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February 21, 2006

SANGOMA TECHNOLOGIES INC.
50 McIntosh Drive, STE. 120
Markham, Ontario
Canada, L3R 9T3

Attn.: Mr. Igor Agranovski

Subject: Verification Testing under FCC PART 15, SUBPART B, Class A - Unintentional Radiators.

Product: A104D, A200
Models: A104D, A200

Dear Mr. Agranovski

The product sample, as provided by you, has been tested and found to comply with **FCC PART 15, SUBPART B, Class A - Unintentional Radiators.**

Enclosed you will find copies of the engineering report. If you have any queries, please do not hesitate to contact us.

Yours truly,



Tri Minh Luu, P. Eng.,
V.P., Engineering

Encl

VERIFICATION CERTIFICATE



NOT TRANSFERABLE

This Verification Certificate is hereby issued to the named GRANTEE and is VALID ONLY for the equipment identified hereon for use under the rules and regulations listed below:

GRANTEE:
Address: SANGOMA TECHNOLOGIES INC.
50 MCINTOSH Drive, STE. 120
Markham, Ontario
Canada, L3R 9T3
Contact Person: Mr. Igor Agranovski
Phone #: 905-474-1990 (ext. 111)
Fax #: 905-474-9223
Email Address: igor@sangoma.com

Equipment Type: Unintentional Radiators for Use in Non-Residential Areas
Product Name: A104D, A200
Models No.: A104D, A200
Year of manufacture: 2006

The above product was tested by UltraTech Engineering Labs Inc. and found to comply with: FCC Part 15, Subpart B - Class A Unintentional Radiators for Use in Commercial and Industrial Areas.

- Note(s):** See attached report, UltraTech's File No.: SNG-024-FCC15A, dated February 21, 2006, for details and conditions of Verification Compliance.



Approved by: Tri M. Luu, P.Eng.
V.P. – Engineering

UltraTech

3000 Bristol Circle, Oakville, Ontario, Canada, L6H 6G4
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31040/SIT



C-1376



46390-2049



200093-0



SL2-IN-E-1119R



00-034



ENGINEERING TEST REPORT



A104D and A200
Models: A104D and A200

Applicant: **SANGOMA TECHNOLOGIES INC.**
50 MCINTOSH Drive, STE. 120
Markham, Ontario
Canada, L3R 9T3

Tested in Accordance With

Federal Communications Commission (FCC)
CFR 47, Part 15, Subpart B
Class A Unintentional Radiators

UltraTech's File No.: SNG-024-FCC15A

This Test report is Issued under the Authority of
Tri M. Luu, Professional Engineer,
Vice President of Engineering
UltraTech Group of Labs

Date: February 21, 2006, 2006



Report Prepared by: Lien M. Trinh

Tested by: William Truong, EMI/EMC Technican

Issued Date: February 21, 2006

Test Dates: January 19, 2006

- *The results in this Test Report apply only to the sample(s) tested, and the sample tested is randomly selected.*
- *This report must not be used by the client to claim product endorsement by NVLAP or any agency of the US Government.*

UltraTech

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Tel.: (905) 829-1570 Fax.: (905) 829-8050
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00-034



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EXHIBIT 1. INTRODUCTION

1.1. SCOPE

Reference:	FCC Part 15, Subpart B, Sections 15.107 & 15.109
Title	Telecommunication - Code of Federal Regulations, CFR 47, Part 15
Purpose of Test:	To gain FCC Verification Authorization for a Class A Unintentional Radiator.
Test Procedures	Both conducted and radiated emissions measurements were conducted in accordance with American National Standards Institute ANSI C63.4 - American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.
Environmental Classification:	Residential, Light-industry, Commercial & Industry

1.2. RELATED SUBMITTAL(S)/GRANT(S)

None

1.3. NORMATIVE REFERENCES

Publication	Year	Title
CISPR 22 CISPR 22 +A1 EN 55022	2003-04-10 2004-10-14 2003	Information Technology Equipment - Radio Disturbance Characteristics – Limits and Methods of Measurement
ANSI C63.4	2004	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 KHz to 40 GHz
CISPR 16-1-1	2003	Specification for radio disturbance and immunity measuring apparatus and methods. Part 1-1: Measuring Apparatus
CISPR 16-2-1	2004	Specification for radio disturbance and immunity measuring apparatus and methods. Part 2-1: Conducted disturbance measurement
FCC CFR Parts 0-15	2005	Code of Federal Regulations – Telecommunication

EXHIBIT 2. PERFORMANCE ASSESSMENT

2.1. CLIENT INFORMATION

APPLICANT:	
Name:	SANGOMA TECHNOLOGIES INC.
Address:	50 McIntosh Drive, STE. 120 Markham, Ontario Canada, L3R 9T3
Contact Person:	Mr. Igor Agranovski Phone #: 905-474-1990 (ext. 111) Fax #: 905-474-9223 Email Address: igor@sangoma.com

MANUFACTURER:	
Name:	SANGOM TECHNOLOGIES INC.
Address:	50 McIntosh Drive, STE. 120 Markham, Ontario Canada, L3R 9T3
Contact Person:	Mr. Igor Agranovski Phone #: 905-474-1990 (ext. 111) Fax #: 905-474-9223 Email Address: igor@sangoma.com

2.2. EQUIPMENT UNDER TEST (EUT) INFORMATION

The following information (with the exception of the Date of Receipt) has been supplied by the applicant.

Brand Name	SANGOMA TECHNOLOGIES INC.
Product Name	A104D and A201
Models No.:	A104D and A201
Part Number:	A104D and A201
Serial Number:	10404D0-00000(A104D), 20000A0-00000(A200)
Type of Equipment	Unintentional Radiators
Oscillators' Frequencies	33.333MHz, 8.192MHz, 12.352MHz, 2.048MHz
Power input source:	5V, 12V

2.3. LIST OF COMPONENTS/PARTS OF THE EUT

Port Number	Parts Description	Parts Number/ Model Number	Serial Number	FCC/CE Compliance (FCC & CE)
1	FPGA (A104D)	Xilinx Spartan, XC3S1000	-	FCC Logo & CE
2	CPLD (A104D & A200)	Xilinx, XC95144XL	-	FCC Logo & CE
3	Hardware Echo Cancellor (A140D & A200)	Octsic OCT6116-128S	-	FCC Logo & CE
4	T1/E1 Framer (A104D)	PMC PM4354-NI	-	FCC Logo & CE
5	Flash Memory (A104D & A200)	ST, M29W800D8	-	FCC Logo & CE
6	FPGA (a200)	Xilinx Spartan, XC3S400	-	FCC Logo & CE

