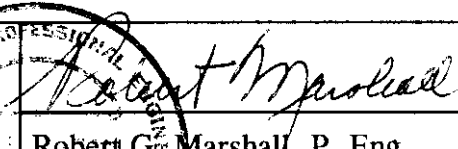
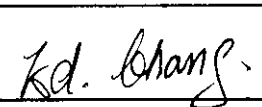


Marstech Limited

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

TEST REPORT			
REPORT DATE:		May 22, 1998	
REPORT NO:		98178D	
CONTENTS:	See Table of Contents		
SUBMITTOR:	TOTTORI SANYO ELECTRIC CO. LTD. 7-101 Tachikawa-Cho Tottori City Tottori Ken, JAPAN		
SUBJECT:	Model No:	CLT-9840	
	FCC ID:	NRNCLT-9840	
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:	April 23, 1998	DATE TESTED:	May 11 & 25, 1998
RESULTS:	Equipment tested complies with referenced specification.		
ALTERATIONS	None		
Tested by:	Original Signed By:	Approved and Certified by:	
			Robert G. Marshall, P. Eng.
	Edward Chang	Date:	April 2/98
THIS REPORT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF MARSTECH LIMITED. This report was prepared by Marstech Limited for the account of the "Submittor". The material in it reflects Marstech's judgement in light of the information available to it at the time of preparation. Any use which a Third Party makes of this report, or any reliance on decisions to be made based on it, are the responsibility of such Third Parties. Marstech accepts no responsibility for damages, if any, suffered by any Third Party as a result of decisions made or actions based on this report			

Authorized by:
Professional Engineers
Ontario



Engineering &
Administrative



Testing For FCC
Submissions/Verifications

Industry Canada
Industry Canada
Approved Test Facility



EXHIBIT D

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

"Report of Measurements"

EXHIBIT D(1)

DEVICE MEASURED

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

APPLICANT: Tottori Sanyo Electric Co. Ltd.
7-101 Tachikawa-Cho
Tottori City,
Tottori Ken, Japan

MANUFACTURER: Tottori Sanyo Electric (Philippines)
Gateway Business Park BO,
Javalera, Gen. Trias,
Cavite, Philippines

Sanyo Electric (Penang) Sdn. Bhd.
150-C, Jalan Kampung Jawa,
Bayan Lepas Free Industrial Zone
Phase III, Bayan Lepas, 11900
Penang, Malaysia

FCC IDENTIFIER: NRNCLT-9840

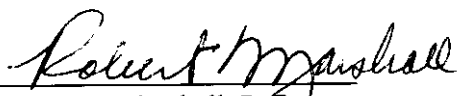
TRADE NAME: Sanyo

MODEL NUMBER: CLT-9840

SERIAL NO.: Not Marked

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

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


Robert G. Marshall, P. Eng.

Date: June 2/98

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

Anritsu 2601 A spectrum analyzer.
Advantest R3261A Spectrum Analyzer
Hewlett-Packard RF generator # 8640 B with an 002 doubler
Hewlett-Packard R8449B Preamp. (30dB)..1.0 Mhz to 26.5 GHZ
A.H. Systems biconical antenna; 20 MHZ - 330 MHZ
A.H. Systems log periodic antenna; 300 MHZ - 1.8 GHZ
A.H. Systems log periodic antenna; 1.0 GHZ - 12.4 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
Compliance Design P950 Preamp (16 dB)...25MHZ - 1.0 GHZ
Notch Filter; Model FIL01605001.....30 dB at 920 MHZ
M/A-COM High Frequency Cable Assembly; No. 2026-0600

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-218)
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

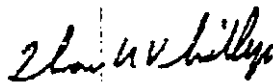
Re: Measurement facility located at Roseville
(3 meter site)

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

EXHIBIT D(2)

SPECTRUM ANALYZER -

ANRITSU MS2601A S/N MT64544 - NEXT
CALIBRATION APRIL 1999

MULTIMETER -

FLUKE 75

SUMMARY OF RESULTS

	COMPLIANCE	
	(yes)	(no)
FIELD STRENGTH OF THE CARRIER FREQUENCIES	(x)	
OCCUPIED BANDWIDTH	(x)	
SPURIOUS RADIATED EMISSIONS	(x)	
LINE CONDUCTED SPURIOUS EMISSIONS	(x)	

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 17,280 $\mu\text{V/M}$; at 902.100 MHz.

Base Station:

Telephone: Maximum field strength of 49,170 $\mu\text{V/M}$; at 926.000 MHz.

