MAGNUM
E N E R G Y

MagWeb GT

MAGNUM
E N E R G Y

Owner's Manual

Sensata
Technologies

Disclaimer of Liability

The use of this manual and the conditions or methods of installation, operation, use, and maintenance of the MagWeb GT are beyond the control of Sensata Technologies. Therefore, this company does not assume responsibility and expressly disclaims liability for loss, damage, or expense whether direct, indirect, consequential or incidental that may arise out of or be in any way connected with such installation, operation, use, or maintenance.

Due to continuous improvements and product updates, the images shown in this manual may not exactly match the unit purchased.

Restrictions on Use

The MagWeb GT may only be used in life support systems with the express written approval of Sensata Technologies. Failure of this device can reasonably be expected to cause failure of that life support system, or to affect the safety or effectiveness of that system. If the MagWeb GT fails, it is reasonable to assume the health of the user or other persons may be endangered.

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This entire manual is available for download—with many of the diagrams available in color—on our website.

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Thank you from all of us at Sensata for purchasing this MagWeb GT.

The MagWeb GT is a product under the Magnum Energy brand from Sensata Technologies. We understand there are many purchasing options in the marketplace, and are pleased that you have decided on a Magnum product.

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IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

This manual contains important instructions to follow during installation and maintenance of your MagWeb GT. To reduce the risk of electrical shock and ensure the safe installation and operation of the MagWeb GT, the following symbol appears in this document to indicate dangerous conditions and important safety instructions.

WARNING: This indicates a situation where failure to follow instructions may cause a serious hardware failure or personnel danger if not applied appropriately. Use extreme caution when performing this task.

Safety Precautions

- All electrical work must be performed in accordance with local, state, and federal electrical codes.

- Before installing or using the MagWeb GT, please read all instructions and cautionary markings in the technical documents.

- Use insulated tools to reduce the chance of electrical shock or accidental short circuits.

- Make sure to use a dedicated outlet for the MagWeb GT. Do NOT plug any other devices into the same outlet as the MagWeb GT.

- Do NOT plug the MagWeb GT into a power strip, surge protector, or uninterruptable power supply (UPS). The surge suppression and/or filtering on these sorts of devices will substantially diminish power line communication (PLC) performance.

- Always verify proper wiring prior to starting your PV system.

- Do not operate if the MagWeb GT has been damaged.

- Do **NOT** attempt to repair the MagWeb GT. If it fails, contact Sensata Customer Support (425-353-8833) to obtain an RMA number and start the replacement process. Damaging or opening the MagWeb GT will void the warranty.

SAVE THESE INSTRUCTIONS

1.0   Introduction

The MagWeb GT (ME-MGT-MW) is the information gateway for our MicroGT 500 microinverters. The unit collects module performance data and transfers this information to an Internet database in real time (retains data for the last 30 days), requiring only a single data and power cable.

The MagWeb GT's integrated http web server offers the simplest and most flexible network integration of any data logger on the market. The user-friendly browser-based interface lets you access your solar array in seconds.

The MagWeb GT monitors the microinverters that are connected to the PV modules. Therefore, the communication between inverters and the MagWeb GT does not affect inverter performance, even if the MagWeb GT fails to communicate with the inverters. The MagWeb GT is **NOT** a revenue grade metering device. Power production data collected by the MagWeb GT is for reference only. Check your utility meter for the real power production of the whole system.

1.1   System Features

• Collects individual module and microinverter statistics
• Communicates in real time
• Requires no additional wiring

The MagWeb GT monitoring system is used in utility-interactive grid-tied applications, and includes two key elements (Figure 1):

