



HomeTek Technology Inc.

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FOOTPRINT

JUL 24 1998

FCC TEST REPORT FOR

APPLICANT : DUAL TECHNOLOGY CORPORATION.

ADDRESS : 9F, 48, NAN-KANG ROAD, SEC. 3,
TAIPEI, TAIWAN, R. O. C.

EUT : NOTEBOOK PC

MODEL NO. : MVA-6690, MVA-6690A

FCC ID : G3LMVA-6690

Under Part 15, SUBPART B.

CLASS B

Certification

PREPARED BY :

HomeTek Technology Inc.

No. 85-5, Shir Men Road, Tu Cheng City,

Taipei Hsien. TAIWAN, R. O. C.

Report # : FB7F025



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TEST REPORT CERTIFICATION

EUT : NOTEBOOK PC
MODEL NO. : MVA-6690, MVA-6690A
FCC ID : G3LMVA-6690
Final Test Date : 7/7/98
APPLICANT : DUAL TECHNOLOGY CORPORATION.
ADDRESS : 9F, 48, NAN-KANG ROAD, SEC. 3,
TAIPEI, TAIWAN, R. O. C.

MEASUREMENT PROCEDURE USED :

PART 15 SUBPART B OF FCC RULES AND REGULATIONS
(47 CFR PART 15) FCC / ANSI C63.4-1992

WE HEREBY SHOW THAT :

THE MEASUREMENT SHOWN IN THE ATTACHMENT WERE MADE IN ACCORDANCE
WITH THE PROCEDURES INDICATED, AND THE MAXIMUM ENERGY EMITTED BY THE
EQUIPMENT WAS FOUND TO BE WITHIN THE FCC LIMITS APPLICABLE.

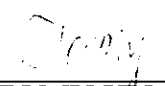
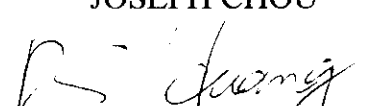
TEST ENGINEER :  DATE : 7/21/98
TOMY HU
CHECK BY :  DATE : 7/21/98
JOSEPH CHOU
APPROVED BY :  DATE : 7/21/98
R.S. HUANG/Manager



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GENERAL INFORMATION

1 APPLICANT : DUAL TECHNOLOGY CORPORATION.
2 ADDRESS : 9F, 48, NAN-KANG ROAD, SEC. 3,
TAIPEI, TAIWAN, R. O. C.

3 MANUFACTURER : DUAL TECHNOLOGY CORPORATION.
4 ADDRESS : 9F, 48, NAN-KANG ROAD, SEC. 3,
TAIPEI, TAIWAN, R. O. C.

5 DESCRIPTION OF EUT :
EUT : NOTEBOOK PC
FCC ID : G3LMVA-6690
Model Number : MVA-6690, MVA-6690A
Serial # : N/A
Data Cable : SHIELDED
Power Cord : UN-SHIELDED
Power Supply Type : ADAPTOR

6 FEATURES OF EUT :

Processor

- Socket - 7 Processor Solution
- Intel 233 MHz
- AMD 266 MHz
- AMD 300 MHz

Main Memory

- Dual Slot 144-Pin/64 bit Access SO-DIMM Memory Module
- 3.3Voltage - FPM/EDO RAM Module Support
- Memory Configuration: One or Two 8MB/16MB/32MB/64MB up to 128MB



Cache Memory

- Internal L1/L2 Cache
- 256KB L2 Cache Memory Pipeline Burst SRAM Built-in
- Supports 512KB (manufacturer's option)

BIOS

- 256K Flash ROM BIOS Support
- Supports PnP (Plug and Play) Execution

Mass Storage

- Removable Hard Disk Drive : 2.5", 12.7mm max. Height, LBA&PIO Mode 4 Support
- CD-ROM Drive : 5.25", 20X/24X full-sized CD-ROM
- Floppy Disk : 3.5" Floppy Disk, 3 Mode

Display

- 13.3" TFT / 12.1" TFT
- 1024 x 768 High Color
- Embedded VRAM
- One Zoomed Video Port
- LCD /External Monitor Simultaneous Use
- External Monitor Supports up to 1024X768

Audio

- 3D Audio sound effects built-in
- 16-bit Stereo Audio Built-in
- Sound Blaster ProTM Compatible
- One Built-in Microphone
- Two Built-in Speakers
- Three Built-in RCA Jacks for Audio input, Audio output, Microphone input
- Software Wavetable Support

Keyboard

- A4 Size, 86-Key Microsoft Windows 95 Membrane-Type Keyboard with 12 Function Keys
- 86-Key Microsoft Windows 95 Compliant With Multiple Language Support
- 89-Key OADG and Microsoft Windows 95 Compliant With Japanese Language Support (Optional)
- Integrated Hot-Key functions : Suspend Mode/LCD Contrast & Brightness / Sound Volume Control



PCMCIA

- PCMCIA 2.1 Standard Compliant
- ZV Port Support
- 2 X Type II or 1 X Type III PCMCIA Card Support
- CardBus Support

Standard I/O Ports

- IrDA V1.1 FIR/SIR Interface
- 1 USB Port
- 1 UART 16550C 9-Pin Serial Port
- EPP/ECP/SPP 25-Pin Parallel Port
- External CRT Port (DDC2B Support)
- 1 PS/2 Mouse or PS/2 Keyboard Port
- TV-Out
- Audio input Jack
- Audio output Jack
- Microphone input Jack

Indicators

- AC-in, Battery low/full, Battery Charging, CD In-use, FDD In-use, HDD In-use, Suspend, Number lock, Caps lock, Scroll lock

Pointing Device

- PS/2 Touchpad Module Built-in

Battery

- Supports DR-36S NiMH or DR-202 Li-Ion Battery Packs
- Gas Gauge on Battery Pack

AC Adapter

- 45wh, 100V ~ 240V Full Range and Auto-Sensing AC Adapter



MODIFICATION LIST

THE FOLLOWING ACCESSORIES WERE ADDED TO THE EUT DURING TESTING :

NO MODIFICATION BY HOMETEK TECHNOLOGY INC.