2.4. LIST OF EUT'S PORTS

Port Number	EUT's Port Description	Number of Identical Ports	Connector Type	Cable Type (Shielded/Non-shielded)
1	T1/E1/J1 (A104D card)	4	RJ45	Flat, Non-shielded
2	Analog telephone line (A200 card)	4	RJ45	Flat, Non-shielded)

2.5. ANCILLARY EQUIPMENT

The EUT was tested while connected to the following representative configuration of ancillary equipment necessary to exercise the ports during tests:

Ancillary Equipment # 1	
Brand name:	IBM Monitor
Model Name or Number:	6332-02N
Serial Number:	66-A9934
Cable Type:	Shielded
Connected to EUT's Port:	HD15

Ancillary Equipment # 2	
Brand name:	HP Printer
Model Name or Number:	C4549A
Serial Number:	US6331G23P
FCC ID:	B94C2164X
Cable Type:	Shielded
Connected to EUT's Port:	DB25

Ancillary Equipment # 3	
Brand name:	HP Keyboard
Part Number:	5187-0341
Serial Number:	SC0231024158
Cable Type:	Shielded
Connected to EUT's Port:	Keyboard Port

Ancillary Equipment # 4	
Brand name:	Compaq Mouse
Model Name or Number:	MO42KC
Serial Number:	030250666
Cable Type:	Shielded
Connected to EUT's Port:	Mouse Port

Ancillary Equipment # 5	
Brand name:	Polk Audio Speakers
Cable Type:	Non-shielded
Connected to EUT's Port:	1/8" Mini Jack

Ancillary Equipment # 6	
Brand name:	Headset
Cable Type:	Non-shielded
Connected to EUT's Port:	1/8" Mini Jack

Ancillary Equipment # 7	
Brand name:	Microphone
Cable Type:	Non-shielded
Connected to EUT's Port:	1/8" Mini Jack

EXHIBIT 3. EUT OPERATING CONDITIONS AND CONFIGURATIONS DURING TESTS

3.1. CLIMATE TEST CONDITIONS

The climate conditions of the test environment are as follows:

Temperature:	20°C
Humidity:	25%
Pressure:	102 kPa
Power input source:	120Vac, 60Hz

3.2. OPERATIONAL TEST CONDITIONS & ARRANGEMENT FOR TEST SIGNALS

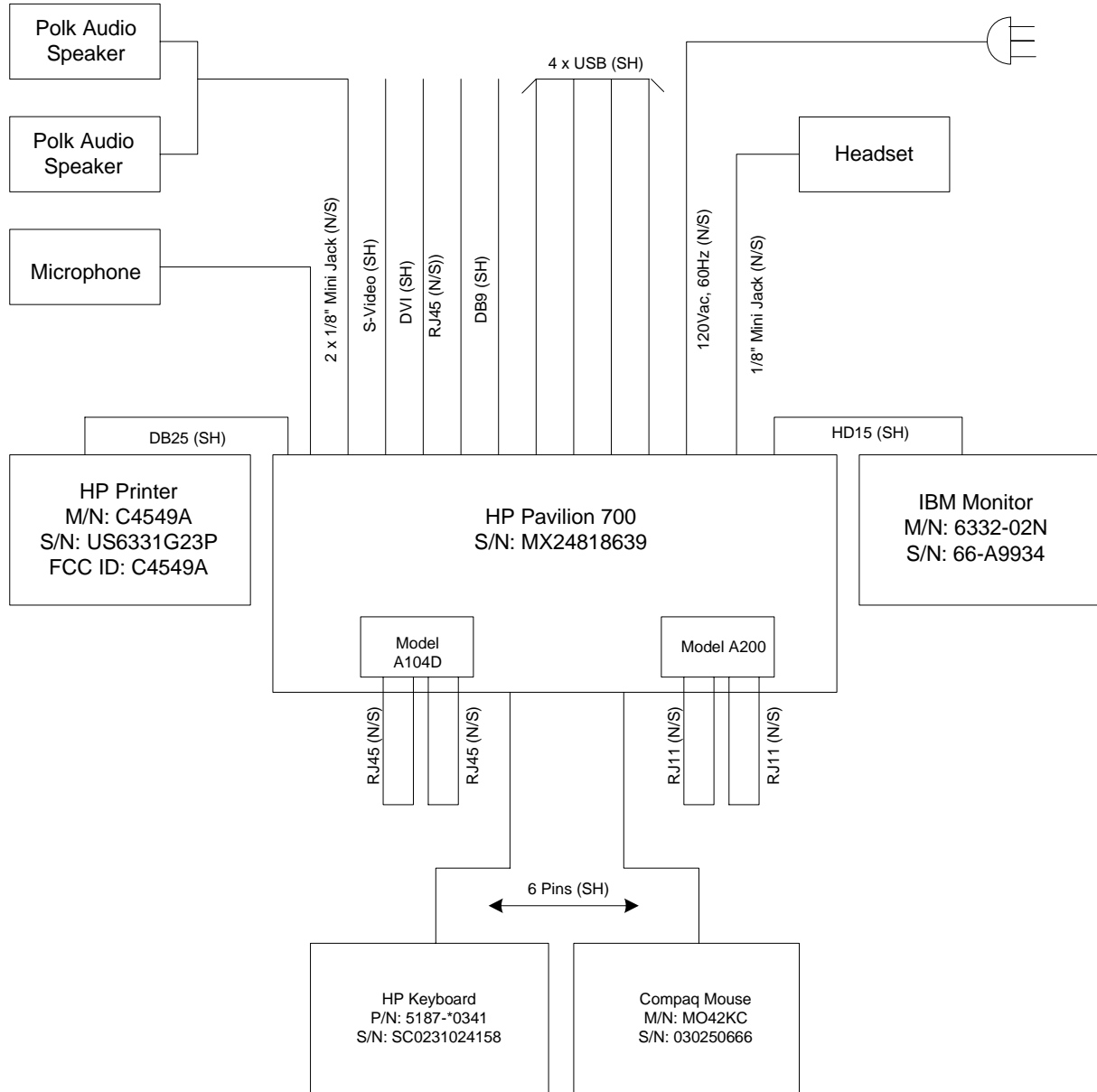
A104D is connected in back to back mode (port 1 to port 2, and port 3 to port 4).

A200 is connected in 2 loops, port 1 (fxo) to port 3 (fxs) and port 2 (fxo) to port 4 (fxs).

All 4 ports of both cards are exercised (making connections, transmitting/receiving data).

A counter of total bytes transmitted and received is maintained to indicate port activity.

