POSIFLEX

HT-2212 Pro / PB-2200 Pro SERIES

TECHNICAL MANUAL

Rev. : Preliminary

MANUFACTURED BY: ***POSIFLEX TECHNOLOGIES, INC.***

AN **ISO-9001** AND **ISO-14001** CERTIFIED MANUFACTURER

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SOME IMPORTANT NOTES

FCC NOTES

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with limits for a Class A digital device pursuant to subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures to correct the interference.

WARRANTY LIMITS

Warranty will terminate automatically when the machine is opened by any person other than the authorized technicians. The user should consult his/her dealer for the problem happened. Warranty voids if the user does not follow the instructions in application of this merchandise. The manufacturer is by no means responsible for any damage or hazard caused by improper application.

ABOUT THIS MANUAL

This manual assists the user especially the software programmer who provides the software system for POS application to utilize the hardware of the HT-2212 Pro & PB-2200 Pro series which are members of the POSIFLEX integrated point-of-sale terminal product family. The HT-2212 Pro is a compact point-of-sale system that gives the most user friendly application interface by providing a 12" touch control LCD panel and combines the performance and affordability of personal computers with the elegance and reliability of business machine. The PB-2200 Pro is a derivation from HT-2212 Pro with the 12" touch control LCD panel removed to allow free discrete application. Both HT-2212 Pro & PB-2200 Pro series provide the built-in networking capability for easy communication among multiple terminals in addition to the data transfer and control through back office server.

The manufacturer of the HT-2212 Pro & PB-2200 Pro series heartily apologizes to the user for reserving the right to change or to modify this manual without notice due to the rapid and constant progress and improvement on science and technology. The user may always obtain the most up to date information or software utilities through any of our web sites:

http://www.posiflex.com.tw; http://www.posiflex.com; http://www.posiflexusa.com

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OVERVIEW

SCOPE

This specification applies to the highly integrated PC based compact hybrid retail terminal HT-2212 Pro / PB-2200 Pro series. The HT-2212 Pro series provides a panel size 12" TFT LCD of 180 nits or optional higher luminance. This series supports also an optional touch control panel over the LCD panel. The PB-2200 Pro series is almost identical to HT-2212 Pro series except the LCD and touch control panel. Both series are powered by an VIA C7 1G CPU with low power consumption, therefore provides low noise environment. Both support a VGA port that can be used as the primary monitor port in PB-2200 Pro or as secondary monitor port in HT-2212 Pro. There is a cash drawer port and the UPS function integrated. There are various options applicable internally including: UPS battery, CF memory card reader, side mount integrated upgrade kit with options of optical finger print sensor and MSR with software controllable parameters, pole mount VFD customer display through USB or COM port, base mount 10" LCD 2nd display. The external options cover even much wider range including: Wireless LAN, Cash drawer, POS printer, Bar code scanner, Programmable keyboard etc.

FEATURES

- CPU: VIA C7 1G or above HDD: 3.5" 40 GB or up
- Support Win2000, WinXP Pro, WEPOS and Linux environment
- 12.1" TFT active matrix LCD panel with 1024 x 768 resolution (XGA)
- **Vertical type LCD panel with easy tilt** angle adjustment from 15° to 50° and swivel angle from 0° to 16° in clockwise direction
- Durable resistive type touch panel (**Touch sound** can be enabled or disabled or adjust pitch by software control)
- Screw free easy maintenance and spill proof construction
- Various I/O ports supported, including:
  a. 1 PS/2 KB port
  b. 1 PS/2 mouse port

c. 4 Serial Ports with capability for +5V / +12V DC power support
d. 1 parallel port
e. 6 USB ports with one port extended to top side
f. 1 LAN port 10/100 base T Ethernet
g. 1 external VGA monitor port for 2nd screen
h. 1 audio line output port
i. 1 microphone input port
j. 1 PCI extension slot
k. 1 CR port capable to control 2 cash drawers with drawer open detection
l. 1 UPS battery connector
m. 1 mini DIN 4 pin lock type power input connector

- IRQ and I/O address of all COM ports can be changed through CMOS setting.
- **Preprogrammed timer wake up function**
- **COM port MODEM ring up function**
- **LAN wake up function**
- **Built-in UPS function with battery health check and alarm** to support the system from intermittent power failure (battery itself is an option)
- **Accidental power off protection** – The power switch is safely located at one side, and this power switch can be defined as a "ON" switch only through software command
- **Software power off** makes full featured remote control through LAN or MODEM possible
- **Forced power off** against system malfunction under the power switch on/off mode or under power switch on only mode with prolonged effort
- **Touch control functions**: left/right button, double click, drag & drop through USB interface
- **Touch parameters** like touch sound enable/disable or pitch adjust can be software controlled
- High resolution touch sensor controller: 1024 X 1024
- **DDR2 SDRAM DIMM memory can extend to 2GB in 2 modules**
- Dual display support under OS capability

- VGA memory size program by software up to **64 MB**
- Integrated structure for various optional upgrade kits
- Ivory and black 2 enclosure color selection

OPTIONAL ITEMS

Note: The underlined items in the following list means that option must be set prior to shipment from the factory. The rest items can be set by the dealers.

a) Selection to be without the touch panel (for HT-2212 Pro only)
b) DDR2 SDRAM memory expansion up to 2GB max.
c) 1 x CF memory card reader
d) 2.5" 2nd HDD
e) Pole mount 2 by 20 VFD customer display through USB or COM port or base mount 10" 2nd LCD screen through VGA port
f) Side mount integrated upgrade kit to right side of 12" LCD panel:
   1. KP-200/200U (36 key + lock keypad, MSR, Smart card reader in PS2/USB interface)
   2. SD-300 (Optical fingerprint reader, MSR)
   3. BC-300 (Bar code card reader)
g) Audio amplifier and internal speakers
h) Preload WinXP Pro, WEPOS or Win 2000
i) UPS battery
j) USB interface external slim type CD-ROM/CD-RW/DVD-ROM drive
k) Posiflex cash drawers (CR-2000 /CR-2200 /CR-3100 /CR-3200 /CR-4000 /CR-4100 /CR-6210)
l) 2 - in - 1 split cash drawer control cable 20863023800
m) Wireless LAN adaptor in USB interface
n) Programmable keyboard KB-6000 or KB-6200 or KB-6600
o) Wireless Dongle for Posiflex wireless POS printers
p) Posiflex POS printers

GENERAL SPECIFICATION

SYSTEM

- CPU: VIA C7 1G or above
- DDR 2 DIMM : 256 MB (expandable to 2GB in 2 modules)
- Built-in 3.5” HDD 40 GB or above in IDE interface

POWER SOURCE

DC power adaptor:

Item	Specification
Voltage range of power input	100 ~ 240 V AC
Load limit of power input	2.5 A max.
Input frequency	47 / 63 Hz
Output voltage	12 V DC
Output current	6.6 A max.

System:

Total Power Consumption	Normal	Maximum
	60 W	80 W

SYSTEM POWER ON/OFF CONTROL

- One main power ON/OFF push switch at side, this switch can be programmed as “ON” only
- System can be waked up after each power off by any of the preset timer or a remote COM port MODEM call or LAN wakeup packet
- System can be switched off by software command through local or remote program control
- Forced power off when switch is ON/OFF or when switch is ON only with prolonged effort
- Power OFF to ON duration: 10 seconds min.

UPS SUPPORT (battery option)

- Supports system operation for up to 30 min. depending on loading condition
- LED turns on yellow when adaptor power stand-by
- LED flashes in blue and system beeps when UPS battery starts working and discharging, and LED flashes in yellow when UPS near to end
- Working on UPS battery status can be detected through COM1 status port

12VDC POWER SUPPLY INTO SYSTEM

- O / P : 12 +/- 1 V DC 6.6 Amp.
- I / P : 110 VAC/2.5A or 240 VAC/1.2A max., 47 ~ 63 Hz

OVERALL POWER OUTPUT LIMIT

- Including PS/2 KB & COM ports: + 5 V DC / 1 Amp max.
- All normal USB: 5 V DC / 500 mA x 6
- VGA: 12 V DC/1 A
- COM ports: 12 V DC/1 A

INPUT / OUTPUT PORTS

- 1 x mini DIN 6 pin female PS/2 KB jack
- 1 x mini DIN 6 pin female PS/2 mouse connector
- 1 x VGA display port for external monitor (for PB-2200 Pro) or 2nd (for HT-2212 Pro) display
- 1 x parallel port
- 1 x LAN port (Ethernet 10 base T and 100 base T)
- 6 x USB ports
- 4 x serial communication ports. Each can supply DC +5V through pin 9 and DC +12V through pin 1 under overall power output limit. Default setting is standard RI and DCD signal input at these pins for all ports.
- 1 x CR port
- 1 x UPS battery connector
- 1 x mini DIN 4 pin power input jack
- 1 x Audio line out + 1 x Mic. in connector

- (Optional 1 x CF slot)

HDD IN BASE

- 40 GB or above operating up to ultra ATA133
- Set as primary master IDE device

TOUCH PANEL

- Extremely endurable life survives minimum up to 35,000,000 touches at same spot
- Touch control interface: PS/2 or USB
- Sensor type: resistive type
- Touch resolution: 1024 x 1024
- Calibration: initial calibration at setup only, no re-calibration required for day to day power on/off
- Driver support: Win XP

PRELOAD OS

- Option among Win 2000, Win XP Pro and WEPOS

OPERATOR DISPLAY (HT-2212 Pro only)

Display Type	**COLOR TFT 12.1" LCD**
View area	**246 mm x 184 mm (9.7" x 7.3")**
Internal interface	**LVDS**
Luminance	**180 cd/m^2 standard**
Contrast ratio	**350 : 1**
Control knob	**Brightness**
Resolution	**1024 X 768**
Memory size	**16 ~ 64 MB share memory**
Tilt angle	**15° ~ 50°**
Swivel angle	**0° ~ 16° clockwise**

LED INDICATOR IN LCD PANEL

- Power ON / Standby LED: blue/orange dual color for system ON/OFF status, external power status, UPS battery monitoring (blue: power on; orange: stand by; flashing blue: operating on UPS battery power)
- LAN status LED: yellow/green dual color for link, communication (green: LAN link; steady green with flickering yellow: data transmission)

AUDIO PORT

- 3.5 Ømono jack for Mic. In
- 3.5 Østereo jack for audio out
- 30 db gain for microphone input
- Input impedance 64 KOhm
- Output 3.3 Vp-p with max. output impedance 200 Ohm
- Line output power 50 mW / 8 Ohm
- Band width 20 Hz ~ 19.2 K Hz
- Output 1.0 W amplifier and internal speaker option

EXTERIOR

- **HT-2212 PRO DIMENSIONS:**

  LCD @ 15°: 295 mm (W) x 263 mm (D) x 342 mm (H) or 11.6” x 10.4” x 13.5”

  LCD @ 50°: 295 mm (W) x 258 mm (D) x 289 mm (H) or 11.6” x 10.2” x 11.4”

  PACKING: 408 mm (W) x 338 mm (D) x 375 mm (H) or 16.1” x 13.3” x 14.8”

- **PB-2200 PRO DIMENSIONS:**

  SYSTEM: 279 mm (W) x 243 mm (D) x 114 mm (H) or 11.0” x 9.6” x 4.5”

  PACKING: 370 mm (W) x 317 mm (D) x 250 mm (H) or 14.6” x 12.5” x 9.8”

- **WEIGHT:**

	NET WEIGHT
HT-2212 Pro	5.2 kgs (11.5 lbs)
PB-2200 Pro	3.3 kgs (7.3 lbs)

