M. Flom Associates, Inc. - Global Compliance Center
3356 North San Marcos Place, Suite 107, Chandler, Arizona 85225-7176
www.mflom.com general@mflom.com (480) 926-3100, FAX: 926-3598

Date of Report: January 8, 2001
Date of Submission: January 16, 2001

Federal Communications Commission
Via: Electronic Filing

Attention: Authorization & Evaluation Division

Applicant: Cisco Systems Inc
Equipment: AIR-LMC350
FCC ID: LDK102040
FCC Rules: 15.247
Subject: CLASS II PERMISSIVE CHANGE

Gentlemen:

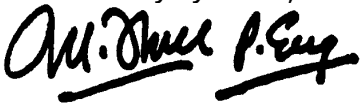
On behalf of the Applicant, enclosed please find Application Form 731, and Engineering Test Report, the whole for certification of the referenced Class II Permissive Change. A copy of the previous Grant is attached for reference.

Filing fees are attached.

The present submission is for change of antennas. An Engineering Analysis (MPE) covering all 3 antennas has been presented by the Applicant and attached hereto.

We trust the same is in order. Should you need any further information, kindly contact the writer who is authorized to act as agent.

Sincerely yours,



Morton Flom, P. Eng.

enclosure(s)
cc: Applicant
MF/cvr

MFA M. Flom Associates, Inc. - Global Compliance Center
3356 North San Marcos Place, Suite 107, Chandler, Arizona 85225-7176
www.mflom.com general@mflom.com (480) 926-3100, FAX: 926-3598

T R A N S M I T T E R C E R T I F I C A T I O N
(CLASS II PERMISSIVE CHANGE)

of

FCC ID: LDK102040
MODEL: AIR-LMC350

to

FEDERAL COMMUNICATIONS COMMISSION

Rule Part(s) 15.247

DATE OF REPORT: January 8, 2001

ON THE BEHALF OF THE APPLICANT:

Cisco Systems Inc

AT THE REQUEST OF: P.O. 366640

Cisco Systems Inc
3875 Embassy Parkway
Akron, OH 44333

Attention of: David A. Case, NCE, Senior Compliance Engineer
(330) 664-7396; FAX: -7301
Email: davecase@cisco.com

SUPERVISED BY: Morton Flom, P. Eng.

LIST OF EXHIBITS
(FCC **CERTIFICATION** (TRANSMITTERS) - REVISED 9/28/98)

APPLICANT: Cisco Systems Inc

FCC ID: LDK102040

BY APPLICANT:

1. LETTER OF AUTHORIZATION

2. IDENTIFICATION DRAWINGS
   - ___ ID LABEL
   - ___ LOCATION INFO
   - ___ ATTESTATION STATEMENT(S)
   - ___ LOCATION OF COMPLIANCE STATEMENT

3. DOCUMENTATION: 2.1033(b)
   - (3) USER MANUAL(S)
   - (4) OPERATIONAL DESCRIPTION
   - (5) BLOCK DIAGRAM
   - (5) SCHEMATIC DIAGRAM
   - (7) EXTERNAL PHOTOGRAPHS
   - INTERNAL PHOTOGRAPHS
   - PARTS LIST
   - ACTIVE DEVICES

4. DRAFT SPECIFICATION INFORMATION

5. PARTS LIST/TUNE UP INFO

BY M.F.A. INC.

A. TESTIMONIAL & STATEMENT OF CERTIFICATION

B. STATEMENT OF QUALIFICATIONS

THE APPLICANT HAS BEEN CAUTIONED AS TO THE FOLLOWING:

15.21 INFORMATION TO USER.

The users manual or instruction manual for an intentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

15.27(a) SPECIAL ACCESSORIES.

Equipment marketed to a consumer must be capable of complying with the necessary regulations in the configuration in which the equipment is marketed. Where special accessories, such as shielded cables and/or special connectors are required to enable an unintentional or intentional radiator to comply with the emission limits in this part, the equipment must be marketed with, i.e. shipped and sold with, those special accessories. However, in lieu of shipping or packaging the special accessories with the unintentional or intentional radiator, the responsible party may employ other methods of ensuring that the special accessories are provided to the consumer, without additional charge.

Information detailing any alternative method used to supply the special accessories for a grant of equipment authorization or retained in the verification records, as appropriate. The party responsible for the equipment, as detailed in § 2.909 of this chapter, shall ensure that these special accessories are provided with the equipment. The instruction manual for such devices shall include appropriate instructions on the first page of text concerned with the installation of the device that these special accessories must be used with the device. It is the responsibility of the user to use the needed special accessories supplied with the equipment.

TABLE OF CONTENTS

RULE	DESCRIPTION	PAGE
	Test Report	1
	Expository Statement for Permissive Changes	2
2.1033(c)	General Information Required	3
	Standard Test Conditions and Engineering Practices	7
15.247(b)	Maximum Peak Output Power	8
15.247(c)	Out of Band Emissions	16
15.205	Restricted Bands Of Operation	23

PAGE NO. 1 of 48.

Required information per ISO/IEC Guide 25-1990, paragraph 13.2:

a) TEST REPORT

b) Laboratory: M. Flom Associates, Inc.
(FCC: 31040/SIT) 3356 N. San Marcos Place, Suite 107
(Canada: IC 2044) Chandler, AZ 85225

c) Report Number: d0110004

d) Client: Cisco Systems Inc
3875 Embassy Parkway
Akron, OH 44333

e) Identification: AIR-LMC350
FCC ID: LDK102040
Description: Unlicensed PCMCIA Direct Sequence Spread Spectrum Transceiver

f) EUT Condition: Not required unless specified in individual tests.

g) Report Date: January 8, 2001
EUT Received: April 14, 2000

h, j, k): As indicated in individual tests.

i) Sampling method: No sampling procedure used.

l) Uncertainty: In accordance with MFA internal quality manual.

m) Supervised by:

Morton Flom, P. Eng.

n) Results: The results presented in this report relate only to the item tested.

o) Reproduction: This report must not be reproduced, except in full, without written permission from this laboratory.

PAGE NO. 2 of 48.

EXPOSITORY STATEMENT
PERMISSIVE CHANGE

APPLICANT: Cisco Systems Inc

FCC ID: LDK102040

The applicant has made design changes/improvements to the originally FCC approved equipment.

Data contained herein confirms that a Permissive Change to the unit has been effected and that the performance of the unit is at or better than the levels originally reported to the commission.

A copy of the original grant of equipment approval is included for convenience.

The following changes/improvements have been made:

additional antennas

PAGE NO. 3 of 48.

LIST OF GENERAL INFORMATION REQUIRED FOR CERTIFICATION

IN ACCORDANCE WITH FCC RULES AND REGULATIONS,
VOLUME II, PART 2 AND TO

15.247

Sub-part 2.1033

(c)(1): NAME AND ADDRESS OF APPLICANT:

Cisco Systems Inc
170 West Tasman Drive
San Jose, CA 95134-1706

MANUFACTURER:

Applicant

(c)(2): FCC ID: LDK102040

MODEL NO: AIR-LMC350

(c)(3): INSTRUCTION MANUAL(S):

PLEASE SEE ATTACHED EXHIBITS

(c)(4): TYPE OF EMISSION:

(c)(5): FREQUENCY RANGE, MHz: 2412 to 2462

(c)(6): POWER RATING, Watts: 0.1 (conducted all channels, all bit rates)
4.0 (EIRP with Parabolic)
4.0 (EIRP with Patch)
1.8 (EIRP with Omni)

___ Switchable ___ Variable _x_ N/A

(c)(7): MAXIMUM POWER RATING, Watts: 1 Watt Conducted

15.203: ANTENNA REQUIREMENT:

___ The antenna is permanently attached to the EUT
___ The antenna uses a unique coupling
_x_ The EUT must be professionally installed
___ The antenna requirement does not apply

PAGE NO. 4 of 48.

Subpart 2.1033 (continued)

(c)(8): VOLTAGES & CURRENTS IN ALL ELEMENTS IN FINAL R. F. STAGE, INCLUDING FINAL TRANSISTOR OR SOLID STATE DEVICE:

COLLECTOR CURRENT, A = per manual
COLLECTOR VOLTAGE, Vdc = per manual
SUPPLY VOLTAGE, Vdc = 5

(c)(9): TUNE-UP PROCEDURE:

PLEASE SEE ATTACHED EXHIBITS

(c)(10): CIRCUIT DIAGRAM/CIRCUIT DESCRIPTION:
Including description of circuitry & devices provided for determining and stabilizing frequency, for suppression of spurious radiation, for limiting modulation and limiting power.

PLEASE SEE ATTACHED EXHIBITS

(c)(11): LABEL INFORMATION:

PLEASE SEE ATTACHED EXHIBITS

(c)(12): PHOTOGRAPHS:

PLEASE SEE ATTACHED EXHIBITS

(c)(13): DIGITAL MODULATION DESCRIPTION:

___ ATTACHED EXHIBITS
_x_ N/A

(c)(14): TEST AND MEASUREMENT DATA:

FOLLOWS

M. Flom Associates, Inc. is accredited by the American Association for Laboratory Association (A2LA) as shown in the scope below.

THE AMERICAN ASSOCIATION FOR LABORATORY ACCREDITATION

ACCREDITED LABORATORY

A2LA has accredited

M. FLOM ASSOCIATES, INC.
Chandler, AZ

for technical competence in the field of

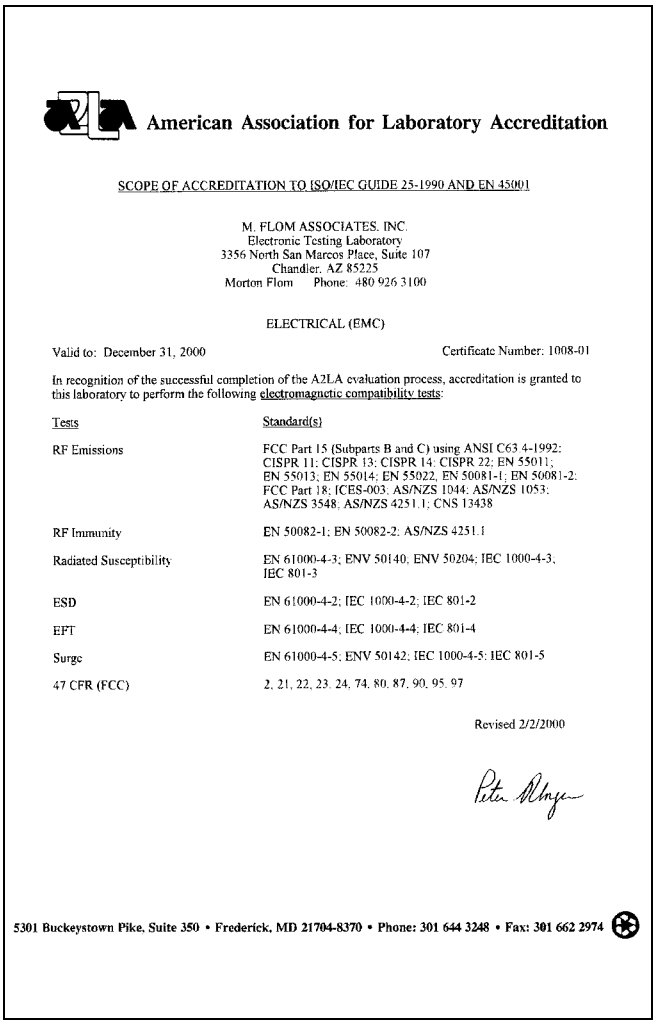
Electrical (EMC) Testing

The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO/IEC Guide 25-1990 "General Requirements for the Competence of Calibration and Testing Laboratories" (equivalent to relevant requirements of the ISO 9000 series of standards) and any additional program requirements in the identified field of testing.

Presented this 24th day of November, 1998.

