

Class B Certification Application

Under Part 15, Subpart B

EUT : Tomato

MODEL : A845

FCC ID : PRB-MB-A845

SRT REPORT # FID1J011

PREPARED FOR :

ZIDA TECHNOLOGIES LTD.

8/F, BLOCK A, GOODVIEW INDUSTRIAL BUILDING,
11 KIN FAT STREET, TUEN MUN,
HONG KONG

ZIDA TECHNOLOGIES LTD.

8/F, BLOCK A, GOODVIEW INDUSTRIAL BUILDING,
11 KIN FAT STREET, TUEN NUM, HONG KONG

TEL : 852-22766349

FAX : 852-24560717

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 written authorization that Spectrum Research and Testing Laboratory, Inc., 15200, Shady Grove Rd., Rockville, MD. 20850, will act as our representative in all matters relating to FCC applications for equipment approval. This includes the signing of all related documents, the transmitting of required fees, and receiving correspondence and notifications from the FCC. All acts performed by Spectrum Research and Testing Laboratory, Inc., especially modifications to our equipment under testing will be carried out on our behalf.

Meantime, the applicant certifies that in the case of an individual applicant (e.g., corporation), no party to the applicant is subject to a denial of federal benefits, that includes FCC denial of federal benefits, that includes FCC benefits, pursuant to Section 5301 of the Anti-Drug Abuse Act of 1998, 21 U.S.C. 862. For a definition of a "party" for these purposes see 47 C.F.R. 1.2002 (b).

If you have any questions regarding our applications for equipment approval, please contact Spectrum Research and Testing Laboratory, Inc. by calling (301) 670-2818.

Respectfully,

Kirk Tanh
(Name, Surname)

Effective Dates :

RD MANAGER
(Position/Title)

From 1 May 2001 to 31 May 2001

DATE : 8 MAY 2001

EMI TESTING REPORT

EUT : Tomato

MODEL : A845

FCC ID : PRB-MB-A845

PREPARED FOR :

ZIDA TECHNOLOGIES LTD.

8/F, BLOCK A, GOODVIEW INDUSTRIAL BUILDING,

11 KIN FAT STREET, TUEN MUN,

HONG KONG

PREPARED BY :

SPECTRUM RESEARCH & TESTING LABORATORY INC.

NO. 101-10, LING 8 , SHAN-TONG LI CHUNG – LI CITY ,
TAOYUAN, TAIWAN , R. O. C.

TEL : (03) 4987684

FAX : (03) 4986528

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1. TEST REPORT CERTIFICATION**APPLICANT** : ZIDA TECHNOLOGIES LTD.**ADDRESS** : 8/F, BLOCK A, GOODVIEW INDUSTRIAL BUILDING,
11 KIN FAT STREET, TUEN MUN,
HONG KONG**EUT DESCRIPTION** : Tomato(A) POWER SUPPLY : 115/230V(B) MODEL : A845(C) FCC ID : PRB-MB-A845**FINAL TEST DATE** : 12/04/2001**MEASUREMENT PROCEDURE USED :**

* PART 15 SUBPART B OF FCC RULES AND REGULATIONS (47 CFR PART 15)

* ANSI C63.4 - 1992

* TEST PROCEDURE AND DATA ARE TRACEABLE TO NATIONAL OR INTERNATIONAL STANDARDS.

We hereby certify that :

The measurements contained in this report were made in accordance with the procedures indicated, and the energy emitted by the equipment was found to be within the limits applicable.

TESTING ENGINEER : Nissan Yi DATE 12/04/2001
Nissan Yi

SUPERVISOR : Sunyou Chen DATE 12/04/2001
Sunyou Chen

APPROVED BY : Johnson Ho DATE 12/04/2001
Johnson Ho

2. TEST STATEMENT

2 . 1 TEST STATEMENT

1. This statement is to explain the test condition of this project.
The EUT was the test condition of each test item.
2. The data was shown in this report reflects the worst – case data for the condition as the summary of test result.
3. EUT conditions.

