KOBETRON INC.

GI-4000
User Manual

Kobetron, Inc.
P.O. Box 5489
Navarre, FL 32566

TEL: (850) 939-5222
FAX: (850) 939-0490
EMAIL: sales@kobetron.com
WEB: www.kobetron.com

"Testing Tomorrow's Technology Today"

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UNPACKING

When unpacking the GI-4000 Tester, verify that the following items are in the shipping container:

- Carrying Case
- GI-4000 Tester (with Battery Pack)
- Lithium Ion Battery Charger
- Spare Battery Pack, Charger and optional AC Adapter (if purchased)
- Anything else you purchased (should be listed on enclosed packing slip)

The GI-4000 Tester was fully tested and inspected for physical damages before shipment. Carefully inspect the unit for damages that may have occurred during transit. If there is any damage, file a claim with the carrier and notify Kobetron™ immediately. The Sales Office will arrange for a replacement of your GI-4000 tester if needed.

REPACKING AND RETURNING

If the GI-4000 Tester must be returned to the factory for any reason, the unit must be packed carefully. Whenever possible the original packing material should be used. Do not ship the unit back until Kobetron™ has been notified and the proper Return Material Authorization (RMA#) has been issued.

WARRANTY

Kobetron™ offers a standard 1 Year Warranty on all parts and labor. An optional 3 Year Extended Warranty is available at time of purchase. The warranty period is effective from the date your GI-4000 Tester is shipped from the factory. If your product should become defective within this period and has not been subject to misuse, it will be repaired free of charge. Products returned for service after the warranty has expired or products that have been misused or tampered with will be repaired for a **NOMINAL CHARGE**.

****OPENING the product will VOID this warranty****

INTRODUCTION

The GI-4000 tester is an instrument used for verifying data in memory and storage devices. The GI-4000 hand-held tester is packaged in a carrying case, which makes it suitable for both bench top and field service use.

UNDERSTANDING THE GI-4000 TESTER

The GI-4000 Tester has a variety of features that are helpful in identifying and verifying memory and storage devices. The GI-4000 Tester has the capability to perform the following:

MEMORY DEVICES

1. **Device Identification:** For memory devices with an Electronic Identification (or Electronic ID), the unit will automatically identify the memory device, size and manufacturer. Electronic ID is called by different names by different manufacturers such as: device ID, manufacturer identification code, and intelligent identifier mode.

2. This instruction manual will use Electronic Identification (or Auto ID).

3. **Signature calculations:** Provides a 4-digit, 8-digit and 40-digit Kobetron signatures. SHA-1 signatures are also available as an optional feature.

4. **Bit by Bit Compare:** Compares the data, bit by bit, to another similar device.

IMPORTANT NOTES BEFORE BEGINNING

- Never keep a memory device in the adapter socket while powering the unit on or off.

- Always use the proper memory device adapter.

- To install a memory device, lift the ZIF socket lever. Insert the memory device in the socket, then lock the device in place by moving the ZIF socket lever down.
- Always observe the orientation of Pin 1 for 24, 28 or 32-pin devices by referencing the configuration shown on the adapter.

- The memory device should always be positioned toward the bottom of the socket.

- Make sure none of the memory device pins are bent.

- Always check a memory device for an Electronic ID before obtaining a signature. If the EPROM does not have an Electronic ID, you must select the device size manually before getting a signature or you will damage the device. As a general rule, devices that are 512KB or larger usually have an electronic ID. However, always consult the manufacturer's data book for confirmation.

GETTING STARTED

1. Remove the GI-4000 unit from the carrying case.

2. Position the power switch to the ON position.

3. If the GI-4000 does not power-up, remove the Lithium-Ion battery pack from the battery compartment (back side) and charge the battery with the Lithium-Ion battery charger that was shipped with your unit. If you purchased the optional AC Adapter, you can plug the AC Adapter into the power connector located on the bottom right front side of the GI-4000.

   NOTE: To prevent damage to your GI-4000 Tester, only use the Universal AC Adapter and Lithium-Ion Battery Charger provided by Kobetron™.

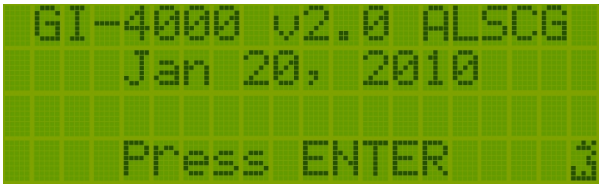
4. When the power is turned on, the screens shown below will be displayed. The screen on the right indicates the unit has passed the internal self-test.

