

TEST REPORT



Certification # 1367-01

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

Checkpoint Systems Inc.
101 Wolf Drive
Thorofare, NJ 08086

Report Issue Date: 13 JUL 04
Sample S/N: NA
Sample Receipt Date: 23 MAR 04

Test Report Number: 04F264B
Model Designation: Condor Plus
Product Description: Electronic
Surveillance
Detection System

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 David Foerstner Name David Foerstner

Title Engineering Group Leader Date 13 JUL 04

Reviewed by: Shm E Hahn Date 13 JUL 04
Approved Signatory

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Test Report Number 04F264B

Product Safety Engineering, Inc 12955 Bellamy Brothers Blvd. Dade City, FL 33525
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EMISSIONS TEST REGULATIONS :

The emissions tests were performed according to following regulations:

- ☐ - EN 50081-1 : 1992
- ☐ - EN 50081-2 : 1995

- ☐ - EN 55011 : 1998 / A1:1999
- ☐ - Group 1
- ☐ - Group 2
- ☐ - Class A
- ☐ - Class B

- ☐ - EN 55013 : 1990 / A12:1994 / A13:1996 / A14:1999

- ☐ - EN 55014 -1: 2001
- ☐ - Household appliances and similar
- ☐ - Portable tools
- ☐ - Semiconductor devices

- ☐ - EN 55022 : 1998
- ☐ - Class A
- ☐ - Class B

- ☐ -AS/NZS 3548:1995
- ☐ - Class A
- ☐ - Class B

- - ICES-003
- ☐ - Class A
- - Class B

- ☐ - CNS 13438
- ☐ - Class A
- ☐ - Class B

- ☐ - VCCI : 1999
- ☐ - Class A
- ☐ - Class B

- - FCC Part 15
- ☐ - Class A
- - Class B

- ☐ - Certification (as intentional radiator)
- ☐ - Verification (as unintentional radiator)
- ☐ - Declaration of Conformity

- - RSS-210

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Environmental conditions during testing:

	LAB	OATS
Temperature: *	_____	: _____
Relative Humidity: **	_____	: _____

* The ambient temperature during the testing was within the range of (50° - 104° F) unless indicted above.

** The humidity levels during the testing was within the range of (10% - 90%) relative humidity unless indicated above.

Power supply system : _____ 115 _____ Volts _____ 60 _____ Hz _____ SINGLE _____ phase

Sign Explanations:

- ☐ - not applicable
- ☒ - applicable

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issions Test Conditions: CONDUCTED EMISSIONS (Interference Voltage)

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

Test not applicable

arby Test Site (Open Area Test Site)
arby Laboratory

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
FCC-TLISN-T4	Fisher Custom Com.	Telecom ISN	20072

issions 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
☐ - 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
☐ - ALR-30M	Electro-Metrics	Loop Antenna	824
☐ - 8447D	Hewlett Packard	Preamplifier	2944A06832
☐ - EMC-30	Electro-Metrics	EMI Receiver	191
☒ - ALA-130/A	Antenna Research	Loop Antenna	106

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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
☒ -	LPA30	eElectro-Metrics	Log Periodic Antenna	2280
☒ -	BIA-30	Electro-Metrics	Biconical Antenna	3852
☒ -	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
☐ -	96005	Eaton	Log Periodic	1099
☐ -	BIA 25	Electro-Metrics	Biconical Antenna	4283

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
☐ -	EMC-30	Electro-Metrics	EMI Receiver	191

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The *EQUIVALENT RADIATED EMISSIONS* measurements in the frequency range GHz - GHz
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
☐ -	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
☐ -	85662A	Hewlett-Packard	Analyzer Display	2403A07352
☐ -	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
☐ -	8449B	Hewlett-Packard	Preamplifier	3008A00320
☐ -	3115	Electro-Mechanics	Double Ridge Guide Horn	3810

The *ANTENNA TERMINAL DISTURBANCE VOLTAGE* in the frequency range 30 MHz - 1,000 MHz were performed.

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

■ - Test not applicable

	Model Number	Manufacturer	Description	Serial Number
☐ -	2F9-3C4-3C5	Wavecom	UHF PAL TV Modulator	185879
☐ -	2F1-3C4-3C5	Wavecom	VHF PAL TV Modulator	157728
☐ -	A-8000	IFR	Spectrum Analyzer	1306
☐ -	8648B	Hewlett-Packard	Signal Generator	3623A01433
☐ -	8648B	Hewlett-Packard	Signal Generator	3623A01477
☐ -	LMV-182A	Leader	RMS Milli-Voltmeter	8010091
☐ -	3202	Krhon-Hite	Active filter	5899
☐ -	FMT115	Leaming	FM Modulator	NONE
☐ -	371	UDT	Optical power meter	06657
☐ -	TSG95	Tektronix	PAL video / Audio generator	B028883
☐ -				

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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

Rationale for EUT setup / configuration:

ANSI C63.4-2001

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Emission Test Results:

Conducted emissions 150 kHz - 30 MHz

The requirements are ☒ - MET ☐ - NOT MET
Minimum limit margin 8.0 dB at 8.36 MHz
Remarks:

Radiated emissions (magnetic field) 10 kHz - 30 MHz

The requirements are ☒ - MET ☐ - NOT MET
Minimum limit margin 0.6 dB at 8.9 MHz
Remarks:

Radiated emissions (electric field) 30 MHz - 1000 MHz

The requirements are ☒ - MET ☐ - NOT MET
Minimum limit margin 0.1 dB at 899.9 MHz
Remarks:

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

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

Radiated emissions GHz - GHz

The requirements are ☐ - MET ☐ - NOT MET
Minimum limit margin dB at GHz
Remarks:

Antenna Terminal Disturbance Voltage 30 MHz - 1,000 MHz

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

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GENERAL REMARKS: Per client instructions and agreement with FCC, for measurement of the fundamental and harmonic emissions in the band 1.705 MHz to 10 MHz, a 20 dB reduction from the true peak is to be compared to the limits of 100 uV/meter (40 dBuV/meter) at 30 meters. The EUT is to be modulated as normally installed. True peak is the point at which the analyzer bandwidth is adjusted for minimum pulse desensitization. A copy of the correspondence between Checkpoint and the FCC is attached in Appendix A for reference. Measurement of the fundamental (7.4 - 8.9) MHz was performed by setting the a spectrum analyzer to "max-hold", peak detector, a 300 kHz bandwidth, and a span from 7 - 9.2 MHz. A resolution bandwidth of 300 kHz was used because increasing the bandwidth above 300 kHz did not increase the detected peak of the fundamental.

