

EXHIBIT 6

TECHNICAL REPORT

Product Safety Engineering, Inc.
12955 Bellamy Bros. Blvd.
Dade City, FL 33525

FCC ID # NTX200

TEST REPORT



Accredited by the National Voluntary
Laboratory Accreditation Program for the
specific scope of accreditation under
Lab Code 200074-0

Laboratory ID

PRODUCT SAFETY ENGINEERING, INC.
12955 Bellamy Brothers Boulevard
Dade City, Florida 33525 USA
PH (352) 588-2209 FX (352) 588-2544

Submitter ID

Custom Manufacturing & Engineering
7887 Bryan Dairy Road
Suite 110
Largo, FL 33777

Report Issue Date: 23 APR 98
Sample S/N: NONE
Sample Receipt Date: March 31, 1998

Test Report Number: 98F002B
Model Designation: NTX200
Product Description: Transceiver /
Collector

Sample Test Date: see data sheets

Marketing Approval _____

Description of non-standard test method or test practice: *None*

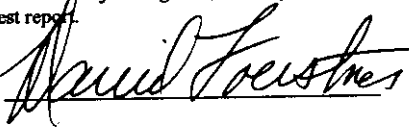
Estimated Measurement Uncertainty: *Not Applicable*

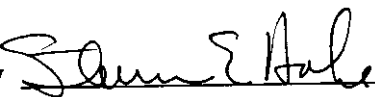
Special limitations of use: *None*

Traceability: *reference standards of measurement have been calibrated by a competent body using standards traceable to the NIST.*

According to testing performed at Product Safety Engineering, Inc., the above-mentioned unit is in compliance with the electromagnetic compatibility requirements defined in regulations indicated on page (3) of the test report. The test results contained herein relate only to the model(s) identified above. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics.

As the responsible EMC Project Engineer, I hereby declare that the equipment tested as specified above conforms to the requirements indicated on page (3) of the test report.

Signature  Name David Foerstner
Title Engineering Group Leader Date 23 APR 98

Reviewed by:  Date 23 APR 98
Approved Signatory

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This report is not to be used to claim product endorsement by NVLAP or any agency of the U.S. Government.

Test Report Number 98F002B

Product Safety Engineering, Inc 12955 Bellamy Brothers Blvd. Dade City, FL 33525
Tel (352) 588-2209 Fax (352) 588-2544

DIRECTORY - EMISSIONS

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	Test Regulations	3
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	Test-setups (Photos)	11 - 12
B)	Test data	
	Conducted emissions	10/150 kHz - 30 MHz
	Radiated emissions	10 kHz - 30 MHz
	Radiated emissions	30 MHz - 1000 MHz
	Interference power	30 MHz - 300 MHz
	Equivalent Radiated emissions	1 GHz - 18 GHz
C)	Appendix A	
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Test Report Number 98F002B

EMISSIONS TEST REGULATIONS :

The emissions tests were performed according to following regulations:

☐ - EN 50081-1 : 1992

☐ - EN 50081-2 : 1995

☐ - EN 55011 : 1991

☐ - Group 1

☐ - Group 2

☐ - Class A

☐ - Class B

☐ - EN 55014 : 1993

☐ - Household appliances and similar

☐ - Portable tools

☐ - Semiconductor devices

☐ - EN 55022 : 1994 / A1:1995

☐ - Class A

☐ - Class B

☐ -AS/NZS 3548:1992

☐ - Class A

☐ - Class B

☐ - VCCI : 1986

☐ - Class A

☐ - Class B

☒ - FCC Part 15

☐ - Class A

☒ - Class B

☒ - Certification

☐ - Verification

☐ - Notification

☐ - Declaration of Conformity

☐ - FCC Part 18

Test Report Number 98F002B

Environmental conditions during testing:

	LAB	OATS
Temperature:	_____	: _____
Relative Humidity	_____	: _____
Atmospheric pressure	_____	: _____ millibars
Power supply system	: <u>120</u> Volts <u>60</u> Hz <u>SINGLE</u> phase	

Sign Explanations:

- ☐ - not applicable
- ☒ - applicable

Test Report Number 98F002B

Emissions Test Conditions: CONDUCTED EMISSIONS (Interference Voltage)

The *CONDUCTED EMISSIONS (INTERFERENCE VOLTAGE)* measurements were performed at the following test location:

☐ - Test not applicable

- ☐ - Darby Test Site (Open Area Test Site)
- ☒ - Darby Laboratory

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
☒ -	8028-50	Solar	50 Ω LISN	829012, 829022
☐ -	3825/2	Solar	50 Ω LISN	924840
☒ -	EMC-30	Electro-Metrics	EMI Receiver	191
☐ -	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
☐ -	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
☐ -	85662A	Hewlett Packard	Analyzer Display	2403A07352
☐ -	8028-50	Solar	50 Ω LISN	903725, 903726
☐ -				