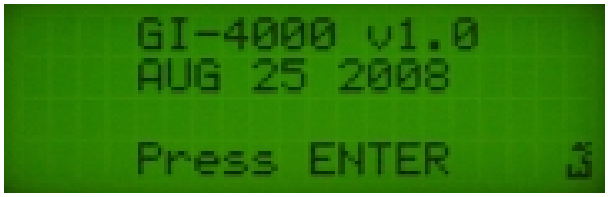
OPTIONAL FEATURES

The GI-4000 can be purchased with a number of optional features. These features include;

1. The GI-4000 Agent Feature
2. The GI-3400 Serial Link Feature
3. The SHA-1 Signature Feature
4. The Compact Flash Feature
5. The GLI Verify Feature

To find out what features are installed on your GI-4000 Tester, simply turn on the Tester and look at the power on screen shown below;

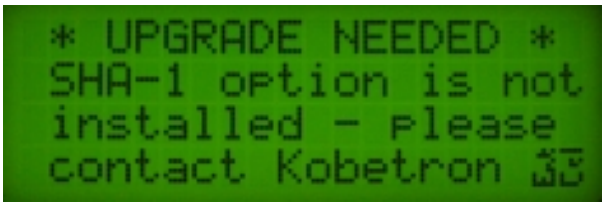


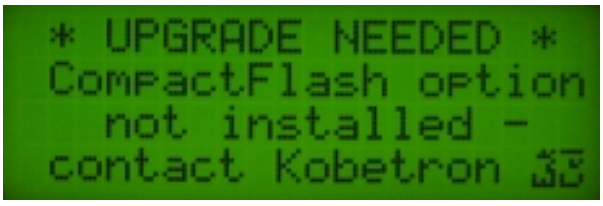


If there are letters listed after the version number (see above left), then the corresponding features are installed. If there are no letters displayed after the version number (see above right), then no optional features are installed. Listed below are the corresponding features associated with the letters;

- **"A"** - GI-4000 Agent Feature
- **"L"** - GI-3400 Serial Link Feature
- **"S"** - SHA-1 Signature Feature
- **"C"** - CompactFlash Feature
- **"G"** - GLI Verify Feature

If you try to use a feature that is not installed, you will get one of the following screens;



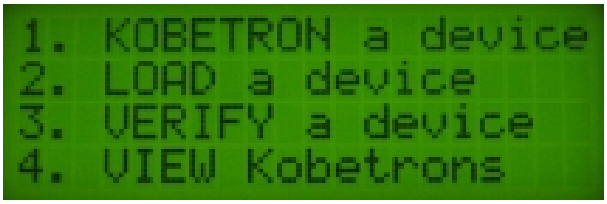


All optional features can be purchased and installed without having to return the Tester to Kobetron. For more information, please contact our sales department.

SETUP MENU

The GI-4000 Tester has a setup menu that allows the user to set several personal preferences. To enter the setup menu, turn on the Tester and press "Enter" on the keypad when you see the screen shown below;

This will take you to the main menu shown below;



Now Press “Setup” on the keypad, the screen below will be shown;

The serial port Baud default is “115,200”and can be toggled to different seetings by;

- Select **1. Baud: 115,200** to select “230,400”;
- Select **1. Baud: 230,400** to select “300”;
- Select **1. Baud: 300** to select “600”;
- Select **1. Baud: 600** to select “1,200”;
- Select **1. Baud: 1,200** to select “2,400”;
- Select **1. Baud: 2,400** to select “4,800”;
- Select **1. Baud: 4,800** to select “9,600”;
- Select **1. Baud: 9,600** to select “19,200”;
- Select **1. Baud: 19,200** to select “38,400”;
- Select **1. Baud: 38,400** to select “57,600”;

The Backlighting default is “On” and can be toggled “On” and “Off” by;

- Select **2. LCD backlight ON** to turn the backlighting “Off”;
- Select **2. LCD backlight OFF** to turn the backlighting “On”;

To view the current Power status of the battery;

- Select **3. Power status**
- When using battery power, the above screen will be displayed;

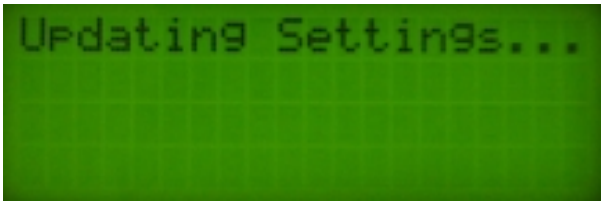
- When using the optional A/C adapter, the above screen will be displayed;
- Pressing **cancel** will take you back to the main setup screen;

- Pressing **Enter** will take you to the next setup screen;

The Timings default is “Off” and can be toggled “On” and “Off” by;

- Select **1. Timings OFF** to turn the timings “On”;
- Select **1. Timings ON** to turn the timings “Off”;

This feature allows the user to measure the time it takes to calculate a signature.



