

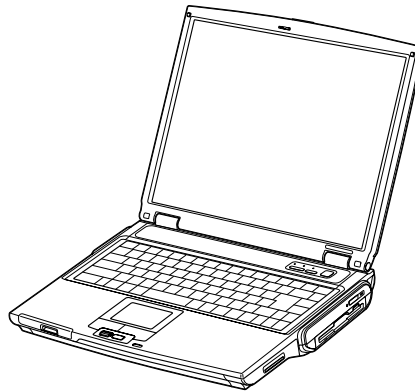
# PCG-NV290

## SERVICE MANUAL

*For American Area  
Canadian Model*

Ver 1-2002J

Revision History



Lineup : PCG-NV290



Confidential

- Design and specifications are subject to change without notice.

**NOTEBOOK COMPUTER**

**SONY®**

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Caution Markings for Lithium/Ion Battery - The following or similar texts shall be provided on battery pack of equipment or in both the operating and the service instructions.

**CAUTION:** Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer’s instructions.

**CAUTION:** The battery pack used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 100°C (212°F) or incinerate.

Dispose of used battery promptly.  
Keep away from children.

**CAUTION:** Changing the back up battery.

- Overcharging, short circuiting, reverse charging, multilation or incineration of the cells must be avoided to prevent one or more of the following occurrences; release of toxic materials, release of hydrogen and/or oxygen gas, rise in surface temperature.
- If a cell has leaked or vented, it should be replaced immediately while avoiding to touch it without any protection.



## Service and Inspection Precautions

### 1. Obey precautionary markings and instructions

Labels and stamps on the cabinet, chassis, and components identify areas requiring special precautions. Be sure to observe these precautions, as well as all precautions listed in the operating manual and other associated documents.

### 2. Use designated parts only

The set’s components possess important safety characteristics, such as noncombustibility and the ability to tolerate large voltages. Be sure that replacement parts possess the same safety characteristics as the originals. Also remember that the  $\Delta$  mark, which appears in circuit diagrams and parts lists, denotes components that have particularly important safety functions; be extra sure to use only the designated components.

### 3. Always follow the original design when mounting parts and routing wires

The original layout includes various safety features, such as inclusion of insulating materials (tubes and tape) and the mounting of parts above the printer board. In addition, internal wiring has been routed and clamped so as to keep it away from hot or high-voltage parts. When mounting parts or routing wires, therefore, be sure to duplicate the original layout.

### 4. Inspect after completing service

After servicing, inspect to make sure that all screws, components, and wiring have been returned to their original condition. Also check the area around the repair location to ensure that repair work has caused no damage, and confirm safety.

### 5. When replacing chip components...

Never reuse components. Also remember that the negative side of tantalum capacitors is easily damaged by heat.

### 6. When handling flexible print boards...

- The temperature of the soldering-iron tip should be about 270C.
- Do not apply the tip more than three times to the same pattern.
- Handle patterns with care; never apply force.

Caution: Remember that hard disk drives are easily damaged by vibration. Always handle with care.

**ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!**  
**LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE  $\Delta$  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.**

