Matsushita-Kotobuki
Electronics Industries Ltd.
Storage Products Division
Address: 2131-1 Minamikata, Kawauchi-cho, Onsen, Ehime 791 – 0395 Japan
Tel: 089 - 966 - 2111 / Fax: 089 – 966 - 6006

TEST REPORT

REPORT NUMBER : MKM01F-008

APPLICANT : Matsushita-Kotobuki
Electronics Industries, Ltd.

MODEL NUMBER : LKM-FK73-D

FCC ID : IUO9TB090LSS

Regulation : FCC Part15B Class B

Conducted Emission Test
Radiated Emission Test

Matsushita-Kotobuki Electronics Ind., Ltd.
Storage Products Division

2131-1 Minamikata, Kawauchi-cho, Onsen-gun,
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SECTION 1. TEST CERTIFICATION

APPLICANT INFORMATION

Company	:	Matsushita-Kotobuki Electronics Industries, Ltd.
Address	:	8-1, Furujin-machi, Takamatsu-city, Kagawa-ken, 760-0025 Japan

GRANTEE INFORMATION

Company	:	Matsushita-Kotobuki Electronics Industries, Ltd.
Division / Section	:	Storage Products Division Legal Affairs Team.
Address	:	2131-1 Minamikata, Kawauchi-cho, Onsen-gun, Ehime-ken, 791-0395 Japan
Telephone number	:	+81 89 966 2111
Fax number	:	+81 89 966 5733
Contact person	:	Shinji Yamauchi

DESCRIPTION OF TEST ITEM

Kind of equipment	:	SUPERDISK Drive
Trademark	:	Matsushita-Kotobuki
FCC ID	:	IUO9TB090LSS
Model number	:	LKM-FK73-D
Serial number	:	KA1123XXM00001

TEST PERFORMED

FCC Registration No.	:	90793
Test started	:	April 02, 2001
Test completed	:	April 02, 2001
Purpose of test	:	FCC Docket 87-389
Regulation	:	FCC Part 15B Class B Unintentional Radiators
Test setup	:	ANSI C63.4 -1992

Report file number : MKM01F-008

Report issue date : April 02, 2001

Test engineer : Shinji Yamauchi S. Yamauchi

Report approved by : Hisayuki Honda H. Honda
[Manager]

This equipment complies with above standard or regulation under the test condition or test configuration shown on this test report.

SECTION 2. EQUIPMENT UNDER TEST

The equipment under test (EUT) consists of the following equipment.
Indication in the following left side column corresponds to section 5.

Symbol	Item	Model No.	Serial No.	FCC ID	Manufacturer
A)	SUPERDISK Drive	LKM-FK73-D	KA1123XXM00001	IUO9TB090LSS	Matsushita-Kotobuki Electronics Ind., Ltd.

Power ratings of EUT : +5V DC, 0.5A

2.1 Port(s) / Connector(s) :

USB Connector(4pin)

2.2 Oscillator(s) / Crystal(s) :

Oscillator	Operating Frequency	Board name	Remarks
8.0 MHz	8.0 MHz	Main PCB	
48.0 MHz	48.0 MHz	Main PCB	

SECTION 3. SUPPORT EQUIPMENT USED

The EUT has been supported by the following equipment during these tests.
Indication in the following left side column corresponds to section 5.

Symbol	Item	Model No.	Serial No.	FCC ID	Manufacturer
B)	I/O Adapter	PA3041U-1PRP	1006882	Declaration of Conformity	TOSHIBA
C)	Host Computer	PP348J-Q4T80	X0013280	CJ6JPN-34962-M5-E	TOSHIBA
D)	Printer	3630A	3040A00351	BSD8533630A	HEWLETT PACKARD
E)	Mouse	M-S34-6MD	ID75BCIF1MON	DZL211029	COMPAQ

SECTION 4. CABLE(S) USED

The following cable(s) was used for testing. Indication number in the following left side column corresponds to section 5.

