

2. TEST STATEMENT**2.1 TEST STATEMENT**

To whom it may concern,

This letter is to explain the EUT(Mouse) will be class II changed.

The original FCC ID : MA7EIV1 was approved by FCC.

The different between new one and old one is changed EUT circuit board layout.

PC CPU : Pentium - 166 MMX

Clock Chip : 66 MHz

Resolution : 640 x 480

The data was shown in this report reflects the worst - case data for the condition as listed above.

2.2 DEPARTURE FROM DOCUMENT POLICIES, PROCEDURE OR SPECIFICATIONS, THE STATEMNT

A. Did have

Any departure from document policies & procedures or from specifications.

Yes _____, No _____ .
If yes, the description as below.

B. The certificate and report shall not be reproduced except in full, without the written approval of SRT laboratory.

C. The report must not be used by the client to claim product endorsement by NVLAP or any agency the government.

D. This product is a prototype product.

E. The effect that the results relate only to the items tested.

3. EUT MODIFICATIONS

The following accessories were added to the EUT during testing :

1. C3, C4 change to 33 pF.
2. Pin 16 of IC series a bead of FBM-11-160808-121.
3. The cable must shielding.

4. MODIFICATION LETTER

This section contains the following documents :

- A. Letter of modifications.



AllSpirit co., Ltd.

7F, No. 4, Lane 609, sec.5, Chung Hsin Rd., San Chung City,
Taipei, Taiwan, R.O.C.

Tel: 886-2-2299-4642 Fax:886-2-2999-4643

<http://www.allmouse.com.tw> E-mail: allmouse@ls.nct.tw

Federal Communications Commission
Authorization and Evaluation Division
7435 Oakland Mills Road
Columbia, MD 21046

To whom it may concern:

This is to serve as proper notice that our company agrees to make all modifications to FCC ID: MA7EIV1 as listed in section 3.0 of modification to submitted by Spectrum Research and Testing Laboratory, Inc.

Respectfully,

Arno C. H. Chiang

(Name, Surname)

Effective Dates:

From 1999/3 to 2002/3

Engineering Department Manager
(Position/Title)

