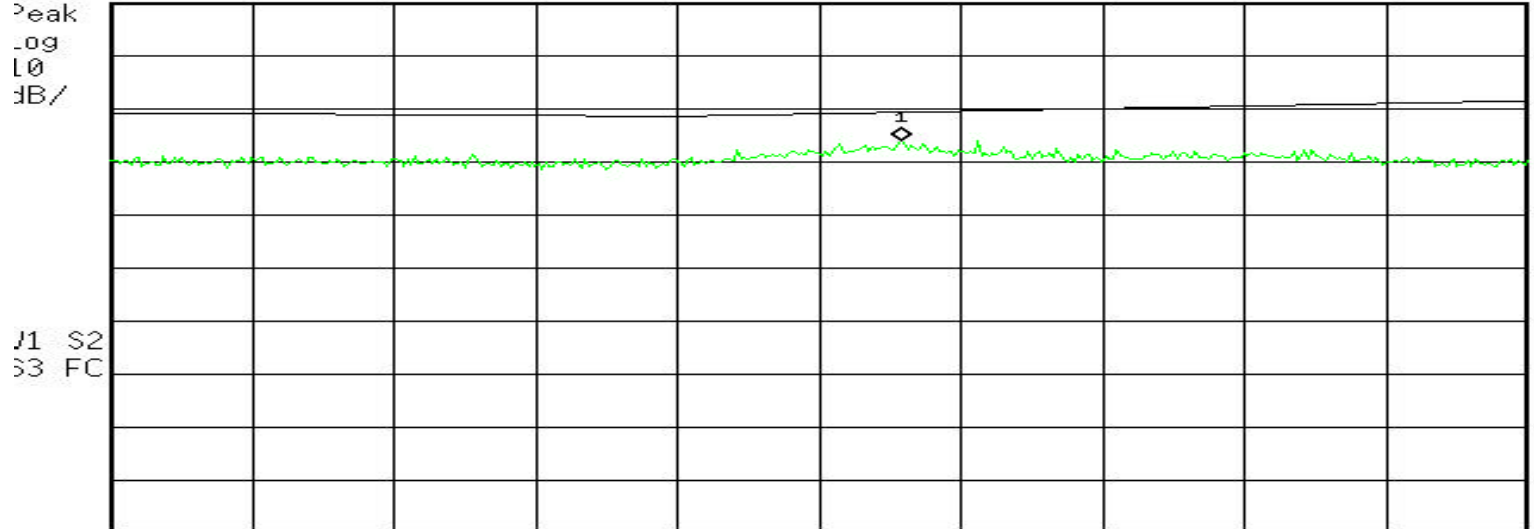
Agilent 15:16:16 Mar 18, 2005

R L

Mkr1 25.39375 GHz
34.06 dB μ V

Ref 59.99 dB μ V

#Atten 0 dB



Start 24 GHz

#Res BW 300 kHz

#VBW 1 MHz

Stop 26.5 GHz

Sweep 28.59 ms (401 pts)

