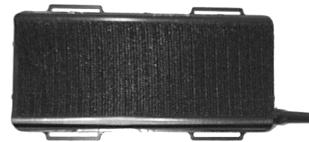


ASSEMBLING THE XYBER®KEY WRIST-WORN KEYBOARD

The Xyber®Key mini-keyboard attaches to a wrist band for wearing the keyboard on your left wrist.

To assemble the keyboard and wrist band:

1. Cut a portion of the velcro material included with your keyboard, so that it covers the back of the keyboard.
2. Attach the velcro to the back of the keyboard.
3. Lay the keyboard face down on a table with the velcro facing up.
4. Attach the wrist band to the keyboard by pressing the velcro on the wrist band into the velcro on the keyboard.
5. Thread the wrist band straps through the top slots of the keyboard.



6. Secure the wristband and fold the straps back.



7. Thread the straps through the bottom slots of the keyboard.
8. Place your left wrist in the band with your thumb through the hole.
9. Tighten the velcro straps so the keyboard sits comfortably on your wrist.



Caring for the MA® V

CARING FOR THE XYBERNAUT MA V

Although the MA V is an industrial tool, it is not completely weatherproof. You should make every effort to avoid extreme temperatures and to keep the unit dry and free from contaminates such as sand, oil, and fumes.

Operating Temperatures and Environments

As a general rule, if it is too hot or cold for you to work in an area, avoid leaving the MA V in that area for prolonged periods.

Of course, as a body-worn device, you can extend the MA V's capabilities by wearing it under the same protective garments you wear to work in extreme environmental and weather conditions.

To handle and store the MA V batteries at safe temperatures, follow the guidelines in the table below.

Battery status	°F	°C
Discharged	+14 to +122	-10 to +50
Charged	+32 to +113	0 to +45
Stored	-14 to +140	-20 to +60

Special Battery Cautions

The following are special precautions you should take when using and handling batteries.

- Do not expose batteries to direct sunlight or extreme heat
- Do not submerge batteries in liquid
- Do not incinerate batteries
- Do not handle damaged or leaking battery packs
- Do not attempt to discharge batteries by short-circulating them
- Do not attempt to charge batteries with a charger other than the one supplied with the MA V

Cleaning

Routine cleaning will extend the life and improve the serviceability of the MA V. The following are general cleaning guidelines you should follow:

- Avoid using abrasives and general solvents
- Use a damp, lint-free cloth on the hardware and cables
- Use canned air on contacts
- Use a soft brush on the belt and vest



Always turn the MA V off and disconnect it from any power source before cleaning. Always power the MA V down using the Windows Shutdown procedure. The Power button is for powering up the unit.

6

Troubleshooting the MA® V

OBTAINING CUSTOMER SUPPORT

If you purchased your MA V equipment through one of our authorized dealers and need technical assistance, please call your local dealer. If, however, you need to contact Xybernaut Corporation, you can contact the Customer Support Group directly between the hours of 9:00 am and 5:30 pm Eastern Standard Time. Be sure to have your MA V serial number available.

U.S. and Canada (toll free): 1-877-877-0297

A good way to obtain the latest information about the MA V, including up-to-the-minute support information, is through the Xybernaut website.

<http://www.xybernaut.com>

This site provides direction for self-support and troubleshooting. Please review the site to see if you can resolve your particular support issue.



The site offers on-line technical support during certain hours, Monday through Friday, and on-line chat for repairs and usage.

Return authorizations

Occasionally, a component needs to be returned for testing or repair. Xybernaut Corporation requires that a return authorization number be issued before you return your equipment for any reason. To receive a return merchandise authorization number, please contact the Xybernaut Customer Support Group.

TROUBLESHOOTING

The following sections provide additional support for troubleshooting specific problems.

The MA V will not turn on

If you are having problems powering up the MA V, run through the following checklist:

- Press and hold the power switch for approximately two seconds before releasing
- Check that all power connections are secure
- Check for damage to the AC cable
- Check for damage to the battery connectors or the battery itself
- Check the charge level of the battery to be certain the battery is fully charged

Cannot find the FPD drivers

If you cannot find the FPD drivers or they are not working properly, you may need to re-install the FPD drivers.

