

Engineering Drawings

ED 4H3B1-01E

Model 437001/437002/437003/437004/

437006/437012/437018/437024

μR1800 Recorder

Pen & Dot Printing Model

ED 4H3B1-01E

**Model 437001/437002/437003/437004/
437006/437012/437018/437024
μR1800 Recorder
Pen & Dot Printing Model**

Disk No. SM03

1st Edition : September 1993 (YG)

All Rights Reserved, Copyright © 1993, Yokogawa Electric Corporation

ED 001-REV 0

ED 4H3B1-01E

IMPORTANT NOTICE TO THE USER

This manual contains information for servicing the YOKOGAWA μ R1800 pen and dot printing recorder. Confirm by model code that this document covers the instrument to be serviced. **Do not use the wrong manual.**

Before any maintenance and servicing, read all safety precautions carefully.

Only properly trained personnel may carry out maintenance and servicing in accordance with and to the extent permitted by this document.

Do not disassemble the instrument or its parts, unless otherwise clearly permitted by this document.

Do not replace any part or assembly, unless otherwise clearly permitted by this document.

YOKOGAWA ELECTRIC CORPORATION (YOKOGAWA) does not in principle supply parts other than those listed in the Customer Maintenance Parts List in the Service Manual (mainly modules and assemblies). Therefore if an assembly fails, the user should replace the whole assembly and NOT components within the assembly (see NOTE). If the user attempts to repair the instrument by replacing individual components within the assembly, YOKOGAWA assumes no responsibility for any consequences, such as defects in instrument accuracy, functionality, or reliability, or user safety hazards.

YOKOGAWA does not offer more detailed maintenance and service information than that contained in the Service Manual and the Engineering Drawings (ED). Engineering Drawings mainly cover the electronic circuit diagrams, electronic parts lists, and component layout diagrams for the printed circuit boards.

All reasonable efforts have been made to assure the accuracy of the content of this document. However, there may still be errors such as clerical errors or omissions. YOKOGAWA assumes no responsibility of any kind concerning the accuracy or contents of this document, nor for the consequences of any errors.

All rights reserved. No part of this document may be reproduced in any form or by any means without the express written prior permission of YOKOGAWA. The contents of this manual are subject to change without notice.

- NOTE** YOKOGAWA instruments have been designed in a way that the replacement of electronic parts can be done on an assembly (module) basis by the user. YOKOGAWA instruments have also been designed in a way that trouble-shooting and replacement of any faulty assembly can be done easily and quickly. Therefore, YOKOGAWA strongly recommends replacing the entire assembly over replacing parts or components within the assembly. The reasons are as follows:
- The instruments use high-performance micro-processors, large scale CMOS gate arrays and surface-mount components to provide state-of-art performance and functions.
 - Repair of components can only be performed by specially trained and qualified maintenance personnel with special tools. In addition, repair of components requires various special parts and components, including costly ones. It also requires facilities where highly-accurate and expensive maintenance equipment and special tools are provided.
 - When taking the service life and cost of the instruments into consideration, the replacement of assemblies offers the user the possibility to use YOKOGAWA instruments more effectively and economically with a minimum in down-time.

INTRODUCTION

This manual contains information for servicing the YOKOGAWA μ R1800 pen & dot printing recorder.

This manual is the first edition, September 1993.

WARNING

This document is to be used by properly trained personnel only. To avoid personal injury, do not perform any servicing unless you are qualified to do so. Refer to the Safety Precautions prior to performing any service. Even in case of servicing according to this document and carried out by qualified personnel, YOKOGAWA assumes no responsibility for any result occurring from this servicing.

WARRANTY

YOKOGAWA ELECTRIC CORPORATION (YOKOGAWA) warrants this product, during the period of warranty according to the contract, against defects in material and workmanship. YOKOGAWA will repair or replace a product which proves defective in material or workmanship, provided that the product is returned to YOKOGAWA or a YOKOGAWA representative authorized to perform in-warranty repairs on the product. YOKOGAWA reserves the right to determine whether product failures are due to defective material or workmanship, or other causes not covered by this warranty.

However, the warranty shall not apply to defects resulting from improper or inadequate maintenance by the customer, unauthorized modification or misuse, operation outside the environmental specifications for the product, or improper site preparation or maintenance. The warranty doesn't cover expendable items such as electric bulbs, charts, ink, batteries, etc. which have become depleted or lost their usefulness. There are no warranties which extend beyond the description herein whether expressed or implied.

For assistance, contact your nearest YOKOGAWA Sales and Service Office. Addresses may be found on the back cover of this manual.

CERTIFICATION

YOKOGAWA certifies that this instrument underwent stringent inspections and performance tests before it was shipped from the factory, and was found to have met the specifications described in this document.

YOKOGAWA also certifies that the calibration standards are traceable to the Electrotechnical Laboratory of the Ministry of International Trade and Industry (which maintains Japan's primary electrical standards) to the extent allowed by the organization's calibration facilities. Calibration standards not traceable to that organization are traceable to the calibration facilities of other members of the International Electrotechnical Commission (IEC), or of members of the International Organization for Standardization (ISO).

SAFETY PRECAUTIONS

The following general safety precautions must be observed during all phases of operation, service, and repair of this instrument. Failure to comply with these precautions or with specific WARNINGS given elsewhere in this manual violates safety standards of design, manufacture, and intended use of the instrument. YOKOGAWA ELECTRIC CORPORATION assumes no liability for the customer's failure to comply with these requirements.

General definitions of safety symbols used on equipment and in manuals



Explanation: To avoid injury, death of personnel or damage to the instrument, the operator must refer to an explanation in the instruction manual.



Protective grounding terminal: To protect against electrical shock in case of a fault. This symbol indicates that the terminal must be connected to ground before operation of equipment.

WARNING

A **WARNING** sign denotes a hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, could result in injury or death of personnel.

CAUTION

A **CAUTION** sign denotes a hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part of the product.

WARNING

Power Supply

Ensure the source voltage matches the voltage of the power supply before turning ON the power.

Protective Grounding

Make sure to connect the protective grounding to prevent an electric shock before turning ON the power.

Necessity of Protective Grounding

Never cut off the internal or external protective grounding wire or disconnect the wiring of protective grounding terminal. Doing so poses a potential shock hazard.

Fuse

To prevent a fire, make sure to use the fuse with specified standard (current, voltage, type). Before replacing the fuse, turn off the power and disconnect the power source. Do not use a different fuse or short-circuit the fuse holder.

Do not Operate in an Explosive Atmosphere

Do not operate the instrument in the presence of flammable liquids or vapors. Operation of any electrical instrument in such an environment constitutes a safety hazard.

External Connection

To ground securely, connect the protective grounding before connecting to measurement or control unit.

CAUTION

Electrostatic Discharge

This instrument utilizes a number of semiconductor components. When handling printed circuit boards, etc., consisting of semiconductor components or components themselves, electrostatic discharge (ESD) can damage or destroy these components. Therefore, care must be taken to protect such components from ESD interference. The following describes the measures to be taken against ESD interference.

- Store or carry PC boards only in a conductive or antistatic bag, to reduce the possibility of damage caused by ESD.
- When removing/installing PC boards from/to the instrument, use a grounding wrist strap with a 1M Ω grounding cable. The strap should be connected to a grounding terminal, or to an unpainted and grounded area of the product.
- When working on a PC board on a workbench, place a conductive sheet grounded with a 1M Ω resistor on the workbench, and put on a grounding wrist strap in the same way as described above. Furthermore, keep electrostatic materials such as plastics away from the workbench.
- Do not directly touch components, foil patterns, connectors or pins, etc. on the PC board with bare hands, even when using a wrist strap and conductive sheet.
- Always handle PC board assemblies by the edges.
- Be sure that all instruments such as test equipment for maintenance, troubleshooting, or repair and the target instrument are properly grounded to prevent a build-up of static charge.
- When handling electronic components, take the same precautions as described above.

CONTENTS

IMPORTANT NOTICE TO THE USER	2
INTRODUCTION	3
WARRANTY	3
CERTIFICATION	3
SAFETY PRECAUTIONS	4
Chapter 1 μR1800 PEN MODEL	
1.1 Overall Wiring	1 - 1
1.2 CPU Board Assembly	1 - 2
1.2.1 Schematic Diagram (B9905 XB)	1 - 2
1.2.2 Schematic Diagram (B9905 YA/ B9905 YB)	1 - 5
1.2.3 Location of Components (Component Side)	1 - 8
1.2.4 Location of Components (Soldering Side)	1 - 9
1.2.5 List of Electrical Parts (B9905 YA)	1 - 10
1.2.6 List of Electrical Parts (B9905 YB)	1 - 13
1.2.7 List of Electrical Parts (B9905 XB)	1 - 16
1.3 Mother Board Assembly	1 - 19
1.3.1 Schematic Diagram (B9905 YS/ B9905 YR)	1 - 19
1.3.2 Location of Components	1 - 20
1.3.3 List of Electrical Parts (B9905 YS)	1 - 21
1.3.4 List of Electrical Parts (B9905 YR)	1 - 21
1.4 Key Board Assembly	1 - 22
1.4.1 Schematic Diagram (B9905 YD)	1 - 22
1.4.2 Location of Components	1 - 23
1.4.3 List of Electrical Parts (B9905 YD)	1 - 24
1.5 Connection Board Assembly	1 - 25
1.5.1 Schematic Diagram (B9905 YF)	1 - 25
1.5.2 Schematic Diagram (B9905 XF)	1 - 26
1.5.3 Location of Components	1 - 27
1.5.4 List of Electrical Parts (B9905 YF)	1 - 28
1.5.5 List of Electrical Parts (B9905 XF)	1 - 29
1.6 Chart Sensor Board Assembly	1 - 30
1.6.1 Schematic Diagram (B9905 YW)	1 - 30
1.6.2 List of Electrical Parts (B9905 YW)	1 - 30
1.7 Sub Option Mother Board Assembly	1 - 31
1.7.1 Schematic Diagram (B9905 YY/ B9905 XY)	1 - 31
1.7.2 Location of Components	1 - 31
1.7.3 List of Electrical Parts (B9905 YY)	1 - 32
1.7.4 List of Electrical Parts (B9905 XY)	1 - 32
1.8 X-Motor Board Assembly	1 - 33
1.8.1 Schematic Diagram (B9905 YH)	1 - 33
1.8.2 Location of Components	1 - 33
1.8.3 List of Electrical Parts (B9905 YH)	1 - 33

Chapter 2 μ R1800 DOT PRINTING MODEL

2.1 Overall Wiring	2 - 1
2.2 CPU Board Assembly	2 - 3
2.2.1 Schematic Diagram (B9906 RB)	2 - 3
2.2.2 Schematic Diagram (B9906 SA/ B9906 SB)	2 - 6
2.2.3 Location of Components (Component Side)	2 - 9
2.2.4 Location of Components (Soldering Side)	2 - 10
2.2.5 List of Electrical Parts (B9906 SA)	2 - 11
2.2.6 List of Electrical Parts (B9906 SB)	2 - 14
2.2.7 List of Electrical Parts (B9906 RB)	2 - 17
2.3 Mother Board Assembly	2 - 20
2.3.1 Schematic Diagram (B9906 SN/ B9906 RN)	2 - 20
2.3.2 Schematic Diagram (B9906 SQ/ RQ/ SR/ RR/ SS/ RS)	2 - 21
2.3.3 Location of Components (B9906 RN)	2 - 23
2.3.4 Location of Components (B9906 RQ)	2 - 24
2.3.5 List of Electrical Parts (B9906 SN/ B9906 RN)	2 - 25
2.3.6 List of Electrical Parts (B9906 SQ/ B9906 RQ)	2 - 26
2.3.7 List of Electrical Parts (B9906 SR/ B9906 RR)	2 - 27
2.3.8 List of Electrical Parts (B9906 SS/ B9906 RS)	2 - 28
2.4 Driver Board Assembly	2 - 29
2.4.1 Schematic Diagram (B9906 RF)	2 - 29
2.4.2 Schematic Diagram (B9906 SF)	2 - 31
2.4.3 Location of Components (Component Side)	2 - 33
2.4.4 Location of Components (Soldering Side)	2 - 34
2.4.5 List of Electrical Parts (B9906 SF)	2 - 35
2.4.6 List of Electrical Parts (B9906 RF)	2 - 36
2.5 Sensor Board Assembly	2 - 38
2.5.1 Schematic Diagram (B9906 FG)	2 - 38
2.5.2 List of Electrical Parts (B9906 FG)	2 - 38
2.6 H.P. Sensor Board Assembly	2 - 39
2.6.1 Schematic Diagram (B9906 SW)	2 - 39
2.6.2 Location of Components	2 - 39
2.6.3 List of Electrical Parts (B9906 SW)	2 - 39
2.7 Shift Sensor Board Assembly	2 - 40
2.7.1 Schematic Diagram (B9906 RX)	2 - 40
2.7.2 Location of Components	2 - 40
2.7.3 List of Electrical Parts (B9906 RX)	2 - 40
2.8 Main Option Board Assembly	2 - 41
2.8.1 Schematic Diagram (B9906 SY/ B9906 SZ/ B9906 RY/ B9906 RZ)	2 - 41
2.8.2 Location of Components	2 - 42
2.8.3 List of Electrical Parts (B9906 SY/ B9906 SZ/ B9906 RY/ B9906 RZ)	2 - 43

Appendix List of Manufacturers of Electronic Parts

NOTE

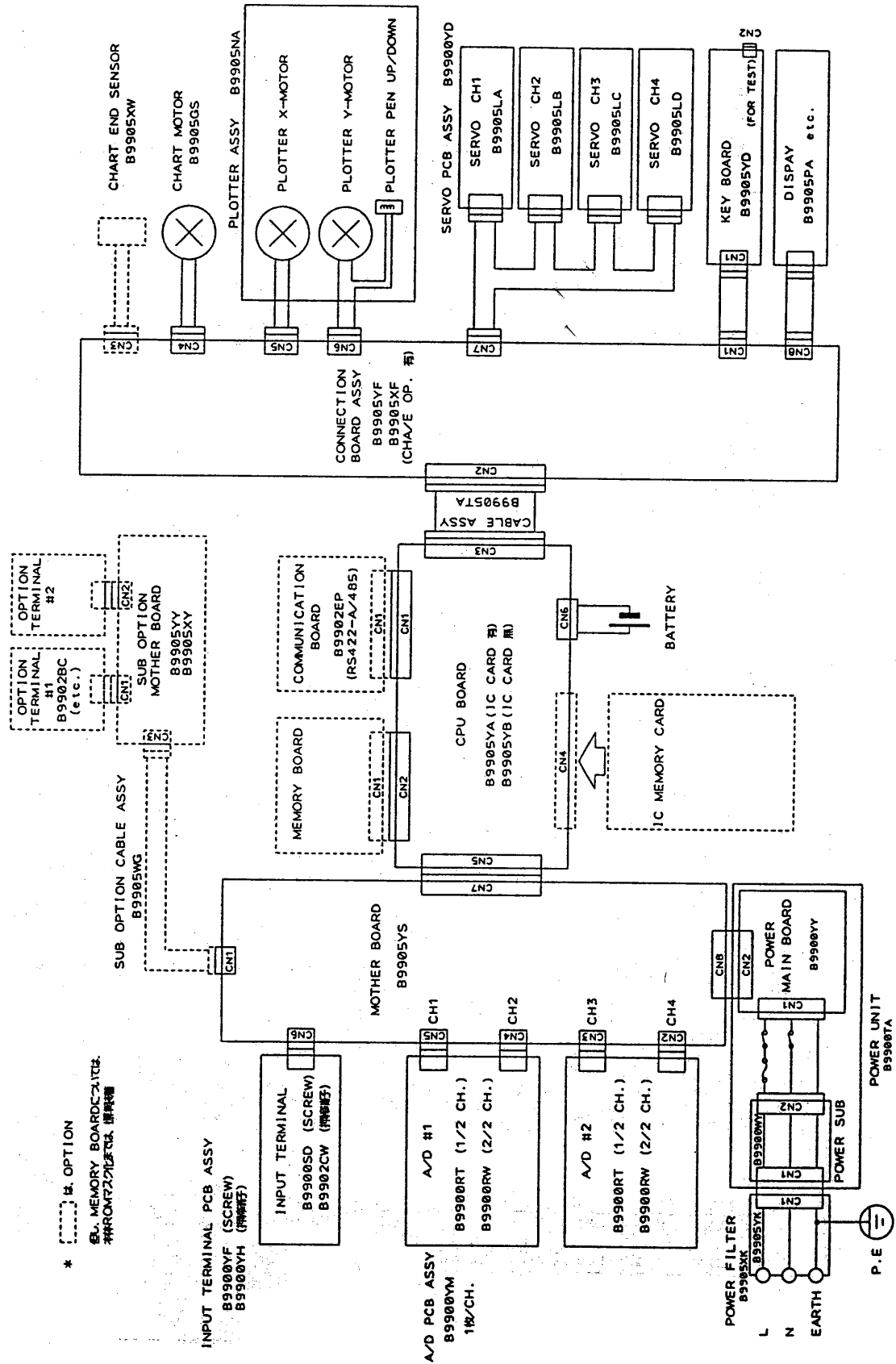
The electrical parts which have "YOKOGAWA" in the manufacturer-name column of the List of Electrical Parts, are YOKOGAWA original parts; including YOKOGAWA manufactured parts, parts that YOKOGAWA has specially tested and selected from among standard production parts produced by component makers, or specially ordered parts such as gate arrays produced for YOKOGAWA.

YOKOGAWA will continue to supply these "YOKOGAWA original parts" for at least five years after the product has been discontinued.

To order such YOKOGAWA original parts, quote the MFR Part No., indicate the quantity desired, and address the order to your nearest YOKOGAWA Sales/Service Office or Representative.

Chapter 1 μ R1800 PEN MODEL

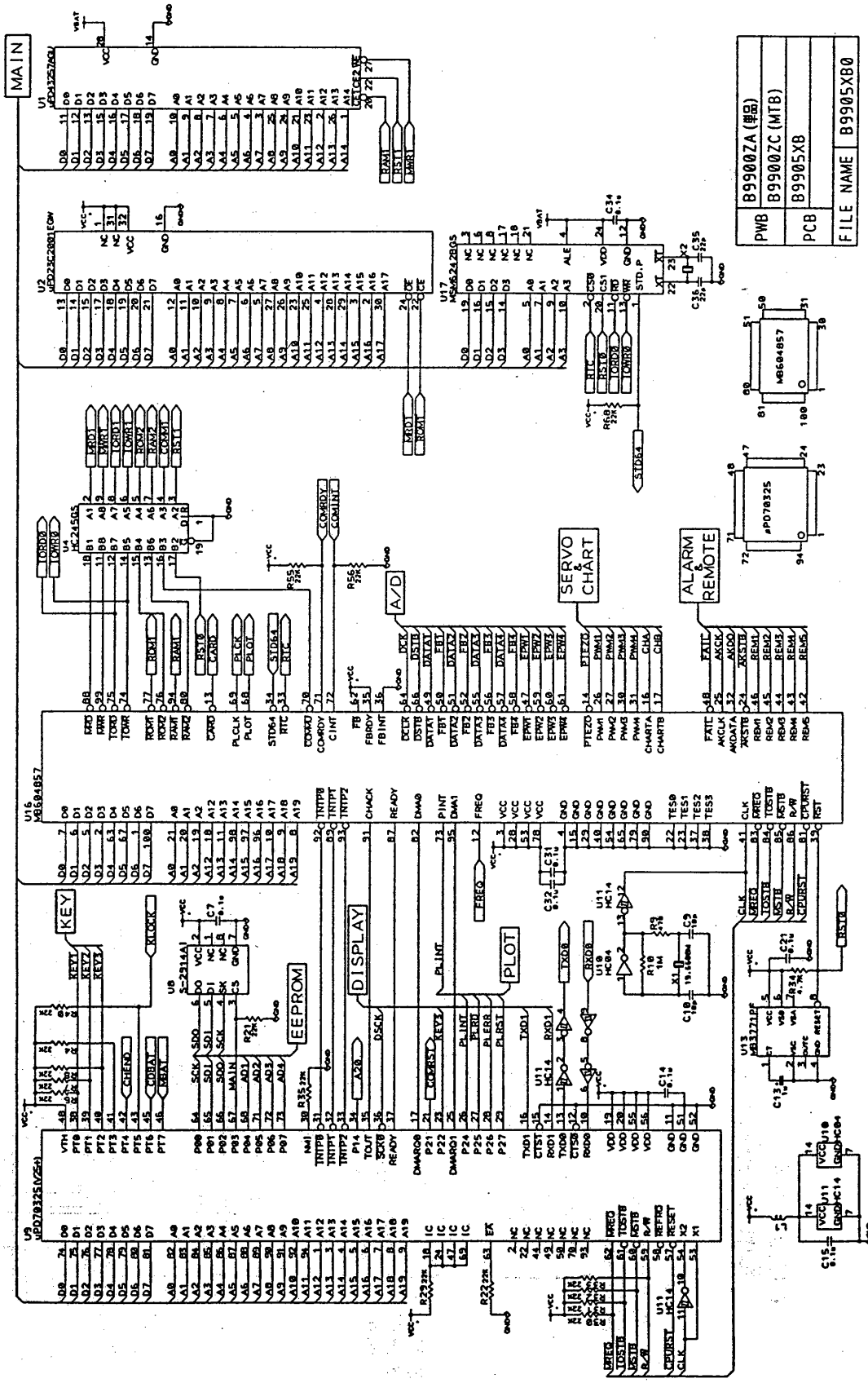
1.1 Overall Wiring

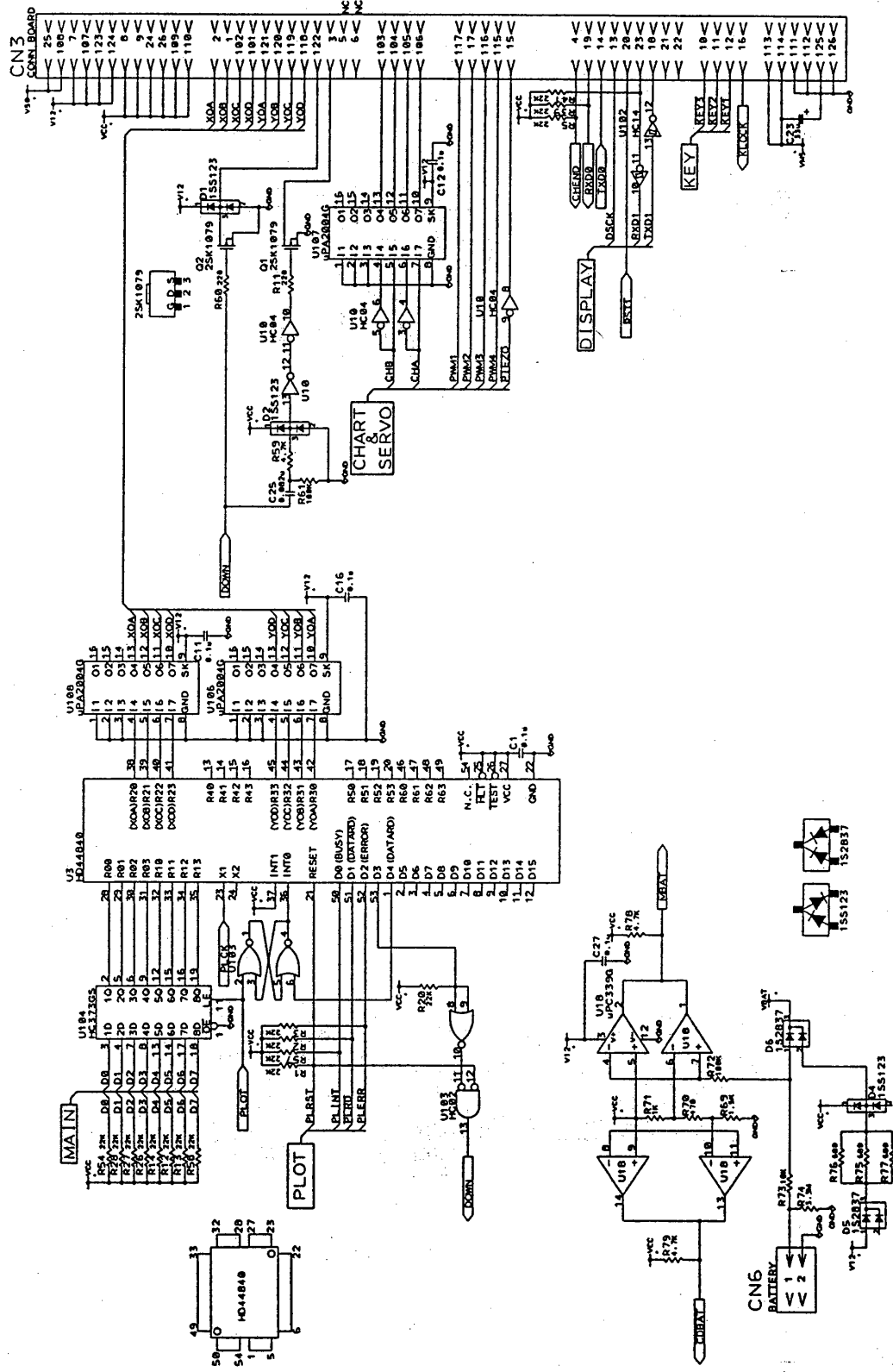


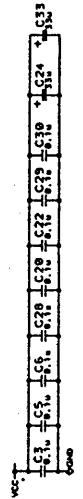
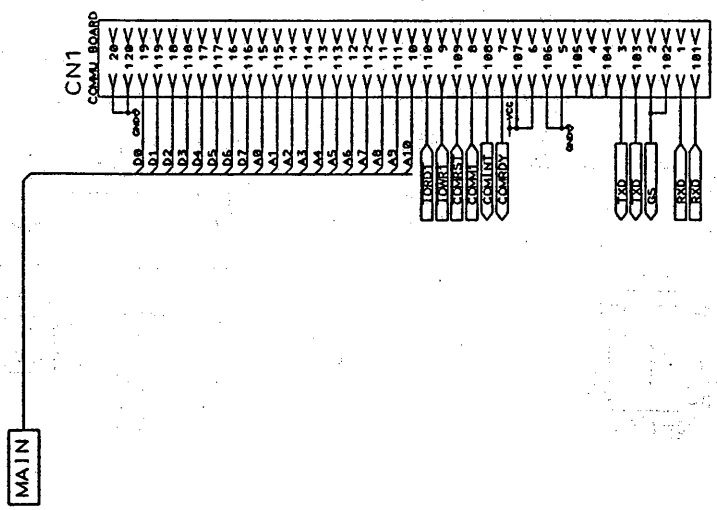
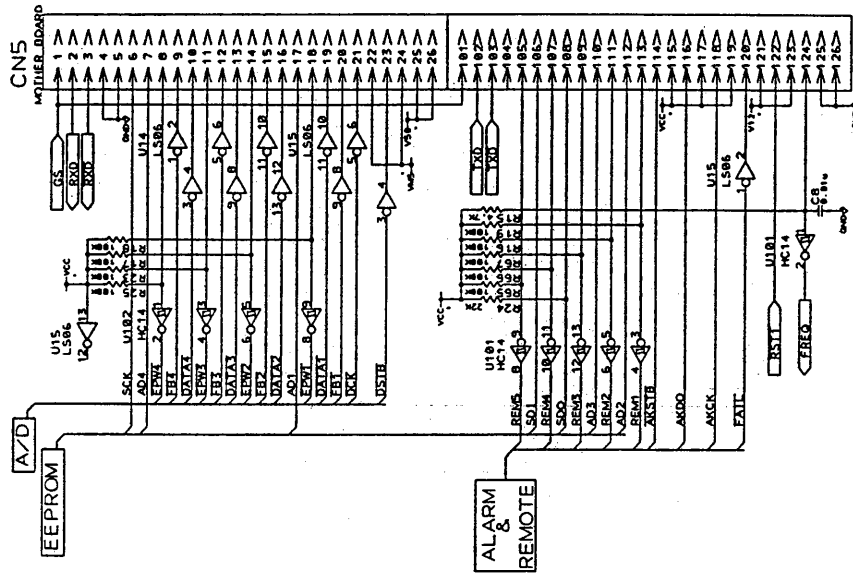
1 μ R1800 PEN MODEL

1.2 CPU Board Assembly

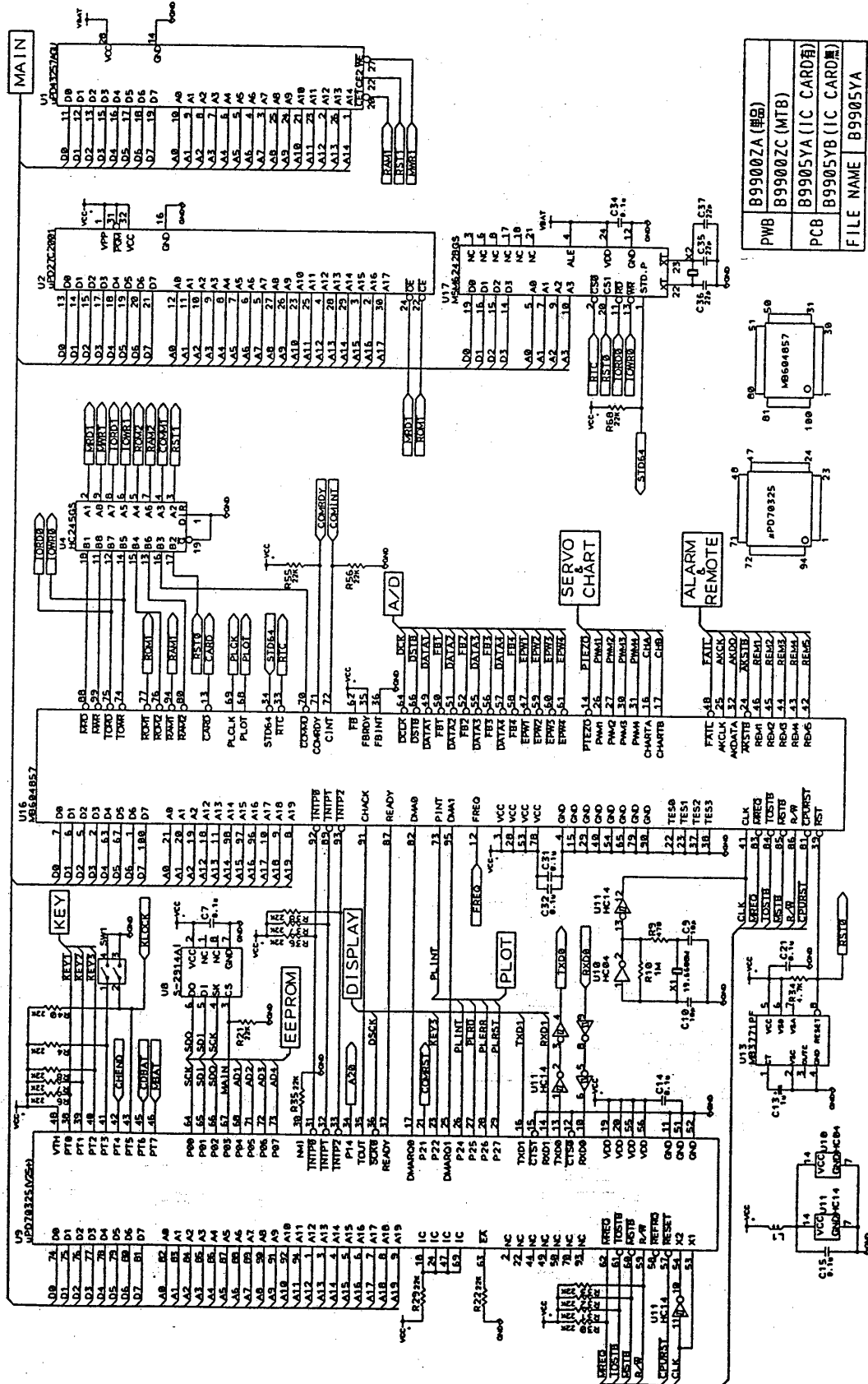
1.2.1 Schematic Diagram (B9905 XB)