CONDUCTED POWER LINE TEST

1 TEST INSTRUMENTS & FACILITIES

The following test Instruments was used during the conducted test :

Item	Instruments/ Facilities	Specification	Manufacturer	Model # / S/N#	Date Of Cal.
1	EMI Receiver	9KHz ~ 30MHz	ROHDE & SCHWARZ	ESHS 30 844827/007	FEB/98
2	LISN	50 Ω /50uH/100A 9KHz ~ 30MHz	SCHWARZ BECK	NNLK 8121 8121370	FEB/98
3	LISN	9KHz ~ 30MHz	ROHDE & SCHWARZ	ESH3-Z5 846128/007	FEB/98
4	Signal Generator	9KHz ~ 2080MHz	ROHDE & SCHWARZ	SMY02 845096/018	FEB/98
5	Pulse Limiter	9KHz ~ 30MHz	ROHDE & SCHWARZ	ESH3Z2 357.8810.52	N/A

Note : All equipment upon which need to calibrated are with period of 1 year.

2 TEST PROCEDURE

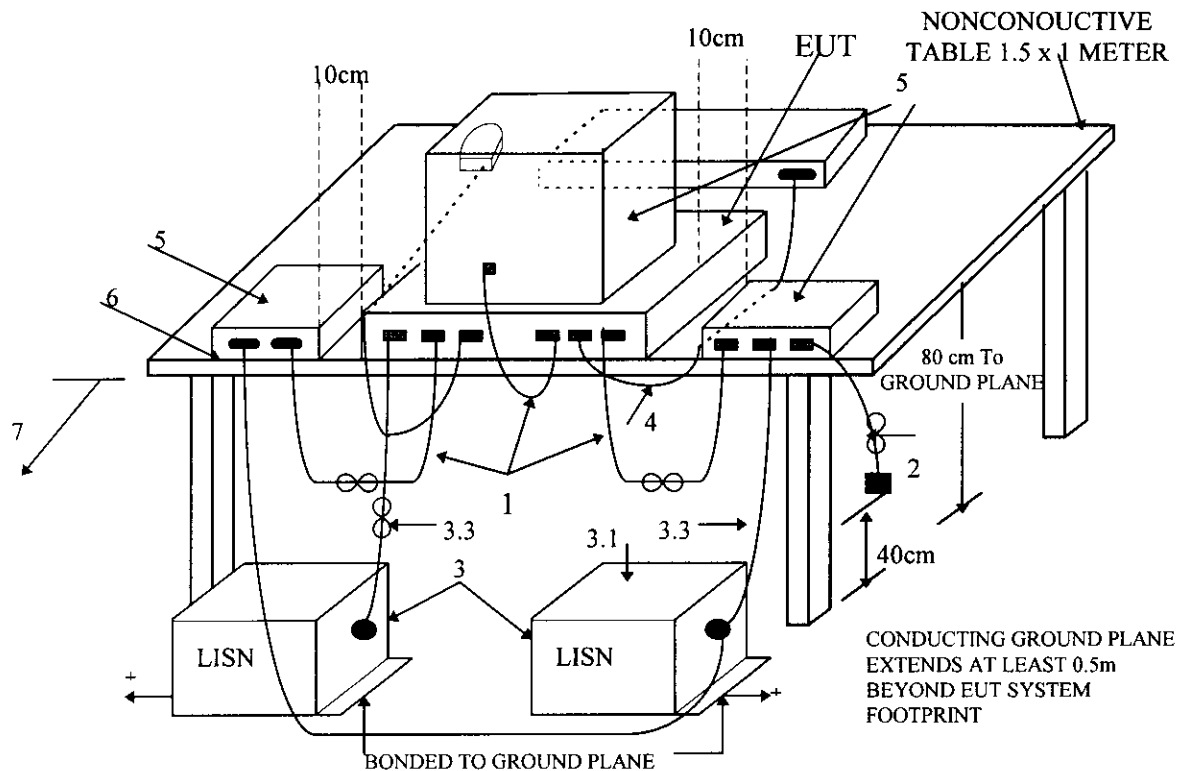
- 2.1 The EUT was tested according to **ANSI C63.4 - 1992**.
- 2.2 The EUT was placed 0.4 meter from the conducting wall of shielding room and kept at least 0.8 meter from any other grounded conducting surface.
- 2.3 The frequency range form 0.45 MHz to 30 MHz was investigated.
- 2.4 The LISN used was 50 Ohm / 50 uHenry as specified by Section 5.1 of **ANSI C63.4 - 1992**.
- 2.5 All the support peripherals are connect to the other LISN.
- 2.6 Cables and peripherals were moved to find the maximum emission levels for each frequency.

