

1.3 Tested System Details

Model No. Serial No.	FCC ID	Description	Cable Description
G8C-253M	E4EG8CA	Receiver	None #

: The equipment is not designed to be connected to public utility (AC) power lines.

The test sample was identified by the client as follows:

Product : Receiver of remote door lock control
Model No. : G8C-253M
FCC ID : E4EG8CA
Manufacturer : OMRON Corporation
CPU Clock Frequency : 10 MHz
Local Clock Frequency : 315 MHz
Tuning Frequency : 315 MHz
Modulation Method : Superregenerative Type
Antenna : Built-in Type
Rating : DC 12 V, 50 mA
Weight : 245 g

1.4 Test Methodology

The measurement method used conformed to FCC Measurement Procedure ANSI C63.4-1992 (Revision of ANSI C63.4-1991) "Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz". The measurements were made as per FCC Part 15, Subpart B requirements. The electric field testing was performed at an antenna to EUT distance of 3 meters.

1.5 Test Facility

The electric field measurement was made at Chemitox EMC open field test site. The location is:

Chemitox EMC Research, Inc.
3rd Open Site
14979, Egusa, Sudama-cho, Kitakoma-gun
Yamanashi-ken, 408-0103 Japan

The Chemitox EMC open site is located approximately 160 km north-west of Tokyo in a mountainous area. There are no residences, stores or factories around this open site. The open site is surrounded by mountains, consequently television and FM radio broadcast signals are completely blocked out. The open site is therefore able to easily avoid overlapping from such signals and can more accurately measure computer device noise. The Chemitox EMC test facility at the above address was filed with the FCC under reference number 31040/SIT on June 18, 1997 and certified by NVLAP under code number 200120-0 on March 31, 1997.

1.6 Referenced Rules Section

<u>Rules Section</u>	<u>Rules Title-Brief Description</u>
2.925	Identification of Equipment - The equipment described in this document shall comply with the identification requirements of this part.

SECTION 3
SYSTEM TEST CONFIGURATION

3.1 Justification

The EUT was measured in the reception and wait mode.

The reception mode was found to have the worst electric field level. The test results are show in Attachment B.

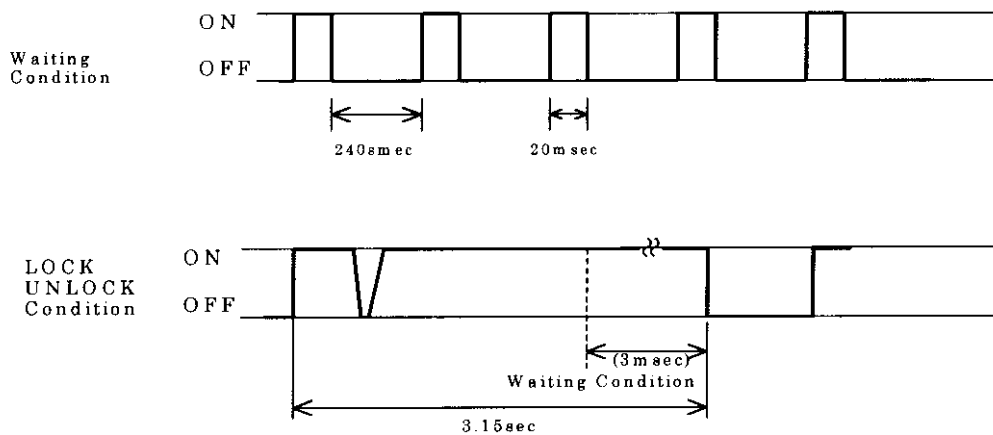
3.2 Video Mode Justification

The equipment does not have a video device.

3.3 EUT Exercise Software

The normal transmission operation of the EUT is conducted by a battery which is installed within a vehicle. For the measurements purpose, a regulated DC power supply is used instead the battery of the vehicle. The reception of the EUT was conducted by operating intermittently a transmitter with the lock condition. There is no difference between the lock and unlock condition regarding the electrical and mechanical functions of a receiver. Also there is no deference between both conditions regarding the frequency of radiated emission. The only difference is the reception time. The following is to explain the difference:

- a) A receiver received the transmission code from a transmitter when the receiver is the "ON" condition.
- b) The "ON" condition of the receiver continues until the reception of the transmission code shall complete.
- c) After the reception of the transmission code shall complete, a door lock actuator shall operate.




3.4 Special Accessories

The EUT does not have a special accessory.

3.5 Equipment Modification

To achieve compliance with Class B of Subpart B requirements, there were no changes to the equipment made by Chemitox EMC Research test facilities during compliance testing.

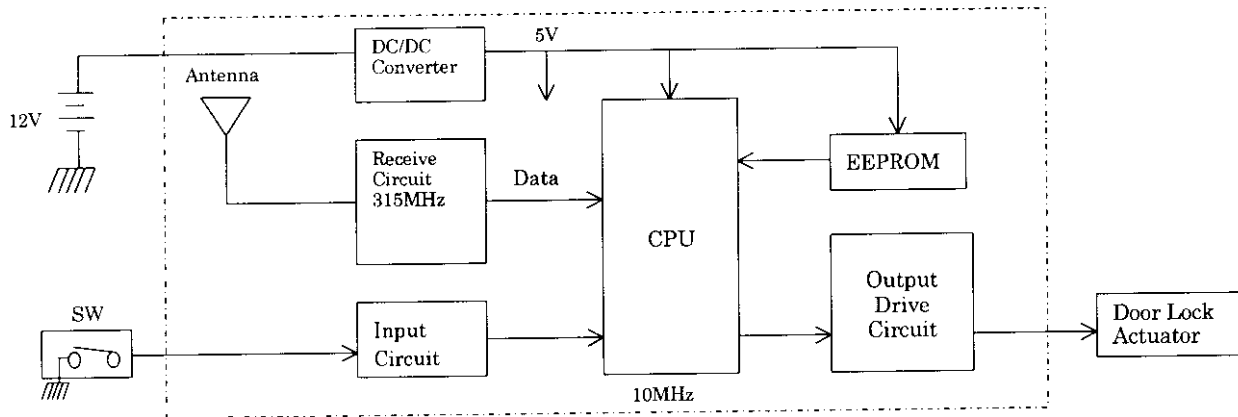
Test Signature :  Date : March 13, 1998
Takaaki Nittono
Position : Manager