To save your settings, press **Cancel** several times to return to the main screen. The above screen will be momentarily displayed before taking you back to the main screen.

MEMORY DEVICE SELECTION

The GI-4000 Tester uses two methods of operation for verifying memory feature:

1. ELECTRONIC ID

The GI-4000 Tester can identify memory devices using an Auto ID feature. This feature allows the GI-4000 Tester to directly read the memory device's size and type. This will *automatically* configure the GI-4000 Tester for verifying that memory device. Please refer to the manufacturer's device manual before using Electronic ID, or use Manual ID.

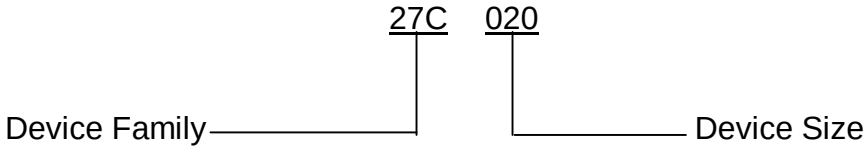
NOTE: Memory devices that do not have an Electronic ID are not permitted to use this feature and could be destroyed.

2. MANUAL ID

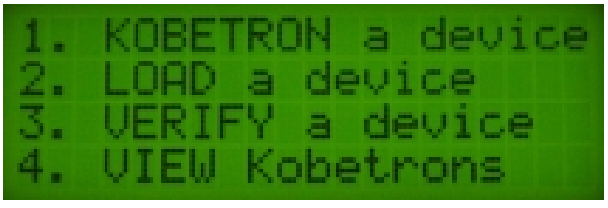
This feature is used to verify devices that do not support Electronic ID, or the Electronic ID is not in the library of the GI-4000 Tester. If the display reads "Error Device not in Library", the user must manually select the device family and size from the options available on the menu screen.

Example for a 27C020 EPROM

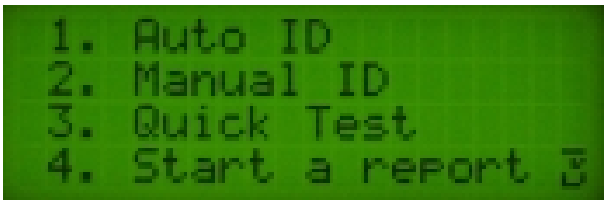
Device Type – EPROM
Size – 2 Mbits



VERIFYING A DEVICE WITH ELECTRONIC ID



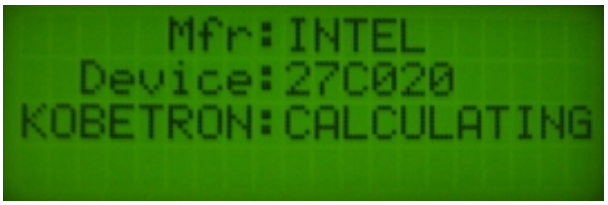
- Select **1. KOBETRON A DEVICE**
- Insert Memory Device into proper adapter



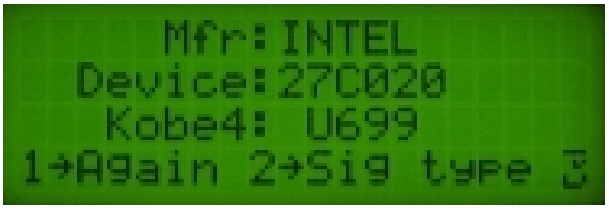
- Select **1. Auto ID**

- During Auto ID process, screen shows:

- Select **1. Kobe4** (4-digit)

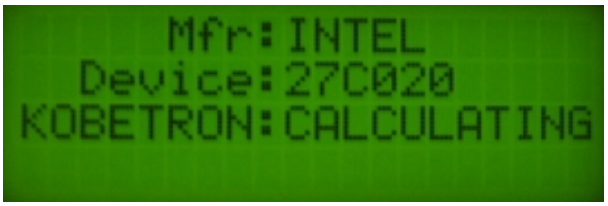


- After calculation, screen shows:

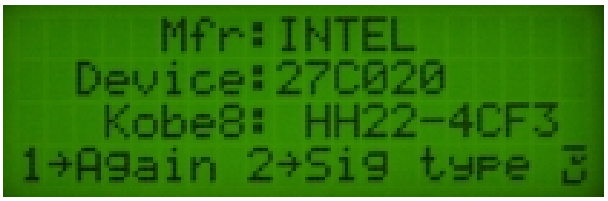


- If you want to perform a Kobe4 signature again, Select **1⟶Again**
- If you want to perform a different signature, Select 2⟶**Sig type**

- Select **2. Kobe8** (8-digit)