CPU : Intel Pentium 4 1.7GHz, clock chip : 100MHz
Resolution : 800*600

4. NVLAP logo is to be approved by management (it is according to NVLAP requirement if it need) before use.

2 . 2 DEPARTURE FROM DOCUMENT POLICIES, PROCEDURE OR SPECIFICATIONS , THE STATEMNT

1. Did have
Any departure from document policies & procedures or from specifications.
Yes _____, No _____ .
If yes , the description as below.
2. .The certificate and report shall not be reproduced except in full , without the written approval of SRT laboratory.
3. .The report must not be used by the client to claim product endorsement by NVLAP or any agency the government.
4. This product is a test sample that was shown as the photos of this test report only.
5. 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). Added a bypass capacitor 270PF at all pins of printer port.
- 2). Added a bypass capacitor 270PF at all pins of COM1 and OCM2.
- 3). Replaced the C144 and C145 instead of capacitor 0.1 μ F.
- 4). Replaced the C146, C147, C148 and C149 instead of capacitor 470PF.
- 5). Added a bypass capacitor 22PF at C16 ~ C30.
- 6). Improved the I/O port GND.
- 7). Connected the Audio and Game port GND to screw hold.
- 8). Connected the I/O port GND.
- 9). Replaced the FB21, FB22, FB23, FB24 and FB25 instead of bead MLB-201209-1200A-N4 (1200 Ω at 100MHz).
- 10). Improved the Audio GND contact to Case GND.
- 11). Replaced the R249 instead of bead MLB-201209-1200A-N4 (1200 Ω at 100MHz).
- 12). Removed C192 ~ C201, C135 ~ C143.
- 13). The Pin1, Pin8 and Pin9 of Game port bypass 0.1 μ F to screw hold.
- 14). The Pin4 and Pin5 of Game port bypass 0.1 μ F to screw hold.
- 15). The Pin2, Pin3, Pin6, Pin7, Pin10, Pin11, Pin12, Pin13, Pin14 and Pin15 of Game port bypass 680PF to screw hold.
- 16). Replaced the RN8 and RN9 instead of bead MLB-3216-1000M4-N2 (1000 Ω at 100MHz).
- 17). Cut the chassis GND and PCB GND.

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To whom it may concern :

This is to serve as proper notice that our company agrees to make
all modifications to FCC ID : PRB-MB-A845 as listed in section
3.0 of modification to submitted by Spectrum Research and Testing
Laboratory, Inc.

Respectfully,

VICKY TANH
(Name, Surname)

C.D. MANAGER
(Position/Title)

Effective Dates :

From 1 May 2001 to 31 May 2001DATE : 8 May 2001

4. CONDUCTED POWER LINE TEST

4 . 1 TEST EQUIPMENT

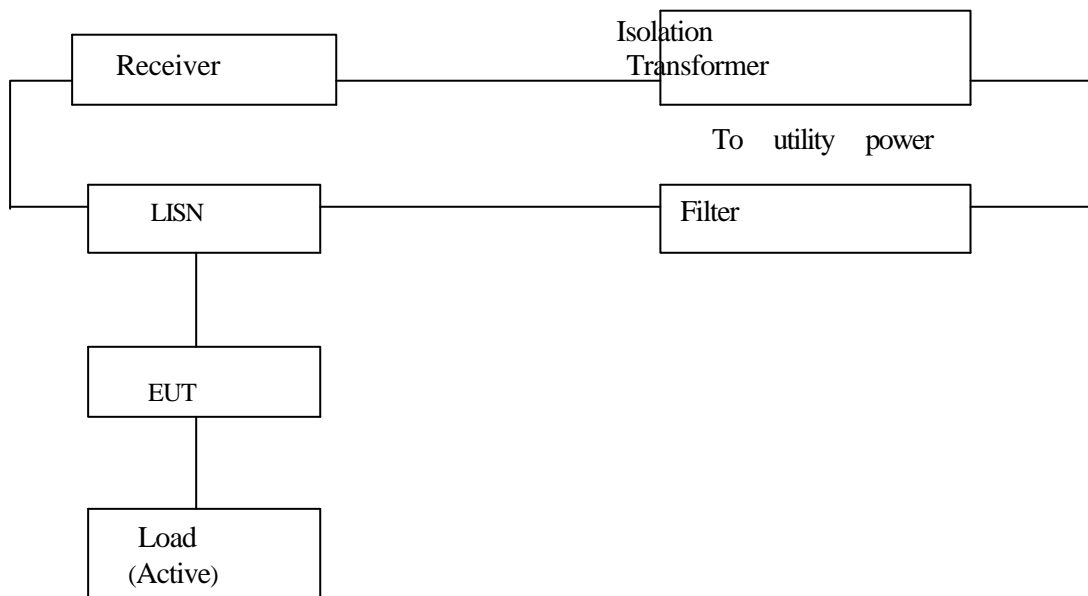
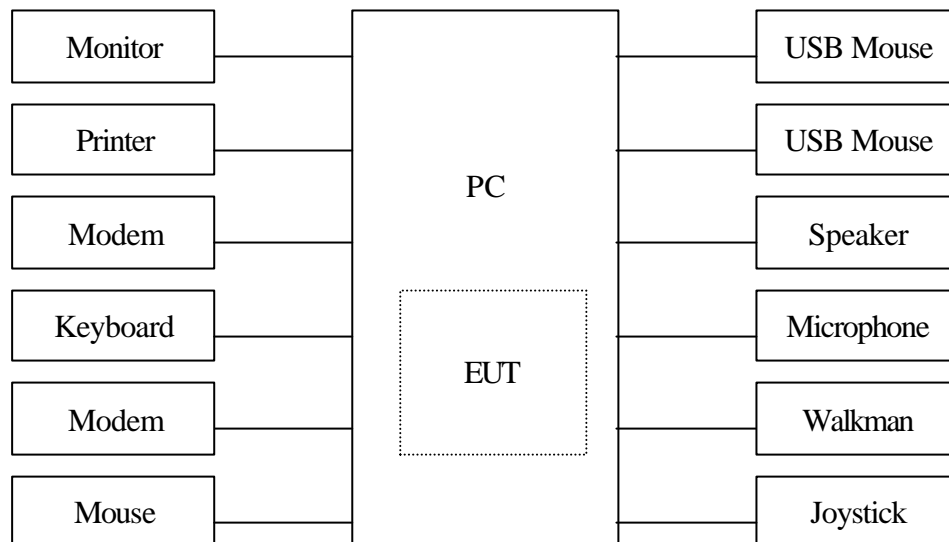
The following test equipment were used during the conducted power line test :

