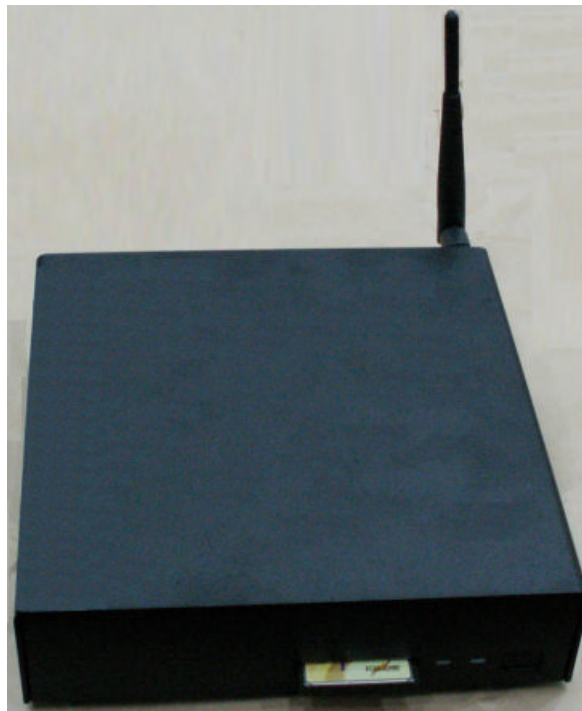


**KV 2000
SERIES**

TECHNICAL MANUAL

Rev. : Original





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 to utilize the hardware of the KV-2000 series which is a member of the POSIFLEX integrated point-of-sale terminal product family. The KV-2000 is a compact and robust point-of-sale system that can be applied in the harshest environment with its fanless and beetle free design. This product combines the performance and affordability of personal computers with the elegance and reliability of business machine. The KV-2000 series also provides the built-in networking capability and even the optional wireless networking for easy communication among multiple terminals in addition to the data transfer and control through back office server.

The manufacturer of the KV-2000 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

The KV-2000 series is a highly compact and rugged metal cased terminal designed for use in a hostile application environment even in a **kitchen** of a restaurant or a fast food store. This product is constructed to be fanless so that is particularly suitable for application in harsh environment like a fast food kitchen. This product is also constructed for **beetle free** application that all openings on the exterior can be protected from insect invasions. This product also supports both LAN and WIFI and is very handy in network application to be used as one of several terminals in a network system controlled by a “back office” computer or as a self-content unit.

FEATURES

- CPU: AMD LX-700
- Support Win2000, WinXP Pro, WEPOS and Linux environment
- Special fanless designed for operation in harsh and wet kitchen environment
- Compact and rugged metal housing including a storage room for HDD and WiFi module
- Optional HDD, WiFi module with external antenna and wall mount bracket
- Various I/O ports supported, including:
 - a. 1 PS/2 KB port
 - b. 1 PS/2 mouse port
 - c. 2 Serial Ports with capability for +5V DC support
 - d. 1 parallel port supporting SPP/EPP/ECP
 - e. 4 USB ports
 - f. 1 LAN port 10/100 base T Ethernet
 - g. 1 VGA monitor port for connection of external monitor with capability to supply + 12 V DC power after internal jumper change
 - h. 1 audio line output port
 - i. 1 microphone input port

- j. 1 5.5/2.5 DC 12 V power input connector
- k. 1 CF memory card slot
- l. 1 internal mini PCI extension slot
- **Preprogrammed timer wake up function**
- **COM port MODEM ring up function**
- **LAN wake up function**
- **DDR SDRAM memory 128 MB can extend to 1GB in 1 SO-DIMM**
- **VGA memory size program by software 16 up to 254 MB**
- **Supports power saving by suspension or doze mode**

OPTIONAL ITEMS

Note: The “*” marked 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) HDD 2.5” 40 GB or above or CF memory card
- b) * DRAM memory expansion
- c) Preload WinCE, WinXP Pro, WEPOS or Linux
- d) Wireless LAN module on internal mini PCI slot
- e) External CD ROM drive or DVD ROM drive in USB interface
- f) Wall mount kit
- g) Bump Bar BB-2000

GENERAL SPECIFICATION

SYSTEM

- CPU speed : AMD LX700
- DRAM : DDR333 128 MB (expandable to 1 GB) in 1 DDR SO-DIMM socket
- Can boot from optional HDD or CF card

POWER SOURCE

Power Source Type: power adaptor

Power Adaptor Input Range	115 ~ 230 V AC
Power Adaptor Output	12 V DC 50 W

SYSTEM POWER ON/OFF CONTROL

- One main power ON/OFF slide switch at side
- 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 hardware switch
- Power OFF to ON duration: 10 seconds min.

