APPLICANT: FRONTPATH, INC

FCC ID: PM4-PROGEAR

TABLE OF CONTENTS

TEST REPORT CONTAINING:

EXHIBIT ATTACHMENTS:

TEST EQUIPMENT LIST

1. Spectrum Analyzer: HP 8566B-Opt 462, S/N 3138A07786, w/ preselector HP 85685A, S/N 3221A01400, Quasi-Peak Adapter HP 8565OA, S/N 3303A01690 & Preamplifier HP 8449B-OPT H02, S/N 3008A00372
2. Biconnical Antenna: Eaton Model 94455-1, S/N 1057,
3. Biconnical Antenna: Electro-Metrics Model BIA-25, S/N 1171
4. Log-Periodic Antenna: Electro-Metrics Model EM-6950, S/N 632
5. Log-Periodic Antenna: Electro-Metrics Model LPA-30, S/N 409
6. Double-Ridged Horn Antenna: Electro-Metrics Model RGA-180, 1-18 GHz, S/N 2319
7. 18-26.3GHz Systron Donner Standard Gain Horn #DBE-520-20
8. Horn 40-60GHz: ATM Part #19-443-6R
9. Line Impedance Stabilization Network: Electro-Metrics Model EM-7820, w/NEMA Adapter S/N 2682
10. Temperature Chamber: Tenney Engineering Model TTRC, S/N 11717-7
11. Frequency Counter: HP Model 5385A, S/N 3242A07460
12. Peak Power Meter: HP Model 8900C, S/N 2131A00545,
13. Open Area Test Site #1-3meters
14. Signal Generator: HP 8640B, S/N 2308A21464
15. Signal Generator: HP 8614A, S/N 2015A07428
16. Passive Loop Antenna: EMCO Model 6512, 9KHz to 30MHz, S/N 9706-1211
17. Dipole Antenna Kit: Electro-Metrics Model TDA-30/1-4, S/N 153
18. AC Voltmeter: HP Model 400FL, S/N 2213A14499
19. Digital Multimeter: Fluke Model 8012A, S/N 4810047
20. Digital Multimeter: Fluke Model 77, S/N 43850817
21. Oscilloscope: Tektronix Model 2230, S/N 300572

TEST PROCEDURE

GENERAL: This report shall NOT be reproduced except in full without the written approval of TIMCO ENGINEERING, INC. Shielded interface cables were used in all cases except for cables connecting to the telephone line and the power cords. A test program was run which simulated a normal data transmission on a network.

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-1992 using a 50uH LISN. Both lines were observed with the UUT transmitting. The bandwidth of the spectrum analyzer was 10kHz with an appropriate sweep speed. The ambient temperature of the UUT was 78°F with a humidity of 40%.

TEST PROCEDURES CONTINUED

BANDWIDTH 6.0dB: The measurements were made with the spectrum analyzer's resolution bandwidth(RBW)=1.0MHz and the video bandwidth(VBW) =3.0MHz and the span set as shown on plot.

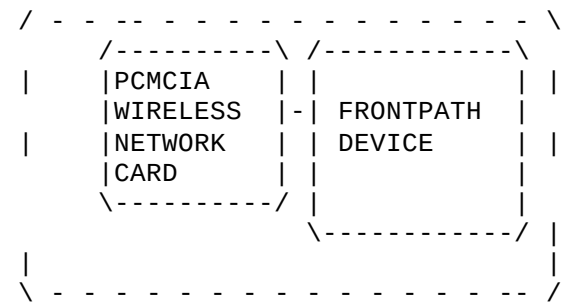
POWER OUTPUT: The RF power output was measured at the antenna feed point using a peak power meter.

ANTENNA CONDUCTED EMISSIONS: The RBW=100KHz, VBW=300KHz and the span set to 10.0MHz and the spectrum was scanned from 30MHz to the 10th Harmonic of the fundamental. Above 1.0GHz the resolution bandwidth was 1.0MHz and the VBW = 3.0MHz and the span to 50MHz.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.4-1992 using a HEWLETT PACKARD spectrum analyzer with a preselector. The bandwidth(RBW) of the spectrum analyzer was 100kHz up to 1GHz and 1.0MHz above 1GHz with an appropriate sweep speed. The VBW above 1.0GHz was = 3.0MHz. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The ambient temperature of the UUT was 90°F with a humidity of 50%.

PRODUCT DESCRIPTION:

This device is a wireless LAN adapter card that provides wireless connection between computers. This card has a Dual Diversity Antenna that is not accessable to the user.



APPLICANT: FRONTPATH, INC

FCC ID: PM4-PROGEAR

NAME OF TEST: POWER LINE CONDUCTED INTERFERENCE

RULES PART NUMBER: 15.107(a)

REQUIREMENTS: .45 - 30 MHz 250 uV OR 47.96 dBuV

TEST PROCEDURE: ANSI STANDARD C63.4-1992. The spectrum was scanned from .45 to 30 MHz.

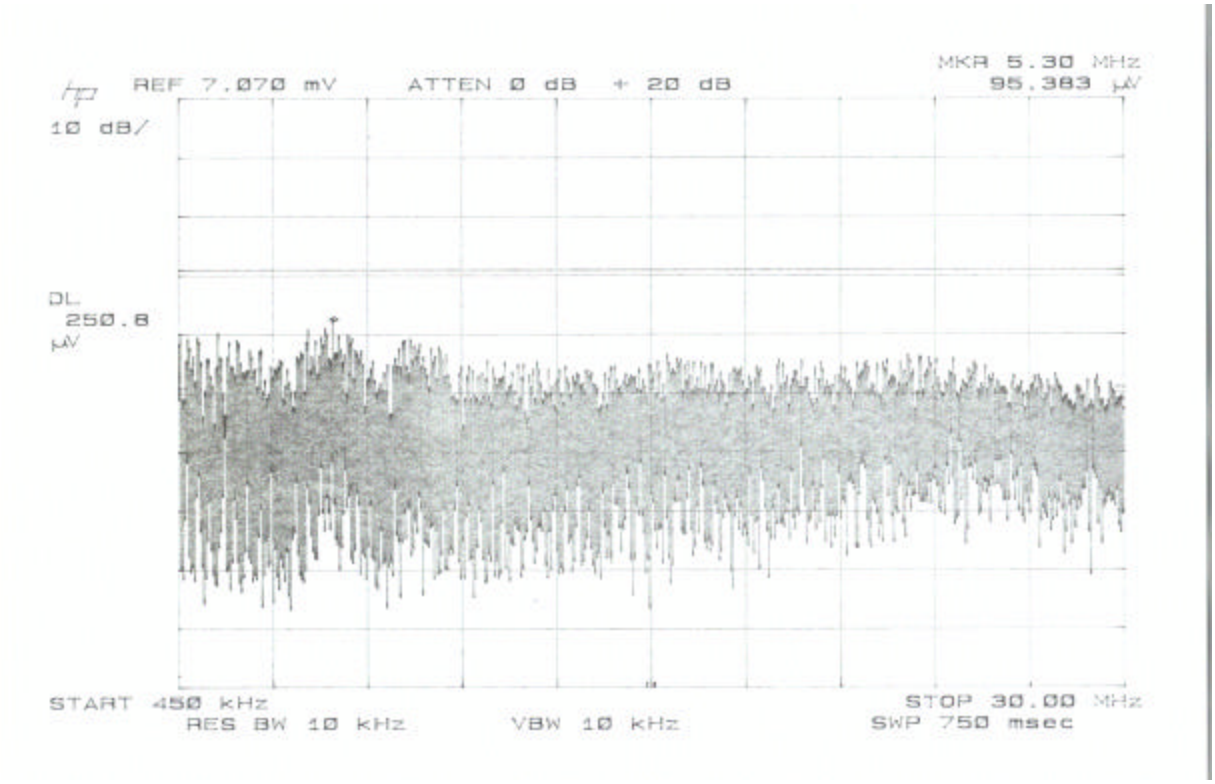
TEST DATA:

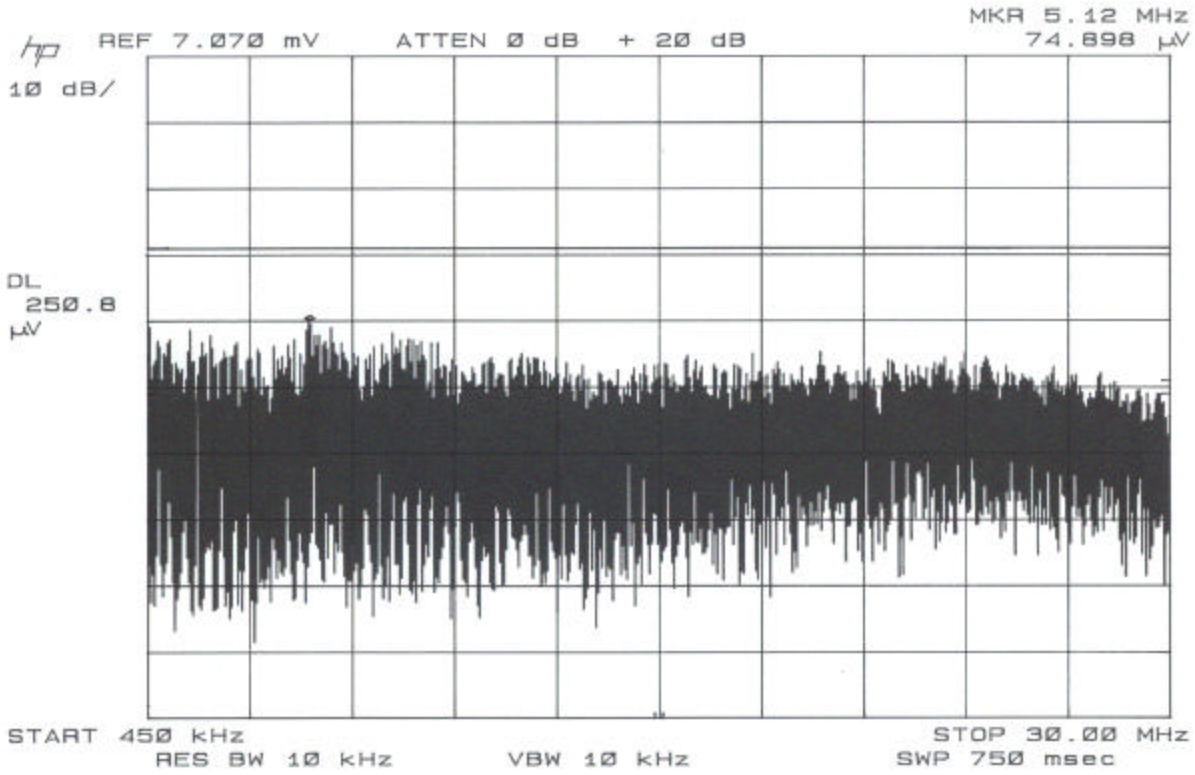
THE HIGHEST EMISSION READ FOR LINE 1 WAS 95.383uV @ 5.30MHz.

THE HIGHEST EMISSION READ FOR LINE 2 WAS 74.898uV @ 5.12MHz.

THE GRAPHS IN EXHIBITS 8A-8B REPRESENT THE EMISSIONS TAKEN FOR THIS DEVICE.

TEST RESULTS: Both lines were observed. The measurements indicate that the unit DOES appear to meet the FCC requirements for this class of equipment.


REF 7.070 mV
ATTEN 0 dB + 20 dB
MKR 5.30 MHz
95.383 µV
10 dB/
DL
250.8
µV
START 450 kHz
RES BW 10 kHz
VBW 10 kHz
STOP 30.00 MHz
SWP 750 msec


MKR 5.12 MHz
74.898 µV
REF 7.070 mV
ATTEN 0 dB + 20 dB
10 dB/
DL
250.8
µV
START 450 kHz
RES BW 10 kHz
VBW 10 kHz
STOP 30.00 MHz
SWP 750 msec

APPLICANT: FRONTPATH, INC

FCC ID: PM4-PROGEAR

NAME OF TEST: 6.0dB BANDWIDTH

RULES PART NUMBER: 15.247(a)(2)

REQUIREMENTS: The 6.0dB bandwidth must be greater than 500kHz.

MEASUREMENT: The 6.0dB bandwidth measured @ 2462.00MHz was 9.24MHz.

The 6.0dB bandwidth measured @ 2412.00MHz was 9.30MHz.

The 6.0dB bandwidth measured @ 2437.00MHz was 8.70MHz.