President
For the Accreditation Council
Certificate Number 1008.01
Valid to December 31, 2000

For tests or types of tests to which this accreditation applies, please refer to the laboratory's Electrical (EMC) Scope of Accreditation



American Association for Laboratory Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC GUIDE 25-1990 AND EN 45001

M. FLOM ASSOCIATES, INC.
Electronic Testing Laboratory
3356 North San Marcos Place, Suite 107
Chandler, AZ 85225
Morton Flom Phone: 480 926 3100

ELECTRICAL (EMC)

Valid to: December 31, 2000 Certificate Number: 1008-01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following electromagnetic compatibility tests:

Tests	Standard(s)
RF Emissions	FCC Part 15 (Subparts B and C) using ANSI C63.4-1992; CISPR 11; CISPR 13; CISPR 14; CISPR 22; EN 55011; EN 55013; EN 55014; EN 55022, EN 50081-1; EN 50081-2; FCC Part 18; ICES-003; AS/NZS 1044; AS/NZS 1053; AS/NZS 3548; AS/NZS 4251.1; CNS 13438
RF Immunity	EN 50082-1; EN 50082-2; AS/NZS 4251.1
Radiated Susceptibility	EN 61000-4-3; ENV 50140; ENV 50204; IEC 1000-4-3; IEC 801-3
ESD	EN 61000-4-2; IEC 1000-4-2; IEC 801-2
EFT	EN 61000-4-4; IEC 1000-4-4; IEC 801-4
Surge	EN 61000-4-5; ENV 50142; IEC 1000-4-5; IEC 801-5
47 CFR (FCC)	2, 21, 22, 23, 24, 74, 80, 87, 90, 95, 97

Revised 2/2/2000

5301 Buckeystown Pike, Suite 350 • Frederick, MD 21704-8370 • Phone: 301 644 3248 • Fax: 301 662 2974

"This laboratory is accredited by the American Association for Laboratory Accreditation (A2LA) and the results shown in this report have been determined in accordance with the laboratory's terms of accreditation unless stated otherwise in the report."

Should this report contain any data for tests for which we are not accredited, or which have been undertaken by a subcontractor that is not A2LA accredited, such data would not covered by this laboratory's A2LA accreditation.

PAGE NO. 6 of 48.

Sub-part 2.1033(b): TEST AND MEASUREMENT DATA

All tests and measurement data shown were performed in accordance with FCC Rules and Regulations, Volume II; Part 2, Sub-part J, Sections 2.1031, 2.1033, 2.1035, 2.1041, 2.1043, 2.1045, and the following individual Parts:

_____	15.209	Radiated emission limits; general requirements
_____	15.211	Tunnel radio systems
_____	15.213	Cable locating equipment
_____	15.214	Cordless telephones
_____	15.217	Operation in the band 160-190 kHz
_____	15.219	Operation in the band 510-1705 kHz
_____	15.221	Operation in the band 525-1705 kHz (leaky coax)
_____	15.223	Operation in the band 1.705-10 MHz
_____	15.225	Operation in the band 13.553-13.567 MHz
_____	15.227	Operation in the band 26-27.28 MHz (remote control)
_____	15.229	Operation in the band 40.66-40.70 MHz
_____	15.231	Periodic operation in the band 40.66-40.70 MHz and above 70 MHz
_____	15.233	Operation within the bands 43.71-44.49, 46.60-46.98 MHz 48.75-49.51 MHz and 49.66-50.0 MHz
_____	15.235	Operation within the band 49.82-49.90 MHz
_____	15.237	Operation within the bands 72.0-73.0 MHz, 74.6-74.8 MHz and 75.2-76.0 MHz (auditory assistance)
_____	15.239	Operation in band 88-108 MHz
_____	15.241	Operation in the band 174-216 MHz (biomedical)
_____	15.243	Operation in the band 890-940 MHz (materials)
_____	15.245	Operation within the bands 902-928 MHz, 2435-2465 MHz, 5785-5815 MHz, 10500-10550 MHz, and 24075-24175 MHz (filed disturbance sensors)
x	15.247	Operation within bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz (spread spectrum)
_____	15.249	Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz
_____	15.251	Operation within the bands 2.9-3.26 GHz, 3.267-3.332 GHz, 3.339-3.3458 GHz, and 3.358-3.6 GHz (vehicle identification systems)
_____	15.321	Specific requirements for asynchronous devices operating in the 1910-1920 MHz and 2390-2400 MHz bands (Unlicensed PCS)
_____	15.323	Specific requirements for isochronous devices operating in the 1920-1930 MHz sub-band (Unlicensed PCS)

STANDARD TEST CONDITIONS and ENGINEERING PRACTICES

Except as noted herein, the following conditions and procedures were observed during the testing:

In accordance with ANSI C63.4-1992/2000, section 6.1.9, and unless otherwise indicated in the specific measurement results, the ambient temperature of the actual EUT was maintained within the range of 10° to 40°C (50° to 104 °F) unless the particular equipment requirements specify testing over a different temperature range. Also, unless otherwise indicated, the humidity levels were in the range of 10% to 90% relative humidity.

Prior to testing, the EUT was tuned up in accordance with the manufacturer's alignment procedures. All external gain controls were maintained at the position of maximum and/or optimum gain throughout the testing.

Measurement results, unless otherwise noted, are worst case measurements.

PAGE NO. 8 of 48.

NAME OF TEST: Maximum Peak Output Power

SPECIFICATION: 47 CFR 15.247(b)

SPEC. LIMIT: ≤ 1 Watt peak

TEST EQUIPMENT: Attached

MEASUREMENT DATA

ANTENNA GAIN, dBi = 21.0 Parabolic Antenna
PEAK OUTPUT POWER, Watts = 4
WORST CASE FOR
ALL CHANNELS

NAME OF TEST: RF Conducted Power

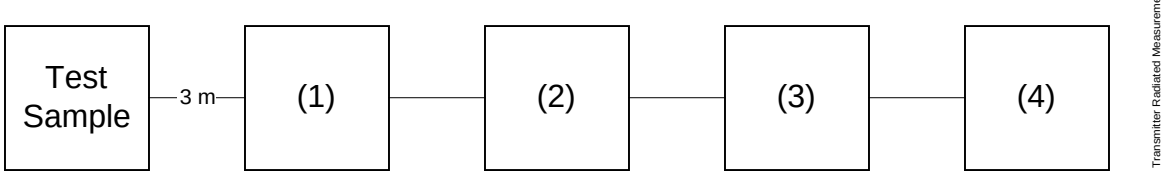
SPECIFICATION: 47 CFR 15.247(b)

MEASUREMENT DATA

MHz	Watts Conducted
2412	0.774
2442	0.093
2462	0.081

PAGE NO. 9 of 48.

TRANSMITTER RADIATED MEASUREMENTS



Transmitter Radiated Measurements

Asset	Description (as applicable)	s/n
(1) TRANSDUCER		
i00091	Emco 3115	001469
i00089	Aprel Log Periodic	001500
i00088	EMCO 3301-B Biconical	2336
(2) HIGH PASS FILTER		
i00	Narda µPAD (In-Band Only)	
i00	Trilithic (Out-Of-Band Only)	
(3) PREAMP		
i00028	HP 8449 (+30 dB)	2749A00121
(4) SPECTRUM ANALYZER		
i00048	HP 8566B	2511A01467
i00057	HP 8557A	1531A00191
i00029	HP 8563E	3213A00104

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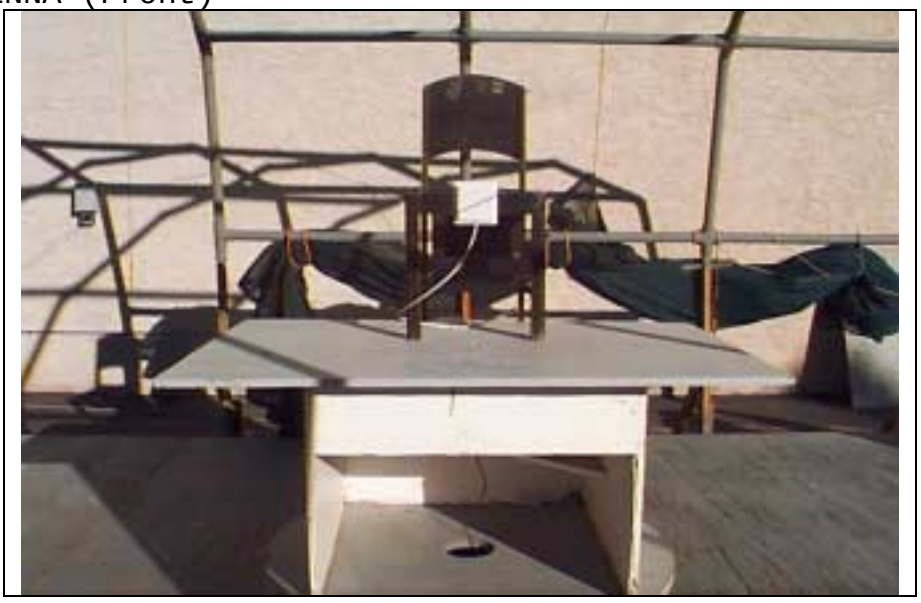
TEST SETUP: Radiated Emissions
PARABOLIC ANTENNA (Front)

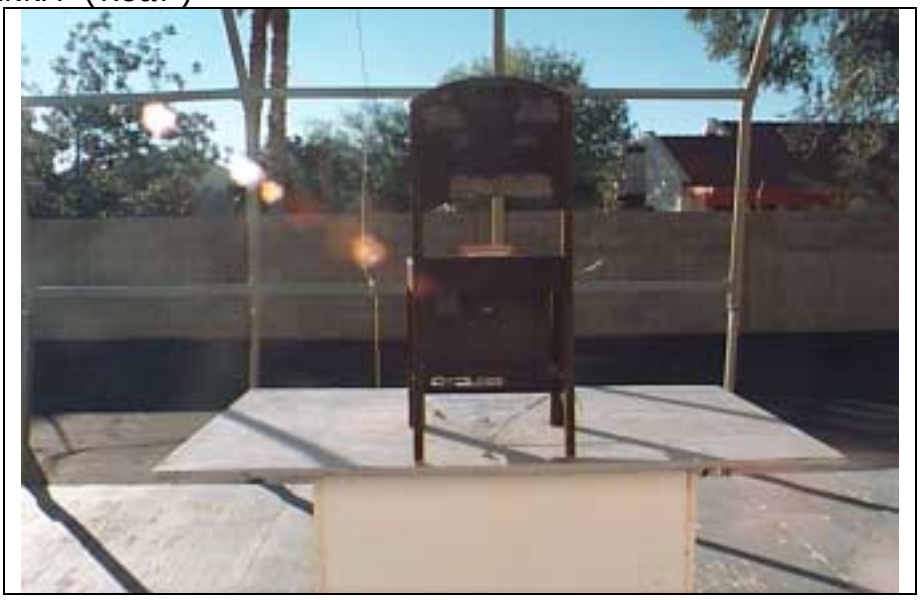
TEST SETUP: Radiated Emissions
PARABOLIC ANTENNA (Rear)

PAGE NO. 11 of 48.

TEST SETUP: Radiated Emissions
PATCH ANTENNA (Front)



TEST SETUP: Radiated Emissions
PATCH ANTENNA (Rear)



PAGE NO. 12 of 48.

TEST SETUP: Radiated Emissions
OMNI ANTENNA (Front)

TEST SETUP: Radiated Emissions
OMNI ANTENNA (Rear)

PAGE NO. 13 of 48.

