APPLICANT: ADCON TELEMETRY, INC.

FCC ID: MQXSMLIP

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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.

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 the plot.

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

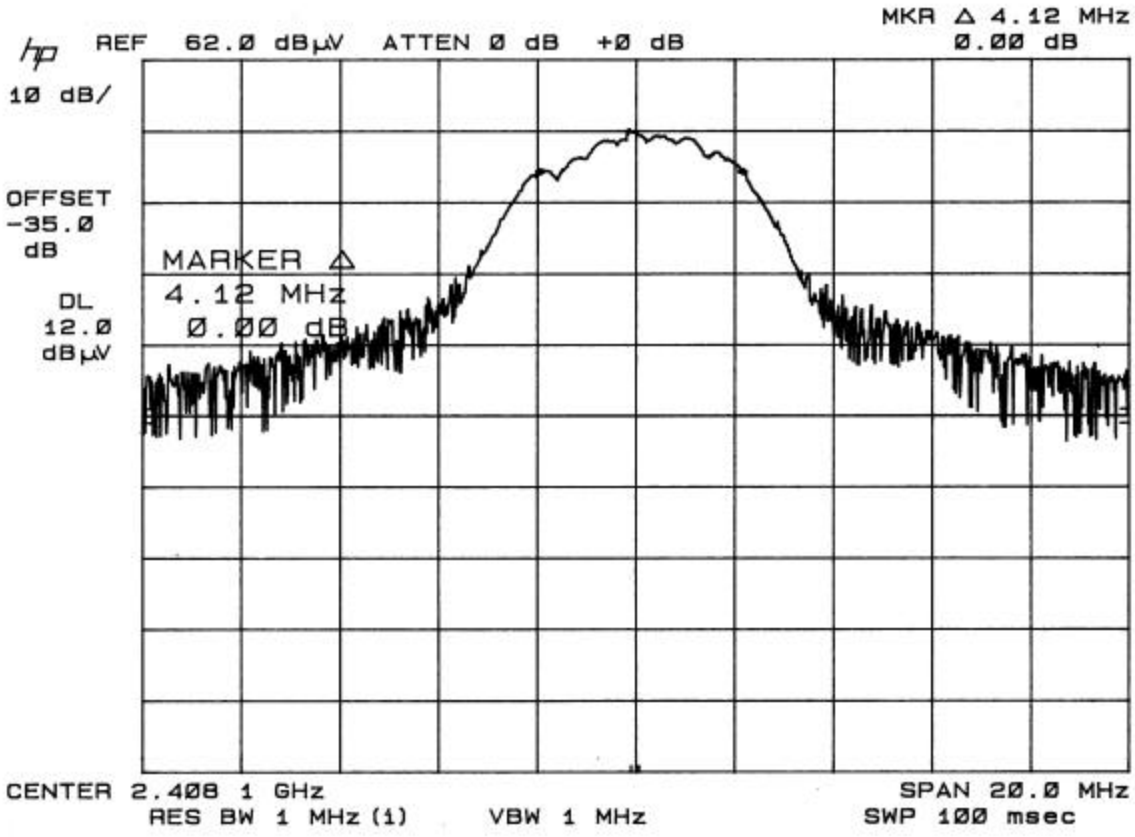
ANTENNA CONDUCTED EMISSIONS: The RBW=100KHz, VBW=300KHz and the span set to 10.0MHz and the spectrum was scanned from 30MHz to the 10th Harmonic of the fundamental. Above 1.0GHz the resolution bandwidth was 1.0MHz and the VBW = 3.0MHz and the span to 50MHz.

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 83°F with a humidity of 65%.

PRODUCT DESCRIPTION: 2.4 GHz DSSS transceiver using a fixed antenna.

APPLICANT:	ADCON TELEMETRY, INC.
FCC ID:	MQXSMLIP
NAME OF TEST:	6.0dB BANDWIDTH
RULES PART NUMBER:	15.247(a)(2)
REQUIREMENTS:	The 6.0dB bandwidth must be greater than 500 kHz.
MEASUREMENT:	The 6.0dB bandwidth measured @ 2470.00MHz was 3.48MHz. THE 6.0dB bandwidth measure @ 2408.00MHz was 4.12MHz.
MEASUREMENT DATA:	See plot below

6.0 dB BANDWIDTH PLOT



APPLICANT: ADCON TELEMETRY, INC.