EQUIPMENT/ FACILITIES	SPECIFICATIONS	MANUFACTURER	MODEL#/ SERIAL#	DATE OF CAL. & CAL. CENTER	DUE DATE	FINAL TEST
EMI TEST RECEIVER	9 KHz TO 30 MHz	ROHDE & SCHWARZ	ESHS30/ 826003/008	MARCH 2001 R&S	1Y	
EMI TEST RECEIVER	9 KHz TO 2750 MHz	ROHDE & SCHWARZ	ESCS30/ 830245/012	JULY 2001 ETC	1Y	√
LISN	50 uH, 50 ohm	SOLAR ELECTRONICS	9252-50- R-24-BNC/ 951315	JULY 2001 ETC	1Y	√
LISN	50uH, 50 ohm	SOLAR ELECTRONICS	9252-50- R-24-BNC/ 951318	JUNE 2001 ETC	1Y	√
SIGNAL GENERATOR	9 KHz TO 1080 MHz	ROHDE & SCHWARZ	SMY01/ 841104/019	MARCH 2001 ETC	1Y	√
POWER CONVERTER	50 TO 300 VAC 47 to 63Hz/ 50Hz/60Hz	AFC	AFC-2KBB F100030030	APRIL 2001 SRT	1Y	√

4 . 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.

4 . 3 TEST SETUP



4 . 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.

1. EUT

DEVICE	MANUFACTURER	MODEL #	FCCID
Tomato	ZIDA TECHNOLOGIES LTD.	A845	PRB-MB-A845

2. INTERNAL DEVICES

DEVICE	MANUFACTURER	MODEL #	FCCID/DoC
N/A			

3. PERIPHERALS

DEVICE	MANUFACTURER	MODEL # SERIAL #	FCCID / DoC	CABLE
MONITOR	SAMSUNG	700IFT	DoC	1.5m unshielded power cord 1.2m shielded data cable (S2)
PRINTER	EPSON	C20SX	DoC	1.5m unshielded power cord 1.2m shielded data cable (S2)
MODEM	HAYES	4007AM	BFJ400AM	1.5m unshielded power cord 1.2m shielded data cable (S2)
KEYBOARD	ACER	6311-AT	N/A	1.2m unshielded data cable
MOUSE	LOGITECH	M-S34	DZL210472	1.2m unshielded data cable
MOUSE	LOGITECH	M-M35	DZL210365	1.2m unshielded data cable
USB MOUSE	LOGITECH	M-BE58	DoC	1.2m unshielded data cable
USB MOUSE	LOGITECH	M-BE58	DoC	1.2m unshielded data cable
SPEAKER	JS	J-205A	N/A	1.2m unshielded data cable
MICRO-PHONE	TAKY	UDM-606	N/A	1.2m unshielded data cable
WALKMAN	AIWA	HS-D102	N/A	1.2m unshielded data cable
JOYSTICK	LOGITECH	J-YG8	DoC	1.2m unshielded data cable
POWER SUPPLY	CWT	CWT-250ATX-A	DoC	N/A
HDD	SEAGATE	ST320413A	DoC	N/A
FDD	SONY	MPF920-E	N/A	N/A
CD ROM	ASUS	CD-S500/A	N/A	N/A
VGA CARD	HIGHTECH	N11-73	DoC	N/A

REMARK :

- Cable - S1 : Single point shielding.
S2 : 360 ° shielding.
S3 : Double point shielding
- Cables - All 1m or greater in length - bundled according to regulations.

4 . 5 EUT OPERATING CONDITION

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

1. EUT power on.
2. Under WIN ME run “EMI TEST” program.
"H" pattern sent to the following peripherals :
 - Monitor or VGA
 - RS232 (modem)
 - Keyboard
 - Printer
 - FDD
 - HDD
3. CPU : Inter Pentium 4 1.7GHz, clock chip : 100MHz
4. Resolution : 800*600

4 . 6 CONDUCTED POWER LINE EMISSION LIMIT

FREQUENCY RANGE (MHz)	CLASS A	CLASS B
0 . 45 - 1.705	60.0dB μ V	48.0dB μ V
1.705 - 30	69.5dB μ V	48.0dB μ V

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

4 . 7 CONDUCTED POWER LINE TEST RESULTS

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 : 24
- . Humidity : 50 %RH
- . Test result :

FREQUENCY (MHz)	LINE1 (dBmV)	LINE2 (dBmV)	LIMIT (dBmV)
0.56	43.9	43.8	48.0
0.83	44.1	43.9	48.0
1.46	38.7	41.6	48.0
2.50	42.5	40.6	48.0
4.72	37.7	34.8	48.0
17.63	34.4	*	48.0

- REMARKS** :
- * = Measurement does not apply for this frequency
 - Uncertainty in conducted emission measured is <+/- 2dB
 - Any departure from specification : N/A

SIGNED BY TESTING ENGINEER : Nissan Yi

5. RADIATED EMISSION TEST

5 . 1 TEST EQUIPMENT

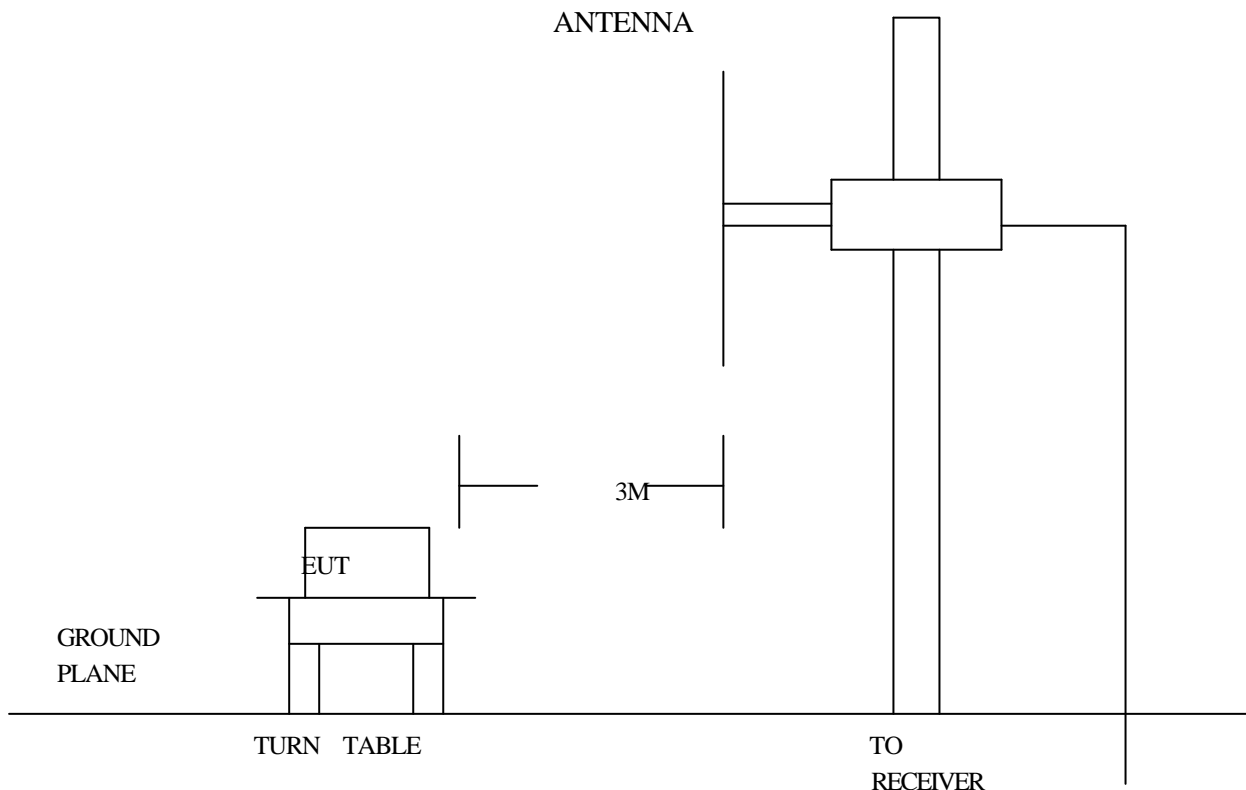
The following test equipment were used during the radiated emission test :

EQUIPMENT / FACILITIES	SPECIFICATIONS	MANUFACTURER	MODEL # / SERIAL #	DATE OF CAL. & CAL. CENTER	DUE DATE	FINAL TEST
TEST RECEIVER	9 KHz TO 2.75 MHz	R & S	ESCS30/ 830245/012	JULY 2001 ETC	1Y	
TEST RECEIVER	20 MHz TO 1000 MHz	R & S	ESVS30/ 841977/003	JUNE 2001 ETC	1Y	√
SPECTRUM ANALYZER	100 Hz TO 1500 MHz	HP	8568B/ 3001A04931	AUG. 2001 ETC	1Y	
SPECTRUM ANALYZER	9 KHz TO 22 GHz	HP	8593E/ 3322A00670	MARCH 2001 ETC	1Y	√
SIGNAL GENERATOR	9 KHz TO 1080 MHz	ROHDE & SCHWARZ	SMY01/ 841104/019	MARCH 2001 ETC	1Y	√
DIPOLE ANTENNA	28 MHz TO 1000 MHz	EMCO	3121C/ 9003-534	FEB. 2001 SRT	1Y	
DIPOLE ANTENNA	28 MHz TO 1000 MHz	EMCO	3121C/ 9611-1239	FEB. 2001 SRT	1Y	
BI-LOG ANTENNA	30 MHz TO 2 GHz	SCHAFFNER-CHASE	CBL6141A/ 4181	JULY 2001 ETC	1Y	√
BI-LOG ANTENNA	26 MHz TO 1100 MHz	EMCO	3143/ 9509-1152	SEP. 2001 ITIR	1Y	
PRE-AMPLIFIER	0.1 MHz TO 1300 MHz	HP	8447D/ 2944A08402	MARCH 2001 SRT	1Y	
PRE-AMPLIFIER	0.1 MHz TO 1300 MHz	HP	8447D/ 2944A06412	JULY 2001 ETC	1Y	
HORN ANTENNA	1 GHz TO 18 GHz	EMCO	3115/ 9012-3619	JAN. 2001 ETC	1Y	√

5 . 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 1.5m, table high 0.8m. All set up is according to ANSI C63.4-1992.
3. The frequency spectrum from 30 MHz to 10 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.

