EMC

TEST REPORT

REPORT NO. : F87071506
MODEL NO. : SBC-411E, WCL-486, SBC-456, SBC-357, SBC-456E, SBC-411
DATE OF TEST : July 15, 1998

PREPARED FOR: AAEON TECHNOLOGY INC.

ADDRESS : 1F, NO. 6, ALLEY 6, LANE 45, PAO-HSIN RD., HSIN-TIEN CITY, TAIPEI, TAIWAN, R.O.C.

PREPARED BY: ADVANCE DATA TECHNOLOGY CORPORATION

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12F, NO.1, SEC.4, NAN-KING EAST RD., TAIPEI, TAIWAN, R.O.C.

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1. CERTIFICATION

Issue Date: Aug. 6, 1998

Product	:	CPU BOARD
Trade Name	:	AAEON
Model No.	:	SBC-411E, WCL-486, SBC-456, SBC-357, SBC-456E, SBC-411
Applicant	:	AAEON TECHNOLOGY INC.
Standard	:	FCC Part 15, Subpart B, Class A ANSI C63.4-1992 CISPR 22:1993+A1+A2

We hereby certify that one sample of the designation has been tested in our facility on July 15, 1998. The test record, data evaluation and Equipment Under Test (EUT) configurations represent herein are true and accurate representation of the measurements of the sample's EMC characteristics under the conditions herein specified.

The test results show that the EUT as described in this report is in compliance with the Class A limits of conducted and radiated emission of applicable standards.

PREPARED BY: Sharon Hsiung , DATE: 8/6/98
(Sharon Hsiung)

TESTED BY: San Lin , DATE: _____
(San Lin)

APPROVED BY: Mike Su , DATE: 8/6/98
(Mike Su)

ADVANCE DATA TECHNOLOGY CORPORATION

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2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product	:	CPU BOARD
Model No.	:	SBC-411E, WCL-486, SBC-456, SBC-357, SBC-456E, SBC-411
Power Supply	:	DC (from PC)
Data Cable	:	N/A

Note: The EUT has six model names which are identical to each other in all aspects except for the following:

* SBC-411E and WCL-486 are identical to each other, except for the model names. It has 2 Ethernet function, without VGA function.
* SBC-411 is identical to SBC-411E, except this model is without Ethernet function.
* SBC-456E has 1 Ethernet function and VGA function (1027x768 256 colors)
* SBC-456 is identical to SBC-456E, except this model is without Ethernet function.
* SBC-357 is without Ethernet function but has VGA on board (1024x768 256 colors).

From the above models, three models were selected as representatives models for the test, as the following :

Mode 1: Model : SBC-411E
Mode 2: Model : SBC-456E
Mode 3: Model : SBC-357

For more detailed features description, please refer to ATTACHMENT 1 - TECHNICAL DESCRIPTION OF EUT and User's Manual.

2.2 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories are used to form representative test configuration during the tests.

For Model : SBC-411E

No	Product	Brand	Model No.	FCC ID	I/O Cable
1	COLOR MONITOR	ADI	937G	BR8937G	Nonshielded Signal (1.2m) Shielded Power (1.8m)
2	PRINTER	HP	C2145A	B94C2145X	Nonshielded Signal (1.2m)
3	MODEM	ACEEX	1414	IFAXDM1414	Shielded signal (1.2m)
4	KEYBOARD	FORWARD	FDA-104GA	F4ZDA-104G	Shielded Signal (1.4m)
5	MOUSE	DEXIN	A2P800A	NIYA2P800A	Shielded signal (1.4m)
6	PC	ADI	DUO PC-C	FCC DoC approved	Nonshielded power (1.8m)
7	PC	IBM	6560-T7T	AN06260F	Nonshielded power (1.8m)
8	MONITOR	ACER	7134T	JVP7134T	Shielded signal (1.8m) Nonshielded power (1.8m)
9	MONITOR	ADI	PD-959	FCC DoC	Shielded signal (1.8m) Nonshielded power (1.8m)
10	KEYBOARD x 2	HP	C3758A	CIGE03633	Nonshielded signal (1.4m)
11	MOUSE	DEXIN	A2P800A	NIYA2P800A	Shielded signal (1.5m)
12	MOUSE	LOGITECH	M-M30	DZL210569	Shielded signal (1.4m)
13	HUB x 2	ACCTON	EN2040	FCC DoC Approved	Shielded signal-(10m to EUT; 3.0m to PC) Shielded power (1.9m)

Note: The EUT acted SERVER PC and communicated with support unit 6-12 which acted as two WORKSTATION PCs and systems of communication partner via support unit 13.

For Model : SBC-456E & SBC-357

No	Product	Brand	Model No.	FCC ID	I/O Cable
1	COLOR MONITOR	ADI	PD-959	FCC Approved	Nonshielded Signal (1.2m) Shielded Power (1.8m)
2	PRINTER	HP	C2145A	B94C2145X	Nonshielded Signal (1.2m)
3	KEYBOARD	FORWARD	FDA-104GA	F4ZDA-104G	Shielded Signal (1.4m)
4	MOUSE	LOGITECH	M-M30	DZL210569	Shielded signal (1.4m)
5	MODEM X 3 (for model SBC-357) MODEM X 1 (for model: SBC-456E)	ACEEX	1414	IFAXDM1414	Shielded signal (1.2m)
6	PC	IBM	6560-T7T	AN06260F	Nonshielded power (1.8m)
7	MONITOR	ACER	7134T	JVP7134T	Shielded signal (1.8m) Nonshielded power (1.8m)
8	KEYBOARD	HP	C3758A	CIGE03633	Nonshielded signal (1.4m)
9	MOUSE	HP	M-S34	DZL211029	Shielded signal (1.5m)
10	HUB	ACCTON	EN2040	FCC Approved	Shielded signal- (10m to EUT; 3.0m to PC) Shielded power (1.9m)

Note: The EUT acted SERVER PC and communicated with support unit 6-9 which acted as two WORKSTATION PCs and systems of communication partner via support unit 10.

2.3 TEST METHODOLOGY AND CONFIGURATION

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4:1992. Radiated testing was performed at an antenna to EUT distance of 10 m on an open area test site. Please refer to the photos of test configuration in Item 5.

3. TEST INSTRUMENTS

3.1 TEST INSTRUMENTS (EMISSION)

RADIATED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
HP Spectrum Analyzer	E4411A	US37360834	Sept. 28, 1998
CHASE Preamplifier	CPA9231A/4	3215	Oct. 31, 1998
HP Preamplifier	8347A	3307A01088	Sept. 4, 1998
ROHDE & SCHWARZ TEST RECEIVER	ESVS 30	841977/002	Jan. 8, 1999
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 28, 1998
CHASE BiLOG Antenna	CBL6112	2074	Dec. 25, 1998
EMCO Double Ridged Guide Antenna	3115	9312-4192	April 3, 1999
CHANCE Turn Table & Tower Controller	ACS-I	N/A	N/A
Open Field Test Site	Site 6	ADT-R06	Dec. 23, 1998

Note: 1. The measurement uncertainty is less than +/- 3dB, which is calculated as per NAMA's document NIS81.

2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.

CONDUCTED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ Test Receiver	ESHS30	828109/007	Aug. 4, 1998
ROHDE & SCHWARZ Artificial Mains Network	ESH2-Z5	892107/003	July 22, 1998
EMCO L.I.S.N.	3825/2	9504-2359	Aug. 1, 1998
Shielded Room	Site 3	ADT-C03	N/A

Note: 1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per NAMA's document NIS81.

2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.

3.2 LIMITS OF CONDUCTED AND RADIATED EMISSION

LIMIT OF RADIATED EMISSION OF CISPR 22

FREQUENCY (MHz)	Class A (at 10m) dBuV/m	Class B (at 10m) dBuV/m
30 - 230	40	30
230 - 1000	47	37

LIMIT OF RADIATED EMISSION OF FCC PART 15, SUBPART B FOR FREQUENCY ABOVE 1000 MHz

FREQUENCY (MHz)	Class A (at 10m)		Class B (at 3m)	
	uV/m	dBuV/m	uV/m	dBuV/m
Above 1000	300	49.5	500	54.0

Note: (1) The lower limit shall apply at the transition frequencies.

