

ELITE ELECTRONIC ENGINEERING INCORPORATED
1516 CENTRE CIRCLE
DOWNERS GROVE, ILLINOIS 60515-1082

ELITE PROJECT: 30827 DATES TESTED: March 22 through 27, 2002

TEST PERSONNEL: Howard Herhold

TEST SPECIFICATION: FCC "Code of Federal Regulations" Title 47
Part 15, Subpart B, Part 27 and Part 2, Para.
2.993

ENGINEERING TEST REPORT NO. 30827-01

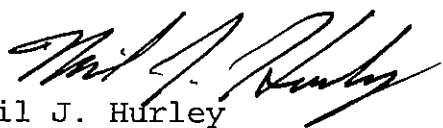
MEASUREMENT OF RF INTERFERENCE FROM A

MODEL MX800R2R3HNSZ1CD


REPEATER BASE STATION

FOR: ADRad Communications, Inc.
Melbourne, FL

Report By:


Neil J. Hurley
NARTE® Certified EMC Engineer
ATL-0149-E

Approved By:


Raymond J. Klonda
Registered Professional
Engineer of Illinois - 44894

ENGINEERING TEST REPORT NO. 30827-01
ADMINISTRATIVE DATA AND SUMMARY OF TESTS

DESCRIPTION OF TEST ITEM: Repeater Base Station

MODEL NO: MX800R2R3HNSZ1CD

SERIAL NO: 02016814

MANUFACTURER: ADRad Communications, Inc.

APPLICABLE SPECIFICATIONS: FCC "Code of Federal Regulations"
Title 47, Part 15, Subpart B, Part 27
and Part 2, Para. 2.993

QUANTITY OF ITEMS TESTED: One (1)

TEST PERFORMED BY: ELITE ELECTRONIC ENGINEERING INCORPORATED
Radio Interference Consultants
Downers Grove, Illinois 60515

DATE RECEIVED: March 22, 2002

DATES TESTED: March 22 through 27, 2002

PERSONNEL (OPERATORS, OBSERVERS, AND CO-ORDINATORS):

CUSTOMER: No ADRad Communications, Inc. personnel were present.

ELITE ELECTRONIC: Howard Herhold

ELITE JOB NO.: 24065

ABSTRACT: The model MX800R2R3HNSZ1CD Repeater Base Station, serial number 02016814, does fully meet the radiated emission requirements of the FCC "Code of Federal Regulations", Title 47, Part 15, Subpart B for unintentional radiators (receivers) and the FCC "Code of Federal Regulations", Title 47, Part 27. See data pages 20 through 25 for more details.

THIS REPORT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE
WRITTEN APPROVAL OF ELITE ELECTRONIC ENGINEERING INCORPORATED.

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TOTAL NUMBER OF PAGES IN THIS DOCUMENT,
(INCLUDING DATA SHEETS): 25

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ENGINEERING TEST REPORT NO. 30827-01

MEASUREMENT OF RF INTERFERENCE FROM

A MODEL MX800R2R3HNSZ1CD

REPEATER BASE STATION

1.0 INTRODUCTION:

1.1 DESCRIPTION OF TEST ITEM: This document present the results of a series of radio interference measurements performed on a model MX800R2R3HNSZ1CD Repeater Base Station, serial number 02016814, (hereinafter referred to as the test item). The tests were performed for ADRad Communications, Inc. of Melbourne, FL.

The test item is a repeater base station operating in the 700MHz band. The power output is 50 watts. The test item is equipped with an antenna port for an external antenna. The antenna port was terminated in 50 ohms for this test.

1.2 PURPOSE: The test series was performed to determine if the test item meets the radiated RF emission requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart B, Sections 15.107 and 15.109 for unintentional radiators and the radiated emission requirements of the FCC "Code of Federal Regulations", Title 47, Part 27. Testing was performed in accordance with ANSI C63.4-1992 "American National Standard for Methods of Measurement of Radio-Noise Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz", and in accordance with the FCC "Code of Federal Regulations", Title 47, Part 2, para. 2.993.

1.3 DEVIATIONS, ADDITIONS AND EXCLUSIONS: There were no deviations, additions to, or exclusions from the test specification during this test series.

1.4 APPLICABLE DOCUMENTS: The following documents of the exact issue designated form part of this document to the extent specified herein:

- Federal Communications Commission "Code of Federal Regulations", Title 47, Part 15, Subpart B for unintentional radiators, dated 1 October 2000
- Federal Communications Commission "Code of Federal Regulations", Title 47, Part 27, dated 1 October 2000
- ANSI C63.4-1992, "American National Standard for Methods of Measurement of Radio-Noise Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz

1.5 SUBCONTRACTOR IDENTIFICATION: This series of tests was performed by Elite Electronic Engineering Incorporated of Downers Grove, Illinois at their Cocoa Beach facility.

1.6 LABORATORY CONDITIONS: The temperature at the time of the test was 28°C and the relative humidity was 56%.

2.0 TEST ITEM SETUP AND OPERATION:

For all tests the test item and all peripheral equipment were placed on a 0.8 meter high non-conductive stand.

The antenna ports were terminated in 50Ω loads.

For the FCC-15 test, the test item was powered up in the receive mode at each of three frequencies, 776MHz (CH. 1), 785MHz (CH. 2) and 794MHz, CH. 3).

For the FCC-27 case radiation tests, the test item was powered up in the transmit mode at each of three frequencies, 746MHz (CH. 1), 755MHz (CH. 2) and 764MHz, (CH. 3).

Since the test item was powered with a 13.8VDC supply, it was ungrounded during the tests.

3.0 TEST EQUIPMENT:

A list of the test equipment used can be found on Table I. All equipment was calibrated per the instruction manuals supplied by the manufacturer.

All measurements were performed with a spectrum analyzer using a peak detector.

4.0 REQUIREMENTS, PROCEDURES AND RESULTS:

4.1 POWERLINE CONDUCTED EMISSIONS:

4.1.1 **REQUIREMENTS:** The test item was powered with a 13.8VDC supply; therefore, conducted emission measurements were not required.

4.2 PRELIMINARY RADIATED MEASUREMENTS:

4.2.1 **PROCEDURES:** The preliminary radiated measurements were performed by Elite Electronic Engineering, Inc. in an absorber lined shielded enclosure. Only the fundamental frequency and some harmonics were detected. No other spurious emissions were detected. The measurements were performed separately with the test item receiving at 776Mz, 785MHz and 794MHz and transmitting at 746MHz, 755MHz and 764MHz at 50 watts. The 1st local oscillator is 90MHz below the receive frequency. The preliminary plots have been included as data pages 14 through 19. This data is presented for a reference, and is not used to determine compliance. All radiation is harmonically related to the transmit frequency or the frequency of the local oscillator. No significant differences in outputs were noted between channels. All significant radiated emissions were subsequently measured at Elite Electronic Engineering Incorporated's open field test site located in Cocoa Beach, Florida.

