KOBETRON

GI-4000PRO

User Manual

Kobetron, LLC
4720 Independence St.
Wheat Ridge, CO 80033

Toll Free: (844) Kobetron (562-3876)
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 Pro, verify that the following items are in the shipping container:

- Carrying Case
- GI-4000 Pro
- AC Adapter/Charger
- Complementary Verify+ System Key
- Optional MI-332 Adapter
- Optional MI-333 Adapter

The GI-4000 Pro 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 GI-4000 Pro if needed.

REPACKING AND RETURNING

If the GI-4000 Pro 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

The Kobetron™ GI-4000 Pro is covered by a 3 Year Parts and Labor Warranty (unless otherwise noted in the purchase agreement). The warranty period is effective from the date the GI-4000 Pro is shipped from the factory. If the 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 Pro is a handheld testing unit used for verifying the data in memory and storage devices. Specifically, it provides a reliable method for identifying the jurisdictional status of various components used in slot machines and Casinos. The GI-4000 Pro is packaged in a carrying case, making it suitable for both bench top and field service use.

UNDERSTANDING THE GI-4000 PRO

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

1. **Device Identification:** For memory devices with an Electronic Identification (or Electronic ID), the unit will automatically identify the memory device, size, and manufacturer. Different manufacturers use a multitude of names for Electronic ID such as: device ID, manufacturer identification code, and intelligent identifier. The phrase Auto ID will be used to reference this feature throughout this manual.

2. **Signature calculations:** Current signature algorithms available include: CDCK, SHA-1, MD5, Kobe4, Kobe 40, SHA256, Checksum, KCRC-8, Kobe32, Kobe4OddBall, Kobe8, Kobe8OddBall, KobeNewID, LT400CD, LT400Disk, S4-CRC, and SHA512. Other algorithms may be added in the future as deemed necessary by regulatory bodies and best testing practices.

3. **Database Verification:** With WIFI and GLI Access database credentials, the GI-4000 Pro will compare signatures received during verification with those included in regulatory letters to assist in quickly identifying the jurisdictional status of the component.

GETTING STARTED

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

2. Push and hold the power button for 2 seconds.

3. If the GI-4000 Pro does not power-up, charge the battery with the AC Adapter that was shipped with your unit. Plug the AC Adapter into the power connector located on the middle top side of the GI-4000 Pro.

   NOTE: To prevent damage to your GI-4000 Pro, only use the Universal AC Adapter provided by Kobetron™.

CONFIGURING THE SETTINGS

There are two ways to access the settings. Clicking the Gear symbol from the home screen or opening the grid menu and selecting **Settings**.

Once in the settings menu, there are several options available.

Updates

This menu allows the user to check for new updates and verify that they have the latest version available. See Updating the GI-4000 Pro

General

This menu contains Date/Time and Battery options, as well as the ability to override signature software version. See Obtaining Signatures from Previous Signature Tools

Algorithms

This menu allows the selection of multiple signature algorithms, as well as the optional ability to add Seed, HMAC, Salt and GAT strings. See Using Other Algorithms

WIFI

This menu will show a list of all wireless networks in range and other connection information. See Connecting to WIFI.

Database

This menu stores the credentials for the connection to the GLI Access database for the specified jurisdiction(s), and options for updating the database. See Utilizing the GLI Access Database

Output File

This menu includes all the various settings necessary for creating a Kobetron™ Signature Generation Report. See Output File Configuration Options

Logging

This menu is to assist with troubleshooting. Error logging may be necessary when working with Kobetron™ Support to determine if the unit can be repaired in field or if it needs to be returned for repairs. The GAT logging is to assist the user during the GAT signature process. There is also an option here to allow Kobetron™ to collect diagnostic information.

Device Info

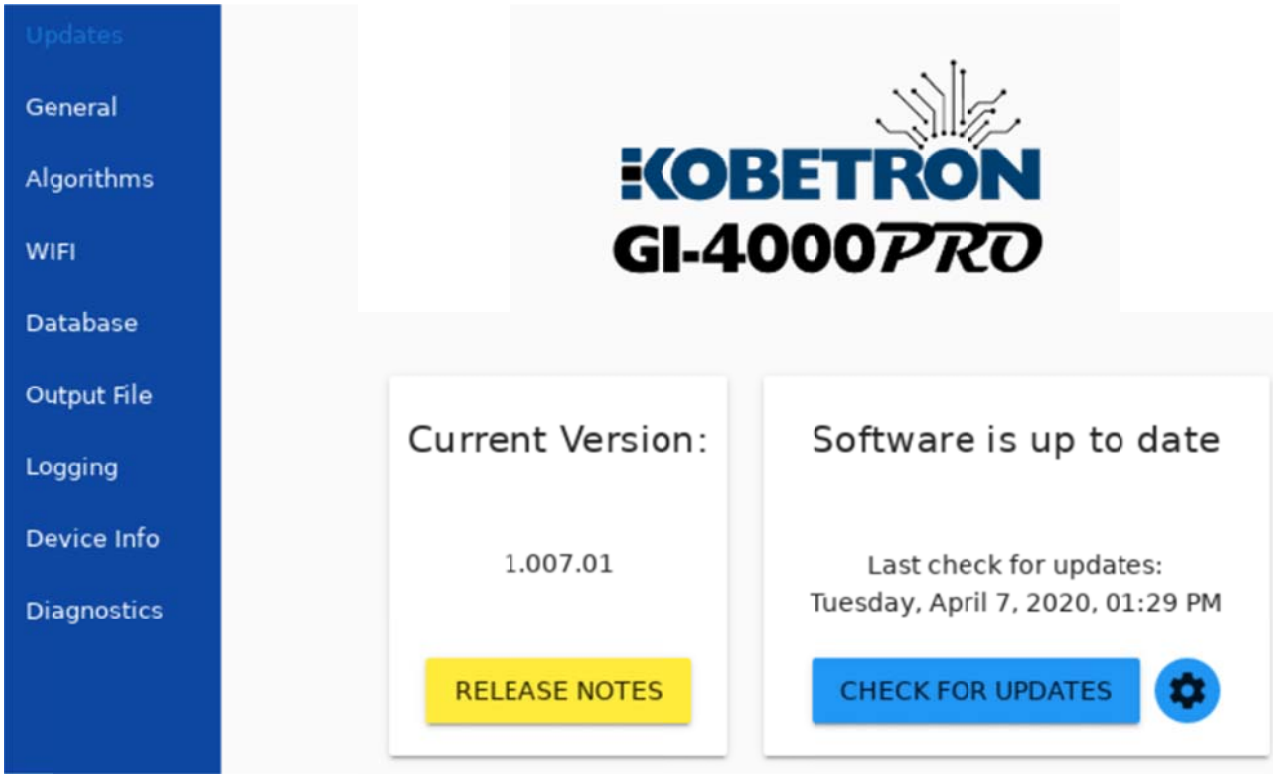
This menu contains information about the current software running on the unit. Kobetron™ Support may ask for you to provide this information when troubleshooting the unit.

Diagnostics

This menu contains various override options and diagnostic tools that Kobetron™ Support may ask a user to change when troubleshooting the unit.

UPDATING THE GI-4000 PRO

The GI-4000 Pro 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 GI-4000 Pro will be downloaded through the internal wireless connection. When the unit is connected to WIFI, it will periodically check for new updates from the Kobetron™ server.