Emissions Test Conditions: RADIATED EMISSIONS (Magnetic Field)

The *RADIATED EMISSIONS (MAGNETIC FIELD)* measurements were performed at the following test location:

- ☐ - Darby Test Site (Open Area Test Site)
- ☐ -
- ☐ -

at a test distance of :

- ☐ - 3 meters
- ☐ - 30 meters

☒ - Test not applicable

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
☐ -	98005	Eaton	Log Periodic Antenna	1099
☐ -	BIA-25	Electro-Metrics	Biconical Antenna	4283
☐ -	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
☐ -	85662A	Hewlett-Packard	Analyzer Display	2403A07352
☐ -	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
☐ -	ALR-30M	Electro-Metrics	Loop Antenna	824
☐ -	8447D	Hewlett Packard	Preamplifier	2944A06832
☐ -	EMC-30	Electro-Metrics	EMI Receiver	191

Test Report Number 98F002B

Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)

The *RADIATED EMISSIONS (ELECTRIC FIELD)* measurements, in the frequency range of 30 MHz-1000 MHz, were tested in a horizontal and vertical polarization at the following test location :

☐ - Test not applicable

- ☒ - Darby Site (Open Area Test Site)
- ☐ - Darby Lab
- ☐ -

at a test distance of :

- ☒ - 3 meters
- ☐ - 10 meters
- ☐ - 30 meters

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
☒ -	96005	Eaton	Log Periodic Antenna	1099
☒ -	BIA-25	Electro-Metrics	Biconical Antenna	4283
☒ -	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
☒ -	85662A	Hewlett-Packard	Analyzer Display	2403A07352
☒ -	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
☒ -	8447D	Hewlett-Packard	Preamplifier (26dB)	2944A06832
☐ -	EMC-30	Electro-Metrics	EMI Receiver	191
☐ -	8568B	Hewlett Packard	Spectrum Analyzer	2407A03213
☐ -	85650A	Hewlett Packard	Quasi-Peak Adapter	2043A00358
☐ -	85662A	Hewlett Packard	Analyzer Display	2340A05806
☐ -	LPA30	EM LPA	Log Periodic	2280

Emissions Test Conditions): INTERFERENCE POWER

The *INTERFERENCE POWER* measurements were performed by using the absorbing clamp on the mains and interface cables in the frequency range 30 MHz - 300 MHz at the following test location :

☒ - Test not applicable

- ☐ - Darby Lab
- ☐ -
- ☐ -
- ☐ -
- ☐ -

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
☐ -	MDS-21	Rhode&Schwarz	Absorbing Clamp	8608447020
☐ -	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
☐ -	85662A	Hewlett-Packard	Analyzer Display	2403A07352
☐ -	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
☐ -	8447D	Hewlett-Packard	Amplifier (26 dB)	2944A06832

Test Report Number 98F002B

The *EQUIVALENT RADIATED EMISSIONS* measurements in the frequency range 1GHz - 5GHz were performed in a horizontal and vertical polarization at the following test location :

■ - Darby Test Site (Open Area Test Site)

- ☐ -
- ☐ -
- ☐ -

at a test distance of:

- ☐ - 1 meters
- - 3 meters
- ☐ - 10 meters

☐ - Test not applicable

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
■ -	8568B	Hewlett-Packard	Spectrum Analyzer	2618A02898
■ -	85682A	Hewlett-Packard	Analyzer Display	2542A11984
■ -	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
■ -	8449B	Hewlett-Packard	Preamplifier	3008A00320
■ -	3115	Electro-Mechanics	Double Ridge Guide Horn	3810

Test Report Number 98F002B

Product Safety Engineering, Inc 12955 Bellamy Brothers Blvd. Dade City, FL 33525
Tel (352) 588-2209 Fax (352) 588-2544

Equipment Under Test (EUT) Test Operation Mode - Emission tests :

The device under test was operated under the following conditions during emissions testing:

- ☐ - Standby
- ☐ - Test program (H - Pattern)
- ☐ - Test program (color bar)
- ☐ - Test program (customer specific)
- ☐ - Practice operation
- ☒ - Normal Operating Mode
- ☐ -

Configuration of the device under test:

- ☒ - See System Under Test Information in Appendix B

Test Report Number 98F002B

Product Safety Engineering, Inc 12955 Bellamy Brothers Blvd. Dade City, FL 33525
Tel (352) 588-2209 Fax (352) 588-2544

Emission Test Results:

Conducted emissions 450 kHz - 30 MHz

The requirements are	☒ - MET	☐ - NOT MET
Minimum limit margin	10.0 dB	at 22.1 MHz
Maximum limit exceeding		at MHz
Remarks:		

