Notebook PC Service Manual

Model : N241S1

Chapter 1
General System Description

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1.1. HARDWARE SPECIFICATIONS

A. CPU

N241S1 Use INTEL Celeron & Pentium III Processor for the PGA370 Socket . Celeron Processor running from 533A MHz to 733 MHz. Pentium III Processor from 500 MHz to 1 GHz. These CPU are integrated high performance 16 KB instruction and 16 KB data, nonblocking, level one cache. The CPUs also integrated level two cache(128 KB for Celeron and 256 KB for Pentium III) with 32-bit applications running on advanced 32-bit operating systems.

The Celeron Vcore running at 1.65V(CPUID 0683h),1.70V(CPUID 0686h) ,Vtt at 1.5V and Vcmos at 2.5V. Pentium III Vcore running at 1.7V, Vtt at 1.5V and Vcmos at 2.5V for 1 GHz.

The power circuit also support the autoset of Vcc core by the VID0-3 signals from CPU. Both of CPUs support MMXtechnology.

B. CORE LOGIC

N241S1 uses SIS630S single chipset as core logic .

The single chipset, SiS630S, provides a high performance/low cost Desktop solution for the Intel Slot 1 and socket 370 series CPUs based system by integrating a high performance North Bridge, advanced hardware 2D/3D GUI engine, Super-South bridge and an AGP4X Slot.

By integrating the UltraAGP ™ technology and advanced 64-bit graphic display

interface, SiS630S delivers AGP 4x performance and memory bandwidth of up to 1 GB/s. In addition, SiS630S also supports an extra AGP Slot that supports 4X and Fast Write transactions. Furthermore, SiS630S provides powerful hardware decoding DVD accelerator to improve the DVD playback performance. In addition to providing the standard interface for CRT monitors, SiS630S also provides the Digital Flat Panel Port (DFP) for a standard interface between a personal computer and a digital flat panel monitor. To extend functionality and flexibility, SiS630S adopts Share System Memory Architecture which can flexibly utilize the frame buffer size up to 64MB.

The "Super-South Bridge" in SiS630S integrates all peripheral controllers/accelerators /interfaces. SiS630S provides a total communication solution including 10/100Mb Fast Ethernet for Office requirement. SiS630S offers AC'97 compliant interface that comprises digital audio engine with 3D-hardware accelerator, on-chip sample rate converter, and professional wavetable along with separate modem DMA controller. SiS630S also provides interface to Low Pin Count (LPC) operating at 33 MHz clock which is the same as PCI clock on the host, and dual USB host controllers with six USB ports that deliver better connectivity and 2 x 12Mb bandwidth.The built-in fast PCI IDE controller supports the ATA PIO/DMA, and the Ultra DMA33/66/100 function that supports the data transfer rate up to 100 MB/s. It provides the separate data path for two IDE channels that can eminently improve the performance under the multi-tasking environment.

C. CLOCK FREQUENCY

System clock:

1. 32.768 KHz XTAL for NS87570
2. 32.768 KHz XTAL for RTC of SIS-630S.
3. 14.318 MHz XTAL for WINBOND 83194BR-63S Clock Generator to Support.
   66/100/133 MHz for CPU.
   33 MHz for all of PCI Devices and LPC .
   14.318 MHz for SIS-630S VGA .
   48 MHz for SIS-630S USB and I/O Chipset(PC87393).
   Multiple 100/133 MHz Clock for SDRAM.
4. 25 MHz XTAL for PHY(RTL 8201)
5. 32.768 KHz XTAL for OZ998
6. 14.318 MHz XTAL for MP3 Audio Decoder STA013

7. 8 MHz XTAL for MP3 Controller T33520

D. MEMORY

D-1 System Memory

N241S1 Support 32MB/64MB/128MB/256MB SDRAM for Expanded with one 144 pin SO-DIMM.

DIMM1	DIMM2	TOTAL
16M	0M	16M
32M	0M	32M
64M	0M	64M
128M	0M	128M
256M	0M	256M
16M	16M	32M
16M	32M	48M
32M	32M	64M
16M	64M	80M
32M	64M	96M
64M	64M	128M
64M	128M	192M
128M	128M	256M
256M	256M	512M

D-2. Video Memory

SIS-630S adopts Share System Memory Architecture which can flexibly utilize the frame buffer size up to 64MB, 1024×768×32bit color(LCD) and 1920×1440 8bbp/16bbp 60NI.

E. VIDEO

N241S1 use VGA Chips Integrated in SIS-630S,which support simultaneous display and graphic windows size from 4MB to 256Mbytes, internal AGP 4X bus and 1.5V operation. It can Support 12.1" SVGA,13.3" XGA and 14.1" XGA TFT (18bit) LCD Panel.

F. LPC Interface

It is integrated in SIS-630S that forward PCI I/O and memory cycle into LPC Bus, Translate 8/16 bit DMA Cycles into Bus cycle.

G. I/O SUBSYSTEM

N241S1 use NS PC87393 LPC to ISA Bridge interface that is support:

1. Parallel port to support EPP/ECP
2. One FIR interface (4Mbit/s).

H. PCMCIA

N241S1 use O2Micro OZ6812T Card Bus controller which support one type II slot, and 32 bits Card Bus.

I. BIOS

AMI BIOS, and support PnP, APM 1.2 and ACPI 1.0 function. One 32 pins PLCC package 2MB FLASH ROM Winbond 29C020C and SST 39SF020 are used for System and VGA BIOS.

J. HARD DISK UNIT

Support PCI Bus Mastering, Native Mode and Compatibility Mode. It is also support PIO Mode 0,1,2,3,4 and Ultra DMA 33/66/100 independent.

Capacity: Support 6/12 or above HDD
Thickness: 9.5mm/2.5”(Toshiba, Fujitsu, IBM, Hitachi)
Host Interface: Fast IDE Interface

K. KEYBOARD

travel : 3.0±0.2mm
support 3 windows keys
key pitch : 19mm
size=285mm x 108.8mm x 5.5mm

L. AUDIO SUBSYSTEM

AC-97 2.1 Compliant AUDIO Controller with Legacy Mode support,3D Sound and Sound Blaster PRO Compatible integrated in SIS-630S.
An Analog device ALC 200 with high S/N ration(>90dB). It is compliant with AC-97 2.1 specification 18-bit stereo full-duplex CODEC with independent and variable sampling rate.

M. CD-ROM

TEAC

12.7mm height 12/8cm CD-ROM disc
PIO mode 4, 24X
average 3.1W,sleep 0.05W

ATAPI interface

N. TOUCH PAD UNIT

SYNAPTIC

capacitor sensor
support edge motion and virtual scroll bar
support 2 or 3 button mode
ESD withstand: 15KV
power consumption: 2.75mA/5V
X/Y resolution: 500 points/inch
interface : PS/2

O. LED INDICATOR UNIT

There are two portion of LED indicators on N241S1

1. ***Two LED indicators on the right case:***

SUSPEND LED : Green color for the system active at suspend mode
Power/Charge LED : Green color for system power on, red color for battery charging.

2. ***Five LED indicator beside by power button:***

FDD LED, HDD LED, CD-ROM LED, Num lock LED, Caps lock LED, Scroll lock LED

P. UNIVERSAL SERIAL BUS (USB)

Universal Serial Bus provides bi-directional, isochronous, dynamically attachable serial interface for adding peripheral device such as CD-R/W, FDD and Digital Camera. Data transfer rate is up to 12Mbits/sec. There are four ports supported by N241S1

Q.MODEM/FAX MODULE

Modem chip : SmartLink HAMR5603+Si3014
meet PC99 WINDOW modem requirement
support : AMR/MDC Slot / V.90 (56Kbps) / AC'97 2.1 / APM & ACPI

V.34bis(4.8Kbps to 33.6Kbps) / V.32 bis(4.8Kbps to 14 Kbps) /AT command set /
V.42 (LAPM) and MNP 2-4 error correction, 5 Data compression
V.22 bis(50 bps to 2.4Kbps) / V.21 Bell 103 / Bell 212
Fax Group3 Class 1/ V.17,V.29,V.27ter,V.21ch2 /
Group III fax / telephony answering machine / DTMF generation and detection / local handset, telephone and microphone record / telephone line and headset or peaked playback /VOX voice Detection/ caller ID(optional) / host base DSVD

R. BATTERY

R –1 Li-Ion

Vender:	Panasonic
battery type:	***Li-Ion***,8cells (4S2P)
battery capacity:	14.8V,3200mAh (47.36 Whrs)
charge voltage:	16.8V+ 2.5% -1.0%
charge temperature:	0~45°C
discharge temperature:	-20~60°C
end of discharge:	11V
cycle life:	500 times
overcharge protection:	when battery voltage reach 17.2 ± 0.2V
over-discharge protection:	when battery voltage decrease to 10 ± 1V
pre-charge current:	0.2 A
charge current:	When system is powered off : 2A
	When system is in powered on : 1A

R – 2. NI-MH

Vender	GP
battery type:	***NI-MH***, 10cells (10S)
battery capacity:	12.0V,3800mAh (45.6 W/hrs)
charge temperature:	0~45°C

discharge temperature:	-20~60°C
end of discharge:	10V
cycle life:	500 times
pre-charge current:	0.2 A
charge current:	When system is powered off : 2A When system is in powered on : 0.65A

S. BLUETOOTH MODULE

Frequency Range	2.402GHz – 2.480GHz.
Bandwidth	MHz
Interface	Standard USB interface
OS	win98/win2000/win CE/win ME/Linux
PC Applications	Dial-up Networking profile/LAN Access Profile/File Transfer Profile
Functions	Analyzing the Bluetooth Protocal Stack including the HCI, L2CAP , RFCOMM , SDP , TCS Layers. Auto-reset Function Avoid RF module shut-down.

T. MINI PC INTERFACE

Support Mini PCI specification revision 1.0 but not support LAN interface signals .

The Mini PCI signal set can be divided into three sub-sets:

Support PCI interface, PCI power management, sideband signals provide audio and communications .

Wake up event support for D3cold .

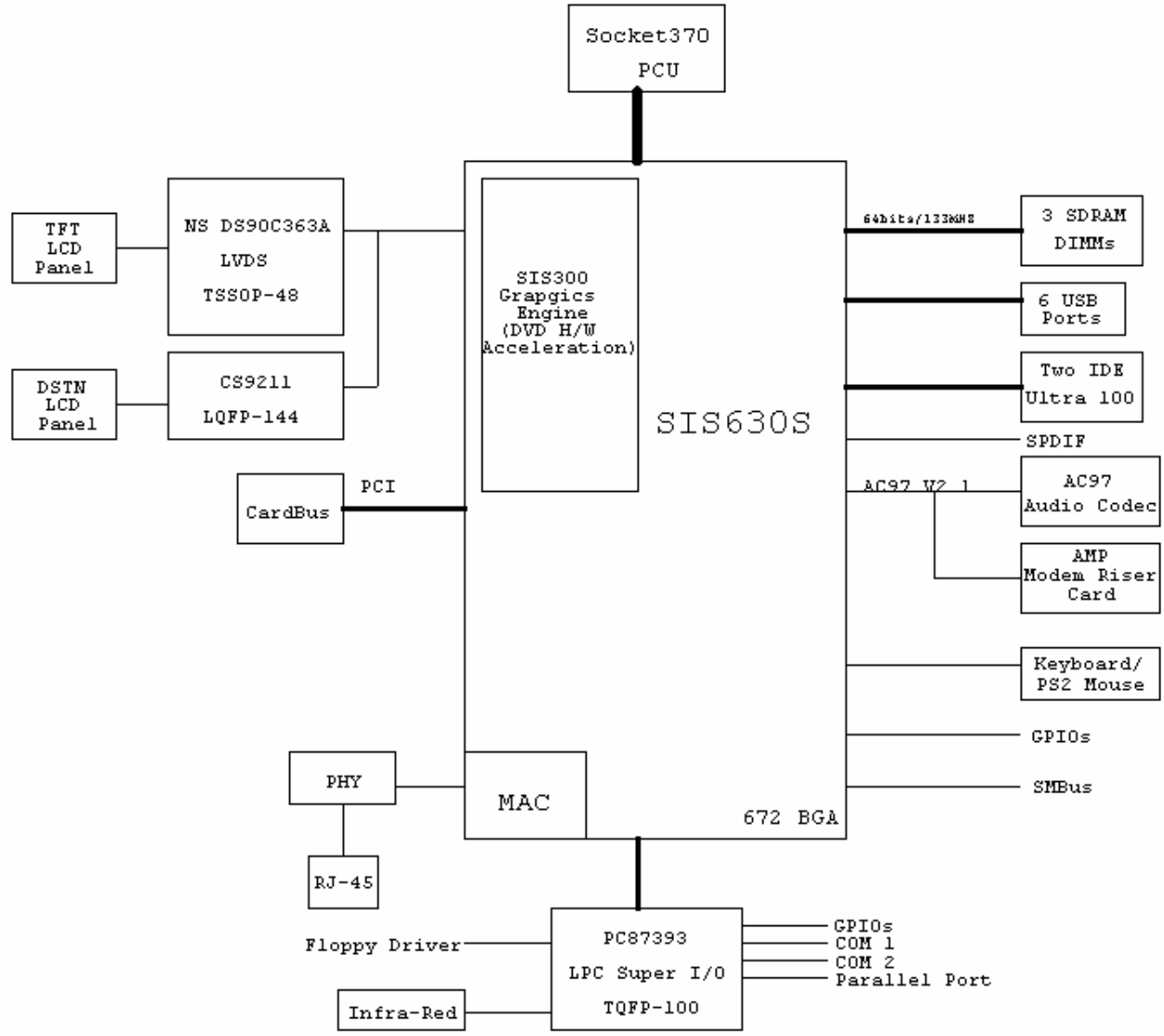
Contact Resistance 55 milliohms maximum (initial) per contact

Current Rating 0.5 A per contact .

Support MINI PCI type III A/B the Detial specification see the card module .

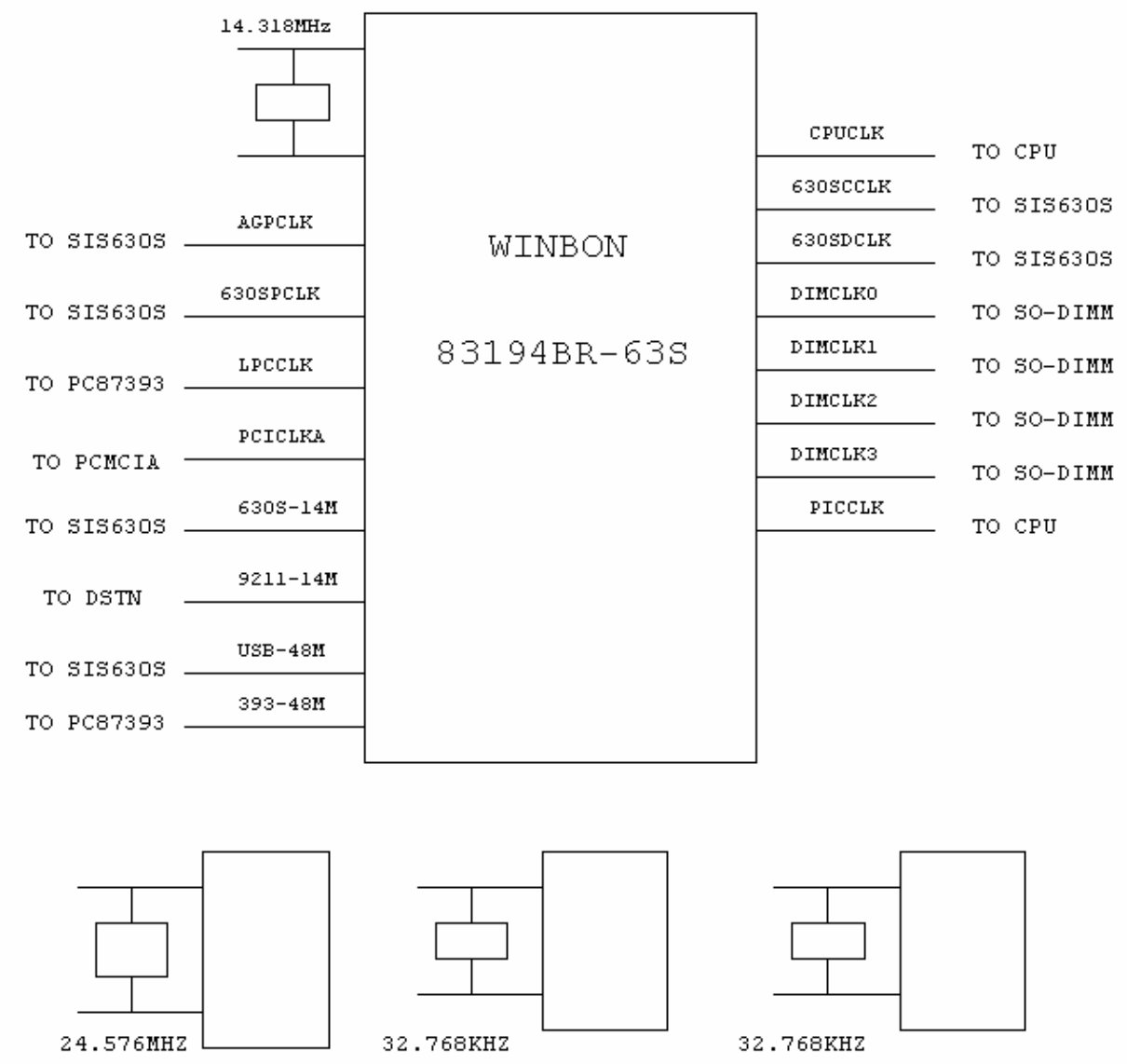
1.2 BLOCK DIAGRAM

A. Core Logic Subsystem



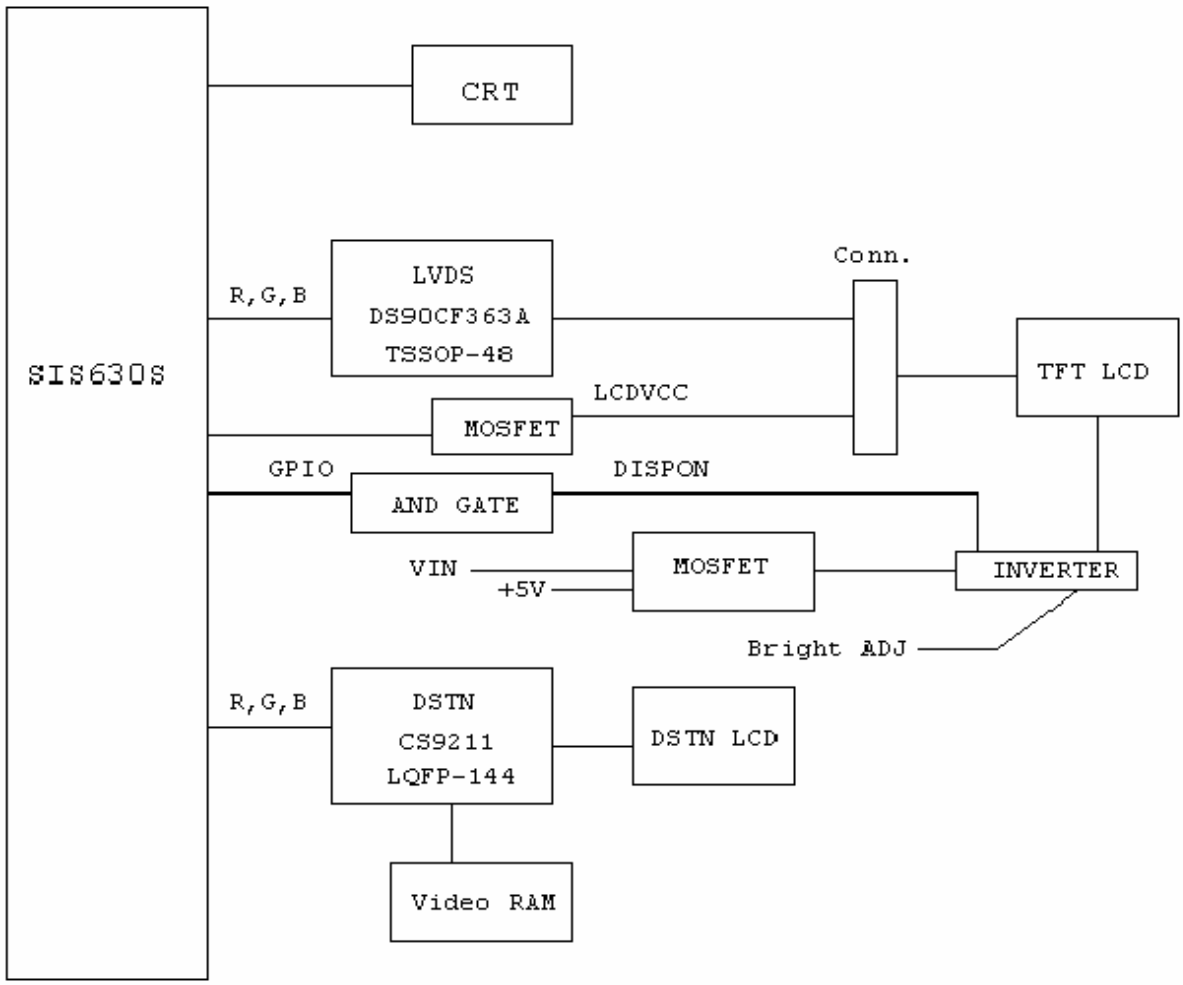
CORE LOGIC BLOCK DIAGRAM

.B. Clock Distribution



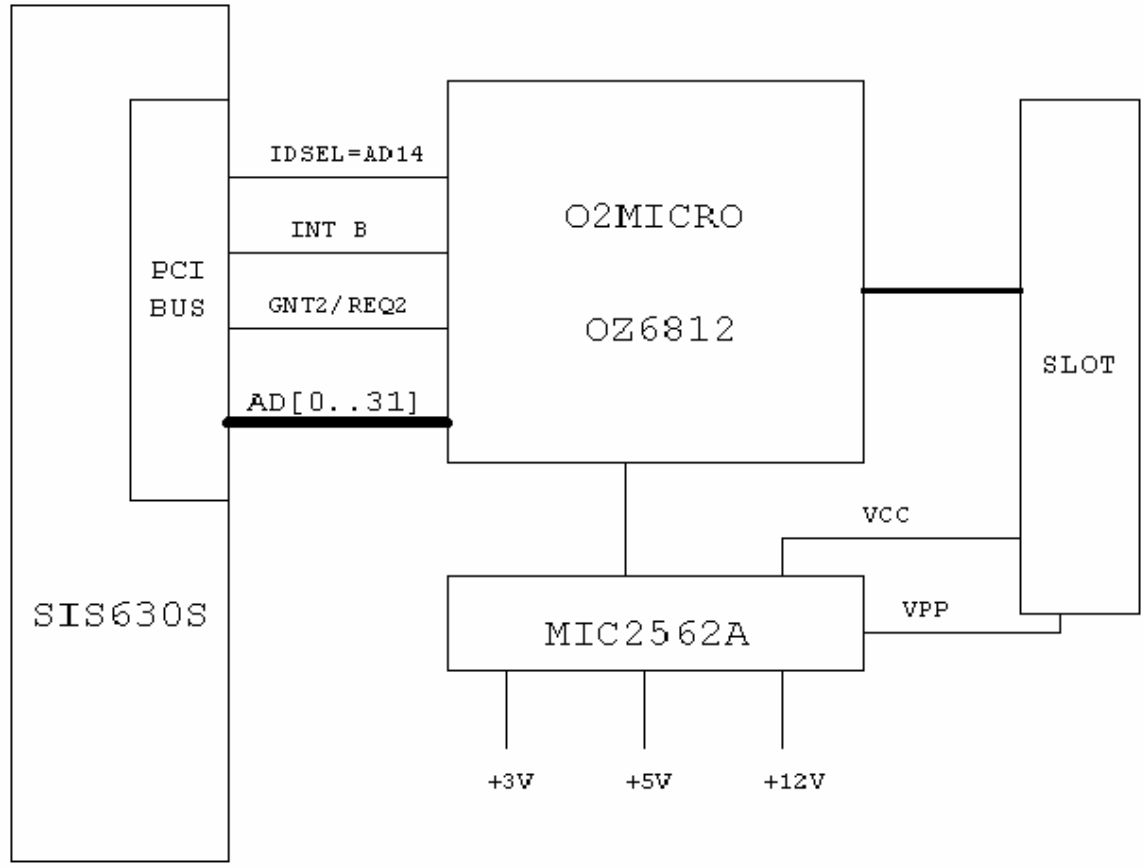
CLOCK DISTRIBUTION

C. VGA Block Diagram



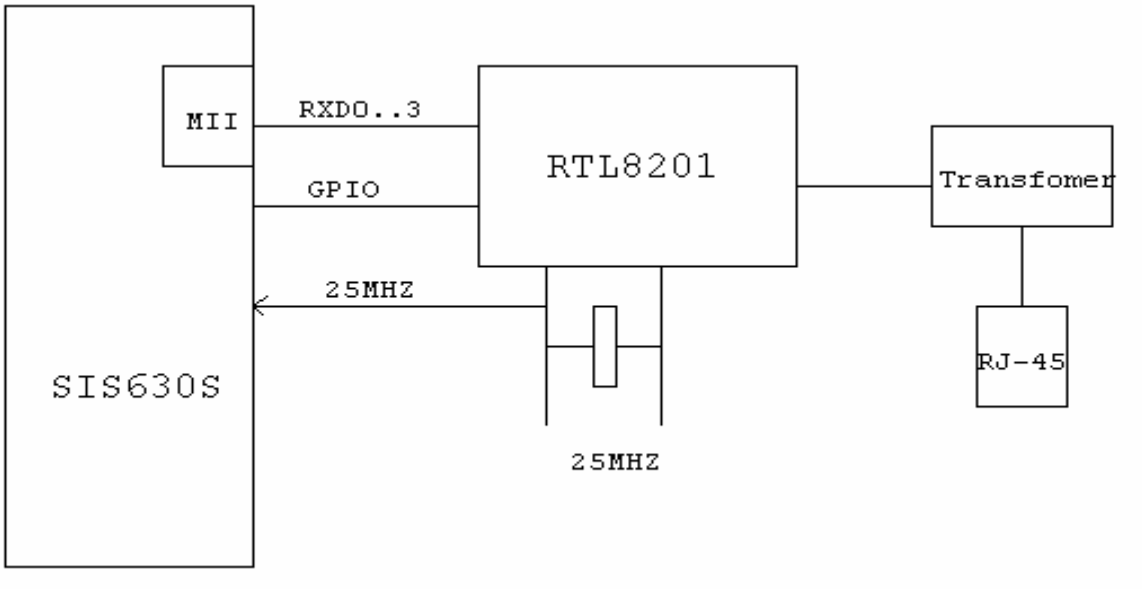
VGA BLOCK DIAGRAM

D. PCMCIA SUBSYSTEM



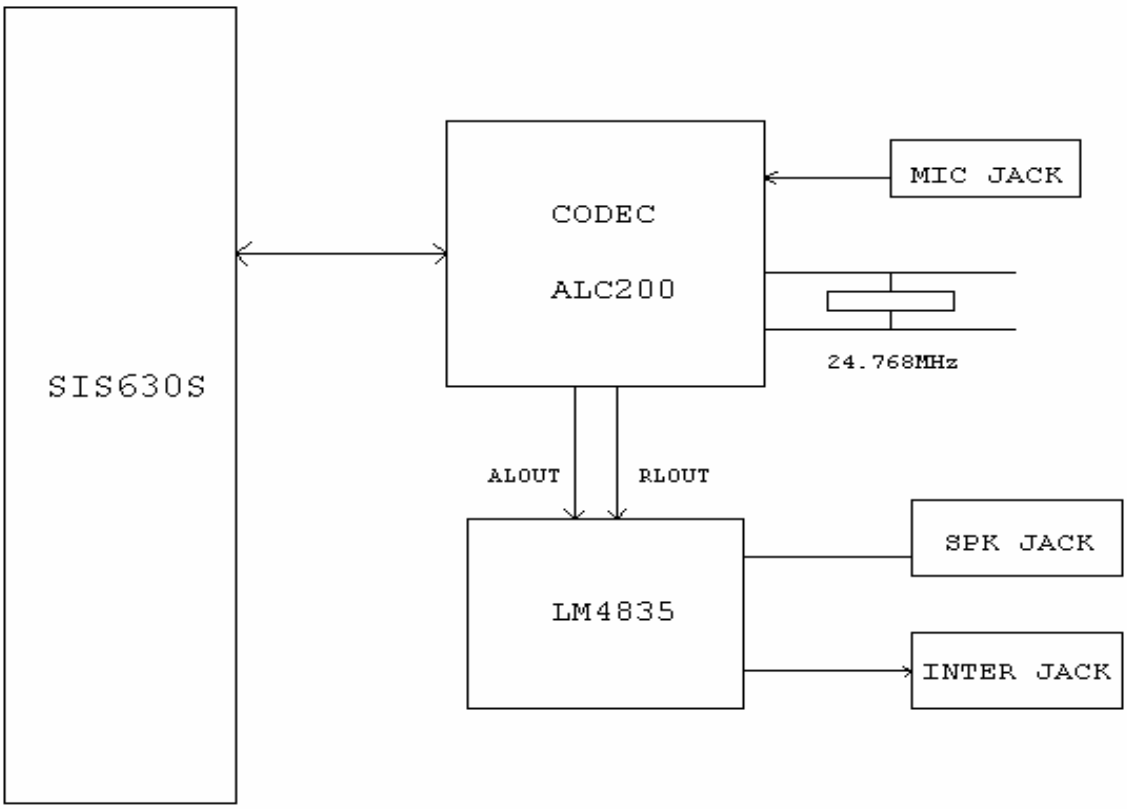
PCMCIA BLOCK DIAGRAM

E. LAN SUBSYSTEM



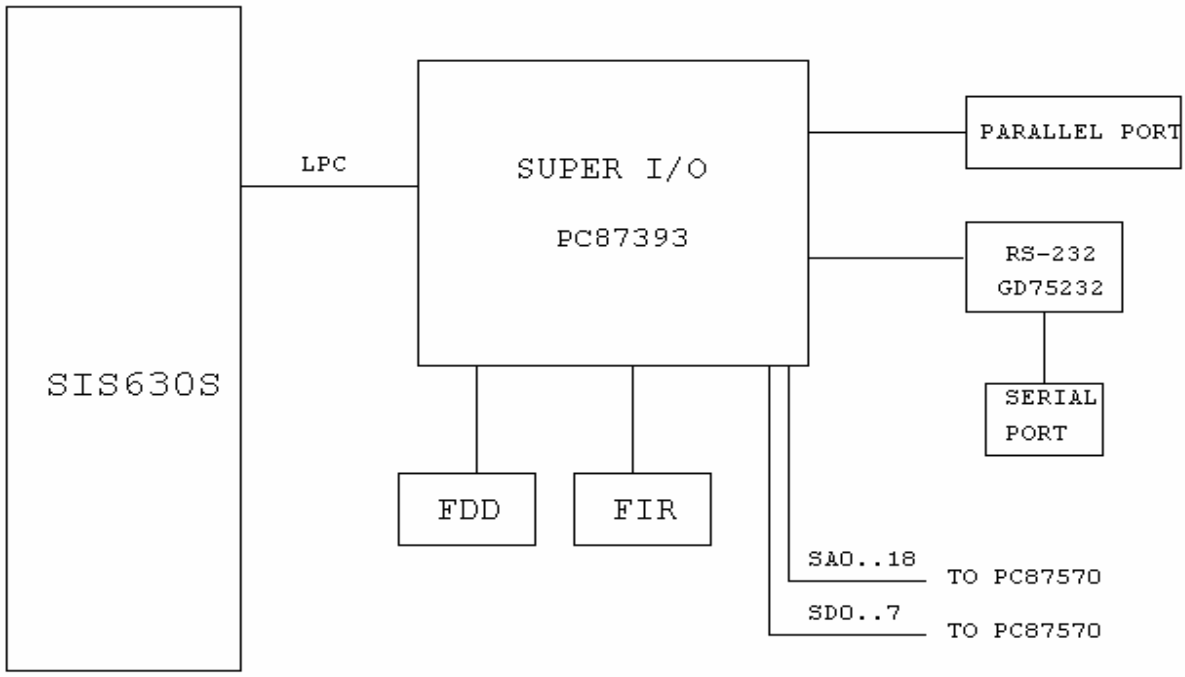
LAN BLOCK DIAGRAM

F. AUDIO SUBSYSTEM



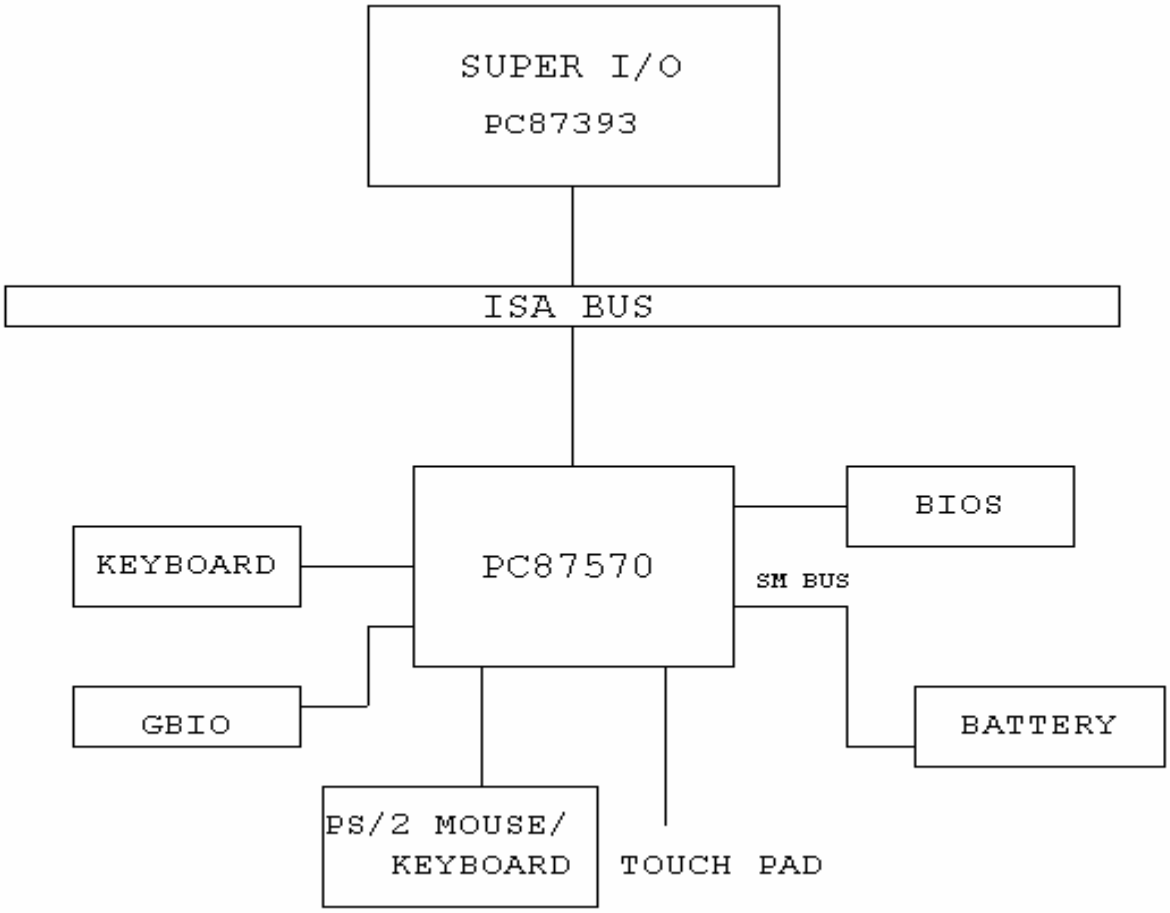
AUDIO BLOCK DIAGRAM

G. I/O SUBSYSTEM



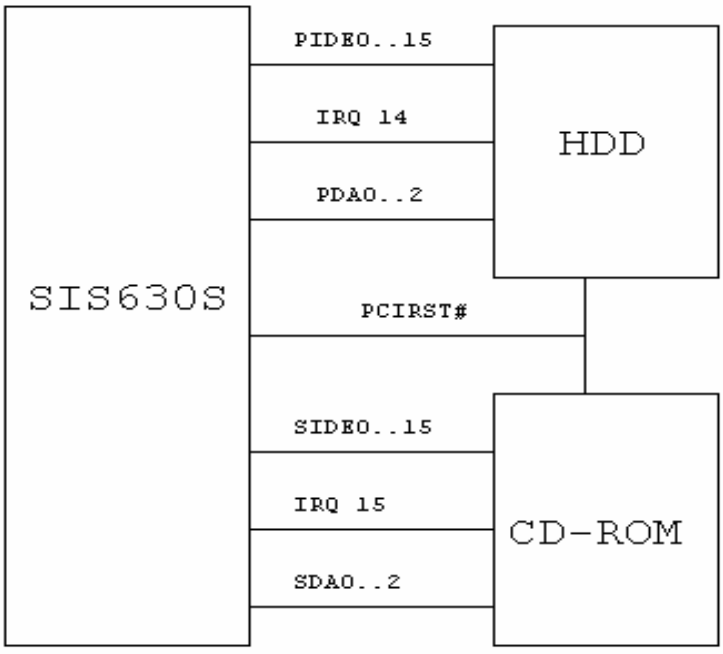
SUPER I/O BLOCK DIAGRAM

H. ISA SUBSYSTEM



ISA SYSTEM Block Diagram

I. IDE SUBSYSTEM



HDD and CD-ROM Block Diagram

1.3 BATTERY MANAGEMENT DEFINITION

A. Li-Ion battery packs

Ÿbattery type : Li-Ion
Ÿbattery cells :8 cells
Ÿbattery SPEC. : 14.8 V, 3200mAh
Ÿbattery power(total) : 47.36 watts
Ÿbattery protection : over charge protect ; over discharge protect ; over temperature protect ; short protect ; over current protect

B. Ni-MH battery packs

Ÿbattery type : NI-MH
Ÿbattery cells :10 cells
Ÿbattery SPEC. : 12 V, 3800mAh
Ÿbattery power(total) : 45.6 watts
Ÿbattery protection : over charge protect ; over discharge protect ; over temperature protect ; short protect ; over current protect

C. Battery gauge

Ÿgas gauge IC in battery package
Ÿsupport SMB bus 1.0 specification
Ÿsupport SMB MASTER mode for battery low broadcast.