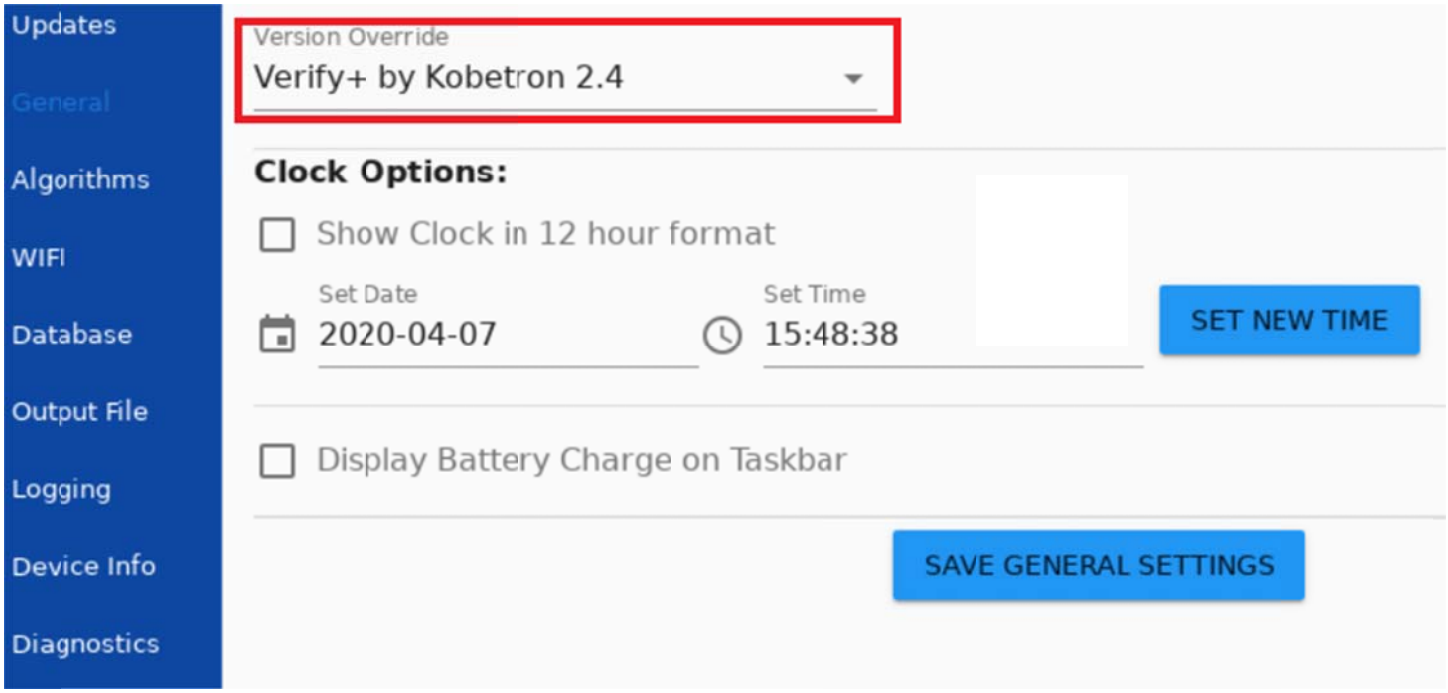
Under the **Updates** menu, the user can manually check for updates by clicking the **Check for Updates** button. This button will dynamically change during the update process. If there is an update available, it will show as **Download Update**. Once the update has been downloaded successfully it will change to read **Install Update**. It is advised to connect to power with the provided AC adapter because the unit may restart several times throughout the update process, and corruption can occur if the unit runs out of power.

If there is an error with downloading or installing the update, the temporary cache can be cleared using the gear button. The unit may need to be restarted after clearing the cache before a new download can be initiated.

Release notes for the current and all previous versions can be viewed from this menu using the **Release Notes**" button. Features and Fixes will be listed under the version where it was added or repaired.

OBTAINING SIGNATURES FROM PREVIOUS SIGNATURE TOOLS

If the GI-4000 Pro returns a signature that does not match the GLI reports or certification reports; it may have been obtained using an older version of the software or a different Verification program. If this occurs, it may be necessary to use the **Version Override** option to generate a matching signature. You can access the Version Override function from the **Settings/General** menu.

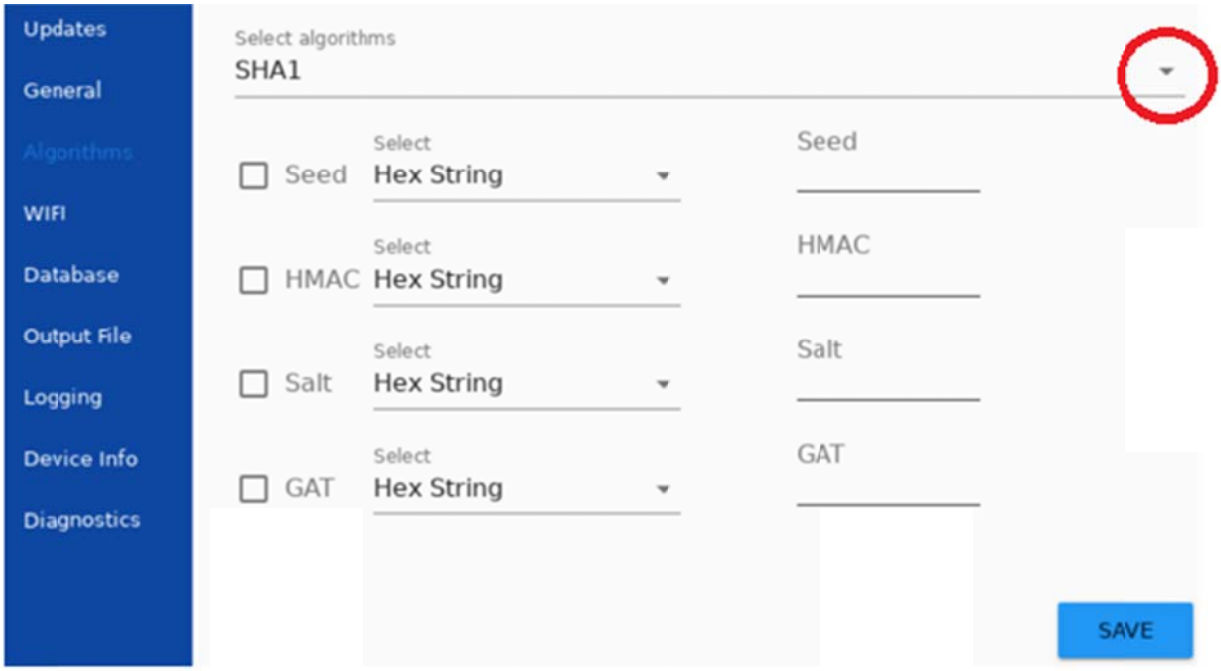


This option enables you to generate signatures that were obtained using DVCK or older GLI Verify or Verify+ versions. To change the override, use the dropdown menu and select the version needed. Then click the **Save General Settings** button. Please refer to your certification letter and/or approved report in GLI Access to determine which version was used to verify the software.

If you require further assistance with a certification letter, contact the GLI Compliance department at 1-888-GLI-REGS (454-7347).

USING OTHER ALGORITHMS

By default, the GI-4000 Pro will use the SHA-1 algorithm as this is the most common. Currently, the available signature algorithms include: CDCK, SHA-1, MD5, Kobe4, Kobe 40, SHA256, Checksum, KCRC-8, Kobe32, Kobe4OddBall, Kobe8, Kobe8OddBall, KobeNewID, LT400CD, LT400Disk, S4-CRC, and SHA512.