ENVIRONMENTAL

- **TEMPERATURE RANGE (excl. UPS battery):**
  Operating: 0°C ~ +40°C or 32°F ~ 104°F
  Non-operating: -20°C ~ +80°C or -4°F ~ +176°F
- **TEMPERATURE RANGE for UPS battery:**
  Operating: 0°C ~ +35°C or 32°F ~ 95°F
  Non-operating: -20°C ~ +40°C or -4°F ~ +104°F
- **HUMIDITY RANGE:**
  Operating: 20%RH ~ 80%RH, non-condensing,
  max. wet bulb 26°C (78.8°F)
  Non-operating: 10%RH ~ 80%RH, non-condensing,
  max. wet bulb 28.9°C (84.0°F)

ACCESSORIES

- User' s manual
- COM1 terminator
- Power adaptor 12 V DC 80 W plus power cord
- Product Information CD or Recovery CD of preloaded OS

COMPLIANCE APPROVALS

- Whole system meet CE, FCC class A standard
  (meet IEC61000-4-2/-3/-4/-5/-6/-8/-11)
- Power supply is UL, VDE approved
- RoHS

OPTIONS

SECOND DISPLAY ON BASE

MODEL Number	LM2010
Display Type	Color TFT 10.4"
View Area (mm)	211.2 x 158.4
Interface	VGA
Internal Interface	1 channel LVDS
Luminance	230 cd/m^2 typ.
Backlight	CCFL x 1
Contrast Ratio	500 : 1
Resolution	800 x 600 (SVGA)
Color Depth	16 bits true color (262,144)
Tilt Angle	Stand straight (as 0°) to backward till touching main unit
Swivel Angle	N. A.
Power Source	DC 12 V in VGA

CUSTOMER DISPLAY UPGRADE KIT

MODEL Number	PD-2601	PD-7321
Display Media	VFD	LCD
Number of rows	2	2 or 4
Characters per row	20	10 or 20 or 26
Character width (mm)	5.25	6.67 or 8.91 or 17.87
Character height (mm)	9.03	9.15 or 18.35
Character format	5 X 7	8 x 16, 16 x 16 or 6 x 8
Character code pages	14	2
International character sets	12	12

Command modes	6	3
Display color	Green w/ Blue or Green filter	White / Blue background
Display area (mm x mm)	157.05 x 22.86	179.15 x 36.75
Display head size (mm)	197 x 56 x 58	256 x 64 x 75
Mounting method	Pole mount on base	Pole mount on base
Pole height (mm)	200	300
Horizontal slide (mm)	N. A.	95
Horizontal rotation	270°	270°
Inclined viewing angle	15°, 30°, 45°	15°, 30°, 45°
Power source	5 V DC in DB9 or USB	5 V DC in DB9

DRAM EXPANSION

- DDR2 SDRAM DIMM in 2 sockets up to total 2 GB max.

SIDE MOUNT UPGRADE KIT BC300

- Bar code card reader to be installed to right side of HT-2212 Pro LCD panel
- Interface: USB
- Configuration parameters can be set via use of separately purchased setup card set

SIDE MOUNT UPGRADE KIT KP200

- To be installed to right side of HT series LCD panel
- Functions include: 36 keys + key-lock programmable keypad, MSR, smart card reader
- Interface: USB
- **PROGRAMMABLE KEYPAD:**
  1. 1 electronic 6-position control key to lock up or determine among 5 different pages of programmable keys

2. 16 key numeric keypad with a double sized “Enter” key
3. 20 programmable single keys of size 19 x 19 mm

- **MAGNETIC STRIPE READER:**
  1. Reader head options: ISO 2 tracks (track 1 + track 2); ISO 3 tracks (track 1 + track 2 + track 3)
  2. Characteristic parameters of ISO readers can be set via software
  3. AAMVA/CA DMV format supported in ISO 3 tracks model
- **SMART CARD READER:**
  1. PC/SC 1.0 standard, EMV level I

SIDE MOUNT UPGRADE KIT SD300

- To be installed to right side of HT series LCD panel
- Functions include: MSR, optical type finger print sensor
- Interface: USB
- **MAGNETIC STRIPE READER:**
  1. Reader head options: ISO 2 tracks (track 1 + track 2); ISO 3 tracks (track 1 + track 2 + track 3)
  2. Characteristic parameters of ISO readers can be set via software
  3. AAMVA/CA DMV format supported in ISO 3 tracks model
- **OPTICAL FINGERPRINT SENSOR:**
  1. Detection area : 14.6 x 18.1 mm (nominal at center)
  2. Gray scale : 8 bits (256 levels)
  3. Resolution : 512 dpi (average x, y over the field)

UPS BATTERY

- 2.3 AH/12V lead acid battery

CF CARD CONNECTOR

- Accepts Compact Flash Memory Card type I
- Operates as master device of IDE secondary channel

2ND HDD

- 2.5” type

- Set as slave device in primary IDE channel

AUDIO AMPLIFIER

- Available on PCI riser card
- Output audio power 1.0 W (in mono signal to drive internal speaker)

EXTERNAL CD ROM DRIVE

- 24 x speed
- USB interface
- Slim external type

CASH DRAWER CONTROL CABLE

- 2 in 1 cash drawer control cable 20863023400 for independent control over two cash drawers of CR-2000 /CR-2200 /CR-3100 /CR-3200 /CR-4000 /CR-4100 /CR-6210

WIRELESS LAN

- IEEE 802.11b/g with USB interface

PRINTER:

- **PP-2000**
  1. 2-station receipt/journal/validation printer
  2. Dot matrix 9 pin impact
  3. Bi-directional printing
  4. Auto cutter provides full cut and partial cut
  5. Auto-detect between RS232 and EPP interface
- **PP-5600**
  1. Dot matrix impact 9 pin receipt printer
  2. Bi-directional printing
  3. Friction feed type
  4. 40 columns for 16.9 CPI
  5. Accepts paper width 3 inches (76 mm)
  6. Prints on ordinary or up to 3-fold carbonless copy paper

- **PP-5700**
  1. Dot matrix impact 9 pin receipt printer
  2. Bi-directional printing
  3. Sprocket feed type
  4. 2 models for single pass or double pass print of Chinese characters
  5. 4.4 lines per second for single pass or 2.2 lines per second for double pass print
  6. 8 KB input buffer
  7. 40 columns (20 columns Chinese) or 35 columns (17 columns Chinese)
- **PP-7000II**
  1. Supports UPOS 1.8
  2. High speed thermal line printer up to 180 mm/sec
  3. High resolution 8 dots/mm by 512 dots/line (576 dots max.)
  4. Epson TM-T88 III compatible command set
  5. Low noise high reliability
  6. Auto guillotine type cutter provides single point left partial cut
  7. Thermal sensitive paper roll at width 80 mm or 58 mm
  8. Supports UPC-A, EAN(JAN)13/8, ITF, CODE39, CODABAR printing
  9. Supports printing on label with marker on the other side
- **PP-7000L**
  1. LAN interface
  2. All other features same as PP7000II
- **PP-7000U**
  1. USB interface
  2. All other features same as PP7000II
- **PP-7700**
  1. Posiflex wireless connection
  2. Requires a dongle DG2000 connected on COM port of host to control
  3. All other features same as PP-7000-II except UPOS 1.8

RELIABILITY INFORMATION

- **POWER ADAPTOR MTBF: 50,000 HRS**

- **TOUCH PANEL LIFE EXPECTANCY (TOUCHES AT SAME SPOT):**

  RESISTIVE TYPE: 35,000,000 UP (for (HT-2212 Pro)

- **LCD PANEL LIFE EXPECTANCY: 10,000 HRS min. (for HT-2212 Pro)**

- **HDD MTBF: 50,000 HRS**

- **2ND DISPLAY LCD BACK LIGHT LIFE EXPECTANCY:**

  LM2010: 20,000 HRS

- **CUSTOMER DISPLAY LIFE EXPECTANCY:**

  PD2601: 30,000 HRS

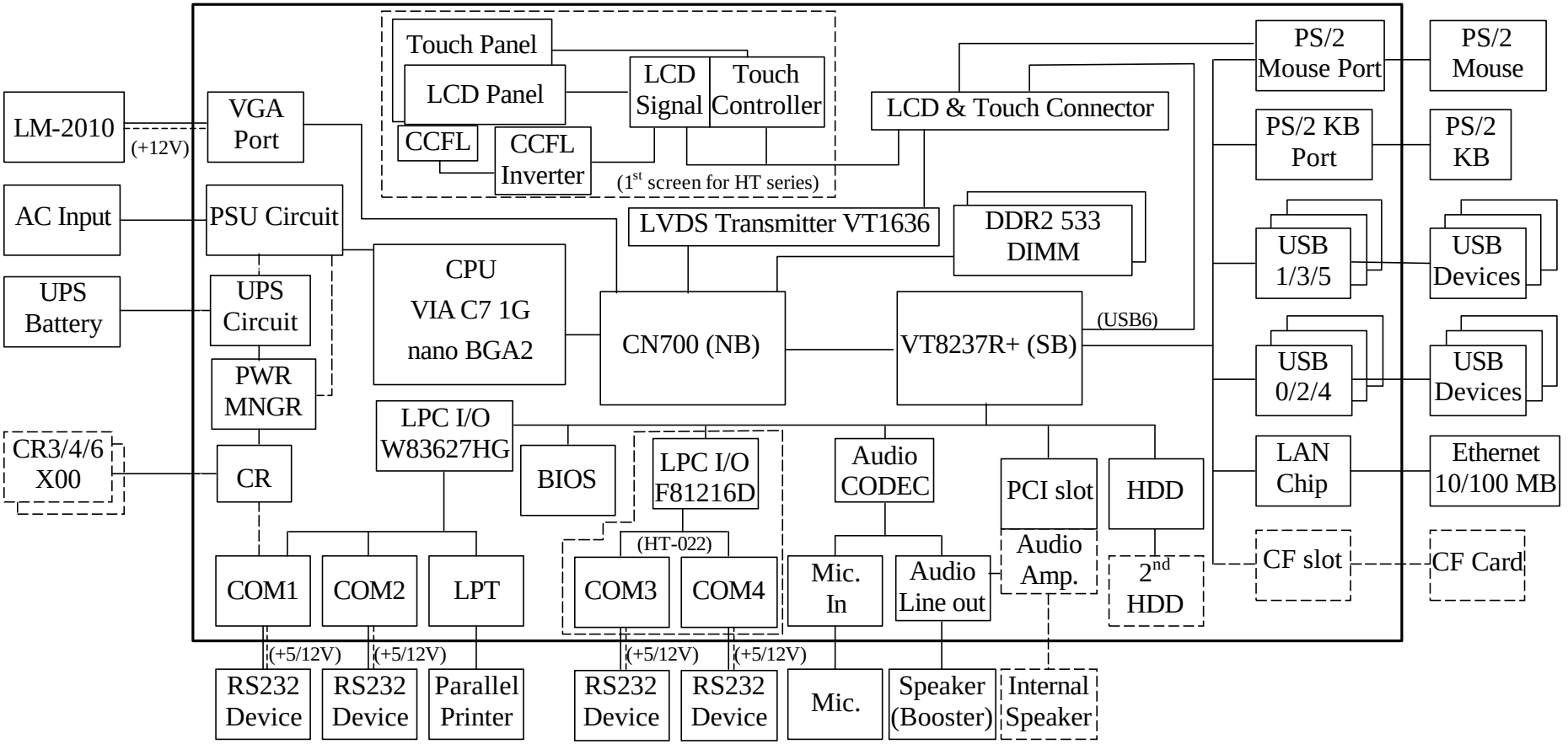
- **BCCR / MSR LIFE EXPECTANCY: 300,000 PASSES**

- **POWER SWITCH LIFE EXPECTANCY: 50,000 STROKES**

- **MOTHER BOARD MTBF: 50,000 HOURS**

SYSTEM DEFINITIONS

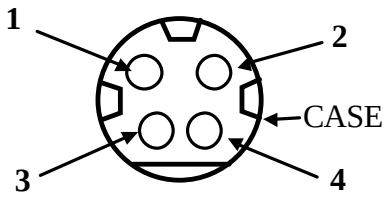
BLOCK DIAGRAM



12 V DC IN CONNECTOR

PIN ASSIGNMENT OF 4 PIN PLUG:

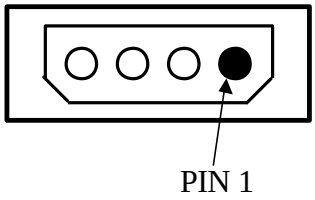
PIN #	DEFINITION
1	+12 V
2	+12 V
3	GND
4	GND
CASE	CHASSIS GND



UPS BATTERY CONNECTOR

PIN ASSIGNMENT OF 4 PIN SOCKET:

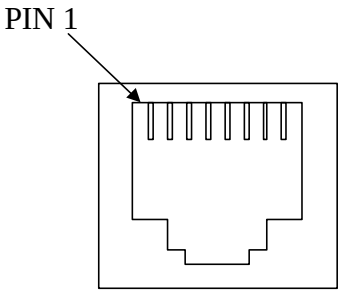
PIN #	DEFINITION
1	+12 V
2	+12 V
3	GND
4	GND



LAN PORT

PIN ASSIGNMENT OF 8 PIN TELEPHONE JACK:

PIN #	DEFINITION
1	TD +
2	TD -
3	RD +
4	NC
5	NC
6	RD -
7	NC
8	NC



- **This port is defined as 100 base T or 10 base T LAN port.**

This port is utilized by the system in pnp (Plug-N-Play) way, IRQ assigned is not fixed for this port. Most usual observation is IRQ 11.