AVERAGE CALCULATION: The control signals are timed for (32) six microsecond bursts at a (100 Hz rate. During the antenn's cycle, the system performs two "blasts" which are called a "bin". A bin consists of two noise cycles and two blast cycles. A "blast" is a transmit cycle followed by a receive cycle. During the noise cycle, the system does not transmit but only receives ambient noise. This allows the system to establish the baseline noise level of the environment for later comparison. The system then transmits or "pulses" the field and then receives or "listens" for an echo of a target signal.

The overall duty cycle for the transmitter operation is (1.92%).

$(16 \text{ bins} * 2 \text{ blasts per bin} * 6 \text{ usec}) = 192 \text{ usec}$

$192 / \text{frame rate (100) Hz (10 milliseconds)} = 0.0192$

$\text{Average correction} = (20 * \text{Log (Duty Cycle)}) = -34.33 \text{ dB}$

** Maximum allowed adjustment for duty cycle = 20 dB so that is what we applied to the peak readings to adjust for average detection.

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.

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Test-setup photo(s):
Conducted emission 150 kHz - 30 MHz



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Test-setup photo(s):
Radiated emission 30 MHz - 1000 MHz



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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	08/14/04
Hewlett Packard	85662A	Display	2403A07352	08/14/04
Hewlett Packard	85650A	Quasi-Peak Adapter	2043A00209	08/14/04
Hewlett Packard	8447D	Preamp 0.1 - 1,000 MHz	2944A06832	12/10/04
Hewlett Packard	8568B	Spectrum Analyzer	2407A03213	08/14/04
Hewlett Packard	85662A	Display	2340A05806	08/14/04
Hewlett Packard	85650A	Quasi-Peak Adapter	2043A00358	08/14/04
Hewlett Packard	8447D	Preamp 0.1 - 1,000 MHz	2944A06901	08/14/04
Hewlett Packard	8447D	Preamp 0.1 - 1,000 MHz	1937A03247	07/17/04
Hewlett Packard	8449B	Preamp 1 - 26.5 GHz	3008A00320	12/02/04
Hewlett Packard	8648B	Signal Generator	3443U00312	05/04/05
Hewlett Packard	8672A	Signal Generator	2211A02426	10/17/04
Eaton	96005	Log Periodic Antenna	1099	02/05/05
Electro-Metrics	LPA 30	Log Periodic Antenna	2280	01/12/05
Electro-Metrics	BIA 30	Biconical Antenna	3852	01/13/05
Electro-Metrics	BIA 25	Biconical Antenna	4283	02/04/05
Electro-Mechanics	3115	Double Ridge Guide Ant.	3810	11/25/05
Electro-Metrics	ALR30M	Magnetic Loop Antenna	824	01/12/05
Solar	8012	LISN	924840	12/24/04
Solar	8028	LISN	829012/809022	12/12/04
Solar	8028	LISN	903725/903726	12/01/04
Schwartzbeck	MDS-21	Absorbing Clamp	02581	09/18/04
Leader	LFG1310	Function Generator	8060233	05/04/05
IFR Systems	A-8000	Spectrum Analyzer	1306	12/08/04
Electro-Metrics	EMC-30	EMI Receiver	191	05/04/05
Antenna Research	ALA-130/A	Loop Antenna	106	03/14/05
Radio Shack	63-867	Temp/Hygrometer	N/A	05/04/05
Radio Shack	63-867A	Temp/Hygrometer	N/A	05/04/05

**Radiated Emissions Measurements
(1.705 - 10.0) MHz
Intentional Radiator
Fundamental
Per 15.223**

Freq. (MHz)	Amplitude (dBuV) Peak	Antenna Correction Factor	Cable Loss	Amplitude (dBuV/m) Peak	Average Correction Factor (dB)	Field Strength (dBuV/m)	FCC Limit dBuV/m	Delta Limit (dB)
7.4	62.8	-6.9	0.5	56.4	-20	36.4	40.0	-3.6
8.2	64.8	-6.3	0.5	59.0	-20	39.0	40.0	-1.0
8.9	64.5	-5.6	0.5	59.4	-20	39.4	40.0	-0.6

Measurements were all performed at a distance of (30) meters. Average correction factor reflects adjustment in amplitude based on calculated effect of duty cycle. (See duty cycle calculation)

Measurements were also performed up to the tenth harmonic and no emissions were observed.

Operation in Restricted Bands per 15.205:

The Direct Digital Synthesizer (DDS) generates a sequence of (16) discrete frequencies. The transmitter is not capable of hopping into, or operating in, the restricted bands and therefore, complies with the restriction. The tuning table attached to the theory of operation defines each possible operating frequency.