D. Battery warning

D-1. LOW BATTERY WARNING

When the current capacity of the battery pack is less than or equal to 6% Capacity, the system willl continuously beeps at a rate of 1 time every 16 seconds and the Green POWER LED will also blink at the same rate.

D-2. VERY LOW BATTERY WARNING

When the current capacity of the battery pack is less than or equal to 3% Capacity, the system willl continuously beeps at a rate of 1 time every 4 seconds and the Green POWER LED will also blink at the same rate if there is no 'Suspend to Disk' partition in the hard disk. If there is a 'Suspend to Disk' partition in the hard disk, the system will enter

'Suspend to Disk' mode when the current capacity of the battery pack is less than or equal to 135 mAH.

E. Battery critical low

When the current capacity of the battery pack is less than or equal to 0% Capacity, the power of the system will be shut down automatically.

F. Smart battery charger

A normal battery charger IC is used to charge the battery. This charger IC is controlled by the embedded controller PC87570. The PC87570 will emulate smart battery interface needed to talk with a smart battery pack.

G. Battery view in windows 95/98

hardware design can view battery gauge by KB interface

H.. Battery view utility

windows 95/98 and dos /power.exe

1.4 HOT – KEY DEFINITION

Key combination	Function
Fn + F1	STANDBY
Fn + F3	MUTE BATTERY WARNING BEEP
Fn + F4	TOGGLE LCD/CRT DISPLAY
Fn + F5	VOLUME INCREASE
Fn + F6	VOLUME DECREASE
Fn + F7	BRIGHTNESS UP
Fn + F8	BRIGHTNESS DOWN
Fn + F9	CONTRAST UP (FOR DSTN LCD)
Fn + F10	CONTRAST DOWN (FOR DSTN LCD)

1.5 POWER PLANS

A. Power Source Descriptions

+5V : 5V power source.

+3V : 3.3V power source.

+12V : 12V power source.

CPU_CORE: CPU core power source. For Celeron the voltage is 2.0V, for Pentium !!! it's 1.6V

+2.5V: 2.5V power source

+1.8V: 1.8V power source for SiS630 & CPU AGTL+ termination powers source.

KBVCCA: KBC AD/DA 3.3V reference voltage

RTCVDD: Real time clock power source

+5V_AUX: LAN 5V always power source

+3V_AUX: LAN 3.3V always power source & KBC 3.3V Power Source

+1.8V-Aux: Sis 630 Power source

+3V_RTL: LAN 3.3V analog power source

+3V_PLL: LAN 3.3V analog power source

LCDVCC: LCD display 3.3V power source

VIN: Inverter 8~20V power source

ADAP+: 20V Power supply from AC adapter

AMPVDD: 5V analog power for audio

Power Source Status Table

	5V	3.3V	12V	CPU_CORE	VCC_CMOS	2.5V	1.5V	1.8V
FULL-ON	ON	ON	ON	ON	ON	ON	ON	ON
SLEEP	ON	ON	ON	ON	ON	ON	ON	ON
STD	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SOFT-OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

1.6 POWER SUPPLY

A. Specification of DC/DC

A-1 General Description :

- The DC/DC (system power) can support+3.3V,+5V,+12V,*+5V_AUX,+3V_AUX +1.8V_AUX* for the main system .
- The DC/DC (CPU power) can support +1.3V~+2.05V, +1.8V,+2.5V for the CPU.

A-2 Electrical Specification :

DC OUTPUT

DC OUTPUT						
VOLTAGE	TOLERANCE	RIPPLE & NOISE	CURRENT			
			MIN	TYP	MAX	SURGE
5.0V	+/-4%	100mVp-p	0.4A	1.5A	2.5A	3A
3.3V	+/-4%	100mVp-p	0.3A	2.0A	3.5A	4A
12V	+/-5%	120mVp-p	10mA	50mA	0.1A	-
+5V_AUX	+/-5%	100mVp-p	10mA		500mA	
+3V_AUX	+/-5%	100mVp-p	0mA		150mA	
+1.8V_AUX	+/-5%	100mVp-p	0mA		150mA	
1.8V	+/-5%	100mVp-p	100mA	-	3.0A	3.5A
2.5V	+/-5%	100mVp-p	0A	-	150mA	-

CPU Vcore	Max. Current	Steady state	Transient response	Remark
1.60V	11A	-130mV/+80mV	-110mV/+ 80mV	**CPU 500~550MHz**
1.65V	18A	-130mV/+80mV	-110mV/+ 80mV	CPU 533~933MHz
1.70V	20A	-130mV/+80mV	-110mV/+ 80mV	CPU 550~1000MHz

Note: The following output ripple/noise requirements shall be meet throughout the load range and under input voltage from 8Vdc to 22Vdc. Measurements shall be made with an oscilloscope with 200MHZ bandwidth output shall be bypassed at connector with a 0.1uF ceramic capacitor and a 10 uF electrolytic capacitor to simulate the loading.

INPUT :

- Adapter:20V @ 3A,60W constant voltage mode.
- Li-Ion Smart Battery Pack 8Cells DC 14.8V/3200mAh,47.36Wh
- NI-MH Smart Battery Pack 10Cells DC 12V/3800mAh,45.6Wh

INRUSH CURRENT :

Condition	All operation condition turn on/off 1 second at all of input power source. 40 degree C air ambient.
limit	No damage shall occur or components over stress, input fuse shall not blow.

A-3 Efficiency:

85% min(Typical Load & Vin : 20V)

5V/1.5A,3.3V/2A,12V/50mA,2V/7A

75% min (Max Load & Vin : 20V)

CPU Vcore

A-4 Protection Requirements

A) Output protection include OVP & current limiter protection .

B) OVP activated when output voltage (CPU-core,+3.3V,+5.0V,) over 20%(max) of normal value .

C) Current limiter protection activated when output short circuit, the dc/dc converter output voltage shutdown or holding . (CPU-core ,+3.3V,+5.0V)

Note :

1 The OVP protection shall cause the system no fire and no smoke.

A-5 Signal

a . Battery charging : When battery is being charged, the Charge LED will be flashing.

A-6 Dynamic Load Response Time

The transient response is measured by switching the output load from 50 to 100 to 50percent of its full value at a frequency of 100Hz and 50% duty cycle,step load change is0.5amp/usec.The recovery time is less than 1ms and the regulation shall be less than the unit of output spec.

B. Specification of AC-adapter

input voltage : 100 ~240±10% AC

input frequency : 50~60Hz±3Hz

input AC current : 1.5Amax @90VAC

efficiency : Better than 80%

inrush current : 50A@115VAC,100A@230VAC

hold up time : 5mS (minimum)

output voltage/current : 20V/3A

output load regulation : ±5%

C. Specification of inverter

input voltage : 8-22VDC

output voltage : 620Vrms @ 50~60KHz

start up voltage : 1200Vrms(min)

brightness adjust range(tube current) : 3mArms-5.5mArms

protection : open circuit protect , current limit protect

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Chapter 2
Connectors and Switches

UNIWILL COMPUTER CORP.
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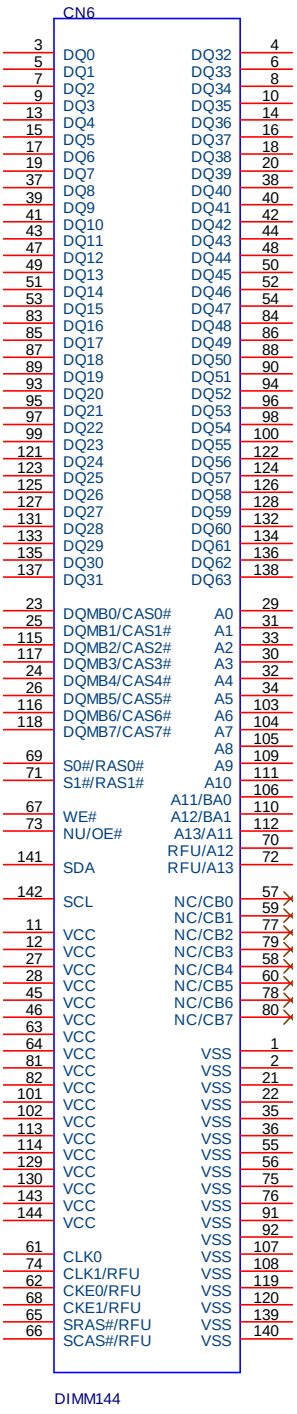
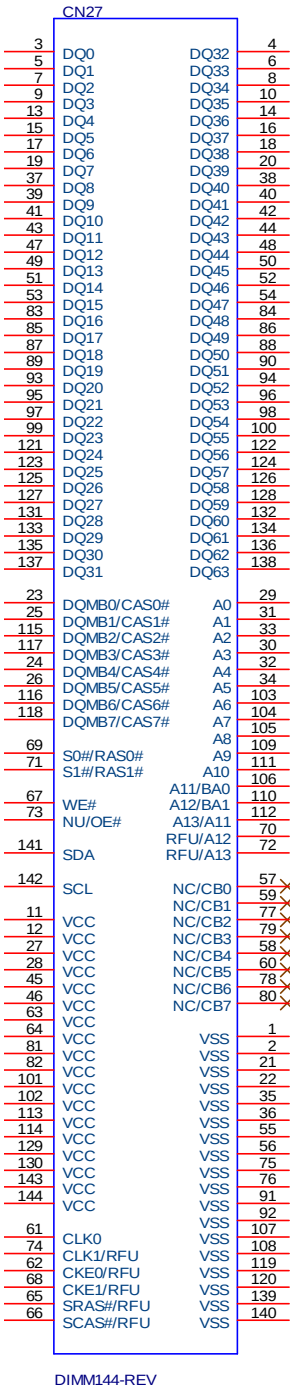
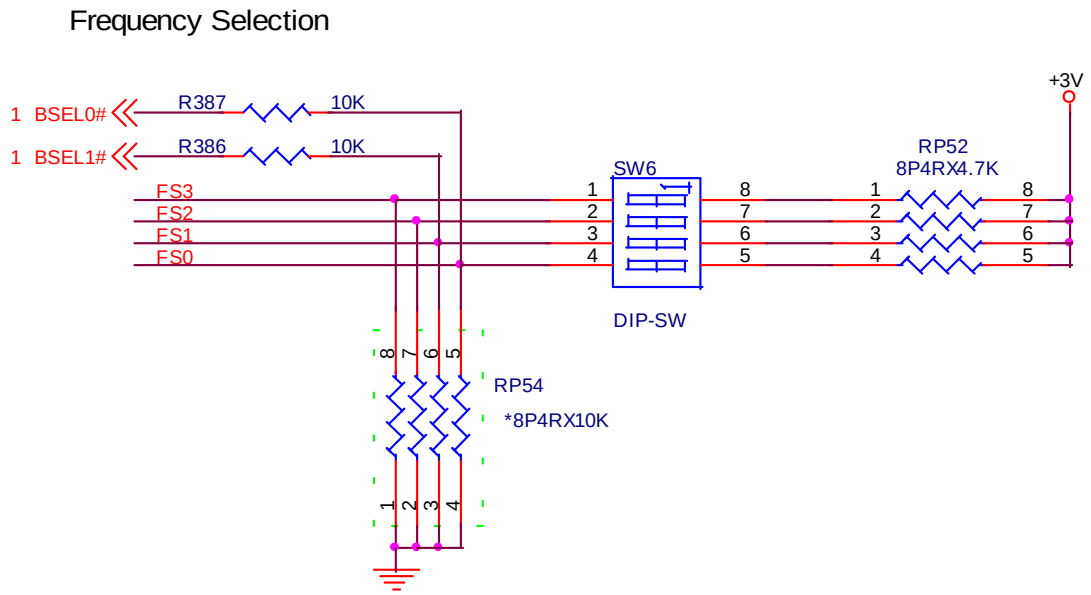
2.1 Connector Definitions

2.1.1 Memory DIMM144 Connector (CN6 and CN27)

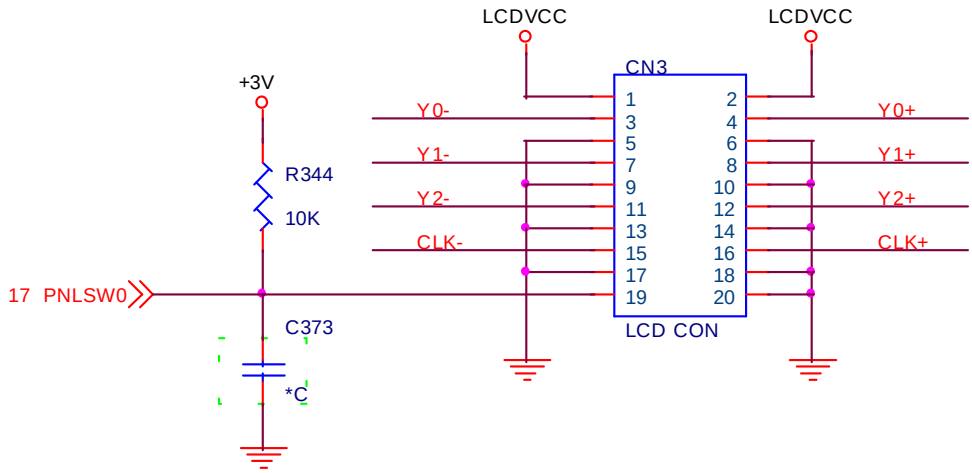




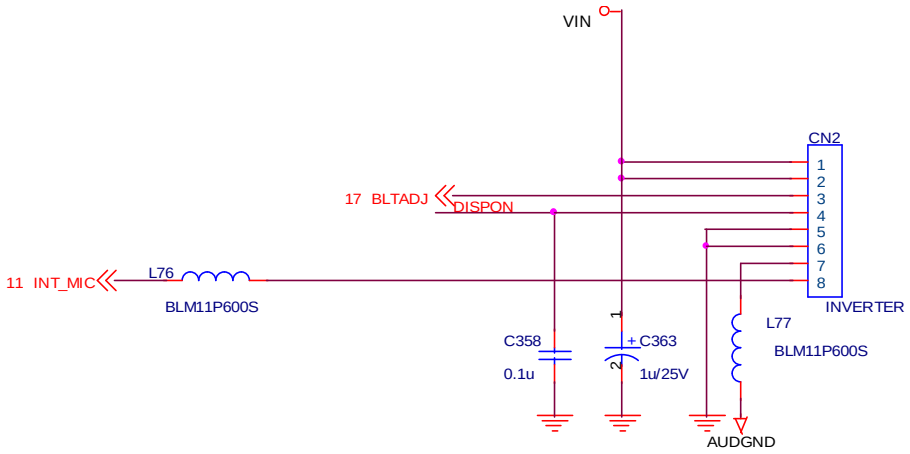
2.1.2 SIS 630S Frequency Selection Circuit



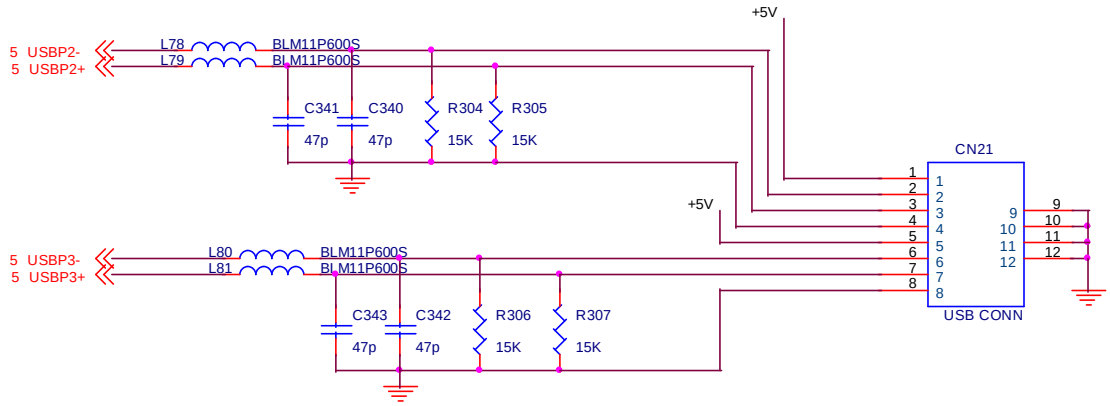
2.1.3 LCD FPC Connector (CN3)



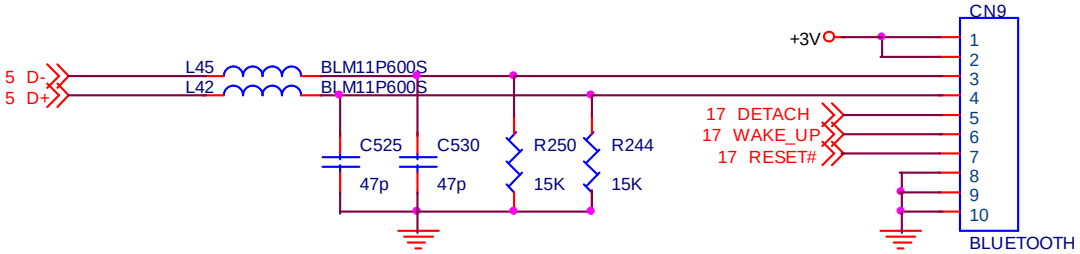
2.1.4 Inverter Connector (CN2)



2.1.5 USB Connector (CN21)



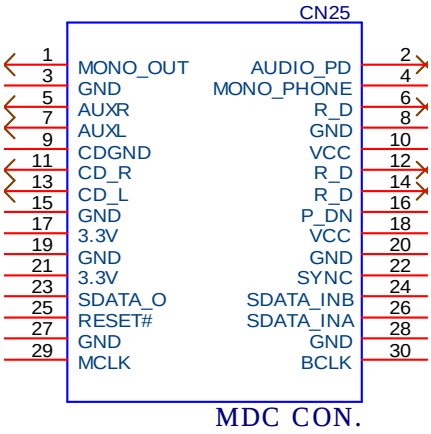
2.1.6 Bluetooth Connector (CN9)



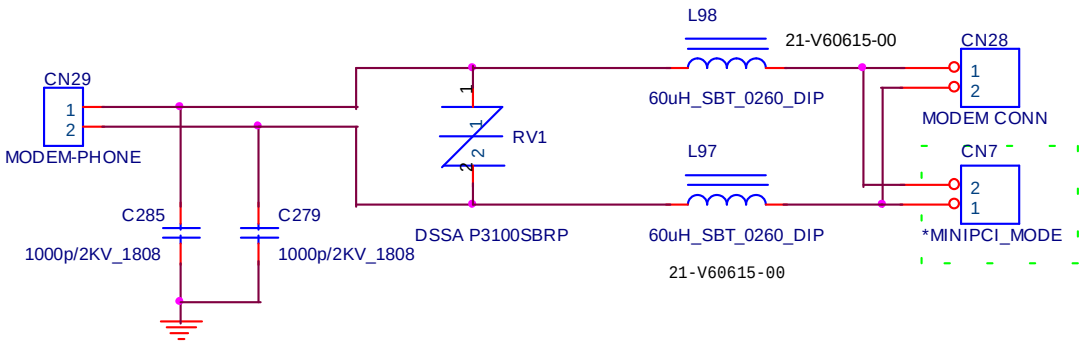
2.1.7 CRT Connector (CN18)

Pin	Description	Pin	Description
1	RED	9	+5V
2	GREEN	10	GND
3	BLUE	11	NC-
4	NC	12	DDCCLK
5	GND	13	HSYNC
6	DACGND	14	VSYNC
7	DACGND	15	DDCDATA
8	DACGND		

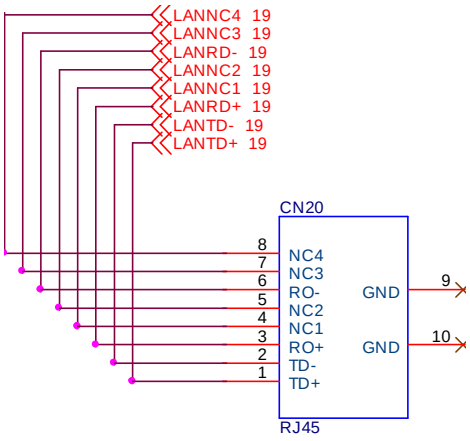
2.1.8 MDC (Software Modem) Connector (CN25)



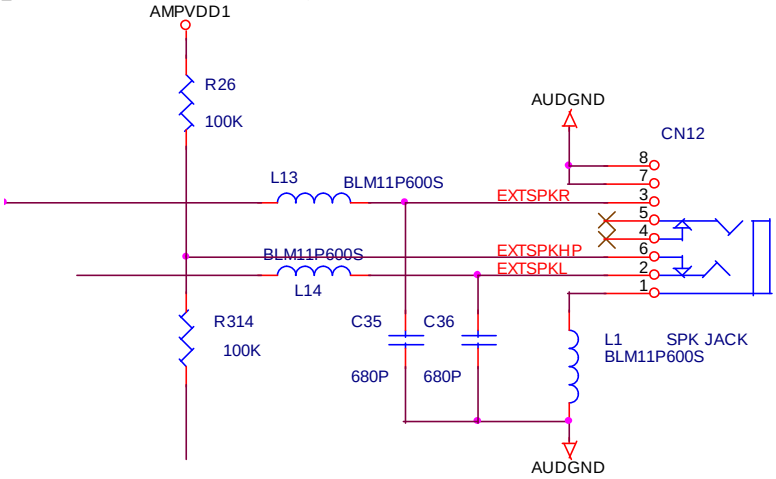
2.1.9 Modem Phone (CN29), Modem Connector (CN28), Mini PCI Mode (CN7)



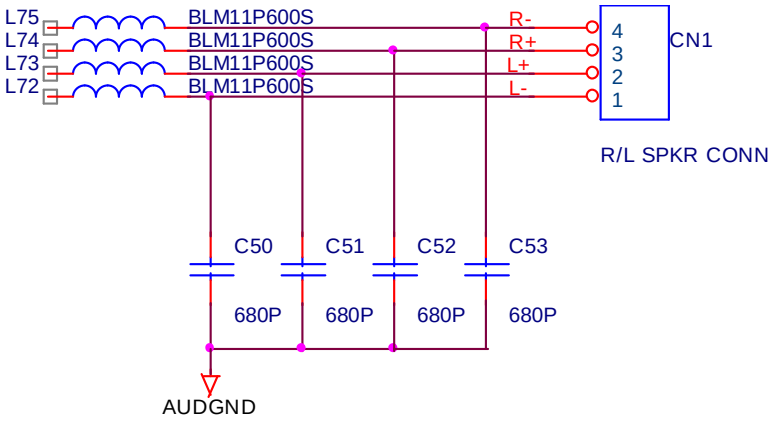
2.1.10 LAN - RJ45 Connector (CN20)



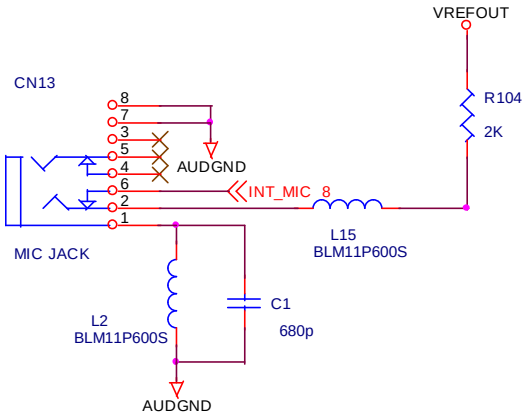
2.1.11 Speaker Jack (CN12)



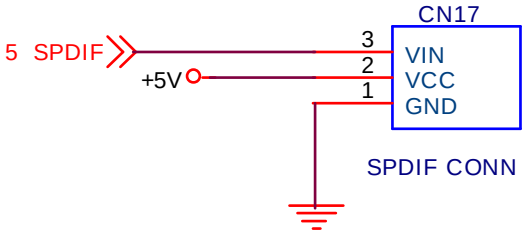
2.1.12 R/L Speaker Connector (CN1)



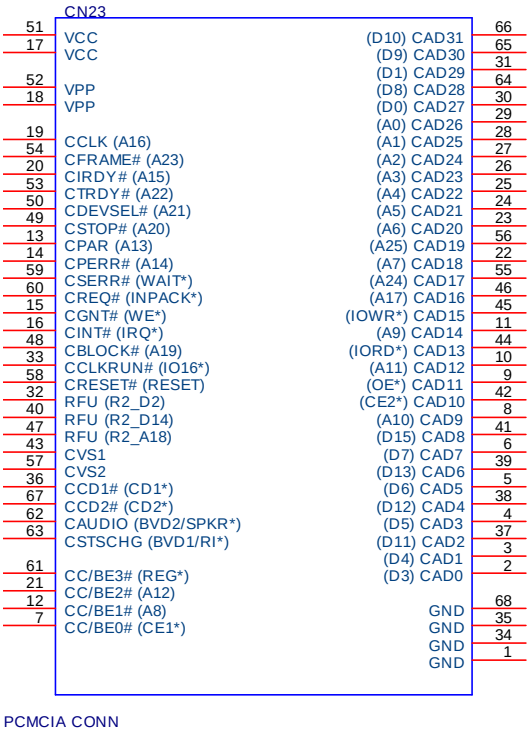
2.1.13 Microphone Jack (CN13)



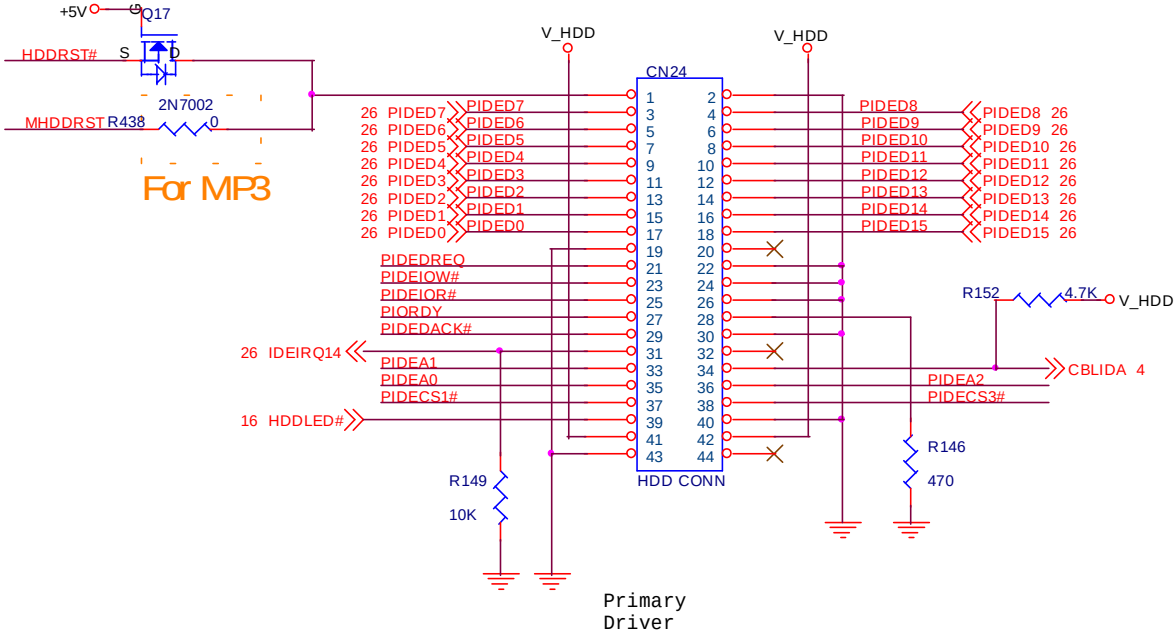
2.1.14 SPDIF Connector (CN17)



