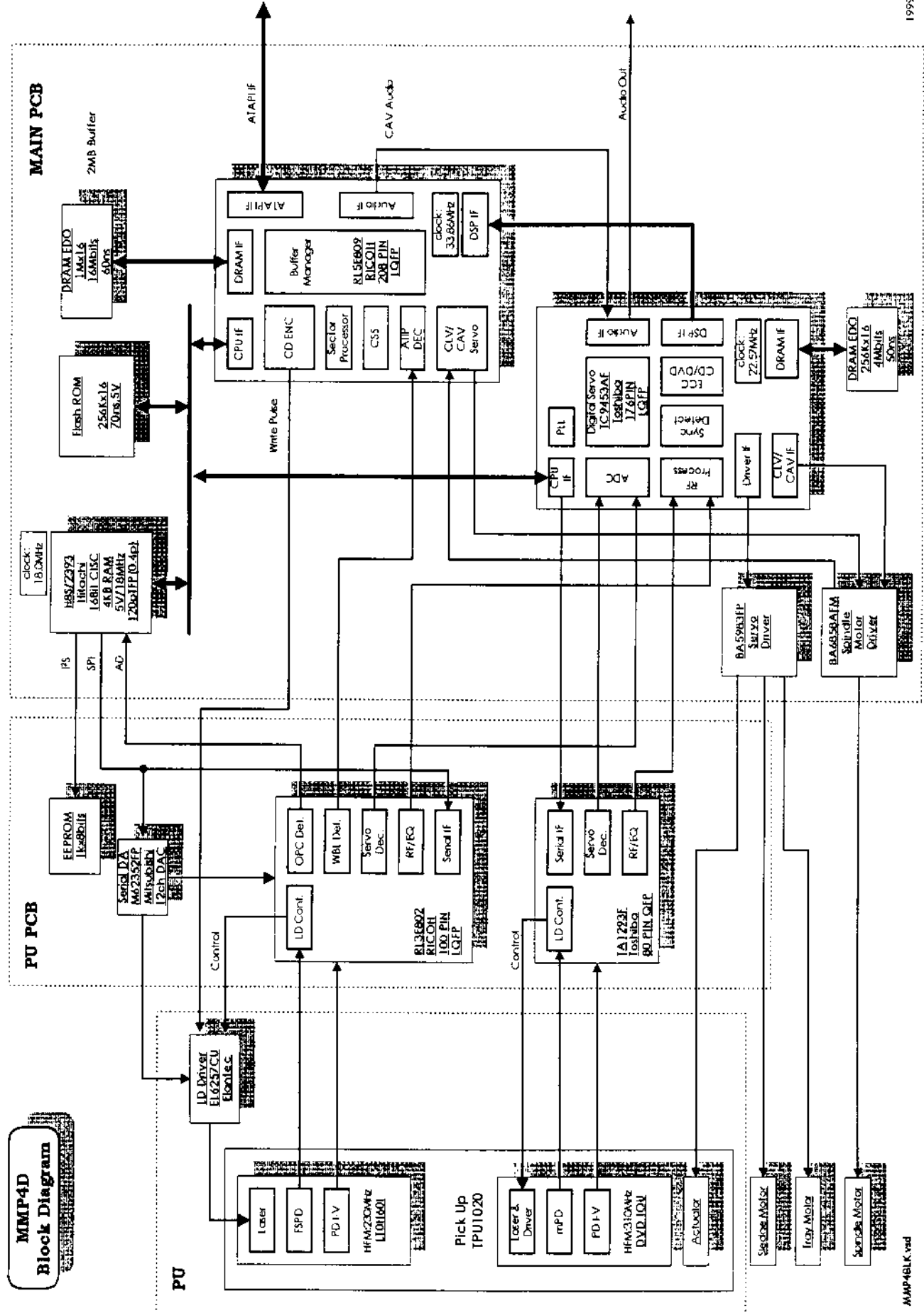
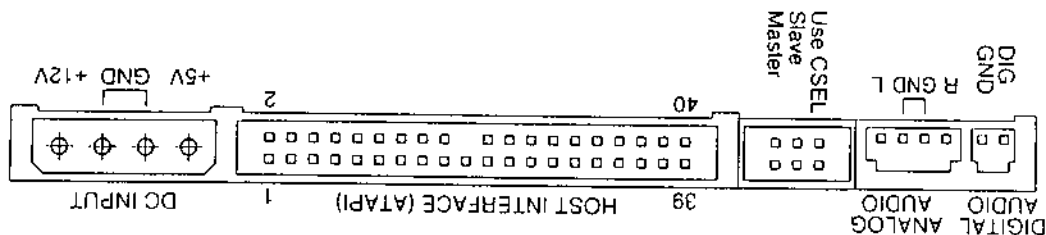


MMP4D Block Diagram



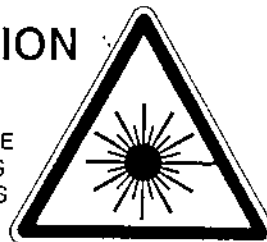


RICOH MP9060A



CAUTION

DO NOT OPEN THE DRIVE
NO USER ADJUSTMENTS
OR SERVICEABLE PARTS
INSIDE



MADE IN JAPAN



This laser product complies with
21CFR Chapter I, Subchapter J.

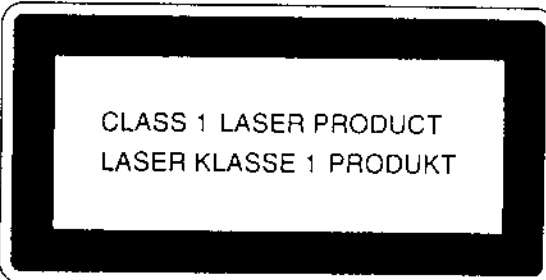
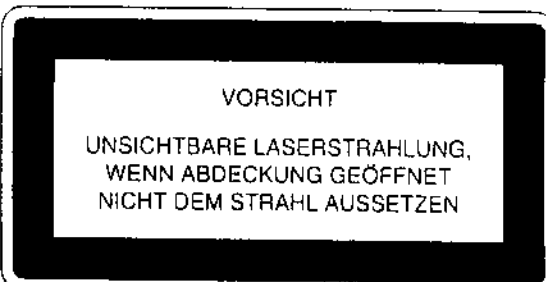
RICOH COMPANY, LTD.
Hadano Plant
423 Hirasawa, Hadano-shi
KANAGAWA-Ken JAPAN