Radiated emissions (magnetic field) 10 kHz - 30 MHz

The requirements are	☐ - MET	☐ - NOT MET
Minimum limit margin		at MHz
Maximum limit exceeding		at MHz
Remarks:		

Radiated emissions (electric field) 30 MHz - 1000 MHz

The requirements are	☒ - MET	☐ - NOT MET
Minimum limit margin	1.6 dB	at 417.9 MHz
Maximum limit exceeding		at MHz
Remarks:		

Interference Power at the mains and interface cables 30 MHz - 300 MHz

The requirements are	☐ - MET	☐ - NOT MET
Minimum limit margin		at MHz
Maximum limit exceeding		at MHz
Remarks:		

Radiated emissions 1 GHz - 5 GHz

The requirements are	☒ - MET	☐ - NOT MET
Minimum limit margin	1.8 dB	at 4.180 GHz
Maximum limit exceeding		at GHz
Remarks:	AVERAGE DETECTOR USED	

Test Report Number 98F002B

GENERAL REMARKS:

SUMMARY:

The requirements according to the technical regulations are

■ - met

□ - not met.

The device under test does

■ - fulfill the general approval requirements mentioned on page 3.

□ - not fulfill the general approval requirements mentioned on page 3.

Testing Start Date April 3, 1998

Testing End Date: April 3, 1998

- PRODUCT SAFETY ENGINEERING INC -

Test Report Number 98F002B

Product Safety Engineering, Inc 12955 Bellamy Brothers Blvd. Dade City, FL 33525
Tel (352) 588-2209 Fax (352) 588-2544

APPENDIX

A

Test Equipment Calibration Information

&

Test Data Sheets

TEST EQUIPMENT CALIBRATION INFORMATION

Manufacturer	Model	Description	Serial Number	Cal Due
Hewlett Packard	8566B	Spectrum Analyzer	2421A00526	12/29/98
Hewlett Packard	85662A	Display	2403A07352	12/29/98
Hewlett Packard	85650A	Quasi-Peak Adapter	2043A00209	12/29/98
Hewlett Packard	8447D	Preamplifier 0.1 - 1,000 MHz	2944A06832	06/30/98
Hewlett Packard	8568B	Spectrum Analyzer	2407A03213	05/13/98
Hewlett Packard	85662A	Display	2340A05806	05/13/98
Hewlett Packard	85650A	Quasi-Peak Adapter	2043A00358	04/14/98
Hewlett Packard	8447D	Preamplifier 0.1 - 1,000 MHz	2944A06901	10/08/98
Hewlett Packard	8447D	Preamplifier 0.1 - 1,000 MHz	1937A03247	10/16/98
Hewlett Packard	8449B	Preamplifier 1 - 26.5 GHz	3008A00320	12/02/98
Hewlett Packard	8648B	Signal Generator	3443U00312	04/29/98
Hewlett Packard	8672A	Signal Generator	2211A02426	05/11/98
Hewlett Packard	6842A	Harmonic / Flicker Tester	3531A00149	12/19/98
Eaton	96005	Log Periodic Antenna	1099	09/16/98
Electro-Metrics	LPA 30	Log Periodic Antenna	2280	08/25/98
Electro-Metrics	BIA 30	Biconical Antenna	3852	08/25/98
Electro-Metrics	BIA 25	Biconical Antenna	4283	09/16/98
Electro-Mechanics	3115	Double Ridge Guide Ant.	3810	04/15/99
Electro-Metrics	ALR30M	Magnetic Loop Antenna	824	10/13/98
Solar	8012	LISN	924840	09/14/98
Solar	8028	LISN	829012/809022	09/01/98
Solar	8028	LISN	903725/903726	08/14/98
Schwartzbeck	MDS-21	Absorbing Clamp	02581	10/02/98
Haefely-Trench	PSD25B	ESD Tester	082999-38	01/06/99
Haefely-Trench	PEFT-1	EFT/B Tester	082628-29	01/13/99
Leader	LFG1310	Function Generator	8060233	10/03/98
Haefely-Trench	Psurge 4	Surge Tester	083372-13	10/08/98
Holaday Ind.	HI 4422	Isotropic Probe	90310	03/17/99
IFR Systems	A-8000	Spectrum Analyzer	1306	04/09/98
Fischer Custom	F-33-1	RF Current Probe	360	09/30/99
Electro-Metrics	EMC-30	EMI Receiver	191	09/22/98
Boonton	4220A	RF Power Meter	204103AA	10/15/98
Boonton	51011	RF Power Meter	28823	10/15/98