3.6 Configuration of Tested System

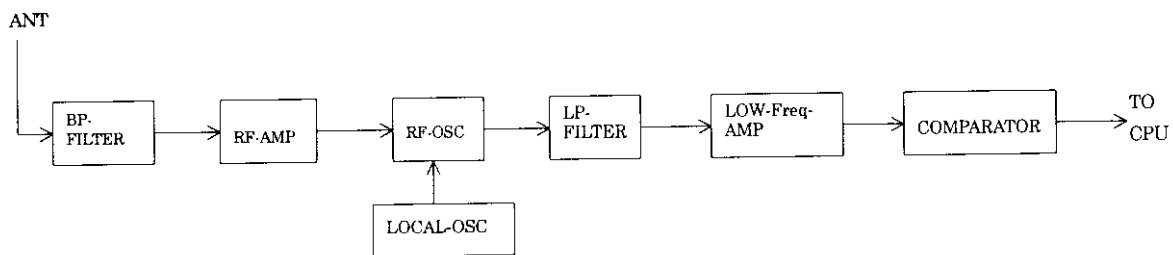
Since the EUT is not connected to any other devices when in use, such a configuration is not shown in this Section.

SECTION 4

BLOCK DIAGRAM OF MODEL G8C-253M



BLOCK DIAGRAM
G8C-253M
OMRON Corporation



RECEIVER CIRCUIT MODEL BLOCK DIAGRAM
G8C-253M
OMRON Corporation

SECTION 5
MEASUREMENT PHOTOGRAPHS

SECTION 6
CONDUCTED POWER-LINE DATA

6.1 Conducted Power-Line Data per Section 15.207

Since the equipment is operated by a battery and is not designed to be connected to public utility (AC) power lines, conducted power-line measurements were not performed.

SECTION 7
ELECTRIC FIELD DATA

7.1 Test Procedure

The electric field strength was measured in the preliminary test by using a spectrum analyzer with a peak detector function. The noise strength below 1000 MHz was read by using a field strength meter with a CISPR quasi-peak detector function. The noise strength above 1000 MHz was read by a spectrum analyzer with a peak detector function.

The data in this section includes the significant emission frequencies, measured levels, correction factors (including cable loss, pre-amplifier gain and antenna factor), the corrected reading, and the limit. An explanation of the correction factor are given in paragraph 7.4. The frequency rang investigated was 30 MHz to 2000 MHz.

7.2 Test Data

7.2.1 Electric Field Strength

The electric field strength of below 1000 MHz was read by a field strength meter with a CISPR quasi-peak detector function. The electric field strength of above 1000 MHz was read by a spectrum analyzer with a peak detector function. The results are shown in a table in Attachment B.

The six highest electric field strength are indicated below:

Test Mode: Reception

Measuring Frequency (MHz)	Electric Field Strength (dB μ V/m)	Margin (dB)	Limit at 3 m (dB μ V/m)	Antenna Polarization
311.570	21.2	24.8	46.0	Vertical
316.290	21.2	24.8	46.0	Vertical
316.970	21.8	24.2	46.0	Vertical
317.670	21.6	24.4	46.0	Vertical
633.940	21.6	24.4	46.0	Vertical
633.940	21.6	24.4	46.0	Horizontal

The electric field strength at both the vertical and horizontal polarization limit meets the requirements of Class B Subpart B, Part 15.

7.2 Test Instrumentation Used, Electric Field Measurement

Equipment	Model No.	Serial No.	Manufacturer	Calibration
Field Strength Meter	ESVP	882401/030	Rohde & Schwarz	Feb. 16, 1998
Spectrum Analyzer	8566B		Hewlett Packard	Aug. 16, 1997
Display	85662A	2534A10467		
RF Section	85660B	2532A02163		
QP Adapter	85650A	2521A00921	Hewlett Packard	N/A
Dipole Antenna	VHA9130	C001/C002 C005	Schwarzbeck	Nov. 4, 1997
Dipole Antenna	UHA9105	C004 C006	Schwarzbeck	Nov. 4, 1997
Logbicon Antenna	VULB9160	3020	Schwarzbeck	May. 19, 1997
Double Ridge Guide Horn Antenna	3115	9005-3434	EMCO	N/A
Pre Amplifier	8447D	2648A04892	Hewlett Packard	Nov. 25, 1997
Fixed Gain Preamplifier	NSP1800-N	417721	MITEQ	Oct. 31, 1997

Calibration: Date of Calibration.

Measuring instrumentation must be checked and calibrated at least every 12 months.

7.3 Electric Field Strength Calculation

The electric field strength was calculated by adding the calibration factor to the measured reading.

The basic equipment and a sample calculation are as follows:

$$\text{EFS} = \text{FSM} + \text{CF}$$

$$\text{Margin} = \text{Limit} - \text{EFS}$$

where FSM : Field Strength Meter Reading (dB μ V)

EFS : Electric Field Strength (dB μ V/m)

CF : Calibration Factor (dB/m)

The calibration factor includes pre-amplifier gain, cable loss and antenna factor.

SECTION 8
PHOTOGRAPHS OF TESTED EUT

ATTACHMENT B
PRODUCT DATA SHEET

List of Table

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Resepition Mode

Table 1.1	Electric Field Strength of Spurious (Vertical Polarization)
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Fig. 1.1	Electric Field Strength of Spurious (Vertical Polarization)
Fig. 1.2	Electric Field Strength of Spurious (Horizontal Polarization)

Wait Mode

Table 2.1	Electric Field Strength of Spurious (Vertical Polarization)
Table 2.2	Electric Field Strength of Spurious (Horizontal Polarization)
Fig. 2.1	Electric Field Strength of Spurious (Vertical Polarization)
Fig. 2.2	Electric Field Strength of Spurious (Horizontal Polarization)

***** Test Results of Electric Field Strength *****
 per Class B of FCC Part 15 Subpart E
 (Frequency Range from 30 MHz to 2000 MHz)

Table 1.1

Product : RECEIVER
 Model : G8C-253M
 Mfr. : OMRON
 Rating : DC12V
 File : RC980313.5
 Date : Mar. 13, 98
 Condition : RECEPTION
 Control No.: C971125Z