NAME OF TEST: Field Strength of Spurious Radiation
PARABOLIC ANTENNA
g00b0042: 2000-Nov-03 Fri 14:38:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER dBuV	CF, dB	uV/m @ 3m	EIRP dBm	MARGIN dB	*PEAK AVERAGE
2412.000000	4824.000000	40.67	8.88	300.26	-45.7	-32.7	PEAK
2442.000000	4884.750000	45.33	8.99	520	-40.9	-27.9	PEAK
2462.000000	4924.000000	40.83	9.07	312.61	-45.3	-32.3	PEAK
2412.000000	7236.000000	32.17	13.05	182.39	-50	-37	PEAK
2442.000000	7326.125000	34	13.2	229.09	-48	-35	PEAK
2462.000000	7386.000000	32.17	13.29	187.5	-49.8	-36.7	PEAK
2412.000000	9648.000000	33.5	15.71	288.74	-46	-33	PEAK
2442.000000	9768.125000	37	15.81	437.02	-42.4	-29.4	PEAK
2462.000000	9848.000000	34.17	15.87	317.69	-45.2	-32.2	PEAK
2412.000000	12060.000000	31.83	17.43	290.4	-46	-32.9	PEAK
2442.000000	12210.125000	34.67	17.01	383.71	-43.5	-30.5	PEAK
2462.000000	12310.000000	31.5	16.73	257.93	-47	-34	PEAK
2412.000000	14472.000000	34	18.42	417.83	-42.8	-29.8	PEAK
2442.000000	14651.950000	37.5	18.35	620.15	-39.4	-26.4	PEAK
2462.000000	14772.000000	34.33	18.31	428.55	-42.6	-29.6	PEAK
2412.000000	16884.000000	33.33	19.58	442.08	-42.3	-29.3	PEAK
2442.000000	17093.991667	35.67	20.05	610.94	-39.5	-26.5	PEAK
2462.000000	17234.000000	34.67	20.43	568.85	-40.1	-27.1	PEAK

*PEAK AND AVERAGE VALUES

PAGE NO. 14 of 48.

NAME OF TEST: Field Strength of Spurious Radiation
PATCH ANTENNA
g00b0062: 2000-Nov-07 Tue 10:25:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER dBuV	CF, dB	uV/m @ 3m	EIRP dBm	MARGIN dB	*PEAK AVERAGE
2412.000000	4824.000000	33.67	8.88	134.12	-52.7	-39.7	PEAK
2442.000000	4883.966667	33	8.99	125.75	-53.2	-40.2	PEAK
2462.000000	4924.000000	33.5	9.07	134.43	-52.7	-39.6	PEAK
2412.000000	7236.000000	32	13.05	178.85	-50.2	-37.2	PEAK
2442.000000	7326.008333	31.5	13.2	171.79	-50.5	-37.5	PEAK
2462.000000	7386.000000	34.5	13.29	245.19	-47.4	-34.4	PEAK
2412.000000	9648.000000	33.5	15.71	288.74	-46	-33	PEAK
2442.000000	9768.008333	33.17	15.81	281.19	-46.2	-33.2	PEAK
2462.000000	9848.000000	35	15.87	349.54	-44.4	-31.3	PEAK
2412.000000	12060.000000	32.33	17.43	307.61	-45.5	-32.4	PEAK
2442.000000	12209.950000	32.33	17.01	293.09	-45.9	-32.9	PEAK
2462.000000	12310.000000	34.5	16.73	364.33	-44	-31	PEAK
2412.000000	14472.000000	35.17	18.42	478.08	-41.6	-28.6	PEAK
2442.000000	14651.950000	30.17	18.35	266.69	-46.7	-33.7	PEAK
2462.000000	14772.000000	35.33	18.31	480.84	-41.6	-28.6	PEAK
2412.000000	16884.000000	34.83	19.58	525.41	-40.8	-27.8	PEAK
2442.000000	17094.008333	31.17	20.05	363.92	-44	-31	PEAK
2462.000000	17234.000000	34	20.43	526.62	-40.8	-27.8	PEAK

*PEAK AND AVERAGE VALUES

PAGE NO. 15 of 48.

NAME OF TEST: Field Strength of Spurious Radiation
OMNI ANTENNA
g00b0076: 2000-Nov-07 Tue 15:14:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER dBuV	CF, dB	uV/m @ 3m	EIRP dBm	MARGIN dB	*PEAK AVERAGE
2412.000000	4824.000000	32.67	8.88	119.54	-53.7	-40.7	PEAK
2442.000000	4883.991667	31.5	8.99	105.8	-54.7	-41.7	PEAK
2462.000000	4924.000000	32.83	9.07	124.45	-53.3	-40.3	PEAK
2412.000000	7236.000000	32	13.05	178.85	-50.2	-37.2	PEAK
2442.000000	7326.000000	28.17	13.2	117.08	-53.9	-40.8	PEAK
2462.000000	7386.000000	33.67	13.29	222.84	-48.3	-35.2	PEAK
2412.000000	9648.000000	33	15.71	272.58	-46.5	-33.5	PEAK
2442.000000	9768.000000	31	15.81	219.03	-48.4	-35.4	PEAK
2462.000000	9848.000000	33.83	15.87	305.49	-45.5	-32.5	PEAK
2412.000000	12060.000000	33	17.43	332.28	-44.8	-31.8	PEAK
2442.000000	12210.000000	29.83	17.01	219.79	-48.4	-35.4	PEAK
2462.000000	12310.000000	34.17	16.73	350.75	-44.3	-31.3	PEAK
2412.000000	14472.000000	32.17	18.42	338.45	-44.6	-31.6	PEAK
2442.000000	14652.000000	29.5	18.35	246.89	-47.4	-34.4	PEAK
2462.000000	14772.000000	34.67	18.31	445.66	-42.2	-29.2	PEAK
2412.000000	16884.000000	34.17	19.58	486.97	-41.5	-28.5	PEAK
2442.000000	17094.000000	27	20.05	225.16	-48.2	-35.2	PEAK
2462.000000	17234.000000	36.33	20.43	688.65	-38.5	-25.4	PEAK

*PEAK AND AVERAGE VALUES

PAGE NO. 16 of 48.

NAME OF TEST: Out of Band Emissions

SPECIFICATION: 47 CFR 15.247(c), 15.209(a)

SPEC. LIMIT: See Below

TEST EQUIPMENT: As per previous page

SEARCH ANTENNAS: 10 kHz – 32 MHz: LOOP 94598-1
32 MHz – 1 GHz: SINGER DM105, $T_1T_2T_3$
1 GHz – 18 GHz: EMCO 3115

LIMIT

In any 100 kHz bandwidth outside these frequency bands, radio frequency power that is produced by the modulation products of the spreading sequence, information sequence, and the carrier frequency shall be either: at least 20 dB below that in any 100 kHz bandwidth within the band that contains the highest level of the desired power **OR** shall not exceed the general levels specified in 15.209(a), whichever results in the lesser attenuation.

All other emissions outside these bands shall not exceed the general radiated emission limits specified in 15.209(a).

At first, bench tests were performed to locate the emissions ar the antenna terminals.

In the field, tests were conducted over the range shown. The test sample was set up on a wooden turntable above ground, and at a distance of three meters from the antenna connected to the spectrum analyzer.

In order to obtain the maximum response at each frequency, the turntable was rotated, and the search antenna was raised and lowered. The EUT was also adjusted for maximum response.

The field strength was calculated from:

E μV/m @ 3 m = LOG_{10}^{-1}(dBm + 107 + A.F. + C.L.)

The following results are worst case conditions. Tests were conducted in Horizontal and Vertical polarization modes.

MEASUREMENT RESULTS: ATTACHED

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 17 of 48.

NAME OF TEST: Out of Band Emissions

2 MB PARABOLIC ANTENNA Lower Bandegde
g00b0030: 2000-Nov-03 Fri 10:23:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER, dBuV	CF, dB	uV/m @ 3m	*PEAK/ AVERAGE
2412.000000	2376.430000	7.3	44.93	408.79	PEAK
2412.000000	2376.500000	-2.6	44.93	130.77	AVERAGE
2412.000000	2378.000000	5.94	44.95	350.35	PEAK
2412.000000	2378.000000	-2.19	44.95	137.4	AVERAGE
2412.000000	2379.430000	-2.6	44.96	131.22	AVERAGE
2412.000000	2380.480000	11.6	44.98	674.53	PEAK
2412.000000	2380.480000	6.33	44.98	367.71	AVERAGE
2412.000000	2381.000000	6.24	44.98	363.92	PEAK
2412.000000	2382.880000	2.56	45.01	239.06	AVERAGE
2412.000000	2383.180000	12.27	45.01	731.14	PEAK
2412.000000	2384.000000	10.6	45.02	603.95	PEAK
2412.000000	2384.000000	1.07	45.02	201.6	AVERAGE
2412.000000	2386.100000	4.53	45.04	300.95	AVERAGE
2412.000000	2386.250000	14.35	45.04	932.18	PEAK
2412.000000	2387.000000	12.02	45.05	713.67	PEAK
2412.000000	2387.000000	3.51	45.05	267.92	AVERAGE
2412.000000	2388.430000	1.85	45.07	221.82	AVERAGE
2412.000000	2388.580000	10.08	45.07	572.14	PEAK
2412.000000	2390.000000	6.75	45.08	390.39	PEAK
2412.000000	2390.000000	-1.85	45.08	145.04	AVERAGE

2 MB PARABOLIC ANTENNA Upper Bandedge
g00b0039: 2000-Nov-03 Fri 12:09:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER, dBuV	CF, dB	uV/m @ 3m	*PEAK/ AVERAGE
2462.000000	2483.500000	0.57	45.72	206.3	PEAK
2462.000000	2483.500000	-0.53	45.72	181.76	AVERAGE
2462.000000	2484.030000	2.12	45.72	246.6	AVERAGE
2462.000000	2484.030000	4.39	45.72	320.26	PEAK
2462.000000	2486.500000	5.38	45.74	359.75	PEAK
2462.000000	2486.500000	4.7	45.74	332.66	AVERAGE
2462.000000	2487.100000	7.26	45.74	446.68	AVERAGE
2462.000000	2487.180000	7.53	45.74	460.79	PEAK
2462.000000	2489.500000	-3.62	45.75	127.79	PEAK
2462.000000	2489.500000	-3.68	45.75	126.91	AVERAGE
2462.000000	2490.030000	7.88	45.76	480.84	PEAK
2462.000000	2491.230000	6.38	45.77	405.04	AVERAGE
2462.000000	2492.500000	-0.51	45.77	183.23	PEAK
2462.000000	2492.500000	-1.16	45.77	170.02	AVERAGE
2462.000000	2493.780000	-3.6	45.79	128.68	PEAK
2462.000000	2494.450000	-3.8	45.79	125.75	AVERAGE
2462.000000	2495.500000	-5.15	45.79	107.65	AVERAGE
2462.000000	2495.580000	-2.91	45.79	139.32	PEAK
2462.000000	2497.150000	-4.37	45.81	118.03	AVERAGE
2462.000000	2497.750000	-0.82	45.81	177.62	PEAK

*PEAK AND AVERAGE VALUES

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NAME OF TEST: Out of Band Emissions

11 MB PARABOLIC ANTENNA Lower Bandedge
g00b0027: 2000-Nov-03 Fri 09:50:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER, dBuV	CF, dB	uV/m @ 3m	*PEAK/ AVERAGE
2412.000000	2375.900000	8.7	44.93	480.29	PEAK
2412.000000	2376.050000	2.6	44.93	237.96	AVERAGE
2412.000000	2378.000000	5.11	44.95	318.42	PEAK
2412.000000	2378.080000	-2.59	44.95	131.22	AVERAGE
2412.000000	2379.580000	0.35	44.96	184.29	AVERAGE
2412.000000	2380.480000	11.74	44.98	685.49	PEAK
2412.000000	2380.480000	7.21	44.98	406.91	AVERAGE
2412.000000	2382.430000	-0.44	44.99	168.85	AVERAGE
2412.000000	2382.730000	11.03	45.01	633.87	PEAK
2412.000000	2384.000000	8.73	45.02	486.97	PEAK
2412.000000	2384.000000	1	45.02	199.99	AVERAGE
2412.000000	2385.430000	10.93	45.03	628.06	PEAK
2412.000000	2385.580000	2.92	45.04	250.03	AVERAGE
2412.000000	2387.000000	13.82	45.05	878.01	PEAK
2412.000000	2387.000000	3.89	45.05	279.9	AVERAGE
2412.000000	2388.430000	9.88	45.07	559.11	PEAK
2412.000000	2388.500000	2.48	45.07	238.51	AVERAGE
2412.000000	2390.000000	11.62	45.08	683.91	PEAK
2412.000000	2390.000000	0.72	45.08	194.98	AVERAGE