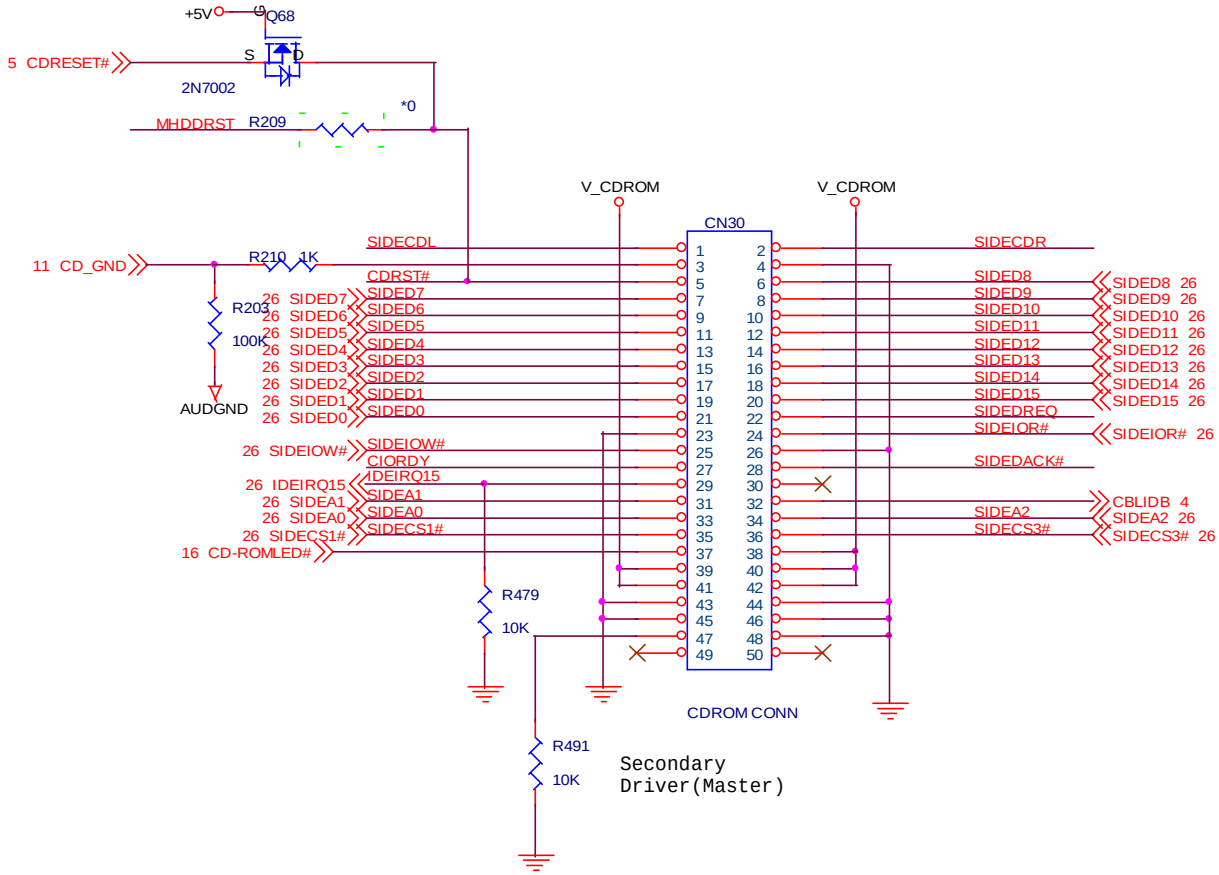
2.1.15 PCMCIA Connector (CN23)



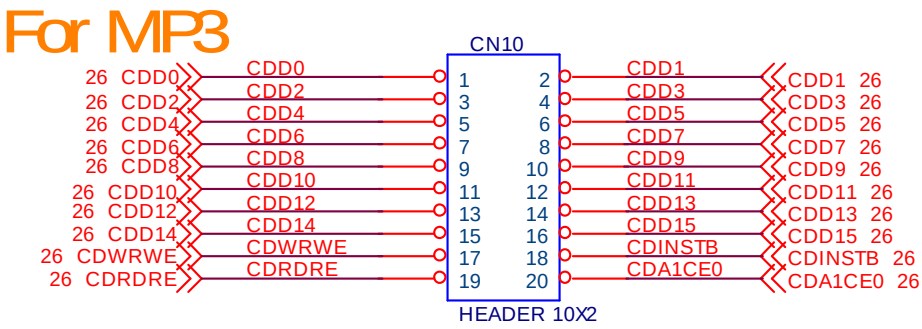
2.1.16 HDD Connector (CN24)

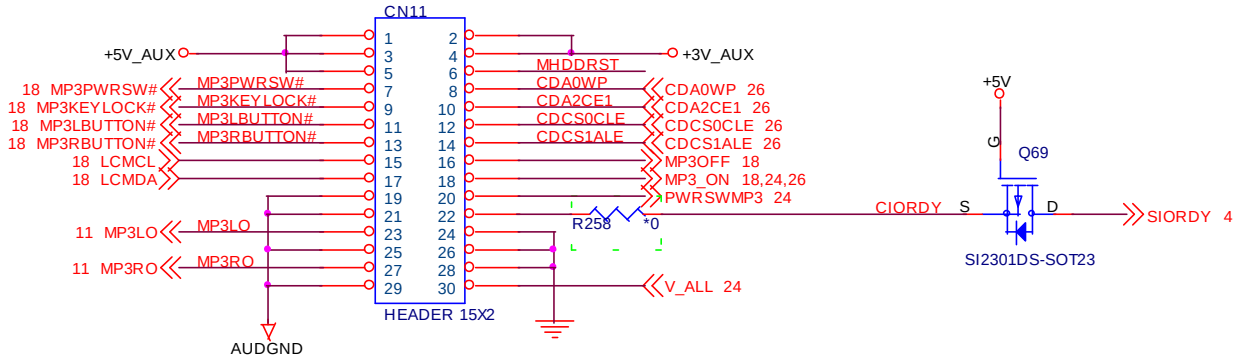


2.1.17 CDROM Connector (CN30)

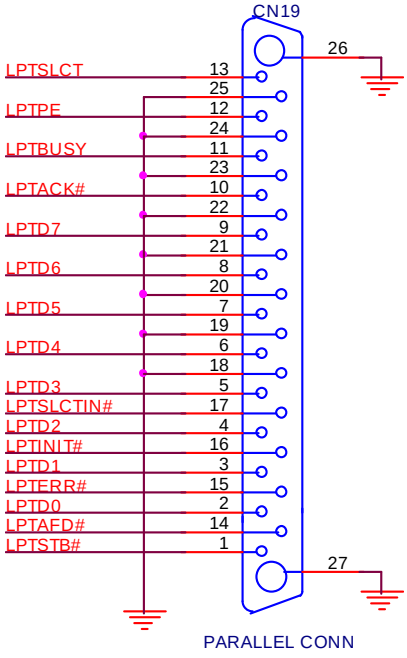


2.1.18 Header For MP3 Connector (CN10, CN11)

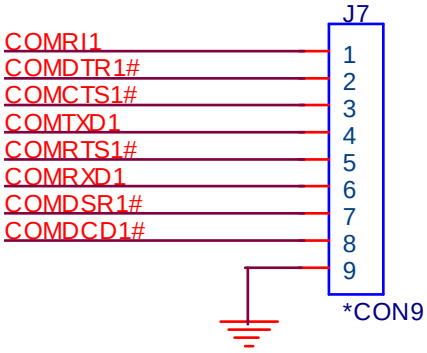




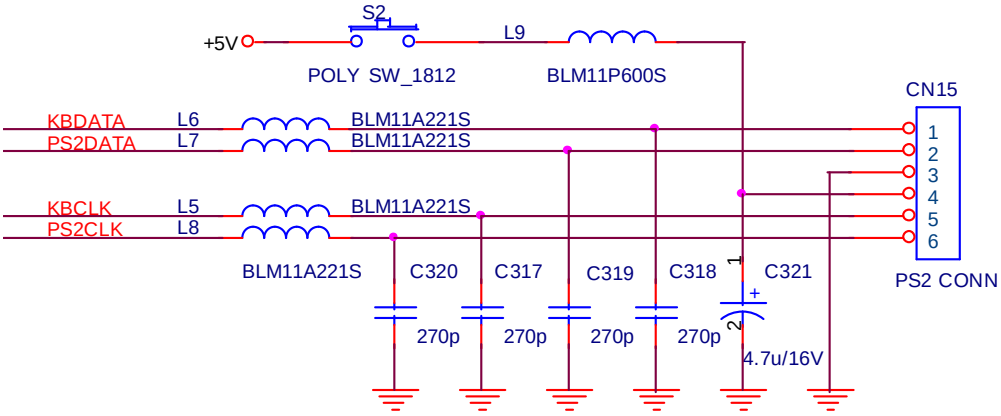
2.1.19 Parallel Connector (CN19)



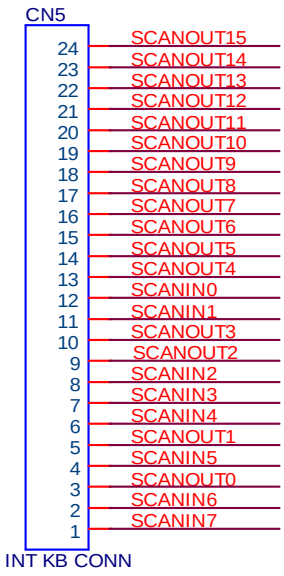
2.1.20 Serial COM Connector (J7)



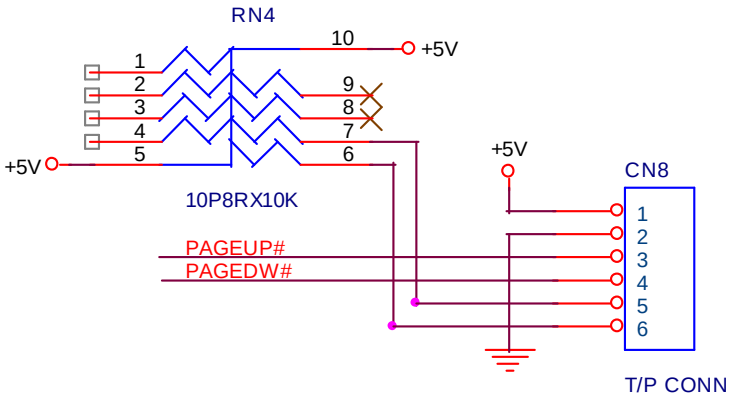
2.1.21 PS/2 Connector (CN15)



2.1.22 Internal KB Connector (CN5)



2.1.23 Touch Pad Connector (CN8)

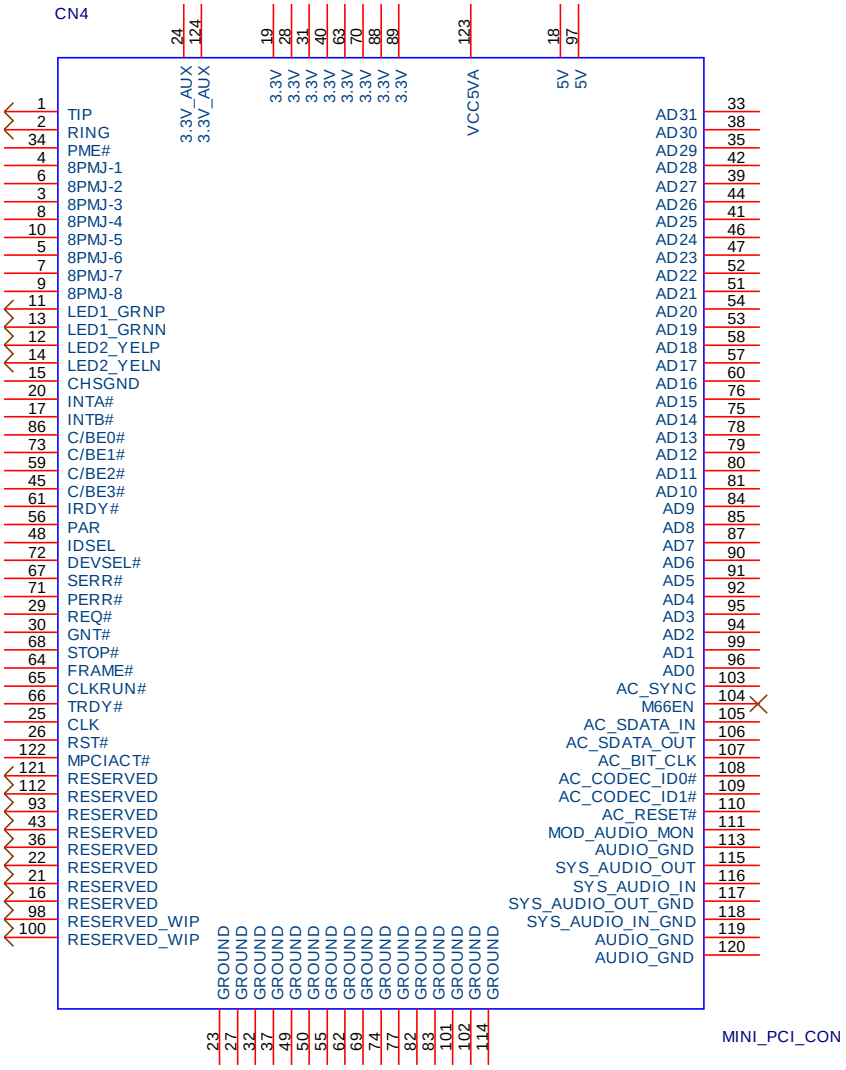


2.1.24 Fan 1 Connector (CN26)

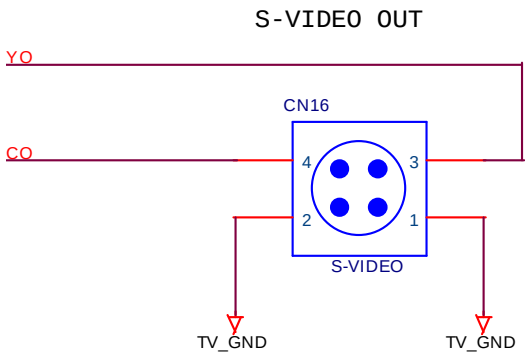
2.1.25 Battery Connector (CN31)

Pin	Description
1	BATT+
2	SMBCLK
3	SMBDATA
4	TEMP
5	+5 AUX
6	GND
7	-
8	-

2.1.26 Mini PCI Connector (CN4)



2.1.27 S-Video Out (CN16)



2.1.28 AC Connector (CN22)

Pin	Description
1	ADAP_IN
2	GND
3	GND

2.2 Mechanical Buttons and Switch Definition

2.2.1 Power on/off button

1. If the system is in S0, S1 or S2 state, pressing the power button will transit the system to S4 (Suspend to Disk) or S5 (Soft-off) state depending on the "Power button function" setting in the BIOS Setup menu.

2. If the system is in S4 or S5 states, pressing the power button will awaken the system into S0 states.

3. If the power button is pressed for more than four seconds, a power button over-ride event is generated and the system will be put into S5 (Soft-off) state.

2.2.2 Cover (Lid) Switch

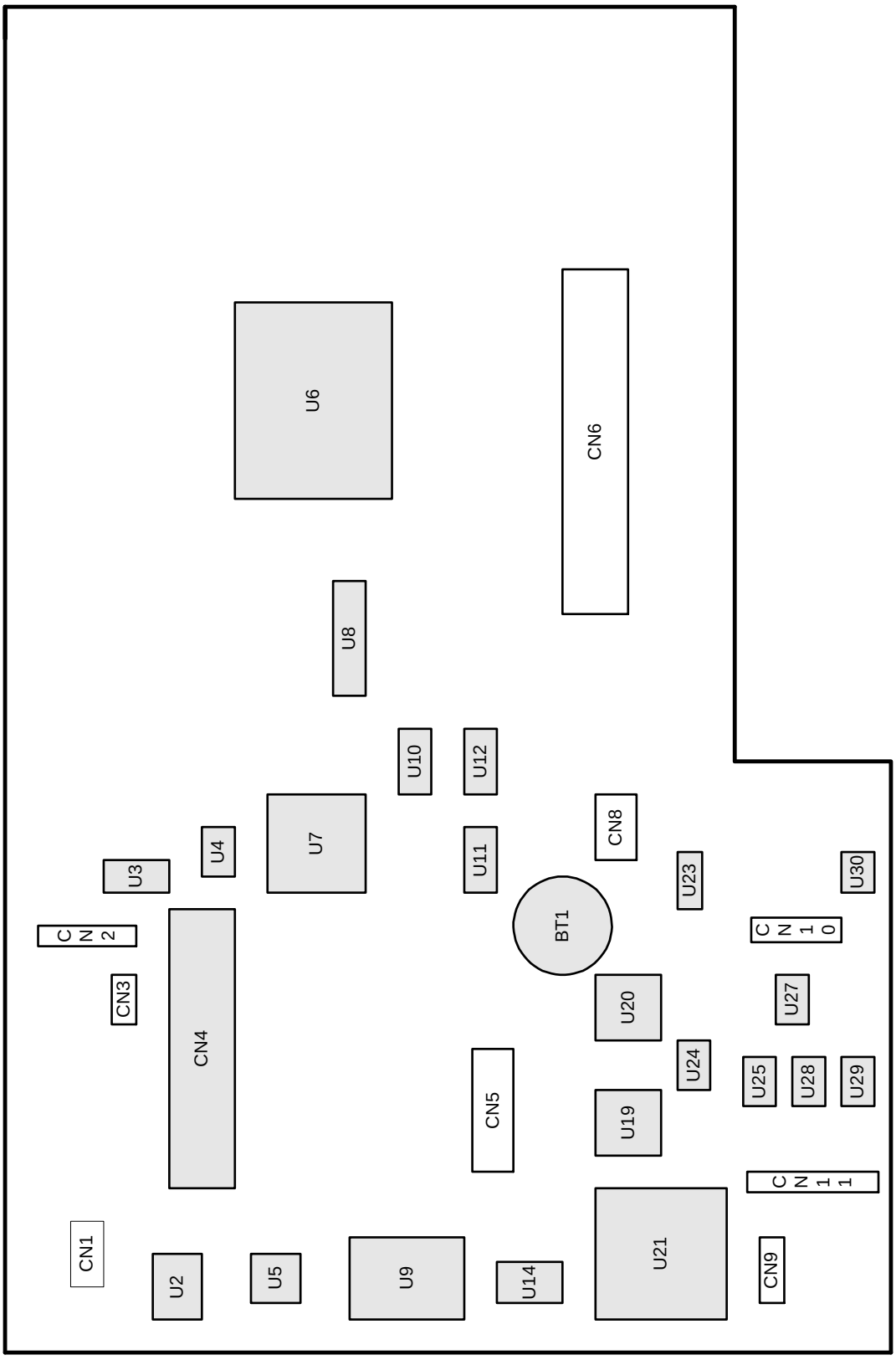
When LCD cover is closed, this Lid switch is triggered and an SMI/SCI is generated to put the system into 'Standby Mode' or 'Suspend to Disk' mode depending on the "Cover Switch" setting in the BIOS Setup menu.

2.2.3 Hot Function Button

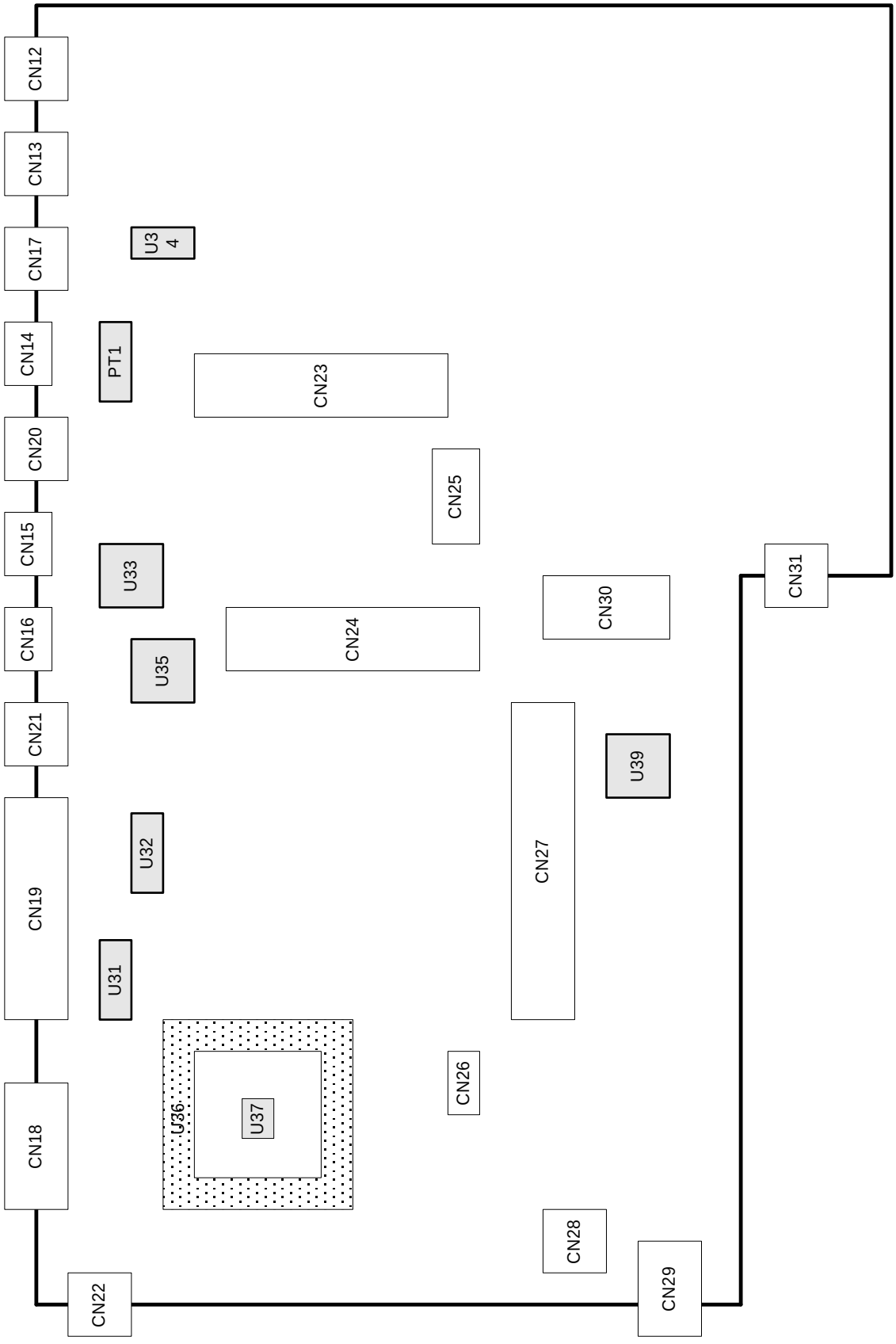
When this button is pressed, the system will launch Microsoft Internet Explorer and connect to Uniwill's Web Site.

2.3. Major Components and Connectors Location

2.3.1 Bottom Side



2.3.2 Top Side


CN12
CN13
CN17
CN14
CN20
CN15
CN16
CN21
CN19
CN18
CN22
U34
PT1
CN23
CN25
U33
CN24
CN30
CN31
U35
CN21
U39
U32
CN27
U31
U36
U37
CN26
CN28
CN29

Notebook PC Service Manual

Model : N241S1

Chapter 3
Major Components

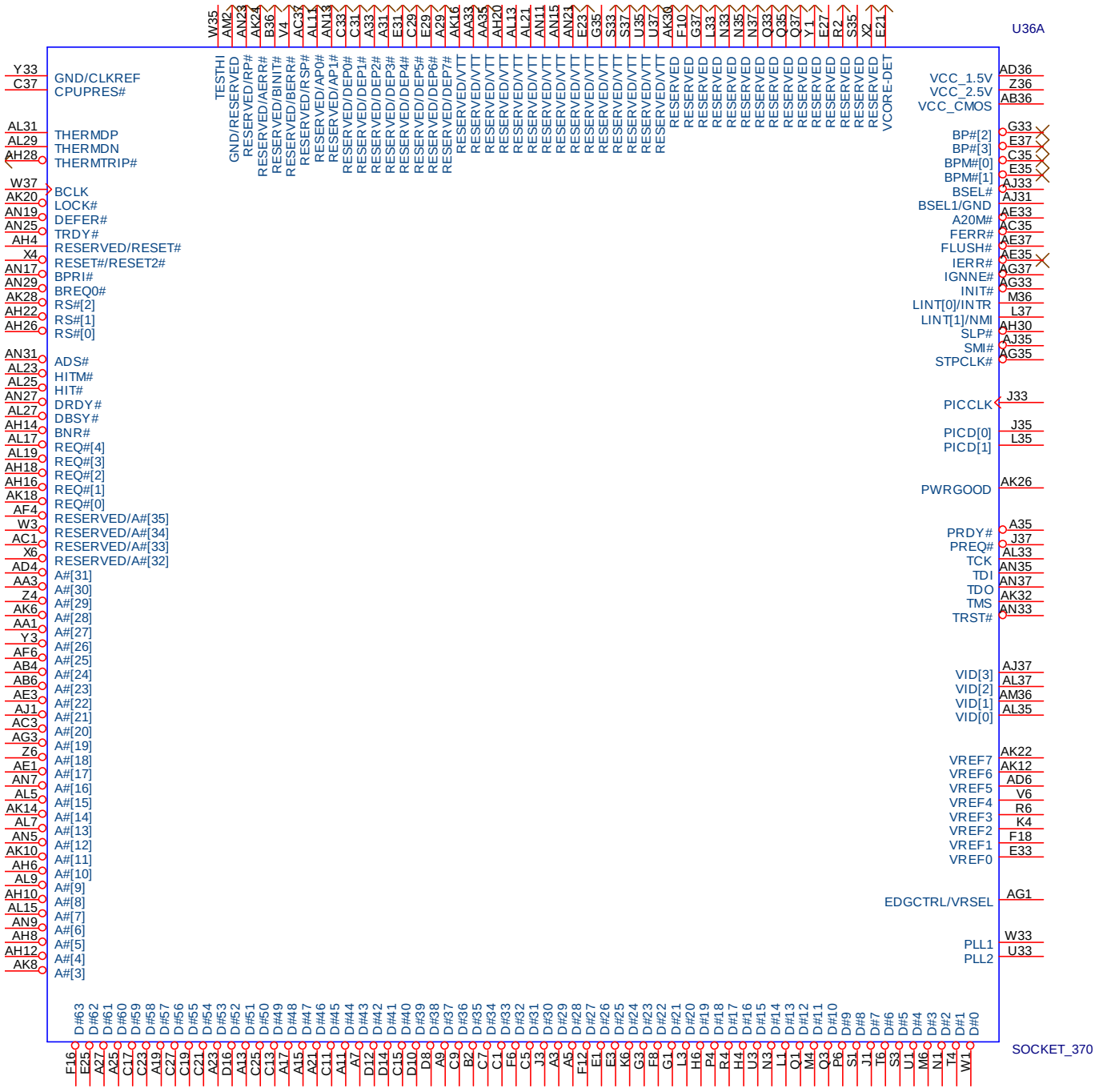
UNIWILL COMPUTER CORP.

No. 24, Pei Yuan Rd., Chung Li Industrial Park
Chung Li City, Taiwan, R.O.C.

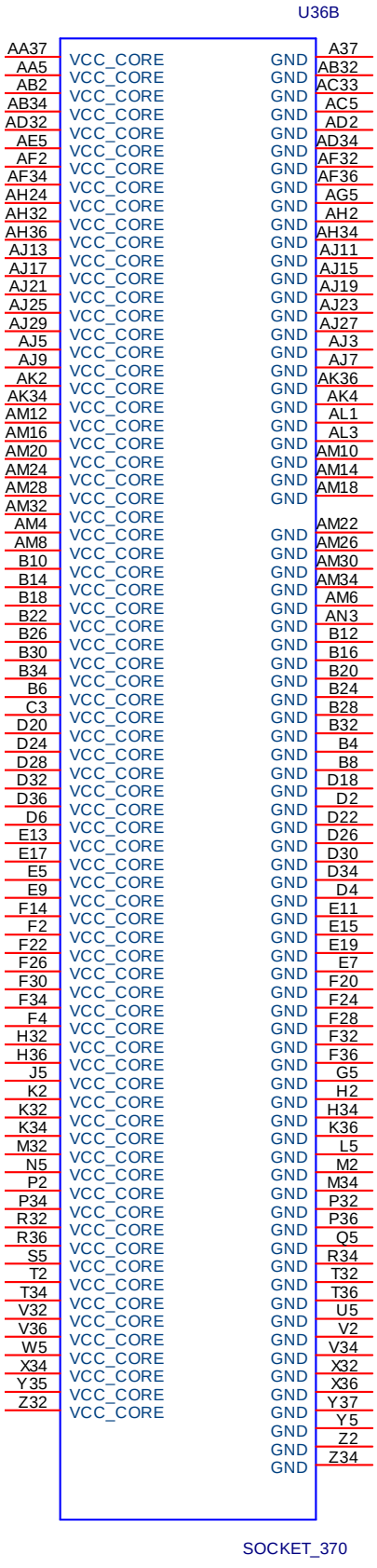
TEL: 886-3-461-6000
FAX: 886-3-461-6317
URL: http://www.uniwill.com.tw/

3.1 Major Components Pin Assignment

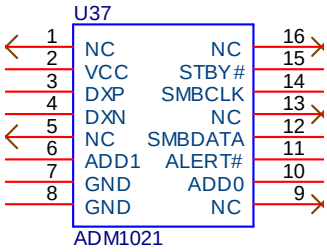
SOCKET_370 (U36A)



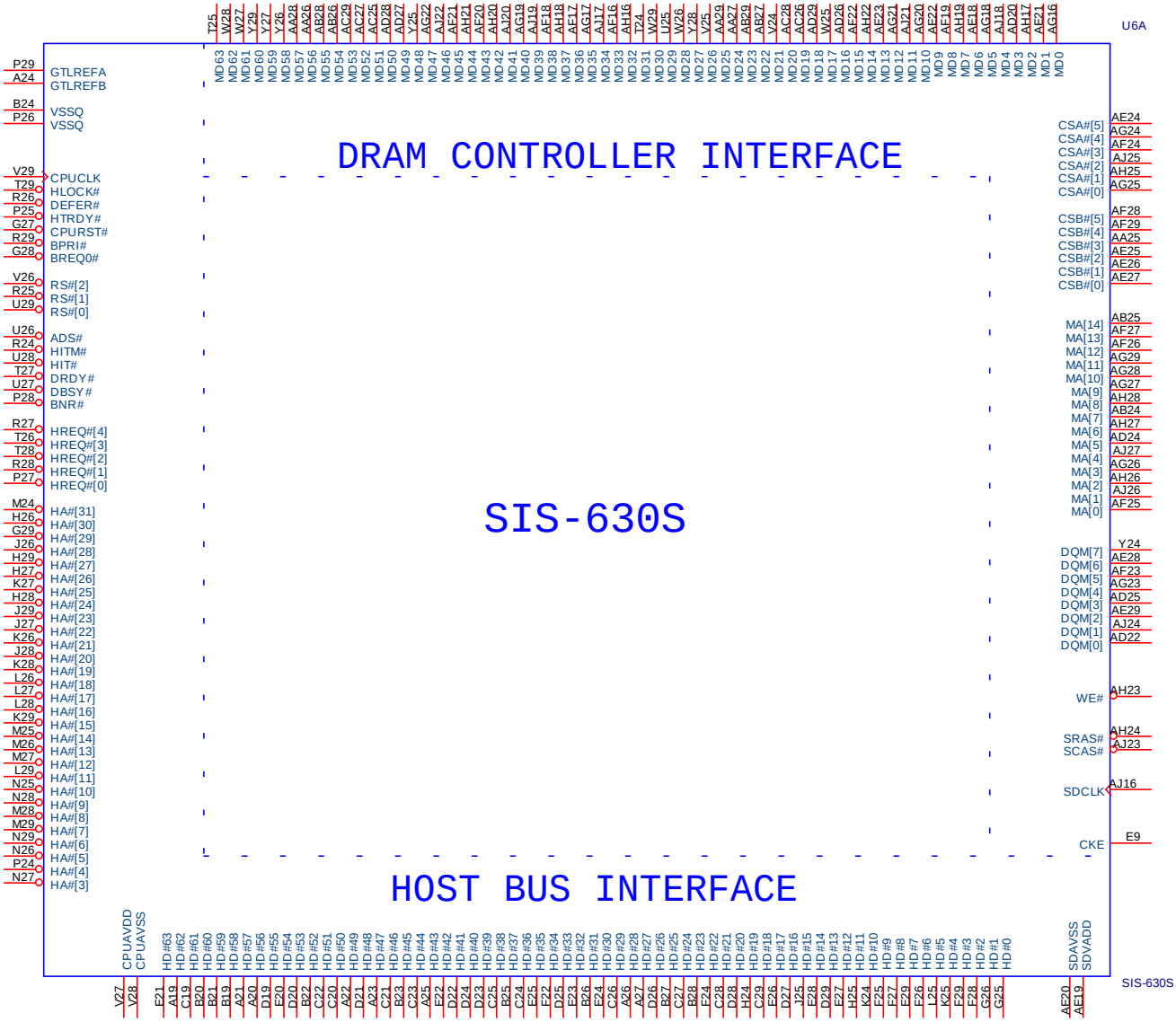
SOCKET_370 (U36B)


U36B
AA37 AA5 AB2 AB34 AD32 AE5 AF2 AF34 AH24 AH32 AH36 AJ13 AJ17 AJ21 AJ25 AJ29 AJ5 AJ9 AK2 AK34 AM12 AM16 AM20 AM24 AM28 AM32 AM4 AM8 B10 B14 B18 B22 B26 B30 B34 B6 C3 D20 D24 D28 D32 D36 D6 E13 E17 E5 E9 F14 F2 F22 F26 F30 F34 F4 H32 H36 J5 K2 K32 K34 M32 N5 P2 P34 R32 R36 S5 T2 T34 V32 V36 W5 X34 Y35 Z32
VCC_CORE
A37 AB32 AC33 AC5 AD2 AD34 AF32 AF36 AG5 AH2 AH34 AJ11 AJ15 AJ19 AJ23 AJ27 AJ3 AJ7 AK36 AK4 AL1 AL3 AM10 AM14 AM18 AM22 AM26 AM30 AM34 AM6 AN3 B12 B16 B20 B24 B28 B32 B4 B8 D18 D2 D22 D26 D30 D34 D4 E11 E15 E19 E7 F20 F24 F28 F32 F36 G5 H2 H34 K36 L5 M2 M34 P32 P36 Q5 R34 T32 T36 U5 V2 V34 X32 X36 Y37 Y5 Z2 Z34
GND
SOCKET_370