• Magnum Energy MicroGT 500 microinverter(s)
• MagWeb GT unit
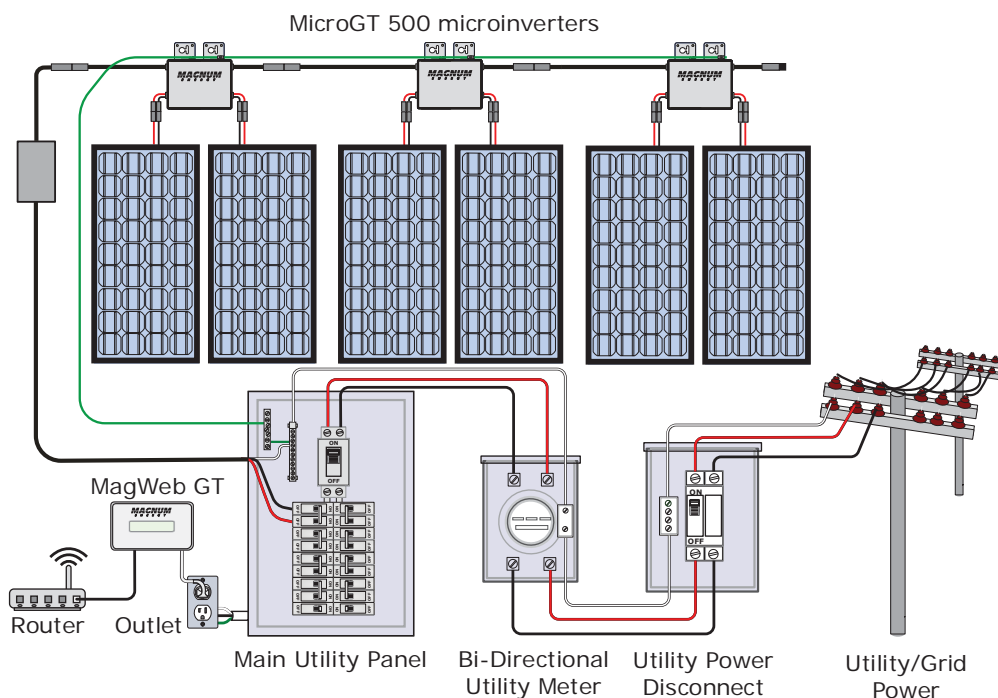
Figure 1, Basic MagWeb GT Installation Diagram

1.2   Interface Features

The MagWeb GT interface includes: Power Connection port, MagWeb GT Serial port, Network port, USB port, and a Reset slot (Figure 2).

Power Connection Port

Network Port (RJ45)

MagWeb GT Serial Port   **USB Port**   **Reset Slot**
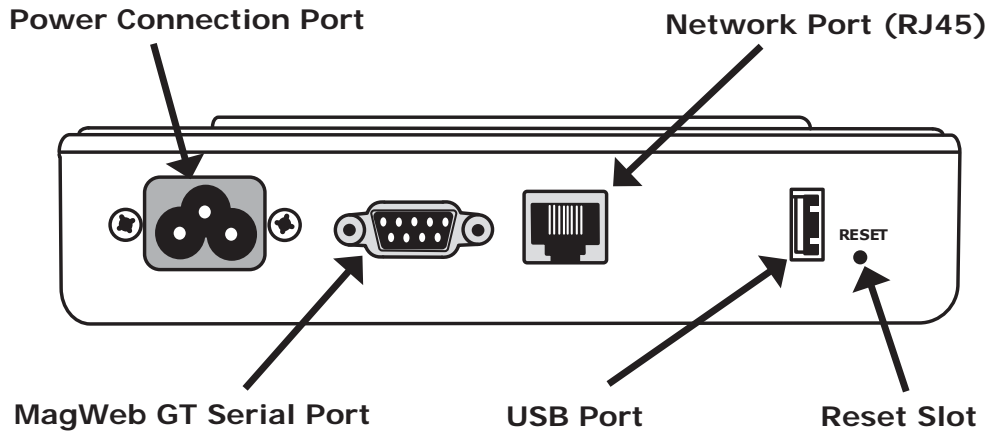
Figure 2, MagWeb GT's Features

Power Connection Port:

The Power Connection port is used to supply the MagWeb GT with power and to communicate with the microinverters using the Power Line Communications (PLC) protocol.

MagWeb GT Serial Port:

The RS232 serial port is used to connect the MagWeb GT to a Magnum pure sine inverter.

Note: *You must purchase Magnum's RJ11-DB6 adapter (ME-MGT-ADAPTER)—includes a DB9 M-F Extension cable (1') and 25' (RJ11) remote cable—to connect the MagWeb GT to the pure sine inverter. Refer to the ME-MGT-ADAPTER Instruction Sheet (PN:64-0088) for information on making this connection.*

Network Port (RJ45):

The Network port (RJ45) is used to connect the MagWeb GT to your local network via a CAT5 cable. This port can be used as a direct connection to the network router, or as an indirect connection that goes through a Wi-Fi extender or PLC bridge.