VGA CONNECTOR

- **This port is a standard 3 x 5 D-sub VGA connector**

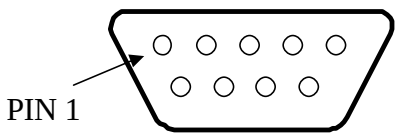
PIN #	DEFINITION	PIN #	DEFINITION	PIN #	DEFINITION
1	RED	6	GND	11	NC
2	GREEN	7	GND	12	DDC_DATA
3	BLUE	8	GND	13	HSYNC
4	NC	9	NC/+12V	14	VSYNC
5	GND	10	GND	15	DDC_CLK

SERIAL PORT COM1

PIN ASSIGNMENT OF 9 PIN D SUB MALE CONNECTOR:

PIN #	DEFINITION	ALTERNATIVE	DEFAULT SETTING
1	DCD	BATTWK / + 12 VDC	BATTWK
2	RX		
3	TX		
4	DTR		
5	GND		
6	DSR		
7	RTS		
8	CTS		
9	RI	CR OPEN / +5 VDC	RI

- **IRQ 4 is assigned to this port. Can be changed in CMOS setup under "Integrated Peripherals" → "SuperIO Device" → "Onboard Serial Port 1".**
- **Please refer to section "UPS DETECTION FUNCTION" in "APPLICATION GUIDE" for BATTWK signal. Please refer to "COM1 APPLICATION COMMENT" in same chapter for remarks on this port.**
- **Both +12 V DC and +5 V DC supply are UPS supported.**
- **Jumper selection: please refer to the description in Hardware details of this manual.**



SERIAL PORT COM2/3/4

PIN ASSIGNMENT OF 9 PIN D SUB MALE CONNECTOR:

PIN #	DEFINITION	ALTERNATIVE	DEFAULT SETTING
1	DCD	+12 VDC	DCD
2	RX		
3	TX		
4	DTR		
5	GND		
6	DSR		
7	RTS		
8	CTS		
9	RI	+5 VDC	RI

- **IRQ 3 is assigned for COM2, IRQ10 is assigned for COM3, IRQ5 is assigned for COM4. All can be changed in CMOS setup All can be changed in CMOS setup under "Integrated Peripherals" → "SuperIO Device" → "Onboard Serial Port 2" or "Integrated Peripherals" → "Serial Port 3 Use IRQ" or "Integrated Peripherals" → "Serial Port 4 Use IRQ".**
- **DC supply to these ports is UPS supported.**
- **Jumper selection: please refer to the description in Hardware details of this manual.**

PARALLEL PORT LPT1

PIN ASSIGNMENT OF 25 PIN D SUB FEMALE CONNECTOR:

PIN #	SPP MODE	EPP MODE	ECP MODE
1	- STROBE	-WRITE	-STROBE
2	D0	D0	D0
3	D1	D1	D1
4	D2	D2	D2
5	D3	D3	D3
6	D4	D4	D4
7	D5	D5	D5
8	D6	D6	D6
9	D7	D7	D7
10	- ACK	INTR	-ACK
11	BUSY	-WAIT	BUSY, PeriphAck
12	PE	NU	Perror, -AckReverse
13	SLCT	NU	SLCT
14	- AUTO FEED	-Datastb	-AutoFeed, HostAck
15	- ERROR	NU	-Fault, -PeriphRequest
16	- INIT	NU	-Init, -ReverseRequest
17	- SLCT IN	NU	- SLCT IN
18	GND	GND	GND
19	GND	GND	GND
20	GND	GND	GND
21	GND	GND	GND
22	GND	GND	GND
23	GND	GND	GND
24	GND	GND	GND
25	GND	GND	GND

- **IRQ 7 is assigned for this port.**

PS/2 KEYBOARD CONNECTOR

PIN ASSIGNMENT OF 6 PIN MINI-DIN FEMALE CONNECTOR:

PIN #	DEFINITION
1	KBDAT
2	NC
3	GND
4	VCC
5	KBCLK
6	NC

PS/2 MOUSE

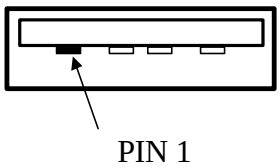
PIN ASSIGNMENT OF 6 PIN MINI DIN JACK:

PIN #	DEFINITION
1	PMDAT
2	NC
3	GND
4	VCC
5	PMCLK
6	NC

USB0 / USB1 / USB2 / USB3 / USB4 / USB5

PIN ASSIGNMENT OF EACH 4 PIN JACK:

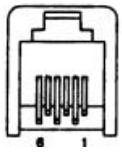
PIN #	DEFINITION
1	VCC
2	-DATA
3	+DATA
4	GND



CASH DRAWER CONNECTER

PIN ASSIGNMENT FOR RJ-11 JACK:

PIN #	DEFINITION
1	NC
2	CASH DRAWER SOLENOID INPUT 2
3	DRAWER OPEN INDICATOR
4	+12 VDC FOR SOLENOID INPUT
5	CASH DRAWER SOLENOID INPUT 1
6	GND



- **This is a RJ11 type 6 pin modular jack for cash drawer control providing control ability over two cash drawers.**
- **Each cash drawer solenoid input is a 150 msec. grounding signal.**
- **The power to cash drawer solenoid is DC 12 V nominal.**
- **The command to open cash drawers is decoded through COM 1.**
- **The drawer open indication can be detected by software through status check on RI signal of COM 1.**
- **Should any difficulty occur in using the cash drawer controller, please try either to arrange a serial printer to be connected to COM 1 so that the hardware handshaking signals can be properly handled or to disable the influence of the hardware handshaking signals.**

CF CARD CONNECTOR (OPTION)

- **Accepts Compact Flash Memory Card type I**

AUDIO OUT

PIN ASSIGNMENT OF 3.5 Ø STEREO JACK:

CONTACT ON PLUG:	DEFINITION:
TIP	R
RING	L
OUTER	GND

MIC. IN

PIN ASSIGNMENT OF 3.5 Ø MONO JACK:

CONTACT ON PLUG:	DEFINITION:
TIP	IN
OUTER	GND

APPLICATION GUIDES

POWER SUPPLY TO I/O PORTS

On the component side of the main board, jumpers on JP7 and JP9 near USB connectors determine the +5V / +12V DC supply to the devices connected to COM1 and COM2 ports separately. The jumper on JP1 near the audio ports determines +12V DC supply to VGA port. Fixed over the power connector area is a LPC adaptor card that is connected to the main board at CN3 near the IDE connector. Jumpers JP1 and JP2 on the LPC adaptor card determine the +5V and +12V DC supply to the devices connected to COM3 / COM4 ports separately. Refer to the hardware details for jumper settings. The total load supplied from the HT-2212 Pro / PB-2200 Pro series to each normal USB devices on 5 V DC is limited to be within 0.5 Ampere each, and power to all other peripherals including keyboard, mouse, COM ports etc. on 5 V DC is limited to be within 1 Ampere. The power supplied to VGA port on 12 V DC is limited to be within 1 Ampere. The total load in COM ports on 12 V DC is also limited to be within 1 Ampere. No matter what, the ventilation of the environment should be much improved to compensate the heat accumulation due to such excessive load.

COM1 APPLICATION COMMENT

With the UPS function built in, there will be some consequences on application of COM1 port and cash drawer port. The COM1 terminator delivered with the system should always be applied whenever there is no regular RS232 device connected to this port. It is definitely inadvisable to connect serial input devices like serial mouse to COM 1 port without thorough investigation. The reason is that some input devices do not provide standard RS232 hardware handshaking signals. Both the cash drawer controller and power management controller share the COM 1 port. When the system issues any command to cash drawer controller or power management controller, the hardware handshaking signal would be in error status and could halt this port if COM 1 is not connected properly. Any possible cross-link to the command for cash drawer or power manager that is also using COM1 at 9600bps, none parity, 8 data bits, 1 stop bit

should be avoided. An index summary of such commands is tabulated at end of this chapter.

SOFTWARE SYSTEM BACKUP

When the system integrator purchases the POS system with preloaded OS from Posiflex, he gets a bonus support of system protection function. In the OS boot process, there are few seconds of system protection function entry screen. Pressing the three key combination of “Ctrl” + “Alt” + “F12” at this entry screen will activate this system protection function. If no action taken in the period of the entry screen, then the OS boot up will go on. At this screen, there is a hidden reserved key combination for system integrator’s convenience. The system integrator may install all necessary software into the OS and preserve the status quo at this screen by pressing “Ctrl” + “Alt” + “F5” prior to shipment to end user. The system status (including OS + AP + Data) preserved in this way will be recalled when later the end user presses “F2” at the system restore screen. Please note that each time this “Ctrl” + “Alt” + “F5” combination is pressed, earlier settings will be renewed to the latest settings.

CASH DRAWER

The cash drawer connector on the HT-2212 Pro / PB-2200 Pro series can be connected with the split cable to control 2 cash drawers. The software command to open the cash drawer with the cable delivered with the cash drawer or the first cash drawer with the optional 2 in 1 cash drawer control cable is a hexadecimal code of <07> sent to COM1 port under the protocol of 9600bps, none parity, 8 data bits, 1 stop bit.

The software command to open the second cash drawer with the optional 2 in 1 cash drawer control cable is a hexadecimal code of <17> sent to COM1 port under the same protocol as above.

The drawer open status can be obtained through checking the communication status of COM1 at signal RI. When there is no drawer open, the RI signal of COM1 is always set. When there is any cash drawer opened, the RI signal of COM1 is reset. The RI signal is obtained as the bit 6 (the second most significant bit) of the I/O address

3FEh if the COM1 address is set to 3F8h~3FFh (conventional address for COM1) in system configuration.

PS/2 INTERFACE DEVICE

If the HT-2212 Pro / PB-2200 Pro series is not installed with any regular PS/2 keyboard nor Posiflex programmable keyboard at system boot up, the application of some PS/2 interface device such as a bar code scanner could encounter some trouble if the OS used is Win 2000. The registry modification as hot fix mentioned in web site http://support.microsoft.com/default.aspx?scid=kb;en-us;262798 does not work in this series. The only solutions are to connect a PS/2 keyboard or Posiflex programmable keyboard for the application or to use an USB interface device (e.g. bar code scanner) instead of the PS/2 interface one or to use other OS.