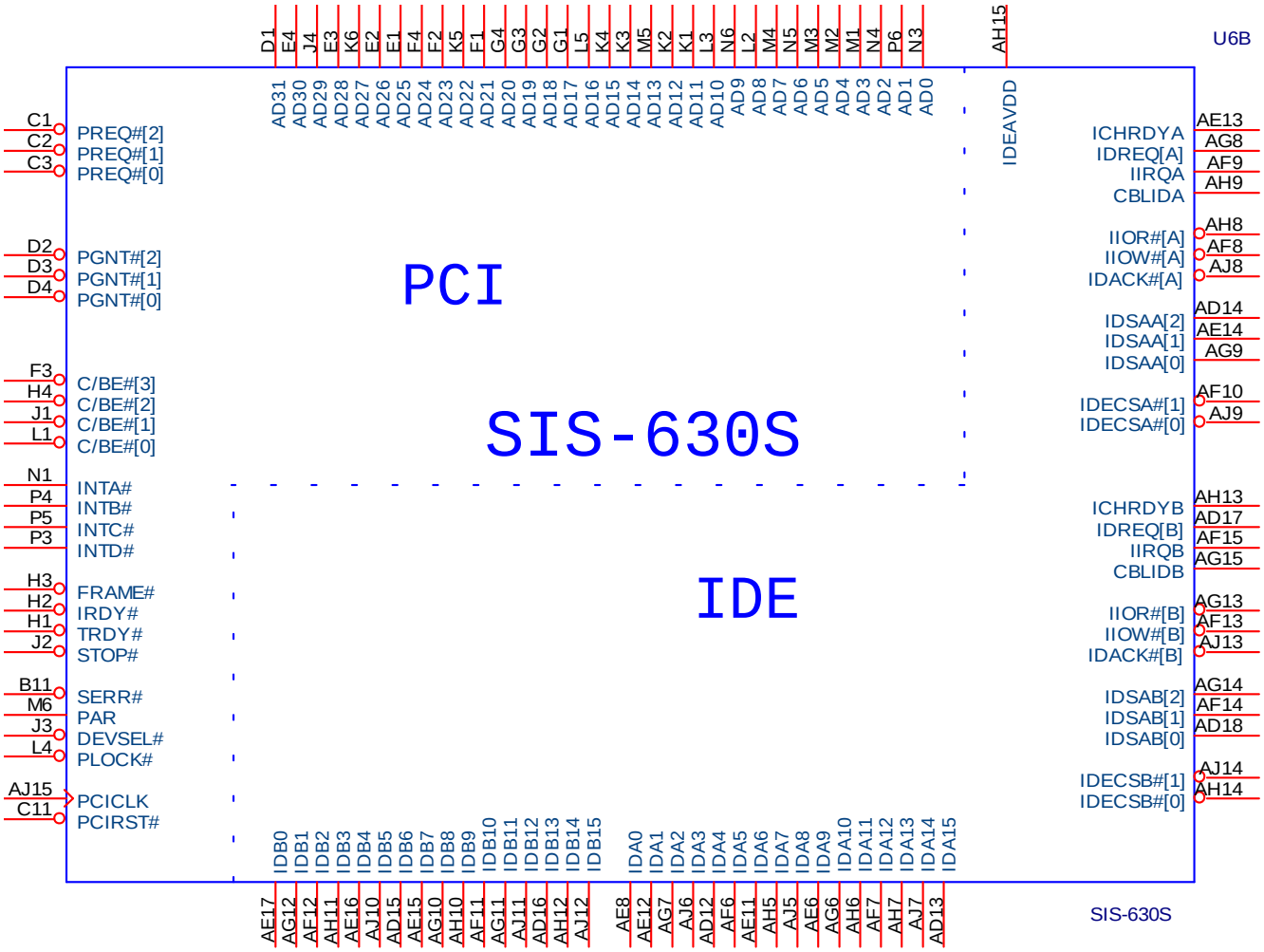
Temperature Sensor (U37)



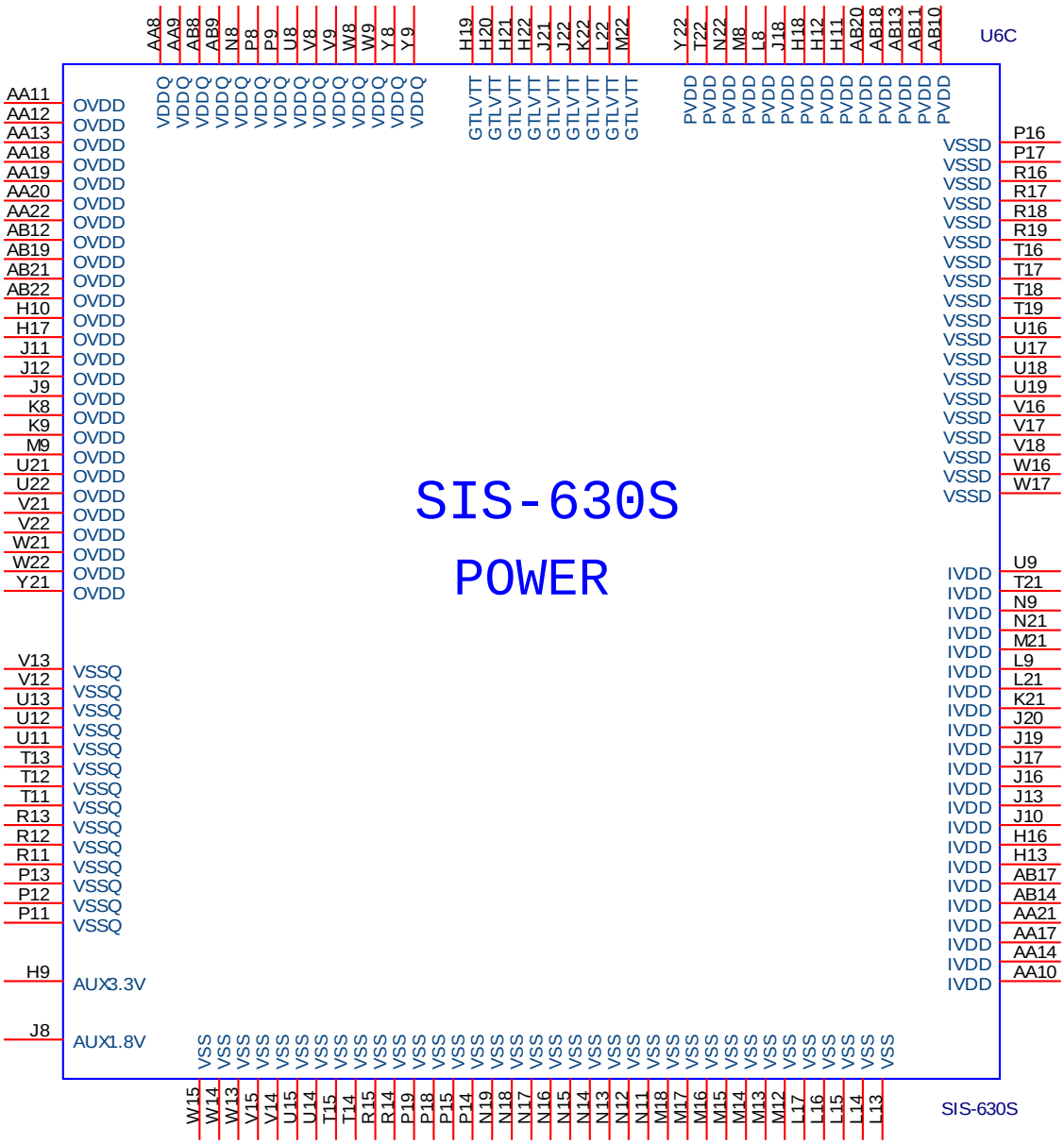
SIS-630S HOST and DRAM Interface (U6A)



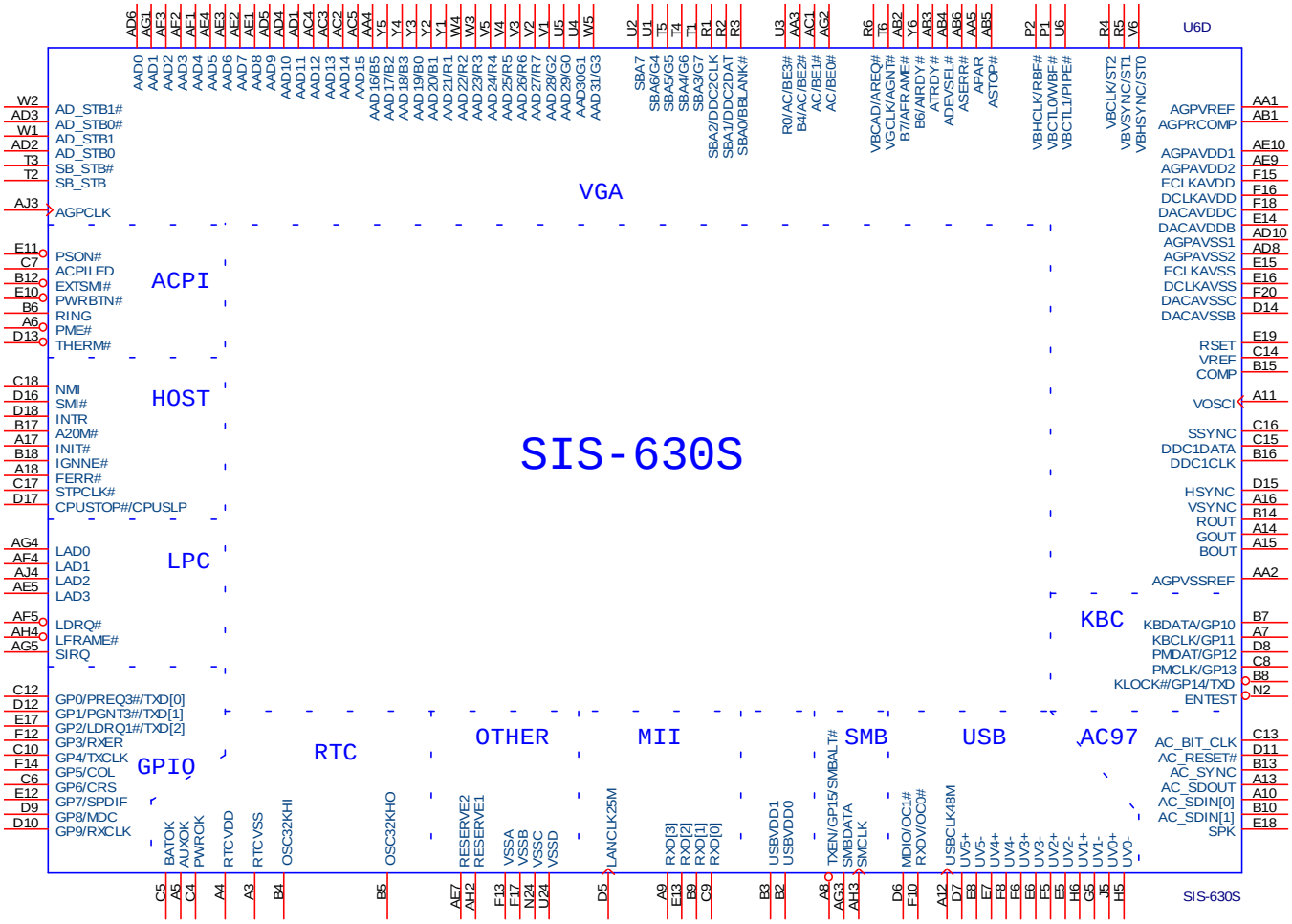
SIS-630S PCI - IDE (U6B)



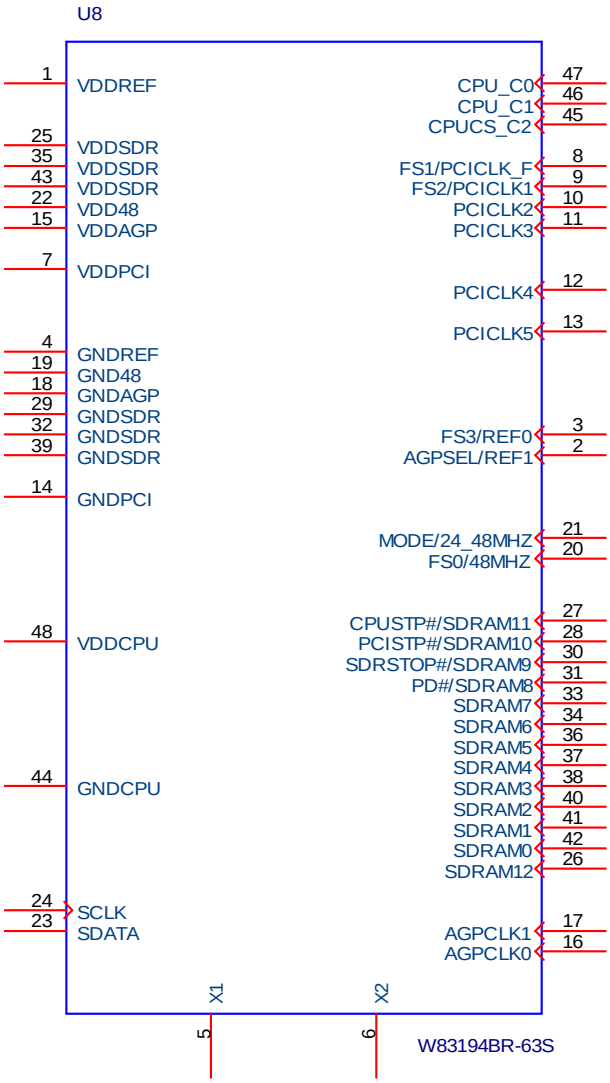
SIS-630S Power (U6C)



SIS 630S – VGA & South Bridge (U6D)

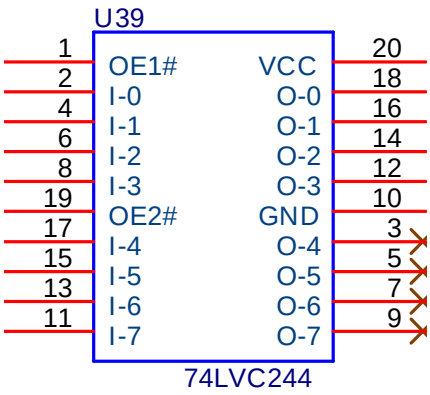


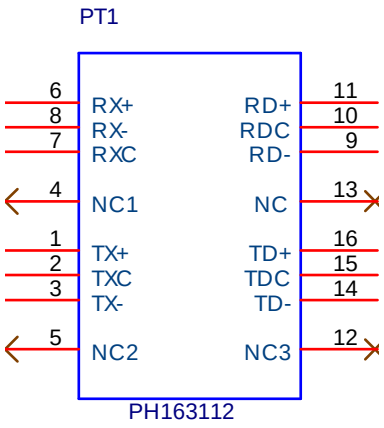
Clock Generator (U8)



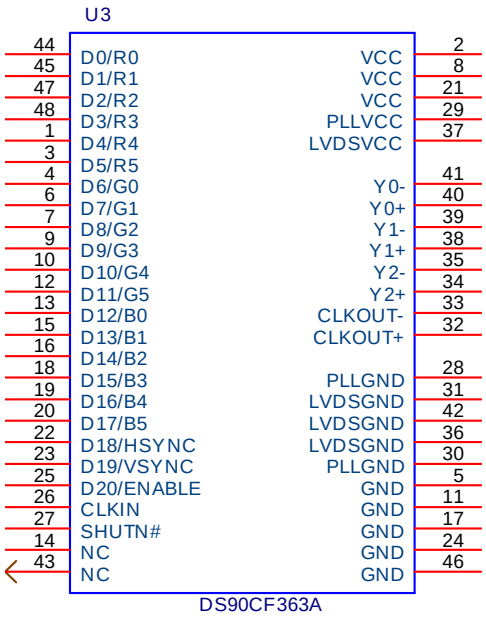
Octal Buffer (U39)

PH63112 (PT1)

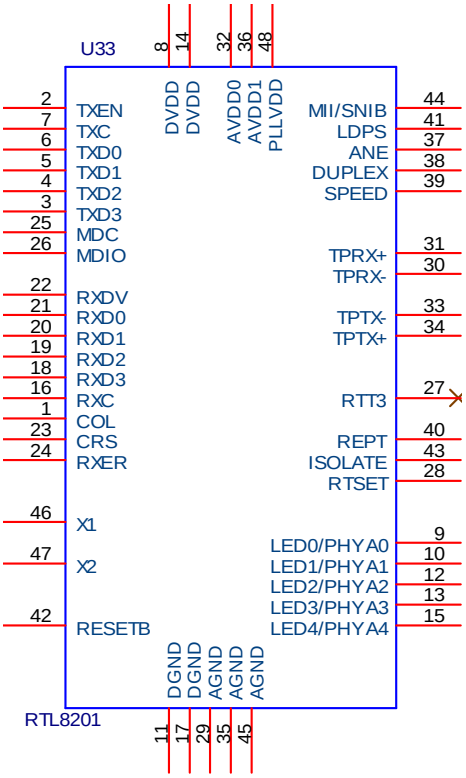




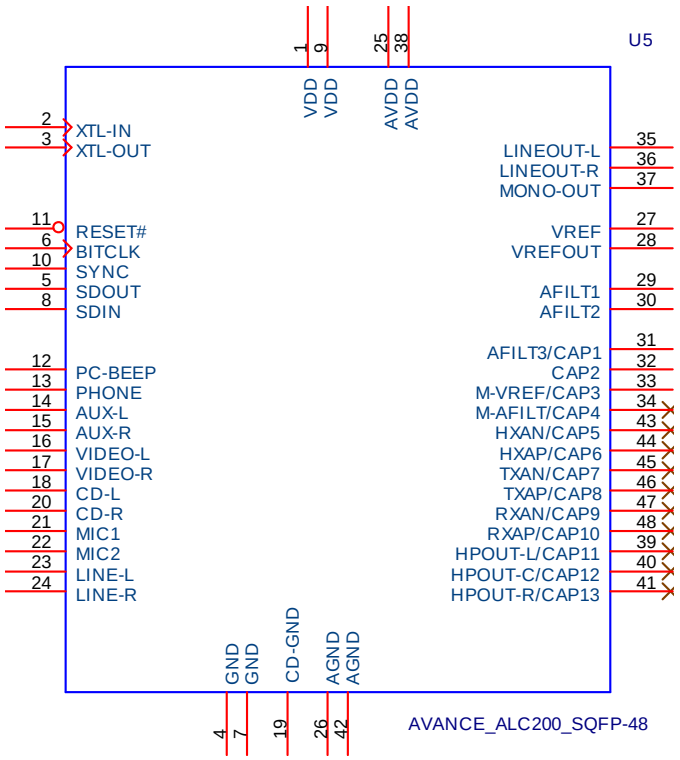
LVDS Transmitter (U3)



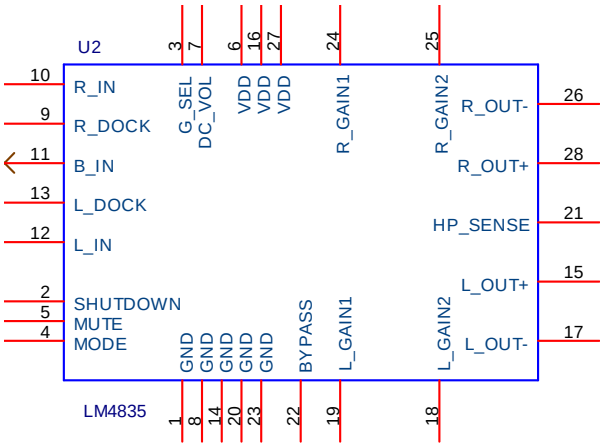
RTL8201 (U33)



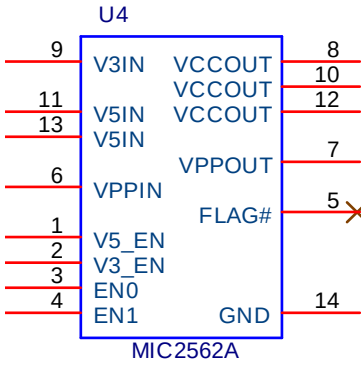
Audio CODEC (U5)



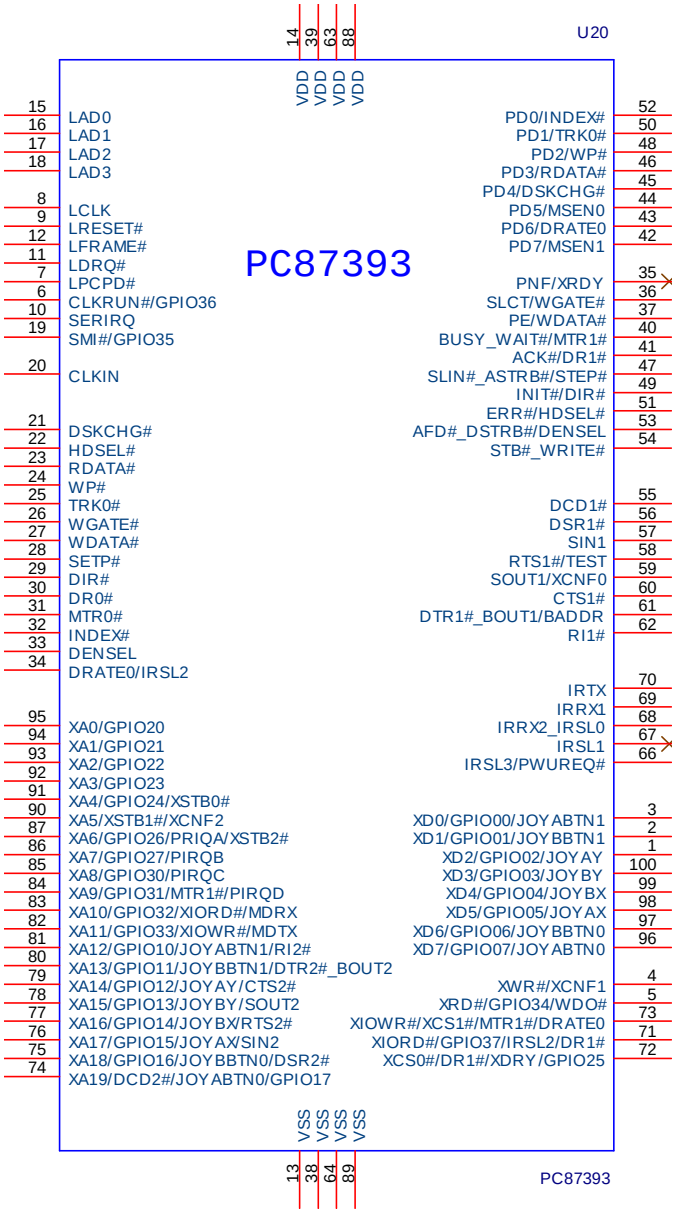
Audio Amplifier (U2)



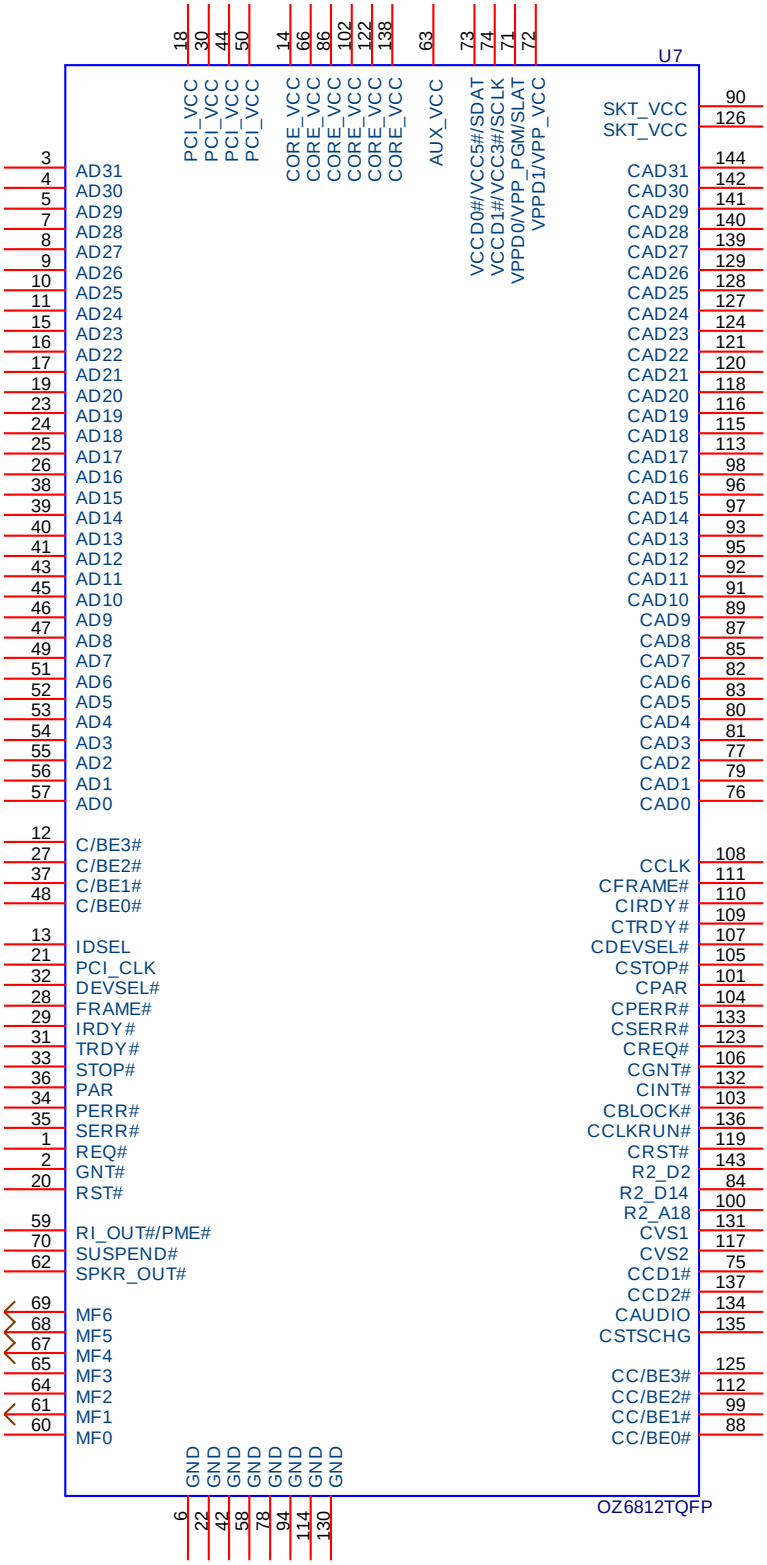
PCMCIA Power Controller (U4)



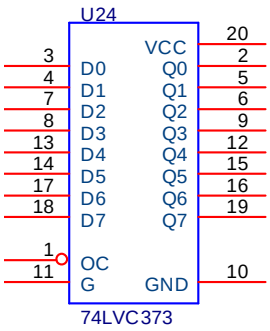
Super I/O Controller (U20)



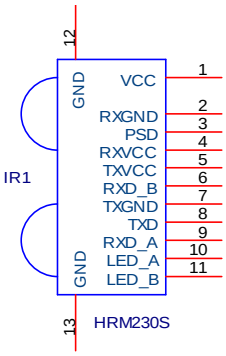
PCMCIA Controller (U7)


U7
18 PCI_VCC
30 PCI_VCC
44 PCI_VCC
50 PCI_VCC
14 CORE_VCC
66 CORE_VCC
86 CORE_VCC
102 CORE_VCC
122 CORE_VCC
138 CORE_VCC
63 AUX_VCC
73 VCCD0#/VCC5#/SDAT
74 VCCD1#/VCC3#/SCLK
71 VPPD0/VPP_PGM/SLAT
72 VPPD1/VPP_VCC
3 AD31
4 AD30
5 AD29
7 AD28
8 AD27
9 AD26
10 AD25
11 AD24
15 AD23
16 AD22
17 AD21
19 AD20
23 AD19
24 AD18
25 AD17
26 AD16
38 AD15
39 AD14
40 AD13
41 AD12
43 AD11
45 AD10
46 AD9
47 AD8
49 AD7
51 AD6
52 AD5
53 AD4
54 AD3
55 AD2
56 AD1
57 AD0
12 C/BE3#
27 C/BE2#
37 C/BE1#
48 C/BE0#
13 IDSEL
21 PCI_CLK
32 DEVSEL#
28 FRAME#
29 IRDY#
31 TRDY#
33 STOP#
36 PAR
34 PERR#
35 SERR#
1 REQ#
2 GNT#
20 RST#
59 RI_OUT#/PME#
70 SUSPEND#
62 SPKR_OUT#
69 MF6
68 MF5
67 MF4
65 MF3
64 MF2
61 MF1
60 MF0
6 GND
22 GND
42 GND
58 GND
78 GND
94 GND
114 GND
130 GND
90 SKT_VCC
126 SKT_VCC
144 CAD31
142 CAD30
141 CAD29
140 CAD28
139 CAD27
129 CAD26
128 CAD25
127 CAD24
124 CAD23
121 CAD22
120 CAD21
118 CAD20
116 CAD19
115 CAD18
113 CAD17
98 CAD16
96 CAD15
97 CAD14
93 CAD13
95 CAD12
92 CAD11
91 CAD10
89 CAD9
87 CAD8
85 CAD7
82 CAD6
83 CAD5
80 CAD4
81 CAD3
77 CAD2
79 CAD1
76 CAD0
108 CCLK
111 CFRAME#
110 CIRDY#
109 CTRDY#
107 CDEVSEL#
105 CSTOP#
101 CPAR
104 CPERR#
133 CSERR#
123 CREQ#
106 CGNT#
132 CINT#
103 CBLOCK#
136 CCLKRUN#
119 CRST#
143 R2_D2
84 R2_D14
100 R2_A18
131 CVS1
117 CVS2
75 CCD1#
137 CCD2#
134 CAUDIO
135 CSTSCHG
125 CC/BE3#
112 CC/BE2#
99 CC/BE1#
88 CC/BE0#
OZ6812TQFP

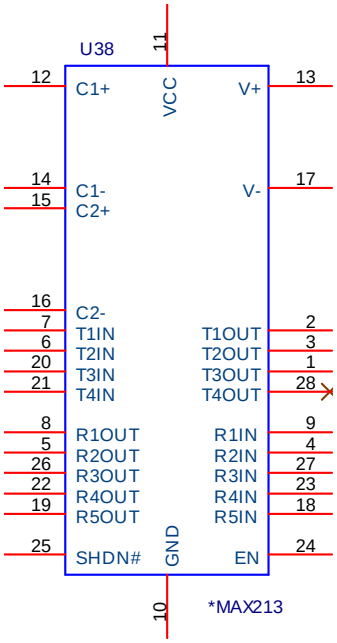
Switch (U24)



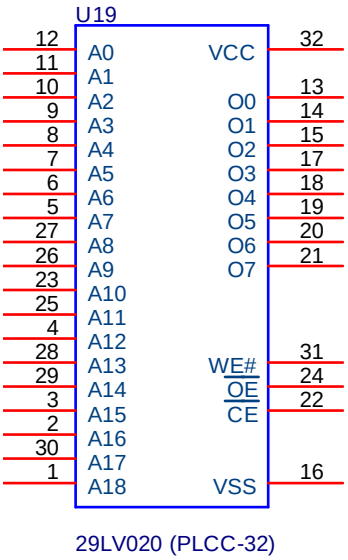
Infrared Transceiver Module (IR1)



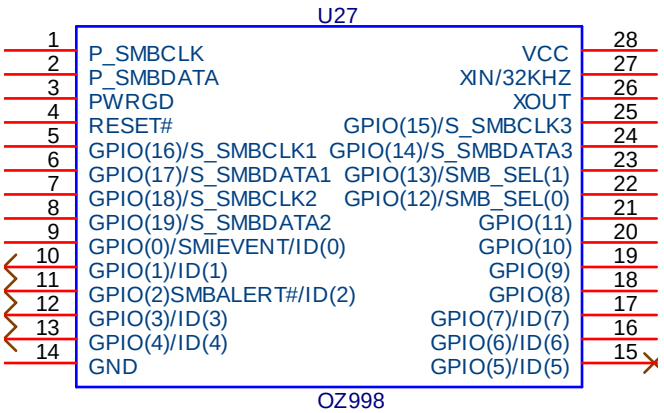
Max 213 (U38)