Note: All channels were checked for highest carrier frequency field strength.

TEST CONDITIONS

Equipment Positioning:

Handset: Vertical or upright
Base Station: Standing on its back with the antenna extended in the vertical plane.

Antenna Polarization:

Handset: Vertical
Base Station: Vertical

Antenna Type: T.4; tuned half wave dipole

Measurement Bandwidth: 100/120 KHz (IF/Q.P.)

Supply Voltages:

Handset: 3.6 VDC from an internal battery.
Base Station: 120 VAC/60 Hz to 12 VDC (adapter)

METHODS OF MEASUREMENT

The cordless phone components were placed in turn on a one metre high, non-metallic turntable and set at maximum output level. 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 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, correction for search height 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.

OCCUPIED BANDWIDTH RESULTS (47 CFR Part 2.989)

The bandwidth was 375 KHz (Refer Exhibit D(3)-4).

OCCUPIED BANDWIDTH

13:10:24 MAY 25. 1998

ACTV	DET:	PEAK	QP	AVG	MARKER
MEAS	DET:	PEAK	375	kHz	NORMAL
		MKR		- .58	dB

MARKER Δ

MARKER	AMPTD
1	100
2	100
3	100
4	100
5	100
6	100
7	100
8	100
9	100
10	100
11	100
12	100
13	100
14	100
15	100
16	100
17	100
18	100
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89	100
90	100
91	100
92	100
93	100
94	100
95	100
96	100
97	100
98	100
99	100
100	100

```
SELECT
1 2 3 4
```

MARKER 3
ON OFF

More
1 of 3

LOG REF 70.0 dBμV

10
dB/
#ATN
0 dB

WA SB
SC FS
CORR

CENTER 902.348 MHz	SPAN 5.000 MHz
#IF BW 100 KHZ	#SWP 10.0 sec
#AVG BW 3 MHz	

SPURIOUS RADIATED EMISSIONS

RESULTS

The maximum field strength of any spurious emission between 25 MHz and 5,000 MHz while transmitting or receiving was:

Handset:

Maximum field strength of: NONE FOUND at 000.00 MHz Spurious Emissions.

Maximum field strength of: NONE FOUND at 0.0000 GHz Harmonic Emissions.

Base Station:

Maximum field strength of: 59.0 μ V/M: at 48.2 MHz Spurious Emissions.

Maximum field strength of: NONE FOUND at 0.0000 GHz Harmonic Emissions.

TEST CONDITIONS

Equipment Positioning:

Handset: SPURIOUS Standing upright and laying on its side

Handset: HARMONICS Standing upright and laying on its side

Base Station: SPURIOUS Standing on its back with the antenna extended in the vertical plane.

Base Station: HARMONICS Standing vertically and on its back with the antenna extended in the vertical plane.

Antenna Polarization:

Handset: SPURIOUS Vertical and horizontal

Handset: HARMONICS Vertical and horizontal

Base Station: SPURIOUS Vertical

Base Station: HARMONICS Vertical and horizontal

Measurement Bandwidth: 100 KHz Peak and 1.0 MHz (IF)

Supply Voltages:

Handset: 3.6 VDC from an internal battery.

Base Station: 120 VAC/60 Hz to 12 VDC (adapter)

METHODS OF MEASUREMENT

The cordless phone components were placed in turn on a one metre high, non-metallic turntable and set at maximum output level. 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 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 the measured level was converted to a field strength using the antenna correction factors and signal 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

BW: 100 KHz Peak and 1 MHz

Span: 5 to 50 MHz

BASE STATION

TEST # MODE	FREQ MHz BAND	LEVEL μ V	ANT. TYPE (PZ)	ANT. FACT.	F.S. μ V/M	LIMIT μ V/M	DIFF. TO LIMIT; dB
01 RX	47.85	11.2	B/C V	3.7	41.4	100	-7.65
TX	48.2	11.8	BC/V	5	59.0	100	-4.58
RX	93.18	14.2	BL/V	1.41	20.0	150	-17.49
TX	461.0	21.1	LP/V	3.16	66.7	200	-9.54
CARRIER	926.000	1,100.00	RT.4 V	44.7	49170.0	50,000	-0.15

HANDSET

TEST # MODE	FREQ MHz BAND	LEVEL μ V	ANT. TYPE (PZ)	ANT. FACT.	F.S. μ V/M	LIMIT μ V/M	DIFF. TO LIMIT; dB
CARRIER	902.100	400.00	RT.4 V	43.2	17280.0	50,000	-9.23

POWERLINE CONDUCTED EMISSIONS

RESULTS

The largest RF voltages on the AC power lines, over the frequency range of 450 KHz to 30 MHz, was **171.79 μ V (44.70 dB μ V) at 0.452 MHz** from the base station while transmitting and/or receiving. (A side of the line in the speakerphone off hook mode) Refer to the attached results.