PRODUCT EMISSIONS

PRODUCT SAFETY ENGINEERING

Data File: TRANS/COLLECTOR FCC-B FIN 4-3-98

No	EMISSION FREQUENCY MHz	SPEC LIMIT dBuV/m	MEASUREMENTS			POL	SITE		CORR FACTOR dB	COMMENTS
			ABS	dLIM	MODE		HGT cm	AZM deg		
1	33.191	40.0	29.1	-10.9	QP	V	100	1		
2	57.160	40.0	28.6	-11.4	PK	V	100	90		
3	77.426	40.0	25.3	-14.7	PK	V	100	1		
4	132.760	43.5	23.1	-20.4	PK	V	100	1		
5	143.825	43.5	24.0	-19.5	PK	V	100	1		
6	417.964	46.0	90.7	44.7	PK	V	100	90	CW	1.6 dB UNDER
7	835.938	46.0	55.3	9.3	PK	H	100	45	CW	
8	835.938	52.3	50.9		QP	H	100	45		PULSED 1.4 dB UNDER

*NOTE: CW and Pulsed Operation Both Investigated. Highest Level Noted.

15.231(e)

$$\begin{aligned}
 \text{LIMIT @ 418 MHz} &= 72.3 \text{ dBuV/m} \\
 &+ 20.0 \text{ dB DUTY CYCLE REDUCTION} \\
 \hline
 &92.3 \text{ dBuV/m}
 \end{aligned}$$

$$\text{LIMIT @ 836 MHz} = 52.3 \text{ dBuV/m}$$

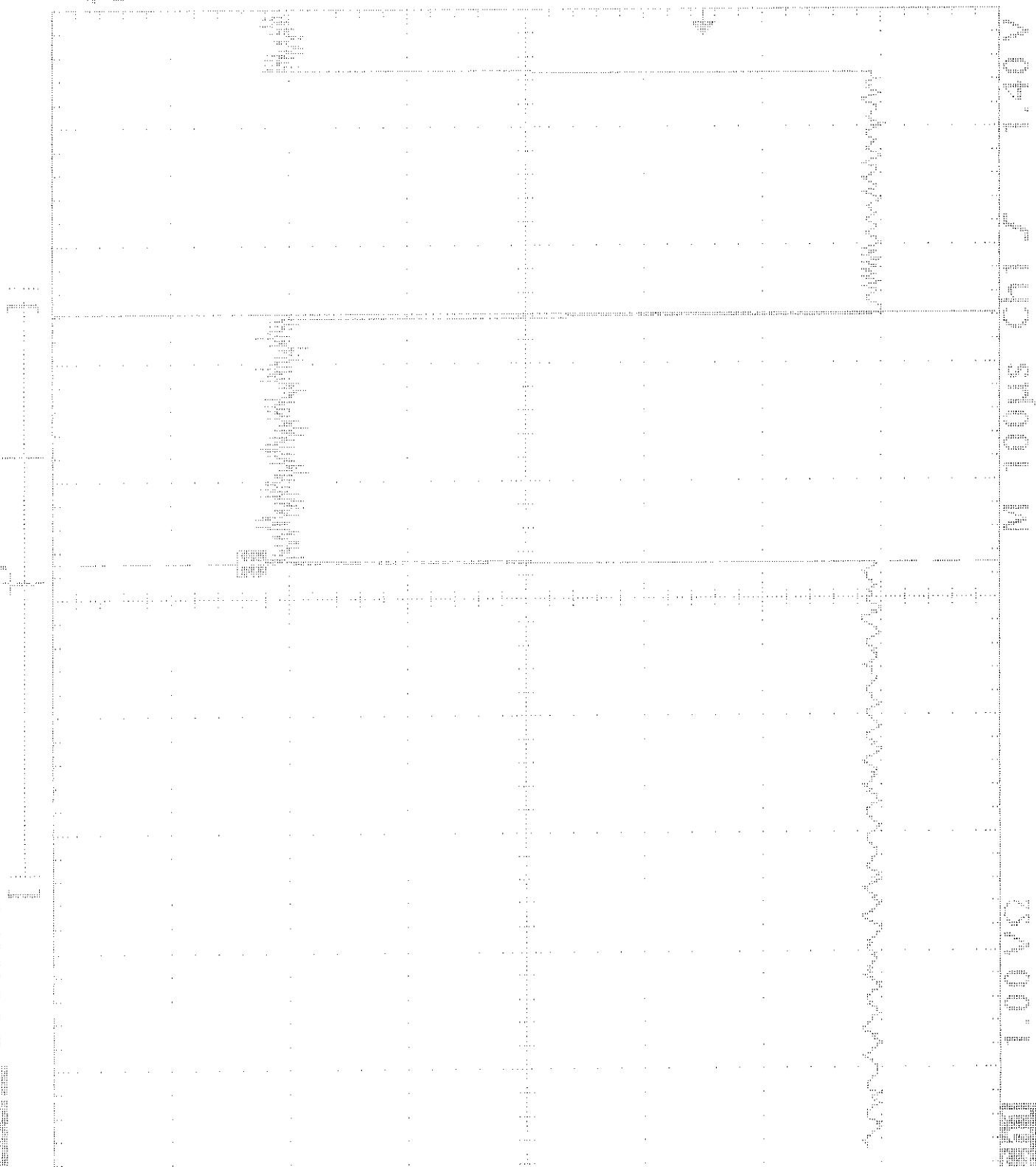
Custom Manufacturing & Engineering Transceiver / Collector