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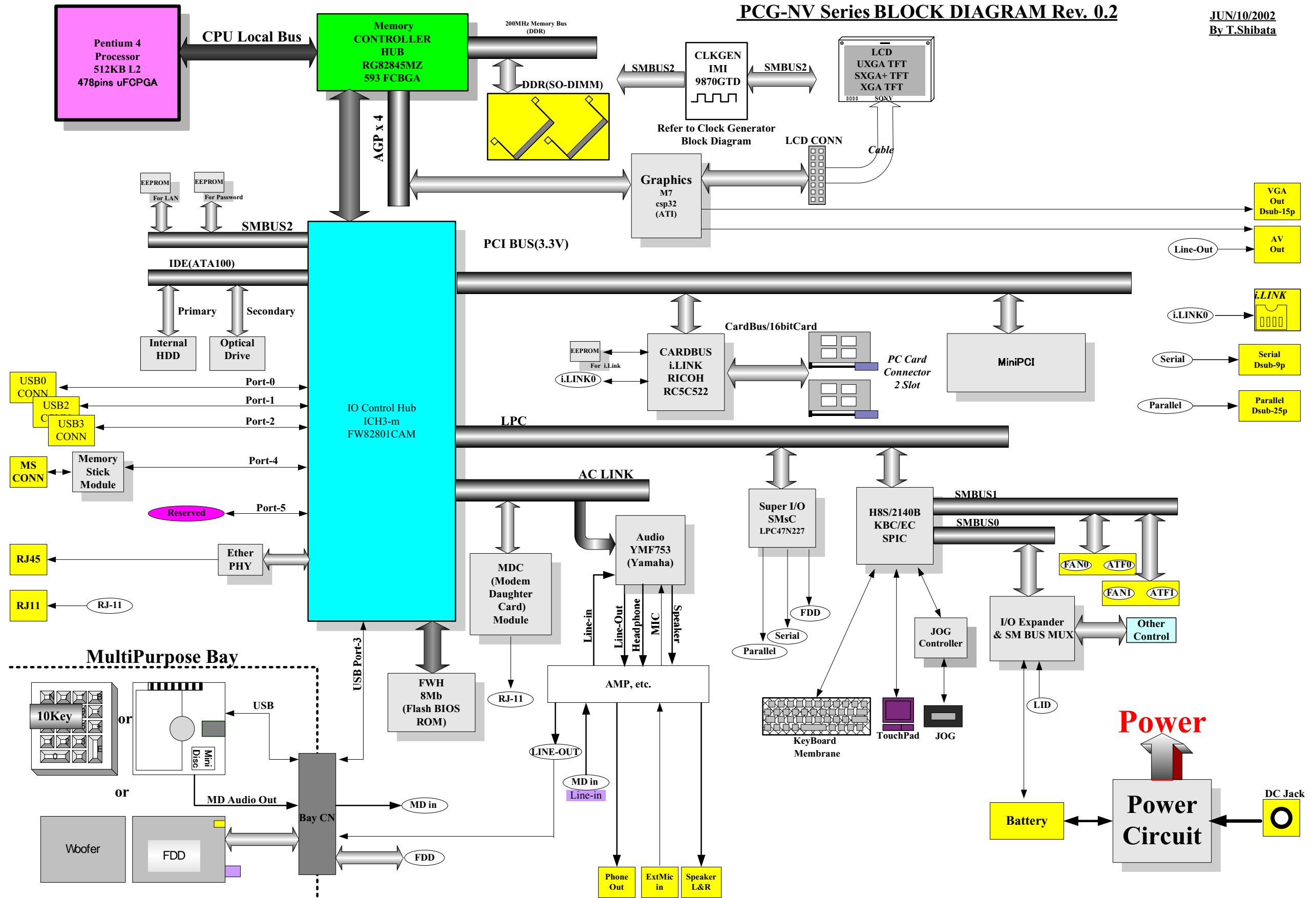
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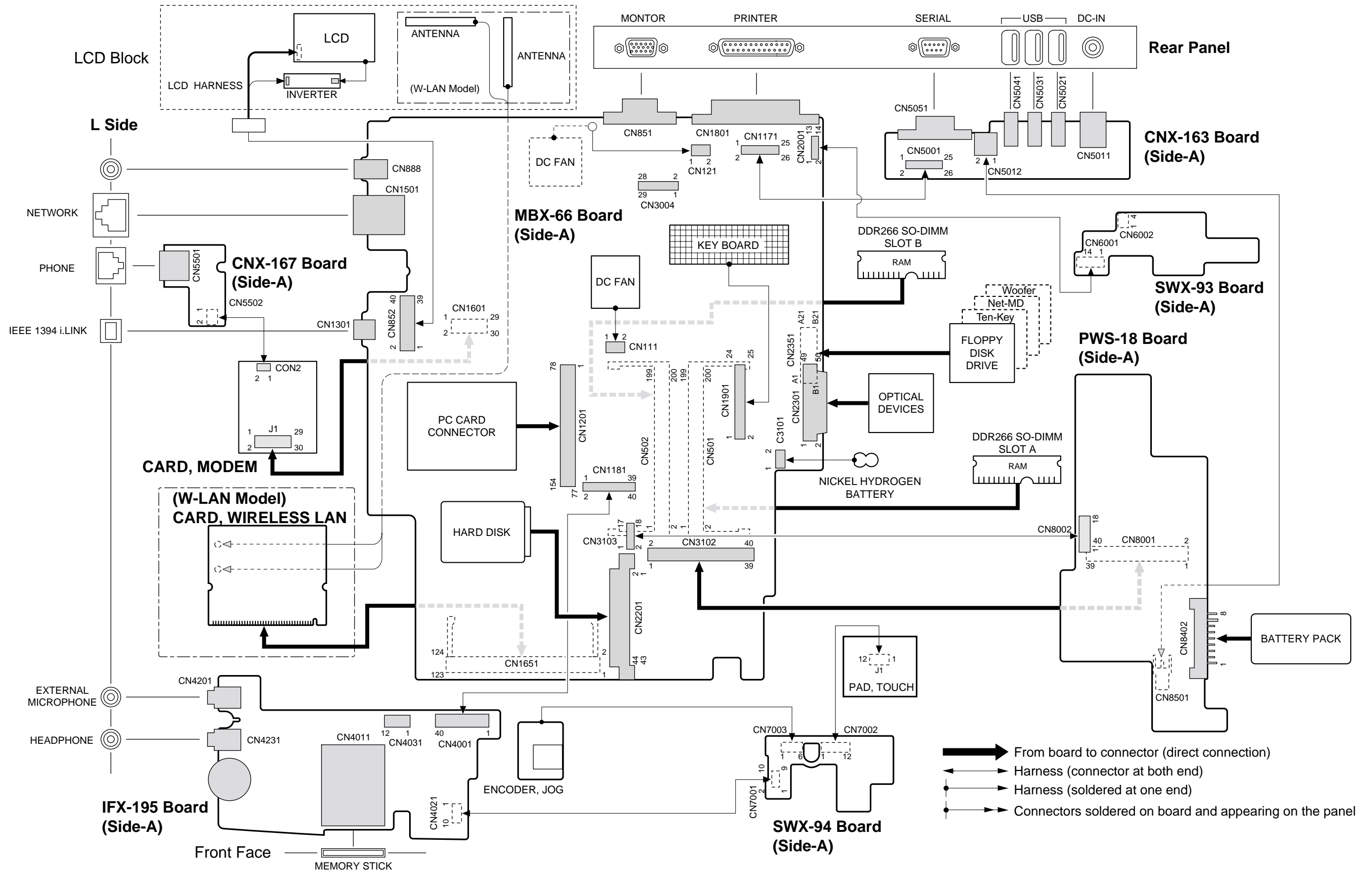
# CHAPTER 1. BLOCK DIAGRAM

## PCG-NV Series BLOCK DIAGRAM Rev. 0.2

JUN/10/2002  
By T.Shibata



# CHAPTER 2. FRAME HARNESS DIAGRAM



## CHAPTER 3.

# EXPLODED VIEWS AND PARTS LIST

### NOTE:

- Items marked “ \* ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- When two or more parts are shown in parallel, use the part described first as the main part.
- The parts marked “ \$ ” are the High Value Modules.
- The parts marked “ # ” are the parts on which barcode label is attached.
- The indication [CH] is used for identification of part type.
- Regarding the boards of this model, the discrete parts on the boards cannot be replaced. However, Some connectors can be replaced.