3 TEST SETUP

3.1 Typical : Setup Of Conducted Test

ELECTRICAL AND ELECTRONIC EQUIPMENT IN THE RANGE OF 9kHz TO 40 GHz

ANSI
C63.4-1992



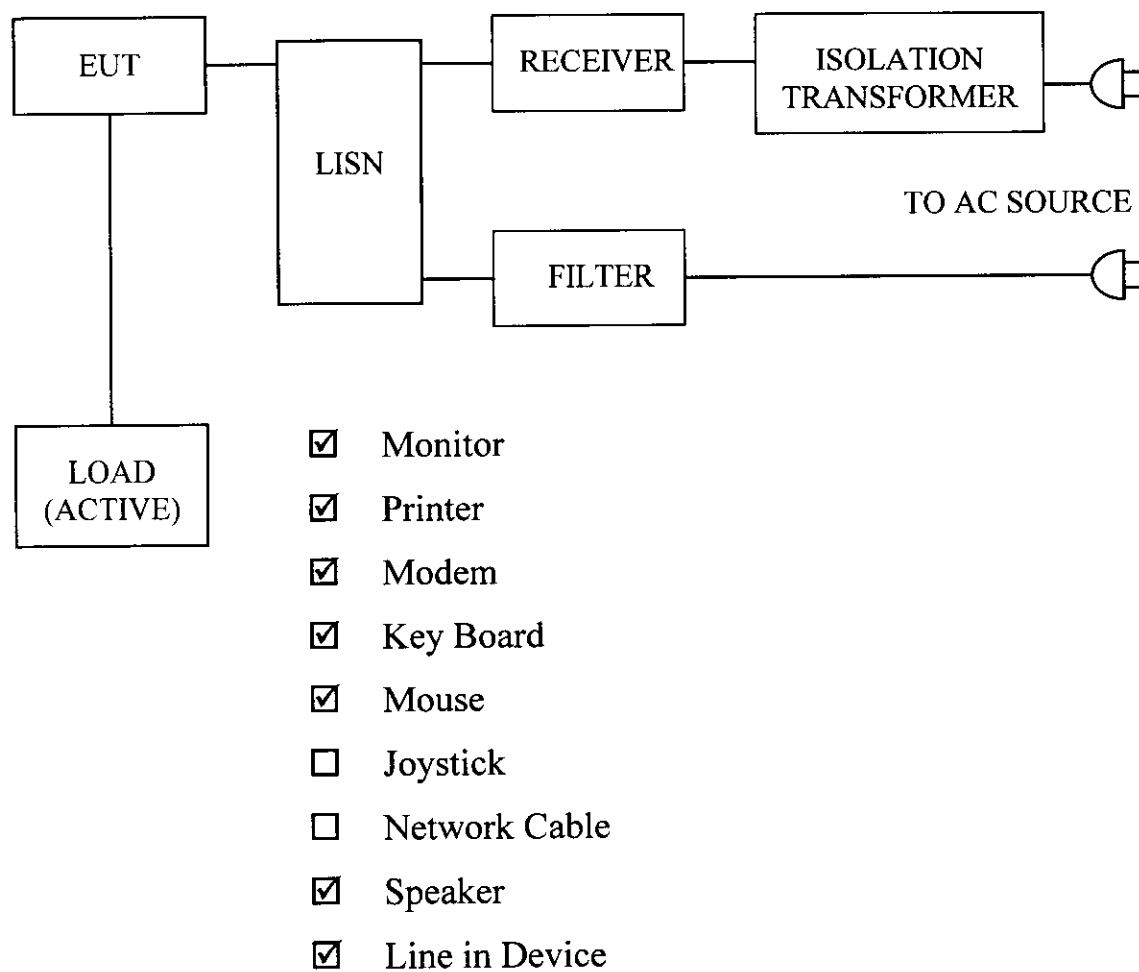
+LISNs may have to be moved to the side to meet 3.3 below.

LEGEND:

1. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 to 40 cm long, hanging approximately in the middle between ground plane and table.
2. I/O cables that are connected to a peripheral shall be bundled in center. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1m.
3. EUT connected to one LISN. Unused LISN connectors shall be terminated in 50 Ω . LISN can be placed on top of, or immediately beneath, ground plane.
 - 3.1 All other equipment powered from second LISN.
 - 3.2 Multiple outlet strip can be used for multiple power cords of non-EUT equipment.
 - 3.3 LISN at least 80 cm from nearest part of EUT chassis.
4. Cables of hand-operated devices, such as keyboards, mouses, etc., have to be placed as close as possible to the host.
5. Non-EUT components being tested.
6. Rear of EUT, including peripherals, shall be all aligned and flush with rear of tabletop.
7. Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the floor ground plane (see 5.2).

Test Configuration Tabletop Equipment Conducted Emission

3.2 Block Diagram Of Conducted Test



4 CONFIGURATION OF THE EUT

The EUT was configured according to **ANSI C63.4 - 1992**. All I/O ports were connected to the appropriate peripherals. All peripherals and cables are listed below (including internal device) :

4.1 EUT

Device	: NOTEBOOK PC
Manufacturer	: DUAL
Model Number	: MVA-6690, MVA-6690A
Serial Number	: N/A
FCC ID	: G3LMVA-6690
Data Cable	: Shielded
Power Cord	: Un-Shielded, 1.5 m

4.2 PERIPHERALS

☒ Monitor

Manufacturer	: ATEC
Model Number	: G450DU
Serial Number	: 714PD000Q0002
FCC ID	: GKR450
Data Cable	: Shielded, 1.5 m
Power Cord	: Un-Shielded, 1.8 m

☒ Printer

Manufacturer : HP
Model Number : DJ400
Serial Number : MY77M1C3Q8
FCC ID : B94C2642X
Data Cable : Shielded, 1.5 m
Power Cord & Adaptor : Un-Shielded, 1.8 m

☒ Modem

Manufacturer : DATATRONIC
Model Number : 1200CK
Serial Number : N/A
FCC ID : E2050V1200CK
Data Cable : Shielded, 1.5 m
Power Cord & Adaptor : Un-Shielded, 1.8 m

☒ Mouse (PS II)

Manufacturer : LOGITECH
Model Number : M-UA34
Serial Number : LTC73700263
FCC ID : DZL211087
Data Cable : Shielded, 1.8 m

☒ KeyBoard

Manufacturer : AST
 Model Number : SK-2000REW
 Serial Number : N/A
 FCC ID : GYUR26SK
 Data Cable : Shielded

☒ Adaptor

Manufacturer : DELTA
 Model Number : ADP-45GB
 Serial Number : G8807000320
 FCC ID : N/A
 Data Cable : N/A
 Power Cord : Un-Shielded, 1.4 m

☒ Walk Man

Manufacturer : National
 Model Number : RQ-310
 Serial Number : N/A
 FCC ID : N/A
 Data Cable : Shielded
 Power Cord : N/A

☒ Micro Phone

Manufacturer : SR
Model Number : SR-M02
Serial Number : N/A
FCC ID : N/A
Data Cable : Un-Shielded

☒ Speaker

Manufacturer : JASS HIPSTER
Model Number : J-008
Serial Number : N/A
FCC ID : N/A
Data Cable : Un-Shielded
Power Cord : N/A

☒ TV

Manufacturer : NEC
Model Number : C-19R25(T)
Serial Number : N/A
FCC ID : N/A
Data Cable : Shielded
Power Cord : Un-Shielded