TEST CONDITIONS

<u>Measurement Bandwidth:</u>	9 KHz Q.P. (IF)
<u>AC Test Voltage:</u>	120 VAC (filtered and stabilized)
<u>Mode of Operation:</u>	Telephone

METHODS OF MEASUREMENT

The base station portion of the cordless phone was placed on a wooden table directly above a 50 ohm line impedance stabilization network.(LISN) If adjustable, the whip antenna was fully extended vertically and the AC power attachment cord went directly down to the LISN. The LISN is grounded directly to the floor of the test facility. Excess AC cord was coiled in a figure eight pattern before connecting directly to the 50 micro-henry LISN.

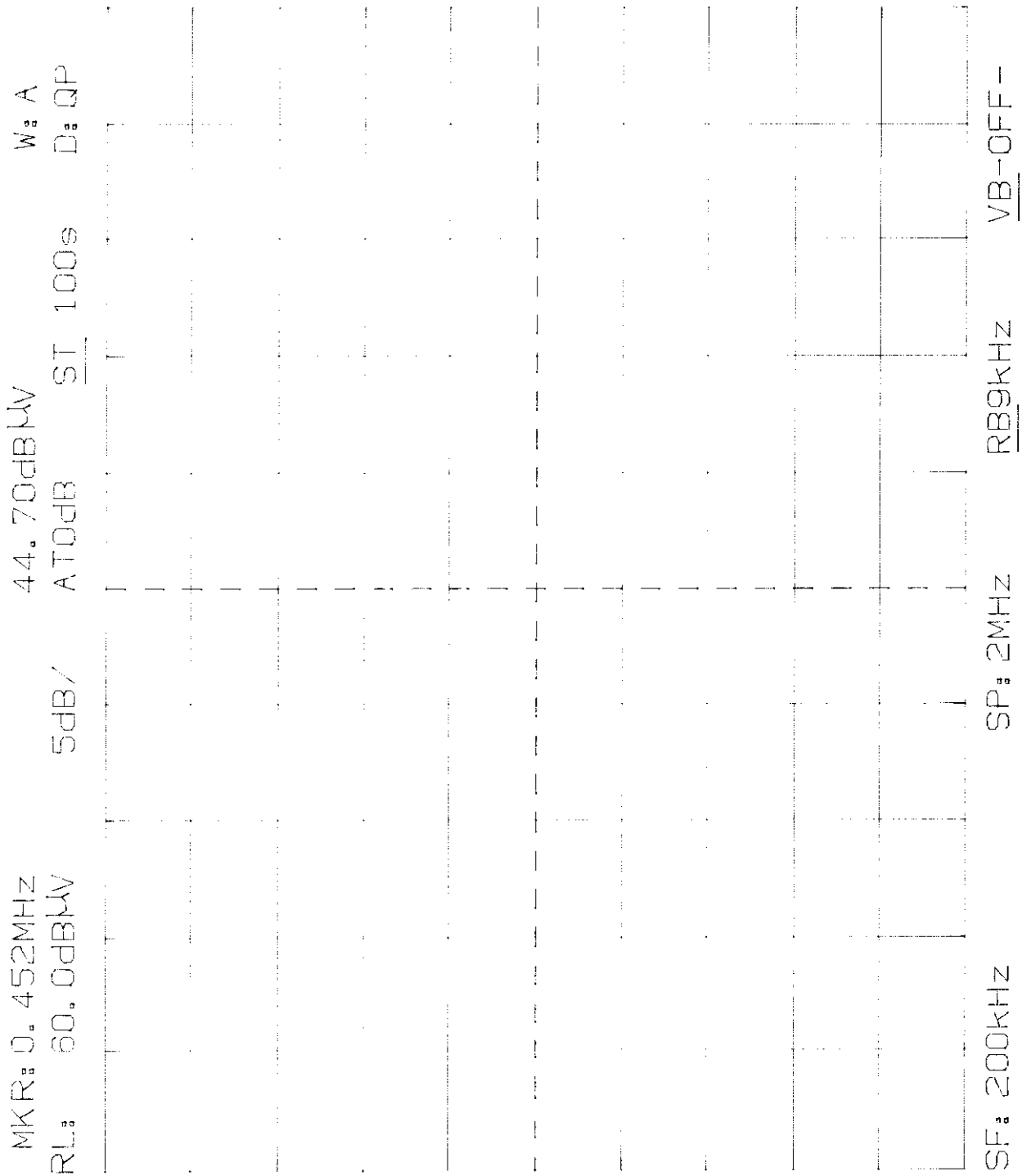
The base station was connected to a simulated 9,000 foot phone line and 48 VDC was applied. The 9,000 foot phone line network was grounded to the nearest AC outlet with a test lead.