FREQ (MHz)	FSM (dBuV)	PAG (dB)	AL (dB)	CL (dB/m)	AF (dB/m)	EFS (dBuV/m)	MRGN (dB)	Limit (dBuV/m)	Note
*** Vertical Polarization ***									
309.575	21.5	25.6	0.0	2.4	18.0	16.3	29.7	16.0	Q,D
310.267	24.0	25.6	0.0	2.4	18.0	18.8	27.2	16.0	Q,D
310.960	21.8	25.6	0.0	2.4	18.0	19.7	26.3	16.0	Q,D
311.570	26.3	25.6	0.0	2.4	18.0	21.2	24.8	16.0	Q,D
312.210	25.8	25.6	0.0	2.4	18.1	20.7	25.3	16.0	Q,D
315.600	24.9	25.6	0.0	2.4	18.2	19.9	26.1	16.0	Q,D
316.290	26.2	25.6	0.0	2.4	18.2	21.2	24.8	16.0	Q,D
316.970	26.8	25.6	0.0	2.4	18.2	21.8	24.2	16.0	Q,D
317.670	26.5	25.6	0.0	2.4	18.2	21.6	24.4	16.0	Q,D
318.290	25.7	25.6	0.0	2.4	18.2	20.8	25.2	16.0	Q,D
633.810	19.5	27.1	0.0	3.8	25.1	21.6	24.1	16.0	Q,D
1173.000	29.0	30.8	0.0	1.9	23.8	26.9	27.1	54.0	P,B

FREQ : Frequency
 FSM : Field Strength Meter Reading
 PAG : Pre-Amplifier Gain
 AL : Attenuator Loss
 CL : Cable Loss
 AF : Antenna Factor
 EFS : Electric Field Strength (EFS=FSM-PAG+AL+CL+AF)
 MRGN : Margin (MRGN=Limit-EFS)
 P : Peak
 Q : CISPR Quasi-Peak
 B : Broad-Band Antenna
 D : Dipole Antenna

Tested by: *T. Allen*

***** Test Results of Electric Field Strength *****
 per Class B of FCC Part 15 Subpart B
 (Frequency Range from 30 MHz to 2000 MHz)

Table 1.2

Product : RECEIVER
 Model : G8C-253M
 Mfr. : ONRON
 Rating : DC12V
 File : RC980313.5
 Date : Mar. 13, 98
 Condition : RECEPTION
 Control No.: C971125Z

FREQ (MHz)	FSM (dBuV)	PAG (dB)	AL (dB)	CL (dB/m)	AF (dB/m)	EFS (dBuV/m)	MRGN (dB)	Limit (dBuV/m)	Note
*** Horizontal Polarization ***									
309.575	22.2	25.6	0.0	2.1	18.0	17.1	28.9	16.0	Q,D
310.267	22.2	25.6	0.0	2.1	18.0	17.6	28.1	16.0	Q,D
310.960	23.2	25.6	0.0	2.1	18.0	18.2	27.8	16.0	Q,D
311.570	23.5	25.6	0.0	2.1	18.0	18.1	27.6	16.0	Q,D
312.210	22.2	25.6	0.0	2.1	18.1	17.1	28.9	16.0	Q,D
315.600	22.7	25.6	0.0	2.1	18.2	17.7	28.3	16.0	Q,D
316.290	23.1	25.6	0.0	2.4	18.2	18.1	27.9	16.0	Q,D
316.970	23.0	25.6	0.0	2.4	18.2	18.0	28.0	16.0	Q,D
317.670	22.3	25.6	0.0	2.1	18.2	17.4	28.6	16.0	Q,D
318.290	21.0	25.6	0.0	2.4	18.2	16.1	29.9	16.0	Q,D
633.910	19.5	27.1	0.0	3.8	25.4	21.6	24.4	16.0	Q,D
1173.000	29.0	30.8	0.0	1.9	23.8	26.9	27.1	51.0	P,B

FREQ : Frequency
 FSM : Field Strength Meter Reading
 PAG : Pre-Amplifier Gain
 AL : Attenuator Loss
 CL : Cable Loss
 AF : Antenna Factor
 EFS : Electric Field Strength(EFS=FSM-PAG+AL+CL+AF)
 MRGN : Margin(MRGN=Limit-EFS)
 P : Peak
 Q : CISPR Quasi-Peak
 B : Broad-Band Antenna
 D : Dipole Antenna

Tested by: *T. Allen*

Fig 1.1 ***** Test Results of Electric Field Strength *****

per Class B of FCC Part 15 Subpart B
(Frequency Range from 30 MHz to 2000 MHz)