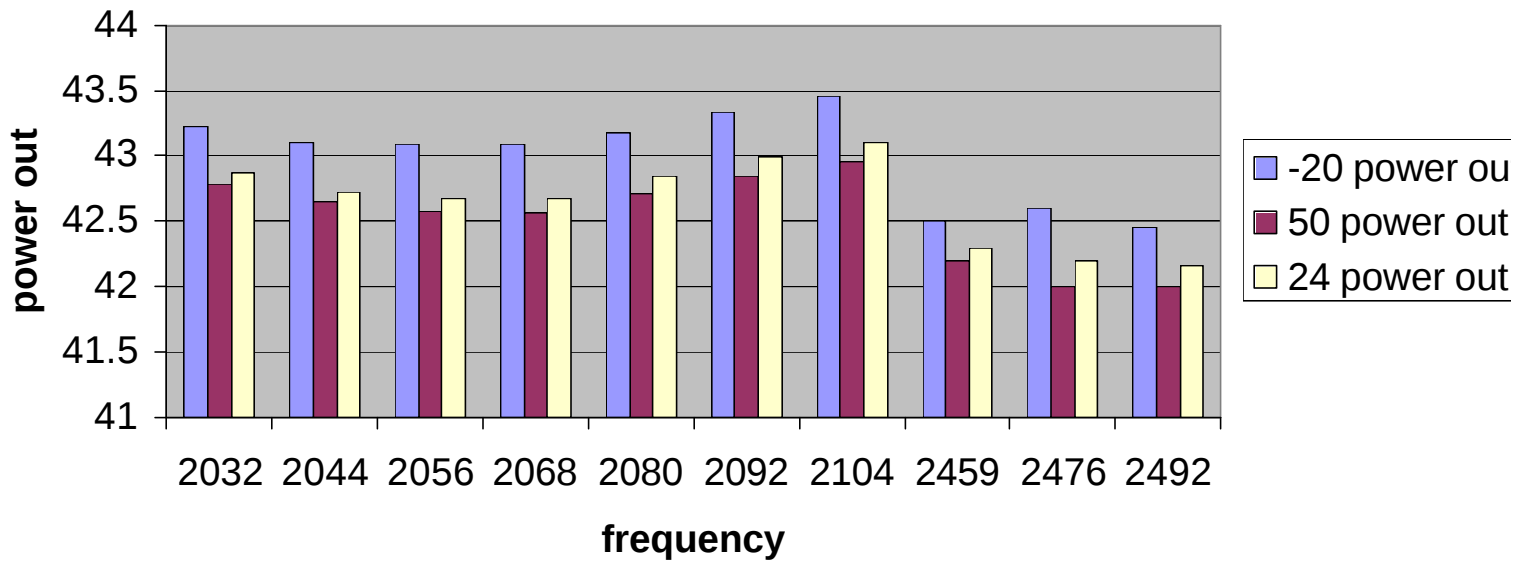
C:\STATE092.STA file saved

POWER OUT OVER TEMPERATURE AND CHANNEL PLAN

2031.5	43.22	42.78	42.87
2043.5	43.1	42.65	42.72
2055.5	43.09	42.58	42.68
2067.5	43.09	42.56	42.67
2079.5	43.18	42.71	42.84
2091.5	43.33	42.84	42.99
2103.5	43.46	42.96	43.1
2458.5	42.5	42.2	42.3
2475.5	42.6	42	42.19
2491.5	42.45	42	42.16
	-20	50	24

These power measurements are made using a CW if signal in the analog mode.
Digital power measurements include the necessary attenuation to meet the requirements of the QPSK modulation of 20dmc IMR

power out over temperature



Set up:

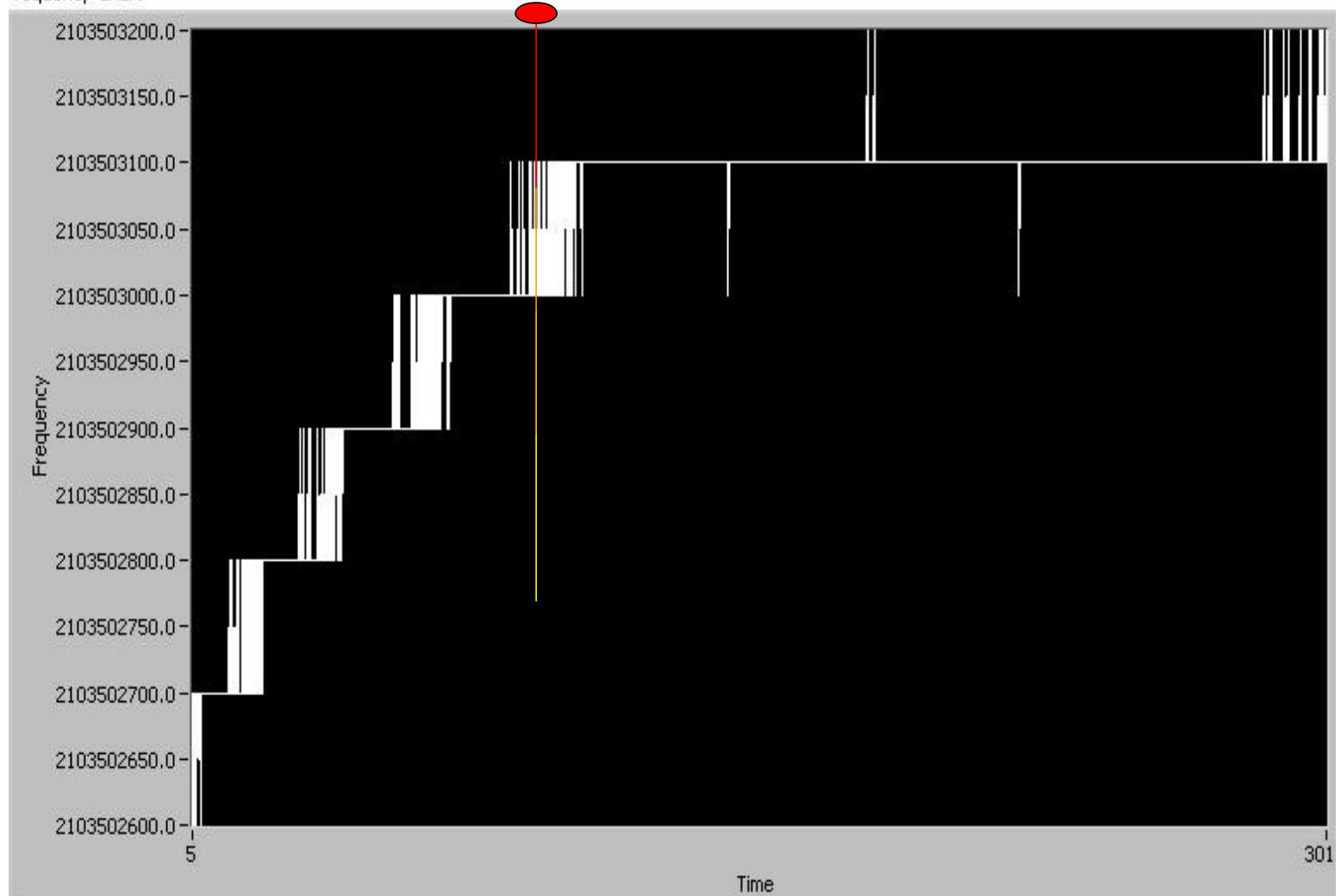
Using an HP 5343A microwave frequency counter controlled by a labview

Virtual instrument created a frequency over time histogram. The histogram is plotted to a graph with a resolution of 100Hz.

After one hour a pause was imposed and the case temperature of the device was raised to 50 and the histogram begun again. The preceding sequence was repeated at minus 20 degrees C. During this process the ac input to the IDU was varied +/- 15% @ 120vac and 220 vac no degradation of performance measured device maintains better than 2ppm frequency stability. Voltage variances +/- 20 % trigger a software alarm that disables the transmitter output