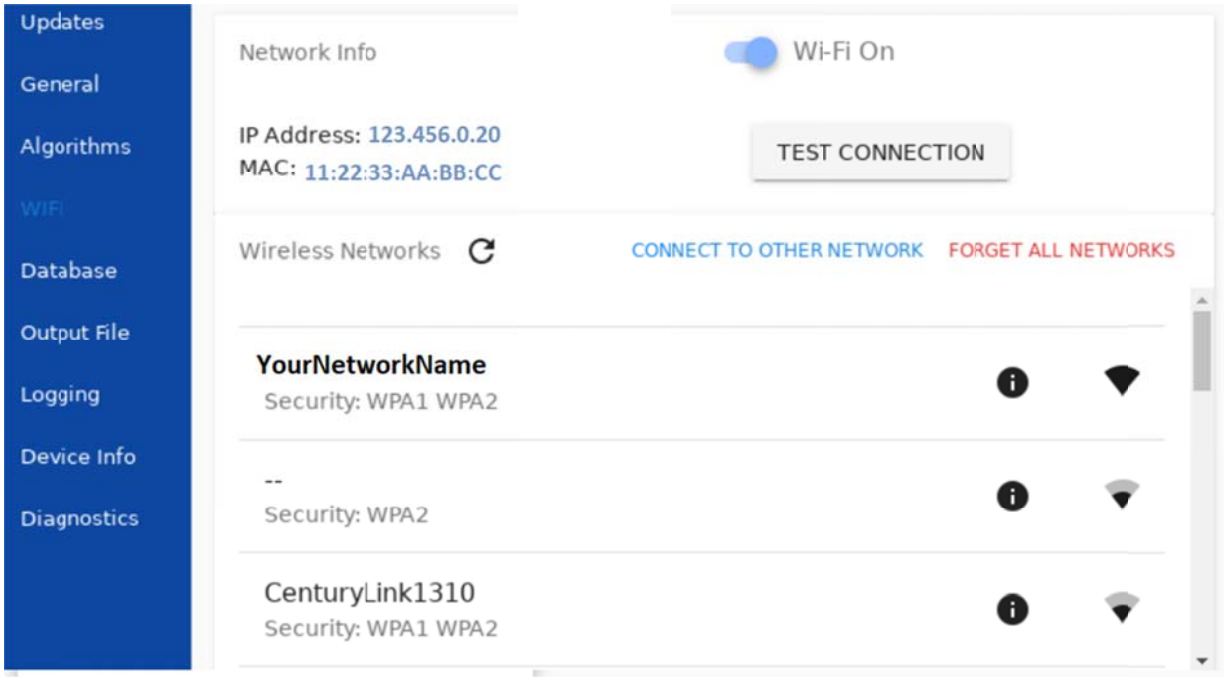
To select additional signature options, navigate to the **Settings/Algorithms** menu and use the dropdown menu and select the checkbox next to the desired algorithms. Once selected, click **Save**. Some of the signature algorithms can use different seed values. Each different seed value will produce a different signature. GLI by default does not use a seed value when issuing certification letters, but some jurisdictions require them. The seed value can be typed in as either a HEX or DECIMAL number. The values cannot be left empty if the checkbox has been selected.

The MD5, SHA-1, and SHA256 algorithms can utilize HMAC and Salt. HMAC and Salt are like seed values in that every different value entered will produce a different signature. HMAC and Salt can be used at the same time if required. The value can be entered as a HEX number or a TEXT string.

The GAT selection is a HEX value that will only be utilized when running a GAT signature.

CONNECTING TO WIFI

When using the 4000 Pro, connecting to WIFI is recommended to receive the latest updates and to utilize the Database functionality. The WIFI menu has several options to assist in connecting to the network of choice. To access this menu, navigate to **Settings/WIFI**.



Each Kobetron™ GI-4000 Pro unit has a unique MAC address that can be used in the case of secure networks that require the use of a Whitelist. The MAC address is displayed on the WIFI menu below the IP address. The IP address will remain blank until after first connection to the internet. Please note, the IP address may change when connecting to other networks or if the network you are connected to gets reset.

To connect to a visible network, select the desired network from the populated list. If the desired network does not appear in the list, try clicking the refresh button located at the top of the network list. If the network requires a password, a prompt will ask for the password before connecting.

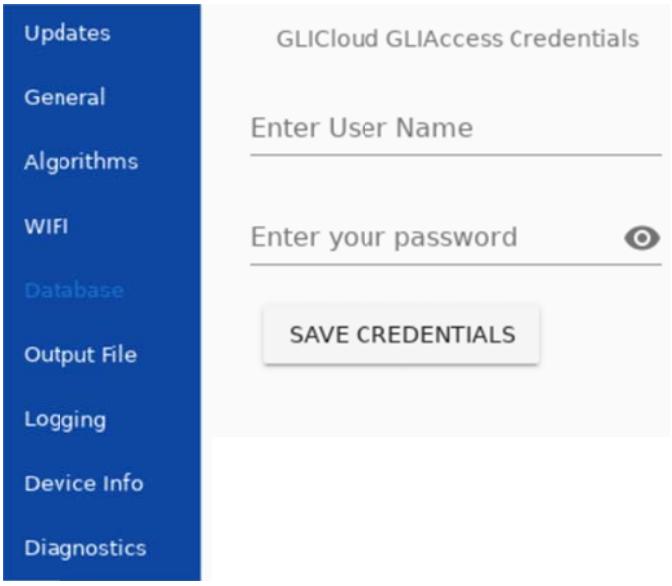
To connect to a hidden network, click **Connect to Other Network** and enter the SSID and password for the desired connection.

To troubleshoot connection issues, click **Test Connection** to open the diagnostic menu. When the diagnostic menu opens click **Start Network Diagnostic**. The diagnostic menu will then populate the **IP address** and then the **Local Network**, **Internet Connection** and **Kobetron Services** fields with an indication of a failed or successful connection.

Troubleshooting tip: If **Local Network** and **Internet Connection** connect but the **Kobetron Services** does not, make sure the **date/time** are properly set and then check the network firewall to make sure **Port 443** is open.