11 MB PARABOLIC ANTENNA Upper Bandedge
g00b0033: 2000-Nov-03 Fri 10:58:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER, dBuV	CF, dB	uV/m @ 3m	*PEAK/ AVERAGE
2462.000000	2483.500000	7.91	45.72	480.29	AVERAGE
2462.000000	2483.500000	16.16	45.72	1241.65	PEAK
2462.000000	2485.080000	15.73	45.73	1183.04	PEAK
2462.000000	2485.530000	7.46	45.73	456.56	AVERAGE
2462.000000	2486.580000	14.19	45.74	991.97	PEAK
2462.000000	2486.730000	6.66	45.74	416.87	AVERAGE
2462.000000	2488.080000	17.13	45.75	1393.16	PEAK
2462.000000	2488.080000	7.38	45.75	453.42	AVERAGE
2462.000000	2489.580000	16.62	45.76	1315.22	PEAK
2462.000000	2489.650000	7.4	45.76	454.99	AVERAGE
2462.000000	2491.080000	15.53	45.77	1161.45	PEAK
2462.000000	2491.080000	4.99	45.77	345.14	AVERAGE
2462.000000	2492.430000	3.2	45.77	280.87	AVERAGE
2462.000000	2492.650000	11.74	45.77	750.76	PEAK
2462.000000	2494.150000	0.59	45.79	208.45	AVERAGE
2462.000000	2494.380000	9.61	45.79	588.84	PEAK
2462.000000	2495.500000	-0.73	45.79	179.06	AVERAGE
2462.000000	2495.730000	8.08	45.79	493.74	PEAK
2462.000000	2497.000000	9.97	45.81	615.18	PEAK
2462.000000	2497.000000	3.34	45.81	286.75	AVERAGE

*PEAK AND AVERAGE VALUES

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NAME OF TEST: Out of Band Emissions

2 MB PATCH ANTENNA Lower Bandedge
g00b0047: 2000-Nov-06 Mon 09:44:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER, dBuV	CF, dB	uV/m @ 3m	*PEAK/ AVERAGE
2412.000000	2376.580000	4.32	44.93	290.07	AVERAGE
2412.000000	2376.800000	9.85	44.94	548.91	PEAK
2412.000000	2378.000000	8.06	44.95	447.2	PEAK
2412.000000	2378.000000	4.31	44.95	290.4	AVERAGE
2412.000000	2379.130000	8.91	44.96	493.74	PEAK
2412.000000	2379.350000	4.3	44.96	290.4	AVERAGE
2412.000000	2381.000000	7.11	44.98	402.25	PEAK
2412.000000	2381.000000	4.26	44.98	289.73	AVERAGE
2412.000000	2382.500000	8.57	44.99	476.43	PEAK
2412.000000	2382.580000	4.26	45	290.4	AVERAGE
2412.000000	2384.000000	8.26	45.02	461.32	PEAK
2412.000000	2384.000000	4.28	45.02	291.74	AVERAGE
2412.000000	2385.500000	4.27	45.04	292.08	AVERAGE
2412.000000	2386.180000	9.5	45.04	533.33	PEAK
2412.000000	2387.000000	6.66	45.05	385.03	PEAK
2412.000000	2387.000000	4.26	45.05	292.08	AVERAGE
2412.000000	2388.350000	4.25	45.06	292.08	AVERAGE
2412.000000	2388.500000	6.97	45.07	399.94	PEAK
2412.000000	2390.000000	7.11	45.08	406.91	PEAK
2412.000000	2390.000000	4.22	45.08	291.74	AVERAGE

2 MB PATCH ANTENNA Upper Bandedge
g00b0053: 2000-Nov-06 Mon 10:53:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER, dBuV	CF, dB	uV/m @ 3m	*PEAK/ AVERAGE
2462.000000	2483.500000	4.46	45.72	322.85	PEAK
2462.000000	2483.500000	-5.38	45.72	103.99	AVERAGE
2462.000000	2484.100000	5.46	45.72	362.24	PEAK
2462.000000	2484.850000	-5.39	45.73	103.99	AVERAGE
2462.000000	2486.500000	2.69	45.74	263.94	PEAK
2462.000000	2486.500000	-4.53	45.74	114.95	AVERAGE
2462.000000	2487.480000	5.89	45.75	381.94	PEAK
2462.000000	2487.700000	-4.2	45.75	119.54	AVERAGE
2462.000000	2489.500000	2.9	45.75	270.71	PEAK
2462.000000	2489.500000	-5.67	45.75	100.93	AVERAGE
2462.000000	2490.480000	-4.34	45.77	117.9	AVERAGE
2462.000000	2491.830000	6.87	45.77	428.55	PEAK
2462.000000	2492.500000	2.48	45.77	258.52	PEAK
2462.000000	2492.500000	-5.32	45.77	105.32	AVERAGE
2462.000000	2493.850000	-5.72	45.79	100.81	AVERAGE
2462.000000	2494.080000	4.33	45.79	320.63	PEAK
2462.000000	2494.900000	6.08	45.79	392.19	PEAK
2462.000000	2495.500000	-5.77	45.79	100.23	AVERAGE
2462.000000	2496.930000	-5.7	45.81	101.27	AVERAGE
2462.000000	2497.000000	5.18	45.81	354.41	PEAK

*PEAK AND AVERAGE VALUES

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NAME OF TEST: Out of Band Emissions

11 MB PATCH ANTENNA Lower Bandedge
g00b0044: 2000-Nov-06 Mon 09:04:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER, dBuV	CF, dB	uV/m @ 3m	*PEAK/ AVERAGE
2412.000000	2375.230000	9.54	44.92	528.45	PEAK
2412.000000	2376.500000	4.27	44.93	288.4	AVERAGE
2412.000000	2378.000000	8.1	44.95	449.26	PEAK
2412.000000	2378.000000	4.26	44.95	288.74	AVERAGE
2412.000000	2379.430000	8.67	44.96	480.29	PEAK
2412.000000	2379.500000	4.25	44.96	288.74	AVERAGE
2412.000000	2381.000000	7.29	44.98	410.68	PEAK
2412.000000	2381.000000	4.24	44.98	289.07	AVERAGE
2412.000000	2382.280000	8.69	44.99	483.06	PEAK
2412.000000	2382.500000	4.24	44.99	289.4	AVERAGE
2412.000000	2384.000000	4.23	45.02	290.07	AVERAGE
2412.000000	2384.300000	8.72	45.02	486.41	PEAK
2412.000000	2385.430000	4.22	45.03	290.07	AVERAGE
2412.000000	2385.800000	9.09	45.04	508.74	PEAK
2412.000000	2387.000000	4.21	45.05	290.4	AVERAGE
2412.000000	2387.300000	8.89	45.05	497.74	PEAK
2412.000000	2388.430000	7.74	45.07	437.02	PEAK
2412.000000	2388.580000	4.2	45.07	290.74	AVERAGE
2412.000000	2390.000000	8.02	45.08	451.86	PEAK
2412.000000	2390.000000	4.2	45.08	291.07	AVERAGE

11 MB PATCH ANTENNA Upper Bandedge
g00b0050: 2000-Nov-06 Mon 10:06:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER, dBuV	CF, dB	uV/m @ 3m	*PEAK/ AVERAGE
2462.000000	2483.500000	8.13	45.72	492.61	PEAK
2462.000000	2483.500000	6.31	45.72	399.48	AVERAGE
2462.000000	2484.700000	7.84	45.73	476.98	AVERAGE
2462.000000	2485.300000	9.44	45.73	573.46	PEAK
2462.000000	2486.500000	6.91	45.74	429.04	PEAK
2462.000000	2486.500000	5.42	45.74	361.41	AVERAGE
2462.000000	2487.780000	8.17	45.75	496.59	PEAK
2462.000000	2487.930000	6.12	45.75	392.19	AVERAGE
2462.000000	2489.130000	6.56	45.75	412.57	AVERAGE
2462.000000	2489.500000	7.1	45.75	439.04	PEAK
2462.000000	2490.480000	7.21	45.77	445.66	AVERAGE
2462.000000	2490.550000	9.37	45.77	571.48	PEAK
2462.000000	2492.500000	7.1	45.77	440.05	PEAK
2462.000000	2492.500000	6.07	45.77	390.84	AVERAGE
2462.000000	2493.100000	8.89	45.78	541.38	PEAK
2462.000000	2494.230000	6.47	45.79	410.2	AVERAGE
2462.000000	2495.130000	8.42	45.79	513.45	PEAK
2462.000000	2495.130000	7.65	45.79	469.89	AVERAGE
2462.000000	2495.950000	9.7	45.79	594.98	PEAK
2462.000000	2497.300000	6.75	45.81	424.62	AVERAGE

*PEAK AND AVERAGE VALUES

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NAME OF TEST: Out of Band Emissions
2 MB OMNI ANTENNA Lower Bandedge
g00b0067: 2000-Nov-07 Tue 13:44:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER, dBuV	CF, dB	uV/m @ 3m	*PEAK/ AVERAGE
2412.000000	2376.500000	-5.61	44.93	92.47	AVERAGE
2412.000000	2376.580000	4.32	44.93	290.07	PEAK
2412.000000	2378.000000	4.26	44.95	288.74	PEAK
2412.000000	2378.000000	-5.53	44.95	93.54	AVERAGE
2412.000000	2379.200000	5.27	44.96	324.71	PEAK
2412.000000	2379.430000	-5.61	44.96	92.79	AVERAGE
2412.000000	2381.000000	4.66	44.98	303.39	PEAK
2412.000000	2381.000000	-5.62	44.98	92.9	AVERAGE
2412.000000	2382.580000	-5.43	45	95.17	AVERAGE
2412.000000	2382.650000	4.84	45.01	310.81	PEAK
2412.000000	2384.000000	3.22	45.02	258.23	PEAK
2412.000000	2384.000000	-5.39	45.02	95.83	AVERAGE
2412.000000	2385.280000	-5.22	45.02	97.72	AVERAGE
2412.000000	2385.280000	5.12	45.02	321.37	PEAK
2412.000000	2386.850000	6.39	45.05	373.25	PEAK
2412.000000	2387.000000	-5.2	45.05	98.29	AVERAGE
2412.000000	2388.200000	5.38	45.06	332.66	PEAK
2412.000000	2388.350000	-5.49	45.06	95.17	AVERAGE
2412.000000	2390.000000	4.67	45.08	307.26	PEAK
2412.000000	2390.000000	-5.45	45.08	95.83	AVERAGE

2 MB OMNI ANTENNA Upper Bandedge
g00b0070: 2000-Nov-07 Tue 14:10:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER, dBuV	CF, dB	uV/m @ 3m	*PEAK/ AVERAGE
2462.000000	2483.500000	4.64	45.72	329.61	PEAK
2462.000000	2483.500000	-4.28	45.72	118.03	AVERAGE
2462.000000	2484.550000	7.31	45.73	448.75	PEAK
2462.000000	2484.850000	-3.25	45.73	133.05	AVERAGE
2462.000000	2486.430000	9.24	45.74	561.05	PEAK
2462.000000	2486.500000	-1.4	45.74	164.82	AVERAGE
2462.000000	2488.080000	9.1	45.75	552.71	PEAK
2462.000000	2489.500000	-4.99	45.75	109.14	AVERAGE
2462.000000	2489.500000	5.02	45.75	345.54	PEAK
2462.000000	2490.330000	-0.7	45.77	179.27	AVERAGE
2462.000000	2490.400000	9.42	45.77	574.78	PEAK
2462.000000	2491.150000	-1.09	45.77	171.4	AVERAGE
2462.000000	2492.500000	-3.3	45.77	132.89	AVERAGE
2462.000000	2492.500000	5.48	45.77	365.17	PEAK
2462.000000	2493.930000	-5.51	45.79	103.28	AVERAGE
2462.000000	2494.000000	5.43	45.79	363.92	PEAK
2462.000000	2495.500000	-5.6	45.79	102.21	AVERAGE
2462.000000	2495.500000	5.11	45.79	350.75	PEAK
2462.000000	2495.880000	6.18	45.79	396.73	PEAK
2462.000000	2497.980000	-4.66	45.81	114.16	AVERAGE

*PEAK AND AVERAGE VALUES

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NAME OF TEST: Out of Band Emissions