4.3 REMARK :

5 EUT OPERATING CONDITION

5.1 Operating condition is according to **ANSI C63.4 - 1992**.

5.2 CPU : Intel Pentium - 233 MHz CPU Clock : 66 MHz
CPU : AMD-K6 - 266/300 MHz CPU Clock : 66 MHz

5.3 Turn on the power of all equipments.

5.4 Test program sent "H" pattern to peripherals as following :

5.4.1 Printer

5.4.2 Monitor

5.4.3 Modem

5.4.4 Keyboard

6 LIMIT OF CONDUCTED POWER LINE EMISSION CLASS B:

Frequency Range	dBuV	uV
0.45 ~ 1.705 MHz	60.0	250 uV
1.705 ~ 30 MHz	69.5	250 uV

6.1 In the above table, the tighter limit applies at the band edges.

7 RESULT OF CONDUCTED POWER LINE TEST (1)

7.1 The frequency range from 0.45 MHz to 30 MHz was investigated. All readings are quasi-peak values.

7.2 IF bandwidth : 9 kHz, Meas Time : 1 sec.

7.3 Temperature : 26 °C, Humidity : 72 % RH.

7.4 Quasi-Peak :

Frequency (MHz)	Line 1		Line 2		Limit	
	dBuV	uV	dBuV	uV	dBuV	uV
0.705	44.66	171.00	39.00	89.13	48	250
1.308	37.01	70.88	35.29	58.14	48	250
2.410	33.80	48.98	35.23	57.74	48	250
4.510	37.92	78.70	36.76	68.87	48	250
7.000	35.36	58.61	32.29	41.16	48	250
11.200	31.38	37.07	31.76	38.73	48	250
19.600	32.45	41.93	29.92	31.33	48	250
24.810	29.11	28.54	28.11	25.44	48	250

REMARK :

1. Model : MVA-6690
2. Measuring mode : 13.3 LCD & AMD K6 300 CPU 1024 X 768
3. Uncertainty in conduction emission measured : $< \pm 2.0\text{dB}$.

Test Engineer : _____

9 RESULT OF CONDUCTED POWER LINE TEST (2)

9.1 The frequency range from 0.45 MHz to 30 MHz was investigated. All readings are quasi-peak values.

9.2 IF bandwidth : 9 kHz, Meas Time : 1 sec.

9.3 Temperature : 26 °C, Humidity : 72 % RH.

9.4 Quasi-Peak :

Frequency (MHz)	Line 1		Line 2		Limit	
	dBuV	uV	dBuV	uV	dBuV	uV
0.705	39.11	90.26	39.53	94.73	48	250
1.172	38.05	79.89	37.25	72.86	48	250
2.500	35.41	58.95	36.22	64.71	48	250
4.460	38.65	85.61	35.94	62.66	48	250
7.205	35.31	58.28	31.98	39.72	48	250
10.810	32.50	41.17	31.20	36.31	48	250
19.990	31.36	36.98	31.15	36.10	48	250
24.560	33.05	44.93	28.30	26.00	48	250

REMARK :

1. Model : MVA-6690
2. Measuring mode : 13.3 LCD & AMD K6 300 CPU 640 X 480
3. Uncertainty in conduction emission measured : $< \pm 2.0\text{dB}$.

Test Engineer : _____

11 RESULT OF CONDUCTED POWER LINE TEST (3)

11.1 The frequency range from 0.45 MHz to 30 MHz was investigated. All readings are quasi-peak values.

11.2 IF bandwidth : 9 kHz, Meas Time : 1 sec.

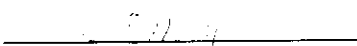
11.3 Temperature : 26 °C, Humidity : 72 % RH.

11.4 Quasi-Peak :

Frequency (MHz)	Line 1		Line 2		Limit	
	dBuV	uV	dBuV	uV	dBuV	uV
0.713	36.58	67.45	39.34	92.68	48	250
1.189	38.10	80.35	36.97	70.55	48	250
2.375	30.30	32.73	35.51	59.63	48	250
4.370	36.26	65.01	36.51	66.91	48	250
6.980	31.56	37.84	28.87	27.77	48	250
11.140	28.44	26.42	27.94	24.95	48	250
19.840	34.09	50.64	25.50	18.84	48	250
24.550	30.54	33.65	24.89	17.56	48	250

REMARK :

1. Model : MVA-6690
2. Measuring mode : 13.3 LCD & AMD K6 300 CPU TV OUT
3. Uncertainty in conduction emission measured : $< \pm 2.0\text{dB}$.

Test Engineer : 

13 RESULT OF CONDUCTED POWER LINE TEST (4)

13.1 The frequency range from 0.45 MHz to 30 MHz was investigated. All readings are quasi-peak values.

13.2 IF bandwidth : 9 kHz, Meas Time : 1 sec.

13.3 Temperature : 26 °C, Humidity : 72 % RH.

13.4 Quasi-Peak :

Frequency (MHz)	Line 1		Line 2		Limit	
	dBuV	uV	dBuV	uV	dBuV	uV
0.637	41.19	114.68	36.72	68.55	48	250
1.172	34.42	52.60	30.60	33.88	48	250
2.305	31.02	35.56	29.77	30.80	48	250
3.810	31.10	35.89	35.04	56.49	48	250
7.550	21.55	11.95	21.51	11.90	48	250
12.160	26.19	20.39	26.40	20.89	48	250
16.300	29.65	30.37	32.51	42.22	48	250
28.050	31.32	36.81	30.30	32.73	48	250

REMARK :

1. Model : MVA-6690A
2. Measuring mode : 12.1 LCD & INTEL 233 CPU 800 X 600
3. Uncertainty in conduction emission measured : $< \pm 2.0\text{dB}$.

Test Engineer : _____

15 RESULT OF CONDUCTED POWER LINE TEST (5)

15.1 The frequency range from 0.45 MHz to 30 MHz was investigated. All readings are quasi-peak values.

15.2 IF bandwidth : 9 kHz, Meas Time : 1 sec.

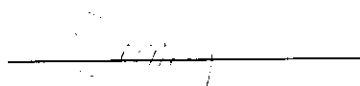
15.3 Temperature : 26 °C, Humidity : 72 % RH.

15.4 Quasi-Peak :

Frequency (MHz)	Line 1		Line 2		Limit	
	dBuV	uV	dBuV	uV	dBuV	uV
0.705	36.08	63.68	36.26	65.01	48	250
1.240	30.52	33.57	30.16	32.21	48	250
2.690	29.09	28.48	28.53	26.70	48	250
3.950	31.54	37.76	32.06	40.09	48	250
6.485	18.95	8.86	18.48	8.39	48	250
10.600	28.38	26.24	26.26	20.56	48	250
19.540	28.11	25.44	27.48	23.66	48	250
24.760	29.44	29.65	30.30	32.73	48	250

REMARK :

1. Model : MVA-6690A
2. Measuring mode : 12.1 LCD & INTEL 233 CPU TV OUT
3. Uncertainty in conduction emission measured : $< \pm 2.0\text{dB}$.