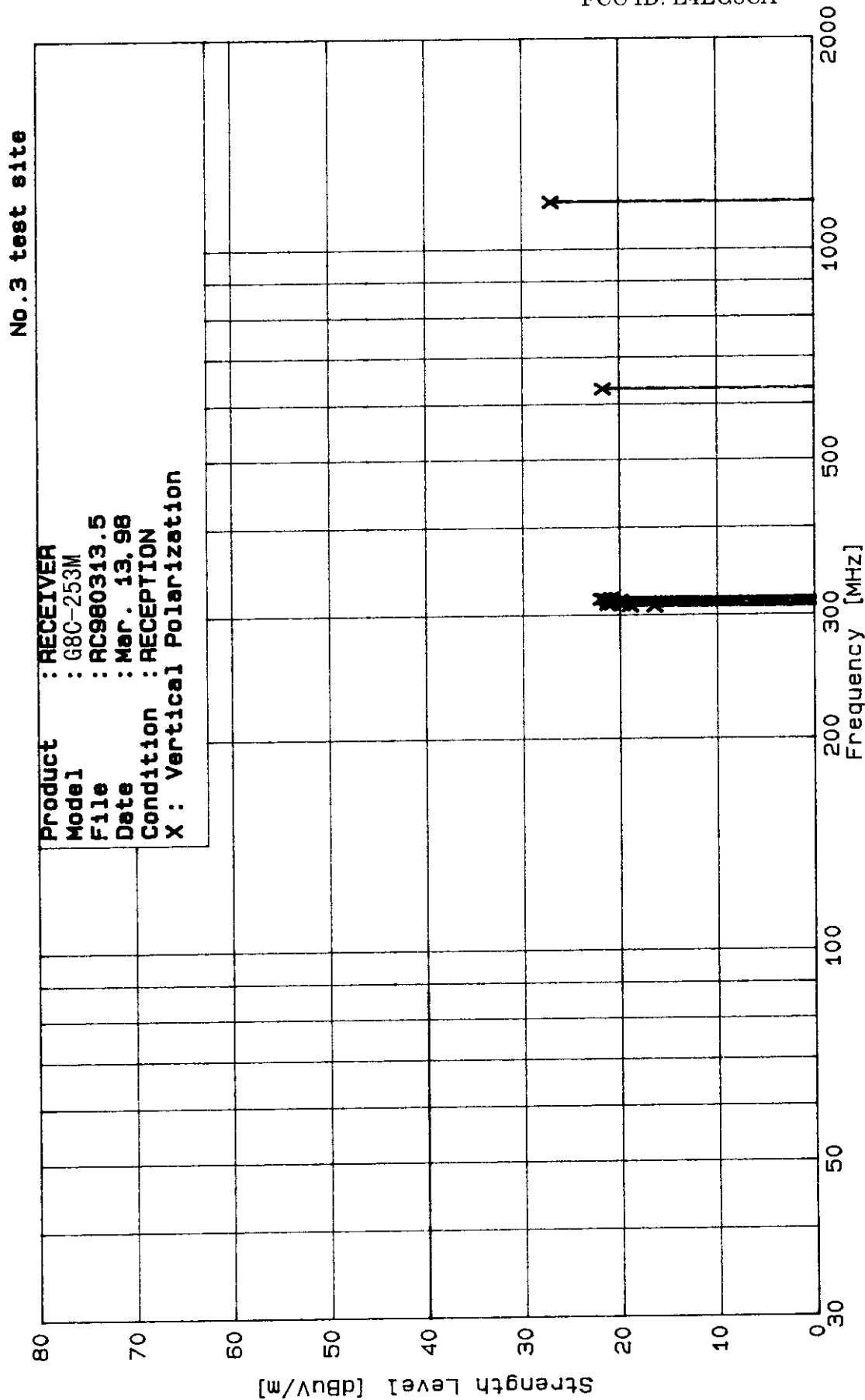
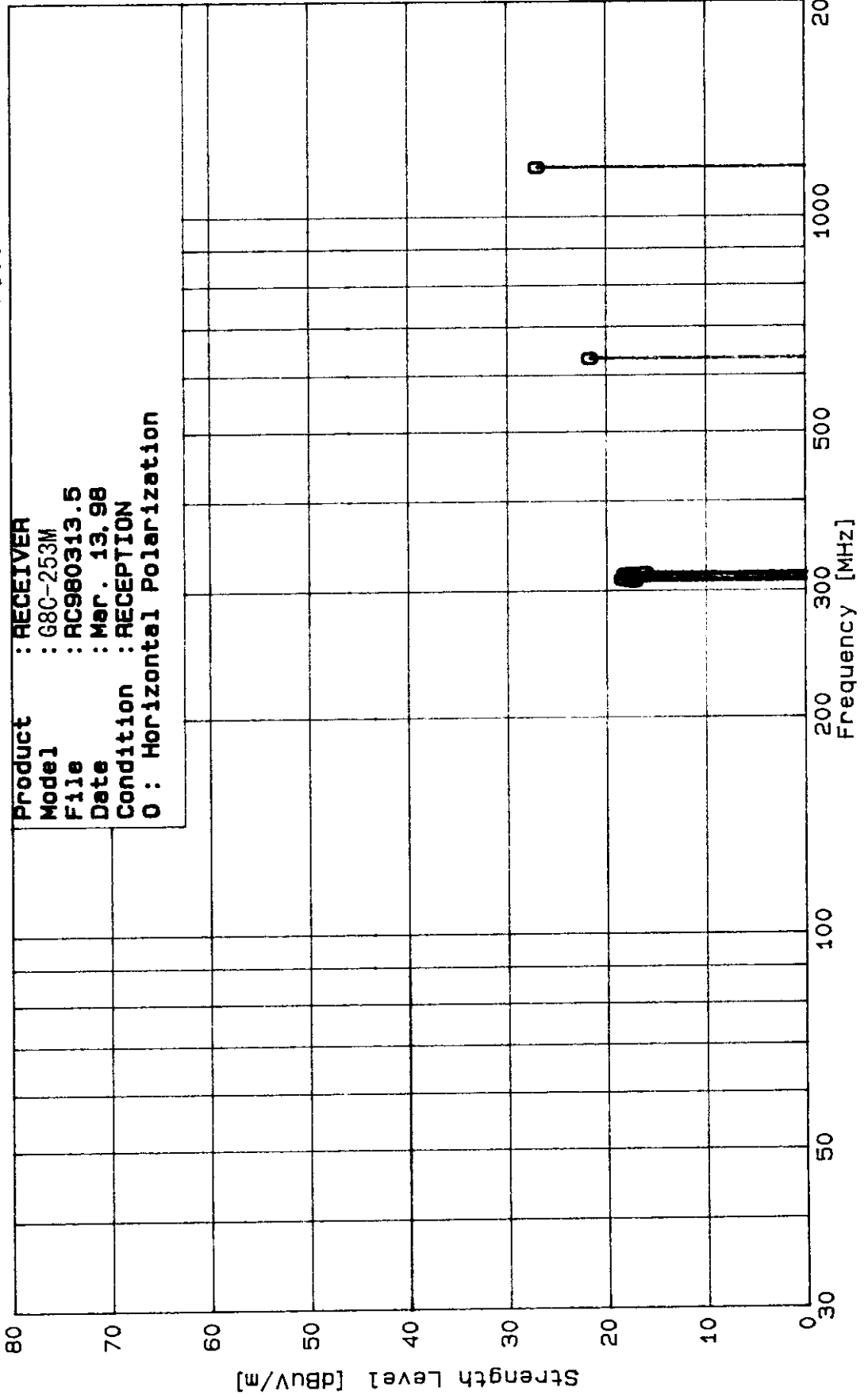