A length of low loss RF foam cable was used to couple the RF voltages from the LISN to the spectrum analyzer. The base station transmitter was keyed on by the handset transmitting nearby. All of the RF voltages were recorded and are attached.

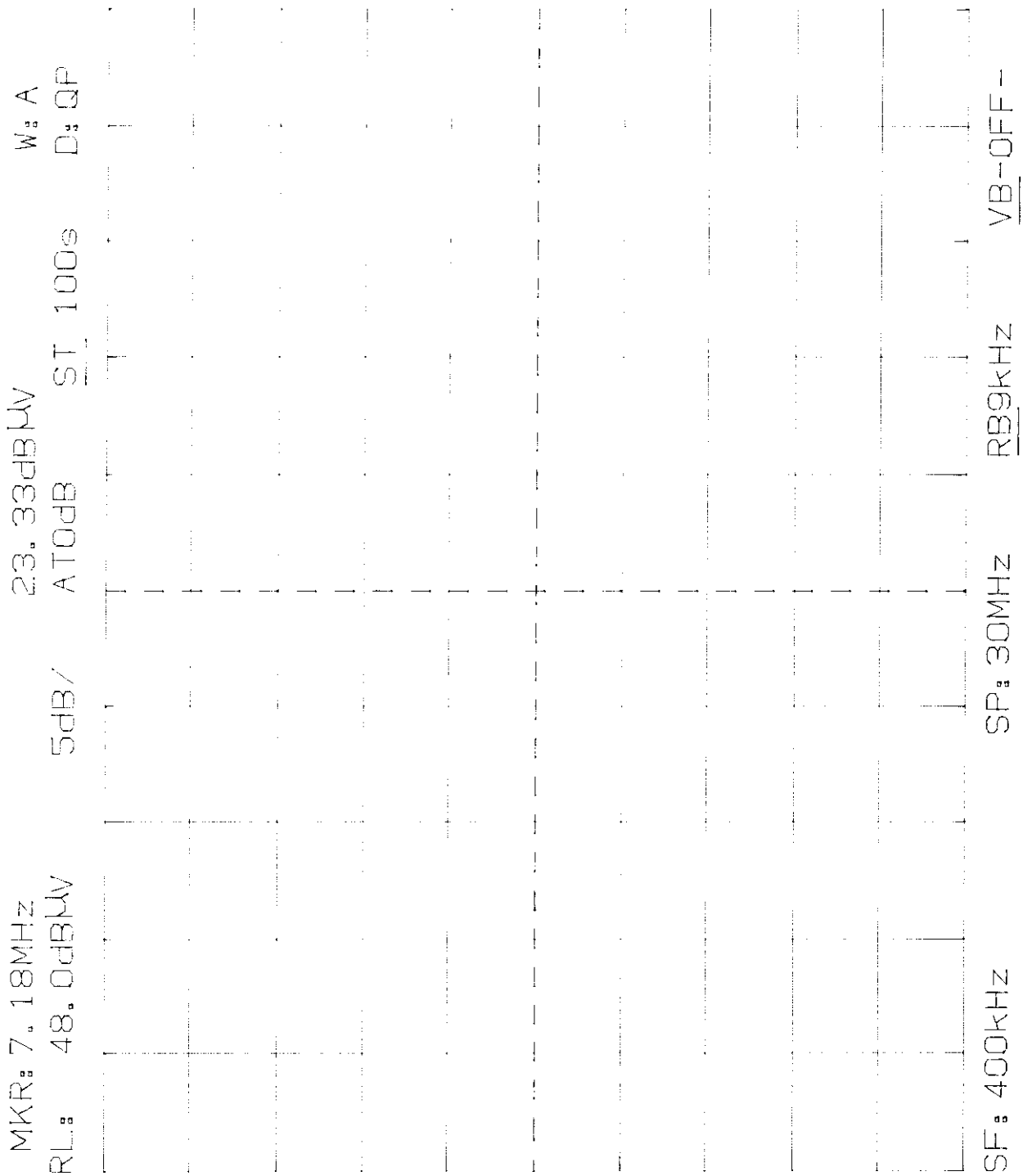
The base station was tested in all modes of operation which were applicable to the specific equipment under test. This included operating modes such as "calling/paging", quiescent or receive mode and standard telephone/transmit operation.