FCC ID: MQXSMLIP

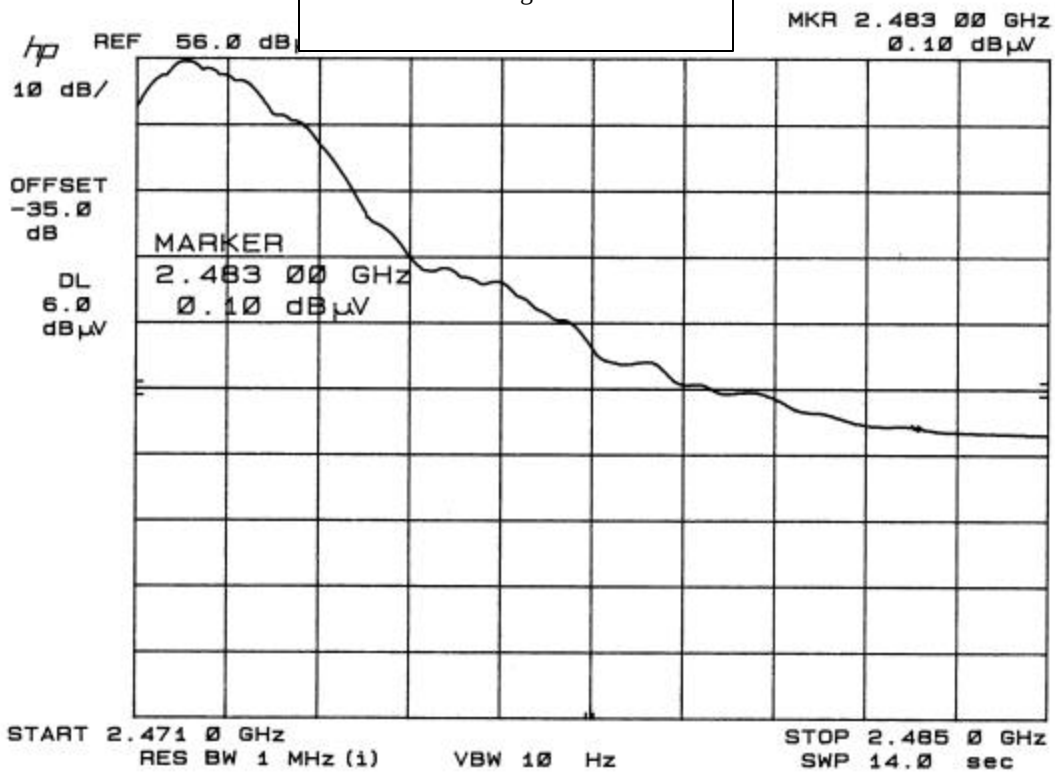
NAME OF TEST: RADIATED SPURIOUS EMISSIONS INTO ADJACENT RESTRICTED BAND

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.

.10 dBuV - from Plot
+ 29.21 dB - ACF
+ 1.10 dB - Coax Loss
_____
30.41 dBuV

Bandedge Plot



APPLICANT: ADCON TELEMETRY, INC.