EXTENDED DUAL DISPLAY MODE

The second monitor (besides the LCD display on HT-2212 Pro) connector is a standard VGA type 3 x 5 pins D connector and can be configured through jumper setting change to support the power for second display screen LM-2010 on rear base of the machine. Please **disable the power supply** in this port per Hardware Details in later chapter when it is to be connected with **other type of monitor**. However, if extended dual display mode (1^{st} and 2^{nd} screen showing different pictures) is required, please note that it can be supported only in VGA driver for Windows XP.

CUSTOMER DISPLAY

The rear pole mount customer display PD2601 upgrade kit of USB model can be connected to any available USB port with an internally supplied power from the HT-2212 Pro / PB-2200 Pro series. The RS232 model PD-2601 or PD-7321 can be connected to any available COM port and use the power supplied through COM port after jumper setting change set per instruction in Hardware Detail. Please refer to above paragraph about COM1 if COM1 is selected for this usage. Please refer to the user' s manual of customer display for detail instructions on use of the PD.

POWER ON/OFF CONTROL

HARDWARE POWER SWITCH

Whenever the HT-2212 Pro / PB-2200 Pro series is to be powered on for the first time after connected to external AC power, this switch must be engaged to turn on the power. This switch is originally an "ON/OFF" power switch. It can be programmed into a power "ON" only switch through software command. To program this switch, the programmer needs to issue the following mentioned commands in the application program to COM1 under the protocol: 9600 bps, parity none, 8 data bits, 1 stop bit.

- **Change to power on only switch –** the command string is <1B> <19> <01> or alternatively <1B> <00> <00> <00> <00> <00> <00> <18> in hexadecimal format.
- **Change to power on/off switch --** the command string is <1B> <19> <00> or alternatively <1B> <00> <00> <00> <00> <00> <18> <00> in hexadecimal format. (default status)

In case the power switch status has been changed from the default status, the switch function will remain after power off. However, if the AC power has been disconnected during the power off stage, such change will be discarded. Therefore, it is advisable for the application program to reinstate the switch function every time the system is rebooted or every time the program is executed to ensure the proper action of the power switch. This function can also be achieved by use of the Posiflex Power Switch Terminal Manager.

SOFTWARE SWITCH OFF

An easy method for software control to turn the system off is the software off switch. This function can be very useful in unattended application. The hexadecimal command string for software switch off function is : <06> <16> <19> <1D> <n>.

In the above, the "n" indicates the time delay in seconds for actual power off after the command string given to COM1. However, an alternative command string <1B> <00> <00> <00> <00> <00> <00> <00> can be used instead to turn off the system power immediately.

Some operating system or software may require complete termination of application programs before system power off for the sake of system maintenance. In

that case the programmer has to program the command to close the application programs (just like "Alt+F4" in Windows), and then at the end of the closing operation, the application program should issue the above mentioned software switch off command string to COM1 under the protocol: 9600 bps, parity none, 8 data bits, 1 stop bit.

FORCED SWITCH OFF

In case of serious system halt due to system resources conflict or any reason, the system could fail to power off through normal means. The Forced Power Off method is designed for such occasions. With the external power switch defined as power ON/OFF switch (default status), push down and hold this Power ON/OFF Switch. The system will be powered off within 10 seconds in this way. Whenever the machine receives a software command to change the external power switch to ON only, the forced power off function is disabled. However, an enhance power off command is provided for the software programmer to allow forced power off after changing the switch to be ON only. The enhance forced power off command string is <1B> <00> <00> <00> <00> <00> <18> <18> and it has to be sent in same way like the ON only switch command. This enhanced forced power off requires the user to keep the switch pressed for a longer period between 10 to 20 seconds to function.

In case the system halt situation is so serious that some hardware/firmware registrations are already confused, this above-mentioned forced power off could though very unlikely still fail. When such situation happens, please remove the external power input from the adaptor and disconnect the UPS battery for few minutes to reset the hardware registers.

UPS BATTERY

The optional UPS battery is a maintenance-free lead-acid battery and is targeted to support basically the data preservation and smooth running of the system during intermittent power failure. This battery is not designed for prolonged power support to the system against power shutdown. That means, when the AC power outage is known to last for more than few minutes, it is advisable to turn off the system instead of using the battery up while repeatedly using it up reduces the battery life dramatically.

The battery will undergo self-discharging over time even when not in use (not connected). A useful advice to preserve the battery at best condition is to regularly recharge the battery if the battery is put in storage for a period of time. It is recommended to turn on the system to recharge the battery for 1 ~ 2 hours every 3 months of storage if the storage temperature is lower than 30°C. The battery should be recharged for 1 ~ 2 hours every month if the storage temperature exceeds 30°C. However, the user shall avoid the situation with storage temperature over 30°C to protect the life of the battery. Do not connect any other battery to this UPS battery because mixed use of batteries of different capacity, history, or manufacturers may cause damages. In case the user wants to have a longer battery support time during AC power off, he/she should consult his/her dealer for application of an external 12 V battery.

When the UPS battery is installed in the system with power off, the standby current will consume the battery much faster than self-discharge. An over-discharged battery will not only mean premature death of the battery itself, it also may cause danger when later being recharged. It is therefore absolutely important that the end user shall **disconnect the UPS battery from the system when the system is to be powered off for more than 72 hours and replace a new battery whenever the monitoring software indicates the battery is out of service**.

UPS BATTERY HEALTH CHECK

The UPS battery health check watchdog function is introduced in the Posiflex Power Switch Manager utility version 1.03 onwards. This function helps checking the UPS battery condition and automatically popping up warning message window to remind the user of a possibly failed battery so that the user won't have to bother checking in the Posiflex Power Switch Manager personally every time.

Listed below are command code strings to COM1 port under protocol: 9600 bps, parity none, 8 data bits, 1 stop bit for reference if the software programmer wants to issue separate commands directly:

- To enable UPS function: <06> <16> <19> <1F> <05> or <1B> <00> <00> <00> <00> <18> <00> <18>
- To disable UPS function: <06> <16> <19> <1F> <04> or <1B> <00> <00> <00> <00> <18> <18> <00>

- "Check Battery-Detect Capability" command string is <1B> <00> <00> <00> <00> <18> <00> <00> in hexadecimal format. And the DCD of COM1 will be set for a period of time if the battery-detect capability of the system is operating.
- "Check Battery Condition" command string is <1B> <00> <00> <00> <00> <18> <18> <18> in hexadecimal format. And the DCD of COM1 will be set for a period of time if the battery responds correctly to the battery detect.

The period of time in last 2 responses starts after several machine cycles since receival of the query command and stops about 15 seconds later or whenever another query command is received. It is advisable to take a check on the response between 1 to 10 seconds after sending the query command and to send the other query command only after first response checked to avoid any possible ambiguity.

In this product, when the system is working on UPS battery power, the status is indicated by LED and is detectable by software. This "operating on battery" signal can be obtained through checking the communication status of COM1 at signal DCD provided this signal is not engaged elsewhere (In other words, Modem is not recommended to be used on COM1). When the system is working on AC power, the DCD signal of COM1 is reset (value = 0). When the system is working on battery power, the DCD signal of COM1 (BATTWK signal) is set (value = 1). The DCD signal is obtained as the bit 7 (the most significant bit) of the I/O address 3FEh if the COM1 address is set to 3F8h~3FFh (conventional address for COM1) in system configuration.

AUTOMATIC POWER ON CONTROL

When the system is turned off after a successful boot up, the preset automatic power on functions if set as below will keep monitoring for the preset conditions and turn on the system when the preset conditions are met.

Please note that if the system is improperly turned off before a complete boot up procedure, the above preset power on control functions will be disabled until next turning off after a complete boot up.

ALARM CLOCK WAKE UP

To utilize Alarm Clock Wake Up function, the user should enter the CMOS setup by pressing "Del" key at system boot up, choose for "IRQ/Event Activity Detect"

in "Power Management Setup" and make the "RTC Alarm Resume" enabled and set the alarm to required time. Save the configuration and exit the CMOS setup program. The Preset Power On Control will then be ready.

MODEM RING UP

To utilize Modem Ring Up function, the user should enter the CMOS setup by pressing "Del" key at system boot up, choose for "IRQ/Event Activity Detect" in "Power Management Setup" and make the "Modem Ring Resume" enabled and connect the RS232 modem to any COM port. However, please note that for this application, there should be no cash drawer connected to the CR port of the main unit. Otherwise, the drawer open signal could interfere the system power management. Save the configuration and exit the CMOS setup program. The Preset Power On Control will then be ready.

LAN WAKE UP

The LAN Wake Up function is supported under pure DOS environment only. It is not applicable to Windows DOS or Command Prompt Mode. In this application, there need to be 1 master machine and 1 target machine connected together through LAN. Both machines should be using same brand of LAN chip.

First the MAC address of the target machine should be checked. Please obtain the file "RSET8139.EXE" from Posiflex Product Information CD in subfolders like \Drivers\KS631X\LAN_621 and execute this file on the target machine. Select the item "View Current Configuration" in the Main Menu and write down the 6 2-digit numbers of the item "Ethernet Address:" for the network technician. Then the target machine should be powered off in a normal way with AC power supply and LAN connections.

Now the networking technician at the master machine can execute the same file "RSET8139.EXE" and select "Run Diagnostics" → "Run Power Management Test" → "Master Machine" → "Magic Packet". There will popup a dialog box. Enter the registered 6 2-digit Ethernet Address of the target machine and press "Enter" then the target machine of that Ethernet Address will be automatically powered up.

FINGERPRINT SENSOR

When the system is delivered with SD-300 or SD-310 with fingerprint sensor and when the system has preloaded OS, the driver for the optical fingerprint sensor will be installed for separated demonstration on use of the fingerprint sensor. For software developers to use all functions of the sensor in their AP, proper SDK (software development kits) should be purchased from the sensor module supplier. The supplier for the sensor module used in SD-300 / SD-310 is DigitalPersona, Inc. and the module used is "U.are.U 4000B". It is advisable to visit their web site: http://www.digitalpersona.com/developers/products.php

SMART CARD READER

The Windows driver for the smart card reader can be found in the subfolder "\Drivers\KP\SC200" in the Posiflex Product Information CD. The reader is PC/SC 1.0 compliant. This reader is also EMV level 1 compliant. It is also supported by Microsoft CCID generic class driver. The applicable smart card reader includes both asynchronous and synchronous type smart cards. For asynchronous type smart card, it reads the card with T = 0 and T = 1 protocols up to 340 Kbps of EMV and ISO modes. For synchronous type smart card, coverage includes: 2-wire (SLE4432/42), 3-wire (SLE4418/28), SDA/I2C, 4403, 4433, 4404, 896 etc. It communicates with the system as USB 2.0 full speed device.

POSIFLEX TOOLS

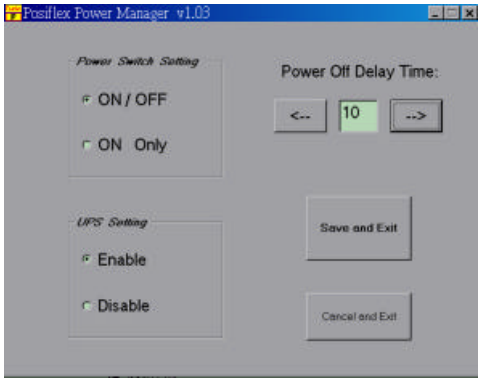
In the preinstalled OS there will be a program group named "POSIFLEX Tools" for specific Posiflex device(s) installed.

POSIFLEX POWER SWITCH MANAGER

The power switch manager determines the UPS control and function of the hardware power switch that is at side of the machine.

When the manager program is installed, there is an item 

in the system's "Start" menu. The window display of this program is like the picture at the right.