4.3 FINAL RADIATED EMISSIONS:

4.3.1 REQUIREMENTS FOR FCC-15: All emanations from an unintentional radiator shall be below the levels shown on below:

RADIATION LIMITS FOR UNINTENTIONAL RADIATORS

Frequency MHz	Distance between Test Item and Antenna in Meters	Field Strength uV/m
30-88	3	100
88-216	3	150
216-960	3	200
Above 960	3	500

Note: The tighter limit shall apply at the edge between the two frequency bands.

4.3.2 PROCEDURES FOR FCC-15: Final open field measurements were manually performed at Elite's open field test site located in Cocoa Beach, Florida. The open field test site is located in a clear area and is equipped with a 1/4-inch wire mesh ground plane.

The measurements were made over the frequency range of 400MHz to 5GHz. Both horizontal and vertical polarizations of the receive antenna were measured.

The open field radiated emissions test was performed separately with the test item operating at each of its three frequencies: 776MHz, 785MHz, and 794MHz in the receive mode.

To ensure that maximum emission levels were measured, the following steps were taken:

- (a) The test item was rotated so that all of its sides were exposed to the receiving antenna.
- (b) Since the measuring antennas are linearly polarized, both horizontal and vertical field components were measured.
- (c) The measuring antenna was raised and lowered from 1 to 4 meters for each antenna polarization to maximize the readings.

4.3.3 RESULTS OF OPEN FIELD RADIATED TEST FOR FCC-15: The

final open field radiated levels are presented on data pages 20 through 22. All open field measurements were below the specification requirements. The emissions level closest to the limit occurred at 1408MHz when tuned to channel 3, 794 MHz. The emissions level at this frequency was 5.8 dB within the limit. Photographs of the test configurations which yielded the highest radiated emission levels are shown on Figure 1.

4.3.4 REQUIREMENTS FOR FCC-27: According to para. 27.53(C)(1), on any frequency outside the 747MHz to 762MHz band, the power of any emissions shall be attenuated outside the band below the transmitter power (P) by at least 43dB plus $10 \log (P)$ dB. This calculation results in the spurious and harmonic emissions being less than -13dBm into a tuned dipole or equivalent antenna. The test methods, modified, of FCC "Code of Federal Regulations", Title 47, Part 2, para. 2.993 regarding field strength of spurious radiation were used in performing these tests with the test item in the transmit mode.

4.3.5 PROCEDURES FOR FCC-27: Final open field measurements were manually performed at Elite's open field test site located in Cocoa Beach, Florida. The open field test site is located in a clear area and is equipped with a 1/4-inch wire mesh ground plane. The test was performed at a 3 meter test distance between the test item and the measurement antenna.

The final open field emission test procedure is as follows:

- a) The test item was placed on a 0.8 meter high non-conductive stand at a 3 meter test distance from the receive antenna.
- b) The antenna output was terminated in a 50 ohm load.
- c) A broadband biconical or double ridged waveguide antenna was placed on an adjustable height antenna mast 3 meters from the test item for emission measurements.
- d) Detected emissions were maximized at each frequency by

rotating the test item and adjusting the receive antenna height and polarization. The maximum meter reading was recorded.

The emissions below 1GHz were measured with peak detector and 100kHz bandwidth. The emissions above 1GHz were measured with a peak detector and 1MHz bandwidth.

The equivalent power into a dipole antenna was determined from the field intensity levels measured at 3 meters using the substitution method. To determine the emission power another tuned dipole antenna or double ridged waveguide antenna was set in place of test item and connected to a calibrated signal generator. The output of the signal generator was adjusted to match the received level at the spectrum analyzer. The signal level was recorded. The reading was corrected to compensate for cable loss, as required, and when the ridged waveguide antenna was used increased by the difference in gain between the dipole and the waveguide antenna.

4.3.6 RESULTS OF OPEN FIELD RADIATED TEST FOR FCC-27: The final open field radiated levels are presented on data pages 23 through 25. As can be seen from this data, the test item met the specification requirements. The highest radiated level was measured at 7550MHz when tuned to channel 2, 755 MHz, 50 W. The peak power levels for the harmonics were at least 6.5 dB below the specification limit. Photographs of the test configurations which yielded the highest radiated emission levels are shown on Figure 2.

5.0 CONCLUSION:

It was found that the ADRad Communications, Inc. model MX800R2R3HNSZ1CD Repeater Base Station, serial number 02016814, does fully meet the radiated interference requirements of Section 15.109

of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart B for unintentional radiators (receivers), and the FCC "Code of Federal Regulations" Title 47, Part 27 as measured per Part 2, para. 2.993.

6.0 CERTIFICATION:

Elite Electronic Engineering Incorporated certifies that the information contained in this report was obtained under conditions which meet or exceed those specified in the test specification.

The data presented in this test report pertains to the test item at the test date. Any electrical or mechanical modification made to the test item subsequent to the specified test date will serve to invalidate the data and void this certification.

This report must not be used to claim product endorsement by NVLAP or any agency of the US Government.

Customer: ADRad Communications

Job Number: 30827

Engineering Test Report Numbers: 30827-01 and 30827-02

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Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Cal Inv	Due Date
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Equipment Type: AMPLIFIERS

AP10	PPE-AMPLIFIER - FL	MITEQ	AFS4-00102000-65-10P-4	180314	100MHZ-100GHZ	06/18/2001	12	06/18/2002
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Equipment Type: ANTENNAS

NFA1	PYRAMID FEED ANTENNA - FL	EMPIRE DEVICES	AT-112	A706	1GHZ-10.5GHZ		I/O	
NBN0	BROADBAND CONE ANT. - FL	COM. DESIGN	8 300	EE002	400MHZ-1GHZ	11/26/2001	12	11/26/2002
NBL0	BICONICAL ANTENNA - FL	COMP. DESIGN	B100	---	20MHZ-220MHZ	08/02/2001	12	08/02/2002
NSC0	LOG SPIRAL ANTENNA - FL	EMCO	3101	2661	200MHZ-1GHZ	01/24/2002	12	01/24/2003
NWF1	DBL. RDG. GUIDE ANT. - FL	EMCO	3105	2041	1GHZ-12.4GHZ	08/03/2001	12	08/03/2002

Equipment Type: COMPUTERS

CDA4	COMPUTER - FL	HEWLETT PACKARD	9836	2143A02590	---		N/A	
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Equipment Type: PRINTERS/PLOTTERS

HLJ0	PLOTTER - FL	HEWLETT PACKARD	7470A	2210A02725	---		N/A	
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Equipment Type: RECEIVERS