DANGER

INVISIBLE LASER RADIATION
WHEN OPEN
AVOID DIRECT EXPOSURE
TO BEAM



E139782

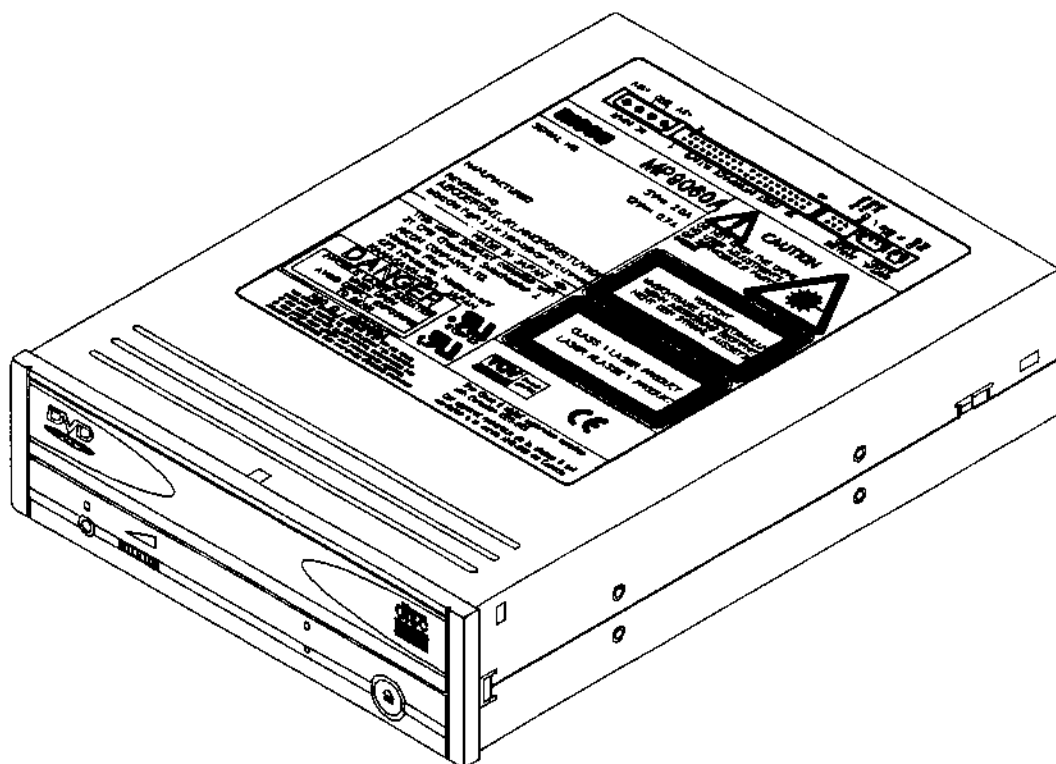


FCC ID : BBP9060A

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.
OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND
(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED,
INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

This Class B digital apparatus complies
with Canadian ICES-003.

Cet appareil numérique de la classe B est
conforme à la norme NMB-003 du Canada.



COPY

FCC PART 15 MEASUREMENT REPORT

RICOH COMPANY, LTD.

CD-Recordable/ReWritable and DVD-ROM Drive

MODEL: MP9060A

Z02C-99133

June, 1999

ZACTA TECHNOLOGY CORPORATION
YONEZAWA TESTING CENTER

4149-7 Hachimanpara 5-chome
Yonezawa-shi Yamagata
992-1128 Japan

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LABORATORY MEASUREMENTS

TEST OUTLINE

COMPANY NAME : RICOH COMPANY, LTD.
EUT : CD-Recordable/ReWritable and DVD-ROM Drive
MODEL NO. : MP9060A
SERIAL NO. : ES12
DATE OF TESTS : MAY 27, 1999
LIMIT : FCC PART 15 SUBPART B CLASS B
CLASS : B
DISTANCE : 3m
POWER SUPPLIED : AC 115 V
REPORT NO. : Z02C-99133

ENGINEER SIGNATURE : Koji Taguchi

PRINTED : Koji Taguchi / EMC engineer

RESULTS OF THE MEASUREMENTS

The minimum margin to the limits are as follows:

	Margin	FREQ.	POL.[H/V]	COMMENT
Conduction	-4.2dB	6.491MHz	N/A	CD READ MODE
Radiation	-4.9dB	766.83MHz	V	DVD READ MODE

CONFIGURATION INFORMATION

COMMENT:

DEVICE INFORMATION

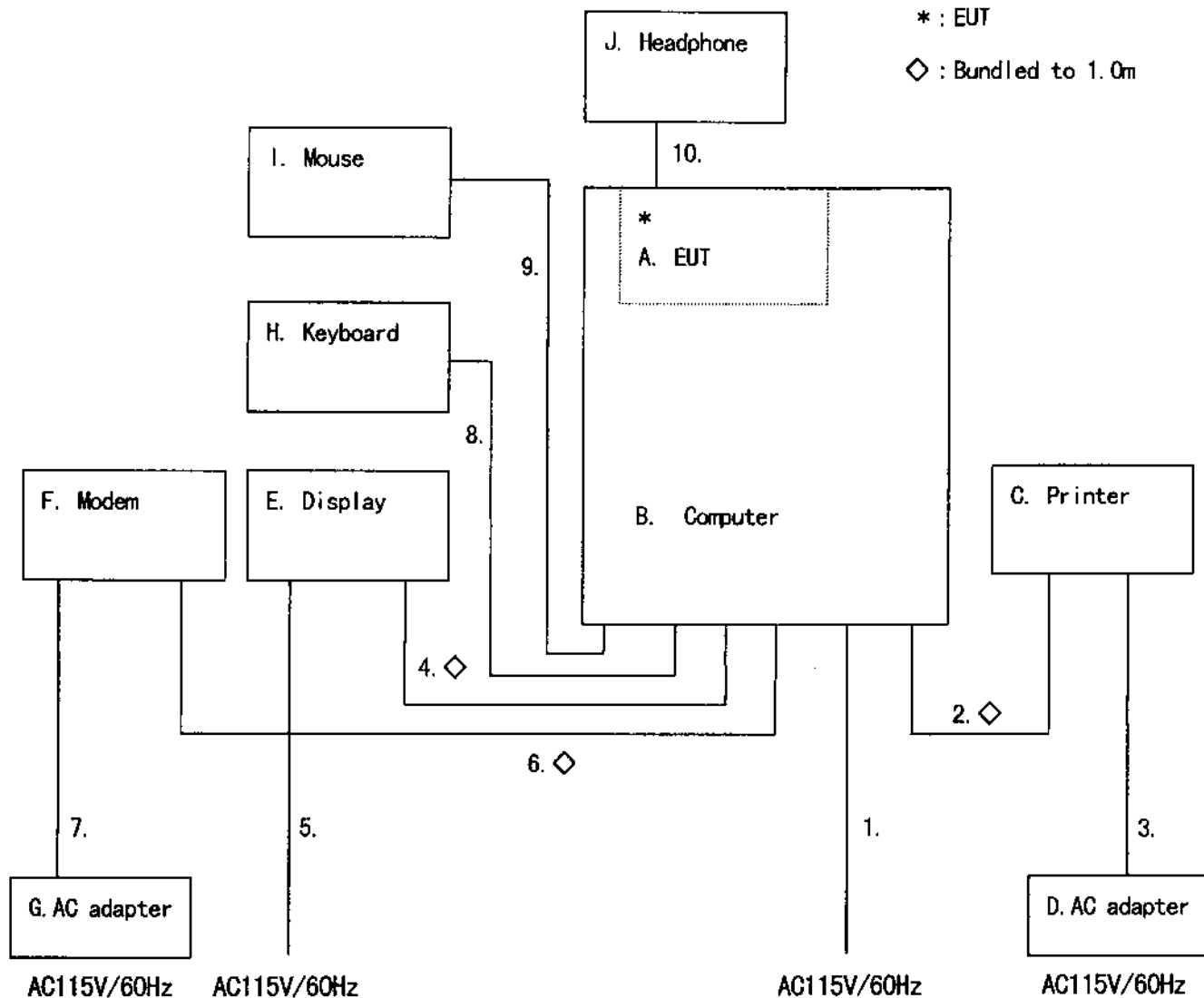
NO.	EQUIPMENT	COMPANY	MODEL NO.	SERIAL NO.	FCC ID	COMMENT
A	CD-Recordable/ ReWritable and DVD-ROM Drive	RICOH	MP9060A	ES12	BBP9060A	EUT
B	Computer	COMPAQ	DESKPRO 5133	7617HXF30138	CNT75NDCZ5	
C	Printer	HP	2225C+	2950S64811	DS16XU2225	
D	AC adapter	HP	82241AJ	N/A	N/A	For Printer
E	Display	IBM	8512-001	72-1480571	C5F7NF13CM14	
F	Modem	Hayes	5240AM	A0125240K346	BFJ5201AM	
G	AC adapter	Hayes	T41-090800-A01	N/A	N/A	For Modem
H	Keyboard	COMPAQ	RT6674TJP	22361433	AQ6-MTN4C15	
I	Mouse	COMPAQ	M-S34-6MD	1D75BDCF2AE9	DZL210472	
J	Headphone	SONY	MDR-Z900	N/A	N/A	