3.3. BLOCK DIAGRAM OF TEST SETUP FOR AC POWERLINE CONDUCTED EMISSION & RADIATED EMISSION MEASUREMENTS

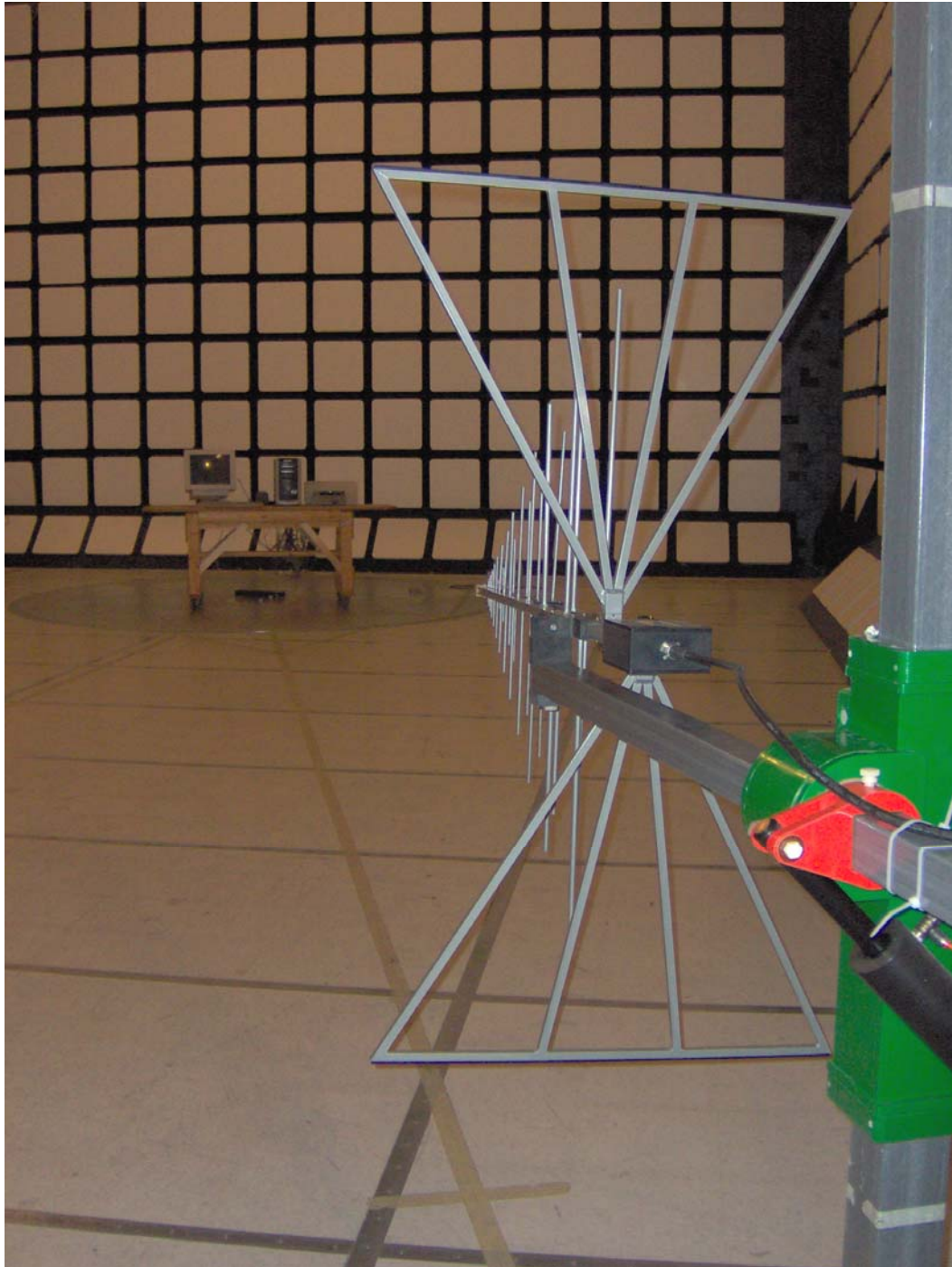


3.4. PHOTOGRAPHS OF TEST SETUP FOR AC CONDUCTED EMISSION MEASUREMENTS





3.5. PHOTOGRAPHS OF TEST SETUP FOR RADIATED EMISSION MEASUREMENTS



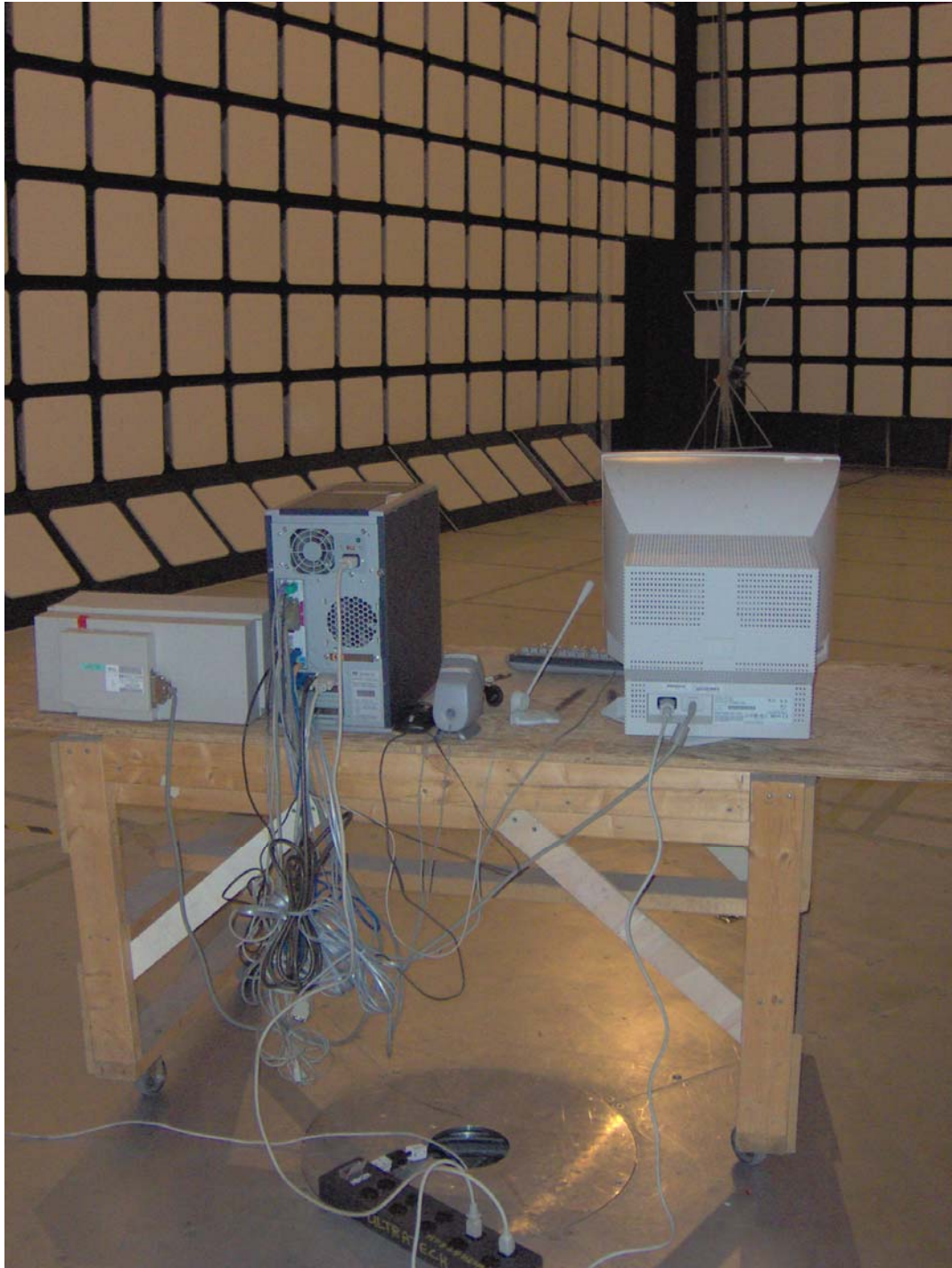


EXHIBIT 4. SUMMARY OF TEST RESULTS

4.1. LOCATION OF TESTS

All of the measurements described in this report were performed at Ultratech Group of Labs located in the city of Oakville, Province of Ontario, Canada.

- AC Powerline Conducted Emissions were performed in UltraTech's shielded room, 16'(L) by 12'(W) by 12'(H).
- Radiated Emissions were performed at the Ultratech's 10 TDK Semi-Anechoic Chamber situated in the Town of Oakville, province of Ontario. This test site been calibrated in accordance with ANSI C63.4, and found to be in compliance with the requirements of Sec. 2.948 of the FCC Rules. The descriptions and site measurement data of the Oakville 3-10 TDK Semi-Anechoic Chamber has been filed with FCC office (FCC File No.: 31040/SIT 1300B3) and Industry Canada office (Industry Canada File No.: IC2049-1). Last Date of Site Calibration: June. 20, 2005.

4.2. APPLICABILITY & SUMMARY OF EMC EMISSION TEST RESULTS

FCC PART 15, SUBPART B	TEST REQUIREMENTS	MARGIN BELOW (-) / ABOVE (+) THE LIMITS	COMPLIANCE (YES/NO)
15.107(b), Class A	AC Power Line Conducted Emissions Measurements	- 17.7 dB @ 0.20 MHz	Yes
15.109(b), Class A	Radiated Emissions from Computing Devices (Digital Devices)	- 5.4 dB @ 354.7 MHz	Yes

4.3. MODIFICATIONS REQUIRED FOR COMPLIANCE

None

4.4. DEVIATION OF THE STANDARD TEST PROCEDURES

None

EXHIBIT 5. MEASUREMENTS, EXAMINATIONS & TEST DATA FOR EMC EMISSIONS

5.1. TEST PROCEDURES

Please refer to Ultratech Test Procedures, File# ULTR-P001-2004, ANSI C63.4, CISPR 22 / EN 55022, CISPR 16-1-2 and CISPR 16-2-3 for Test Procedures.

5.2. MEASUREMENT UNCERTAINTIES