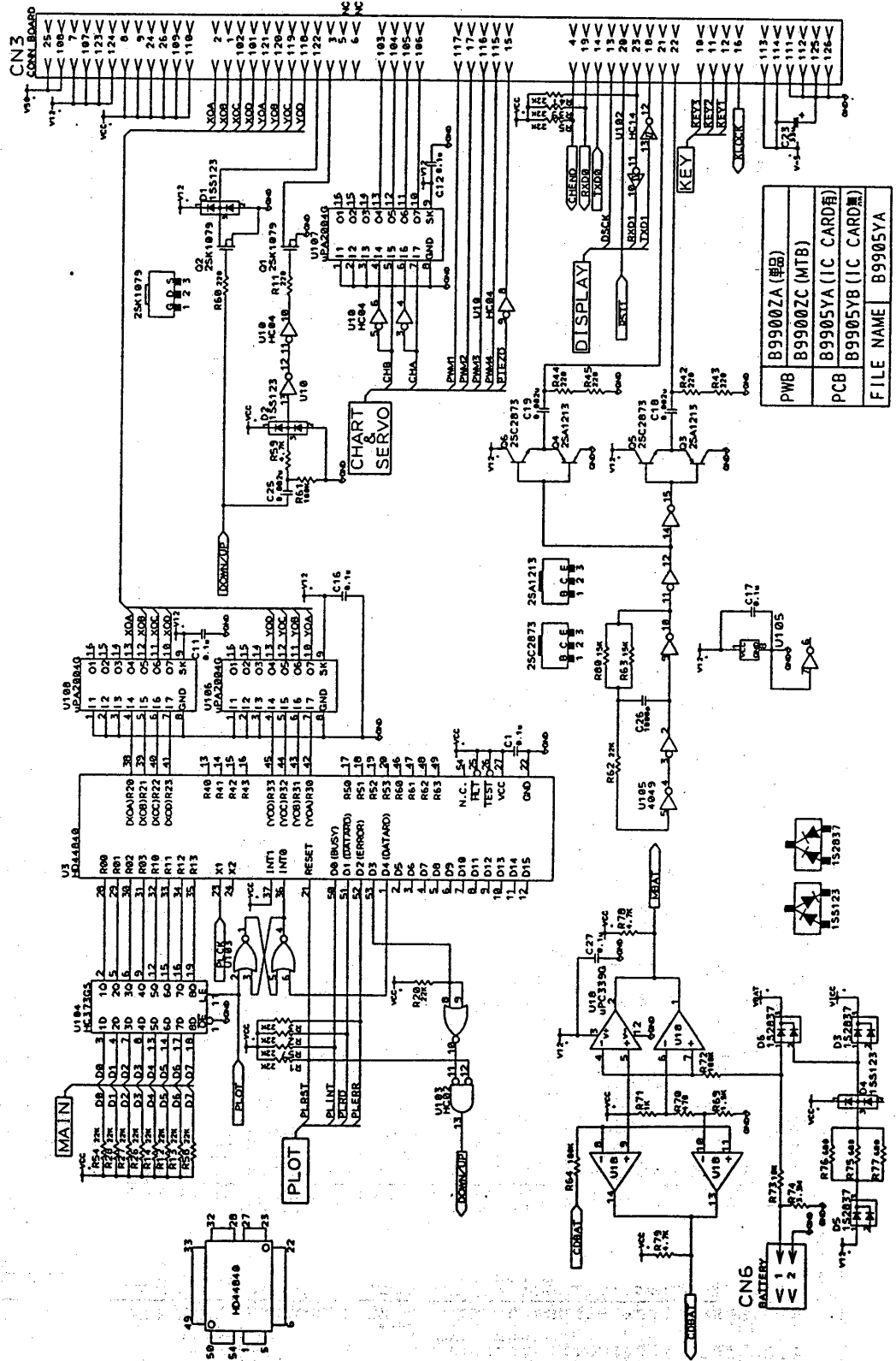




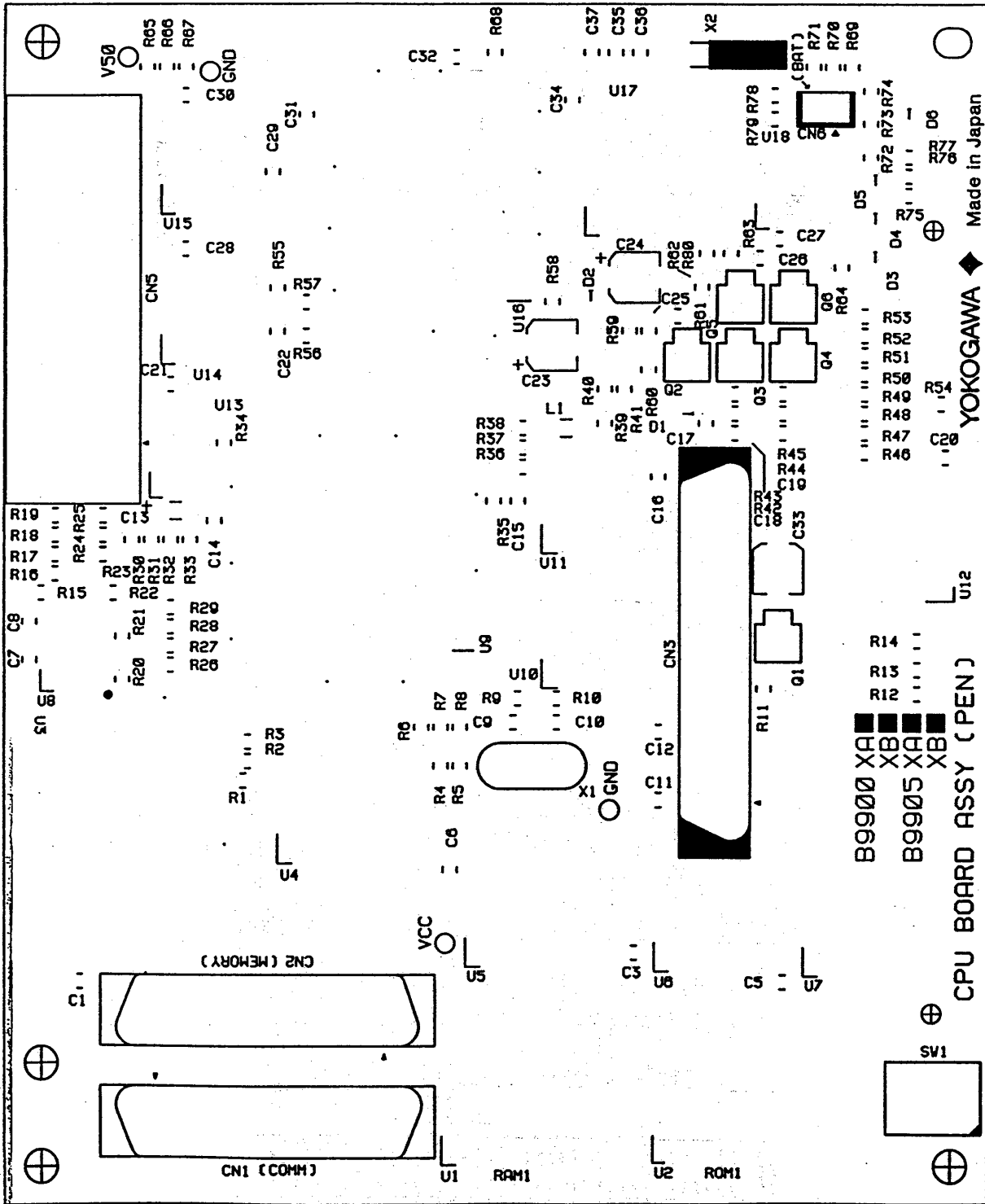


1.2.2 Schematic Diagram (B9905 YA/ B9905 YB)





1.2.3 Location of Components (Component Side)



1.2.5 List of Electrical Parts (B9905 YA)

CPU board assembly: B9905YA

(July 1993)

Item	Q'ty	Part Name	Description			MFR Part No.	MFR Name
C1	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C3	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C5	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C6	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C7	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C8	1	CERAMIC CAP	0.01 μ F	\pm 10%	50V	GRM40R103K50*	MURATA
C9	1	CERAMIC CAP	10pF	\pm 1P%	50V	C2012CH1H100F*	TDK
C10	1	CERAMIC CAP	10pF	\pm 1P%	50V	C2012CH1H100F*	TDK
C11	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C12	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C13	1	TANTALUM CAP	1.0 μ F	\pm 20%	16V	*SVA1C105M*	NEC
C14	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C15	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C16	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C17	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C18	1	CERAMIC CAP	82000pF	\pm 10%	25V	GRM40R823K25*	MURATA
C19	1	CERAMIC CAP	82000pF	\pm 10%	25V	GRM40R823K25*	MURATA
C20	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C21	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C22	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C23	1	ALUMINUM CAP	33 μ F	\pm 20%	10V	MVK10VC33(M)E60	NITSUCHEMI
C24	1	ALUMINUM CAP	33 μ F	\pm 20%	10V	MVK10VC33(M)E60	NITSUCHEMI
C25	1	CERAMIC CAP	82000pF	\pm 10%	25V	GRM40R823K25*	MURATA
C26	1	CERAMIC CAP	1000pF	\pm 5%	50V	GRM40CH102J50*	MURATA
C27	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C28	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C29	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C30	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C31	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C32	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C33	1	ALUMINUM CAP	33 μ F	\pm 20%	10V	MVK10VC33(M)E60	NITSUCHEMI
C34	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C35	1	CERAMIC CAP	22pF	\pm 5%	50V	C2012CH1H220J*	TDK
C36	1	CERAMIC CAP	22pF	\pm 5%	50V	C2012CH1H220J*	TDK
CN1	1	POST TYPE CONN				FX2C-40S-1. 27DSA	HIROSE
CN2	1	POST TYPE CONN				FX2C-40S-1. 27DSA	HIROSE
CN3	1	POST TYPE CONN				FX2C2-52P-1. 27DSA	HIROSE
CN4	1	POST TYPE CONN				D1CM4-38S-RPC-02-20E	ITT CANNON
CN5	1	POST TYPE CONN				FX2-52P-1. 27DS	HIROSE
CN6	1	POST TYPE CONN				53253-0210	MOLEX
D1	1	DIODE				1S5123	NEC
D2	1	DIODE				1S5123	NEC
D3	1	DIODE				1S2837	NEC
D4	1	DIODE				1S5123	NEC
D5	1	DIODE				1S2837	NEC
D6	1	DIODE				1S2837	NEC
L1	1	COIL				BLM31A02*	MURATA
PWB	1	PWB				B9900ZA	YOKOGAWA
Q1	1	FET				2SK1079	TOSHIBA
Q2	1	FET				2SK1079	TOSHIBA
Q3	1	TRANSISTOR				2SA1213-0, Y	TOSHIBA
Q4	1	TRANSISTOR				2SA1213-0, Y	TOSHIBA
Q5	1	TRANSISTOR				2SC2873-0, Y	TOSHIBA
Q6	1	TRANSISTOR				2SC2873-0, Y	TOSHIBA
R1	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R2	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R3	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R4	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R5	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA

CPU board assembly:B9905YA

(July 1993)

1 J4R1800 PEN MODEL

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
R6	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R7	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R8	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R9	1	METAL OXIDE RES	470 Ω ±1% 0.1W	ERJ6ENF4700*	MATSUSHITA
R10	1	METAL OXIDE RES	1M Ω ±1% 0.1W	ERJ6ENF1004*	MATSUSHITA
R11	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R12	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R13	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R14	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R15	1	METAL OXIDE RES	4.7k Ω ±1% 0.1W	ERJ6ENF4701*	MATSUSHITA
R16	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R17	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R18	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R19	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R20	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R21	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R22	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R23	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R24	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R25	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R26	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R27	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R28	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R29	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R30	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R31	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R32	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R33	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R34	1	METAL OXIDE RES	4.7k Ω ±1% 0.1W	ERJ6ENF4701*	MATSUSHITA
R35	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R36	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R37	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R38	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R39	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R40	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R41	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R42	1	METAL OXIDE RES	220 Ω ±1% 0.1W	ERJ6ENF2200*	MATSUSHITA
R43	1	METAL OXIDE RES	220 Ω ±1% 0.1W	ERJ6ENF2200*	MATSUSHITA
R44	1	METAL OXIDE RES	220 Ω ±1% 0.1W	ERJ6ENF2200*	MATSUSHITA
R45	1	METAL OXIDE RES	220 Ω ±1% 0.1W	ERJ6ENF2200*	MATSUSHITA
R46	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R47	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R48	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R49	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R50	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R51	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R52	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R53	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R54	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R55	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R56	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R57	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R58	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R59	1	METAL OXIDE RES	4.7k Ω ±1% 0.1W	ERJ6ENF4701*	MATSUSHITA
R60	1	METAL OXIDE RES	220 Ω ±1% 0.1W	ERJ6ENF2200*	MATSUSHITA
R61	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R62	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R63	1	METAL OXIDE RES	15k Ω ±1% 0.1W	ERJ6ENF1502*	MATSUSHITA
R64	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA

CPU board assembly:B9905YA

(July 1993)

Item	Q'ty	Part Name	Description			MFR Part No.	MFR Name
R65	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R66	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R67	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R68	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R69	1	METAL OXIDE RES	1.5k Ω	$\pm 1\%$	0.1W	ERJ6ENF1501*	MATSUSHITA
R70	1	METAL OXIDE RES	470 Ω	$\pm 1\%$	0.1W	ERJ6ENF4700*	MATSUSHITA
R71	1	METAL OXIDE RES	1k Ω	$\pm 1\%$	0.1W	ERJ6ENF1001*	MATSUSHITA
R72	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R73	1	METAL OXIDE RES	10k Ω	$\pm 1\%$	0.1W	ERJ6ENF1002*	MATSUSHITA
R74	1	METAL OXIDE RES	3.3M Ω	$\pm 1\%$	W	RK73H2A*3.3M F	KOA
R75	1	METAL OXIDE RES	680 Ω	$\pm 1\%$	0.1W	ERJ6ENF6800*	MATSUSHITA
R76	1	METAL OXIDE RES	680 Ω	$\pm 1\%$	0.1W	ERJ6ENF6800*	MATSUSHITA
R77	1	METAL OXIDE RES	680 Ω	$\pm 1\%$	0.1W	ERJ6ENF6800*	MATSUSHITA
R78	1	METAL OXIDE RES	4.7k Ω	$\pm 1\%$	0.1W	ERJ6ENF4701*	MATSUSHITA
R79	1	METAL OXIDE RES	4.7k Ω	$\pm 1\%$	0.1W	ERJ6ENF4701*	MATSUSHITA
R80	1	METAL OXIDE RES	15k Ω	$\pm 1\%$	0.1W	ERJ6ENF1502*	MATSUSHITA
U1	1	MEMORY				UPD43257AGU-10L	NEC
U3	1	MPU & PRPHL				HD44860B51	HITACHI
U4	1	CMOS LOGIC				TC74HC245AF	TOSHIBA
U5	1	CMOS LOGIC				TC74HC245AF	TOSHIBA
U6	1	CMOS LOGIC				TC74HC245AF	TOSHIBA
U7	1	CMOS LOGIC				TC74HC245AF	TOSHIBA
U8	1	MEMORY				S-2914A1F10	SEIKO
U9	1	MPU & PRPHL				UPD70325GJ-10-5BG	NEC
U10	1	CMOS LOGIC				TC74HC04AF	TOSHIBA
U11	1	CMOS LOGIC				TC74HC14AF	TOSHIBA
U12	1	CMOS LOGIC				TC74HC245AF	TOSHIBA
U13	1	IC				MB3771PF	FUJITSU
U14	1	TTL				HD74LS06FP	HITACHI
U15	1	TTL				HD74LS06FP	HITACHI
U16	1	ASIC				MB604857	FUJITSU
U17	1	MPU & PRPHL				MSM6242BGS-VK	OKI
U18	1	COMPARATOR IC				UPC339G	NEC
U101	1	CMOS LOGIC				TC74HC14AF	TOSHIBA
U102	1	CMOS LOGIC				TC74HC14AF	TOSHIBA
U103	1	CMOS LOGIC				TC74HC02AF	TOSHIBA
U104	1	CMOS LOGIC				TC74HC373AF	TOSHIBA
U105	1	CMOS LOGIC				UPD4049UBG	NEC
U106	1	SC MODULE				UPA2004GR	NEC
U107	1	SC MODULE				UPA2004GR	NEC
U108	1	SC MODULE				UPA2004GR	NEC
X1	1	CRYSTAL UNIT				AT-51 19.6608MHZ	NIHONDENPA
X2	1	CRYSTAL UNIT				KF-38G	KYOCERA

1.2.6 List of Electrical Parts (B9905 YB)

CPU board assembly: B9905YB

(July 1993)

1 UR1800 PEN MODEL

Item	Q'ty	Part Name	Description			MFR Part No.	MFR Name
C1	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C3	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C5	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C6	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C7	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C8	1	CERAMIC CAP	0.01 μF	±10%	50V	GRM40R103K50*	MURATA
C9	1	CERAMIC CAP	10pF	±1F%	50V	C2012CH1H100F*	TDK
C10	1	CERAMIC CAP	10pF	±1F%	50V	C2012CH1H100F*	TDK
C11	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C12	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C13	1	TANTALUM CAP	1.0 μF	±20%	16V	*SVA1C105M*	NEC
C14	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C15	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C16	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C17	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C18	1	CERAMIC CAP	82000pF	±10%	25V	GRM40R823K25*	MURATA
C19	1	CERAMIC CAP	82000pF	±10%	25V	GRM40R823K25*	MURATA
C20	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C21	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C22	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C23	1	ALUMINUM CAP	33 μF	±20%	10V	MVK10VC33(M)E60	NITSUCHEMI
C24	1	ALUMINUM CAP	33 μF	±20%	10V	MVK10VC33(M)E60	NITSUCHEMI
C25	1	CERAMIC CAP	82000pF	±10%	25V	GRM40R823K25*	MURATA
C26	1	CERAMIC CAP	1000pF	±5%	50V	GRM40CH102J50*	MURATA
C27	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C28	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C29	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C30	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C31	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C32	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C33	1	ALUMINUM CAP	33 μF	±20%	10V	MVK10VC33(M)E60	NITSUCHEMI
C34	1	CER CAPACITOR	0.1 μF	-20~80%	50V	C2012Y5V1H104Z*	TDK
C35	1	CERAMIC CAP	22pF	±5%	50V	C2012CH1H220J*	TDK
C36	1	CERAMIC CAP	22pF	±5%	50V	C2012CH1H220J*	TDK
CN1	1	POST TYPE CONN				FX2C-40S-1.27DSA	HIROSE
CN2	1	POST TYPE CONN				FX2C-40S-1.27DSA	HIROSE
CN3	1	POST TYPE CONN				FX2C2-52P-1.27DSA	HIROSE
CN5	1	POST TYPE CONN				FX2-52P-1.27DS	HIROSE
CN6	1	POST TYPE CONN				53253-0210	MOLEX
D1	1	DIODE				1S5123	NEC
D2	1	DIODE				1S5123	NEC
D3	1	DIODE				1S2837	NEC
D4	1	DIODE				1S5123	NEC
D5	1	DIODE				1S2837	NEC
D6	1	DIODE				1S2837	NEC
L1	1	COIL				BLM31A02*	MURATA
PWB	1	PWB				B9900ZA	YOKOGAWA
Q1	1	FET				2SK1079	TOSHIBA
Q2	1	FET				2SK1079	TOSHIBA
Q3	1	TRANSISTOR				2SA1213-0,Y	TOSHIBA
Q4	1	TRANSISTOR				2SA1213-0,Y	TOSHIBA
Q5	1	TRANSISTOR				2SC2873-0,Y	TOSHIBA
Q6	1	TRANSISTOR				2SC2873-0,Y	TOSHIBA
R1	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R2	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R3	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R4	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R5	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R6	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA

CPU board assembly:B9905YB

(July 1993)

Item	Q'ty	Part Name	Description			MFR Part No.	MFR Name
R7	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R8	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R9	1	METAL OXIDE RES	470 Ω	$\pm 1\%$	0.1W	ERJ6ENF4700*	MATSUSHITA
R10	1	METAL OXIDE RES	1M Ω	$\pm 1\%$	0.1W	ERJ6ENF1004*	MATSUSHITA
R11	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R12	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R13	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R14	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R15	1	METAL OXIDE RES	4.7k Ω	$\pm 1\%$	0.1W	ERJ6ENF4701*	MATSUSHITA
R16	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R17	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R18	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R19	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R20	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R21	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R22	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R23	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R24	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R25	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R26	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R27	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R28	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R29	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R30	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R31	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R32	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R33	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R34	1	METAL OXIDE RES	4.7k Ω	$\pm 1\%$	0.1W	ERJ6ENF4701*	MATSUSHITA
R35	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R36	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R37	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R38	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R39	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R40	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R41	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R42	1	METAL OXIDE RES	220 Ω	$\pm 1\%$	0.1W	ERJ6ENF2200*	MATSUSHITA
R43	1	METAL OXIDE RES	220 Ω	$\pm 1\%$	0.1W	ERJ6ENF2200*	MATSUSHITA
R44	1	METAL OXIDE RES	220 Ω	$\pm 1\%$	0.1W	ERJ6ENF2200*	MATSUSHITA
R45	1	METAL OXIDE RES	220 Ω	$\pm 1\%$	0.1W	ERJ6ENF2200*	MATSUSHITA
R54	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R55	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R56	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R57	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R58	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R59	1	METAL OXIDE RES	4.7k Ω	$\pm 1\%$	0.1W	ERJ6ENF4701*	MATSUSHITA
R60	1	METAL OXIDE RES	220 Ω	$\pm 1\%$	0.1W	ERJ6ENF2200*	MATSUSHITA
R61	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R62	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R63	1	METAL OXIDE RES	15k Ω	$\pm 1\%$	0.1W	ERJ6ENF1502*	MATSUSHITA
R64	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R65	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R66	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R67	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R68	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R69	1	METAL OXIDE RES	1.5k Ω	$\pm 1\%$	0.1W	ERJ6ENF1501*	MATSUSHITA
R70	1	METAL OXIDE RES	470 Ω	$\pm 1\%$	0.1W	ERJ6ENF4700*	MATSUSHITA
R71	1	METAL OXIDE RES	1k Ω	$\pm 1\%$	0.1W	ERJ6ENF1001*	MATSUSHITA
R72	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R73	1	METAL OXIDE RES	10k Ω	$\pm 1\%$	0.1W	ERJ6ENF1002*	MATSUSHITA

CPU board assembly:B9905YB

(July 1993)

1 J1R1800 PEN MODEL

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
R74	1	METAL OXIDE RES	3.3M Ω \pm 1% W	RK73H2A*3.3M F	KOA
R75	1	METAL OXIDE RES	680 Ω \pm 1% 0.1W	ERJ6ENF6800*	MATSUSHITA
R76	1	METAL OXIDE RES	680 Ω \pm 1% 0.1W	ERJ6ENF6800*	MATSUSHITA
R77	1	METAL OXIDE RES	680 Ω \pm 1% 0.1W	ERJ6ENF6800*	MATSUSHITA
R78	1	METAL OXIDE RES	4.7k Ω \pm 1% 0.1W	ERJ6ENF4701*	MATSUSHITA
R79	1	METAL OXIDE RES	4.7k Ω \pm 1% 0.1W	ERJ6ENF4701*	MATSUSHITA
R80	1	METAL OXIDE RES	15k Ω \pm 1% 0.1W	ERJ6ENF1502*	MATSUSHITA
U1	1	MEMORY		UPD43257AGU-10L	NEC
U3	1	MPU & PRPHL		HD44860B51	HITACHI
U4	1	CMOS LOGIC		TC74HC245AF	TOSHIBA
U8	1	MEMORY		S-2914A1F10	SEIKO
U9	1	MPU & PRPHL		UPD70325GJ-10-5BG	NEC
U10	1	CMOS LOGIC		TC74HC04AF	TOSHIBA
U11	1	CMOS LOGIC		TC74HC14AF	TOSHIBA
U13	1	IC		MB3771PF	FUJITSU
U14	1	TTL		HD74LS06FP	HITACHI
U15	1	TTL		HD74LS06FP	HITACHI
U16	1	ASIC		MB604857	FUJITSU
U17	1	MPU & PRPHL		MSM6242BGS-VK	OKI
U18	1	COMPARATOR IC		UPC339G	NEC
U101	1	CMOS LOGIC		TC74HC14AF	TOSHIBA
U102	1	CMOS LOGIC		TC74HC14AF	TOSHIBA
U103	1	CMOS LOGIC		TC74HC02AF	TOSHIBA
U104	1	CMOS LOGIC		TC74HC373AF	TOSHIBA
U105	1	CMOS LOGIC		UPD4049UBG	NEC
U106	1	SC MODULE		UPA2004GR	NEC
U107	1	SC MODULE		UPA2004GR	NEC
U108	1	SC MODULE		UPA2004GR	NEC
X1	1	CRYSTAL UNIT		AT-51 19.6608MHZ	NIHONDENPA
X2	1	CRYSTAL UNIT		KF-38G	KYOCERA

1.2.7 List of Electrical Parts (B9905 XB)

CPU board assembly: B9905XB

(July 1993)

Item	Q'ty	Part Name	Description			MFR Part No.	MFR Name
C1	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C3	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C5	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C6	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C7	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C8	1	CERAMIC CAP	0.01 μ F	\pm 10%	50V	GRM40R103K50*	MURATA
C9	1	CERAMIC CAP	10pF	\pm 1P%	50V	C2012CH1H100F*	TDK
C10	1	CERAMIC CAP	10pF	\pm 1P%	50V	C2012CH1H100F*	TDK
C11	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C12	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C13	1	TANTALUM CAP	1.0 μ F	\pm 20%	16V	*SVA1C105M*	NEC
C14	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C15	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C16	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C20	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C21	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C22	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C23	1	ALUMINUM CAP	33 μ F	\pm 20%	10V	MVK10VC33 (M) E60	NITSUCHEMI
C24	1	ALUMINUM CAP	33 μ F	\pm 20%	10V	MVK10VC33 (M) E60	NITSUCHEMI
C25	1	CERAMIC CAP	82000pF	\pm 10%	25V	GRM40R823K25*	MURATA
C27	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C28	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C29	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C30	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C31	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C32	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C33	1	ALUMINUM CAP	33 μ F	\pm 20%	10V	MVK10VC33 (M) E60	NITSUCHEMI
C34	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C35	1	CERAMIC CAP	22pF	\pm 5%	50V	C2012CH1H220J*	TDK
C36	1	CERAMIC CAP	22pF	\pm 5%	50V	C2012CH1H220J*	TDK
CN1	1	POST TYPE CONN				FX2C-40S-1.27DSA	HIROSE
CN3	1	POST TYPE CONN				FX2C2-52P-1.27DSA	HIROSE
CN5	1	POST TYPE CONN				FX2-52P-1.27DS	HIROSE
CN6	1	POST TYPE CONN				53253-0210	MOLEX
D1	1	DIODE				1SS123	NEC
D2	1	DIODE				1SS123	NEC
D4	1	DIODE				1SS123	NEC
D5	1	DIODE				1S2837	NEC
D6	1	DIODE				1S2837	NEC
L1	1	COIL				BLM31A02*	MURATA
PWB	1	PWB				B9900ZA	YOKOGAWA
Q1	1	FET				2SK1079	TOSHIBA
Q2	1	FET				2SK1079	TOSHIBA
R1	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R2	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R3	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R4	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R5	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R6	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R7	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R8	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R9	1	METAL OXIDE RES	470 Ω	\pm 1%	0.1W	ERJ6ENF4700*	MATSUSHITA
R10	1	METAL OXIDE RES	1M Ω	\pm 1%	0.1W	ERJ6ENF1004*	MATSUSHITA
R11	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R12	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R13	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R14	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R15	1	METAL OXIDE RES	4.7k Ω	\pm 1%	0.1W	ERJ6ENF4701*	MATSUSHITA
R16	1	METAL OXIDE RES	100k Ω	\pm 1%	0.1W	ERJ6ENF1003*	MATSUSHITA

CPU board assembly:B9905XB

(July 1993)

1 J4R1800 PEN MODEL

Item	Q'ty	Part Name	Description			MFR Part No.	MFR Name
R17	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R18	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R19	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R20	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R21	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R22	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R23	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R24	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R25	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R26	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R27	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R28	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R29	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R30	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R31	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R32	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R33	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R34	1	METAL OXIDE RES	4.7k Ω	$\pm 1\%$	0.1W	ERJ6ENF4701*	MATSUSHITA
R35	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R39	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R40	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R41	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R54	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R55	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R56	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R57	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R58	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R59	1	METAL OXIDE RES	4.7k Ω	$\pm 1\%$	0.1W	ERJ6ENF4701*	MATSUSHITA
R60	1	METAL OXIDE RES	220 Ω	$\pm 1\%$	0.1W	ERJ6ENF2200*	MATSUSHITA
R61	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R65	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R66	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R67	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R68	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R69	1	METAL OXIDE RES	1.5k Ω	$\pm 1\%$	0.1W	ERJ6ENF1501*	MATSUSHITA
R70	1	METAL OXIDE RES	470 Ω	$\pm 1\%$	0.1W	ERJ6ENF4700*	MATSUSHITA
R71	1	METAL OXIDE RES	1k Ω	$\pm 1\%$	0.1W	ERJ6ENF1001*	MATSUSHITA
R72	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R73	1	METAL OXIDE RES	10k Ω	$\pm 1\%$	0.1W	ERJ6ENF1002*	MATSUSHITA
R74	1	METAL OXIDE RES	3.3M Ω	$\pm 1\%$	W	RK73H2A*3.3M F	KOA
R75	1	METAL OXIDE RES	680 Ω	$\pm 1\%$	0.1W	ERJ6ENF6800*	MATSUSHITA
R76	1	METAL OXIDE RES	680 Ω	$\pm 1\%$	0.1W	ERJ6ENF6800*	MATSUSHITA
R77	1	METAL OXIDE RES	680 Ω	$\pm 1\%$	0.1W	ERJ6ENF6800*	MATSUSHITA
R78	1	METAL OXIDE RES	4.7k Ω	$\pm 1\%$	0.1W	ERJ6ENF4701*	MATSUSHITA
R79	1	METAL OXIDE RES	4.7k Ω	$\pm 1\%$	0.1W	ERJ6ENF4701*	MATSUSHITA
U1	1	MEMORY				UPD43257AGU-10L	NEC
U2	1	ROM				B9905XC	YOKOGAWA
U3	1	MPU & PRPHL				HD44860B51	HITACHI
U4	1	CMOS LOGIC				TC74HC245AF	TOSHIBA
U8	1	MEMORY				S-2914A1F10	SEIKO
U9	1	MPU & PRPHL				UPD703256J-10-5BG	NEC
U10	1	CMOS LOGIC				TC74HC04AF	TOSHIBA
U11	1	CMOS LOGIC				TC74HC14AF	TOSHIBA
U13	1	IC				MB3771PF	FUJITSU
U14	1	TTL				HD74LS06FP	HITACHI
U15	1	TTL				HD74LS06FP	HITACHI
U16	1	ASIC				MB604857	FUJITSU
U17	1	MPU & PRPHL				MSM6242BGS-VK	OKI
U18	1	COMPARATOR IC				UPC339G	NEC

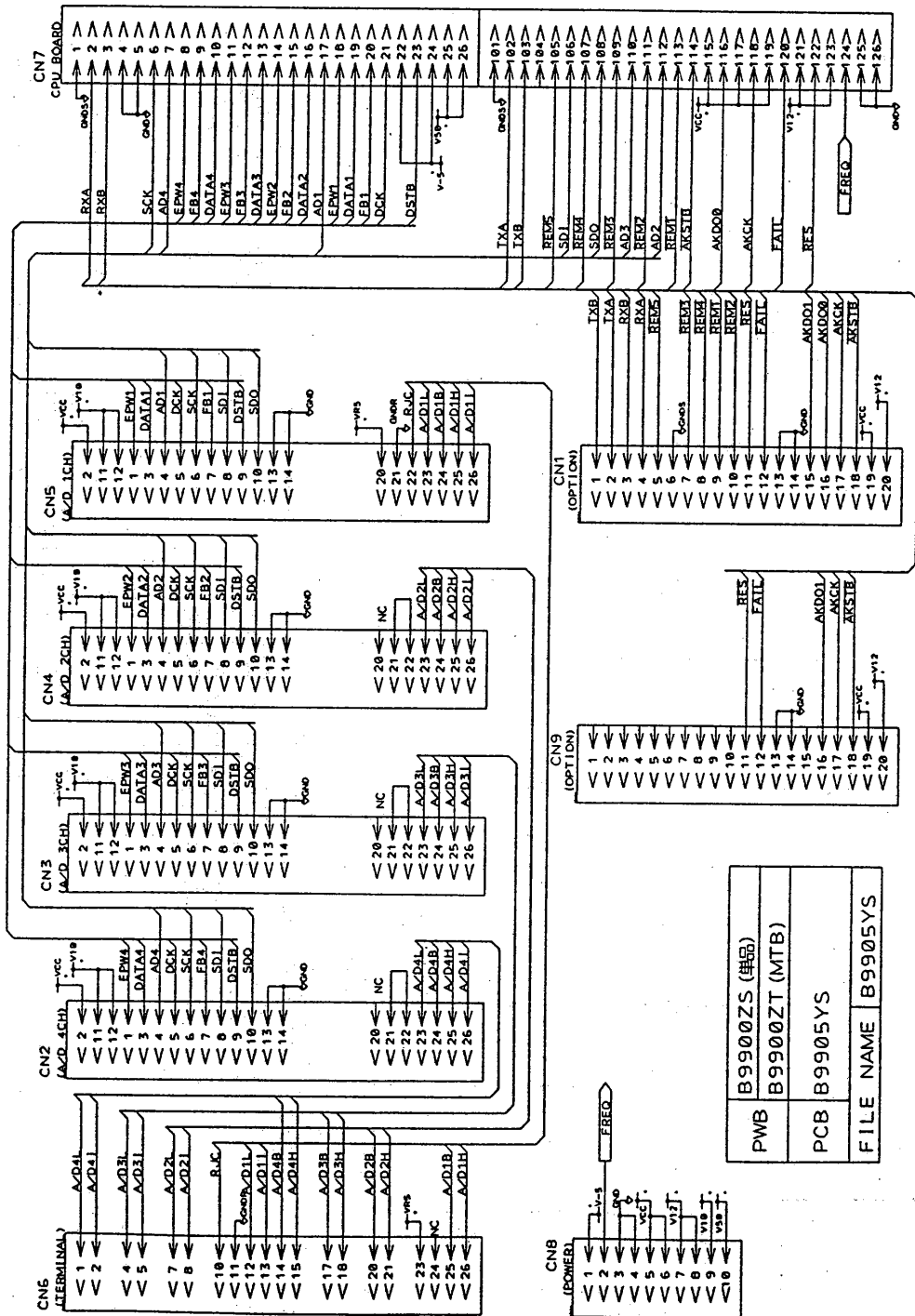
CPU board assembly:B9905XB

(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
U101	1	CMOS LOGIC		TC74HC14AF	TOSHIBA
U102	1	CMOS LOGIC		TC74HC14AF	TOSHIBA
U103	1	CMOS LOGIC		TC74HC02AF	TOSHIBA
U104	1	CMOS LOGIC		TC74HC373AF	TOSHIBA
U106	1	SC MODULE		UPA2004GR	NEC
U107	1	SC MODULE		UPA2004GR	NEC
U108	1	SC MODULE		UPA2004GR	NEC
X1	1	CRYSTAL UNIT		AT-51 19.6608MHZ	NIHONDENPA
X2	1	CRYSTAL UNIT		KF-38G	KYOCERA