POWER SWITCH SETTING

The function of the power switch that is at side of the machine can be defined here. When "ON/OFF" function for this switch is selected, the power switch turns the system on when the system is off and turns the system off when the system is on. When "ON Only" function for this switch is selected, the power switch always turns the system **on** regardless of the status whether the system is On or Off. In this way, accidental switching off of the system is avoided. However, the software power off function 

or the Windows system shut down function has to be engaged to turn off the system in such approach.

UPS SETTING

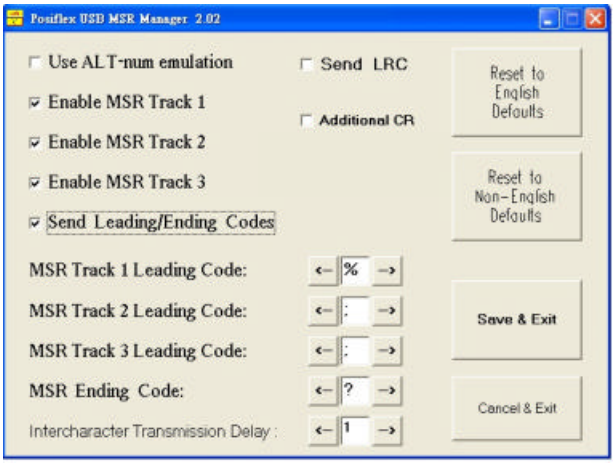
When the system is equipped with a workable UPS battery, "Enable" will be automatically selected to make operations running smoothly during **intermittent** power failure. When there is no UPS battery installed (or when the installed UPS battery is detected as "dead"), "Disable" will be automatically selected to make sure that the system immediately turns off and rejects any possible noise or the consequent RTC CMOS setup data loss when power fails.

POWER OFF DELAY TIME

This function defines the time delay between the software power off command 

in the "Start" menu and the actual power off. The count is programmable between 1 and 255, and each count represents 1 sec delay. This software power off command is an irrevocable process just like pulling the plug after a certain delay to allow the shutdown procedures. So special care must be exercised in using this software power off command. However, this command must be engaged to turn the power off when the power switch is set to "ON Only".

POSIFLEX (USB) MSR MANAGER



The tool will be there only when the MSR unit is installed in the optional kit SD-300 or KP-200. For systems with USB MSR on SD-300 or USB interface KP-200, the USB MSR manager helps defining several characteristics in output format control for reading the magnetic stripe card. For MSR on PS/2 interface KP-200, the MSR manager applies instead.

Please find the subfolder \Drivers\SD_Series\USBMSR_202 or \Drivers\KP\USBMSR_202 in Posiflex product information CD and execute the "SETUP.EXE" to install the USB MSR Manager. Please find the subfolder \Drivers\KP\KBMSR\MSR106 in Posiflex product information CD and execute the "SETUP.EXE" to install the PS/2 interface MSR Manager. The screen shot of the program 

is similar to the top picture at right. Program 

will be in "Posiflex Tools" and there will be the in "StartUp". As for the PS/2 interface MSR Manager, the letters "USB" will be missing from all the titles for USB MSR manager.

USE ALT-NUM EMULATION

This function is required only for language systems using a different keyboard layout of the alphabetical part from the US keyboard when track 1 of the (USB) MSR is enabled. This function will have no influence if the MSR uses only track 2 and/or track 3. The reason is that the data of the MSR are sent to the host as if they were keyed in from a keyboard. When the alphabetical data in track 1 of the MSR is read, the data goes to the keyboard controller and the system keyboard controller interprets it according to the keyboard layout set for the country. This could cause some confusion among some European countries (For example, the location for "A" in US keyboard is that for "Q" in a French keyboard. The location for "Z" in US keyboard is that for "Y" in a German keyboard.) One way to deal with such problem is to use the "Alt-num" approach. This means that, for example, when "A" is read, the scan codes for pressing and holding "Alt" key while pressing "6" and "5" keys of the numerical keypad consecutively are sent to the keyboard controller. Therefore, the data will not be misinterpreted regardless of the keyboard layout.

ENABLE MSR TRACK 1

A tick in the check box enables the reading of track 1 data if the reader head for track 1 exists. Without this check, the data of track 1 on the MSR will be ignored.

ENABLE MSR TRACK 2

A tick in the check box enables the reading of track 2 data if the reader head for track 2 exists. Without this check, the data of track 2 on the MSR will be ignored.

ENABLE MSR TRACK 3

A tick in the check box enables the reading of track 3 data if the reader head for track 3 exists. Without this check, the data of track 3 on the MSR will be ignored.

MSR WILL SEND THE LEADING CODE

In data encoding of the magnetic stripes, each tracks are separated with each start/end sentinels. However the user may decide whether to send codes of/for these sentinels or not depending on the requirement of the application software. The MSR

will always send a “CR” (carriage return) signal to end of each track data for separation if this item is unchecked.

MSR TRACK 1 LEADING CODE

MSR TRACK 2 LEADING CODE

MSR TRACK 3 LEADING CODE

MSR ENDING CODE

Once the codes for the sentinels of each tracks are defined to be sent to the system, the leading codes for each start sentinels and the ending code for the common end sentinel can be selected from a table of displayable characters with ASCII code from 20h to 7Eh. Pressing each left/right button selects each code. The default track 1 leading code is “%”; the default track 2 and track 3 leading code is “;”; the default ending code is “?”.

TRANSMISSION INTERCHARACTER DELAY

Usually, the processing algorithm and the keyboard data input buffer in an operating system are arranged in such a way that the system resources are preserved as much as possible while data input from the keyboard port presents no problem. However, as we know that the amount of data read from one single swipe of MSR can be very much larger than any possibly fastest keyboard entry in same duration. Some operating system may be unable to handle such a bunch of data in so short time. Therefore, a so-called intercharacter delay is introduced to allow the system to digest the input data. When data read from the MSR is marching to the system, a programmable time delay is inserted between any two characters. The value to define this intercharacter delay ranges from 0 to 32. The correspondent delay time ranges from 2 ms to 66 ms.

SEND LRC

When the check box is ticked, the MSR sends LRC to the host as part of data for Application Program to double check.

ADDITIONAL CR

When the check box is ticked, the MSR sends a carriage return signal to the host at end of each track data after the ending code for Application Program to separate each field.

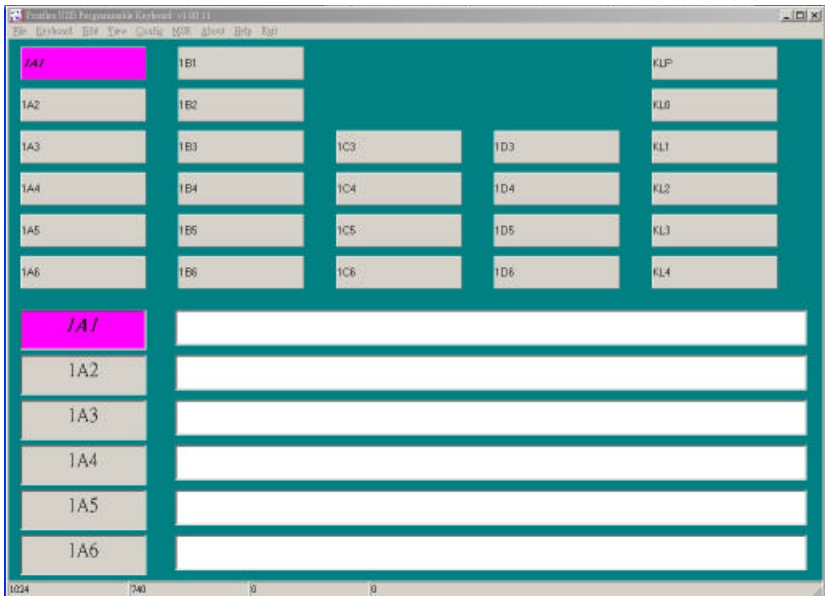
RESET TO ENGLISH DEFAULTS

RESET TO NON-ENGLISH DEFAULTS

These two options provide users to reset all the MSR maneuver functions to the proper defaults according to the system language the user uses. This consideration involves mostly of the Alt-Num emulation and the intercharacter delay.

PROGRAMMABLE KEYPAD

When a upgrade kit USB interface KP-200 is preinstalled in this system, an utility called "Posiflex USB Programmable Keyboard" will appear in the program group "Posiflex Tools" of the preloaded OS. This utility is used to define the programmable keys on KP-200 under Windows environment. \Drivers\KP\uKBW.xxx in Posiflex product information CD is the subfolder for executing the "SETUP.EXE" to install this utility. There will be a warning screen before the screen shot similar to the picture at right to ask the user not to disturb the keyboard initialization when this utility is engaged. To edit the content for a specific key please select the position from the key map. The color of that key will change and the content entered in the editing area will be accepted for its content to be programmed.



THE COMMAND MENU

In the command menu, there are “File”, “Keyboard”, “Edit”, “Config”, MSR”, “About”, “Help” and “Exit”. The “File” menu can be used to open an existing template file to be edited in this utility or to save the edited result into a template file or to exit this utility. The “Keyboard” menu can be used to read the current content in the programmable keypad to be edited in this utility or to write the edited result into the programmable keypad. The “Edit” menu helps the editing operation like copy, paste or clear the programmed content of a programmable key. Please ignore any gray command relating to “Page” that is applicable only to other models of Posiflex programmable keyboard and remains here only for consistency consideration. Same comment applies to the gray “View” menu. The “Config” menu determines the keypad beep response and the “InterCharacter Delay” of the keypad output. The “MSR” menu reads the optional MSR in KP-200 as stated in earlier section. The “About” menu provides information of this utility itself. The “Help” menu explains the contents in next paragraph. The “Exit” provides the termination of this utility.

SPECIAL CONTENTS

One of the features that a Posiflex programmable keyboard / keypad outclasses other competitors is that the contents to be programmed is not limited in those displayable characters only. The programmable content includes those editing keys such as arrows on a usual PC keyboard and function keys such as F1 to F12, “Shift”, “Esc” etc. and even a programmable delay time. In the editing area, click the right button of a mouse, a multilevel menu will appear for selection of these special contents.

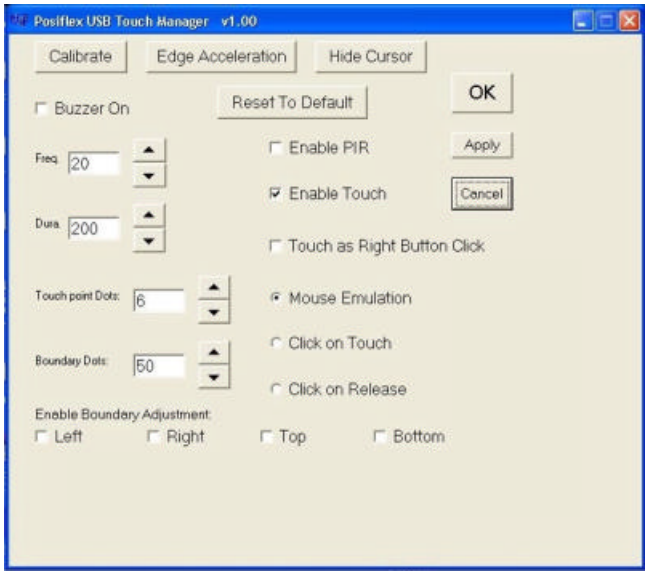
THE ANSWER BACK CODES

The answer back codes of the 6 position electronic control key are noted in the keyboard programming with the locations coded as “KLP”, “KL0”, “KL1”, “KL2”, “KL3” and “KL4” in the key-layout map of page L1. These answer back codes will be issued by the programmable keyboard to host system whenever the 6 position electronic key is switched to a new position (there will be a time delay as determined in the configuration of the keyboard programming utility, this time delay is useful to give only the answer back code of the last position of control key when it is turned across

multiple positions) or when the keyboard receives an "Enquiry" command from the host system.