USB Port:

The USB port can be used as a power source (5VDC) for a Wi-Fi bridge, if necessary. It is NOT a two-way communication port, and is therefore incompatible with external Wi-Fi devices such as Wi-Fi dongles or thumb drives.

Reset Slot:

The Reset button is used to return the MagWeb GT to its default settings—press and hold for 3 seconds or longer.

Note: *The historical power generation will not be cleared when the Reset button is pushed.*

2.0   Installation

2.1   Pre-Installation

Carefully remove the MagWeb GT from its shipping container and inspect all contents. Verify the following items are included:

- MagWeb GT
- MagWeb GT Owner's Manual
- Power cable (115 VAC)
- CAT5 Network cable (RJ45)

Make sure you have access to the following before attempting to install the MagWeb GT:

- A dedicated standard AC electrical outlet.
- An available broadband Internet connection.
- A broadband router with a CAT5 Ethernet, or wireless router.
- A pre-programmed MagWeb GT unit.

2.2   Selecting a Location to Install the MagWeb GT

Find a location that is located as electrically close to the solar sub-panel as possible on a dedicated circuit—this enhances the Power Line Communications (PLC) signal.

Note: Locating the MagWeb GT at or very near the solar sub-panel may not be the most convenient location, but it ensures a clean PLC signal and a stable data stream.

The MagWeb GT is NOT rated for outdoor use, so if installing outdoors near a junction box or breaker panel make sure that you enclose it in an appropriate weatherproof NEMA electrical box (PN: MP-ODE).

2.2.1   Using an Electrical Mounting DIN Rail

1. Loosen the two M3 mounting screws on the back of the MagWeb GT, and then rotate the two rail holders so that the holders are above the unit (Figure 3).
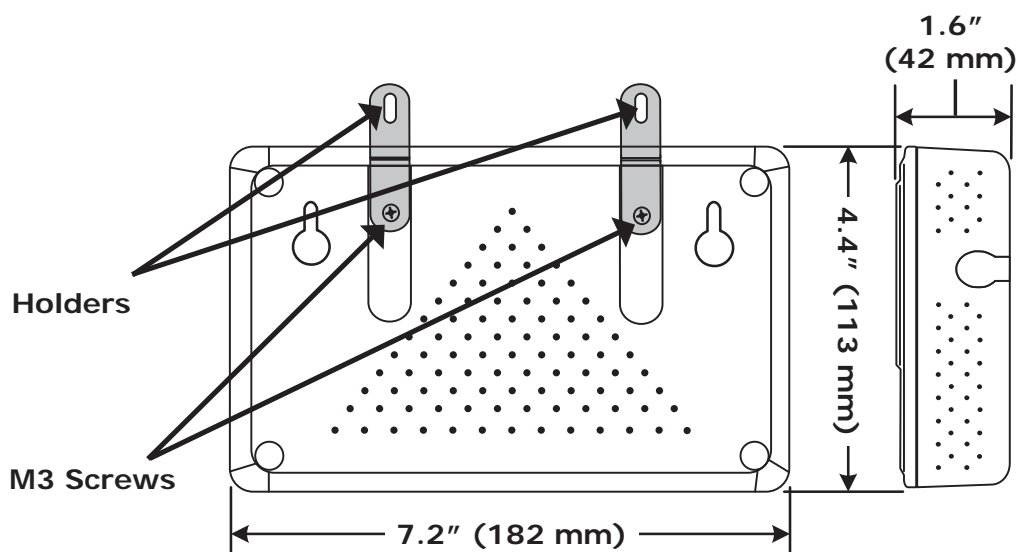
***Figure 3**, MagWeb Mounting Screws and DIN Rail Holders*