1.3 Mother Board Assembly

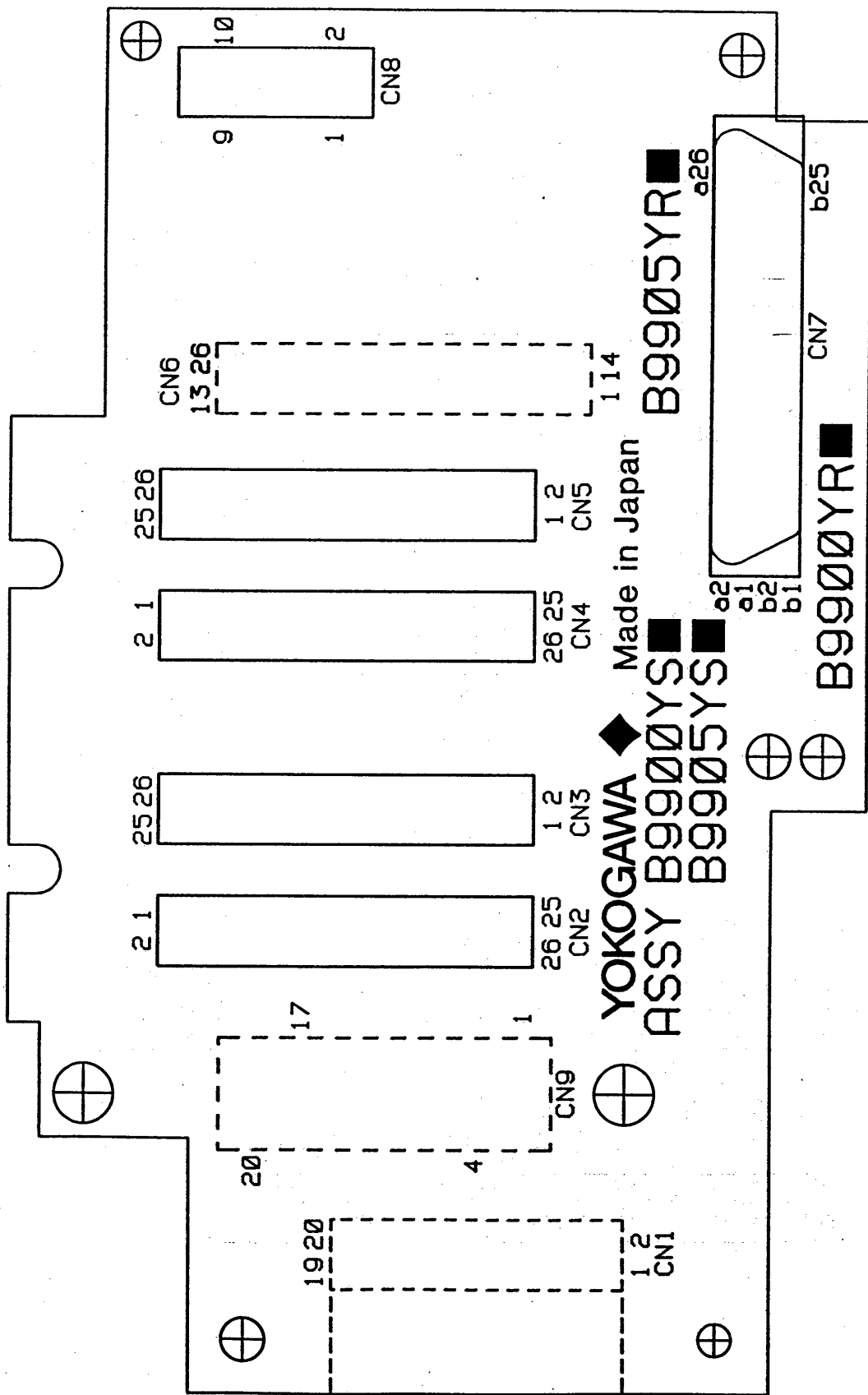
1.3.1 Schematic Diagram (B9905 YS/ B9905 YR)



PWB	B9900ZS (製品)
PCB	B9900ZT (MTB)
FILE NAME	B9905YS

1 LR1800 PEN MODEL

1.3.2 Location of Components



1.3.3 List of Electrical Parts (B9905 YS)

Mother board assembly: B9905YS

(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
1	1	FERRITE CORE		B9900WE	YOKOGAWA
CN1	1	POST TYPE CONN		A1-20PA-2.54DS	HIROSE
CN2	1	POST TYPE CONN		HIF3H-26PB-2.54DSA11	HIROSE
CN3	1	POST TYPE CONN		HIF3H-26PB-2.54DSA11	HIROSE
CN4	1	POST TYPE CONN		HIF3H-26PB-2.54DSA11	HIROSE
CN5	1	POST TYPE CONN		HIF3H-26PB-2.54DSA11	HIROSE
CN6	1	POST TYPE CONN		HIF3H-26P-2.54W(16)	HIROSE
CN7	1	POST TYPE CONN		FX2C-52S-1.27DSA	HIROSE
CN8	1	POST TYPE CONN		PS-10SG-D4TS1-5	JAE
PWB	1	PWB		B9900ZS	YOKOGAWA

1.3.4 List of Electrical Parts (B9905 YR)

Mother board assembly: B9905YR

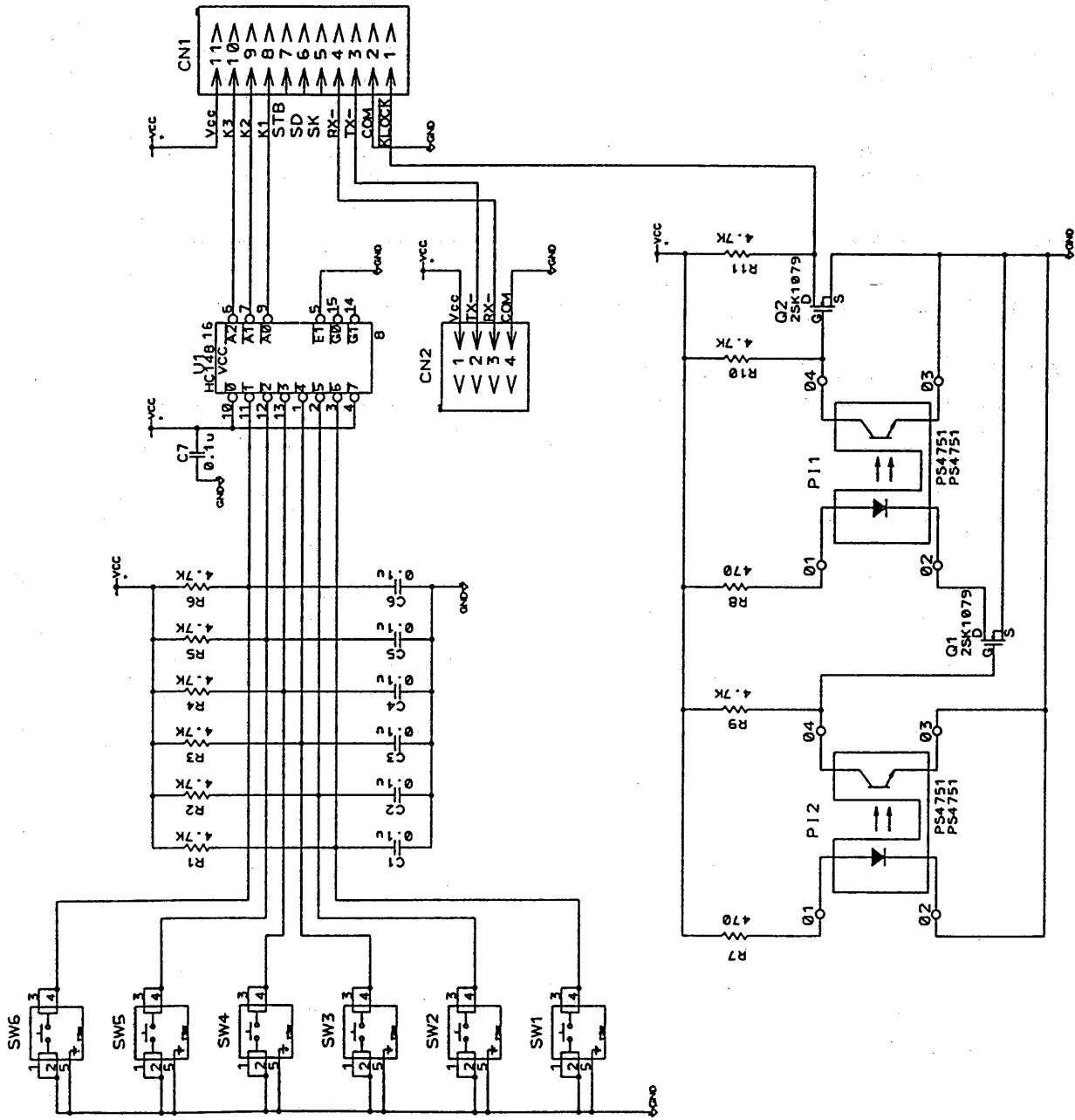
(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
1	1	FERRITE CORE		B9900WE	YOKOGAWA
CN1	1	POST TYPE CONN		A1-20PA-2.54DS	HIROSE
CN4	1	POST TYPE CONN		HIF3H-26PB-2.54DSA11	HIROSE
CN5	1	POST TYPE CONN		HIF3H-26PB-2.54DSA11	HIROSE
CN6	1	POST TYPE CONN		HIF3H-26P-2.54W(16)	HIROSE
CN7	1	POST TYPE CONN		FX2C-52S-1.27DSA	HIROSE
CN8	1	POST TYPE CONN		PS-10SG-D4TS1-5	JAE
PWB	1	PWB		B9900ZS	YOKOGAWA

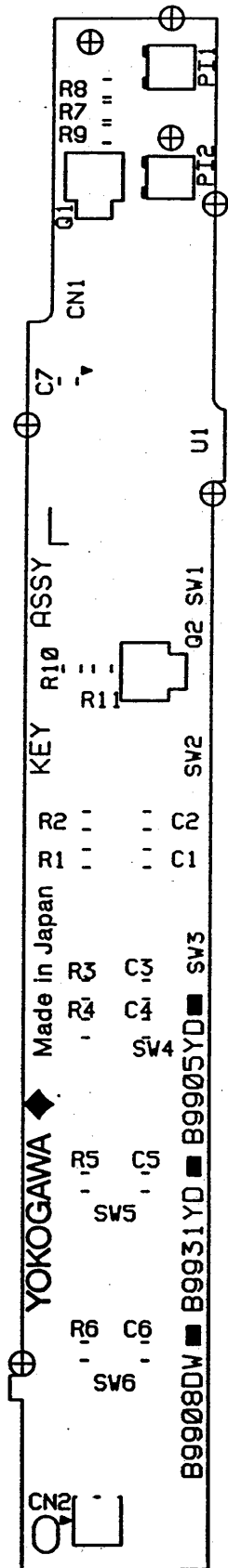
1 µR1800 PEN MODEL

1.4 Key Board Assembly

1.4.1 Schematic Diagram (B9905 YD)



1.4.2 Location of Components



1UR1800 PEN MODEL

1.4.3 List of Electrical Parts (B9905 YD)

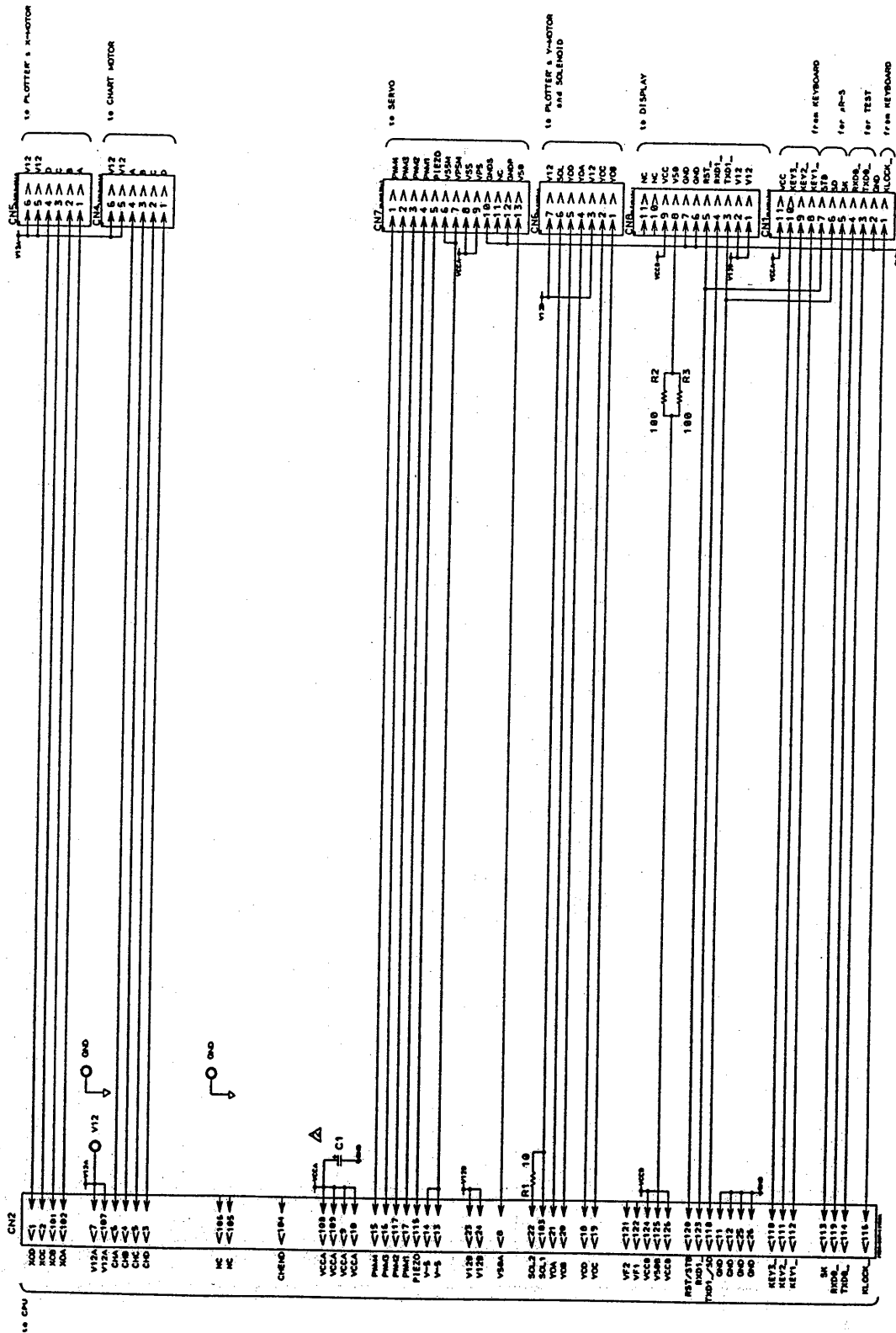
Key board assembly:B9905YD

(July 1993)

Item	Q'ty	Part Name	Description			MFR Part No.	MFR Name
1	1	GUIDE				B9905KG	YOKOGAWA
C1	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C2	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C3	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C4	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C5	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C6	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C7	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
CN1	1	POST TYPE CONN				00-6201-117-042-800	KYO ELCO
CN2	1	POST TYPE CONN				1MSA-9220B-04A-GF	IRISO
P11	1	OPTO ISOLATOR				PS4751	NEC
P12	1	OPTO ISOLATOR				PS4751	NEC
PWB	1	KEY PWB				B9905ZD	YOKOGAWA
Q1	1	FET				2SK1079	TOSHIBA
Q2	1	FET				2SK1079	TOSHIBA
R1	1	METAL OXIDE RES	4.7k Ω	\pm 1%	0.1W	ERJ6ENF4701*	MATSUSHITA
R2	1	METAL OXIDE RES	4.7k Ω	\pm 1%	0.1W	ERJ6ENF4701*	MATSUSHITA
R3	1	METAL OXIDE RES	4.7k Ω	\pm 1%	0.1W	ERJ6ENF4701*	MATSUSHITA
R4	1	METAL OXIDE RES	4.7k Ω	\pm 1%	0.1W	ERJ6ENF4701*	MATSUSHITA
R5	1	METAL OXIDE RES	4.7k Ω	\pm 1%	0.1W	ERJ6ENF4701*	MATSUSHITA
R6	1	METAL OXIDE RES	4.7k Ω	\pm 1%	0.1W	ERJ6ENF4701*	MATSUSHITA
R7	1	METAL OXIDE RES	470 Ω	\pm 1%	0.1W	ERJ6ENF4700*	MATSUSHITA
R8	1	METAL OXIDE RES	470 Ω	\pm 1%	0.1W	ERJ6ENF4700*	MATSUSHITA
R9	1	METAL OXIDE RES	4.7k Ω	\pm 1%	0.1W	ERJ6ENF4701*	MATSUSHITA
R10	1	METAL OXIDE RES	4.7k Ω	\pm 1%	0.1W	ERJ6ENF4701*	MATSUSHITA
R11	1	METAL OXIDE RES	4.7k Ω	\pm 1%	0.1W	ERJ6ENF4701*	MATSUSHITA
SW1	1	KEYBOARD SW				SKHMAA	ALPS
SW2	1	KEYBOARD SW				SKHMAA	ALPS
SW3	1	KEYBOARD SW				SKHMAA	ALPS
SW4	1	KEYBOARD SW				SKHMAA	ALPS
SW5	1	KEYBOARD SW				SKHMAA	ALPS
SW6	1	KEYBOARD SW				SKHMAA	ALPS
U1	1	CMOS LOGIC				TC74HC148AF	TOSHIBA

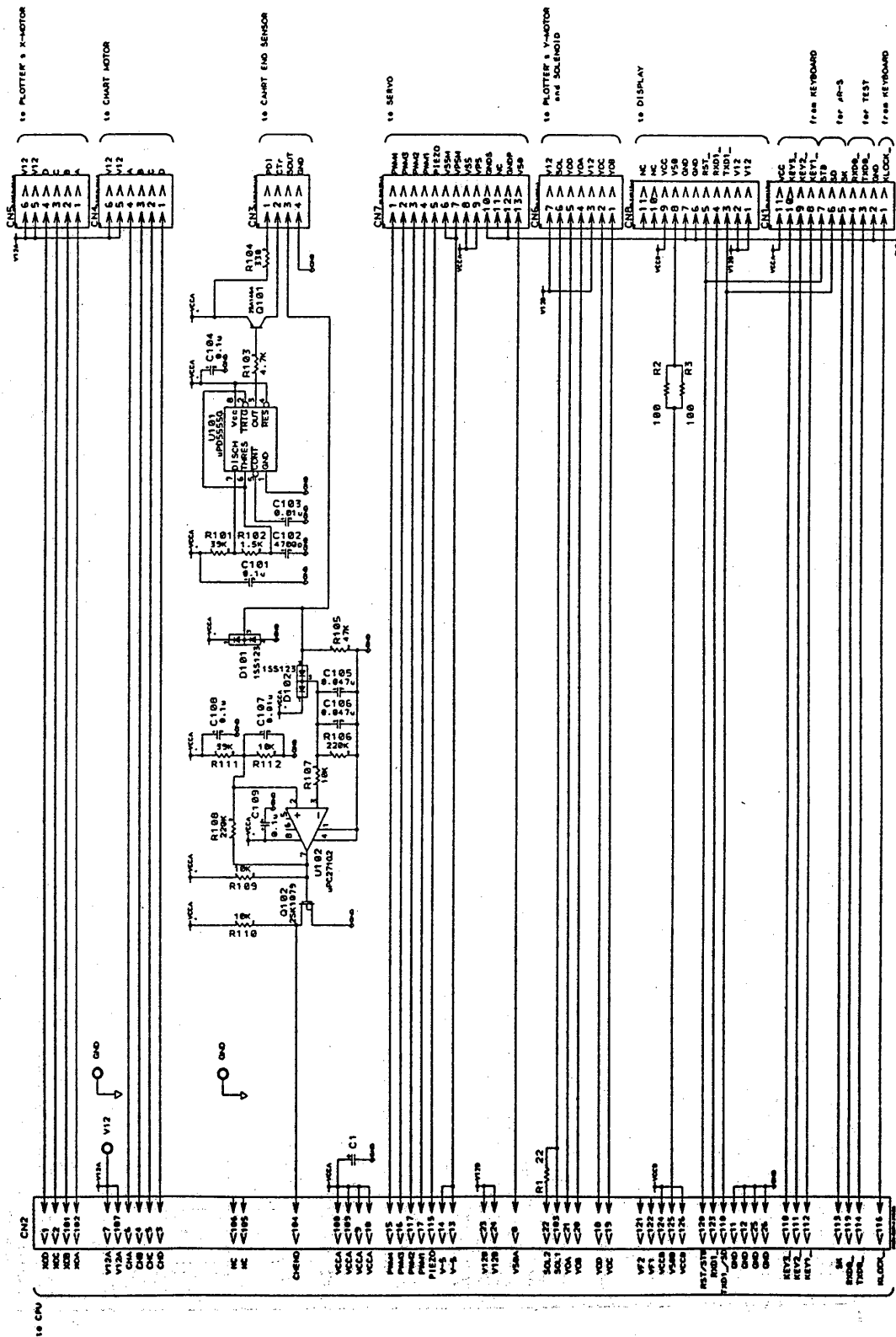
1.5 Connection Board Assembly

1.5.1 Schematic Diagram (B9905 YF)

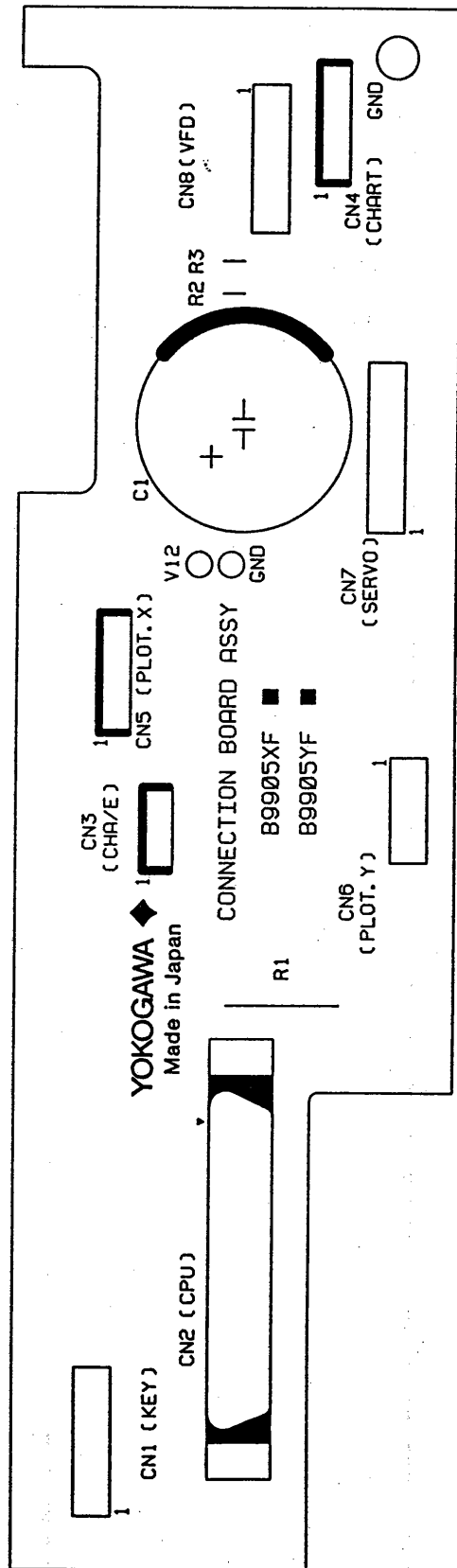


1 IHT800 PEN MODEL

1.5.2 Schematic Diagram (B9905 XF)



1.5.3 Location of Components



1 UR1800 PEN MODEL

1.5.4 List of Electrical Parts (B9905 YF)

Connection board assembly: B9905YF

(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
1	120	HOOKUP WIRE		50/0.18 PVC GRN	SUMITOMO
2	1	TERMINAL		ICT1.25-3	NICHIFU
CN1	1	POST TYPE CONN		HLEM11S-1	BURNDY
CN2	1	POST TYPE CONN		FX2B-52P-1.27DSA	HIROSE
CN4	1	POST TYPE CONN		53253-0610	MOLEX
CN5	1	POST TYPE CONN		53253-0610	MOLEX
CN6	1	PC EDGE CONN		HLEM7S-1	BURNDY
CN7	1	POST TYPE CONN		HLEM13S-1	BURNDY
CN8	1	POST TYPE CONN		HLEM11S-1	BURNDY
PWB	1	CONNECTION PWB		B9905ZF	YOKOGAWA
R1	1	METAL OXIDE RES	22 Ω ±5% 2W	ERG2SJ220*	MATSUSHITA
R2	1	METAL FILM RES	100 Ω ±1% 0.25W	LF1/4 100 F	TAMA
R3	1	METAL FILM RES	100 Ω ±1% 0.25W	LF1/4 100 F	TAMA

1.5.5 List of Electrical Parts (B9905 XF)

Connection board assembly:B9905XF

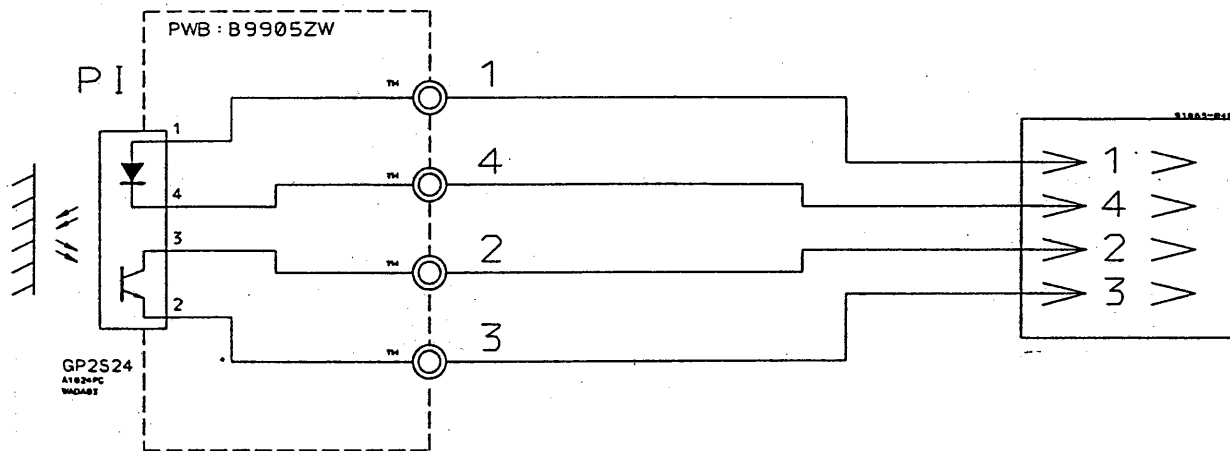
(July 1993)

1 μ R1800 PEN MODEL

Item	Q'ty	Part Name	Description			MFR Part No.	MFR Name
1	120	HOOKUP WIRE				50/0.18 PVC GRN	SUMITOMO
2	1	TERMINAL				1CT1.25-3	NICHIFU
C101	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C102	1	CERAMIC CAP	4700pF	\pm 10%	50V	GRM40R472K50*	MURATA
C103	1	CERAMIC CAP	0.01 μ F	\pm 10%	50V	GRM40R103K50*	MURATA
C104	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C105	1	CERAMIC CAP	0.047 μ F	\pm 10%	50V	GRM40R473K50*	MURATA
C106	1	CERAMIC CAP	0.047 μ F	\pm 10%	50V	GRM40R473K50*	MURATA
C107	1	CERAMIC CAP	0.01 μ F	\pm 10%	50V	GRM40R103K50*	MURATA
C108	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C109	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
CN1	1	POST TYPE CONN				HLEM11S-1	BURNDY
CN2	1	POST TYPE CONN				FX2B-52P-1.27DSA	HIROSE
CN3	1	POST TYPE CONN				53253-0410	MOLEX
CN4	1	POST TYPE CONN				53253-0610	MOLEX
CN5	1	POST TYPE CONN				53253-0610	MOLEX
CN6	1	PC EDGE CONN				HLEM7S-1	BURNDY
CN7	1	POST TYPE CONN				HLEM13S-1	BURNDY
CN8	1	POST TYPE CONN				HLEM11S-1	BURNDY
D101	1	DIODE				1SS123	NEC
D102	1	DIODE				1SS123	NEC
PWB	1	CONNECTION PWB				B9905ZF	YOKOGAWA
Q101	1	TRANSISTOR				2SA1464	NEC
Q102	1	FET				2SK1079	TOSHIBA
R1	1	METAL OXIDE RES	22 Ω	\pm 5%	2W	ERG2SJ220*	MATSUSHITA
R2	1	METAL FILM RES	100 Ω	\pm 1%	0.25W	LF1/4 100 F	TAMA
R3	1	METAL FILM RES	100 Ω	\pm 1%	0.25W	LF1/4 100 F	TAMA
R101	1	METAL OXIDE RES	39k Ω	\pm 1%	0.1W	ERJ6ENF3902*	MATSUSHITA
R102	1	METAL OXIDE RES	1.5k Ω	\pm 1%	0.1W	ERJ6ENF1501*	MATSUSHITA
R103	1	METAL OXIDE RES	4.7k Ω	\pm 1%	0.1W	ERJ6ENF4701*	MATSUSHITA
R104	1	METAL OXIDE RES	330 Ω	\pm 1%	0.1W	ERJ6ENF3300*	MATSUSHITA
R105	1	METAL OXIDE RES	47k Ω	\pm 1%	0.1W	ERJ6ENF4702*	MATSUSHITA
R106	1	METAL OXIDE RES	220k Ω	\pm 1%	0.1W	ERJ6ENF2203*	MATSUSHITA
R107	1	METAL OXIDE RES	10k Ω	\pm 1%	0.1W	ERJ6ENF1002*	MATSUSHITA
R108	1	METAL OXIDE RES	220k Ω	\pm 1%	0.1W	ERJ6ENF2203*	MATSUSHITA
R109	1	METAL OXIDE RES	10k Ω	\pm 1%	0.1W	ERJ6ENF1002*	MATSUSHITA
R110	1	METAL OXIDE RES	10k Ω	\pm 1%	0.1W	ERJ6ENF1002*	MATSUSHITA
R111	1	METAL OXIDE RES	39k Ω	\pm 1%	0.1W	ERJ6ENF3902*	MATSUSHITA
R112	1	METAL OXIDE RES	10k Ω	\pm 1%	0.1W	ERJ6ENF1002*	MATSUSHITA
U101	1	A/D & D/A				UPD5555G	NEC
U102	1	COMPARATOR IC				UPC271G2	NEC

1.6 Chart Sensor Board Assembly

1.6.1 Schematic Diagram (B9905 YW)



1.6.2 List of Electrical Parts (B9905 YW)

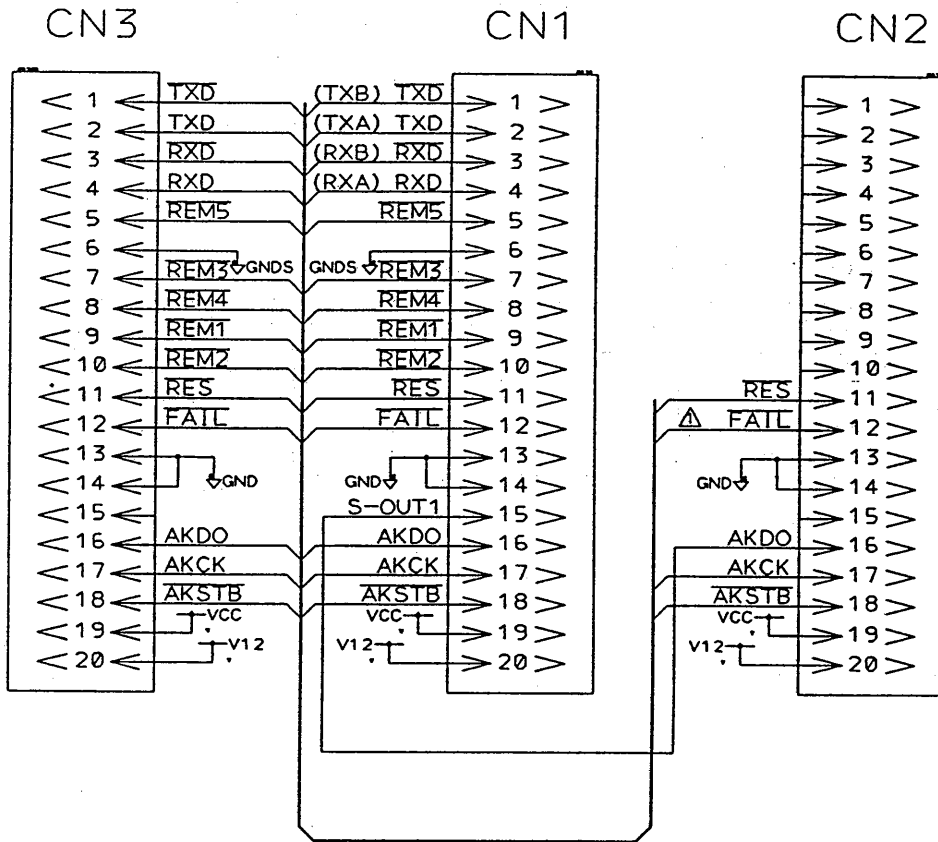
Chart Sensor board assembly: B9905YW

(July 1993)

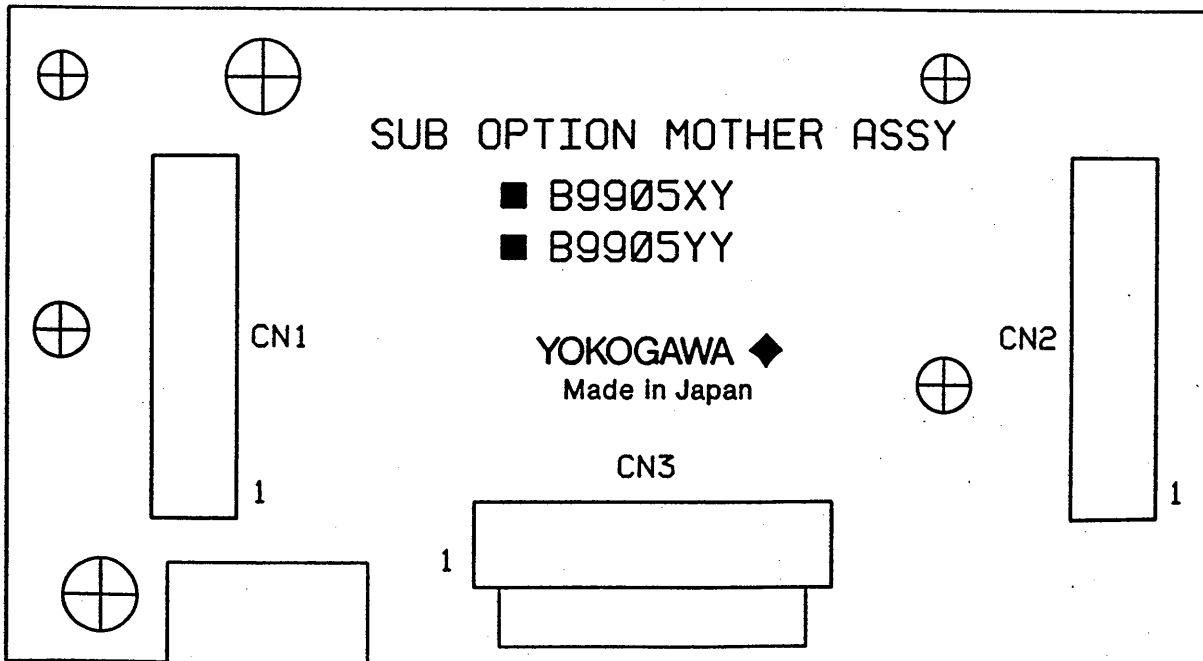
Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
1	1	POST TYPE CONN		51065-0400	MOLEX
2	4	POST TYPE CONN		50212-8000	MOLEX
3	330	HOOKUP WIRE		UL1007 AWG24 BRN	SUMITOMO
4	330	HOOKUP WIRE		UL1007 AWG24 RED	SUMITOMO
5	330	HOOKUP WIRE		UL1007 AWG24 ORN	SUMITOMO
6	330	HOOKUP WIRE		UL1007 AWG24 YEL	SUMITOMO
7	200	TUBE		G9306CN	YOKOGAWA
PI	1	OPTO ISOLATOR		GP2S24(C)	SHARP
PWB	1	PWB		B9905ZW	YOKOGAWA

