Marstech Limited

11 Kelfield Street, Etobicoke, Ontario, Canada, M9W 5A1
Telephone (416) 246-1116, Fax (416) 246-1020

Authorized by: Professional Engineers Ontario

Engineering & Administrative

CERTIFICATE UL 10 ENOA

Testing For FCC Submissions/Verifications

Approved Test Facility

Qualified Site

Qualified Facility

TEST REPORT			
REPORT DATE:	6 January 1999		REPORT NO: 98516D
CONTENTS:	See Table of Contents		
SUBMITTOR:	THOMSON CONSUMER ELECTRONICS, INC. Audio & Communications Product Dev. 101 West 103rd Street Indianapolis, IN 46290-1102 USA		
SUBJECT:	Model No:	**26700XXX-A** (New Version of 2-9750(XXXX)	
	FCC ID:	G9H2-9750	
TEST SPECIFICATION	FCC CFR 47 15.233 AND 2.989 Sections: 15.35, 15.107, 15.109, 15.207 and 15.209 NOTE: Tests Conducted Are "Type" Tests.		
DATE SAMPLE RECEIVED:	7 December 1998	DATE TESTED:	16 & 17 December 1998
RESULTS:	Equipment tested complies with referenced specification.		
ALTERATIONS	The following alterations are required for compliance with referenced specification: **Base Unit:** **1. C36, 68pF capacitor was changed to 150pF.** **2. R57, 2.2KΩ resistor was changed to 3.3KΩ.** **3. F1, 10 Ω 1/2W resistor was changed to Polyswitch (TR600-150) or 350mA slow blow fuse.** **4. R33, 47Ω 1/2W resistor was deleted and replaced by a jumper.**		
Tested by:	Original signed by: Jim Sims Ed. Chang Edward Chang	Approved by: REGISTERED PROFESSIONAL ENGINEER R. G. MARSHALL Robert G. Marshall, P. Eng. Date:	Robert G. Marshall Jan 26/99

TECHNICAL REPORT - FCC 2.1033(b)

Applicant

Thomson Consumer Electronics, Inc.
Audio & Communications Product Dev.
101 West 103rd Street
Indianapolis, IN
46290-1102 USA

FCC Identifier

G9H2-9750

Manufacturer

Dongguan CCT Telecommunications Products Co. Ltd.
No. 13 - 16, Hong Yie Dong San Road
Hong Yie Economic Development Zone, Tang Xia Zhen
Dongguan, Guangdong Province, The PRC

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EXHIBIT D

[FCC Ref. 2.1033(b)(6)]

"Report of Measurements"

EXHIBIT D(1)

DEVICE MEASURED

(FCC Ref. 2.1033(b)(6))

APPLICANT:	Thomson Consumer Electronics, Inc. Audio & Communications Product Dev. 101 West 103rd Street Indianapolis, IN 46290-1102 USA
MANUFACTURER:	Dongguan CCT Telecommunications Products Co. Ltd. No. 13 - 16, Hong Yie Dong San Road Hong Yie Economic Development Zone, Tang Xia Zhen Dongguan, Guangdong Province, The PRC
FCC IDENTIFIER:	G9H2-9750
MODEL NUMBER:	26700XXX-A [New Version of 2-9750(XXXX)]
SERIAL NO.:	R&D9801347

Marstech Limited
11 Kelfield Street
Etobicoke, Ontario
M9W 5A1 CANADA

TECHNICIANS:
Jim Sims - Com-Serve Corp.
Edward Chang - Marstech Limited

Robert G. Marshall, P. Eng.

Date: Jan 26/99

EXHIBIT D(2)

TEST FACILITY AND EQUIPMENT LIST

FACILITIES

Radiated — ANSI C63.4 (FCC OET/55) open field 3 meter test range. This test range is protected from the cold and moisture by a non-conductive enclosure.

Conducted — 2.5m Anechoic Chamber

EQUIPMENT

Hewlett-Packard spectrum analyzer # 8554 RF & 141T video.
Anritsu 2601 A spectrum analyzer.
Advantest R3261A Spectrum Analyzer
Hewlett-Packard RF generator # 8640 B with an 002 doubler
Hewlett-Packard attenuator 30 dB # 11708A.
Narda 20 watt (20 dB) attenuator
Compliance Design P950 Preamp (16 dB)..... 25 MHZ -1.0 GHz
A.H. Systems biconical antenna; ....20 MHZ - 330 MHz
A.H. Systems log periodic antenna; .....300 MHZ - 1.8 GHz
Eaton dipole antennas; T1, T2, T3 .....25 MHZ - 1.0 GHz
CDI Roberts dipole antennas; T1, T2, T3 & T4.....25 MHZ - 1.0 GHz

NOTE:

The Anritsu 2601 A spectrum analyzer, the Hewlett-Packard spectrum analyzer and the Advantest R3261A spectrum analyzer are calibrated annually, and that calibration is directly traceable to the National Research Council of Canada (NRC). This equipment is only used by qualified technicians and only for the purpose of EMI measurements. The three meter test range has been carefully evaluated to the ANSI document C63.4 and will be remeasured for reflections and losses every three years.