(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).

(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

LIMIT OF CONDUCTED EMISSION OF CISPR 22

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

Note: (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz

(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4. TEST RESULTS (EMISSION)

4.1 RADIO DISTURBANCE

Frequency Range	:	0.15 - 30 MHz (Conducted Emission)
		30 - 1000 MHz (Radiated Emission)
Input Voltage	:	120 Vac, 60 Hz
Temperature	:	28 ℃
Humidity	:	65 %
Atmospheric Pressure	:	997 mbar

TEST RESULT	Remarks
PASS	Minimum passing margin of conducted emission: -17.7 dB at 0.156 MHz Minimum passing margin of radiated emission: -2.5 dB at 109.40 & 226.60 MHz

4.1.1 EUT OPERATION CONDITION

1. Turn on the power of all equipments.
2. Industrial PC reads a test program to enable all functions.
3. Industrial PC reads and writes messages from HDD.
4. Industrial PC sends and receives messages to and from HOST PC via a LAN cable.
5. Industrial PC sends "H" messages to monitor and monitor display "H" patterns on screen.
6. Industrial PC sends "H" messages to modem.
7. Industrial PC sends "H" messages to printer, and the printer prints them on paper.
8. Repeat steps 2-8.

4.1.2 TEST DATA OF CONDUCTED EMISSION (A)

EUT: **CPU BOARD** MODEL: **SBC-411E**

6 dB Bandwidth: 10 kHz

TEST PERSONNEL: San Lin

Freq.	L Level		N Level		Limit		Margin [dB (μV)]			
[MHz]	[dB (μV)]		[dB (μV)]		[dB (μV)]		L		N	
	QP	AV	QP	AV	QP	AV	QP	AV	QP	AV
0.213	44.50	-	43.80	-	79.00	66.00	-39.6	-	-39.4	-
0.384	39.40	-	39.60	-	79.00	66.00	-39.1	-	-38.5	-
0.558	33.90	-	34.50	-	73.00	60.00	-45.0	-	-42.6	-
1.070	28.00	-	30.40	-	73.00	60.00	-35.3	-	-34.2	-
5.700	37.70	-	38.80	-	73.00	60.00	-29.7	-	-27.8	-
10.070	43.30	-	45.20	-	73.00	60.00	-34.5	-	-35.2	-

Remarks:
1. "*": Undetectable
2. Q.P. and AV. are abbreviations of quasi-peak and average individually.
3. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
4. The emission level of other frequencies were very low against the limit.
5. Margin value = Emission level - Limit value

ADT CO. Shielded Room 3
CISPR 22 CLASS A

15. Jul 98 20:05

EUT: SBC-4116
Test Spec: LISN : L

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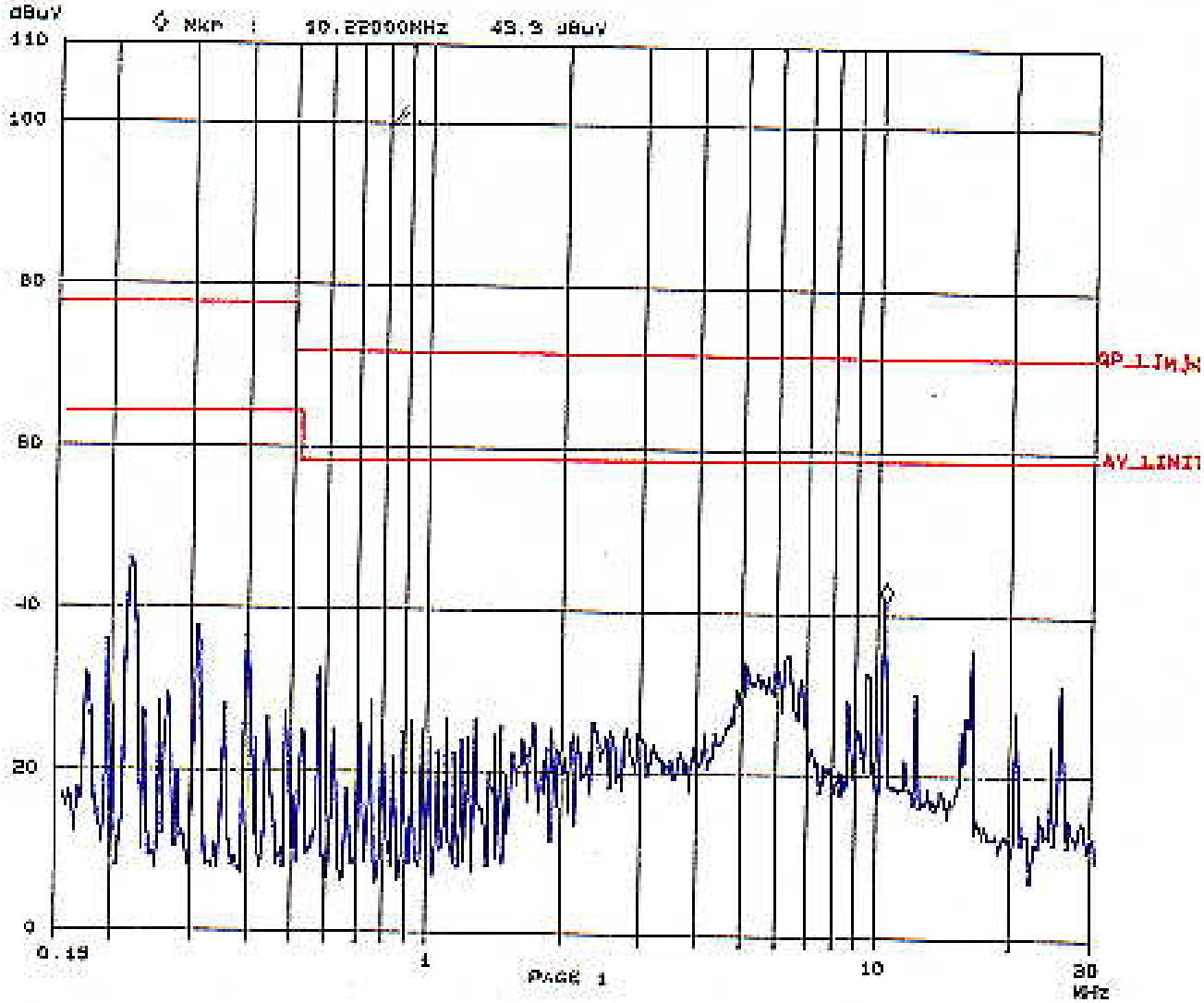
Tested by San Lin

Fast Scan Settings (8 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	450k	3k	10k	PK	0.05ms	10dBLN	OFF	60dB
450k	5M	3k	10k	PK	0.05ms	10dBLN	OFF	60dB
5M	30M	3k	10k	PK	0.05ms	20dBLN	OFF	60dB