1.7 Sub Option Mother Board Assembly

1.7.1 Schematic Diagram (B9905 YY/ B9905 XY)



1.7.2 Location of Components



1 μR1800 PEN MODEL

1.7.3 List of Electrical Parts (B9905 YY)

Sub Option mother board assembly: B9905YY

(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
CN1	1	BOARD CONN		A5-20DA-254DSA	HIROSE
CN3	1	POST TYPE CONN		A1-20PA-2.54DS	HIROSE
PWB	1	SUB OP. MOTHER PWB		B9905ZY	YOKOGAWA

1.7.4 List of Electrical Parts (B9905 XY)

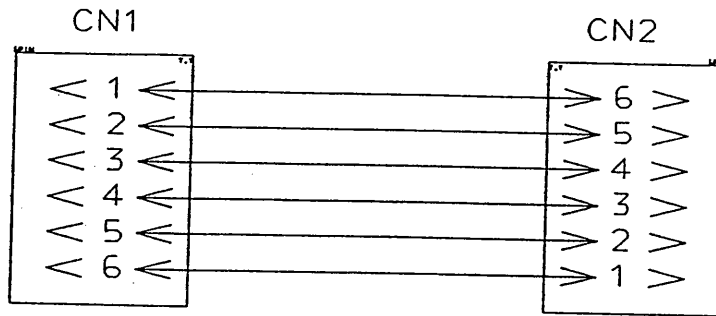
Sub Option mother board assembly: B9905XY

(July 1993)

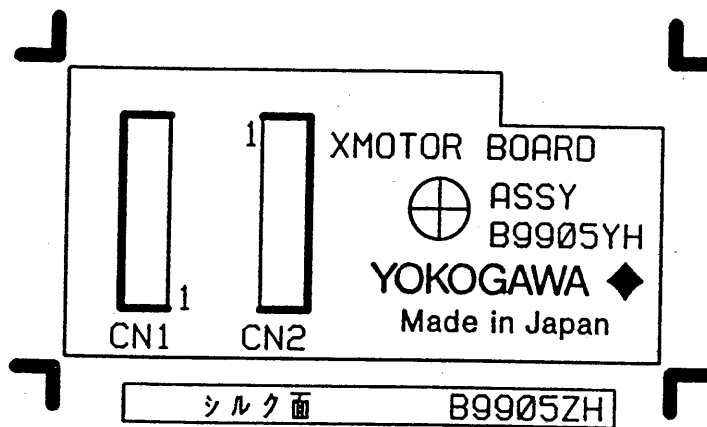
Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
CN1	1	BOARD CONN		A5-20DA-254DSA	HIROSE
CN2	1	BOARD CONN		A5-20DA-254DSA	HIROSE
CN3	1	POST TYPE CONN		A1-20PA-2.54DS	HIROSE
PWB	1	SUB OP. MOTHER PWB		B9905ZY	YOKOGAWA

1.8 X-Motor Board Assembly

1.8.1 Schematic Diagram (B9905 YH)



1.8.2 Location of Components



1 LR1800 PEN MODEL

1.8.3 List of Electrical Parts (B9905 YH)

X-Motor board assembly: B9905YH

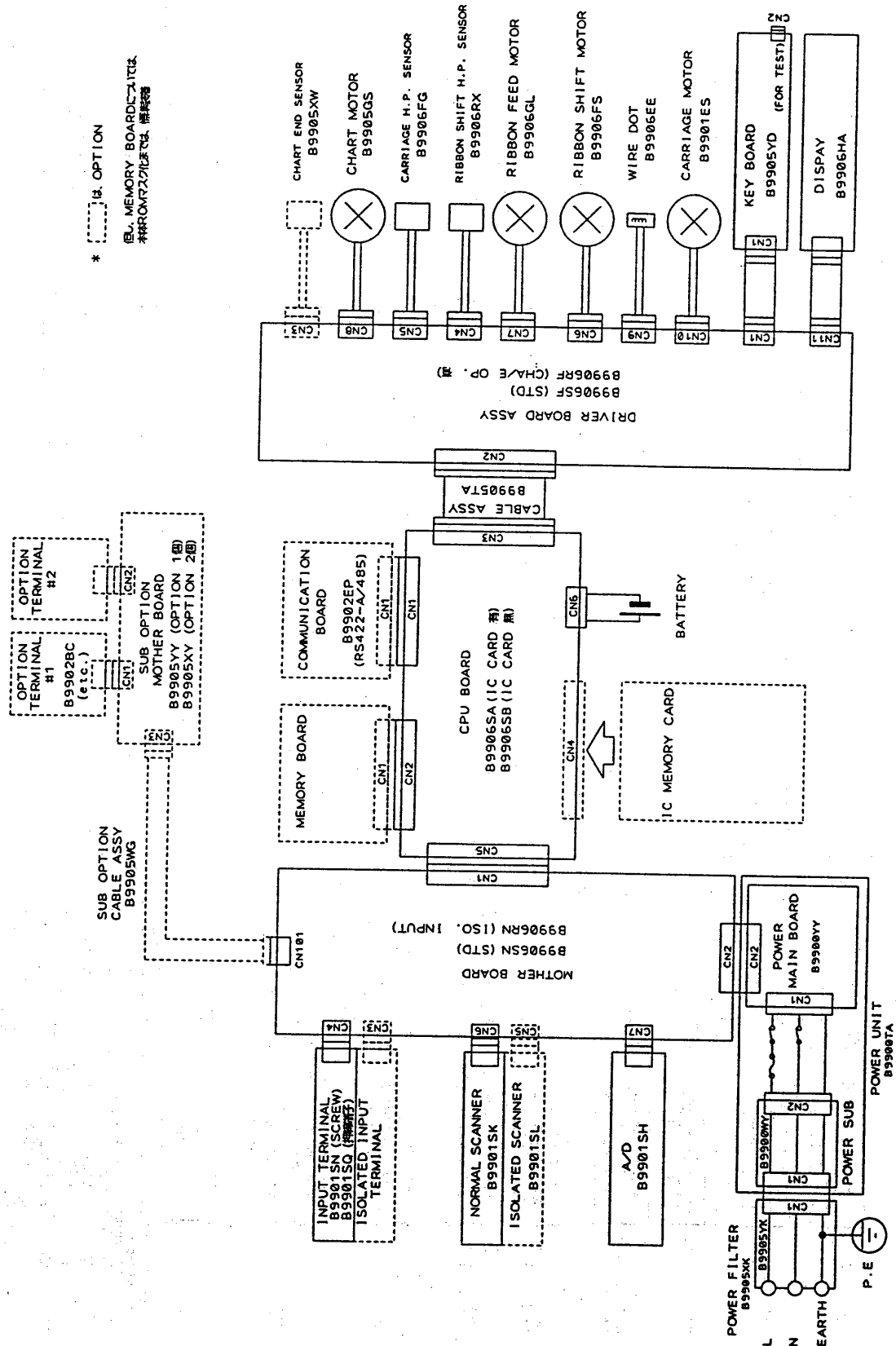
(July 1993)

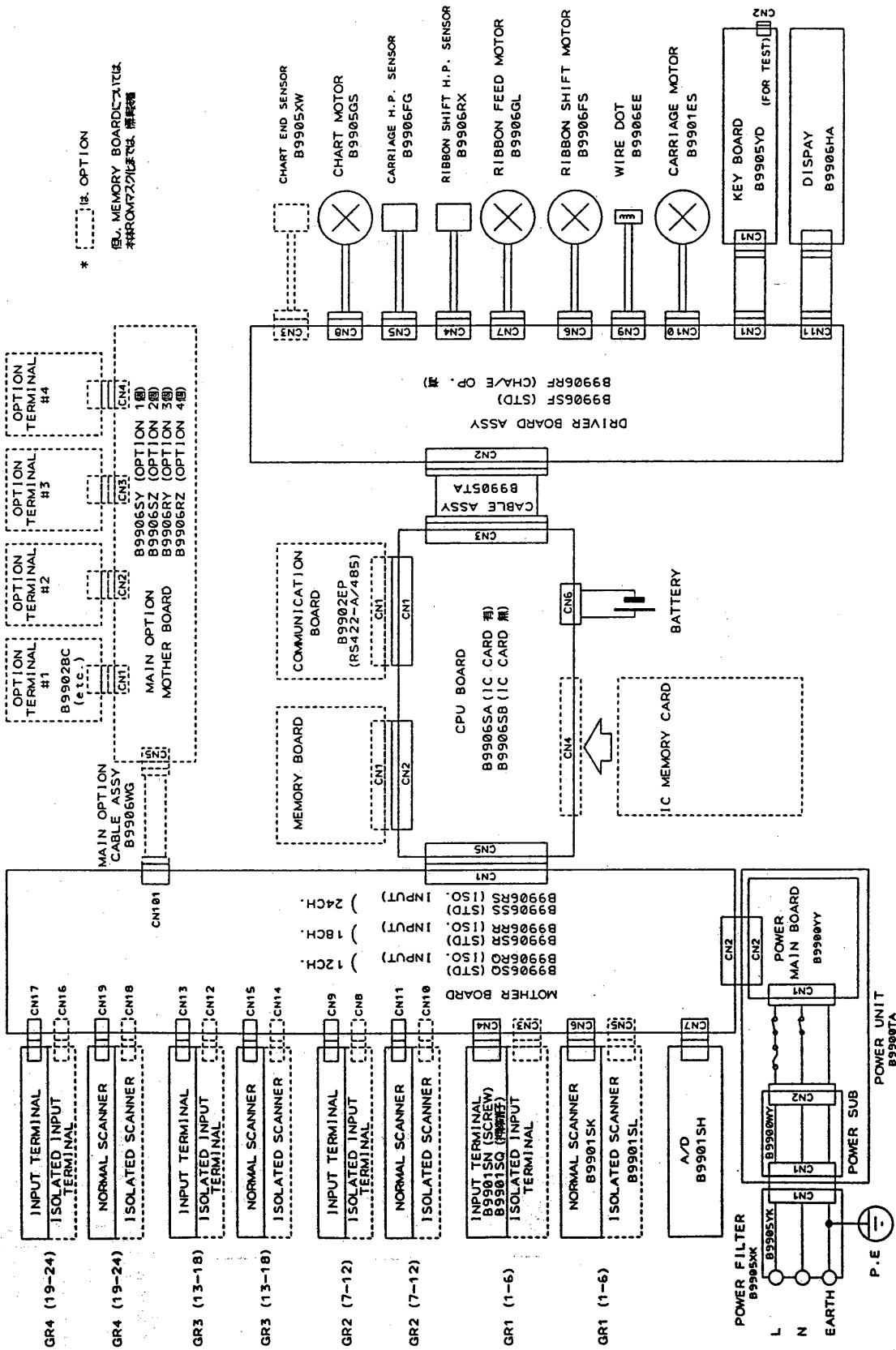
Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
CN1	1	POST TYPE CONN		53253-0610	MOLEX
CN2	1	POST TYPE CONN		53253-0610	MOLEX
PWB	1	X-MOTOR PWB		B9905ZH	YOKOGAWA



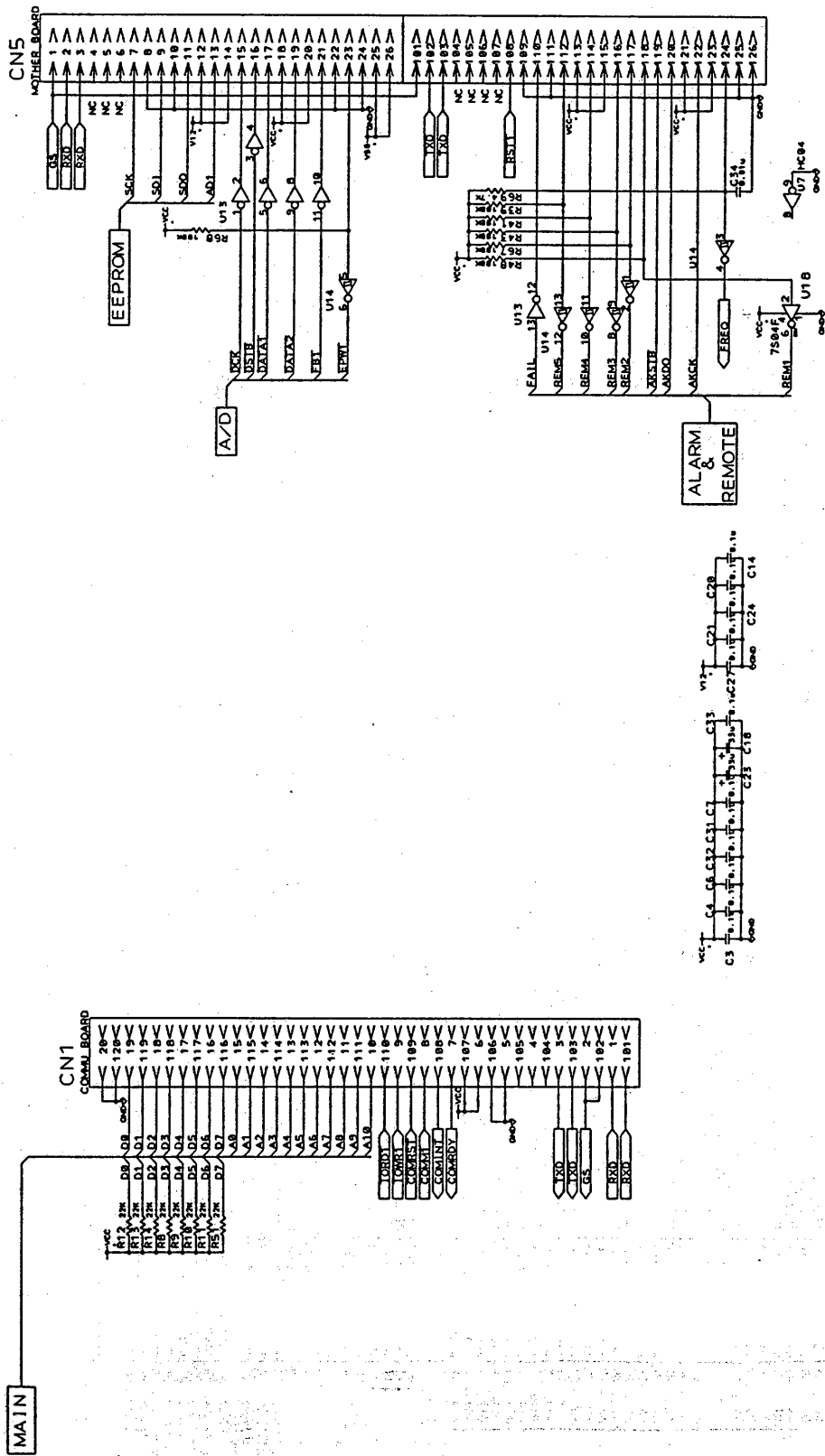
Chapter 2 μ R1800 DOT PRINTING MODEL

2.1 Overall Wiring



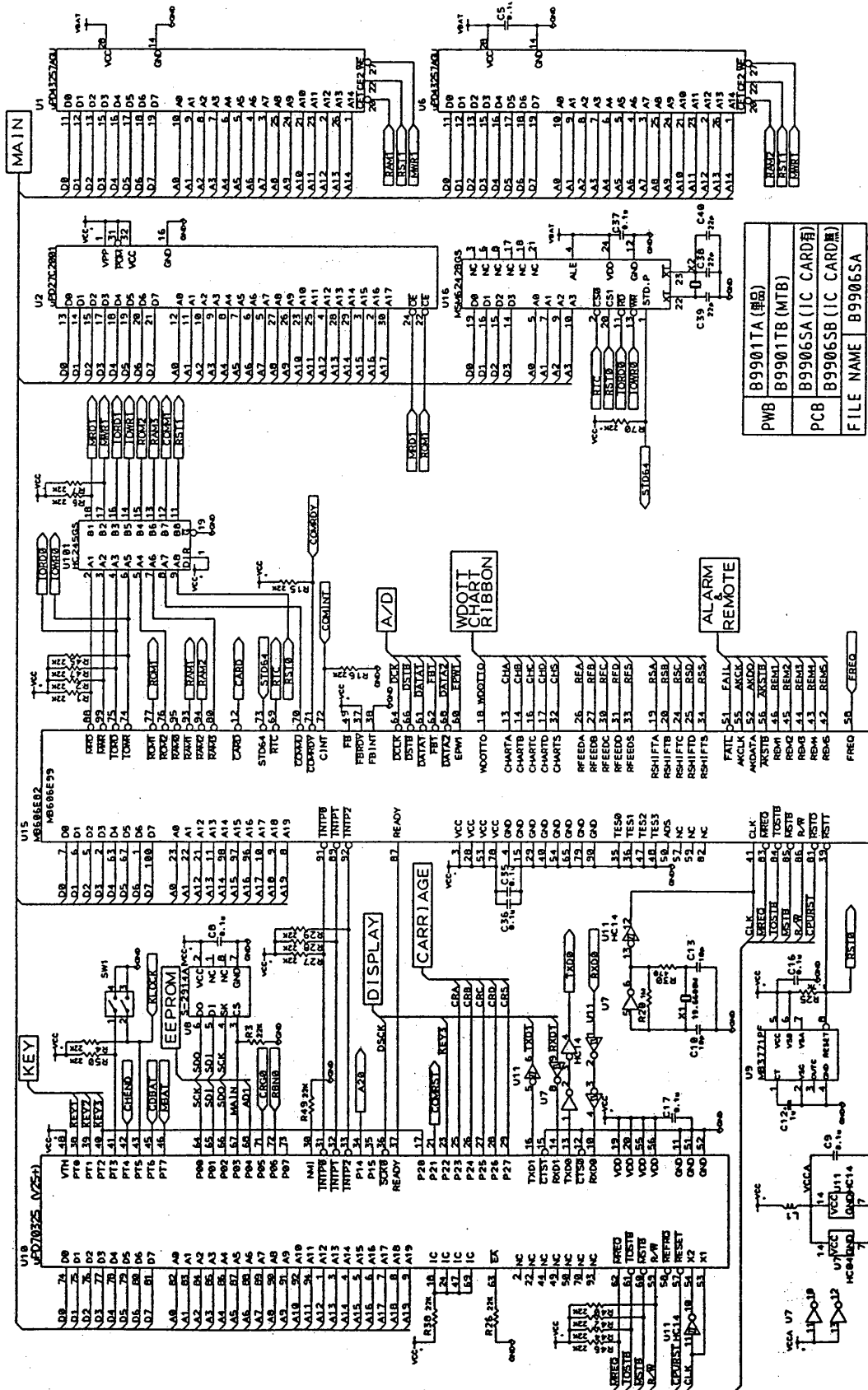


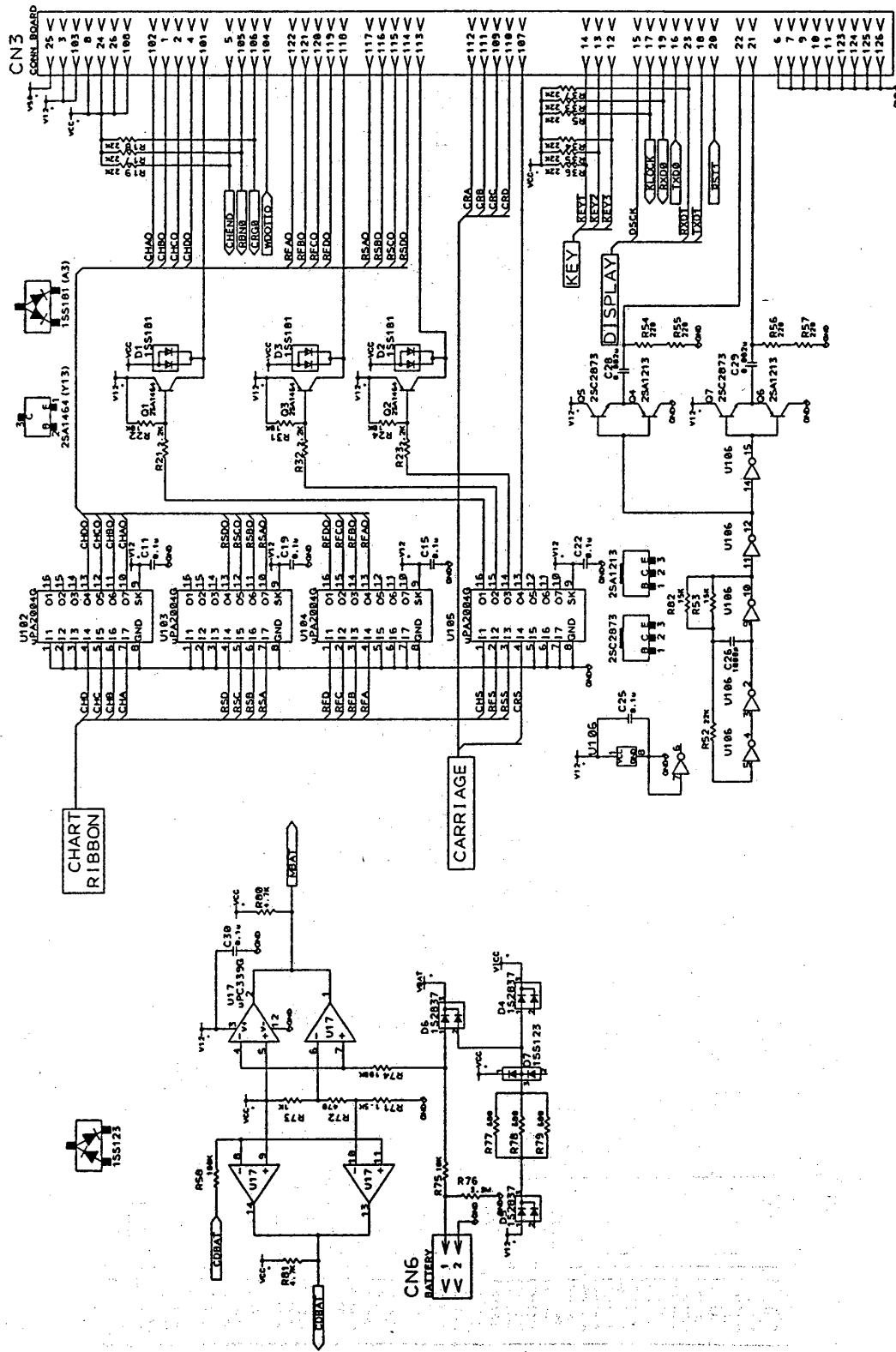
* 虚線は、OPTION
 但し、MEMORY BOARDだけは、
 標準ROM22化までは、標準機



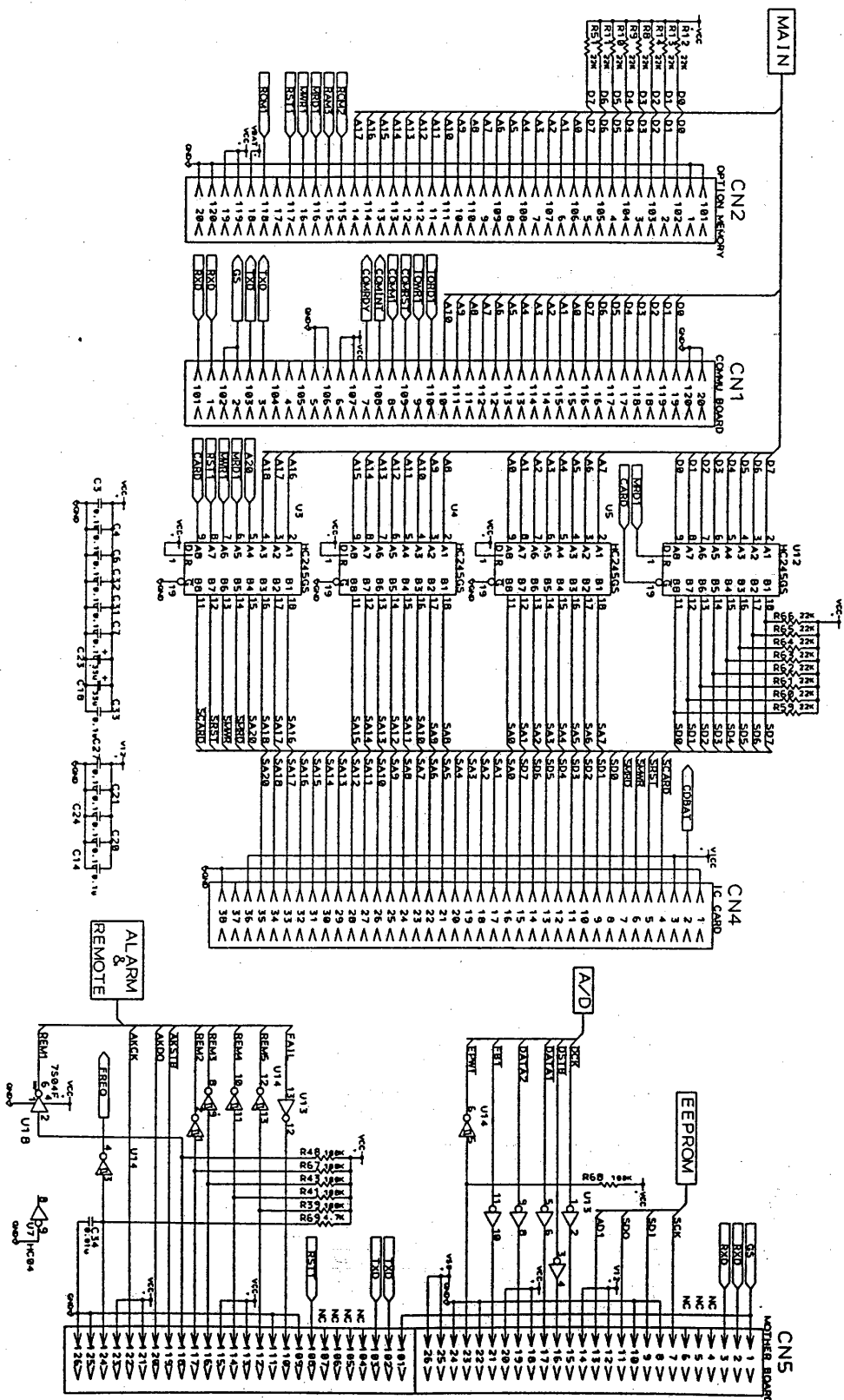
2 μR1800 DOT PRINTING MODEL

2.2.2 Schematic Diagram (B9906 SA/ B9906 SB)

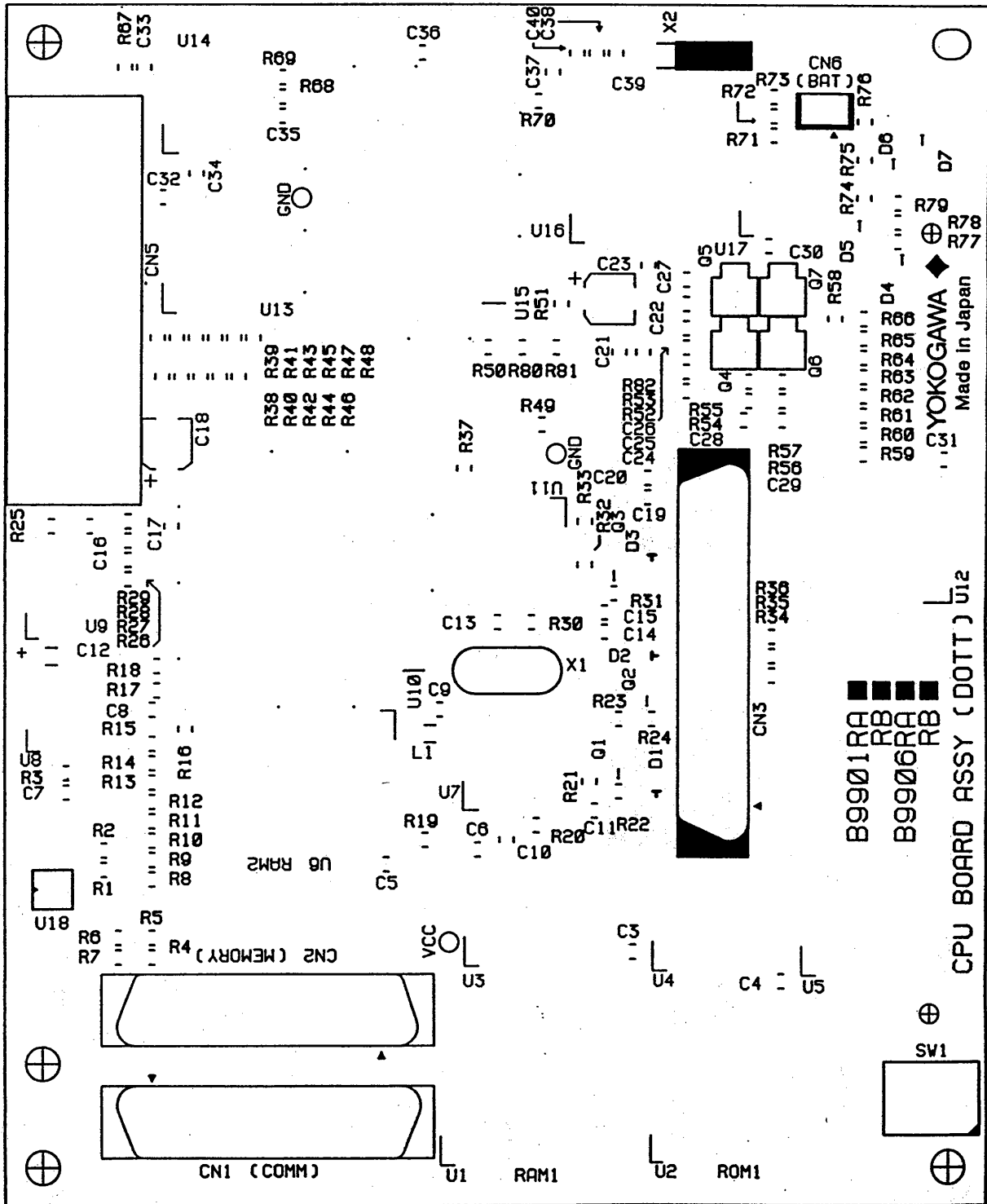




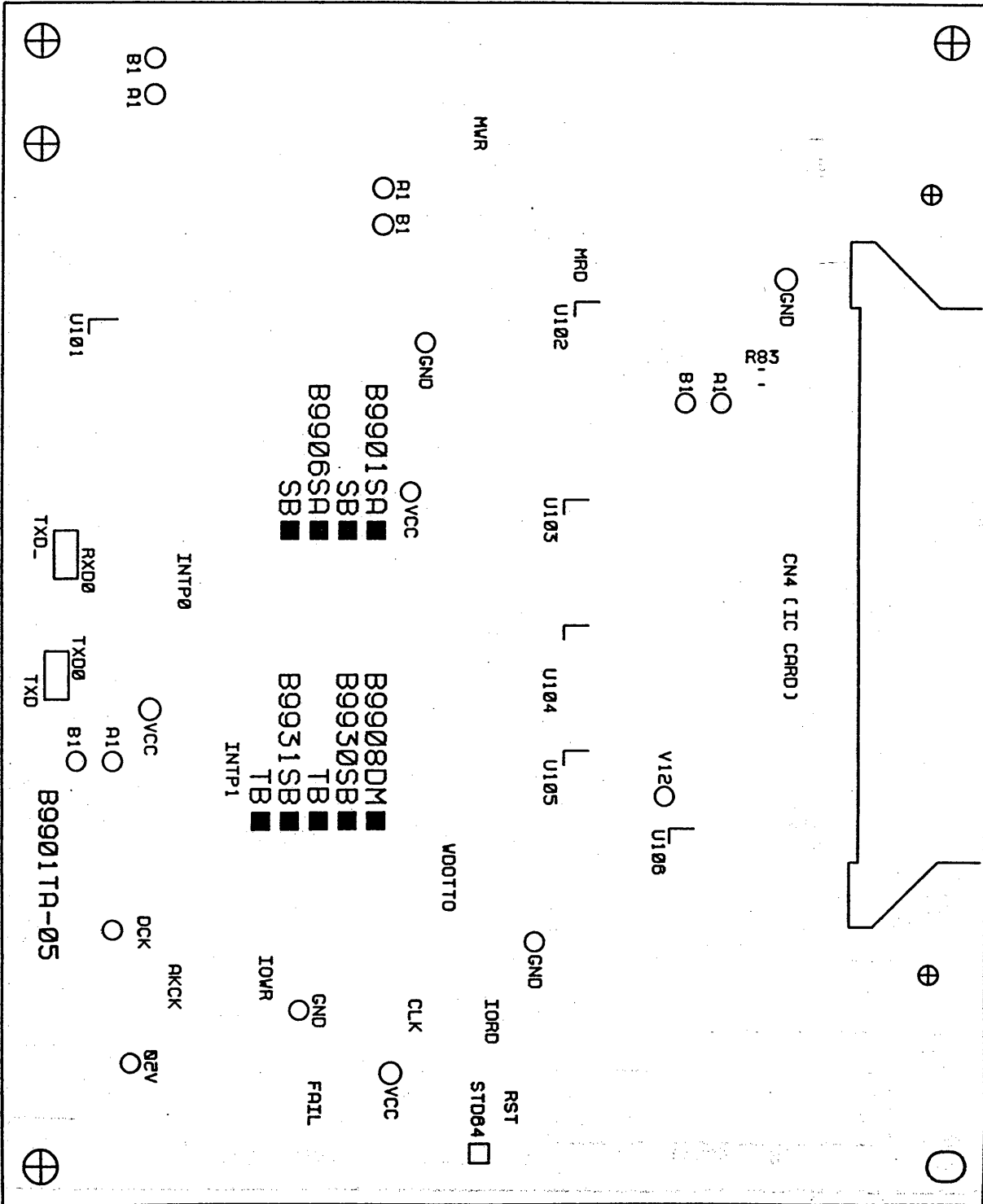
2 μR1800 DOT PRINTING MODEL



2.2.3 Location of Components (Component Side)



2.2.4 Location of Components (Soldering Side)



2.2.5 List of Electrical Parts (B9906 SA)

CPU board assembly: B9906SA

(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
C3	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C4	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C5	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C6	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C7	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C8	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C9	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C10	1	CERAMIC CAP	22pF \pm 5% 50V	C2012CH1H220J*	TDK
C11	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C12	1	TANTALUM CAP	1.0 μ F \pm 20% 16V	*SVA1C105M*	NEC
C13	1	CERAMIC CAP	22pF \pm 5% 50V	C2012CH1H220J*	TDK
C14	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C15	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C16	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C17	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C18	1	ALUMINUM CAP	33 μ F \pm 20% 10V	MVK10VC33(M)E60	NI TSUCHEMI
C19	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C20	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C21	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C22	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C23	1	ALUMINUM CAP	33 μ F \pm 20% 10V	MVK10VC33(M)E60	NI TSUCHEMI
C24	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C25	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C26	1	CERAMIC CAP	1000pF \pm 5% 50V	GRM40CH102J50*	MURATA
C27	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C28	1	CERAMIC CAP	82000pF \pm 10% 25V	GRM40R823K25*	MURATA
C29	1	CERAMIC CAP	82000pF \pm 10% 25V	GRM40R823K25*	MURATA
C30	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C31	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C32	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C33	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C34	1	CERAMIC CAP	0.01 μ F \pm 10% 50V	GRM40R103K50*	MURATA
C35	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C36	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C37	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C38	1	CERAMIC CAP	22pF \pm 5% 50V	C2012CH1H220J*	TDK
C39	1	CERAMIC CAP	22pF \pm 5% 50V	C2012CH1H220J*	TDK
CN1	1	POST TYPE CONN		FX2C-40S-1.27DSA	HIROSE
CN2	1	POST TYPE CONN		FX2C-40S-1.27DSA	HIROSE
CN3	1	POST TYPE CONN		FX2C2-52P-1.27DSA	HIROSE
CN4	1	POST TYPE CONN		D1CM4-38S-RPC-02-20E	ITT CANNON
CN5	1	POST TYPE CONN		FX2-52P-1.27DS	HIROSE
CN6	1	POST TYPE CONN		53253-0210	MOLEX
D1	1	DIODE		1SS181-*	TOSHIBA
D2	1	DIODE		1SS181-*	TOSHIBA
D3	1	DIODE		1SS181-*	TOSHIBA
D4	1	DIODE		1S2837	NEC
D5	1	DIODE		1S2837	NEC
D6	1	DIODE		1S2837	NEC
D7	1	DIODE		1SS123	NEC
L1	1	COIL		BLM31A02*	MURATA
PWB	1	PWB		B9901TA	YOKOGAWA
Q1	1	TRANSISTOR		2SA1464	NEC
Q2	1	TRANSISTOR		2SA1464	NEC
Q3	1	TRANSISTOR		2SA1464	NEC
Q4	1	TRANSISTOR		2SA1213-0,Y	TOSHIBA
Q5	1	TRANSISTOR		2SC2873-0,Y	TOSHIBA
Q6	1	TRANSISTOR		2SA1213-0,Y	TOSHIBA
Q7	1	TRANSISTOR		2SC2873-0,Y	TOSHIBA