RAE3	SPECTRUM ANALYZER - FL	HEWLETT PACKARD	8566A	2209A01339	100HZ-22GHZ	11/05/2001	12	11/05/2002
RAF2	QUASIPeAK ADAPTER - FL	HEWLETT PACKARD	85650A	2043A00245	10KHZ-1GHZ	11/05/2001	12	11/05/2002

Equipment Type: SIGNAL GENERATORS

GDC0	SIGNAL GENERATOR - FL	HEWLETT PACKARD	TS-403B/U	GP-839	1.8GHZ-4GHZ		NOTE 1	
GDA0	SIGNAL GENERATOR - FL	HEWLETT PACKARD	614A	640-03876	800MHZ-2.1GHZ	05/04/2001	12	05/04/2002

I/O: Initial Only

N/A: Not Applicable

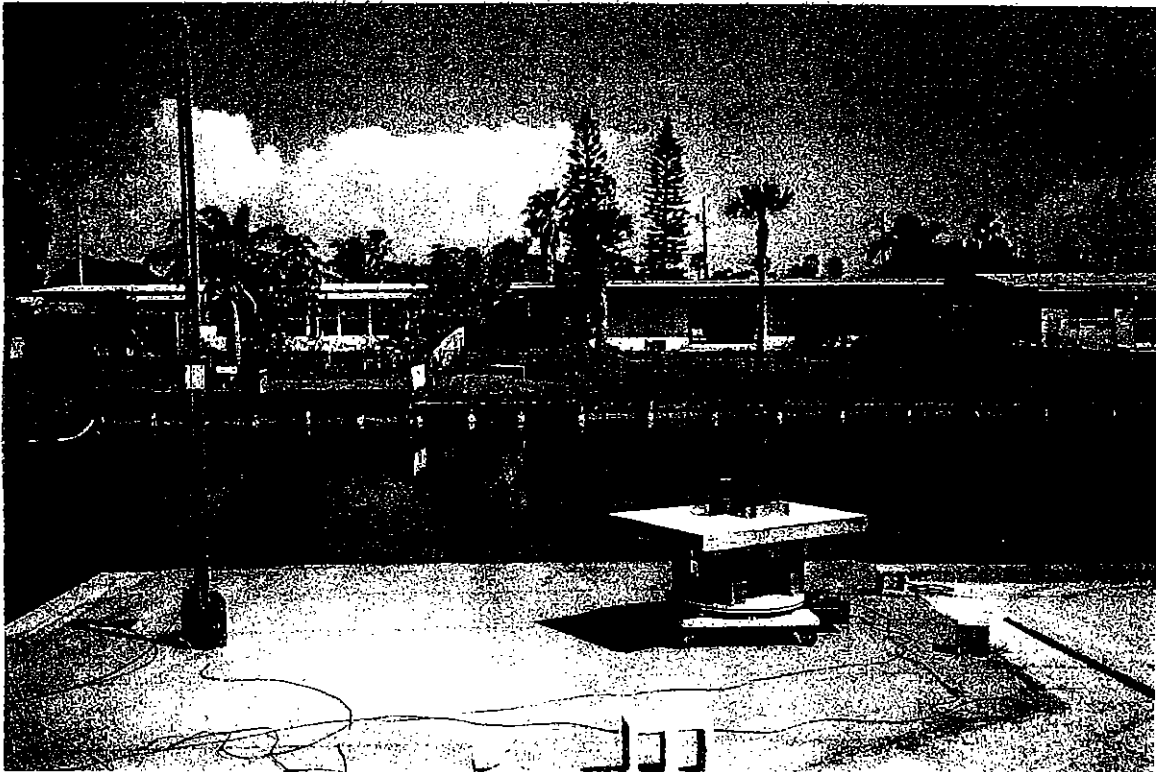
Note 1: For the purpose of this test, the equipment was calibrated over the specified frequency range, pulse rate, or modulation prior to the test or monitored by a calibrated instrument.

FIGURE 1



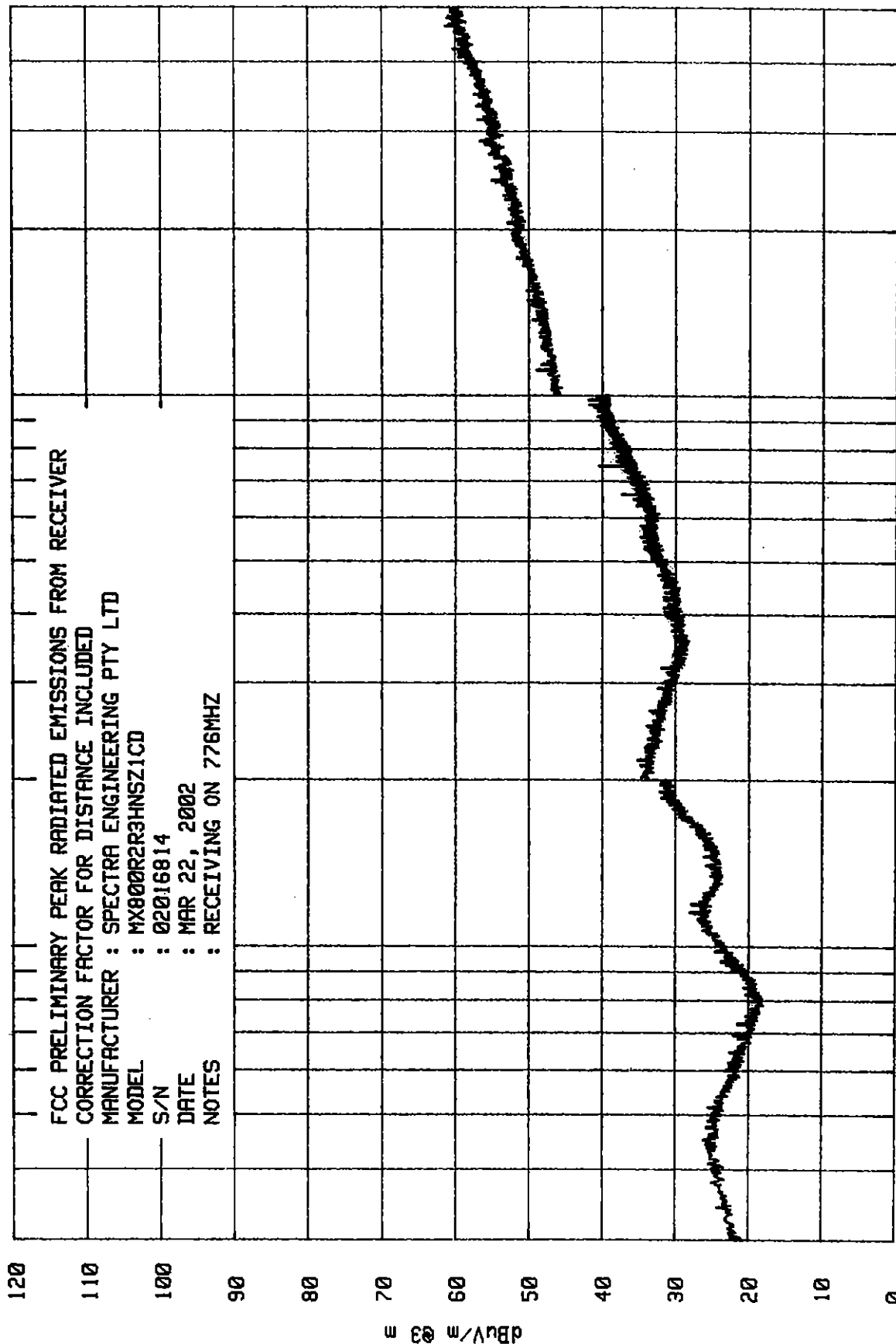
TEST SETUP FOR RADIATED EMISSIONS MEASUREMENTS
MAXIMIZED FOR MEASUREMENT OF WORST CASE EMISSIONS