POSIFLEX USB TOUCH MANAGER

For HT-2212 Pro series with touch control panel, the "Posiflex USB Touch Manager" will be installed with the preloaded OS and there will be 4 utilities in the "Posiflex USB Touch Tools" program group with "Posiflex USB Touch Manager" being the main program.



POSIFLEX USB TOUCH MANAGER

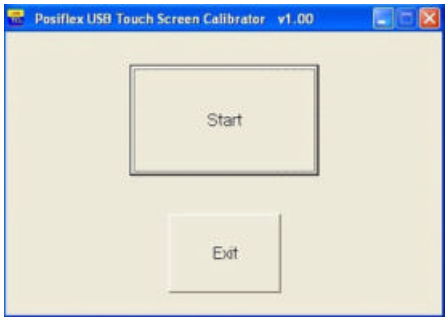
Most items in this utility should be easily understandable to average user. Followings are just some reminders on some items.

- **Calibrate** – This button engages the "Posiflex USB Touch Calibrator".
- **Edge Acceleration** – This function engages the "Posiflex USB Touch Edge Acceleration Tool" and helps to find the hidden taskbar or thin scroll bar through touch.
- **Hide Cursor / Show Cursor** – This button hides or shows the mouse cursor on screen display. Please never hide cursor before the touch is enabled and calibrated.
- **Buzz On** – This check box together with the 2 list buttons below it determines the frequency and duration of the internal buzzer beep as response to touch on touch panel.
- **Touch Point Dots** – This list button selects the size of touch point on touch panel. A too small touch size makes the mouse cursor jumpy or even bouncing. A too large touch size results in unsatisfactory touch accuracy.

- **Reset To Default** – This button resets all touch parameters.
- **Enable PIR** – This check box is not applicable to the monitor. Please keep it unchecked.
- **Enable Touch** – This check box must be checked to have the touch panel working.
- **Touch as Right Button Click** – This check box defines each touch on touch panel as clicking the right button of mouse at that point. When it is unchecked, each touch will work as clicking the left button of mouse. (Ref. to the right hand version of mouse)
- **Mouse Emulation/Click on Touch/Click on Release** – Only one of the three radio buttons can be selected. The mouse emulation refers to the drag and drop function.
- **OK** – This button accepts all parameters set and closes the utility window.
- **Apply** – This button accepts all parameters set and remains in the utility window.
- **Cancel** – This button discards all changes to the parameters and closes the utility window.

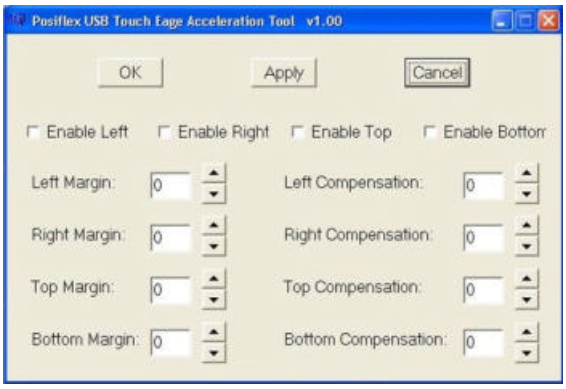
USB TOUCH CALIBRATOR

This program helps re-calibrating the touch position with the USB mouse emulation. Please touch the 3 or 9 calibration boxes and a confirmation box that appear sequentially.



USB TOUCH EDGE ACCELERATION TOOL

This program helps to find the hidden taskbar or thin scroll bar through touch.



- **Enable ...** – Each check box determines whether or not to engage edge acceleration against which edge of screen.
- **Margin** – This list button selects the range to engage edge acceleration toward the edge before the edge is reached.
- **Compensation** – This list button selects the distance to advance the mouse toward edge from touch point.

USB TOUCH RIGHT BUTTON TOOL

This tool differs slightly from the "Touch as Right Button Click" check box in the USB touch manager. When executed, there will be a small window of "One Shot Right Button" appearing on desktop. Any touch on the panel right after touching this small window will work like clicking the right button of mouse at that point. However, the next touch will resume the left button of mouse unless the small window is touched again.

POSIFLEX TOUCH MANAGER

When the touch control panel controller installed uses PS/2 KB interface (control board HT-41 used), the "Posiflex Touch Manager" will be installed with the preloaded OS and there will be 3 utilities in the "Posiflex Tools" program group.

TOUCH MANAGER

This function is used to define some fundamental parameters for the touch controller such as beep sound control and touch precision control. There is a program named as "POSIFLEX Touch Terminal Init" in the StartUp program group. This

program brings the touch panel reset to its center as the Windows always starts with the cursor at the center no matter what the movement history of the mouse has been.

TOUCH CALIBRATOR

This function is used to recalibrate the touch panel with the LCD display panel. Once executed, the user is requested to touch the lower left corner and upper right corner of the screen consecutively and then the confirmation block to ascertain the calibration.

RIGHT BUTTON

This function is used to simulate the click on right button of a real mouse by touch on the panel. A drawing of a 2-button mouse will appear on the desktop. Touch the right button in this drawing. Any touch on the screen after this action will result in a right button mouse click. After touching the left button in this drawing any touch will resume the left button function.

SOFTWARE COMMAND INDEX

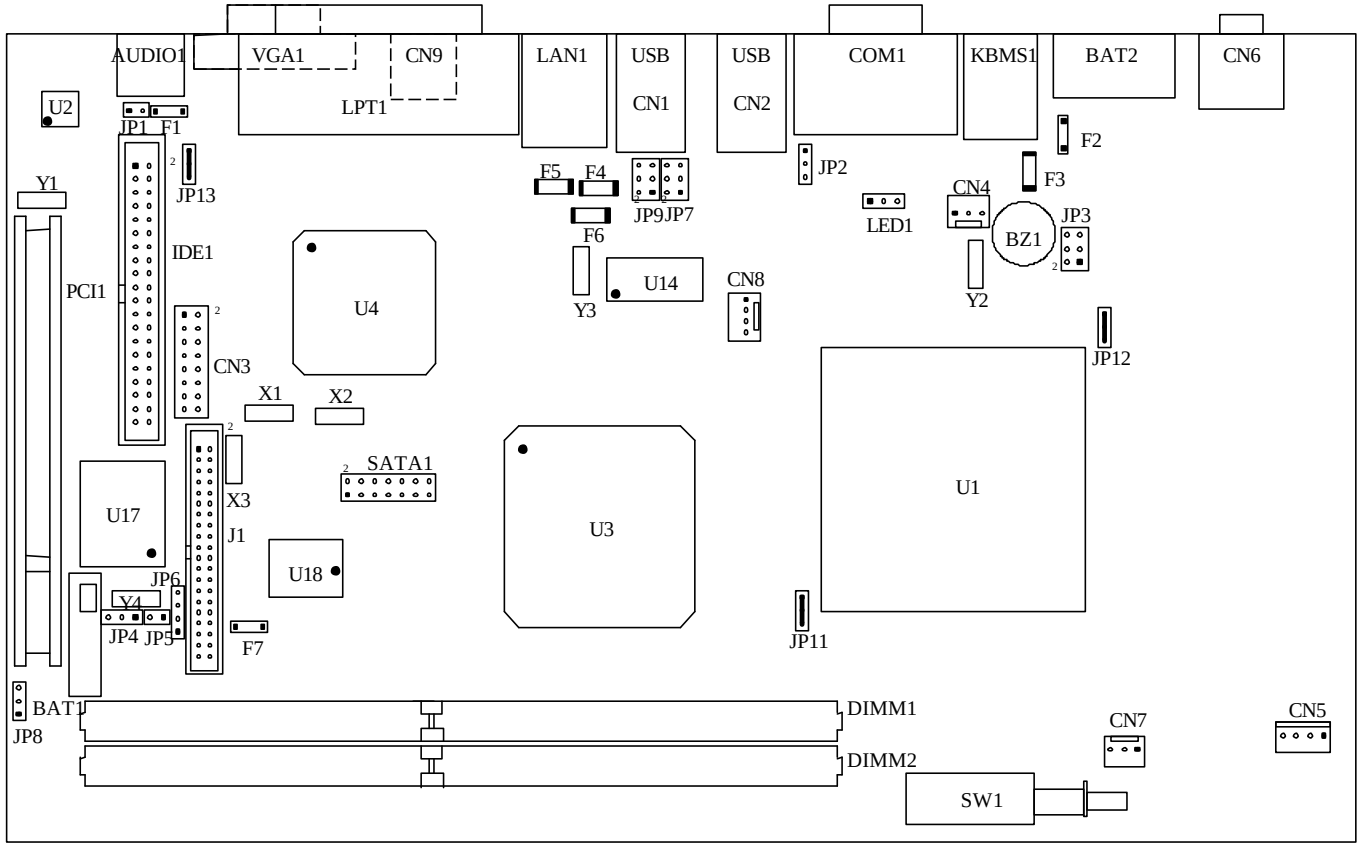
Following table is a collection of software command applicable to the HT-2212 Pro / PB-2200 Pro series for a quick look up. The page number listed could deviate from the display of this file if different viewer is utilized.

Usage of the Command	Page	Chapter	Section / Subsection
Open CR1	5-2	Application Guide	Cash Drawer
Open CR2	5-2	Application Guide	Cash Drawer
Drawer open sense	5-2	Application Guide	Cash Drawer
Main switch ON only	5-4	Application Guide	Power On/Off Control / External Power Switch
Main switch ON/OFF	5-4	Application Guide	Power On/Off Control / External Power Switch
Software power off	5-4	Application Guide	Power On/Off Control / Software Switch Off
Enhance forced power off	5-5	Application Guide	Forced Power Off
Enable UPS function	5-6	Application Guide	UPS Battery Health Check
Disable UPS function	5-7	Application Guide	UPS Battery Health Check
Check battery-detect capability	5-7	Application Guide	UPS Battery Health Check
Check battery condition	5-7	Application Guide	UPS Battery Health Check
UPS status check	6-5	Hardware Details	Software Awareness of UPS Status

HARDWARE DETAILS

MAIN BOARD (HT-2200C)