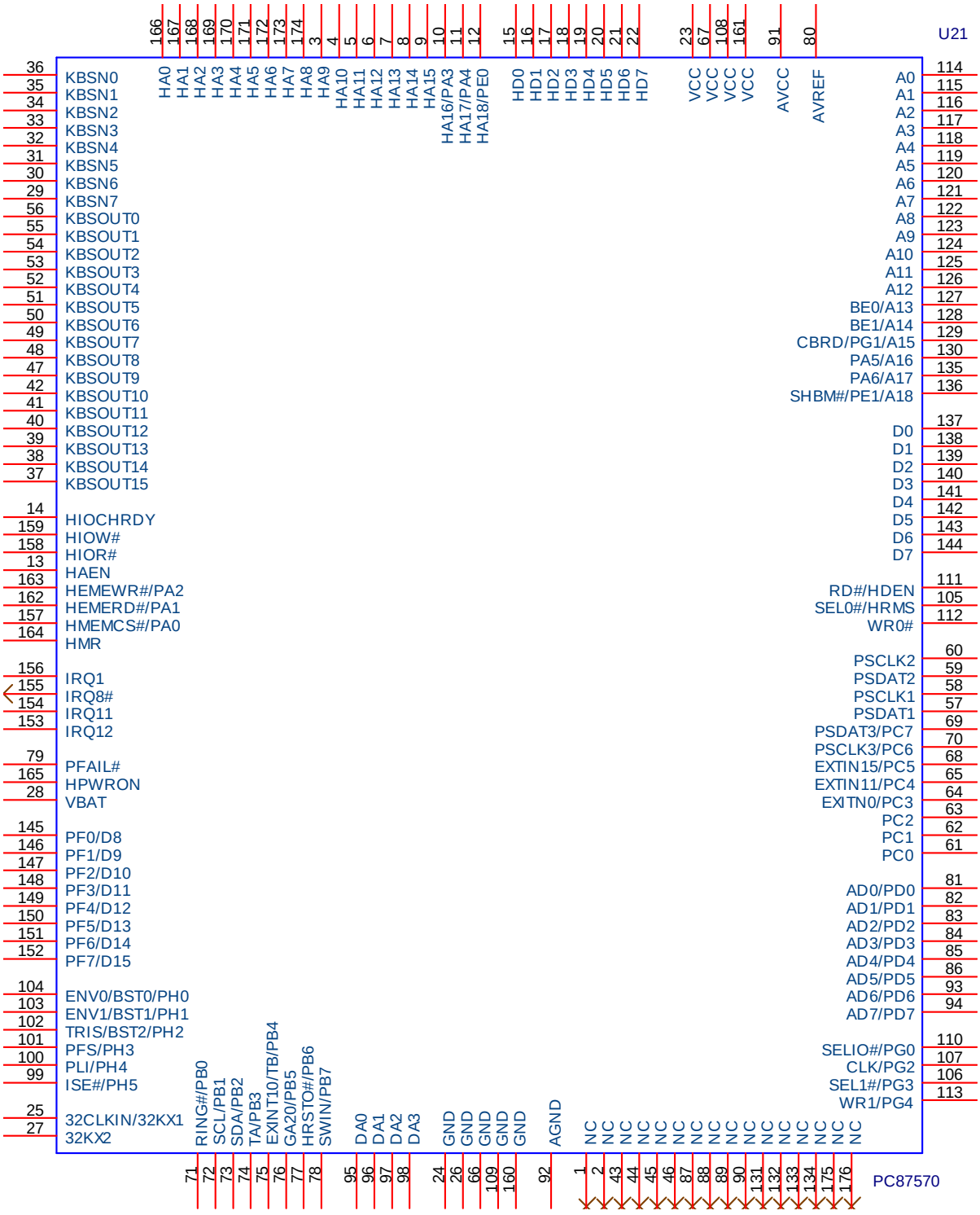
BIOS EEPROM Socket (U19)



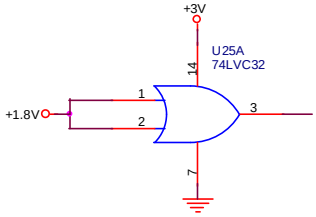
OZ998 (U27)



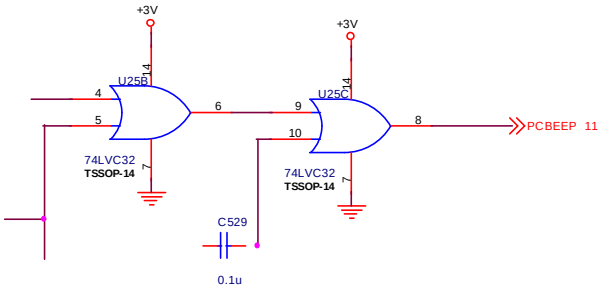
Keyboard Controller - PC87570 (U21)



U25A



U25B, U25C



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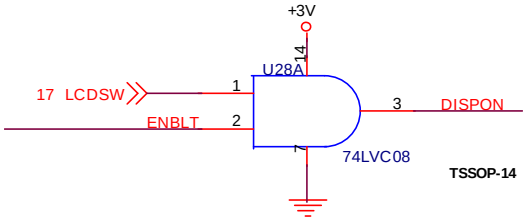
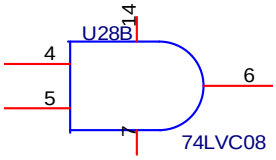


U28B



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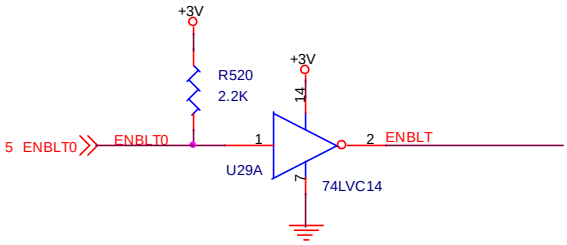

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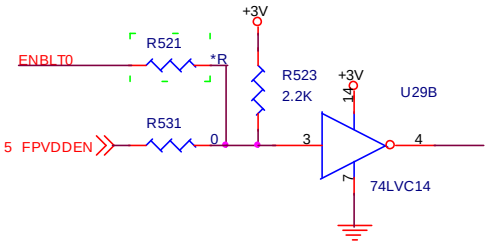

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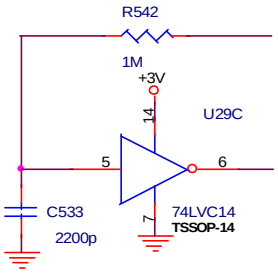

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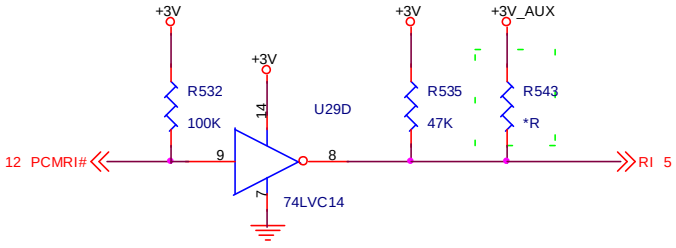

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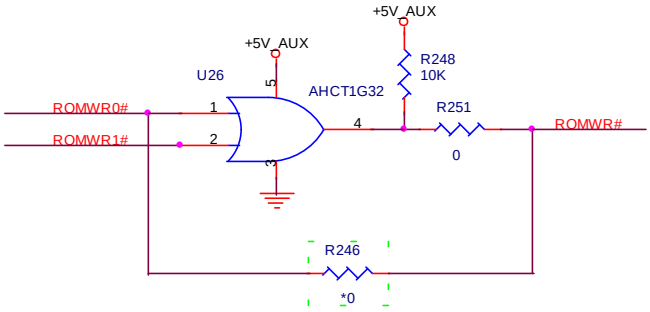

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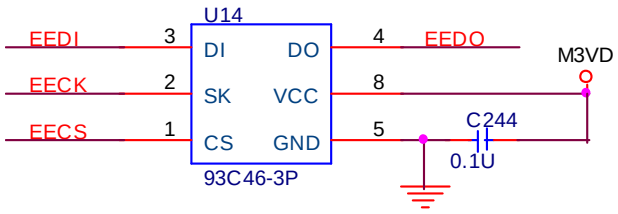
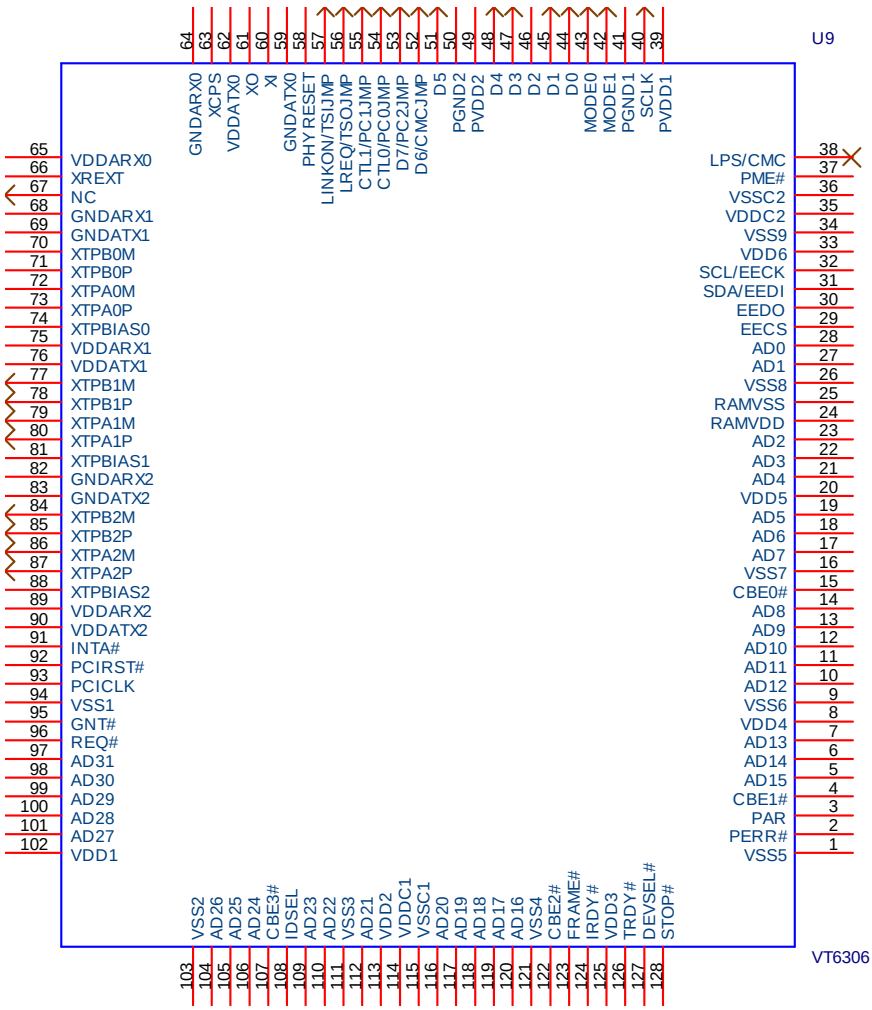


IEEE 1394 (U9)



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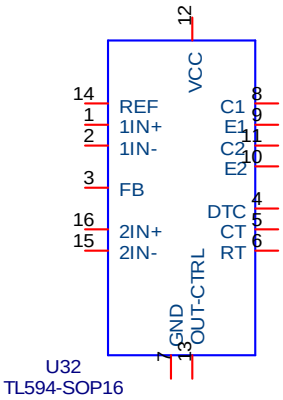

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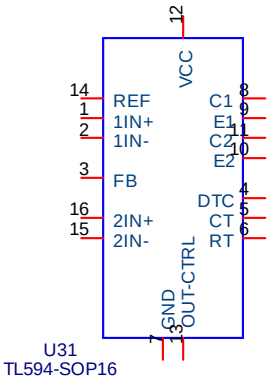

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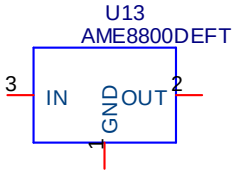

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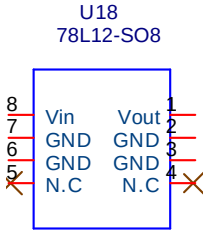

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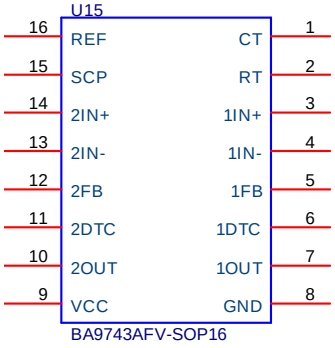

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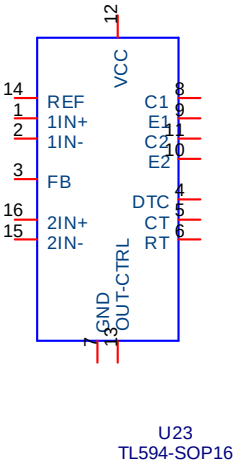

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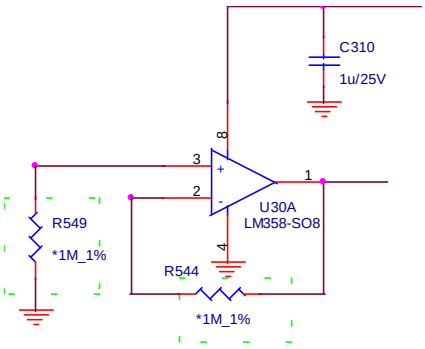

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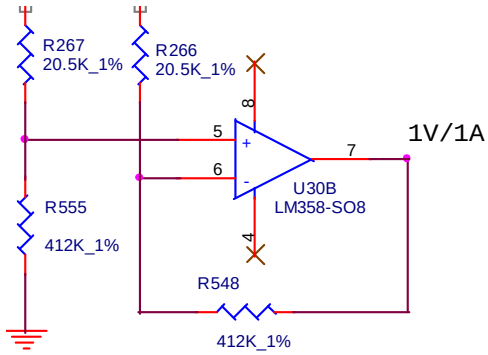

U1

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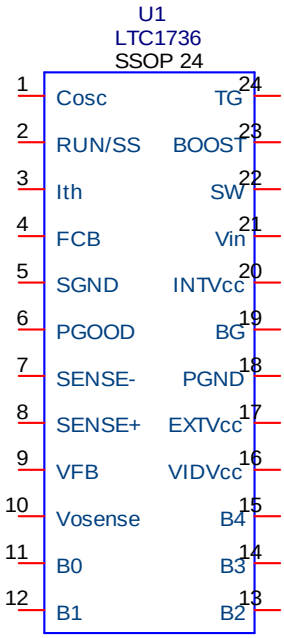
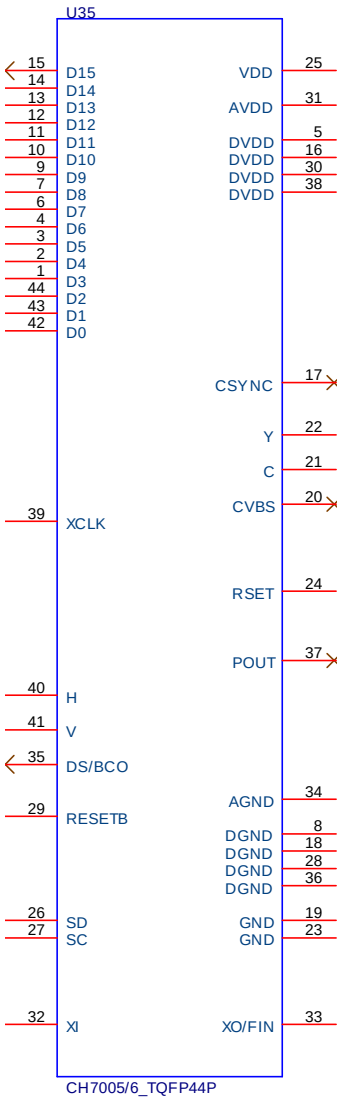
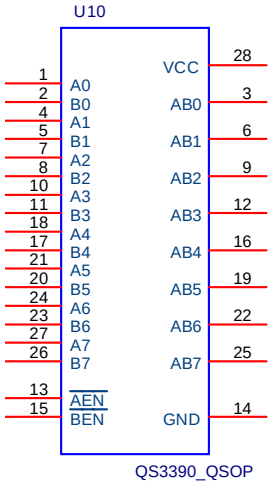
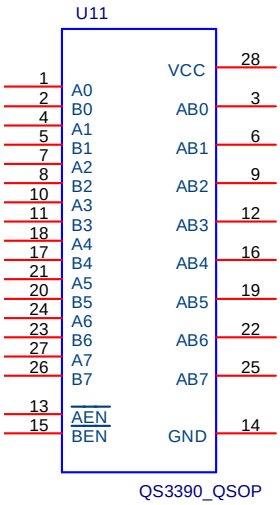

U1
LTC1736
SSOP 24
1 Cosc
2 RUN/SS
3 Ith
4 FCB
5 SGND
6 PGOOD
7 SENSE-
8 SENSE+
9 VFB
10 Vosense
11 B0
12 B1
24 TG
23 BOOST
22 SW
21 Vin
20 INTVcc
19 BG
18 PGND
17 EXTVcc
16 VIDVcc
15 B4
14 B3
13 B2


U35
15 D15
14 D14
13 D13
12 D12
11 D11
10 D10
9 D9
7 D8
6 D7
4 D6
3 D5
2 D4
1 D3
44 D2
43 D1
42 D0
39 XCLK
40 H
41 V
35 DS/BCO
29 RESETB
26 SD
27 SC
32 XI
25 VDD
31 AVDD
5 DVDD
16 DVDD
30 DVDD
38 DVDD
17 CSYNC
22 Y
21 C
20 CVBS
24 RSET
37 POUT
34 AGND
8 DGND
18 DGND
28 DGND
36 DGND
19 GND
23 GND
33 XO/FIN
CH7005/6_TQFP44P

U10 **U11** **U12**


U10
VCC
AB0
AB1
AB2
AB3
AB4
AB5
AB6
AB7
GND
AEN
BEN
QS3390_QSOP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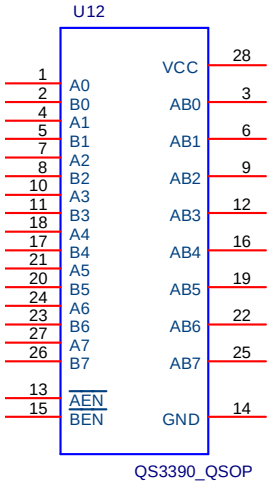
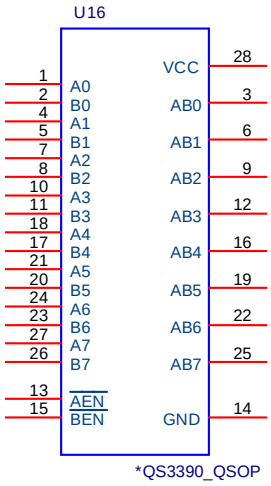
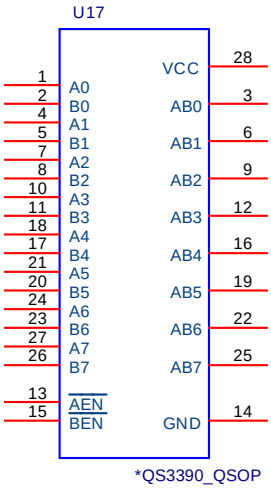
VCC
AB0
AB1
AB2
AB3
AB4
AB5
AB6
AB7
GND
AEN
BEN
QS3390_QSOP


U12
VCC
AB0
AB1
AB2
AB3
AB4
AB5
AB6
AB7
GND
AEN
BEN
QS3390_QSOP

U16 **U17** **U22**


U16
VCC
AB0
AB1
AB2
AB3
AB4
AB5
AB6
AB7
GND
AEN
BEN
*QS3390_QSOP


U17
VCC
AB0
AB1
AB2
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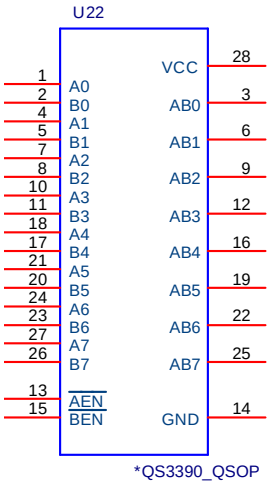
AB6
AB7
GND
AEN
BEN
*QS3390_QSOP


U22
VCC
AB0
AB1
AB2
AB3
AB4
AB5
AB6
AB7
GND
AEN
BEN
*QS3390_QSOP

Notebook PC Service Manual

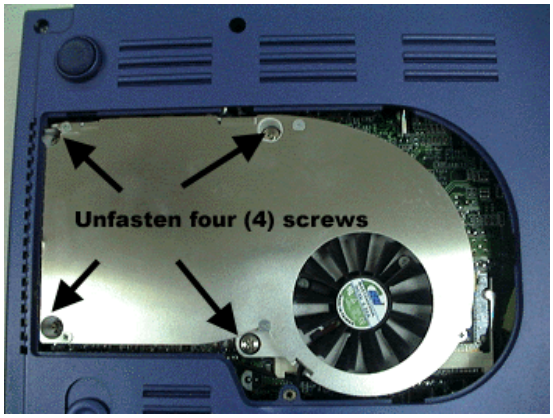
Model : N241S1

Chapter 4
System Disassembly

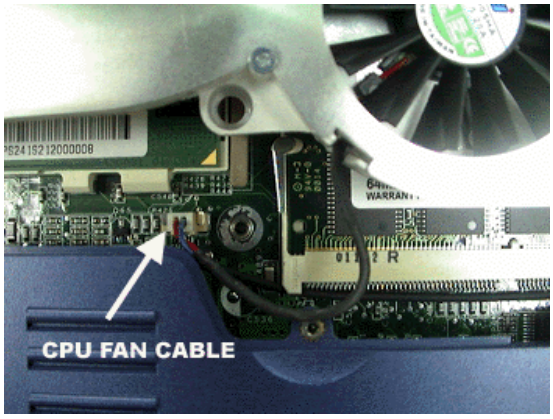
I. System Disassembly Procedures

1. To start disassembly, unlock battery knob and remove the battery pack as shown.

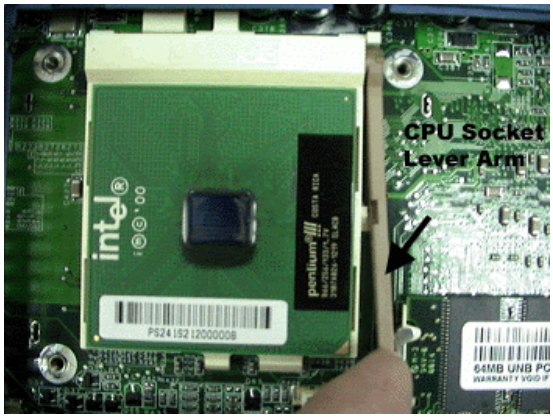
2. Unfasten one (1) screw of the CPU Fan Heatsink cover.



3. Unfasten the four (4) screws of the CPU Fan Heat Sink assembly.

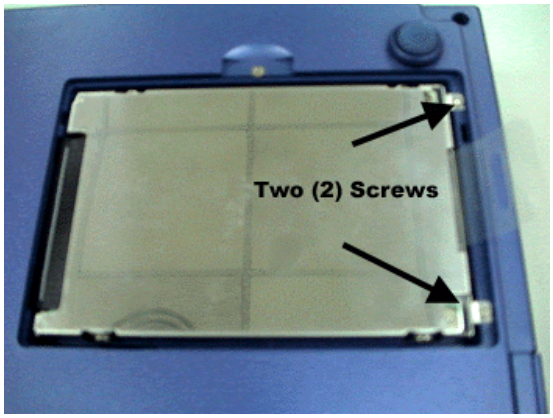


4. Disconnect the CPU Fan cable and remove the CPU heat sink Fan assembly.

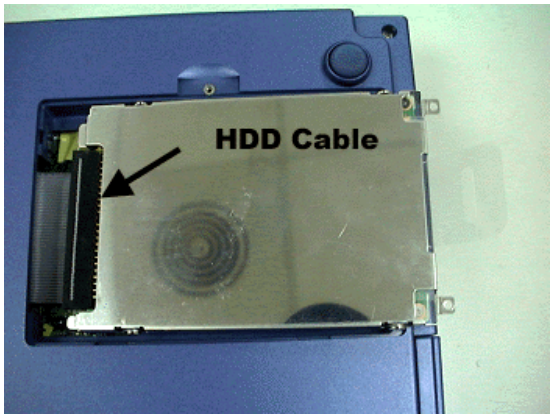


5. Gently press down the CPU socket lever arm and move lever arm to the right to release the lock. Then pull up the lever arm to 90o angle and make sure that the CPU socket is in UNLOCK position. Remove CPU.

6. Unfasten one (1) screw of the HDD cover.

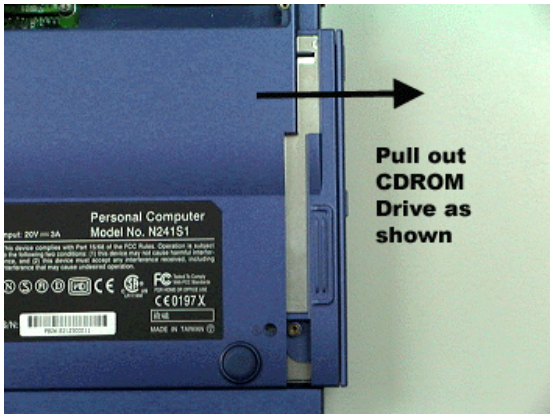


7. Unfasten two (2) screws of HDD cover.

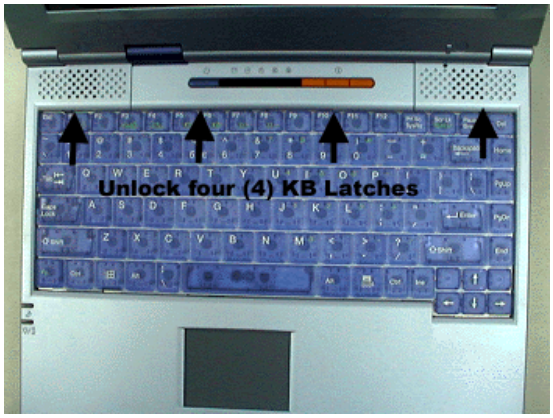


8. Disconnect HDD assembly from the HDD cable.

9. Unfasten two (2) screws of the CDROM/DVDROM assembly.

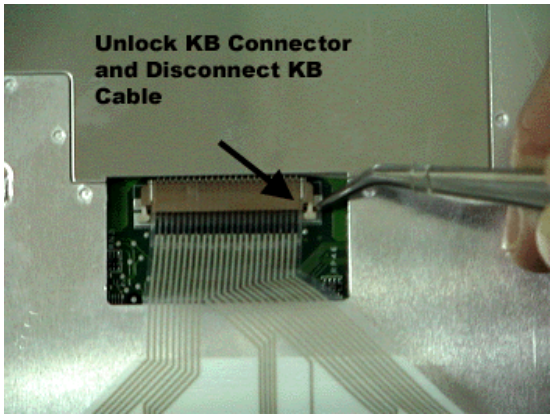


10. Pull out CDROM drive as shown.

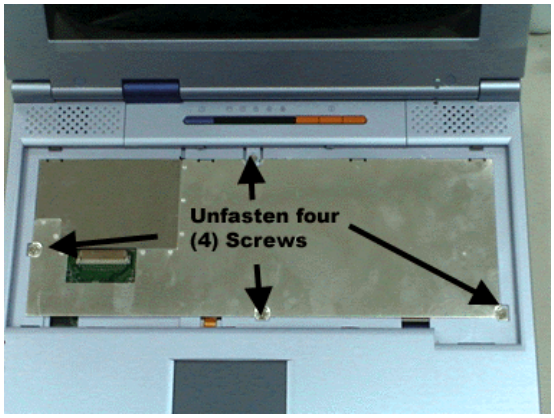


11Unlock the four (4) KB latches.

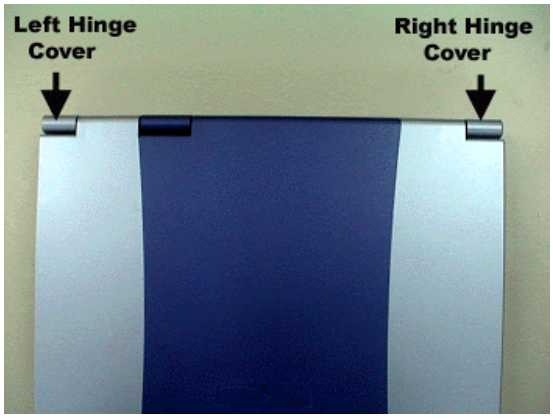
12. Unlock the KB latches using a plastic pointed tool as shown in the photo.



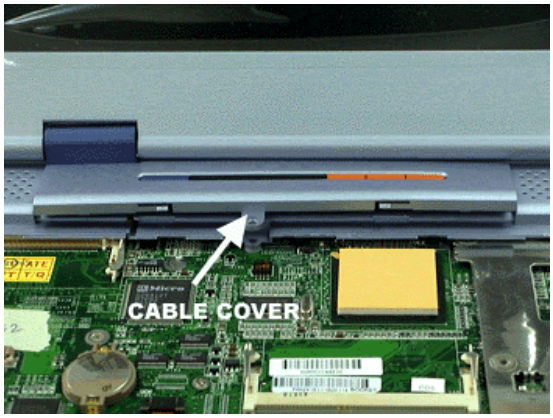
13. Unlock the KB connector and disconnect the KB cable. Then remove the KB.



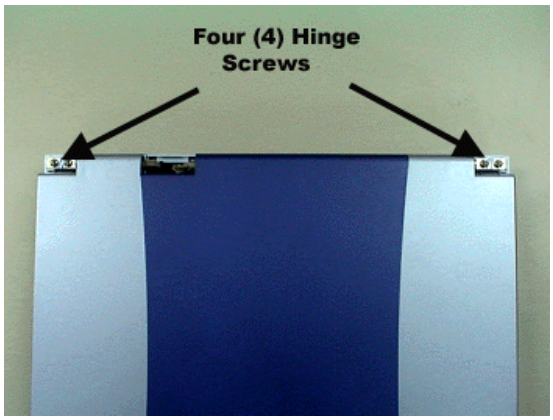
14. Unfasten four (4) screws of the KB shielding.



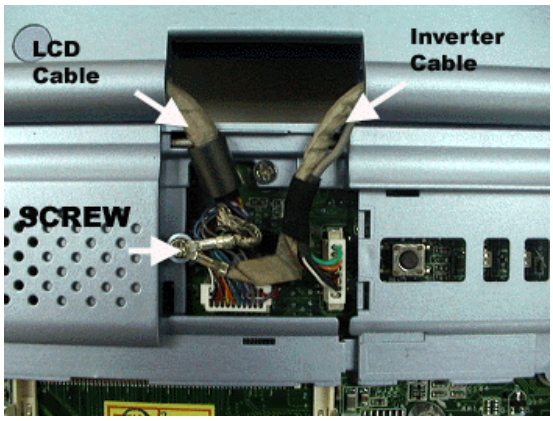
15. Remove left and right hinge covers.



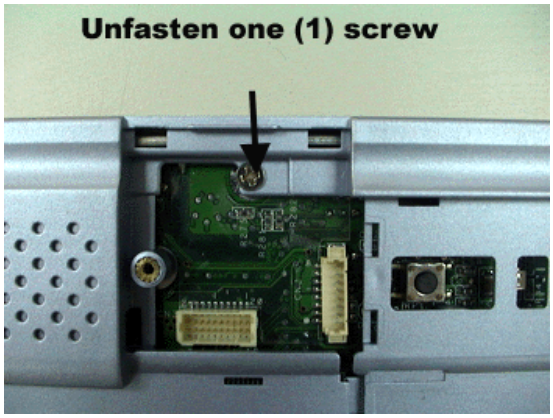
16. Remove the cable cover.



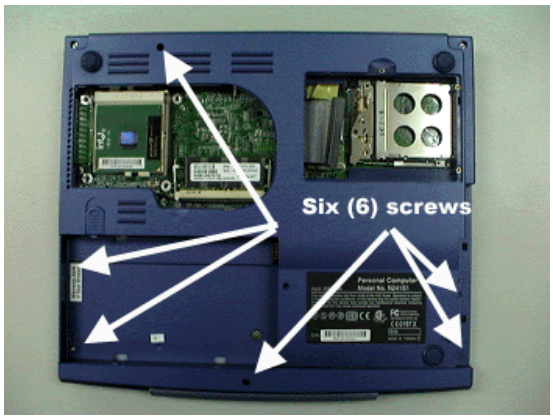
17. Unfasten four (4) screws of the hinges



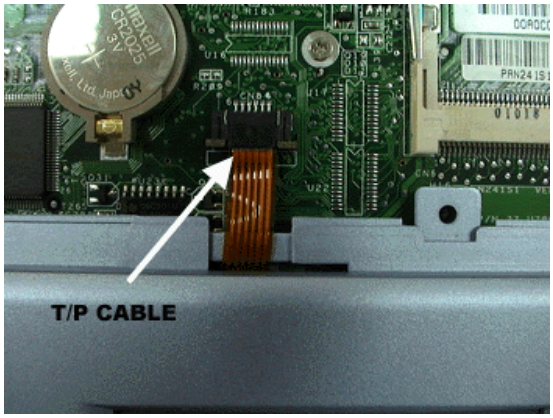
18. Unfasten one (1) screw of the inverter and LCD cable. Disconnect Inverter cable and LCD cable. The LCD panel assembly can now be separated from the base assembly.