2. Attach the MagWeb GT to the mounting rail with the appropriate-sized screws (Figure 4).
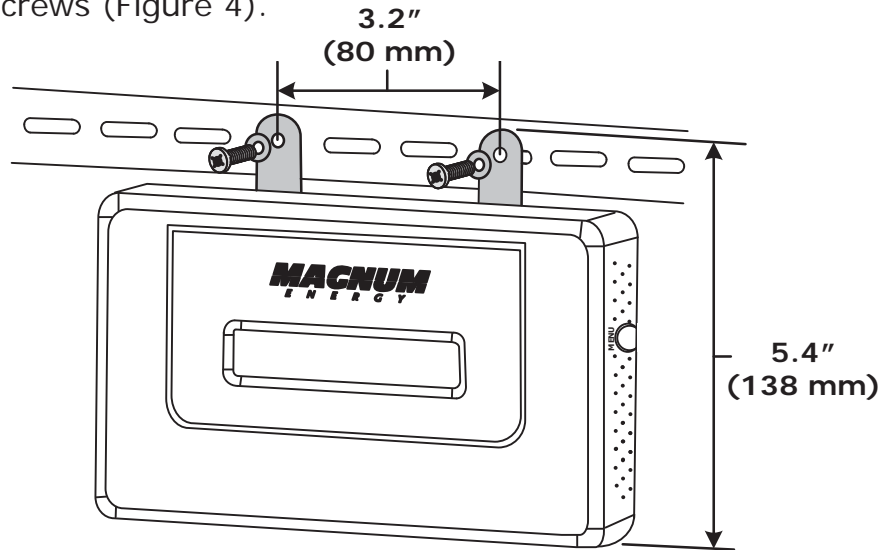
Figure 4, Mounting the MagWeb GT on a DIN Rail

2.2.2 Using a Wall Mount

When mounting the MagWeb GT on a wall, make sure to select a cool, dry, indoor location.

1. Depending on the wall surface to which you are mounting the MagWeb GT, use either two #8 drywall screws or two wall anchors—installed 5.1″ (130 mm) apart. The drywall screws and wall anchors are NOT supplied with the MagWeb GT.

2. Align/slide the MagWeb GT onto mounting screws (Figure 5).
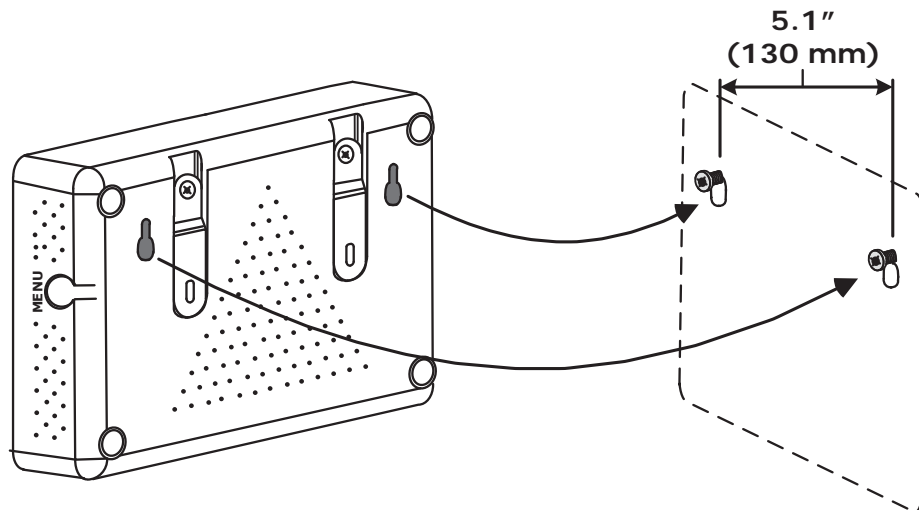
Figure 5, Wall Mounting the MagWeb GT

Best Practice: *Install/connect the MagWeb GT to the Internet while the rest of the array is being installed. Doing so allows the MagWeb GT to automatically update its internal software while the installation is underway. The MagWeb GT communicates with the microinverters once the installation is complete and the array is energized.*

Power Connection Port   **Network Port**
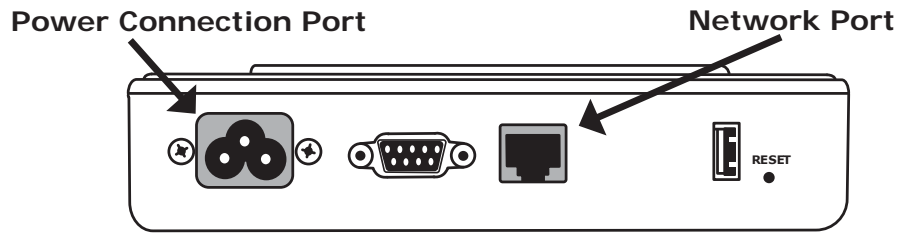
Figure 6, MagWeb GT Cable Connections

2.3   Connecting the Power and Network Cables

1. Connect the supplied power cable to the MagWeb GT's Power Connection port (Figure 6).

    Note: Per the previous section, the MagWeb GT communicates with the microinverters using the Power Line Communications (PLC) protocol through the Power Connection port.