If the cordless phone contained an intercom mode of operation, then this test was repeated in that mode. The attached results represent the **worst case results** in each test condition.

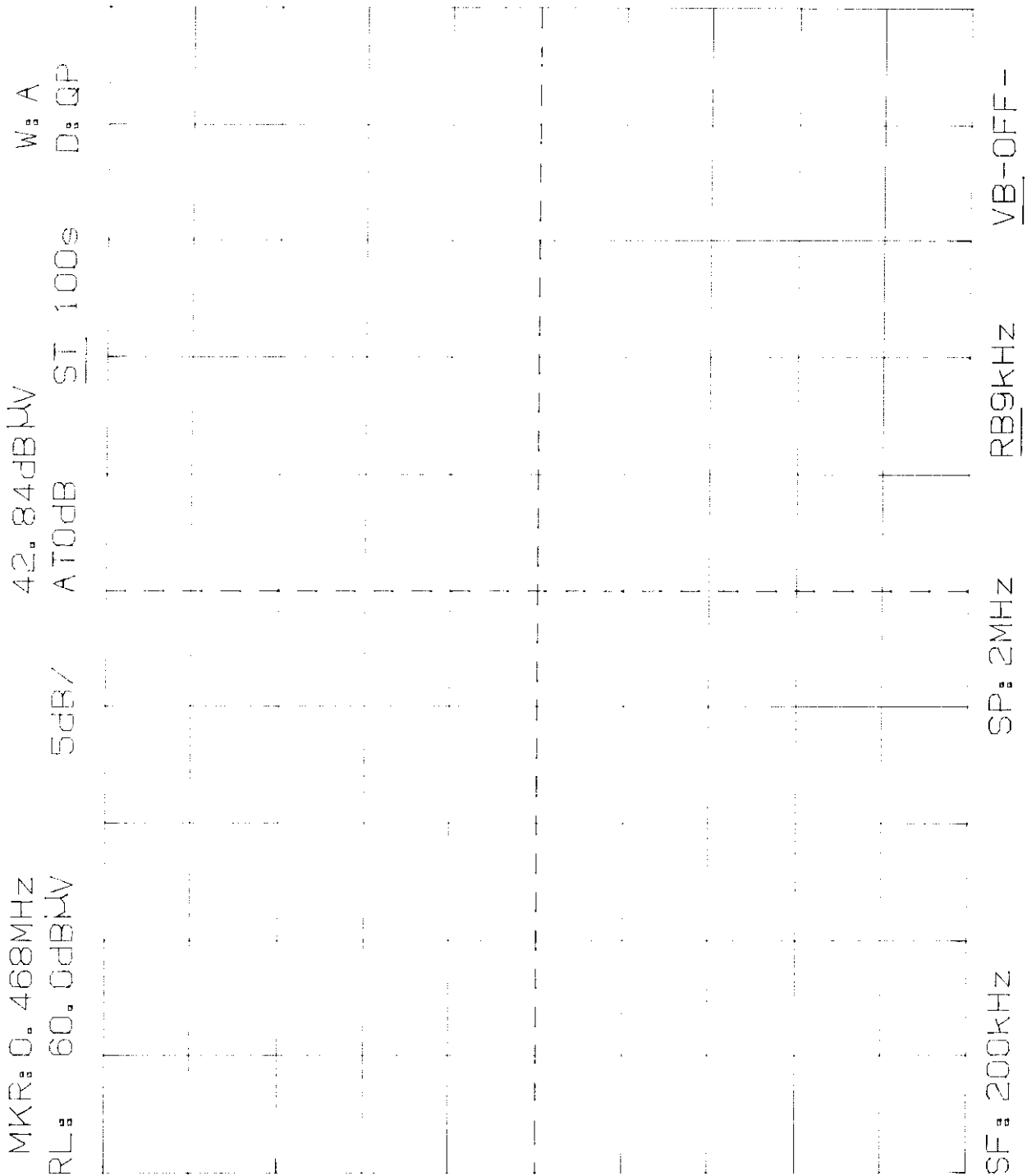
POWER LINE CONDUCTED EMISSIONS
 MODEL CLT-9840 - SIDE A
 HANDSET SPEAKERPHONE OFF-HOOK