ADT CO. Shielded Room 3
CISPR 22 CLASS A

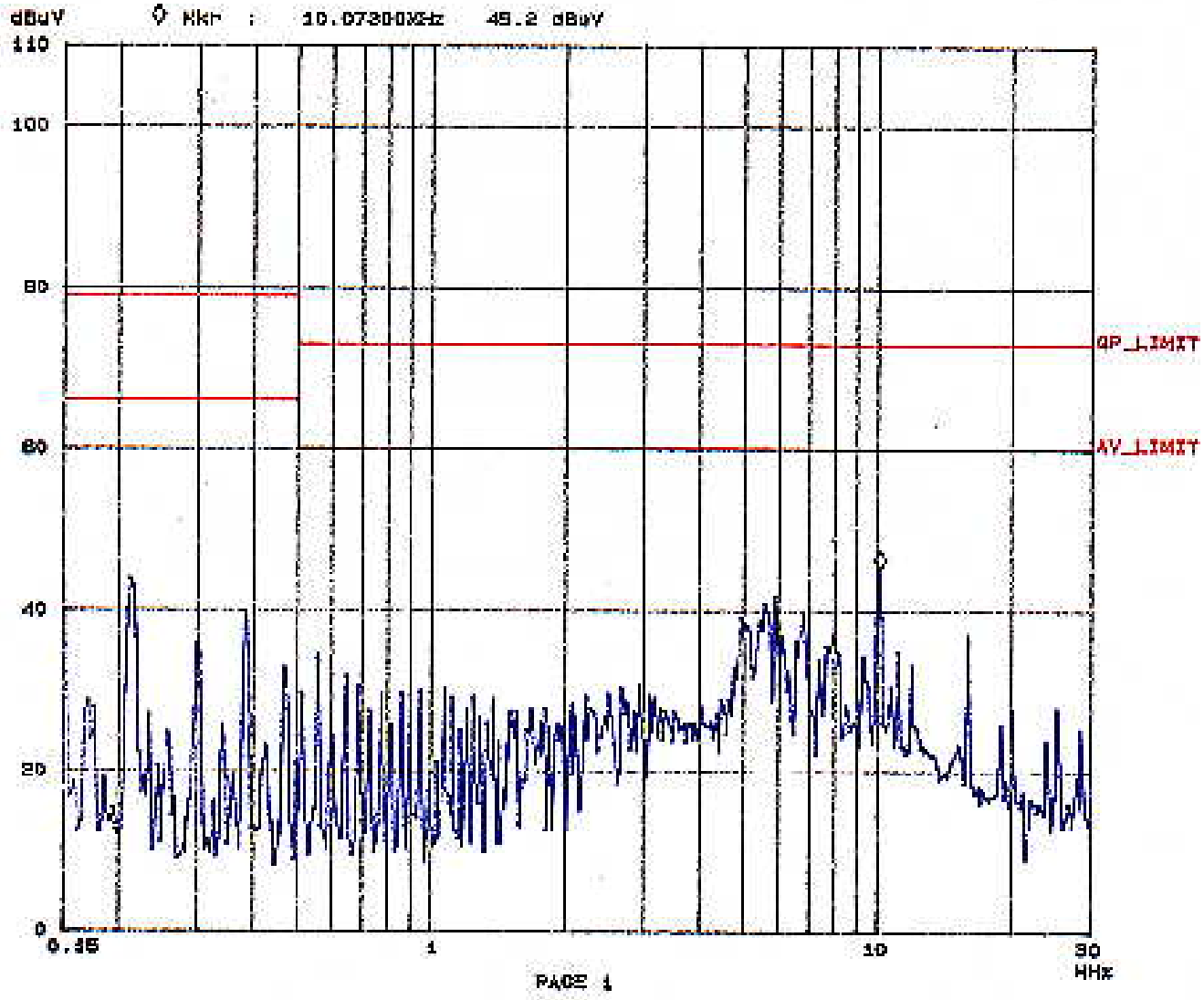
15. Jul 98 19:15

EUT: 980-4116
Test Spec: LISN : N

Report No. F840715C6
Page 9-2
Tested by Sam Lin

Fast Scan Settings (3 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150K	450K	3k	10K	PK	0.00ms	10dBLN	OFF	80dB
450K	6M	3k	10K	PK	0.00ms	10dBLN	OFF	80dB
6M	30M	3k	10K	PK	0.00ms	10dBLN	OFF	80dB



4.1.3 TEST DATA OF CONDUCTED EMISSION (B)

EUT: **CPU BOARD** MODEL: **SBC-456E**

6 dB Bandwidth: 10 kHz

TEST PERSONNEL: San Lin

Freq.	L Level		N Level		Limit		Margin [dB (μV)]			
[MHz]	[dB (μV)]		[dB (μV)]		[dB (μV)]		L		N	
	QP	AV	QP	AV	QP	AV	QP	AV	QP	AV
0.156	61.30	-	61.30	-	79.00	66.00	-17.7	-	-17.7	-
0.180	54.80	-	53.60	-	79.00	66.00	-24.2	-	-25.4	-
0.630	30.30	-	30.60	-	73.00	60.00	-42.7	-	-42.4	-
0.790	27.10	-	29.90	-	73.00	60.00	-45.9	-	-43.1	-
1.710	33.10	-	35.30	-	73.00	60.00	-39.9	-	-37.7	-
4.030	41.30	-	39.30	-	73.00	60.00	-31.7	-	-33.7	-

Remarks:
1. "*": Undetectable
2. Q.P. and AV. are abbreviations of quasi-peak and average individually.
3. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
4. The emission level of other frequencies were very low against the limit.
5. Margin value = Emission level - Limit value

ADT CO. Shielded Room 3
CISPR 22 CLASS A

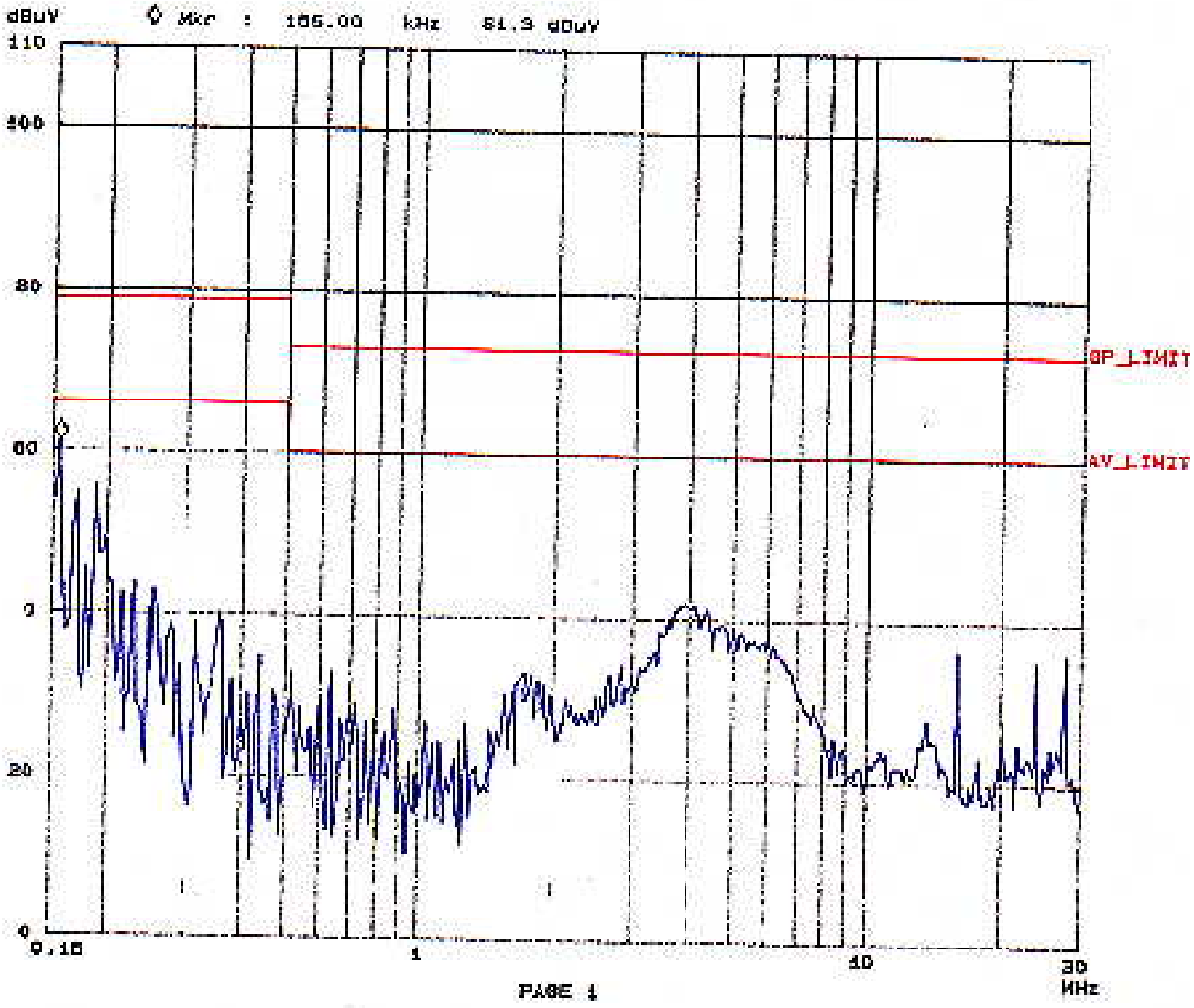
28. Jul 98 16:23

EUT: 38D-4586
Test Spec: LISN : L

Report No. FR407156
Page 10-1
Tested by Gan Lin

Fast Scan Settings (3 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	450k	3k	10k	-K	0.05ms	10dBLN	OFF	80dB
450k	5M	3k	10k	PK	0.05ms	10dBLN	OFF	80dB
5M	30M	3k	10k	PK	0.05ms	10dBLN	OFF	80dB



ADT CO. Shielded Room 3
CISPR 22 CLASS A

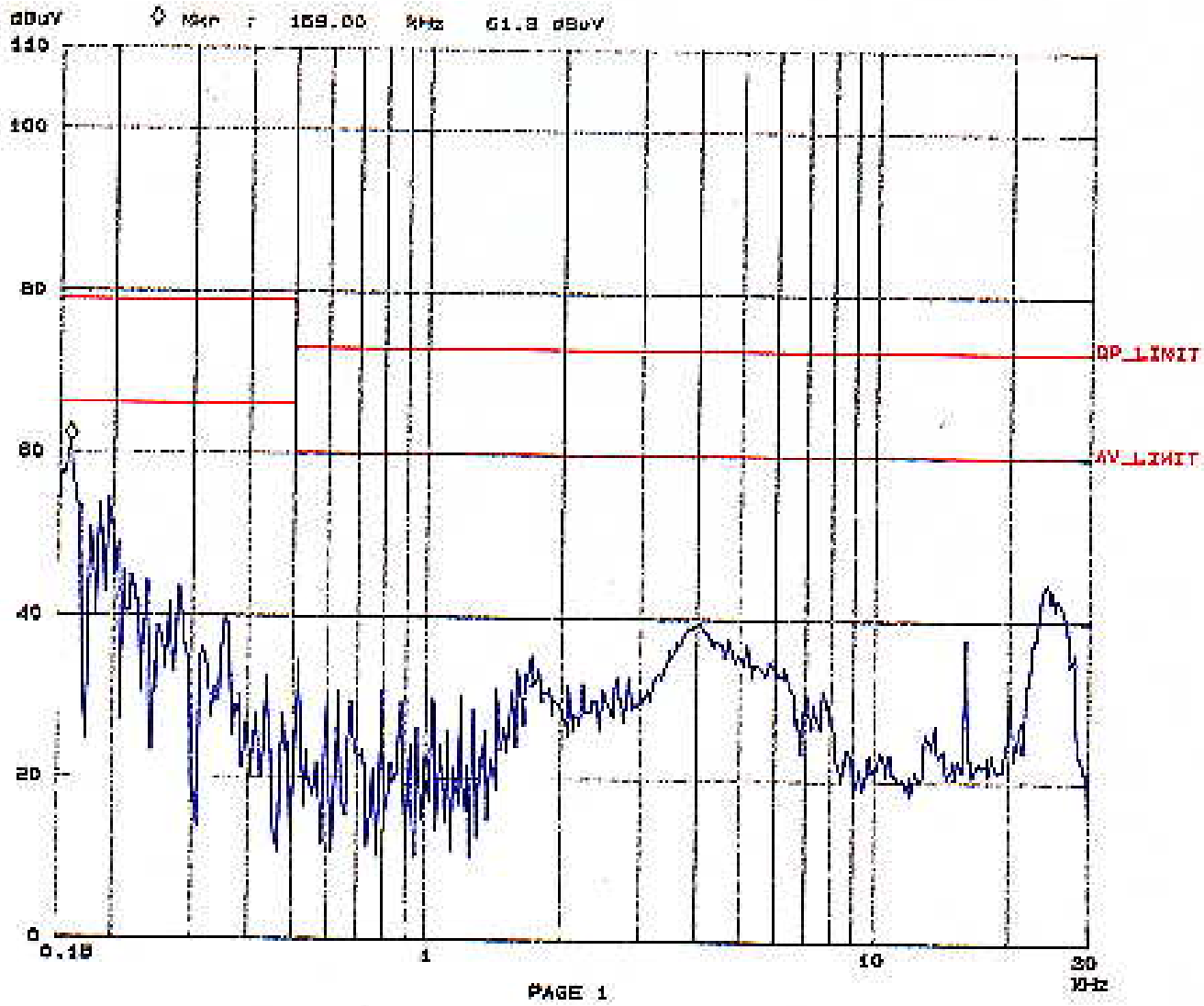
28. Jul 98 18:29

EUT: SBC-488C
Test Spec: LISN : N

Report No. F870915706
Page 10-2
Tested by Sam Lin

Fast Scan Settings (3 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	X-Time	Atten	Preamp	DpRge
150k	450k	3k	10k	PK	0.00ms	10dBLN	OFF	60dB
450k	5M	3k	10k	PK	0.00ms	10dBLN	OFF	60dB
5M	30M	3k	10k	PK	0.00ms	10dBLN	OFF	60dB



4.1.4 TEST DATA OF CONDUCTED EMISSION (C)

EUT: **CPU BOARD** MODEL: **SBC-357**

6 dB Bandwidth: 10 kHz

TEST PERSONNEL: San Lin

Freq.	L Level		N Level		Limit		Margin [dB (μV)]			
[MHz]	[dB (μV)]		[dB (μV)]		[dB (μV)]		L		N	
	QP	AV	QP	AV	QP	AV	QP	AV	QP	AV
0.159	59.40	-	60.60	-	79.00	66.00	-19.6	-	-18.4	-
0.280	45.90	-	43.50	-	79.00	66.00	-33.1	-	-35.5	-
0.440	32.30	-	31.60	-	79.00	66.00	-46.7	-	-47.4	-
1.760	35.00	-	33.00	-	73.00	60.00	-38.0	-	-40.0	-
3.770	43.10	-	40.60	-	73.00	60.00	-29.9	-	-32.4	-
5.440	38.60	-	36.60	-	73.00	60.00	-34.4	-	-36.4	-

Remarks:
1. "*": Undetectable
2. Q.P. and AV. are abbreviations of quasi-peak and average individually.
3. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
4. The emission level of other frequencies were very low against the limit.
5. Margin value = Emission level - Limit value

ADT CO. Shielded Room 3
CISPR 22 CLASS A

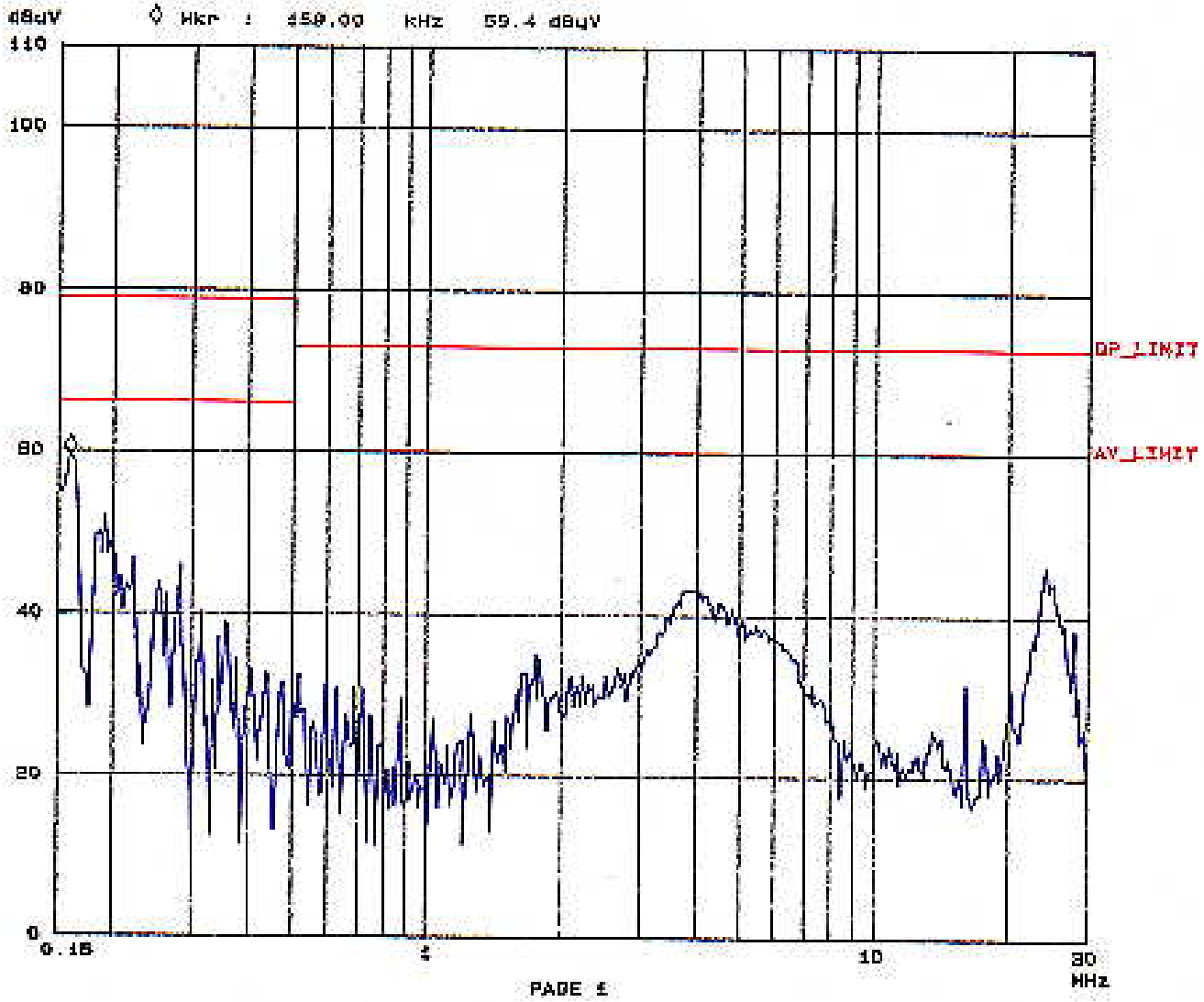
28. Jul 98 16:52

EUT: 30C-367
Test Spec: LISN : L

Report No. FR407506
Page 11-1
Tested by San Lin

Fast Scan Settings (3 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpAge
150k	450k	9k	10k	PK	0.05ms	10dBLN	OFF	60dB
450k	5M	9k	10k	PK	0.05ms	10dBLN	OFF	60dB
5M	30M	9k	10k	PK	0.05ms	10dBLN	OFF	60dB



ADT CO. Shielded Room 3
CISPR 22 CLASS A

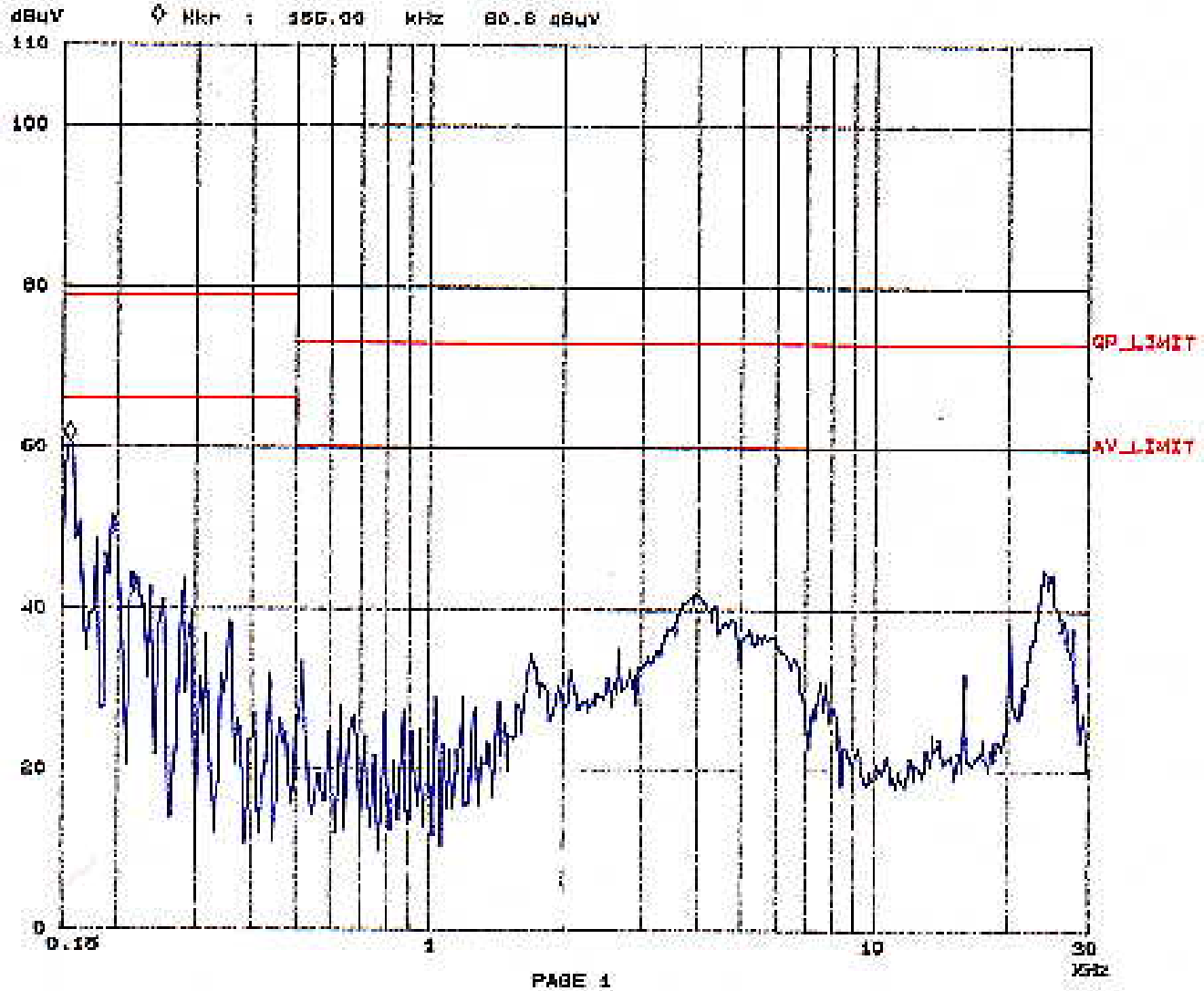
28. Jul 98 15:58

Report No. P870713-06
Page 11-2
Tested by San Lin

EUT: 88C-857
Test Spec: LISN : N

Test Scan Settings (3 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	DpRge
150k	450k	3k	10k	PK	0.05ms	10dBLN	OFF	80dB
450k	5M	3k	10k	PK	0.05ms	10dBLN	OFF	80dB
5M	30M	3k	10k	PK	0.05ms	10dBLN	OFF	80dB



4.1.5 TEST DATA OF RADIATED EMISSION (A)

EUT: **CPU BOARD** MODEL: **SBC-411E**

ANTENNA: CHASE BILOG CBL 6112/EMCO Horn 3115

POLARITY: Horizontal

DETECTOR FUNCTION AND BANDWIDTH: Quasi peak, 120 kHz (30-1000 MHz)
Peak, 1 MHz (1000 MHz-2000 MHz)

FREQUENCY RANGE: 30-1000 MHz MEASURED DISTANCE: 10 M

FREQUENCY RANGE: 1000-2000 MHz MEASURED DISTANCE: 3 M

TEST PERSONNEL: San Lin

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
64.25	8.2	17.8	26.0	40.0	-14.0
116.18	15.3	17.3	32.6	40.0	-7.4
132.83	14.0	16.1	30.1	40.0	-9.9
149.29	12.1	15.6	27.7	40.0	-12.3
216.17	12.0	14.2	26.2	40.0	-13.8
226.55	12.9	21.3	34.2	40.0	-5.8
233.87	13.6	14.1	27.7	47.0	-19.3
255.09	16.2	15.0	31.2	47.0	-15.8
265.56	16.5	27.0	43.5	47.0	-3.5

REMARKS :
1. Emission level (dBuV/m) = Correction Factor(dB/m) +Meter Reading (dBuV).
2. Correction Factor(dB/m) = Ant. Factor(dB/m)+Cable loss(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level - Limit value

TEST DATA OF RADIATED EMISSION (A)

EUT: **CPU BOARD** MODEL: **SBC-411E**

ANTENNA: CHASE BILOG CBL 6112/EMCO Horn 3115

POLARITY: Vertical

DETECTOR FUNCTION AND BANDWIDTH: Quasi peak, 120 kHz (30-1000 MHz)
Peak, 1 MHz (1000 MHz-2000 MHz)

FREQUENCY RANGE: 30-1000 MHz MEASURED DISTANCE: 10 M

FREQUENCY RANGE: 1000-2000 MHz MEASURED DISTANCE: 3 M

TEST PERSONNEL: Sam Lin

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
109.40	14.4	-4.4	10.1	40.0	-29.9
109.40	14.4	23.0	37.5	40.0	-2.5
116.20	14.3	20.9	35.2	40.0	-4.8
132.80	13.7	23.0	36.7	40.0	-3.3
135.30	13.6	16.2	29.8	40.0	-10.2
182.60	9.9	19.2	29.1	40.0	-10.9
216.20	12.5	16.6	29.1	40.0	-10.9
226.60	13.0	24.5	37.5	40.0	-2.5
233.90	13.3	15.8	29.1	47.0	-17.9
265.50	15.6	17.4	33.0	47.0	-14.0

REMARKS :
1. Emission level (dBuV/m) = Correction Factor(dB/m) +Meter Reading (dBuV).
2. Correction Factor(dB/m) = Ant. Factor(dB/m)+Cable loss(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level - Limit value

4.1.6 TEST DATA OF RADIATED EMISSION (B)

EUT: **CPU BOARD** MODEL: **SBC-456E**

ANTENNA: CHASE BILOG CBL 6112/EMCO Horn 3115

POLARITY: Horizontal

DETECTOR FUNCTION AND BANDWIDTH: Quasi peak, 120 kHz (30-1000 MHz)
Peak, 1 MHz (1000 MHz-2000 MHz)

FREQUENCY RANGE: 30-1000 MHz MEASURED DISTANCE: 10 M

FREQUENCY RANGE: 1000-2000 MHz MEASURED DISTANCE: 3 M

TEST PERSONNEL: San Lin

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
113.16	15.0	15.0	30.0	40.0	-10.0
116.93	15.3	18.2	33.5	40.0	-6.5
120.85	15.5	13.4	28.9	40.0	-11.1
122.85	15.3	15.6	30.9	40.0	-9.1
152.69	11.8	15.1	26.9	40.0	-13.1
200.48	10.5	11.5	22.0	40.0	-18.0
233.85	13.6	12.6	26.2	47.0	-20.8

REMARKS :
1. Emission level (dBuV/m) = Correction Factor(dB/m) +Meter Reading (dBuV).
2. Correction Factor(dB/m) = Ant. Factor(dB/m)+Cable loss(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level - Limit value

TEST DATA OF RADIATED EMISSION (B)

EUT: **CPU BOARD** MODEL: **SBC-456E**

ANTENNA: CHASE BILOG CBL 6112/EMCO Horn 3115

POLARITY: Vertical

DETECTOR FUNCTION AND BANDWIDTH: Quasi peak, 120 kHz (30-1000 MHz)
Peak, 1 MHz (1000 MHz-2000 MHz)

FREQUENCY RANGE: 30-1000 MHz MEASURED DISTANCE: 10 M

FREQUENCY RANGE: 1000-2000 MHz MEASURED DISTANCE: 3 M

TEST PERSONNEL: San Lin

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
56.25	8.8	27.9	36.7	40.0	-3.3
72.25	7.2	24.4	31.6	40.0	-8.4
112.47	14.4	15.9	30.3	40.0	-9.7
116.94	14.3	21.2	35.5	40.0	-4.5
120.03	14.3	19.6	33.9	40.0	-6.1
133.60	13.6	16.9	30.5	40.0	-9.5
233.89	13.3	24.4	37.7	47.0	-9.3

REMARKS :
1. Emission level (dBuV/m) = Correction Factor(dB/m) +Meter Reading (dBuV).
2. Correction Factor(dB/m) = Ant. Factor(dB/m)+Cable loss(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level - Limit value

4.1.7 TEST DATA OF RADIATED EMISSION (C)

EUT: **CPU BOARD** MODEL: **SBC-357**

ANTENNA: CHASE BILOG CBL 6112/EMCO Horn 3115

POLARITY: Horizontal

DETECTOR FUNCTION AND BANDWIDTH: Quasi peak, 120 kHz (30-1000 MHz)
Peak, 1 MHz (1000 MHz-2000 MHz)

FREQUENCY RANGE: 30-1000 MHz MEASURED DISTANCE: 10 M

FREQUENCY RANGE: 1000-2000 MHz MEASURED DISTANCE: 3 M

TEST PERSONNEL: San Lin

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
126.68	14.8	19.5	34.3	40.0	-5.7
139.06	13.2	20.9	34.1	40.0	-5.9
152.68	11.8	24.6	36.4	40.0	-3.6
157.32	11.3	22.0	33.3	40.0	-6.7
160.44	11.1	19.9	31.0	40.0	-9.0
163.60	11.0	19.5	30.5	40.0	-9.5
169.90	10.9	19.7	30.6	40.0	-9.4

REMARKS :
1. Emission level (dBuV/m) = Correction Factor(dB/m) +Meter Reading (dBuV).
2. Correction Factor(dB/m) = Ant. Factor(dB/m)+Cable loss(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level - Limit value

TEST DATA OF RADIATED EMISSION (C)

EUT: **CPU BOARD** MODEL: **SBC-357**

ANTENNA: CHASE BILOG CBL 6112/EMCO Horn 3115

POLARITY: Vertical

DETECTOR FUNCTION AND BANDWIDTH: Quasi peak, 120 kHz (30-1000 MHz)
Peak, 1 MHz (1000 MHz-2000 MHz)