2. Connect the supplied CAT5 network cable to the MagWeb GT's Network port (Figure 6).

2.4   Initial Connection to the Internet

There are three ways to <u>initially</u> connect the MagWeb to the Internet:

*   A direct CAT5 cable connection to a broadband router.
*   A wireless connection to a broadband router.
*   Using a PLC bridge to connect to a broadband router.

2.4.1   Connecting Directly using a CAT5 Cable

1. Ensure the CAT5 network cable is connected to the Network port on the bottom of the MagWeb GT.

2. Connect the other end of the CAT5 network cable to an open port on the broadband router (Figure 7).
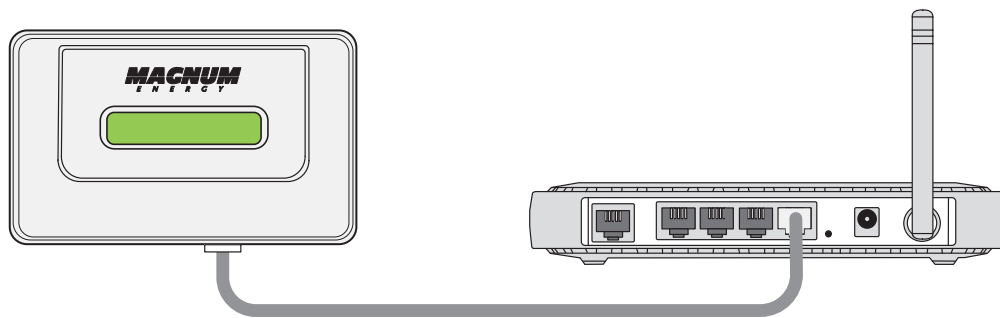
Figure 7, Connecting the MagWeb GT Directly to Router

2.4.2   Connecting Wirelessly

Refer to Section 5.1.2, "Connecting to the MagWeb GT Wirelessly" for information on this procedure.

In WLAN mode, the MagWeb GT can connect to a wireless broadband router via Wi-Fi to access the local web (Figure 8). In Local Wireless Access mode, you can use your phone or a PC (requires a network cable) to connect to the MagWeb GT and access the local web.
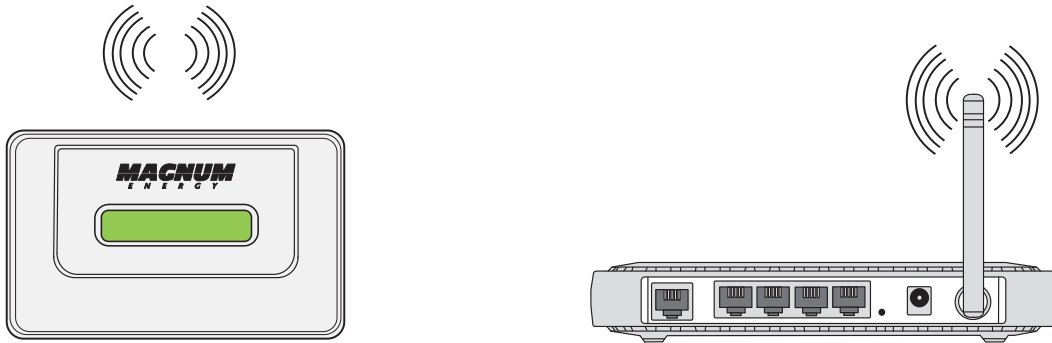
Figure 8, Connecting the MagWeb GT Wirelessly

2.4.3   Connecting using a PLC Bridge

Note: A PLC bridge uses the power line to communicate, and requires both a "send" and "receive" unit (see Figure 9). The quality and length of the CAT5 network cable will affect the quality of the MagWeb GT's communication. You can use a Switch to enhance quality of communication, if necessary.