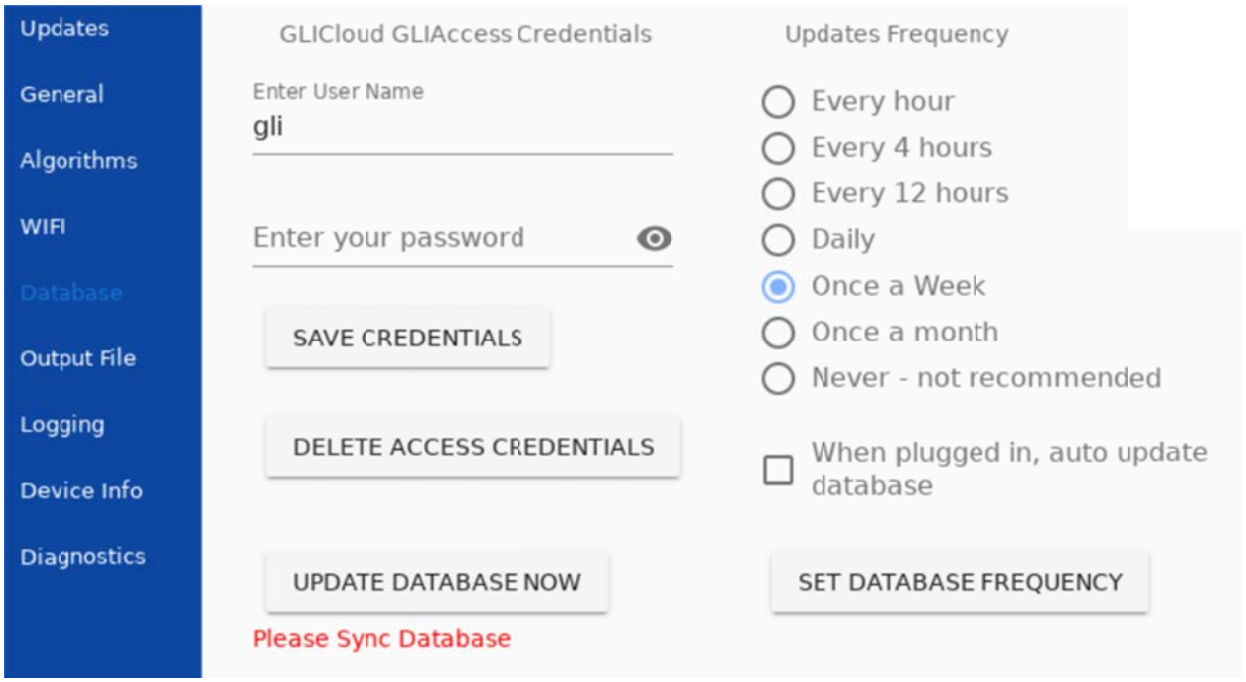
UTILIZING THE GLI ACCESS DATABASE

A GLI Access username and password are required to use the Database feature. The regulatory authority in each Jurisdiction determines the access permissions to be given to GLI Access users. Any questions regarding GLI Access including account information or a password reset should be directed to a GLI Development Representative or the GLI Compliance Department.



This menu provides an area for the GLI Access username and password to be entered. Once entered, touch the **Save Credentials** button. This will start the process of synchronizing the Pro with the requested GLI Access database. The first time the database is synchronized, the process can take up to 20 minutes depending on the total size of the database and internet speed. During this process, the unit cannot be used as leaving the Database menu will cancel the download. A strong WIFI connection and connecting to AC power is recommended when downloading the GLI Access database for the first time.

GLI is constantly updating the jurisdictional database, so it is recommended to update the GI-4000 Pro often to ensure accurate regulatory information. After the password has been initially entered, a new screen will appear under the Database menu. The password does not have to be entered every time, though the password field remains available in case the GLI Access account has been updated.

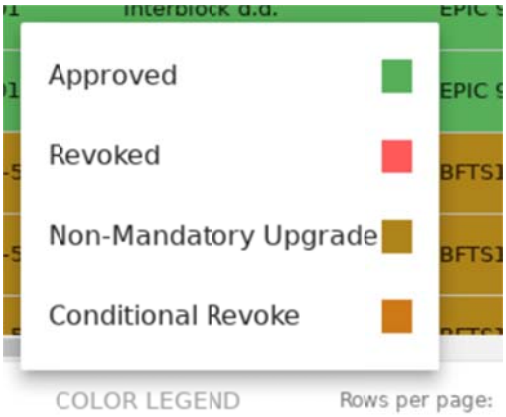


Clicking **Update Database Now** will download the latest database updates onto your GI-4000 Pro. The program can be configured to automatically check for updates using the selections under **Updates Frequency**. Click the **Set Database Frequency** button to save changes. The last synchronization will appear in red text under the **Update Database Now** button.

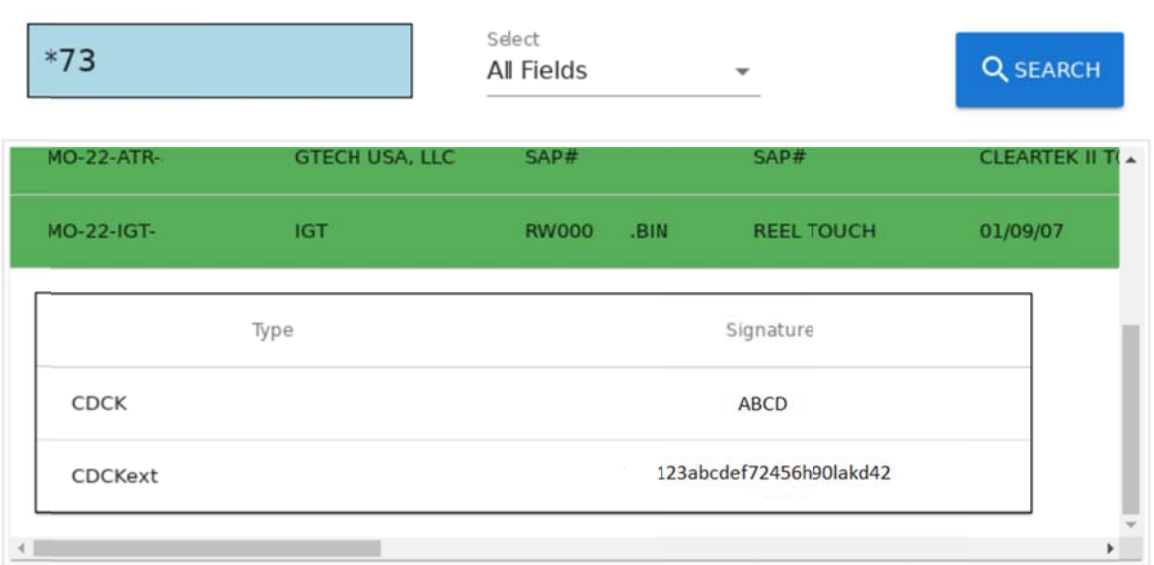
Database searching will become available once the GLI Access Jurisdictional database has been downloaded and updated. This can be accessed by clicking the magnifying glass symbol on the **Home** screen.

The search functionality gives basic options for searching specific fields or all fields for an exact match. If a partial search is required, use the star symbol as a wild card.

During signature verification or when searching the Jurisdictional database, each item will be color coded for easy visual identification. The display will remain uncolored if the signature was not found in the database.

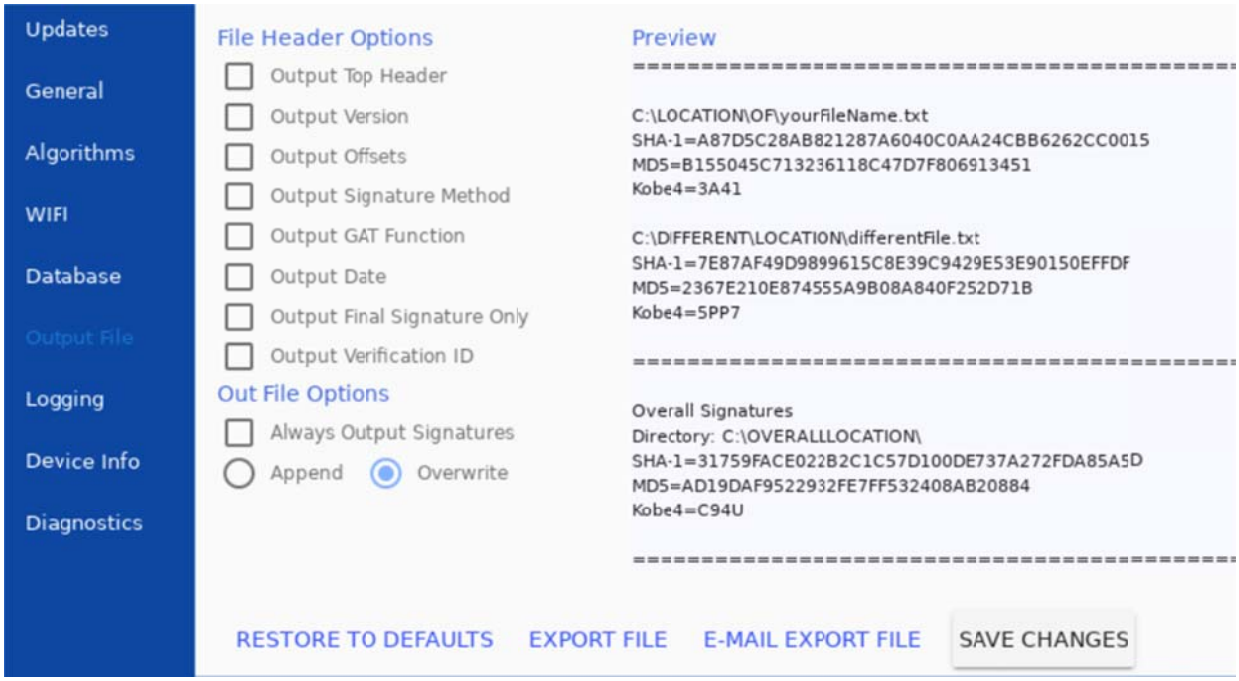


To view the matching signatures for each item in the database, click on the desired line item.