2 μ R1800 DOT PRINTING MODEL

CPU board assembly:B9906SA

(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
R1	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R2	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R3	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R4	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R5	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R6	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R7	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R8	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R9	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R10	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R11	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R12	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R13	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R14	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R15	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R16	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R17	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R18	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R19	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R20	1	METAL OXIDE RES	1M Ω ±1% 0.1W	ERJ6ENF1004*	MATSUSHITA
R21	1	METAL OXIDE RES	2.2k Ω ±1% 0.1W	ERJ6ENF2201*	MATSUSHITA
R22	1	METAL OXIDE RES	10k Ω ±1% 0.1W	ERJ6ENF1002*	MATSUSHITA
R23	1	METAL OXIDE RES	2.2k Ω ±1% 0.1W	ERJ6ENF2201*	MATSUSHITA
R24	1	METAL OXIDE RES	10k Ω ±1% 0.1W	ERJ6ENF1002*	MATSUSHITA
R25	1	METAL OXIDE RES	4.7k Ω ±1% 0.1W	ERJ6ENF4701*	MATSUSHITA
R26	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R27	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R28	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R29	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R30	1	METAL OXIDE RES	470 Ω ±1% 0.1W	ERJ6ENF4700*	MATSUSHITA
R31	1	METAL OXIDE RES	10k Ω ±1% 0.1W	ERJ6ENF1002*	MATSUSHITA
R32	1	METAL OXIDE RES	2.2k Ω ±1% 0.1W	ERJ6ENF2201*	MATSUSHITA
R33	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R34	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R35	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R36	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R37	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R38	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R39	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R40	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R41	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R42	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R43	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R44	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R45	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R46	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R47	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R48	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R49	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R50	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R51	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R52	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R53	1	METAL OXIDE RES	15k Ω ±1% 0.1W	ERJ6ENF1502*	MATSUSHITA
R54	1	METAL OXIDE RES	220 Ω ±1% 0.1W	ERJ6ENF2200*	MATSUSHITA
R55	1	METAL OXIDE RES	220 Ω ±1% 0.1W	ERJ6ENF2200*	MATSUSHITA
R56	1	METAL OXIDE RES	220 Ω ±1% 0.1W	ERJ6ENF2200*	MATSUSHITA
R57	1	METAL OXIDE RES	220 Ω ±1% 0.1W	ERJ6ENF2200*	MATSUSHITA
R58	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R59	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA

CPU board assembly:B9906SA

(July 1993)

Item	Q'ty	Part Name	Description			MFR Part No.	MFR Name
R60	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R61	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R62	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R63	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R64	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R65	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R66	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R67	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R68	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R69	1	METAL OXIDE RES	4.7k Ω	$\pm 1\%$	0.1W	ERJ6ENF4701*	MATSUSHITA
R70	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R71	1	METAL OXIDE RES	1.5k Ω	$\pm 1\%$	0.1W	ERJ6ENF1501*	MATSUSHITA
R72	1	METAL OXIDE RES	470 Ω	$\pm 1\%$	0.1W	ERJ6ENF4700*	MATSUSHITA
R73	1	METAL OXIDE RES	1k Ω	$\pm 1\%$	0.1W	ERJ6ENF1001*	MATSUSHITA
R74	1	METAL OXIDE RES	100k Ω	$\pm 1\%$	0.1W	ERJ6ENF1003*	MATSUSHITA
R75	1	METAL OXIDE RES	10k Ω	$\pm 1\%$	0.1W	ERJ6ENF1002*	MATSUSHITA
R76	1	METAL OXIDE RES	3.3M Ω	$\pm 1\%$	W	RK73H2A*3.3M F	KOA
R77	1	METAL OXIDE RES	680 Ω	$\pm 1\%$	0.1W	ERJ6ENF6800*	MATSUSHITA
R78	1	METAL OXIDE RES	680 Ω	$\pm 1\%$	0.1W	ERJ6ENF6800*	MATSUSHITA
R79	1	METAL OXIDE RES	680 Ω	$\pm 1\%$	0.1W	ERJ6ENF6800*	MATSUSHITA
R80	1	METAL OXIDE RES	4.7k Ω	$\pm 1\%$	0.1W	ERJ6ENF4701*	MATSUSHITA
R81	1	METAL OXIDE RES	4.7k Ω	$\pm 1\%$	0.1W	ERJ6ENF4701*	MATSUSHITA
R82	1	METAL OXIDE RES	15k Ω	$\pm 1\%$	0.1W	ERJ6ENF1502*	MATSUSHITA
U1	1	MEMORY				UPD43257AGU-10L	NEC
U3	1	CMOS LOGIC				TC74HC245AF	TOSHIBA
U4	1	CMOS LOGIC				TC74HC245AF	TOSHIBA
U5	1	CMOS LOGIC				TC74HC245AF	TOSHIBA
U6	1	MEMORY				UPD43257AGU-10L	NEC
U7	1	CMOS LOGIC				TC74HC04AF	TOSHIBA
U8	1	MEMORY				S-2914A1F10	SEIKO
U9	1	IC				MB3771PF	FUJITSU
U10	1	MPU & PRPHL				UPD70325GJ-10-5BG	NEC
U11	1	CMOS LOGIC				TC74HC14AF	TOSHIBA
U12	1	CMOS LOGIC				TC74HC245AF	TOSHIBA
U13	1	TTL				HD74LS06FP	HITACHI
U14	1	CMOS LOGIC				TC74HC14AF	TOSHIBA
U15	1	ASIC				MB606E99	FUJITSU
U16	1	MPU & PRPHL				MSM6242BGS-VK	OKI
U17	1	COMPARATOR IC				UPC339G	NEC
U18	1	CMOS LOGIC				SC7S04F	MOTOROLA
U101	1	CMOS LOGIC				TC74HC245AF	TOSHIBA
U102	1	SC MODULE				UPA2004GR	NEC
U103	1	SC MODULE				UPA2004GR	NEC
U104	1	SC MODULE				UPA2004GR	NEC
U105	1	SC MODULE				UPA2004GR	NEC
U106	1	CMOS LOGIC				UPD4049UBG	NEC
X1	1	CRYSTAL UNIT				AT-51 19.6608MHZ	NIHONDENPA
X2	1	CRYSTAL UNIT				KF-38G	KYOCERA

2. I/R1800 DOT PRINTING MODEL

2.2.6 List of Electrical Parts (B9906 SB)

CPU board assembly: B9906SB

(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
C3	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C4	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C5	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C6	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C7	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C8	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C9	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C10	1	CERAMIC CAP	22pF \pm 5% 50V	C2012CH1H220J*	TDK
C11	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C12	1	TANTALUM CAP	1.0 μ F \pm 20% 16V	*SVA1C105M*	NEC
C13	1	CERAMIC CAP	22pF \pm 5% 50V	C2012CH1H220J*	TDK
C14	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C15	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C16	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C17	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C18	1	ALUMINUM CAP	33 μ F \pm 20% 10V	MVK10VC33 (M) E60	NITSUCHEMI
C19	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C20	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C21	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C22	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C23	1	ALUMINUM CAP	33 μ F \pm 20% 10V	MVK10VC33 (M) E60	NITSUCHEMI
C24	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C25	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C26	1	CERAMIC CAP	1000pF \pm 5% 50V	GRM40CH102J50*	MURATA
C27	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C28	1	CERAMIC CAP	82000pF \pm 10% 25V	GRM40R823K25*	MURATA
C29	1	CERAMIC CAP	82000pF \pm 10% 25V	GRM40R823K25*	MURATA
C30	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C31	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C32	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C33	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C34	1	CERAMIC CAP	0.01 μ F \pm 10% 50V	GRM40R103K50*	MURATA
C35	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C36	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C37	1	CER CAPACITOR	0.1 μ F -20~80% 50V	C2012Y5V1H104Z*	TDK
C38	1	CERAMIC CAP	22pF \pm 5% 50V	C2012CH1H220J*	TDK
C39	1	CERAMIC CAP	22pF \pm 5% 50V	C2012CH1H220J*	TDK
CN1	1	POST TYPE CONN		FX2C-40S-1. 27DSA	HIROSE
CN2	1	POST TYPE CONN		FX2C-40S-1. 27DSA	HIROSE
CN3	1	POST TYPE CONN		FX2C2-52P-1. 27DSA	HIROSE
CN5	1	POST TYPE CONN		FX2-52P-1. 27DS	HIROSE
CN6	1	POST TYPE CONN		53253-0210	MOLEX
D1	1	DIODE		1S181-*	TOSHIBA
D2	1	DIODE		1S181-*	TOSHIBA
D3	1	DIODE		1S181-*	TOSHIBA
D4	1	DIODE		1S2837	NEC
D5	1	DIODE		1S2837	NEC
D6	1	DIODE		1S2837	NEC
D7	1	DIODE		1S123	NEC
L1	1	COIL		BLM31A02*	MURATA
PWB	1	PWB		B9901TA	YOKOGAWA
Q1	1	TRANSISTOR		2SA1464	NEC
Q2	1	TRANSISTOR		2SA1464	NEC
Q3	1	TRANSISTOR		2SA1464	NEC
Q4	1	TRANSISTOR		2SA1213-0, Y	TOSHIBA
Q5	1	TRANSISTOR		2SC2873-0, Y	TOSHIBA
Q6	1	TRANSISTOR		2SA1213-0, Y	TOSHIBA
Q7	1	TRANSISTOR		2SC2873-0, Y	TOSHIBA
R1	1	METAL OXIDE RES	22k Ω \pm 1% 0.1W	ERJ6ENF2202*	MATSUSHITA

CPU board assembly:B9906SB

(July 1993)

Item	Q'ty	Part Name	Description			MFR Part No.	MFR Name
R2	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R3	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R4	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R5	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R6	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R7	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R8	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R9	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R10	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R11	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R12	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R13	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R14	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R15	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R16	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R17	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R18	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R19	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R20	1	METAL OXIDE RES	1M Ω	±1%	0.1W	ERJ6ENF1004*	MATSUSHITA
R21	1	METAL OXIDE RES	2.2k Ω	±1%	0.1W	ERJ6ENF2201*	MATSUSHITA
R22	1	METAL OXIDE RES	10k Ω	±1%	0.1W	ERJ6ENF1002*	MATSUSHITA
R23	1	METAL OXIDE RES	2.2k Ω	±1%	0.1W	ERJ6ENF2201*	MATSUSHITA
R24	1	METAL OXIDE RES	10k Ω	±1%	0.1W	ERJ6ENF1002*	MATSUSHITA
R25	1	METAL OXIDE RES	4.7k Ω	±1%	0.1W	ERJ6ENF4701*	MATSUSHITA
R26	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R27	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R28	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R29	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R30	1	METAL OXIDE RES	470 Ω	±1%	0.1W	ERJ6ENF4700*	MATSUSHITA
R31	1	METAL OXIDE RES	10k Ω	±1%	0.1W	ERJ6ENF1002*	MATSUSHITA
R32	1	METAL OXIDE RES	2.2k Ω	±1%	0.1W	ERJ6ENF2201*	MATSUSHITA
R33	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R34	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R35	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R36	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R37	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R38	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R39	1	METAL OXIDE RES	100k Ω	±1%	0.1W	ERJ6ENF1003*	MATSUSHITA
R40	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R41	1	METAL OXIDE RES	100k Ω	±1%	0.1W	ERJ6ENF1003*	MATSUSHITA
R42	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R43	1	METAL OXIDE RES	100k Ω	±1%	0.1W	ERJ6ENF1003*	MATSUSHITA
R44	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R45	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R46	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R47	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R48	1	METAL OXIDE RES	100k Ω	±1%	0.1W	ERJ6ENF1003*	MATSUSHITA
R49	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R50	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R51	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R52	1	METAL OXIDE RES	22k Ω	±1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R53	1	METAL OXIDE RES	15k Ω	±1%	0.1W	ERJ6ENF1502*	MATSUSHITA
R54	1	METAL OXIDE RES	220 Ω	±1%	0.1W	ERJ6ENF2200*	MATSUSHITA
R55	1	METAL OXIDE RES	220 Ω	±1%	0.1W	ERJ6ENF2200*	MATSUSHITA
R56	1	METAL OXIDE RES	220 Ω	±1%	0.1W	ERJ6ENF2200*	MATSUSHITA
R57	1	METAL OXIDE RES	220 Ω	±1%	0.1W	ERJ6ENF2200*	MATSUSHITA
R58	1	METAL OXIDE RES	100k Ω	±1%	0.1W	ERJ6ENF1003*	MATSUSHITA
R67	1	METAL OXIDE RES	100k Ω	±1%	0.1W	ERJ6ENF1003*	MATSUSHITA
R68	1	METAL OXIDE RES	100k Ω	±1%	0.1W	ERJ6ENF1003*	MATSUSHITA

2 μR1800 DOT PRINTING MODEL

CPU board assembly:B9906SB

(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
R69	1	METAL OXIDE RES	4.7kΩ ±1% 0.1W	ERJ6ENF4701*	MATSUSHITA
R70	1	METAL OXIDE RES	22kΩ ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R71	1	METAL OXIDE RES	1.5kΩ ±1% 0.1W	ERJ6ENF1501*	MATSUSHITA
R72	1	METAL OXIDE RES	470Ω ±1% 0.1W	ERJ6ENF4700*	MATSUSHITA
R73	1	METAL OXIDE RES	1kΩ ±1% 0.1W	ERJ6ENF1001*	MATSUSHITA
R74	1	METAL OXIDE RES	100kΩ ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R75	1	METAL OXIDE RES	10kΩ ±1% 0.1W	ERJ6ENF1002*	MATSUSHITA
R76	1	METAL OXIDE RES	3.3MΩ ±% W	RK73H2A*3.3M F	KOA
R77	1	METAL OXIDE RES	680Ω ±1% 0.1W	ERJ6ENF6800*	MATSUSHITA
R78	1	METAL OXIDE RES	680Ω ±1% 0.1W	ERJ6ENF6800*	MATSUSHITA
R79	1	METAL OXIDE RES	680Ω ±1% 0.1W	ERJ6ENF6800*	MATSUSHITA
R80	1	METAL OXIDE RES	4.7kΩ ±1% 0.1W	ERJ6ENF4701*	MATSUSHITA
R81	1	METAL OXIDE RES	4.7kΩ ±1% 0.1W	ERJ6ENF4701*	MATSUSHITA
R82	1	METAL OXIDE RES	15kΩ ±1% 0.1W	ERJ6ENF1502*	MATSUSHITA
U1	1	MEMORY		UPD43257AGU-10L	NEC
U6	1	MEMORY		UPD43257AGU-10L	NEC
U7	1	CMOS LOGIC		TC74HC04AF	TOSHIBA
U8	1	MEMORY		S-2914A1F10	SEIKO
U9	1	IC		MB3771PF	FUJITSU
U10	1	MPU & PRPHL		UPD70325GJ-10-5BG	NEC
U11	1	CMOS LOGIC		TC74HC14AF	TOSHIBA
U13	1	TTL		HD74LS06FP	HITACHI
U14	1	CMOS LOGIC		TC74HC14AF	TOSHIBA
U15	1	ASIC		MB606E99	FUJITSU
U16	1	MPU & PRPHL		MSM6242BGS-VK	OKI
U17	1	COMPARATOR IC		UPC339G	NEC
U18	1	CMOS LOGIC		SC7S04F	MOTOROLA
U101	1	CMOS LOGIC		TC74HC245AF	TOSHIBA
U102	1	SC MODULE		UPA2004GR	NEC
U103	1	SC MODULE		UPA2004GR	NEC
U104	1	SC MODULE		UPA2004GR	NEC
U105	1	SC MODULE		UPA2004GR	NEC
U106	1	CMOS LOGIC		UPD4049UBG	NEC
X1	1	CRYSTAL UNIT		AT-51 19.6608MHZ	NIHONDENPA
X2	1	CRYSTAL UNIT		KF-38G	KYOCERA

2.2.7 List of Electrical Parts (B9906 RB)

CPU board assembly: B9906RB

(July 1993)

Item	Q'ty	Part Name	Description			MFR Part No.	MFR Name
C3	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C4	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C6	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C7	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C8	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C9	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C10	1	CERAMIC CAP	22pF	\pm 5%	50V	C2012CH1H220J*	TDK
C11	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C12	1	TANTALUM CAP	1.0 μ F	\pm 20%	16V	*SVA1C105M*	NEC
C13	1	CERAMIC CAP	22pF	\pm 5%	50V	C2012CH1H220J*	TDK
C14	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C15	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C16	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C17	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C18	1	ALUMINUM CAP	33 μ F	\pm 20%	10V	MVK10VC33(M)E60	NITSUCHEMI
C19	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C20	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C21	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C22	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C23	1	ALUMINUM CAP	33 μ F	\pm 20%	10V	MVK10VC33(M)E60	NITSUCHEMI
C24	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C25	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C27	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C30	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C31	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C32	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C33	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C34	1	CERAMIC CAP	0.01 μ F	\pm 10%	50V	GRM40R103K50*	MURATA
C35	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C36	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C37	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C38	1	CERAMIC CAP	22pF	\pm 5%	50V	C2012CH1H220J*	TDK
C39	1	CERAMIC CAP	22pF	\pm 5%	50V	C2012CH1H220J*	TDK
CN1	1	POST TYPE CONN				FX2C-40S-1.27DSA	HIROSE
CN3	1	POST TYPE CONN				FX2C2-52P-1.27DSA	HIROSE
CN5	1	POST TYPE CONN				FX2-52P-1.27DS	HIROSE
CN6	1	POST TYPE CONN				53253-0210	MOLEX
D1	1	DIODE				1SS181-*	TOSHIBA
D2	1	DIODE				1SS181-*	TOSHIBA
D3	1	DIODE				1SS181-*	TOSHIBA
D5	1	DIODE				1S2837	NEC
D6	1	DIODE				1S2837	NEC
D7	1	DIODE				1SS123	NEC
L1	1	COIL				BLM31A02*	MURATA
PWB	1	PWB				B9901TA	YOKOGAWA
Q1	1	TRANSISTOR				2SA1464	NEC
Q2	1	TRANSISTOR				2SA1464	NEC
Q3	1	TRANSISTOR				2SA1464	NEC
R3	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R4	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R8	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R9	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R10	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R11	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R12	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R13	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R14	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R15	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA
R16	1	METAL OXIDE RES	22k Ω	\pm 1%	0.1W	ERJ6ENF2202*	MATSUSHITA

2 µR1800 DOT PRINTING MODEL

CPU board assembly:B9906RB

(July 1993)

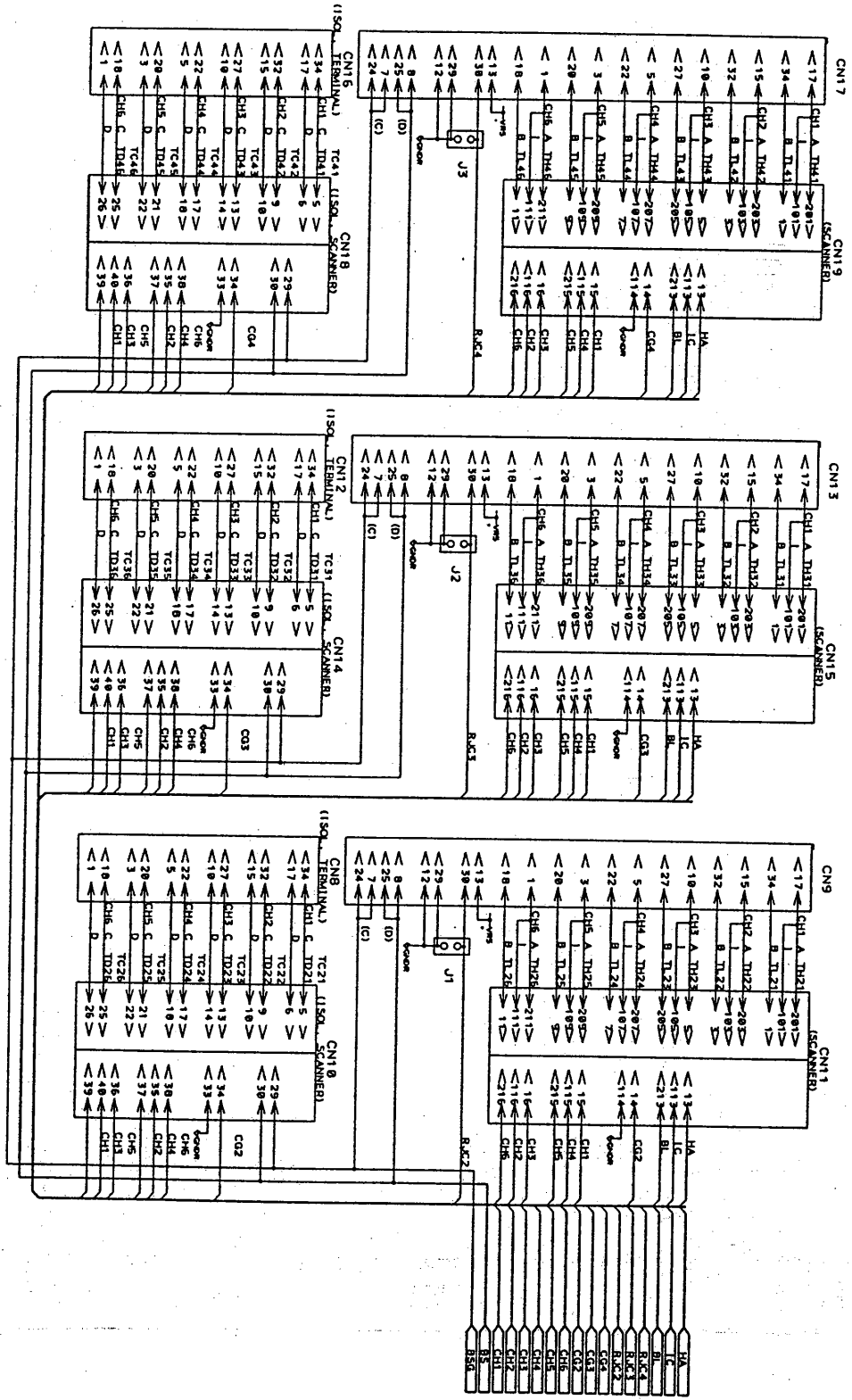
Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
R17	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R18	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R19	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R20	1	METAL OXIDE RES	1M Ω ±1% 0.1W	ERJ6ENF1004*	MATSUSHITA
R21	1	METAL OXIDE RES	2.2k Ω ±1% 0.1W	ERJ6ENF2201*	MATSUSHITA
R22	1	METAL OXIDE RES	10k Ω ±1% 0.1W	ERJ6ENF1002*	MATSUSHITA
R23	1	METAL OXIDE RES	2.2k Ω ±1% 0.1W	ERJ6ENF2201*	MATSUSHITA
R24	1	METAL OXIDE RES	10k Ω ±1% 0.1W	ERJ6ENF1002*	MATSUSHITA
R25	1	METAL OXIDE RES	4.7k Ω ±1% 0.1W	ERJ6ENF4701*	MATSUSHITA
R26	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R30	1	METAL OXIDE RES	470 Ω ±1% 0.1W	ERJ6ENF4700*	MATSUSHITA
R31	1	METAL OXIDE RES	10k Ω ±1% 0.1W	ERJ6ENF1002*	MATSUSHITA
R32	1	METAL OXIDE RES	2.2k Ω ±1% 0.1W	ERJ6ENF2201*	MATSUSHITA
R33	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R34	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R35	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R36	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R37	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R38	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R39	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R40	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R41	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R42	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R43	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R44	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R46	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R48	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R49	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R50	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R51	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R67	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R68	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R69	1	METAL OXIDE RES	4.7k Ω ±1% 0.1W	ERJ6ENF4701*	MATSUSHITA
R70	1	METAL OXIDE RES	22k Ω ±1% 0.1W	ERJ6ENF2202*	MATSUSHITA
R71	1	METAL OXIDE RES	1.5k Ω ±1% 0.1W	ERJ6ENF1501*	MATSUSHITA
R72	1	METAL OXIDE RES	470 Ω ±1% 0.1W	ERJ6ENF4700*	MATSUSHITA
R73	1	METAL OXIDE RES	1k Ω ±1% 0.1W	ERJ6ENF1001*	MATSUSHITA
R74	1	METAL OXIDE RES	100k Ω ±1% 0.1W	ERJ6ENF1003*	MATSUSHITA
R75	1	METAL OXIDE RES	10k Ω ±1% 0.1W	ERJ6ENF1002*	MATSUSHITA
R76	1	METAL OXIDE RES	3.3M Ω ±1% W	FK73H2A*3.3M F	KOA
R77	1	METAL OXIDE RES	680 Ω ±1% 0.1W	ERJ6ENF6800*	MATSUSHITA
R78	1	METAL OXIDE RES	680 Ω ±1% 0.1W	ERJ6ENF6800*	MATSUSHITA
R79	1	METAL OXIDE RES	680 Ω ±1% 0.1W	ERJ6ENF6800*	MATSUSHITA
R80	1	METAL OXIDE RES	4.7k Ω ±1% 0.1W	ERJ6ENF4701*	MATSUSHITA
R81	1	METAL OXIDE RES	4.7k Ω ±1% 0.1W	ERJ6ENF4701*	MATSUSHITA
U1	1	MEMORY		UPD43257AGU-10L	NEC
U2	1	ROM		B9906RC	YOKOGAWA
U6	1	MEMORY		UPD43257AGU-10L	NEC
U7	1	CMOS LOGIC		TC74HC04AF	TOSHIBA
U8	1	MEMORY		S-2914A1F10	SEIKO
U9	1	IC		MB3771PF	FUJITSU
U10	1	MPU & PRPHL		UPD70325GJ-10-5BG	NEC
U11	1	CMOS LOGIC		TC74HC14AF	TOSHIBA
U13	1	TTL		HD74LS06FP	HITACHI
U14	1	CMOS LOGIC		TC74HC14AF	TOSHIBA
U15	1	ASIC		MB606E99	FUJITSU
U16	1	MPU & PRPHL		MSM6242BGS-VK	OKI
U17	1	COMPARATOR IC		UPC339G	NEC
U18	1	CMOS LOGIC		SC7504F	MOTOROLA

CPU board assembly:B9906RB

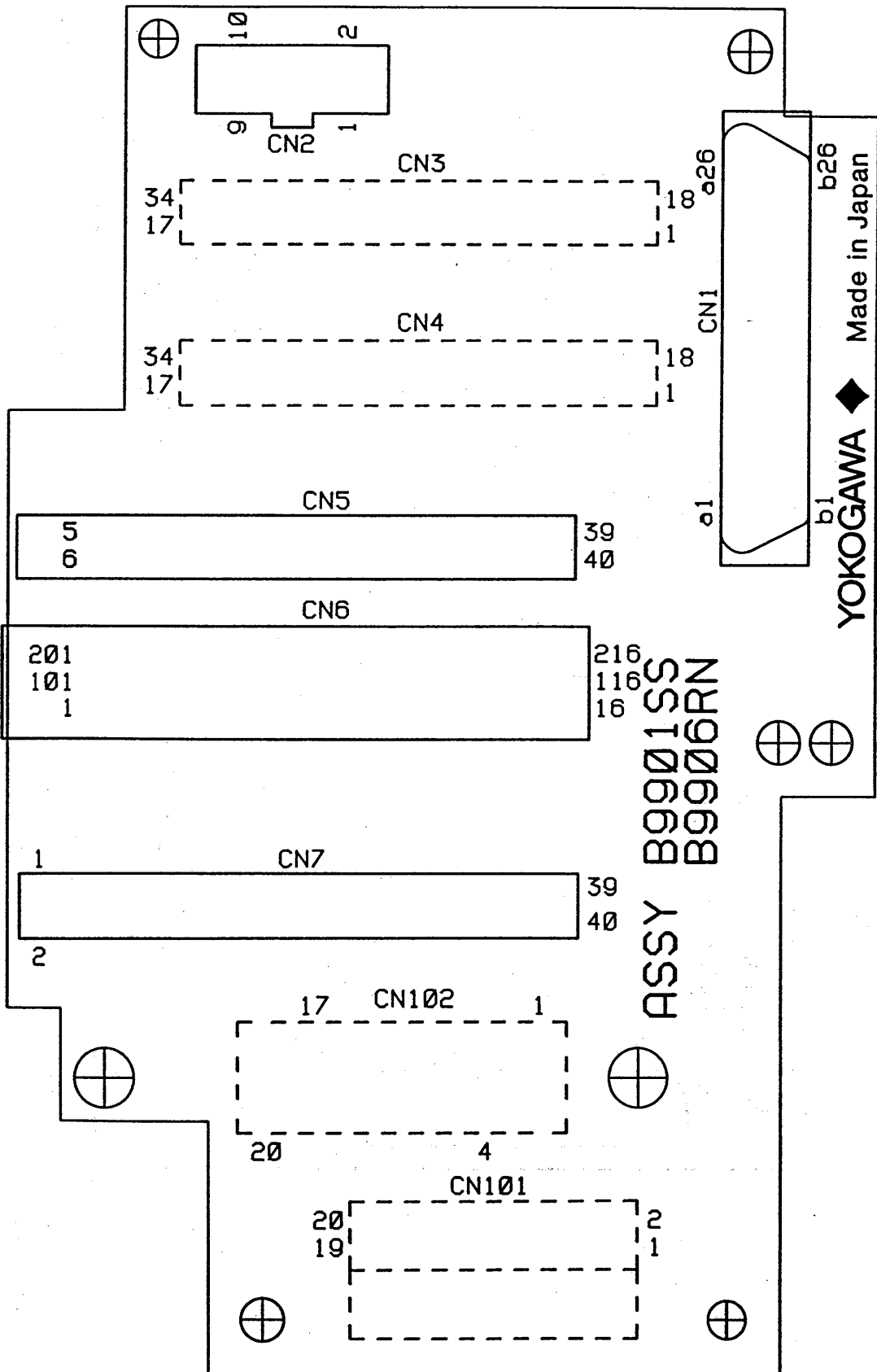
(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
U101	1	CMOS LOGIC		TC74HC245AF	TOSHIBA
U102	1	SC MODULE		UPA2004GR	NEC
U103	1	SC MODULE		UPA2004GR	NEC
U104	1	SC MODULE		UPA2004GR	NEC
U105	1	SC MODULE		UPA2004GR	NEC
X1	1	CRYSTAL UNIT		AT-51 19.6608MHZ	NIHONDENPA
X2	1	CRYSTAL UNIT		KF-38G	KYOCERA