DATE: 1 May 22 '99

5. CONDUCTED POWER LINE TEST

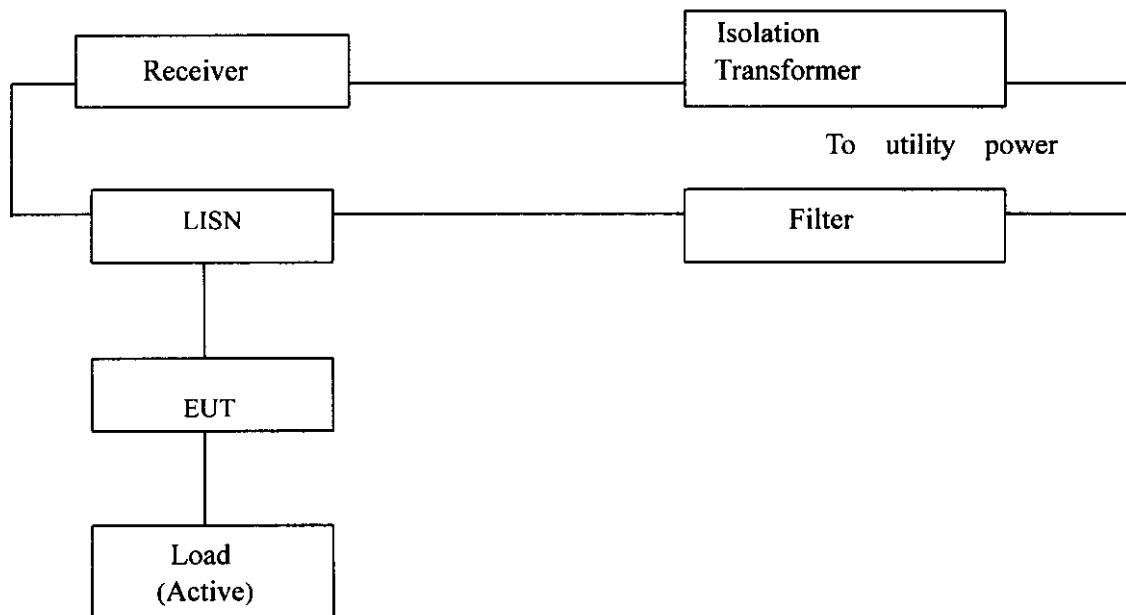
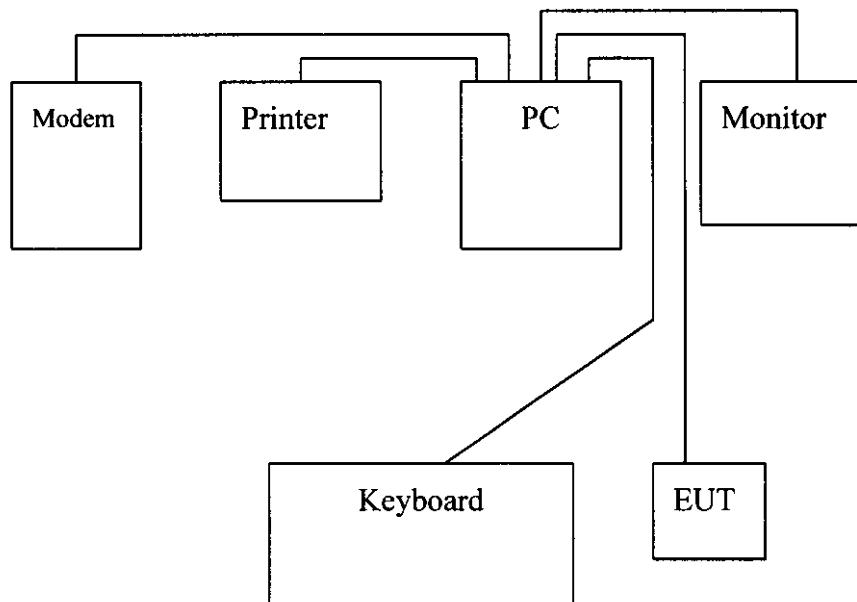
5.1 TEST EQUIPMENT

The following test equipment were used during the conducted power line test :

EQUIPMENT/ FACILITIES	SPECIFICATIONS	MANUFACTURER	MODEL#/ SERIAL#	DATE OF CAL & CAL CENTER	DU ^E DATE	FINAL TEST
SPECTRUM ANALYZER	9 KHz TO 1 GHz	HP	8590L/ 3624A01317	AUGUST 1998 ETC	1Y	
EMI TEST RECEIVER	9 KHz TO 30 MHz	ROHDE & SCHWARZ	ESHS30/ 826003/008	AUGUST 1998 ETC	1Y	✓
LISN	50 uH, 50 ohm	SOLAR ELECTRONICS	9252-50- R24-BNC/ 951315	AUGUST 1998 ETC	1Y	✓
LISN	50uH, 50 ohm	SOLAR ELECTRONICS	9252-50- R24-BNC/ 951318	AUGUST 1998 ETC	1Y	✓
SIGNAL GENERATOR	9 KHz TO 1080 MHz	ROHDE & SCHWARZ	SMY01/ 841104/019	APRIL 1999 ETC	1Y	✓
POWER CONVERTER	0 TO 300 VAC VAC 47-500 Hz	AFC	AFC-1KW/ 850510	MARCH 1999 ETC	1Y	✓

5.2 TEST PROCEDURE

The EUT was tested according to ANSI C63.4 - 1992. The frequency spectrum from 0.45 MHz to 30 MHz was investigated. The LISN used was 50 ohm / 50 uHenry as specified by section 5.1 of ANSI C63.4 - 1992. Cables and peripherals were moved to find the maximum emission levels for each frequency.

5 . 3 TEST SETUP

5.4 CONFIGURATION OF THE EUT

The EUT was configured according to ANSI C63.4 - 1992. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

A. EUT

DEVICE	MANUFACTURER	MODEL #	FCCID / DoC
MOUSE	ALLSPIRIT CO., LTD.	MA7EIV1	MA7EIV1

B. INTERNAL DEVICES

C. PERIPHERALS

- 10 -

(1). Cable - uns : Unshielded
s : Shielded
S1 : Single point shielding.
S2 : 360° shielding.
S3 : Double point shielding

(2). Cables - All 1m or greater in length - bundled according to regulations.