OUTPUT FILE CONFIGURATION OPTIONS

The output file configuration options relate to how the header is structured for the output file and the behavior that dictates how the signatures are stored.



Adjusting **File Header Options** will change the preview of how the output file will look in the **Preview** box on the right. For any option, uncheck it to remove and the preview will reflect how the new appearance. Once the Preview displays, touch the **Save Changes** button. Defaults can be restored at any time by touching **Restore to Defaults** and then **Save Changes**.

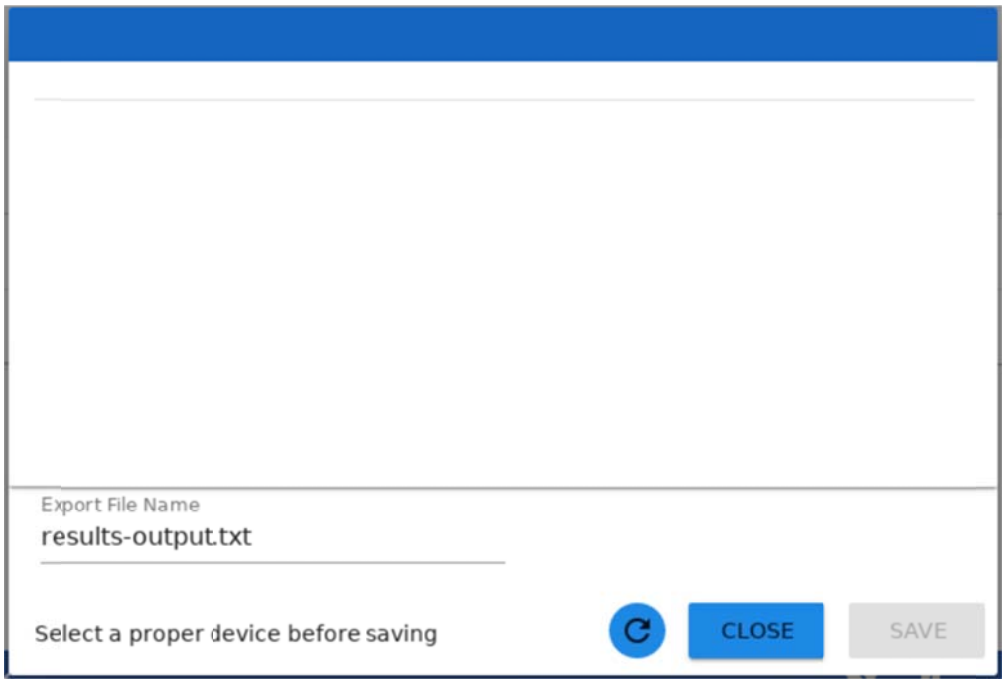
Click **Save Changes** when the preview displays the desired format.

- **Output Top Header**: Will output a header to identify the document.
- **Output Version**: Will output the current version of the signature utility used to make the signatures, or the overridden version if applicable.
- **Output Offsets**: Will output (Starting offset, Ending offset)
- **Output Signature Method**: Will output the method used, such as File/Directory/GAT/etc.
- **Output GAT Function**: This shows the GAT function selected during the verification process.
- **Output Date**: Will output the date the signatures were preformed "Date: 06/23/89 08:05:25 Mountain Standard Time"
- **Output Final Signature Only**: This is used for directory signatures. Will output only the final signature instead of the final signature and signatures of each item in the directory.
- **Output Verification ID**: Will signature the whole output file and append the signature onto the document. Used to provide proof the document was not edited.

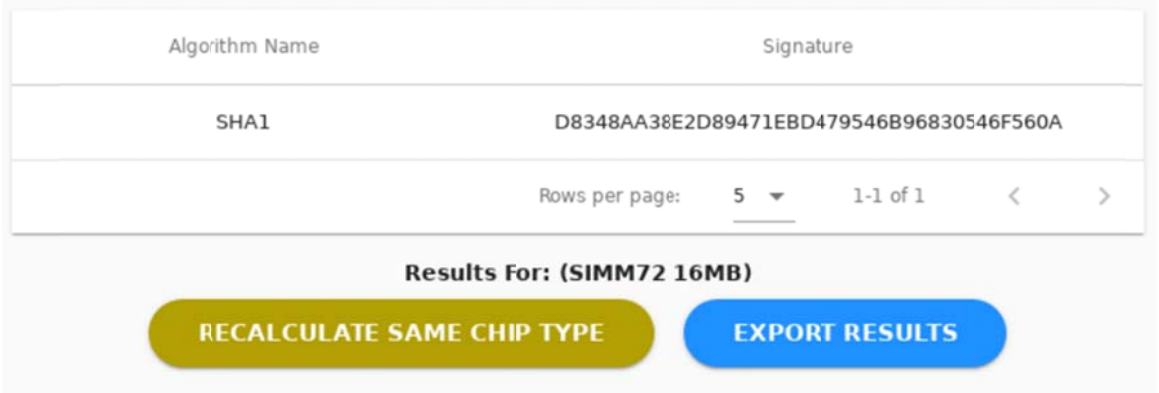
The Output File Options section is for handling the output file itself.

- **Always Output Signatures**: With this selected, each verification performed will write signatures to the output file in the desired append/overwrite option. If this is not selected, an output file will not be created.
- **Append**: Will add each verification signature to the end of the output file.
- **Overwrite**: Will overwrite the output file after a verification to only have the most recent signature in it.

The ability to export the Output File to an external memory device is provided in this menu as well as the option to email the Output File over WIFI. When exporting to a memory device, there is an option to rename the file.