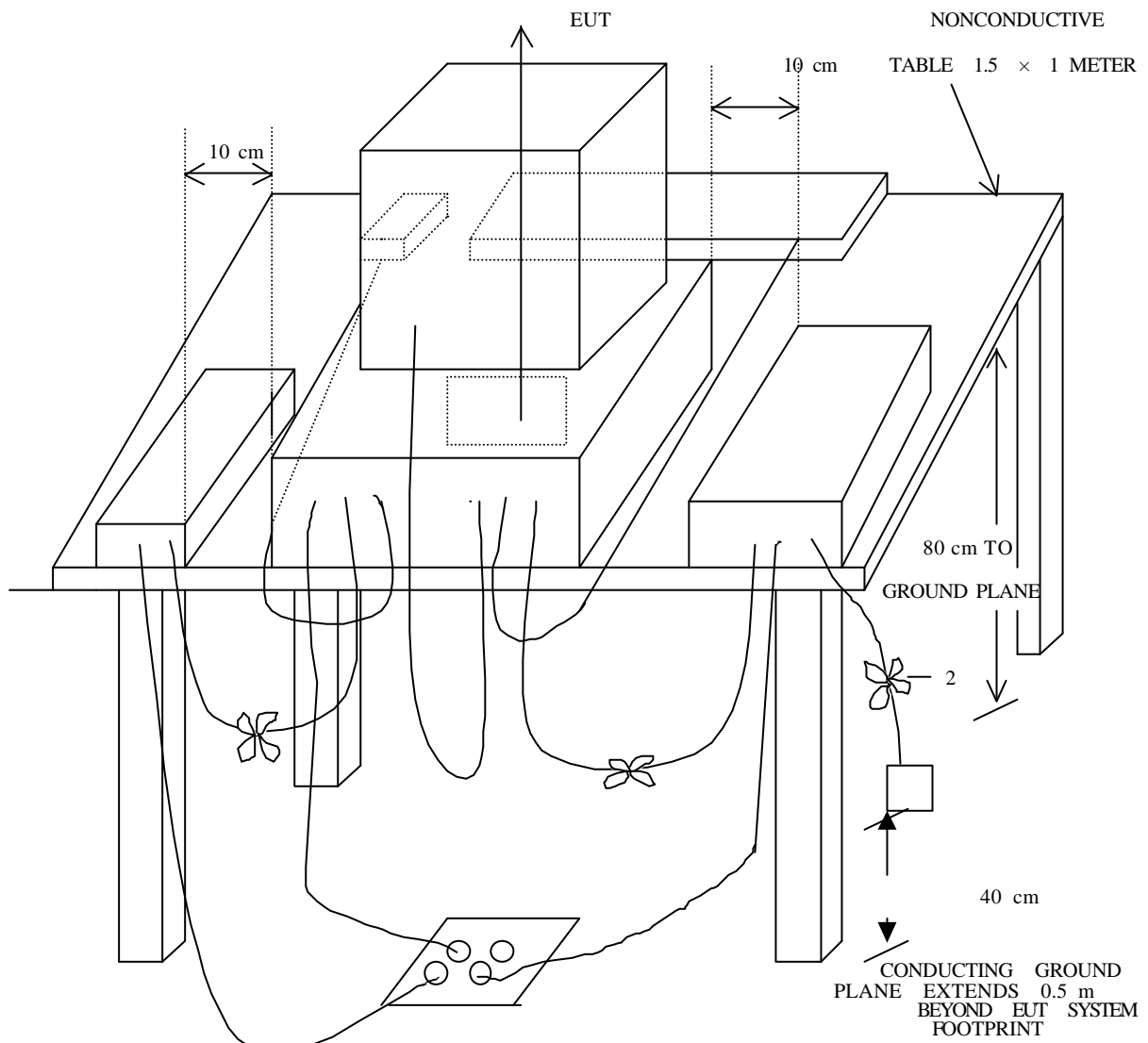
5 . 3 RADIATED TEST SET-UP



5 . 3 RADIATED TEST SET-UP

ANSI C63.4-1992

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



5 . 4 CONFIGURATION OF THE THE EUT

Same as section 4.4 of this report

5 . 5 EUT OPERATING CONDITION

Same as section 4.5 of this report.

5 . 6 RADIATED EMISSION LIMITS

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)	FIELD STRENGTH (dBmV/m)
30 - 88	3	40.0
88 - 216	3	43.5
216 - 960	3	46.0
ABOVE 960	3	54.0

CLASS B (OPEN CASE)

FREQUENCY (MHz)	DISTANCE (m)	FIELD STRENGTH (dBmV/m)
30 - 88	3	46.0
88 - 216	3	49.5
216 - 960	3	52.0
ABOVE 960	3	60.0

CLASS A

FREQUENCY (MHz)	DISTANCE (m)	FIELDS STRENGTH (dBmV/m)
30 - 88	3	50.0
88 - 216	3	53.5
216 - 960	3	56.0
ABOVE 960	3	64.0

- 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.