The restricted frequency bands (per FCC Part 15.205) in the operating frequency band of the EUT are as follows:

8.291 - 8.294 MHz
8.362 - 8.366 MHz
8.37625 - 8.38675 MHz
8.41425 - 8.41475 MHz

**Radiated Emissions Measurements
(30 - 1,000) MHz
Unintentional Radiator
Per 15.109**

PRODUCT EMISSIONS

PRODUCT SAFETY ENGINEERING

Data File: CONDOR FCC-B 3-24-2004

No	EMISSION	SPEC	MEASUREMENTS			SITE		CORR	COMMENTS
	FREQUENCY MHz	LIMIT dBuV/m	ABS	dLIM dB	MODE	POL	HGT cm	FACTOR dB	
							AZM deg		
1	30.398	40.0	32.5	-7.5	PK	V	100	1	-14.4
2	34.788	40.0	29.2	-10.8	PK	V	100	1	-15.4
3	35.204	40.0	29.5	-10.5	PK	V	100	1	-15.5
4	36.880	40.0	22.3	-17.7	PK	V	100	1	-15.9
5	41.642	40.0	36.1	-3.9	QP	V	100	1	-16.7
6	42.300	40.0	32.8	-7.2	PK	V	100	1	-16.7
7	42.855	40.0	30.7	-9.3	PK	V	100	1	-16.7
8	43.675	40.0	25.1	-14.9	PK	V	100	1	-16.7
9	44.235	40.0	28.2	-11.8	PK	V	100	1	-16.7
10	56.256	40.0	27.8	-12.2	PK	V	100	270	-17.
11	68.926	40.0	24.4	-15.6	PK	V	100	1	-19.1
12	69.590	40.0	27.0	-13.0	PK	V	100	1	-19.2
13	70.395	40.0	29.6	-10.4	PK	V	100	1	-19.4
14	71.122	40.0	33.6	-6.4	PK	V	100	270	-19.5
15	131.247	43.5	26.5	-17.0	PK	V	100	270	-13.9
16	143.736	43.5	28.7	-14.8	PK	V	100	180	-13.7
17	150.001	43.5	26.0	-17.5	PK	V	100	180	-12.9
18	168.738	43.5	37.6	-5.9	PK	V	100	180	-11.7
19	218.732	46.0	38.0	-8.0	PK	V	100	45	-13.2
20	231.272	46.0	37.2	-8.8	PK	V	100	315	-13.2
21	243.737	46.0	45.8	-0.2	QP	V	100	315	-13.2
22	256.267	46.0	37.6	-8.4	PK	V	100	45	-12.9
23	268.731	46.0	35.5	-10.5	PK	V	100	315	-12.2
24	281.242	46.0	41.5	-4.5	PK	V	100	45	-11.5
25	293.738	46.0	34.7	-11.3	PK	V	100	45	-10.8
26	306.242	46.0	35.9	-10.1	PK	V	100	45	-10.5
27	318.764	46.0	32.0	-14.0	PK	V	100	135	-10.5
28	331.268	46.0	37.9	-8.1	PK	V	100	45	-10.5
29	343.750	46.0	37.1	-8.9	PK	V	100	45	-10.5
30	356.259	46.0	35.1	-10.9	PK	V	100	315	-10.4
31	362.489	46.0	38.7	-7.3	PK	V	100	135	-10.4
32	368.758	46.0	36.9	-9.1	PK	V	100	315	-10.3
33	406.267	46.0	37.8	-8.3	PK	V	100	315	-9.8
34	418.738	46.0	39.0	-7.1	PK	V	100	135	-9.5
35	437.506	46.0	35.7	-10.3	PK	V	100	45	-9.
36	456.259	46.0	33.3	-12.7	PK	H	200	180	-8.6
37	468.771	46.0	33.1	-12.9	PK	H	200	270	-8.4
38	599.990	46.0	39.1	-6.9	PK	V	100	45	-6.9
39	649.995	46.0	33.3	-12.8	PK	V	100	45	-5.7
40	699.989	46.0	36.9	-9.1	PK	H	200	180	-3.4
41	799.988	46.0	39.9	-6.1	PK	H	200	180	-3.4
42	898.875	46.0	36.0	-10.0	PK	H	200	180	-1.
43	899.982	46.0	45.9	-0.1	QP	H	200	270	-1.
44	900.120	46.0	37.6	-8.4	PK	H	200	180	-1.

ALARM ON

**Conducted Emissions Measurements
(0.150 - 30) MHz
Intentional Radiator
Per 15.207**

Product Safety Engineering

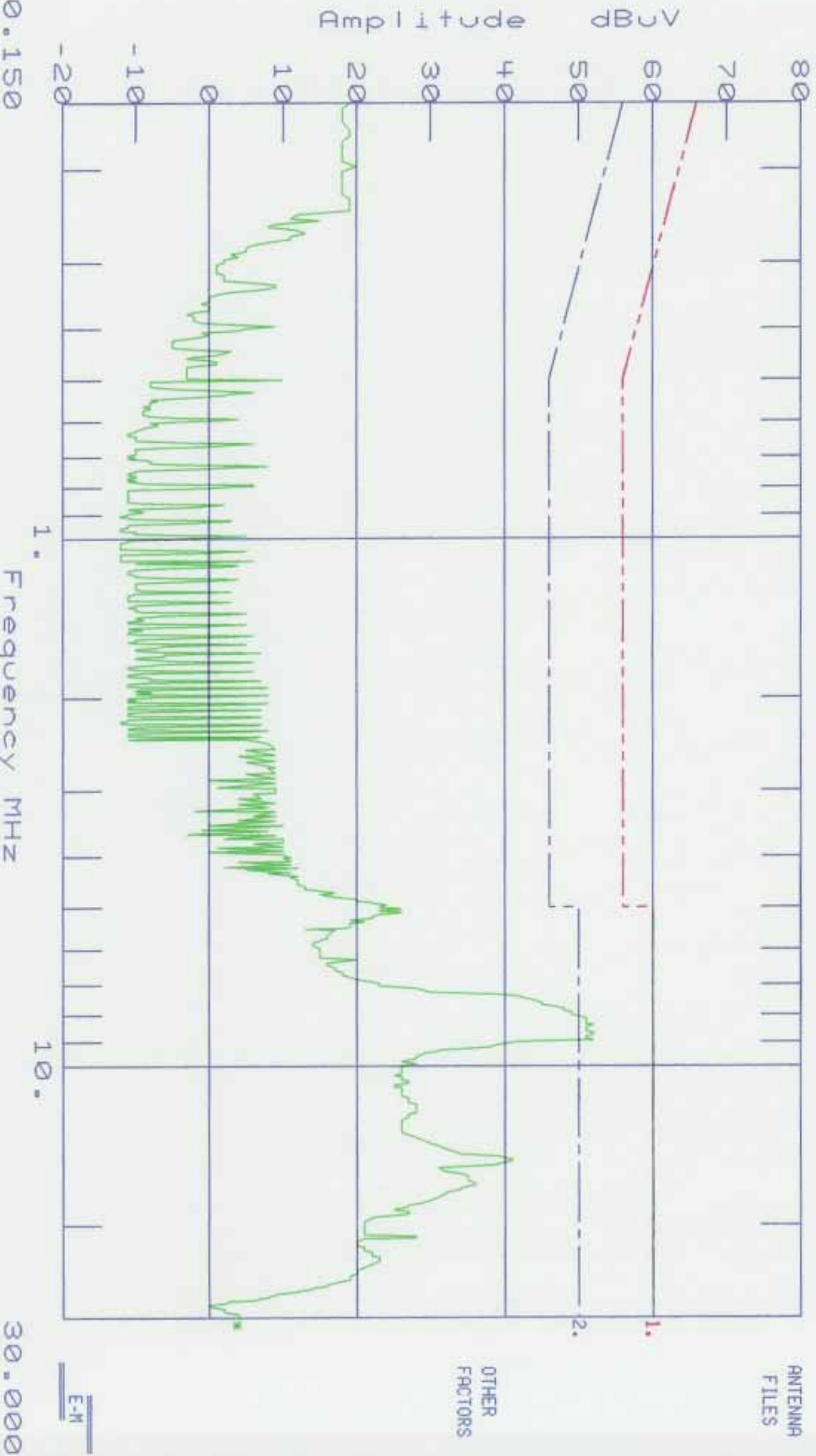
CHECKPOINT

Date : 03/25/04
 Technician : JACK GARNER
 Test Method : EN55022 CLASS B
 Equipment : CONDOIR W/GLOBTEK
 Mode of Op. : NORMAL
 Serial No. :
 Time : 08:55:46.46
 Test Equip. : EMC-30
 Test Number : 1
 Sensor Loc. : LINE
 Sensor Pol. :
 Ext. Atten. : 0 dB

EMC-30 SETTINGS
 Detector Quasi Peak
 Bandwidth CISPR
 Dump/Dwell IN/A
 RF Atten. 10 dB
 IF Atten. 10 dB

SPECS
 1) CISPR 22 Quasi Peak
 2) CISPR 22 AVG
 3)
 4)

Comment : 120 VAC / 60 HZ



TEST TITLE:CHECKPOINT	PAGE 1
DATA FILE :264_L.D30	Freq.(MHz)
Amplitude Units : dBuV	Threshold -8 dB
	0.1500

Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
7.3784	42.0		-8.000 *
7.4457	43.0		-7.000 *
7.5130	44.0		-6.000 *
7.5803	45.0		-5.000 *
7.6476	45.0		-5.000 *
7.7149	47.0		-3.000 *
7.7822	48.0		-2.000 *
7.8495	48.0		-2.000 *
7.9169	49.0		-1.000 *
7.9842	49.0		-1.000 *
8.0515	50.0		0.000 *
8.1188	51.0		1.000 *
8.1862	51.0		1.000 *
8.2535	51.0		1.000 *
8.3208	51.0		1.000 *
8.3611	52.0	-8.000 *	2.000 *
8.4553	51.0		1.000 *
8.5226	51.0		1.000 *
8.5899	51.0		1.000 *
8.6572	52.0	-8.000 *	2.000 *
8.7245	52.0	-8.000 *	2.000 *
8.7918	51.0		1.000 *
8.8557	51.0		1.000 *
8.9230	52.0	-8.000 *	2.000 *
8.9297	52.0	-8.000 *	2.000 *
8.9936	42.0		-8.000 *

Product Safety Engineering

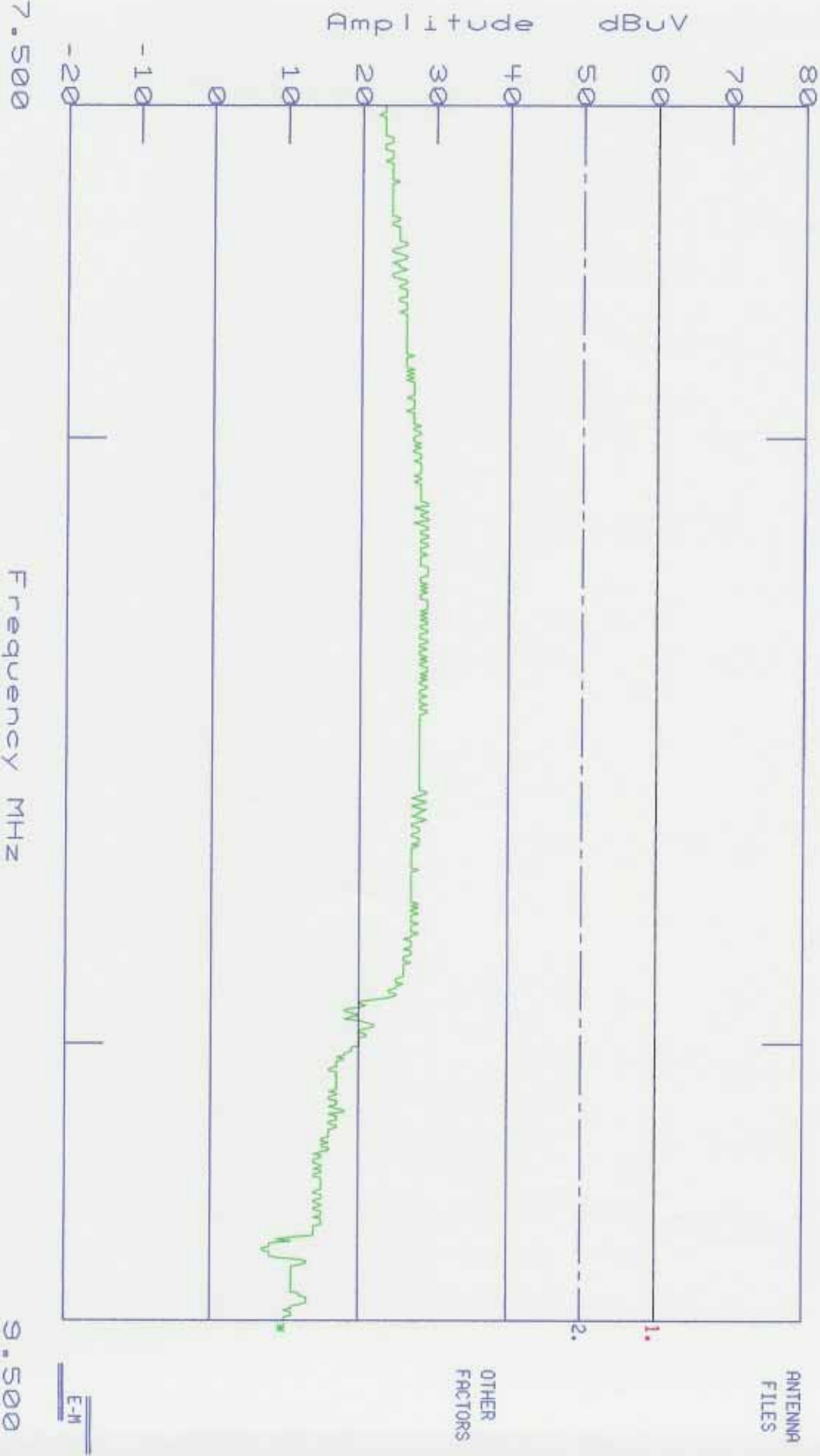
CHECKPOINT

Date : 03/25/04
 Technician : JACK GARNER
 Test Method : EN55022 CLASS B
 Equipment : CONDOR W/GLOBTEK
 Mode of Op. : NORMAL
 Serial No. :
 Time : 09:16:37.44
 Test Equip. : EMC-30
 Test Number : 1
 Sensor Loc. : LINE
 Sensor Pol. :
 Ext. Atten. : 0 dB
 Comment : 120 VAC / 60 HZ (AVERAGE)

EMC-30 SETTINGS
 Detector Average
 Bandwidth CISPR
 Dump/Dwell N/A
 RF Atten. 10 dB
 IF Atten. 10 dB

SPECS
 1) CISPR 22 Quasi Peak
 2) CISPR 22 AVG
 3)
 4)

A10



TEST TITLE:CHECKPOINT
DATA FILE :264_LA.D30
Amplitude Units : dBuV

Threshold -21 dB

PAGE 1
Freq.(MHz)
7.5000

Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
8.1024	29.0		-21.000 *
8.1058	29.0		-21.000 *
8.1159	29.0		-21.000 *
8.1262	29.0		-21.000 *
8.1296	29.0		-21.000 *
8.1397	29.0		-21.000 *
8.1430	29.0		-21.000 *
8.1531	29.0		-21.000 *
8.1565	29.0		-21.000 *
8.1666	29.0		-21.000 *
8.1700	29.0		-21.000 *
8.1834	29.0		-21.000 *
8.2036	29.0		-21.000 *
8.2070	29.0		-21.000 *
8.2103	29.0		-21.000 *
8.2137	29.0		-21.000 *
8.2171	29.0		-21.000 *
8.2305	29.0		-21.000 *
8.2372	29.0		-21.000 *
8.2440	29.0		-21.000 *
8.2574	29.0		-21.000 *
8.2608	29.0		-21.000 *
8.2642	29.0		-21.000 *
8.2675	29.0		-21.000 *
8.2709	29.0		-21.000 *
8.2776	29.0		-21.000 *
8.2843	29.0		-21.000 *
8.2911	29.0		-21.000 *
8.2944	29.0		-21.000 *
8.3045	29.0		-21.000 *
8.3079	29.0		-21.000 *
8.3214	29.0		-21.000 *
8.3247	29.0		-21.000 *
8.3348	29.0		-21.000 *
8.3483	29.0		-21.000 *
8.3550	29.0		-21.000 *
8.3651	29.0		-21.000 *
8.3685	29.0		-21.000 *
8.3718	29.0		-21.000 *
8.3785	29.0		-21.000 *
8.3853	29.0		-21.000 *
8.3954	29.0		-21.000 *
8.3987	29.0		-21.000 *
8.4122	29.0		-21.000 *
8.4256	29.0		-21.000 *
8.4357	29.0		-21.000 *
8.4391	29.0		-21.000 *
8.5703	29.0		-21.000 *
8.5737	29.0		-21.000 *
8.5871	29.0		-21.000 *
8.6006	29.0		-21.000 *
8.6174	29.0		-21.000 *

Product Safety Engineering

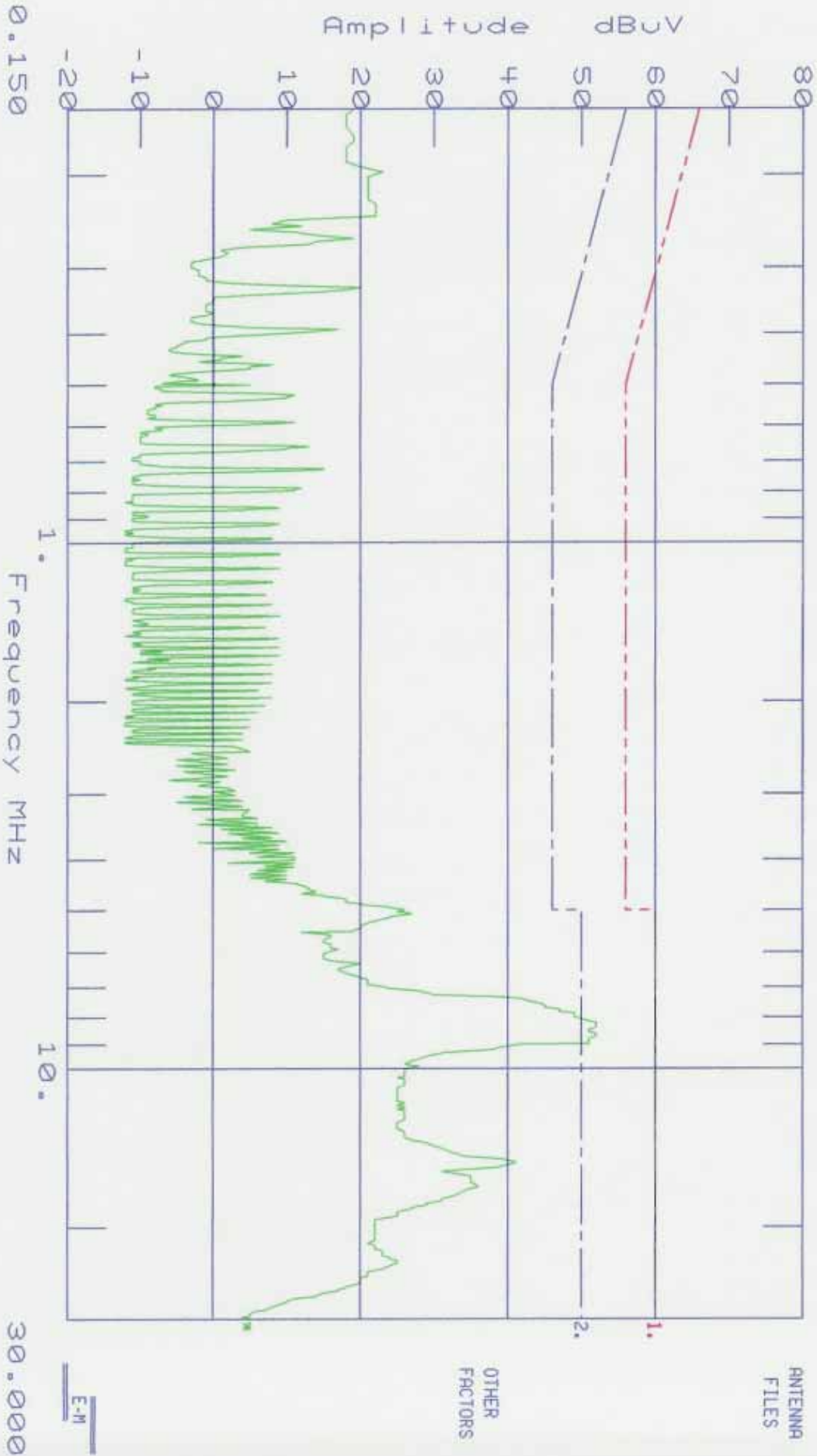
CHECKPOINT

Date : 03/25/04
 Technician : JACK GARNER
 Test Method : EN55022 CLASS B
 Equipment : CONDOR H/GLOBTEK
 Mode of Op. : NORMAL
 Serial No. :
 Comment : 120 VAC / 60 HZ

Time : 08:29:16.58
 Test Equip. : EMC-30
 Test Number : 1
 Sensor Loc. : NEUTRAL
 Sensor Pol. :
 Ext. Atten. : 0 dB

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

SPECS
 1) CISPR 22 Quasi Peak
 2) CISPR 22 AVG
 3)
 4)



TEST TITLE:CHECKPOINT	PAGE 1
DATA FILE :264_N.D30	Freq.(MHz)
Amplitude Units : dBuV	0.1500
Threshold -8 dB	

Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
7.3784	42.0		-8.000 *
7.4457	43.0		-7.000 *
7.5063	44.0		-6.000 *
7.5803	45.0		-5.000 *
7.6476	45.0		-5.000 *
7.7149	47.0		-3.000 *
7.7822	47.0		-3.000 *
7.8495	49.0		-1.000 *
7.9169	49.0		-1.000 *
7.9842	49.0		-1.000 *
8.0515	50.0		0.000 *
8.1188	51.0		1.000 *
8.1862	52.0	-8.000 *	2.000 *
8.2535	52.0	-8.000 *	2.000 *
8.3208	52.0	-8.000 *	2.000 *
8.3679	52.0	-8.000 *	2.000 *
8.4553	51.0		1.000 *
8.5226	51.0		1.000 *
8.5899	52.0	-8.000 *	2.000 *
8.6572	52.0	-8.000 *	2.000 *
8.6908	52.0	-8.000 *	2.000 *
8.7918	51.0		1.000 *
8.8557	51.0		1.000 *
8.9230	51.0		1.000 *
8.9701	51.0		1.000 *
8.9936	42.0		-8.000 *

Product Safety Engineering

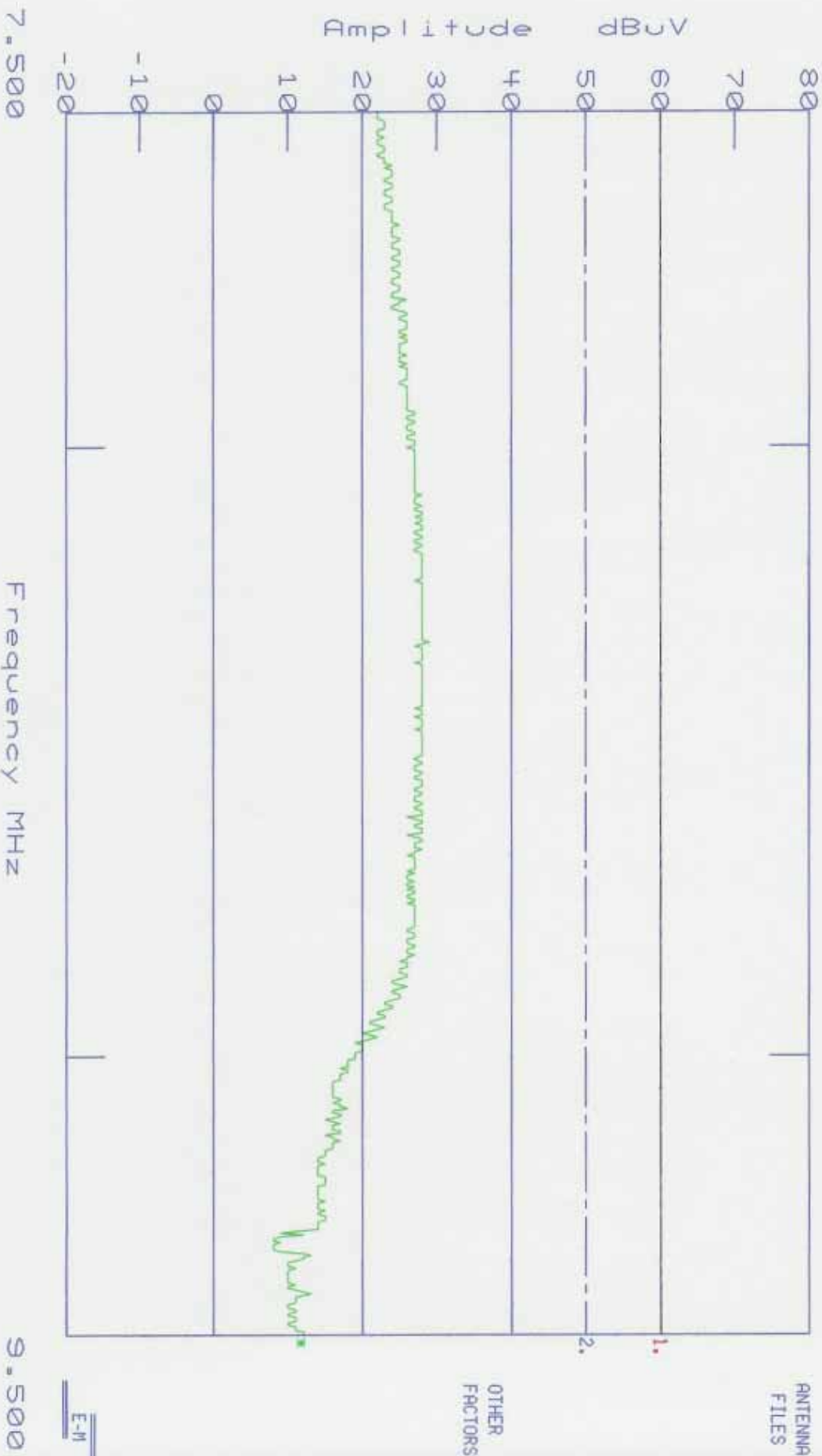
CHECKPOINT

Date : 03/25/04 08:46:01.01
 Technician : JACK GARNER
 Test Method : EN55022 CLASS B
 Equipment : CONDOIR M/GLOBTEK
 Mode of Op. : NORMAL
 Serial No. :
 Time :
 Test Equip. : EMC-30
 Test Number : 1
 Sensor Loc. : NEUTRAL
 Sensor Pol. :
 Ext. Atten. : 0 dB

EMC-30 SETTINGS
 Detector Average
 Bandwidth CISPR
 Dump/Dwell N/A
 RF Atten. 10 dB
 IF Atten. 10 dB

SPECS
 1) CISPR 22 Quasi Peak
 2) CISPR 22 AVG
 3)
 4)

Comment : 120 VAC / 60 HZ (AVERAGE)



TEST TITLE:CHECKPOINT	PAGE 1
DATA FILE :264_NA.D30	Freq.(MHz)
Amplitude Units : dBuV	7.5000
Threshold -21 dB	

Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
8.3079	29.0		-21.000 *

Bandwidth Plot

A Plot of the operating bandwidth was taken by placing the measuring antenna close to the EUT, setting a spectrum analyzer to (5) dB/div, RBW= 300 kHz, VBW= 1 MHz, span = 7 to 9.2 MHz, peak detection and max hold. The plot is shown of the following page.

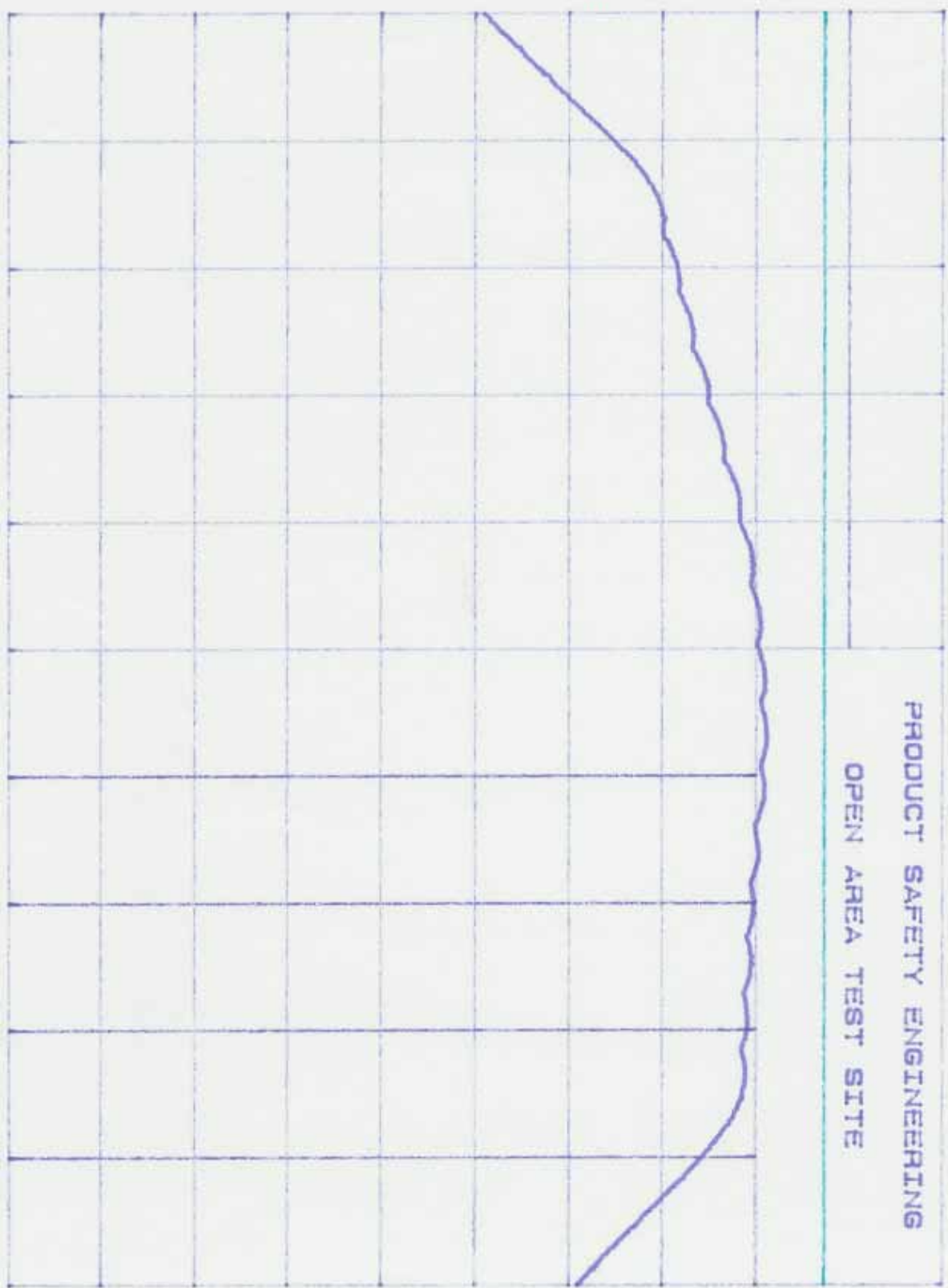
The plot confirms the transmitter bandwidth is exceeds (10%) [820 kHz] of the center frequency of (8.2) MHz, therefore the limit is (100) uV/meter at (30) meters.