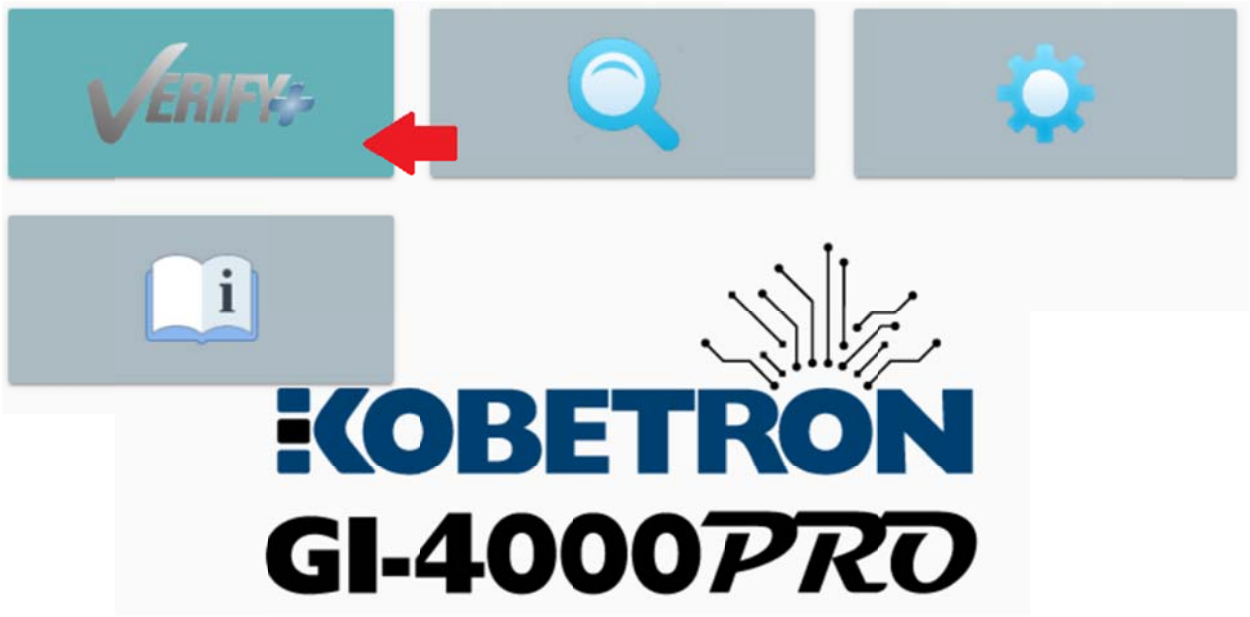
After obtaining a signature, there is also an option to export that single verification directly to external memory device without going back to the Settings menu.



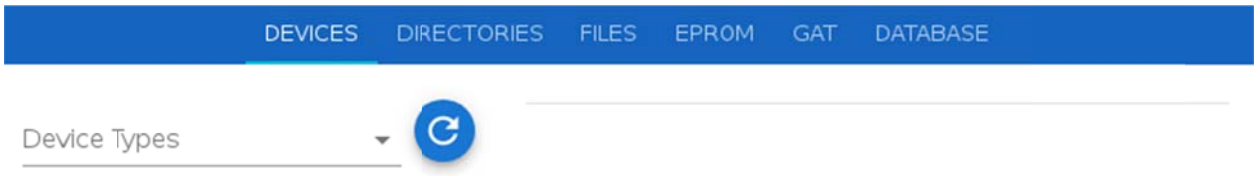
VERIFIYING A MEMORY DEVICE

1. Insert the desired memory device into the unit. Accepted memory devices are Compact Flash cards (CF), CFast cards, or any device that can be connected to the USB port.
    a. Note: If using an EPROM, see EPROM MEMORY DEVICE SELECTION

2. Select **Verify+** Icon from the home screen

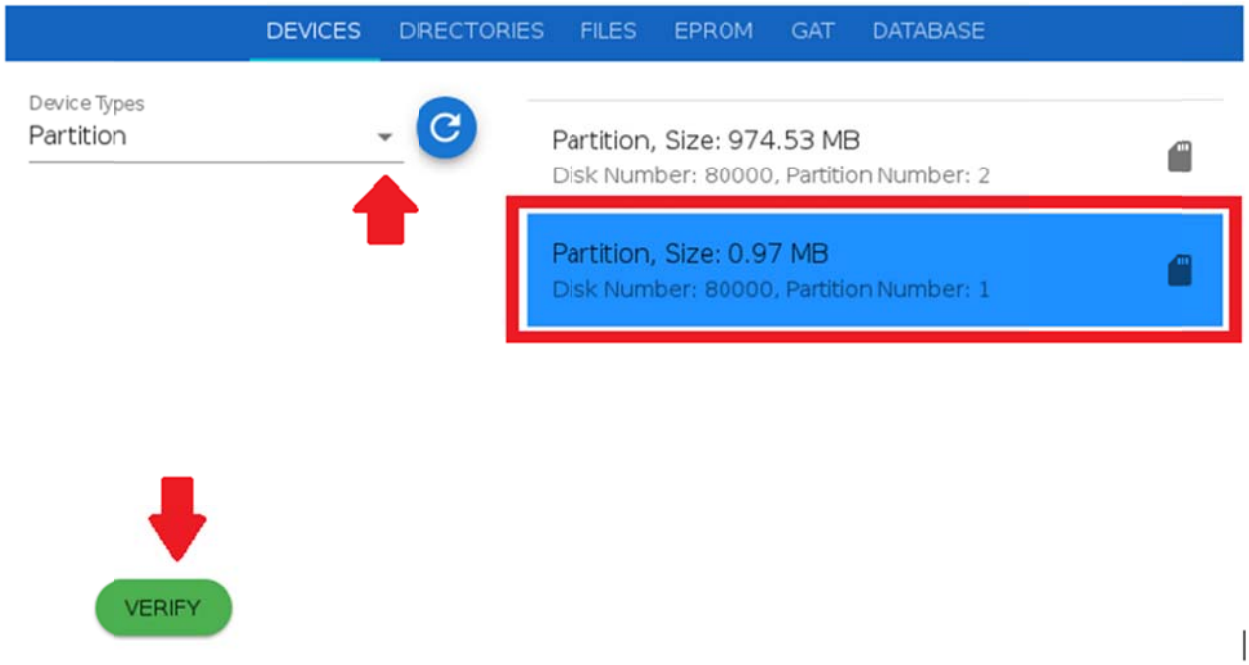


3. Select appropriate category from the top of the screen, this will depend on the type of memory device you are using. Please refer to the certification letter and/or approved report in GLI Access to determine which method was used to verify the software.

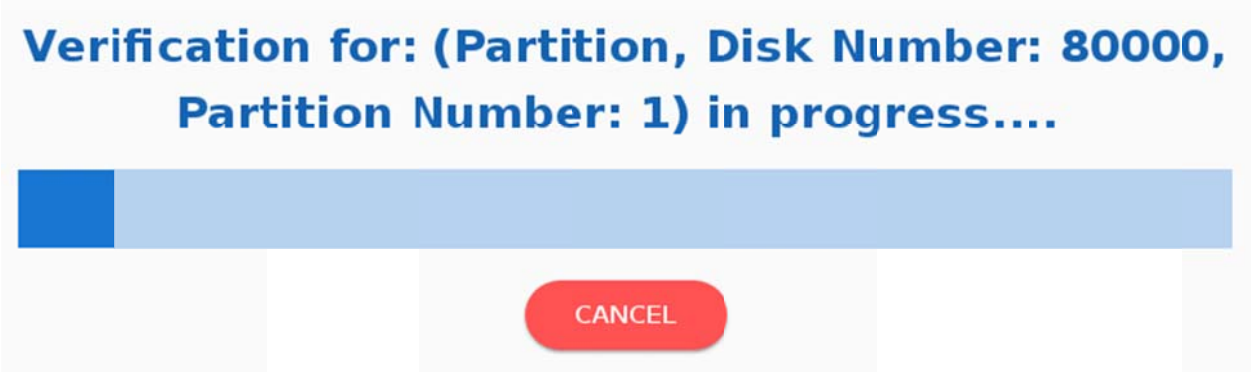


4. If the memory device does not appear and become selectable, try re-connecting the device or touching the refresh button.

5. Select the proper type from the available dropdown list. The list will change depending on the type of device entered, giving more options if the Tester recognizes a specific file structure. Then select the item needed for verification and click **Verify**.



6. While the Tester is verifying, you will see a progress bar. Running multiple signature algorithms or a more complicated algorithm may take longer to calculate than running a single calculation.



7. Once verification is completed, all signatures requested will populate, and can be exported using the Output file. For more information see Using Other Algorithms and Output File Configuration Options.