OVERALL POWER OUTPUT LIMIT

- Including PS/2 KB & COM ports: +5VDC/1 Amp max.
- All standard USB: 5VDC/500 mA x 4
- VGA: 12VDC/1A

LED COLOR

- Power ON / Standby LED: blue/orange dual color for system ON/OFF and external power status (blue: power on; orange: stand by)
- LAN status LED: green/yellow dual color for link, communication (green: LAN link; yellow flicker: data transmission)

INPUT / OUTPUT PORTS

- 1 x mini DIN 6 pin female PS/II KB jack
- 1 x mini DIN 6 pin female PS/II mouse connector
- 1 x Sub D 15 pin VGA port for monitor display
- 1 x parallel port (SPP, EPP, ECP)
- 1 x LAN port (Ethernet 10 base T and 100 base T upgradeable to 1 Gbps)
- 4 x USB ports of USB 2.0
- 2 x serial communication ports. Both can supply DC +5V through pin 9 under overall power output limit. Default setting is standard RI signal input at these pins.
- 1 x 5.5/2.5 coaxial DC jack for 12 V DC power input
- 1 x mini PCI socket (internal) for WiFi module

VGA PORT

Max. Resolution	1920 X 1440 true color 32 bits
VGA Memory size	16 ~ 254 MB share memory
Power Support	12 V DC through pin 9

AUDIO PORT

- 3.5 Ømono jack for Mic. In
- 3.5 Østereo jack for audio out
- Output audio power 50 mW / 8 Ohm
- Bandwidth 20 Hz ~ 19.2 K Hz
- Input impedance 64 KOhm
- 30 db gain for microphone input



EXTERIOR

- **DIMENSIONS:**

MACHINE: 200 mm (W) x 208 mm (D) x 53 mm (H)
or 7.9" x 8.2" x 2.1"

PACKING DIMENSION: 342 mm (W) x 260 mm (D) x 180 mm (H)

- **WEIGHT:**

	NET WEIGHT	GROSS WEIGHT
KV-2000	2 kg (4.4 lbs)	2.5 kg (5.5 lbs)

ENVIRONMENTAL

- **TEMPERATURE RANGE:**

Operating: 0°C ~ +35°C or 32°F ~ 95°F

Non-operating: -20°C ~ +60°C or -4°F ~ +140°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: 1 copy
- Power adapter 12 V DC 50 W plus power cord
- Product Information CD or Recovery CD of preloaded OS

COMPLIANCE APPROVALS

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

OPTIONS

DRAM EXPANSION

- DDR 333 SO-DIMM
- Max. up to 1 GB

HDD KIT

- 2.5"
- 40 GB or above
- IDE interface (can not coexist with CF slot)

CF MEMORY CARD

- Compact Flash Type II memory card 256 MB / 512 MB / 1 GB
- (must not be inserted with HDD kit installed)

WIFI MODULE

- Omni directional antenna included
- IEEE 802.11 a/b/g

PRELOAD OS

- WinCE / WinXP Pro / WEPOS / Linux

EXTERNAL CD ROM DRIVE

- 24 x speed
- USB interface
- Slim type

BUMP BAR

- BB-2000

WALL MOUNT KIT

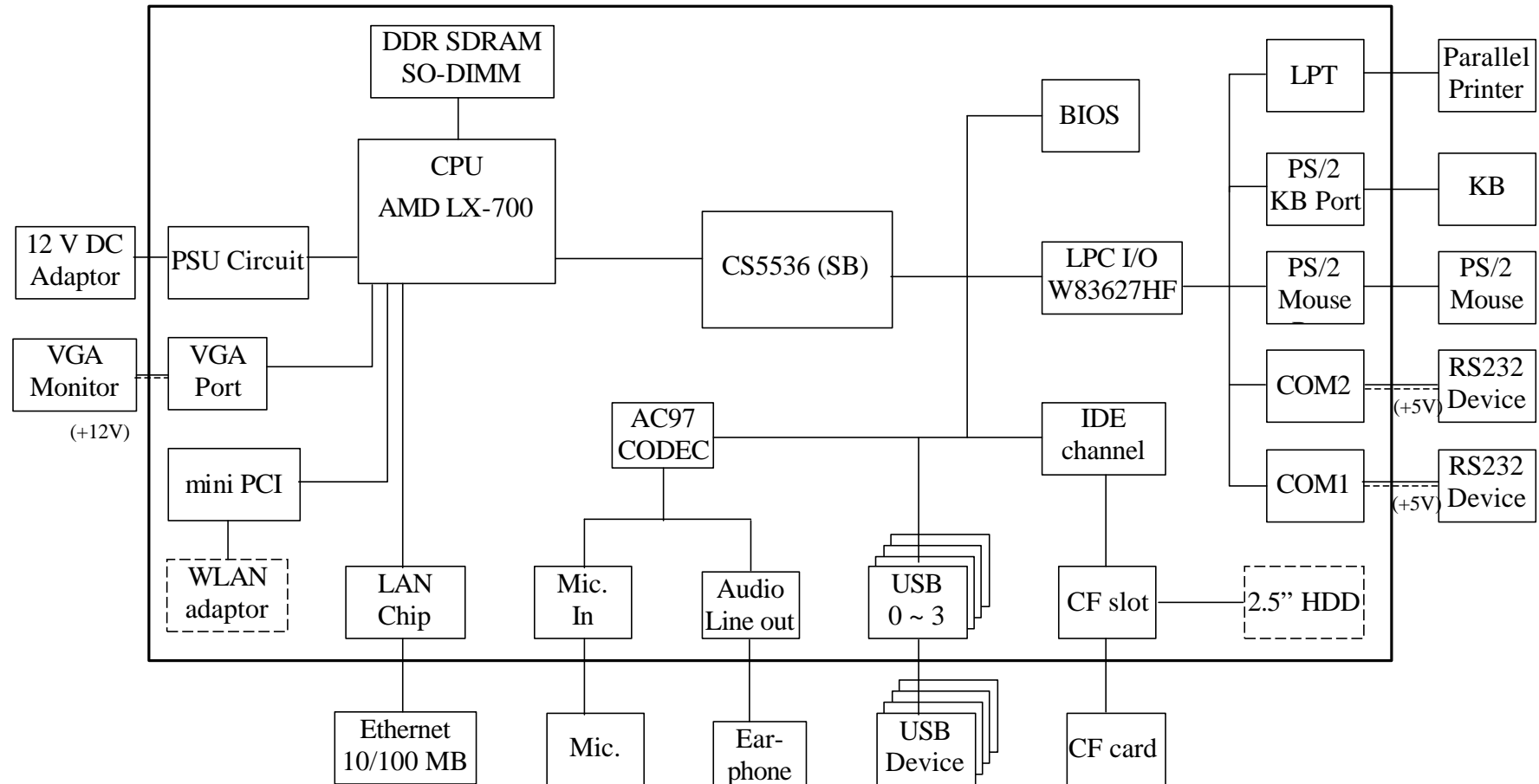


RELIABILITY SPECIFICATION

- POWER ADAPTOR MTBF: 60,000 HRS
- HDD LOAD/UNLOAD CYCLES: 300,000 TIMES
- MAIN BOARD MTBF: 50,000 HRS
- POWER SWITCH LIFE EXPECTANCY: 100,000 STROKES

SYSTEM DEFINITIONS

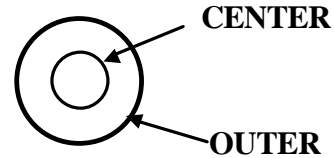
BLOCK DIAGRAM



12 V DC IN CONNECTOR

PIN ASSIGNMENT OF DC JACK:

<u>PIN #</u>	<u>DEFINITION</u>
CENTER	+12 V
OUTER	GND



VGA CONNECTOR

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

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

LAN PORT

PIN ASSIGNMENT OF 8 PIN TELEPHONE JACK:

<u>PIN #</u>	<u>DEFINITION</u>
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.

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

AUDIO OUT

PIN ASSIGNMENT OF 3.5 Ø STEREO JACK:

<u>CONTACT ON PLUG:</u>	<u>DEFINITION:</u>
TIP	R
RING	L
OUTER	GND

MIC. IN

PIN ASSIGNMENT OF 3.5 Ø MONO JACK:

<u>CONTACT ON PLUG:</u>	<u>DEFINITION:</u>
TIP	IN
OUTER	GND



PARALLEL PORT LPT1

PIN ASSIGNMENT OF 25 PIN D SUB FEMALE CONNECTOR:

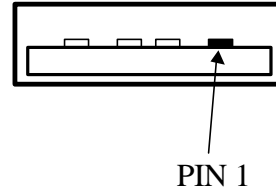
<u>PIN #</u>	<u>SPP MODE</u>	<u>EPP MODE</u>	<u>ECP MODE</u>
1	- STROBE	-WRITE	-STROBE
2	D0	D0	D0
3	D1	D1	D1
4	D2	D2	D2
5	D3	D3	D3
6	D4	D4	D4
7	D5	D5	D5
8	D6	D6	D6
9	D7	D7	D7
10	- ACK	INTR	-ACK
11	BUSY	-WAIT	BUSY, PeriphAck
12	PE	NU	Perror, -AckReverse
13	SLCT	NU	SLCT
14	- AUTO FEED	-Datastb	-AutoFeed, 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.

USB0 / USB1 / USB2 / USB3

PIN ASSIGNMENT OF EACH 4 PIN JACK:

<u>PIN #</u>	<u>DEFINITION</u>
1	VCC
2	-DATA
3	+DATA
4	GND



SERIAL PORT COM1/2

PIN ASSIGNMENT OF 9 PIN D SUB MALE CONNECTOR:

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

- IRQ 4 is assigned for COM1, IRQ3 is assigned for COM2.
- Jumper selection: please refer to the description in Hardware details of this manual.



APPLICATION GUIDES

POWER SUPPLY TO COM PORTS

On the solder side of the main board, jumpers on JP7 determine the +5V DC supplies to the devices connected to COM1/COM2 separately. Refer to the hardware details for jumper settings. The total load supplied from the KV system to all USB devices on 5 V DC is limited to be within 2 Ampere, and power to all other peripherals including keyboard, mouse, COM ports etc. on 5 V DC is 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.

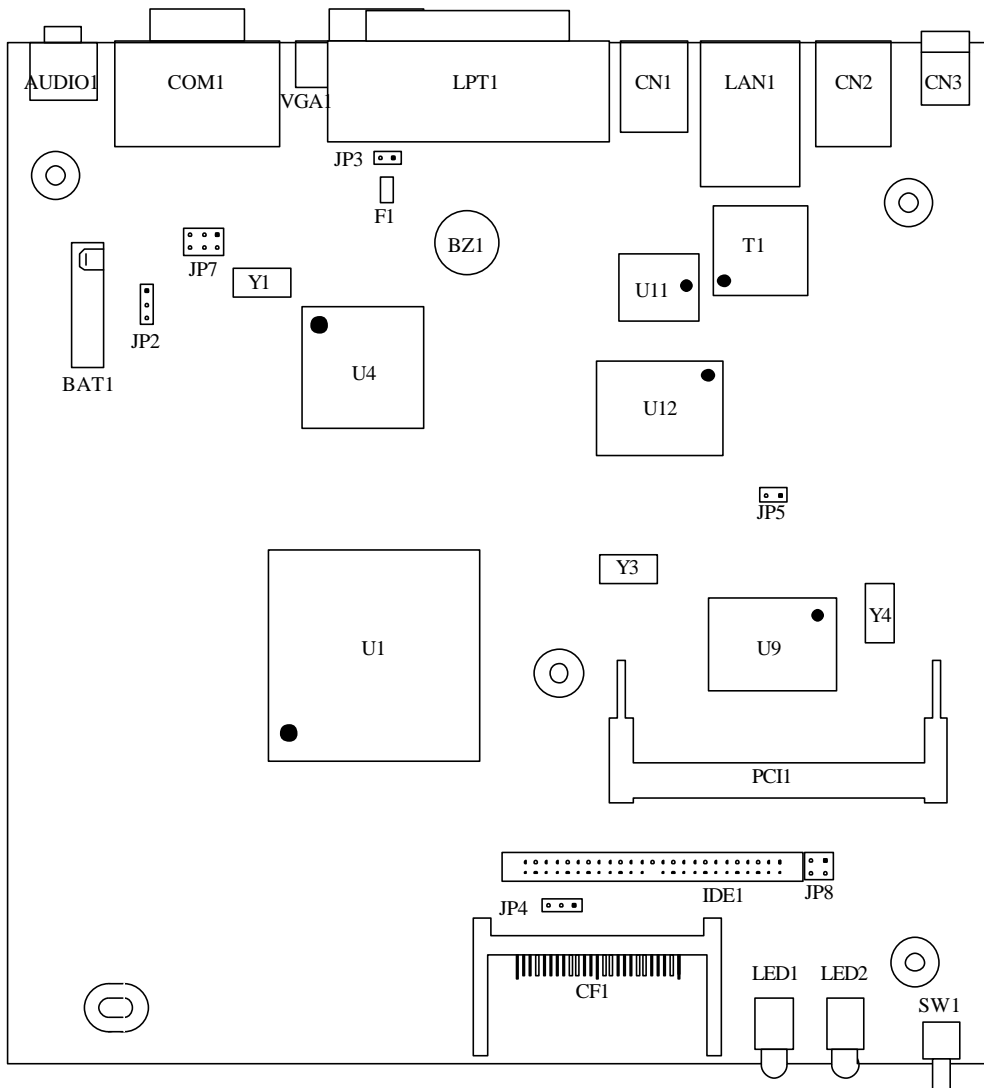
SOFTWARE SYSTEM BACKUP

When the system integrator purchases the POS system with preloaded WinXP or WEPOS on optional HDD from Posiflex, he gets a bonus support of system protection function. Pressing the three key combination of “Ctrl” + “Alt” + “F12” at OS boot up stage will activate this system protection function and the system backup screen will show up. 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.



HARDWARE DETAILS

MAIN BOARD (KV-2000C)

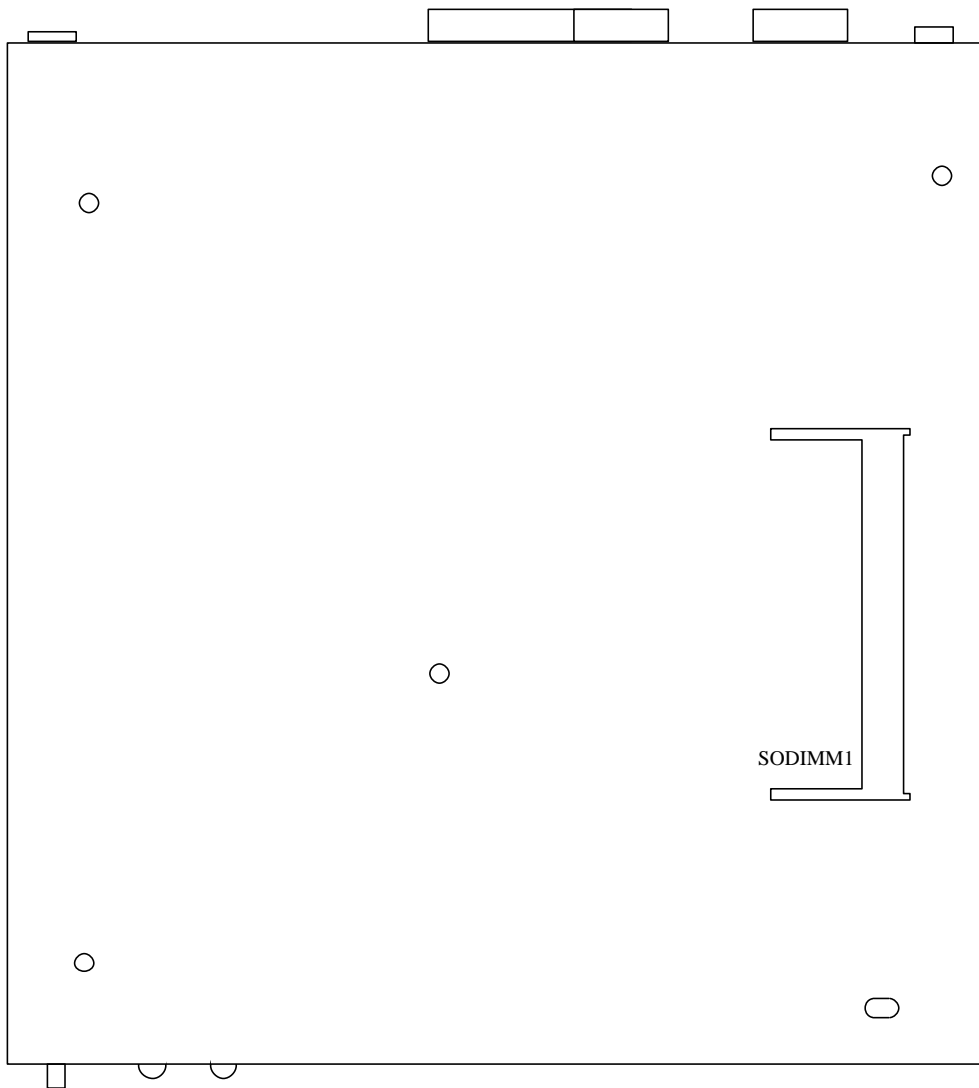
COMPONENT SIDE





Notation Remarks:

In drawing for jumpers like  or  the small black block ■ is used to indicate the position of pin number 1 and the small number marked near a corner of a jumper with 2 or more rows of pins is used to indicate the pin number at that corner.

SOLDER SIDE



Notation Remarks:

In drawing for jumpers like ² or ₃ the small black block ■ is used to indicate the position of pin number 1 and the small number marked near a corner of a jumper with 2 or more rows of pins is used to indicate the pin number at that corner.

JUMPERS AND CONNECTORS

ON COMPONENT SIDE

Position	Part Spec	Usage
AUDIO1	JACK 3.5D x 2	MIC IN & AUDIO LINE OUT
BZ1	BUZZER	BUZZER
CF1	RT HDR 1x3 W/L	CF CARD READER SLOT
CN1	USB x 2	USB PORT 2/3
CN2	PS/2 x 2	PS/2 KB & MOUSE PORTS
CN3	JACK 2.5/5.5	DC POWER INPUT
COM1	D9M x 2	COM 1/2 PORTS
F1	FUSE	VGA DC FUSE
IDE1	mini HDR 25x2 W/H	CONNECTOR FOR KV HDD CABLE
JP2	HDR 3x1	CMOS DATA CONTROL
JP3	HDR 2x1	VGA DC SETUP
JP4	HDR 3x1	RESERVED
JP5	HDR 2x1	LAN CHIP CONTROL
JP7	HDR 3x2	COM DC SETUP
JP8	HDR 2x2	RESERVED
LAN1	USB x 2 + LAN	LAN PORT & USB PORT 0/1
LED1	5D LED	POWERLED
LED2	5D LED	LAN LED
SW1	TACT SWITCH	POWER SWITCH
VGA1	D15F 3x5	VGA PORT
PCI1	mini PCI SLOT	SLOT FOR OPTIONAL WIFI CARD

ON SOLDER SIDE

Position	Part Spec	Usage
SODIMM1	DDR SO-DIMM	DDR SDRAM

JUMPER SETTINGS

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

CMOS DATA CONTROL

JP2 STATUS	CMOS DATA CONTROL
1-2 short	Clear CMOS data
2-3 short	Normal operation ★

VGA PORT +12 V DC SUPPLY SELECT

JP3 STATUS	VGA PORT PIN 9 STATUS
1 – 2 short	VGA port Pin9 supplies + 12 V DC ★
1 - 2 open	VGA port Pin9 not connected

COM1/COM2 DC SUPPLY SELECT

JP7 STATUS	PIN 9 STATUS
1 – 3 short	COM1 Pin9 connected to 5 V DC
3 - 5 short	COM1 Pin9 connected as RI ★
2 – 4 short	COM2 Pin9 connected to 5 V DC
4 - 6 short	COM2 Pin9 connected as RI ★

LAN CHIP CONTROL

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

RESERVED

JP4 STATUS	
1 – 2 short	
2 - 3 short	★

RESERVED

JP8 STATUS	
All open	★
1 – 2 short	
2 - 4 short	

SERVICE AND SPARE PARTS

SERVICE GUIDE

OPEN TOP COVER

Please first remove any power or cable connection to KV-2000 and then remove 2 screws each as in the right picture on both sides of KV-2000 to open its metal top cover.



INSTALL / REMOVE OPTIONAL HDD

Please follow the KV-2000 HDD kit installation guide for detail to install the optional kit and do the reverse operations to remove it. However, a very important reminder is that please always remove the CF card once the HDD is installed in the KV-2000 system.

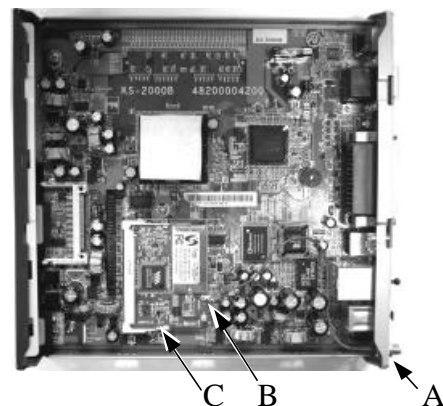


INSTALL / REMOVE OPTIONAL WLAN

Please follow steps below to separately install the WiFi module.

Step A: Use suitable tool to break open the semi-cut antenna hole on rear I/O plate of KV-2000 and screw the base of external antenna into this hole.

Step B: Connect the wire from the antenna to the main connection point on the WiFi control board.



Step C: Insert the WiFi control board to the mini-PCI slot in KV-2000. Fix back the top metal cover of KV-2000. Screw on the antenna rod onto its base and turn the rod to proper direction for application.

To remove the module the operation is simply the reverse of the above. However, please remember to cover the antenna hole on rear I/O plate with proper sticker to remain beetle free.

REPLACE MAINBOARD



Remove 2 screws on rear I/O plate as circled in above picture and remove the 5 screws circled in right picture to release the mainboard with I/O plate from the chassis. Then remove the hex screws of all D connectors to release the I/O plate from mainboard for mainboard replacement.





SPARE PARTS LIST (RoHS)

The column “Pos.” in the list below refers basically to the ID numbers indicated in the Assembly Drawing. If this column is not available, it refers to a packaging item. The column “S.” indicates the alternative selections available for that position. This list is subject to update without notice.

Pos.	S.	Part Number	Description
100	1	14200106013	KV-2000 Top Chassis Cover, Black
110	1	10553038053	Flat Head Screw #6-5L-32NC
120	1	10163535017	Silicon Rubber for CPU
130	1	10163835352	CPU Heat Sink for KV-2000
140	1	44200604200	KV-2000 M/B w/LX-700 CPU
150	1	MSCRW#6-6+R	Round Head Screw #6-6L-32NC
180	1	10163870017	Silicon Rubber for DRAM
190	1	14200100010	Main Chassis for KV-2000
200	1	14200101113	Front Bezel for KV-2000, Black
210	1	14200302013	CF Card Cover for KV-2000, Black
220	1	10557038043	Plan Head Scew#6-4L-32NC
230	1	10267010161	Plastic Foot, Black

Pos.	S.	Part Number	Description
Opt.240	1	14200104010	Wall Mount Bracket for KV-2000
250	1	15440316029	LED Lenses
260	1	14200300013	Power Switch Knob for KV-2000, Black
270	1	14200301013	Inner Plastic Bezel for KV-2000, Black
280	1	34206002000	I/O Plate Assembly for KV-2000
Opt.290	1	34205000010	WiFi Module Kit w/Antenna for KV-2000
300	1	10290200061	PS2 Cover, Black
310	1	10290200051	RJ45 Cover, Black
320	1	10290200041	USB Cover, Black
330	1	MHXCSCRW#4.8*8.2	HEX Screw#4.8*8.2mm
340	1	10290200031	25 Pin Connector Cover, Black
350	1	10290200021	9 Pin Connect Cover, Black
360	1	10290200071	Audio Cover Plug
370	1	34204000020	KV-2000 HDD Kit w/ 20G 2.5"HDD
	2	34204000030	KV-2000 HDD Kit w/ 40G 2.5"HDD

Pos.	S.	Part Number	Description
380		10162050157	Silicon Rubber Gray for HDD 20*50*1.5 mm
	1	21973212240	Power Supply for KV-2000 Series
	1	21868101310	Power Cord for Australia for KV-2000 Series
	2	21868201300	Power Cord for Europe for KV-2000 Series
	3	21868301300	Power Cord for Japan for KV-2000 Series
	4	21868401300	Power Cord for S.A. for KV-2000 Series
	5	21868501310	Power Cord for U.K. for KV-2000 Series
	6	21868601300	Power Cord for U.S.A. for KV-2000 Series
	1	14200510110	Carton for KV-2000
	1	14200520110	Inner Box for KV-2000
	1	14200530010	Cardboard for KV-2000
	1	CPEBAG25*35	PE Bag 25*35cm
	1	14200600113	KV-2000 CE Label, Black
	1	14200900010	KV-2000 User' s Manual

ASSEMBLY DRAWING