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

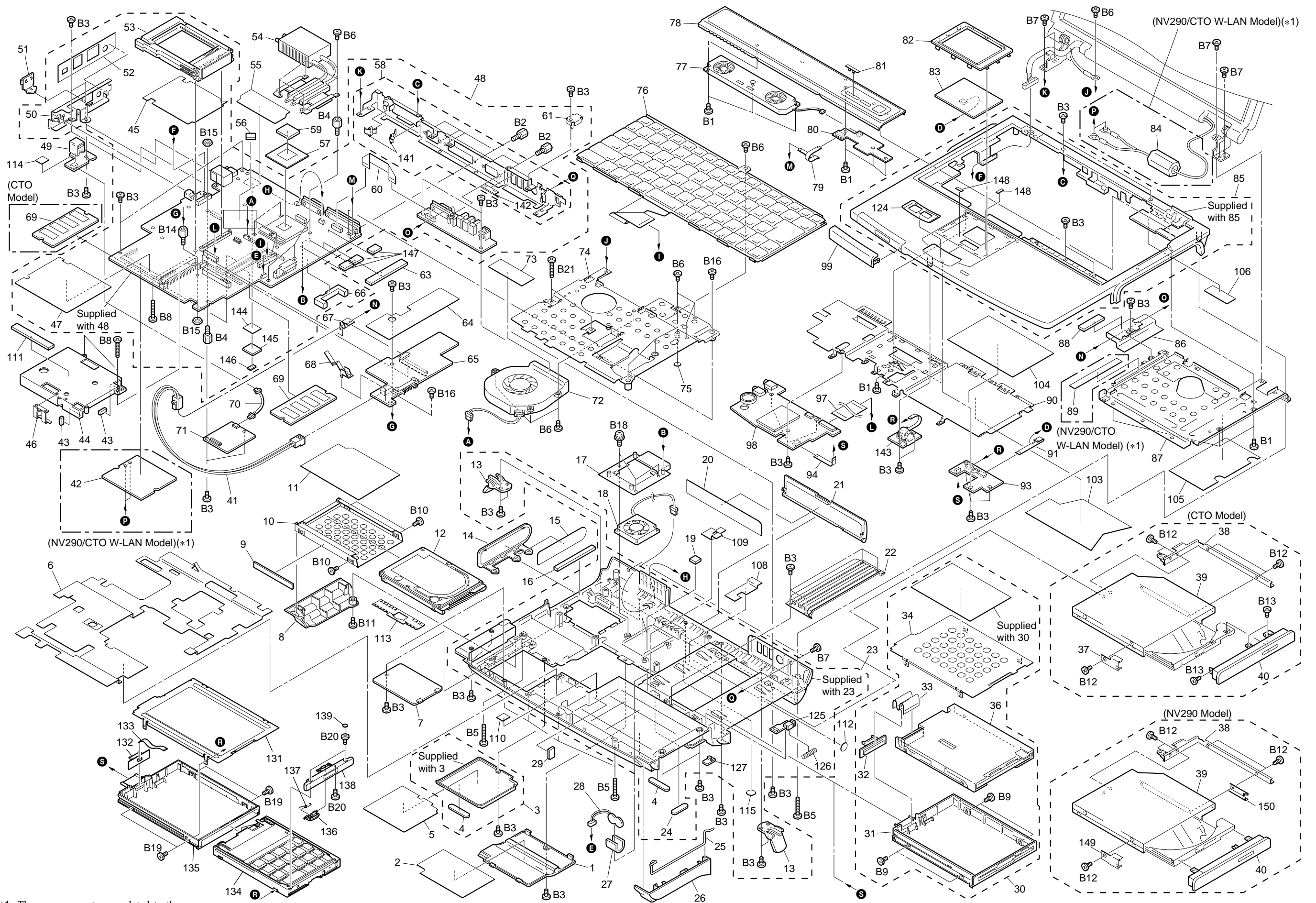
### 【使用上の注意】

- \* 印の部品は常備在庫しておりません。
- 図面番号のない部品は供給しません。
- 併記部品の場合、上部記載部品をメイン部品として使用してください。
- 部品名称の前に \$ 印のついた部品は、High Value Module です。
- 商品名称の前に # 印のついた部品は、バーコードラベル貼付部品です。
- [CH]の表記は部品管理上の識別です。
- 本モデルの基板については、基板上的各部品の修理は行うことができません。ただし、一部のコネクタについては、修理可能です。

$\Delta$  印の部品、または  $\Delta$  印付きの点線で囲まれた部品は、安全性を維持するために重要な部品です。従って交換時は、必ず指定の部品を使用してください。