2 μR1800 DOT PRINTING MODEL

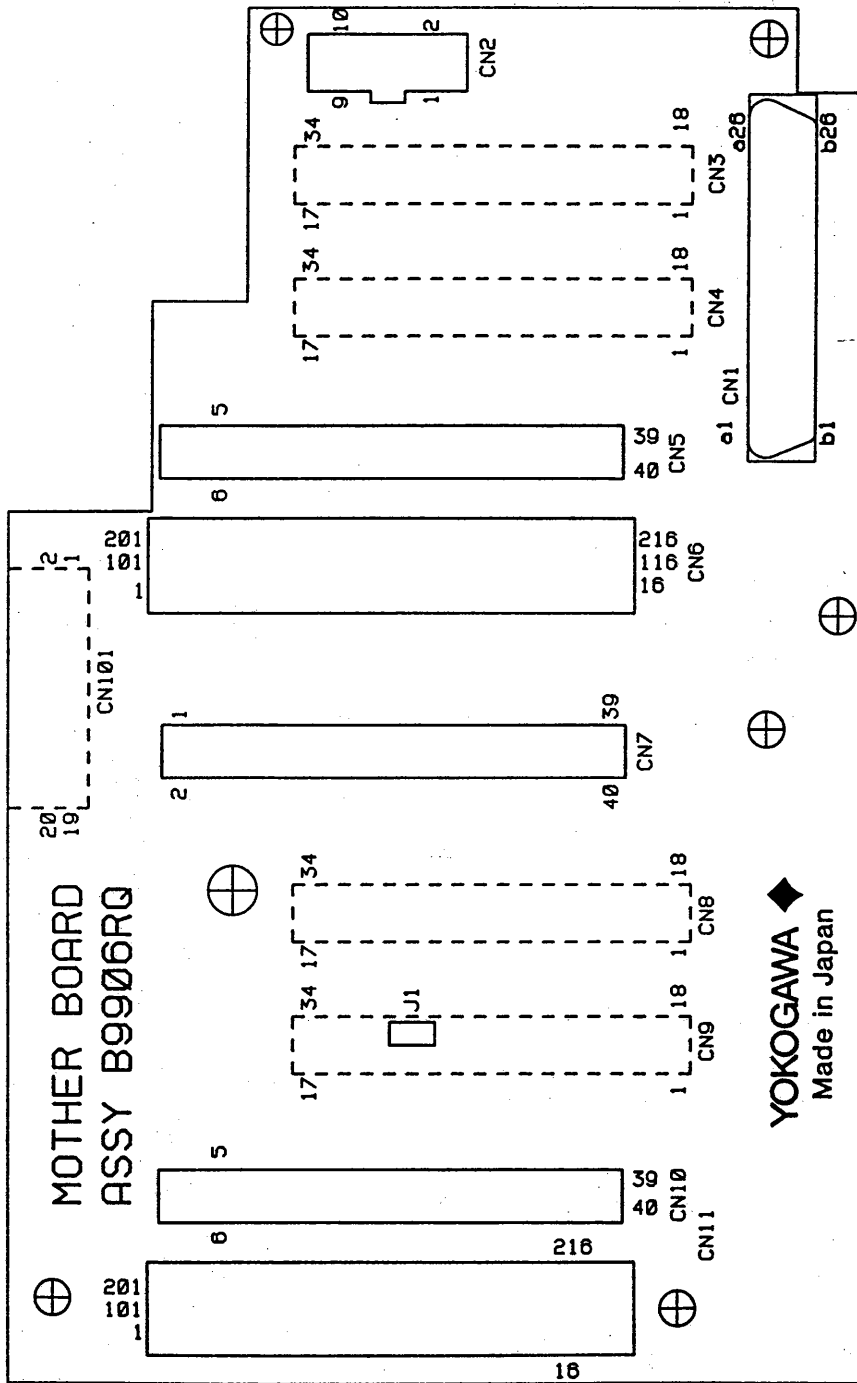


2.3.3 Location of Components (B9906 RN)



2 μR1800 DOT PRINTING MODEL

2.3.4 Location of Components (B9906 RQ)



2.3.5 List of Electrical Parts (B9906 SN/ B9906 RN)

Dot mother board assembly: B9906SN

(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
U101	1	CMOS LOGIC		TC74HC245AF	TOSHIBA
U102	1	SC MODULE		UPA2004GR	NEC
U103	1	SC MODULE		UPA2004GR	NEC
U104	1	SC MODULE		UPA2004GR	NEC
U105	1	SC MODULE		UPA2004GR	NEC
X1	1	CRYSTAL UNIT		AT-51 19.6608MHZ	NIHONDENPA
X2	1	CRYSTAL UNIT		KF-38G	KYOCERA

Dot mother board assembly: B9906RN

(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
1	1	FERRITE CORE		B9901RW	YOKOGAWA
2	1	FERRITE CORE		B9901RW	YOKOGAWA
CN1	1	POST TYPE CONN		FX2C-52S-1.27DSA	HIROSE
CN2	1	POST TYPE CONN		PS-10SG-D4TS1-5	JAE
CN3	1	POST TYPE CONN		H1F3H-34P-2.54W(16)	HIROSE
CN4	1	POST TYPE CONN		H1F3H-34P-2.54W(16)	HIROSE
CN5	1	POST TYPE CONN		H1F3H-40PB-2.54DSA12	HIROSE
CN6	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN7	1	POST TYPE CONN		H1F3H-40PB-2.54DSA11	HIROSE
CN101	1	POST TYPE CONN		A1-20PA-2.54DS	HIROSE
PWB	1	PWB		B9901TR	YOKOGAWA

2 μR1800 DOT PRINTING MODEL

2.3.6 List of Electrical Parts (B9906 SQ/ B9906 RQ)

12 Dot mother board assembly:B9906SQ

(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
2	1	FERRITE CORE		B9901RW	YOKOGAWA
4	1	FERRITE CORE		B9901RW	YOKOGAWA
CN1	1	POST TYPE CONN		FX2C-52S-1.27DSA	HIROSE
CN2	1	POST TYPE CONN		PS-10SG-D4TS1-5	JAE
CN4	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN6	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN7	1	POST TYPE CONN		HIF3H-40PB-2.54DSA11	HIROSE
CN9	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN11	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN101	1	POST TYPE CONN		A1-20PA-2.54DS	HIROSE
PWB	1	DOT MOTHER PWB		B9906TQ	YOKOGAWA

12 Dot mother board assembly:B9906RQ

(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
1	1	FERRITE CORE		B9901RW	YOKOGAWA
2	1	FERRITE CORE		B9901RW	YOKOGAWA
3	1	FERRITE CORE		B9901RW	YOKOGAWA
4	1	FERRITE CORE		B9901RW	YOKOGAWA
CN1	1	POST TYPE CONN		FX2C-52S-1.27DSA	HIROSE
CN2	1	POST TYPE CONN		PS-10SG-D4TS1-5	JAE
CN3	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN4	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN5	1	POST TYPE CONN		HIF3H-40PB-2.54DSA12	HIROSE
CN6	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN7	1	POST TYPE CONN		HIF3H-40PB-2.54DSA11	HIROSE
CN8	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN9	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN10	1	POST TYPE CONN		HIF3H-40PB-2.54DSA12	HIROSE
CN11	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN101	1	POST TYPE CONN		A1-20PA-2.54DS	HIROSE
PWB	1	DOT MOTHER PWB		B9906TQ	YOKOGAWA

2.3.7 List of Electrical Parts (B9906 SR/ B9906 RR)

18 Dot mother board assembly: B9906SR

(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
2	1	FERRITE CORE		B9901RW	YOKOGAWA
4	1	FERRITE CORE		B9901RW	YOKOGAWA
6	1	FERRITE CORE		B9901RW	YOKOGAWA
CN1	1	POST TYPE CONN		FX2C-52S-1.27DSA	HIROSE
CN2	1	POST TYPE CONN		PS-10SG-D4TS1-5	JAE
CN4	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN6	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN7	1	POST TYPE CONN		HIF3H-40PB-2.54DSA11	HIROSE
CN9	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN11	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN13	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN15	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN101	1	POST TYPE CONN		A1-20PA-2.54DS	HIROSE
PWB	1	DOT MOTHER PWB		B9906T0	YOKOGAWA

18 Dot mother board assembly: B9906RR

(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
1	1	FERRITE CORE		B9901RW	YOKOGAWA
2	1	FERRITE CORE		B9901RW	YOKOGAWA
3	1	FERRITE CORE		B9901RW	YOKOGAWA
4	1	FERRITE CORE		B9901RW	YOKOGAWA
5	1	FERRITE CORE		B9901RW	YOKOGAWA
6	1	FERRITE CORE		B9901RW	YOKOGAWA
CN1	1	POST TYPE CONN		FX2C-52S-1.27DSA	HIROSE
CN2	1	POST TYPE CONN		PS-10SG-D4TS1-5	JAE
CN3	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN4	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN5	1	POST TYPE CONN		HIF3H-40PB-2.54DSA12	HIROSE
CN6	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN7	1	POST TYPE CONN		HIF3H-40PB-2.54DSA11	HIROSE
CN8	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN9	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN10	1	POST TYPE CONN		HIF3H-40PB-2.54DSA12	HIROSE
CN11	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN12	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN13	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN14	1	POST TYPE CONN		HIF3H-40PB-2.54DSA12	HIROSE
CN15	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN101	1	POST TYPE CONN		A1-20PA-2.54DS	HIROSE
PWB	1	DOT MOTHER PWB		B9906T0	YOKOGAWA

2 μR1800 DOT PRINTING MODEL

2.3.8 List of Electrical Parts (B9906 SS/ B9906 RS)

24 Dot mother board assembly: B9906SS

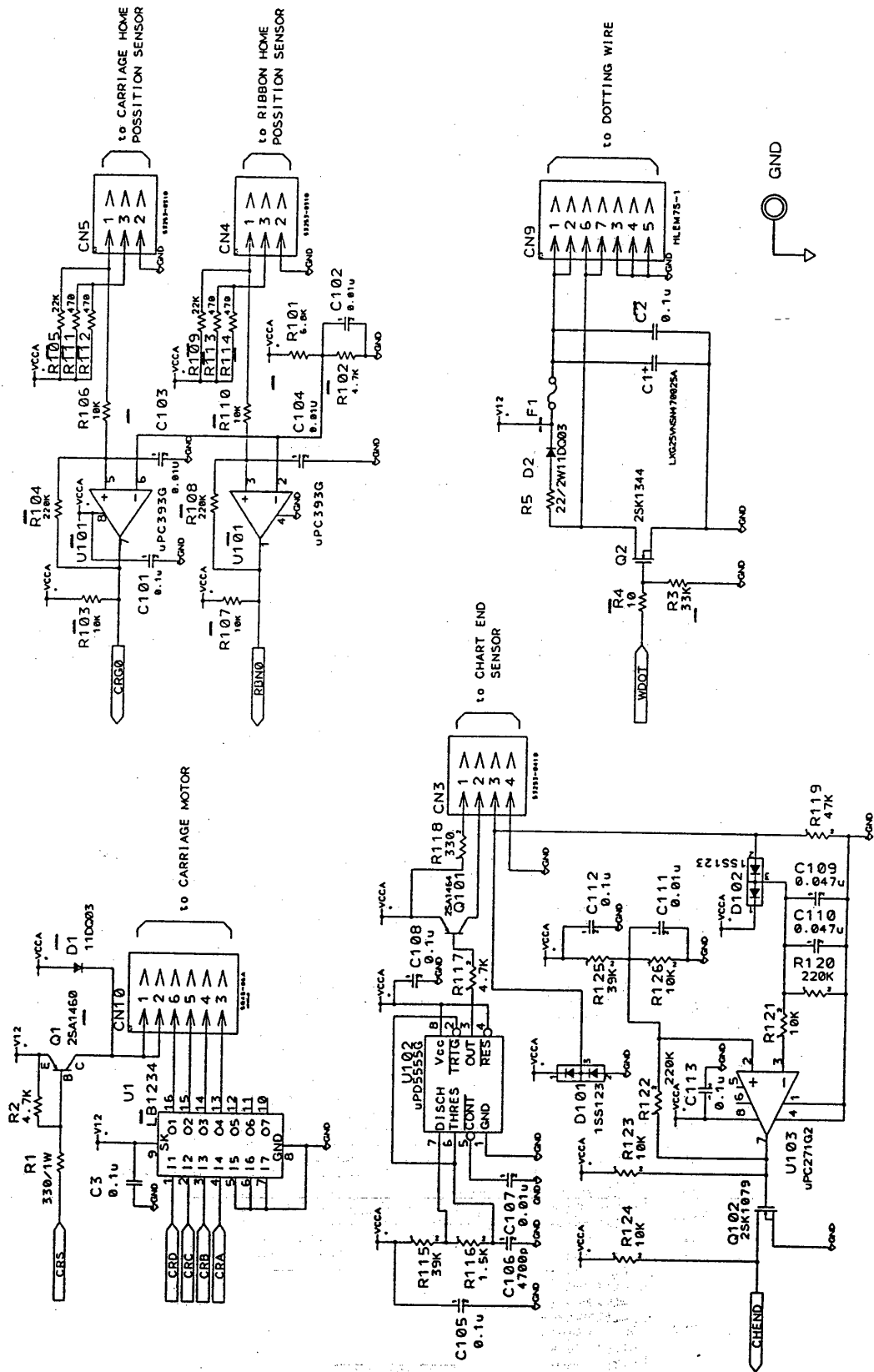
(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
2	1	FERRITE CORE		B9901RW	YOKOGAWA
4	1	FERRITE CORE		B9901RW	YOKOGAWA
6	1	FERRITE CORE		B9901RW	YOKOGAWA
8	1	FERRITE CORE		B9901RW	YOKOGAWA
CN1	1	POST TYPE CONN		FX2C-52S-1.27DSA	HIROSE
CN2	1	POST TYPE CONN		PS-10SG-D4TS1-5	JAE
CN4	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN6	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN7	1	POST TYPE CONN		HIF3H-40PB-2.54DSA11	HIROSE
CN9	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN11	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN13	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN15	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN17	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN19	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN101	1	POST TYPE CONN		A1-20PA-2.54DS	HIROSE
PWB	1	DOT MOTHER PWB		B9906TQ	YOKOGAWA

24 Dot mother board assembly: B9906RS

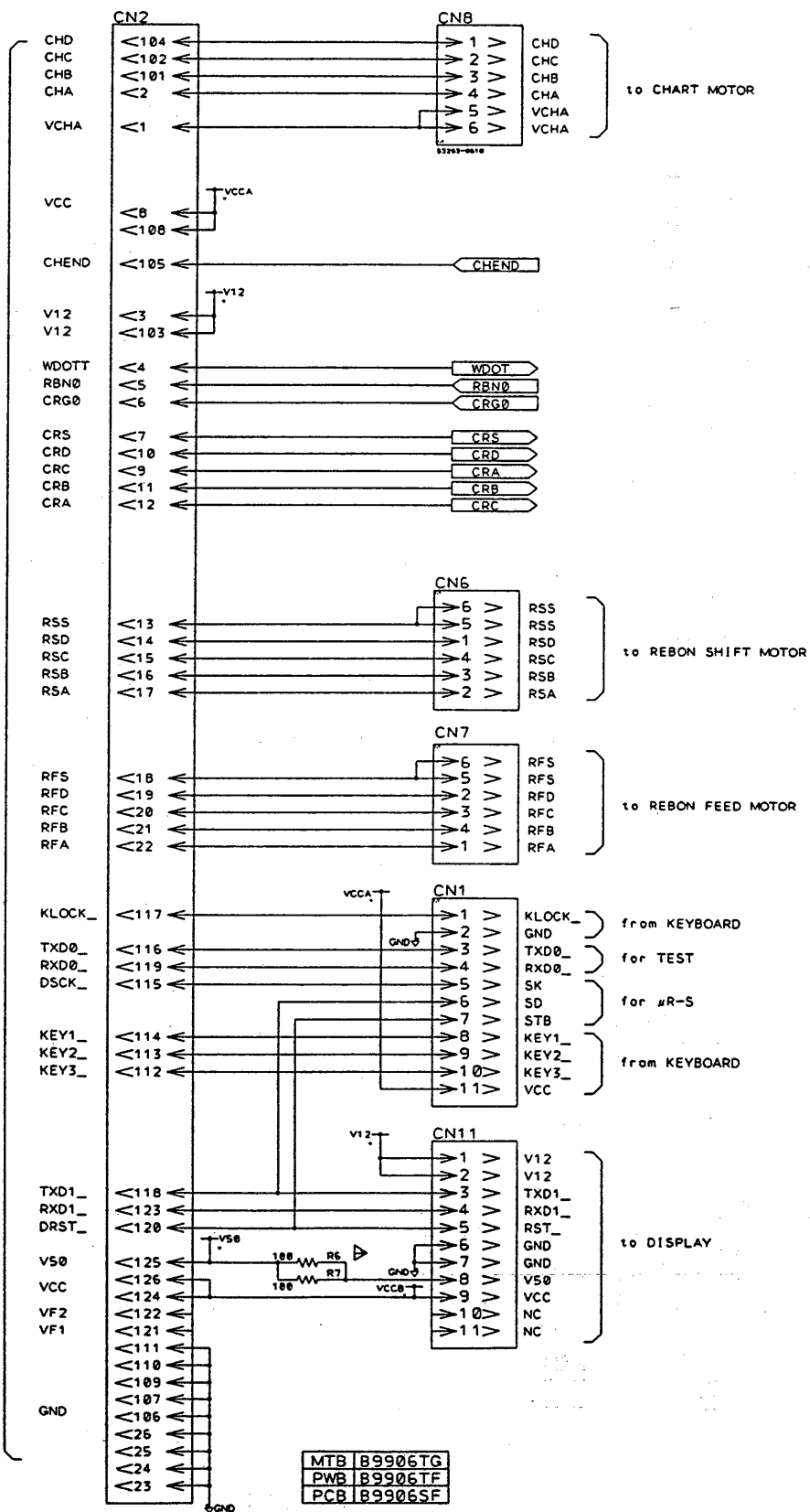
(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
1	1	FERRITE CORE		B9901RW	YOKOGAWA
2	1	FERRITE CORE		B9901RW	YOKOGAWA
3	1	FERRITE CORE		B9901RW	YOKOGAWA
4	1	FERRITE CORE		B9901RW	YOKOGAWA
5	1	FERRITE CORE		B9901RW	YOKOGAWA
6	1	FERRITE CORE		B9901RW	YOKOGAWA
7	1	FERRITE CORE		B9901RW	YOKOGAWA
8	1	FERRITE CORE		B9901RW	YOKOGAWA
CN1	1	POST TYPE CONN		FX2C-52S-1.27DSA	HIROSE
CN2	1	POST TYPE CONN		PS-10SG-D4TS1-5	JAE
CN3	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN4	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN5	1	POST TYPE CONN		HIF3H-40PB-2.54DSA12	HIROSE
CN6	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN7	1	POST TYPE CONN		HIF3H-40PB-2.54DSA11	HIROSE
CN8	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN9	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN10	1	POST TYPE CONN		HIF3H-40PB-2.54DSA12	HIROSE
CN11	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN12	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN13	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN14	1	POST TYPE CONN		HIF3H-40PB-2.54DSA12	HIROSE
CN15	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN16	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN17	1	POST TYPE CONN		HIF3H-34P-2.54W(16)	HIROSE
CN18	1	POST TYPE CONN		HIF3H-40PB-2.54DSA12	HIROSE
CN19	1	BOARD CONN		PCN10C-48S-2.54DSA44	HIROSE
CN101	1	POST TYPE CONN		A1-20PA-2.54DS	HIROSE
PWB	1	DOT MOTHER PWB		B9906TQ	YOKOGAWA

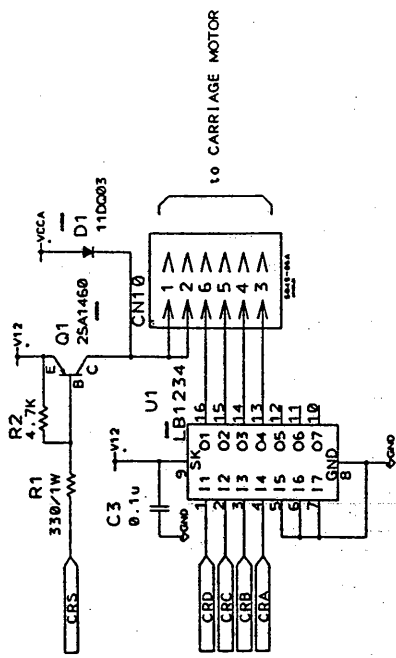
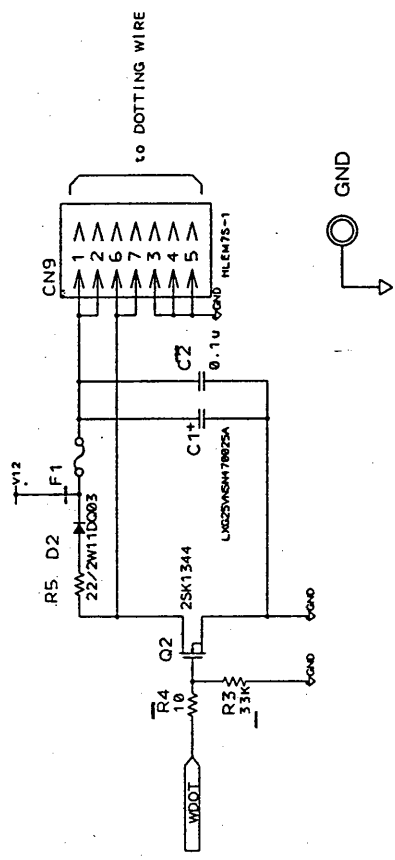
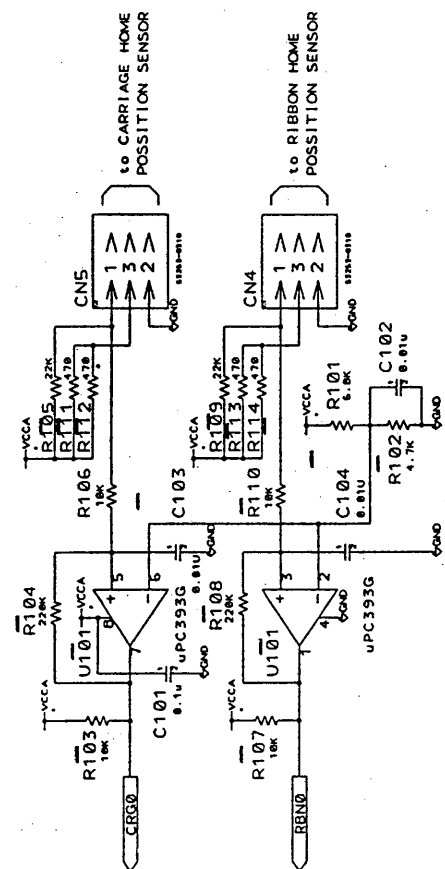


2.4.2 Schematic Diagram (B9906 SF)

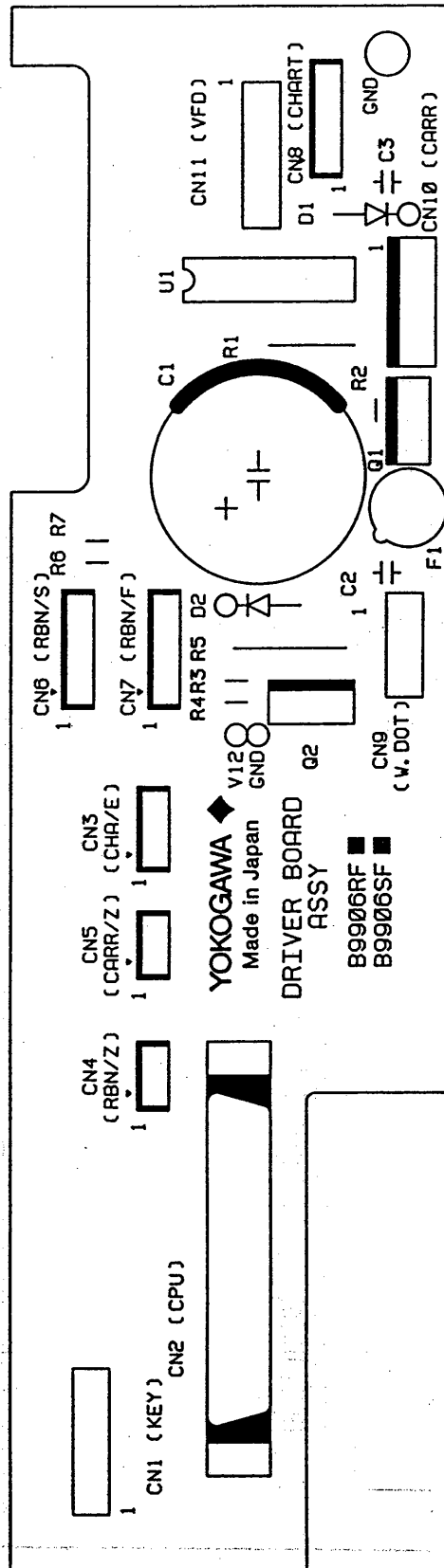
from CPU Board Assy



2 μ R1800 DOT PRINTING MODEL

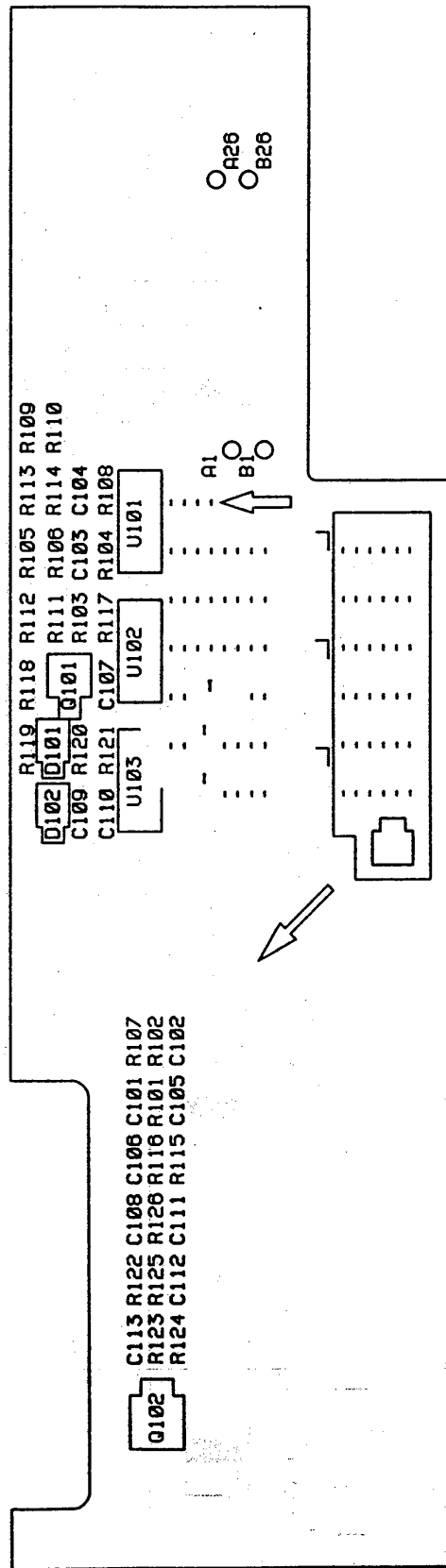


2.4.3 Location of Components (Component Side)



2 µR1800 DOT PRINTING MODEL

2.4.4 Location of Components (Soldering Side)



2.4.5 List of Electrical Parts (B9906 SF)

Driver board assembly:B9906SF

(July 1993)

Item	Q'ty	Part Name	Description			MFR Part No.	MFR Name
1	1	FUSE				19560	WICKMANN
2	120	HOOKUP WIRE				50/0.18 PVC GRN	SUMITOMO
3	1	TERMINAL				ICT1.25-3	NICHIFU
C1	1	ALUMINUM CAP	4700 μ F	$\pm 20\%$	25V	LXG25VNSN4700(M)25A	NITSUCHEMI
C2	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	FK26Y5V1H104Z	TDK
C3	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	FK26Y5V1H104Z	TDK
C101	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C102	1	CERAMIC CAP	0.01 μ F	$\pm 10\%$	50V	GRM40R103K50*	MURATA
C103	1	CERAMIC CAP	0.01 μ F	$\pm 10\%$	50V	GRM40R103K50*	MURATA
C104	1	CERAMIC CAP	0.01 μ F	$\pm 10\%$	50V	GRM40R103K50*	MURATA
CN1	1	POST TYPE CONN				HLEM11S-1	BURNDY
CN2	1	POST TYPE CONN				FX2B-52P-1.27DSA	HIROSE
CN4	1	POST TYPE CONN				53253-0310	MOLEX
CN5	1	POST TYPE CONN				53253-0310	MOLEX
CN6	1	POST TYPE CONN				53253-0610	MOLEX
CN7	1	POST TYPE CONN				53253-0610	MOLEX
CN8	1	POST TYPE CONN				53253-0610	MOLEX
CN9	1	PC EDGE CONN				HLEM7S-1	BURNDY
CN10	1	POST TYPE CONN				5045-06A	MOLEX
CN11	1	POST TYPE CONN				HLEM11S-1	BURNDY
D1	1	DIODE				S1S3M	SHINDENGEN
D2	1	DIODE				S1S3M	SHINDENGEN
F1	1	FUSE:TR5T K19372-.5A				B9573TZ	YOKOGAWA
PWB	1	DRIVER PWB				B9906TF	YOKOGAWA
Q1	1	TRANSISTOR				2SA1460	NEC
Q2	1	FET				2SK1344	TOSHIBA
R1	1	METAL OXIDE RES	330 Ω	$\pm 5\%$	1W	ERG1SJ331*	MATSUSHITA
R2	1	METAL FILM RES	4.7k Ω	$\pm 1\%$	0.25W	LF1/4 4.7K F	TAMA
R3	1	METAL FILM RES	33k Ω	$\pm 1\%$	0.25W	LF1/4 33K F	TAMA
R4	1	METAL FILM RES	10 Ω	$\pm 1\%$	0.25W	LF1/4 10 F	TAMA
R5	1	METAL OXIDE RES	22 Ω	$\pm 5\%$	2W	ERG2SJ220*	MATSUSHITA
R6	1	METAL FILM RES	100 Ω	$\pm 1\%$	0.25W	LF1/4 100 F	TAMA
R7	1	METAL FILM RES	100 Ω	$\pm 1\%$	0.25W	LF1/4 100 F	TAMA
R101	1	METAL OXIDE RES	6.8k Ω	$\pm 1\%$	0.1W	ERJ6ENF6801*	MATSUSHITA
R102	1	METAL OXIDE RES	4.7k Ω	$\pm 1\%$	0.1W	ERJ6ENF4701*	MATSUSHITA
R103	1	METAL OXIDE RES	10k Ω	$\pm 1\%$	0.1W	ERJ6ENF1002*	MATSUSHITA
R104	1	METAL OXIDE RES	220k Ω	$\pm 1\%$	0.1W	ERJ6ENF2203*	MATSUSHITA
R105	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R106	1	METAL OXIDE RES	10k Ω	$\pm 1\%$	0.1W	ERJ6ENF1002*	MATSUSHITA
R107	1	METAL OXIDE RES	10k Ω	$\pm 1\%$	0.1W	ERJ6ENF1002*	MATSUSHITA
R108	1	METAL OXIDE RES	220k Ω	$\pm 1\%$	0.1W	ERJ6ENF2203*	MATSUSHITA
R109	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R110	1	METAL OXIDE RES	10k Ω	$\pm 1\%$	0.1W	ERJ6ENF1002*	MATSUSHITA
R111	1	METAL OXIDE RES	470 Ω	$\pm 1\%$	0.1W	ERJ6ENF4700*	MATSUSHITA
R112	1	METAL OXIDE RES	470 Ω	$\pm 1\%$	0.1W	ERJ6ENF4700*	MATSUSHITA
R113	1	METAL OXIDE RES	470 Ω	$\pm 1\%$	0.1W	ERJ6ENF4700*	MATSUSHITA
R114	1	METAL OXIDE RES	470 Ω	$\pm 1\%$	0.1W	ERJ6ENF4700*	MATSUSHITA
U1	1	SC MODULE				LB1234	SANYO
U101	1	COMPARATOR IC				UPC393G2	NEC

2 μ FT1800 DOT PRINTING MODEL

2.4.6 List of Electrical Parts (B9906 RF)

Driver board assembly:B9906RF

(July 1993)