19. Unfasten one (1) screw of the top cabinet.

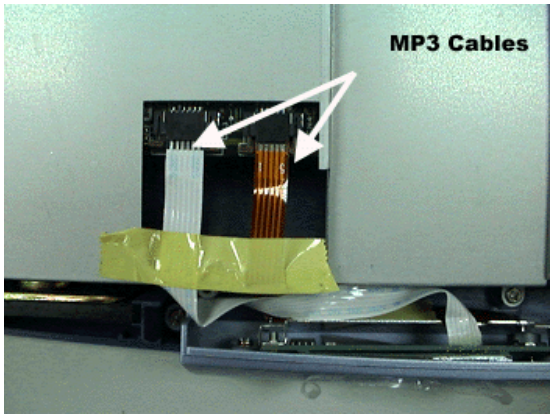


20. Unfasten six (6) screws from the bottom cabinet.

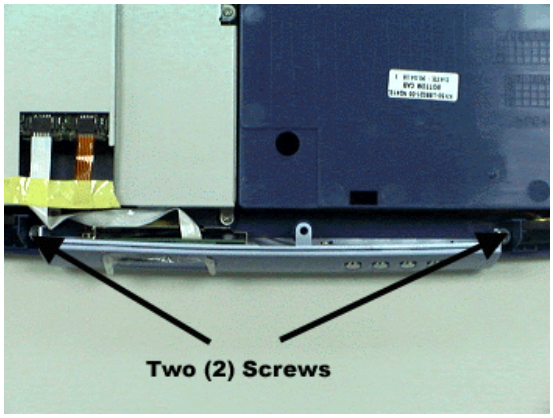


21. Disconnect the touch pad (T/P) cable

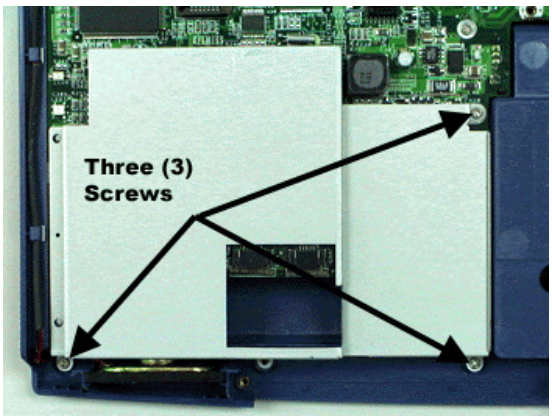
22. Carefully separate the top cabinet from the bottom cabinet by unlocking the latches of the top cabinet.



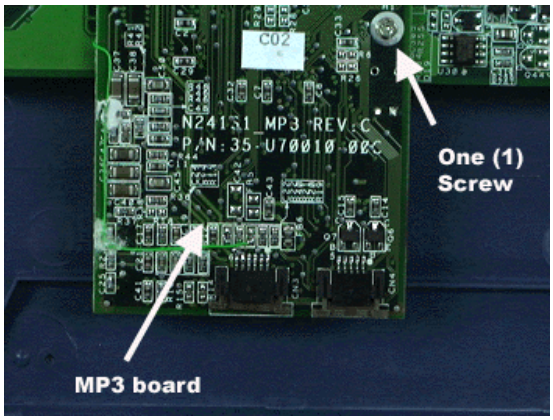
23. Disconnect the two MP3 cables from the connector.



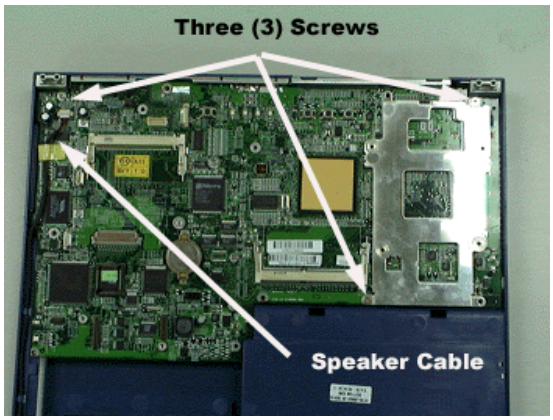
24. Unfasten two (2) screws of the MP3 assembly and remove the MP3 assembly from the bottom cabinet.



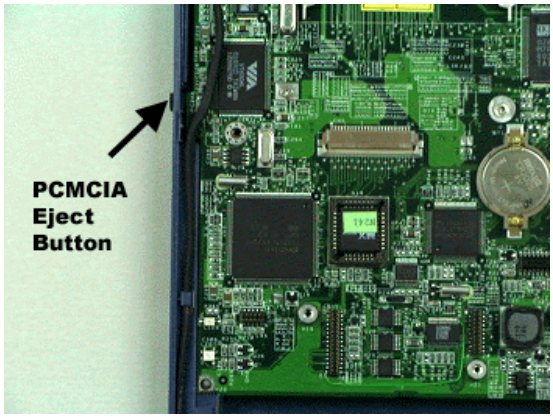
25. Unfasten three (3) screws of the MP3 shielding and remove the MP3 shielding.



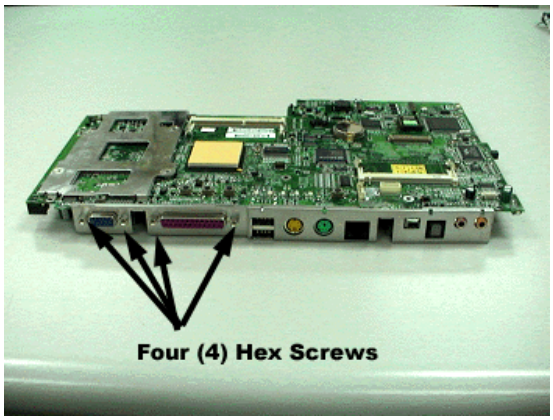
26. Unfasten one (1) screw of the MP3 board and remove the MP3 board from the connector on MB



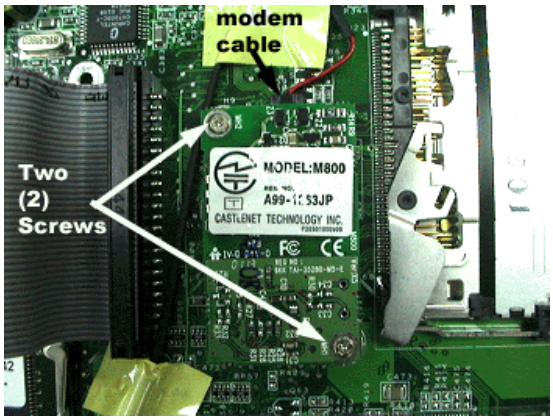
27. Disconnect speaker cable from the connector. Unfasten three (3) screws from the MB.



28. By pushing first the PCMCIA eject button, gently lift the MB and separate the MB from the bottom cabinet.

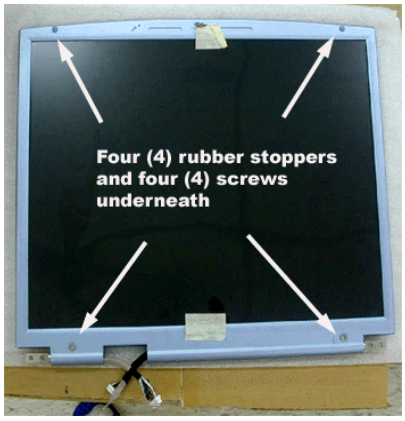


29. Unfasten four (4) hexagonal screws of the I/O ports.



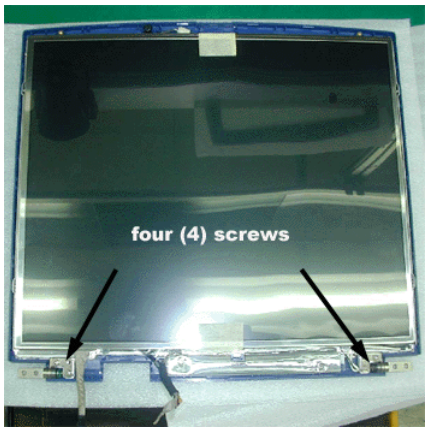
30.Unfasten two (2) screws of the Modem board. Disconnect the modem cable from the connector.

II. LCD Display Panel Disassembly Procedure:

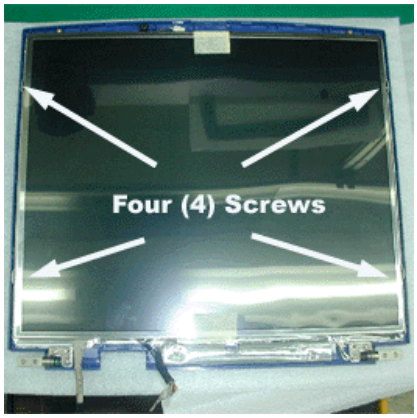


1. Remove four (4) rubber stoppers and unfasten the four (4) screws underneath.

2. Using both hands, grasp the LCD bezel and gently lift the LCD bezel starting from the bottom side, going clockwise to the right side.



3. Unfasten the four (4) screws of the hinges.



4. Unfasten four (4) screws of the LCD Screen.

5. Unfasten two (2) screws of the inverter board and then disconnect the cables from both sides.

Notebook PC Service Manual

Model: N241S1

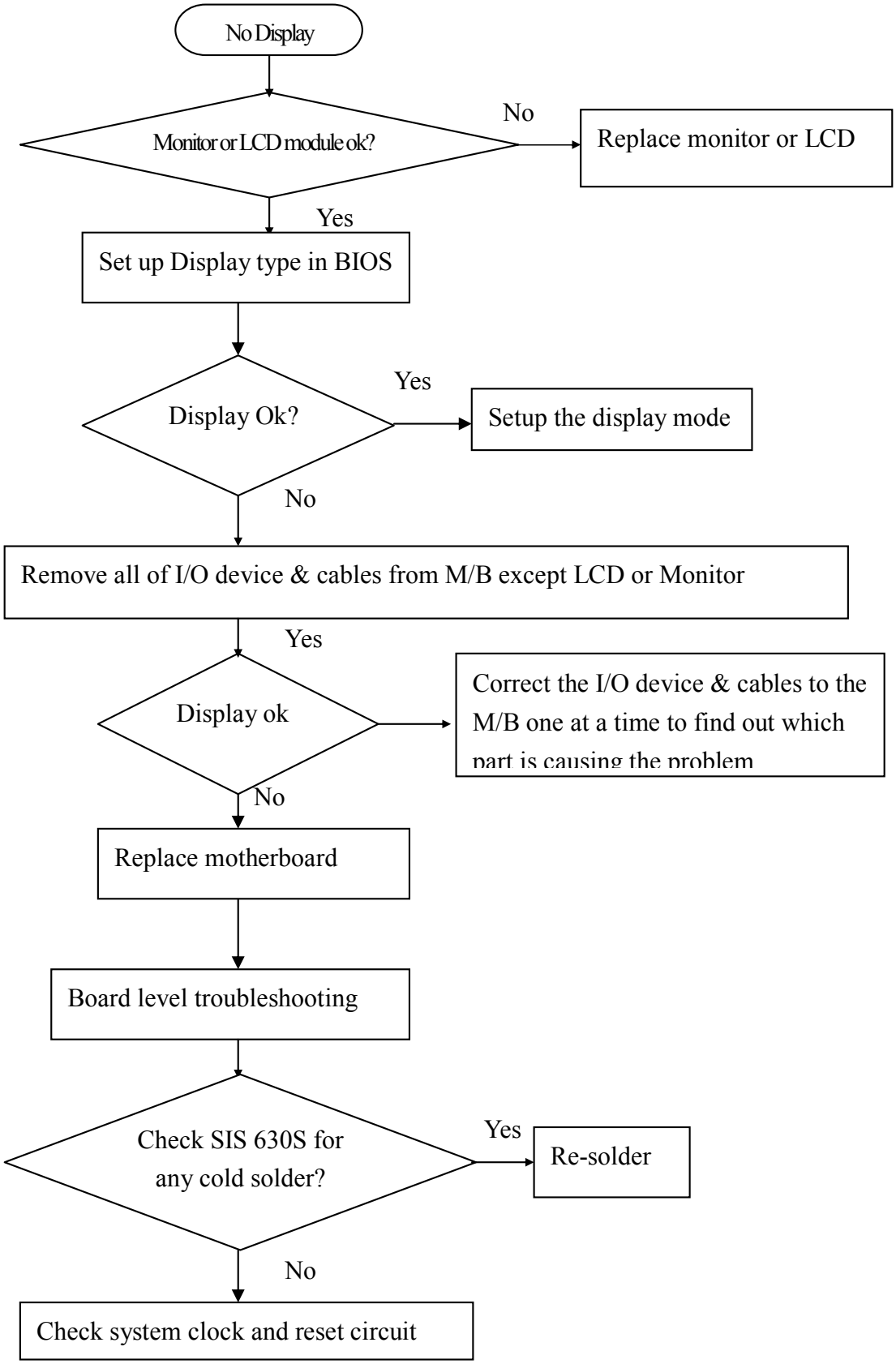
Chapter 5
Trouble Shooting

UNIWILL COMPUTER CORP.
No. 24, Pei Yuan Rd., Chung Li Industrial Park
Chung Li City, Taiwan, R.O.C.
TEL: 886-3-461-6000
FAX: 886-3-461-8000
URL: http://uniwill.com.tw/

Trouble Shooting List

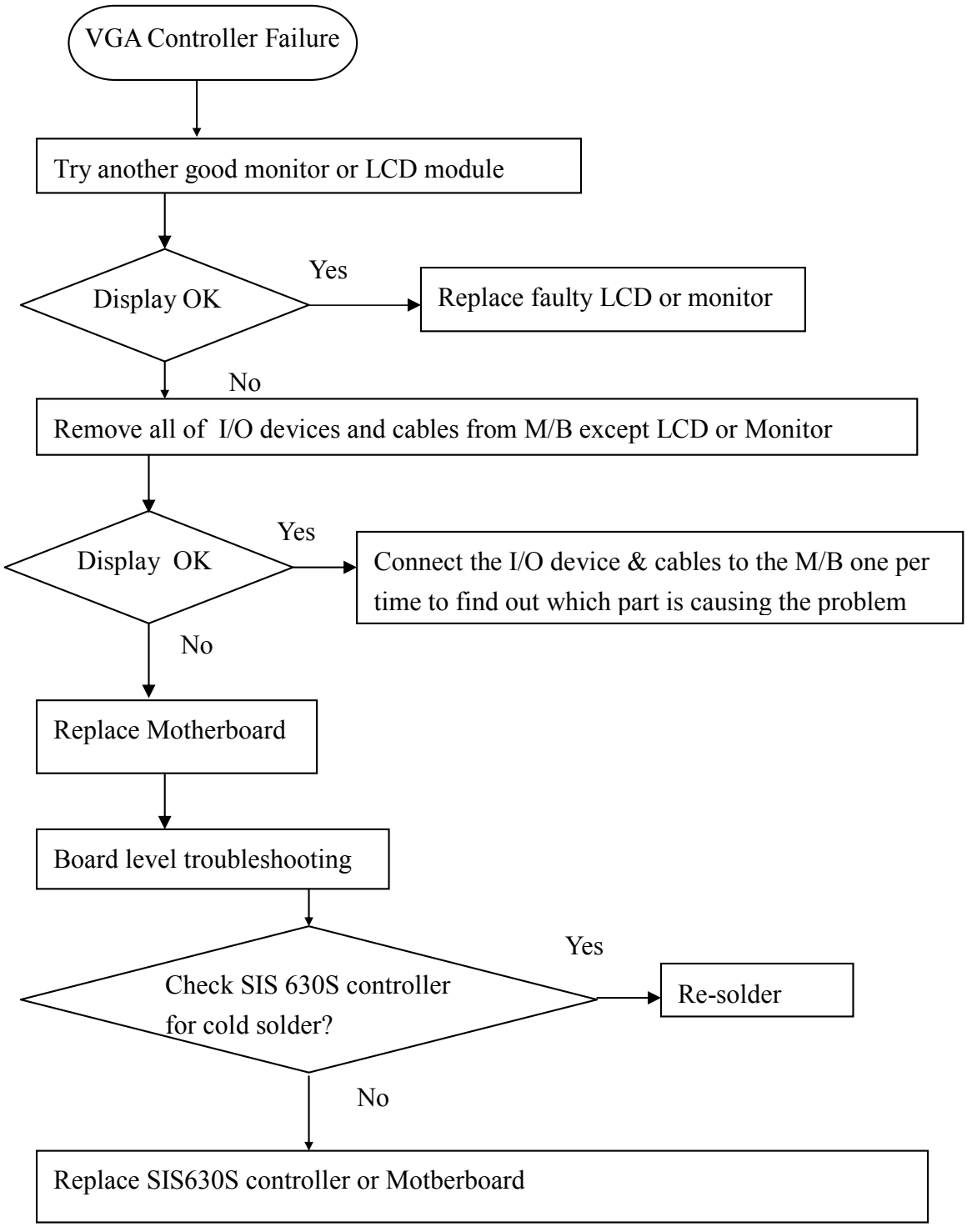
5.1 No display (system failure)

Symptom: There is no display on both LCD and Monitor after power on although the LCD and Monitor are known-good.



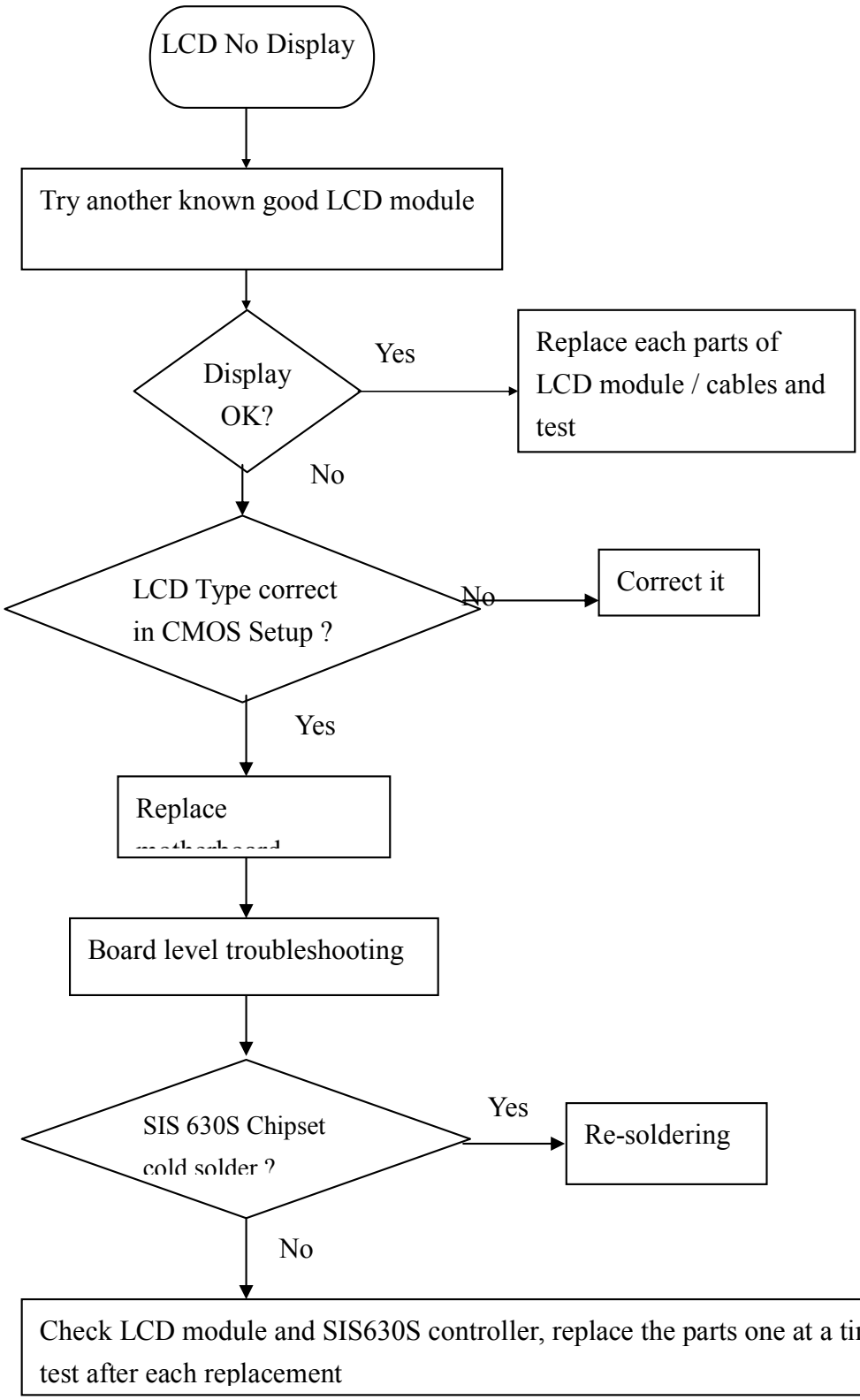
5.2 VGA controller failure

Symptom: There is no display on both LCD and Monitor although Power-On-Self-Test is passed



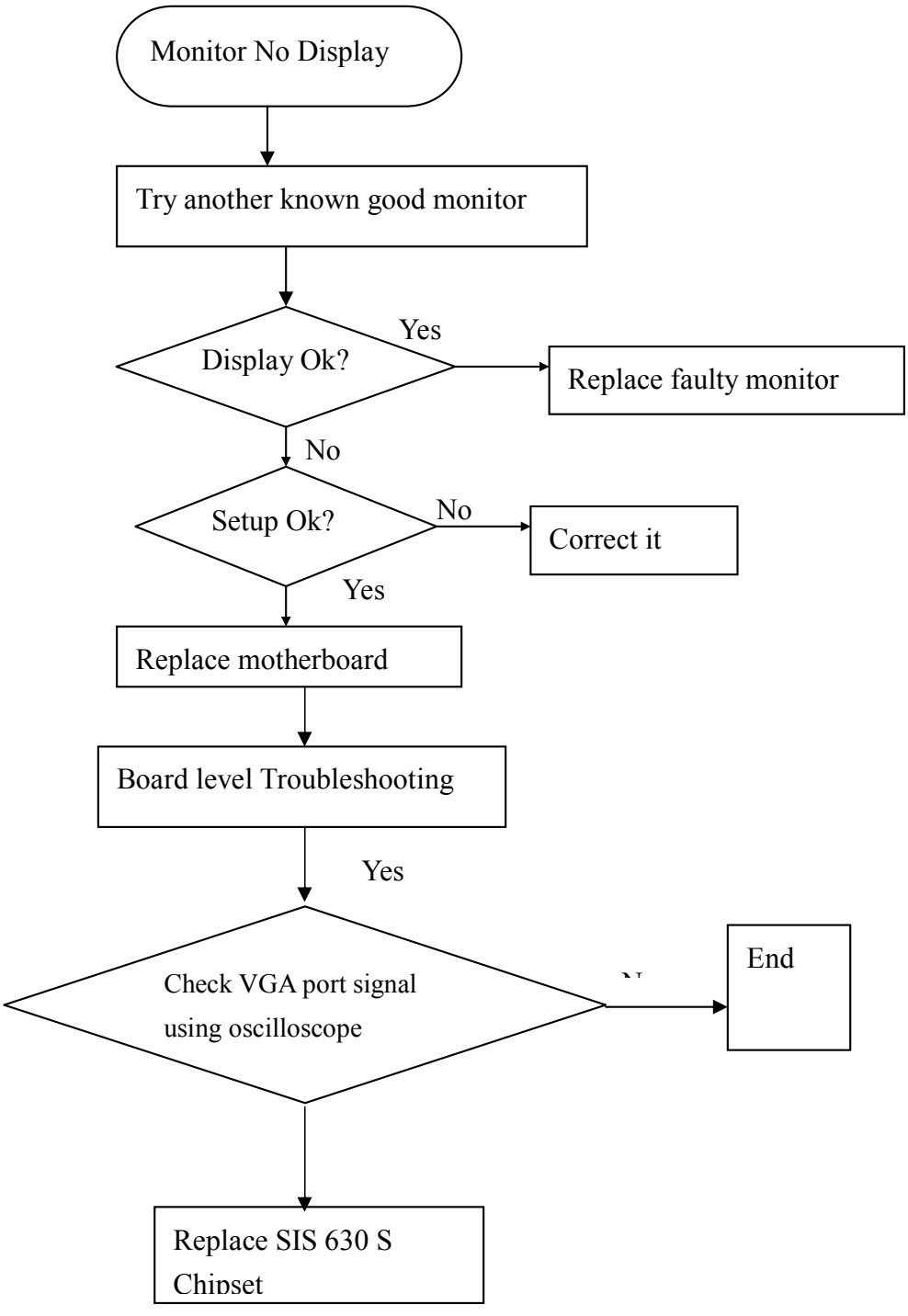
5.3 LCD no display or Invalid Picture

Symptom: The LCD shows nothing or abnormal picture, but it is good for external monitor.