5.5 EUT OPERATING CONDITION

Operating condition is according to ANSI C63.4 - 1992

1. EUT power on.
2. "H" pattern sent to the following peripherals:
 - monitor
 - printer
 - modem
3. PC CPU : Pentium - 166 MMX Clock Chip : 66 MHz
4. Resolution : 640 x 480

5.6 CONDUCTED POWER LINE EMISSION LIMIT

FREQUENCY RANGE (MHz)	CLASS A	CLASS B
0.45 - 1.705	1000 uV	250 uV
1.705 - 30	3000 uV	250 uV

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

5.7 CONDUCTED POWER LINE TEST RESULT

The frequency spectrum from 0.45 MHz to 30 MHz was investigated. All readings are quasi-peak values with a resolution bandwidth of 9 KHz.

Temperature : 29 °C

Humidity : 48 %RH

QUASI-PEAK

FREQUENCY (MHz)	LINE1 (uV)	LINE2 (uV)	LIMIT (uV)
0.62	33.88	*	250
3.61	74.99	117.50	250
3.96	*	146.20	250
4.02	123.00	*	250
6.45	98.86	*	250
6.94	*	116.10	250
11.30	*	96.61	250

SIGNED BY TESTING ENGINEER : Jaylon

5.7 CONDUCTED POWER LINE TEST RESULT

The frequency spectrum from 0.45 MHz to 30 MHz was investigated. All readings are quasi-peak values with a resolution bandwidth of 9 KHz.

Temperature : 29 °C

Humidity : 48 %RH

QUASI-PEAK

FREQUENCY (MHz)	LINE1 (uV)	LINE2 (uV)	LIMIT (uV)
0.56	56.89	*	250
0.82	37.58	45.19	250
1.09	28.18	26.61	250
2.21	11.09	13.18	250
9.71	59.57	62.37	250
22.20	*	80.35	250
22.60	51.88	*	250

SIGNED BY TESTING ENGINEER :

6. RADIATED EMISSION TEST**6.1 TEST EQUIPMENT**

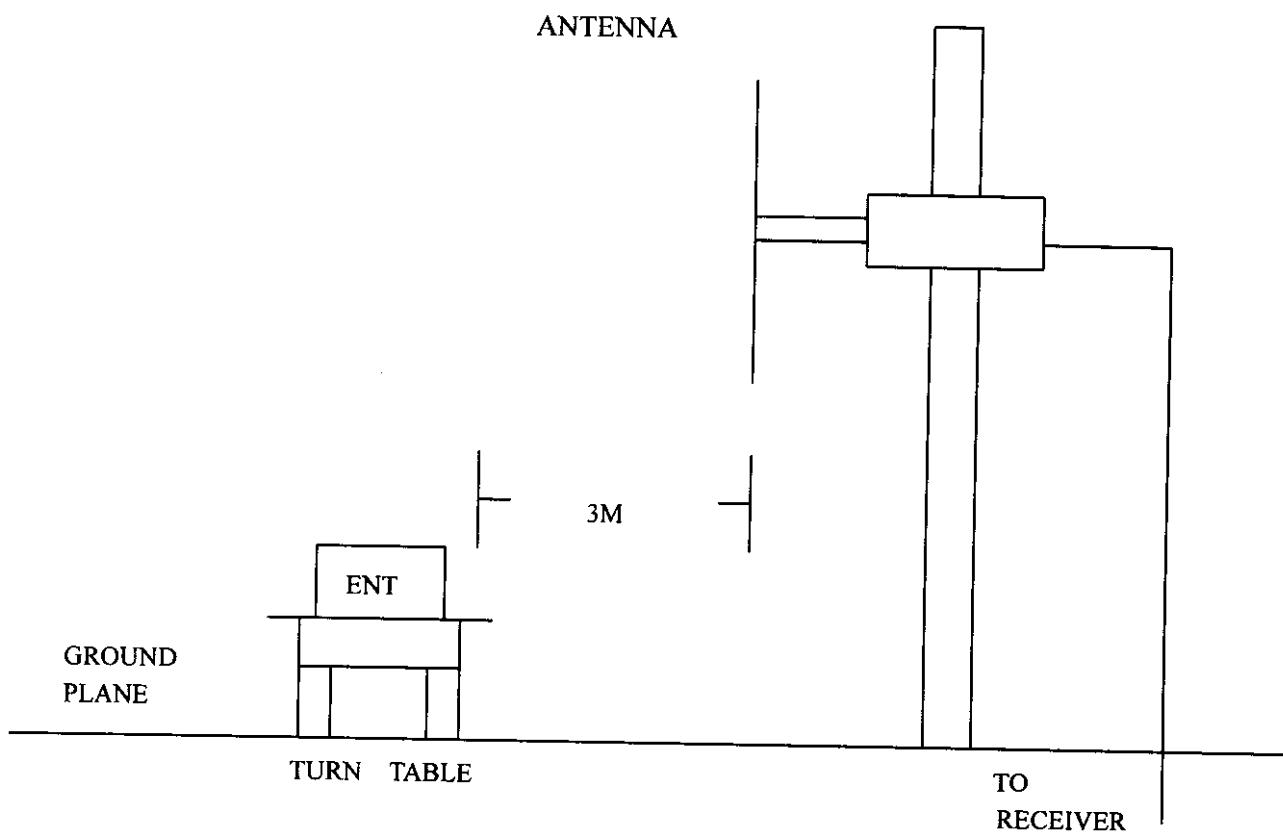
The following test equipments were used during the radiated emission test :