FREQUENCY RANGE: 30-1000 MHz MEASURED DISTANCE: 10 M

FREQUENCY RANGE: 1000-2000 MHz MEASURED DISTANCE: 3 M

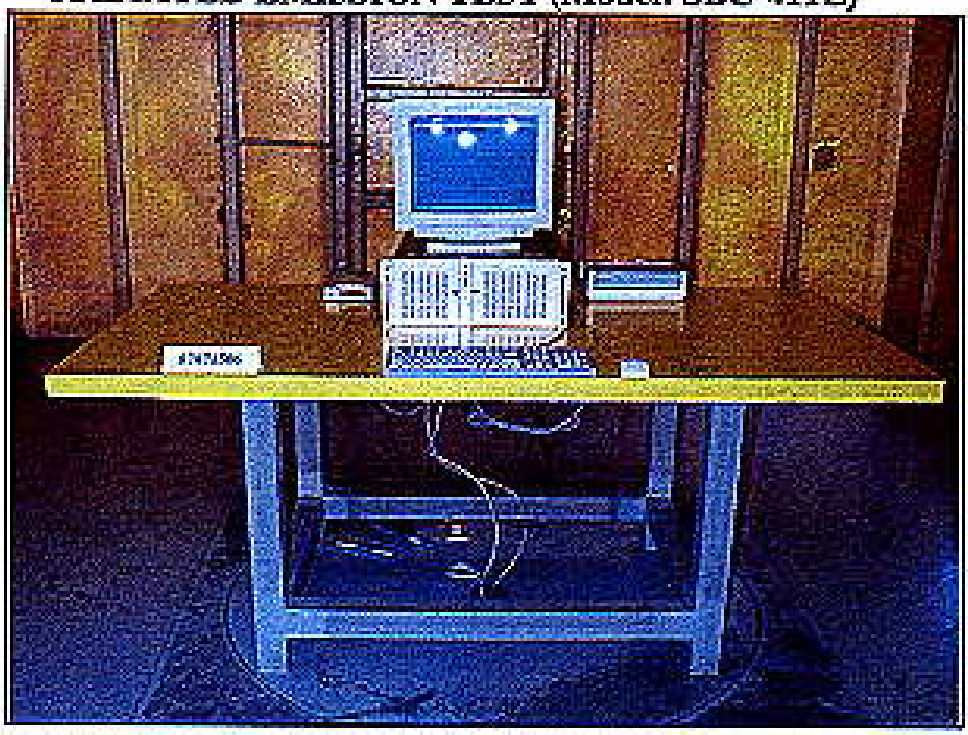
TEST PERSONNEL: San Lin

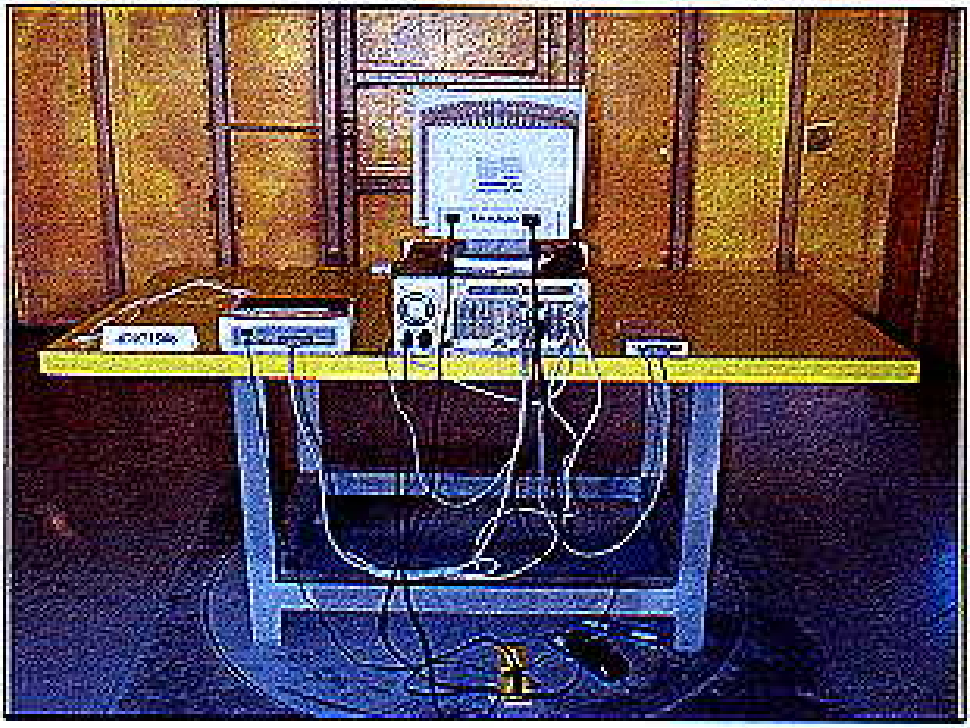
Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
119.71	14.3	16.0	30.3	40.0	-9.7
132.14	13.7	14.7	28.4	40.0	-11.6
144.73	13.1	18.3	31.4	40.0	-8.6
154.61	12.6	22.2	34.8	40.0	-5.2
157.30	12.4	24.4	36.8	40.0	-3.2
159.33	12.3	22.7	35.0	40.0	-5.0
163.61	11.8	23.7	35.5	40.0	-4.5
169.89	11.0	20.4	31.4	40.0	-8.6
210.75	12.3	18.3	30.6	40.0	-9.4
220.23	12.7	21.4	34.1	40.0	-5.9
220.25	12.7	18.8	31.5	40.0	-8.5

REMARKS :
1. Emission level (dBuV/m) = Correction Factor(dB/m) +Meter Reading (dBuV).
2. Correction Factor(dB/m) = Ant. Factor(dB/m)+Cable loss(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level - Limit value

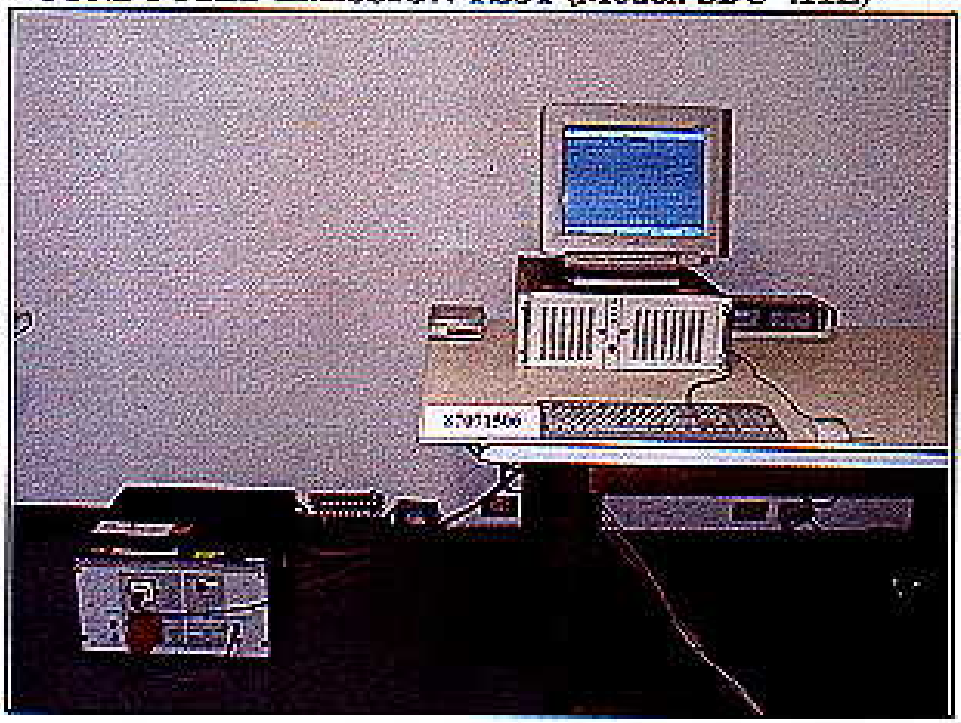
5. PHOTOGRAPHS OF THE TEST CONFIGURATION WITH MINIMUM MARGIN

RADIATED EMISSION TEST (Model: SBC-411E)