FIGURE 2



TEST SETUP FOR RADIATED EMISSIONS MEASUREMENTS
MAXIMIZED FOR MEASUREMENT OF WORST CASE EMISSIONS

ELITE ELECTRONIC ENGINEERING Co.
Downers Grove, Ill. 60515



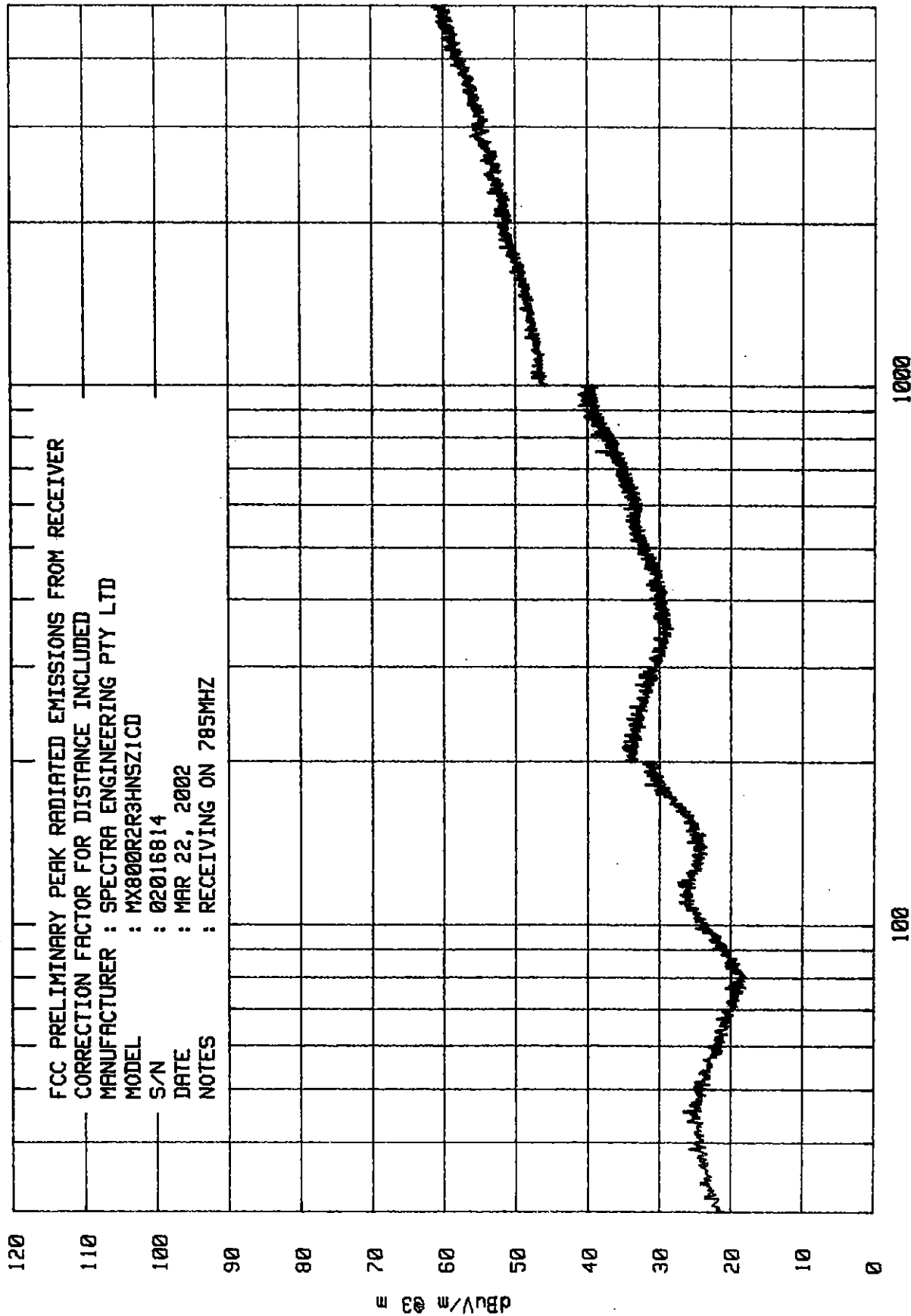