POWER LINE CONDUCTED EMISSIONS
MODEL CLT-9840
SIDE: A



POWER LINE CONDUCTED EMISSIONS
MODEL CLT-9840 - SIDE B
HANDSET SPEAKERPHONE OFF-HOOK



POWER LINE CONDUCTED EMISSIONS
MODEL CLT-9840
SIDE: B

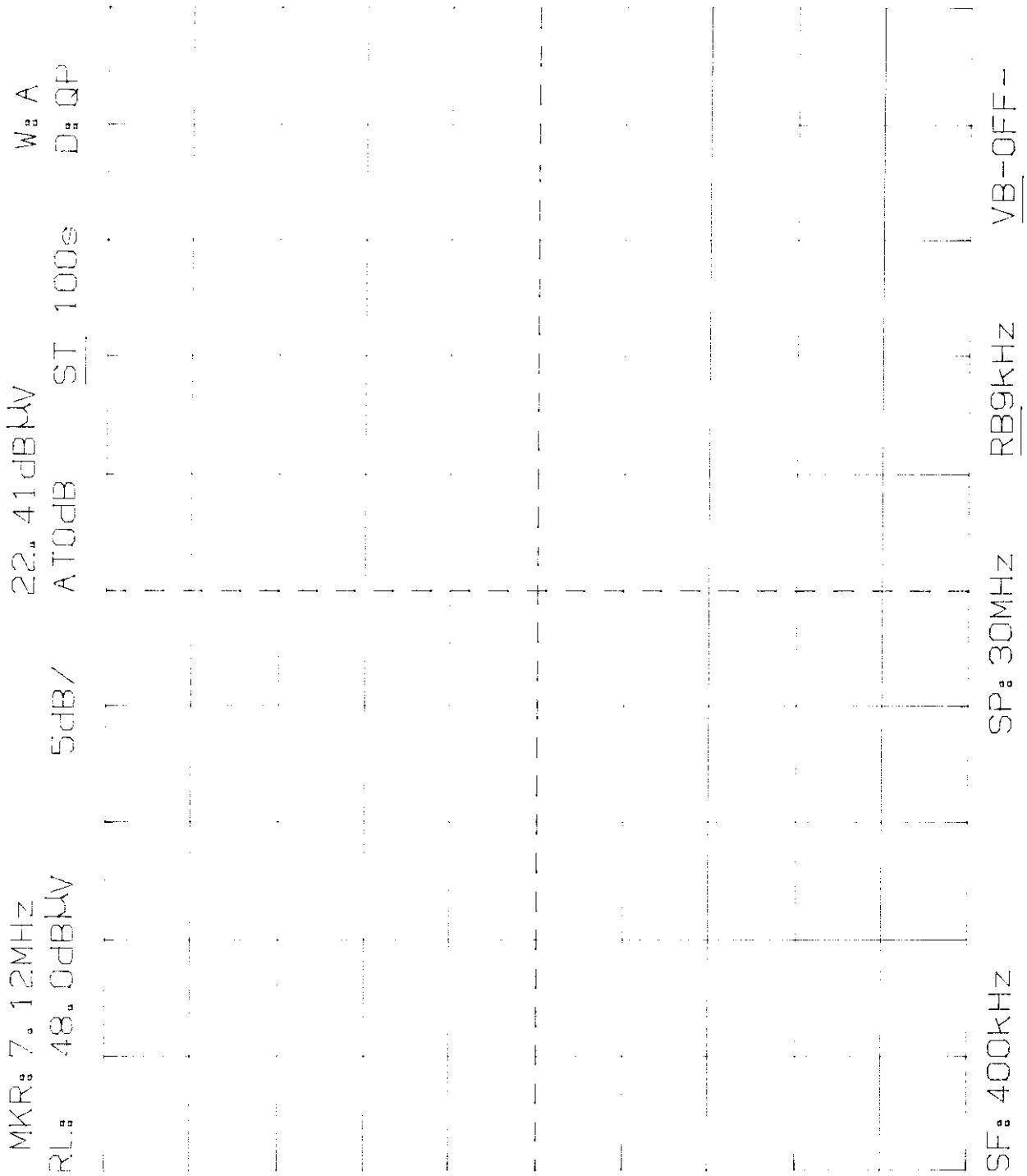


EXHIBIT E
(FCC Ref. 2.1033(b)(7))

"Photographs"