EQIPMENT / FACILITIES	SPECIFICAT- IONS	MANUFACTUR- ER	MODEL#/ SERIAL#	DATE OF CAL. & CAL. CENTER	DUE DATE	FINAL TEST
RECEIVER	20 MHz TO 1000 MHz	R & S	ESVS30/ 841977/003	APRIL 1999 ETC	1Y	✓
SPECTRUM ANALYZER	100 Hz TO 1500 MHz	HP	8568B/ 3019A05294	OCT. 1998 ETC	1Y	
SPECTRUM ANALYZER	9 KHz TO 22 GHz	HP	8593E/ 3322A00670	APRIL 1999 ETC	1Y	
SPECTRUM ANALYZER	100 Hz TO 1000 MHz	IFR	A-7550/ 2684/1248	JULY 1998 ETC	1Y	
SIGNAL GENERATOR	9 KHz TO 1080 MHz	ROHDE & SCHWARZ	SMY01/ 841104/019	APRIL 1999 ETC	1Y	✓
DIPOLE ANTENNA	28 MHz TO 1000 MHz	EMCO	3121C/ 9003-534	MAR. 1999 SRT	1Y	
DIPOLE ANTENNA	28 MHz TO 1000 MHz	EMCO	3121C/ 9611-1239	SEP. 1998 SRT	1Y	
BI-LOG ANTENNA	26 MHz TO 2000 MHz	EMCO	3142/ 9608-1073	SEP. 1998 SRT	1Y	✓
BI-LOG ANTENNA	26 MHz TO 1100 MHz	EMCO	3143/ 9509-1152	SEP. 1998 SRT	1Y	
PRE-AMPLIFIER	0.1 MHz TO 1300 MHz	HP	8447D/ 2944A08402	APRIL 1999 ETC	1Y	
PRE-AMPLIFIER	0.1 MHz TO 1300 MHz	HP	8447D/ 2944A06412	AUGUST 1998 ETC	1Y	
HORN ANTENNA	1 GHz TO 18 GHz	EMCO	3115/ 9012-3619	JAN. 1999 EMCO	1Y	

6 . 2 TEST PROCEDURE

- (1).The EUT was tested according to ANSI C63.4 - 1992. The radiated test was performed at SRT lab's open site. this site is on file with the FCC laboratory division, reference 31040 / SIT.
- (2).The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-1992.
- (3).The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. All readings are above 1 GHz, peak values with a resolution bandwidth of 1 MHz. Measurements were made at 3 meters.
- (4). The antenna high were varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5). The antenna polarization : Vertical polarization and horizontal polarization.