### 3-1. Main Section

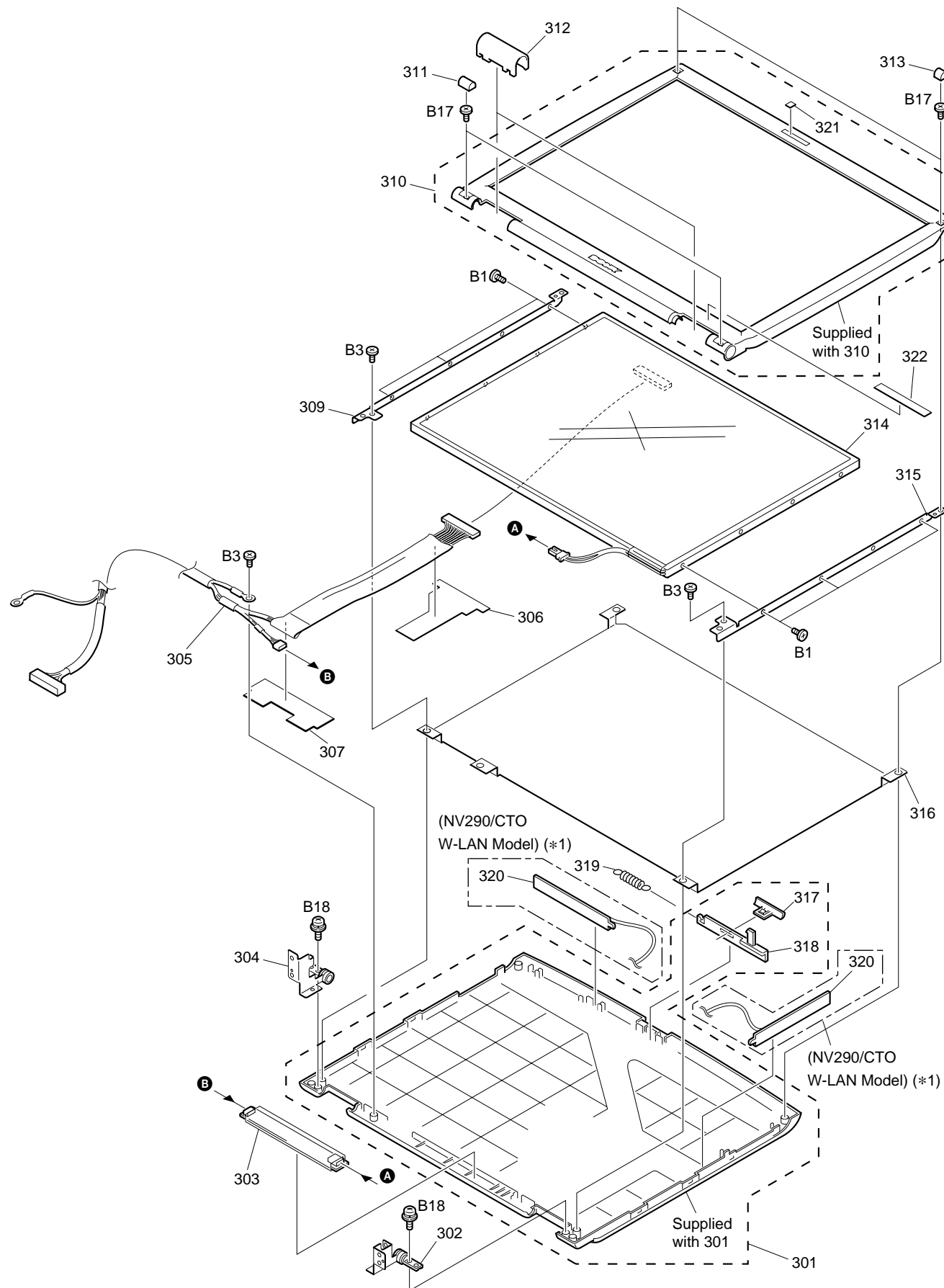
Ref.No.	Part No.	Description	Ref.No.	Part No.	Description	Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
1	X-4624-632-3	ASSY MEMORY COVER	57	6-703-330-01	(CTO)...IC RH80532GC029512-2	132	1-816-577-11	CONNECTOR, BAY 4P 1MM	B1	4-665-205-01	SPECIAL FLAT HEAD (EG GRIP), M2
2	4-662-679-01	INSULATOR MEMORY COVER			(Pentium 4-M 1.7GHz)	133	1-824-587-11	FFC (4P)	B2	4-635-966-01	SCREW (HEX)
3	X-4624-633-2	ASSY MINI PCI COVER	57	6-703-331-01	(CTO)...IC RH80532GC033512-2	134	1-477-344-11	KEY UNIT, 10	B3	4-641-726-12	SCREW (M2), SPECIAL HEAD
4	4-661-307-01	FOOT FRONT			(Pentium 4-M 1.8GHz)	135	4-661-127-02	BAY K BOTTOM	B4	4-661-107-01	STAND OFF M2X5
5	4-662-680-01	INSULATOR MINI PCI	58	X-4624-710-2	I/O BRACKET ASSY	136	4-661-128-01	BAY K FOOT	B5	4-644-637-42	GRIP, M2 EG
			59	4-660-835-01	THERMAL SHEET CPU						
6	4-661-671-02	INSULATOR BOTTOM	60	1-824-072-21	CABLE, FLEXIBLE FLAT (26PIN)	137	4-661-129-01	BAY K SPRING	B6	4-642-852-21	+B M2
7	4-661-164-11	MODEM COVER				138	4-661-134-01	BAY K BEZEL	B7	4-662-693-03	GRIP, M2.6 S HEAD (EG)
8	4-661-113-02	HDD DOOR	* 61	4-654-119-11	PLATE (DC)	139	4-662-551-01	BAY K COVER	B8	4-644-637-32	GRIP, M2 EG
9	4-664-566-01	CUSHION HDD BRACKET F	63	4-662-685-01	THERMAL SHEET PW	141	4-662-379-01	FIN GND	B9	4-646-807-11	0 PLATE M2.5 (FDD)
* 10	4-653-799-02	BRACKET HDD	64	4-661-674-02	INSULATOR PWS	142	4-662-378-01	USB GND	B10	4-635-301-01	SCREW M3X4
			65	A-8067-697-A	[CH]...ASSY PWS-18.2 (C) (S)						
			66	4-662-537-01	BLIND FDD	143	1-477-588-11	ENCODER, JOG	B11	4-654-811-01	SCREW M3
11	4-653-801-02	SHEET HDD				144	4-666-529-01	ADHESIVE TAPE ATI	B12	4-652-498-01	+B M2 (NOJI)
12	A-8059-136-A	ASSY HDD 40GB (H,20) (S)	67	1-823-101-11	CABLE, FLEXIBLE FLAT	* 145	4-666-528-01	HEAT SINK ATI	B13	4-645-177-01	(CTO)...SCREW (M1.7X3.5)
12	A-8111-359-A	ASSY HDD 60GB (H,30) (S)	68	X-4624-635-1	ASSY LATCH DETECTOR	146	4-666-530-01	CUSHION ATI	B14	4-661-159-01	STAND OFF M2X8.5
12	A-8059-226-A	ASSY HDD 30GB (H,15) (S)	69	6-600-116-01	IC M470L3224DT0-CB0	147	4-667-146-01	THERMAL SHEET PW-2	B15	7-622-205-05	NUT M2 TYPE2
					(DDR266 SO-DIMM 256MB)						
13	X-4624-638-2	ASSY FOOT REAR	69	6-600-160-01	IC HYMD232M646A6-H	148	4-657-284-01	ADHESIVE TAPE (PALM)	B16	4-641-726-41	SCREW (M2), SPECIAL HEAD
					(DDR266 SO-DIMM 256MB)	149	4-657-045-02	(NV290)...SPRING DRIVE (TO)	B18	4-665-648-01	SCREW M2 EG GRIP WASHER
14	X-4624-634-2	ASSY SIDE I/O DOOR	70	1-960-827-61	HARNESS (2 PIN)	150	4-655-927-01	(NV290)...SPRING (DVD-ROM)	B19	4-666-474-01	NUMBER 0 SPECIAL HEAD M2.6
15	4-662-543-01	LABEL SIDE I/O							B20	4-639-112-01	SCREW M2X4
16	4-663-865-02	CUSHION SIDE I/O	71	1-761-380-23	CARD, MODEM				B21	4-644-637-71	GRIP, M2 EG
* 17	X-4624-741-1	ASSY 2ND FAN GUIDE	72	1-763-842-11	FAN, DC (CPU)						
18	1-763-843-11	FAN, DC (SECOND)	73	4-664-521-01	SHEET FF						
			* 74	X-4624-727-1	PALMREST BRACKET L ASSY						
19	4-662-704-01	SHEET 2ND FAN	75	4-664-050-01	SHEET SUPPORT SCREW						
20	4-662-542-01	LABEL I/O									
21	4-661-116-02	I/O DOOR	76	1-477-230-12	KEY BOARD UNIT (U)						