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)
MI-331	Compact Flash & MMC
MI-332	48-PIN Universal Adapter (DIP)
MI-333	32-PIN Universal Adapter (PLCC)

Adapters shown in Red can *only* be used with the GI-3000. The MI-331 can *only* be used with the GI-4000. Adapters shown in Green can be used with either GI-4000 or GI-4000 Pro.

EPROM MEMORY DEVICE SELECTION

Important notes before beginning:

- It is recommended that memory devices be removed while powering the unit on or off. The adapter can remain in place during power cycling.
- Always use the proper memory device adapter.
- To install a memory device in the MI-332 adapter, 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 by referencing the configuration shown on the MI-332 adapter.

- Ensure the memory device is positioned at the bottom of the MI-332 socket (closest to the ZIF socket lever).

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

- Always try using Auto ID first when verifying memory devices. If the memory device cannot be identified using Auto ID, then Manual ID will be required. Generally, memory devices that are 512KB or larger will use Auto ID. However, always consult the manufacturer's data book for confirmation.

The GI-4000 Pro uses two methods of operation for verifying EPROM memory:

AUTO ID

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

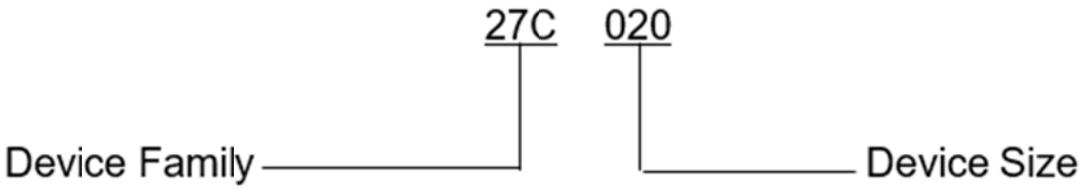
- **NOTE: If the Auto ID displays an ID that does not match the memory device DO NOT CONTINUE THE VERIFICATION or the memory device could be destroyed.**

MANUAL ID

- This feature is used to verify devices that do not support Auto ID, or the ID is not listed in the device library of the GI-4000 Pro. 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 Mb

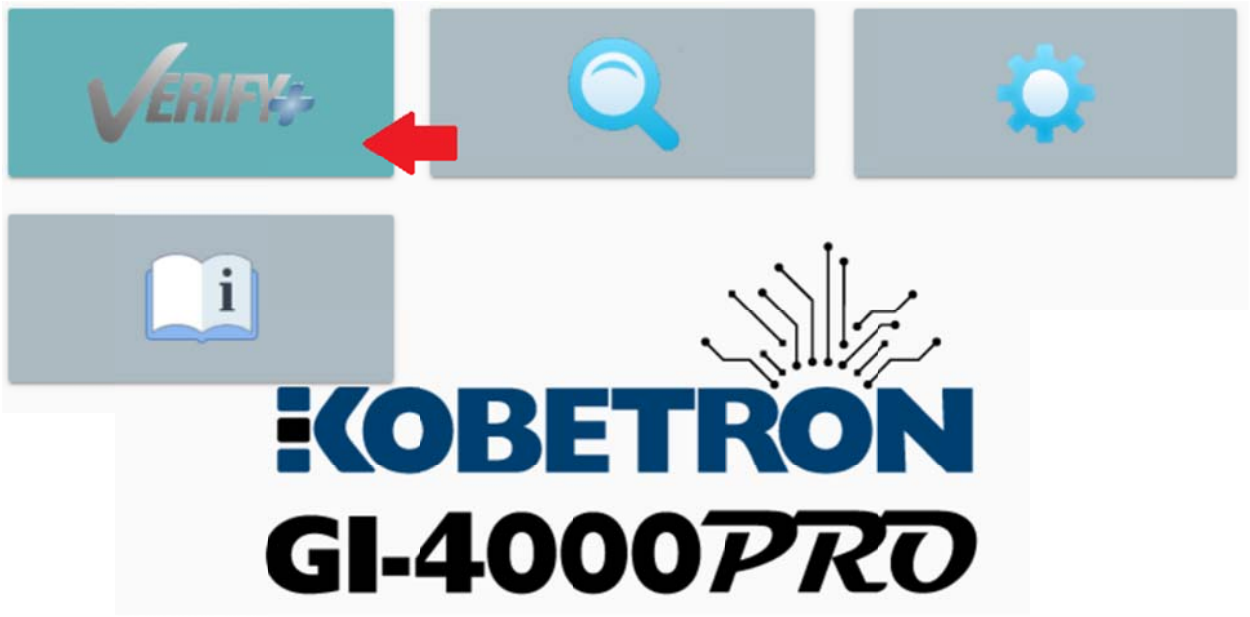


Steps for Verifying an EPROM:

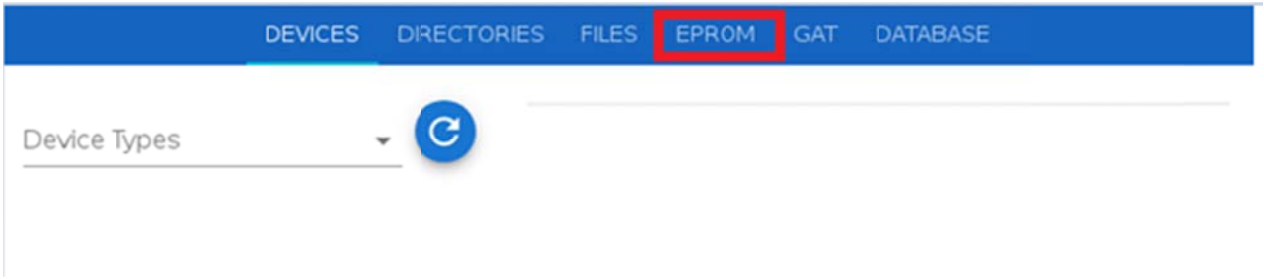
1. Insert the correct adapter for the desired EPROM into the 96-pin header located behind the door on the left side of the unit. Make sure to line up pins and attach adapter as evenly as possible so as not to bend the 96-pin header.

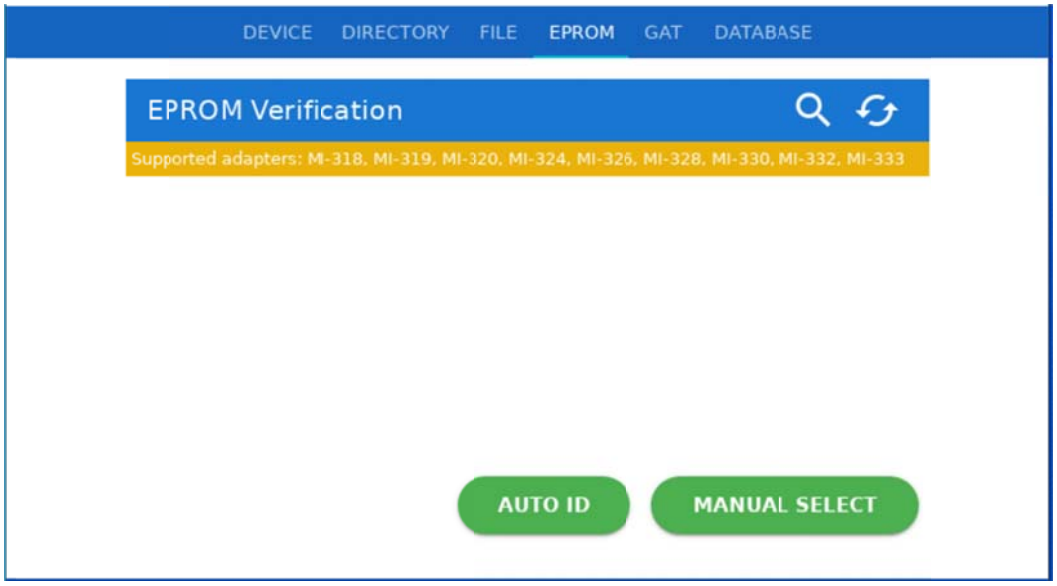
2. Insert EPROM into adapter, making sure to pay attention to the direction and placement of the pins. Below is an example of an EPROM placed correctly in the MI-332 adapter.