The measurement uncertainties stated were calculated in accordance with requirements of UKAS Document LAB 34 with a confidence level of 95%. Please refer to Exhibit 6 for Measurement Uncertainties.

5.3. MEASUREMENT EQUIPMENT USED

The measurement equipment used complied with the requirements of the Standards referenced in the Methods & Procedures ANSI C63.4 and CISPR 16-1-1.

5.4. AC POWERLINE CONDUCTED EMISSIONS @ FCC PART 15, SUBPART B, PARA.15.107(B)

5.4.1. Limits

The equipment shall meet the limits of the following table:

Test Frequency Range (MHz)	CLASS A LIMITS		Measuring Bandwidth
	Quasi-Peak (dBµV)	Average* (dBµV)	
0.15 to 0.5	79	66	RBW = 9 kHz VBW ≥ 9 kHz for QP VBW = 10 Hz for Average
0.5 to 30	73	60	RBW = 9 kHz VBW ≥ 9 kHz for QP VBW = 10 Hz for Average

5.4.2. Method of Measurements

Refer to Ultratech Test Procedures ULTR-P001-2004 & ANSI C63.4 for method of measurements.

5.4.3. Test Equipment List

Test Instruments	Manufacturer	Model No.	Serial No.	Frequency Range
EMI Receiver System/Spectrum Analyzer with built-in Amplifier	Hewlett Packard	HP 8546A	3520A00248	9KHz-5.6GHz, 50 Ohms
Transient Limiter	Hewlett Packard	11947A	310701998	9 kHz – 200 MHz 10 dB attenuation
L.I.S.N.	EMCO	3825/2	89071531	9 kHz – 200 MHz 50 Ohms / 50 µH
12’x16’x12’ RF Shielded Chamber	RF Shielding


5.4.4. Test Data

The emissions were scanned from 150 kHz to 30 MHz at AC mains Terminal via a LISN, and all emissions less than 40 dB below the limits were recorded.

FREQUENCY (MHz)	RF LEVEL (dBuV)	RECEIVER DETECTOR (P/QP/AVG)	QP LIMIT (dBuV)	AVG LIMIT (dBuV)	MARGIN (dB)	PASS/ FAIL	LINE TESTED (L1/L2)
0.21	39.2	QP	79.0	66.0	-39.8	PASS	L1
0.21	29.2	AVG	79.0	66.0	-36.8	PASS	L1
8.92	36.0	36	73.0	60.0	-37.0	PASS	L1
8.92	28.7	28.7	73.0	60.0	-31.3	PASS	L1
0.20	50.6	QP	79.0	66.0	-28.4	PASS	L2
0.20	48.3	AVG	79.0	66.0	-17.7	PASS	L2
0.31	40.1	QP	79.0	66.0	-38.9	PASS	L2
0.31	39.0	AVG	79.0	66.0	-27.0	PASS	L2