Item	Qty	Part Name	Description			MFR Part No.	MFR Name
1	1	FUSE				19560	WICKMANN
2	120	HOOKUP WIRE				50/0.18 PVC GRN	SUMITOMO
3	1	TERMINAL				ICT1.25-3	NICHIFU
C1	1	ALUMINUM CAP	4700 μ F	$\pm 20\%$	25V	LXG25VNSN4700(M)25A	NITSUCHEMI
C2	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	FK26Y5V1H104Z	TDK
C3	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	FK26Y5V1H104Z	TDK
C101	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C102	1	CERAMIC CAP	0.01 μ F	$\pm 10\%$	50V	GRM40R103K50*	MURATA
C103	1	CERAMIC CAP	0.01 μ F	$\pm 10\%$	50V	GRM40R103K50*	MURATA
C104	1	CERAMIC CAP	0.01 μ F	$\pm 10\%$	50V	GRM40R103K50*	MURATA
C105	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C106	1	CERAMIC CAP	4700pF	$\pm 10\%$	50V	GRM40R472K50*	MURATA
C107	1	CERAMIC CAP	0.01 μ F	$\pm 10\%$	50V	GRM40R103K50*	MURATA
C108	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C109	1	CERAMIC CAP	0.047 μ F	$\pm 10\%$	50V	GRM40R473K50*	MURATA
C110	1	CERAMIC CAP	0.047 μ F	$\pm 10\%$	50V	GRM40R473K50*	MURATA
C111	1	CERAMIC CAP	0.01 μ F	$\pm 10\%$	50V	GRM40R103K50*	MURATA
C112	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
C113	1	CER CAPACITOR	0.1 μ F	-20~80%	50V	C2012Y5V1H104Z*	TDK
CN1	1	POST TYPE CONN				HLEM11S-1	BURNDY
CN2	1	POST TYPE CONN				FX2B-52P-1.27DSA	HIROSE
CN3	1	POST TYPE CONN				53253-0410	MOLEX
CN4	1	POST TYPE CONN				53253-0310	MOLEX
CN5	1	POST TYPE CONN				53253-0310	MOLEX
CN6	1	POST TYPE CONN				53253-0610	MOLEX
CN7	1	POST TYPE CONN				53253-0610	MOLEX
CN8	1	POST TYPE CONN				53253-0610	MOLEX
CN9	1	PC EDGE CONN				HLEM7S-1	BURNDY
CN10	1	POST TYPE CONN				5045-06A	MOLEX
CN11	1	POST TYPE CONN				HLEM11S-1	BURNDY
D1	1	DIODE				S1S3M	SHINDENGEN
D2	1	DIODE				S1S3M	SHINDENGEN
D101	1	DIODE				1SS123	NEC
D102	1	DIODE				1SS123	NEC
F1	1	FUSE:TR5T K19372-.5A				B9573TZ	YOKOGAWA
PWB	1	DRIVER PWB				B9906TF	YOKOGAWA
Q1	1	TRANSISTOR				2SA1460	NEC
Q2	1	FET				2SK1344	TOSHIBA
Q101	1	TRANSISTOR				2SA1464	NEC
Q102	1	FET				2SK1079	TOSHIBA
R1	1	METAL OXIDE RES	330 Ω	$\pm 5\%$	1W	ERG1SJ331*	MATSUSHITA
R2	1	METAL FILM RES	4.7k Ω	$\pm 1\%$	0.25W	LF1/4 4.7K F	TAMA
R3	1	METAL FILM RES	33k Ω	$\pm 1\%$	0.25W	LF1/4 33K F	TAMA
R4	1	METAL FILM RES	10 Ω	$\pm 1\%$	0.25W	LF1/4 10 F	TAMA
R5	1	METAL OXIDE RES	22 Ω	$\pm 5\%$	2W	ERG2SJ220*	MATSUSHITA
R6	1	METAL FILM RES	100 Ω	$\pm 1\%$	0.25W	LF1/4 100 F	TAMA
R7	1	METAL FILM RES	100 Ω	$\pm 1\%$	0.25W	LF1/4 100 F	TAMA
R101	1	METAL OXIDE RES	6.8k Ω	$\pm 1\%$	0.1W	ERJ6ENF6801*	MATSUSHITA
R102	1	METAL OXIDE RES	4.7k Ω	$\pm 1\%$	0.1W	ERJ6ENF4701*	MATSUSHITA
R103	1	METAL OXIDE RES	10k Ω	$\pm 1\%$	0.1W	ERJ6ENF1002*	MATSUSHITA
R104	1	METAL OXIDE RES	220k Ω	$\pm 1\%$	0.1W	ERJ6ENF2203*	MATSUSHITA
R105	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R106	1	METAL OXIDE RES	10k Ω	$\pm 1\%$	0.1W	ERJ6ENF1002*	MATSUSHITA
R107	1	METAL OXIDE RES	10k Ω	$\pm 1\%$	0.1W	ERJ6ENF1002*	MATSUSHITA
R108	1	METAL OXIDE RES	220k Ω	$\pm 1\%$	0.1W	ERJ6ENF2203*	MATSUSHITA
R109	1	METAL OXIDE RES	22k Ω	$\pm 1\%$	0.1W	ERJ6ENF2202*	MATSUSHITA
R110	1	METAL OXIDE RES	10k Ω	$\pm 1\%$	0.1W	ERJ6ENF1002*	MATSUSHITA
R111	1	METAL OXIDE RES	470 Ω	$\pm 1\%$	0.1W	ERJ6ENF4700*	MATSUSHITA
R112	1	METAL OXIDE RES	470 Ω	$\pm 1\%$	0.1W	ERJ6ENF4700*	MATSUSHITA

Driver board assembly:B9906RF

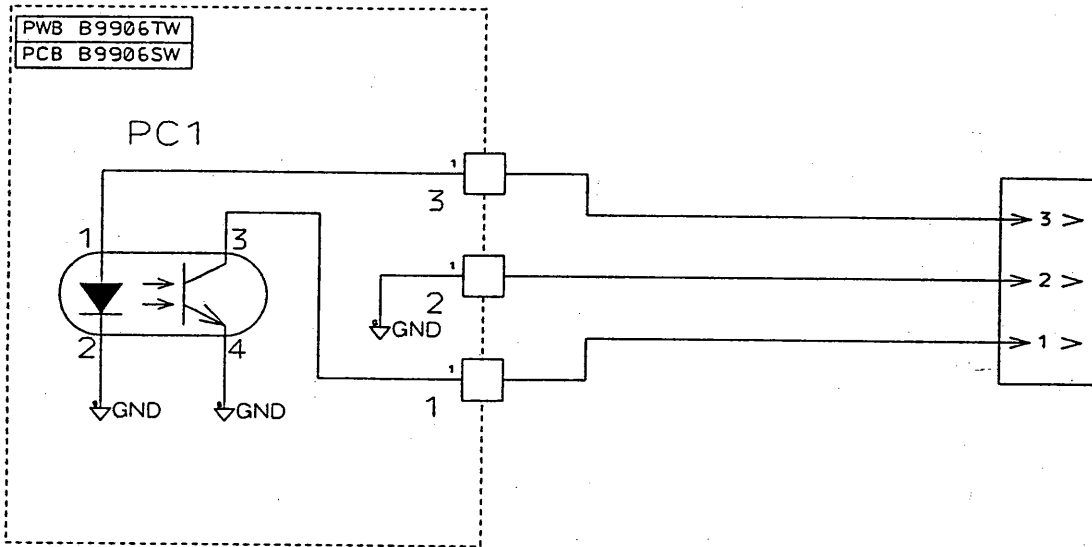
(July 1993)

Item	Q'ty	Part Name	Description			MFR Part No.	MFR Name
R113	1	METAL OXIDE RES	470 Ω	±1%	0.1W	ERJ6ENF4700*	MATSUSHITA
R114	1	METAL OXIDE RES	470 Ω	±1%	0.1W	ERJ6ENF4700*	MATSUSHITA
R115	1	METAL OXIDE RES	39k Ω	±1%	0.1W	ERJ6ENF3902*	MATSUSHITA
R116	1	METAL OXIDE RES	1.5k Ω	±1%	0.1W	ERJ6ENF1501*	MATSUSHITA
R117	1	METAL OXIDE RES	4.7k Ω	±1%	0.1W	ERJ6ENF4701*	MATSUSHITA
R118	1	METAL OXIDE RES	330 Ω	±1%	0.1W	ERJ6ENF3300*	MATSUSHITA
R119	1	METAL OXIDE RES	47k Ω	±1%	0.1W	ERJ6ENF4702*	MATSUSHITA
R120	1	METAL OXIDE RES	220k Ω	±1%	0.1W	ERJ6ENF2203*	MATSUSHITA
R121	1	METAL OXIDE RES	10k Ω	±1%	0.1W	ERJ6ENF1002*	MATSUSHITA
R122	1	METAL OXIDE RES	220k Ω	±1%	0.1W	ERJ6ENF2203*	MATSUSHITA
R123	1	METAL OXIDE RES	10k Ω	±1%	0.1W	ERJ6ENF1002*	MATSUSHITA
R124	1	METAL OXIDE RES	10k Ω	±1%	0.1W	ERJ6ENF1002*	MATSUSHITA
R125	1	METAL OXIDE RES	39k Ω	±1%	0.1W	ERJ6ENF3902*	MATSUSHITA
R126	1	METAL OXIDE RES	10k Ω	±1%	0.1W	ERJ6ENF1002*	MATSUSHITA
U1	1	SC MODULE				LB1234	SANYO
U101	1	COMPARATOR IC				UPC393G2	NEC
U102	1	A/D & D/A				UPD5555G	NEC
U103	1	COMPARATOR IC				UPC271G2	NEC

2 μR1800 DOT PRINTING MODEL

2.5 Sensor Board Assembly

2.5.1 Schematic Diagram (B9906 FG)



2.5.2 List of Electrical Parts (B9906 FG)

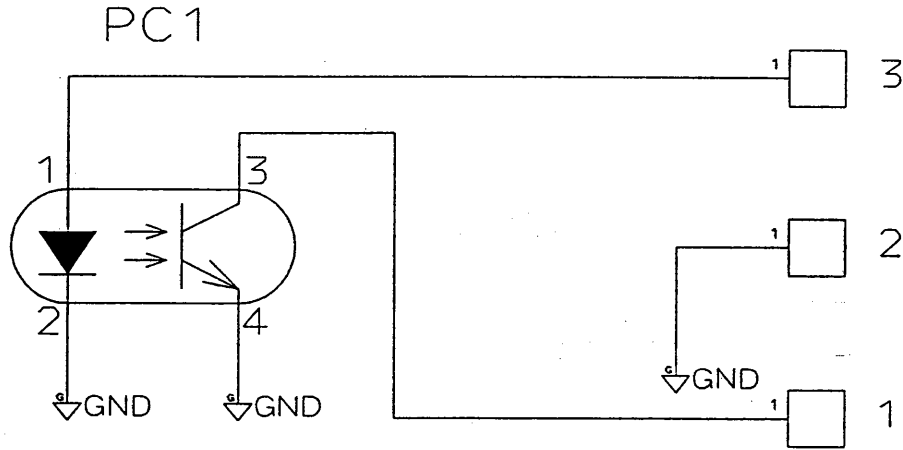
Sensor board assembly: B9906FG

(July 1993)

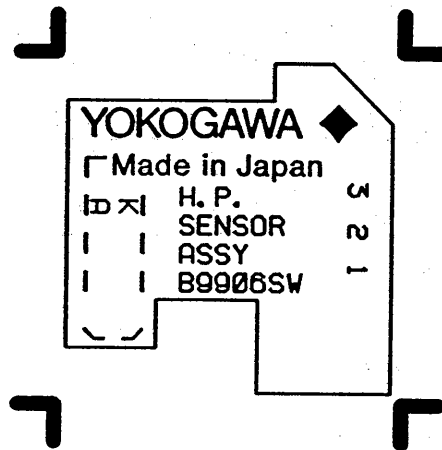
Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
1	1	H. P. SENSOR BOARD		B9906SW	YOKOGAWA
2	1	POST TYPE CONN		51065-0300	MOLEX
3	3	POST TYPE CONN		50212-8000	MOLEX
4	270	HOOKUP WIRE		UL1007 AWG24 BRN	SUMITOMO
5	270	HOOKUP WIRE		UL1007 AWG24 RED	SUMITOMO
6	270	HOOKUP WIRE		UL1007 AWG24 ORN	SUMITOMO

2.6 H.P. Sensor Board Assembly

2.6.1 Schematic Diagram (B9906 SW)



2.6.2 Location of Components



2.6.3 List of Electrical Parts (B9906 SW)

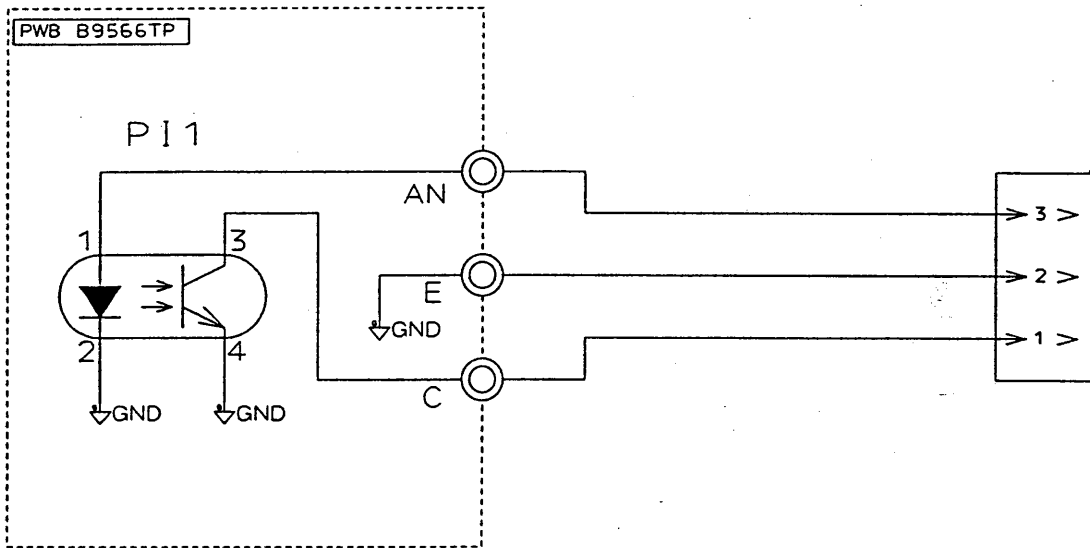
H.P. Sensor board assembly: B9906SW

(July 1993)

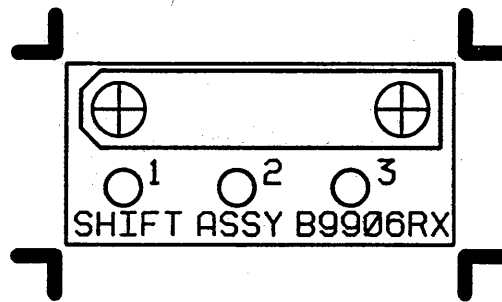
Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
1	1	OPTO ISOLATOR		GP1S02	SHARP
PWB	1	H. P. SENSER PWB		B9906TW	YOKOGAWA

2.7 Shift Sensor Board Assembly

2.7.1 Schematic Diagram (B9906 RX)



2.7.2 Location of Components



2.7.3 List of Electrical Parts (B9906 RX)

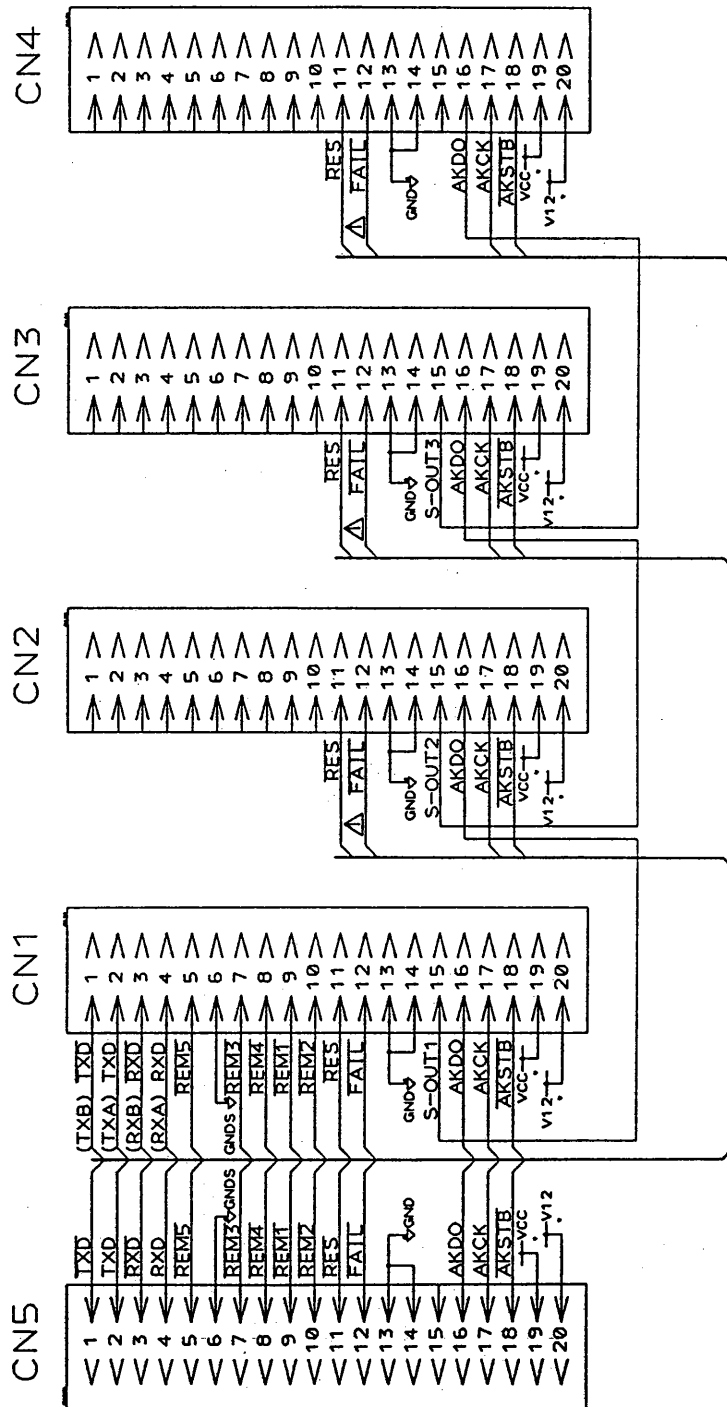
Shift Sensor board assembly: B9906RX

(July 1993)

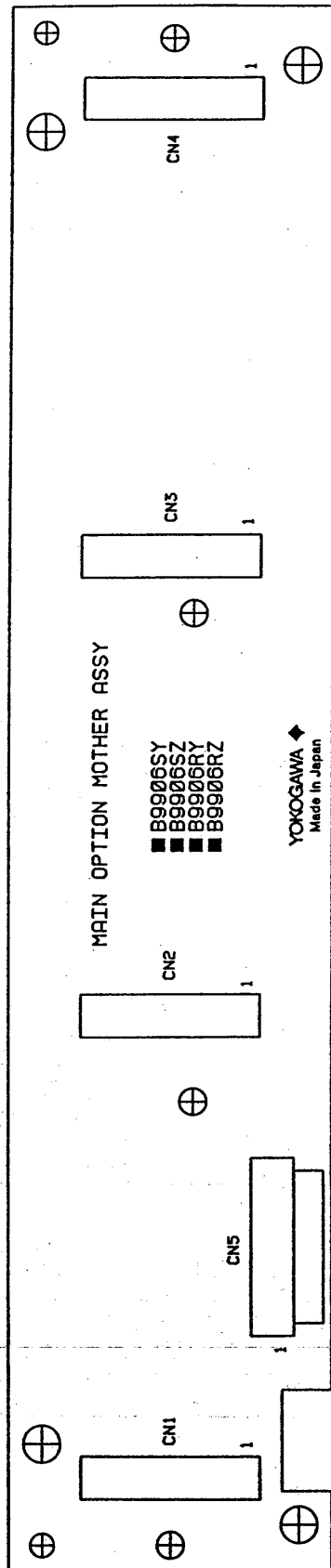
Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
1	1	PWB		B9906TX	YOKOGAWA
2	1	OPTO ISOLATOR		GP1S02	SHARP
3	1	POST TYPE CONN		51065-0300	MOLEX
4	3	POST TYPE CONN		50212-8000	MOLEX
5	130	HOOKUP WIRE		UL1007 AWG24 BRN	SUMITOMO
6	130	HOOKUP WIRE		UL1007 AWG24 RED	SUMITOMO
7	130	HOOKUP WIRE		UL1007 AWG24 ORN	SUMITOMO

2.8 Main Option Board Assembly

2.8.1 Schematic Diagram (B9906 SY/ B9906 SZ/ B9906 RY/ B9906 RZ)



2.8.2 Location of Components



2.8.3 List of Electrical Parts (B9906 SY/ B9906 SZ/ B9906 RY/ B9906 RZ)

Main option board assembly:B9906SY

(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
CN1	1	BOARD CONN		A5-20DA-254DSA	HIROSE
CN5	1	POST TYPE CONN		A1-20PA-2.54DS	HIROSE
PWB	1	MAIN OP.MOTHER PWB		B9906TY	YOKOGAWA

Main option board assembly:B9906SZ

(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
CN1	1	BOARD CONN		A5-20DA-254DSA	HIROSE
CN2	1	BOARD CONN		A5-20DA-254DSA	HIROSE
CN5	1	POST TYPE CONN		A1-20PA-2.54DS	HIROSE
PWB	1	MAIN OP.MOTHER PWB		B9906TY	YOKOGAWA

Main option board assembly:B9906RY

(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
CN1	1	BOARD CONN		A5-20DA-254DSA	HIROSE
CN2	1	BOARD CONN		A5-20DA-254DSA	HIROSE
CN3	1	BOARD CONN		A5-20DA-254DSA	HIROSE
CN5	1	POST TYPE CONN		A1-20PA-2.54DS	HIROSE
PWB	1	MAIN OP.MOTHER PWB		B9906TY	YOKOGAWA

Main option board assembly:B9906RZ

(July 1993)

Item	Q'ty	Part Name	Description	MFR Part No.	MFR Name
CN1	1	BOARD CONN		A5-20DA-254DSA	HIROSE
CN2	1	BOARD CONN		A5-20DA-254DSA	HIROSE
CN3	1	BOARD CONN		A5-20DA-254DSA	HIROSE
CN4	1	BOARD CONN		A5-20DA-254DSA	HIROSE
CN5	1	POST TYPE CONN		A1-20PA-2.54DS	HIROSE
PWB	1	MAIN OP.MOTHER PWB		B9906TY	YOKOGAWA

2 µR1800 DOT PRINTING MODEL

Appendix List of Manufacturers of Electronic Parts

MFR Abbreviation	MFR Name	Address
ASAHI ELEC	Asahi Electric Co., Ltd.	Dairoku Hakuo Bldg.(3F) 2-2-13 Nishi-kanda, Chiyoda-ku, Tokyo, 101 JAPAN
ASAHI	Asahi Electric Works Ltd.	1-7-24 Kokutaiji-cho, Naka-ku, Hiroshima-shi, Hiroshima, 730 JAPAN
ALPHA ELEC	Alpha Electronics Corp.	3K Bldg. 2-4-7 Kajiya-cho, Chiyoda-ku, Tokyo, 101 JAPAN
AKK	Asakura Kogyo Co., Ltd.	4-10-7 Daimachi, Hachioji-shi, Tokyo, 193 JAPAN
AKS	Akabane Kinzoku Seisakusho K.K.	2-16-4 Akabane-minami, Kita-ku, Tokyo, 115 JAPAN
ALF	Alpha Co., Ltd.	4-5-5 Hino-honmachi, Hino-shi, Tokyo, 191 JAPAN
ALPS	Alps Electric Co., Ltd.	1-7 Yukigayaotsuka-cho, Ota-ku, Tokyo, 145 JAPAN
AMP	AMP Japan Ltd.	87 Hisamoto, Takatsu-ku, Kawasaki-shi, Kanagawa, 213 JAPAN
AD	Analog Devices	Jibiki Daini Bldg. 4-7-8 Kojimachi, Chiyoda-ku, Tokyo, 102 JAPAN
ANR	Anritsu Corp.	5-10-27 Minami-azabu, Minato-ku, Tokyo, 106 JAPAN
ANRITSU	Anritsu Meter Co., Ltd.	2-4-5 Shimo-meguro, Meguro-ku, Tokyo, 153 JAPAN
BB	Burr-Brown Japan Ltd.	Natural House Bldg.(2F) 6-14-15 Akasaka, Minato-ku, Tokyo, 107 JAPAN
CDK	Chitose Electric Co., Ltd.	1-13-16 Izumi, Komae-shi, Tokyo, 201 JAPAN
CJK	Coaning Japan K.K.	Kowa 35 Bldg.(3F) 1-14-14 Akasaka, Minato-ku, Tokyo, 107 JAPAN
CKD	CKD Corp.	Sumitomo-bank Nihon-ichi Bldg. 1-17-17 Nihonbashi, Minami-ku, Osaka-shi, Osaka, 542 JAPAN
TOCOS	Tokyo Cosmos Electronics Co., Ltd.	2-268 Sobudai, Zama-shi, Kanagawa, 228 JAPAN
CPH	Kureha Plastics Co., Ltd.	2221 Oaza-Kamitamari, Tamari-mura, Niihari-gun, Ibaragi, 311-34 JAPAN
COPAL	Copal Electronics Co., Ltd.	Daigo Mori Bldg. 1-17-1 Toranomom, Minato-ku, Tokyo, 105 JAPAN
CITIZEN	Citizen Watch Co., Ltd.	840 Shimotomi, Tokorozawa-shi, Saitama, 359 JAPAN
DAI	Dainichi Denshi Co., Ltd.	Dainichi Bldg. 1-1-7 Koraku, Bunkyo-ku, Tokyo, 112 JAPAN
DDK	Daiichi Denshi Kogyo Ltd.	Heiwaseimei Fuchu Bldg.(2F) 1-4 Hachiman Fuchu-shi, Tokyo, 183 JAPAN
DIC	Dainippon Ink & Chemicals, Inc.	3-7-20 Nihonbashi, Chuo-ku, Tokyo, 103 JAPAN
DAIICHI	Daiichi Denzai K.K.	3-4-14 Higashi-nogawa, Komae-shi, Tokyo, 201 JAPAN
DAITO	Daitou Tsushinki Co., Ltd.	2-17-7 Shimo-meguro, Meguro-ku, Tokyo, 153 JAPAN
DENKIKAGA	Denki Kagaku Kogyo K.K.	1-4-1 Yuraku-cho, Chiyoda-ku, Tokyo, 100 JAPAN
DSK	Daiwa Sanko Co., Ltd.	2-9-10 Soto-kanda, Chiyoda-ku, Tokyo, 101 JAPAN
DATEL	Datel Inc.	Meijiseimei Bldg. 2-27-4 Nishi-gotanda, Shinagawa-ku, Tokyo, 141 JAPAN
EIE	EIE Co., Ltd.	5-1-7 Ginza, Chuo-ku, Tokyo, 104 JAPAN
ELCO INTER	Elco International Corp.	CBC Kokusai Bldg.(6F) 3-22-7 Shiba, Minato-ku, Tokyo, 105 JAPAN
ELM	Elma Electronics A.G.	2-4-5 Kajiya-cho, Chiyoda-ku, Tokyo, 101 JAPAN
ELNA	Elna Co., Ltd.	Gotanda K Bldg.(4F) 2-21-1 Nishi-gotanda, Shinagawa-ku, Tokyo, 141 JAPAN
ELMEC	Elmec Corp.	KSP-R&D-B-10F 100-1 Sakado, Takatsu-ku, Kawasaki-shi, KANAGAWA, 213 JAPAN
SEIKO EPSON	Epson Hanbai Co., Ltd.	Hatsudai Koyama Bldg., 1-53-6 Hatsudai, Shibuya-ku, Tokyo, 151 JAPAN
FURUKAWA	The Furukawa Battery Co., Ltd.	Marutomo Bldg. 3-6-8 Utsubohonmachi Nishi-ku, Osaka-shi, Osaka, 550 JAPAN
FCH	Fairchild Aschlumberger Company	464 Ellis street, Mountain View, California 94042 U.S.A.
FDK	Fuji Denki Kagaku Co., Ltd.	Hama Gum Bldg. 5-36-11 Shinbashi, Minato-ku, Tokyo, 105 JAPAN
FUJICON	Fujicon Co., Ltd.	3-32-4 Kugahara, Ota-ku, Tokyo, 146 JAPAN
FUJI	Fuji Electric Co., Ltd.	Shin Yurakucho Bldg. 1-12-1 Yuraku-cho, Chiyoda-ku, Tokyo, 100 JAPAN
FUJISOKU	Fujisoku Electric Co., Ltd.	Yushima Fuji Bldg.(5F) 3-13-8 Yushima, Bunkyo-ku, Tokyo, 113 JAPAN
FUJITSU	Fujitsu Ltd.	Furukawa Sougou Bldg., 2-6-1 Marunouchi, Chiyoda-ku, Tokyo, 100 JAPAN
FKK	Fujikura Kasei Co., Ltd.	2-6-15 Shiba-koen, Minato-ku, Tokyo, 105 JAPAN
FUJIKURA	Fujikura Cable Works, Ltd.	1-5-1 Kiba, Koto-ku, Tokyo, 135 JAPAN
FUJI POLYM	Fuji Polimertech Corp.	4-8-16 Nihonbashi-honcho, Chuo-ku, Tokyo, 103 JAPAN

MFR Abbreviation	MFR Name	Address
FSH	Fusoh Co., Ltd.	501 TBR Bldg. 2-10-2 Nagata-cho, Chiyoda-ku, Tokyo, 100 JAPAN
GEC	Gokoh Electric Co., Ltd.	6-18-12 Nishi-gotanda, Shinagawa-ku, Tokyo, 141 JAPAN
GJK	Grace Japan K.K.	100 Kaneda, Atsugi-shi, Kanagawa, 243 JAPAN
GSI	General Semiconductor Industries, Inc.	2001 West 10th Place Tempe Arizona 85281 U.S.A.
HAK	Hakko Co., Ltd.	1-10-6 Takaban, Meguro-ku, Tokyo, 152 JAPAN
HAMAI	Hamai Electric Lamp Ind. Co., Ltd.	1-9-26 Kasuga, Bunkyo-ku, Tokyo, 112 JAPAN
HCC	Hitachi Chemical Co., Ltd.	Shinjuku Mitsui Bldg. 2-1-1 Nishi-shinjuku, Shinjuku-ku, Tokyo, 160 JAPAN
HITACHI, D	Hitachi Cable, Ltd.	2-1-12 Marunouchi, Chiyoda-ku, Tokyo, 100 JAPAN
HDK	Hokuriku Electric Ind. Co., Ltd.	102 Oya Bldg. 1-4-11 Tamadaira, Hino-shi, Tokyo, 191 JAPAN
HEC	Hosiden Electronics Co., Ltd.	1-4-33 Kitakyuhoji, Yao-shi, Osaka, 581 JAPAN
HIROSE	Hirose Electric Co., Ltd.	5-5-23 Osaki, Shinagawa-ku, Tokyo, 141 JAPAN
HITACHI	Hitachi Ltd.	Shinmaru Bldg. 1-5-1 Marunouchi, Chiyoda-ku, Tokyo, 100 JAPAN
HKD	Hakko Electric Corp.	257-1 Oaza-narushima, Tatebayashi-shi, Gunma, 374 JAPAN
HKS	Hakko Shoji Co., Ltd.	1-7-9 Kami-meguro, Meguro-ku, Tokyo, 153 JAPAN
HML	Hitachi Maxell, Ltd.	1-1-88 Ushitora, Ibaraki-shi, Osaka 567 JAPAN
HONDA	Honda Tsushin Kogyo Co., Ltd.	6-18-12 Meguro-honcho, Meguro-ku, Tokyo, 152 JAPAN
HOS	H,OS Co., Ltd.	Okumiya Kosan Bldg.(4F) 3-7-3 Soto-kanda, Chiyoda-ku, Tokyo, 101 JAPAN
HOSODA	Hosoda & Co., Ltd.	Ishikawa Bldg.(2F) 2-8-5 Ginza, Chuo-ku, Tokyo, 104 JAPAN
HANAI	Hanai Densen	2-11-5 Sakura-shinmachi, Setagaya-ku, Tokyo, 154 JAPAN
HZT	Hertz Technology Inc.	293-4 Sanda-cho, Hachioji-shi, Tokyo, 193 JAPAN
IZUMI	Izumi Denki Corp.	6-1-1 Heiwajima, Ota-ku, Tokyo, 143 JAPAN
IWATSU	Iwatsu Electronics Co., Ltd.	Daini Matsuda Bldg. 3-4-8 Toranomon, Minato-ku, Tokyo, 105 JAPAN
IEI	Ikuno Electrol Inc.	88 Komaoka-cho, Tsurumi-ku, Yokohama-shi, Kanagawa, 230 JAPAN
IFK	Ishifuku Metal Ind. Co., Ltd.	3-20-7 Uchi-kanda, Chiyoda-ku, Tokyo, 101-91 JAPAN
IKEGAMI	Ikegami Tsushinki Co., Ltd.	5-6-16 Ikegami, Ota-ku, Tokyo, 146 JAPAN
INC	Inter Compo Inc.	ICI Bldg. 1-6-7 Shibuya, Shibuya-ku, Tokyo, 150 JAPAN
INTEL	Intel Japan K.K.	Shinmaru Bldg. 1-5-1 Marunouchi, Chiyoda-ku, Tokyo, 100 JAPAN
IOE	IOE	Maruki Bldg.(5F) 1-13-7 Nishi-gotanda, Shinagawa-ku, Tokyo, 141 JAPAN
ISKA	Ishikawa Seisakusho	6-3-5 Toshima, Kita-ku, Tokyo, 114 JAPAN
ISKB	Ishikawa Seisakusho	4-7-5 Soto-kanda, Chiyoda-ku, Tokyo, 101 JAPAN
ISHIZUKA	Ishizuka Electronics Corp.	1-7-7 Kinshi, Sumida-ku, Tokyo, 130 JAPAN
ISS	Ikura Seiki Seisakusho Co., Ltd.	Suzutomo Bldg. 1-25-5 Higashi-ueno, Taito-ku, Tokyo, 110 JAPAN
IST	Iwatsu Electric Co., Ltd.	Asahiseimei Kaikan-nai 2-1-3 Nihombashi, Chuo-ku, Tokyo, 103 JAPAN
ITE	Iwata Electric Co., Ltd.	Kanazawa Bldg. 4-6-13 Shimo-ochiai, Shinjuku-ku, Tokyo, 161 JAPAN
ITFA	Interface	1-1-25 Minami-kaniya, Minami-ku, Hiroshima-shi, Hiroshima, 732 JAPAN
ITFB	Interface	1-2-3-4 Toyoda, Suwa-shi, Nagano, 392 JAPAN
ITT CANNON	ITT Cannon (Japan)	3014-2 Shinohara-cho, Kohoku-ku, Yokohama-shi, Kanagawa, 222 JAPAN
IWT	Iwata Denko Co., Ltd.	3-32-2 Minami-senzoku, Ota-ku, Tokyo, 145 JAPAN
JAE	Japan Aviation Electronics Industry, Ltd.	1-21-6 Dogenzaka, Shibuya-ku, Tokyo, 150 JAPAN
JDI	Japan Drive-it Co., Ltd.	8-10 Denenchofu, Ota-ku, Tokyo, 145 JAPAN
JMC	Japan Macnics Corp.	1-22-2 Hakusan High-tech Park, Midori-ku, Yokohama-shi, Kanagawa, 226 JAPAN
JPC	Jepico Corp.	Shinjukuku Daiichiseimei Bldg.(4F) 2-7-1 Nishi-shinjuku, Shinjuku-ku, Tokyo, 163 JAPAN
JRC	Japan Radio Co., Ltd.	2-17-22 Akasaka, Minato-ku, Tokyo, 105 JAPAN
JRM	Japan Resister Mfg. Co., Ltd.	3-6-20 Minami-oi, Shinagawa-ku, Tokyo, 140 JAPAN
NIHONSERVO	Japan Servo Co., Ltd.	Kanda Daini Chuo Bldg. 7 Kanda-Mitoshiro-cho, Chiyoda-ku, Tokyo, 101 JAPAN
JUNKOSHA	Junkosha Co., Ltd.	2-25-25 Miyasaka, Setagaya-ku, Tokyo, 156 JAPAN