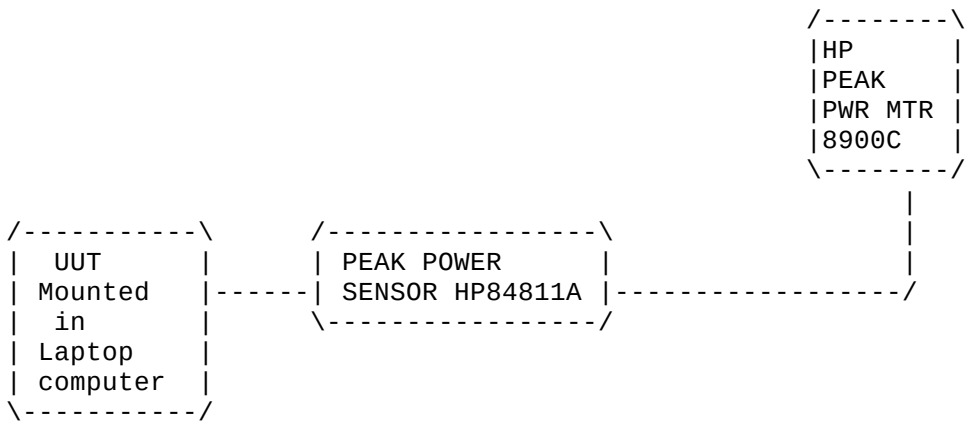
FCC ID: MQXSMLIP

NAME OF TEST: POWER OUTPUT

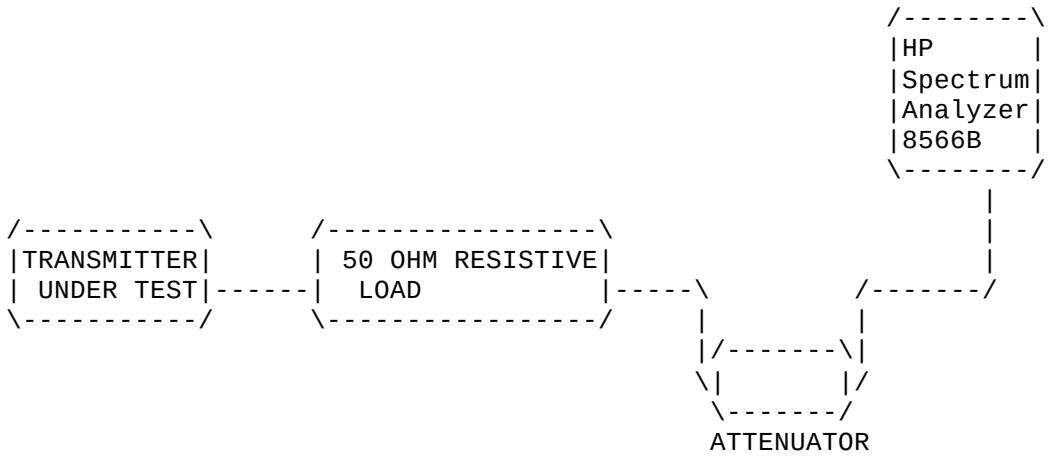
RULES PART NUMBER: 15.247(b) 1.0Watt or +30dBm

MEASUREMENT: 0.013 WATTS

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



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 100 kHz RBW.

EMISSION FREQUENCY ___MHz___	dB BELOW CARRIER _____
2410.0	00.00
4820.0	42.00
7230.0	83.40
9640.0	99.40
12050.0	107.70
14460.0	104.90

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.

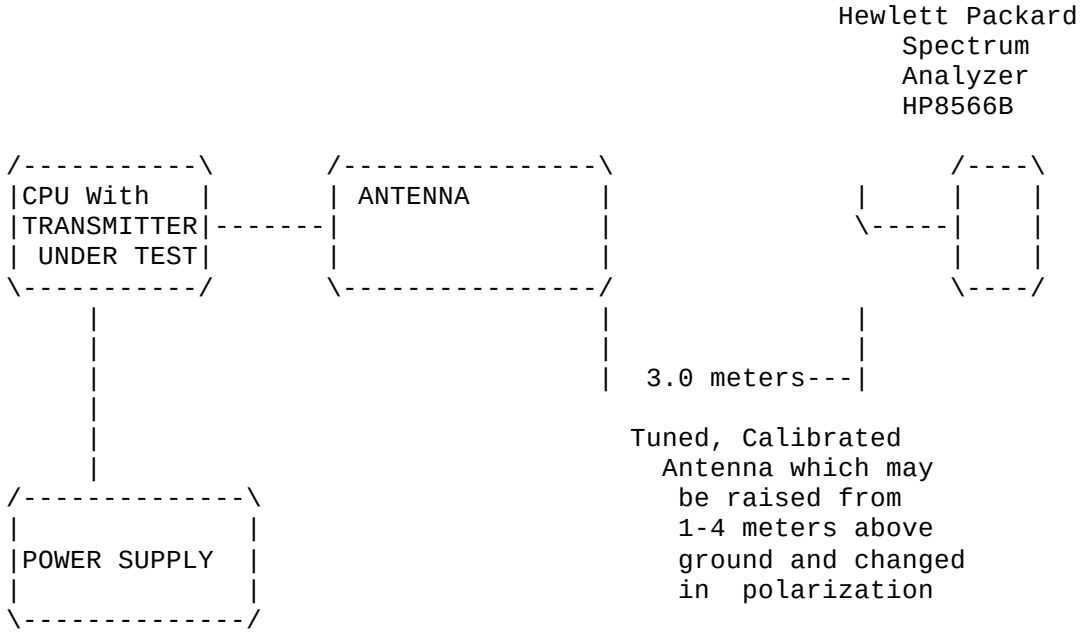
TEST DATA:

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBuv	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuv/m	Margin dB
2422.00	**2422.00**	**72.90**	**H**	**3.34**	**28.91**	**105.15**	**22.23**
2422.00	**4844.00R**	**13.90**	**V**	**5.98**	**33.84**	**53.72**	**.28**

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

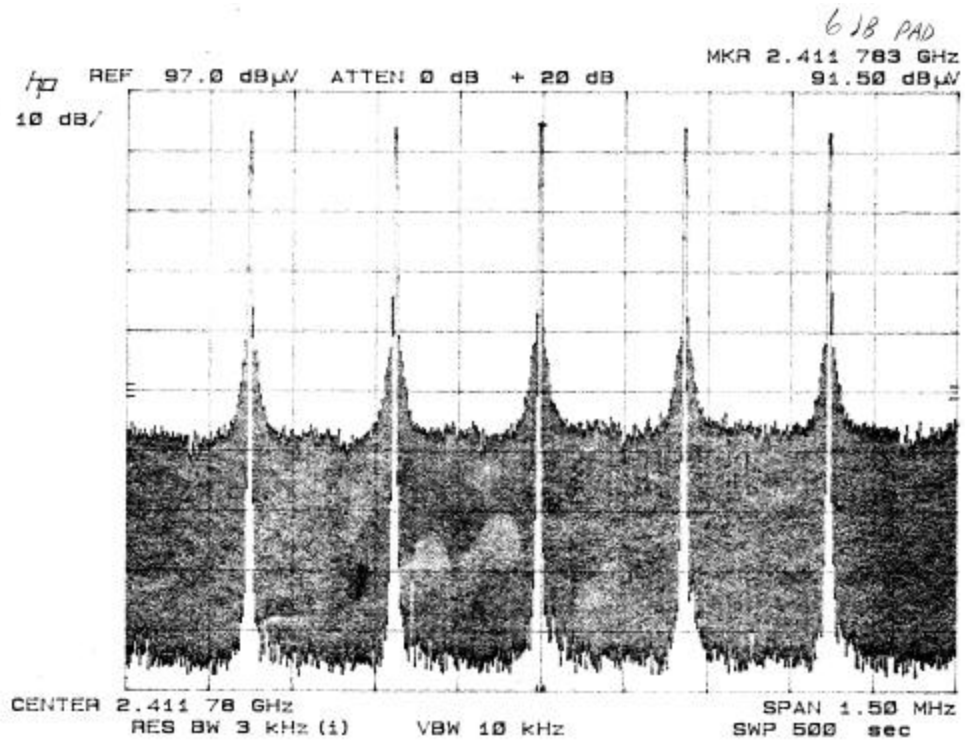


Equipment placed 80 cm above ground
on a rotatable platform.

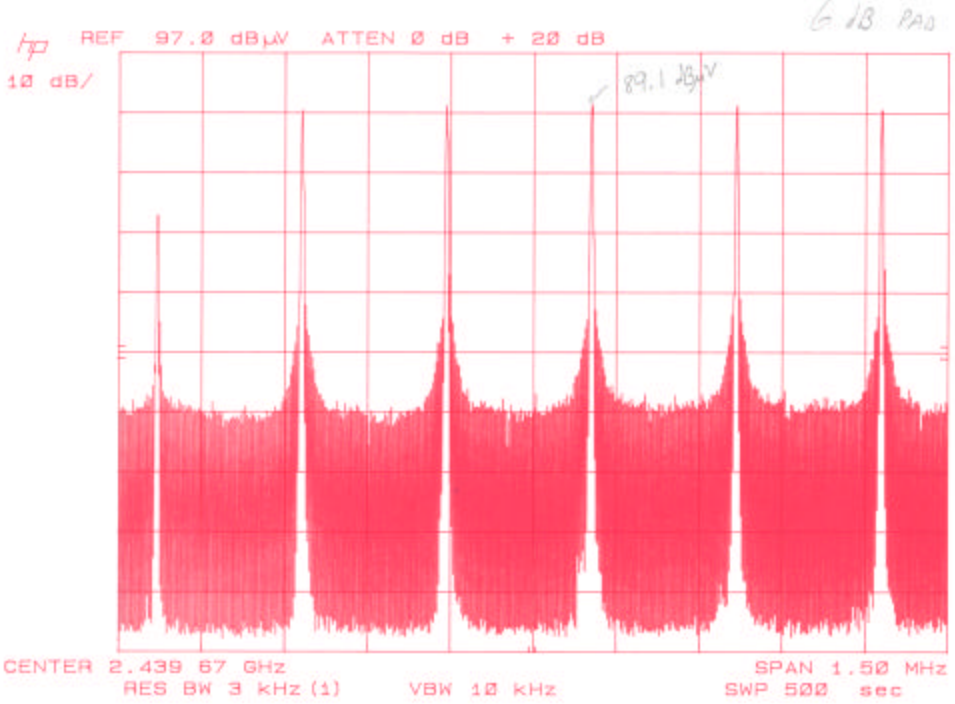
APPLICANT:	ADCON TELEMETRY, INC.
FCC ID:	MQXSMLIP
NAME OF TEST:	POWER SPECTRAL DENSITY
RULES PART NUMBER:	15.247(d)
REQUIREMENTS:	The peak level measured must be no greater than +8.0dBm.
DATA:	THE PLOTS ARE SHOWN ON THE FOLLOWING PAGES.