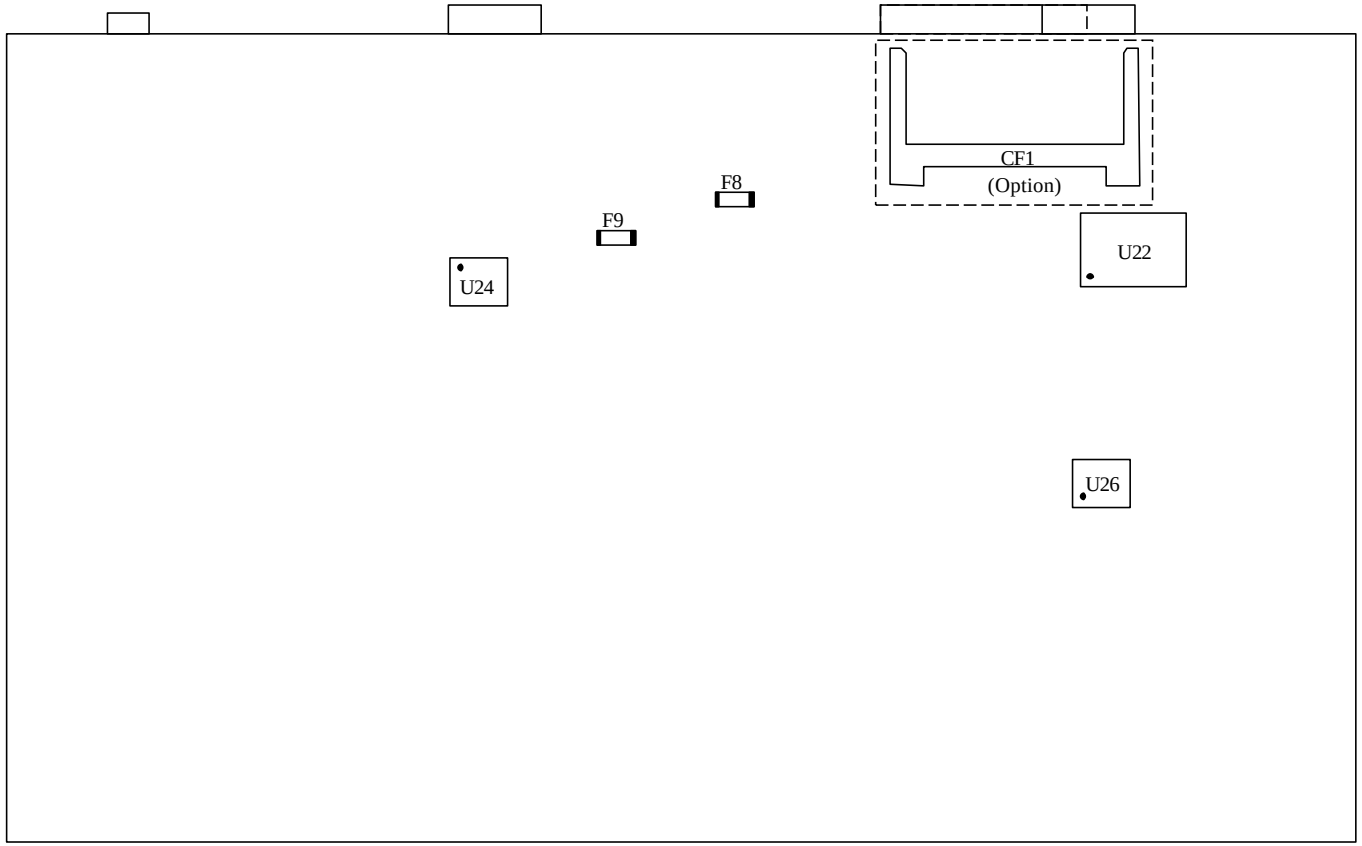
COMPONENT SIDE



Notation Remarks:

1. A small black block or a small number "1" in the drawing for a jumper or an IC is used to indicate the position of pin number 1.
2. A small number "2" marked near a corner of a jumper with 2 rows of pins is used to indicate the position of pin number 2 for identification of all pins.

SOLDER SIDE



Notation Remarks:

1. A small black block ● or a small number "1" in the drawing for a jumper or an IC is used to indicate the position of pin number 1.
2. A small number "2" marked near a corner of a jumper with 2 rows of pins is used to indicate the position of pin number 2 for identification of all pins.

JUMPERS AND CONNECTORS

ON COMPONENT SIDE

Position	Part Spec	Usage
AUDIO1	DUAL JACK	Mic. in + Line out (No Amp)
BAT1	BATSKTV	Vertical Type Round Socket for CR3025
BAT2	CONN 1x4	UPS Battery Connector
BZ1	BUZZER	Buzzer
CN1	USBx3	USB Connector x 3
CN2	USBx3	USB Connector x 3
CN3	HDR 2x8	LPC Interface Connector for HT-022
CN4	HDR 1x3 w/L	System Exhaust Fan
CN5	HDR 1x4 w/L	IDE Power Connector
CN6	mDIN 4 JACK	Power Connector
CN7	HDR 1x3 w/L	Reserved
CN8	HDR 1x4 w/L	Reserved
CN9	RJ11 JACK	Cash Drawer Port
COM1	D9Mx2	COM2 Port on Top of COM1 Port
DIMM1	DDR2DIM	For DDR2 533 DIMM
DIMM2	DDR2DIM	For DDR2 533 DIMM
F1	POLY FUSE	For +12 V Power in VGA Port
F2	POLY FUSE	UPS Charge Protect
F3	SMD FUSE	Fuse for +5 V Power in KB/Mouse Ports
F4	SMD FUSE	Fuse for +5 V Power in USB Ports
F5	SMD FUSE	Fuse for +5 V Power in USB Ports
F6	SMD FUSE	Fuse for +12 V Power in COM Ports
F7	POLY FUSE	Fuse for LCD Inverter
IDE1	IDE SLOT	IDE Channel (UDMA-133)
J1	mHSG 2x20	LCD + Touch Connector
JP1	HDR 1x2	12 V DC Supply Select for VGA Port
JP2	HDR 1x3	Software Awareness of UPS Status
JP3	HDR 2x3	Deleted
JP4	HDR 1x3	Deleted
JP5	HDR 1x2	LAN Chip Function Control
JP6	HDR 1x4	PS2 mouse signal loopback
JP7	HDR 2x3	COM1 DC Supply Select
JP8	HDR 1x3	CMOS Data Control
JP9	HDR 2x3	COM2 DC Supply Select
JP11	3 pin JUMPER	U Hook for CPU Heat Sink

JP12	3 pin JUMPER	U Hook for CPU Heat Sink
JP13	3 pin JUMPER	U Hook for cable tie
KBMS1	mDIN6Fx2	PS/2 KB & PS/2 Mouse Ports
LAN1	RJ45	Ethernet 10 Base T / 100 Base T
LED1	HDR 1x3	LED Connector
LPT1	D25F	Parallel Port
PCI1	PCI SLOT	PCI Extension Riser Slot
SATA1	HDR 2x7	Not Mounted
SW1	DC SW	Power Switch
U1	nano BGA2	CPU
U2	IC	Audio CODEC Chip
U3	microFCBGA IC	NB Chip
U4	microFCBGA IC	SB Chip
U14	IC	CLKGEN
U17	IC	LAN Chip
U18	IC	BIOS
VGA1	D3x5F	External Monitor
X1	XTAL	Crystal
X2	XTAL	Crystal
X3	XTAL	Crystal
Y1	XTAL	Crystal
Y2	XTAL	Crystal
Y3	XTAL	Crystal
Y4	XTAL	Crystal

ON SOLDER SIDE

Position	**Part Spec**	**Usage**
CF1	HDR 1x2	CF Card Slot
F8	SMD FUSE	Fuse for +5 V Power in USB Port
F9	SMD FUSE	Fuse for +5 V Power in COM Port
U22	IC	LPCIO
U24	IC	Power Manager
U26	IC	LVDS Transmitter

JUMPER SETTINGS

The "★" marks in the following tables denote the factory default settings.

VGA PORT DC POWER ENABLE/DISABLE*(Note1)*

JP1 STATUS	VGA PORT
Short	12 V DC Enabled
Open	12 V DC Disabled ★

Note 1: Please note that the VGA port is designed specially for Posiflex monitors. If the VGA port is to be connected to any other brand of monitors, the user must be responsible to make sure that the JP1 is changed to disconnect the power in VGA port and any consequence if it is not changed.

COM1 DC SUPPLY SELECT*(Note2)*

JP7 STATUS	COM1 PIN1/PIN9 SETTING
1 – 3 short	COM1 Pin9 connected to 5 V
3 - 5 short	COM1 Pin9 connected as RI ★
2 – 4 short	COM1 Pin1 connected to 12 V
4 - 6 short	COM1 Pin1 connected as DCD ★

COM2 DC SUPPLY SELECT*(Note2)*

JP9 STATUS	COM2 PIN1/PIN9 SETTING
1 – 3 short	COM2 Pin9 connected to 5 V
3 - 5 short	COM2 Pin9 connected as RI ★
2 – 4 short	COM2 Pin1 connected to 12 V
4 - 6 short	COM2 Pin1 connected as DCD ★

Note 2: Please note that the 5 V or 12 V DC supply should be selected only for supporting the Posiflex serial devices that are designed to be powered from this source. Whenever such Posiflex device is to be removed from this port, the 5 V or 12 V DC supply must be deselected.

SOFTWARE AWARENESS OF UPS STATUS

JP2 STATUS	UPS STATUS
1 – 2 short	Normal (DCD signal)
2 - 3 short	Detect UPS status ★

The UPS status is used to inform the software the power source the system is operating on (AC adaptor or UPS battery when the UPS function module option is installed). The default of this jumper is set to detect the UPS status. The user has to change this jumper if he/she wants to detect the standard DCD signal on COM1 in his application software. When this jumper is set to detect UPS status DCD bit of COM1 is set, the AC power is present.

LAN CHIP FUNCTION CONTROL

JP5 STATUS	LAN CHIP CONTROL
Short	LAN function enabled ★
Open	LAN function disabled

CMOS DATA CONTROL

JP8 STATUS	CMOS DATA CONTROL
1-2 short	Clear CMOS data
2-3 short	Normal operation ★

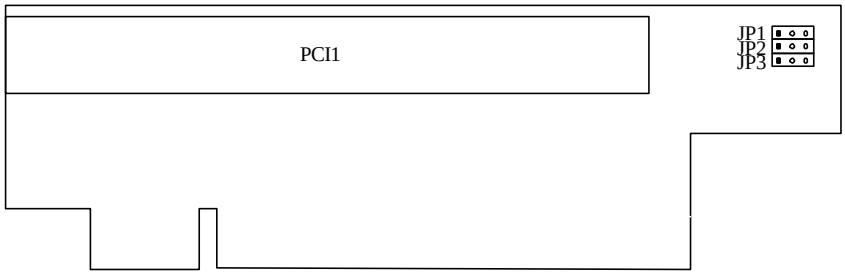
PS/2 MOUSE SIGNAL LOOPBACK

STATUS OF JP6	PS/2 MOUSE SIGNAL
All Open	Through PS/2 Touch Controller (HT-41)
1-2, 3-4 short	No PS/2 Touch Controller

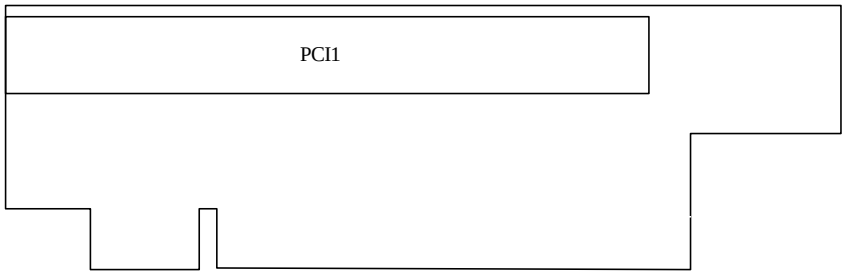
PCI RISER CARD

COMPONENT SIDE

WITH AUDIO AMPLIFIER



WITHOUT AUDIO AMPLIFIER



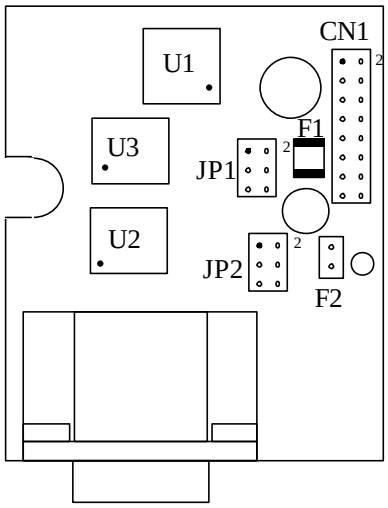
JUMPER SETTINGS

AUDIO AMPLIFIER SETUP

JP1, JP2, JP3	AUDIO AMP	OUTPUT
JP1 pin 2 – JP2 pin 2, JP1 pin 3 – JP2 pin 3, JP3 pin 1,2 – internal speaker output	Enabled (when installed with also internal speaker)	Mono
JP1 pin 1 – 2, JP2 pin 1 – 2, JP3 pin 1 – 2 Short	Disabled	Stereo

LPC ADAPTOR CARD HT-022

COMPONENT SIDE



JUMPERS AND CONNECTORS

ON COMPONENT SIDE

Position	Part Spec	Usage
CN1	HDR 2x8	LPC Connector for CN3 in Main Board
COM3	D9Mx2	COM4 Port on Top of COM3 Port
F1	SMD FUSE	Fuse for +5 V Power in COM3/4 Ports
F2	POLY FUSE	Fuse for +12 V Power in COM3/4 Ports
JP1	HDR 2x3	+5 V DC Supply Select for COM3/4
JP2	HDR 2x3	+12 V DC Supply Select for COM3/4
U1	IC	LPCIO

JUMPER SETTINGS

The "★" marks in the following tables denote the factory default settings.