11 MB OMNI ANTENNA Lower Bandedge
g00b0064: 2000-Nov-07 Tue 13:08:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER, dBuV	CF, dB	uV/m @ 3m	*PEAK/ AVERAGE
2412.000000	2375.230000	6.37	44.92	366.86	PEAK
2412.000000	2376.430000	-5.61	44.93	92.47	AVERAGE
2412.000000	2377.780000	5.84	44.95	346.34	PEAK
2412.000000	2378.000000	-5.6	44.95	92.79	AVERAGE
2412.000000	2378.830000	5.7	44.96	341.19	PEAK
2412.000000	2379.650000	-5.63	44.97	92.68	AVERAGE
2412.000000	2380.550000	7.17	44.98	405.04	PEAK
2412.000000	2381.000000	-5.55	44.98	93.65	AVERAGE
2412.000000	2382.280000	-5.5	44.99	94.3	AVERAGE
2412.000000	2383.030000	5.04	45.01	318.05	PEAK
2412.000000	2383.930000	5.29	45.01	327.34	PEAK
2412.000000	2384.000000	-5.37	45.02	96.05	AVERAGE
2412.000000	2385.730000	-5.07	45.04	99.66	AVERAGE
2412.000000	2385.730000	5.8	45.04	348.34	PEAK
2412.000000	2387.000000	4.21	45.05	290.4	PEAK
2412.000000	2387.000000	-5.1	45.05	99.43	AVERAGE
2412.000000	2388.500000	-5.28	45.07	97.61	AVERAGE
2412.000000	2388.730000	6.22	45.07	366.86	PEAK
2412.000000	2390.000000	3.92	45.08	281.84	PEAK
2412.000000	2390.000000	-5.33	45.08	97.16	AVERAGE

11 MB OMNI ANTENNA Upper Bandedge
g00b0073: 2000-Nov-07 Tue 14:25:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	METER, dBuV	CF, dB	uV/m @ 3m	*PEAK/ AVERAGE
2462.000000	2483.500000	9.07	45.72	548.91	PEAK
2462.000000	2483.500000	-2.09	45.72	151.88	AVERAGE
2462.000000	2485.000000	-2.74	45.73	141.09	AVERAGE
2462.000000	2485.080000	7.71	45.73	469.89	PEAK
2462.000000	2486.280000	8.7	45.74	527.23	PEAK
2462.000000	2486.500000	-3.28	45.74	132.74	AVERAGE
2462.000000	2487.630000	8.25	45.75	501.19	PEAK
2462.000000	2488.150000	-2.59	45.75	143.88	AVERAGE
2462.000000	2489.050000	9.49	45.75	578.1	PEAK
2462.000000	2489.650000	-2.36	45.76	147.91	AVERAGE
2462.000000	2490.700000	-3.18	45.77	134.74	AVERAGE
2462.000000	2490.930000	8.58	45.77	521.8	PEAK
2462.000000	2492.500000	5.69	45.77	374.11	PEAK
2462.000000	2492.500000	-4.53	45.77	115.35	AVERAGE
2462.000000	2494.080000	-5.32	45.79	105.56	AVERAGE
2462.000000	2494.380000	7.36	45.79	454.46	PEAK
2462.000000	2495.500000	4.82	45.79	339.23	PEAK
2462.000000	2495.580000	-5.42	45.79	104.35	AVERAGE
2462.000000	2496.930000	5.11	45.81	351.56	PEAK
2462.000000	2497.000000	-5.25	45.81	106.66	AVERAGE

*PEAK AND AVERAGE VALUES

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NAME OF TEST: Restricted Bands of Operation

SPECIFICATION: 47 CFR 15.205

TEST EQUIPMENT: As per attached page

MEASUREMENT PROCEDURE

The EUT was set up on a three meter open field site according to the procedure on ANSI C63.4.

Sensitivity of system was measured:

Below 2 GHz:

CISPR Bandwidths	= 8 dBµV
1 MHz RBW, 1 MHz VBW	= 12 dBµV
1 MHz RBW, 10 Hz VBW	= 3 dBµV

Above 2 GHz:

1 MHz RBW, 1 MHz VBW	= 33 dBµV
1 MHz RBW, 10 Hz VBW	= 22 dBµV

Sensitivity of system with preamps:

Below 2 GHz:

Preamps are not used in this range.

Above 2 GHz:

Peak	= 3 dBµV
Average	= -8 dBµV

Cable Loss:

915 MHz	= -0.8 dBµV
2450 MHz	= -3 dBµV

Note:

dB loss vs. frequency included in programmed software.

Reference Level Offset:

set @ 1 dB, accounts for cable and connector loss.

TEST RESULTS: No harmonic or spurious emissions were detected in the restricted bands in excess of the limits of 15.205. System measurement sensitivity was –130 dBm.

SUPERVISED BY: Morton Flom, P. Eng.

PAGE NO. 24 of 48.

NAME OF TEST: Emissions At Band Edges

SPECIFICATION: 47 CFR

TEST EQUIPMENT: As for "Out of Band Emissions"

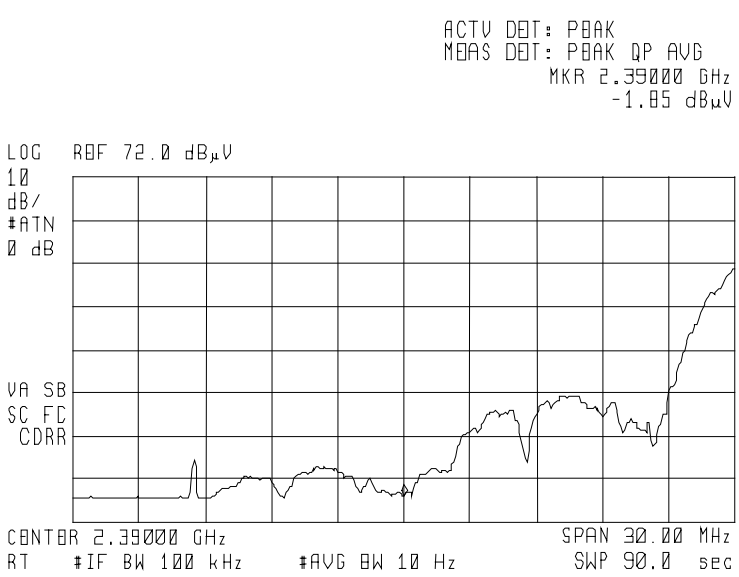
MEASUREMENT RESULTS

ATTACHED

SUPERVISED BY: Morton Flom, P. Eng.

PAGE NO. 25 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0031: 2000-Nov-03 Fri 10:48:00
PARABOLIC ANTENNA

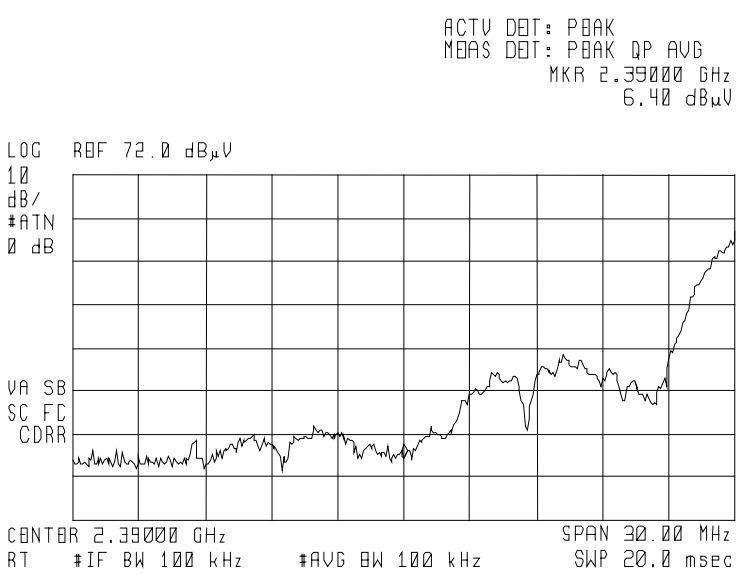


POWER: HIGH
MODULATION: 2 MB/SEC PSUDEO RANDOM DATA
LOWER BANDEDGE CH. 2412/AVG

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 26 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0032: 2000-Nov-03 Fri 10:52:00
PARABOLIC ANTENNA

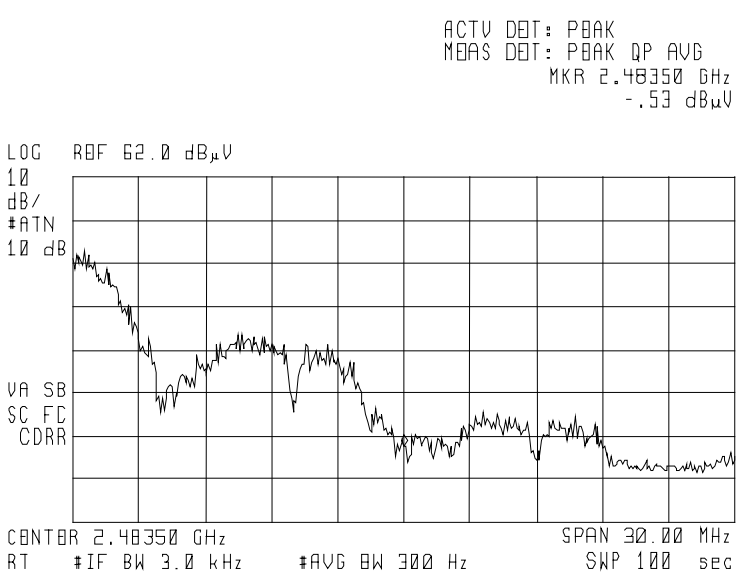


POWER: HIGH
MODULATION: 2 MB/SEC PSUDEO RANDOM DATA
LOWER BANDEDGE CH.
2412/PEAK

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 27 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0041: 2000-Nov-03 Fri 14:34:00
PARABOLIC ANTENNA

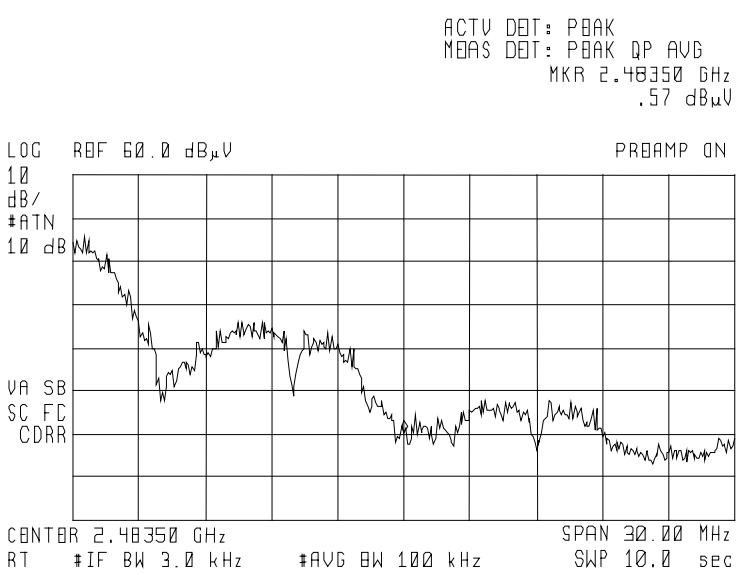


POWER: HIGH
MODULATION: 2 MB/SEC PSUDEO RANDOM DATA
UPPER BANDEDGE CH 2462/AVG

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 28 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0040: 2000-Nov-03 Fri 14:24:00
PARABOLIC ANTENNA