Measured @ 3 Meters

Frequency (GHz)	Spec Limit (dB μ V/M)	Peak Measurement (dB μ V/M)	Average Measurement (dB μ V/M)	Δ Limit	Polarity	Height (cm)
1.253	54.0	58.2	50.0	4.0	Hor	200
1.671	54.0	56.0	46.0	8.0	Hor	150
2.089	54.0	53.6	42.4	11.6	Vert	300
2.507	54.0	55.3	43.7	10.3	Vert	150
2.936	54.0	56.0	47.1	6.9	Vert	150
3.343	54.0	58.9	45.9	8.1	Hor	100
3.762	54.0	63.2	48.5	5.5	Hor	150
4.180	54.0	59.2	52.2	1.8	Hor	200

* NOTE: CW and Pulsed Operation Both Investigated. Highest Level Noted.

CH 1 200V 100ns



CH 2 20V 10ns

CH 2 20V 10ns

31 Mar 1998

12:55:19

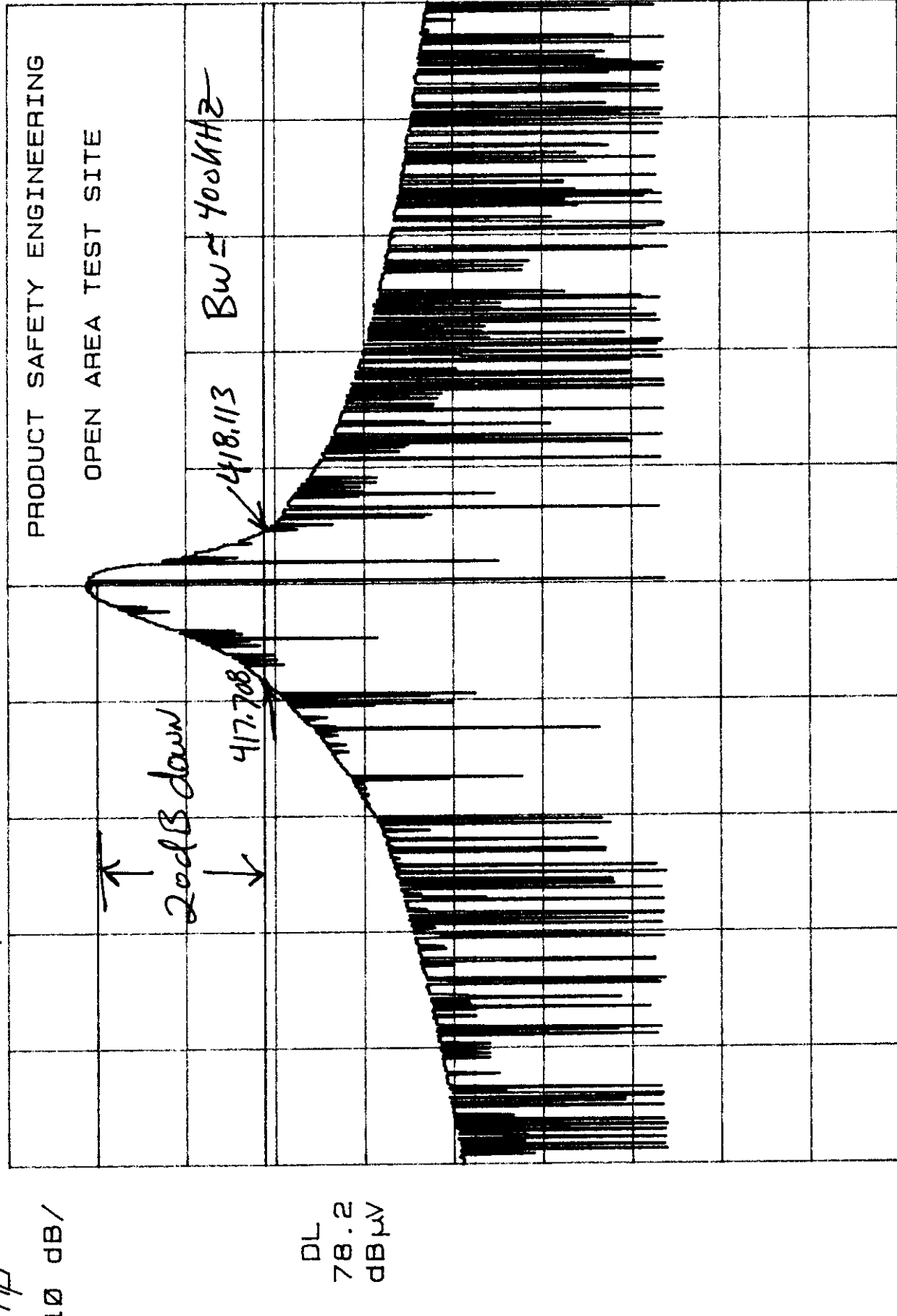
Transceiver

AS

43 APRIL 18

COLLECTOR