1. Ensure the CAT5 network cable is connected to the Network port on the bottom of the MagWeb GT.

2. Connect the other end of the CAT5 network cable to the "send" unit of the PLC bridge.

3. Route and connect another CAT5 network cable from the "receive" unit of the PLC bridge to an open port on the broadband router (refer to your bridge user's manual for specific operating instructions).
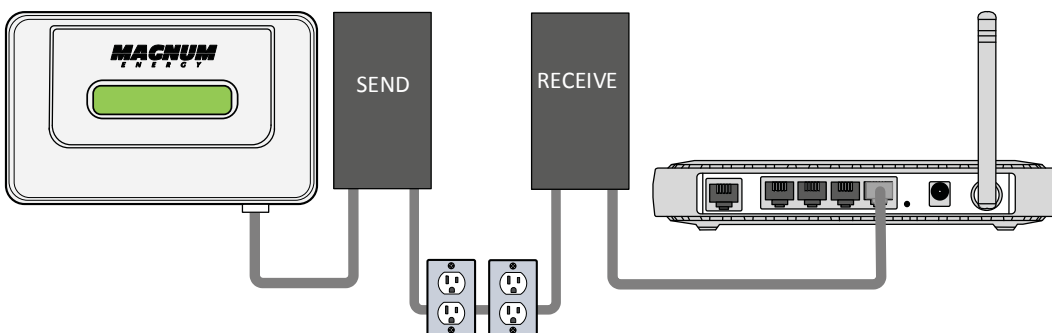
Figure 9, Connecting the MagWeb GT to a PLC Bridge

2.5   Powering Up the MagWeb GT

1. Ensure the power cable is correctly connected to the Power Connection port on the bottom of the MagWeb GT.

2. Plug the other end of the power cable into a dedicated standard AC electrical outlet.

> **WARNING:** Make sure to use a dedicated outlet for the MagWeb GT. Do NOT plug any other devices into the same outlet as the MagWeb GT.

> **WARNING:** Do NOT plug the MagWeb GT into a power strip, surge protector, GFIC receptacle, AFCI breakers, or an uninterruptable power supply (UPS). The surge suppression and/or filtering on these types of devices will substantially diminish PLC performance.

3.0   Setup

3.1   Initializing the MagWeb GT

Once power is supplied to the MagWeb GT, its LCD display automatically goes through a series of initialization screens.

Initialization Sequence

Approximately 10 seconds after applying power, the following info appears on the LCD display in sequence (see Figures 10-13).

Note: The IP addresses shown on the MagWeb GT displays for this section (Figures 11-15) are only examples.

1.   Loading the software firmware (Figure 10).
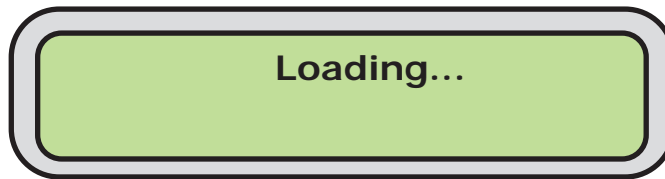
Loading...

Figure 10, MagWeb GT Loading Software

2.   Awaiting the entering of inverter IDs (Figure 11 & Figure 12).

The <u>first time</u> (see note at top of next page) the MagWeb GT is powered up it displays the available internal LAN IP address, as well as the Wireless network IP address. See Managing the Network Connection on page 19 if you need to access the MagWeb GT through the Local Area Network (LAN).

LAN IP Address

L: 192.168.1.101
W: 192.168.1.102

Wireless IP Address
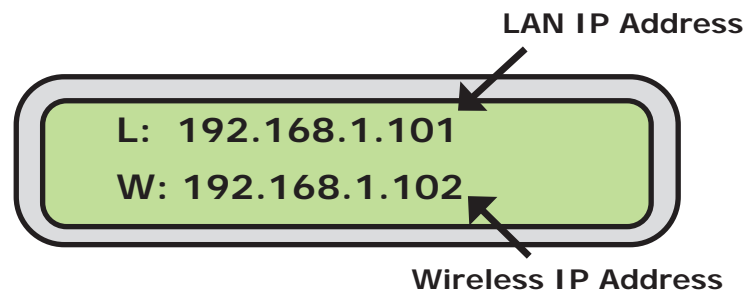
Figure 11, Available LAN/Wireless IP Addresses

The display alternates (every 5 seconds) between the IP addresses (Figure 11) and an Input Inverter ID on Local Web screen (Figure 12) at this point in the process.