Fig 1.2 ***** Test Results of Electric Field Strength *****

per Class B of FCC Part 15 Subpart B
(Frequency Range from 30 MHz to 2000 MHz)

No. 3 test site



***** Test Results of Electric Field Strength *****
 per Class B of FCC Part 15 Subpart B
 (Frequency Range from 30 MHz to 2000 MHz)

Table 2.1

Product : RECEIVER
 Model : G8C-253M
 Mfr. : OMRON
 Rating : DC12V
 File : RC980313.1
 Date : Mar. 13,98
 Condition : WAIT
 Control No.: C971125Z

FREQ (MHz)	FSM (dBuV)	PAG (dB)	AL (dB)	CL (dB/m)	AF (dB/m)	EFS (dBuV/m)	MRGN (dB)	Limit (dBuV/m)	Note
*** Vertical Polarization ***									
309.575	20.1	25.6	0.0	2.4	18.0	14.9	31.1	46.0	Q,D
310.267	20.5	25.6	0.0	2.1	18.0	15.3	30.7	46.0	Q,D
310.960	21.0	25.6	0.0	2.4	18.0	15.9	30.1	46.0	Q,D
311.570	20.9	25.6	0.0	2.4	18.0	15.8	30.2	46.0	Q,D
312.210	19.8	25.6	0.0	2.4	18.1	14.7	31.3	46.0	Q,D
315.600	19.8	25.6	0.0	2.1	18.2	14.8	31.2	46.0	Q,D
316.290	20.4	25.6	0.0	2.1	18.2	15.4	30.6	46.0	Q,D
316.970	20.9	25.6	0.0	2.4	18.2	15.9	30.1	46.0	Q,D
317.670	20.5	25.6	0.0	2.4	18.2	15.6	30.4	46.0	Q,D
318.290	20.2	25.6	0.0	2.4	18.2	15.3	30.7	46.0	Q,D
633.940	19.5	27.1	0.0	3.8	25.4	21.6	21.4	46.0	Q,D
1173.000	29.0	30.8	0.0	4.9	23.8	26.9	27.1	54.0	P,B

FREQ : Frequency
 FSM : Field Strength Meter Reading
 PAG : Pre-Amplifier Gain
 AL : Attenuator Loss
 CL : Cable Loss
 AF : Antenna Factor
 EFS : Electric Field Strength(EFS=FSM-PAG+AL+CL+AF)
 MRGN : Margin(MRGN=Limit-EFS)
 P : Peak
 Q : CISPR Quasi-Peak
 B : Broad-Band Antenna
 D : Dipole Antenna

Tested by: *T. H. H. H.*

***** Test Results of Electric Field Strength *****
 per Class B of FCC Part 15 Subpart B
 (Frequency Range from 30 MHz to 2000 MHz)

Table 2.2

Product : RECEIVER
 Model : G8C-253M
 Mfr. : OMRON
 Rating : DC12V
 File : RC980313.1
 Date : Mar. 13, 98
 Condition : WAIT
 Control No.: C971125Z

FREQ (MHz)	FSM (dBuV)	PAG (dB)	AL (dB)	CL (dB/m)	AF (dB/m)	EFS (dBuV/m)	MRGN (dB)	Limit (dBuV/m)	Note
*** Horizontal Polarization ***									
309.575	18.9	25.6	0.0	2.1	18.0	13.7	32.3	46.0	Q,D
310.267	19.0	25.6	0.0	2.1	18.0	13.8	32.2	46.0	Q,D
310.960	18.9	25.6	0.0	2.4	18.0	13.8	32.2	46.0	Q,D
311.570	19.0	25.6	0.0	2.4	18.0	13.9	32.1	46.0	Q,D
312.210	18.9	25.6	0.0	2.1	18.1	13.8	32.2	46.0	Q,D
315.600	19.0	25.6	0.0	2.4	18.2	14.0	32.0	46.0	Q,D
316.290	18.9	25.6	0.0	2.4	18.2	13.9	32.1	46.0	Q,D
316.970	19.7	25.6	0.0	2.4	18.2	14.7	31.3	46.0	Q,D
317.670	18.9	25.6	0.0	2.4	18.2	14.0	32.0	46.0	Q,D
318.290	18.7	25.6	0.0	2.4	18.2	13.8	32.2	46.0	Q,D
633.940	19.5	27.1	0.0	3.8	25.1	21.6	24.4	46.0	Q,L
1173.000	29.0	30.8	0.0	1.9	23.8	26.9	27.1	54.0	P,B

FREQ : Frequency
 FSM : Field Strength Meter Reading
 PAG : Pre-Amplifier Gain
 AL : Attenuator Loss
 CL : Cable Loss
 AF : Antenna Factor
 EFS : Electric Field Strength(EFS=FSM-PAG+AL+CL+AF)
 MRGN : Margin(MRGN=Limit-EFS)
 P : Peak
 Q : CISPR Quasi-Peak
 B : Broad-Band Antenna
 D : Dipole Antenna

Tested by: *T. H. H. H.*

Fig 2.1 ***** Test Results of Electric Field Strength *****

per Class B of FCC Part 15 Subpart B
(Frequency Range from 30 MHz to 2000 MHz)