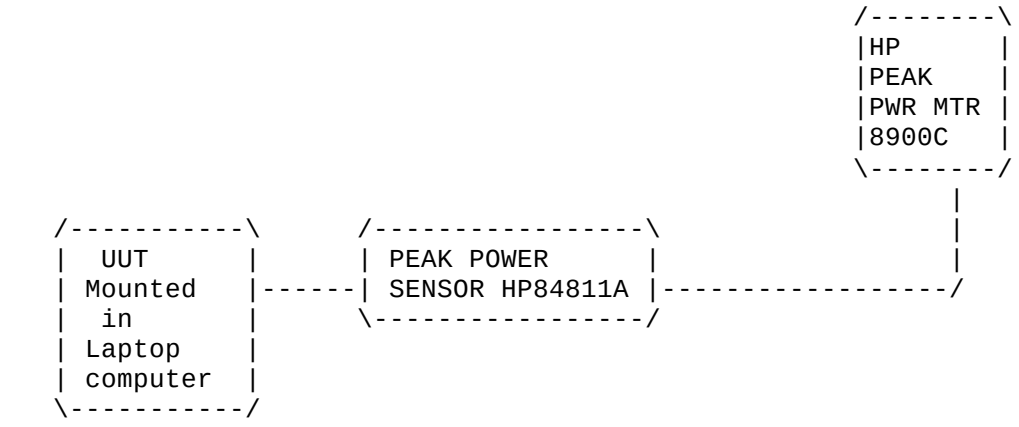
MEASUREMENT DATA: See plots, Pages #8-10.

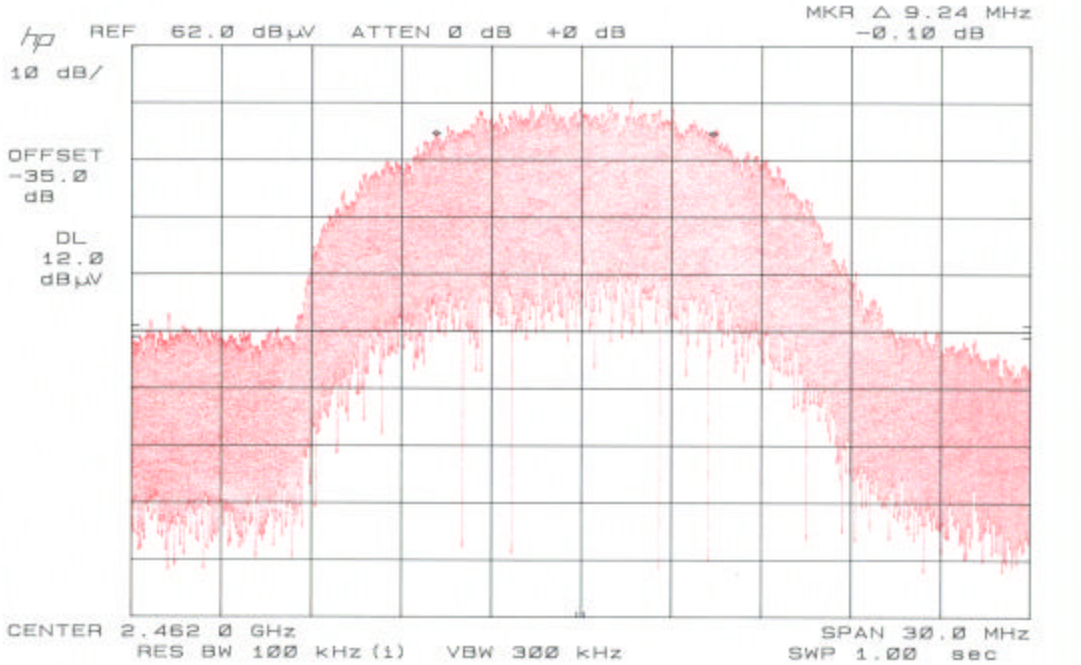
NAME OF TEST: POWER OUTPUT

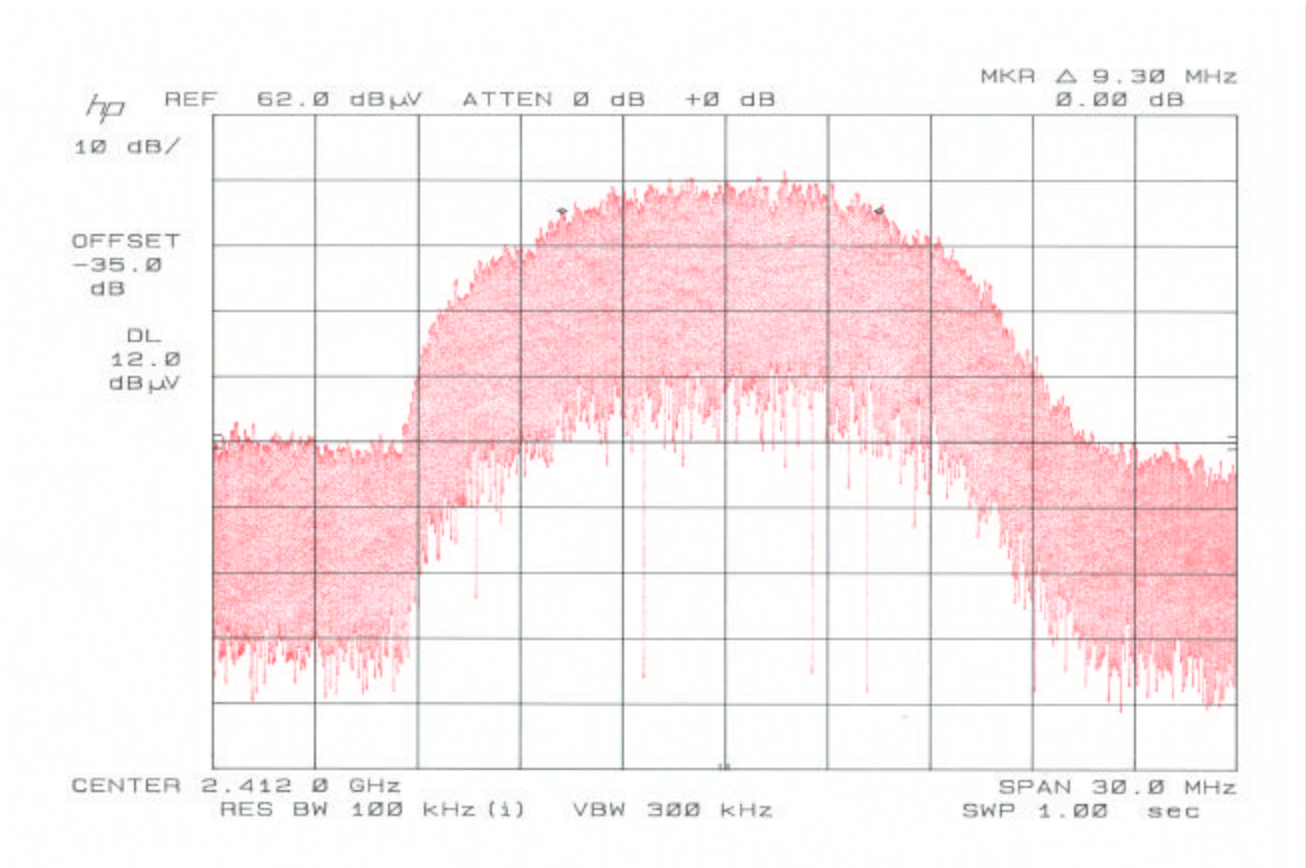
RULES PART NUMBER: 15.247(b) 1.0Watt or +30dBm