Test Engineer : 

RADIATED EMISSION TEST

1 TEST INSTRUMENTS & FACILITIES

The following test Instruments was used during the radiated emission test :

Item	Instruments /facilities	Specification	Manufacturer	Model # / S/N#	Location	Date of Cal.
1	SPECTRUM ANALYZER	9KHz ~ 1.8GHz	HP	HP8591 3710A06158	Open Site I	APR/98
2	EMI TEST RECEIVER	20MHz ~ 1GHz	ROHDE & SCHWARZ	ESVS10 845165/017	Open Site I	FEB/98
3	PRE-AMPLIFIER	0.1MHz ~ 1.3 GHz	HP	8447D 1937A02095	Open Site I	MAY/98
4	EMI TEST RECEIVER	20Hz ~ 26.5GHz	ROHDE & SCHWARZ	ESMI 845442/006	Open Site II	FEB/98
5	PRE-AMPLIFIER	20MHz ~ 7GHz	ROHDE & SCHWARZ	ESMI-Z7 846363/001	Open Site II	FEB/98
6	SIGNAL GENERATOR	9KHz ~ 2080MHz	ROHDE & SCHWARZ	SMY02 845096/018		FEB/98
7	ANTENNA (BI-LOG)	25MHz ~ 2GHz	ARA	LPB2520 S/N:1096	Open Site II	MAR/98
8	ANTENNA (BI-LOG)	25MHz ~ 2GHz	ARA	LPB2520 S/N:1095	Open Site I	MAR/98
9	ANTENNA (DIPOLE)	30 ~ 300MHz	ROHDE & SCHWARZ	HZ-12 842899/08		JAN/98
10	ANTENNA (DIPOLE)	300 ~ 1000MHz	ROHDE & SCHWARZ	HZ-13 842007/0004		JAN/98

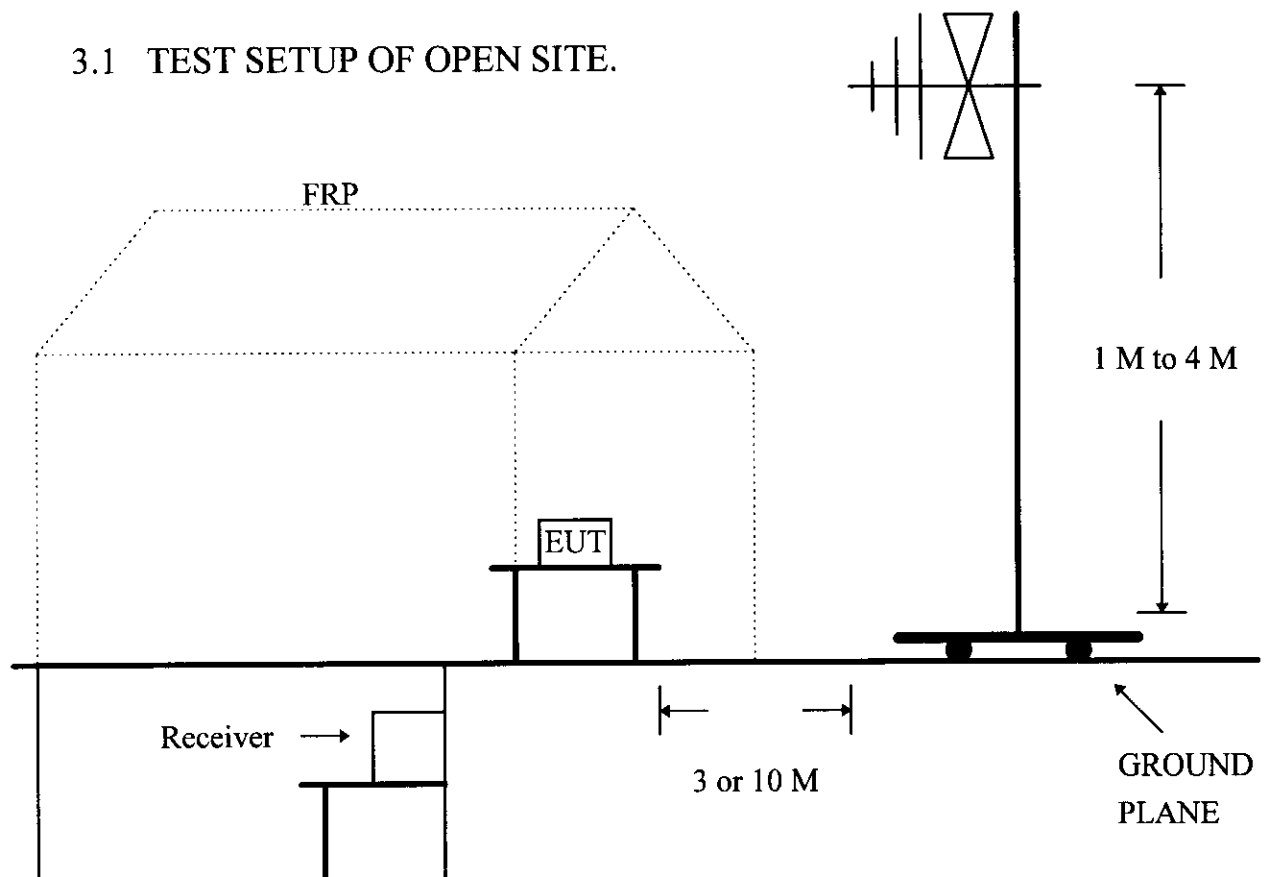
Note : All equipment upon which need to calibrated are with period of 1 year.

2 TEST PROCEDURE

- 2.1 The EUT was test according to **ANSI C63.4 - 1992**.
- 2.2 The radiated test was performed at HomeTek Lab's Open Site II.
- 2.3 This site is on file with the FCC laboratory division, reference 31040/site 1300F2, Date : August 22, 1997.
- 2.4 The frequency range from 30 MHz to 1 GHz, the measurement were made at 3 meters, with a BI-log antenna.