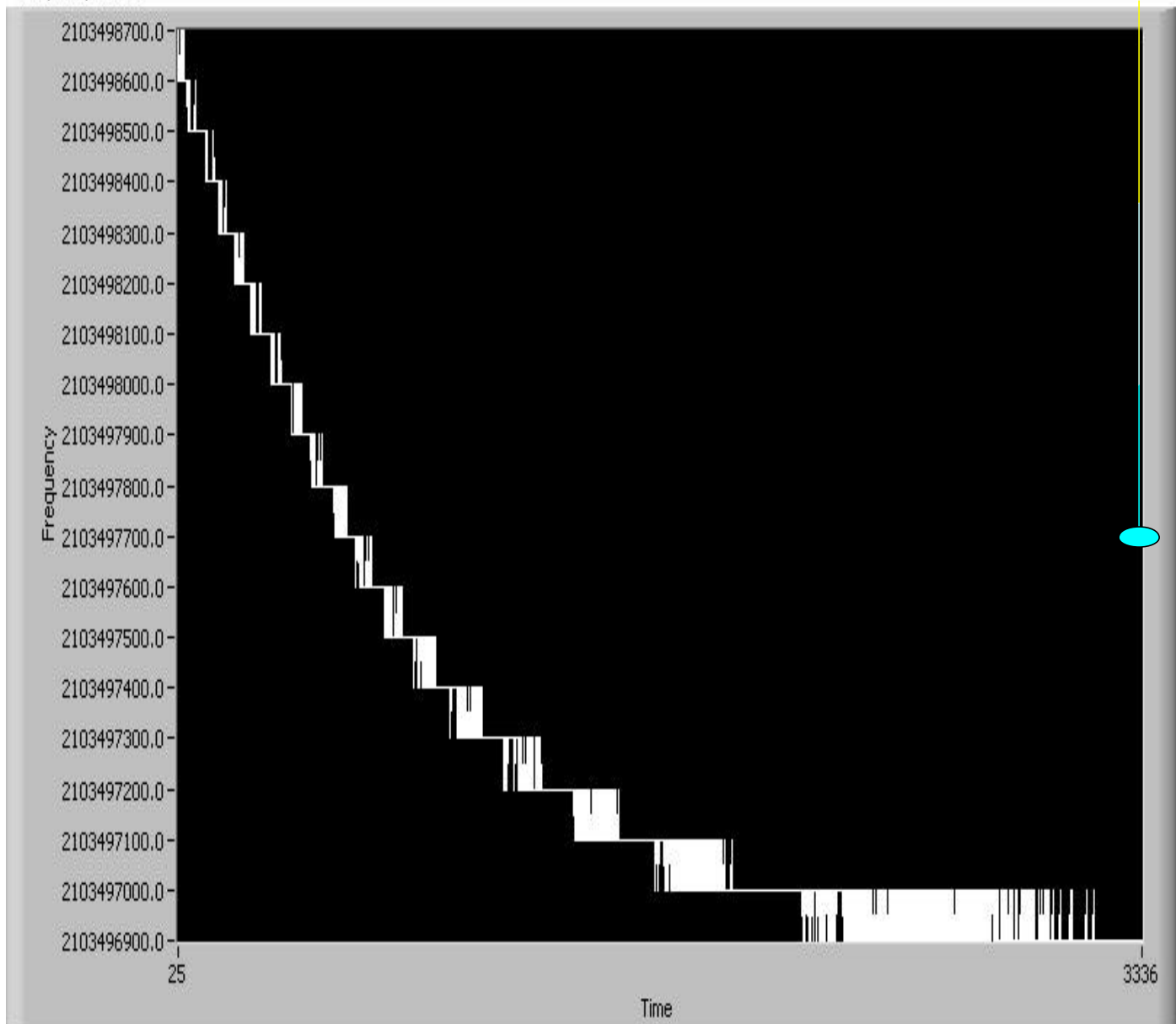
Ambient temperature 50degrees C ramp time 15 minutes Max deviation 600Hz