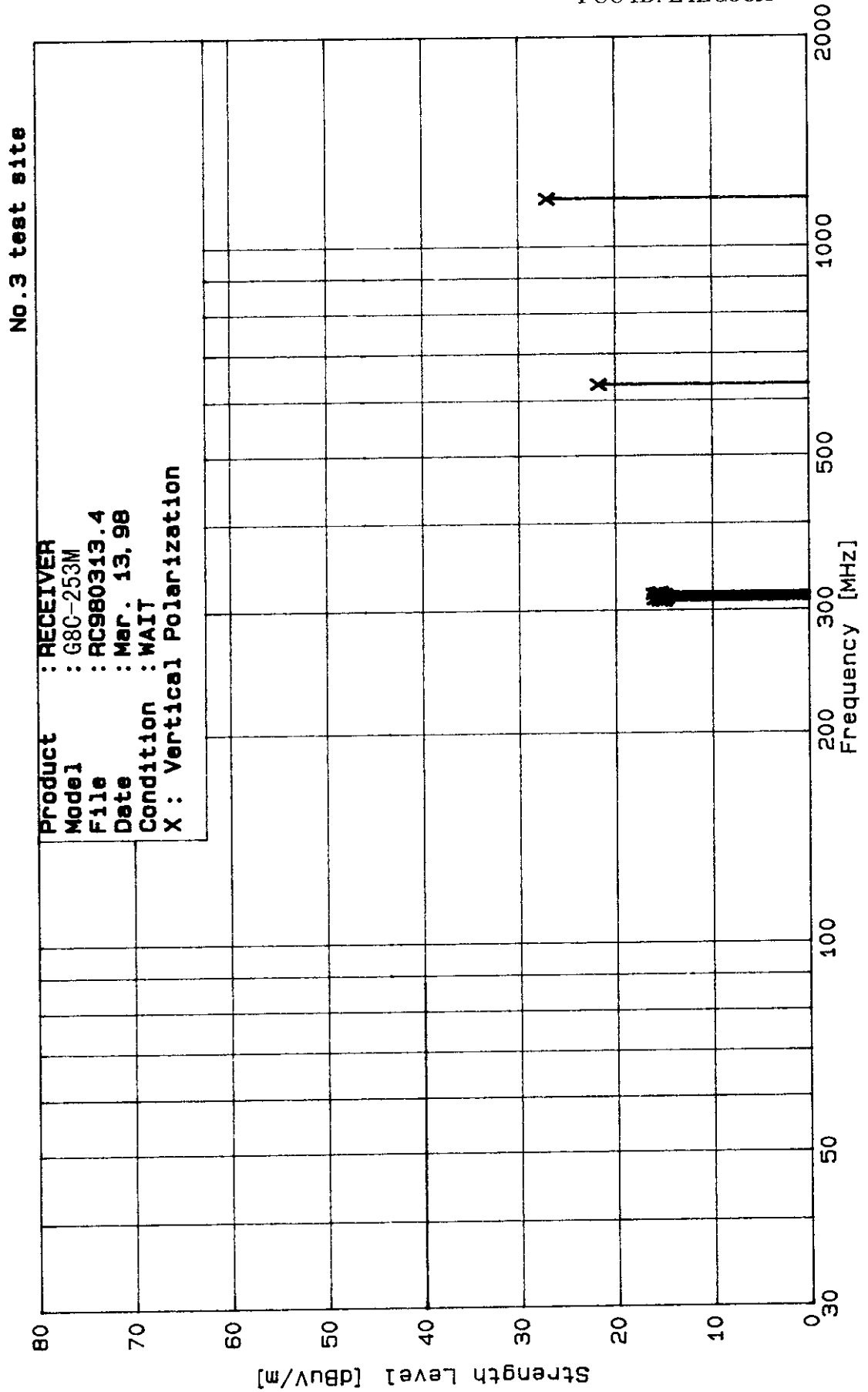
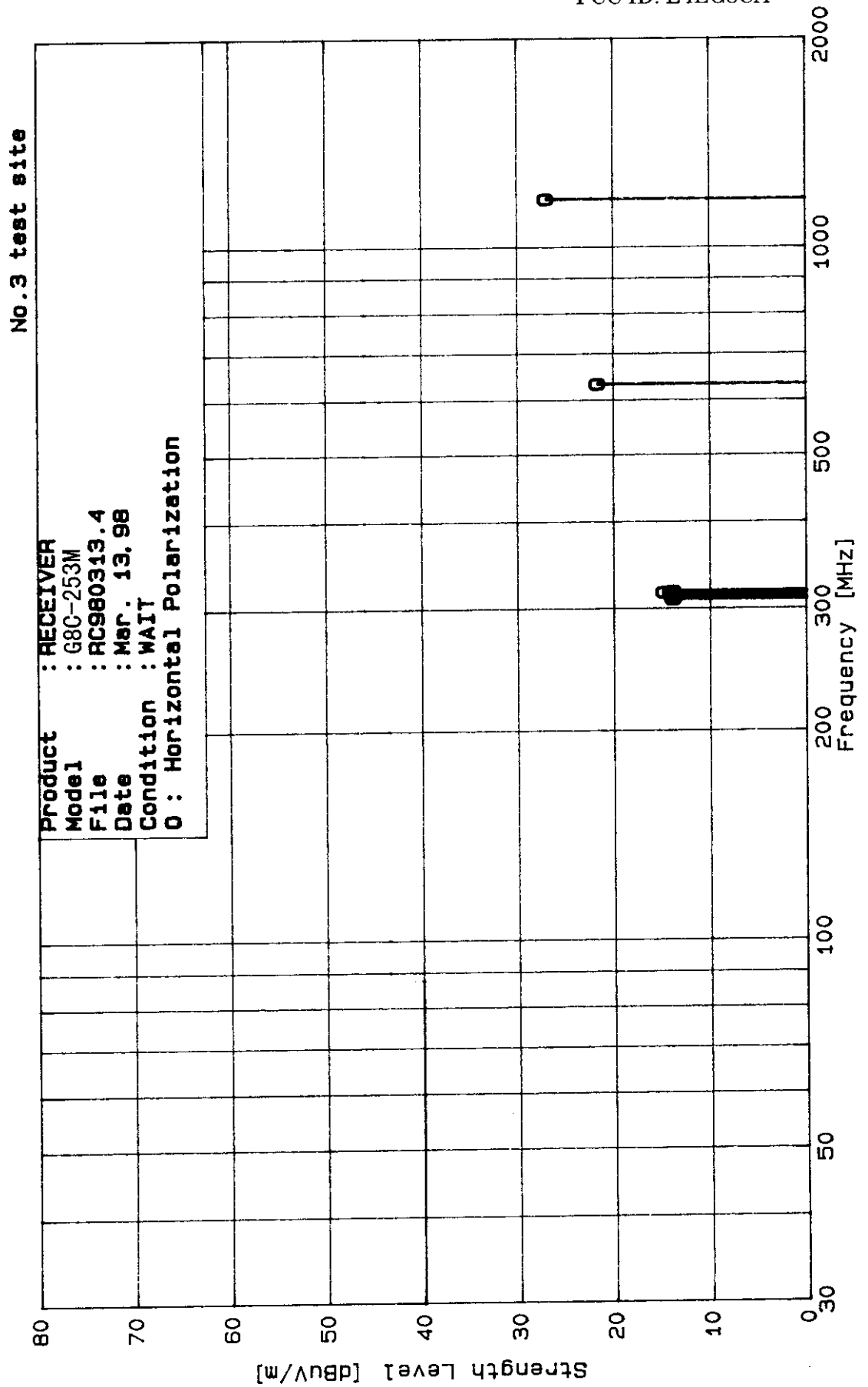