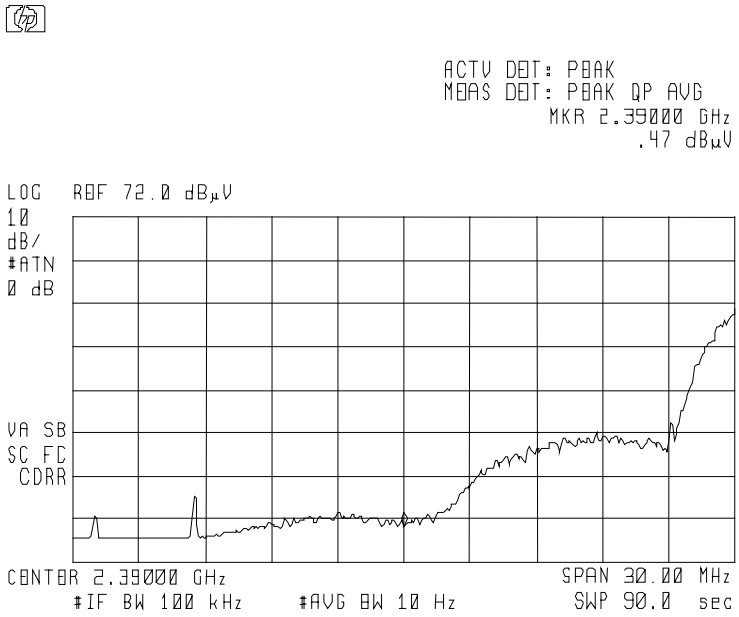


POWER: HIGH
MODULATION: 2 MB/SEC PSUDEO RANDOM DATA
UPPER BANDEDGE CH 2462/PEAK

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 29 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0028: 2000-Nov-03 Fri 10:18:00
PARABOLIC ANTENNA

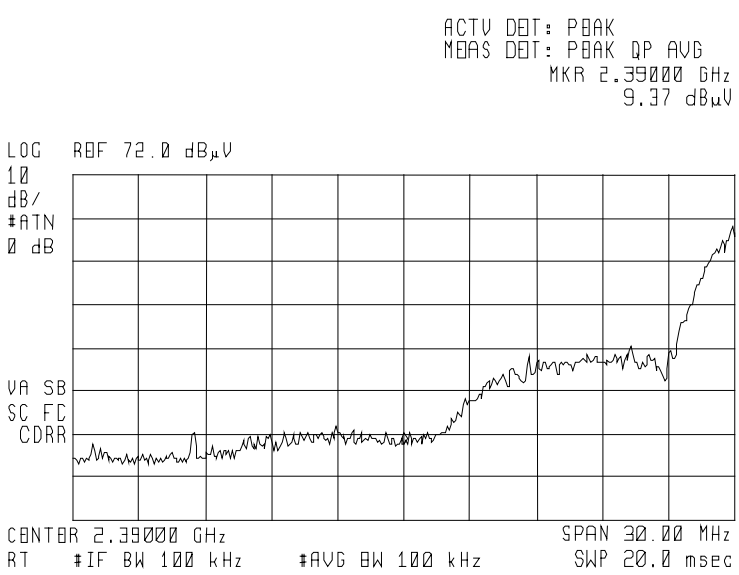


POWER: HIGH
MODULATION: 11 MB/SEC PSUDEO RANDOM DATA
LOWER BANDEDGE CH. 2412/AVG

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 30 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0029: 2000-Nov-03 Fri 10:20:00
PARABOLIC ANTENNA

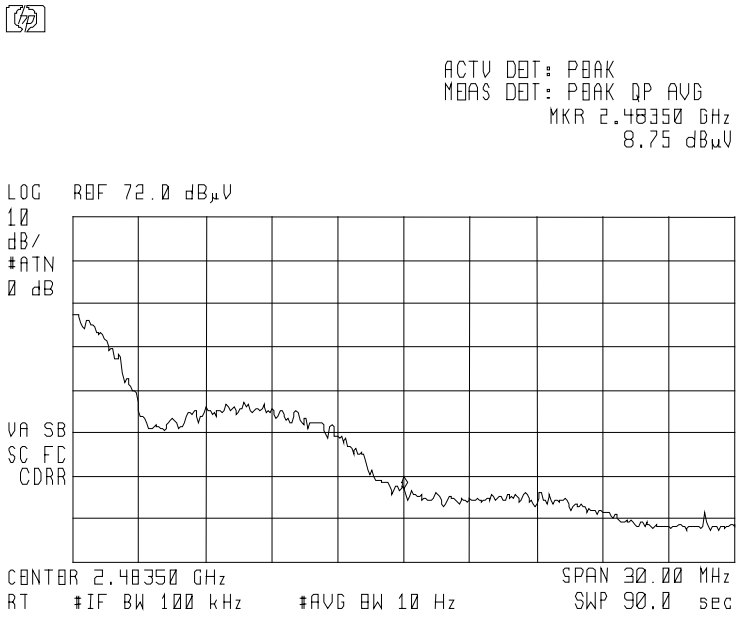


POWER: HIGH
MODULATION: 11 MB/SEC PSUDEO RANDOM DATA
LOWER BANDEDGE CH. 2412/PEAK

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 31 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0035: 2000-Nov-03 Fri 12:02:00
PARABOLIC ANTENNA

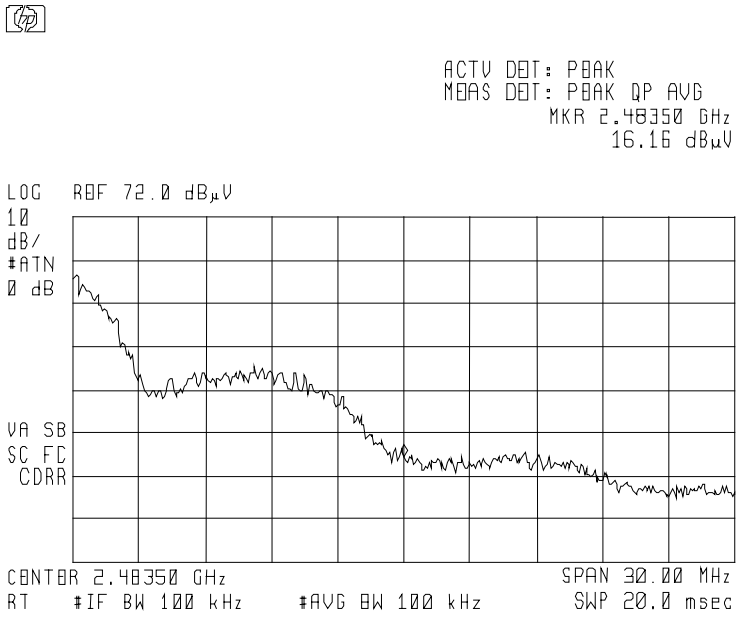


POWER: HIGH
MODULATION: 11 MB/SEC PSUDEO RANDOM DATA
UPPER BANDEDGE CH, 2462/AVG

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 32 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0034: 2000-Nov-03 Fri 11:57:00
PARABOLIC ANTENNA

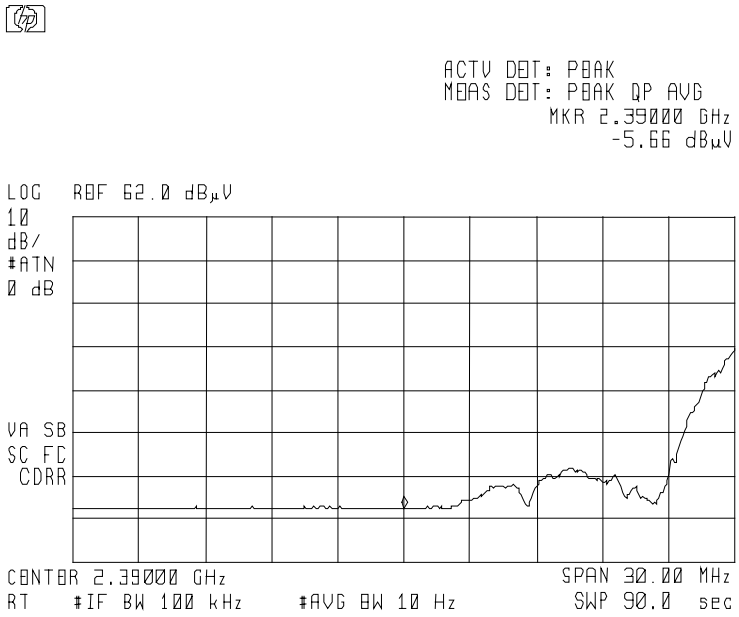


POWER: HIGH
MODULATION: 11 MB/SEC PSUDEO RANDOM DATA
UPPER BANDEDGE CH, 2462/PEAK

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 33 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0060: 2000-Nov-07 Tue 10:13:00
PATCH ANTENNA

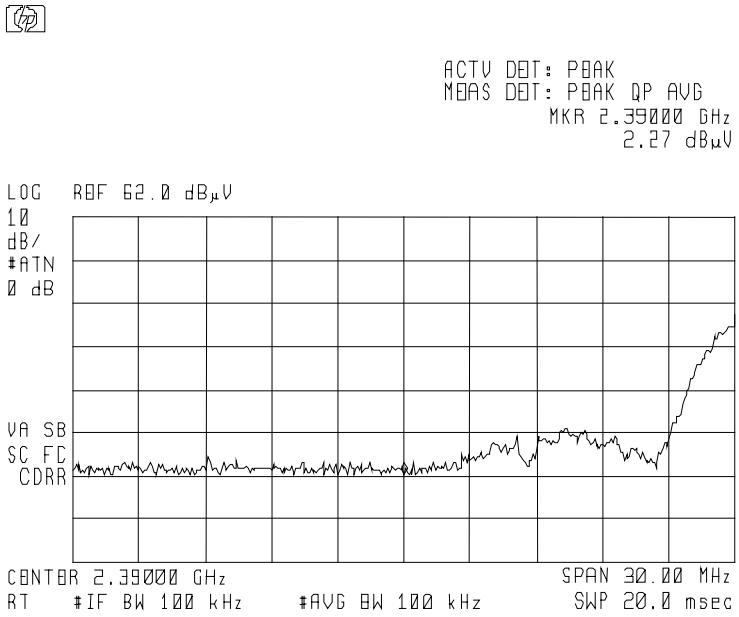


POWER: HIGH
MODULATION: 2 MB/SEC PSUDEO RANDOM DATA
LOWER BANDEDGE CH. 2412/AVG

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 34 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0061: 2000-Nov-07 Tue 10:18:00
PATCH ANTENNA

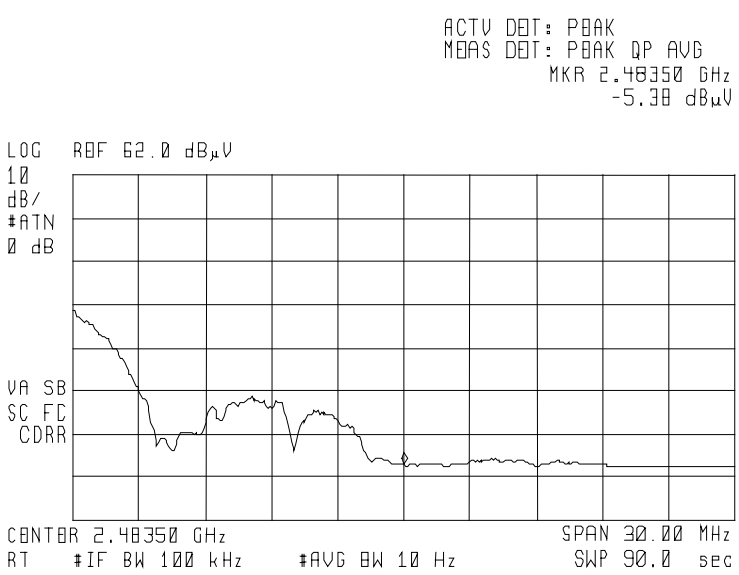


POWER: HIGH
MODULATION: 2 MB/SEC PSUDEO RANDOM DATA
LOWER BANDEDGE CH.
2412/PEAK

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 35 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0054: 2000-Nov-07 Tue 09:06:00
PATCH ANTENNA