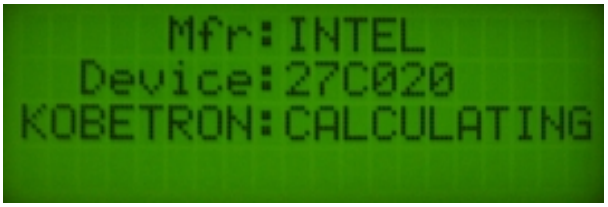


- After calculation, screen shows:

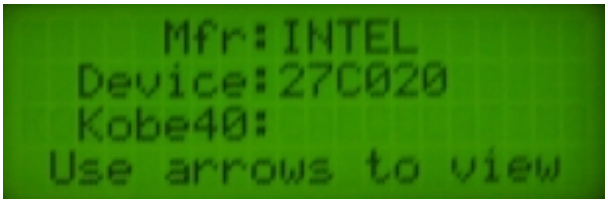


- If you want to perform a Kobe8 signature again, Select **1⟶Again**
- If you want to perform a different signature, Select 2⟶**Sig type**

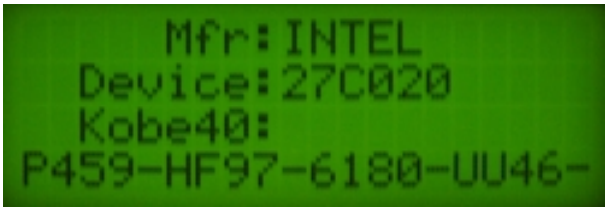
- Select **3. Kobe40** (40-digit)



- After calculation, screen shows:

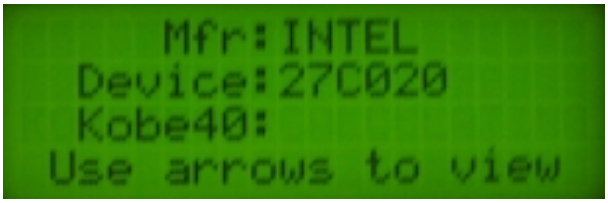


- Push the Up arrow on the keypad to see the beginning of the signature:
- Push the Down arrow on the keypad to see the end of the signature:
- Push the Left arrow on the keypad to scroll the signature to the left:
- Push the Right arrow on the keypad to scroll the signature to the right:

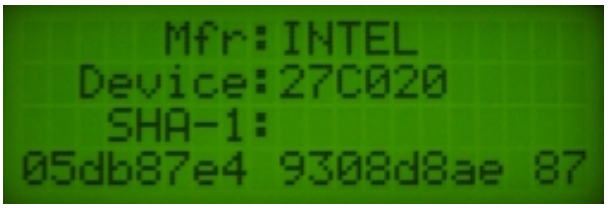


- If you want to perform a Kobe40 signature again, Select **1⟶Again**
- If you want to perform a different signature, Select 2⟶**Sig type**

- Select **4. SHA-1** (40-digit)



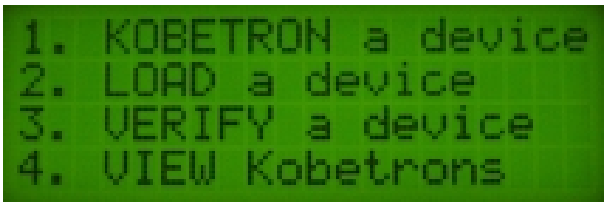
- Push the Up arrow on the keypad to see the beginning of the signature:
- Push the Down arrow on the keypad to see the end of the signature:
- Push the Left arrow on the keypad to scroll the signature to the left:
- Push the Right arrow on the keypad to scroll the signature to the right:



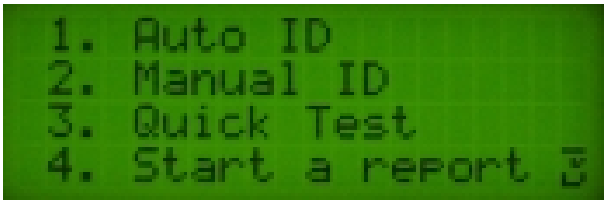
- If you want to perform a Kobe40 signature again, Select **1⟶Again**
- If you want to perform a different signature, Select 2⟶**Sig type**
- When you are finished, press **cancel twice** to return to the main screen:

NOTE: 4-digit signatures are not available on SIMM Modules or any other devices greater then 1Mbyte in size.

