



1619 Elm Hill Pike
Nashville, TN 37210

PRODUCTION MODEL NUMBER

Attn: Mr. Rainer Riffert, EE

March 12, 2003

This report concerns: FCC Part 15 Subpart C, Testing of an FM Transmitter
(ref. FCC Part 15, Subpart C)
(ref. ANSI C63.4-1992)

This report was prepared by:

PHILIPS CONSUMER ELECTRONICS COMPANY
ONE PHILIPS DRIVE
P.O. BOX 14810.
KNOXVILLE, TN. 37914-1810

A Division of Philips Electronics
North America Corporation
P.O. Box 14810
Knoxville, TN 37914-1810

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LIST OF EXHIBITS

PCEC REPORT # 30581

1. Engineering Statement
2. NVLAP Accreditation Certificate
3. Product Description
4. Deviations of Test Methods
5. Test Procedures
6. Occupied Bandwidth
7. Radiated Emissions Data
8. Summary of Results

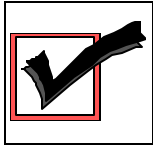
- Appendix A. Schematic
- Appendix B. Parts List
- Appendix C. Circuit Board Layout
- Appendix D. Photos of Test Setup
- Appendix E. EUT Photos



PCEC REPORT # 30581

SECTION 1

ENGINEERING STATEMENT



Engineering Statement

All measurement data on the attached reports was taken pursuant to FCC Rules and Regulations (Part 15, Sub-part C, Intentional Radiators) on the Philips Consumer Electronics Company site at Knoxville, Tennessee, which is recognized by the FCC and NVLAP Accredited (Lab Code 200409-0). Though this data is taken under stringent laboratory conditions and to the best of our knowledge, represents accurate data, it must be recognized that emissions from this type equipment may be greatly affected by the final installation of the equipment. Therefore, Philips Consumer Electronics Company, while supporting the accuracy of the data in this report, takes no responsibility for use of equipment based on these tests. The manufacturer of this equipment must take full responsibility for any field problems that may arise, and agrees that Philips Consumer Electronics Company, in performing its functions in accordance with its objectives and purposes, does not assume or undertake to discharge any responsibility of the manufacturer to any other party or parties.

The measurement report was compiled and approved by:

A handwritten signature in blue ink, appearing to read 'Richard K. Moyers', is written over a horizontal line.

Richard K. Moyers
Business Coordinator,
Philips Testing Service
(NVLAP Signatory)



PCEC REPORT # 30581

SECTION 2
NVLAP ACCREDITATION CERTIFICATE

United States Department of Commerce
National Institute of Standards and Technology



ISO/IEC 17025:1999
ISO 9002:1994

Certificate of Accreditation

PHILIPS TESTING SERVICE
KNOXVILLE, TN

is recognized by the National Voluntary Laboratory Accreditation Program
for satisfactory compliance with criteria set forth in NIST Handbook 150:2001,
all requirements of ISO/IEC 17025:1999, and relevant requirements of ISO 9002:1994.
Accreditation is awarded for specific services, listed on the Scope of Accreditation, for:

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

June 30, 2003

Effective through

David F. Alderman

For the National Institute of Standards and Technology
NVLAP Lab Code: 200409-0

ISO/IEC 17025:1999
ISO 9002:1994

Scope of Accreditation



Revised Scope 06/06/2002

Page: 1 of 3

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

NVLAP LAB CODE 200409-0

PHILIPS TESTING SERVICE

One Philips Drive, P.O. Box 14810

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Mr. Richard K. Moyers

Phone: 865-521-1617 Fax: 865-521-1637

E-Mail: Richard.k.moyers@philips.com

URL: <http://www.philipstesting.com>

NVLAP Code Designation / Description

Emissions Test Methods:

12/CIS13	IEC/CISPR 13 (2001-04) and EN 55013 (2001): Sound and television broadcast receivers and associated equipment - Radio disturbance characteristics - Limits and methods of measurement
12/CIS14	CISPR 14-1 (March 30, 2000): Limits and methods of measurement of radio interference characteristics of household electrical appliances, portable tools and similar electrical apparatus - Part 1: Emissions
12/CIS14a	EN 55014-1 (1993) with Amendments A1 (1997) & A2 (1999)
12/CIS14b	AS/NZS 1044 (1995)
12/CIS14c	CNS 13783-1
12/CIS22	IEC/CISPR 22 (1997) and EN 55022 (1998): Limits and methods of measurement of radio disturbance characteristics of information technology equipment

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For the National Institute of Standards and Technology



ISO/IEC 17025:1999
ISO 9002:1994

Scope of Accreditation

Page: 2 of 3

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ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

NVLAP LAB CODE 200409-0

PHILIPS TESTING SERVICE

NVLAP Code Designation / Description

12/CIS22a	IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
12/CIS22b	CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
12/F01	FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a	Conducted Emissions, Power Lines, 450 KHz to 30 MHz
12/F01b	Radiated Emissions
12/T51	AS/NZS 3548: Electromagnetic Interference - Limits and Methods of Measurement of Information Technology Equipment

Immunity Test Methods:

12/CIS20	IEC/CISPR 20 (2002-02) and EN 55020 (1994): Sound and television broadcast receivers and associated equipment - Immunity characteristics - Limits and methods of measurement
12/I01	IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test

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ISO/IEC 17025:1999
ISO 9002:1994

Scope of Accreditation

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**ELECTROMAGNETIC COMPATIBILITY
AND TELECOMMUNICATIONS**

NVLAP LAB CODE 200409-0

PHILIPS TESTING SERVICE

<i>NVLAP Code</i>	<i>Designation / Description</i>
12/I02	IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test
12/I03	IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test
12/I04	IEC 61000-4-5 (1995): Surge Immunity Test
12/I05	IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields
12/I06	IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test
12/I07	IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests

June 30, 2003

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David F. Alderman

For the National Institute of Standards and Technology



PCEC REPORT # 30581

SECTION 3 PRODUCT DESCRIPTION

iTrip FM Transmitter

The iTrip FM transmitter for the iPod can play stereo music through any FM receiver. The iTrip is made specifically for the iPod. This gives iTrip advantages over similar devices. For example, with the iTrip, It can have the cleanest possible signal - because the user can choose any radio station on the dial to tune for the best performance possible. This is done by 'playing' special station codes directly from the iPod itself. Another advantage of the iTrip is that it needs no batteries, it receives its tiny amount of power from the iPod, and it can rotate out of the way to charge the iPod while still in use. There is no power switch, it just plugs in and it is ready to go. It shuts off automatically after 30 seconds of silence - just like the iPod. When audio music is played out of the iPod into the iTrip, it will wake up and continue to play as long as music is playing. The iTrip can be turned off by unplugging the unit from the iPod. The iTrip is the ultimate accessory for the iPod because it allows the user to share the music and share the fun beyond your headphones. Don't leave home without it.



PCEC REPORT # 30581

SECTION 4

DEVIATIONS OF TEST METHODS

DEVIATION FROM TEST METHOD

PCEC REPORT # 30581

NONE



PCEC REPORT # 30581

SECTION 5 TEST PROCEDURES

TEST PROCEDURE (ANSI C63.4 - 1992)

PCEC REPORT #30581

PROCEDURE-SPURIOUS RADIATION

The EUT was placed on the floor of an RF screen cage. A receiving Bicon antenna was placed 1 meter away from the EUT on a wooden tri-pod 1 meter above the floor of the RF screen cage. The receiving antenna was connected to the 50 Ohm input of the HP8566B spectrum analyzer. The EUT was powered up and was configured into its normal operational mode.

The 30 to 250 MHz band was observed on the spectrum analyzer while the EUT power and control leads were adjusted to maximize emissions (see photos). The peak frequencies for this band were recorded. This search for emissions continued from 250 MHz up to the upper frequency required per FCC 15.33 (b) (1). Upon completion of the pre-scan, the EUT was placed on a metal turntable mounted level with the metal ground plane of the 3 meter test site, powered by a 110 VAC supply.

The EUT was booted up into its normal operational mode. The worst-case cable configuration determined by the pre-scan was duplicated and re-maximized at the worst-case frequency. Based on this configuration all frequencies located during the 1 meter pre-scan were measured at the 3-meter test distance. The receiving antennas were varied in height from 1 to 4 meters and the remote turntable was rotated 360° to find the maximum emissions. This test was performed for all modes of operation.

All significant emissions are reported on the attached data report. To verify that the E.M.I. emissions measured were generated by the E.U.T., the system power was interrupted at peak reading while observing the Spectrum Analyzer. Unless otherwise specified, all Radiated Emissions are recorded as "PEAK" spectrum analyzer readings. The Radiated Field Strength was calculated as follows: Maximum Emission Received (dB) + Antenna Factor (dB) + Cable Loss (dB) = Field Strength dBuV/Meter.

Equipment Used During Testing:

<u>Model</u>	<u>s/n</u>	<u>Cal Date</u>	<u>Cal Due</u>	<u>Description</u>
HP 8566B	6612	7/22/02	7/22/03	Spectrum Analyzer
HP 85650A	1001	7/29/02	7/29/03	Quasi-Peak Adapter
HP 85685A	0627	7/24/02	7/24/03	RF Pre-selector
EMCO 3110	1679	12/09/02	12/09/03	Bicon Antenna
EMCO 3146	3571	12/09/02	12/09/03	Log-Periodic Antenna

ALL CALIBRATIONS ARE TRACEABLE TO NIST STANDARDS



PCEC REPORT # 30581

SECTION 6 OCCUPIED BANDWIDTH

REPORT # 30581 OCCUPIED BANDWIDTH
REF 58.0 dB V ATTEN 10 dB

MKR 89.705 9 MHz
56.95 dB V

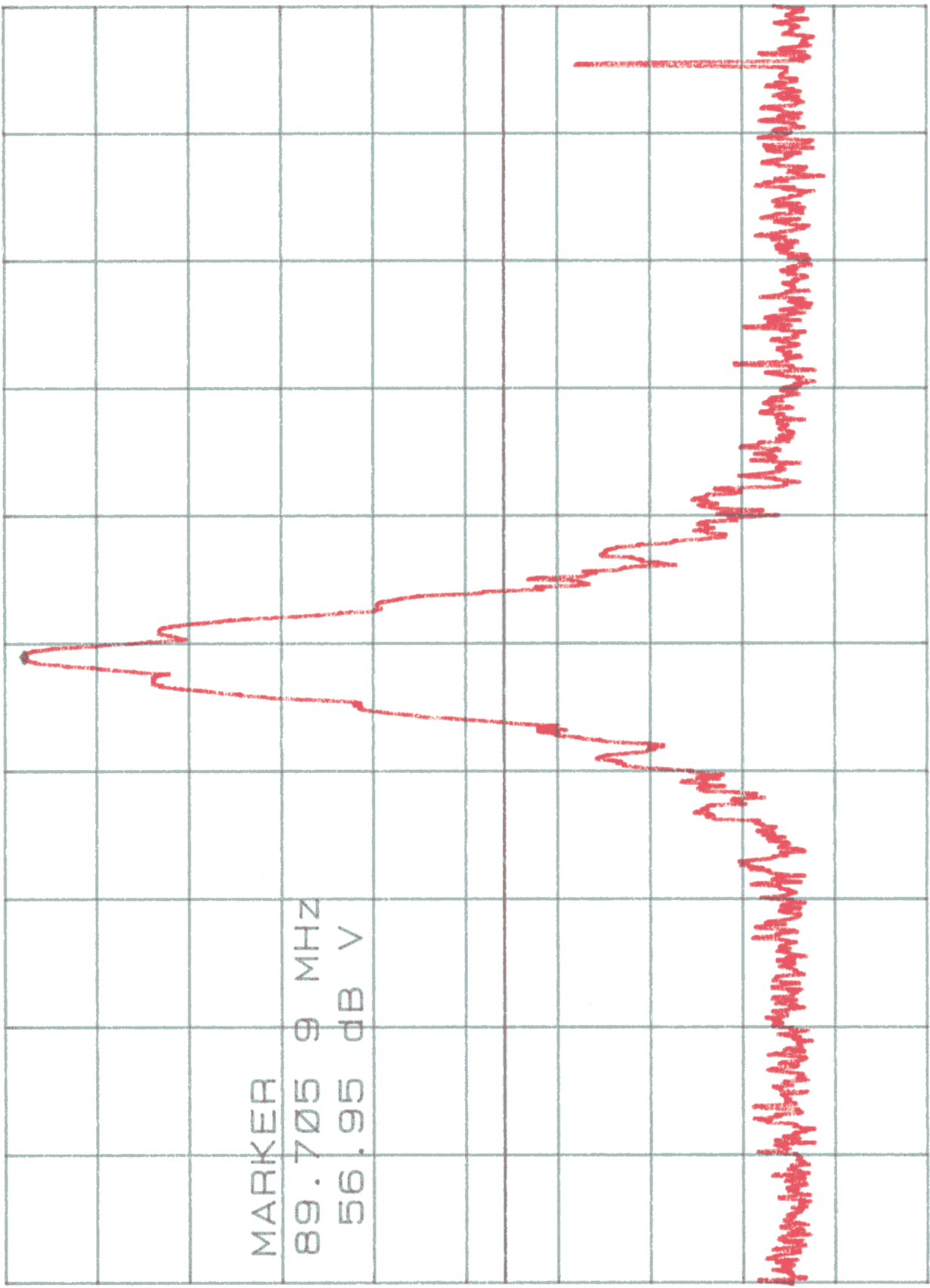
5 dB/

MARKER

89.705 9 MHz
56.95 dB V

DL
30.9
dB V

CORR'D



CENTER 89.716 MHz
RES BW 10 KHZ
SPAN 933 KHZ
SWP 30.0 msec
VBW 10 KHZ

REPORT # 30581 OCCUPIED BANDWIDTH
REF 58.0 dB V ATTN 10 dB

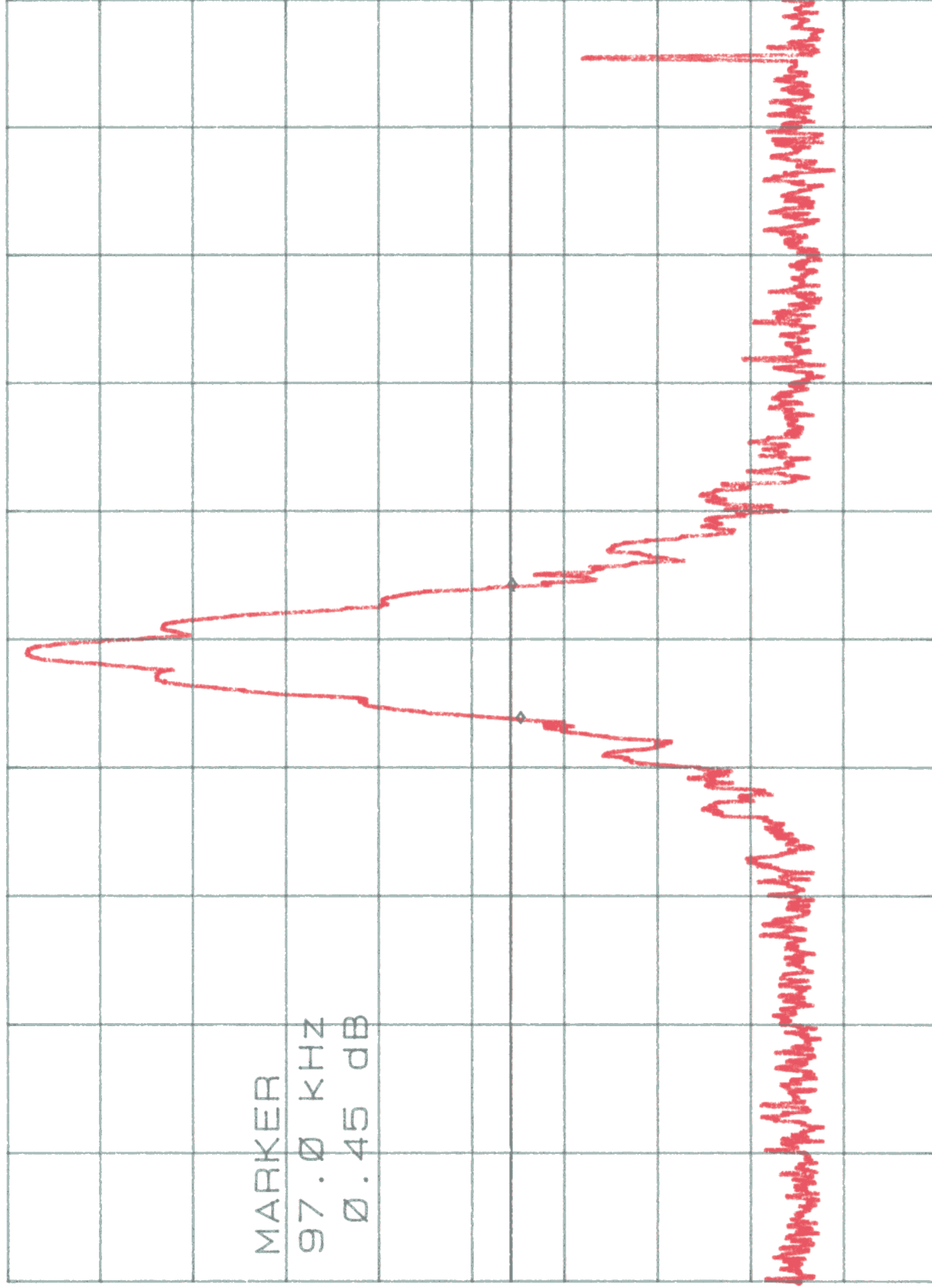
MKR 97.0 KHZ
0.45 dB

5 dB/

DL
30.9
dB V

MARKER
97.0 KHZ
0.45 dB

CORR'D



CENTER 89.716 MHz
RES BW 10 KHZ
SPAN 933 KHZ
SWP 30.0 msec
VBW 10 KHZ

REPORT # 30581 OCCUPIED BANDWIDTH
REF 58.0 dB V ATTEN 10 dB

MKR 98.306 0 MHz
53.55 dB V

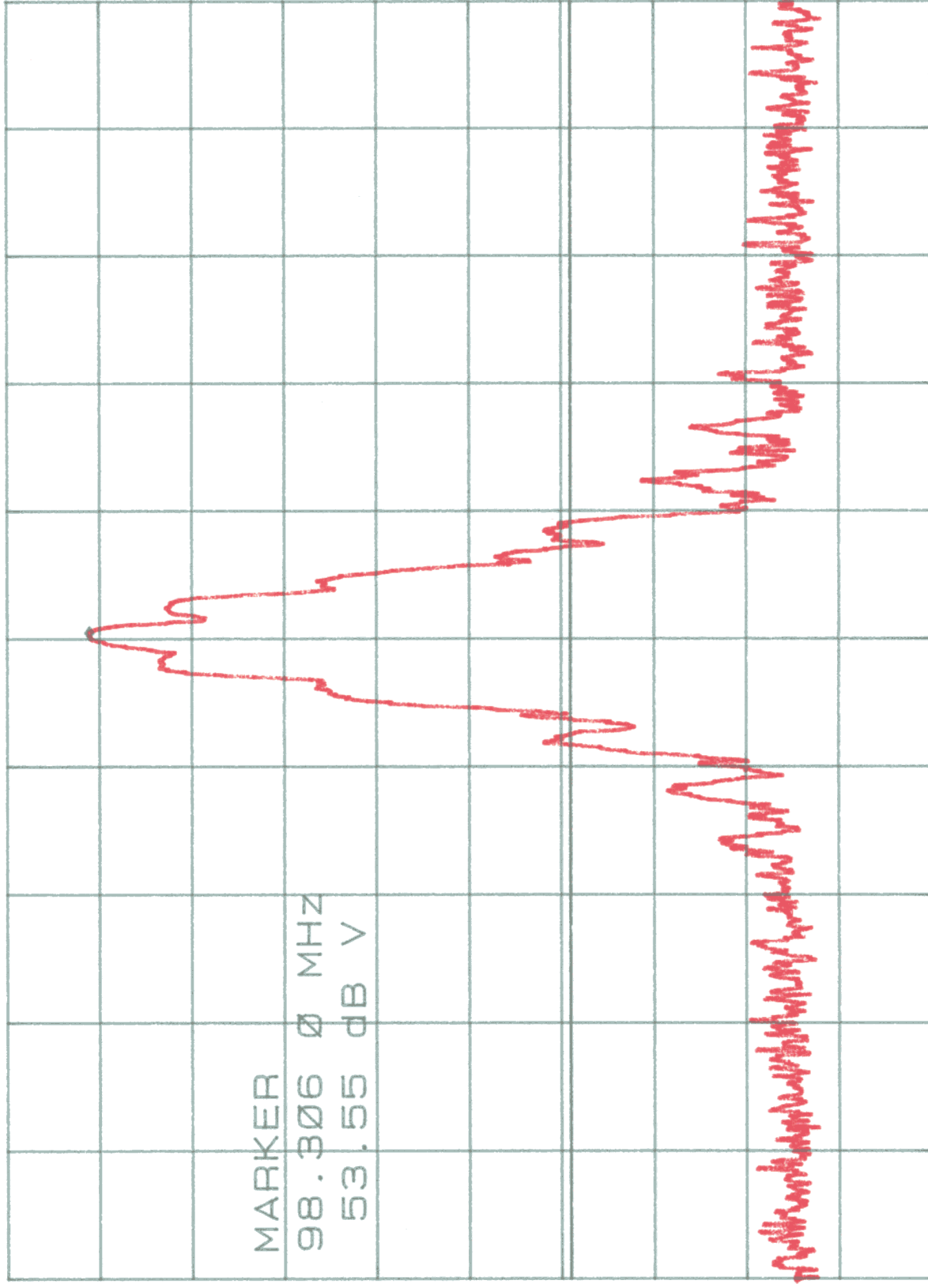
5 dB/

MARKER

98.306 0 MHz
53.55 dB V

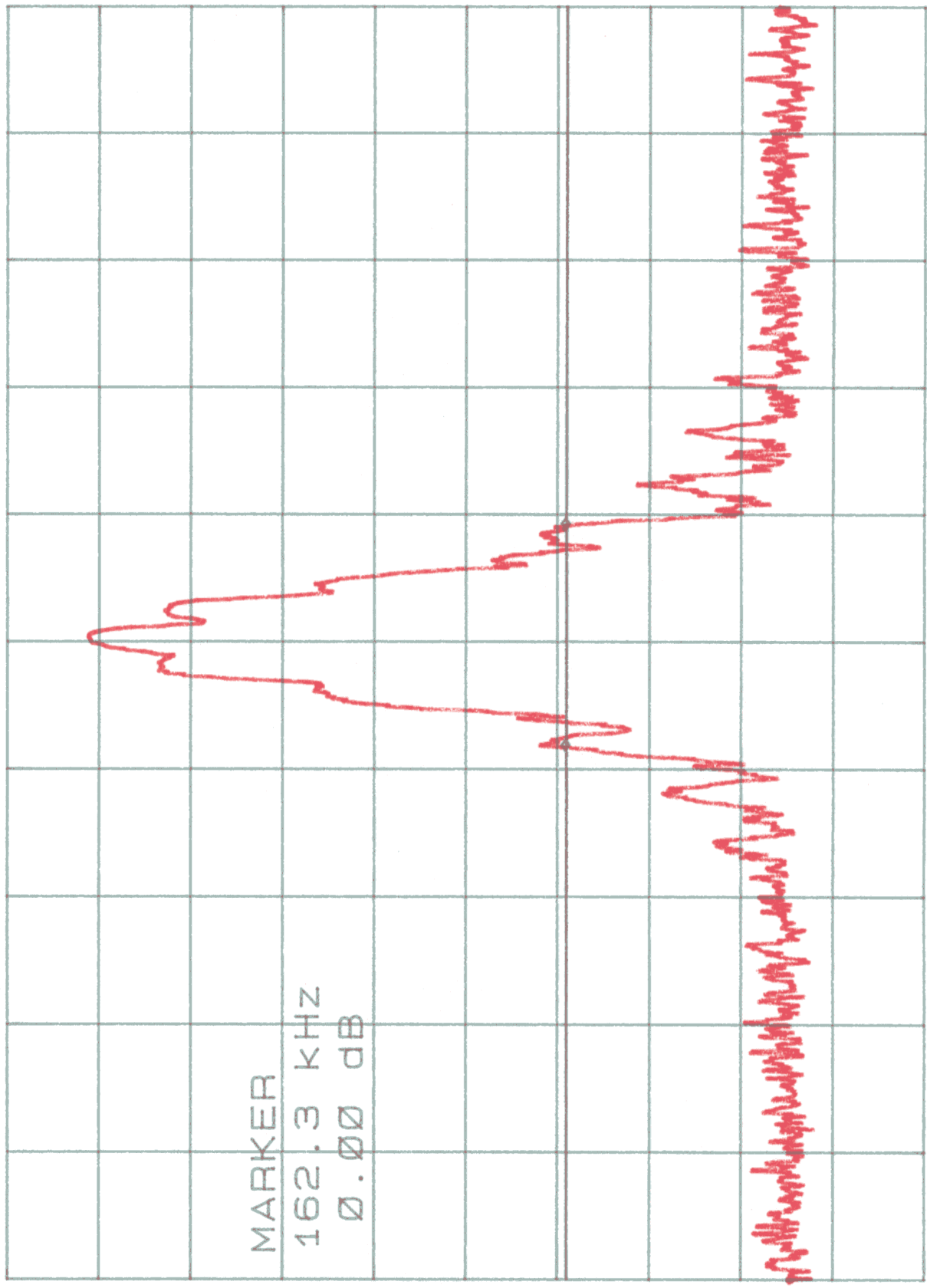
DL
27.5
dB V

CORR'D



CENTER 98.302 MHz
RES BW 10 KHZ
VBW 10 KHZ
SPAN 933 KHZ
SWP 30.0 msec

REPORT # 30581 OCCUPIED BANDWIDTH
REF 58.0 dB V ATTEN 10 dB MKR 162.3 KHZ 0.00 dB



5 dB/

DL
27.5
dB V

CORR'D

CENTER 98.302 MHZ RES BW 10 KHZ VBW 10 KHZ SPAN 933 KHZ SWP 30.0 msec

REPORT # 30581 OCCUPIED BANDWIDTH MKR 106.205 0 MHz
REF 63.0 dB V ATTEN 10 dB 51.70 dB V

5 dB/

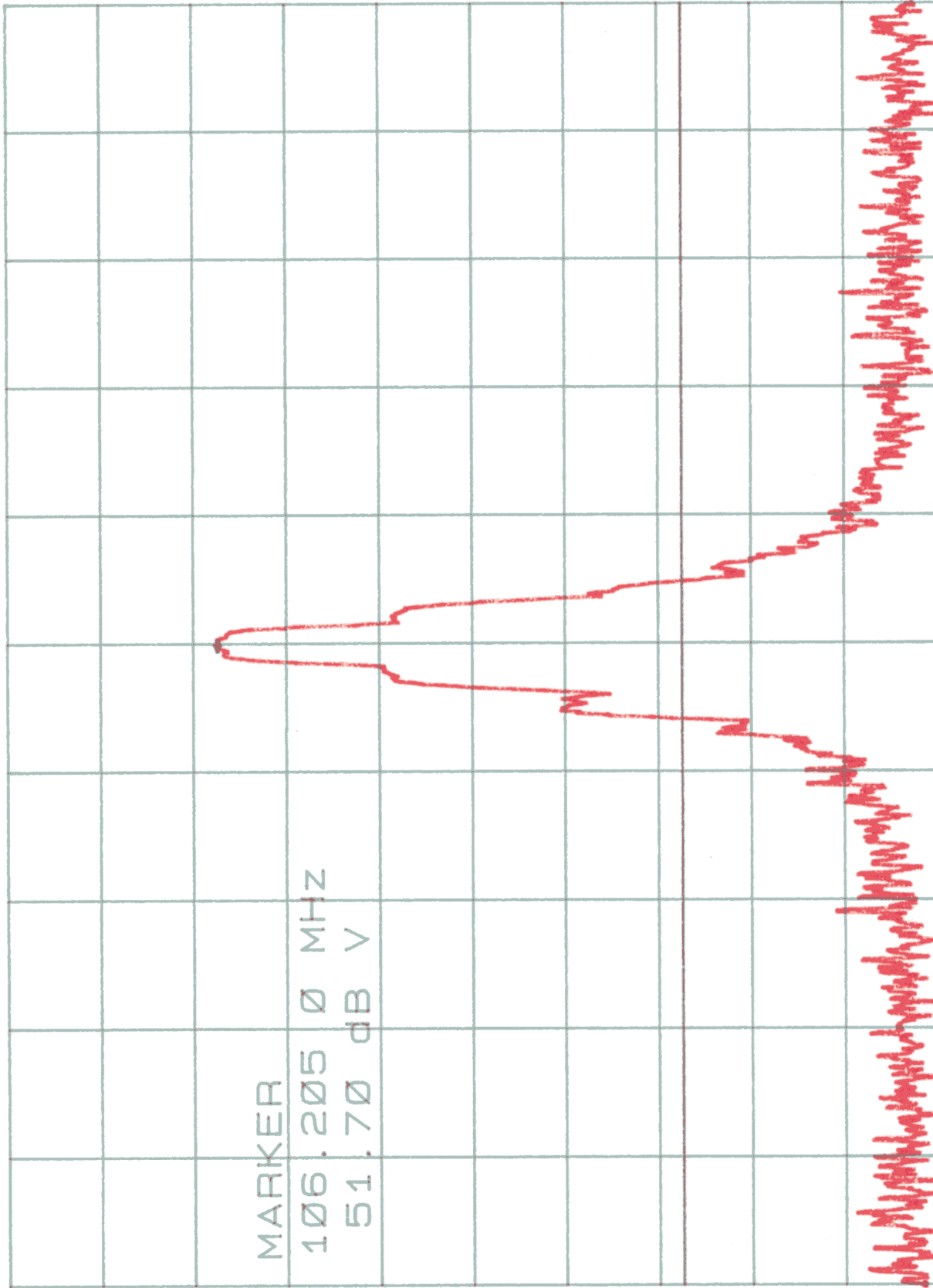
MARKER

106.205 0 MHz

51.70 dB V

DL
26.7
dB V

CORR'D



CENTER 106.206 MHz

RES BW 10 KHZ

VBW 10 KHZ

SPAN 932 KHZ

SWP 30.0 msec

REPORT # 30581 OCCUPIED BANDWIDTH
REF 63.0 dB V ATTEN 10 dB

MKR 101.6 KHZ
0.60 dB

dB/

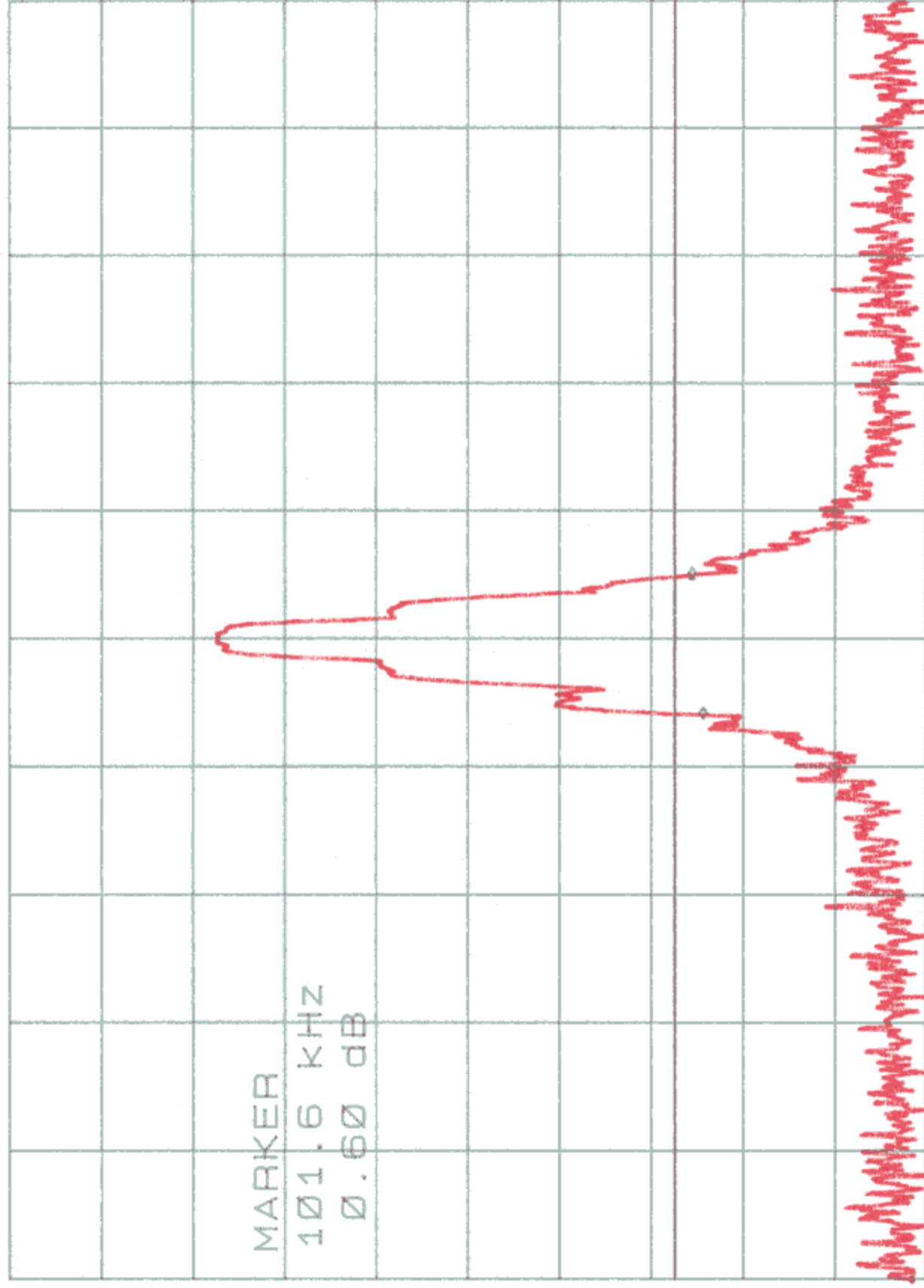
MARKER

101.6 KHZ

0.60 dB

DL
26.7
dB V

RR'D



NTER 106.206 MHZ

RES BW 10 KHZ

VBW 10 KHZ

SPAN 932 KHZ

SWP 30.0 msec



PCEC REPORT # 30581

SECTION 7 RADIATED EMISSIONS

DATA SHEET

PHILIPS CONSUMER ELECTRONICS COMPANY

EMI LAB

P.O. BOX 14810

KNOXVILLE, TENNESSEE 37914-1810

TEL:(423)-521-4720 FAX:(423)-521-4786

OPEN FIELD RADIATION MEASUREMENT FCC CLASS "B" LIMITS

REPORT #:

MANUFACTURE: Griffin Tech

MODEL # BH1415F

DATE: 2003-03-13

SUPPORT EQUIPMENT

Unit on Side

DELTA REFERS TO THE dB DIFFERENCE BETWEEN THE HORIZONTAL OR VERTICAL READING AND THE dB LIMIT AT THAT FREQUENCY.

THE FOLLOWING ARE PEAK READINGS WITH CABLE AND ANTENNA FACTORS INCLUDED EXCEPT AS NOTED BY "QP".

"QP" = QUASI PEAK READING AT THAT FREQUENCY

SPECTRUM ANALYZER SETTINGS:

RBW: 100KHz

VBW: 100KHz

TEST DISTANCE BETWEEN DEVICE UNDER TEST AND RECEIVING ANTENNA W/ 3-METER

NOTE!! "FAILURE" INDICATES THAT THE DEVICE EXCEEDS THE FCC CLASS "B" LIMIT AT THAT FREQUENCY

FREQ. (MHz)	HORZ. dBuV/m	VERT. dBuV/m	H DELTA (dBuV)	V DELTA (dBuV)	LIMIT CLASS "B"	FREQ. STATUS
89.7	43.25	38.05	-4.75	-9.95	48	Average
179.4	AMBIENT	24.14	NO DELTA	-19.36	43.5	
269.1	24.14	AMBIENT	-21.86	NO DELTA	46	
358.8	26.39	AMBIENT	-19.61	NO DELTA	46	
448.5	26.87	AMBIENT	-19.13	NO DELTA	46	
538.2	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
627.9	31.84	28.84	-14.16	-17.16	46	
717.6	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
807.3	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
897	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
986.7	AMBIENT	AMBIENT	NO DELTA	NO DELTA	53.9	

DATA SHEET

PHILIPS CONSUMER ELECTRONICS COMPANY

EMI LAB

P.O. BOX 14810

KNOXVILLE, TENNESSEE 37914-1810

TEL:(423)-521-4720 FAX:(423)-521-4786

OPEN FIELD RADIATION MEASUREMENT FCC CLASS "B" LIMITS

REPORT #:

MANUFACTURE:

MODEL #

DATE:

SUPPORT EQUIPMENT:

Griffin Tech

BH1415F

2003-03-13

Unit Flat

DELTA REFERS TO THE dB DIFFERENCE BETWEEN THE HORIZONTAL OR VERTICAL READING AND THE dB LIMIT AT THAT FREQUENCY.

THE FOLLOWING ARE PEAK READINGS WITH CABLE AND ANTENNA FACTORS INCLUDED EXCEPT AS NOTED BY "QP".

"QP" = QUASI PEAK READING AT THAT FREQUENCY

SPECTRUM ANALYZER SETTINGS:

RBW: 100KHz

VBW: 100KHz

TEST DISTANCE BETWEEN DEVICE UNDER TEST AND RECEIVING ANTENNA WAS

3-METER

NOTE!! "FAILURE" INDICATES THAT THE DEVICE EXCEEDS THE FCC CLASS "B" LIMIT AT THAT FREQUENCY

FREQ. (MHz)	RAW H	RAW V	ANTENNA FACTOR	HORZ. dBuV/m	VERT. dBuV/m	H DELTA (dBuV)	V DELTA (dBuV)	LIMIT CLASS "B"	FREQ. STATUS
89.7	33.5	28.8	10.25	43.75	39.05	-4.25	-8.95	48	
179.4	0	8.7	15.44	AMBIENT	24.14	NO DELTA	-19.36	43.5	
269.1	8.4	0	15.34	23.74	AMBIENT	-22.26	NO DELTA	46	
358.8	8.1	5.1	17.79	25.89	22.89	-20.11	-23.11	46	
448.5	5.8	0	21.47	27.27	AMBIENT	-18.73	NO DELTA	46	
538.2	0	0	22.14	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
627.9	11.1	4.4	22.44	33.54	26.84	-12.46	-19.16	46	
717.6	0	0	24.3	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
807.3	0	0	27.04	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
897	0	0	28.14	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
986.7	0	0	29.2	AMBIENT	AMBIENT	NO DELTA	NO DELTA	53.9	

Average

DATA SHEET

PHILIPS CONSUMER ELECTRONICS COMPANY
EMI LAB
P.O. BOX 14810
KNOXVILLE, TENNESSEE 37914-1810
TEL:(423)-521-4720 FAX:(423)-521-4786

OPEN FIELD RADIATION MEASUREMENT FCC CLASS "B" LIMITS

REPORT #:
MANUFACTURE: Griffin Tech
MODEL # BH1415F
DATE: 2003-03-13
SUPPORT EQUIPMENT
Unit on End

DELTA REFERS TO THE dB DIFFERENCE BETWEEN THE HORIZONTAL OR VERTICAL READING AND THE dB LIMIT AT THAT FREQUENCY.

THE FOLLOWING ARE PEAK READINGS WITH CABLE AND ANTENNA FACTORS INCLUDED EXCEPT AS NOTED BY "QP".

"QP" = QUASI PEAK READING AT THAT FREQUENCY

SPECTRUM ANALYZER SETTINGS:

RBW: 100KHz

VBW: 100KHz

TEST DISTANCE BETWEEN DEVICE UNDER TEST AND RECEIVING ANTENNA W/ 3-METER

NOTE!! "FAILURE" INDICATES THAT THE DEVICE EXCEEDS THE FCC CLASS "B" LIMIT AT THAT FREQUENCY

FREQ. (MHz)	HORZ. dBuV/m	VERT. dBuV/m	H DELTA (dBuV)	V DELTA (dBuV)	LIMIT CLASS "B"	FREQ. STATUS
89.7	32.05	47.15	-15.95	-0.85	48	Average
179.4	AMBIENT	26.64	NO DELTA	-16.86	43.5	
269.1	AMBIENT	20.74	NO DELTA	-25.26	46	
358.8	AMBIENT	24.89	NO DELTA	-21.11	46	
448.5	AMBIENT	28.07	NO DELTA	-17.93	46	
538.2	AMBIENT	26.24	NO DELTA	-19.76	46	
627.9	26.84	32.14	-19.16	-13.86	46	
717.6	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
807.3	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
897	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
986.7	AMBIENT	AMBIENT	NO DELTA	NO DELTA	53.9	

DATA SHEET

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TEL: (423)-521-4720 FAX: (423)-521-4786

OPEN FIELD RADIATION MEASUREMENT FCC CLASS "B" LIMITS

REPORT #:
MANUFACTURE: Griffin Tech
MODEL # BH1415F
DATE: 2003-03-13
SUPPORT EQUIPMENT
Unit on Side

DELTA REFERS TO THE dB DIFFERENCE BETWEEN THE HORIZONTAL OR VERTICAL READING AND THE dB LIMIT AT THAT FREQUENCY.

THE FOLLOWING ARE PEAK READINGS WITH CABLE AND ANTENNA FACTORS INCLUDED EXCEPT AS NOTED BY "QP".

"QP" = QUASI PEAK READING AT THAT FREQUENCY

SPECTRUM ANALYZER SETTINGS:

RBW: 100KHz

VBW: 100KHz

TEST DISTANCE BETWEEN DEVICE UNDER TEST AND RECEIVING ANTENNA WA: 3-METER

NOTE!! "FAILURE" INDICATES THAT THE DEVICE EXCEEDS THE FCC CLASS "B" LIMIT AT THAT FREQUENCY

FREQ. (MHz)	HORZ. dBuV/m	VERT. dBuV/m	H DELTA (dBuV)	V DELTA (dBuV)	LIMIT CLASS "B"	FREQ. STATUS
98.3	41.01	36.11	-6.99	-11.89	48	Average
196.6	AMBIENT	AMBIENT	NO DELTA	NO DELTA	43.5	
294.9	26.2	21.9	-19.8	-24.1	46	
393.2	25.18	26.98	-20.82	-19.02	46	
491.5	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
589.8	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
688.1	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
786.4	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
884.7	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
983	AMBIENT	AMBIENT	NO DELTA	NO DELTA	53.9	

DATA SHEET

PHILIPS CONSUMER ELECTRONICS COMPANY

EMI LAB

P.O. BOX 14810

KNOXVILLE, TENNESSEE 37914-1810

TEL:(423)-521-4720 FAX:(423)-521-4786

OPEN FIELD RADIATION MEASUREMENT FCC CLASS "B" LIMITS

REPORT #:

MANUFACTURE: Griffin Tech

MODEL # BH1415F

DATE: 2003-03-13

SUPPORT EQUIPMENT

Unit Flat

DELTA REFERS TO THE dB DIFFERENCE BETWEEN THE HORIZONTAL OR VERTICAL READING AND THE dB LIMIT AT THAT FREQUENCY.

THE FOLLOWING ARE PEAK READINGS WITH CABLE AND ANTENNA FACTORS INCLUDED EXCEPT AS NOTED BY "QP".

"QP" = QUASI PEAK READING AT THAT FREQUENCY

SPECTRUM ANALYZER SETTINGS:

RBW: 100KHz

VBW: 100KHz

TEST DISTANCE BETWEEN DEVICE UNDER TEST AND RECEIVING ANTENNA W/ 3-METER

NOTE!! "FAILURE" INDICATES THAT THE DEVICE EXCEEDS THE FCC CLASS "B" LIMIT AT THAT FREQUENCY

FREQ. (MHz)	HORZ. dBuV/m	VERT. dBuV/m	H DELTA (dBuV)	V DELTA (dBuV)	LIMIT CLASS "B"	FREQ. STATUS
98.3	41.61	36.11	-6.39	-11.89	48	Average
196.6	AMBIENT	AMBIENT	NO DELTA	NO DELTA	43.5	
294.9	26.1	22.8	-19.9	-23.2	46	
393.2	25.08	27.48	-20.92	-18.52	46	
491.5	26.48	24.98	-19.52	-21.02	46	
589.8	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
688.1	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
786.4	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
884.7	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
983	AMBIENT	AMBIENT	NO DELTA	NO DELTA	53.9	

DATA SHEET

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P.O. BOX 14810
KNOXVILLE, TENNESSEE 37914-1810
TEL: (423)-521-4720 FAX: (423)-521-4786

OPEN FIELD RADIATION MEASUREMENT FCC CLASS "B" LIMITS

REPORT #:
MANUFACTURE: Griffin Tech
MODEL # BH1415F
DATE: 2003-03-13
SUPPORT EQUIPMENT: Unit on End

DELTA REFERS TO THE dB DIFFERENCE BETWEEN THE HORIZONTAL OR VERTICAL READING AND THE dB LIMIT AT THAT FREQUENCY.
THE FOLLOWING ARE PEAK READINGS WITH CABLE AND ANTENNA FACTORS INCLUDED EXCEPT AS NOTED BY "QP".

"QP" = QUASI PEAK READING AT THAT FREQUENCY

SPECTRUM ANALYZER SETTINGS:

RBW: 100KHz

VBW: 100KHz

TEST DISTANCE BETWEEN DEVICE UNDER TEST AND RECEIVING ANTENNA WAS

3-METER

NOTE!! "FAILURE" INDICATES THAT THE DEVICE EXCEEDS THE FCC CLASS "B" LIMIT AT THAT FREQUENCY

FREQ. (MHz)	RAW H	RAW V	ANTENNA FACTOR	HORZ. dBuV/m	VERT. dBuV/m	H DELTA (dBuV)	V DELTA (dBuV)	LIMIT CLASS "B"	FREQ. STATUS
98.3	14.5	33.4	10.71	25.21	44.11	-22.79	-3.89	48	Average
196.6	0	0	16.94	AMBIENT	AMBIENT	NO DELTA	NO DELTA	43.5	
294.9	3.6	7.3	16.8	20.4	24.1	-25.6	-21.9	46	
393.2	6.7	10.6	18.58	25.28	29.18	-20.72	-16.82	46	
491.5	0	6.1	21.18	AMBIENT	27.28	NO DELTA	-18.72	46	
589.8	0	0	21.9	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
688.1	0	0	24.68	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
786.4	0	0	26.18	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
884.7	0	0	27.8	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
983	0	0	29.2	AMBIENT	AMBIENT	NO DELTA	NO DELTA	53.9	
	0	0	29.2						

DATA SHEET

PHILIPS CONSUMER ELECTRONICS COMPANY
EMI LAB
P.O. BOX 14810
KNOXVILLE, TENNESSEE 37914-1810
TEL: (423)-521-4720 FAX: (423)-521-4786

OPEN FIELD RADIATION MEASUREMENT FCC CLASS "B" LIMITS

REPORT #:
MANUFACTURE: Griffin Tech
MODEL # BH1415F
DATE: 2003-03-13
SUPPORT EQUIPMENT: Unit on Side

DELTA REFERS TO THE dB DIFFERENCE BETWEEN THE HORIZONTAL OR VERTICAL READING AND THE dB LIMIT AT THAT FREQUENCY.
THE FOLLOWING ARE PEAK READINGS WITH CABLE AND ANTENNA FACTORS INCLUDED EXCEPT AS NOTED BY "QP".

"QP" = QUASI PEAK READING AT THAT FREQUENCY

SPECTRUM ANALYZER SETTINGS:

RBW: 100KHz

VBW: 100KHz

TEST DISTANCE BETWEEN DEVICE UNDER TEST AND RECEIVING ANTENNA WAS

3-METER

NOTE!! "FAILURE" INDICATES THAT THE DEVICE EXCEEDS THE FCC CLASS "B" LIMIT AT THAT FREQUENCY

FREQ. (MHz)	RAW H	RAW V	ANTENNA FACTOR	HORZ. dBuV/m	VERT. dBuV/m	H DELTA (dBuV)	V DELTA (dBuV)	LIMIT CLASS "B"	FREQ. STATUS
106.2	29.3	23.4	11.26	40.56	34.66	-7.44	-13.34	48	Average
212.4	5	0	17.86	22.86	AMBIENT	-20.64	NO DELTA	43.5	
318.6	10.6	4	18.06	28.66	22.06	-17.34	-23.94	46	
424.8	10.5	6.2	19.25	29.75	25.45	-16.25	-20.55	46	
531	8.1	4.1	22.28	30.38	26.38	-15.62	-19.62	46	
637.2	4.7	4.1	23.27	27.97	27.37	-18.03	-18.63	46	
743.4	0	0	24.11	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
849.6	0	0	27.3	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
955.8	0	0	28.76	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
	0	0	29.2						

DATA SHEET

PHILIPS CONSUMER ELECTRONICS COMPANY
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KNOXVILLE, TENNESSEE 37914-1810
TEL: (423)-521-4720 FAX: (423)-521-4786

OPEN FIELD RADIATION MEASUREMENT FCC CLASS "B" LIMITS

REPORT #:
MANUFACTURE: Griffin Tech
MODEL # BH1415F
DATE: 2003-03-13
SUPPORT EQUIPMENT: Unit Flat

DELTA REFERS TO THE dB DIFFERENCE BETWEEN THE HORIZONTAL OR VERTICAL READING AND THE dB LIMIT AT THAT FREQUENCY.
THE FOLLOWING ARE PEAK READINGS WITH CABLE AND ANTENNA FACTORS INCLUDED EXCEPT AS NOTED BY "QP".

"QP" = QUASI PEAK READING AT THAT FREQUENCY

SPECTRUM ANALYZER SETTINGS:

RBW: 100KHz

VBW: 100KHz

TEST DISTANCE BETWEEN DEVICE UNDER TEST AND RECEIVING ANTENNA WAS

3-METER

NOTE!! "FAILURE" INDICATES THAT THE DEVICE EXCEEDS THE FCC CLASS "B" LIMIT AT THAT FREQUENCY

FREQ. (MHz)	RAW H	RAW V	ANTENNA FACTOR	HORZ. dBuV/m	VERT. dBuV/m	H DELTA (dBuV)	V DELTA (dBuV)	LIMIT CLASS "B"	FREQ. STATUS
106.2	29.1	22.3	11.26	40.36	33.56	-7.64	-14.44	48	Average
212.4	4.7	0	17.86	22.56	AMBIENT	-20.94	NO DELTA	43.5	
318.6	9.8	3.4	18.06	27.86	21.46	-18.14	-24.54	46	
424.8	9.7	4.5	19.25	28.95	23.75	-17.05	-22.25	46	
531	7.6	3	22.28	29.88	25.28	-16.12	-20.72	46	
637.2	4.5	3.3	23.27	27.77	26.57	-18.23	-19.43	46	
743.4	0	0	24.11	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
849.6	0	0	27.3	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
955.8	0	0	28.76	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	

DATA SHEET

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TEL: (423)-521-4720 FAX: (423)-521-4786

OPEN FIELD RADIATION MEASUREMENT FCC CLASS "B" LIMITS

REPORT #:
MANUFACTURE: Griffin Tech
MODEL # BH1415F
DATE: 2003-03-13
SUPPORT EQUIPMENT
Unit on End

DELTA REFERS TO THE dB DIFFERENCE BETWEEN THE HORIZONTAL OR VERTICAL READING AND THE dB LIMIT AT THAT FREQUENCY.

THE FOLLOWING ARE PEAK READINGS WITH CABLE AND ANTENNA FACTORS INCLUDED EXCEPT AS NOTED BY "QP".

"QP" = QUASI PEAK READING AT THAT FREQUENCY

SPECTRUM ANALYZER SETTINGS:

RBW: 100KHz

VBW: 100KHz

TEST DISTANCE BETWEEN DEVICE UNDER TEST AND RECEIVING ANTENNA WAS 3-METER

NOTE!! "FAILURE" INDICATES THAT THE DEVICE EXCEEDS THE FCC CLASS "B" LIMIT AT THAT FREQUENCY

FREQ. (MHz)	HORZ. dBuV/m	VERT. dBuV/m	H DELTA (dBuV)	V DELTA (dBuV)	LIMIT CLASS "B"	FREQ. STATUS
106.2	20.86	41.76	-27.14	-6.24	48	Average
212.4	AMBIENT	22.26	NO DELTA	-21.24	43.5	
318.6	22.16	25.86	-23.84	-20.14	46	
424.8	23.55	28.35	-22.45	-17.65	46	
531	25.88	29.48	-20.12	-16.52	46	
637.2	26.77	29.47	-19.23	-16.53	46	
743.4	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
849.6	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	
955.8	AMBIENT	AMBIENT	NO DELTA	NO DELTA	46	



PCEC REPORT # 30581

SECTION 8 SUMMARY OF RESULTS

SUMMARY OF RESULTS (ANSI C63.4 - 1992)

PCEC REPORT #30581

The measurement uncertainty of this data (Report #30581) is (+-) 2.34 dB for radiated emissions. This report applies only to the equipment tested, Griffin Technology Model BH1415F (4014-TRIP) FM Transmitter and indicates that this equipment MEETS the requirements as set forth by the FCC for Intentional Radiators.

DEVIATIONS: NONE

MODIFICATIONS: NONE

Mass production of final instrument systems utilizing the exact electrical/ mechanical components, lead dress, and RF ground paths as tested by PCEC will not likely cause harmful interference to any radio communication, radio navigation or safety services. Any deviation in design from the system tested by our facility will require further verification of Compliance by PCEC. This test report is the confidential property of Griffin Technology. Extracts from this test report shall not be reproduced except in full without our written approval.

PHILIPS CONSUMER ELECTRONICS COMPANY



Richard K. Moyers
Business Coordinator,
Philips Testing Service
(NVLAP Signatory)