5 . 7 RADIATED EMISSION TEST RESULT

The frequency spectrum from 30 MHz to 10 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 : 23
- . Humidity : 51 %RH
- . Test result :

FREQ. (MHz)	FACTOR (dB)	ANT. FACTOR (dB/m)	READING (dBmV)		EMISSION (dBmV/m)		LIMITS (dBmV/m)	AZ (°)	EL(M)
			HORIZ	VERT	HORIZ	VERT			
150.3046	1.8	12.8	23.8	*	38.4	*	43.5	236.6	1.0
166.0145	1.9	11.8	24.5	22.6	38.2	36.3	43.5	125.5	1.0
336.8075	2.7	14.2	25.0	23.2	41.9	40.1	46.0	254.5	1.0
534.0115	3.2	17.4	20.1	17.4	40.7	38.0	46.0	111.5	1.0
400.0605	3.1	16.6	*	21.0	*	40.7	46.0	365.5	1.0
626.0145	3.8	19.3	17.2	*	40.3	*	46.0	126.5	1.0
1201.0000	3.2	25.2	17.6	18.9	46.0	47.3	54.0	3.5	1.0
1328.5000	3.4	25.5	18.4	*	47.3	*	54.0	215.4	1.0
2281.0000	4.6	28.0	14.7	*	47.3	*	54.0	58.4	1.0
2610.0000	5.2	28.3	*	13.8	*	47.3	54.0	311.7	1.0
2780.0000	5.3	29.3	12.4	*	47.0	*	54.0	31.9	1.0
3117.0000	5.6	30.6	*	11.8	*	48.0	54.0	167.2	1.0

- REMARKS** :
- *= Measurement does not apply for this frequency.
 - Uncertainty in radiated emission measured is ± 4 dB
 - Any departure from specification : N/A
 - Factor will include cable loss and correction factor.
 - Sample calculation

$$\text{Emission(dB}\mu\text{V/m)} = \text{Factor (dB)} + \text{Ant. Factor (dB/m)} + \text{reading (dB}\mu\text{V)}$$
 - AZ(°) : Turn table azimuth
 - EL(M) : Antenna height (Meter)
 - The EUT's radiated emission above 4GHz was too low to receive
 - Close case

Nissan Yi

SIGNED BY TESTING ENGINEER : _____

5 . 7 RADIATED EMISSION TEST RESULT

The frequency spectrum from 30 MHz to 10 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 : 23
- . Humidity : 51 %RH
- . Test result :

FREQ. (MHz)	FACTOR (dB)	ANT. FACTOR (dB/m)	READING (dBmV)		EMISSION (dBmV/m)		LIMITS (dBmV/m)	AZ (°)	EL(M)
			HORIZ	VERT	HORIZ	VERT			
192.0372	2.2	10.6	4.8	*	37.6	*	49.5	236.6	1.0
229.0972	2.2	13.9	23.5	25.0	39.6	41.1	52.0	96.5	1.0
300.1221	2.7	13.6	24.2	24.0	40.5	40.3	52.0	36.5	1.0
336.8075	2.7	14.2	26.8	24.8	43.7	41.7	52.0	254.5	1.0
400.0605	3.1	16.6	*	20.7	*	40.4	52.0	365.5	1.0
498.0232	3.1	17.4	20.0	*	40.5	*	52.0	111.5	1.0
1163.5000	3.1	25.1	25.3	*	53.5	*	60.0	125.5	1.0
1201.0000	3.2	25.2	26.2	25.8	54.6	54.2	60.0	3.5	1.0
1348.0000	3.4	25.6	24.9	*	53.9	*	60.0	215.4	1.0
1463.5000	3.7	25.8	26.3	24.4	55.8	53.9	60.0	88.5	1.0
1730.5000	3.9	27.2	*	23.4	*	54.5	60.0	145.5	1.0
1993.0000	4.0	28.5	*	20.7	*	53.2	60.0	12.2	1.0

- REMARKS** :
- *= Measurement does not apply for this frequency.
 - Uncertainty in radiated emission measured is ± 4 dB
 - Any departure from specification : N/A
 - Factor will include cable loss and correction factor.
 - Sample calculation

$$\text{Emission(dB}\mu\text{V/m)} = \text{Factor (dB)} + \text{Ant. Factor (dB/m)} + \text{reading (dB}\mu\text{V)}$$
 - AZ(°) : Turn table azimuth
 - EL(M) : Antenna height (Meter)
 - The EUT's radiated emission above 2GHz was too low to receive
 - Open case

SIGNED BY TESTING ENGINEER : _____