

EMC EMISSION - TEST REPORT

UNITED STATES STANDARD 47 CFR PARTS 2, 22, and 90

Test Report File No. : **0006-08** Date of Issue: 25 January 2000

Model / Serial No. : **303-VC / --**

Product Type : **PageCenter**

Applicant : **SONIK**

Manufacturer : **SONIK**

License holder : **SONIK**

Address : **310 Via Cruz, Suite 111**
: **San Marcos, CA 92069**

Test Result : **■ Positive** **□ Negative**

Test Project Number
Reference(s) : **0006-08**

Total pages - Test Report : **19**

NOTE: All test equipment used during testing is calibrated and traceable to NIST.

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DIRECTORY - EMISSIONS

Test Report

	Pages
Test Report	1 - 8
Directory	2
Test Regulations	3
General Remarks and Summary	8
Equipment	
Radiated Emissions	5

Technical Documentation

Test Data Sheets	TD1
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Appendices

Appendix A	A1
Test Setups (Photographs)	
Appendix B	B1
Product Information Form(s)	
Appendix C	C1
Change History	
Appendix D	D1
Supplemental Information	

EMISSIONS TEST REGULATIONS :

The emissions tests were performed according to the following regulations:

- EN 50081-1 / 1991

- EN 55011 / 1991

- Group 1

- Group 2

- EN 55014 / 1993

- Class A

- Class B

- Household appliances and similar

- Portable tools

- Semiconductor devices

- VCCI

- Class A ITE

- Class B ITE

- 47 CFR Part 15, Subpart B

- 107(b)

- 107(a)

- 107(e)

- Class A

- Class B

- 109(b)

- 109(a)

- 109(g)

- Class A

- Class B

- 47 CFR Part 2

- 2.1053

- 47 CFR Part 22

- 22.917

- 47 CFR Part 90

- 90.210

- AS/NZS 3548: 1995

- Class A

- Class B

- CISPR 11 (1990)

- Group 1

- Group 2

- Class A

- Class B

- CISPR 22 (1998)

- Class A

- Class B

Environmental Conditions In The Laboratory:

	Actual
Temperature:	: 16 °C
Relative Humidity:	: 62 %
Atmospheric Pressure:	: 100.0 kPa

Power Supply Utilized:

Power supply system : 120 V / 60 Hz / 1φ

Symbol Definitions:

- - Applicable
- - Not Applicable

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**

■ - Canyon #2 (3- and 10-Meter Open Area Test Site), Carroll Canyon, San Diego (Calibration Due Date: 20 May 2000)

Testing was performed at a test distance of :

■ - 3 meters

Test Equipment Used :

Model No.	Prop. No.	Description	Manufacturer	Serial No.	Cal Due Date
LPB 2520/A	739	Antenna Bilog	Antenna Research	1170	04/00
ESVS 30	466	EMI Test Receiver	Rohde & Schwarz	833825/003	12/00

Remarks: One year calibration cycle for all test equipment.

Equipment Under Test (EUT) Test Operation Mode - Emissions Tests :

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

- Standby
 - Test Program (H - Pattern)
 - Test Program (Color Bar)
 - Test Program (Customer Specified)
 - Practice Operation
 - Normal Operating Mode
 - Transmit mode: mid, low and high band
-

Configuration of the equipment under test:

- See Constructional Data Form in Appendix B - Page B2
- See Product Information Form(s) in Appendix B - Page B2

The following peripheral devices and interface cables were connected during the testing:

- | | |
|-----------------------------------------------------|----------------|
| <input type="checkbox"/> - _____ | Type : _____ |
| <input type="checkbox"/> - _____ | Type : _____ |
| <input type="checkbox"/> - _____ | Type : _____ |
| <input type="checkbox"/> - _____ | Type : _____ |
| <input type="checkbox"/> - _____ | Type : _____ |
| <input type="checkbox"/> - _____ | Type : _____ |
| <input type="checkbox"/> - _____ | Type : _____ |
| <input type="checkbox"/> - _____ | Type : _____ |
| <input type="checkbox"/> - _____ | Type : _____ |
| <input type="checkbox"/> - unshielded power cable | |
| <input type="checkbox"/> - unshielded cables | |
| <input type="checkbox"/> - shielded cables | MPS.No.: _____ |
| <input type="checkbox"/> - customer specific cables | |
| <input type="checkbox"/> - _____ | |
| <input type="checkbox"/> - _____ | |

Emissions Test Results:

Field Strength of Spurious Radiation			
■ - PASS	□ - FAIL	□ - NOT APPLICABLE	
Minimum limit margin (low band)		6.8 dB	at 300 MHz
Minimum limit margin (mid band)		16.4 dB	at 324 MHz
Minimum limit margin (high band)		12 dB	at 348 MHz
Remarks:	<hr/> <hr/>		

GENERAL REMARKS:

NOTE: All photographs are representative of setup for maximum emissions.

SUMMARY:

All tests according to the regulations cited on page 3 were

- Performed
- Not Performed

The Equipment Under Test

- **Fulfills** the general approval requirements cited on page 3.
- **Does not** fulfill the general approval requirements cited on page 3.

Statement of Measurement Uncertainty

The data and results referenced in this document are true and accurate. The measurement uncertainty is calculated to be ± 2 dB for conducted emissions and ± 4 dB for radiated emissions.