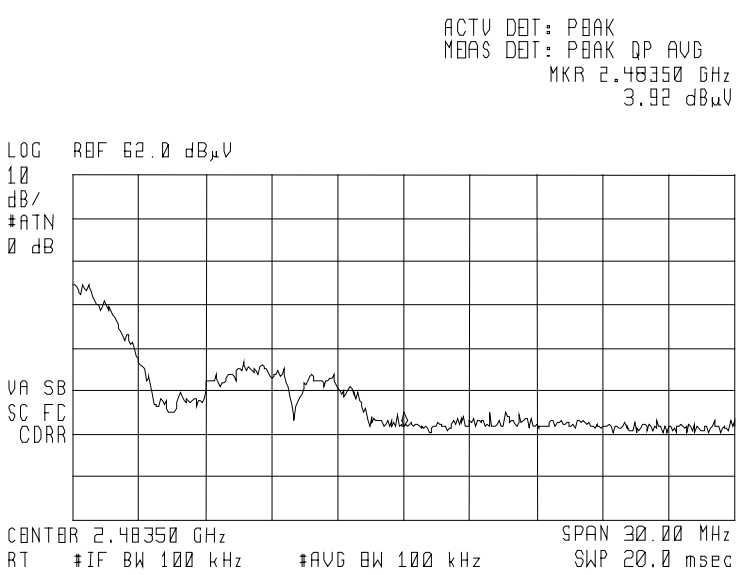


POWER: HIGH
MODULATION: 2 MB/SEC PSUDEO RANDOM DATA
UPPER BANDEDGE CH 2462/AVG

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 36 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0055: 2000-Nov-07 Tue 09:08:00
PATCH ANTENNA

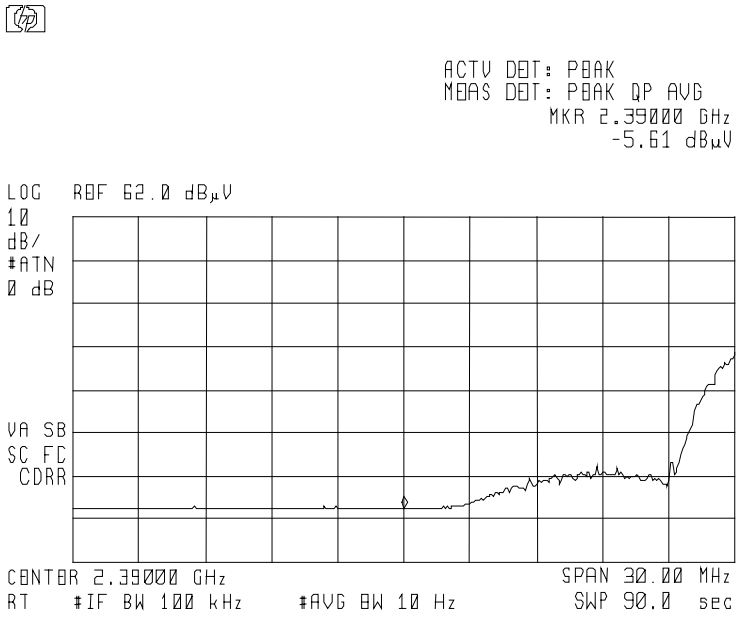


POWER: HIGH
MODULATION: 2 MB/SEC PSUDEO RANDOM DATA
UPPER BANDEDGE CH 2462/PEAK

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 37 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0059: 2000-Nov-07 Tue 09:56:00
PATCH ANTENNA

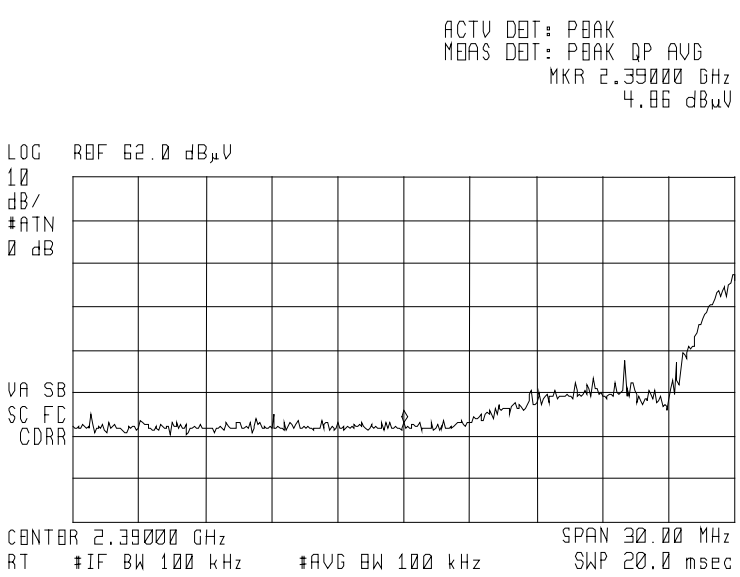


POWER: HIGH
MODULATION: 11 MB/SEC PSUDEO RANDOM DATA
LOWER BANDEDGE CH. 2412/AVG

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 38 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0058: 2000-Nov-07 Tue 09:52:00
PATCH ANTENNA

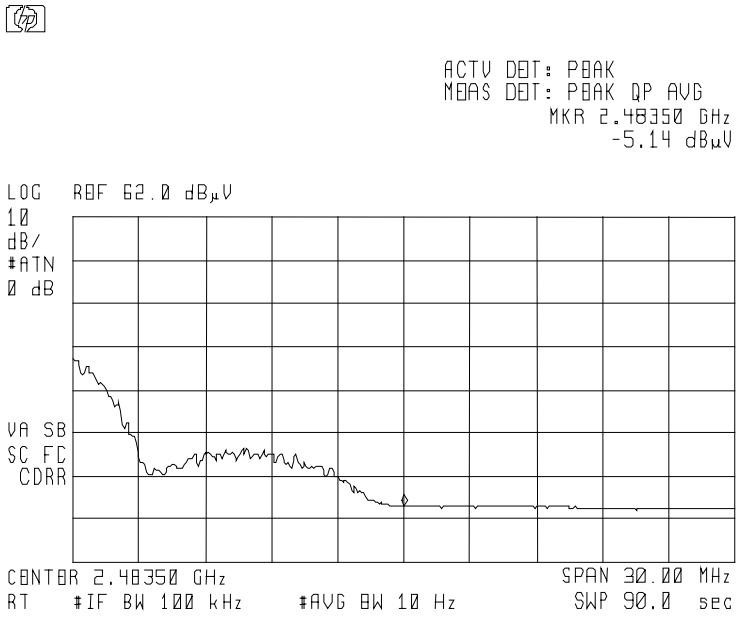


POWER: HIGH
MODULATION: 11 MB/SEC PSUDEO RANDOM DATA
LOWER BANDEDGE CH. 2412/PEAK

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 39 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0057: 2000-Nov-07 Tue 09:40:00
PATCH ANTENNA

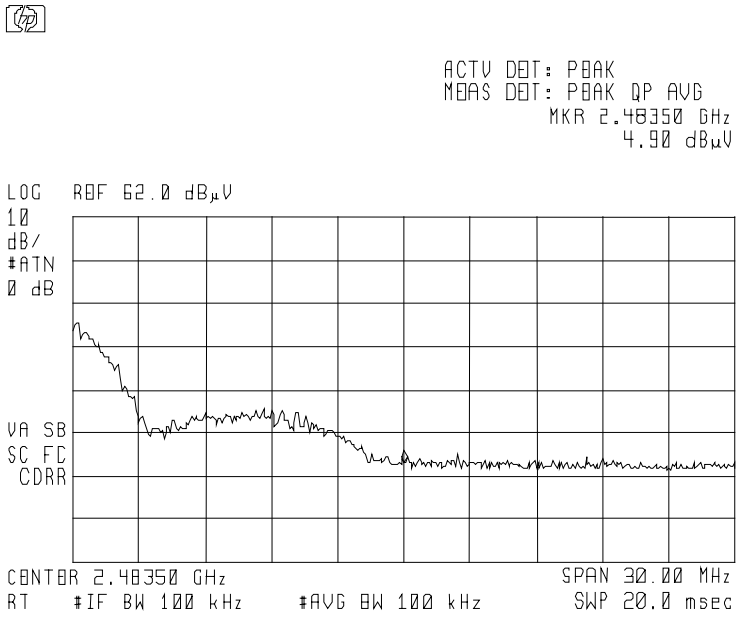


POWER: HIGH
MODULATION: 11 MB/SEC PSUDEO RANDOM DATA
UPPER BANDEDGE CH. 2462/AVG

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 40 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0056: 2000-Nov-07 Tue 09:37:00
PATCH ANTENNA

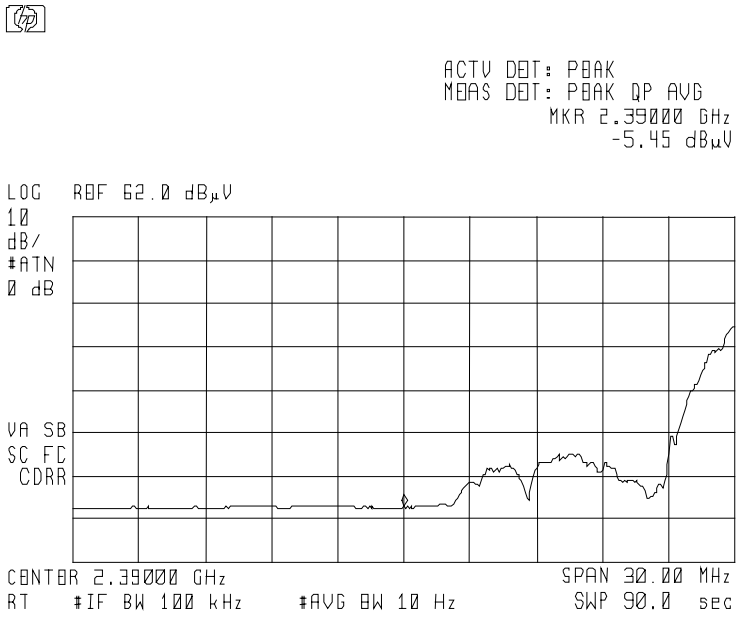


POWER: HIGH
MODULATION: 11 MB/SEC PSUDEO RANDOM DATA
UPPER BANDEDGE CH. 2462/PEAK

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 41 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0068: 2000-Nov-07 Tue 14:03:00
OMNI ANTENNA

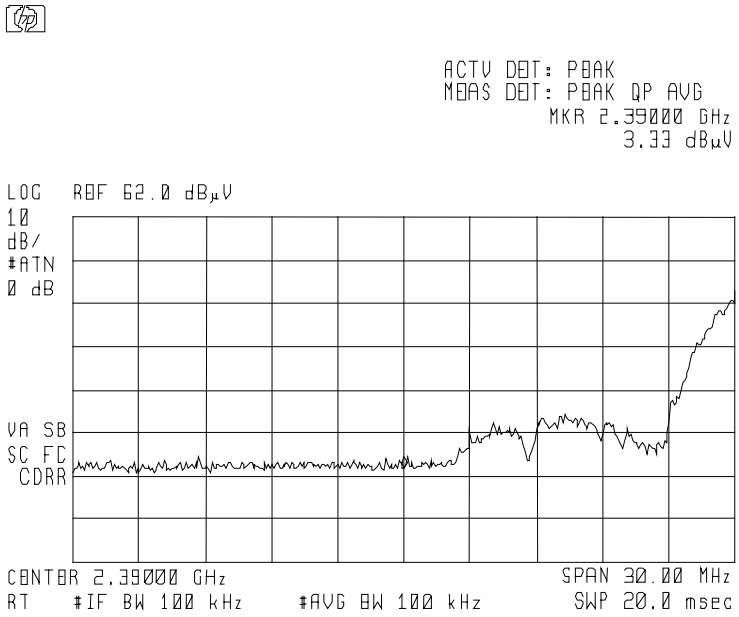


POWER: HIGH
MODULATION: 2 MB/SEC PSUDEO RANDOM DATA
LOWER BANDEDGE CH. 2412/AVG

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 42 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0069: 2000-Nov-07 Tue 14:04:00
OMNI ANTENNA