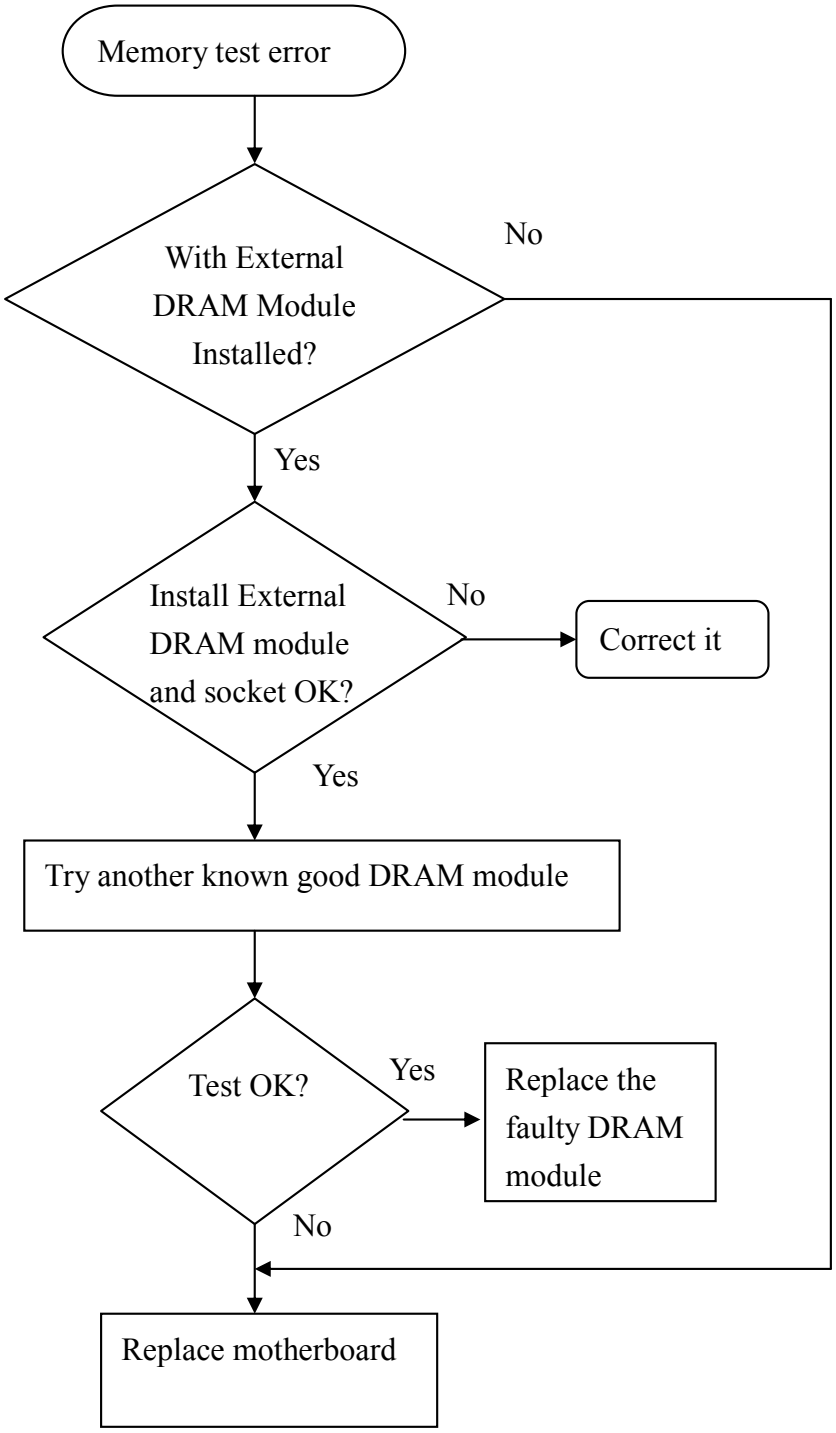


5.4 External monitor has no display or color abnormal

Symptom: The CRT monitor shows nothing or abnormal color, but it is ok for LCD

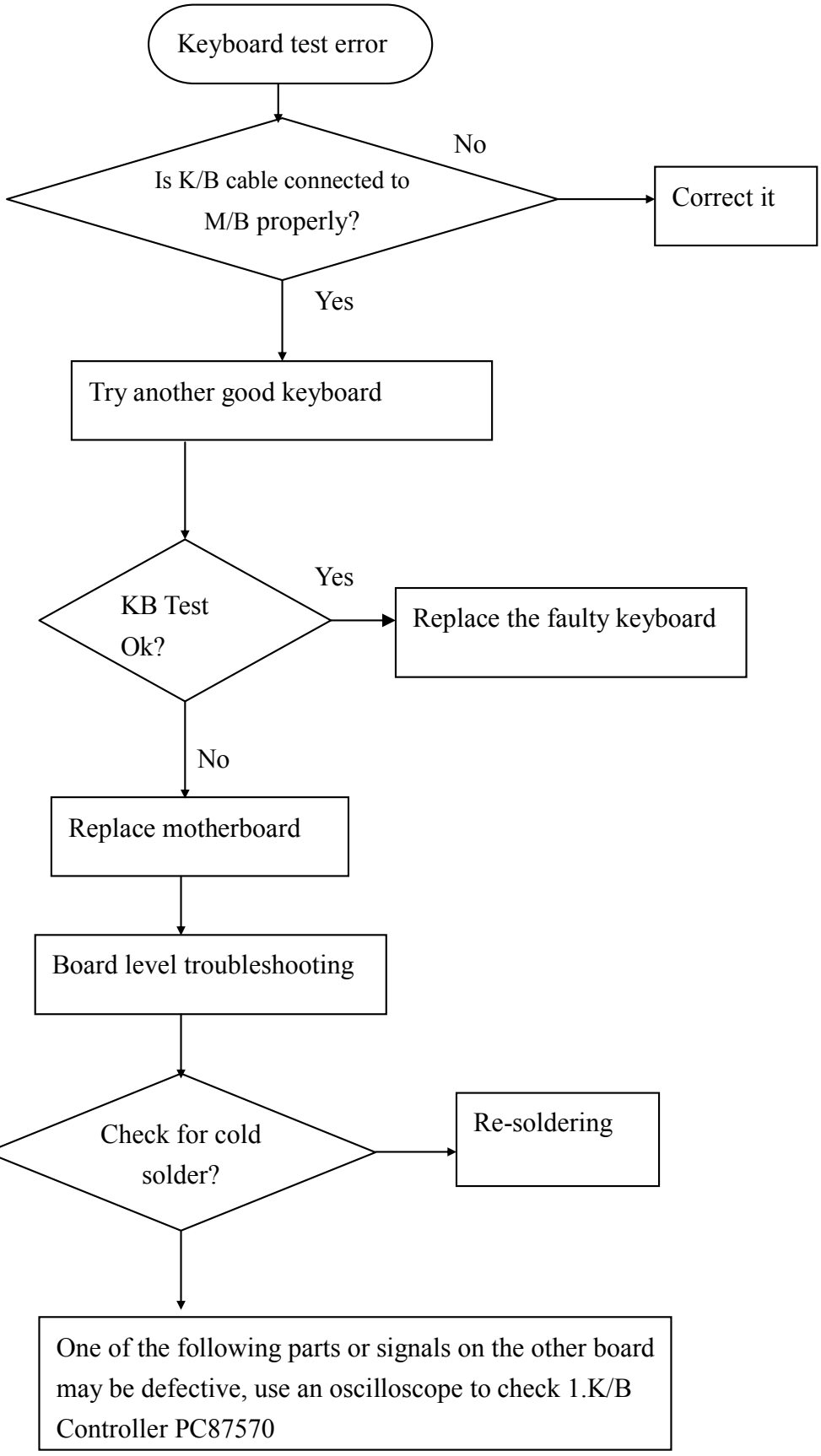


5.5 Memory test error



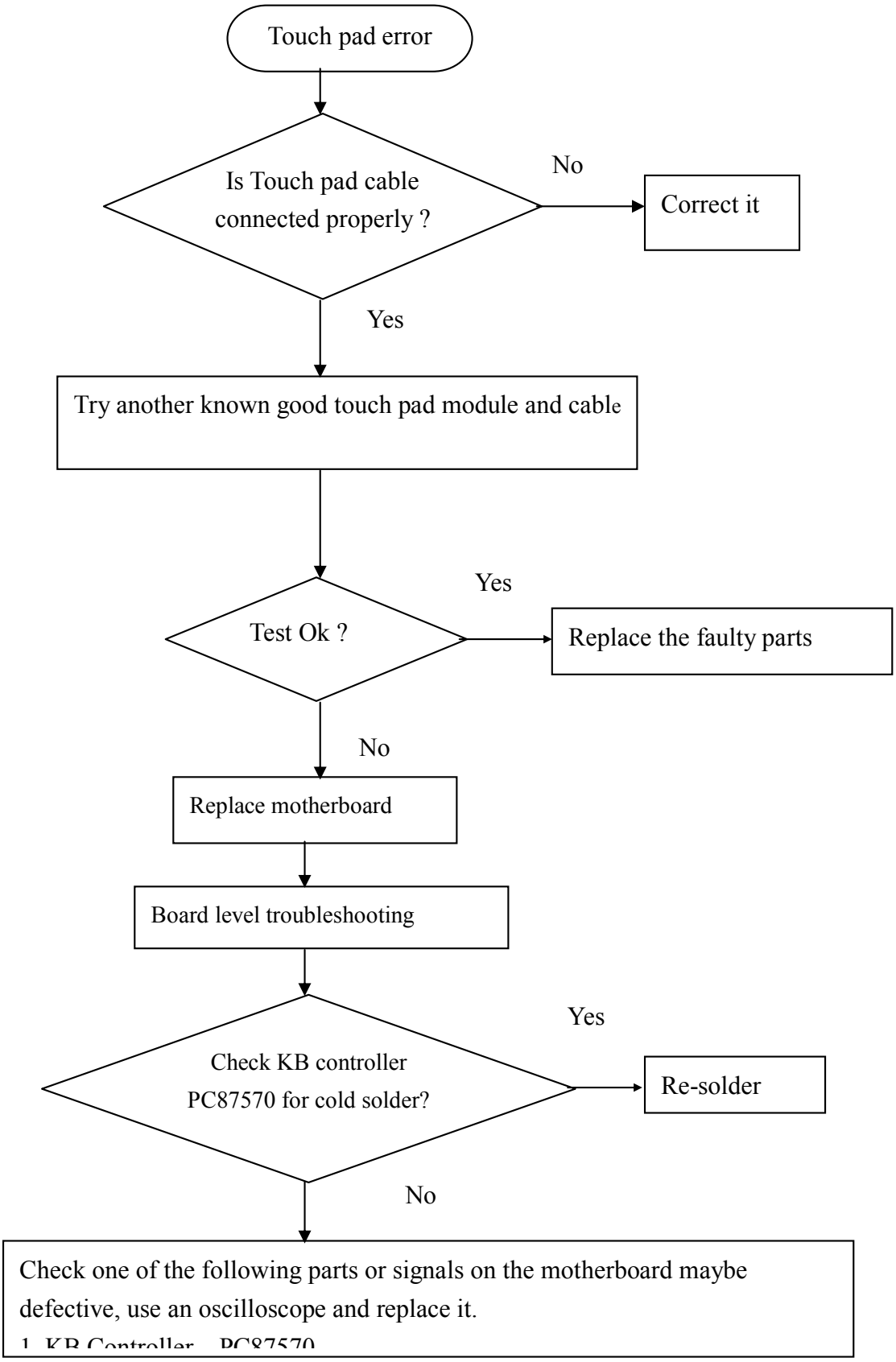
5.6 Keyboard test error

Symptom: error message of keyboard failure is shown or any key doesn't work



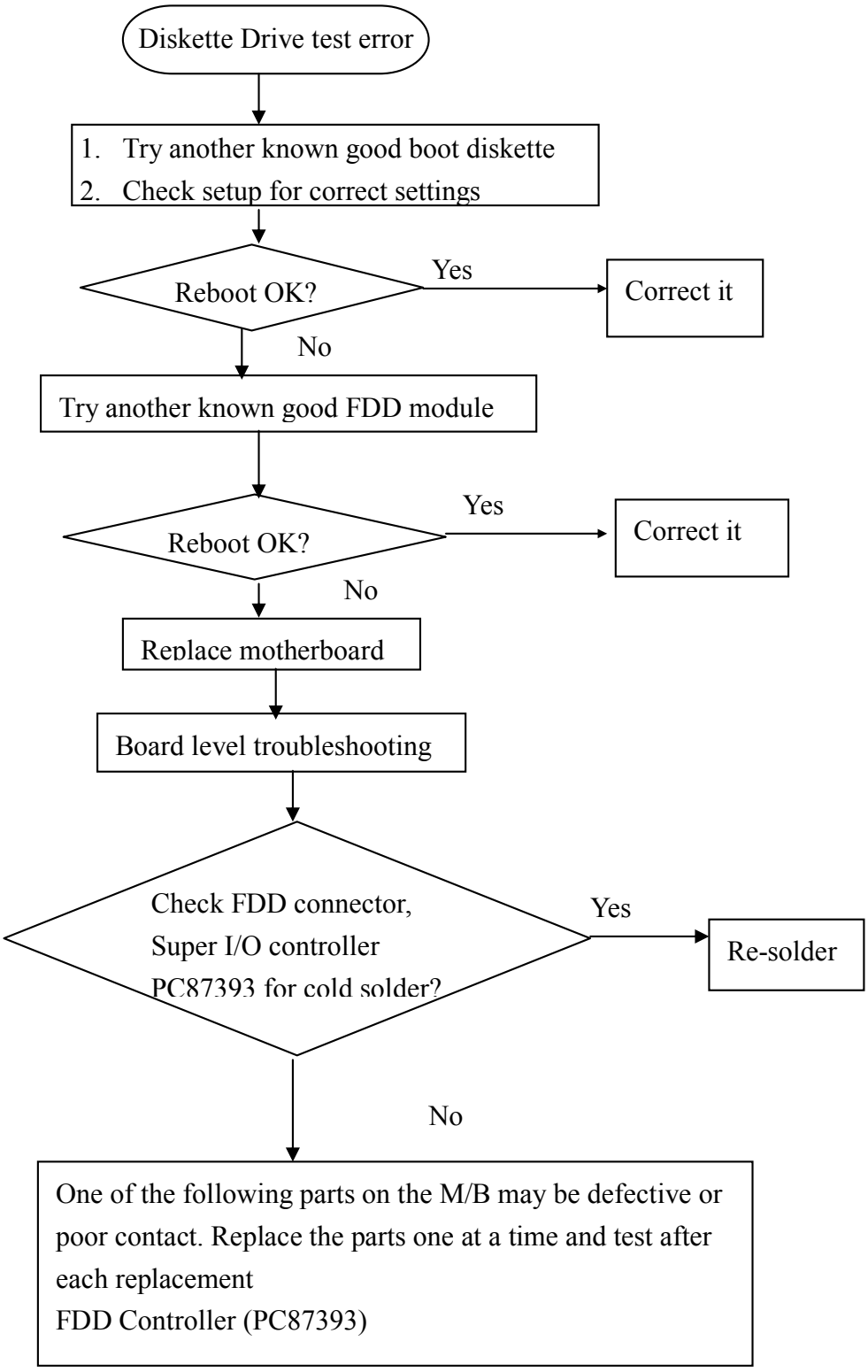
5.7 Touch Pad test error

Symptom: An error message is shown when the Touch Pad point is enabled



5.8 Diskette drive test error

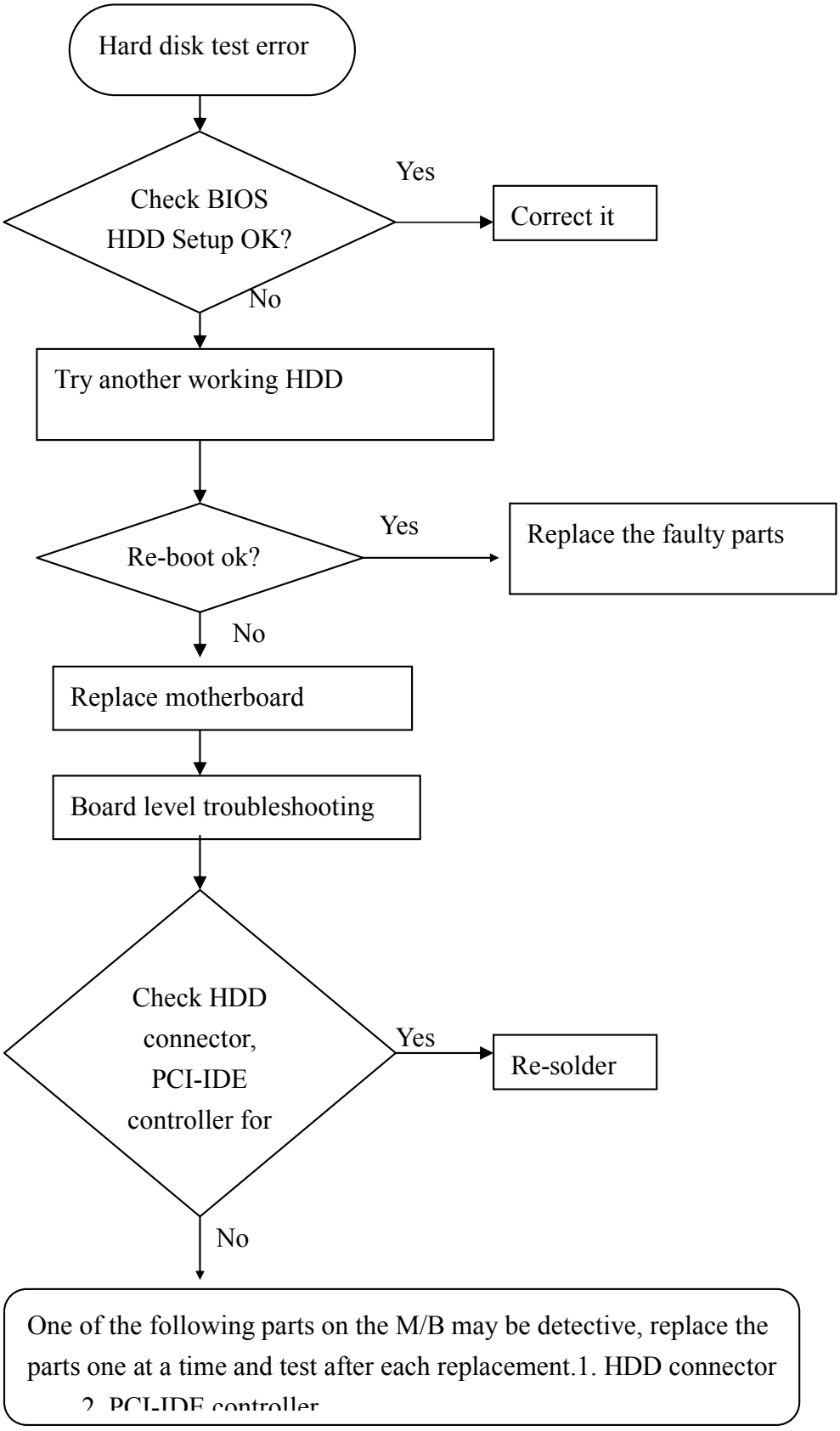
Symptom: An error message is shown while loading data from FDD to system



5.9 Hard disk drive test error

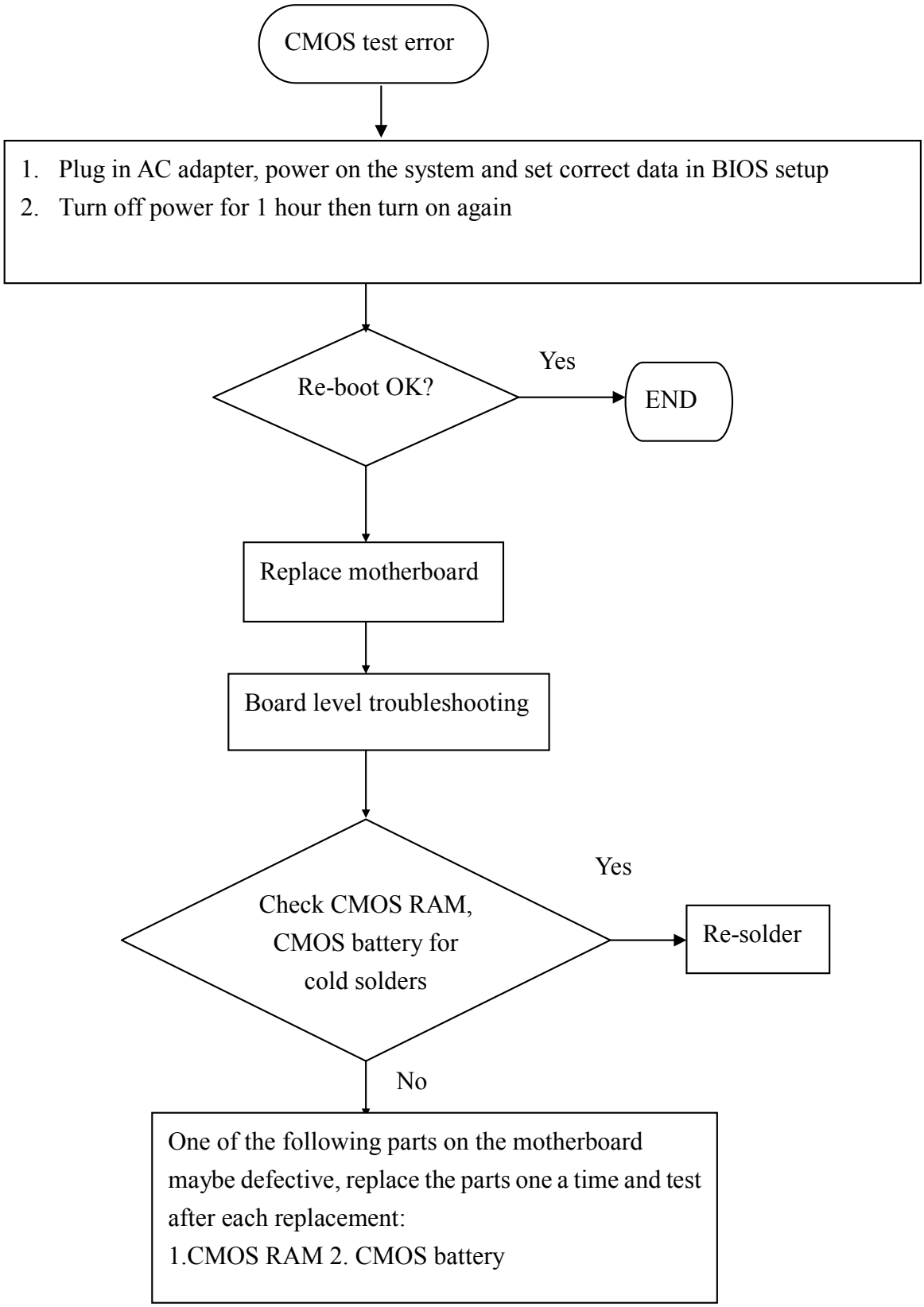
Symptom: Either an error message is shown, or the drive motor spins non-stop,

while reading data from or writing data to Hard disk



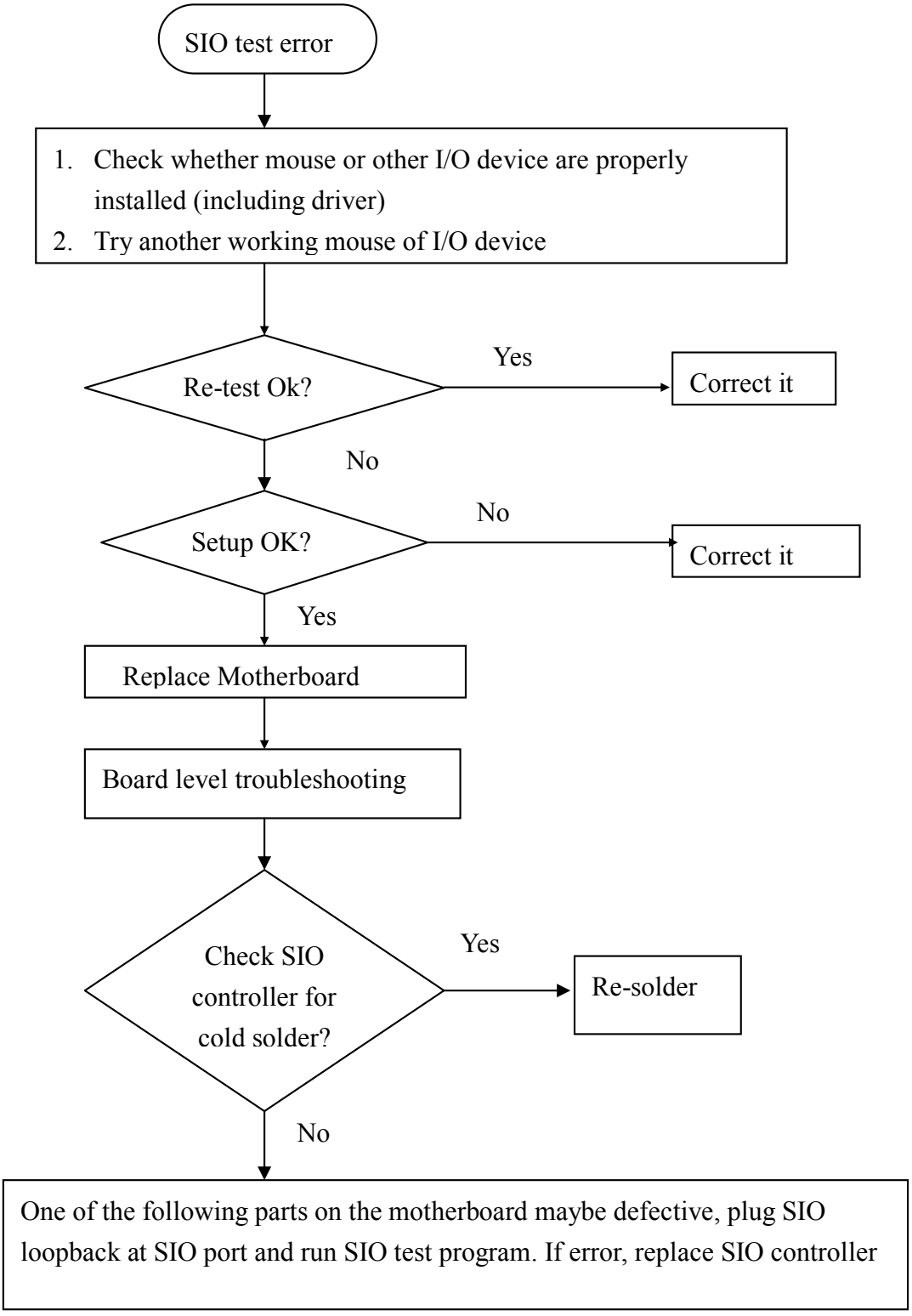
5.10 CMOS test error

1. CMOS data lost, or inaccurate system time & data



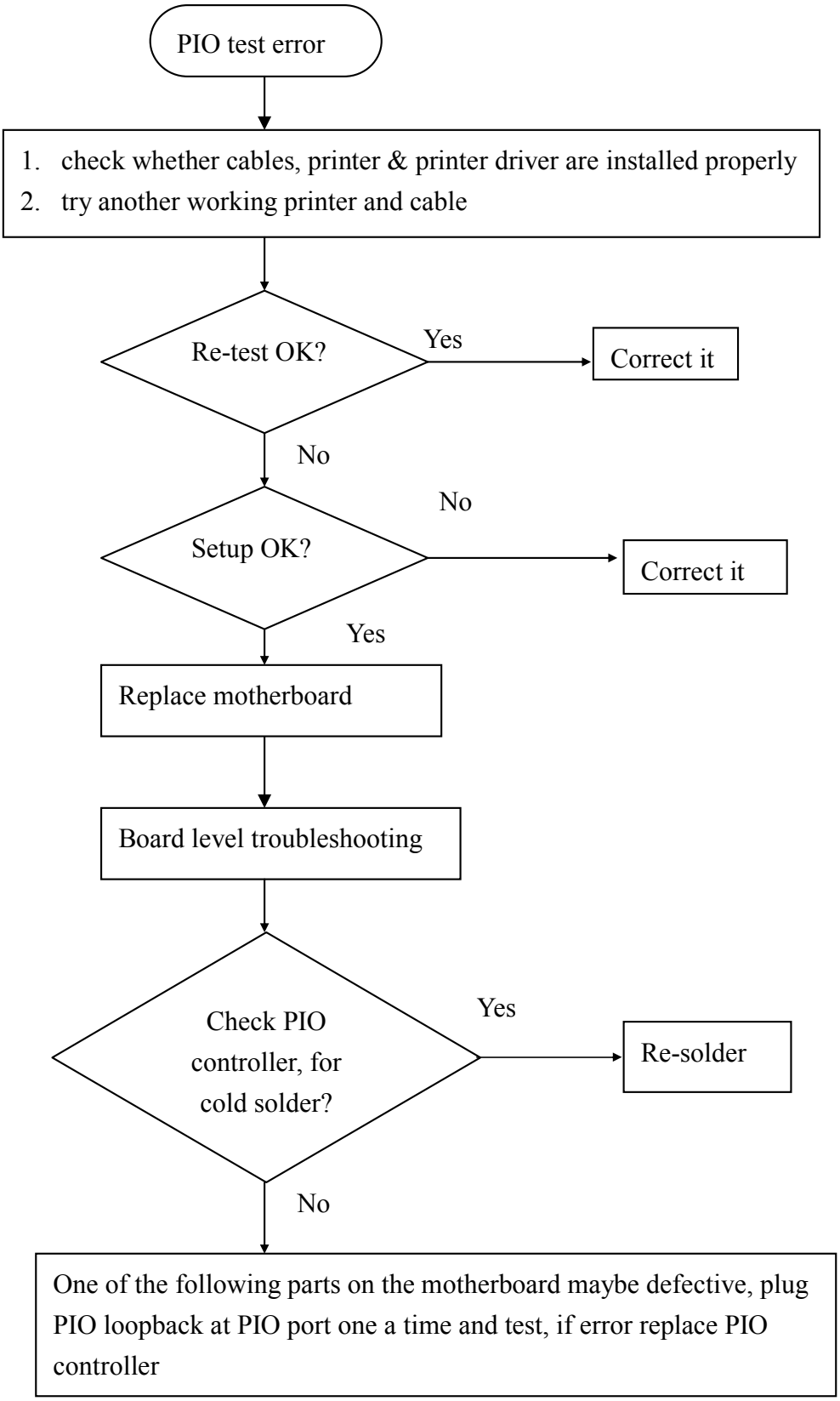
5.11 SIO port test error

Symptom: An error display occurs when a mouse or other I/O device is installed



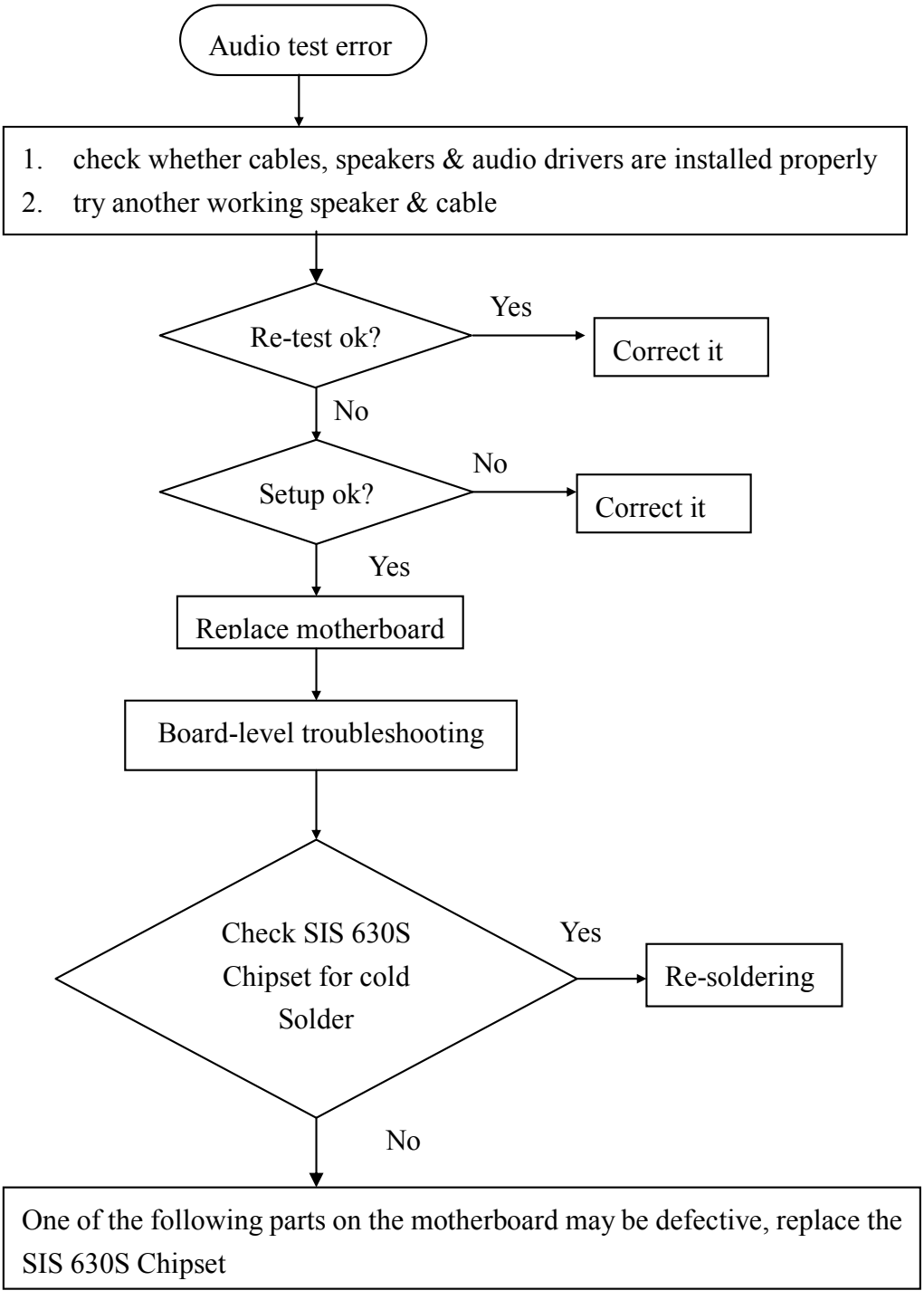
5.12 PIO port test error

Symptom: When a print command is issued, printer prints nothing or garbage.



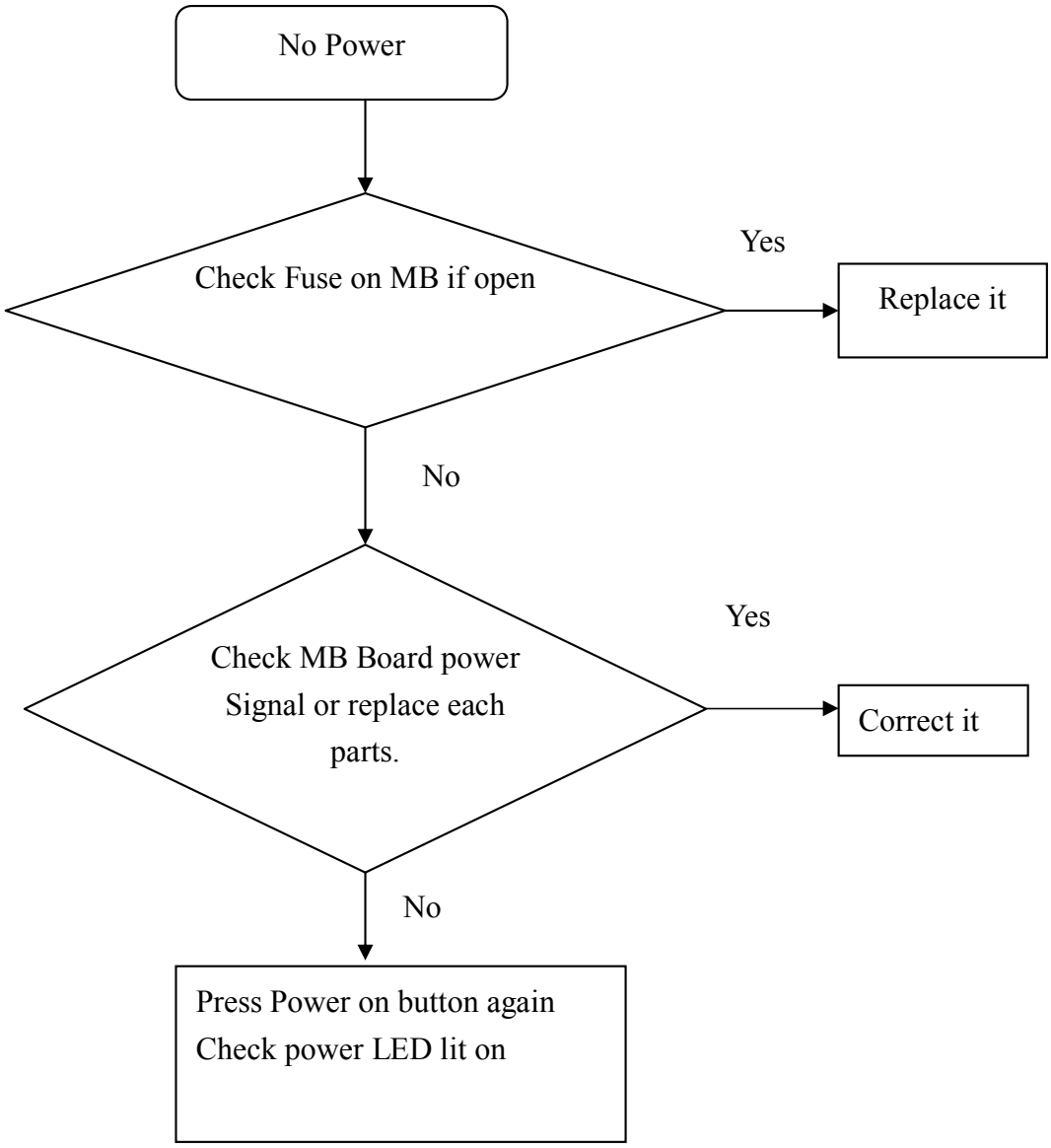
5.13 Audio failure

Symptom: No sound from speaker after audio drive is installed.



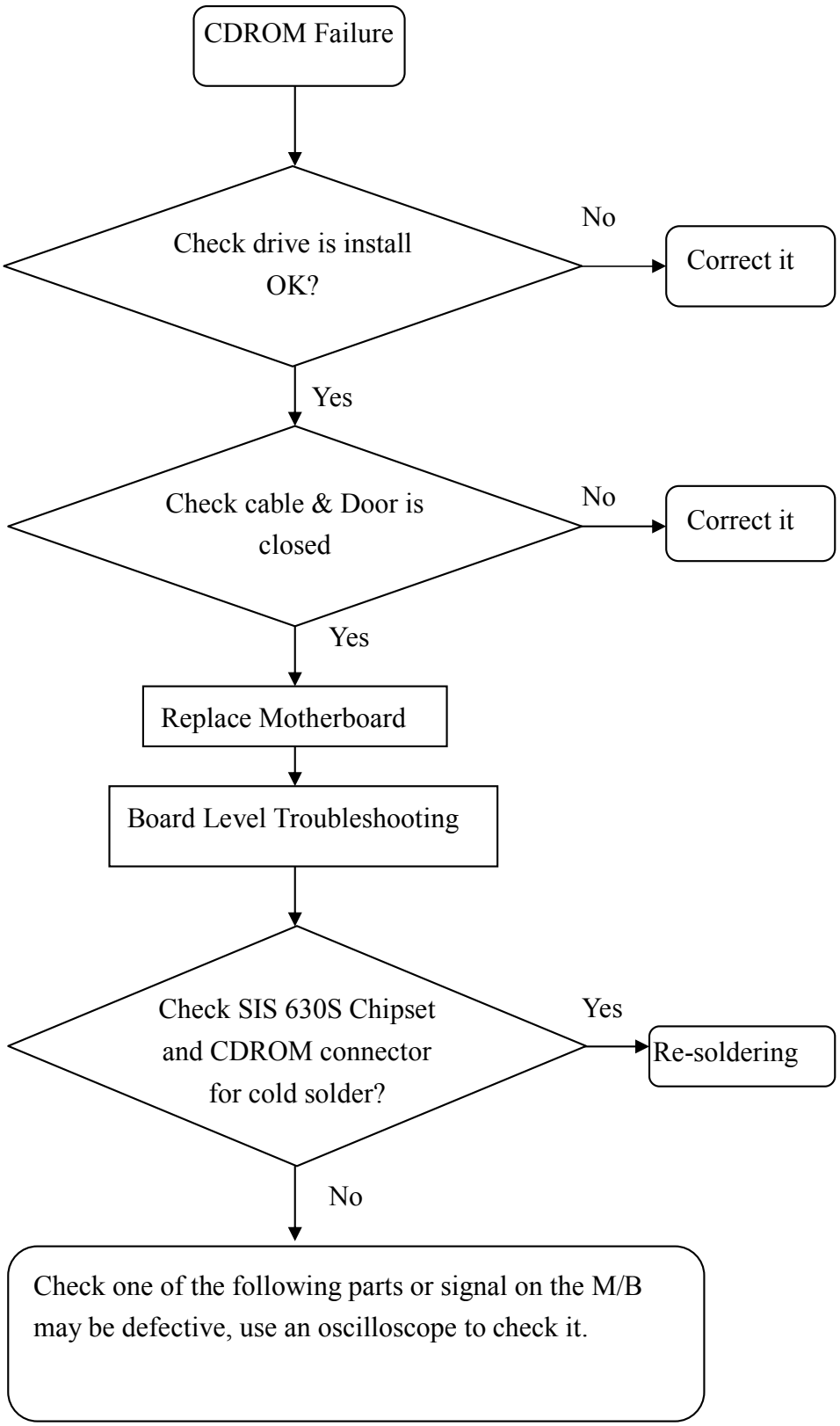
5.14 No power symptom:

Symptom: When the power button is pressed, nothing happens, power indicator is not light up.