CABLES INFORMATION

NO.	CABLE	COMPANY	LENGTH [m]	SHIELDED	COMMENT
1	AC power cord	LONGWELL	2.3	Shielded	For PC
2	Printer cable	KANEKO	1.2	Shielded	Bundled to 1.0m
3	DC cable	N/A	1.2	Unshielded	For Printer
4	Video cable	N/A	1.5	Shielded	Bundled to 1.0m
5	AC power cord	N/A	1.5	Unshielded	For Display
6	RS-232C cable	FUJIKURA	1.2	Shielded	Bundled to 1.0m
7	DC cable	N/A	1.6	Unshielded	For Modem
8	Keyboard cable	N/A	1.9	Unshielded	
9	Mouse cable	N/A	1.6	Unshielded	
10	Headphone cable	N/A	1.2	Shielded	Coiled

SYSTEM CONFIGURATION

COMMENT: _____



Symbols 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 Configuration/Cable Information.

TEST SITE CONDITION

DATE	SITE #	WEATHER	TEMPERATURE	HUMIDITY
May 27, 1999	2	Cloudy	26°C	53%

INSTRUMENTATION USED

[*] RECEIVER

RADIATED ☐ R/S ESV (DET ☐ QP ☐ PEAK)
☒ KYORITSU KNM-5002, KCV-6002 (DET ☒ QP ☐ PEAK)
 IF BANDWIDTH ☒ 120kHz ☐ OTHER kHz
 CONDUCTED ☒ R/S ESHS10 (DET ☒ QP ☐ PEAK ☐ AVERAGE)
☐ KYORITSU KNM-2402 (DET ☐ QP ☐ PEAK ☐ AVERAGE)
 IF BANDWIDTH ☐ 200Hz ☐ 500Hz ☐ 24kHz ☒ 10kHz
 PRI AMP ☐ HP8449B (1GHz-26.5GHz) ☒ ANRITSU MH648A (30MHz-1.2GHz)
☐ NOT USED

[*] SPECTRUM ANALYZER

☐ HP8568B (DET ☐ QP ☐ PEAK ☐ AVERAGE)
☐ HP8590A (DET ☐ PEAK ☐ AVERAGE)
☒ ADVANTEST R3271A (100Hz-26.5GHz) (DET ☒ PEAK ☒ AVERAGE)
 RADIATED: RESOLUTION BANDWIDTH
☐ 10kHz ☐ 30kHz ☐ 100kHz ☐ 120kHz ☐ 300kHz ☒ 1MHz
 VIDEO BANDWIDTH
☐ 3kHz ☐ 10kHz ☐ 30kHz ☐ 100kHz
☐ 300kHz ☒ 1MHz ☐ 3MHz
 CONDUCTED: RESOLUTION BANDWIDTH
☐ 100Hz ☐ 300Hz ☐ 1kHz ☐ 3kHz ☐ 10kHz
 VIDEO BANDWIDTH
☐ 100Hz ☐ 300Hz ☐ 1kHz ☐ 3kHz ☐ 10kHz
☐ 30kHz ☐ 100kHz ☐ 300kHz ☐ 1MHz ☐ 3MHz
 PRI AMP ☐ HP85685A ☒ HP8449B ☐ NOT USED

ANTENNAS

☒ SCHWARZBEC BBA9106/VHA9103LE
☒ EMCO LOGPERIODIC DIPOLE MODEL 3146
☐ R/S LOOP ANTENNA HFH2-Z2 (10kHz-30MHz)
☐ ADVANTEST LOG SPIRAL ANTENNA MODEL TR17205 (1-10GHz)
☒ EMCO DOUBLE RIDGED GUIDE ANTENNA MODEL 3115 (1-18GHz)

COAXIAL CABLE

☒ 8D-2W 15m
☒ 10D-SFA 26m, 8D-2W 15m ☐ OTHER (m)
☐ 23D-HA 22m, 8D-2W 8m ☒ SUCOFLEX 104 15m

ANTENNA LOCATION

☐ 1m CLOSE FROM EUT ☒ 3m METHOD STANDARD
☐ 10m METHOD STANDARD ☐ OTHER ()

LISN

☐ CDI 8012-50-R-24-BNC ☒ KYORITSU KNM-242C

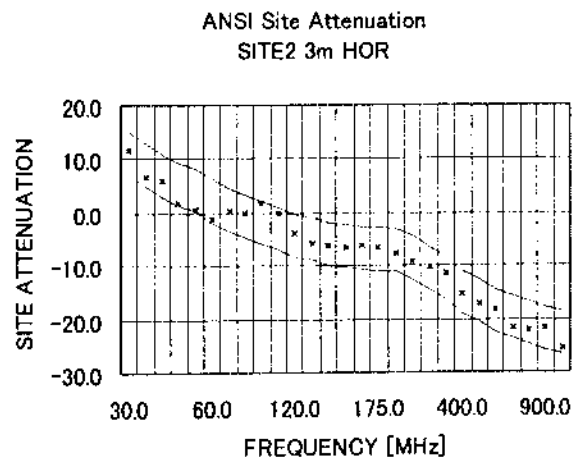
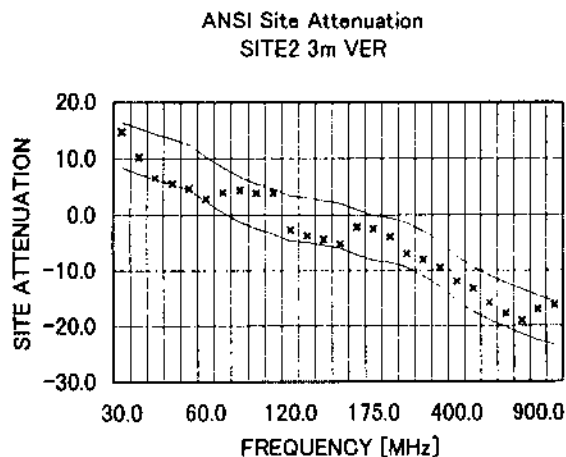
MEMO

TECHNICAL INFORMATION

DESCRIPTION FOR TEST SITE

1. LOCATION: ZACTA TECHNOLOGY CORPORATION YONEZAWA TESTING CENTER
4149-7 Hachimanpara 5-chome, Yonezawa-shi Yamagata 992-1128 Japan
Phone: +81-238-28-2880 Fax: +81-238-28-2888
2. THE NUMBER OF SITE: Total: 4 sites #1 site
#2 site
#3 site
#4 site
3. THE TYPE OF SITE : Whether protected site
4. TEST TYPE : All site could perform as follows tests:
 - 1) 3/10m Radiated emission test
 - 2) Conducted emission test

5. NORMALIZED SITE ATTENUATION GRAPH



6. FACILITY FILING INFORMATION

FOC FINAL SITE FILING: January 29, 1997 (Final date)

§ 2.948 Pursuant to ANSI C63.4-1992

#1 site

#2 site

#3 site

#4 site (Final date: June 18, 1998)

*3m/10m Radiated emission test & Conducted emission test could be performed on each site

VOC1 FINAL SITE FILING: April 1, 1997 (Final date)

V-5/97.04 Pursuant to VOC1 Regulations for Registration of
measurement facilities

#1 site R - 136 C - 132

#2 site R - 137 C - 133

#3 site R - 138 C - 134

#4 site R - 752 C - 775 (Final date: June 23, 1998)