Input Inverter ID

on Local Web
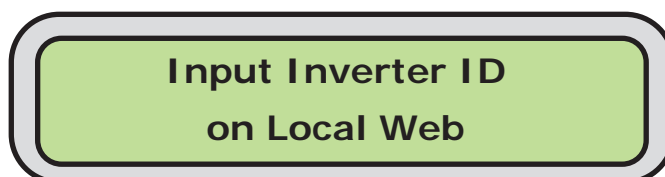
Figure 12, Input Inverter ID Display

Note: *Figures 11 & 12 only appear on power-up if the microinverter IDs have <u>not</u> yet been programmed into the MagWeb GT. If the microinverter IDs have been entered, Figure 13 shows.*

Firmware Version

Searching V4.0

192.168.2.101

Router-Assigned IP Address
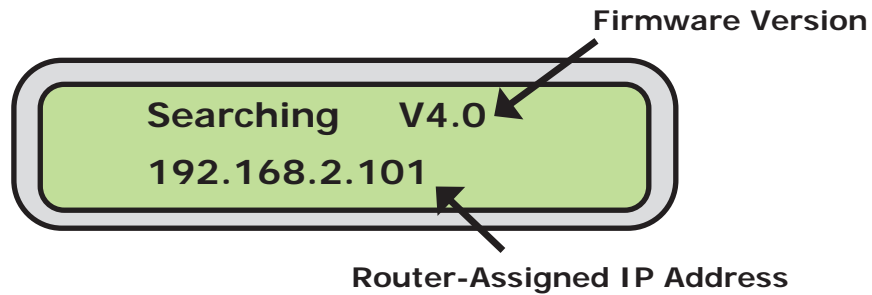
Figure 13, Subsequent Start-up Sequence Display

Network Communication Protocols

The MagWeb GT needs to have access to the router via a LAN IP address. The MagWeb GT only searches for and obtains a DHCP IP address during its powering-up sequence.

Note: *The complete initialization sequence can take several minutes (up to 15 minutes depending on the complexity of the installation).*

3. Operating interface. The next screen to appear depends on whether the MagWeb GT is connected to the internet via LAN (Figure 14), or is connected via Wireless (Figure 15).

    If connected via LAN:

LAN IP Address   MagWeb-Internet Communication

L: 192.168.1.101   +W

750W   11.45Kwh   06

Current
Power Production   Lifetime Production
(total)   Reporting Inverters
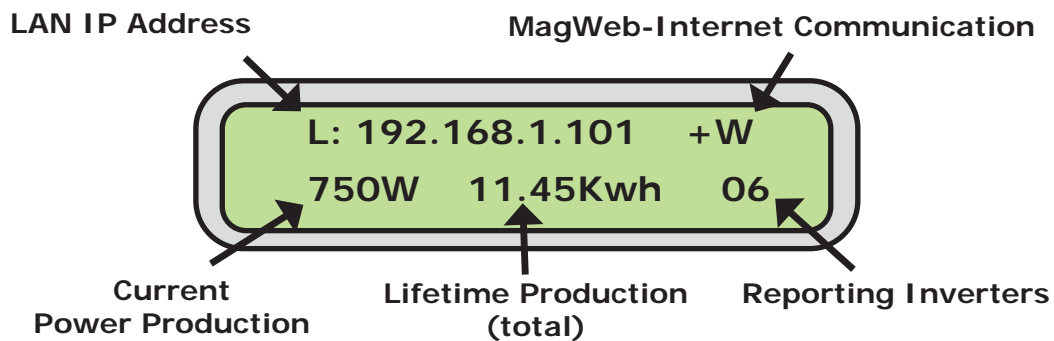
Figure 14, LAN Connection Operating Interface

LAN IP Address:

The LCD display on the front of the MagWeb GT shows an IP address (Example: 192.168.1.101*)* if the connection to the router is successful (IP addresses vary, check with the router's user manual for specifics). However, if the LCD displays **"192.168.131.228"**, the MagWeb-router connection has not been successful. In that case, check all the cable connections and reboot the MagWeb GT—remove the power cable for a few seconds, and then reconnect.

When the MagWeb GT connects to the internet via LAN, enter the LAN IP address in the computer's internet browser to log in to the MagWeb GT's local network interface.

MagWeb GT Communication

A "+W" indicates the MagWeb GT is successfully communicating with the Internet. A "–W" indicates that the MagWeb GT is not successfully communicating with the Internet.

Current Power Production:

What the solar array is currently producing (in Watts).

Lifetime Production:

The lifetime power output of the system (in Kwh).

Reporting Inverters:

The number of microinverters reporting to the MagWeb GT. If the number is followed by an "!", then the number of reporting microinverters does not match the number of IDs programmed into the MagWeb GT (see Managing Inverter IDs, page 19).