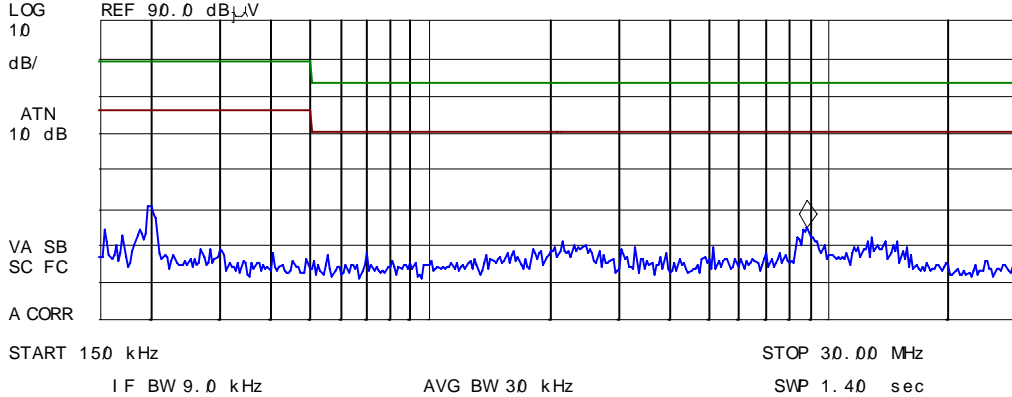
UltraTech Group of Labs	
Applicant:	Sangoma Technologies Inc.
Product:	Models A104D & A200

AC POWER LINE CONDUCTED EMISSIONS MEASUREMENT PLOT			
Detector: <input checked="" type="checkbox"/> PEAK <input checked="" type="checkbox"/> QUASI-PEAK <input checked="" type="checkbox"/> AVERAGE		Temp: 20°C	Humidity: 25%
Line Tested: L1	Line Voltage: 120Vac	Test Tech: William Tr.	Test Date: Jan. 19/06
Standard: FCC15 Class A			

17:34:20 JAN 19, 2006


Signal	Freq (MHz)	PK Amp	QP Amp	AV Amp	AV Δ L2
1	0.205420	42.1	39.2	29.2	-36.8
2	8.922275	39.4	36.0	28.7	-31.3

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 8.94 MHz
34.66 dB μ V



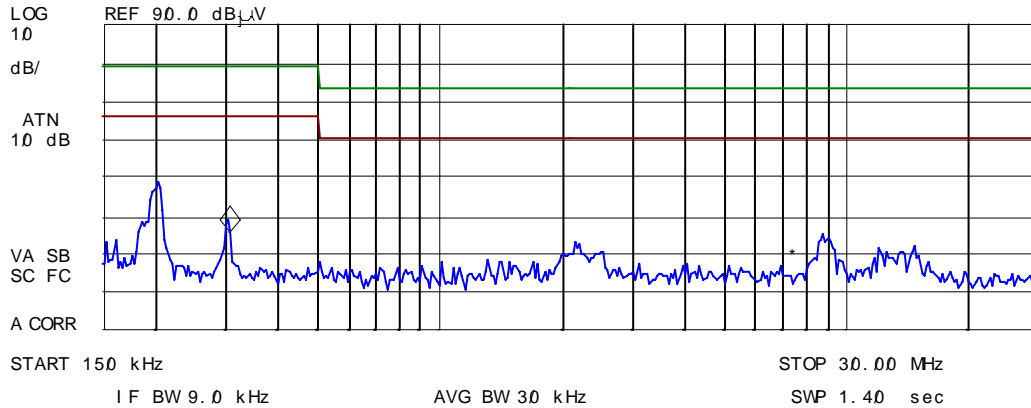
UltraTech Group of Labs	
Applicant:	Sangoma Technologies Inc.
Product:	Models A104D & A200

AC POWER LINE CONDUCTED EMISSIONS MEASUREMENT PLOT			
Detector: <input checked="" type="checkbox"/> PEAK <input checked="" type="checkbox"/> QUASI-PEAK <input checked="" type="checkbox"/> AVERAGE		Temp: 20°C	Humidity: 25%
Line Tested: L2	Line Voltage: 120Vac	Test Tech: William Tr.	Test Date: Jan. 19/06
Standard: FCC15 Class A			

17:28:40 JAN 19, 2006

Signal	Freq (MHz)	PK Amp	QP Amp	AV Amp	AV Δ L2
1	0.204235	52.7	50.6	48.3	-17.7
2	0.307620	42.0	40.1	39.0	-27.0

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 310 kHz
35.30 dB μ V



5.5. RADIATED EMISSIONS FROM CLASS A UNINTENTIONAL RADIATORS (DIGITAL DEVICES) @ FCC 15.109(B)

5.5.1. Limits

The equipment shall meet the limits of the following table:

Test Frequency Range (MHz)	Class A Limits @ 10 m (dB μ V/m)	EMI Detector Used	Measuring Bandwidth (kHz)
30 – 88	39.1	Quasi-Peak	RBW = 120 kHz, VBW \geq 120 kHz
88 – 216	43.5	Quasi-Peak	RBW = 120 kHz, VBW \geq 120 kHz
216 – 960	46.4	Quasi-Peak	RBW = 120 kHz, VBW \geq 120 kHz
Above 960	49.5	Average	RBW = 1 MHz, VBW = 10 Hz

5.5.2. Method of Measurements

Refer to Ultratech Test Procedures ULTR-P001-2004 & ANSI C63.4 for method of measurements.

The spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 -1000	5000
Above 1000	5 th harmonic of the highest frequency or 40 GHz, whichever is lower

5.5.3. Test Equipment List

Test Instruments	Manufacturer	Model No.	Serial No.	Frequency Range
Spectrum Analyzer/EMI Receiver	Rohde & Schawrz	FSEK20/B4/B21	834157/005	9 kHz – 40 GHz with external mixer
EMI Receiver System/Spectrum Analyzer with built-in Amplifier	Hewlett Packard	HP 8546A	3520A00248	9KHz-5.6GHz, 50 Ohms
Microwave Amplifier	Hewlett Packard	HP 83017A	311600661	1 GHz to 26.5 GHz
Biconilog Antenna	EMCO	3143	1029	20 MHz to 2 GHz
Horn Antenna	EMCO	3155	9701-5061	1 GHz – 18 GHz

5.5.4. Test Data

The emissions were scanned from 30 MHz to 1 GHz at 10 meters distance and all emissions less than 20 dB below the limits were recorded.