VERIFYING A DEVICE WITH MANUAL ID



- Select **1. KOBETRON A DEVICE**
- Insert Memory Device into proper adapter

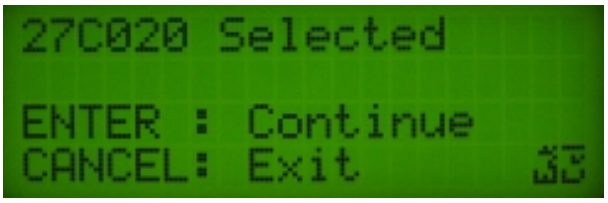


- Select **2. Manual ID**

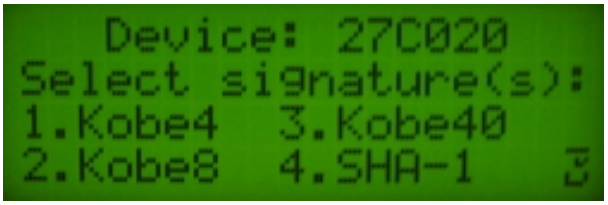
- Select Device Type **3. 27C/V**

- Select **Enter (for next screen)**

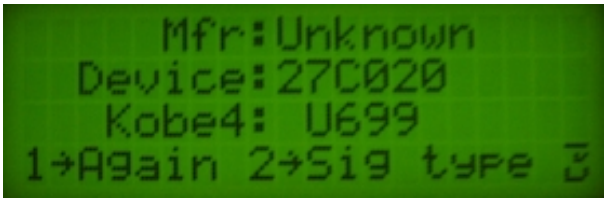
- Select **2. 020**



- After selection is finished, screen shows:
- Press Enter



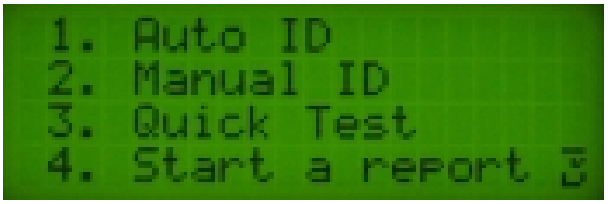
- Select **1. Kobe4** (4-digit)



- After calculation, screen shows:
- If you want to perform a Kobe40 signature again, Select **1⟶Again**
- If you want to perform a different signature, Select 2⟶**Sig type**
- When you are finished, press **cancel twice** to return to the main screen:

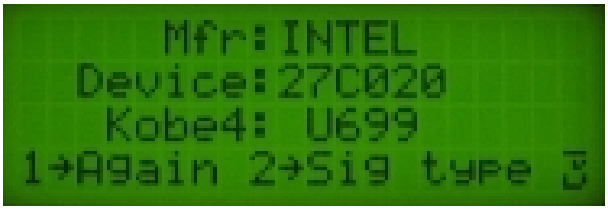
QUICK TEST

This test is only for memory devices with Electronic ID. It allows the user to verify a device quickly without having to go through individual keystrokes. All devices 1 Mbyte or less in size will automatically display the Kobe4 (4 digit) signature. All devices greater then 1 Mbyte in size will automatically display the Kobe8 (8 digit) signature.



- Select **3. Quick Test**

- During Auto ID process, screen shows



- After calculation, screen shows:
- If you want to perform a Kobe40 signature again, Select **1⟶Again**
- If you want to perform a different signature, Select 2⟶**Sig type**
- When you are finished, press **cancel twice** to return to the main screen:

TESTING SAME DEVICES

If you are testing memory devices that are the same type and size, you can simply insert the next memory device, then;

- Press **1⟶Again**

TESTING DIFFERENT DEVICES

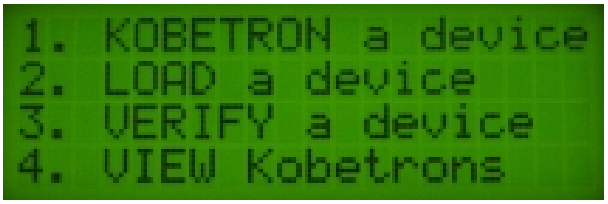
When testing different device types or sizes, you must use manual or Electronic ID for the new device in order to get the correct signature. If you do not make the changes, you will get the wrong signature.

BIT BY BIT COMPARE

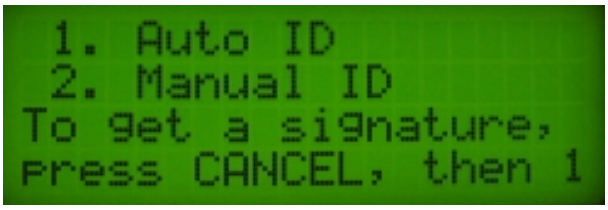
The GI-4000 Tester has the ability to compare two similar memory data bit by bit through downloading the memory device's data into a resident RAM buffer. Then, after downloading a memory device's data into the RAM, another memory device of the same type and size can be compared to the data previously loaded into RAM. Devices of up to 128Mbyte can be compared.