Fig 2.2 *** Test Results of Electric Field Strength *******
per Class B of FCC Part 15 Subpart B
(Frequency Range from 30 MHz to 2000 MHz)



ATTACHMENT C
SCHEMATIC AND PARTS LIST

Parts List

No	PARTS NAME	MANUFACTURER	QTY	TYPE	SPECIFICATION	REMARK
1	PWB	NIHON CMK	1	FR-4		
2	CPU	FUJITSU	1	MB89677ARPFM-G-157		CPU1
3	RESET IC	MITSUMI elec.	1	MM1185AFF		IC1
4	FLASHER IC	TELEFUNKEN	1	U6043B-FPG3		IC2
5	TRANSISTOR ARRAY	TOSHIBA	2	TD62004AF-TP2		IC4,5
6	TRANSISTOR	ROHM	1	2SB852K-T146B	0.2W	Tr11
7	↑	NEC	1	2SD936	10W	Tr2
8	↑	MATSUSHITA elec.	1	2SC2925-S-T(TA)	0.75W	Tr12
9	↑	NEC	1	2SD780DW5-T1B	0.2W	Tr14
10	↑	TOSHIBA	1	2SA1429-Y	1W	Tr16
11	DIGITAL TRANSISTOR	ROHM	1	DTA143EKAT146	0.2W	Tr6
12	↑	↑	1	DTC143ZKAT146	0.2W	Tr8
13	↑	↑	1	DTB113ZKT146	0.2W	Tr3
14	↑	↑	1	FMA7AT148	0.3W	Tr4
15	↑	↑	1	FMC3AT148	0.3W	Tr7
16	↑	↑	1	IMZ1AT148	0.3W	Tr13
17	↑	TOSHIBA	2	RN1427TE85L	0.2W	Tr9,10
18	MOSFET	mitsubishi elec.	1	FS10KM-06	10A 60V	Tr15
19	ZENER DIODE	MOTROLA	5	MMSZ4689-T1	500mW 4.85-5.36V	ZD3,4,5,11,18
20	↑	↑	1	MMSZ4690-T1	500mW 5.23-5.88V	ZD17



					DESIGNED	CHECKED	APPLICATION TIME AND ALARM CONTROLLER
					APPROVED	/	DWG No.
SYM	DATE	E/C CONTENTS	E/C No.	SIGN	SHEET No	1 / 4	DESIGN for G8C-253M

No	PARTS NAME	MANUFACTURER	QTY	TYPE	SPECIFICATION	REMARK
21	ZENER DIODE	MOTROLA	2	MMSZ5246B-T1	500mW 15.2-16.8V	ZD6,13
22	↑	↑	5	MMSZ5252B-T1	500mW 22.8-25.2V	ZD9,10,12,14,19
23	↑	NEC	2	RD30FMB-T1	1W 28.0-32.0V	ZD15,16
24	↑	↑	1	RD6.2JSAB2-T4	400W 6.04-6.34V	ZD2
25	DIODE	TOSHIBA	4	ISS372(TES5R)	90V 100mA	D6,13,17,18
26	↑	FUJI elec.	2	ERA15-06V1	1A 600V	D1,2
27	↑	ROHM	4	1MN10T10S	80V 100mA	D7,11,14,15
28	↑	MATSUSHITA elec.	1	MA142WK-(TX)	80V 100mA	D4
29	CHIP RESISTOR	*	2	RK20CAY100J-T1	100 1/10W	R59,61
30	↑	*	2	RK20CAY680J-T1	680 1/10W	R43,45
31	↑	*	1	RK20CAY1.6KJ-T1	1.6K 1/10W	R53
32	↑	*	4	RK20CAY2.2KJ-T1	2.2K 1/10W	R57,58,60,62
33	↑	*	4	RK20CAY4.7KJ-T1	4.7K 1/10W	R24,33,55,56
34	↑	*	2	RK20CAY5.1KJ-T1	5.1K 1/10W	R18,25
35	↑	*	4	RK20CAY10KJ-T1	10K 1/10W	R7,19,67,68
36	↑	*	1	RK20CAY12KJ-T1	12K 1/10W	R44
37	↑	*	4	RK20CAY22KJ-T1	22K 1/10W	R4,6,31,51
38	↑	*	15	RK20CAY47KJ-T1	47K 1/10W	*1
39	↑	*	2	RK20CAY47KJ-T1	47K 1/10W	R28,29
40	↑	*	1	RK20CAY150KJ-T1	150K 1/10W	R42

*1: R5,9,11,13,14,17,26,32,36,46,49,51,52,64,66

					DESIGNED	CHECKED	APPLICATION TIME AND ALARM CONTROLLER
					APPROVED	/	DWG No
							DESIGN for
SYM	DATE	E/C CONTENTS	E/C No.	SIGN	SHEET No	2 / 4	G 8 C - 2 5 3 A

No	PARTS NAME	MANUFACTURER	QTY	TYPE	SPECIFICATION	REMARK
41	CHIP RESISTOR	*	1	RK20CBY1KF-T1	1K 1/10W 1%	R16
42	↑	*	1	RK20CBY180KF-T1	180K 1/10W 1%	R35
43	*	*	1	RK32CAY470J-T1	470 1/4W	R34
44	*	*	2	RK32CAY820J-T1	820 1/4W	R50,65
45	↑	*	8	RK32CAY1.5KJ-T1	1.5K 1/4w	R8,10,12,38,40, 41,69,70
46	↑	*	1	RK32CAY2.2KJ-T1	2.2K 1/4W	R63
47	CARBON RESISTOR	MATSUSHITA elec.	1	ERDS1TJ430V	43 1/2W	R47
48	*	*	1	ERDS1TJ751V	750 1/2W	R48
49	SHUNT RESISTOR	FOX	1	RL(A20920)R02-1	18mΩ	R39
50	RESISTOR ARRAY	MURATA	1	RGLD10M471J473J-M02	470-47K	RA1
51	↑	↑	3	RGLD6M471J473J	470-47K	RA2,3,4
52	CAPACITOR	MATSUSHITA elec.	1	ECA1HM010KB	1.0U 50V 10%	C38
53	↑	↑	1	ECA1AM221B	220U 10V	C3
54	↑	*	1	CE11R85B1H220-T1	22U 50V	C39
55	↑	*	1	CE11R85B1H331	330U 50V	C1
56	CHIP RESISTOR	*	2	CCM-L20CH1H220J-T2	22U 50V	C35,36
57	↑	*	8	CKM-L20R1H471K-T2	470P 50V	*2
58	↑	*	1	CKM-L20R1H221K-T2	220P 50V	C30
59	↑	*	1	CKM-L20R1H681K-T2	680P 50V	C44
60	↑	*	2	CKM-L20R1H102K-T2	1000P 50V	C42,45