3 TEST SETUP

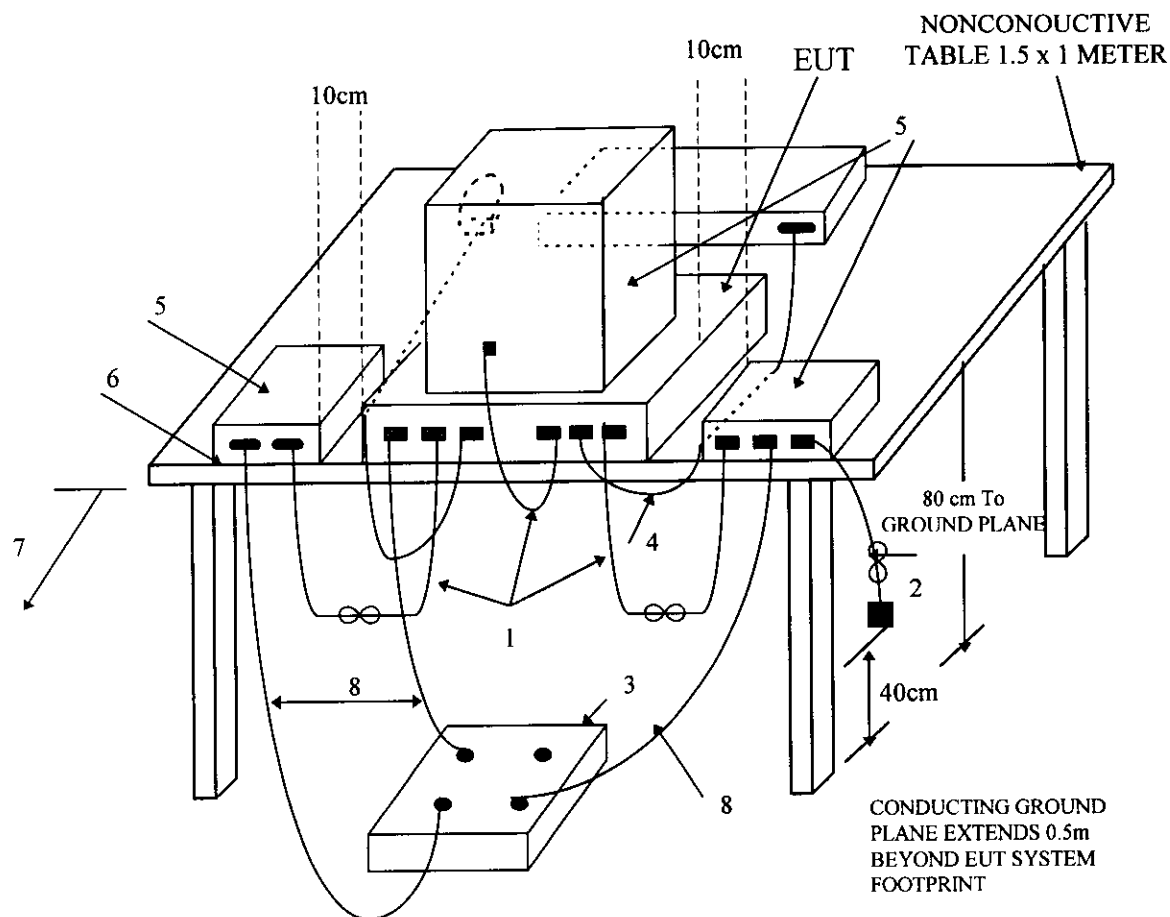
3.1 TEST SETUP OF OPEN SITE.



3.2 TEST SET OF EUT

ELECTRICAL AND ELECTRONIC EQUIPMENT IN THE RANGE OF 9kHz TO 40 GHz

ANSI
C63.4-1992



LEGEND:

1. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 to 40 cm long, hanging approximately in the middle between ground plane and table.
2. I/O cables that are connected to a peripheral shall be bundled in center. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1m.
3. If LISNs are kept in the test setup for radiated emissions, it is preferred that they be installed under the ground plane with the receptacle flush with the ground plane.
4. Cables of hand-operated devices, such as keyboards, mice, etc., have to be placed as close as possible to the controller.
5. Non-EUT components of EUT system being tested.
6. The rear of all components of the system under test shall be located flush with the rear of the table.
7. No vertical conducting wall used.
8. Power cords drape to the floor and are routed over to receptacle.

Test Configuration Tabletop Equipment Radiated Emission

4 CONFIGURATION OF THE EUT

Same as “Conducted Power Line test”, section 4

5 EUT OPERATING CONDITION

5.1 Same as “Conducted Power Line test”, section 5

5.2 The radiated emission in the frequency range from 30 MHz - 1000 MHz was test in a horizontal and vertical polarization at HomeTek Lab’s open site II.

6 LIMIT OF RADIATED EMISSION CLASS B:

Frequency (MHz)	Measurement Distance	dBuV	uV/m
30 - 88	3 (M)	40	100
88 - 216	3 (M)	43.5	150
216 - 960	3 (M)	46	200
Above 1000	3 (M)	54	500

6.1 The tighter limit shall apply at the edge between two frequency bands.

6.2 Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

7 RESULT OF RADIATED EMISSION TEST (1)

- 7.1 The frequency range from 30 MHz to 1 GHz was investigated. All readings are quasi-peak values with resolution bandwidth of 120 kHz.
- 7.2 The measurements above 1 GHz with a resolution bandwidth of 1 MHz are peak reading at 3 meters.
- 7.3 The measurements were made at 3 meters of HomeTek Lab's open site II.
- 7.4 Temperature : 27 °C, Humidity : 72 % RH.
- 7.5 Radiated Emission data : **Horizontal**

Frequency (MHz)	Reading Level (dBuV)	ANT factor (dBuV)	Cable Loss (dBuV)	Emission Level (dBuV)	Emission Level (uV/m)	Limit (dBuV)	Limit (uV/m)
66.66	20.15	8.36	0.48	28.99	28.15	40.0	100
266.68	21.63	15.11	0.94	37.68	76.56	46.0	200
272.09	18.52	15.12	1.04	34.68	54.20	46.0	200
300.00	23.05	15.07	0.94	39.06	89.04	46.0	200
333.39	18.70	15.77	1.19	35.66	60.67	46.0	200
600.40	17.41	20.47	1.68	39.56	95.06	46.0	200
673.01	14.47	21.31	1.63	37.41	74.22	46.0	200

- Emission Level = Reading Level + ANT Factor + Cable Loss.
- Sample Calculation for 673.01 MHz .
- Corrected Reading : (14.47) + (21.31) + (1.63) = 37.41 . (Emission Level)