* 22	4-661-111-01	SUPPORT BRACKET	77	1-825-142-11	1-BOX STEREO SPEAKER						
23	X-4624-631-2	ASSY BOTTOM HOUSING	78	X-4624-637-2	ASSY HOOD KEYBOARD						
			79	1-824-072-31	CABLE, FLEXIBLE FLAT (14PIN)						
24	4-662-375-01	FOOT CENTER	80	A-8110-586-A	[CH]...ASSY SWX-93 (C) (S)						
25	4-661-112-01	BATT DOOR LINK									
26	4-661-115-02	BATT DOOR	81	4-661-171-12	(NV290/CTO W-LAN)...W-LAN SWITCH						
27	4-664-311-01	BATT CUSHION	81	4-662-547-12	(CTO)...W-LAN SWITCH COVER						
28	1-756-038-11	BATTERY, NICKEL HYDROGEN	82	4-661-172-02	TP BEZEL						
			83	1-796-319-21	PAD, TOUCH						
29	4-664-565-01	CUSHION BOTTOM C	84	1-400-255-11	(NV290/CTO W-LAN)...FERRITE CORE						
30	A-8059-969-A	ASSY BAY FD (TE)									
31	X-4624-627-2	ASSY FDD BOTTOM	85	X-4624-636-2	ASSY PALMREST HOUSING						
32	1-816-578-11	CONNECTOR, BAY 26P 1MM	* 86	4-662-681-01	HEAT SINK PW						
33	1-824-587-21	FFC (26P)	* 87	X-4624-728-2	PALMREST BRACKET R ASSY						
			88	4-662-686-01	THERMAL SHEET HS-PW						
34	4-661-092-01	FDD TOP BRACKET	89	4-663-780-01	(NV290/CTO W-LAN)... PALMREST BRACKET R TAPE						
36	1-796-231-21	FDD (FD-05HG-7771)									
37	4-661-087-02	(CTO)...GROUND PLATE C(PA)									
* 38	4-661-091-11	BRACKET C	* 90	4-661-120-01	TOUCHPAD BRACKET						
39	1-796-506-11	(NV290)...W-DVD (SD-R6012)	91	1-823-813-11	CABLE, FLEXIBLE FLAT 12P						
			93	A-8110-587-A	[CH]...ASSY SWX-94 (C) (S)						
39	1-796-455-11	(CTO)...COMBO DRIVE (UJDA730)	94	1-824-072-51	CABLE, FLEXIBLE FLAT (10PIN)						
40	X-4625-258-1	(NV290)...ASSY DVD-RW BEZEL (TO)	97	1-824-072-11	CABLE, FLEXIBLE FLAT (40PIN)						
40	X-4624-626-1	(CTO)...ASSY CD-ROM BEZEL									
41	1-961-764-11	HARNESS (DC)	98	A-8067-693-A	ASSY IFX-195 (S)						
42	1-761-564-11	(NV290/CTO W-LAN)... WIRELESS LAN CARD	99	4-661-551-22	(NV290/CTO W-LAN)...LENS COVER						
			99	4-661-551-32	(CTO)...LENS COVER						
			103	4-665-113-01	SHEET TP-BRACKET BT						
43	4-664-567-01	CUSHION HDD GUIDE	104	4-665-226-01	SPACER TPB						
44	4-661-110-02	HDD GUIDE									
45	4-661-673-01	INSULATOR PC-CARD	105	4-665-227-02	SPACER TBR						
* 46	4-661-167-01	HDD SUPPORT GROUNDING	106	4-665-228-01	SPACER PRH						
47	4-661-672-02	INSULATOR HDD	108	4-665-016-01	COPPER TAPE BOTTOM A						
			109	4-665-017-01	COPPER TAPE BOTTOM B						
48	A-8067-695-A	[CH]...ASSY MBX-66.2 (C) (S)	110	4-665-018-01	COPPER TAPE BOTTOM C						
49	A-8110-584-A	[CH]...ASSY CNX-167 (C) (S)									
50	X-4624-725-1	SIDE I/O BRACKET ASSY	111	4-665-022-01	CUSHION HDD GUIDE TOP						
51	4-661-163-01	LAN DOOR	112	4-665-023-01	CUSHION BOTTOM B						
52	4-662-544-01	SHEET SIDE I/O	113	X-4625-033-1	ASSY FINGER HDD						
			114	4-656-131-01	SHEET MODEM						
53	1-816-371-11	CONNECTOR, PC CARD(EJECT,RIGHT)	115	4-641-630-21	COVER BAY HOLE						
54	4-661-151-01	HEAT SINK									
55	4-663-030-01	INSULATOR FIN	124	4-661-173-02	JOG BEZEL						
56	4-662-684-01	THERMAL SHEET NORTH	125	4-661-088-01	FDD LATCH LEVER						
57	6-703-333-01	(NV290)...IC RH80532GC041512-2 (Pentium 4-M 2.0GHz)	126	4-661-090-01	FDD LATCH SPRING						
			127	4-661-093-02	FDD LATCH BUTTON						
			131	4-661-125-01	BAY K TOP BRACKET						