FREQUENCY (MHz)	RF LEVEL (dBuV/m)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBuV/m)	MARGIN (dB)	PASS/ FAIL
47.4	27.0	PEAK	V	39.1	-12.2	PASS
64.7	30.0	PEAK	V	39.1	-9.1	PASS
71.2	29.5	PEAK	V	39.1	-9.7	PASS
81.0	32.1	PEAK	V	39.1	-7.0	PASS
81.0	32.5	PEAK	H	39.1	-6.6	PASS
84.8	32.1	PEAK	V	39.1	-7.0	PASS
132.0	31.1	PEAK	V	43.5	-12.4	PASS
146.1	33.9	PEAK	V	43.5	-9.6	PASS
146.1	28.0	PEAK	H	43.5	-15.5	PASS
148.6	31.6	PEAK	V	43.5	-11.9	PASS
148.6	25.3	PEAK	H	43.5	-18.2	PASS
157.1	31.1	PEAK	V	43.5	-12.4	PASS
157.1	25.8	PEAK	H	43.5	-17.7	PASS
165.2	33.2	PEAK	V	43.5	-10.3	PASS
165.2	28.9	PEAK	H	43.5	-14.6	PASS
173.2	34.4	PEAK	V	43.5	-9.1	PASS
173.2	29.3	PEAK	H	43.5	-14.3	PASS
181.3	37.8	PEAK	V	43.5	-5.7	PASS
181.3	33.6	PEAK	H	43.5	-9.9	PASS
189.8	35.4	PEAK	V	43.5	-8.2	PASS
189.8	34.7	PEAK	H	43.5	-8.8	PASS
197.9	30.3	PEAK	V	43.5	-13.2	PASS
197.9	31.2	PEAK	H	43.5	-12.3	PASS
203.1	32.9	PEAK	V	43.5	-10.6	PASS
203.1	31.1	PEAK	H	43.5	-12.4	PASS
205.1	36.5	QP	V	43.5	-7.0	PASS
205.1	35.8	PEAK	H	43.5	-7.7	PASS
211.3	35.9	PEAK	V	43.5	-7.6	PASS
211.3	35.2	PEAK	H	43.5	-8.3	PASS
213.2	37.6	PEAK	V	43.5	-5.9	PASS
213.2	35.2	PEAK	H	43.5	-8.3	PASS
215.5	31.8	PEAK	V	43.5	-11.7	PASS
215.5	34.2	PEAK	H	43.5	-9.3	PASS
219.8	30.2	PEAK	V	46.4	-16.2	PASS
219.8	31.8	PEAK	H	46.4	-14.7	PASS
229.9	34.9	PEAK	V	46.4	-11.5	PASS
229.9	36.1	PEAK	H	46.4	-10.3	PASS
287.2	36.6	PEAK	V	46.4	-9.8	PASS
287.2	36.2	PEAK	H	46.4	-10.2	PASS

Continued...

FREQUENCY (MHz)	RF LEVEL (dBuV/m)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBuV/m)	MARGIN (dB)	PASS/ FAIL
295.4	38.8	PEAK	V	46.4	-7.6	PASS
295.4	37.7	PEAK	H	46.4	-8.7	PASS
303.5	39.6	PEAK	V	46.4	-6.8	PASS
303.5	36.2	PEAK	H	46.4	-10.2	PASS
312.0	37.2	PEAK	V	46.4	-9.2	PASS
312.0	36.1	PEAK	H	46.4	-10.4	PASS
319.8	38.6	PEAK	V	46.4	-7.8	PASS
319.8	35.9	PEAK	H	46.4	-10.5	PASS
322.1	34.7	PEAK	V	46.4	-11.7	PASS
322.1	36.1	PEAK	H	46.4	-10.4	PASS
328.3	35.4	PEAK	V	46.4	-11.0	PASS
328.3	34.4	PEAK	H	46.4	-12.0	PASS
334.5	34.2	PEAK	V	46.4	-12.2	PASS
334.5	31.6	PEAK	H	46.4	-14.8	PASS
336.4	34.1	PEAK	V	46.4	-12.3	PASS
336.4	33.3	PEAK	H	46.4	-13.1	PASS
338.0	37.2	PEAK	V	46.4	-9.2	PASS
338.0	33.5	PEAK	H	46.4	-13.0	PASS
342.6	36.9	PEAK	V	46.4	-9.5	PASS
342.6	34.0	PEAK	H	46.4	-12.4	PASS
346.5	37.0	PEAK	V	46.4	-9.4	PASS
346.5	34.7	PEAK	H	46.4	-11.8	PASS
350.8	37.2	PEAK	V	46.4	-9.3	PASS
350.8	39.1	PEAK	H	46.4	-7.3	PASS
354.7	38.2	PEAK	V	46.4	-8.2	PASS
354.7	41.0	PEAK	H	46.4	-5.4	PASS
359.0	37.3	PEAK	V	46.4	-9.1	PASS
359.0	39.5	PEAK	H	46.4	-6.9	PASS
367.1	37.6	PEAK	V	46.4	-8.8	PASS
367.1	37.9	PEAK	H	46.4	-8.5	PASS
371.4	37.6	PEAK	V	46.4	-8.8	PASS
371.4	36.9	PEAK	H	46.4	-9.5	PASS
377.6	36.6	PEAK	V	46.4	-9.8	PASS
377.6	33.2	PEAK	H	46.4	-13.2	PASS
393.8	37.3	PEAK	V	46.4	-9.2	PASS
393.8	38.9	PEAK	H	46.4	-7.5	PASS
418.2	35.8	PEAK	V	46.4	-10.7	PASS
418.2	36.5	PEAK	H	46.4	-9.9	PASS
426.4	36.2	PEAK	V	46.4	-10.2	PASS
426.4	37.3	PEAK	H	46.4	-9.1	PASS
451.2	35.7	PEAK	V	46.4	-10.7	PASS
451.2	35.9	PEAK	H	46.4	-10.6	PASS
496.5	36.9	PEAK	V	46.4	-9.5	PASS
496.5	34.8	PEAK	H	46.4	-11.6	PASS

Continued...