NVLAP ACCREDITATION :

NVLAP CODE: 200306-0

NVLAP INFORMATION

NVLAP accreditation does not constitute any product endorsement by NVLAP or any agent
of the U.S. Government

TEST EQUIPMENT

Equipment	Manufacture	Model name / Serial No	Last Cal. date	Period
Spectrum Analyzer	HEWLETT-PACKARD Co	HP8568B / 2732A03847	Apr. 1998	1 year
Spectrum Analyzer	ADVANTEST	R3271A / 65050042	May. 1999	1 year
RF Preamplifier	Anritsu	MH648A / M96157	Jun. 1998	1 year
RF Preamplifier	HEWLETT-PACKARD Co.	HP8449B / 3008A00589	May. 1999	1 year
Signal Generator	HEWLETT-PACKARD Co.	HP8657A / 2750U00157	May. 1998	1 year
Test Receiver	ROHDE & SCHWARZ	ESV / 89237	Apr. 1999	1 year
Test Receiver	ROHDE & SCHWARZ	ESH2 / 892237/012	Mar. 1999	1 year
Test Receiver	ROHDE & SCHWARZ	ESHS10 / 61360022	Oct. 1998	1 year
Test Receiver	Kyouritsu Electrical Works, Ltd.	KNM-5002/ 4N-187-2 KCV-6002/ 4-288-1	Aug. 1998	1 year
Test Receiver	Kyouritsu Electrical Works, Ltd.	KNM-5002/ 4N-187-10 KCV-6002/ 4-257-1	Oct. 1998	1 year
Test Receiver	Kyouritsu Electrical Works, Ltd.	KNM-5002/ 4N-195-2 KNM-6002/ 4-269-2	Jan. 1999	1 year
Test Receiver	Kyouritsu Electrical Works, Ltd.	KNM-2402/ 4N-192-1	Nov. 1998	1 year
Test Receiver	Kyouritsu Electrical Works, Ltd.	KNM-2402/ 4N-220-1	Aug. 1998	1 year
Line Impedance Stabilization Network	Kyouritsu Electrical Works, Ltd.	KNW-242C / 8-875-19	Feb. 1999	1 year
Line Impedance Stabilization Network	Kyouritsu Electrical Works, Ltd.	KNW-242C / 8-1096-3	Jan. 1999	1 year
Biconical Antenna	Schwarzbeck	VHA9103LE/BBA9106 /02130879	May. 1998	1 year
Log Periodic Antenna	Electro-Mechanics Co.	3146 / 8901-2336	May. 1998	1 year
Log Periodic Antenna	Electro-Mechanics Co.	3146 / 8901-2332	May. 1998	1 year
Double Ridged Guide Antenna	Electro-Mechanics Co.	3115 / 4328	Jun. 1998	1 year

Calibration traceable to NIST or an equivalent standards reference organization.

= FCC PART15B class B 3m RADIATED DATA SHEET =

DATE OF TESTS: 99/05/27 SITE: 2 CHART NO. - SHEET NO. 1
 COMPANY NAME: RICOH MODEL: MP9060A MODE: CD READ
 COMMENT:

POL. H/V	FREQ. [MHz]	READ. [dBuV]	FACTOR [dB]	NET [dBuV/m]	LIMITS [dBuV/m]	MARGIN [dB]	C O M M E N T
V	58.99	52.4	-19.6	32.8	40.0	-7.2	
V	59.52	50.0	-20.0	30.0	40.0	-10.0	
H	100.22	50.3	-17.6	32.7	43.5	-10.8	
H	200.46	44.9	-10.9	34.0	43.5	-9.5	
H	350.89	51.0	-11.4	39.6	46.0	-6.4 *	
V	550.56	44.5	-7.1	37.4	46.0	-8.6	
V	759.91	37.5	-1.4	36.1	46.0	-9.9	
V	766.83	39.3	-1.3	38.0	46.0	-8.0	
H	1059.84	48.7	-8.3	40.4	54.0	-13.6	PEAK
H	1059.84	50.8	-8.3	42.5	54.0	-11.5	AVERAGE
V	1177.98	48.2	-7.8	40.4	54.0	-13.6	AVERAGE
V	1177.98	47.0	-7.8	39.2	54.0	-14.8	PEAK

= FCC PART15B class B 3m RADIATED DATA SHEET =

DATE OF TESTS: 99/05/27 SITE: 2 CHART NO. - SHEET NO. 2
 COMPANY NAME: RICOH MODEL: MP9060A MODE: CD WRITE
 COMMENT:

POL. H/V	FREQ. [MHz]	READ. [dBuV]	FACTOR [dB]	NET [dBuV/m]	LIMITS [dBuV/m]	MARGIN [dB]	C O M M E N T
V	58.99	51.6	-19.6	32.0	40.0	-8.0	
V	350.89	48.8	-11.4	37.4	46.0	-8.6	
V	451.15	46.9	-9.1	37.8	46.0	-8.2	
V	550.56	47.4	-7.1	40.3	46.0	-5.7 *	
V	759.91	39.7	-1.4	38.3	46.0	-7.7	
H	766.84	40.4	-1.3	39.1	46.0	-6.9	
H	806.16	35.8	-0.3	35.5	46.0	-10.5	
V	959.88	32.9	2.5	35.4	46.0	-10.6	

= FCC PART15B class B 3m RADIATED DATA SHEET =

DATE OF TESTS: 99/05/27 SITE: 2 CHART NO. - SHEET NO. 3
 COMPANY NAME: RICOH MODEL: MP9060A MODE: DVD READ
 COMMENT:

POL.	FREQ.	READ.	FACTOR	NET	LIMITS	MARGIN	C O M M E N T
H/V	[MHz]	[dBuV]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
V	58.99	49.6	-19.6	30.0	40.0	-10.0	
V	59.52	47.4	-20.0	27.4	40.0	-12.6	
H	350.89	52.1	-11.4	40.7	46.0	-5.3	
V	350.89	48.6	-11.4	37.2	46.0	-8.8	
V	550.56	47.8	-7.1	40.7	46.0	-5.3	
V	570.21	47.4	-6.8	40.6	46.0	-5.4	
V	759.91	41.7	-1.4	40.3	46.0	-5.7	
V	766.83	42.4	-1.3	41.1	46.0	-4.9 *	
H	766.84	40.2	-1.3	38.9	46.0	-7.1	
H	1059.86	52.4	-8.3	44.1	54.0	-9.9	PEAK
H	1059.86	51.0	-8.3	42.7	54.0	-11.3	AVERAGE
V	1177.99	48.0	-7.8	40.2	54.0	-13.8	AVERAGE
V	1177.99	47.1	-7.8	39.3	54.0	-14.7	PEAK
H	1654.21	44.2	-5.5	38.7	54.0	-15.3	AVERAGE
H	1654.21	44.3	-5.5	38.8	54.0	-15.2	PEAK

= FCC PART15B class B LINE CONDUCTED DATA SHEET =

DATE OF TESTS : 99/05/27 SITE: 2 CHART NO. - SHEET NO. 4
 COMPANY NAME : RICOH MODEL: MP9060A MODE: CD READ
 COMMENT:

FREQ. [MHz]	READ.A [dBuV]	READ.B [dBuV]	FACTOR [dB]	NET A [dBuV]	NET B [dBuV]	LIMITS [dBuV]	MARGIN [dB]	COMMENT
2.228	28.0	27.2	0.2	28.2	27.4	48.0	-19.8	
4.906	34.7	39.2	0.3	35.0	39.5	48.0	-8.5	
5.942	42.1	42.4	0.3	42.4	42.7	48.0	-5.3	
6.491	43.5	39.9	0.3	43.8	40.2	48.0	-4.2	*
21.877	39.4	39.0	0.8	40.2	39.8	48.0	-7.8	
29.804	30.8	29.5	1.2	32.0	30.7	48.0	-16.0	