\*1 These components are related to the WIRELESS LAN.



### 3-2. LCD Section (NV290 Model) – Made by SH – (Only CTO) – Made by TS –



Ref.No.	Part No.	Description
301	X-4624-630-4	ASSY DISPLAY HOUSING
302	X-4624-798-2	HINGE 15R
303	1-476-316-31	INVERTER UNIT
304	X-4624-799-1	HINGE 15L
305	1-961-756-12	LCD HARNESS
306	4-664-943-02	COPPER TAPE LCD CON
307	4-664-944-01	COPPER TAPE LCD ED
* 309	4-664-977-01	LCD-15 BRACKET L2
310	X-4624-629-4	ASSY LCD BEZEL 15
311	4-661-297-01	CUSHION HINGE
312	4-661-135-01	HINGE COVER
313	4-661-296-03	CUSION LCD
314	A-8110-581-A	(NV290)...ASSY LCD15SX (SH4) (S)
314	A-8110-284-A	(CTO)...ASSY LCD 15TO AP (S)
* 315	4-664-978-02	LCD-15 BRACKET R2
316	4-661-101-01	LCD SHIELDING
317	4-661-548-01	LCD HOOK KNOB
318	4-661-157-02	LCD HOOK
319	4-661-158-01	LATCH SPRING
320	1-754-242-11	(NV290/CTO W-LAN)... ANTENNA (1/2 LAMBDA) (*1)
321	4-661-298-03	CUSHION LATCH
322	4-666-526-11	LABEL ID (U)
322	4-666-815-11	(CTO_XPH)...LABEL ID (U/CTO)
322	4-666-815-21	(CTO_XPP)...LABEL ID (U/CTO)
B1	4-665-205-01	SPECIAL FLAT HEAD (EG GRIP), M2
B3	4-641-726-12	SCREW (M2), SPECIAL HEAD
B17	4-641-726-41	SCREW (M2), SPECIAL HEAD
B18	4-665-648-01	SCREW M2 EG GRIP WASHER

\*1 These components are related to the **WIRELESS LAN**.  
Installation positions of the antenna and connectors are specified depending on the colors of the lead wires.

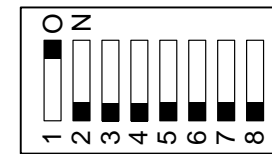
**NOTE :**

Set the DIP switch on the MBX-66 board (Main board) to match with the LCD that is used in this computer.

A-8110-581-A



A-8110-284-A



The upper position where ON indication is shown is the ON position . The lower position is the OFF position.