7.6 Radiated Emission data : **Vertical**

Frequency (MHz)	Reading Level (dBuV)	ANT factor (dBuV)	Cable Loss (dBuV)	Emission Level (dBuV)	Emission Level (uV/m)	Limit (dBuV)	Limit (uV/m)
64.98	27.82	5.71	0.46	33.99	50.06	40.0	100
233.35	22.59	15.23	0.84	38.66	85.70	46.0	200
266.66	21.24	17.05	0.94	39.23	91.52	46.0	200
300.01	22.70	17.12	0.94	40.76	109.14	46.0	200
333.33	18.69	17.89	1.19	37.77	77.36	46.0	200
366.92	18.06	18.57	1.04	37.67	76.47	46.0	200
600.46	13.47	21.98	1.68	37.13	71.86	46.0	200

- Emission Level = Reading Level + ANT Factor + Cable Loss.
- Sample Calculation for 600.46 MHz .
- Corrected Reading : (13.47) + (21.98) + (1.68) = 37.13 . (Emission Level)

REMARK :

1. Model : MVA-6690
2. Measuring mode : 13.3 LCD & AMD K6 300 CPU 1024 X 768
3. Uncertainty in radiated emission measured : $< \pm 4.0\text{dB}$.

Test Engineer :

9 RESULT OF RADIATED EMISSION TEST (2)

- 9.1 The frequency range from 30 MHz to 1 GHz was investigated. All readings are quasi-peak values with resolution bandwidth of 120 kHz.
- 9.2 The measurements above 1 GHz with a resolution bandwidth of 1 MHz are peak reading at 3 meters.
- 9.3 The measurements were made at 3 meters of HomeTek Lab's open site II.
- 9.4 Temperature : 27 °C, Humidity : 72 % RH.
- 9.5 Radiated Emission data : **Horizontal**

Frequency (MHz)	Reading Level (dBuV)	ANT factor (dBuV)	Cable Loss (dBuV)	Emission Level (dBuV)	Emission Level (uV/m)	Limit (dBuV)	Limit (uV/m)
67.68	23.18	8.02	0.48	31.68	38.37	40.0	100
266.58	20.77	14.96	0.96	36.69	68.31	46.0	200
300.72	20.90	15.11	1.07	37.08	71.45	46.0	200
333.33	19.34	15.77	1.19	36.30	65.31	46.0	200
366.63	20.40	16.24	1.04	37.68	76.56	46.0	200
386.62	21.51	16.64	1.27	39.42	93.54	46.0	200
466.66	18.46	17.99	1.22	37.67	76.47	46.0	200

- Emission Level = Reading Level + ANT Factor + Cable Loss.
- Sample Calculation for 466.66 MHz .
- Corrected Reading : (18.46) + (17.99) + (1.22) = 37.67 . (Emission Level)

9.6 Radiated Emission data : **Vertical**

Frequency (MHz)	Reading Level (dBuV)	ANT factor (dBuV)	Cable Loss (dBuV)	Emission Level (dBuV)	Emission Level (uV/m)	Limit (dBuV)	Limit (uV/m)
66.68	25.65	5.80	0.48	31.93	39.49	40.0	100
171.82	21.08	13.80	0.79	35.67	60.74	43.5	150
315.02	15.49	16.31	0.99	32.79	43.60	46.0	200
333.37	17.98	17.89	1.19	37.06	71.28	46.0	200
466.84	18.03	20.20	1.22	39.45	93.86	46.0	200
533.19	13.32	21.11	1.24	35.67	60.74	46.0	200

- Emission Level = Reading Level + ANT Factor + Cable Loss.
- Sample Calculation for 533.19 MHz .
- Corrected Reading : (13.32) + (21.11) + (1.24) = 35.67 . (Emission Level)

REMARK :

1. Model : MVA-6690
2. Measuring mode : 13.3 LCD & AMD K6 300 CPU 640 X 480
3. Uncertainty in radiated emission measured : $< \pm 4.0\text{dB}$.

Test Engineer : _____

11 RESULT OF RADIATED EMISSION TEST (3)

- 11.1 The frequency range from 30 MHz to 1 GHz was investigated. All readings are quasi-peak values with resolution bandwidth of 120 kHz.
- 11.2 The measurements above 1 GHz with a resolution bandwidth of 1 MHz are peak reading at 3 meters.
- 11.3 The measurements were made at 3 meters of HomeTek Lab's open site II.
- 11.4 Temperature : 27 °C, Humidity : 72 % RH.
- 11.5 Radiated Emission data : **Horizontal**

Frequency (MHz)	Reading Level (dBuV)	ANT factor (dBuV)	Cable Loss (dBuV)	Emission Level (dBuV)	Emission Level (uV/m)	Limit (dBuV)	Limit (uV/m)
67.68	22.86	8.02	0.48	31.36	36.98	40.0	100
266.58	21.78	14.96	0.96	37.70	76.74	46.0	200
300.72	19.92	15.11	1.07	36.10	63.83	46.0	200
333.33	19.34	15.77	1.19	36.30	65.31	46.0	200
366.63	20.28	16.24	1.04	37.56	75.51	46.0	200
386.62	18.86	16.64	1.27	36.77	68.94	46.0	200
466.66	17.97	17.99	1.22	37.18	72.28	46.0	200

- Emission Level = Reading Level + ANT Factor + Cable Loss.
- Sample Calculation for 466.66 MHz .
- Corrected Reading : (17.97) + (17.99) + (1.22) = 37.18 . (Emission Level)

11.6 Radiated Emission data : **Vertical**

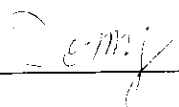
Frequency (MHz)	Reading Level (dBuV)	ANT factor (dBuV)	Cable Loss (dBuV)	Emission Level (dBuV)	Emission Level (uV/m)	Limit (dBuV)	Limit (uV/m)
66.68	24.93	5.80	0.48	31.21	36.35	40.0	100
171.82	17.98	13.80	0.79	32.57	42.51	43.5	150
315.02	16.94	16.31	0.99	34.24	51.52	46.0	200
333.37	17.55	17.89	1.19	36.63	67.84	46.0	200
466.84	15.85	20.20	1.22	37.27	73.03	46.0	200
533.19	11.64	21.11	1.24	33.99	50.06	46.0	200
666.54	10.48	23.57	1.63	35.68	60.81	46.0	200

- Emission Level = Reading Level + ANT Factor + Cable Loss.
- Sample Calculation for 666.54 MHz .
- Corrected Reading : (10.48) + (23.57) + (1.63) = 35.68 . (Emission Level)

REMARK :

1. Model : MVA-6690
2. Measuring mode : 13.3 LCD & AMD K6 300 CPU TV OUT
3. Uncertainty in radiated emission measured : $< \pm 4.0\text{dB}$.