PRODUCT SAFETY ENGINEERING MKR 417.708 MHZ
REF 107.0 dBμV ATTN 10 dB 78.10 dBμV



START 416.44 MHZ STOP 419.51 MHZ
RES BW 1 MHZ SWP 100 msec
VBW 1 MHZ

Product Safety Engineering

CUSTOM MANUFACTURING AND ENG.

Date : 04/03/98
 Technician : MATT EICHEL
 Test Method : FCC-B
 Equipment : TRANS / COLLECTOR
 Mode of Op. : NORMAL
 Serial No. :

Time : 08:25:22.77
 Test Equip. : EMC-30
 Test Number : 1
 Sensor Loc. : SIDE 1
 Sensor Pol. :
 Ext. Atten. : 0 dB

SPECS
 1) FCC-B (150 KHz-30 MHz)
 2)
 3)
 4)

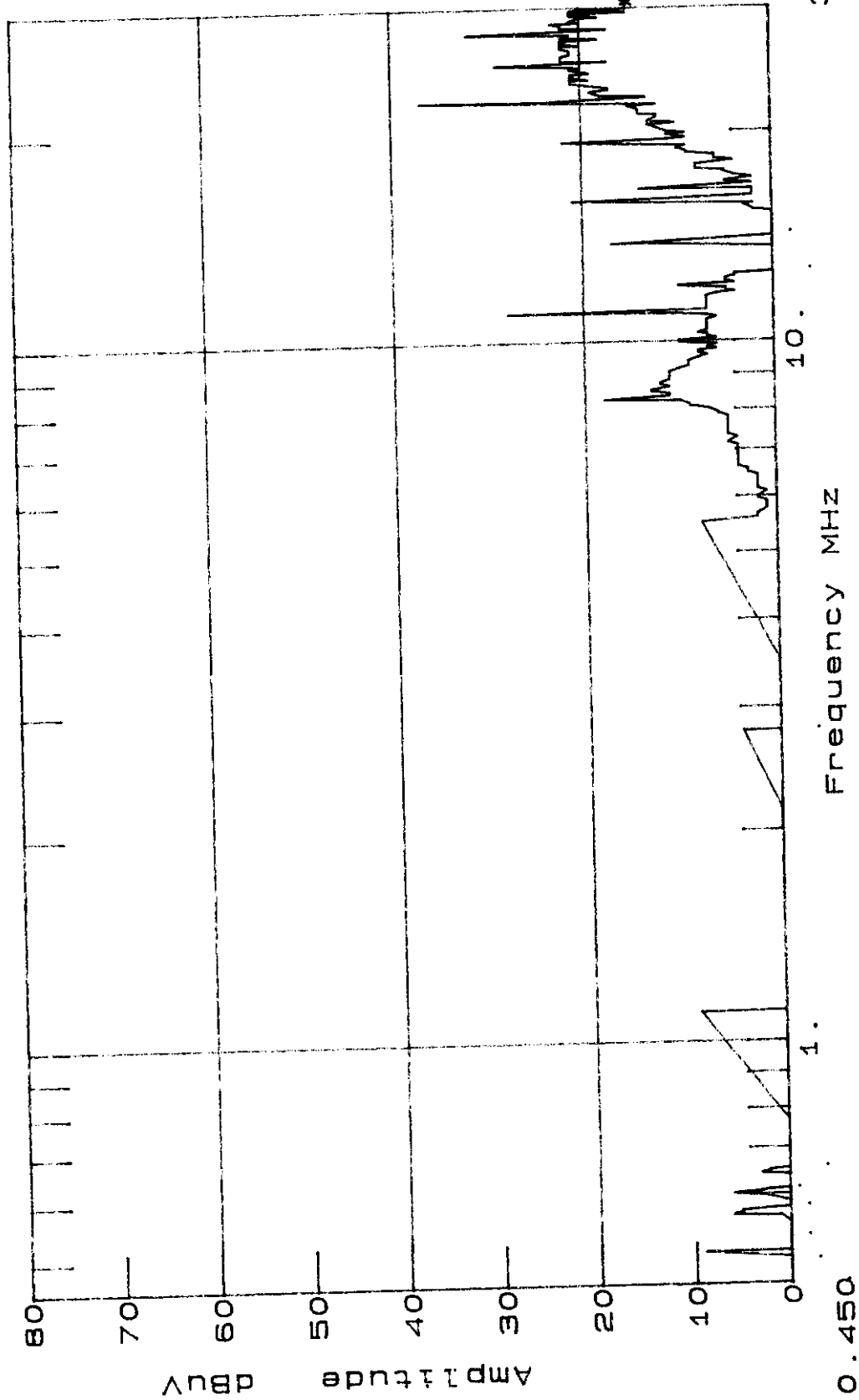
EMC-30 SETTINGS
 Detector QuasiPeak
 Bandwidth CISPR
 Dump/DwellN/A
 RF Atten. 10 dB
 IF Atten. 10 dB