= FCC PART15B class B LINE CONDUCTED DATA SHEET =

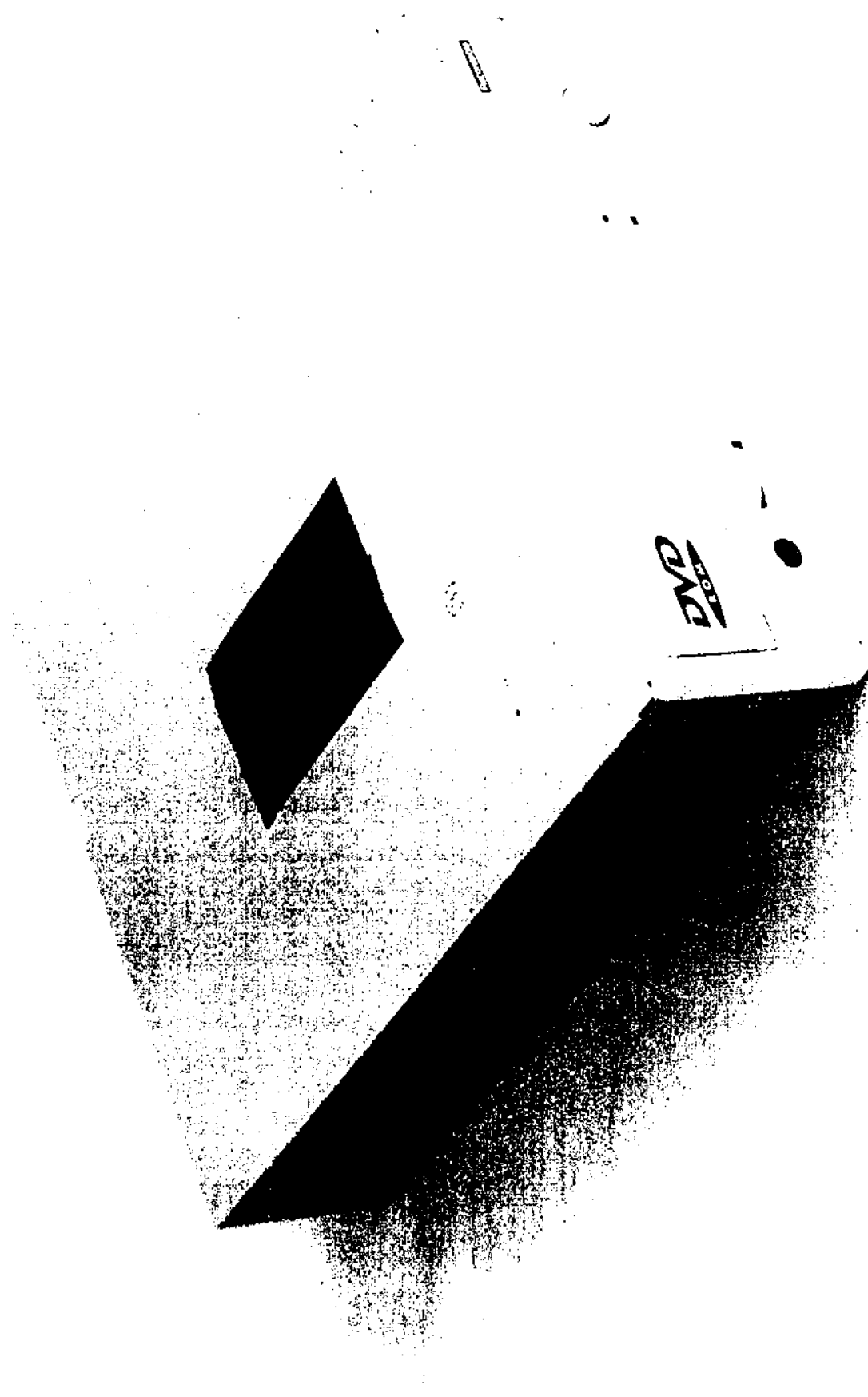
DATE OF TESTS : 99/05/27 SITE: 2 CHART NO. - SHEET NO. 5
 COMPANY NAME : RICOH MODEL: MP9060A MODE: CD WRITE
 COMMENT:

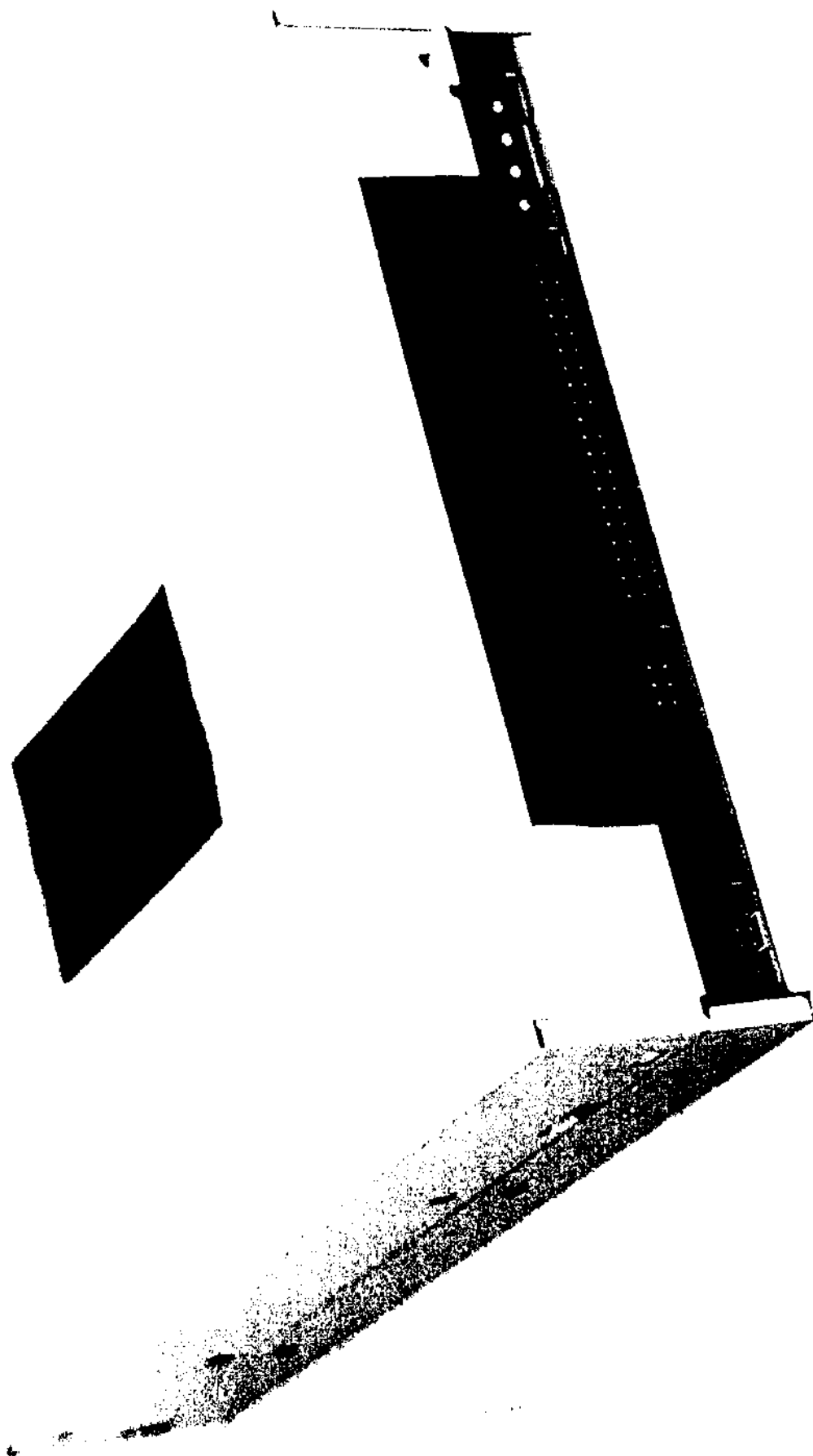
FREQ. [MHz]	READ.A [dBuV]	READ.B [dBuV]	FACTOR [dB]	NET A [dBuV]	NET B [dBuV]	LIMITS [dBuV]	MARGIN [dB]	COMMENT
5.890	40.6	40.5	0.3	40.9	40.8	48.0	-7.1	
6.131	43.4	42.6	0.3	43.7	42.9	48.0	-4.3	*
6.879	43.0	39.3	0.3	43.3	39.6	48.0	-4.7	
15.230	27.1	32.2	0.6	27.7	32.8	48.0	-15.2	
21.875	38.0	37.3	0.8	38.8	38.1	48.0	-9.2	
29.808	30.7	30.0	1.2	31.9	31.2	48.0	-16.1	