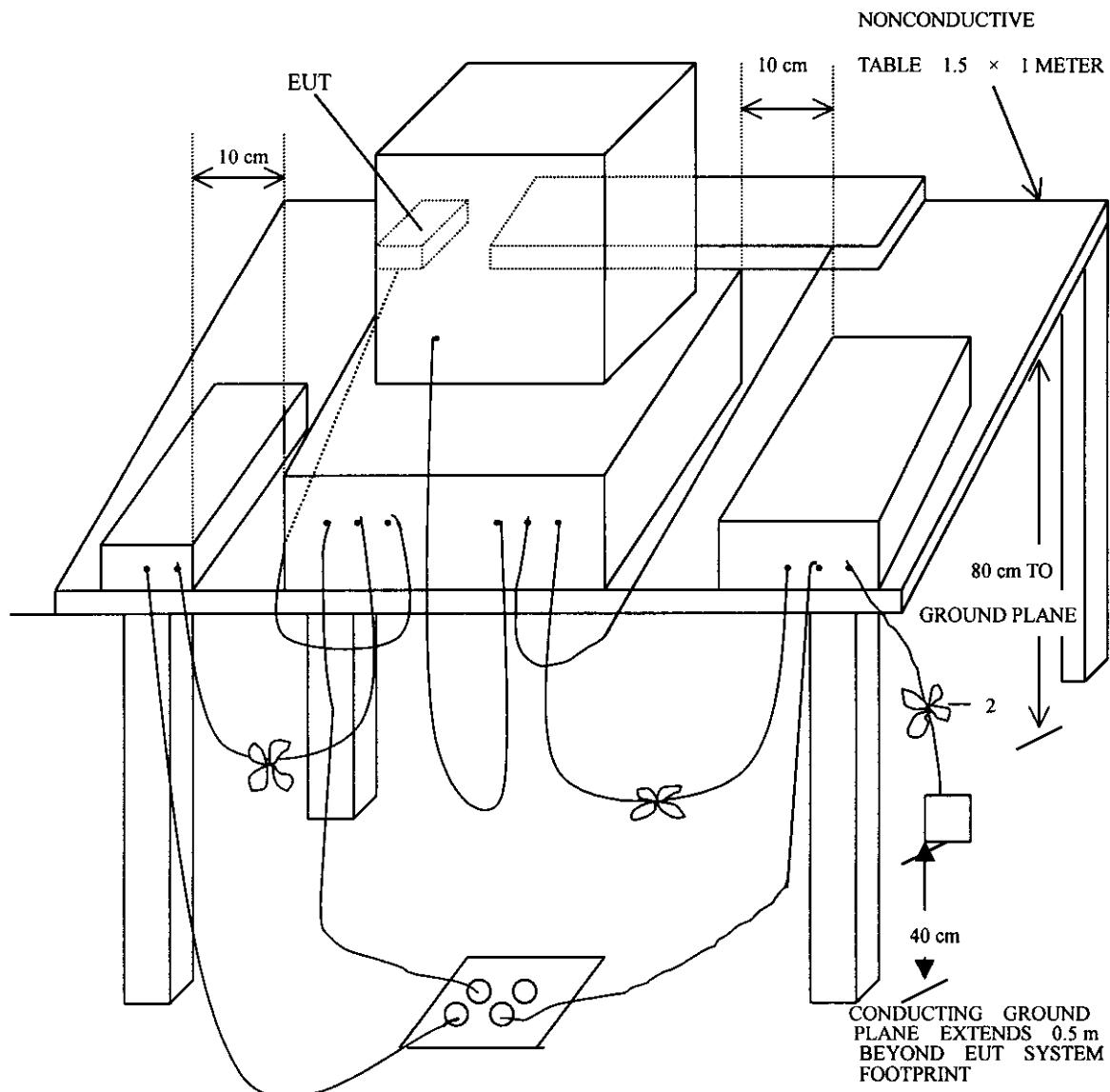
6 . 3 RADIATED TEST SET-UP



6 . 3 RADIATED TEST SET-UP

ANSI

ELECTRICAL AND ELECTRONIC EQUIPMENT IN THE RANGE IN THE RANGE OF 9 KHz TO 40 GHz C63.4-1992



6 . 4 CONFIGURATION OF THE THE EUT

Same as section 4.4 of this report

6 . 5 EUT OPERATING CONDITION

Same as section 4.5 of this report.