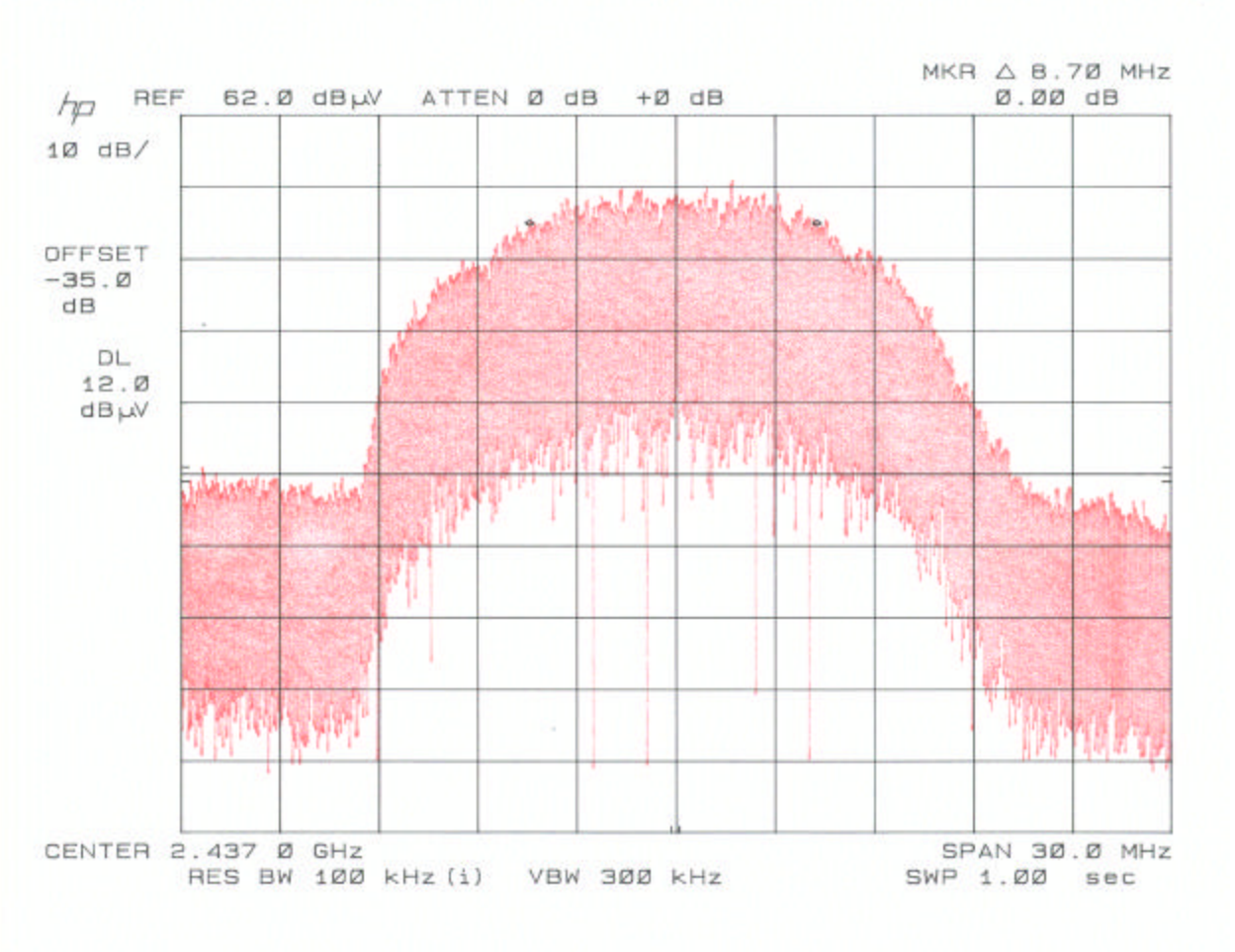
MEASUREMENT: 32.0 mWATTS @ 2412.0MHz
31.0mWatts @ 2437.0MHz
32.0mWatts @ 2462.0MHz

15.247(c) Method of Measuring RF Power output:
The Peak power Sensor was connected in place of the antenna.

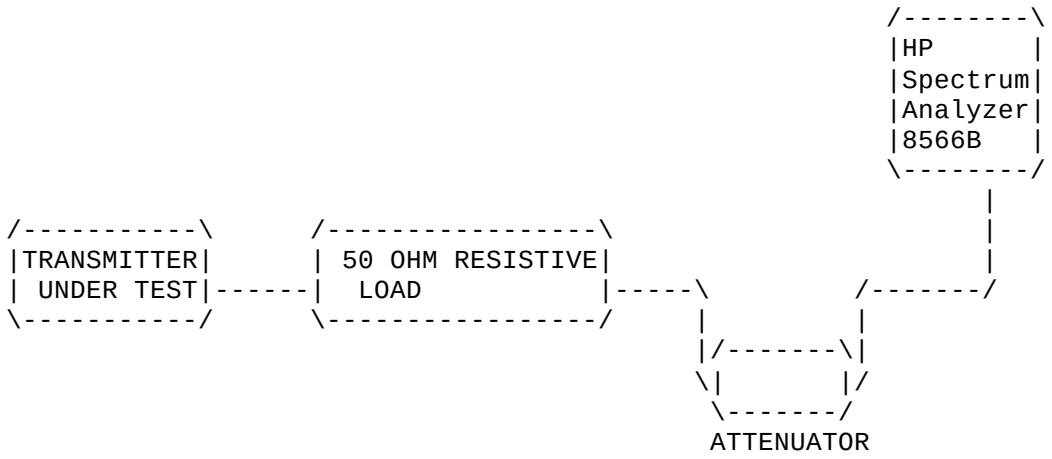



REF 62.0 dBµV
ATTEN 0 dB +0 dB
MKR Δ 9.24 MHz
-0.10 dB
10 dB/
OFFSET
-35.0
dB
DL
12.0
dBµV
CENTER 2.462 0 GHz
RES BW 100 kHz (i)
VBW 300 kHz
SPAN 30.0 MHz
SWP 1.00 sec