A. Loading a device into RAM (Buffer)

Insert one of the two devices to be compared into the ZIF socket. The data from this device will be copied to the buffer.

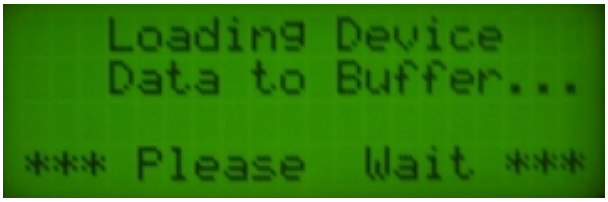


- Select **2. Load a Device**

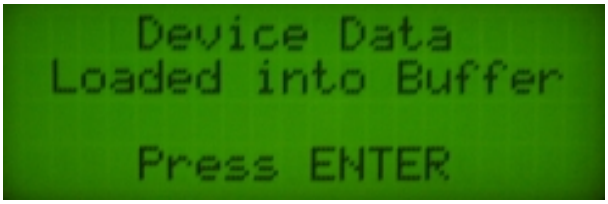


- Select **1. Auto ID or 2. Manual ID (If device doesn't have Electronic ID)**

- During Auto ID process, screen shows



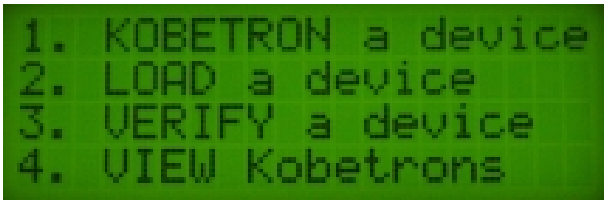
- During loading process, screen shows



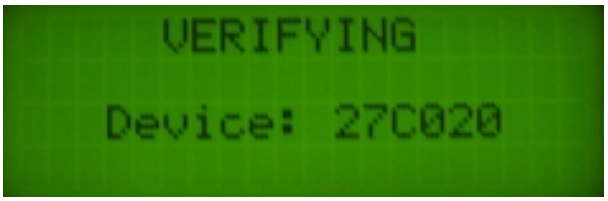
- Press **Enter**, the data has now been loaded to the buffer.

B. Verifying similar devices (bit by bit)

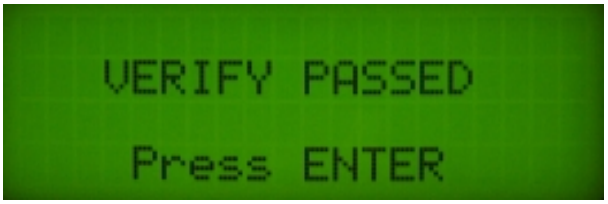
Remove 1st device from socket and insert 2nd device to be compared with data loaded into the buffer, or verify original device in the socket against the buffer.



- Select **3. Verify a Device**



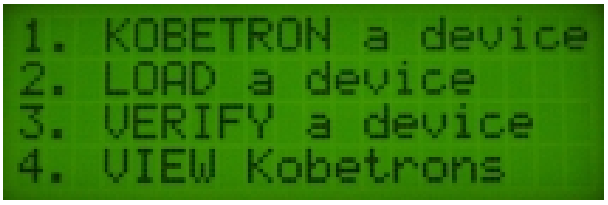
- During verification process, screen shows



- Press **Enter** and repeat the above steps to verify another device.

VIEW KOBETRONS

This feature allows the user to view the last 10 signatures that were calculated since the tester was last turned on. The signatures are displayed starting from the most recent to the oldest.



- Select **4. View Kobetrons**

- The last signature calculated will be displayed as **Item [0]**
- To view the 2nd to last signature calculated, press 9⟶ on the keypad:

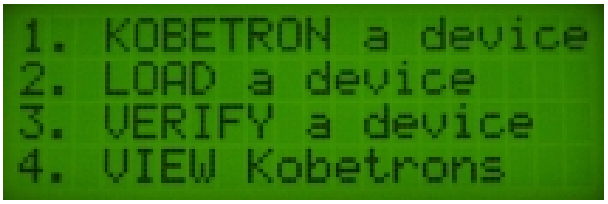
- The 2nd to last signature calculated will be displayed as **Item [1]**
- To view all other recorded signatures, continue to press 9⟶ on the keypad:
- When you are finished, press **cancel** to return to the main screen:

START A REPORT

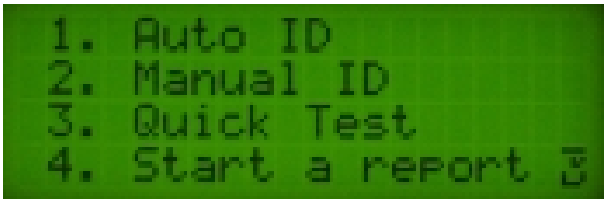
The GI-4000 Tester has the ability to print a report of your signatures to a serial printer connected to the serial port of the Tester. To use this feature, you must first make sure the baud rate of the serial port is properly set to the printer speed (usually 9600 bps).