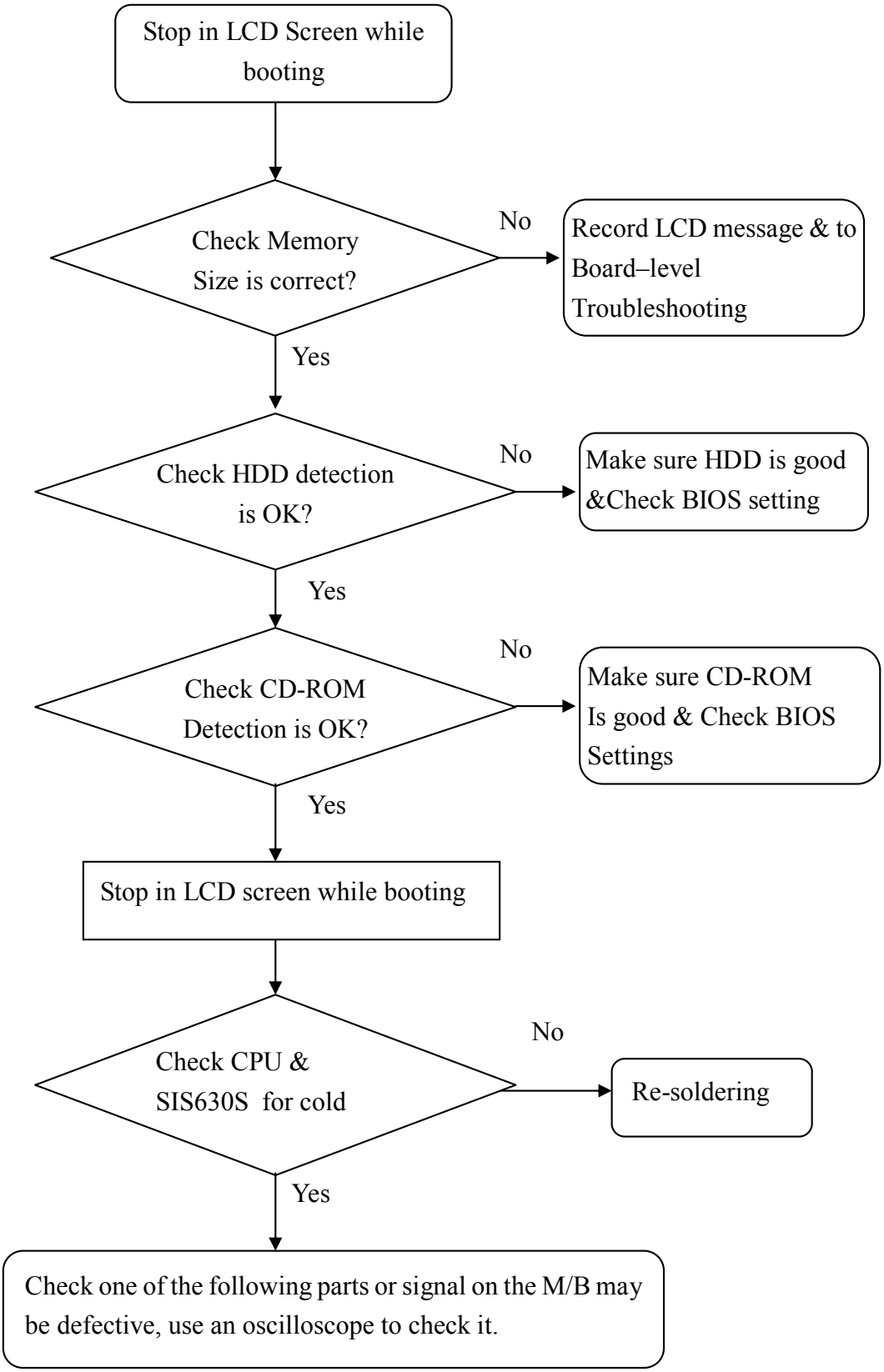


5.15 CD-ROM drive test error

An error message is shown when reading data from CD-ROM drive

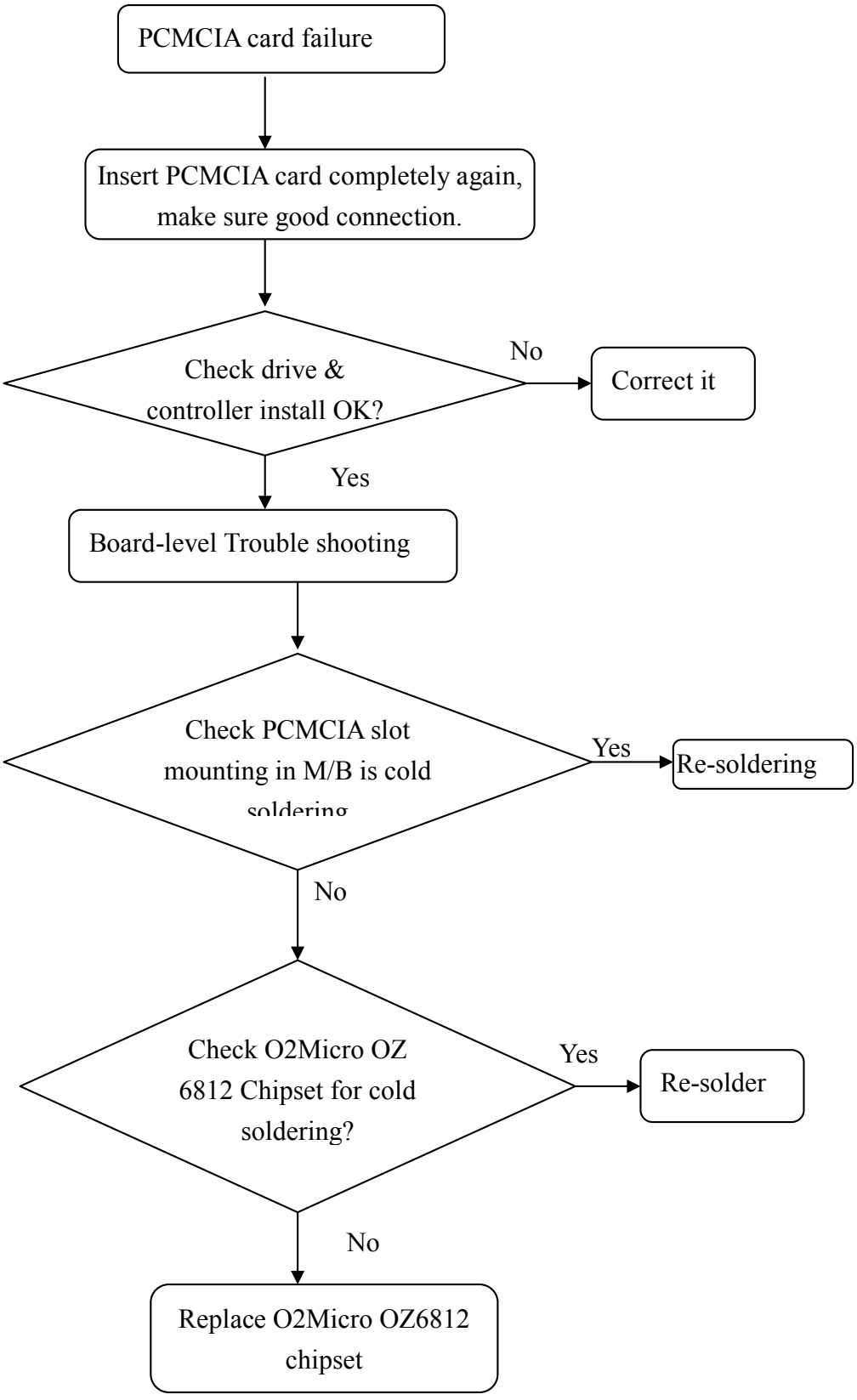


5.16 Stopping in LCD screen while booting

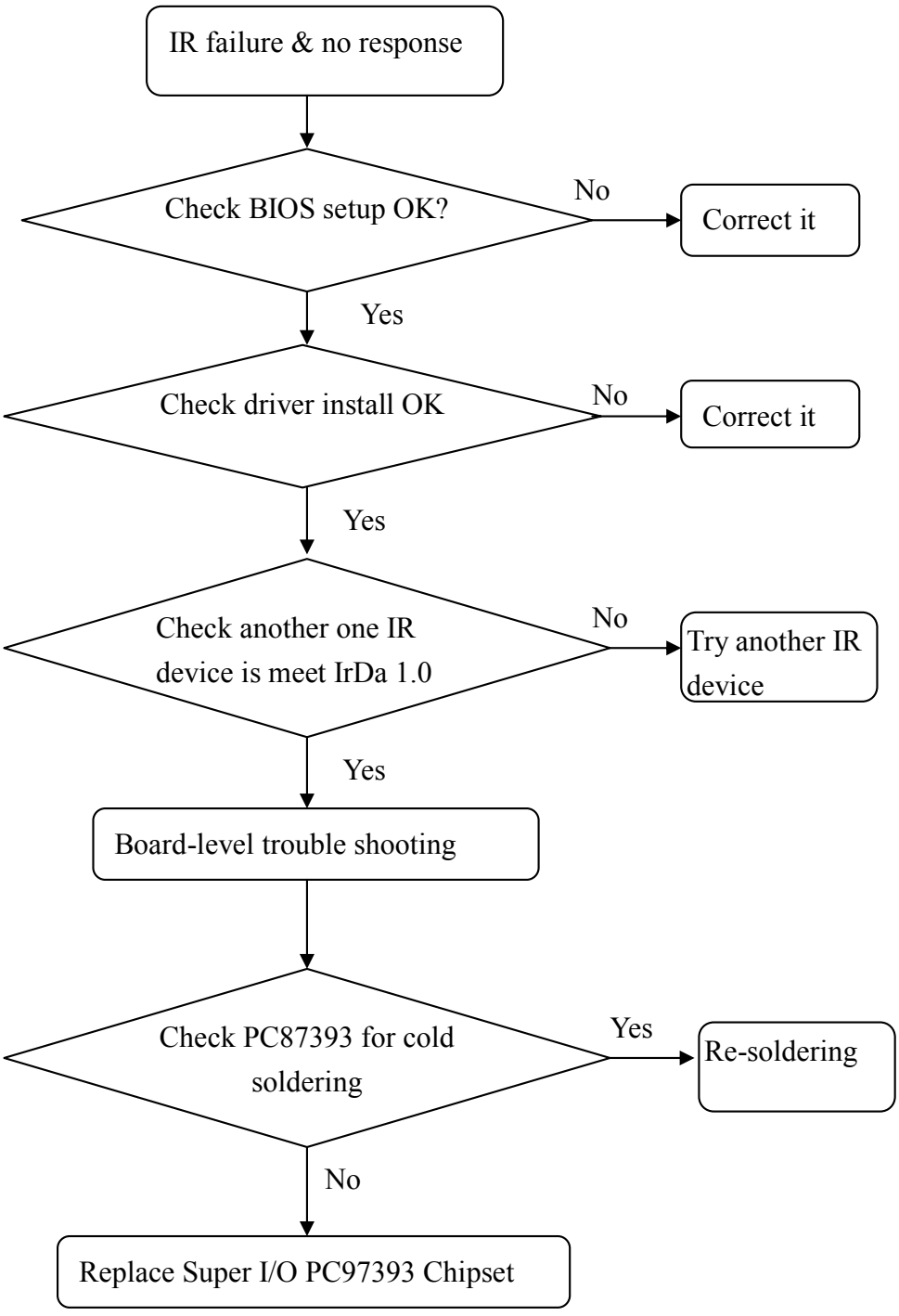


5.17 PCMCIA CardBus failure

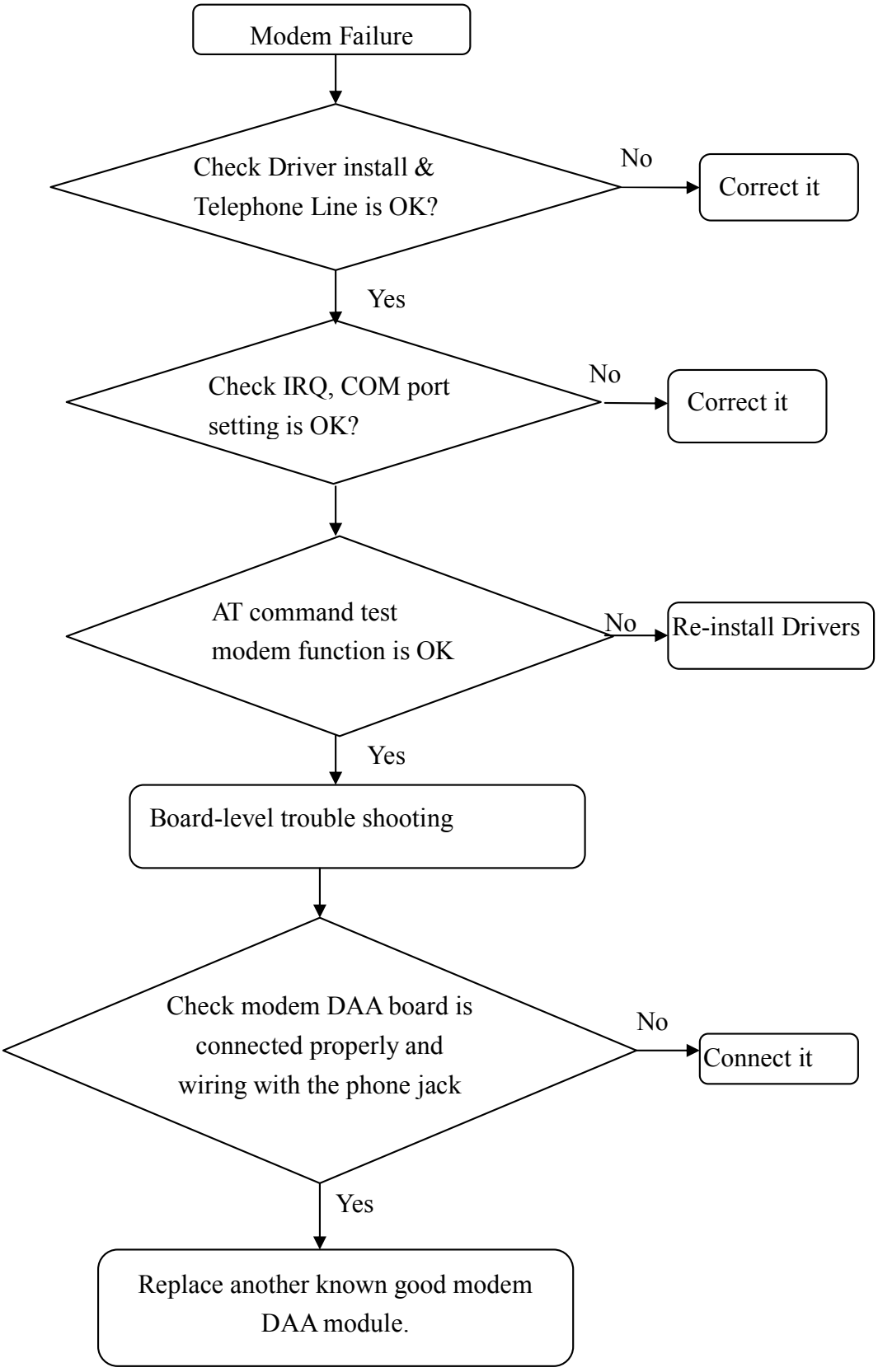
Symptom : when insert PCMCIA card to PCMCIA slot, but system can't detect.



5.18 IR Port can't transfer data.



5.19 Modem failure



Notebook PC Service Manual

Model : N241S1

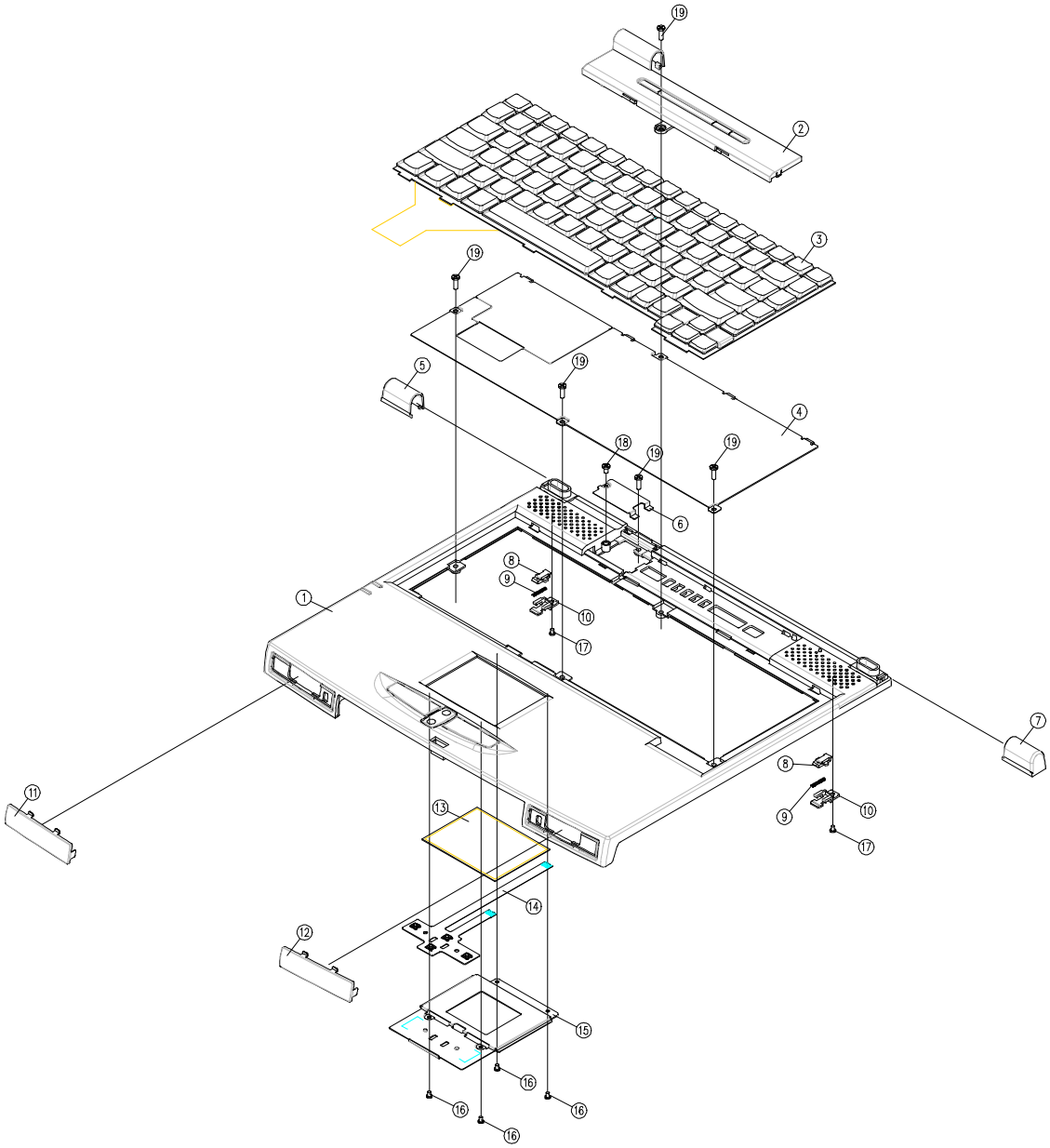
Chapter 6
Explosion Diagram

UNIWILL COMPUTER CORP.

No. 24 Pei Yuan Road
Chung Li Industrial Park, Chung Li City
Tao Yuan Hsien, Taiwan
R.O.C.
TEL: 886-3-461-6000
FAX: 886-3-461-6317

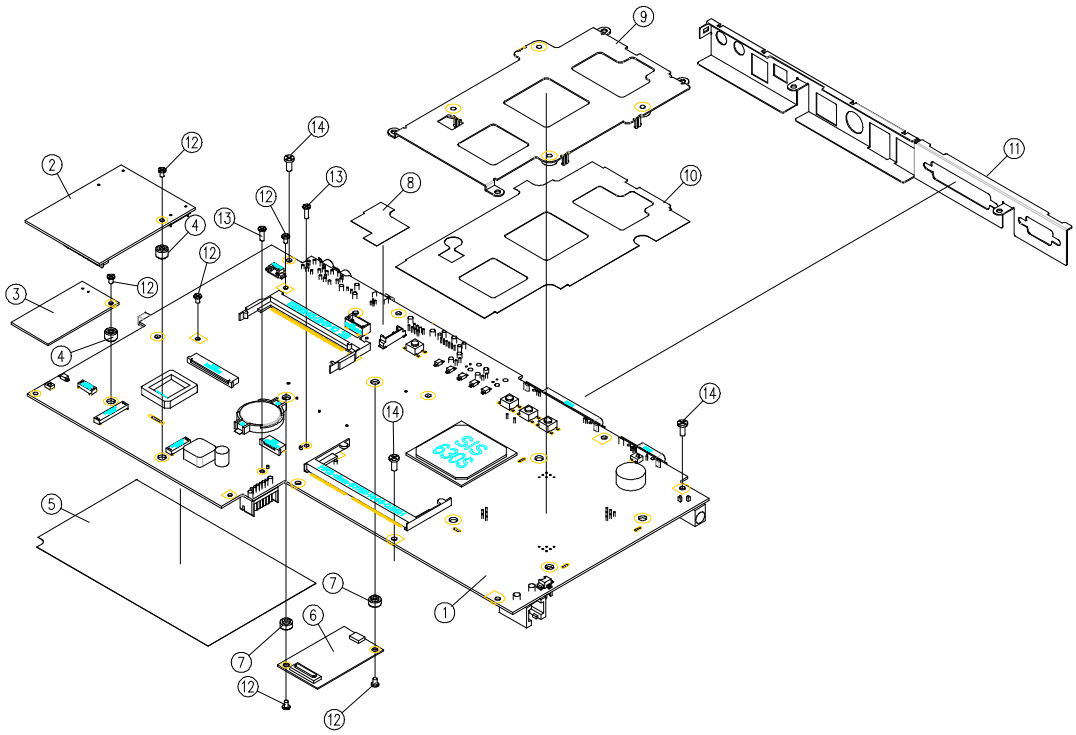
URL: http:// www.uniwill.com.tw/

6.1 TOP CABINET ASSEMBLY



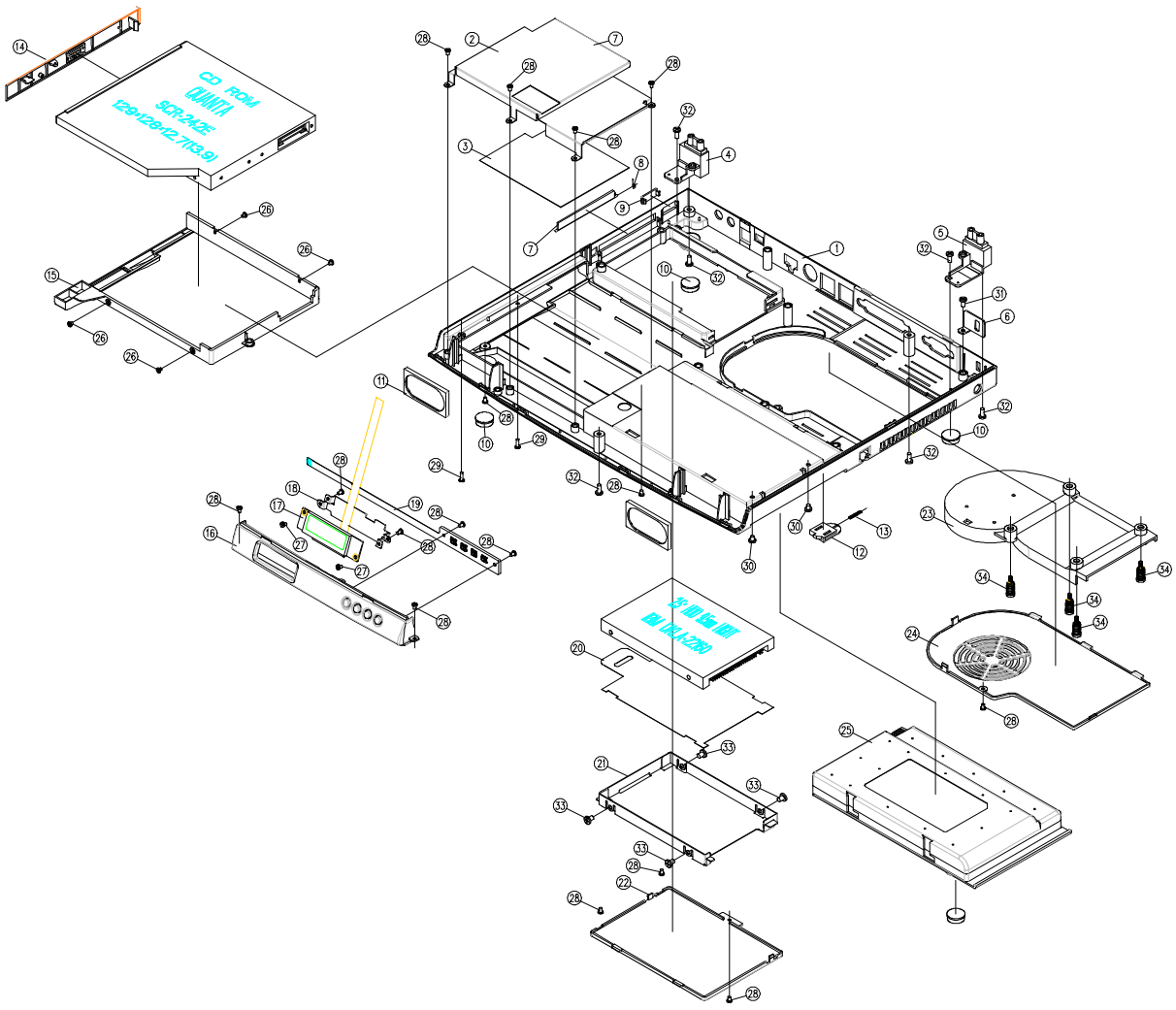
NO.	PART NUMBER	DESCRIPTION	QTY
1	50-U70057-00	TOP COVER ASS'Y	1
2	50-U70059-00	CABLE COVER ASS'Y	1
3	71-U70010-00	US KEYBOARD	1
4	40-U70071-00	KEYBOARD PLATE	1
5	50-U70054-00	HINGE COVER (L)	1
6	40-U70025-00	CABLE PLATE	1
7	50-U70055-00	HINGE COVER	1
8	50-U70092-00	KEYBOARD LATCH	2
9	40-102002-00	SPRING	2
10	50-U70093-00	KEYBOARD LATCH COVER	2
11	40-U70001-00	SPEAKER NET (L)	1
12	40-U70002-00	SPEAKER NET (R)	1
13	74-08U204-00	TOUCH PAD	1
14	29-U70032-00	TOUCH PAD FPC	1
15	40-U70024-00	TOUCH PAD BRACKET	1
16	41-720120-03	SCREW, M2X3	4
17	41-720120-04	SCREW, M2X4	2
18	41-720125-04	SCREW, M2.5X4	1
19	41-720125-08	SCREW, M2.5X8	5

6.2 MOTHERBOARD ASSEMBLY



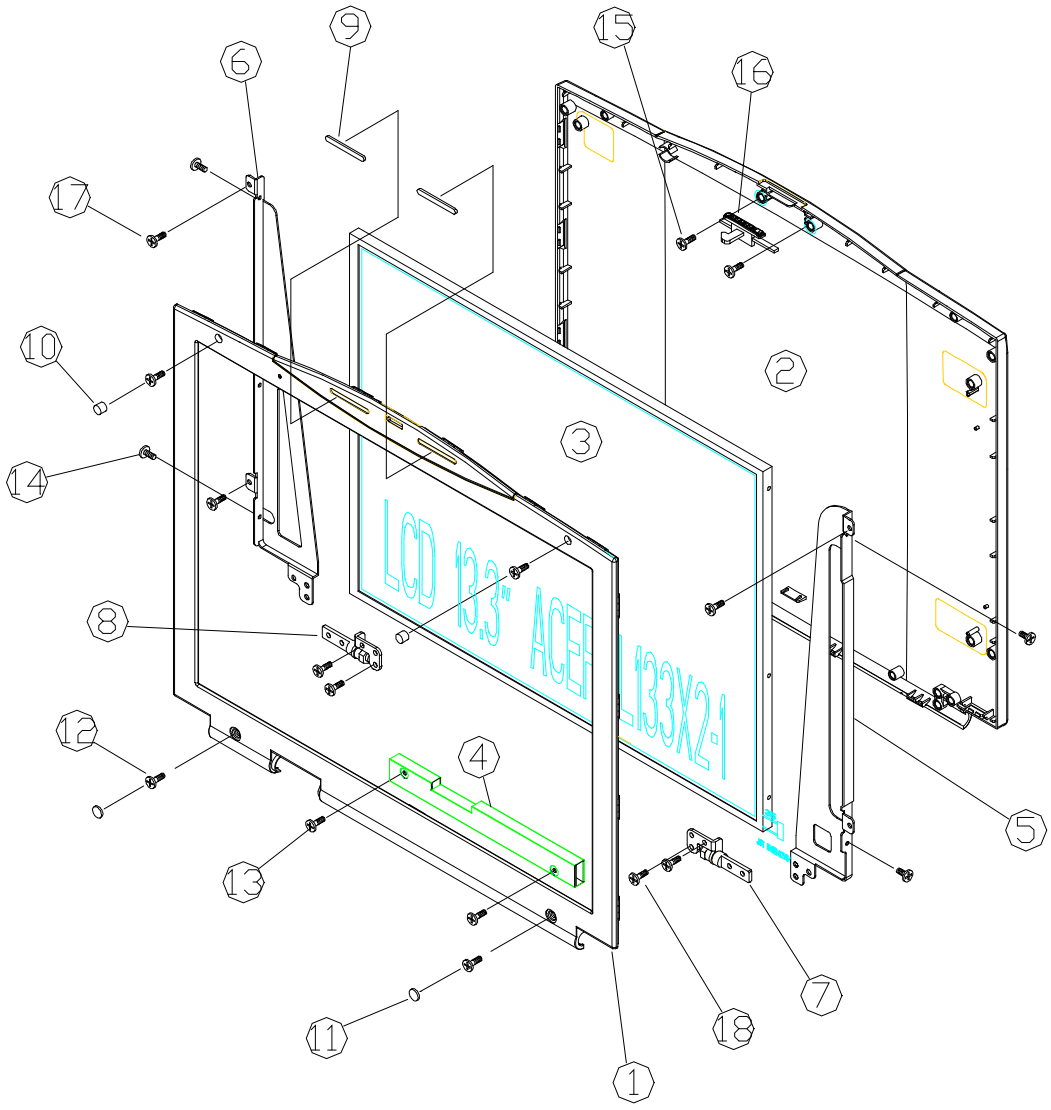
NO.	PART NUMBER	DESCRIPTION	QTY
1	82-U70100-00B	M/B ASSY	1
2	80-	MP3 BOARD ASSY	1
3	80-U70020-00B	BLUETOOTH BOARD ASSY	1
4	41-670320-04	HEX NUT M2X4H	2
5	50-U70213-00	MYLAR FOR CDROM	1
6		MDC MODEM	1
7	41-670320-03	HEX NUT M2X3H	2
8	50-U70212-00	MYLAR FOR LCD CONN.	1
9	40-U70026-00	THERMAL BRACKET	1
10	50-U70215-00	MYLAR FOR THERMAL BRACKET	1
11	40-U70021-00	I/O BRACKET	1
12	41-720120-04	SCREW, M2X4	6
13	41-720120-06	SCREW,M2X6	2
14	41-720125-06	SCREW,M2.5X6	3

6.3 BOTTOM CABINET ASSEMBLY


CD ROM
(SAMITA)
SCR-2435
129x128x12.7(13.9)

NO.	PART NUMBER	DESCRIPTION	QTY
1	50-U70022-00	BASE COVER	1
2	40-U70023-00	PALMREST BRACKET	1
3	50-U70216-00	MYLAR FOR PALMREST BRACKET	1
4	40-U70051-00	HINGE FRAME (L)	1
5	40-U70052-00	HINGE FRAME (R)	1
6	40-U70027-00	SECURITY LOCK BRACKET	1
7	50-U70065-00	PCMCIA DOOR (L)	1
8	40-102904-00	SPRING FOR PCMCIA DOOR	1
9	50-252906-00	IR LENS	1
10	52-U70091-00	RUBBER FOOT	1
11	22-300515-00	SPEAKER ASSY	1
12	50-U70091-00	BATTERY LATCH	1
13	40-102002-00	SPRING	1
14	50-U70063-00	CDROM BEZEL ASSY	1
15	50-U70111-00	CDROM HOLDER	1
16	50-U70058-00	MP3 COVER ASSY	1
17	72-U17001-00	MP3 LCM	1
18	40-U70022-00	MP3 LCM BRACKET	1
19	29-U70031-00	MP3 FPC	1
20	50-U70211-00	MYLAR FOR HDD	1
21	50-U70112-00	HDD HOLDER	1
22	50-U70053-00	HDD COVER	1
23	40-U70711-00	THERMAL MODULE	1
24	50-U70052-00	CPU COVER	1
25	23-U70101-00	BATTERY PACK ASSY	1
26	41-720620-02	SCREW, M2X2.5	4
27	41-720120-03	SCREW, M2X3	2
28	41-720120-04	SCREW, M2X4	16
29	41-720120-06	SCREW, M2X6	2
30	41-720125-03	SCREW, M2.5X3	2
31	41-720125-05	SCREW, M2.5X5	1
32	41-720125-06	SCREW, M2.5X6	6
33	41-720130-04	SCREW, M3X4	4
34	41-850125-04	SCREW	4

6.4 LCD 12’1” ASSY BACK CABINET (FRONT)


9
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18
11
1

NO.	PART NUMBER	DESCRIPTION
1	50-U79031-00	FRONT CAB 13.3” LCD #8054
2	50-U79041-00	BACK CAB 13.3” LCD #8054
3		LCD ACER 13.3” LCD #8054
4		PCB INVERTER
5	40-U80022-00	BRACKET LCD (R)
6	40-U80021-00	BRACKET LCD (L)
7	40-U70054-00	HINGE-R LCD
8	40-U70053-00	HINGE-L LCD
9	52-U70021-00	RUBBER LCD FRONT #8053 MIDDLE
10	52-U70022-00	RUBBER LCD FRONT #8054
11	50-U70218-00	MYLAR (B) LCD 14.1” FRONT CAB
12	41-720125-06	SCREW M2.5X6
13	41-720120-04	SCREW M2.0X4
14	41-720120-03	SCREW M2.0X3
15	41-700125-35	SCREW M2.5X3 H=8.0
16	50-U70075-00	HOOK LATCH LCD #8053
17	41-720120-04	SCREW M2.0X4
18	41-720125-06	SCREW M2.5X6