MKR △ 9.30 MHz
0.00 dB
REF 62.0 dBµV ATTEN 0 dB +0 dB
10 dB/
OFFSET
-35.0
dB
DL
12.0
dBµV
CENTER 2.412 0 GHz
RES BW 100 kHz (i) VBW 300 kHz
SPAN 30.0 MHz
SWP 1.00 sec


MKR △ 8.70 MHz
0.00 dB
REF 62.0 dBµV
ATTEN 0 dB +0 dB
10 dB/
OFFSET
-35.0
dB
DL
12.0
dBµV
CENTER 2.437 0 GHz
SPAN 30.0 MHz
RES BW 100 kHz (i)
VBW 300 kHz
SWP 1.00 sec

15.247(c) Method of Measuring RF Conducted Spurious Emissions



NAME OF TEST: SPURIOUS EMISSIONS AT ANTENNA TERMINALS

REQUIREMENTS: Emissions must be at least 20dB down from the highest emission level within the authorized band as measured with a 100KHz RBW.

EMISSION FREQUENCY ___MHz___	dB BELOW CARRIER _____
2412.0	00.0
4824.0	-80.30
7236.0	-86.30
9648.0	-89.70
2437.0	0.00
4875.0	-76.90
7311.0	-84.90
9748.0	-92.10
2462.0	0.00
4924.0	-73.70
7386.0	-84.80

NOTE: THE SPECTRUM WAS SCANNED TO THE TENTH HARMONIC.

15.247(c),15.205 &15.209(b) Field_strength_of_spurious_emissions:

REQUIREMENTS:

FIELD STRENGTH of Fundamental: 902-928MHz 2.4-2.4835GHz 127.38dBuV/m @3m 54dBuV/m	FIELD STRENGTH of Harmonics 54 dBuV/m @3m	S15.209 30 - 88 MHz 40 dBuV/m @3M 88 -216 MHz 43.5 216 -960 MHz 46 ABOVE 960 MHz

EMISSIONS RADIATED OUTSIDE OF THE SPECIFIED FREQUENCY BANDS, EXCEPT FOR HARMONICS, SHALL BE ATTENUATED BY AT LEAST 50 dB BELOW THE LEVEL OF THE FUNDAMENTAL OR TO THE GENERAL RADIATED EMISSION LIMITS IN 15.209, WHICHEVER IS THE LESSER ATTENUATION.

REQUIREMENTS: Emissions that fall in the restricted bands (15.205) must be less than 54dBuV/m otherwise the spurious and harmonics must be attenuated by at least 20dB.

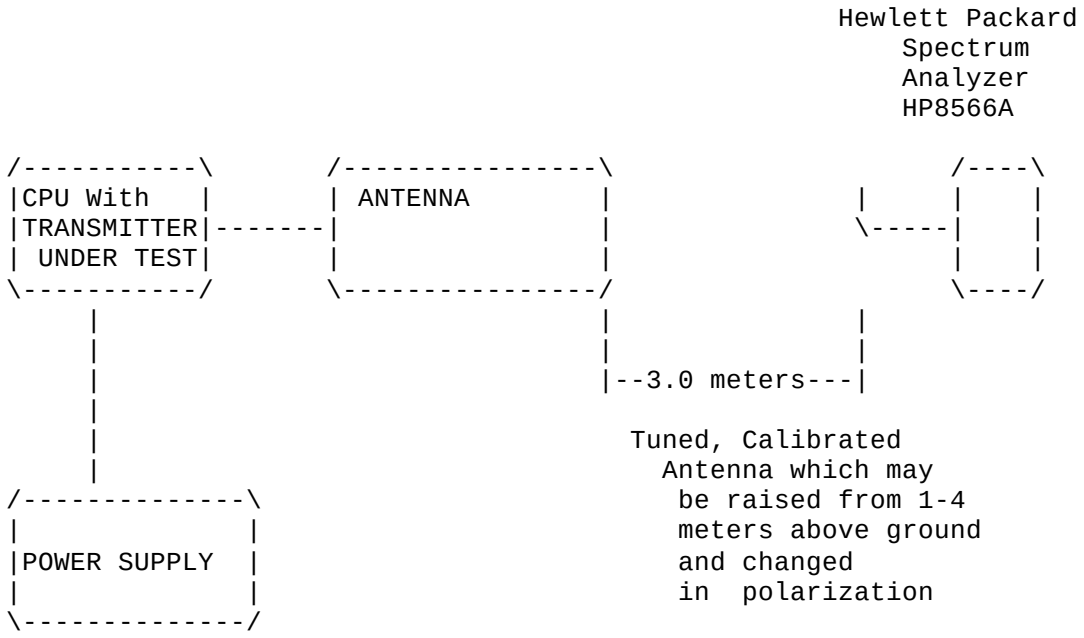
TEST DATA:

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBuv	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuv/m	Margin dB
2,417.00	**2,417.00**	**66.5**	**H**	**3.70**	**29.25**	**95.75**	**31.63**
2,417.00	**4,834.00**	**13.6**	**V**	**5.70**	**34.13**	**53.43**	**0.57**
2,417.00	**7,233.00**	**2.0**	**V**	**7.50**	**36.94**	**46.44**	**7.56**
2,437.00	**2,437.00**	**67.6**	**V**	**3.70**	**29.25**	**96.85**	**30.53**
2,437.00	**4,874.00**	**9.4**	**V**	**5.70**	**34.13**	**49.23**	**4.77**
2,437.00	**7,311.00**	**2.0**	**V**	**7.50**	**36.94**	**46.44**	**7.56**
2,457.00	**2,457.00**	**67.5**	**H**	**3.70**	**29.25**	**96.75**	**30.63**
2,457.00	**4,914.00**	**8.8**	**H**	**5.70**	**34.13**	**48.63**	**5.37**
2,457.00	**7,371.00**	**2.0**	**H**	**7.50**	**36.94**	**46.44**	**7.56**

METHOD OF MEASUREMENT: The procedure used was ANSI STANDARD C63.4-1992 & the Guidance on Measurements for Direct Sequence Spread Spectrum Systems. Measurements were made at the open field test site of TIMCO ENGINEERING INC. located at 849 N.W. State Road, Newberry, FL 32669.