From the main menu, press “Setup” on the keypad

- Select **1. Baud:** repeatedly until the desired baud rate is displayed;
- When the desired rate is displayed, press **cancel** to save settings

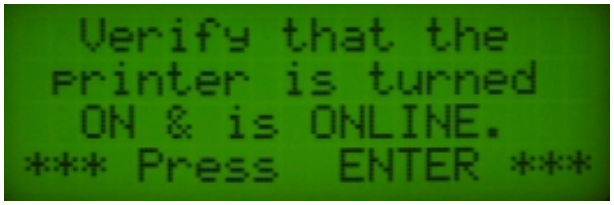


- Select **1. Kobetron a device**



- Select **4. Start a report**

- Select **1. Report ONE device** (for single device signature) or
- Select **2. Report a LIST of devices** (for multiple device signatures)



- Press **Enter** and start normal signature process
- Signatures will be sent to printer as they are completed
- If **Report ONE device** was selected, the report will finish after one signature
- If **Report a LIST of devices** was selected, press **cancel** at the main menu to terminate the report.

MEMORY DEVICE ADAPTERS

Model No.	Description
MI-311	32-PIN Adapter (DIP)
MI-312	40-PIN Adapter (DIP)
MI-313	40-PIN Adapter (DIP)
MI-314	42-PIN Adapter (DIP)
MI-315	32-PIN Adapter (PLCC)
MI-316	44-PIN Adapter (PLCC)
MI-317	44-PIN Adapter (PLCC)
MI-318	72-PIN Adapter (PIXEL SIMM)
MI-319	80-PIN Adapter (SIMM)
MI-320	72-PIN Adapter (CG SIMM)
MI-321	32-PIN Adapter (PLCC)
MI-322	32-PIN Adapter (PLCC)
MI-323	24-PIN Adapter (DIP)
MI-324	UNIDESA Adapter (Proprietary)
MI-325	24-PIN Adapter (DIP)
MI-326	Cash Code Memory Stick
MI-327	32-PIN Adapter (PLCC)
MI-328	44-PIN Adapter (PLCC)
MI-329	32-PIN Adapter (PLCC)
MI-330	44-PIN Adapter (PLCC)

The Kobetron™ Memory Investigator Adapter Series can be used with both the GI-3000 and GI-4000 products.

UPDATING THE GI-4000 TESTER

The GI-4000 Tester is designed so that users can update the software in the field without having to return the unit to the factory. Software updates for the Tester can be downloaded from our web site. To access our private web site, go to (www.kobetron.com) and click on the “Login Here” button and enter your Username and Password. If you do not have a Username and Password, complete the “Customer Registration” form and you will be assigned one. Once you gain access to our private web site, click on the GI-4000 Gaming Investigator link shown in Figure 1. This link will take you to our software download area. Once you are in our download area, click on the ‘**Version x.x**” link shown below in Figure 2. When the File Download window shown in Figure 3 opens, click on the “Save” button. Select the location where you want to save