To install the FPD drivers:

1. Create a target folder on the C:\ drive for the MA V.
2. Copy the FPD driver information included with the MA V system into the target folder.
3. Go to the target folder and locate **setup.exe**.
4. Using the left mouse, double click to open the setup program.
5. The program leads you through an automatic installation of the FPD drivers.

Trouble launching FPD drivers

The FPD requires specific drivers to utilize the touch screen. These drivers are installed on MA Vs purchased with the FPD option, and enable you to adjust the display settings and calibrate the touch screen. If the system tray menu or FPD driver icons have been deleted, you can launch the FPD drivers through the Windows start menu.

For the Gunze drivers to load, the FPD must be on. Therefore, power on the FPD right after powering on the CPU.

To launch FPD Drivers:

1. From the Windows start menu, navigate to **Programs/Gunze/U-tp**. The following options are available:

FPD driver options	Functions performed
Settings	Allows you to perform administrative functions for the passive stylus such as setting the events that occur when the passive stylus touches the FPD.
Event Selector	Displays icons (pointer device settings and event selector) in the system tray menu from which you can perform printer driver tasks.
Calibrate	Initiates the touch screen calibration routine.
Test	Executes a self test that checks the ROM, RAM, and COM-ports.
Help	Displays help.

The video does not display on an external VGA monitor

An older monitor may not meet the newest VGA pin out standards. Please record your monitor's make and model number and contact our Customer Support Group.

Problems using the passive stylus

If you are having problems using the passive stylus to click on icons, type using the on-screen keyboard, or write text, make sure you have completed the following:

- Calibrate the touch panel display
- Activate the Jot settings to view the CIC on-screen keyboard
- Enable the CIC PenX ink to write text directly on the display panel
- Review the Jot Tutorial to learn how to write text the system will recognize



Refer to “Calibrating the touch screen display” on page 22 for the calibration routine.

Activating Jot settings

In order to use the on-screen keyboard, you must activate the Jot settings.

To activate the Jot settings:

1. From the start menu, navigate to **Programs\ CIC Jot 1.0\ Jot Settings**.
2. Go to the **Mode** tab and select the appropriate **Inking Mode** setting.
3. Click **Apply** and then **Ok**.
4. A new icon (CIC PenX ink) appears in the system menu tray or as a floating tool bar.
5. Click on the icon so that your cursor changes to a pencil. You are now ready to write text using the passive stylus.



Refer to the Jot tutorial for hand writing tips and techniques.

XYBERNAUT MA V SPECIFICATIONS

Central Processing Unit:

Processor • 500 MHz Intel® Mobile Celeron®, 1.1 V Ultra Low Voltage

Memory and Storage

- 128 MB SDRAM, expandable to 256 MB
- 2 GB or 5 GB internal HDD, externally expandable to 32 GB or more
- 1 GB removable HDD through the use of a 1 GB Compact Flash card

Ports

- Compact Flash, USB, FireWire® (iLINK®), DC-IN jack, UIP (supports LVDS and GVIF), PDP (Power Docking Port) for connection to the MA V Holster, Power switch, Hibernate switch

Audio/Video

- Video memory 8 MB SDRAM
- Built-in sound card, full-duplex, stereo I/O
- Integrated Digital Signal Processor; Texas Instruments TMS320C5416™

CPU Chassis

- Durable magnesium alloy case
- 5.9" x 3.5" x 2" (15 cm x 9 cm x 5 cm)
- Approx. 1 lb. (455 g)
- Worn with belt, vest, suspenders, shoulder pack, or backpack
- Optional protective pouch

Holster

- 1 Type II or III PCMCIA card slot
- USB, FireWire® (iLINK®), VGA, and Power Docking port
- CPU Module connect to optional Holster for extended connectivity and operation
- Holster doubles as desktop docking station

Xyber®Panel Digital Flat Panel Display

- 6.4" (16.3 cm) viewable, all-light readable display, 640 x 480 color VGA
- 8.4" (21.3 cm) viewable all-light readable display, 800 x 600 color SVGA
- Brightness control, up to 500 cd/m²
- Onscreen keyboard and built-in handwriting recognition
- Activation: voice, passive stylus, or touch-screen
- Zippered protective pouch
- Optional flip-down carrying case

Xyber®View Head Mounted Displays	<ul style="list-style-type: none">• VGA, SVGA color direct view display• Monocular or binocular view• Transmissive or occluded viewing• Left- or right-side wearable• Integrated microphone and earpiece speaker for voice activation and voice communications• Hardhat models available
Xyber®Key Wrist-worn Mini-Keyboard	<ul style="list-style-type: none">• 60-key, wrist-mounted, ruggedized QWERTY keyboard
Battery	<ul style="list-style-type: none">• Primary and Secondary Lithium-ion batteries• Hot-swappable• AC power adapter/battery charger with protective circuitry
Software	<ul style="list-style-type: none">• Microsoft® Windows 98, 2000, or, Linux• CIC JOT Handwriting Recognition (with FPD)• On-Screen Keyboard Software (with FPD)• Other drivers appropriate with peripheral devices purchased from Xybernaut

Glossary

AC power adapter	Part of the power system that uses a detachable power cord to plug into an electrical outlet to either power the MA V during desktop use or to charge the batteries while they are installed in the CPU and Holster.
battery	The power source for the MA V in mobile configurations. The MA V can be configured with primary and secondary lithium-ion batteries. The batteries are rechargeable.
BIOS	Basic Input Output System is system level software that provides a set of instructions for booting the computer. The MA V's system BIOS is optimized to take advantage of the performance of the MA V while minimizing power consumption.
cellular connection	A wireless dial-up connection that uses cellular technology for connections to the network.
Compact Flash	A standard for volatile memory. The MA V has a Compact Flash slot on the CPU and accepts Compact Flash cards conforming to Compact Flash Type II standards.
CPU	The Central Processing Unit.
display unit	The display unit on the Head-mounted Display (HMD) that acts as a monitor.
DC-IN	The port on the CPU used to connect the MA V to an AC power adapter and wall outlet.
earphone/microphone	The earpiece that serves as a microphone to accept voice commands and as a earphone for audio response.
FPD	<i>See Xyber[®] Panel Digital Flat Panel Display.</i>

FireWire®	An ultra high-speed port on the CPU and Holster. Also known as IEEE 1394A or iLINK. The external bus standard supports data transfer rates up to 400Mbps making it ideal for audio and video devices.
HDD	The mechanism that reads and writes data on a hard disk for data storage on the computer.
Holster	An optional component of the MA V that connects to the CPU. The Holster provides USB, FireWire® (iLINK®), VGA ports and a PCMCIA card slot, and holds a secondary battery. The Holster doubles as a desktop docking station.
hot-swapping	The act of removing one power source from the MA V and replacing it with another without the loss of data or shutting down the system.
HMD	<i>See XyberView™ Head-mounted Display.</i>
LAN	A Local Area Network. The MA V can use a variety of PCMCIA cards to connect to a LAN through RF wireless or wired LAN PCMCIA cards.
LED	Light Emitting Diodes. LEDs on the MA V batteries indicate the remaining charge of a battery.
MA V	The Xybernaut Mobile Assistant V, wearable computer from Xybernaut.
PCMCIA slots (PC slots)	A slot on the Holster that accepts a Type II or III PCMCIA (Personal Computer Memory Card International Association) card.
power docking port (PDP)	The port that connects the CPU to the Holster.
RF wireless connection	A radio frequency connection to, for example, a LAN, a WAN, a private network, or public switched network (PSTN).
speech recognition software	Software that comprehends voice input for navigating between applications and speech-to-text dictation.

UIP	User Interface Port on the CPU that supports LVDS and GVIF connections.
USB	Universal Serial Port. The evolving industry standard for connecting peripherals.
voice activation	The ability to navigate and enter data into the MA V with verbal commands.
VGA port	Video Graphics Array port. A port on the Holster for connecting a standard desktop monitor to the MA V.
video camera	Captures and records moving and still images. Can be attached to the MA V via a PCMCIA card, USB, or FireWire® (iLINK®).
Xyber®Key Wrist-worn Mini-Keyboard	A miniature, yet fully functional keyboard designed to be worn on the wrist during mobile use to input information to the MA V. Used primarily with the HMD.
Xyber®Panel Digital Flat Panel Display (FPD)	A miniature, touch-screen activated, all-light readable display designed to be worn on the body as an I/O option for the MA V.
Xyber®View Head-mounted Display (HMD)	A head-worn I/O device with a miniature display mounted on an eyepiece. When positioned correctly, the HMD provides the same view as a 15 inch monitor. A microphone and earpiece are incorporated into the HMD for voice-activated computing.

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