*2 : C4,8,26,29,43,46,47,48

					DESIGNED	CHECKED	APPLICATION TIME AND ALARM CONTROLLER
					APPROVED	DESIGN for	DWG No.
							G 8 C - 2 5 3 M
SYM	DATE	E/C CONTENTS	E/C No.	SIGN	SHEET No	3 / 4	

No	PARTS NAME	MANUFACTURER	QTY	TYPE	SPECIFICATION	REMARK
61	CHIP RESISTOR	*	1	CKM-L20R1H333K-T2	0.033U 50V	C40
62	↑	*	1 2	CKM-L20F1H104Z-T2	0.1U 50V	*3
63	↑	MURATA	1	GRM40-034R104K50PT	0.1U 50V	C6
64	↑	*	1	CCM-L20CH1H150J-T2	15P 50V	C32
65	↑	*	1	CCM-L20CH1H100D-T2	10P 50V	C49
66	↑	*	1	CCM-L20CJ1H030C-T2	3P 50V	C50
67	↑	*	1	CCM-L20CH1H150J-T2	15P 50V	C51
68	RELAY	OMRON	2	G8QN-1C4M-Z4	DC12V	RY1,2
69	↑	↑	1	G8LD-N	DC12V	RY5
70	↑	↑	2	G8QN-1C4-RUM-Z4	DC12V	RY3,4
71	BUZZER	CITIZEN	1	CB25CP	DC5V 85dB	BZ
72	CRYSTAL RESONATOR	DAISHINKU	1	AT-49-10.000	10MHz	XTAL
73	EEPROM	SEIKO elec.	1	S-29131AFJ-TB		IC3
74	RF MODULE	MITSUMI elec.	1	WMF-R15	AM 315MHz	
75	CONNECTOR	YAZAKI	1	7383-3104	090 20PIN	CN1
76	↑	AMP	1	174912-2	040 36PIN	CN2
77	TAPPING SCREW	NITTO-SEIKO	5	SWCH MFSN-PB	M3*6	
78	ANTENNA		1			
79	CASE		1	BWH42	BROWN	
80	BASE		1	BWH42	BROWN	

*3 : C2,7,25,27,28,31,33,37,41,52,53,54

					DESIGNED	CHECKED	APPLICATION TIME AND ALARM CONTROLLER
					APPROVED	/	DWG No.
							DESIGN for
SYM	DATE	E/C	CONTENTS	E/C No.	SIGN	SHEET No	4 / 4
							G 8 C - 2 5 3 M

No	PARTS NAME	MANUFACTURER	QTY	TYPE	SPECIFICATION	REMARK
21	1608 CHIP RESISTOR	MATSUSHITA, ROHM	1		33KΩ	R7
22	1608 CHIP RESISTOR	Matsushita, Rohm	2		47KΩ	R13,19
23	↑	↑	1		56KΩ	R8
24	↑	↑	2		100KΩ	R17,18
25	↑	↑	1		1MΩ	R16
26	↑	↑	1		3.3MΩ	R14
27	2125 CHIP RESISTOR	Matsushita, Rohm	1		1KΩ	R5
28	↑	↑	1		10KΩ	R15
29	COIL	Uchida Mfg.Co.,Ltd.	2			L1,2
30	CHIP INDUCTOR	Taiyoyuden Co.,Ltd.	3		1UH	L3,4,6
31	↑	Murata Mfg.Co.,Ltd.	1		17nH	L5
32	TRANSISTOR	NEC Corp.	3		2SC4571	Q1,2,3
33	↑	Rohm Co.,Ltd.	1		DTC144TU	Q4
34	DIODE	Matsushita Elec.Co.	1		MA110	D1
35	IC	Hitachi.Ltd.	1		HA17358F	X1
36	CONNECTOR	Iriso Elec.Co.,Ltd.	1		2P	CN1
37	↑	↑	1		3P	CN2
38	CASE		1			
39	COVER		1			
40						

					DESIGNED	CHECKED	APPLICATION
					APPROVED		DWG No.
							DESIGN for
SYM	DATE	E/C	CONTENTS	E/C No.	SIGN	SHEET No	2/2

ATTACHMENT D
TEST METHODS

E.1 Electric field Measurements

The preliminary measurements were made by using a spectrum analyzer, a logbicon antenna (below 1000 MHz) and a horn antenna (above 1000 MHz). The measurements below 1000 MHz were then made by using a field strength meter and a tuned half-wave dipole antenna. The measurements above 1000 MHz were made by using a spectrum analyzer and a horn antenna. The horizontal distance between the EUT and the measurement antenna was 3 meters (m). The EUT was placed on a non-conductive rotating table, the top of which was 1.0 by 0.8 m in size. The height of the table was 0.8 m above the ground plane. The antenna orientation was both horizontal and vertical to determine maximum radiation from the EUT. Then the EUT was rotated and the antenna height was varied from 1 to 4 m. The measurements below 1000 MHz were set the 6 dB bandwidth of the field strength meter to 120 kHz and the detector function to the CISPR quasi-peak mode. The measurements above 1000 MHz were set the resolution bandwidth and video bandwidth of the spectrum analyzer to 1 MHz and the detector function to the peak mode. During the measurements, the EUT was operated in a meter intended to maximize its emission characteristics in a typical application.