6 . 6 RADIATED EMISSION LIMIT

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below :

CLASS B

FREQUENCY (MHz)	DISTANCE (m)	FIELDS STRENGTH (uV/m)
30 - 88	3	100
88 - 216	3	150
216 - 960	3	200
ABOVE 960	3	500

CLASS B (OPEN CASE)

FREQUENCY (MHz)	DISTANCE (m)	FIELDS STRENGTH (uV/m)
30 - 88	3	199.5
88 - 216	3	298.5
216 - 960	3	398.1

CLASS A

FREQUENCY (MHz)	DISTANCE (m)	FIELDS STRENGTH (uV/m)
30 - 88	3	316.3
88 - 216	3	473.2
216 - 960	3	613.0
ABOVE 960	3	1000.0

NOTE :

1. In the emission tables above, the tighter limit applies at the band edges.
2. Distance refers to the distance between measuring instrument, antenna, and the closest point of any part of the device or system.

6.7 RADIATED EMISSION TEST RESULT

The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. All readings are above 1 GHz, peak values with a resolution bandwidth of 1 MHz. Measurements were made at 3 meters.

Temperature : 25 °CHumidity : 45 %RH

FREQ. (MHz)	FACTOR (dB)	ANT. FACTOR (dB/m)	READING (dBuV)		EMISSION (uV/m)		LMTS (uV/m)
			HORIZ	VERT	HORIZ	VERT	
49.40	0.5	10.5	*	21.7	*	43.2	100
151.25	1.1	9.2	17.5	*	24.5	*	150
278.32	1.5	14.8	*	16.5	*	43.7	200
339.43	1.7	15.7	14.3	*	38.5	*	200
627.52	2.1	22.8	*	7.5	*	41.7	200
680.87	2.2	22.1	9.5	*	49.0	*	200
865.17	2.9	23.1	*	10.3	*	65.3	200
906.88	2.9	24.2	9.8	*	70.0	*	200

DEFINITIONS :

- (1). * = Measurement does not apply for this frequency.
- (2). Uncertainty in radiated emission measured is <+/-4dB
- (3). Any departure from specification : N/A
- (4). Factor will include cable loss and correction factor.
- (5). Sample calculation

$$20 \log (\text{emission}) \text{ uV/m} = \text{Factor (dB)} + \text{Ant. Factor(dB/m)} + \text{reading(dBuV)}$$
- (6). PC CPU : Pentium - 166 MMX Clock Chip : 66MHz
- (7). Resolution : 640 x 480
- (8). PS2 port

SIGNED BY TESTING ENGINEER : Taylor

6.7 RADIATED EMISSION TEST RESULT

The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. All readings are above 1 GHz, peak values with a resolution bandwidth of 1 MHz. Measurements were made at 3 meters.

Temperature : 25 °CHumidity : 45 %RH

FREQ. (MHz)	FACTOR (dB)	ANT. FACTOR (dB/m)	READING (dBuV)		EMISSION (uV/m)		LMTS (uV/m)
			HORIZ	VERT	HORIZ	VERT	
35.66	0.5	13.8	17.3	21.2	38.0	59.6	100
75.59	0.7	7.9	23.5	*	40.3	*	100
97.30	0.8	8.7	31.5	27.4	112.2	70.0	150
279.29	1.5	14.8	15.2	*	37.6	*	200
365.62	1.7	16.1	*	11.2	*	28.2	200
573.20	2.0	21.8	7.8	*	38.0	*	200
598.42	2.1	23.1	*	7.1	*	41.2	200
865.17	2.9	23.1	14.1	13.8	101.2	97.7	200

NOTES

- (1). * = Measurement does not apply for this frequency.
- (2). Uncertainty in radiated emission measured is <+/4dB
- (3). Any departure from specification : N/A
- (4). Factor will include cable loss and correction factor.
- (5). Sample calculation
 $20 \log (\text{emission}) \text{ uV/m} = \text{Factor (dB)} + \text{Ant. Factor(dB/m)} + \text{reading(dBuV)}$
- (6). PC CPU : Pentium - 166 MMX Clock Chip : 66MHz
- (7). Resolution : 640 x 480
- (8). Series port

SIGNED BY TESTING ENGINEER : Jaylon