MFR Abbreviation	MFR Name	Address
BKB	Kyokuto Boeki Kaisha, Ltd.	Shin-otemachi Bldg.(7F) 2-2-1 Otemachi, Chiyoda-ku, Tokyo, 100-91 JAPAN
KCC KYOURITSU KAWASAKI	Kokusai Chart Corp. Kyoritsu Dengyo Co., Ltd. Kawasaki Densen Co., Ltd.	798 Futatsumiya, Ageo-shi, Saitama, 362 JAPAN 2-1-5 Higashi-nakano, Nakano-ku, Tokyo, 164 JAPAN 498 Sakado, Takatsu-ku, Kawasaki-shi, Kanagawa, 213 JAPAN
KAMAYA KEI KEK KEL KYOSAN KEW KITAGAWA	Kamaya Electric Co., Ltd. Kokusai Electronics Corp. Kaigai Electronics Inc. KEL Corp. Kyosan Electric Mfg. Co., Ltd. Koro Electric Works Ltd. Kitagawa Ind. Co., Ltd.	3515 Kami-wada, Yamato-shi, Kanagawa, 242 JAPAN 5-34-10 Minamidai, Nakano-ku, Tokyo, 164 JAPAN 2-2-5 Roppongi, Minato-ku, Tokyo, 106 JAPAN 6-17-7 Nagayama, Tama-shi, Tokyo, 206 JAPAN 3-4-2 Marunouchi, Chiyoda-ku, Tokyo, 100 JAPAN 4-22-2 Nogata, Nakano-ku, Tokyo, 165 JAPAN Sengoku Bldg.(6F) 2-4-26 Nihonbashi-muromachi, Chuo-ku, Tokyo, 103 JAPAN
KJO KKK KAKIZAKI KIMUDEN KMS KOA KPM	Kinjo Denki K.K. Kenden Kogyo K.K. Kakizaki Mfg. Co., Ltd. Kimura Denki Co., Ltd. Katsuragawa Machine Screw Ltd. KOA Corporation Kawakami Paint Mfg. Co., Ltd.	2-12-2 Tamadaira, Hino-shi, Tokyo, 191 JAPAN 4-24-5 Chihaya, Toshima-ku, Tokyo, 171 JAPAN 1-18-2 Nishi-ikebukuro, Toshima-ku, Tokyo, 171 JAPAN 1-33-10 Nishi-gotanda, Shinagawa-ku, Tokyo, 141 JAPAN 3-24-1 Yaguchi, Ota-ku, Tokyo, 146 JAPAN 3-2-3 Ebisu, Shibuya-ku, Tokyo, 150 JAPAN 2-41-1 Tsukaguchi-honcho, Amagasaki-shi, Hyogo, 661 JAPAN
KSC KSD KSS KINSEKI KSBECT	Koyo Seiko Co., Ltd. Kyosai Denki K.K. KS Sangyo Co., Ltd. Kinseki Co., Ltd. KS Vector Co., Ltd.	7-11-15 Ginza, Chuo-ku, Tokyo, 103 JAPAN 1606 Yamada-cho, Hachioji-shi, Tokyo, 193 JAPAN 3-17-3 Kuramae, Taito-ku, Tokyo, 111 JAPAN 1-8-1 Izumihoncho, Komae-shi, Tokyo, 201 JAPAN Pearl Bldg. 3-15-5 Shibuya, Shibuya-ku, Tokyo, 150 JAPAN
KSW KTK KYOUWA KWT KYOCERA	Kato Spring Works Co., Ltd. Kyoei Tsushin Kogyo Co., Ltd. Kyowa Electronic Instrument Co., Ltd., Kawate Corp. Kyocera Corp.	1-1-3 Higashi-tabatacho, Kita-ku, Tokyo, 114 JAPAN 3-1-7 Higashi, Shibuya-ku, Tokyo, 150 JAPAN 2-3-8 Toranomon, Minato-ku, Tokyo, 105 JAPAN 15-2 Nakajuku, Itabashi-ku, Tokyo, 173 JAPAN 5-22 Kita-inouecho, Higashino, Yamashina-ku, Kyoto-shi, Kyoto, 607 JAPAN
KYK LINEARTECH MAC 8	Kinzoku Youzai Co., Ltd. Liner Technology Corporation Mac Eight Co., Ltd.	4-18-15 Nogata, Nakano-ku, Tokyo, 165 JAPAN 1630 McCarthy Bldg., Milpitas, CA 95035 U.S.A. 1811 Komaoka-cho, Tsurumi-ku, Yokohama-shi, Kanagawa, 230 JAPAN
MATSUDENKO MATSUDENSHI	Matsushita Denko Co., Ltd. Matsushita Electronic Ind. Co., Ltd.	177 Nozaki-cho, Mitaka-shi, Tokyo, 181 JAPAN National Bldg.(1-9F) 1-1-2 Shibakoen, Minato-ku, Tokyo, 105 JAPAN
MCI	Matsushita Communication Industrial Co., Ltd.	4-3-1 Tsunashima-higashi, Kohoku-ku, Yokohama-shi, Kanagawa, 223 JAPAN
MICRON	Micron Electric Co., Ltd.	786 Futoo-cho, Kohoku-ku, Yokohama-shi, Kanagawa, 222 JAPAN
MDR	Midoriya Electric Co., Ltd.	Shuzui Bldg. 2-7-19 Kyobashi, Chuo-ku, Tokyo, 104 JAPAN
MATSUO	Matsuo Electric Co., Ltd.	1-34-20 Higashi-shinagawa, Shinagawa-ku, Tokyo, 140 JAPAN
MECS	Matsubo Electronic Components Sales Co., Ltd.	Nitto Hoshino Bldg.(3F) 8-11-1 Nishi-shinjuku, Shinjuku-ku, Tokyo, 162 JAPAN
MHC MITSUBISHI MIZUDEN	Matsukyu Co., Ltd. Mitsubishi Electric Co., Ltd. Mizutani Electric Ind. Co., Ltd.	4-6-7 Nishi-shinkoiwa, Katsushika-ku, Tokyo, 124 JAPAN 2-2-3 Marunouchi, Chiyoda-ku, Tokyo, 100 JAPAN Daigo Azuma Bldg.(3F) 3-38 Kanda-sakumacho, Chiyoda-ku, Tokyo, 101 JAPAN
MKK MKS MURATA 3M MIDORI MPI MRR	Matsui Co., Ltd. Meikosha Co., Ltd. Murata Mfg. Co., Ltd. Sumitomo 3M Co., Ltd. Midori Precisions Co., Ltd. Mitsubishi Plastics Industries Ltd. Moririca Electronics Co., Ltd.	2-5-5 Hamamatsu-cho, Minato-ku, Tokyo, 105 JAPAN 6-8-19 Shimo-meguro, Meguro-ku, Tokyo, 153 JAPAN 3-26-11 Nishi-rokugo, Ota-ku, Tokyo, 144 JAPAN 7-1-21 Akasaka, Minato-ku, Tokyo, 107 JAPAN 2-11-2 Yakumodai, Chofu-shi, Tokyo, 182 JAPAN 2-5-2 Marunouchi, Chiyoda-ku, Tokyo, 100 JAPAN 3321 Izumi-cho, Izumi-ku, Yokohama-shi, Kanagawa, 244 JAPAN
MRY	Moroyama Electric Co., Ltd.	295 Hongo, Moroyama-cho, Iruma-gun, Saitama, 350-04 JAPAN
MSS	Musashi Electric Co., Ltd.	8-20-36 Ginza, Chuo-ku, Tokyo, 104 JAPAN

MFR Abbreviation	MFR Name	Address
MTN MOTOROLA MTR	Matano K.K. Nihon Motrola Ltd. Matsuraya Co., Ltd.	863-2 Komiya-cho, Hachioji-shi, Tokyo, 192 JAPAN 3-20-1 Minami-azabu, Minato-ku, Tokyo, 106 JAPAN Tokyo Oroshiuri Center Bldg.(9F) 7-22-7 Nishi-gotanda, Shinagawa-ku, Tokyo, 141 JAPAN
MTT MIYAMA N. ALEPH	MTT Co., Ltd. Miyama Electric Co., Ltd. Nippon Aleph Corp.	11-4 Sanei-cho, Shinjuku-ku, Tokyo, 160 JAPAN 4-7-1 Kamiikedai, Ota-ku, Tokyo, 145 JAPAN 88 Komaoka-cho, Tsurumi-ku, Yokohama-shi, Kanagawa, 230 JAPAN
NAL	Nihon Almit Co., Ltd.	Miyata Bldg.(6F) 1-38 Yoyogi, Shibuya-ku, Tokyo, 151 JAPAN
NBA NBT NCC	Burndy Japan Ltd. Nihon Battery Co., Ltd. NCC International	3-26-33 Takanawa, Minato-ku, Tokyo, 108 JAPAN 1-8-1 Nishi-shinbashi, Minato-ku, Tokyo, 105 JAPAN Matsunaga Bldg. 1-6-6 Soto-kanda, Chiyoda-ku, Tokyo, 101 JAPAN
NICHICON	Nichicon Capacitor Ltd.	Toshin 24 Omori Bldg.(5F) 1-6-8 Omori-kita, Ota-ku, Tokyo, 143 JAPAN
NITSUCHEMI NDC NDK NIHONDENPA	Nippon Chemi-con Corp. Nitto Denko Corp. Nikko Denshi Kogyo Co., Ltd. Nihon Denpa	1-167-1 Higashi-Ome, Ome-shi, Tokyo, 198 JAPAN 1-1-2 Shimo-hozumi, Ibaraki-shi, Osaka, 567 JAPAN 3-9-29 Midorigaoka, Meguro-ku, Tokyo, 152 JAPAN Shinwa Bldg. 3-2-4 Nishi-shinjuku, Shinjuku-ku, Tokyo, 160 JAPAN
N. DENYO NEC NAGASAWA NGK	Nippon Denyo Co., Ltd. Nippon Electric Co., Ltd. Nagasawa Electric Works Ltd. NGK Insulators Ltd.	3-9-11 Sengen-cho, Fuchu-shi, Tokyo, 183 JAPAN 5-33-1 Shiba, Minato-ku, Tokyo, 108 JAPAN 5-8-8 Yoyogi, Shibuya-ku, Tokyo, 151 JAPAN Shin-maru Bldg.(2F) 1-5-1 Marunouchi, Chiyoda-ku, Tokyo, 100 JAPAN
NIC JIR NIP DEN	Nichiban Co., Ltd. Nihon Inter Electronics Corp. Nippon Thermo Co., Ltd.	2-2-4 Kudan-minami, Chiyoda-ku, Tokyo, 102 JAPAN 4-7-15 Myojin-cho, Hachioji-shi, Tokyo, 193 JAPAN 1727-1 Takada-cho, Kohoku-ku, Yokohama-shi, Kanagawa, 223 JAPAN
NISSHO NAGANO JRC	Nissho Electric Nagano Japan Radio Co., Ltd.	1-16 Kotobuki-cho, Toyota-shi, Aichi, 471 JAPAN 1163 Shimohigano, Inasato-cho, Nagano-shi, Nagano, 381-21 JAPAN
NIKKAI NIKKOHM	Nihon Kaiheiki Ind. Co., Ltd. Nikkohm Co., Ltd.	1-5-14 Minami-magome, Ota-ku, Tokyo, 143 JAPAN Ono Bldg.(4F) 3-9-10 Nihonbashi-kayabacho, Chuo-ku, Tokyo, 103 JAPAN
N. KOUDEN MOLEX NMR	Nippon Light Metal Co., Ltd. Nihon Molex Nippon Miniature Rope Co., Ltd.	3-13-12 Mita, Minato-ku, Tokyo, 108 JAPAN 785 Fukami-suwa, Yamato-shi, Kanagawa, 242 JAPAN Ikeda Bldg.(2F) 5-15 Nihonbashi-hakozakicho, Chuo-ku, Tokyo, 103 JAPAN
NOD NOF NIHONPULSE JRC NSB	Node Corp. Nippon Oil & Fats Co., Ltd. Nippon Pulse Motor Co., Ltd. New Japan Radio Co., Ltd. Nisshinbo Industries, Inc.	1-30-20 Higashi-magome, Ota-ku, Tokyo, 143 JAPAN 1-10-1 Yuraku-cho, Chiyoda-ku, Tokyo, 100 JAPAN 2-16-13 Hongo, Bunkyo-ku, Tokyo, 113 JAPAN 1-22-14 Toranomon, Minato-ku, Tokyo, 105 JAPAN 3-10 Nihonbashi-Yokoyamacho, Chuo-ku, Tokyo, 103 JAPAN
NS NSSA	National Semiconductor Japan Ltd. Nakagawa Seisakusho K.K.	4-15 Nishi-shinjuku, Shinjuku-ku, Tokyo, 160 JAPAN 302-2 Takegahana-nishimachi, Matsudo-shi, Chiba, 271 JAPAN
NSSB NSM NIHON T&B	Nakagawa Seisakusho K.K. Nakagawa Mfg. Co., Ltd. Nihon Thomas & Betts Ltd.	2-15-4 Kyojima, Sumida-ku, Tokyo, 131 JAPAN 2-5-21 Nishiki-cho, Warabi-shi, Saitama, 335 JAPAN Dai 44 Kowa Bldg. 1-2-7 Higashiyama, Meguro-ku, Tokyo, 153 JAPAN
NITTOKU	Shin Nitto Electric Co., Ltd.	1181-1 Oaza-Obuse, Obuse-machi, Kamitakai-gun, Nagano, 381-02 JAPAN
TI	TEXAS Instrument Japan Ltd.	Aoyama Fuji Bldg. 3-6-12 Kita-aoyama, Minato-ku, Tokyo 107 JAPAN
NITSUKO	Nitsuko Corp.	260 Kita-mikata, Takatsu-ku, Kawasaki-shi, Kanagawa, 213 JAPAN
NTN	NTN Toyo Bearing Co., Ltd.	1-3-17 Kyomachibori, Nishi-ku, Osaka-shi, Osaka, 550 JAPAN
NTS	Nitto Shokai Co., Ltd.	Nito Bldg. 2-20-27 Takanawa, Minato-ku, Tokyo, 108 JAPAN
VISHAY NVI	Nippon Vishay Co., Ltd. Nippon Valqua Industries, Ltd.	4-15-4 Hara-machida, Machida-shi, Tokyo, 194 JAPAN Marukane Bldg. 1-1-1 Asahi-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa, 210 JAPAN

MFR Abbreviation	MFR Name	Address
ORIGIN	Origin Electric Co., Ltd.	1-18-1 Takada, Toshima-ku, Tokyo, 171 JAPAN
OSHINO	Oshino Electric Lamp Works Ltd.	2-5-2 Minami-shinagawa, Shinagawa-ku, Tokyo, 140 JAPAN
ORIENTAL OFC	Oriental Motor Co., Ltd. Okada Finish and Coating Co., Ltd.	2-21-11 Kojima, Taito-ku, Tokyo, 111 JAPAN 349-1 Homura-nakanobun, Yoshikawa-machi, Kitakatsushika-gun, Saitama, 342 JAPAN
OKAYA	Okaya Electric Ind. Co., Ltd.	Shibuya Yasuda Bldg. 1-8-3 Shibuya, Shibuya-ku, Tokyo, 150 JAPAN
OKI	Oki Electronics Co., Ltd.	4-3-13 Toranomom, Minato-ku, Tokyo, 105 JAPAN
OKITA	Okita Works Co., Ltd.	Shindaiso Bldg.(2-14F) 2-10-7 Dogenzaka, Shibuya-ku, Tokyo, 150 JAPAN
OMC	Okazaki Mfg. Corp.	New Toyo Bldg.(5F) 1-1-15 Moto-akasaka, Minato-ku, Tokyo, 107 JAPAN
OMD	Omori Denki Seisakusho Co., Ltd.	2-15-16 Naka-ikegami, Ota-ku, Tokyo, 145 JAPAN
ORC	Okayama Rubber Co., Ltd.	3-34-7 Hongo, Bunkyo-ku, Tokyo, 113 JAPAN
OMRON	Omron Corp.	Nissei Bldg.(15F) 1-6-3 Osaki, Shinagawa-ku, Tokyo, 141 JAPAN
PCN	PCN Corp.	Shin-yokohama Bldg.(9F) 3-19-11 Shin-yokohama, Kohoku-ku, Yokohama-shi, Kanagawa, 222 JAPAN
PMI	Nippon PMI Corp.	Time 24 Bldg. 35 Tansu-cho, Shinjuku-ku, Tokyo, 162 JAPAN
CHUOMUSEN	Chuo Musen Co., Ltd.	1-9-12 Omori-nishi, Ota-ku, Tokyo, 143 JAPAN
RICOH	Ricoh Denshi Co., Ltd.	Shinpo Bldg.(4F) 6-13-7 Ginza, Chuo-ku, Tokyo, 104 JAPAN
REW	Riken Electric Wire Co., Ltd.	1-12-22 Tsukiji, Chuo-ku, Tokyo, 104 JAPAN
RIC	Ricoh Co., Ltd.	1-15-5 Minami-aoyama, Minato-ku, Tokyo, 107 JAPAN
RIKEN	Riken Dengu Seizo Co., Ltd.	1-4-5 Higashi-sakashita, Itabashi-ku, Tokyo, 174 JAPAN
ROHM	Rohm Co., Ltd.	5-13 Minami-cho, Hachioji-shi, Tokyo, 192 JAPAN
RPC	Raspac Co., Ltd.	Shin Kyobashi Bldg.(6F) 3-9-4 Kyobashi, Chuo-ku, Tokyo, 104 JAPAN
SAE	Nippon SAE Co., Ltd.	1-34-15 Ebisu-nishi, Shibuya-ku, Tokyo, 150 JAPAN
SANYO	Sanyo Electric Co.	Natsume Bldg. 2-18-8, Yushima, Bunkyo-ku, Tokyo, 113 JAPAN
SCC	Sumitomo Chemical Co., Ltd.	2-7-9 Nihonbashi, Chuo-ku, Tokyo, 103 JAPAN
SCH	H/Schurter	201 Velbethia Jiyugaoka 6-21-12 Okusawa, Setagaya-ku, Tokyo, 158 JAPAN
SAITO CORD	Saito Code Seizo Co., Ltd.	5-19-8 Minami-oi, Shinagawa-ku, Tokyo, 140 JAPAN
SDC	Sanden Kogyo Co., Ltd.	4-2-6 Kamesawa, Sumida-ku, Tokyo, 130 JAPAN
SDK	Sango Denki Kogyo K.K.	1-31-6 Denenchofu, Ota-ku, Tokyo, 145 JAPAN
SHIBAURA	Shibaaura Electronics Co., Ltd.	I-O Bldg.(3F) 2-38-9 Ikebukuro, Toshima-ku, Tokyo, 171 JAPAN
SEC	Shinko Electric Co., Ltd.	4-11-2 Soto-kanda, Chiyoda-ku, Tokyo, 101 JAPAN
SED	Sanei Electric Co., Ltd.	New Towa Bldg.(1F) 1-5-7 Soto-kanda, Chiyoda-ku, Tokyo, 101 JAPAN
SEI	Sanei Electric Inc.	1-4-5 Nishi-ikebukuro, Toshima-ku, Tokyo, 170 JAPAN
SEIDENSHA	Seidensha Electric Works Ltd.	1-2-23 Hara-machida, Machida-shi, Tokyo, 194 JAPAN
SEH	Sakaguchi Electric Heaters Co., Ltd.	1-12-2 Soto-kanda, Chiyoda-ku, Tokyo, 101 JAPAN
SGT	Sugatsune Kogyo Co., Ltd.	1-8-11 Higashi-kanda, Chiyoda-ku, Tokyo, 101 JAPAN
SIC	Sekisui-Iko Co., Ltd.	Usami Bldg.(4F) 2-4-14 Uchi-kanda, Chiyoda-ku, Tokyo, 101 JAPAN
SIGNETICS	Signetics Corp.	811 E. Arques Avenue Sunnyvale, California 94088-3409 U.S.A.
SEIKO	Seiko Instruments Inc.	6-31-1 Kameido, Koto-ku, Tokyo, 136 JAPAN
SILICONIX	Siliconix Incorporated.	2201 Laurelwood Road, Santa Clara, CA 95054-1516, U.S.A.
SJDA	Shoji Denki	3-6-17 Soto-kanda, Chiyoda-ku, Tokyo, 101 JAPAN
SJDB	Shoji Denki	3-7-7 Nishi-gotanda, Shinagawa-ku, Tokyo, 141 JAPAN
SENJYU	Senju Kinzoku Kogyo Co., Ltd.	23 Senjushido-cho, Adachi-ku, Tokyo, 120 JAPAN
SKB	Showa Highpolymer Co., Ltd.	3-20 Kanda-nishikicho, Chiyoda-ku, Tokyo, 101 JAPAN
SKC	Showa Kosan Co., Ltd.	6-13-18 Akasaka, Minato-ku, Tokyo, 107 JAPAN
SINETSU	Shinetsu Kagaku Kogyo Co., Ltd.	Asahi Tokai Bldg. 2-6-1 Otemachi, Chiyoda-ku, Tokyo, 100 JAPAN
SANKEN	Sanken Electric Co., Ltd.	Ikebukuro Chitose Bldg. 1-22-8 Nishi-ikebukuro, Toshima-ku, Tokyo, 171 JAPAN
SLM	Sumitomo Light Metal Industries, Ltd.	5-11-3 Shinbashi, Minato-ku, Tokyo, 105 JAPAN
SMC	Sanken Microphone Co., Ltd.	2-8-8 Ogikubo, Suginami-ku, Tokyo, 167 JAPAN

MFR Abbreviation	MFR Name	Address
SMI	Settsu Metal Industrial Corp.	2-2-2 Taito, Taito-ku, Tokyo, 110 JAPAN
SMK	SMK Corp.	6-5-5 Togoshi, Shinagawa-ku, Tokyo, 142 JAPAN
SMR	Somar Corp.	Marusho Bldg. 4-11-2 Ginza, Chuo-ku, Tokyo, 104 JAPAN
SHINDENGEN	Shindengen Electric Mfg. Co., Ltd.	2-2-1 Otemachi, Chiyoda-ku, Tokyo, 100 JAPAN
SNK	Sankyo Ltd.	Aihara Bldg.(3F) 3-21 Kanda-sakumacho, Chiyoda-ku, Tokyo, 101 JAPAN
SOC	S.O.C. Corp.	1-32-13 Shin-koyasu, Kanagawa-ku, Yokohama-shi, Kanagawa, 221 JAPAN
SOG	Sogo Electronics Co., Ltd.	1-1-3 Kami-saginomiya, Nakano-ku, Tokyo, 165 JAPAN
SONY	Sony Corp.	6-7-35 Kita-shinagawa, Shinagawa-ku, Tokyo, 141 JAPAN
SOSHIN	Soshin Electric Co., Ltd.	1-18-18 Naka-magome, Ota-ku, Tokyo, 143 JAPAN
SPC	SPC Electronics Corp.	2-1-3 Shibasaki, Chofu-shi, Tokyo, 182 JAPAN
SCHROFF	Schroff Co., Ltd.	Yokohama Bashamichi Bldg.(8F) 4-55 Ota-cho, Naka-ku, Yokohama-shi, Kanagawa, 231 JAPAN
SHARP	Sharp Co., Ltd.	8 Ichigayahachiman-cho, Shinjuku-ku, Tokyo, 162 JAPAN
SRT	Soritsu Electronic Instrumental Co., Ltd.	1-7-23 Nakamachi, Koganei-shi, Tokyo, 184 JAPAN
SSC	Shinagawa Shoko Co., Ltd.	5-4-19 Osaki, Shinagawa-ku, Tokyo, 141 JAPAN
SSK	San-e Seiko K.K.	Sekigami Bldg.(3F) 1-13-9 Ebisu, Shibuya-ku, Tokyo, 150 JAPAN
SSM	Susumu Ind. Co., Ltd.	8-11-11 Ikuta, Tama-ku, Kawasaki-shi, Kanagawa, 214 JAPAN
SSS	Sankyo Seiki Mfg. Co., Ltd.	1-17-2 Shinbashi, Minato-ku, Tokyo, 105 JAPAN
STA	Star Micronics Co., Ltd.	194 Naka-yoshida, Shizuoka-shi, Shizuoka, 420 JAPAN
STC	Sanwa Tsushin Kogyo Co., Ltd.	Watanabe Bldg. 1-21-11 Tsurumi-chuo, Tsurumi-ku, Yokohama-shi, Kanagawa, 230 JAPAN
STACK	Stack Electronics Co., Ltd.	3-9-18 Musashino, Akishima-shi, Tokyo, 196 JAPAN
STK	Sumitomo Special Metals Co., Ltd.	Sanyo Boeki Bldg. 2-11 Kanda-nishikicho, Chiyoda-ku, Tokyo, 101 JAPAN
STANLEY	Stanley Electric Co., Ltd.	2-9-13 Naka-meguro, Meguro-ku, Tokyo, 153 JAPAN
SUMIDA	Sumida Electric Co., Ltd.	Kuran Iwasaki Bldg.(3F) 1-21-18 Fujimi-cho, Tachikawa-shi, Tokyo, 190 JAPAN
SUMITOMO	Sumitomo Electric Kogyo Co., Ltd.	1-3-12 Moto-akasaka, Minato-ku, Tokyo, 107 JAPAN
SUZ	Suzuki Shokan Co., Ltd.	4010-4 Aza-Miyanodai, Miyadera, Iruma-shi, Saitama, 358 JAPAN
SHOWA	Showa Electric Wire & Cable Co., Ltd.	Dai 19 Mori Bldg.(7F) 1-2-20 Toranomon, Minato-ku, Tokyo, 105 JAPAN
SWK	Showa Kosan Co., Ltd.	Daini Aoki Bldg.(5F) 2-71-6 Ikebukuro, Toshima-ku, Tokyo, 171 JAPAN
SYD	Sanyo Denki Co., Ltd.	1-15-1 Kita-otsuka, Toshima-ku, Tokyo, 170 JAPAN
SZK	Shizuki Electric Co., Ltd.	Nisshin Yaesu Bldg. (Tokyo office) 1-4-14 Kyobashi, Chuo-ku, Tokyo, 104 JAPAN
TAJIMI	Tajimi Musen Denki Co., Ltd.	2-29-1 Ebisu-minami, Shibuya-ku, Tokyo, 150 JAPAN
TAMA	Tama Electric Ltd.	2-15-12 Nakane, Meguro-ku, Tokyo, 152 JAPAN
TAS	Maruasa K.K.	4-3-9 Nihonbashi-muromachi, Chuo-ku, Tokyo, 103 JAPAN
TBC	Tokyo Byokane Co., Ltd.	3-13-6 Saiwai-cho, Tachikawa-shi, Tokyo, 190 JAPAN
TOYOCOM	Toyo Communication Equipment Co., Ltd.	Onarimon Daiichi Bldg. 3-20-4 Nishi-shinbashi, Minato-ku, Tokyo, 105 JAPAN
TOSHIBA C.	Toshiba Chemical Corp.	3-3-9 Shinbashi, Minato-ku, Tokyo, 105 JAPAN
TOKYODEN	Tokyo Denshi Corp.	1-21-13 Kami-igusa, Suginami-ku, Tokyo, 167 JAPAN
TELEDYNE	Teledyne Japan K.K.	Daiko Daisan Bldg. 2-10-7 Shibuya, Shibuya-ku, Tokyo, 150 JAPAN
TDK	TDK Electric Co., Ltd.	Hachioji Tohoseimei Bldg.(5F) 9-8 Higashi-machi, Hachioji-shi, Tokyo, 192 JAPAN
TOUDAIMUSE	Todai Electric Ltd.	3-48-6 Sendagi, Bunkyo-ku, Tokyo, 113 JAPAN
TDP	Toa Electronics Ltd.	1-29-10 Takadanobaba, Shinjuku-ku, Tokyo, 160 JAPAN
TERAOKA	Teraoka Seisakusho Co., Ltd.	1-4-22 Hiromachi, Shinagawa-ku, Tokyo, 140 JAPAN
TAMURA	Tamura Electric Works Ltd.	2-2-3 Meguro, Meguro-ku, Tokyo, 153 JAPAN
TGK	Toagosei Chemical Industry Co., Ltd.	1-14-1 Nishi-shinbashi, Minato-ku, Tokyo, 105 JAPAN
TOHO AEN	Toho Zinc Co., Ltd.	3-12-2 Nihonbashi, Chuo-ku, Tokyo, 103 JAPAN
TOKIN	TOKIN Corporation	Hazama Bldg. 2-5-8 Kita-aoyama, Minato-ku, Tokyo, 107 JAPAN
TKD	Tokyo Ko-on Denpa Co., Ltd.	723 Futako, Takatsu-ku, Kawasaki-shi, Kanagawa, 213 JAPAN
TKG	Takigen Mfg. Corp.	1-24-4 Nishi-gotanda, Shinagawa-ku, Tokyo, 141 JAPAN

MFR Abbreviation	MFR Name	Address
TKK	Takachiho Koeki Co., Ltd.	Nakamura Bldg. 1-2-8 Yotsuya, Shinjuku-ku, Tokyo, 160 JAPAN
TKW	Tokiwa Electric Wire Co., Ltd.	Shizaisoko-nai 2-14-10 Kugahara, Ota-ku, Tokyo, 145 JAPAN
TMC	Taiyo Metal Company	1-1-29 Negishi, Taito-ku, Tokyo, 110 JAPAN
TOA	Toakeiki Seisakusho Co., Ltd.	4-3-18 Minami-yukigaya, Ota-ku, Tokyo, 145 JAPAN
TOB	Tobe Kako K.K.	5-2-22 Nishi-gotanda, Shinagawa-ku, Tokyo, 141 JAPAN
TOCHIGI	Tochigiya Co., Ltd.	2-11-1 Uchi-kanda, Chiyoda-ku, Tokyo, 101 JAPAN
TOKO	Toko, Inc.	2-1-17 Higashi-yukigaya, Ota-ku, Tokyo, 145 JAPAN
TOSHIBA	Toshiba Corp.	1-1-1 Shibaura, Minato-ku, Tokyo, 105 JAPAN
T. TOKUIN	Tokyo Printing Ink Mfg. Co., Ltd.	2-7-15 Tabata-shinmachi, Kita-ku, Tokyo, 114 JAPAN
TRH	Tokuriki Honten Co., Ltd.	2-9-12 Kanda-kajiyacho, Chiyoda-ku, Tokyo, 101 JAPAN
TSC	Tokyo Seiden Co., Ltd.	4-28-21 Miyamae, Suginami-ku, Tokyo, 168 JAPAN
TSK	Tokuriki Seiko K.K.	2-33-1 Kojima-cho, Chofu-shi, Tokyo, 182 JAPAN
TSS	Taiyo Stainless Spring Co., Ltd.	1-15-17 Miharadai, Nerima-ku, Tokyo, 177 JAPAN
TOTOKU	Tokyo Tokushu Densen Co., Ltd.	2-2-17 Kabuki-cho, Shinjuku-ku, Tokyo, 160 JAPAN
TAKASAGO	Takasago Tekko K.K.	1-1-1 Shingashi, Itabashi-ku, Tokyo, 175 JAPAN
TEITSU	Teikoku Tsushin Kogyo Co., Ltd.	335 Kariyado, Nakahara-ku, Kawasaki-shi, Kanagawa, 211 JAPAN
TYB	Toyobo Co., Ltd.	2-2-8 Dojimahama, Kita-ku, Osaka-shi, Osaka, 530 JAPAN
TAIYO	Taiyo Yuden Co., Ltd.	6-16-20 Ueno, Taito-ku, Tokyo, 110 JAPAN
USHIO	Usio Denki	Asahi Tokai Bldg.(19F) 2-6-1 Otemachi, Chiyoda-ku, Tokyo, 100 JAPAN
UTUSYOUJI	Utusyouji	2-8-8 Nihonbashi-Honcho, Chuo-ku, Tokyo, 103 JAPAN
UUU	Sanyu Kogyo Co., Ltd.	3-9-23 Nishi-gotanda, Shinagawa-ku, Tokyo, 141 JAPAN
VDS	Victor Data Systems Co., Ltd.	608 Kashiwagaya, Ebina-shi, Kanagawa, 243 JAPAN
VIC	Victor Co. of Japan, Ltd.	4-8-14 Nihonbashi-Honcho, Chuo-ku, Tokyo, 103 JAPAN
VIOLET	Violet Electric Co., Ltd.	5-348 Tomoda-cho, Oume-shi, Tokyo, 198 JAPAN
VOLGEN	Volgen Electric Co., Ltd.	Watanabe Bldg. 4-12-5 Meguro, Meguro-ku, Tokyo, 153 JAPAN
WKC	Wada Kosan Co., Ltd.	7-35-5 Higashi-oizumi, Nerima-ku, Tokyo, 177 JAPAN
XICOR	Xicor Inc.	851 Buckeye Court, Milpitas, CA 95035 U.S.A.
YAGISHITA	Yagishita Electric Co., Ltd.	1-3-27 Kotobuki-cho, Odawara-shi, Kanagawa, 250 JAPAN
YEC	Yamato Electronics Co., Ltd.	Tojiki Bldg.(6F) 3-10-7 Iwamoto-cho, Chiyoda-ku, Tokyo, 101 JAPAN
YED	Y E Data Inc.	Sunshine 60 (9F) 3-1-1 Higashi-ikebukuro, Toshima-ku, Tokyo, 170 JAPAN
YHK	Yamani Hatsujo K.K.	2-1-8 Tenryu-cho, Okaya-shi, Nagano, 394 JAPAN
YHW	Yamatake Honeywell	2-12-19 Shibuya, Shibuya-ku, Tokyo, 150 JAPAN
YHP	Yokogawa-Hewlett-Packard Ltd.	3-29-21 Takaido-Higashi, Suginami-ku, Tokyo, 168 JAPAN
YUTAKA	Yutaka Koki Co., Ltd.	3-3-7 Mita, Minato-ku, Tokyo, 108 JAPAN
YOSHIDA	Yoshida Kogyo K.K.	4-18-11 Taito, Taito-ku, Tokyo, 110 JAPAN
YAMAICHI	Yamaichi Electric Mfg. Co., Ltd.	3-29-12 Ikegami, Ota-ku, Tokyo, 146 JAPAN
YOKOGAWA	Yokogawa Electric Corporation	2-9-32 Nakacho, Musashino-shi, Tokyo, 180 JAPAN