+5 V DC SUPPLY SELECT FOR COM3/4 *(Note3)*

JP1 STATUS	COM3/4 PIN9 SETTING
1 – 3 short	COM3 Pin9 connected to 5 V
3 - 5 short	COM3 Pin9 connected as RI ★
2 – 4 short	COM4 Pin9 connected to 5 V
4 - 6 short	COM4 Pin9 connected as RI ★

+12 V DC SUPPLY SELECT FOR COM3/4 *(Note3)*

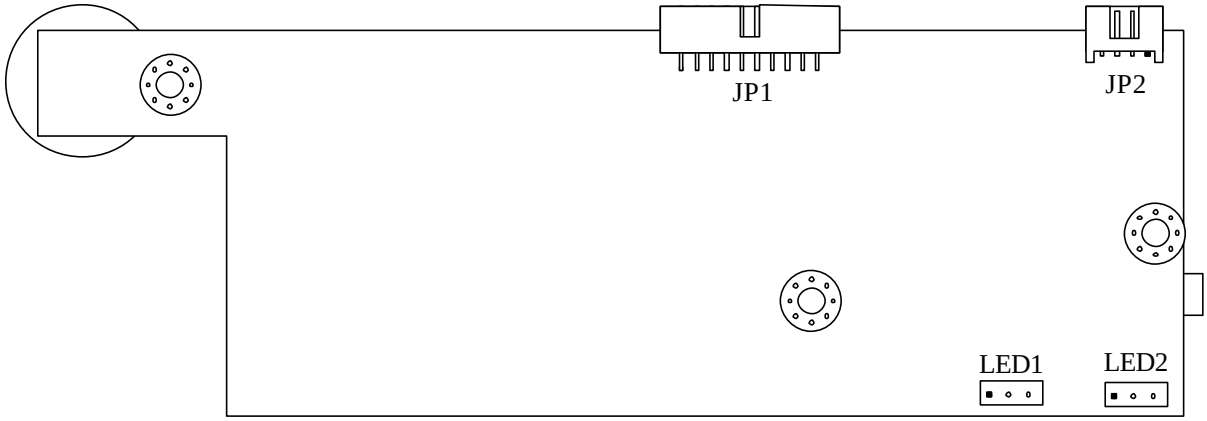
JP2 STATUS	COM3/4 PIN1 SETTING
1 – 3 short	COM3 Pin1 connected to 12 V
3 - 5 short	COM3 Pin1 connected as DCD ★
2 – 4 short	COM4 Pin1 connected to 12 V
4 - 6 short	COM4 Pin1 connected as DCD ★

Note 3: Please note that the 5 V or 12 V DC supply should be selected only for supporting the Posiflex serial devices that are designed to be powered from this source. Whenever such Posiflex device is to be removed from this port, the 5 V or 12 V DC supply must be deselected.

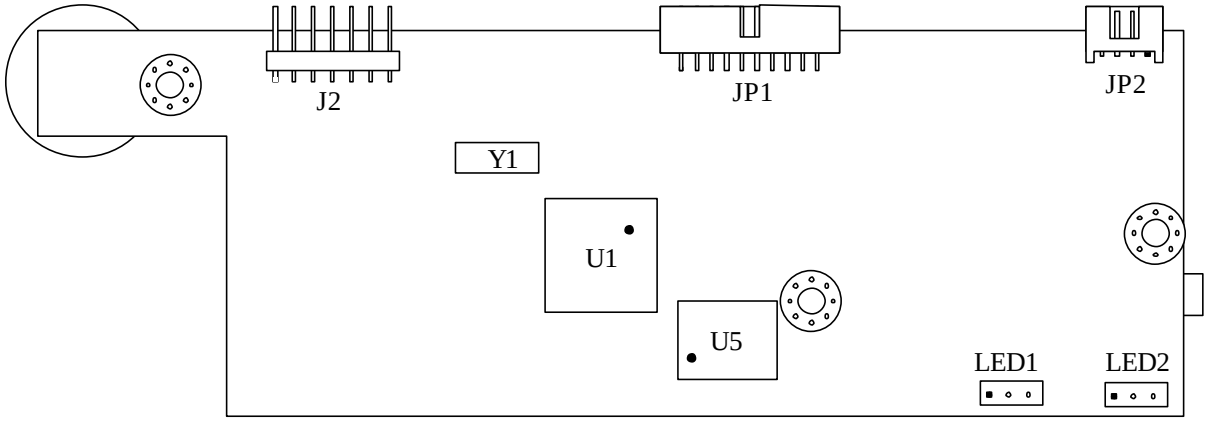
LCD / TOUCH CONTROL CARD

COMPONENT SIDE

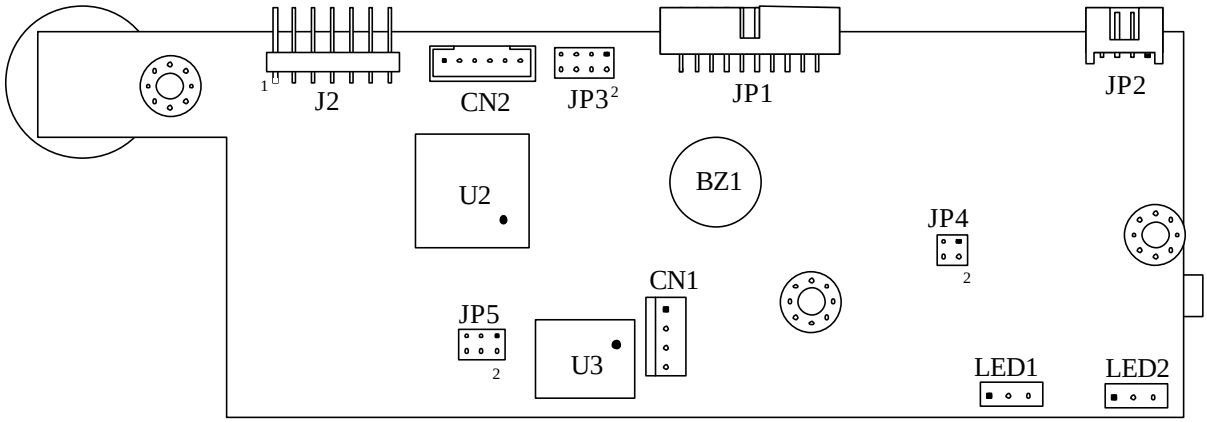
LT-41 (no touch control)



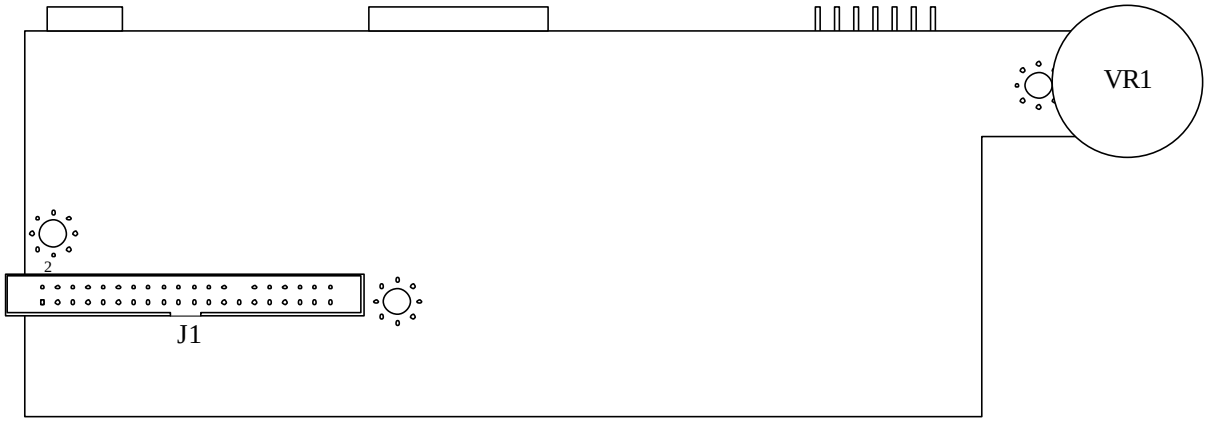
HT-41 (PS/2 touch interface)



HT-42 (USB touch interface)



SOLDER SIDE (HT / LT-41 / HT-42)



JUMPERS AND CONNECTORS

ON COMPONENT SIDE

Position	Part Spec	Usage
BZ1	HDR 2x3	Buzzer (HT-42 only)
CN1	HDR 1x4 w/L	Reserved (HT-42 only)
CN2	mHSG 1x6	Reserved (HT-42 only)
J2	HDR 1x7 rt	For Touch Control Panel (HT-41/42 only)
JP1	mHSG 2x10 rt	LCD Panel LVDS Cable
JP2	mHSG 1x4 rt	Inverter Cable
JP3	HDR 2x4	USB Touch Control Setup (HT-42 only)
JP4	HDR 2x2	To be deleted (HT-42 only)
JP5	HDR 2x3	To be deleted (HT-42 only)
LED1	Blue / Yellow	Power / Stand By Status Indicator
LED2	Green / Yellow	LAN Status Indicator
U1	IC	PS/2 Touch Controller (HT-41 only)
U2	IC	USB Touch Controller (HT-42 only)
U3	IC	To be deleted (HT-42 only)
U5	IC	Buffer (HT-41 only)
Y1	XTAL	Crystal (HT-41 only)

ON SOLDER SIDE

Position	Part Spec	Usage
J1	HDR 2x20 w/H	LCD + Touch Connector to Main Board
VR1	VR w/Wheel	Brightness/Contrast Control

JUMPER SETTINGS

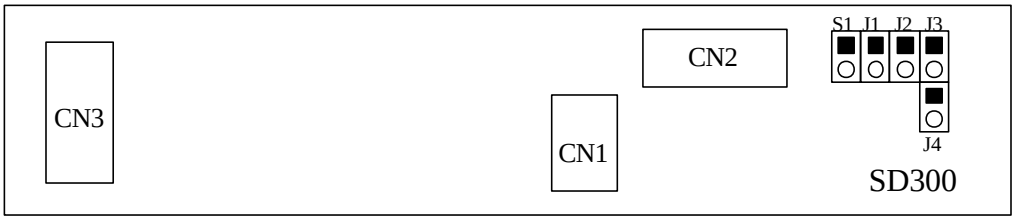
The "★" marks in the following tables denote the factory default settings.

USB TOUCH SETUP

STATUS OF JP3 ON SOLDER SIDE	APPLICABLE OS
1-2 short, 5-6 open	Windows (Win98, Win2000, WinXP)
1-2 open, 5-6 open	Linux or WinCE
1-2 short, 5-6 short	MS-DOS
3-4 short	Touch panel type E ★
3-4 open	Touch panel type F

Please note for MS-DOS application of the USB touch control, the "USB Mouse Support" in BIOS must be "Enabled".

USB MSR CONTROL BOARD (SD300)



Connectors:

CN1: for external USB cable to connect to host

CN2: for internal USB cable to connect to optical type finger print sensor

CN3: for MSR cable to connect to MSR reader head

Jumpers:

The default status for normal ISO reader delivery is: S1 open and J1 ~ J3 short.

Jumper Name	Function	When Short	When Open
S1	ISO/JIS2	JIS2	ISO
J1	Alt+Num	Disabled	Enabled
J2	NumLock	Disabled	Enabled
J3	USB Device Class	HID	Vendor
J4	OS	Windows	DOS