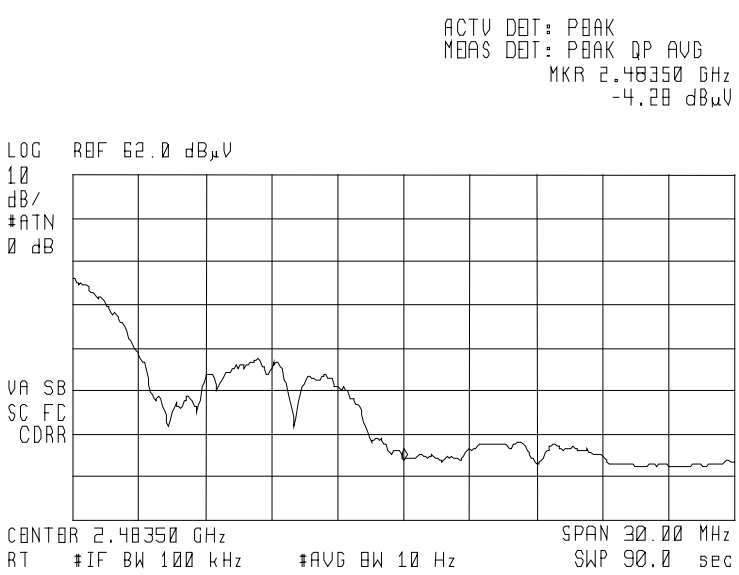


POWER: HIGH
MODULATION: 2 MB/SEC PSUDEO RANDOM DATA
LOWER BANDEDGE CH.
2412/PEAK

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 43 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0071: 2000-Nov-07 Tue 14:20:00
OMNI ANTENNA

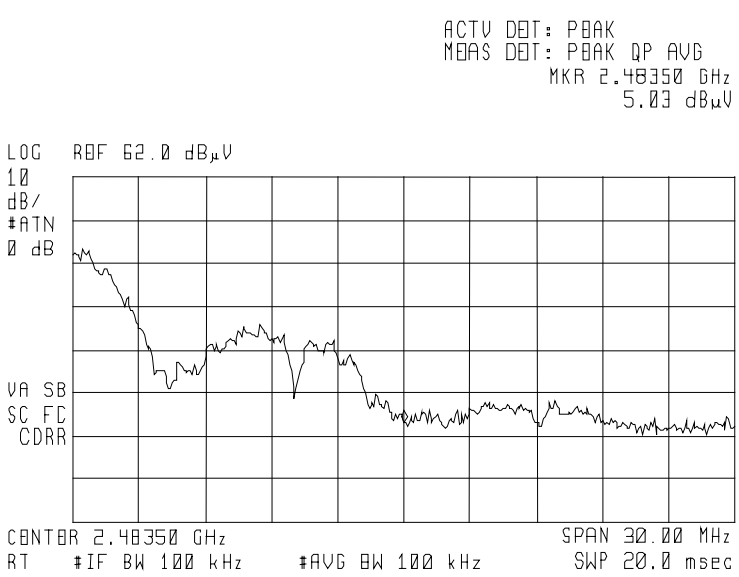


POWER: HIGH
MODULATION: 2 MB/SEC PSUDEO RANDOM DATA
UPPER BANDEDGE CH 2462/AVG

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 44 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0072: 2000-Nov-07 Tue 14:21:00
OMNI ANTENNA

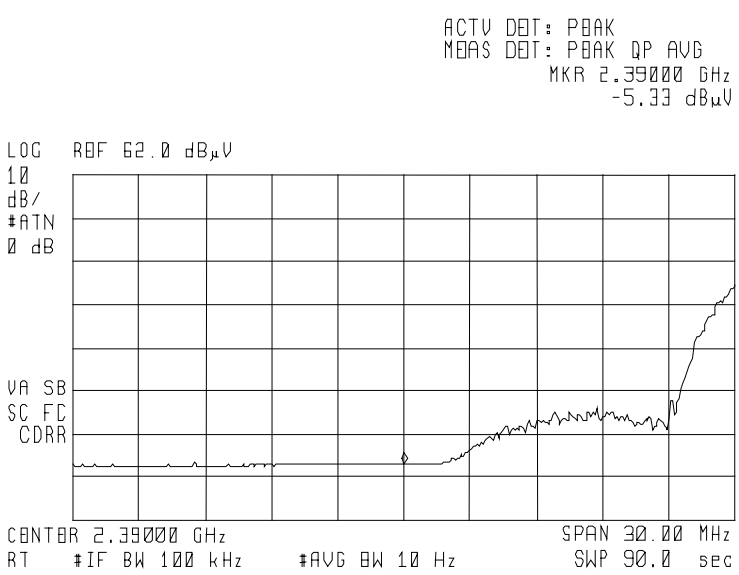


POWER: HIGH
MODULATION: 2 MB/SEC PSUDEO RANDOM DATA
UPPER BANDEDGE CH 2462/PEAK

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 45 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0065: 2000-Nov-07 Tue 13:38:00
OMNI ANTENNA

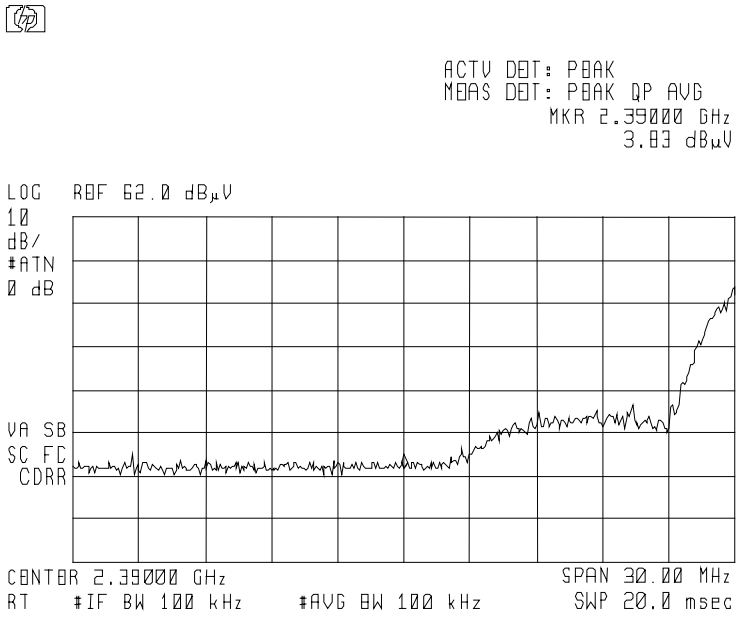


POWER: HIGH
MODULATION: 11MB/SEC PSUDEO RANDOM DATA
LOWER BANDEDGE CH. 2412/AVG

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 46 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0066: 2000-Nov-07 Tue 13:39:00
OMNI ANTENNA

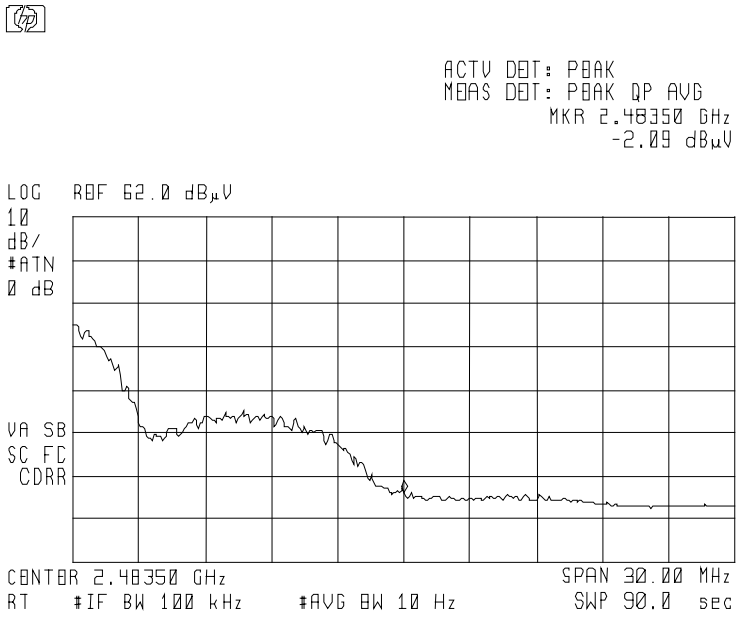


POWER: HIGH
MODULATION: 11MB/SEC PSUDEO RANDOM DATA
LOWER BANDEDGE CH.
2412/PEAK

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 47 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0074: 2000-Nov-07 Tue 14:35:00
OMNI ANTENNA

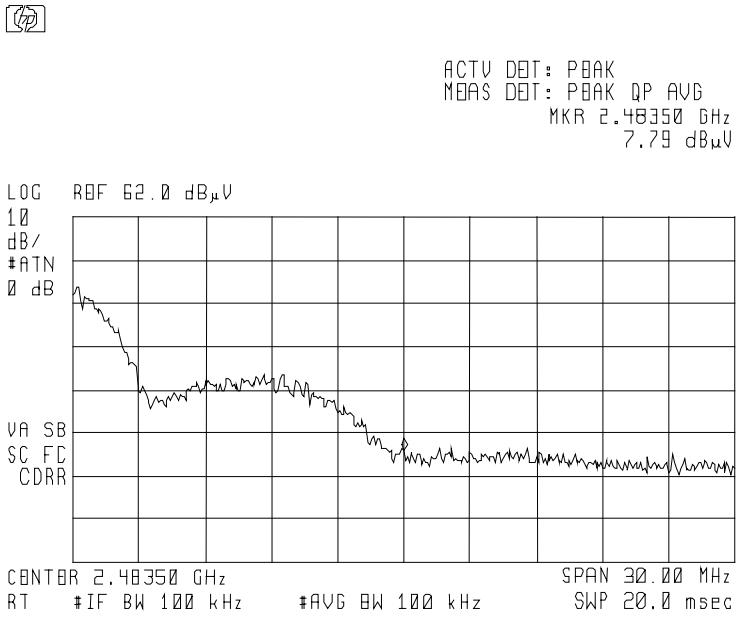


POWER: HIGH
MODULATION: 11 MB/SEC PSUDEO RANDOM DATA
UPPER BANDEDGE CH. 2462/AVG

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

PAGE NO. 48 of 48.

NAME OF TEST: Emissions At Band Edges
g00b0075: 2000-Nov-07 Tue 14:37:00
OMNI ANTENNA



POWER: HIGH
MODULATION: 11 MB/SEC PSUDEO RANDOM DATA
UPPER BANDEDGE CH. 2462/PEAK

PERFORMED BY: Doug Noble, B.A.S. E.E.T.

END OF TEST REPORT

RADIATED MEASUREMENTS
FOR PART 15 TRANSMITTERS W/ INTEGRAL ANTENNAS

Radiated Measurements

RANGE OF MEASUREMENT	SPECIFICATION	RESOLUTION B/W	VIDEO B/A
30 to 1000 MHz	CISPR	≥100 kHz	≥100 kHz
>1000 MHz	FCC, 15.37(b)	1 MHz	≥1 MHz
(if averaging)	FCC, 15.37(b)	1 MHz	10 Hz

Measuring Equipment

a. ANTENNAS:

EMCO 3109	20 - 300 MHz
APREL AALP2001	200 - 1000 MHz
APREL AAB20200	20 - 200 MHz
APREL AAH118	1 - 18 GHz

b. INSTRUMENTS:

HP8566B	Spectrum Analyzer
HP85685A	Preselector, w/ preamp below 2 GHz
HP85650A	Quasi Peak Adapter
HP8449	Preamp, above 2 GHz
HP8563E	Spectrum Analyzer, above 2 GHz

All test instrumentation is calibrated every January and every July. In addition, all test instrumentation is calibrated daily, or as required by the manufacturer. A Calibration Agreement is maintained with Hewlett Packard.

Occupied Bandwidth

Occupied Bandwidth is measured as a radiated signal without attenuators and/or filter. RBW, VBW and scan settings as shown were set to produce a meaningful result in accordance with ANSI C63.4, Section 13.1.7.

Part 15.21, Information to User

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly avoided by the party responsible for compliance could void the user's authority to operate the equipment.

§ 15.205 Restricted Bands of Operation

(a) Except as shown in paragraph (b) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.25
0.495-0.505	16.69475-16.69625	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2655-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-339.4	3600-4400	(2)
13.36-13.41			

Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz. Above 38.6

TESTIMONIAL AND STATEMENT OF CERTIFICATION

THIS IS TO CERTIFY THAT:

1. THAT the application was prepared either by, or under the direct supervision of, the undersigned.

2. THAT the technical data supplied with the application was taken under my direction and supervision.

3. THAT the data was obtained on representative units, randomly selected.

4. THAT, to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct.

CERTIFYING ENGINEER: Morton Flom, P. Eng.