Test Engineer :



13 RESULT OF RADIATED EMISSION TEST (4)

- 13.1 The frequency range from 30 MHz to 1 GHz was investigated. All readings are quasi-peak values with resolution bandwidth of 120 kHz.
- 13.2 The measurements above 1 GHz with a resolution bandwidth of 1 MHz are peak reading at 3 meters.
- 13.3 The measurements were made at 3 meters of HomeTek Lab's open site II.
- 13.4 Temperature : 27 °C, Humidity : 72 % RH.
- 13.5 Radiated Emission data : **Horizontal**

Frequency (MHz)	Reading Level (dBuV)	ANT factor (dBuV)	Cable Loss (dBuV)	Emission Level (dBuV)	Emission Level (uV/m)	Limit (dBuV)	Limit (uV/m)
66.66	22.99	8.36	0.48	31.83	39.04	40.0	100
133.32	25.42	11.55	0.74	37.71	76.82	43.5	150
266.65	21.77	15.11	0.94	37.82	77.80	46.0	200
272.05	15.65	15.12	1.04	31.81	38.95	46.0	200
299.97	20.87	15.07	0.94	36.88	69.82	46.0	200
366.66	15.98	16.24	1.04	33.26	46.03	46.0	200
400.11	19.03	16.32	1.14	36.49	66.76	46.0	200
466.82	18.11	17.99	1.22	37.32	73.45	46.0	200

- Emission Level = Reading Level + ANT Factor + Cable Loss.
- Sample Calculation for 466.82 MHz .
- Corrected Reading : (18.11) + (17.99) + (1.22) = 37.32 . (Emission Level)

13.6 Radiated Emission data : **Vertical**

Frequency (MHz)	Reading Level (dBuV)	ANT factor (dBuV)	Cable Loss (dBuV)	Emission Level (dBuV)	Emission Level (uV/m)	Limit (dBuV)	Limit (uV/m)
60.80	23.86	6.65	0.51	31.02	35.56	40.0	100
66.66	24.77	5.80	0.48	31.05	35.69	40.0	100
114.54	19.17	14.49	0.63	34.29	51.82	43.5	150
232.68	15.99	15.13	0.94	32.06	40.09	46.0	200
266.66	15.18	17.05	0.94	33.17	45.55	46.0	200
357.98	17.12	17.87	1.17	36.16	64.27	46.0	200
399.98	15.79	18.86	1.14	35.79	61.59	46.0	200
466.64	14.80	20.20	1.22	36.22	64.71	46.0	200

- Emission Level = Reading Level + ANT Factor + Cable Loss.
- Sample Calculation for 466.64 MHz .
- Corrected Reading : (14.80) + (20.20) + (1.22) = 36.22 . (Emission Level)

REMARK :

1. Model : MVA-6690A
2. Measuring mode : 12.1 LCD & INTEL 233 CPU 800 X 600
3. Uncertainty in radiated emission measured : $< \pm 4.0\text{dB}$.

Test Engineer : _____

15 RESULT OF RADIATED EMISSION TEST (5)

- 15.1 The frequency range from 30 MHz to 1 GHz was investigated. All readings are quasi-peak values with resolution bandwidth of 120 kHz.
- 15.2 The measurements above 1 GHz with a resolution bandwidth of 1 MHz are peak reading at 3 meters.
- 15.3 The measurements were made at 3 meters of HomeTek Lab's open site II.
- 15.4 Temperature : 27 °C, Humidity : 72 % RH.
- 15.5 Radiated Emission data : **Horizontal**

Frequency (MHz)	Reading Level (dBuV)	ANT factor (dBuV)	Cable Loss (dBuV)	Emission Level (dBuV)	Emission Level (uV/m)	Limit (dBuV)	Limit (uV/m)
64.98	23.27	8.71	0.46	32.44	41.88	40.0	100
66.68	22.37	8.36	0.48	31.21	36.35	40.0	100
194.95	25.04	11.86	0.79	37.69	76.65	43.5	150
272.94	22.27	15.13	1.07	38.47	83.85	46.0	200
333.31	22.58	15.77	1.19	39.54	94.84	46.0	200
400.08	17.28	16.32	1.14	34.74	54.58	46.0	200
466.69	19.67	17.99	1.22	38.88	87.90	46.0	200
644.35	13.37	20.44	1.57	35.38	58.75	46.0	200

- Emission Level = Reading Level + ANT Factor + Cable Loss.
- Sample Calculation for 644.35 MHz .
- Corrected Reading : (13.37) + (20.44) + (1.57) = 35.38 . (Emission Level)

15.6 Radiated Emission data : **Vertical**

Frequency (MHz)	Reading Level (dBuV)	ANT factor (dBuV)	Cable Loss (dBuV)	Emission Level (dBuV)	Emission Level (uV/m)	Limit (dBuV)	Limit (uV/m)
58.50	22.70	8.46	0.46	31.62	38.11	40.0	100
162.46	22.08	11.80	0.79	34.67	54.14	43.5	150
181.93	22.47	12.44	0.81	35.72	61.09	43.5	150
246.93	19.61	14.71	1.04	35.36	58.61	46.0	200
333.44	20.15	17.89	1.19	39.23	91.52	46.0	200
466.96	17.36	20.20	1.22	38.78	86.90	46.0	200

- Emission Level = Reading Level + ANT Factor + Cable Loss.
- Sample Calculation for 466.96 MHz .
- Corrected Reading : (17.36) + (20.20) + (1.22) = 38.78 . (Emission Level)

REMARK :

1. Model : MVA-6690A
2. Measuring mode : 12.1 LCD & INTEL 233 CPU TV OUT
3. Uncertainty in radiated emission measured : $< \pm 4.0\text{dB}$.

Test Engineer :