A-8110-581-A

No.	1	2	3	4	5	6	7	8
ON/OFF	0	0	1	1	1	1	1	1

0 : ON 1: OFF

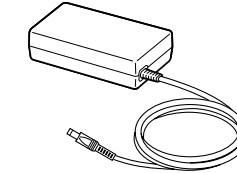
A-8110-284-A

No.	1	2	3	4	5	6	7	8
ON/OFF	0	1	1	1	1	1	1	1

0 : ON 1: OFF

Ref.No.	Part No.	Description
ACCESSORIES *****		
△ 801	1-477-205-42	ADAPTOR, AC
802	A-8110-809-A	BP2NX SNT (U) ASSY (S)
△ 803	1-757-562-21	CORD, POWER
804	A-8110-962-A	WEIGHT SAVER ASSY H2
805	A-8059-753-A	ASSY BAY WOOFER
	4-668-169-01	QUICK START, 2330U

**801**  
AC Adaptor (1)



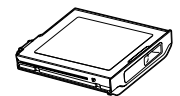
**804**  
Weight Saver (1)



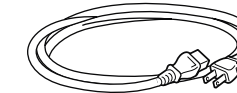
**802**  
Battery Pack (1)



**805**  
Woofler Bay Unit (1)



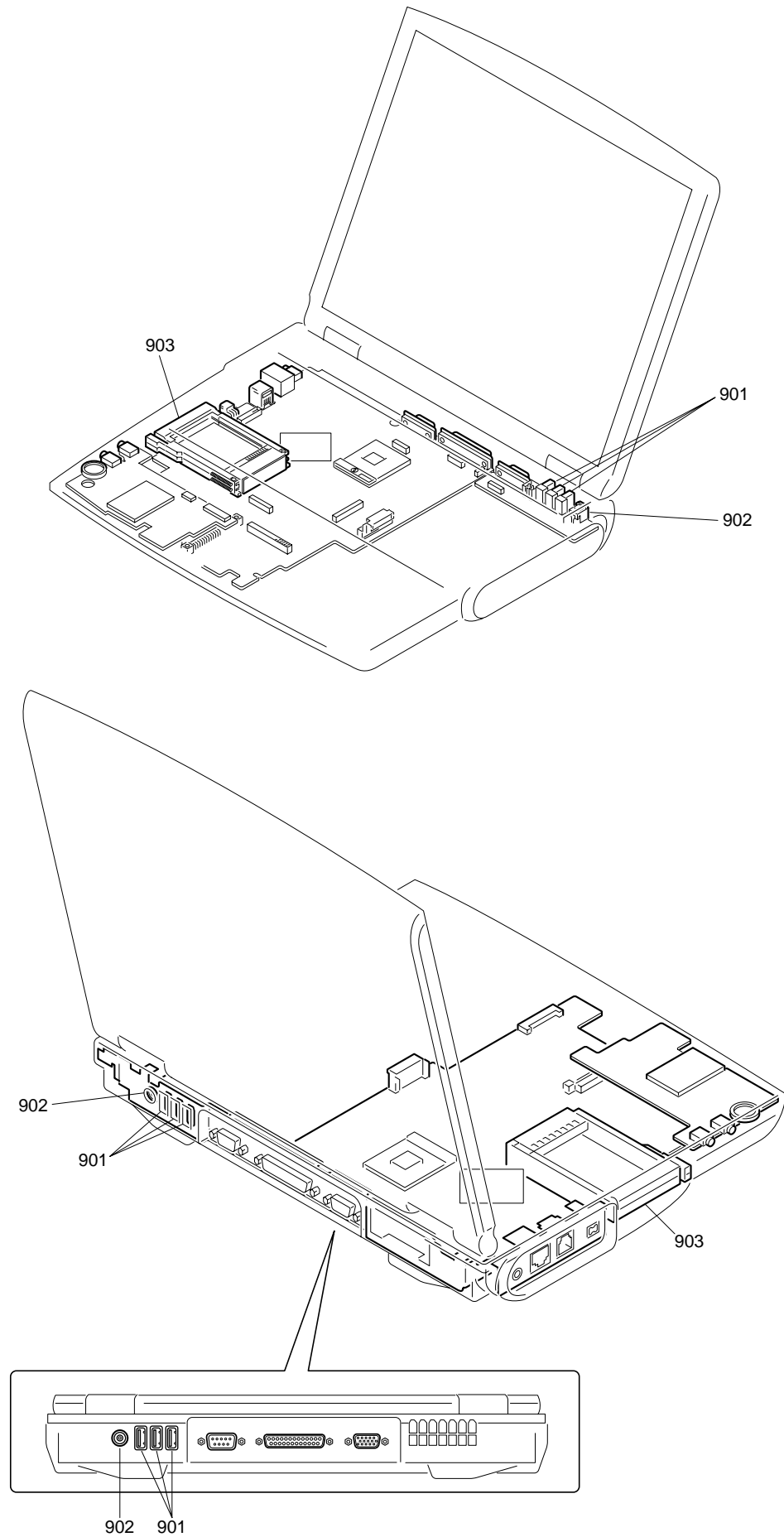
**803**  
Power Cord (1)

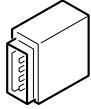
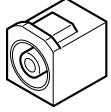
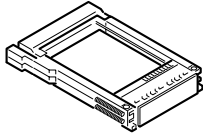