9m2
 4-3-98

Comment : 120V / 60 HZ

ANTENNA
FILES

OTHER
FACTORS



TEST TITLE: CUSTOM MANUFACTURING AND ENG.	PAGE 1
DATA FILE : 002_L.D30	Freq. (MHz)
Amplitude Units : dBuV	0.4500
Threshold -20 dB	

FCC-B15.S30		
Freq(MHz)	Amp	vs Spec(dB)
11.0276	28.0	-20.000 *
22.1905	37.0	-11.000 *
24.9321	29.0	-19.000 *
27.6389	32.0	-16.000 *

ms
1-3-43

Product Safety Engineering

CUSTOM MANUFACTURING AND ENG.

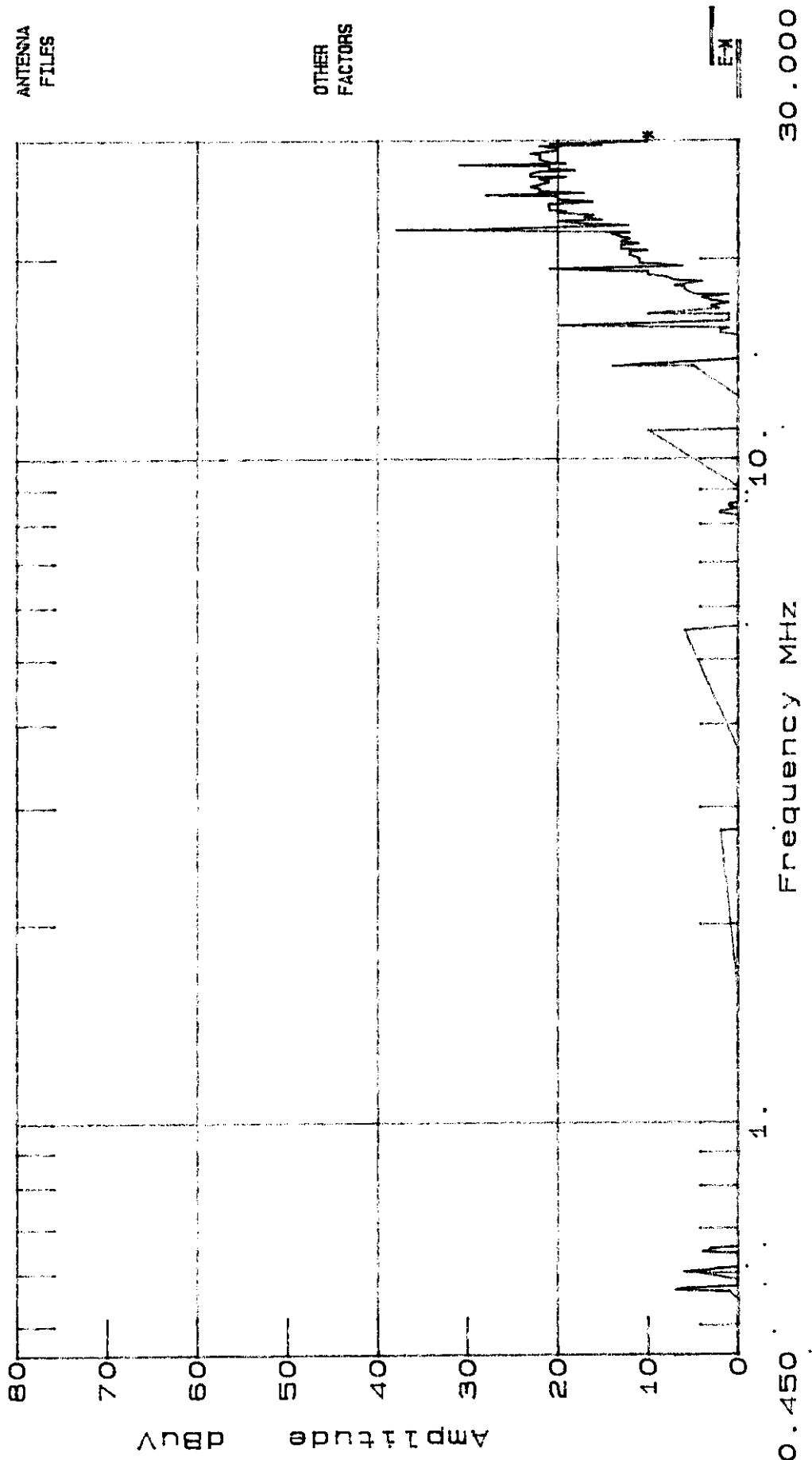
Date : 04/03/98
 Technician : MATT EICHEL
 Test Method : FCC-B
 Equipment : TRANS / COLLECTOR
 Mode of Op. : NORMAL
 Serial No. :
 Time : 08:56:17.05
 Test Equip. : EMC-30
 Test Number : 1
 Sensor Loc. : SIDE 2
 Sensor Pol. :
 Ext. Atten. : 0 dB