STOP = 5000

FREQUENCY - MHz

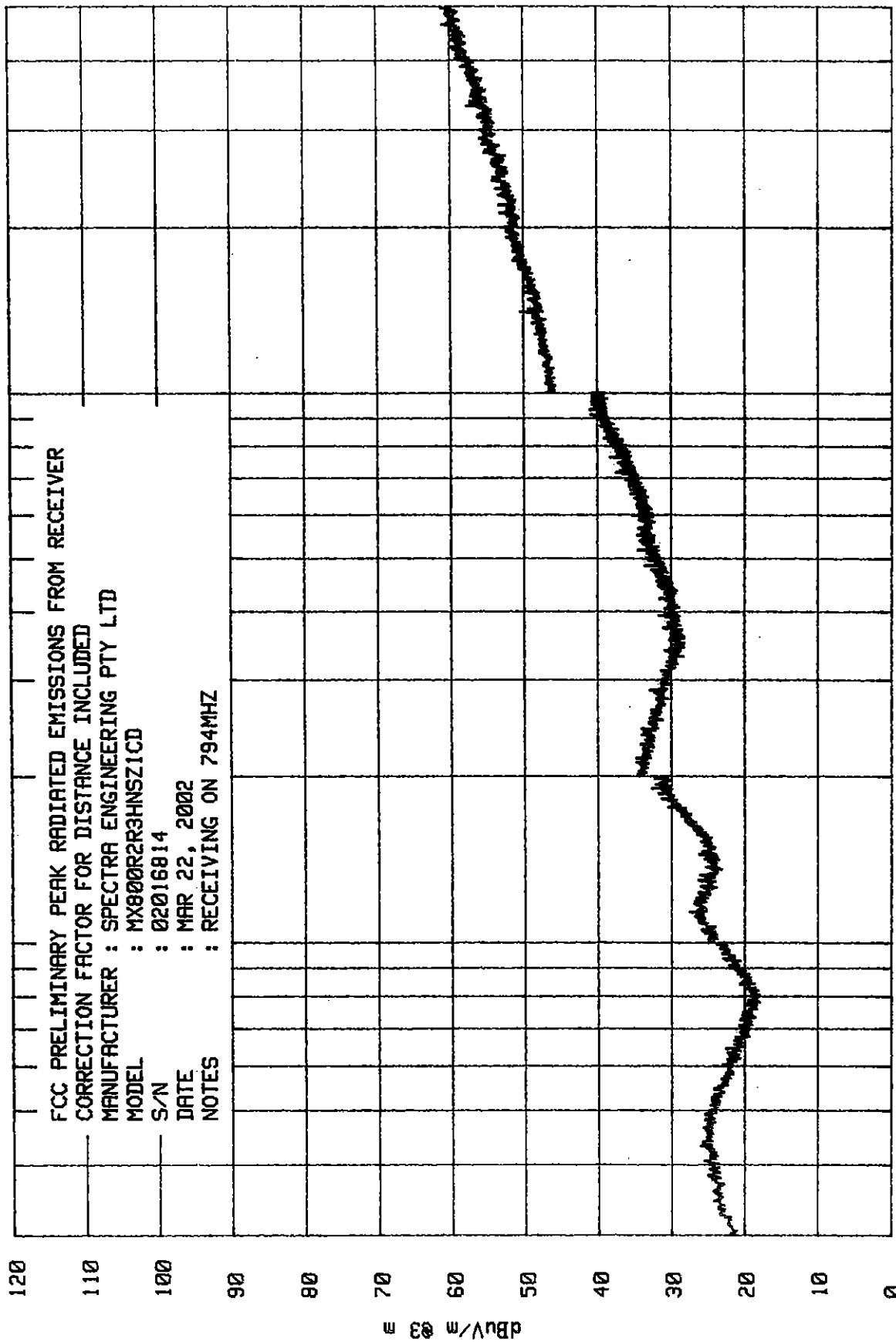
100

START = 30

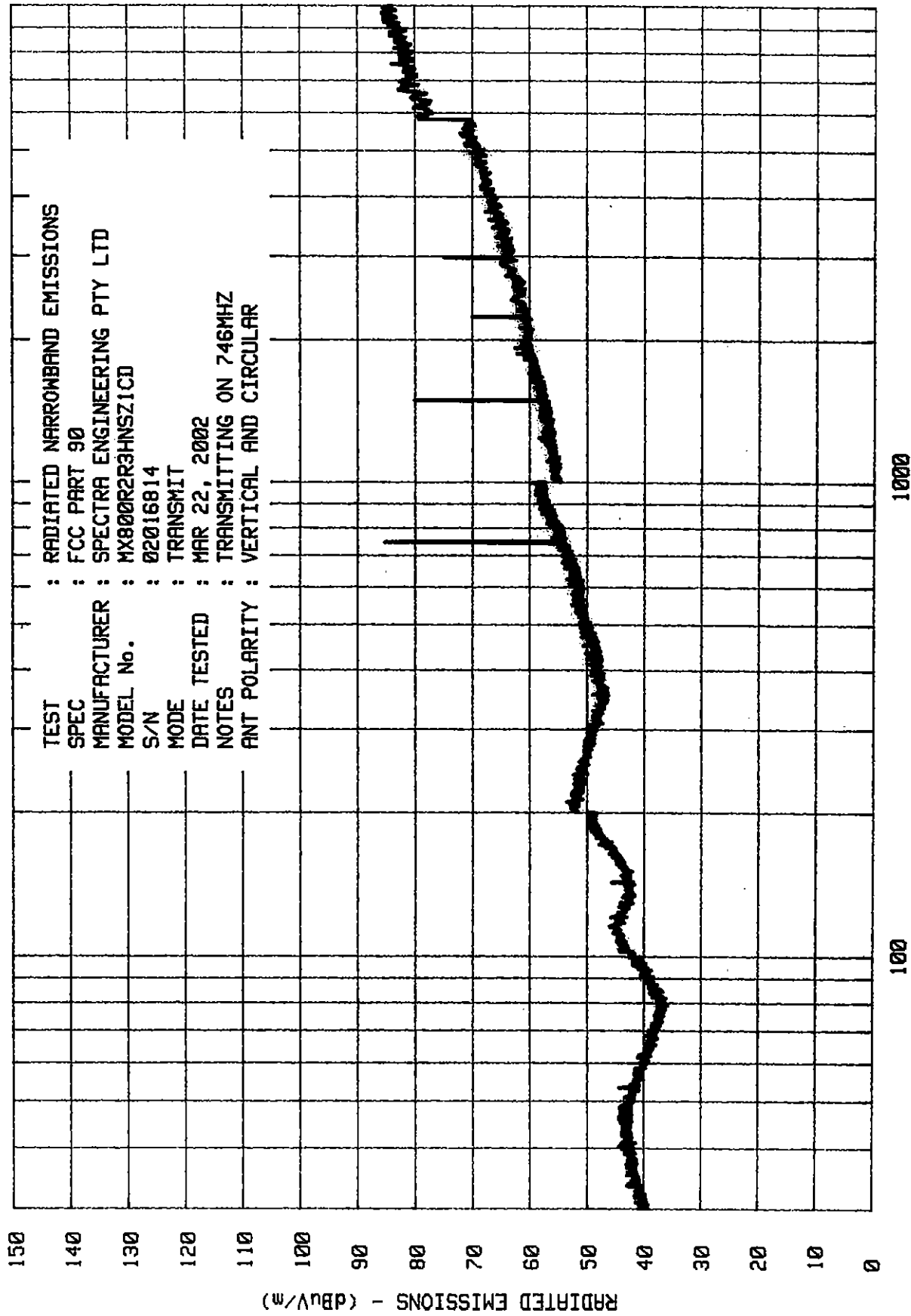
ELITE ELECTRONIC ENGINEERING Co.
Downers Grove, Ill. 60515