@ 2411.78 MHz	@ 2439.67 MHz	@ 2471.79 MHz
91.5 dBuV	89.1 dBuV	89.6 dBuV
6.0 dB PAD	6.0 dB PAD	6.0 dB PAD
TOTAL 97.5 dBuV	**TOTAL 95.1 dBuV**	**TOTAL 95.6 dBuV**
-107 dBuV to dBm	**-107 dBuV to dBm**	**-107 dBuV to dBm**
TOTAL –9.5 dBm	**TOTAL –11.9 dBm**	**TOTAL –11.4 dBm**

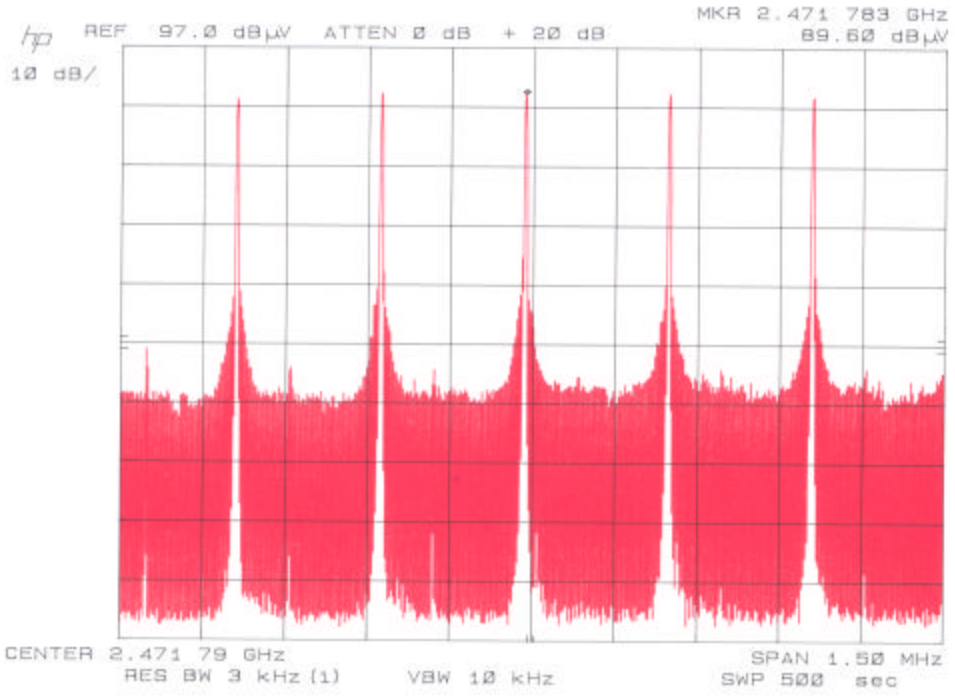
POWER SPECTRAL DENSITY PLOT



POWER SPECTRAL DENSITY PLOT



POWER SPECTRAL DENSITY PLOT



APPLICANT: ADCON TELEMETRY, INC.

FCC ID: MQXSMLIP

NAME OF TEST: PROCESSING GAIN

RULES PART NUMBER: 15.247(e)

REQUIREMENTS:

DATA: See note from Adcon in exhibit 9A – 9I.