FEDERAL COMMUNICATIONS COMMISSION

7435 Oakland Mills Road
Columbia, MD 21046
Telephone: 301-725-1585 (ext-216)
Facsimile: 301-344-2050

September 23, 1997

IN REPLY REFER TO
31040/SIT
1300F2

Electrohome Electronics Ltd
809 Wellington Street, North
Kitchener, Ontario N2G 4J6, Canada

Attention: Gerry Gallagher

Re: Measurement facility located at Roseville
(3 meter site)

Gentlemen:

Your submission of the description of the subject measurement facility has been reviewed and found to be in compliance with the requirements of Section 2.948 of the FCC Rules. The description has, therefore, been placed on file and the name of your organization added to the Commission's list of facilities whose measurement data will be accepted in conjunction with applications for certification or notification under Parts 15 or 18 of the Commission's Rules. Our list will also indicate that the facility complies with the radiated and AC line conducted test site criteria in ANSI C63.4-1992. Please note that this filing must be updated for any changes made to the facility, and at least every three years the data on file must be certified as current.

Per your request, the above mentioned facility has been also added to our list of those who perform these measurement services for the public on a fee basis. This list is published periodically and is also available on the Laboratory's Public Access Link as described in the enclosed Public Notice.

Sincerely,

Thomas W. Phillips
Electronics Engineer
Customer Service Branch

SUMMARY OF RESULTS

		COMPLIANCE (yes)	(no)
FIELD STRENGTH OF THE CARRIER FREQUENCIES			
Handset:	48 MHz and 49 MHz bands	(x)	( )
Base Station:	43/44 MHz and 46 MHz bands	(x)	( )
OCCUPIED BANDWIDTH			
Handset:	48 MHz and 49 MHz bands	(N/T)	( )
Base Station:	43/44 MHz and 46 MHz bands	(N/T)	( )
SPURIOUS RADIATED EMISSIONS			
Handset:	48 MHz and 49 MHz bands	(x)	( )
Base Station:	43/44 MHz and 46 MHz bands	(x)	( )
LINE CONDUCTED SPURIOUS EMISSIONS			
Base Station:	Telephone Mode: 43/44 MHz and 46 MHz bands	(N/T)	( )
TRANSMITTER ENVIRONMENTAL TESTS			
Handset:		(N/T)	( )
Base Station:		(N/T)	( )
EQUIPMENT REQUIREMENTS AND IDENTIFICATION			
a) Manufacturers or applicants name:		(x)	( )
b) FCC ID:		(x)	( )
c) Serial number:		(N/M)	( )
d) Antenna:		(x)	( )
e) Operator controls:		(x)	( )
f) Security Coding		(x)	( )
g) Equipment/Packaging Marking		(x)	( )

CARRIER FREQUENCY FIELD STRENGTH

RESULTS

Handset:	**Maximum field strength of 4,433 μV/M:**	**Channel # 02**
Handset:	**Maximum field strength of 5,307 μV/M:**	**Channel # 25**

Base Station:
Modes:

Telephone:	**Maximum field strength of 9,314 μV/M:**	**Channel # 02**
Telephone:	**Maximum field strength of 9,928 μV/M:**	**Channel # 25**

TEST CONDITIONS

Equipment Positioning:	
Handset:	vertical or upright
Base Station:	standing vertically with the antenna extended in the vertical plane
Antenna Polarization:	
Handset:	vertical
Base Station:	vertical
Antenna Type:	T.1; tuned half wave dipole
Measurement Bandwidth:	100 KHz (IF)
Supply Voltages:	
Handset:	3.6 VDC from an internal battery.
Base Station:	120 VAC/60 Hz to 09 VDC (adapter)

METHODS OF MEASUREMENT

The cordless phone components were placed in turn on a one metre high, non-metallic turntable. Measurements were made in a minimum of 3 positions for the handset and 2 for the base station. If adjustable, the whip antennas were fully extended.