2.993(a)(b)
2.993(a)(b) Continued Field_strength_of_spurious_emissions:

Method of Measuring Radiated Spurious Emissions



Equipment placed 80 cm above ground
on a rotatable platform.

APPLICANT: FRONTPATH, INC

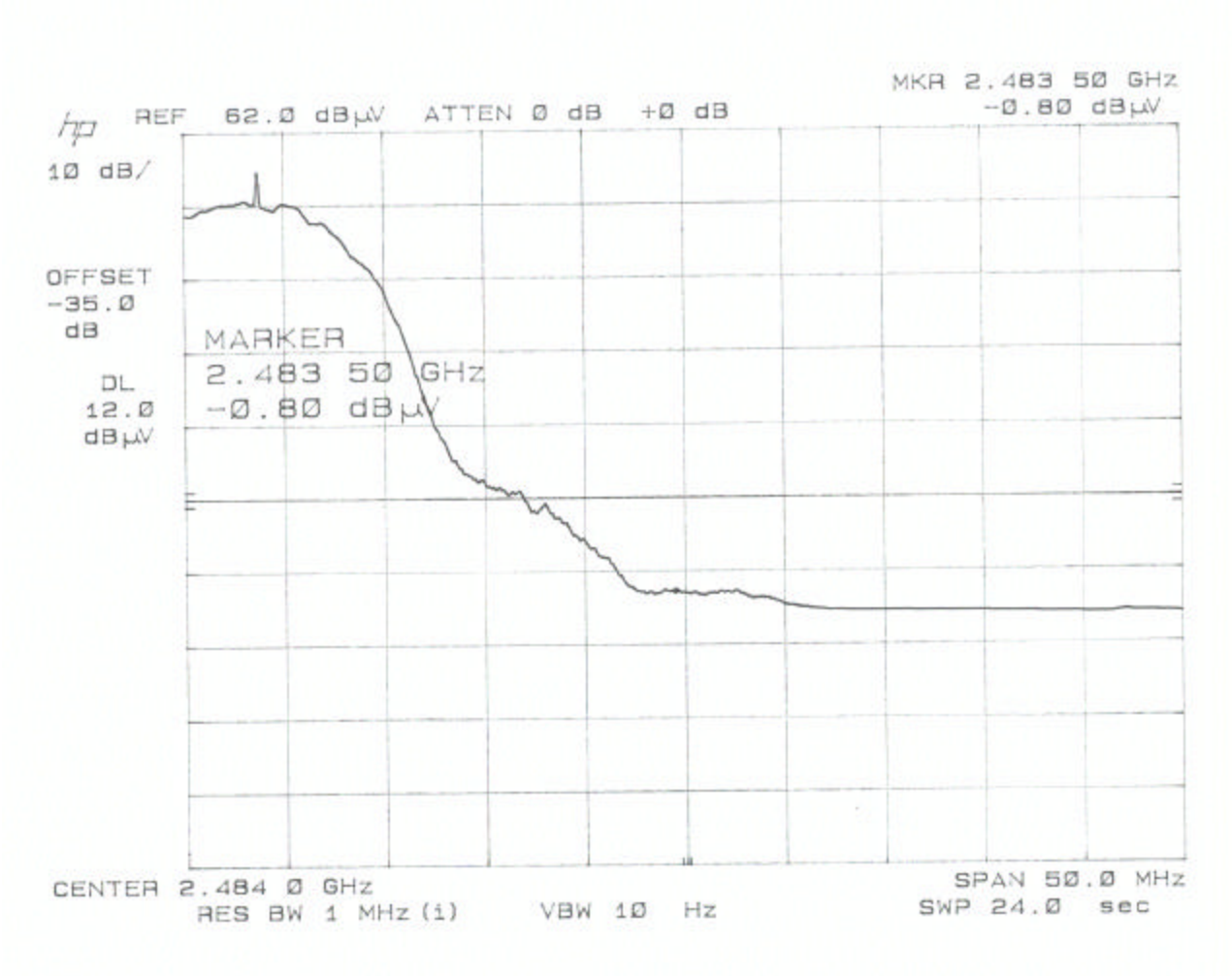
FCC ID: PM4-PROGEAR

NAME OF TEST: RADIATED SPURIOUS EMISSIONS INTO ADJACENT RESTRICTED BAND

REQUIREMENTS: Emissions that fall in the restricted bands (15.205). These emissions must be less than or equal to 500 uV/m (54 dBuV/m).

TEST PROCEDURE: An in band field strength measurement of the fundamental emissions using the RBW and detector function required by C63.4-2000 and FCC rules. The procedure was repeated with an average detector and a plot made. The calculated field strength in the adjacent restricted band is presented below.

-	.80 dBuV	from Plot
+	29.21 dB	ACF
+	1.1 dB	Coax Loss
+	10.0 dB	10 dB Pad
TOTAL	39.51 dBuV	


MKR 2.483 50 GHz
-0.80 dBµV
REF 62.0 dBµV ATTEN 0 dB +0 dB
10 dB/
OFFSET
-35.0
dB
MARKER
2.483 50 GHz
-0.80 dBµV
DL
12.0
dBµV
CENTER 2.484 0 GHz
RES BW 1 MHz (i)
VBW 10 Hz
SPAN 50.0 MHz
SWP 24.0 sec

APPLICANT: FRONTPATH, INC

FCC ID: PM4-PROGEAR

NAME OF TEST: POWER SPECTRAL DENSITY

RULES PART NUMBER: 15.247(d)

REQUIREMENTS: The peak level measured must be no greater than +8.0dBm.

DATA: THE PLOTS ARE SHOWN IN Pages 17-19.