PRODUCT SAFETY ENGINEERING
REF 112.0 dBμV ATTEN 30 dB

5 dB/
POS PK

PRODUCT SAFETY ENGINEERING
OPEN AREA TEST SITE

DL
105.6
dBμV



START 7.00 MHz
RES BW 300 KHz
VBW 1 MHz
STOP 9.24 MHz
SWP 20.0 sec

Antenna Current

Antenna	PDA Setting	TX1 Current mA	TX2 Current mA
Default	23 / 0	770	NA

APPENDIX

B

System Under Test Description

Description of System under Test

The Condor Plus consists of a Checkpoint model 4024 printed wiring board and Condor Plus antenna. The system receives power from an external DC power supply. The power supply used during the testing was a Globtek model GT-255024D-R. The filtered AC power cord for the Globetek supply was a Eupen Kabelwerk model IMX 04. The 24V DC power in of the EUT uses a (3) pin plug (only 2 cabled) which is (1) meter long, shielded and the shield is terminated at power supply end only.

The following unterminated cables were attached:

J9 Synch, 4 pin cable 1 meter long, unterminated. Shielded but shield unterminated at either end.

J10 Synch, 4 pin cable 1 meter long, unterminated. Shielded but shield unterminated at either end.

J13 Com out, 6 pin cable 1 meter long, unterminated. Shielded but shield unterminated at either end.

J14 Com in, 6 pin cable 1 meter long, unterminated. Shielded but shield unterminated at either end.

MAR 13 '97 10:59 TO: 912105223396
JUL 28 '96 15:18 TO: 912013442060

FROM: CHECKPOINT SYSTEMS INC
FROM: CHECKPOINT SYSTEM INC

T-025 P. 02/02 --CTT
T-031 P. 01/02 F-074



CHECKPOINT SYSTEMS, INC. FACSIMILE TRANSMISSION COVER

To: F.C.C. Lab

Date: 7/16/96

Attention: Mr. Ed Gibbons

Fax No: (609) 344-2339

No. of Pages: 3
(Incl. Cover)

From: Mr. Gregory E. Sleet
CHECKPOINT SYSTEMS, INC.
181 WOLF DRIVE, P.O. BOX 181
THOROFARE, N.J. 08086

Telephone: (609) 344-2339 Direct
Toll Free: (800) 257-6640 Ext. 2339
Fax No.: (609) 344-2366

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Dear Mr. Gibbons:

Following up on our recent phone conversations, please confirm and if necessary correct our understanding of the points discussed below. Based on the details of our fax dated 7/3/96:

- ✓ • Our pulsed emissions will be treated as frequency hopping, where the bandwidth will be considered the spectrum contained between the lowest and highest carrier frequency we pulse.
- ✓ • A simple ratio of the maximum single restricted band infringed upon divided by the bandwidth of our fundamental emission must be less than 1% to satisfy section 15.205 of the rules.
in the band 1.7GHz - 10 GHz
- • For fundamental and harmonic emissions ~~below 30 MHz~~, a 20 dB reduction from the true peak is to be compared to the limits of 100uV/meter ~~and 300uV/meter respectively~~ at 30 meters. The unit is modulated as normally installed. True peak refers to the point at which the analyzer bandwidth is adjusted for minimum pulse deconvolution.
- • For ~~emissions outside the 1.7GHz - 10 GHz band~~ ~~harmonic emissions~~ CISPR quasi-peak measurements will be made with the unit modulating as normally installed. Based on the bandwidth plot, care must be given to measure multiples of the worst case emission points. Limits are as specified in section 15.209.
- ✓ • Conducted emissions remain as specified in part 15 of the rules.

Ed Gibbons
8/2/96

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 Part 15 Class B limits.

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

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

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

Observed Level		45.8	dB μ V	
ACF	+	24.3	dB/M	
Cable Loss	+	1.7	dB	
Preamp Gain	-	<u>26.0</u>	dB	
Actual Level		45.8	dB μ V/M	@ 243.7 MHz

Please have a company official review this report and sign.