Comment : 120V / 60 HZ

EMC-30 SETTINGS
 Detector QuasiPeak
 Bandwidth CISPR
 Dump/DwellIN/A
 RF Atten. 10 dB
 IF Atten. 10 dB

SPECS
 1) FCC-B (150 KHz-30 MHz)
 2)
 3)
 4)

1732
 1-343



TEST TITLE: CUSTOM MANUFACTURING AND ENG.

DATA FILE : 002_N.D30

Amplitude Units : dBuV

Threshold -20 dB

PAGE 1
Freq. (MHz)
0.4500

		FCC-B15.S30	
Freq(MHz)	Amp	vs Spec(dB)	
22.1871	38.0	-10.000	*
22.2005	29.0	-19.000	*
24.9355	28.0	-20.000	*
27.6423	31.0	-17.000	*

942
4-5-93

APPENDIX

B

System Under Test Description

SYSTEM COMPONENTS

DEVICE TYPE: CUSTOM MANUFACTURING AND ENGINEERING COLLECTOR BASE
FCC ID#:

DEVICE TYPE: CUSTOM MANUFACTURING TRANSCEIVER
FCC ID#:

DEVICE TYPE:
FCC ID#:

DEVICE TYPE:
FCC ID#:

DEVICE TYPE:
FCC ID#:

DEVICE TYPE:
FCC ID#:

DEVICE TYPE:
FCC ID#:

DEVICE TYPE:
FCC ID#:

DEVICE TYPE:
FCC ID#:

DEVICE TYPE:
FCC ID#:

INTERFACE CABLES

DEVICE TYPE:TRANSCEIVER
SHIELD:NO
LENGTH:6 FEET
CONNECTOR TYPE:DEDICATED TO RJ45 (FERRITE AT TRANSCEIVER END)
PORT:XCVR ON COLLECTOR

DEVICE TYPE:EUT COLLECTOR
SHIELD:NO
LENGTH:6 FEET
CONNECTOR TYPE:RJ11 TO RJ11
PORT:MODEM

DEVICE TYPE:
SHIELD:
LENGTH:
CONNECTOR TYPE:
PORT:

DEVICE TYPE:
SHIELD:
LENGTH:
CONNECTOR TYPE:
PORT:

DEVICE TYPE:
SHIELD:
LENGTH:
CONNECTOR TYPE:
PORT:

DEVICE TYPE:
SHIELD:
LENGTH:
CONNECTOR TYPE:
PORT:

AC LINE CORDS

DEVICE TYPE: EUT
SHIELD:NO
LENGTH:6 FEET
CONNECTOR TYPE:IEC TO DEDICATED

DEVICE TYPE:
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CONNECTOR TYPE:

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CONNECTOR TYPE:

APPENDIX

C

Measurement Protocol

The test methodology followed during the collection of the data included within this technical report was ANSI C63.4:1992.

The EUT was powered with (120) VAC / (60) Hz during the collection of data included within.

The data is compared to the FCC Class B limits.

The "EMI" instrumentation is capable of calculating the final emission level based on the following formula:

Level at the receiver (dBuV) + Antenna Correction Factor(dB/M) + Cable Loss (dB) - Preamp Gain (dB) = Actual Level in dBuV/M.

The sample calculation below is based on the actual test data collected:

Observed Level	<u>96.5</u>	dBuV
ACF	<u>17.2</u>	dB/M
Cable Loss	<u>3.0</u>	dB
Preamp Gain	<u>26.0</u>	dB
Actual Level	<u>90.7</u>	dBuV/M @ <u>418</u> MHz

Please have a company official review this report and sign.