The level at	2412.00MHz	2437.00MHz	2462.00MHz
From Plot:	- 3.60 dBuV	- 4.40 dBuV	- 4.80 dBuV
	+60.00 dB ATT	+60.00 dB ATT	+60.00 dB ATT
	+35.00 CF	+35.00 CF	+35.00 CF
Sub Total:	+91.40 dBuV	+90.60 dBuV	+90.20 dBuV
Total:	-15.60 dBm	-16.40 dBm	-16.80 dBm

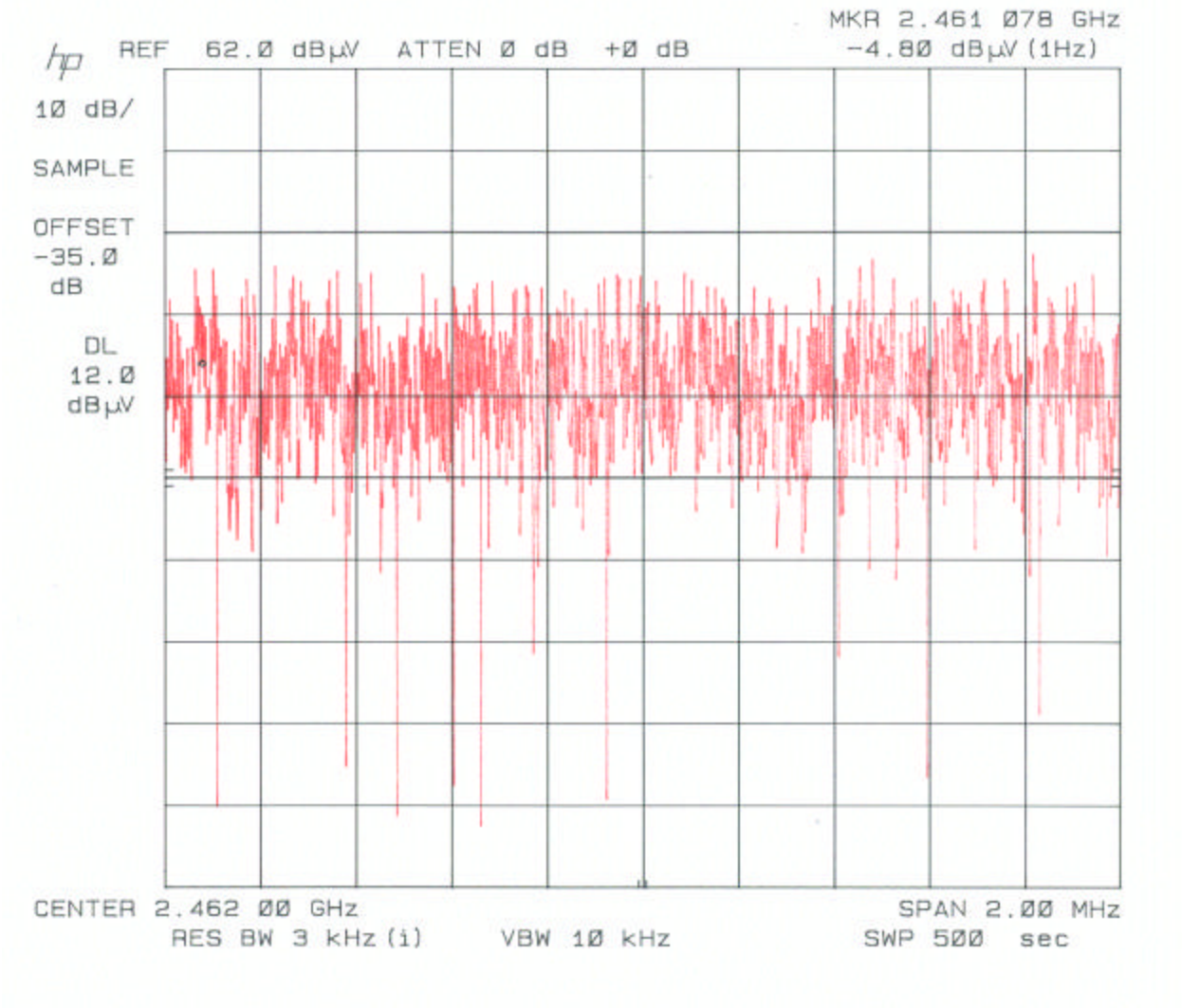
NAME OF TEST: PROCESSING GAIN

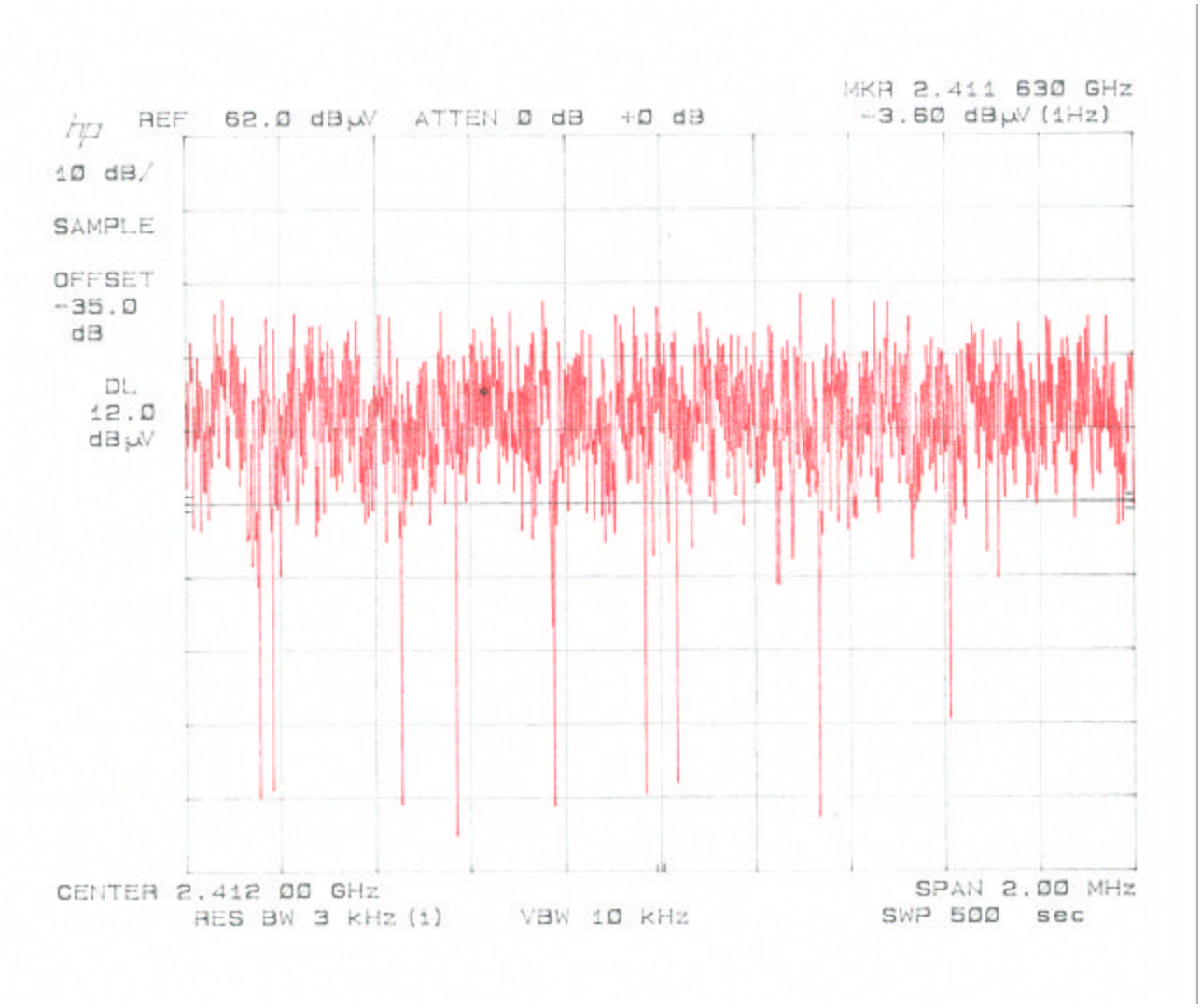
RULES PART NUMBER: 15.247(e)