Frequency Chart



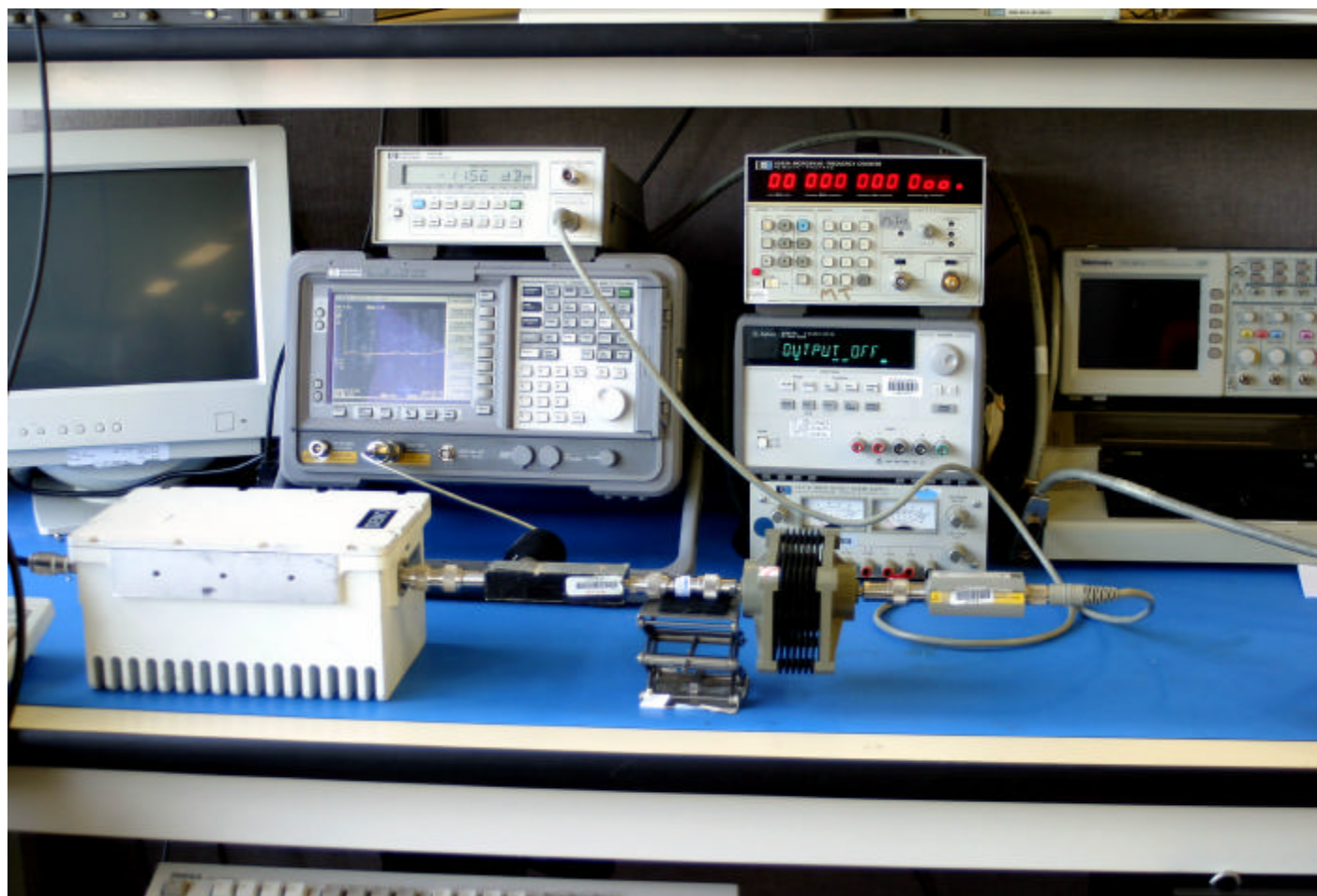
Ambient temperature -20 degrees C Max deviation 1.8KHz

Frequency Chart





Station spurious conducted emissions at the antenna port



FCC LABEL LOCATION



FCC LABEL MATERIAL SPECIFICATION

Z-Ultimate® Select 3000 White Thermal Transfer Material

Description:

A gloss topcoated, white, polyester, thermal transfer material that is specifically designed to be a fanfold labelstock. The Z-Ultimate Select 3000 White offers unique static dissipating properties that reduce the amount of dust that causes print voids. The high tack, high-strength, permanent acrylic-based adhesive displays superior adhesion and strength on an extensive variety of surfaces. This combination of Z-Ultimate Select 3000 White and Zebra's 4100, 5095 and 5100 resin ribbons provides excellent scratch and smear resistance and print quality for a thermal transfer label.

Z-Ultimate Select 3000 White media printed with 4100, 5095 and 5100 ribbons is a UL Recognized Component for Indoor and Outdoor use (UL Recognized Component when printed with any Zebra printer).

Suggested Applications

- Fanfoldable applications
- Shelf or scan pallet labels
- UL Required Information labeling
- Water-immersed labels
- Labels in contact with moving parts or friction conveyor drives
- Labels exposed to acid or alkali solutions; top side printed circuit board applications

Suggested Contacts

- Using Departments
- Engineering Department
- Product Manager
- Quality Control Manager
- Purchasing Department

Technical Specifications

Description		Caliper
Facestock	White, gloss topcoated polyester	2.0 mil
Adhesive	Permanent, acrylic-based	0.8 mil
Liner	50 lb. semi-bleached, kraft stock	3.0 mil
Total		5.8 mil

Recommended Zebra Ribbons:

4100, 5095, 5100

Minimum Application Temperature:

10°F (-12°C)

Service Temperature Range:

-40°F to 356°F (-40°C to 180°C)

Recommended Storage Conditions:

32°F to 70°F (0°C to 21°C) at 35% to 50% RH

Note: All products should be pre-tested to ensure that they meet all intended requirements of specific end use applications. For testing of this material please order SAM5219.



Supplies Guidebook • Call 800.423.0422

2-190

Rev. 3/00

Z-Ultimate Select 3000 White