Number	Name	Length	Shield	From	To
1)	USB I/F cable	0.1 m	Yes	SUPERDISK Drive Metal connector	Host Computer
2)	Mouse cable	1.8 m	None	I/O Adapter Metal connector	Mouse
3)	Expansion I/F cable	0.3m	Yes	Host Computer Metal connector	I/O Adapter
4)	Parallel I/F cable	1.5 m	Yes	I/O Adapter Metal connector	Printer
5)	Power cord for Host Computer	1.8 m	None	I/O Adapter	AC Adapter
6)	Power cord for Host Computer	1.9 m	None	AC Adapter	Power Source
7)	Power cord for Printer	2.0 m	None	Printer	AC Adapter
8)	Power cord for Printer	2.0 m	None	AC Adapter	Power Source

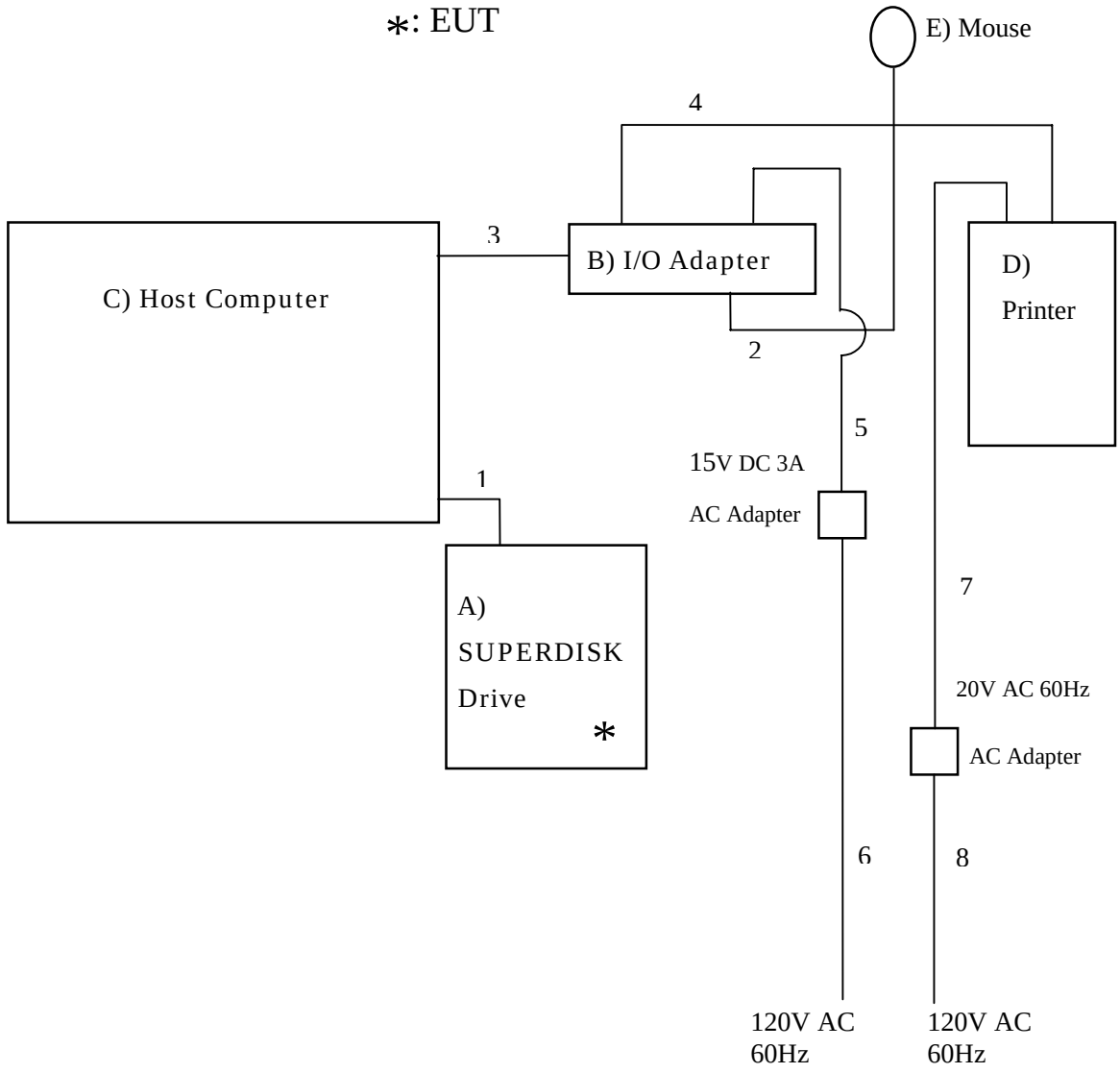
None :

All cables are not attached ferrite core.

SECTION 5. CONSTRUCTION OF EQUIPMENT

The construction of EUT during testing is as follows.

System configuration



Symbol or numbers assigned to equipment or cables on this diagram are corresponded to the symbols or numbers assigned to equipment or cables on tables in Sections 2 to 4.

SECTION 6. OPERATING CONDITIONS

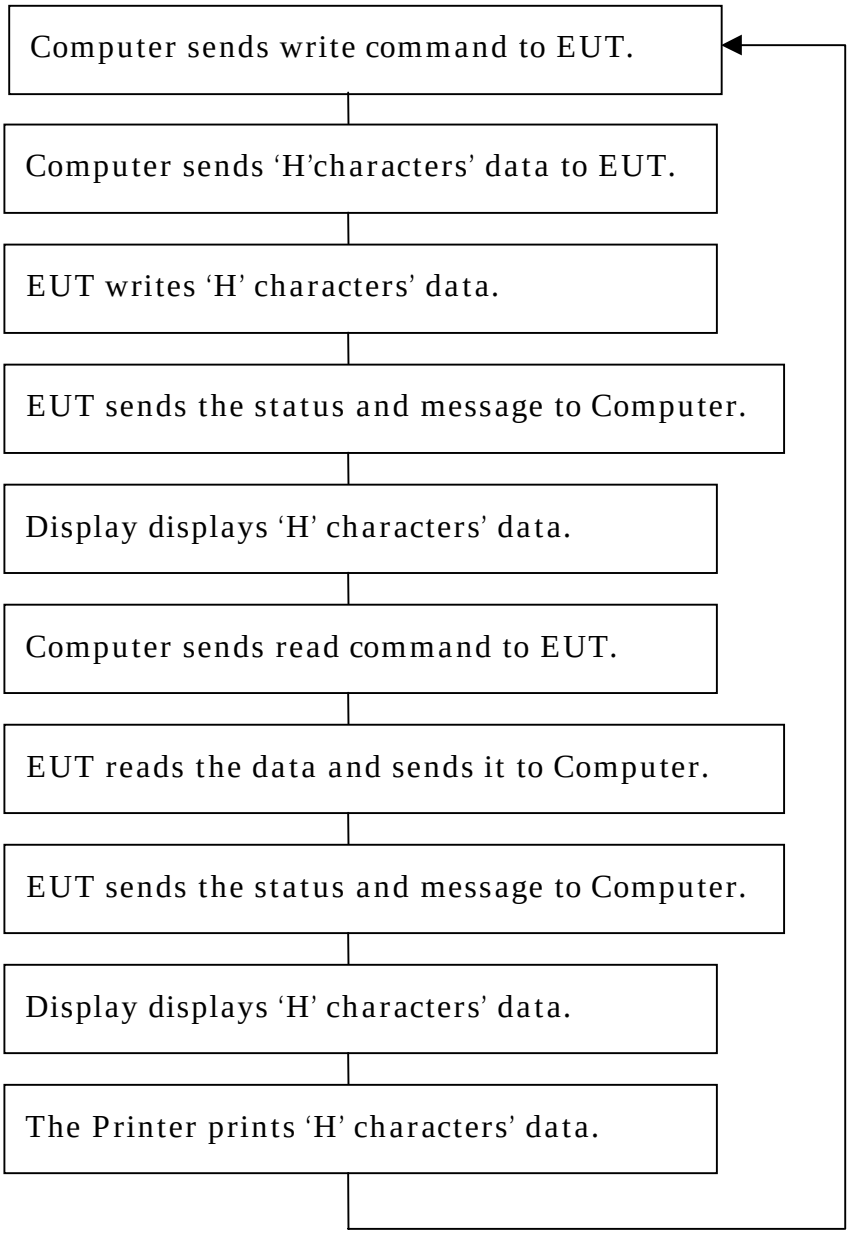
The EUT has been operated under the following conditions during the tests.

6.1 Operating condition

The tests have been carried out under Write / Read mode.

6.2 Operation flow

Performed following operations continuously.



SECTION 7. TEST PROCEDURE(S)

Tests have been carried out with the test procedure(s) drawn up by our laboratory which is in accordance with the following test procedure(s).

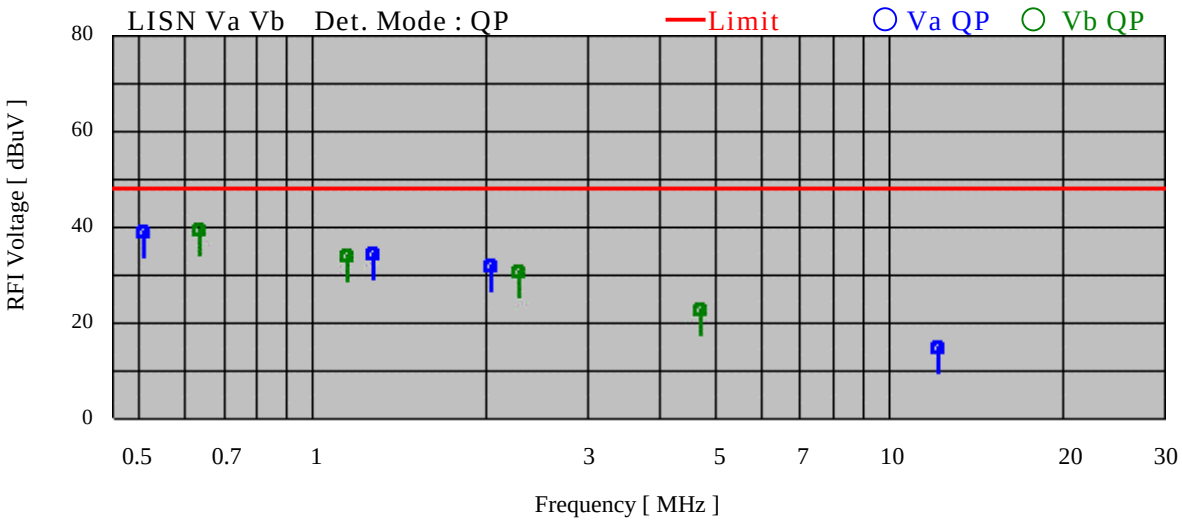
Test item	Test procedure used	Scanned frequency range
Conducted Emission	ANSI C63.4-1992	0.45 - 30 MHz
Radiated Emission	ANSI C63.4-1992	30 - 1000 MHz

SECTION 8. EVALUATION OF TEST RESULTS

8.1 Conducted Emission Test

Product Name	:	SUPERDISK Drive
Model No.	:	LKM-FK73-D
Serial No.	:	KA1123XXM00001
Power Supply	:	120V / 60Hz
Test Mode	:	Read / Write
Temp / Humi / Pres	:	15 °C / 35% / 1009hPa
Operator	:	S. Yamauchi

No	Freq.	Reading Level Va	Reading Level Vb	Factor	Emission Level Va	Emission Level Vb	Limit	Margin
	[MHz]	[dBuV]		[dB]	[MHz]		[dBuV]	[dB]
1	0.512	38.7	----	0.1	38.8	----	48.0	9.2
2	0.639	----	39.0	0.1	----	39.1	48.0	8.9
3	1.152	----	33.5	0.1	----	33.6	48.0	14.4
4	1.282	34.0	----	0.2	34.2	----	48.0	13.8
5	2.049	31.3	----	0.2	31.5	----	48.0	16.5
6	2.300	----	30.2	0.2	----	30.4	48.0	17.6
7	4.734	----	22.4	0.3	----	22.7	48.0	25.3
8	12.172	13.8	----	0.6	14.4	----	48.0	33.6

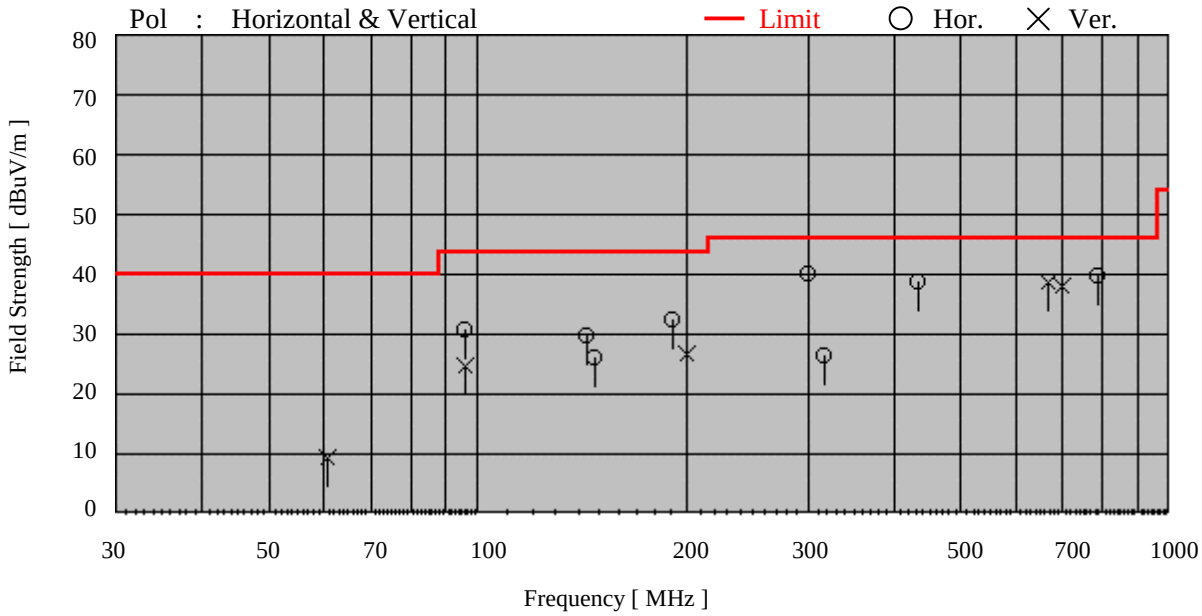


8.2 Radiated Emission Test

Product Name	:	SUPERDISK Drive
Model No.	:	LKM-FK73-D
Serial No.	:	KA1123XXM00001
Power Supply	:	120V / 60Hz
Test Mode	:	Read / Write
Temp / Humi / Pres	:	15 °C / 35% / 1009hPa
Operator	:	S. Yamauchi

[Quasi Peak mode]

No	Freq.	Reading Level		Factor	Emission Level		Limit	Margin
		Hor.	Ver.		Hor.	Ver.		
	[MHz]	[dBuV]		[dB]	[dBuV/m]		[dBuV/m]	[dB]
1	60.799	----	0.1	9.2	----	9.3	40.0	30.7
2	95.995	----	13.7	10.9	----	24.6	43.5	18.9
3	96.000	19.7	----	10.9	30.6	----	43.5	12.9
4	143.998	13.7	----	16.2	29.9	----	43.5	13.6
5	147.899	9.6	----	16.4	26.0	----	43.5	17.5
6	192.008	14.4	----	18.0	32.4	----	43.5	11.1
7	199.999	----	8.7	18.2	----	26.9	43.5	16.6
8	299.996	18.8	----	21.3	40.1	----	46.0	5.9
9	317.790	6.9	----	19.3	26.2	----	46.0	19.8
10	433.345	18.2	----	20.4	38.6	----	46.0	7.4
11	666.670	----	13.6	25.2	----	38.8	46.0	7.2
12	700.005	----	12.6	25.5	----	38.1	46.0	7.9
13	786.390	13.6	----	26.2	39.8	----	46.0	6.2



8.3 Conclusion

This test report clearly shows that the EUT is in compliance with the FCC Part 15B, Class B specification.

The minimum margins to the limits are as follows:

Conduction measurement	8.9 dB	at	0.639 MHz
Radiation measurement	5.9 dB	at	299.996 MHz

8.4 Sample Calculations

8.4.1 Conducted Emission

Example @ 0.639 MHz

Emission Level	=	Meter Reading	39.0 dBuV
	+	A.M.N. Factor	+ 0.1 dB
			= 39.1 dBuV
Margin	=	Limit	48.0 dBuV
	-	Emission Level	- 39.1 dBuV
			= 8.9 dB

A.M.N. : Artificial Mains Network = Line Impedance Stabilization Network (LISN)

8.4.2 Radiated Emission

Example @ 299.996 MHz

Emission Level	=	Meter Reading	18.8 dBuV
	+	Factor	+ 21.3 dB
(Factor	=	Antenna Factor + Cable Loss)	
			= 40.1 dBuV/m
Margin	=	Limit	46.0 dBuV/m
	-	Emission Level	- 40.1 dBuV/m
			= 5.9 dB

SECTION 9. PHOTOGRAPHS OF TEST SET-UP

Test setup in accordance with ANSI C63.4-1992

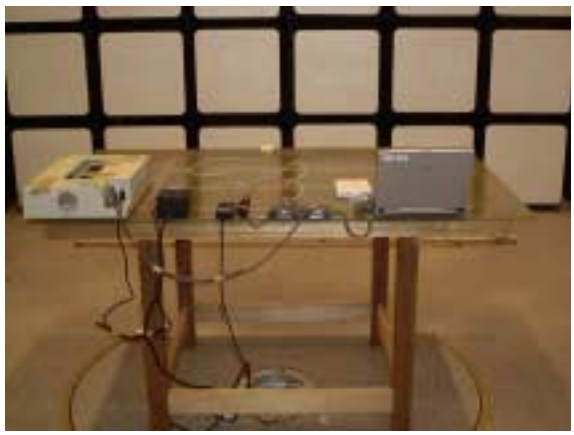
9.1 Conducted Emission Test

Front View

Rear view

9.2 Radiated Emission Test

Front View



Rear view

Note : Maintaining 10cm spacing between all the equipment cabinets.

SECTION 10. INSTRUMENTS USED FOR TEST

Instrument	Model No.	Serial No.	Manufacturer	Last cal.	Period
EMI Test Receiver	85462A	3520A00241	Hewlett Packard	8/2000	1 Year
RF Filter Section	85460A	3448A00210	Hewlett Packard	8/2000	1 Year
Biconical Antenna	BBA9106	None	Schwarzbeck	11/2000	1 Year
Logperiodic Antenna	UHALP9107	1622	Schwarzbeck	11/2000	1 Year
Artificial Mains Network(AMN) = Line Impedance Stabilization Network(LISN)	ESH3-Z5	840062/024	Schwarzbeck	7/2000	1 Year
Artificial Mains Network(AMN) = Line Impedance Stabilization Network(LISN)	ESH3-Z5	840062/028	Schwarzbeck	8/2000	1 Year

SECTION 11. PRECISION

Tolerances of the measuring instruments are shown on below.

1. Antenna factor ± 2.0 dB
2. Cable loss ± 1.0 dB
3. EMI test receiver ± 2.0 dB
4. Artificial Mains Network(AMN) impedance ± 20%
   = Line Impedance Stabilization Network(LISN)
5. Site Attenuation ± 4.0 dB

Repeatability and reproducibility about maximum emission setup are not specified herein.

SECTION 12. VALIDITY TEST REPORT

12.1 The test result of this report is effective for equipment under test itself and under the test configuration described on the report.

12.2 This test report does not assure that whether the test result taken in other testing laboratory is compatible or reproducible to the test result on this report or not.

12.3 Copying of this report without permission is prohibited.