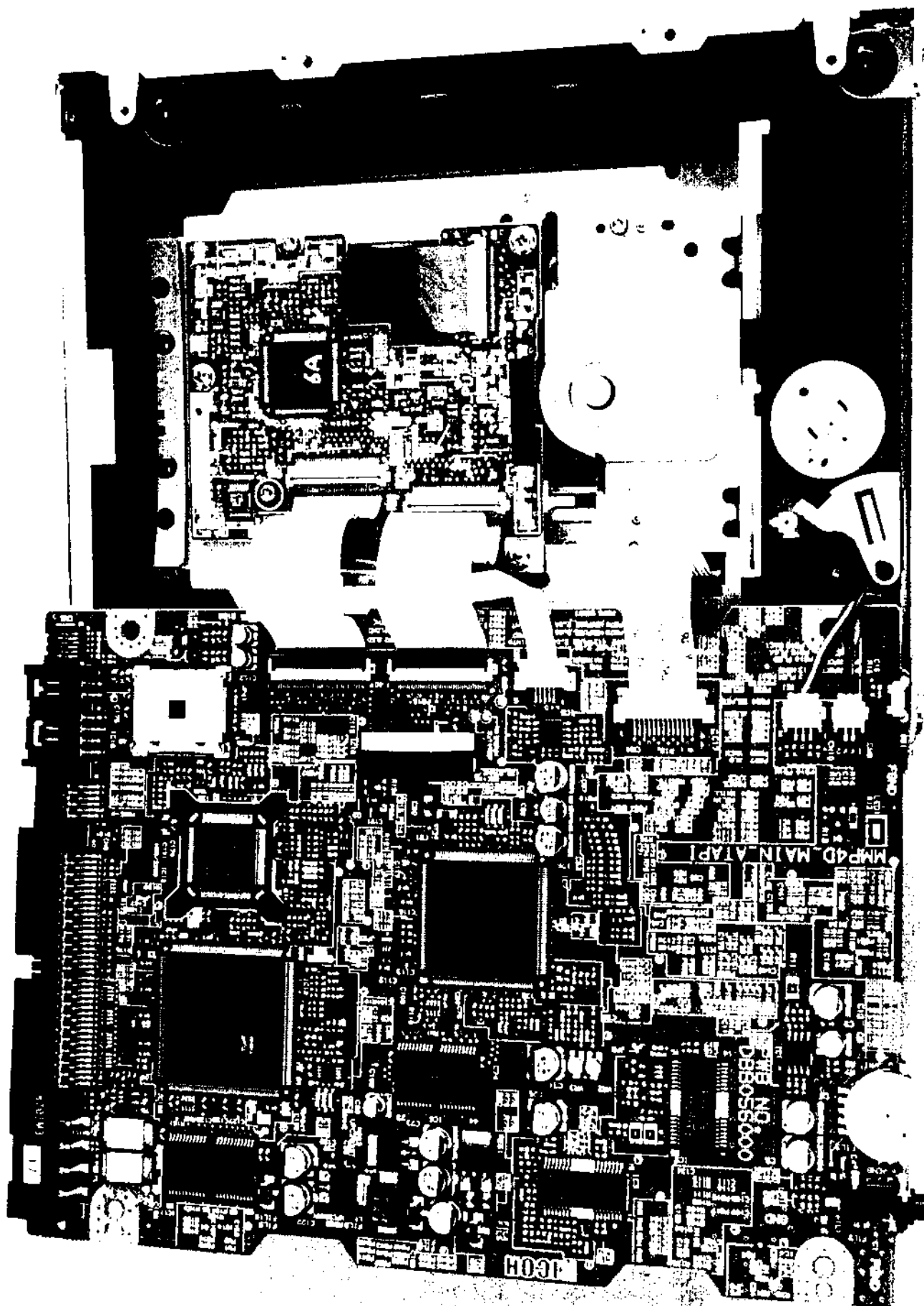
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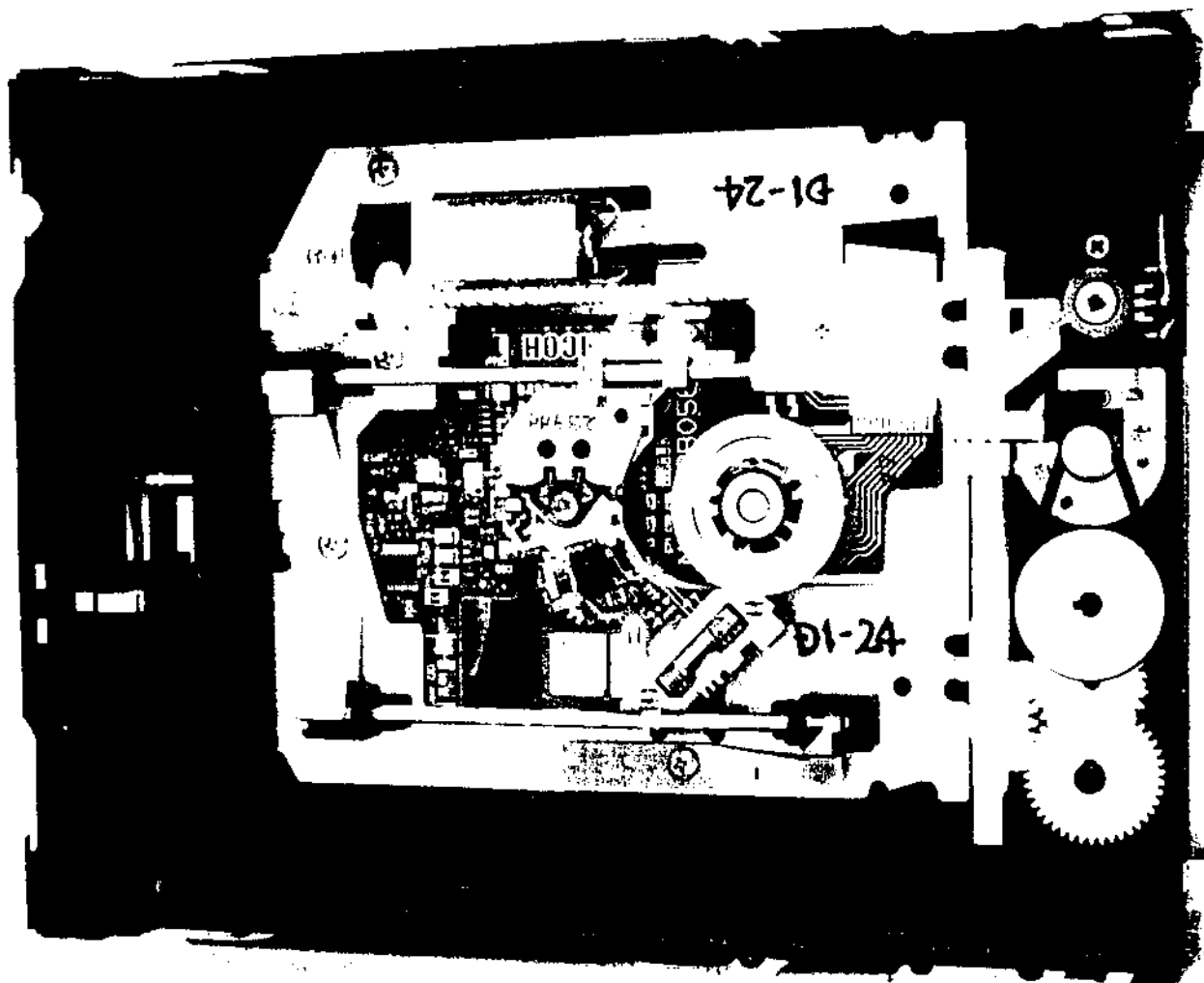
DATE OF TESTS : 99/05/27 SITE: 2 CHART NO. - SHEET NO. 6
 COMPANY NAME : RICOH MODEL: MP9060A MODE: DVD READ
 COMMENT:

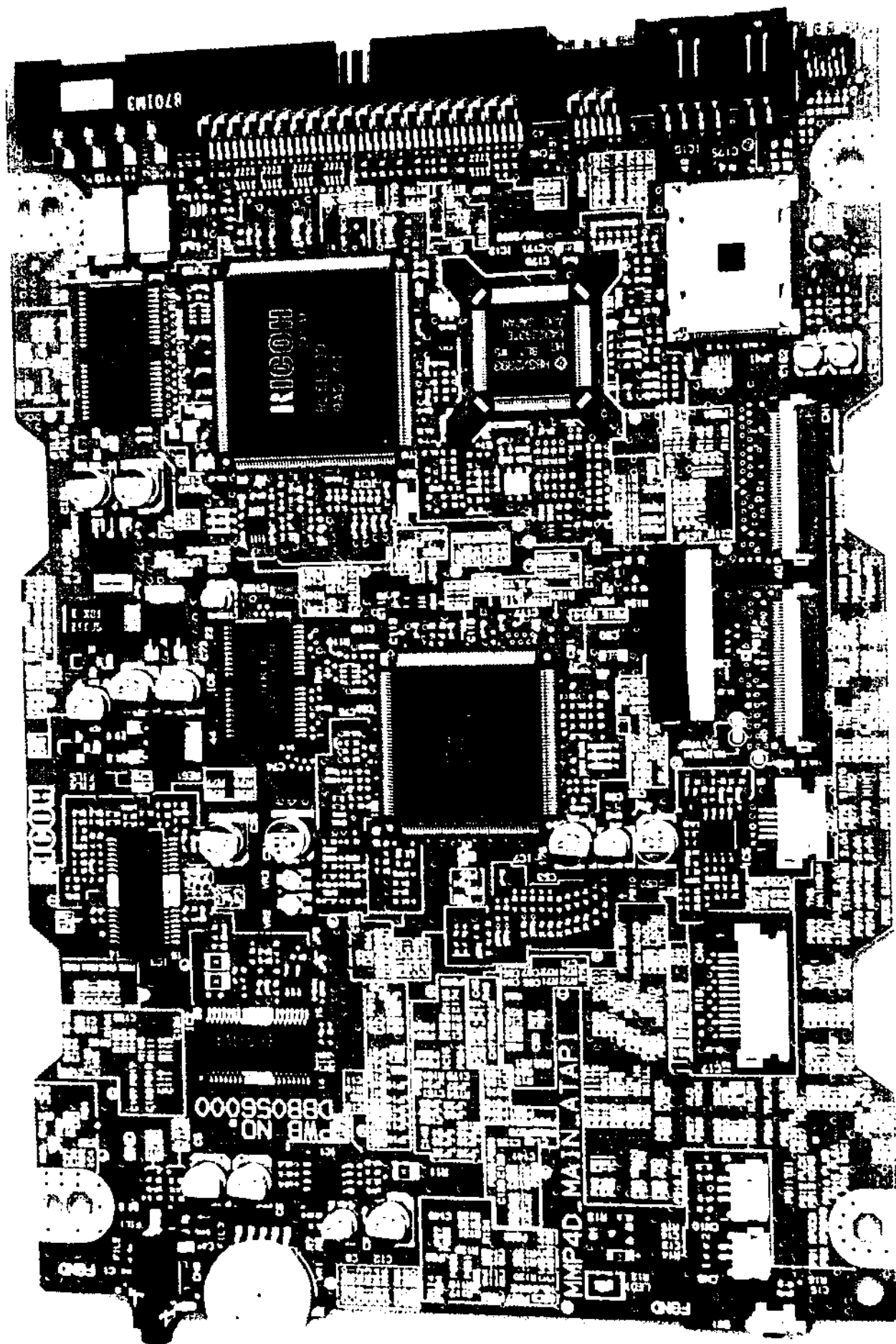
FREQ. [MHz]	READ.A [dBuV]	READ.B [dBuV]	FACTOR [dB]	NET A [dBuV]	NET B [dBuV]	LIMITS [dBuV]	MARGIN [dB]	COMMENT
6.126	43.0	42.2	0.3	43.3	42.5	48.0	-4.7	
6.138	43.0	43.0	0.3	43.3	43.3	48.0	-4.7	
6.492	42.7	43.2	0.3	43.0	43.5	48.0	-4.5	*
15.229	27.4	25.0	0.6	28.0	25.6	48.0	-20.0	
21.870	38.6	38.3	0.8	39.4	39.1	48.0	-8.6	
29.704	29.1	28.5	1.2	30.3	29.7	48.0	-17.7	