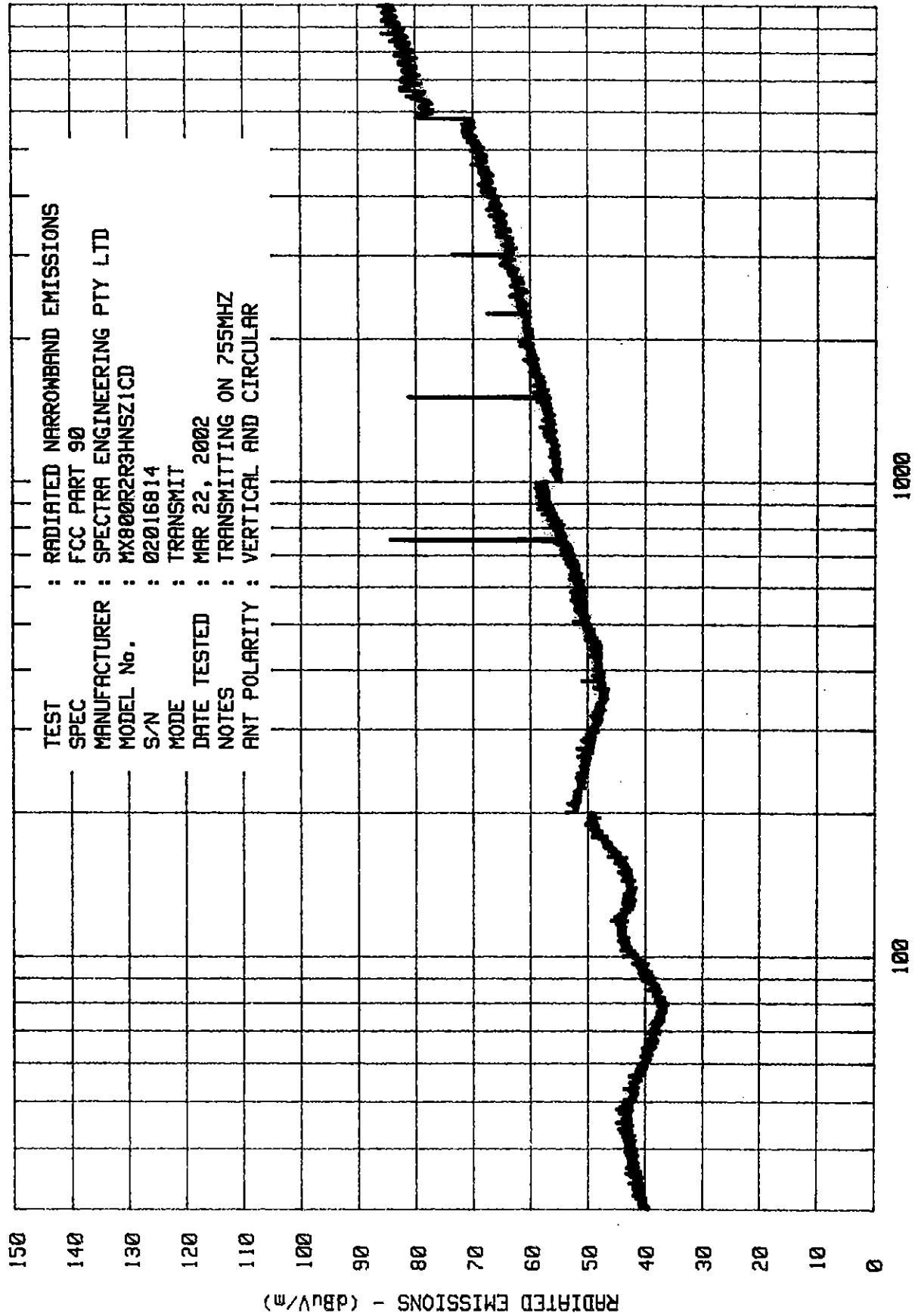
ELITE ELECTRONIC ENGINEERING Co.
Downers Grove, Ill. 60515



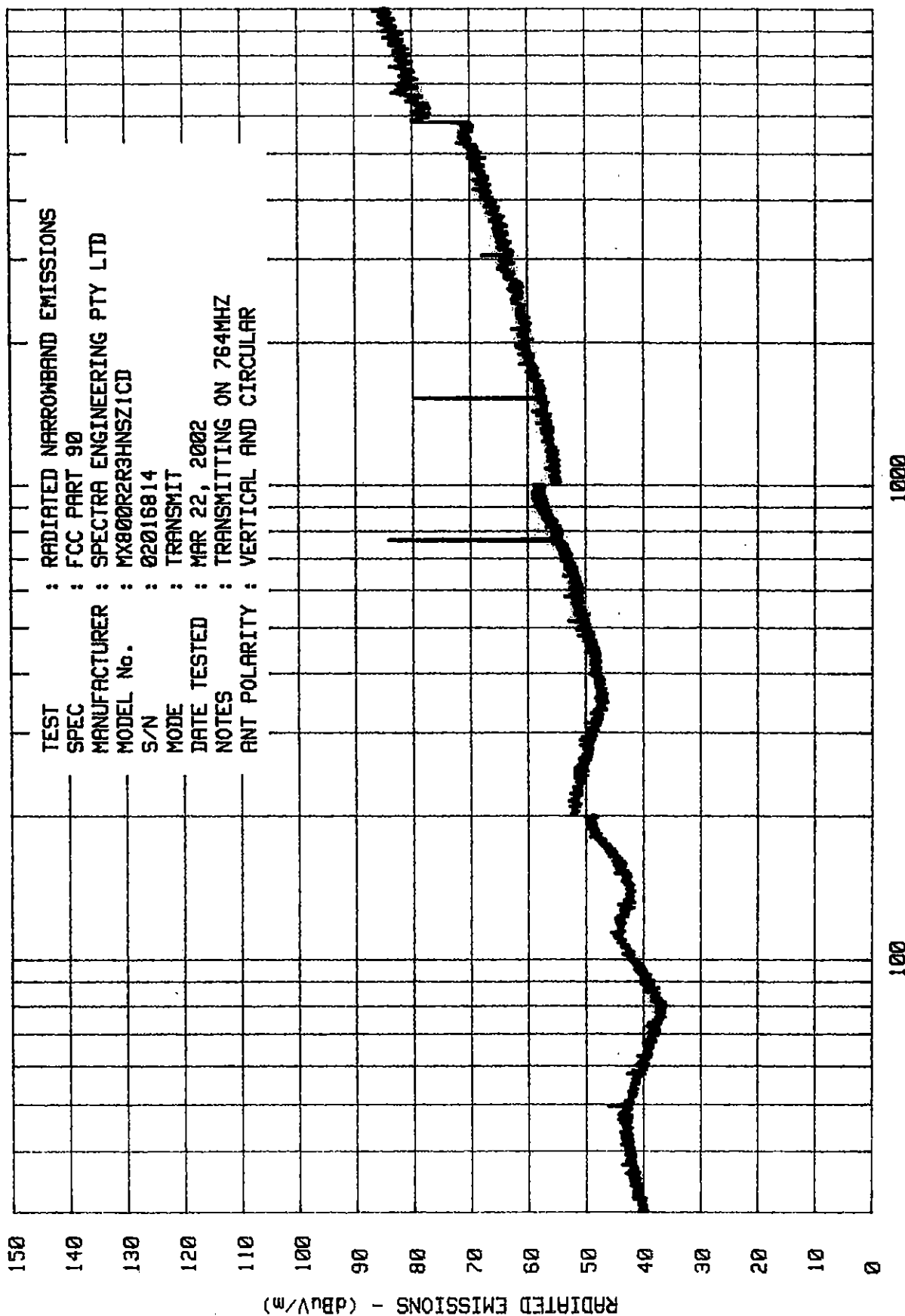
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Downers Grove, Ill. 60515