FREQUENCY (MHz)	RF LEVEL (dBuV/m)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBuV/m)	MARGIN (dB)	PASS/FAIL
733.9	36.6	PEAK	V	46.4	-9.8	PASS
733.9	36.4	PEAK	H	46.4	-10.0	PASS
762.1	36.6	PEAK	V	46.4	-9.8	PASS
762.1	33.8	PEAK	H	46.4	-12.6	PASS

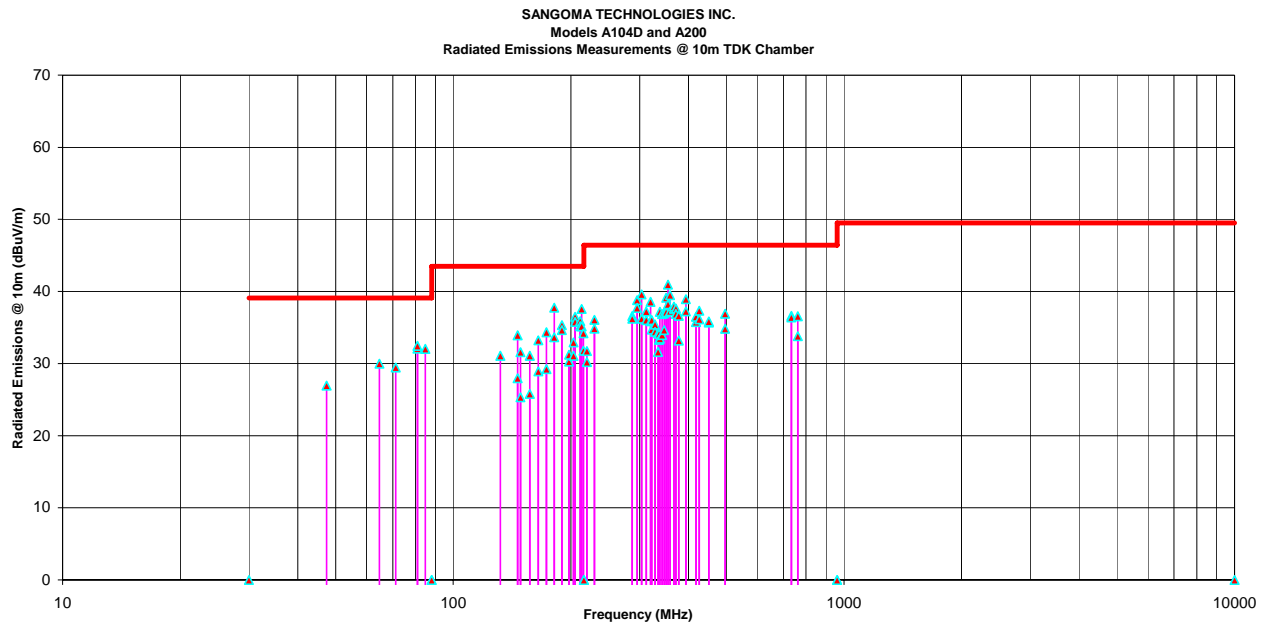


EXHIBIT 6. MEASUREMENT UNCERTAINTY

The measurement uncertainties stated were calculated in accordance with the requirements of NIST Technical Note 1297 and LAB 34

6.1. LINE CONDUCTED EMISSION MEASUREMENT UNCERTAINTY

CONTRIBUTION (Line Conducted)	PROBABILITY DISTRIBUTION	UNCERTAINTY (dB)	
		9-150 kHz	0.15-30 MHz
EMI Receiver specification	Rectangular	± 1.5	± 1.5
LISN coupling specification	Rectangular	± 1.5	± 1.5
Cable and Input Transient Limiter calibration	Normal (k=2)	± 0.3	± 0.5
Mismatch: Receiver VRC $\Gamma_1 = 0.03$ LISN VRC $\Gamma_R = 0.8(9 \text{ kHz}) 0.2(30 \text{ MHz})$ Uncertainty limits $20\text{Log}(1 \pm \Gamma_1 \Gamma_R)$	U-Shaped	± 0.2	± 0.3
System repeatability	Std. deviation	± 0.2	± 0.05
Repeatability of EUT	--	--	--
Combined standard uncertainty	Normal	± 1.25	± 1.30
Expanded uncertainty U	Normal (k=2)	± 2.50	± 2.60

Sample Calculation for Measurement Accuracy in 150 kHz to 30 MHz Band:

$$u_c(y) = \sqrt{\sum_{i=1}^m u_i^2(y)} = \pm \sqrt{(1.5^2 + 1.5^2)/3 + (0.5/2)^2 + (0.05/2)^2 + 0.35^2} = \pm 1.30 \text{ dB}$$

$$U = 2u_c(y) = \pm 2.6 \text{ dB}$$

6.2. RADIATED EMISSION MEASUREMENT UNCERTAINTY

CONTRIBUTION (Radiated Emissions)	PROBABILITY DISTRIBUTION	Uncertainty (dB)	
		3m	10m
Antenna Factor Calibration	Normal (k=2)	± 1.0	± 1.0
Cable Loss Calibration	Normal (k=2)	± 0.3	± 0.5
EMI Receiver specification	Rectangular	± 1.5	± 1.5
Antenna Directivity	Rectangular	± 0.5	± 0.5
Antenna factor variation with height	Rectangular	± 2.0	± 0.5
Antenna phase center variation	Rectangular	0.0	± 0.2
Antenna factor frequency interpolation	Rectangular	± 0.25	± 0.25
Measurement distance variation	Rectangular	± 0.6	± 0.4
Site imperfections	Rectangular	± 2.0	± 2.0
Mismatch: Receiver VRC $\Gamma_1 = 0.2$ Antenna VRC $\Gamma_R = 0.67(Bi) 0.3 (Lp)$ Uncertainty limits $20\text{Log}(1 \pm \Gamma_1 \Gamma_R)$	U-Shaped	+1.1 -1.25	± 0.5
System repeatability	Std. Deviation	± 0.5	± 0.5
Repeatability of EUT		-	-
Combined standard uncertainty	Normal	+2.19 / -2.21	+1.74 / -1.72
Expanded uncertainty U	Normal (k=2)	+4.38 / -4.42	+3.48 / -3.44

Calculation for maximum uncertainty when 10 M biconical antenna including a factor of k=2 is used:

$$U = 2u_c(y) = 2x(+2.19) = +4.38 \text{ dB} \text{ And } U = 2u_c(y) = 2x(-2.21) = -4.42 \text{ dB}$$

EXHIBIT 7. LABELLING & VERIFICATION REQUIREMENTS

7.1. SECTION 15.19 - LABELING REQUIREMENTS

For a Class A digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

- (1) The label shall NOT be a stick-on, paper label. The label on these products shall be permanently affixed to the product and shall be readily visible to the purchaser at the time of purchase, as described in FCC 2.925(d). "Permanently" affixed means that the label is etched, engraved, stamped, silk-screened, indelibly printed, or otherwise permanently marked on a permanently attached part of the equipment or on a nameplate of metal plastic, or other material fastened to the equipment by welding, riveting, or a permanent adhesive. The label must be designed to last the expected life-time of the equipment in the environment in which the equipment may be operated and must not be readily detachable.
- (2) Where a device is constructed in two or more sections connected by wires and marketed together, the statement specified in this Section is required to be affixed only to the main control unit.
- (3) When the device is so small or for such use that it is not practicable to place the statement specified in this Section on it, the information required by these paragraphs shall be placed in the instruction manual or pamphlet supplied to the user or, alternatively, shall be placed on the container in which the device is marketed. However, the FCC identifier or the unique identifier, as appropriate, must be displayed on the device.