For each of the above conditions the turntable was rotated through 360 degrees while the receiving antenna, at three (3) metres from the EUT, was varied in height from 1 to 4 metres and set in both planes of polarization to find the maximum signal strength. The unmodulated carrier level was measured using a spectrum analyzer and a substitution signal from an RF generator. The measured level was converted to a field strength using the antenna correction factors and cable losses.

All base station measurements were made with the equipment under test connected to an artificial telephone line network, with 48 VDC applied.

SPURIOUS RADIATED EMISSIONS

RESULTS

The maximum field strength of any spurious emission, with respect to the applicable limit, to 1,000 MHz, while transmitting or receiving was:

Handset: **Maximum field strength of 78.5 μV/M at 244.12 MHz; Channel 02**
Maximum field strength of 112.0 μV/M at 749.53 MHz; Channel 25

Base Station:
Maximum field strength of 95.4 μV/M at 306.14 MHz; Channel 02
Maximum field strength of 66.0 μV/M at 140.91 MHz; Channel 25
Maximum field strength of: NONE FOUND RECEIVE

TEST CONDITIONS

Equipment Positioning:	
Handset:	laying on its side
Base Station:	standing on its back with the antenna extended in the vertical plane.
Antenna Polarization:	
Handset:	horizontal
Base Station:	vertical (25) and horizontal (2)
Base Station: Receive	vertical and horizontal
Measurement Bandwidth:	100 KHz/120 KHz Q.P. (IF)
Supply Voltages:	
Handset:	3.6 VDC from an internal battery.
Base Station:	120 VAC/60 Hz to 09 VDC (adaptor)

METHODS OF MEASUREMENT

The cordless phone components were placed in turn on a one metre high, non-metallic turntable. Measurements were made in a minimum of 3 positions for the handset and 2 for the base station. If adjustable, the whip antennas were fully extended.

For each of the above conditions the turntable was rotated through 360 degrees while the receiving antenna, at three (3) metres from the EUT, was varied in height from 1 to 4 metres and set in both planes of polarization to find the maximum signal strength. The level was measured using a spectrum analyzer and a substitution signal from an RF generator. The measured level was converted to a field strength using the antenna correction factors and cable losses.

All base station measurements were made with the equipment under test connected to an artificial telephone line network, with 48 VDC applied.

RADIATED EMISSION RESULTS

BW: 100/120 KHz
Span: 5 to 50 MHz

BASE STATION

TEST # MODE	FREQ MHz BAND	LEVEL μV	ANT. TYPE (PZ)	ANT. FACT.	F.S. μV/M	LIMIT μV/M	DIFF. TO LIMIT; dB
CARRIER	43.740	7,110.0	RT.1 V	1.31	9314.1	10,000	-0.62
01 TX	131.17	10.1	B/C V	5.6	56.6	150	-8.47
02 TX	174.90	07.0	B/C H	7.6	53.2	150	-9.00
03 TX	218.66	04.6	B/C H	7.3	33.6	200	-15.50
04 TX	306.14	04.7	L/P H	20.3	95.4	200	-6.43
CARRIER	46.970	7,300.0	RT.1 V	1.36	9928.0	10,000	-0.06
05 TX	140.91	11.0	B/C V	6.0	66.0	150	-7.13
06 TX	187.88	06.3	B/C H	7.4	46.6	150	-10.15
07 TX	234.80	05.2	B/C H	9.2	47.8	200	-12.42
08 TX	281.82	04.6	B/C H	16.2	74.5	200	-8.58
09 TX	328.74	05.0	L/P H	14.5	72.5	200	-8.81

RADIATED EMISSION RESULTS

BW: 100/120 KHz
Span: 5 to 50 MHz

HANDSET

TEST # MODE	FREQ MHz BAND	LEVEL μV	ANT. TYPE (PZ)	ANT. FACT.	F.S. μV/M	LIMIT μV/M	DIFF. TO LIMIT; dB
CARRIER	48.840	3,100.0	RT.1 V	1.43	4433.0	10,000	-7.07
01 TX	195.30	05.0	B/C H	7.2	36.0	150	-12.40
02 TX	244.12	07.2	B/C H	10.9	78.5	200	-8.13
03 TX	781.39	03.0	L/P H	25.4	76.2	200	-8.38
CARRIER	49.970	3,610.0	RT.1 V	1.47	5306.7	10,000	-5.50
04 TX	249.82	08.1	B/C H	12.0	97.2	200	-6.27
05 TX	749.53	05.0	L/P H	22.4	112.0	200	-5.04