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Downers Grove, Ill. 60515



ELITE ELECTRONIC ENGINEERING Co.
Downers Grove, Ill. 60515





ETR 30827-01
DATA SHEET

MANUFACTURER : ADRAD COMMUNICATIONS, INC.
MODEL : MX800R2R3HNSZ1CD
S/N : 02016814
SPECIFICATION : FCC Part 15 Subpart B, Unintentional Radiators
TEST PERFORMED : Open Field Radiated Emissions
TEST MODE : Receiving
DATE : March 23, 2002
ANTENNAS : NBN0 and NWF1
NOTES : Channel 1, 776MHz
All measurements taken at 3 meters.

FREQ (MHz)	ANT POL	METER READING (dBuV)	ANTENNA FACTOR (dB)	CABLE LOSS (dB)	AMP GAIN (dB)	TOTAL (dBuV/m)	TOTAL (uV/m)	LIMIT (uV/m)
686	V	26.7	25.6	1.5	-24.6	29.2	28.8	200
686	H	23.6	25.6	1.5	-24.6	26.1	20.2	200
1372	V	32.3	24.6	2.7	-24.1	35.5	59.6	500
1372	H	25.7	24.6	2.7	-24.1	28.9	27.9	500
2058	V	31.1	27.6	3.5	-23.8	38.4	83.2	500
2058	H	26.8	27.6	3.5	-23.8	34.1	50.7	500
2744	V	18.2	AMB 29.6	4.4	-23.7	28.5	26.6	500
2744	H	16.6	AMB 29.6	4.4	-23.7	26.9	22.1	500
3430	V	16.5	AMB 31.4	5.0	-23.5	29.4	29.5	500
3430	H	16.4	AMB 31.4	5.0	-23.5	29.3	29.2	500
4116	V	15.7	AMB 33.0	5.4	-23.6	30.5	33.5	500
4116	H	16.1	AMB 33.0	5.4	-23.6	30.9	35.1	500
4802	V	16.6	AMB 33.2	6.3	-23.2	32.9	44.2	500
4802	H	15.7	AMB 33.2	6.3	-23.2	32.0	39.8	500

CHECKED BY:



ETR 30827-01
DATA SHEET

MANUFACTURER : ADRAD COMMUNICATIONS, INC.
MODEL : MX800R2R3HNSZ1CD
S/N : 02016814
SPECIFICATION : FCC Part 15 Subpart B, Unintentional Radiators
TEST PERFORMED : Open Field Radiated Emissions
TEST MODE : Receiving
DATE : March 23, 2002
ANTENNAS : NBN0 and NWF1
NOTES : Channel 2, 785MHz
All measurements taken at 3 meters.

FREQ (MHz)	ANT POL	METER READING (dBuV)	ANTENNA FACTOR (dB)	CABLE LOSS (dB)	AMP GAIN (dB)	TOTAL (dBuV/m)	TOTAL (uV/m)	LIMIT (uV/m)
695	V	23.7	25.6	1.5	-24.6	26.2	20.4	200
695	H	22.9	25.6	1.5	-24.6	25.4	18.6	200
1390	V	37.7	24.6	2.7	-24.1	40.9	110.9	500
1390	H	32.2	24.6	2.7	-24.1	35.4	58.9	500
2085	V	27.8	27.6	3.5	-23.8	35.1	56.9	500
2085	H	25.0	27.6	3.5	-23.8	32.3	41.2	500
2780	V	17.7	29.6	4.4	-23.7	28.0	25.1	500
2780	H	17.7	29.6	4.4	-23.7	28.0	25.1	500
3475	V	18.2	31.4	5.0	-23.5	31.1	35.9	500
3475	H	16.4	31.4	5.0	-23.5	29.3	29.2	500
4170	V	18.1	33.0	5.4	-23.6	32.9	44.2	500
4170	H	16.8	33.0	5.4	-23.6	31.6	38.0	500
4865	V	16.1	33.4	6.3	-23.2	32.6	42.7	500
4865	H	16.1	33.4	6.3	-23.2	32.6	42.7	500

CHECKED BY: 



ETR 30827-01
DATA SHEET

MANUFACTURER : ADRAD COMMUNICATIONS, INC.
MODEL : MX800R2R3HNSZ1CD
S/N : 02016814
SPECIFICATION : FCC Part 15 Subpart B, Unintentional Radiators
TEST PERFORMED : Open Field Radiated Emissions
TEST MODE : Receiving
DATE : March 23, 2002
ANTENNAS : NBNO and NWF1
NOTES : Channel 3, 794MHz
All measurements taken at 3 meters.

FREQ (MHz)	ANT POL	METER READING (dBuV)		ANTENNA FACTOR (dB)	CABLE LOSS (dB)	AMP GAIN (dB)	TOTAL (dBuV/m)	TOTAL (uV/m)	LIMIT (uV/m)
704	V	32.6	AMB	25.7	1.5	-24.6	35.2	57.5	200
704	H	37.5	AMB	25.7	1.5	-24.6	40.1	101.2	200
1408	V	44.9		24.7	2.7	-24.1	48.2	257.0	500
1408	H	40.4		24.7	2.7	-24.1	43.7	153.1	500
2112	V	27.8		27.7	3.5	-23.8	35.2	57.5	500
2112	H	24.4		27.7	3.5	-23.8	31.8	38.9	500
2816	V	15.9	AMB	29.7	4.4	-23.9	26.1	20.2	500
2816	H	16.9	AMB	29.7	4.4	-23.9	27.1	22.6	500
3520	V	15.9	AMB	31.7	5.0	-23.5	29.1	28.5	500
3520	H	16.4	AMB	31.7	5.0	-23.5	28.9	27.9	500
4224	V	17.0	AMB	33.0	5.4	-23.6	31.8	38.9	500
4224	H	17.1	AMB	33.0	5.4	-23.6	31.9	39.4	500
4928	V	17.3	AMB	33.7	6.3	-22.8	34.5	35.1	500
4928	H	16.0	AMB	33.7	6.3	-22.8	33.2	45.7	500

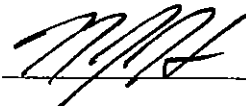
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ETR 30827-01
DATA SHEET