7.2. SECTIONS 15.21 & 15.105 - INFORMATION TO USER

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: *This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provided reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.*

Warning: Changes or modifications not expressly approved by <manufacturer> could void the user's authority to operate the equipment.

7.3. SECTION 2.909 - RESPONSIBLE PARTY

The following parties are responsible for the compliance of radio frequency equipment with the applicable standards:

- (c) In the case of the equipment subject to authorization under the Declaration of Conformity procedure:
 - (1) The manufacturer or, if the equipment is assembled from individual component parts and the resulting system is subject to authorization under Declaration of Conformity, the assembler.
 - (2) If the equipment, by itself, is subject to Declaration of Conformity and the equipment is imported, the importer.

7.4. SECTION 2.945 - SAMPLING TEST OF EQUIPMENT COMPLIANCE

The Commission will, from time to time, request the responsible party to submit equipment subject to this chapter to determine the extent to which subsequent production of such equipment continues to comply with the data filed by the applicant (or on file with the responsible party for equipment subject to notification or a Declaration of Conformity). Shipping costs to the Commission's laboratory and return shall be borne by the responsible party.

7.5. SECTION 2.946 - PENALTY FOR FAILURE TO PROVIDE TEST SAMPLES AND DATA.

- (a) Any responsible party, as defined in Section 2.909 of this chapter, or nay party who markets equipment subject to the provisions of this chapter, shall provide test sample(s) or data upon request by the Commission. Failure to comply with such a request with the time frames shown below may be cause for forfeiture, pursuant to Section 1.80 of Part 1 of this chapter, or other administrative sanctions such as suspending action on any applications for equipment authorization submitted by such party while the matter is being resolved.
 - (1) When the equipment is subject to authorization under Declaration of Conformity, data shall be provided within 14 days of delivery of the request and test sample(s) shall be provided within 60 days of delivery of the request.
 - (2) For all other devices, test sample(s) or data shall be provided within 60 days of the request.
- In the case of the equipment involving harmful interference or safety of life or property, the Commission may specify that test samples subject to the provisions of this section be submitted within less than 60 days, but not less than 14 days. Failure to comply within the specified time period will be subject to the sanctions specified in paragraph (a) of this section.

7.6. LIMITATION ON VERIFICATION: FCC PART 2, SUBPART J, SECTION 2.952

- (a) Verification signifies that the manufacturer or importer has determined that the equipment has been shown to be capable of compliance with the applicable technical standards if no unauthorized change is made in the equipment and if the equipment is properly maintained and operated. Compliance with these standards shall not be construed to be a finding by the manufacturer or importer with respect to matters not encompassed by the Commission's rules.
- (b) Verification of the equipment by the manufacturer or importer is effective until a termination date is otherwise established by the Commission.
- (c) No person shall, in any advertising matter, brochure, etc., use or make reference to a verification in a deceptive or misleading manner or convey the impression that such verification reflects more than a determination by the manufacturer or importer that the device or product has been shown to be capable of compliance with the applicable technical standards of the Commission's Rules.

7.7. RESPONSIBILITY OF MANUFACTURER OR IMPORTER: FCC PART 2, SUBPART J, SECTION 2.953

- (a) In verifying compliance, the manufacturer or importer (in the case of imported equipment) warrants that each unit of the equipment marketed under the verification procedure will conform to the unit tested and found acceptable by the manufacturer or importer and that data on file with the manufacturer or importer continues to be representative of the equipment being produced under such verification within the variation that can be expected due to quantity production and testing on a statistical basis.
- (b) The importer of equipment subject to verification may upon receiving a written statement from the manufacturer that the equipment complies with the appropriate technical standards rely on the manufacturer or independent testing agency to verify compliance. The test records required by Section 2.955 however should be in English language and made available to the Commission upon a reasonable request.
- (c) In the case of transfer of control of equipment, as in the case of sale or merger of the grantee, the new manufacturer or importer shall bear the responsibility of continued compliance of the equipment.
- (d) Equipment verified by the manufacturer or importer shall be re-verified if the modification or change adversely affects the emanation characteristics of the modified equipment. The manufacturer or importer continues to bear the responsibility for continued compliance of subsequently produced equipment.

7.8. IDENTIFICATION: FCC PART 2, SUBPART J, SECTION 2.954

The identification of equipment subject to verification shall be consistent with current manufacturer or marketing practices: *Provided*, The manufacturer or importer maintains adequate identification records for each unit verified to facilitate positive identification of each equipment marketed.

7.9. RETENTION OF RECORDS: FCC PART 2, SUBPART J, SECTION 2.955

- (a) For each equipment subject to verification, the manufacturer (or importer) shall maintain the records listed below:
 - (1) A record of the original design drawings and specifications and all changes that have been made that may affect compliance with the requirements of Section 2.953.
 - (2) A record of the procedures used for production inspection and testing (if tests were performed) to insure the conformance required by Section 2.953. (Statistical production line emission testing is not required).
- (b) The records listed in paragraphs (a) of this section shall be retained for two years after the manufacture of said equipment item has been permanently discontinued, or until the conclusion of an investigation or a proceeding if the manufacturer or importer is officially notified that an investigation or any other administrative proceeding involving his equipment has been instituted.

7.10. FCC INSPECTION & SUBMISSION OF EQUIPMENT FOR TESTING: FCC PART 2, SUBPART J, SEC. 2.956

- (a) Each manufacturer or importer of equipment subject to verification shall upon receipt of reasonable request submit to the Commission the records required by Section 2.955.
- (b) The Commission may require the manufacturer or importer of equipment subject to verification to submit one or more of sample units for measurements at the Commission's Laboratory.
- (c) In the event the manufacturer believes that shipment of the sample to the Commission's Laboratory is impractical because of the size or weight of the equipment, or the power requirement or for any other reason, the applicant may submit a written explanation why such shipment is impractical and should not be required.

7.11. SAMPLING TESTS OF EQUIPMENT COMPLIANCE: FCC PART 2, SUBPART J, SECTION 2.957

The Commission will from time to time, request the manufacturer or importer to submit to the FCC Laboratory in Columbia, Maryland, various equipment(s) for which verification has been made, to determine the extent to which subsequently produced units continue to comply with the applicable standards.