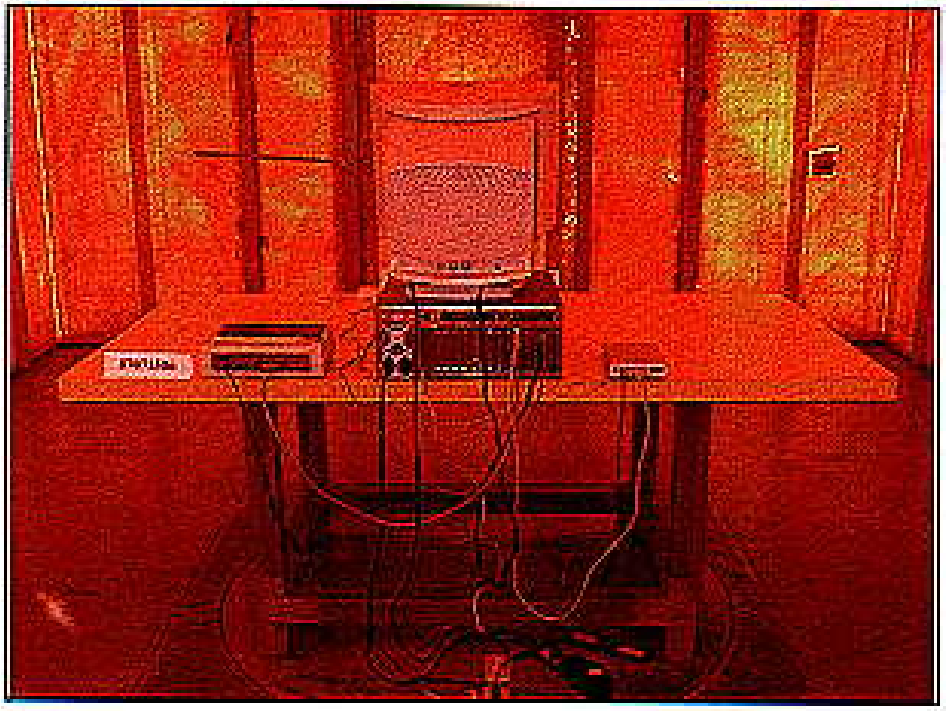




CONDUCTED EMISSION TEST (Model: SBC-411E)

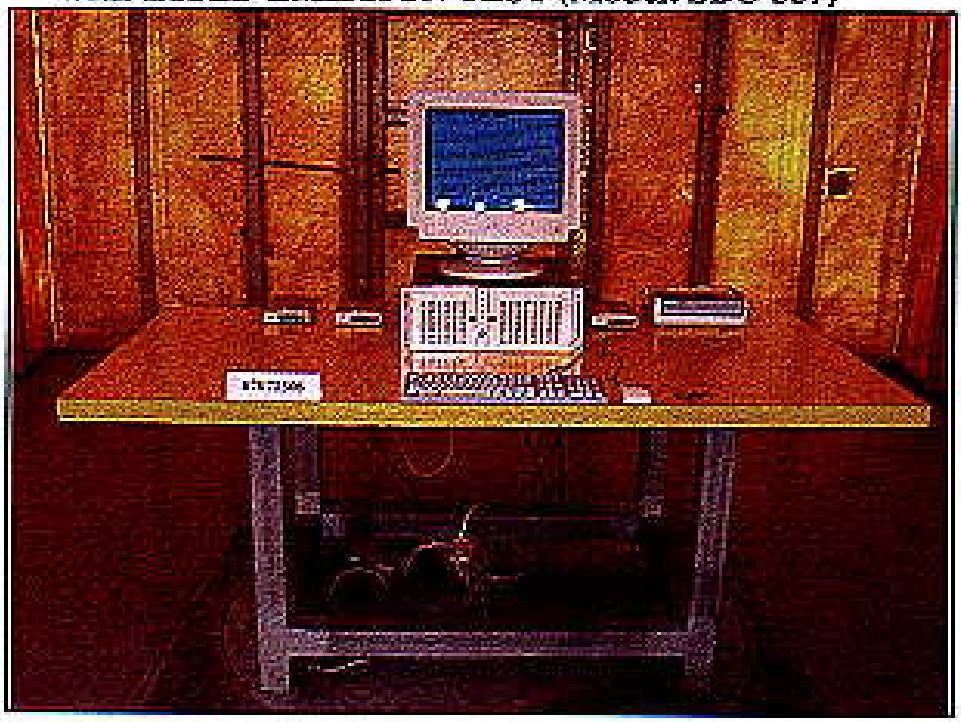


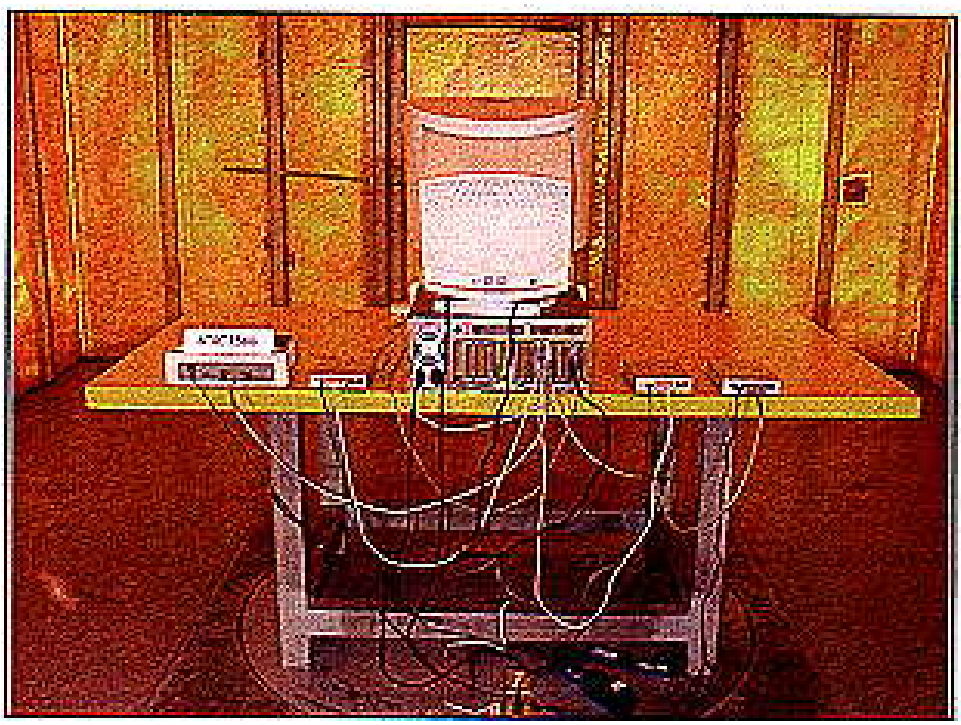
RADIATED EMISSION TEST (Model: SBC-456E)



CONDUCTED EMISSION TEST (Model: SBC-456E)

RADIATED EMISSION TEST (Model: SBC-357)





CONDUCTED EMISSION TEST (Model: SBC-357)

6. ATTACHMENT I - TECHNICAL DESCRIPTION OF EUT

SPECIFICATIONS:

* CPU	AMD DX5-133 (SQFP Type)
* Bus Interface	ISA bus
* Chipset	Ali 1489/1487
* System memory	4MB to 32MB, One 72-pin SIMM socket onboard supports BEDO, EDO, Fast Page DRAM
* L2 cache memory	Onboard 128KB 2nd Level cache memory, supports up to Two floppy disk drives, 5.25" (360KB and 1.2MB) and/or 3.5" (720KB, 1.44MB and 2.88MB)
* Enhanced IDE	Supports two hard disk drive, supports PIO mode 3/4
* Multi-mode parallel port	Configured to LPT1, LPT2, LPT3 or disabled. Supports SPP, ECP modes
* Serial port	Two RS-232 ports, Ports can be individually configured from COM1 to COM4 or disabled
* Keyboard connector	6-pin mini-DIN connector supports standard PC/AT keyboard
* Ethernet controller	Realtek RTL8029AS 10-Base PCI bus Ethernet controller
* Ethernet Interface	Software drivers available. Supports remote boot ROM function
* SDD interface	One 32-pin DIP socket supports the M-systems Disk On Chip 2000 series, memory capacity from 2MB or 72 MB
* PC/104 connector	104-pin connector for a 16-bit bus
* Watchdog Timer	Can generate a system reset to IRQ15. The time interval is software selectable (2sec. ~ 128min., 1sec/step)
* Power supply voltage	+5V (4.75V to 5.25V) +12V (11.4V to 12.6V)
* Max. power requirement	+5V @ 3A
* Operating Temp.	32 to 140 degrees C
* Dimension	73"(L) x 4.8"(W) (185mm x 122mm)
* Weight	0.23kg.