MANUFACTURER : ADRAD COMMUNICATIONS, INC.
MODEL : MX800R2R3HNSZ1CD
S/N : 02016814
SPECIFICATION : FCC-27 OPEN FIELD SPURIOUS RADIATED EMISSIONS
DATE : March 27, 2002
NOTES : 50 WATT OUTPUT, CHANNEL 1, 746MHz
: TEST DISTANCE IS 3 METERS

FREQ (MHz)	ANT POL	MTR RDG (dBuV)	MATCHED SIGNAL (dBm)	ANT GAIN (dB)	ERP TOTAL (dBm)	OUTPUT POWER (dBm)	ATTN (dB)	MIN ATTN (dB)
1432	V	18.3	-73.0	6.1	-66.9	47	113.9	60
1432	H	18.1	-73.3	6.1	-67.2	47	114.2	60
2118	V	16.4	-76.2	6.9	-69.3	47	116.3	60
2118	H	17.6	-69.0	6.9	-62.1	47	109.1	60
2804	V	15.9	-71.1	7.2	-63.9	47	110.9	60
2804	H	17.9	-79.0	7.2	-71.8	47	118.8	60
3490	V	15.4	-72.1	7.7	-64.4	47	111.4	60
3490	H	17.1	-63.3	7.7	-55.6	47	102.6	60
4176	V	14.7	-53.0	7.4	-45.6	47	92.6	60
4176	H	17.4	-52.5	7.4	-45.1	47	92.1	60
4862	V	17.4	-50.7	8.2	-42.5	47	89.5	60
4862	H	16.7	-51.4	8.2	-43.2	47	90.2	60
5548	V	16.5	-55.3	8.1	-47.2	47	94.2	60
5548	H	16.8	-55.7	8.1	-47.6	47	94.6	60
6234	V	19.8	-39.0	8.9	-30.1	47	77.1	60
6234	H	19.6	-48.6	8.9	-39.7	47	86.7	60
6920	V	21.1	-43.7	8.5	-35.2	47	82.2	60
6920	H	20.8	-44.3	8.5	-35.8	47	82.8	60
7460	V	28.8	-29.3	8.2	-21.1	47	68.1	60
7460	H	26.0	-41.0	8.2	-32.8	47	79.8	60

CHECKED BY: 



ETR 30827-01
DATA SHEET

MANUFACTURER : ADRAD COMMUNICATIONS, INC.
MODEL : MX800R2R3HNSZ1CD
S/N : 02016814
SPECIFICATION : FCC-27 OPEN FIELD SPURIOUS RADIATED EMISSIONS
DATE : March 27, 2002
NOTES : 50 WATT OUTPUT, CHANNEL 2, 755MHz
: TEST DISTANCE IS 3 METERS

FREQ (MHz)	ANT POL	MTR RDG (dBuV)	MATCHED SIGNAL (dBm)	ANT GAIN (dB)	ERP TOTAL (dBm)	OUTPUT POWER (dBm)	ATTN (dB)	MIN ATTN (dB)
1450	V	14.9	-82.0	6.0	-76.0	47	123.0	60
1450	H	17.1	-77.9	6.0	-71.9	47	118.9	60
2145	V	17.6	-75.8	7.0	-68.8	47	115.8	60
2145	H	16.5	-75.5	7.0	-68.5	47	115.5	60
2840	V	16.9	-69.0	7.3	-61.7	47	108.7	60
2840	H	16.7	-73.8	7.3	-66.5	47	113.5	60
3535	V	17.8	-67.0	7.3	-59.7	47	106.7	60
3535	H	15.3	-66.9	7.3	-59.6	47	106.6	60
4230	V	16.1	-57.3	7.5	-49.8	47	96.8	60
4230	H	16.1	-53.2	7.5	-45.7	47	92.7	60
4925	V	18.1	-43.4	8.3	-35.1	47	82.1	60
4925	H	16.7	-50.8	8.3	-42.5	47	89.5	60
5620	V	17.2	-48.7	8.2	-40.5	47	87.5	60
5620	H	16.6	-51.4	8.2	-43.2	47	90.2	60
6315	V	21.0	-31.6	8.8	-22.8	47	69.8	60
6315	H	20.3	-43.2	8.8	-34.4	47	81.4	60
7010	V	21.2	-42.6	8.5	-34.1	47	81.1	60
7010	H	19.7	-49.9	8.5	-41.4	47	88.4	60
7550	V	27.1	-27.7	8.2	-19.5	47	66.5	60
7550	H	24.2	-38.7	8.2	-30.5	47	77.5	60

CHECKED BY:



ETR 30827-01
DATA SHEET

MANUFACTURER : ADRAD COMMUNICATIONS, INC.
MODEL : MX800R2R3HNSZ1CD
S/N : 02016814
SPECIFICATION : FCC-27 OPEN FIELD SPURIOUS RADIATED EMISSIONS
DATE : March 27, 2002
NOTES : 50 WATT OUTPUT, CHANNEL 3, 764MHz
: TEST DISTANCE IS 3 METERS

FREQ (MHz)	ANT POL	MTR RDG (dBuV)	MATCHED SIGNAL (dBm)	ANT GAIN (dB)	ERP TOTAL (dBm)	OUTPUT POWER (dBm)	ATTN (dB)	MIN ATTN (dB)
1468	V	16.6	-80.0	6.1	-73.9	47	120.9	60
1468	H	17.9	-76.5	6.1	-70.4	47	117.4	60
2172	V	16.9	-81.5	7.1	-74.4	47	121.4	60
2172	H	18.7	-72.4	7.1	-65.3	47	112.3	60
2876	V	16.6	-72.5	7.2	-65.3	47	112.3	60
2876	H	17.2	-79.5	7.2	-72.3	47	119.3	60
3580	V	15.9	-70.0	7.1	-62.9	47	109.9	60
2580	H	15.6	-72.0	7.1	-64.9	47	111.9	60
4284	V	16.7	-53.0	7.8	-45.2	47	92.2	60
4284	H	17.4	-52.3	7.8	-44.5	47	91.5	60
4988	V	16.5	-52.2	8.3	-43.9	47	90.9	60
4988	H	17.7	-47.7	8.3	-39.4	47	86.4	60
5692	V	15.5	-40.9	8.3	-32.6	47	79.6	60
5692	H	17.0	-52.7	8.3	-44.4	47	91.4	60
6396	V	22.5	-37.3	8.8	-28.5	47	75.5	60
6396	H	22.3	-41.0	8.8	-32.2	47	79.2	60
7100	V	18.9	-47.7	8.3	-39.4	47	86.4	60
7100	H	20.6	-48.6	8.3	-40.3	47	87.3	60
7640	V	26.0	-33.9	8.3	-25.6	47	72.6	60
7640	H	25.4	-37.1	8.3	-28.8	47	75.8	60

CHECKED BY: