

EMISSION -- TEST REPORT

Test report file no. : **TR1-02837F**

Date of issue: September 20, 2002

Kind of equipment : CD-RW/DVD-ROM DRIVE

Model : SD-R1312 (With an Audio Port)

Applicant : Toshiba Corporation Digital Media Network Company
Digital Media Development Center
Optical Disc Drive Design Dept.

Manufacturer : Toshiba Multi Media Devices Co., Ltd. (Representative)

Applicant's address : 1-1, Shibaura 1-chome, Minato-ku, Tokyo, 105-8001, Japan

Test result according to

the regulation(s) indicated : ☒ **Positive** ☐ **Negative**

at page 3

This test report with appendix consists of 30 pages. The test result only responds to the tested sample. It is not allowed to copy this report even partly without the written allowance of the test laboratory. The report must not be used to claim products endorsement by the accreditation body (A2LA, NEMKO and TUV P.S.) or any government agency.



Authorized Laboratory



Agent Laboratory Recognized By



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Constructional dataform (CDF)	none
 <u>B) Test data</u>	
Conducted emissions (Mains) 150/450kHz - 30MHz	19 - 23
Conducted emissions (Telecommunication) 150kHz - 30MHz	N/A
Radiated emissions 150kHz - 30MHz	N/A
Radiated emissions 30MHz - 1000/2000MHz	24 - 28
Interference power 30MHz - 300MHz	N/A
Equivalent radiated emissions 1GHz - 18GHz	N/A
Harmonic currents	N/A
Voltage fluctuations and flicker	N/A
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N/A : Not Applicable

TEST REGULATIONS

The tests were performed according to following regulations :

- | | |
|---|--|
| <ul style="list-style-type: none"> o - EN 61000-6-3 :2001 o - EN 61000-6-4 :2001 o - EN 55011 :1998 o - EN 55011 :1998 / A1:1999 o - EN 55014-1 :2000 o - EN 55014-1 :2000 / A1:2001 o - EN 55022 :1994 / A2:1997 o - EN 55022 :1998 o - EN 60601-1-2 :1993 o - EN 60601-1-2 :2001 o - EN 61326 :1997 / A2:2001 o - EN 61000-3-2 :1995 / A2:1998 o - EN 61000-3-2 :2000 <li style="padding-left: 20px;">- Harmonic current emission o - EN 61000-3-3 :1995 o - EN 61000-3-3 :1995 / A1:2001 | <ul style="list-style-type: none"> o - Group 1 o - Class A o - Household appliances and similar o - Tools o - Semiconductor devices o - Class A o - Class B o - Class A o - Class B o - Class C o - Class D - Voltage fluctuations and flicker |
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|---|--|
| <ul style="list-style-type: none"> • - FCC Part 15 Subpart B <li style="padding-left: 20px;">Test Method : ANSI C63.4-1992 o - FCC Part 15 Subpart B <li style="padding-left: 20px;">Test Method : ANSI C63.4-1992 <li style="padding-left: 20px;">according to 15.109(g) : CISPR 22 o - FCC Part 18 Subpart C <li style="padding-left: 20px;">Test Method : FCC/OST MP-5 (1985) | <ul style="list-style-type: none"> o - Class A • - Class B o - Class A o - Class B |
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| <ul style="list-style-type: none"> o - ICES-003 :1997 <li style="padding-left: 20px;">Test Method : C108.8-M1983 | <ul style="list-style-type: none"> o - Class A o - Class B |
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- | | |
|---|--|
| <ul style="list-style-type: none"> o - AS/NZS 2064 :1997 / A1:1997 o - AS/NZS 1044 :1995 / A1:1997 o - AS/NZS 3548 :1995 / A2:1997 | <ul style="list-style-type: none"> o - Group 1 o - Class A o - Group 2 o - Class B o - Household appliances and similar o - Tools o - Semiconductor devices o - Class A o - Class B |
|---|--|

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- | | |
|--|--|
| <ul style="list-style-type: none"> o - VCCI | <ul style="list-style-type: none"> o - Class A o - Class B |
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- | | |
|--|--|
| <ul style="list-style-type: none"> o - CISPR 11 :1997 o - CISPR 11 :1997 / A1:1999 o - CISPR 14-1 :2000 o - CISPR 14-1 :2000 / A1:2001 o - CISPR 22 :1993 / A2:1996 o - CISPR 22 :1997 | <ul style="list-style-type: none"> o - Group 1 o - Class A o - Group 2 o - Class B o - Household appliances and similar o - Tools o - Semiconductor devices o - Class A o - Class B |
|--|--|

TEST FACILITIES

All measurement facilities are located in 1614, Mushihata, Omigawa-machi, Katori-gun, Chiba-ken, 289-0341 Japan.

Accredited by American Association for Laboratory Accreditation(A2LA) for the emission and immunity tests stated in the scope of the certificate under Certificate Number 1266-01.

Authorized by NEMKO for the emission and immunity tests stated in the scope of the authorization under Authorization Number ELA172.

Approved by the Ministry of Commerce in New Zealand under ENG 3/9 AJD.

Recognized by TUV Product Service for the emission and immunity tests stated in the scope of the certificate under Certificate No. JPN9803C.

Registered by Federal Communications Commission under the registered numbers 90558 for No. 1 test site, 510504 for No. 2 test site, 90557 for No. 4 test site and 99356 for No. 5 test site.

Registered by Voluntary Control Council For Interference by Information Technology Equipment(VCCI) under Registered Numbers R-188 and C-785 for No. 1 open site, C-187 for No. 1 shielded room, R-189 for No. 2 open site, C-188 for No. 2 shielded room, R-656 for No. 4 open site, C-613 for No. 4 shielded room, R-1227 and C-1290 for No.5 open site, and C-1291 for No.5 shielded room.

TEST METHODS

The test methods are implemented subject to the internal test procedures based on the regulations indicated with "•" on the page 3.

ENVIRONMENTAL CONDITIONS

Temperature	---	see test data
Humidity	--- %	see test data
Atmospheric pressure	--- hPa	see test data

POWER SUPPLY SYSTEM UTILIZED

Power supply system : DC+5V, +12V
AC120V/60Hz for PC

MEASUREMENT UNCERTAINTY

The treatment of the measurement uncertainty shall be based on "Guide to the expression of Uncertainty in Measurement" (GUM).

The uncertainty of measurement result is

Conducted Emission Test	: $\pm 1.76\text{dB}$
Radiated Emission Test	: $\pm 3.73\text{dB}$

for a level of confidence of approximately 95%, (k=2).

DEFINITIONS FOR SYMBOLS USED IN THIS TEST REPORT

- - Black box indicates that the listed condition, standard or equipment is applicable for this Report.
- o - Blank box indicated that the listed condition, standard or equipment was not applicable for this Report.

TEST CONDITIONS

The measurement of **the conducted emissions** was performed in **the mains (150/450KHz - 30MHz)** and/or **the telecommunication ports (150KHz - 30MHz)**

• - Test applicable

- - in the mains ports
- o - in the telecommunication ports

- - in a shielded enclosure.
- o - at a nonreflecting open site.

- - Shielded room No. 1
- o - Shielded room No. 2
- o - Shielded room No. 4
- o - Shielded room No. 5
- o - Open site No. 1
- o - Open site No. 2
- o - Open site No. 5

Used test instruments :

Model	Name	Manufacturer	Code No.	Cal.date	Next cal.
o - ESH2	Test Receiver	Rohde & Schwarz	RCH01	2001.11	2002.11
o - ESHS10	Test Receiver	Rohde & Schwarz	RCH02	2002.2	2003.2
o - ESPC	Test Receiver	Rohde & Schwarz	RCV03	2002.7	2003.7
o - ESCS30	Test Receiver	Rohde & Schwarz	RCV04	2002.3	2003.3
• - ESCS30	Test Receiver	Rohde & Schwarz	RCV05	2002.5	2003.5
o - ESH2-Z5	AMN	Rohde & Schwarz	LSN01	2001.9	2002.9
• - ESH3-Z5	AMN	Rohde & Schwarz	LSN02	2002.3	2003.3
• - ESH3-Z5	AMN	Rohde & Schwarz	LSN03	2002.1	2003.1
o - ESH3-Z5	AMN	Rohde & Schwarz	LSN06	2002.7	2003.7
o - ESH3-Z5	AMN	Rohde & Schwarz	LSN07	2002.5	2003.5
o - ESH3-Z5	AMN	Rohde & Schwarz	LSN08	2001.11	2002.11
o - ESH3-Z5	AMN	Rohde & Schwarz	LSN11	2001.11	2002.11
o - ESH3-Z6	AMN	Rohde & Schwarz	LSN09	2002.7	2003.7
o - ESH3-Z6	AMN	Rohde & Schwarz	LSN10	2002.7	2003.7
• - 8567A(display)	Spectrum Analyzer	Hewlett Packard	SPD01	2002.8	2003.8
• - 8567A(RF unit)	Spectrum Analyzer	Hewlett Packard	SPR01	2002.8	2003.8
• - 85650A	Quasi Peak Adapter	Hewlett Packard	QPA01	2002.8	2003.8
o - 8567A(display)	Spectrum Analyzer	Hewlett Packard	SPD02	2002.4	2003.4
o - 8567A(RF unit)	Spectrum Analyzer	Hewlett Packard	SPR02	2002.4	2003.4
o - 85650A	Quasi Peak Adapter	Hewlett Packard	QPA02	2002.4	2003.4
o - 8567A(display)	Spectrum Analyzer	Hewlett Packard	SPD03	2002.7	2003.7
o - 8567A(RF unit)	Spectrum Analyzer	Hewlett Packard	SPR03	2002.7	2003.7
o - 85650A	Quasi Peak Adapter	Hewlett Packard	QPA03	2002.7	2003.7
o - 8568A(display)	Spectrum Analyzer	Hewlett Packard	SPD04	2001.11	2002.11
o - 8568A(RF unit)	Spectrum Analyzer	Hewlett Packard	SPR04	2001.11	2002.11
o - 85650A	Quasi Peak Adapter	Hewlett Packard	QPA04	2001.11	2002.11
o - R3361B	Spectrum Analyzer	ADVANTEST	SPTG01	2001.11	2002.11
o - E7405A	Spectrum Analyzer	Hewlett Packard	SPR05	2001.11	2002.11

note : The AMN code no. LSN02 was connected to the EUT during the test.

Used test instruments :

Model	Name	Manufacturer	Code No.	Cal.date	Next cal.
o - ENY22(50dB)	ISN	Rohde & Schwarz	ISN201	2001.11	2002.11
o - ENY22(60dB)	ISN	Rohde & Schwarz	ISN201	2001.11	2002.11
o - ENY22(80dB)	ISN	Rohde & Schwarz	ISN201	2001.11	2002.11
o - ENY41(50dB)	ISN	Rohde & Schwarz	ISN401	2001.11	2002.11
o - ENY41(60dB)	ISN	Rohde & Schwarz	ISN401	2001.11	2002.11
o - ENY41(80dB)	ISN	Rohde & Schwarz	ISN401	2001.11	2002.11
o - EZ-17	Current Probe	Rohde & Schwarz	CPRB01	2001.11	2002.11
o - Direct	CDN	EMC Kashima	DIU02	2002.4	2003.4
o - Direct	CDN	EMC Kashima	DIU04	2002.2	2003.2
o - Direct	CDN	EMC Kashima	DIU05	2002.2	2003.2
o - Direct	CDN	EMC Kashima	DIU06	2002.2	2003.2
o - Direct	CDN	EMC Kashima	DIU07	2002.2	2003.2
o - FTC101	Ferrite Tube	Luthi Elektronik	FT01	2002.4	2003.4
o - FTC101	Ferrite Tube	Luthi Elektronik	FT02	2002.4	2003.4
o - FTC101	Ferrite Tube	Luthi Elektronik	FT03	2002.4	2003.4

All used test-instruments are calibrated at least once a year.

The measurement of **the radiated emissions (150KHz - 30MHz)** was performed at a nonreflecting open site and test distance of :

o - Test applicable

- | | |
|---------------------|---------------|
| o - Open site No. 1 | o - 3 meters |
| o - Open site No. 2 | o - 10 meters |
| o - Open site No. 5 | o - 30 meters |

Used test instruments :

Model	Name	Manufacturer	Code No.	Cal.date	Next cal.
o - ESH2	Test Receiver	Rohde & Schwarz	RCH01	2001.11	2002.11
o - ESHS10	Test Receiver	Rohde & Schwarz	RCH02	2002.2	2003.2
o - ESPC	Test Receiver	Rohde & Schwarz	RCV03	2002.7	2003.7
o - ESCS30	Test Receiver	Rohde & Schwarz	RCV04	2002.3	2003.3
o - ESCS30	Test Receiver	Rohde & Schwarz	RCV05	2002.5	2003.5
o - HFH2-Z2	Loop Antenna	Rohde & Schwarz	LPA01	2002.2	2003.2
o - 8567A(display)	Spectrum Analyzer	Hewlett Packard	SPD01	2002.8	2003.8
o - 8567A(RF unit)	Spectrum Analyzer	Hewlett Packard	SPR01	2002.8	2003.8
o - 85650A	Quasi Peak Adapter	Hewlett Packard	QPA01	2002.8	2003.8
o - 8567A(display)	Spectrum Analyzer	Hewlett Packard	SPD02	2002.4	2003.4
o - 8567A(RF unit)	Spectrum Analyzer	Hewlett Packard	SPR02	2002.4	2003.4
o - 85650A	Quasi Peak Adapter	Hewlett Packard	QPA02	2002.4	2003.4
o - 8567A(display)	Spectrum Analyzer	Hewlett Packard	SPD03	2002.7	2003.7
o - 8567A(RF unit)	Spectrum Analyzer	Hewlett Packard	SPR03	2002.7	2003.7
o - 85650A	Quasi Peak Adapter	Hewlett Packard	QPA03	2002.7	2003.7
o - 8568A(display)	Spectrum Analyzer	Hewlett Packard	SPD04	2001.11	2002.11
o - 8568A(RF unit)	Spectrum Analyzer	Hewlett Packard	SPR04	2001.11	2002.11
o - 85650A	Quasi Peak Adapter	Hewlett Packard	QPA04	2001.11	2002.11
o - R3361B	Spectrum Analyzer	ADVANTEST	SPTG01	2001.11	2002.11
o - E7405A	Spectrum Analyzer	Hewlett Packard	SPR05	2001.11	2002.11
o - 8447D	Pre-Amplifier	Hewlett Packard	PRA01	2002.6	2003.6
o - 8447D	Pre-Amplifier	Hewlett Packard	PRA02	2002.6	2003.6
o - 8447D	Pre-Amplifier	Hewlett Packard	PRA03	2002.6	2003.6
o - 8447D	Pre-Amplifier	Hewlett Packard	PRA06	2001.10	2002.10
o - SAU-3018M	Pre-Amplifier	AVANTEK	PRA04	2002.6	2003.6

All used test-instruments are calibrated at least once a year.

The measurement of **the radiated emissions (30MHz - 1000/2000MHz)** was performed in a horizontal and vertical polarization at a nonreflecting open site and test distance of :

• - Test applicable

- - Open site No. 1
- o - Open site No. 2
- o - Open site No. 4
- o - Open site No. 5
- - 3 meters
- o - 10 meters
- o - 30 meters

Used test instruments :

Model	Name	Manufacturer	Code No.	Cal.date	Next cal.
o - ESV	Test Receiver	Rohde & Schwarz	RCV01	2002.3	2003.3
o - ESVS10	Test Receiver	Rohde & Schwarz	RCV02	2002.2	2003.2
o - ESPC	Test Receiver	Rohde & Schwarz	RCV03	2002.7	2003.7
o - ESCS30	Test Receiver	Rohde & Schwarz	RCV04	2002.3	2003.3
• - ESCS30	Test Receiver	Rohde & Schwarz	RCV05	2002.5	2003.5
o - LPB-2520A	Biconi.-Logperi.	Antenna Research	BL02	2002.8	2003.8
o - LPB-2520A	Biconi.-Logperi.	Antenna Research	BL03	2002.8	2003.8
o - LPB-2520A	Biconi.-Logperi.	Antenna Research	BL04	2002.8	2003.8
o - LPB-2520A	Biconi.-Logperi.	Antenna Research	BL05	2002.8	2003.8
• - VULB 9168	LOGBICON	Schwarzbeck	LGBC01	2002.6	2003.6
o - VULB 9168	LOGBICON	Schwarzbeck	LGBC02	2002.6	2003.6
o - VULB 9168	LOGBICON	Schwarzbeck	LGBC03	2002.6	2003.6
• - 3115	Double Ridged Guide	EMCO	DRH01	2002.4	2003.4
• - 8567A(display)	Spectrum Analyzer	Hewlett Packard	SPD01	2002.8	2003.8
• - 8567A(RF unit)	Spectrum Analyzer	Hewlett Packard	SPR01	2002.8	2003.8
• - 85650A	Quasi Peak Adapter	Hewlett Packard	QPA01	2002.8	2003.8
o - 8567A(display)	Spectrum Analyzer	Hewlett Packard	SPD02	2002.4	2003.4
o - 8567A(RF unit)	Spectrum Analyzer	Hewlett Packard	SPR02	2002.4	2003.4
o - 85650A	Quasi Peak Adapter	Hewlett Packard	QPA02	2002.4	2003.4
o - 8567A(display)	Spectrum Analyzer	Hewlett Packard	SPD03	2002.7	2003.7
o - 8567A(RF unit)	Spectrum Analyzer	Hewlett Packard	SPR03	2002.7	2003.7
o - 85650A	Quasi Peak Adapter	Hewlett Packard	QPA03	2002.7	2003.7
o - 8568A(display)	Spectrum Analyzer	Hewlett Packard	SPD04	2001.11	2002.11
o - 8568A(RF unit)	Spectrum Analyzer	Hewlett Packard	SPR04	2001.11	2002.11
o - 85650A	Quasi Peak Adapter	Hewlett Packard	QPA04	2001.11	2002.11
o - R3361B	Spectrum Analyzer	ADVANTEST	SPTG01	2001.11	2002.11
• - E7405A	Spectrum Analyzer	Hewlett Packard	SPR05	2001.11	2002.11
o - 8447D	Pre-Amplifier	Hewlett Packard	PRA01	2002.6	2003.6
o - 8447D	Pre-Amplifier	Hewlett Packard	PRA02	2002.6	2003.6
• - 8447D	Pre-Amplifier	Hewlett Packard	PRA03	2002.6	2003.6
o - 8447D	Pre-Amplifier	Hewlett Packard	PRA06	2001.10	2002.10
• - SAU-3018M	Pre-Amplifier	AVANTEK	PRA04	2002.6	2003.6
o - 8449B	Pre-Amplifier	Hewlett Packard	PRA05	2001.11	2002.11
o - SUCOFLEX 104	Micro Wave cable	Hewlett Packard	MWC-0.5m	2002.8	2003.8
o - SUCOFLEX 104	Micro Wave cable	Hewlett Packard	MWC-8m	2002.8	2003.8
o - ESH3-Z6	AMN	Rohde & Schwarz	LSN09	2002.7	2003.7
o - ESH3-Z6	AMN	Rohde & Schwarz	LSN10	2002.7	2003.7

All used test-instruments are calibrated at least once a year.

The measurement of **the interference power (30MHz - 300MHz)** was performed by using the absorbing clamp on the mains or interface cables at :

o - Test applicable

- o - Open site No. 1
- o - Open site No. 2
- o - Open site No. 5
- o - Shielded room No. 4

Used test instruments :

Model	Name	Manufacturer	Code No.	Cal.date	Next cal.
o - ESV	Test Receiver	Rohde & Schwarz	RCV01	2002.3	2003.3
o - ESVS10	Test Receiver	Rohde & Schwarz	RCV02	2002.2	2003.2
o - ESPC	Test Receiver	Rohde & Schwarz	RCV03	2002.7	2003.7
o - ESCS30	Test Receiver	Rohde & Schwarz	RCV04	2002.3	2003.3
o - ESCS30	Test Receiver	Rohde & Schwarz	RCV05	2002.5	2003.5
o - MDS21	Absorbing Clamp	Rohde & Schwarz	CLP01	2002.8	2003.8
o - 8567A(display)	Spectrum Analyzer	Hewlett Packard	SPD01	2002.8	2003.8
o - 8567A(RF unit)	Spectrum Analyzer	Hewlett Packard	SPR01	2002.8	2003.8
o - 85650A	Quasi Peak Adapter	Hewlett Packard	QPA01	2002.8	2003.8
o - 8567A(display)	Spectrum Analyzer	Hewlett Packard	SPD02	2002.4	2003.4
o - 8567A(RF unit)	Spectrum Analyzer	Hewlett Packard	SPR02	2002.4	2003.4
o - 85650A	Quasi Peak Adapter	Hewlett Packard	QPA02	2002.4	2003.4
o - 8567A(display)	Spectrum Analyzer	Hewlett Packard	SPD03	2002.7	2003.7
o - 8567A(RF unit)	Spectrum Analyzer	Hewlett Packard	SPR03	2002.7	2003.7
o - 85650A	Quasi Peak Adapter	Hewlett Packard	QPA03	2002.7	2003.7
o - 8568A(display)	Spectrum Analyzer	Hewlett Packard	SPD04	2001.11	2002.11
o - 8568A(RF unit)	Spectrum Analyzer	Hewlett Packard	SPR04	2001.11	2002.11
o - 85650A	Quasi Peak Adapter	Hewlett Packard	QPA04	2001.11	2002.11
o - R3361B	Spectrum Analyzer	ADVANTEST	SPTG01	2001.11	2002.11
o - E7405A	Spectrum Analyzer	Hewlett Packard	SPR05	2001.11	2002.11
o - 8447D	Pre-Amplifier	Hewlett Packard	PRA01	2002.6	2003.6
o - 8447D	Pre-Amplifier	Hewlett Packard	PRA02	2002.6	2003.6
o - 8447D	Pre-Amplifier	Hewlett Packard	PRA03	2002.6	2003.6
o - 8447D	Pre-Amplifier	Hewlett Packard	PRA06	2001.10	2002.10
o - SAU-3018M	Pre-Amplifier	AVANTEK	PRA04	2002.6	2003.6

All used test-instruments are calibrated at least once a year.

The measurements of **the harmonic currents** and **voltage fluctuations / flicker** were performed at :

o - Test applicable

- o - Shielded room No. 3
- o - Shielded room No. 4

Used test instruments :

Model	Name	Manufacturer	Code No.	Cal.date	Next cal.
o - PM3000A	Power Analyzer	Voltech	UPA01	2002.6	2003.6
o - PM3000ACE	Power Analyzer	Voltech	UPA02	2001.10	2002.10
o - SIB-30	Ref. Impedance	DENKENSEIKI	RIN01	2002.6	2003.6
o - 4150	Ref. Impedance	NF Electronic Inst	RIN02	2002.2	2003.2
o - RTI-N5kVA	Supply Source	DENKENSEIKI	CVCF03	2001.12	2002.12
o - 4420	Supply Source	NF Electronic Inst	CVCF06-1	2002.2	2003.2
o - 4421	Supply Source	NF Electronic Inst	CVCF06-2	2002.2	2003.2
o - 4421	Supply Source	NF Electronic Inst	CVCF06-3	2002.2	2003.2

All used test-instruments are calibrated at least once a year.

EQUIPMENT UNDER TEST

Type of the EUT :

- o - Production
- - Pre-Production
- o - Prototype

Description of the EUT :

The EUT is a CD-RW / DVD-ROM DRIVE which is used for the H/H TYPE DRIVE storage desktop personal computer.

The highest frequencies generated or used in the EUT are $350\text{MHz} \pm 20\%$ for CD and $420\text{MHz} \pm 20\%$ for DVD.

(Optical Pickup Head Type : SRU3140, Mfr. SANKYO SEIKI MFG. Co., Ltd.)

Operation - mode of the EUT :

The equipment under test was operated during the measurement under following conditions :

- o - Standby
- o - Test program (H - Pattern)
- o - Test program (color bar)
- o - Test program (customer specific)
- - Continuous mode :

EUT 1). Max. 12x speed data read at Random (DVD-ROM Disc)

2). Max. 40x speed data read at Random (CD-ROM Disc)

3). Max. 2x speed data read at Random (DVD-RAM Disc)

4). Max. 10x speed data write at Sequential (High Speed CD-RW Disc)

5). Max. 32x speed data write at Sequential (CD-R Disc)

CRT Display : displaying "H"

Printer : printing "H"

TEST CONFIGURATION

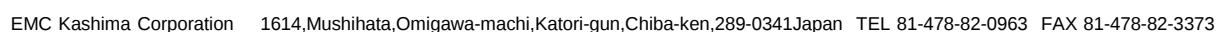
EUT and Peripherals :

Equipment name	Model	Serial	Company	FCC ID
(A) CD-RW/DVD-ROM DRIVE (EUT)	SD-R1312	2S4-S101	TOSHIBA	CJ6AT02-050
(B) Personal Computer	DTPC-16	SG01172764	HP	DoC*
(C) Keyboard	SK-2511A	M000403971	HP	GYUR73SK
(D) Mouse	Mouse2.1A	5252894-00000	Microsoft	C3KKMP3
(E) Microphone	none	none	none	N/A
(F) Cassette Player	WM-EQ7	46800	SONY	N/A
(G) Game Pad	GP4	6323700664299	Microsoft	DoC*
(H) CRT Display	EV500A	15052C019280	Gateway	BEJCB575B
(I) Printer	C4608A	SG77H1F1WX	HP	B94C2164X
(J) AC Adapter	C2178A	none	HP	N/A
(K) Headphone	MDR-E837	none	SONY	N/A
(L) Modem	C202A	010488	EPSON	BKM552C202A
(M) AC Adapter	H00CAA	019629	EPSON	N/A
(N) Terminator	none	none	none	N/A

*note : Authorized under a Declaration of Conformity

Cable(s) used :

Cable name	Length	Shielded	Model	Remarks (company etc.)
(1) USB	2.0 m	Yes	none	
(2) Keyboard	1.4 m	Yes	none	
(3) Mouse	1.8 m	Yes	none	
(4) Microphone	2.2 m	no	none	
(5) Line IN	1.5 m	no	none	
(6) Line OUT	1.5 m	no	none	
(7) Network	3.0 m	no	none	
(8) RS-232C	2.0 m	Yes	C232N-D2	ELECOM
(9) Video	1.8 m	Yes	none	
(10) Centronics	2.0 m	Yes	CPC-F2	ELECOM
(11) Headphone	1.8 m	no	none	
(12) AC Power (PC)	2.2 m	no	none	
(13) AC Power (Monitor)	1.8 m	no	none	
(14) DC Power (Printer)	1.8 m	no	none	
(15) AC Power (Printer)	0.9 m	no	none	
(16) DC Power (Modem)	1.9 m	no	none	



TEST RESULT

The measurement data presented in this report reflects the worst case configuration.

Conducted emissions (Mains) 150/450kHz - 30MHz

☒ - Test applicable

The requirements are

• - MET

o - NOT MET

Min. limit margin :

Quasi-peak	15.9	dB	at	0.194	MHz
Average		dB	at		MHz

Remarks : This data is from Data Write at Sequential (CD-R Disc) mode.

Conducted emissions (Telecommunication ports) 150kHz - 30MHz

☐ - Test applicable

The requirements are

o - MET

o - NOT MET

Min. limit margin :

Quasi-peak		dB	at		MHz
Average		dB	at		MHz

Remarks : _____

Radiated emissions 150kHz - 30MHz

☐ - Test applicable

The requirements are

o - MET

o - NOT MET

Min. limit margin

		dB	at		MHz
--	--	----	----	--	-----

Remarks : _____

• - Test applicable

0 - NOT MET

at 240.03 MHz

and Data Write at Sequential (High Speed CD-RW Disc) mode.

o - Test applicable

0 - NOT MET

at MHz

at MHz

Remarks : _____

o - Test applicable

0 - NOT MET

at MHz

Remarks : _____

note : The measuring receivers are in compliance with the requirements of CISPR 16.

Harmonic currents

☐ - Test applicable

The requirements are

☐ - MET

☐ - NOT MET

Remarks : _____

Voltage fluctuations and flicker

☐ - Test applicable

The requirements are

☐ - MET

☐ - NOT MET

short-term flicker indicator : Pst = _____
 relative steady-state voltage change : dc = _____ %
 maximum relative voltage change : dmax = _____ %
 relative voltage change characteristic : d(t) = _____ ms
 long-term flicker indicator : Plt = _____

Remarks : _____

SUMMARY

GENERAL REMARKS :

FINAL JUDGMENT :

The requirements according to the technical regulations are

- - met
- - **not** met

The equipment under test does

- - **Fulfills** the general approval requirements mentioned on page 3.
- - **Does not** fulfill the general approval requirements mentioned on page 3.

The engineers of EMC Kashima Corporation were not involved in modification for the tested sample.

Testing start date : September 12, 2002
Testing end date : September 13, 2002

EMC Kashima Corporation

Test engineer


Ken'ichi Suda
Director


Mitsuhiro Jitsukawa

No.1 Test Site

Conducted Emission Test

(0.15MHz - 30MHz at Mains Ports)

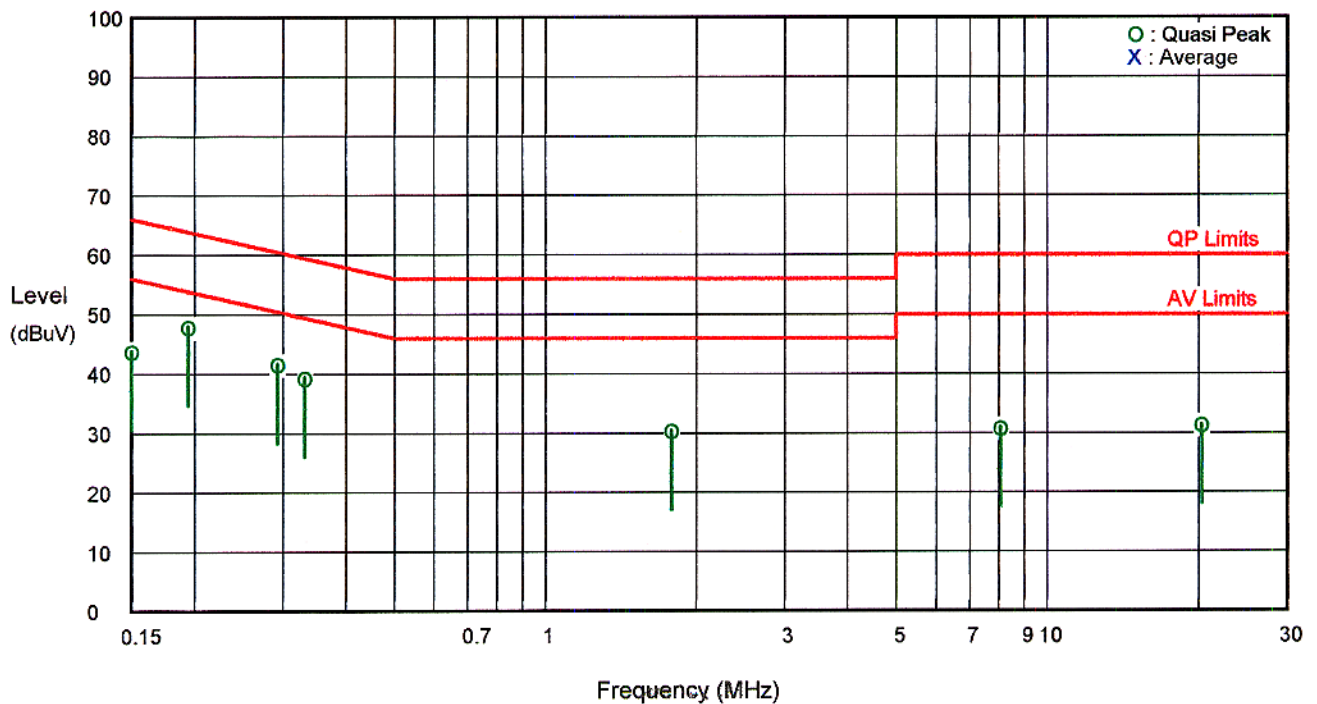
Company : TOSHIBA CORPORATION
 Equipment : CD-RW/DVD-ROM DRIVE
 Model : SD-R1312 (With an Audio Port)
 Power : DC +5V +12V (PC:AC120V/60Hz)
 Test Mode : Data Read at Random (DVD-ROM Disc)
 Remarks : SN/2S4-S101
 Regulation : FCC Part15B Class B (0.15MHz-30MHz)

Report No. : TR1-02837F
 Tested Date : 2002/09/13
 Temperature : 23°C
 Humidity : 50 %
 Atmos. Press. : 1008 hPa

Engineer : *M. Jitsukawa*
 Mitsuhiro Jitsukawa

No.	Frequency (MHz)	N		L		Correction Factor (dB)	Result		Limits		Margin	
		QP (dBuV)	AV	QP (dBuV)	AV		QP (dBuV)	AV	QP (dBuV)	AV	QP (dB)	AV
1	0.1500	43.5	-	39.5	-	0.4	43.9	-	66.0	56.0	22.1	-
2	0.1941	47.7	-	44.7	-	0.3	48.0	-	63.9	53.9	15.9	-
3	0.2928	41.3	-	38.0	-	0.4	41.7	-	60.4	50.4	18.7	-
4	0.3313	39.0	-	37.5	-	0.4	39.4	-	59.4	49.4	20.0	-
5	1.7860	30.0	-	30.0	-	0.5	30.5	-	56.0	46.0	25.5	-
6	8.0660	30.0	-	30.0	-	1.0	31.0	-	60.0	50.0	29.0	-
7	20.2740	30.0	-	30.0	-	1.5	31.5	-	60.0	50.0	28.5	-

Result = Reading(highest data of N or L) + AMN factor + cable loss



No.1 Test Site

Conducted Emission Test

(0.15MHz - 30MHz at Mains Ports)

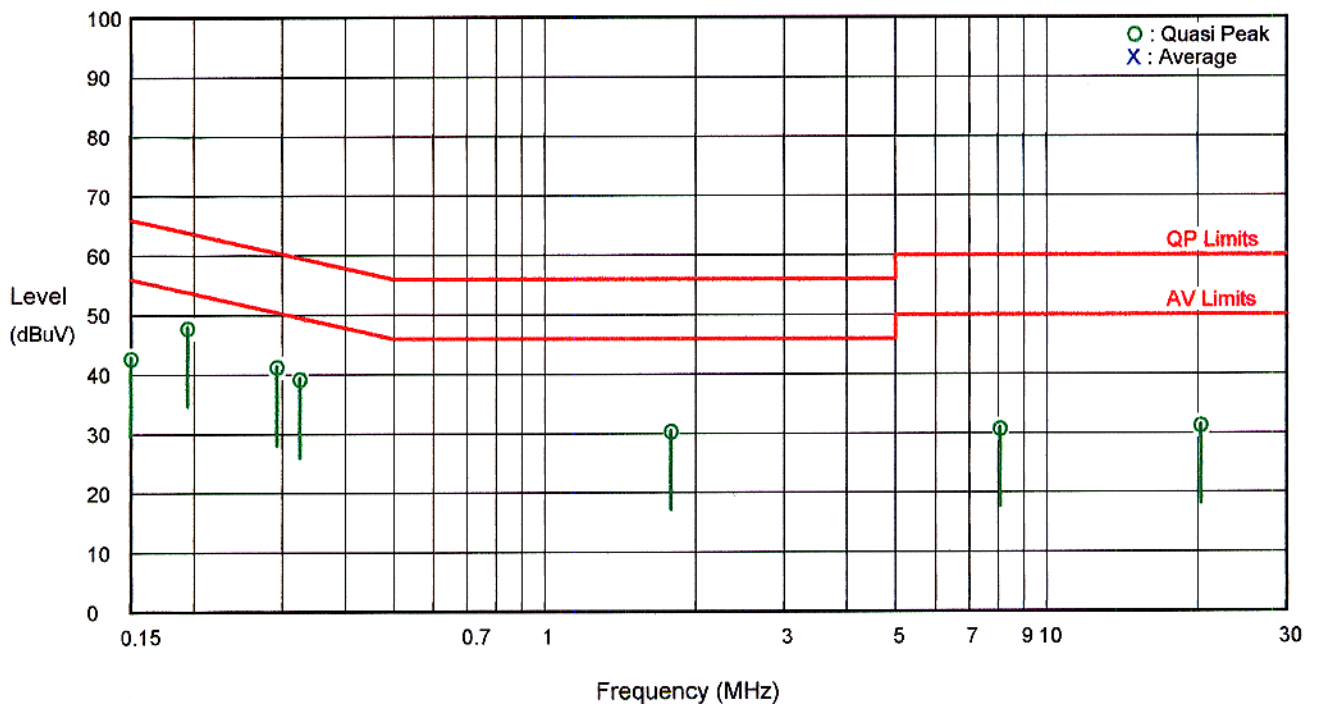
Company : TOSHIBA CORPORATION
 Equipment : CD-RW/DVD-ROM DRIVE
 Model : SD-R1312 (With an Audio Port)
 Power : DC +5V +12V (PC:AC120V/60Hz)
 Test Mode : Data Read at Random (CD-ROM Disc)
 Remarks : SN/2S4-S101
 Regulation : FCC Part15B Class B (0.15MHz-30MHz)

Report No. : TR1-02837F
 Tested Date : 2002/09/13
 Temperature : 23°C
 Humidity : 50 %
 Atmos.Press. : 1008 hPa

Engineer : *M. Jitsukawa*
 : Mitsuhiro Jitsukawa

No.	Frequency (MHz)	N		L		Correction Factor (dB)	Result		Limits		Margin	
		QP (dBuV)	AV	QP (dBuV)	AV		QP (dBuV)	AV	QP (dBuV)	AV (dBuV)	QP (dB)	AV
1	0.1500	42.5	-	38.5	-	0.4	42.9	-	66.0	56.0	23.1	-
2	0.1941	47.7	-	44.0	-	0.3	48.0	-	63.9	53.9	15.9	-
3	0.2928	41.0	-	37.3	-	0.4	41.4	-	60.4	50.4	19.0	-
4	0.3249	39.0	-	37.5	-	0.4	39.4	-	59.6	49.6	20.2	-
5	1.7860	30.0	-	30.0	-	0.5	30.5	-	56.0	46.0	25.5	-
6	8.0660	30.0	-	30.0	-	1.0	31.0	-	60.0	50.0	29.0	-
7	20.2740	30.0	-	30.0	-	1.5	31.5	-	60.0	50.0	28.5	-

Result = Reading(highest data of N or L) + AMN factor + cable loss



No.1 Test Site

Conducted Emission Test

(0.15MHz - 30MHz at Mains Ports)

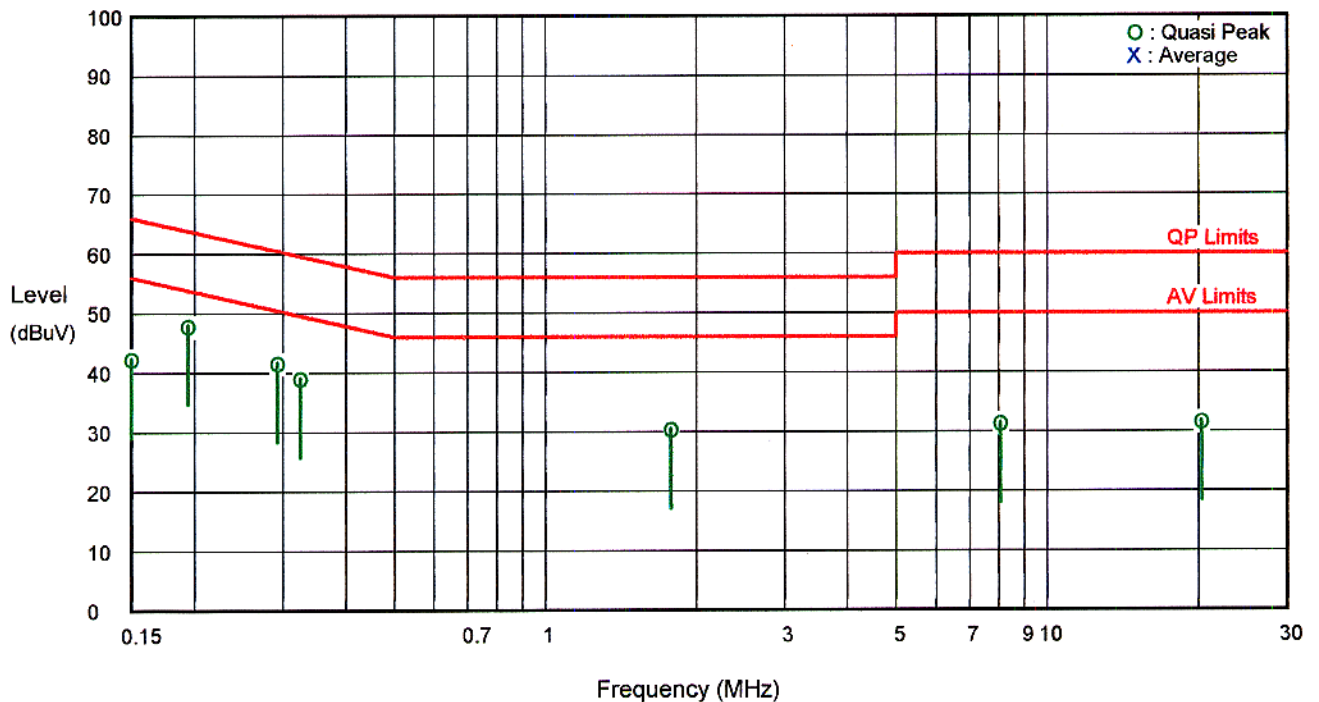
Company : TOSHIBA CORPORATION
 Equipment : CD-RW/DVD-ROM DRIVE
 Model : SD-R1312 (With an Audio Port)
 Power : DC +5V +12V (PC:AC120V/60Hz)
 Test Mode : Data Read at Random (DVD-RAM Disc)
 Remarks : SN/2S4-S101
 Regulation : FCC Part15B Class B (0.15MHz-30MHz)

Report No. : TR1-02837F
 Tested Date : 2002/09/13
 Temperature : 23°C
 Humidity : 50 %
 Atmos.Press. : 1008 hPa

M. Jitsukawa
 Engineer : Mitsuhiro Jitsukawa

No.	Frequency (MHz)	N		L		Correction Factor (dB)	Result		Limits		Margin	
		QP (dBuV)	AV	QP (dBuV)	AV		QP (dBuV)	AV	QP (dBuV)	AV	QP (dB)	AV
1	0.1500	42.0	-	38.3	-	0.4	42.4	-	66.0	56.0	23.6	-
2	0.1941	47.7	-	44.0	-	0.3	48.0	-	63.9	53.9	15.9	-
3	0.2928	41.3	-	37.7	-	0.4	41.7	-	60.4	50.4	18.7	-
4	0.3249	38.7	-	37.3	-	0.4	39.1	-	59.6	49.6	20.5	-
5	1.7821	30.0	-	30.0	-	0.5	30.5	-	56.0	46.0	25.5	-
6	8.0645	30.5	-	30.0	-	1.0	31.5	-	60.0	50.0	28.5	-
7	20.2740	30.0	-	30.3	-	1.5	31.8	-	60.0	50.0	28.2	-

Result = Reading(highest data of N or L) + AMN factor + cable loss



No.1 Test Site

Conducted Emission Test

(0.15MHz - 30MHz at Mains Ports)

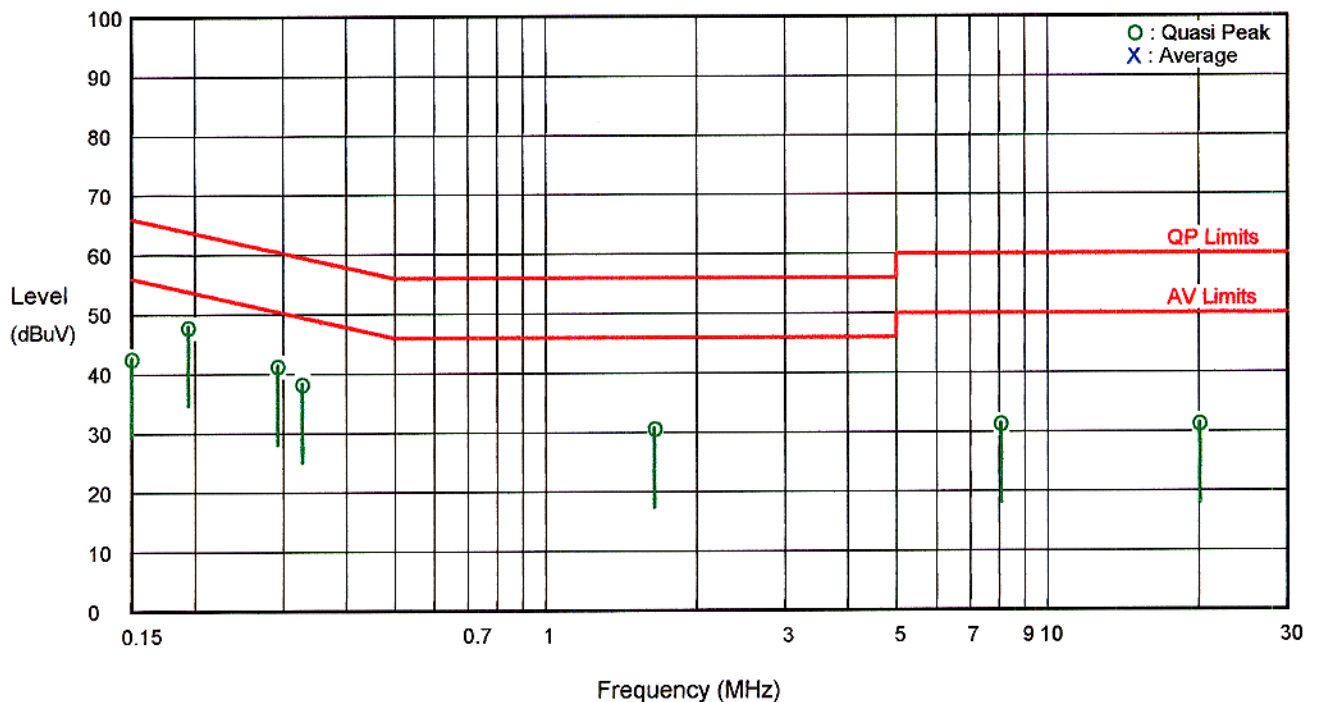
Company : TOSHIBA CORPORATION
 Equipment : CD-RW/DVD-ROM DRIVE
 Model : SD-R1312 (With an Audio Port)
 Power : DC +5V +12V (PC:AC120V/60Hz)
 Test Mode : Data Write at Sequential (High Speed CD-RW Disc)
 Remarks : SN/2S4-S101
 Regulation : FCC Part15B Class B (0.15MHz-30MHz)

Report No. : TR1-02837F
 Tested Date : 2002/09/13
 Temperature : 23°C
 Humidity : 50 %
 Atmos. Press. : 1008 hPa

M. Jitsukawa
 Engineer : Mitsuhiro Jitsukawa

No.	Frequency (MHz)	N		L		Correction Factor (dB)	Result		Limits		Margin	
		QP (dBuV)	AV	QP (dBuV)	AV		QP (dBuV)	AV	QP (dBuV)	AV	QP (dB)	AV
1	0.1500	42.3	-	38.3	-	0.4	42.7	-	66.0	56.0	23.3	-
2	0.1941	47.7	-	44.0	-	0.3	48.0	-	63.9	53.9	15.9	-
3	0.2925	41.0	-	37.5	-	0.4	41.4	-	60.5	50.5	19.1	-
4	0.3278	38.0	-	36.7	-	0.4	38.4	-	59.5	49.5	21.1	-
5	1.6479	30.0	-	30.3	-	0.5	30.8	-	56.0	46.0	25.2	-
6	8.0645	30.5	-	30.3	-	1.0	31.5	-	60.0	50.0	28.5	-
7	20.0860	30.0	-	30.0	-	1.5	31.5	-	60.0	50.0	28.5	-

Result = Reading(highest data of N or L) + AMN factor + cable loss



No.1 Test Site

Conducted Emission Test

(0.15MHz - 30MHz at Mains Ports)

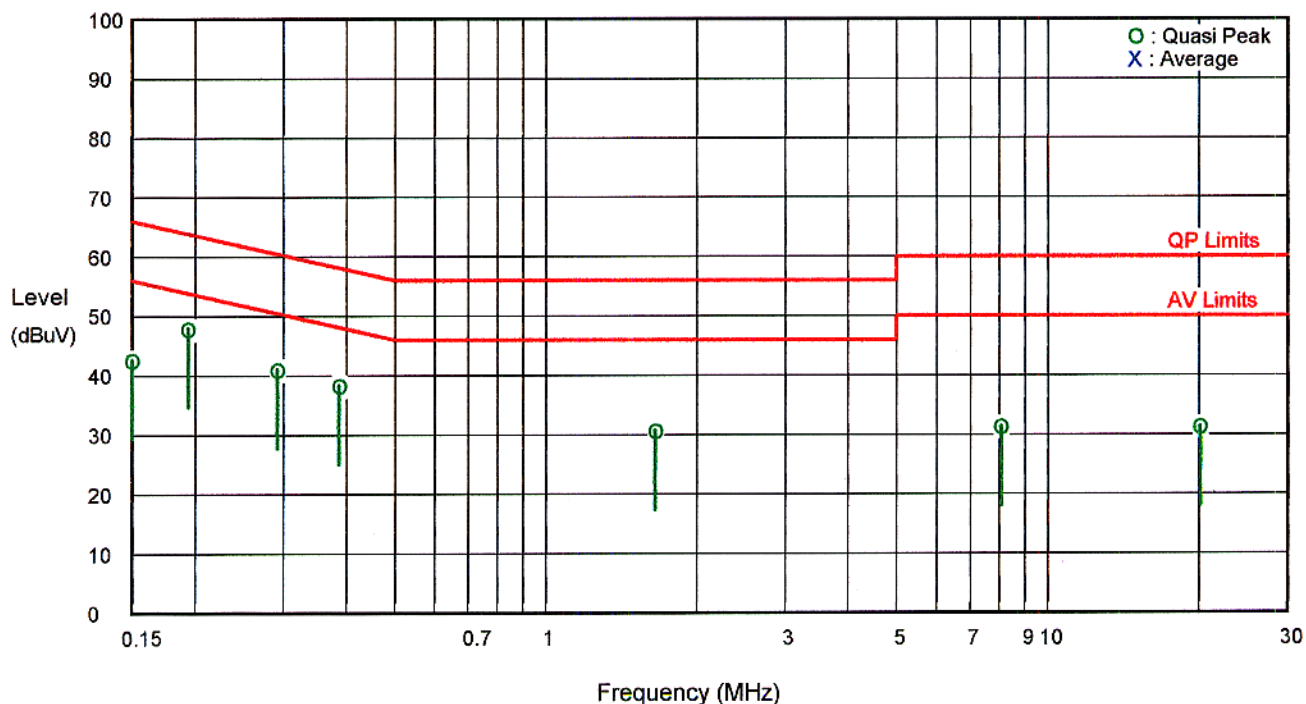
Company : TOSHIBA CORPORATION
 Equipment : CD-RW/DVD-ROM DRIVE
 Model : SD-R1312 (With an Audio Port)
 Power : DC +5V +12V (PC:AC120V/60Hz)
 Test Mode : Data Write at Sequential (CD-R Disc)
 Remarks : SN/2S4-S101
 Regulation : FCC Part15B Class B (0.15MHz-30MHz)

Report No. : TR1-02837F
 Tested Date : 2002/09/13
 Temperature : 23°C
 Humidity : 50 %
 Atmos. Press. : 1008 hPa

Engineer *M. Jitsukawa* Mitsuhiro Jitsukawa

No.	Frequency (MHz)	N		L		Correction Factor (dB)	Result		Limits		Margin	
		QP (dBuV)	AV	QP (dBuV)	AV		QP (dBuV)	AV	QP (dBuV)	AV	QP (dB)	AV
1	0.1500	42.3	-	38.3	-	0.4	42.7	-	66.0	56.0	23.3	-
2	0.1940	47.7	-	44.0	-	0.3	48.0	-	63.9	53.9	15.9	-
3	0.2917	40.7	-	37.5	-	0.4	41.1	-	60.5	50.5	19.4	-
4	0.3873	38.0	-	37.0	-	0.4	38.4	-	58.1	48.1	19.7	-
5	1.6520	30.3	-	30.3	-	0.5	30.8	-	56.0	46.0	25.2	-
6	8.0700	30.5	-	30.3	-	1.0	31.5	-	60.0	50.0	28.5	-
7	20.1500	30.0	-	30.0	-	1.5	31.5	-	60.0	50.0	28.5	-

Result = Reading(highest data of N or L) + AMN factor + cable loss



No.1 Test Site

Radiated Emission Test

(30MHz - 2000MHz)

Company : TOSHIBA CORPORATION
 Equipment : CD-RW/DVD-ROM DRIVE
 Model : SD-R1312 (With an Audio Port)
 Power : DC +5V +12V (PC:AC120V/60Hz)
 Test Mode : Data Read at Random (DVD-ROM Disc)
 Remarks : SN/2S4-S101
 Regulation : FCC Part15B Class B (30MHz-2GHz)
 Test Distance : 3 m
 Attenuator : 0 dB

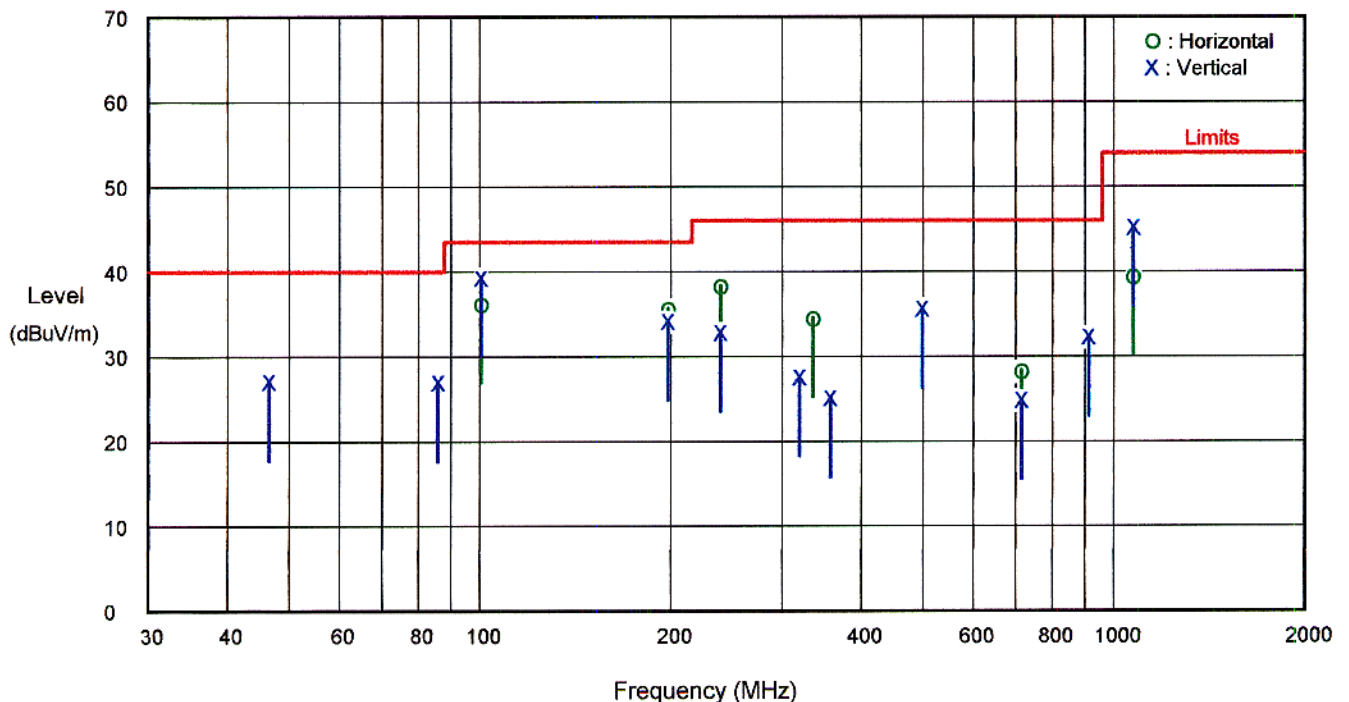
Report No. : TR1-02837F
 Tested Date : 2002/09/12
 Temperature : 25°C
 Humidity : 48 %
 Atmos. Press. : 1010 hPa

M. Jitsukawa
 Engineer : Mitsuhiro Jitsukawa

No.	Freq (MHz)	Horizontal			Vertical			Ant. Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Result		Limits (dBuV/m) 3 m	Margin	
		Read (dBuV)	T/T (degr)	A/M (cm)	Read (dBuV)	T/T (degr)	A/M (cm)				Hor (dBuV/m)	Ver (dBuV/m)		Hor (dB)	Ver (dB)
1	46.46	-	-	-	41.0	102	100	11.9	1.5	27.3	-	27.1	40.0	-	12.9
2	85.97	-	-	-	44.0	83	100	8.1	2.2	27.3	-	27.0	40.0	-	13.0
3	100.47	52.5	251	186	55.5	303	100	8.6	2.4	27.2	36.3	39.3	43.5	7.2	4.2
4	198.00	49.5	56	152	48.0	0	100	10.0	3.4	27.2	35.7	34.2	43.5	7.8	9.3
5	240.03	49.5	93	125	44.0	51	100	12.1	3.8	27.0	38.4	32.9	46.0	7.6	13.1
6	319.99	-	-	-	36.5	0	100	13.8	4.4	27.1	-	27.6	46.0	-	18.4
7	336.05	43.0	152	100	-	-	-	14.3	4.5	27.2	34.6	-	46.0	11.4	-
8	357.95	-	-	-	33.0	236	100	14.9	4.7	27.4	-	25.2	46.0	-	20.8
9	499.15	-	-	-	40.5	28	100	18.0	5.7	28.5	-	35.7	46.0	-	10.3
10	715.82	29.0	54	100	25.5	170	100	21.0	7.0	28.6	28.4	24.9	46.0	17.6	21.1
11	914.42	-	-	-	30.0	0	100	22.6	8.0	28.2	-	32.4	46.0	-	13.6
12	1075.29	40.7	156	150	46.5	18	153	24.2	8.8	34.2	39.5	45.3	54.0	14.5	8.7

Result = Reading Level + Antenna Factor + Cable Loss - Preamp Gain + Attenuator + 20xLog(Test Distance/Standard Distance)
 Antenna Type : LOGBICON (30MHz-1GHz) & Double Ridged Guide (above 1GHz)

An average detector was used for the measurement in the data above 1000MHz.



No.1 Test Site

Radiated Emission Test

(30MHz - 2000MHz)

Company : TOSHIBA CORPORATION
 Equipment : CD-RW/DVD-ROM DRIVE
 Model : SD-R1312 (With an Audio Port)
 Power : DC +5V +12V (PC:AC120V/60Hz)
 Test Mode : Data Read at Random (CD-ROM Disc)
 Remarks : SN/2S4-S101
 Regulation : FCC Part15B Class B (30MHz-2GHz)
 Test Distance : 3 m
 Attenuator : 0 dB

Report No. : TR1-02837F
 Tested Date : 2002/09/13
 Temperature : 25°C
 Humidity : 55 %
 Atmos. Press. : 1008 hPa

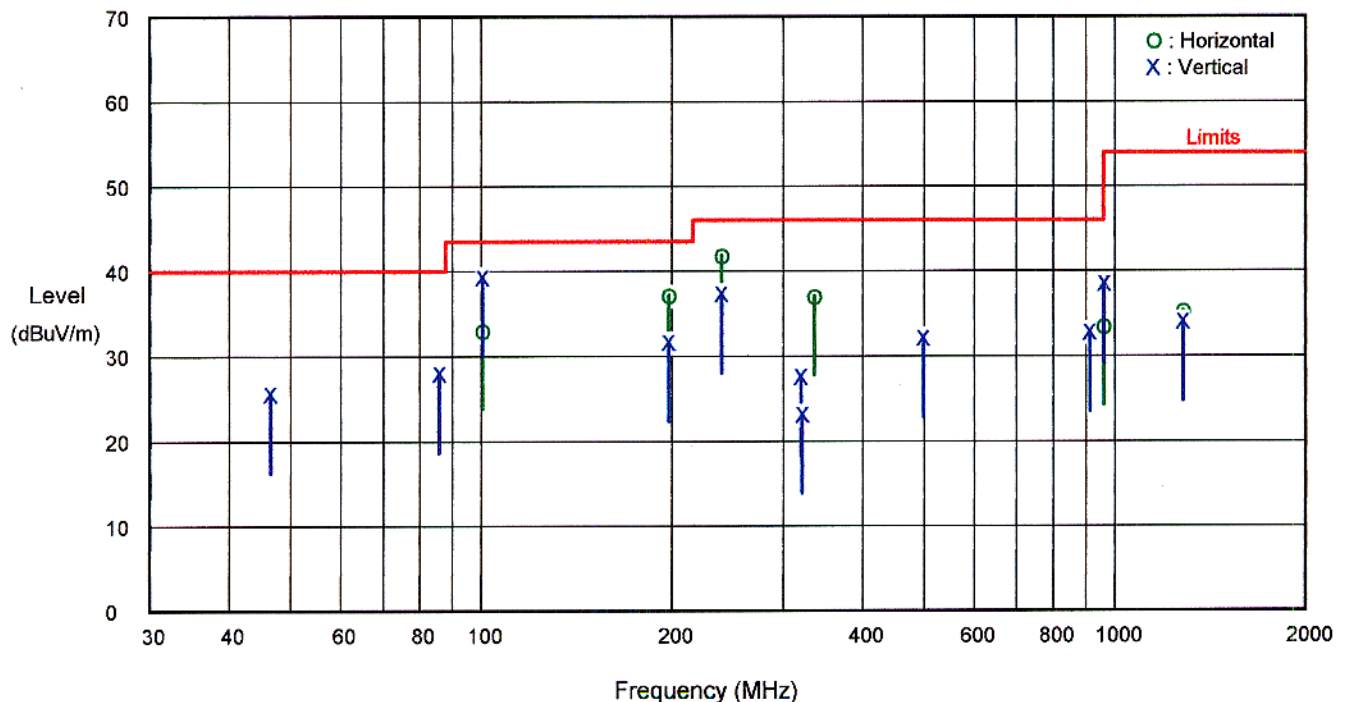
Engineer : *M. Jitsukawa* Mitsuhiro Jitsukawa

No.	Freq (MHz)	Horizontal			Vertical			Ant. Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Result		Limits (dBuV/m) 3 m	Margin	
		Read (dBuV)	T/T (degr)	A/M (cm)	Read (dBuV)	T/T (degr)	A/M (cm)				Hor (dBuV/m)	Ver (dBuV/m)		Hor (dB)	Ver (dB)
1	46.46	-	-	-	39.5	89	100	11.9	1.5	27.3	-	25.6	40.0	-	14.4
2	85.97	-	-	-	45.0	75	100	8.1	2.2	27.3	-	28.0	40.0	-	12.0
3	100.47	49.3	217	191	55.5	317	100	8.6	2.4	27.2	33.1	39.3	43.5	10.4	4.2
4	198.00	51.0	85	163	45.5	0	100	10.0	3.4	27.2	37.2	31.7	43.5	6.3	11.8
5	240.03	53.0	73	129	48.5	39	100	12.1	3.8	27.0	41.9	37.4	46.0	4.1	8.6
6	319.99	-	-	-	36.5	0	100	13.8	4.4	27.1	-	27.6	46.0	-	18.4
7	321.33	-	-	-	32.0	0	100	13.9	4.4	27.1	-	23.2	46.0	-	22.8
8	336.05	45.5	69	100	-	-	-	14.3	4.5	27.2	37.1	-	46.0	8.9	-
9	499.15	-	-	-	37.0	33	100	18.0	5.7	28.5	-	32.2	46.0	-	13.8
10	914.42	-	-	-	30.5	332	100	22.6	8.0	28.2	-	32.9	46.0	-	13.1
11	962.96	30.0	23	100	35.0	0	142	23.4	8.3	28.1	33.6	38.6	54.0	20.4	15.4
12	1282.45	36.3	40	122	35.0	85	135	24.8	9.7	35.4	35.4	34.1	54.0	18.6	19.9

Result = Reading Level + Antenna Factor + Cable Loss - Preamp Gain + Attenuator + 20xLog(Test Distance/Standard Distance)

Antenna Type : LOGBICON (30MHz-1GHz) & Double Ridged Guide (above 1GHz)

An average detector was used for the measurement in the data above 1000MHz.



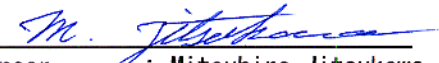
No.1 Test Site

Radiated Emission Test

(30MHz - 2000MHz)

Company : TOSHIBA CORPORATION
 Equipment : CD-RW/DVD-ROM DRIVE
 Model : SD-R1312 (With an Audio Port)
 Power : DC +5V +12V (PC:AC120V/60Hz)
 Test Mode : Data Read at Random (DVD-RAM Disc)
 Remarks : SN/2S4-S101
 Regulation : FCC Part15B Class B (30MHz-2GHz)
 Test Distance : 3 m
 Attenuator : 0 dB

Report No. : TR1-02837F
 Tested Date : 2002/09/13
 Temperature : 25°C
 Humidity : 55 %
 Atmos. Press. : 1008 hPa

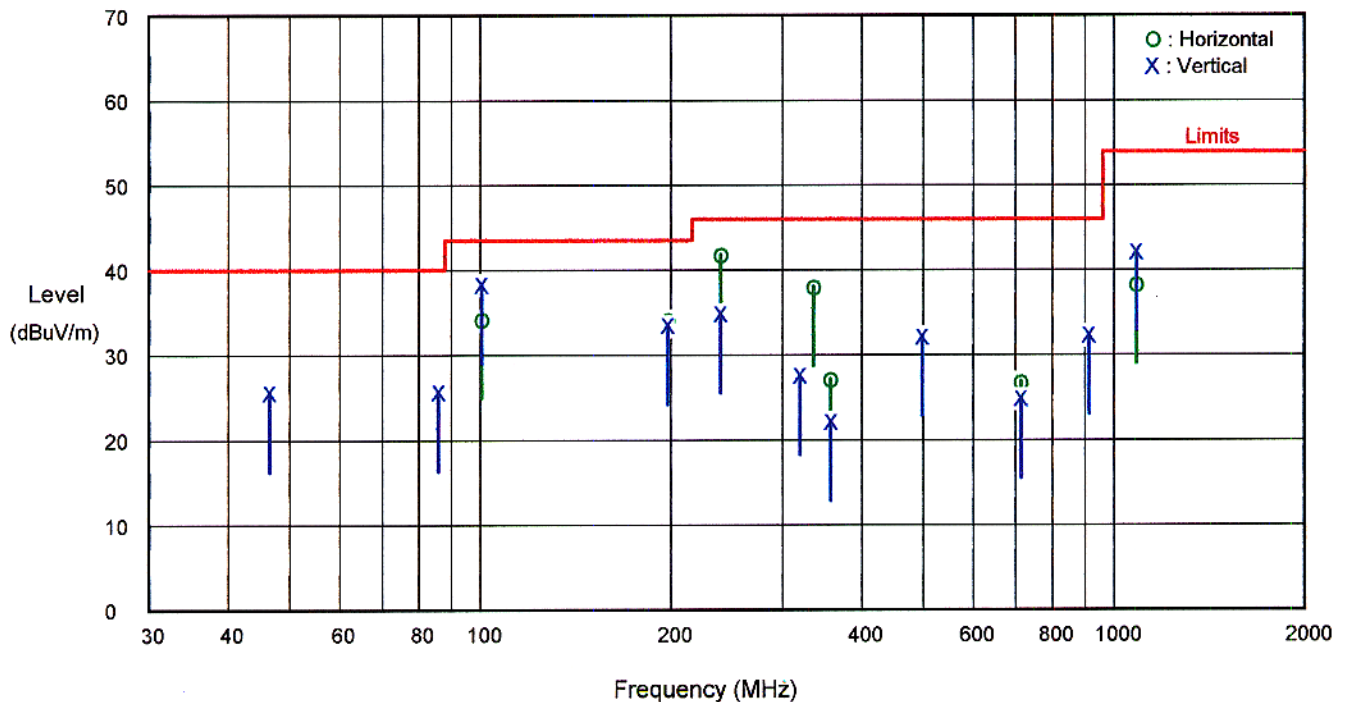

 Engineer : Mitsuhiro Jitsukawa

No.	Freq (MHz)	Horizontal			Vertical			Ant. Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Result		Limits (dBuV/m) 3 m	Margin	
		Read (dBuV)	T/T (degr)	A/M (cm)	Read (dBuV)	T/T (degr)	A/M (cm)				Hor (dBuV/m)	Ver (dBuV/m)		Hor (dB)	Ver (dB)
1	46.46	-	-	-	39.5	89	100	11.9	1.5	27.3	-	25.6	40.0	-	14.4
2	85.97	-	-	-	42.7	98	100	8.1	2.2	27.3	-	25.7	40.0	-	14.3
3	100.47	50.5	253	188	54.5	270	100	8.6	2.4	27.2	34.3	38.3	43.5	9.2	5.2
4	198.00	48.0	107	144	47.3	0	100	10.0	3.4	27.2	34.2	33.5	43.5	9.3	10.0
5	240.03	53.0	73	129	46.0	46	100	12.1	3.8	27.0	41.9	34.9	46.0	4.1	11.1
6	319.99	-	-	-	36.5	0	100	13.8	4.4	27.1	-	27.6	46.0	-	18.4
7	336.05	46.5	60	100	-	-	-	14.3	4.5	27.2	38.1	-	46.0	7.9	-
8	357.53	35.0	250	100	30.0	163	100	14.9	4.7	27.4	27.2	22.2	46.0	18.8	23.8
9	499.15	-	-	-	37.0	40	100	18.0	5.7	28.5	-	32.2	46.0	-	13.8
10	714.96	27.5	63	100	25.5	193	100	21.0	7.0	28.6	26.9	24.9	46.0	19.1	21.1
11	914.42	-	-	-	30.0	0	100	22.6	8.0	28.2	-	32.4	46.0	-	13.6
12	1084.70	39.5	217	158	43.3	0	158	24.3	8.8	34.2	38.4	42.2	54.0	15.6	11.8

Result = Reading Level + Antenna Factor + Cable Loss - Preamp Gain + Attenuator + 20xLog(Test Distance/Standard Distance)

Antenna Type : LOGBICON (30MHz-1GHz) & Double Ridged Guide (above 1GHz)

An average detector was used for the measurement in the data above 1000MHz.



No.1 Test Site

Radiated Emission Test

(30MHz - 2000MHz)

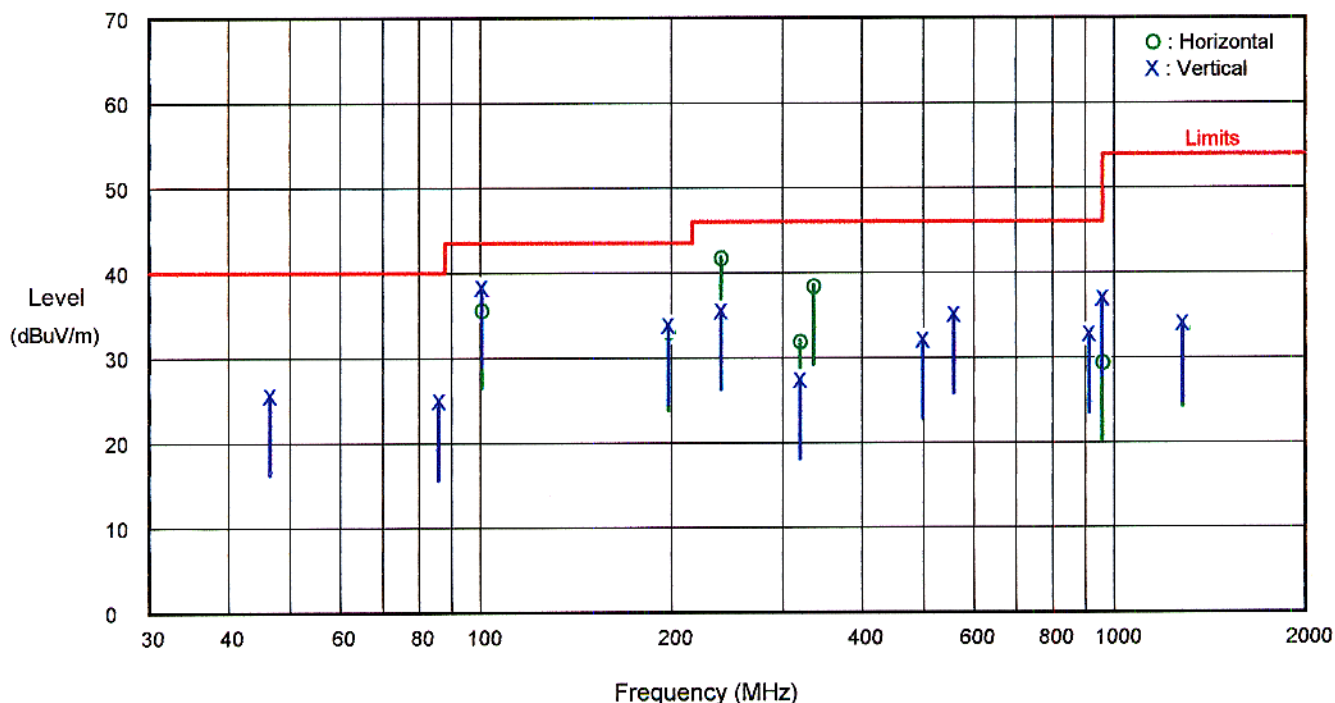
Company : TOSHIBA CORPORATION
 Equipment : CD-RW/DVD-ROM DRIVE
 Model : SD-R1312 (With an Audio Port)
 Power : DC +5V +12V (PC:AC120V/60Hz)
 Test Mode : Data Write at Sequential (High Speed CD-RW Disc)
 Remarks : SN/2S4-S101
 Regulation : FCC Part15B Class B (30MHz-2GHz)
 Test Distance : 3 m
 Attenuator : 0 dB

Report No. : TR1-02837F
 Tested Date : 2002/09/13
 Temperature : 25°C
 Humidity : 55 %
 Atmos. Press. : 1008 hPa

M. Jitsukawa
 Engineer : Mitsuhiro Jitsukawa

No.	Freq (MHz)	Horizontal			Vertical			Ant. Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Result		Limits (dBuV/m) 3 m	Margin	
		Read (dBuV)	T/T (degr)	A/M (cm)	Read (dBuV)	T/T (degr)	A/M (cm)				Hor (dBuV/m)	Ver (dBuV/m)		Hor (dB)	Ver (dB)
1	46.46	-	-	-	39.5	90	100	11.9	1.5	27.3	-	25.6	40.0	-	14.4
2	85.97	-	-	-	42.0	100	100	8.1	2.2	27.3	-	25.0	40.0	-	15.0
3	100.47	52.0	288	159	54.5	270	100	8.6	2.4	27.2	35.8	38.3	43.5	7.7	5.2
4	198.00	47.0	109	141	47.7	0	100	10.0	3.4	27.2	33.2	33.9	43.5	10.3	9.6
5	240.03	53.0	86	138	46.7	56	100	12.1	3.8	27.0	41.9	35.6	46.0	4.1	10.4
6	319.99	-	-	-	36.5	0	100	13.8	4.4	27.1	-	27.6	46.0	-	18.4
7	320.01	41.0	59	100	36.3	230	100	13.8	4.4	27.1	32.1	27.4	46.0	13.9	18.6
8	336.05	47.0	71	100	-	-	-	14.3	4.5	27.2	38.6	-	46.0	7.4	-
9	499.15	-	-	-	37.0	37	100	18.0	5.7	28.5	-	32.2	46.0	-	13.8
10	558.55	-	-	-	39.0	341	100	18.8	6.0	28.6	-	35.2	46.0	-	10.8
11	914.46	-	-	-	30.5	0	100	22.6	8.0	28.2	-	32.9	46.0	-	13.1
12	959.37	26.0	93	100	33.5	0	100	23.4	8.3	28.1	29.6	37.1	46.0	16.4	8.9
13	1281.70	34.5	283	113	35.0	90	115	24.8	9.7	35.4	33.6	34.1	54.0	20.4	19.9

Result = Reading Level + Antenna Factor + Cable Loss - Preamp Gain + Attenuator + 20xLog(Test Distance/Standard Distance)
 Antenna Type : LOGBICON (30MHz-1GHz) & Double Ridged Guide (above 1GHz)
 An average detector was used for the measurement in the data above 1000MHz.



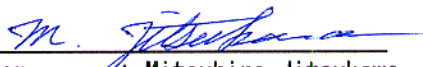
No.1 Test Site

Radiated Emission Test

(30MHz - 2000MHz)

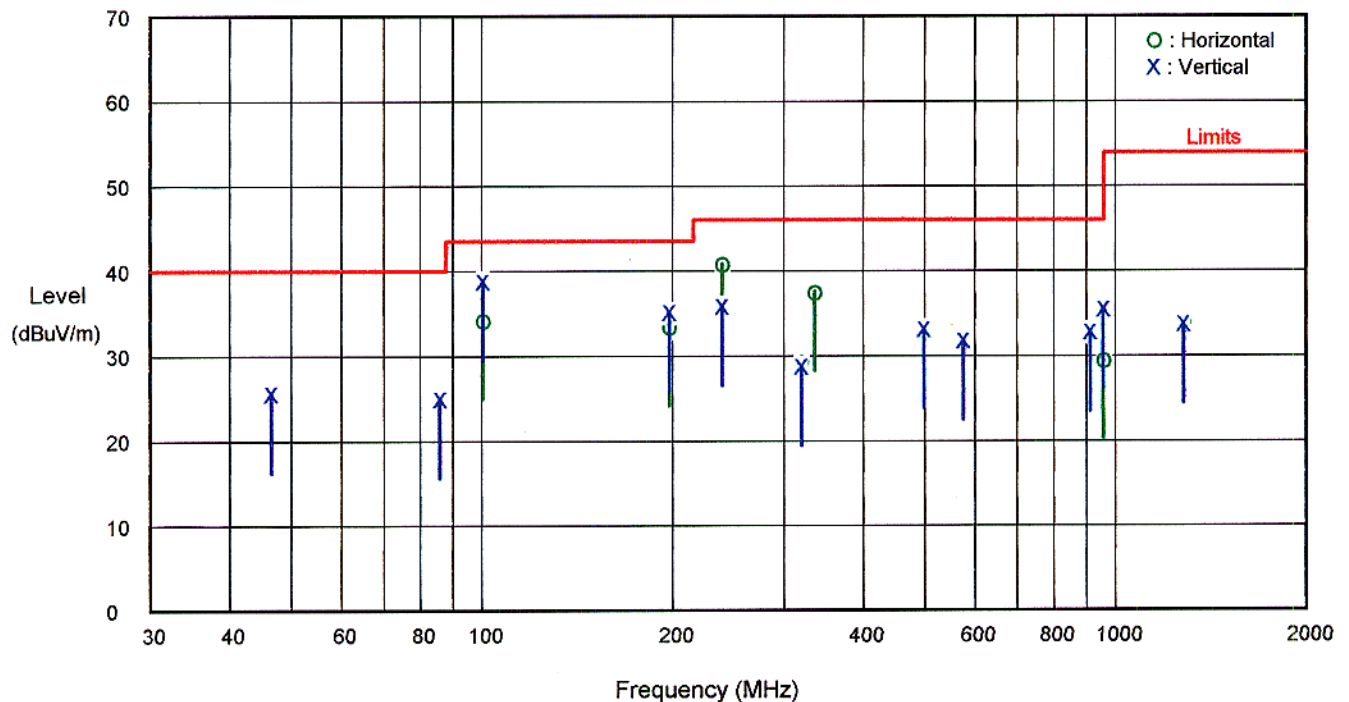
Company : TOSHIBA CORPORATION
 Equipment : CD-RW/DVD-ROM DRIVE
 Model : SD-R1312 (With an Audio Port)
 Power : DC +5V +12V (PC:AC120V/60Hz)
 Test Mode : Data Write at Sequential (CD-R Disc)
 Remarks : SN/2S4-S101
 Regulation : FCC Part15B Class B (30MHz-2GHz)
 Test Distance : 3 m
 Attenuator : 0 dB

Report No. : TR1-02837F
 Tested Date : 2002/09/13
 Temperature : 25°C
 Humidity : 55 %
 Atmos. Press. : 1008 hPa

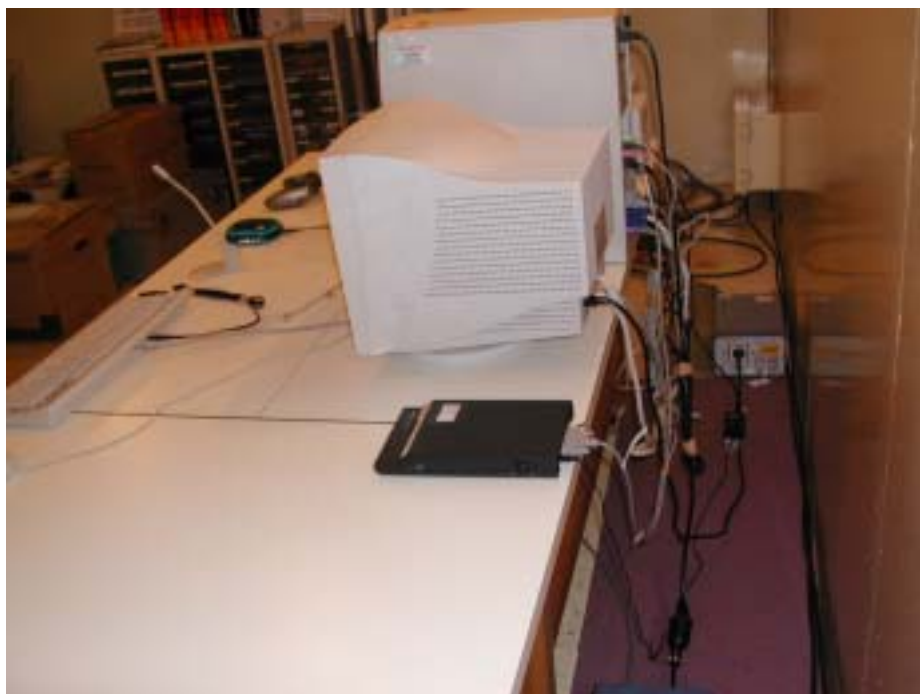
Engineer :  Mitsuhiro Jitsukawa

No.	Freq (MHz)	Horizontal			Vertical			Ant. Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Result		Limits (dBuV/m) 3 m	Margin	
		Read (dBuV)	T/T (degr)	A/M (cm)	Read (dBuV)	T/T (degr)	A/M (cm)				Hor (dBuV/m)	Ver (dBuV/m)		Hor (dB)	Ver (dB)
1	46.46	-	-	-	39.5	98	100	11.9	1.5	27.3	-	25.6	40.0	-	14.4
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3	100.47	50.5	288	159	55.0	329	100	8.6	2.4	27.2	34.3	38.8	43.5	9.2	4.7
4	198.00	47.3	117	146	49.0	0	100	10.0	3.4	27.2	33.5	35.2	43.5	10.0	8.3
5	240.03	52.0	90	132	47.0	47	100	12.1	3.8	27.0	40.9	35.9	46.0	5.1	10.1
6	319.99	-	-	-	38.5	0	100	13.8	4.4	27.1	-	29.6	46.0	-	16.4
7	320.01	38.3	59	100	37.7	230	100	13.8	4.4	27.1	29.4	28.8	46.0	16.6	17.2
8	336.05	46.0	69	100	-	-	-	14.3	4.5	27.2	37.6	-	46.0	8.4	-
9	499.15	-	-	-	38.0	40	100	18.0	5.7	28.5	-	33.2	46.0	-	12.8
10	575.76	-	-	-	35.5	0	100	19.0	6.1	28.7	-	31.9	46.0	-	14.1
11	914.45	-	-	-	30.5	0	100	22.6	8.0	28.2	-	32.9	46.0	-	13.1
12	959.37	26.0	99	100	32.0	0	100	23.4	8.3	28.1	29.6	35.6	46.0	16.4	10.4
13	1281.59	35.0	0	120	34.7	89	113	24.8	9.7	35.4	34.1	33.8	54.0	19.9	20.2

Result = Reading Level + Antenna Factor + Cable Loss - Preamp Gain + Attenuator + 20xLog(Test Distance/Standard Distance)
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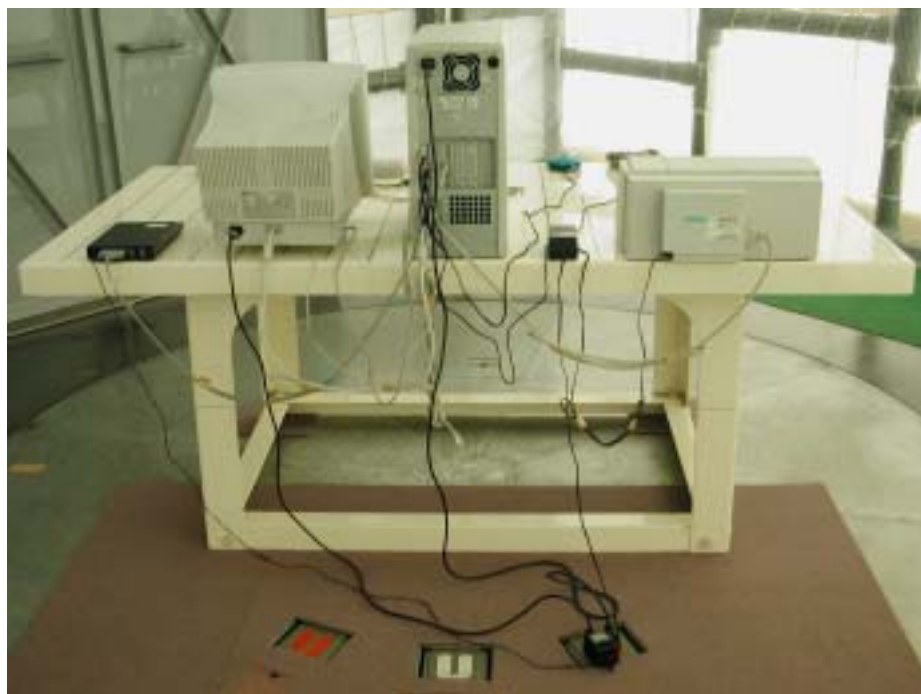


THE PHOTOS OF TEST-SETUPS



Conducted emission 150/450kHz - 30MHz (Mains ports)

THE PHOTOS OF TEST-SETUPS



Radiated emission 30MHz - 1000/2000MHz