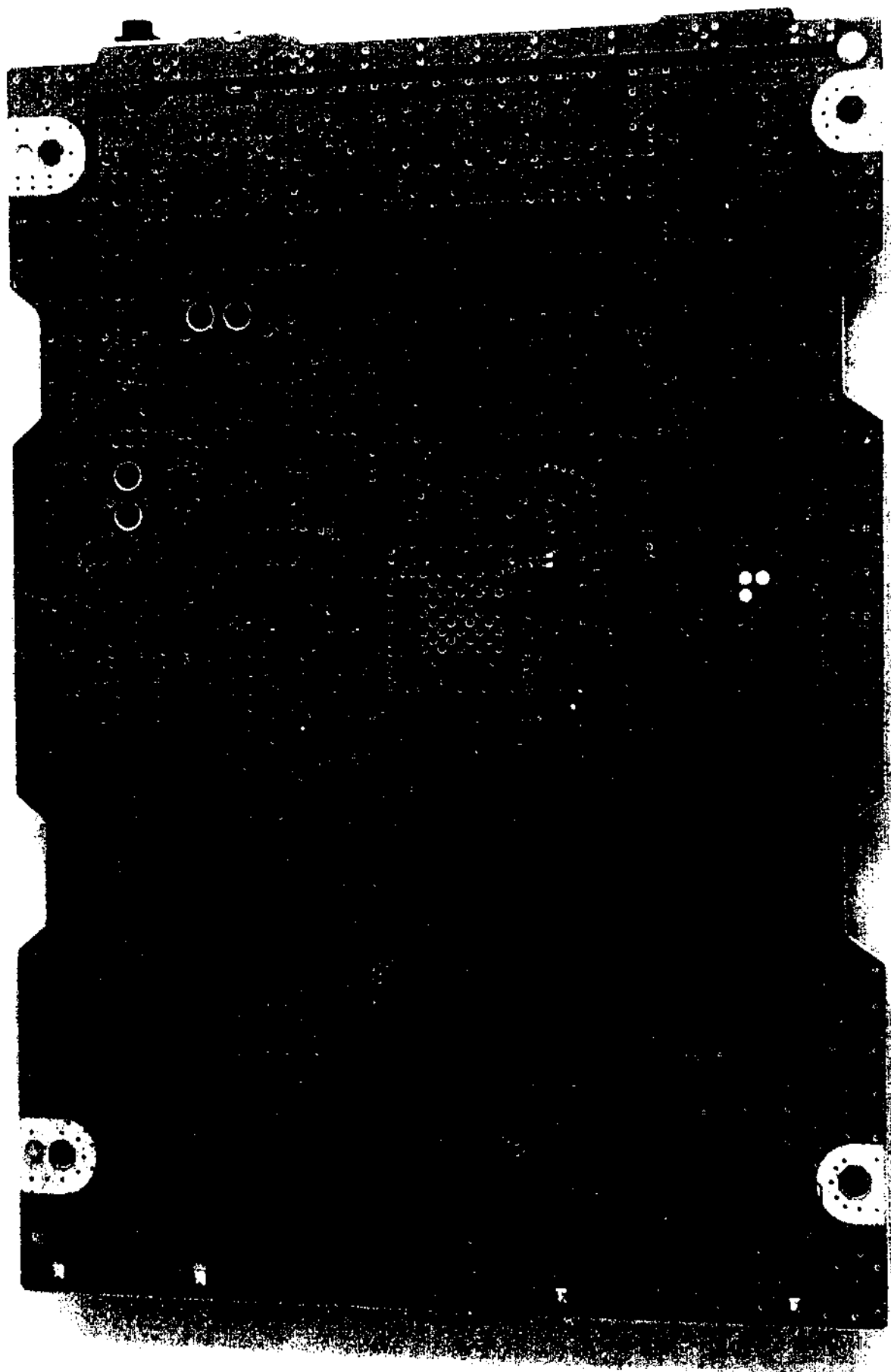


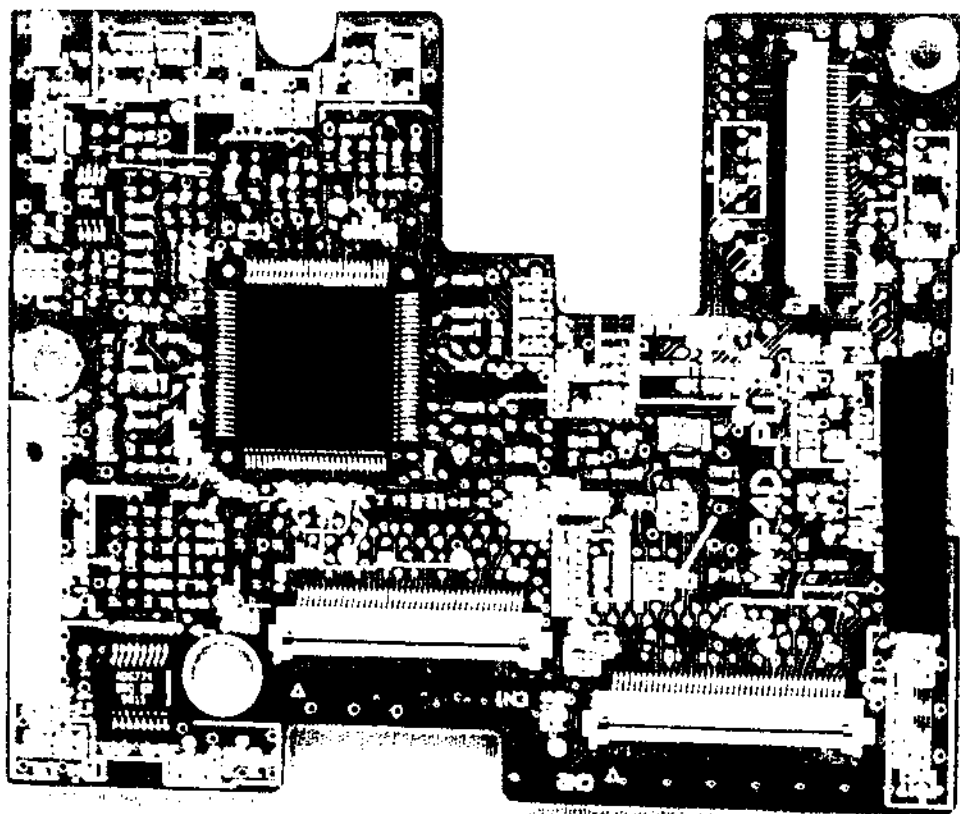


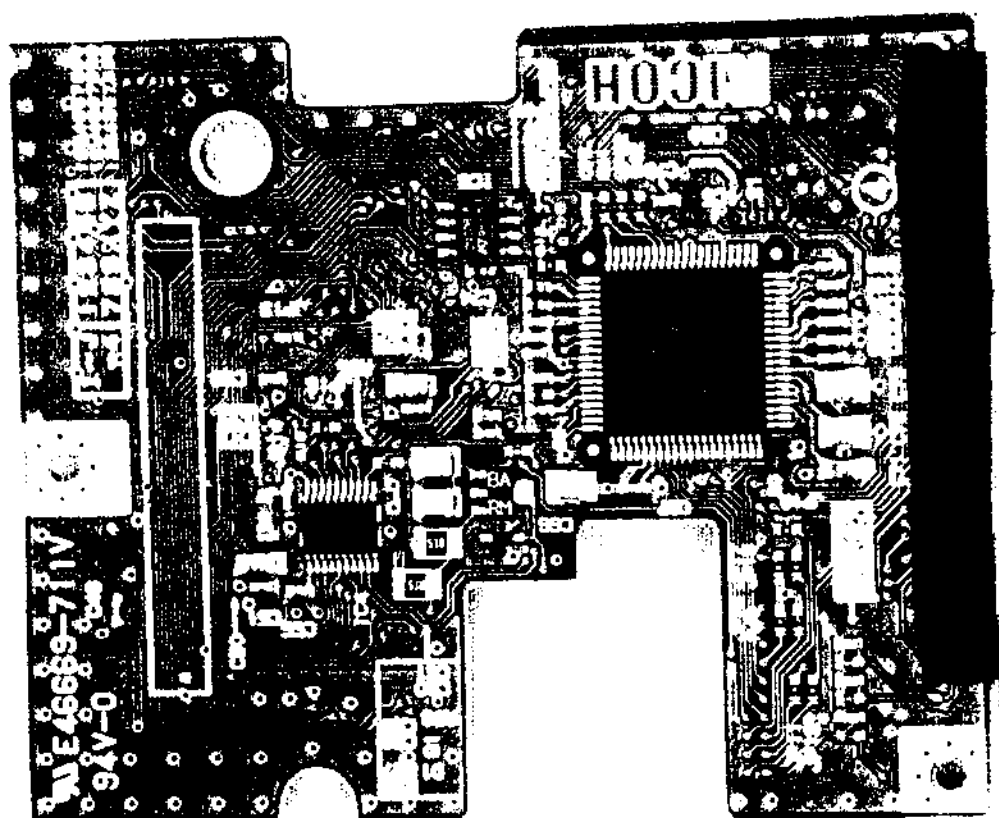












3-8:08 +
0339N5