3. Select **Verify+** Icon from the home screen



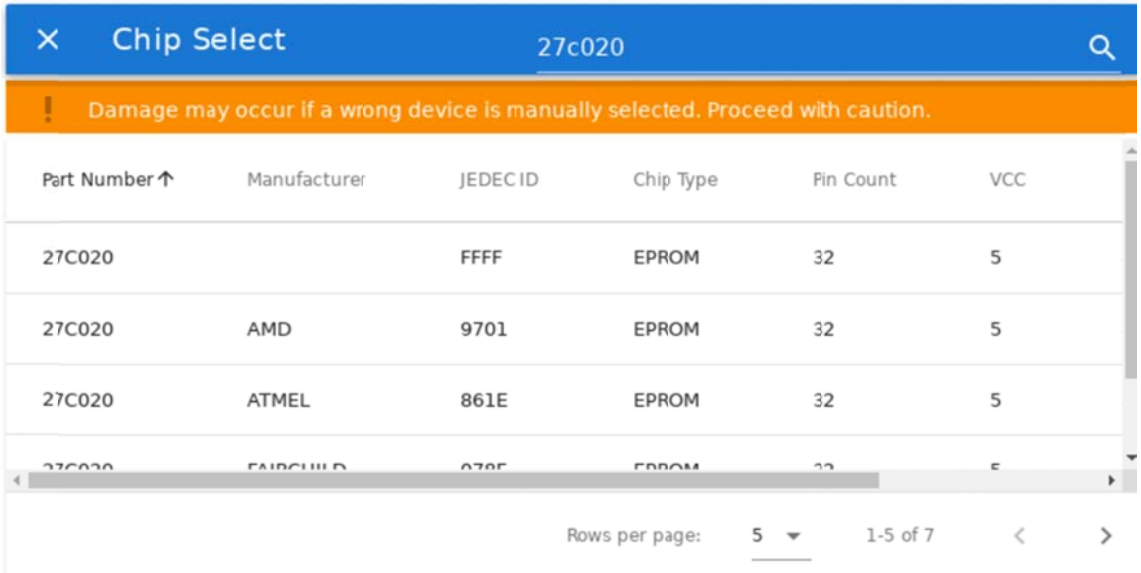
4. Select EPROM category from the top of the screen.



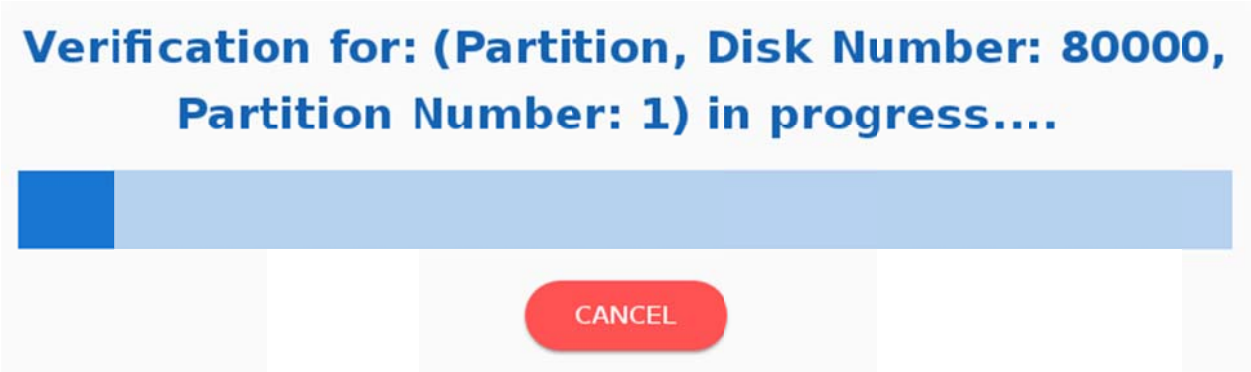


5. Select **AutoID** and wait for the GI-4000 Pro to read the EPROM. If the EPROM is compatible with Auto ID a confirmation screen will appear with information about the EPROM including size, manufacturer, ID and number of pins. Review the information and if correct, click **Verify**.

6. If the EPROM is not compatible with AutoID select **Manual Select.** A **Chip Select** menu will open with a list of items in the device library. There may be a delay the first time the device library is opened. Choose the item from this that best matches the EPROM. There is a search bar at the top to facilitate this selection. After the selection has been made, a confirmation screen will appear with information about the EPROM including size, manufacturer, ID and number of pins. Review the information and if correct, click **Verify**.



7. While the GI-4000 Pro is verifying, you will see a progress bar. Running multiple signature algorithms or a more complicated algorithm may take longer to calculate than running a single calculation.



Once verification is completed, all signatures requested will populate, and can be exported using the Output file. For more information see Using Other Algorithms and Output File Configuration Options.

TECH TIPS

- SIMMS can either be 72-pin or 80-pin.
- 72-pin SIMMS can be either Standard/Pixel or CG SIMMS.
- Standard/Pixel 72-pin SIMMS are used with the MI-318. They may have a bank of switches which must all be turned off before testing.
- CG 72-pin SIMMS are used with the MI-320.
- 80-pin SIMMS are used with the MI-319.

BATTERY RELATED QUESTIONS

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

What does the question mark on the battery mean?

This means the battery is currently uncalibrated. To recalibrate the battery, remove the AC adapter and let the battery fully discharge, waiting until the unit shuts down on its own. Attach the unit to AC power and let charge until the yellow light stops blinking and remains steady. This will take around 3 hours.

What if the unit won't turn on/Why does the yellow light blink but the unit won't turn on?

This can indicate that there is not enough power in the battery pack to run the boot sequence, or that the battery is uncalibrated and is not conveying the proper charge level. Plug the unit into AC power. Often the unit will boot up once it receives power without needing to push the power button. If the yellow light begins to flash quickly instead of slowly, please contact Kobetron™ Support.

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

No. Do not attempt to recharge the battery pack with any charger other than the charger that was shipped with your unit. The charger shipped with your GI-4000 Pro has internal settings for the specific Lithium-Ion battery pack used and doing so could damage your battery pack and void your warranty.

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 Pro for a minimum of 6 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 2-3 hours to recharge. When the battery pack is fully charged, the blinking yellow light on the unit will stop blinking and turn to a steady yellow light.

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

The Lithium-Ion batteries in your GI-4000 Pro 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 yellow flashing light on your unit stops flashing and turns to a solid yellow 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 PRO SPECIFICATIONS

Power

- 4 Cell Lithium-Ion Battery Pack - 7.4 VDC, 6400 mAh
- Universal AC Adapter - 12.0 VDC, 3 Amp

Hardware

- 7” Touch Screen
- 1 USB Port
- 1 Compact Flash Port
- 1 CFAST Port
- 1 96 Pin Header (for Kobetron™ Adapters)

Supported Memory Devices

- EPROMs, FLASH, SPI, I^2C & Firmware Hubs
- 72/80-pin SIMMs, Memory Sticks & S400 Modules
- Compact Flash Cards
- CFast Cards
- USB Thumb Drives
- USB Connected Devices

If you have any questions or comments, please call:

KOBETRON, LLC.

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

at any
LLC