The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

### 3-3. Connector Section (CH Type only)



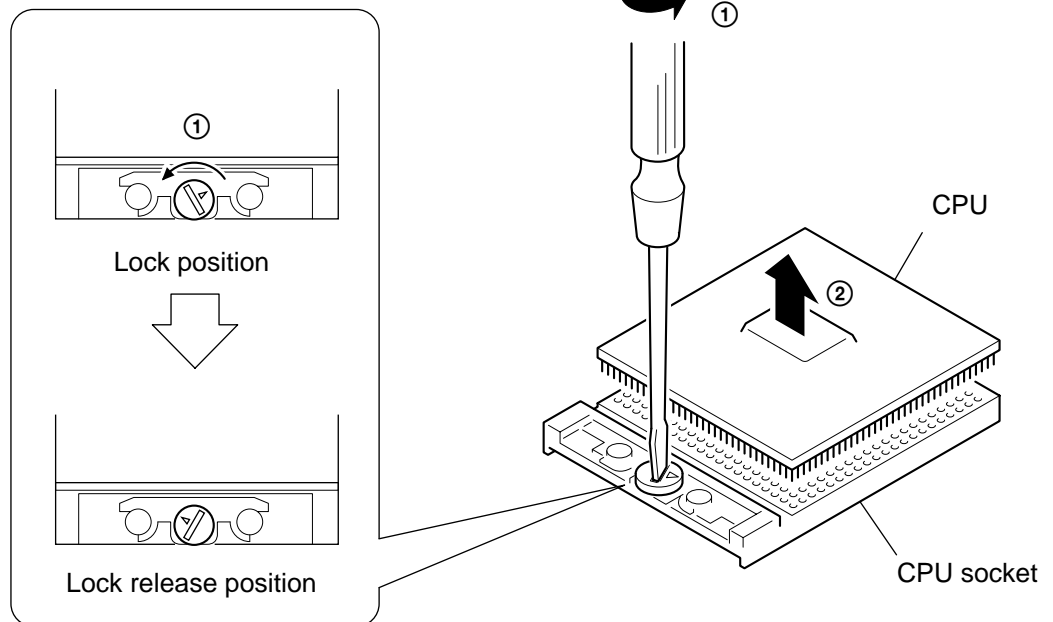
Ref.No.	Fig.	Part No.	Description
901		1-815-422-12	[CH]...CONNECTOR, USB (A) USB connector
902		1-779-745-21	[CH]...JACK, DC DC IN connector
903		1-816-371-11	[CH]...CONNECTOR, PC CARD (EJEC,RIGHT) PC Card Slot connector

\* Among the parts that are used on the boards of this model, only the connectors that are show in the list can be replaced.  
(The parts other that the specified connectors cannot be replaced.)

## 4-1. Replacing the CPU

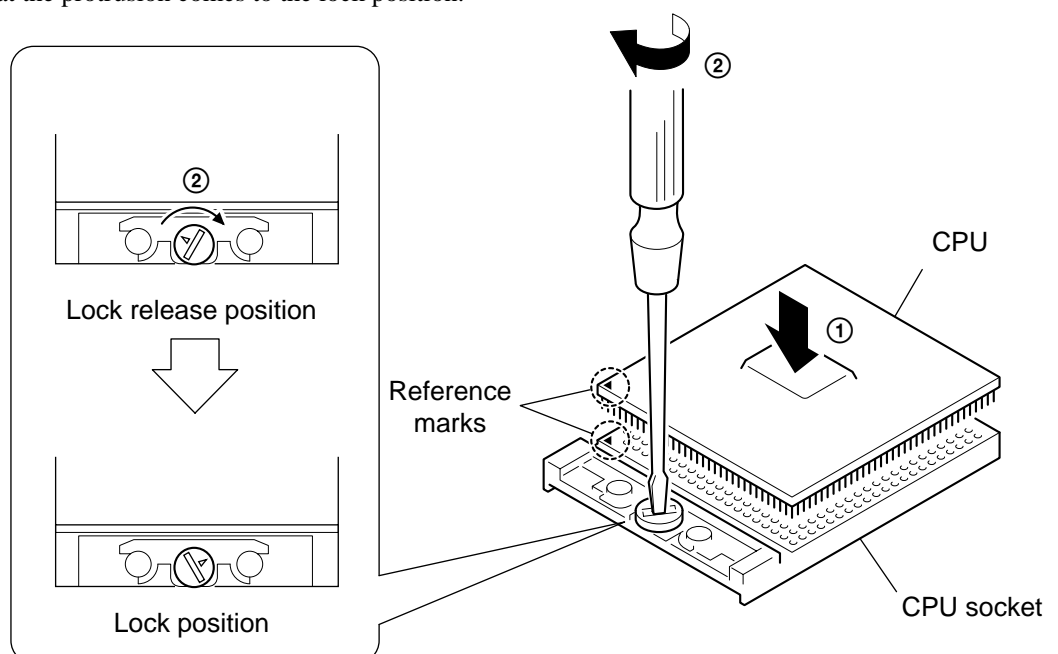
### 1. Removing the CPU

- ① Insert a flat-blade screwdriver into the notch as shown in the illustration and rotate it so that the protrusion comes to the lock release position.
- ② Pull the CPU gently upward to lift it out of the CPU socket.



### 2. Installing the CPU

- ① Align the triangle reference mark of the CPU with that of the CPU socket and insert all the pins of the CPU to the corresponding holes of the CPU socket.
- ② Insert a flat-blade screwdriver into the notch as shown in the illustration and rotate it so that the protrusion comes to the lock position.




**NOTE:**

Rotate a flat-blade screwdriver to the lock position securely. If not, the operation of the CPU may become unstable.

**List of PCG-NV Series (As of October, 2002)**

<b>Model Name</b>	<b>Service Manual Part No.</b>
PCG-NV170P PCG-NV170 PCG-NV190 PCG-NV190P	9-874-535-03
PCG-NV290	9-876-001-01

 : Additional Models



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## Revision History

Suffix	Ver.	Date	Contents	QM No.
-01	Ver. 1	2002.10.15	First Edition	
< Remarks >				