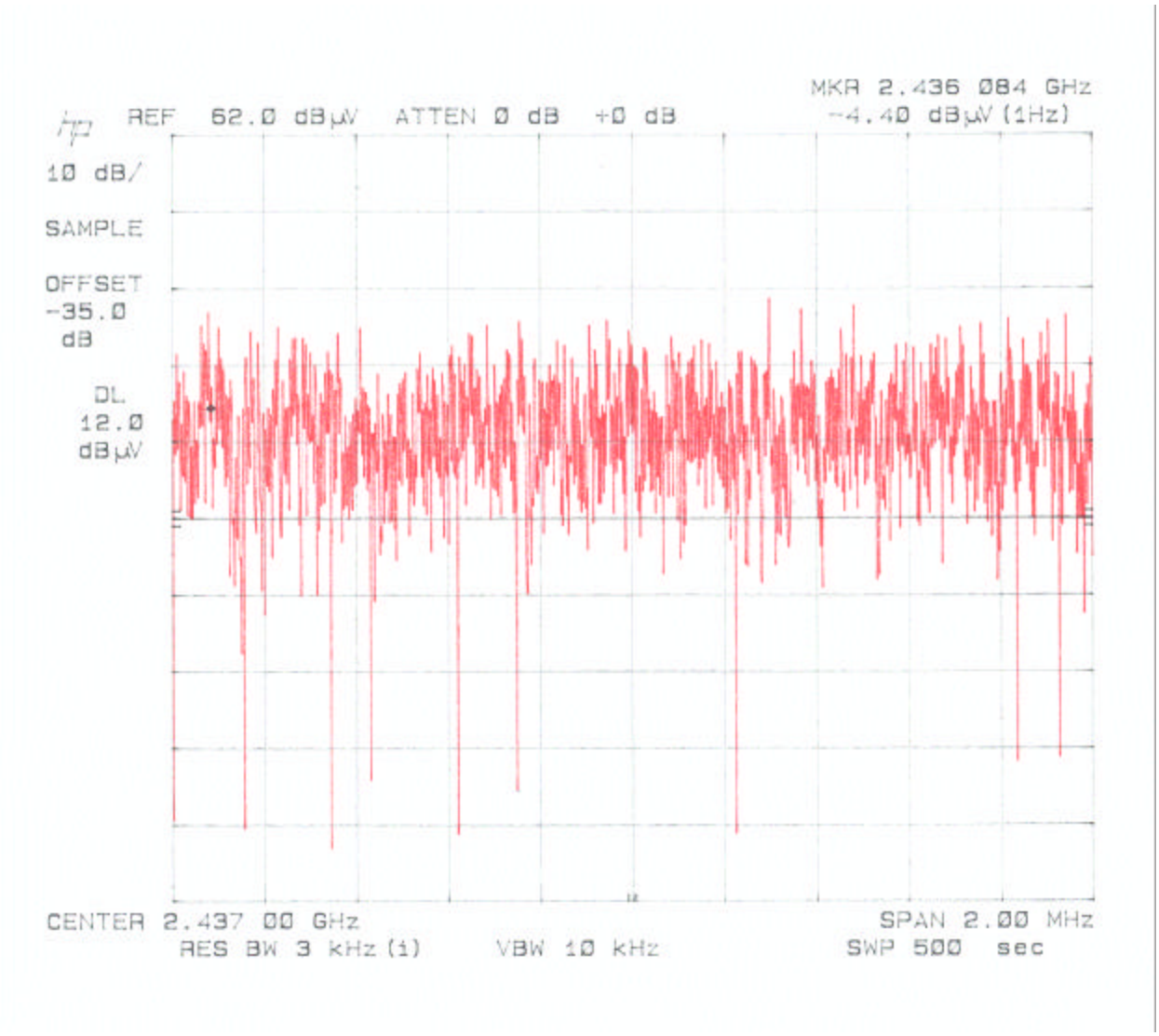
REQUIREMENTS:

DATA: The processing gain information supplied by the manufacturer is 10.0dB.

See page 8 for processing gain test methods and data.


MKR 2.461 078 GHz
REF 62.0 dBµV ATTEN 0 dB +0 dB
-4.80 dBµV (1Hz)
10 dB/
SAMPLE
OFFSET
-35.0
dB
DL
12.0
dBµV
CENTER 2.462 00 GHz
SPAN 2.00 MHz
RES BW 3 kHz (i)
VBW 10 kHz
SWP 500 sec


MKR 2.411 630 GHz
-3.60 dBµV (1Hz)
REF 62.0 dBµV ATTEN 0 dB +0 dB
10 dB/
SAMPLE
OFFSET
-35.0
dB
DL
12.0
dBµV
CENTER 2.412 00 GHz
RES BW 3 kHz (1)
VBW 10 kHz
SPAN 2.00 MHz
SWP 500 sec


MKR 2.436 084 GHz
REF 62.0 dBµV ATTEN 0 dB +0 dB
-4.40 dBµV (1Hz)
10 dB/
SAMPLE
OFFSET
-35.0
dB
DL
12.0
dBµV
CENTER 2.437 00 GHz
SPAN 2.00 MHz
RES BW 3 kHz (i)
VBW 10 kHz
SWP 500 sec