Figure 1

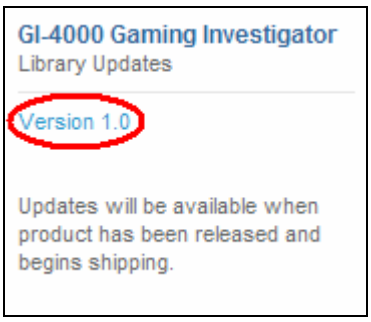


Figure 2

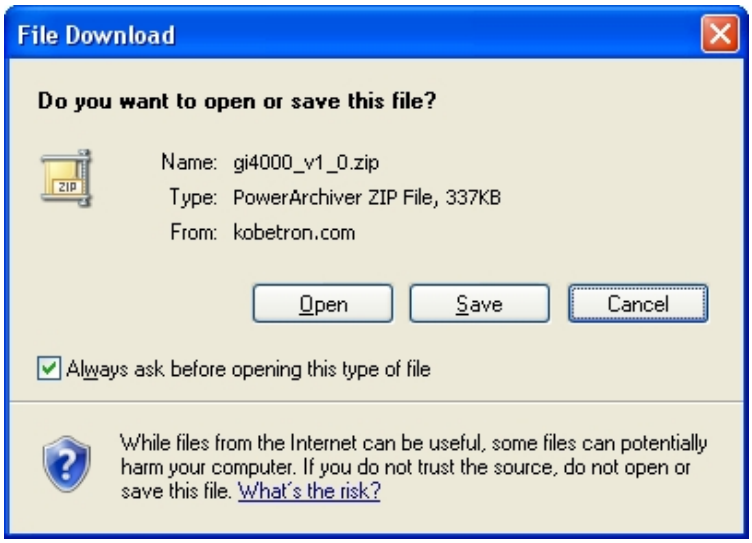


Figure 3

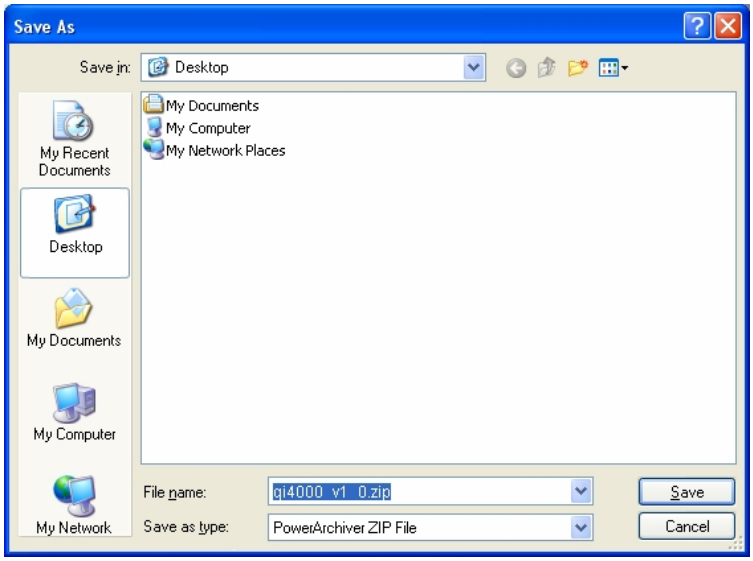


Figure 4

the update file in the Save As window shown in Figure 4 and click on “Save”. Your update file should start downloading. For complete step-by-step instructions, please read the “GI-4000 Upgrading Instructions” included in the zip file you downloaded.

TECH TIPS

- SIMMS (72 pin) can be either Standard/Pixel or CG SIMMS.
- The standard SIMMS may have a bank of switches. These switches must all be turned off before testing with the MI-318.
- The CG SIMM has a larger PCB height. The CG SIMM must use the MI-320 Adapter to obtain a correct signature.

BATTERY RELATED QUESTIONS

Your new GI-4000 is equipped with a 4400 MaH high capacity Lithium-Ion battery pack. To prevent possible damage and ensure maximum battery life, please read the following frequently asked questions.

Can I use any battery charger to recharge my battery pack?

No. Do not attempt to recharge the battery pack with any charger other then the charger that was shipped with your unit. The charger shipped with your GI-4000 has internal settings for the specific Lithium-Ion battery pack used and doing so could damage your battery pack and void your warranty. To charge the battery, you ***MUST*** remove the battery from the GI-4000 battery compartment and plug it into the battery charger. Unlike the GI-3000, the GI-4000 uses an external battery charger.

How long should the battery pack last on a full charge?

Under normal operating conditions, your battery pack should provide enough power to run the GI-4000 for a minimum of 10-12 hours of continuous use at room temperatures.

How long should it take to fully charge the battery pack?

On average, the battery pack should take approximately 8-10 hours to recharge. When the battery pack is fully charged, the blinking green light on the charger will stop blinking and turn to a steady green light.

What is the expected battery life for the high capacity battery?

The Lithium-Ion batteries in your GI-4000 have a life expectancy of approximately 500 charge cycles. To maximize the life of your battery, make sure your battery is fully recharged and that the green flashing light on your charger stops flashing and turns to a solid green light before removing the battery from the charger. As you approach the end of the life cycle of the battery, you may experience less usage time per full charge. This is quite normal for Lithium-Ion batteries.

GI-4000 TESTER SPECIFICATIONS

Power:	4 Cell Lithium-Ion Battery Pack	-	8.4VDC, 4400 MaH
	Optional Universal AC Adapter	-	9.0VDC, 2500 MA
Battery Charger:	Universal AC, 8.4VDC, 1 Amp with AUS, EUR, and UK Adapters.		
Devices:	2716 to 27V322 EPROMs 4MB to 64 MB 72-pin and 80-pin SIMMs All Type II CompactFlash Cards		
Dimensions:	7.13” x 4.5” x 2.06”		
Weight:	1.5 Lbs.		
Case Construction:	Injection Molded High impact Fire Retardant ABS Plastic.		

If you have any questions or comments, please call:

KOBETRON™, INC.

Phone: (850) 939-5222

Fax: (850) 939-0490

Monday - Friday 9:00 a.m.-5:00 p.m. (ET)

Email: sales@kobetron.com

Website: www.kobetron.com