Equipment Received Date: 17 January 2000

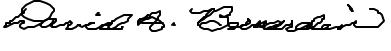
Testing Start Date: 17 January 2000

Testing End Date: 17 January 2000

- TÜV PRODUCT SERVICE, INC. -

Responsible Engineer: Mary Washington Responsible Engineer: Dave Bernardin


Mary Washington
(EMC Test Engineer)


Dave Bernardin
(EMC Engineer)

Technical Documentation

Test Data Sheets

Page TD1 of TD4

Rev.No 1.0

REPORT No: S0006

SPEC: FCC Part 2, Para 2.1053; Part 22, Para. 22.917;
Part 90, Para 90.210

CUSTOMER: SONIK TECHNOLOGIES CORPORATION

TEST DIST: 3 Meters

E U T: PageCenter Model 303-VC S/N 35499-078

TEST SITE: 2

EUT MODE: Transmit Mode, Low Band

BICONICAL 739

DATE: 17-Jan-00

TESTED BY: Dave Bernardin

LOG PERIODIC: 739

NOTES: Peak with 120 KHz measurement bandwidth.

RCVR: 466

Limit = $F_s(dB\text{uV/m}) - 43 + 10\log(P)w$. Power = 2.6W

$$\text{Limit} = 126.3 - 47.1 = 79.2 \text{ dBuV/m}$$

Temperature: 16C Relative Humidity:

THE BOSTONIAN

Temperature: 16C Relative Humidity: 62%

EUT MARGIN -6.8 dB at 300 MHz

VERTICAL HORIZONTAL COR

FREQUENCY **VERTICAL** **HORIZONTAL**
measured measured

measured measured

CORRECTION, MAXIMUM FACTOR, CORRECTION

RECEIVED | 1971
UNIT | MARCH

REPORT No: S0006

SPEC: FCC Part 2, Para 2.1053; Part 22, Para. 22.917;
Part 90, Para 90.210

CUSTOMER: SONIK TECHNOLOGIES CORPORATION

TEST DIST: 3 Meters

EUT: PageCenter Model 303-VC S/N 35499-078

TEST SITE:

EUT MODE: Transmit Mode, High Band

BICONICAL: 739

DATE: 17-Jan-00 TESTED BY: Dave Bernardino

LOG PERIODIC: 739

NOTES: Peak with 120 KHz measurement bandwidth.

RCVR: 466

Limit = $F_s(\text{dBuV/m}) - 43 + 10\log(P)w$, Power = 2.6W

Limit = 114 - 47 = 67dBuV/m

Temperature: 16C

-12.0 dB at 348 MHz

VERTICAL HORIZONTAL CORRECTION

SCIEIER | ELIT

Temperature: 16C Relative Humidity: 62%

Relative Humidity: 62%

Appendix A

Test Setups (Photographs)

NOTE: All photographs are representative of setup for maximum emissions.

Photograph of Test Setup:
Spurious Radiation Emissions



Appendix B

Product Information Form(s)

Page B1 of B3

Rev.No 1.0

PRODUCT DESCRIPTION				
NAME, MODEL, SERIAL # OF EUT:		Pagecenter, Model 303-VC		
DESCRIPTION OF EUT:		--		
Components of EUT				
Description	Model Number	Serial Number	FCC ID Number	
Pagecenter	303-VC	35499-078	MNT-PC-VC	
OPERATING MODE(S):		Receiver; voice or data modulation; narrowband (12.5 kHz) or wideband (25 kHz); transmit deviation modes using FM.		
I/O CABLES				
CONNECTION	Computer ports (2)	External switches	Speaker/Mic	
SHIELD	No	No	No	
CONNECTORS	RS-232, DB9	DB15	Stereo mini-plug	
TERMINATION TYPE	--	--	--	
LENGTH	--	--	--	
REMOVABLE	Yes	Yes	Yes	
CONNECTION	Phone line	Keyboard		
SHIELD	No	No		
CONNECTORS	RJ-11	PS-2		
TERMINATION TYPE	--	--		
LENGTH	--	--		
REMOVABLE	Yes	Yes		
POWER CORDS				
UNIT:	--	UNIT:		
MANUFACTURER:		MANUFACTURER:		
SHIELDED:		SHIELDED:		
LENGTH:		LENGTH:		
POWER INTERFACE				
FREQUENCY/AC/DC VOLTAGE:	60 Hz / 120 Vac			
PHASES/CURRENT:	1 / --			
OSCILLATOR FREQUENCIES				
FREQUENCY (Mhz)	EUT LOCATION		DESCRIPTION OF USE	
48	Digital board		CPU clock	
4	Digital board		CTCSS encloser/decoder	
3.57	Digital board		DTMF encoder/decoder	
17.5	RF board		PLL reference frequency	
21.9	RF board		Second L.O. for receiver	
132-150	RF board		First L.O. for receiver	
POWER SUPPLY				
DESCRIPTION	MANUFACTURER	MODEL #	SERIAL #	SWITCHING/LINEAR FREQ.
--				
POWER LINE FILTERS				
MANUFACTURER	MODEL NO.		QTY.	LOCATION ON EUT
--				
CRITICAL EMI COMPONENTS				
DESCRIPTION	MANUFACTURER	PART # OR VALUE	QTY.	LOCATION ON EUT
--				
DESCRIPTION OF ENCLOSURE:		Plastic enclosure with metal coating on inside surface.		

INTERFACING AND/OR SIMULATORS PERIPHERAL EQUIPMENT:				
DESCRIPTION	MANUFACTURER	MODEL #	SERIAL #	FCC ID
Laptop computer	--	--	--	--
Keyboard	Hewlett Packard	--	--	--
Switch box test fixture	Sonik	--	--	--
BLOCK DIAGRAM:	--			

Appendix C

Change History

Not Applicable

Appendix D

Supplemental Information

Not Applicable