Note: *The MicroGT IDs <u>must be programmed</u> into the MagWeb GT for it to recognize the microinverters. The MagWeb GT will NOT automatically sense the microinverters (see Managing Inverter IDs).*

If connected via Wi-Fi:

Wireless IP Address

W: 192.168.1.102   +W

750W   11.45Kwh   06
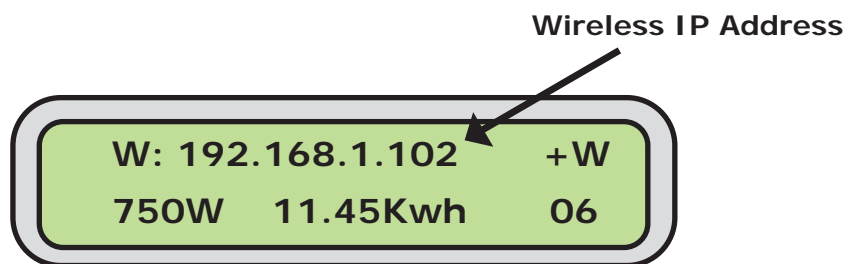
Figure 15, Wireless Connection Operating Interface

Wireless IP Address:

The MagWeb shows an IP address (Example: 192.168.1.102) if the connection is successful.

When the MagWeb GT connects to the internet via Wi-Fi, enter the wireless IP address in the computer's internet browser to log in to the MagWeb GT's local network interface.

4.0   Operation

This section covers the basic operation of your MagWeb GT. The MagWeb GT has a two-line, 40-character alphanumeric LCD display that enables easy programming and operation.

4.1   Using the Menu Button

On the side of the MagWeb GT, press and hold the MENU button (Figure 16) for 2 seconds. The MagWeb GT's menu appears (see Figure 17 below).
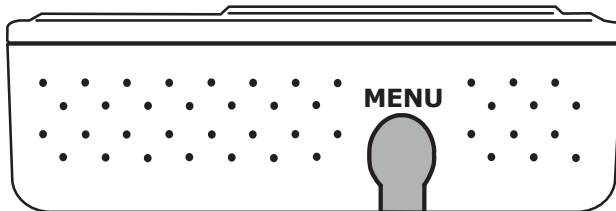
Note: *The MagWeb GT must be successfully initialized in order to cycle through its menus.*

Figure 16, MagWeb GT Menu Button

The MagWeb GT has the following menu structure:

Exit Menu

Signal Level

Status

Turn Off All
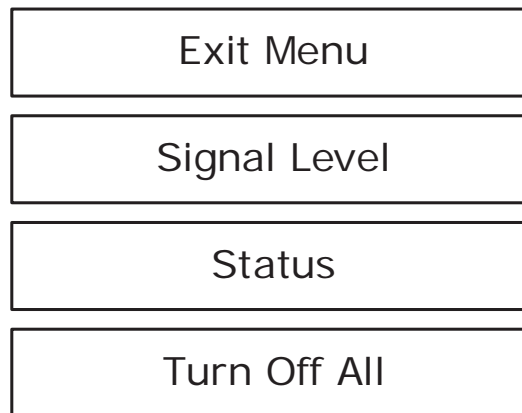
Figure 17, MagWeb GT Menu Structure

Press and hold the MENU button to cycle thru the menus. Release the button to gain access to the functionality of each menu item.

Exit Menu: Press to return the MagWeb GT to the normal operating screen (see Figure 14 or 15).

Signal Level: The communication strength between microinverters and the MagWeb GT is measured from 1-5. A higher number of "=" symbols indicates a stronger signal strength (Figure 18).

Note: *The signal level does not display if there is no PLC detected.*
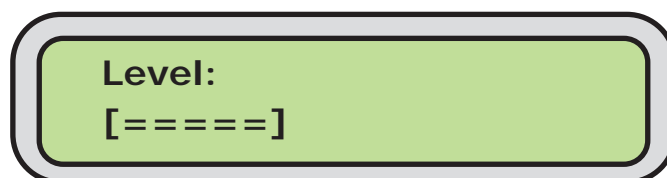
Level:
[=====]

Figure 18, MagWeb GT Signal Level Screen

Status: Shows the number of microinverters that should be reporting to the MagWeb GT (Total), and the number that are actually reporting (Connected). The numbers should match (Figure 19).

```
Connected:      05
Total:          06
```
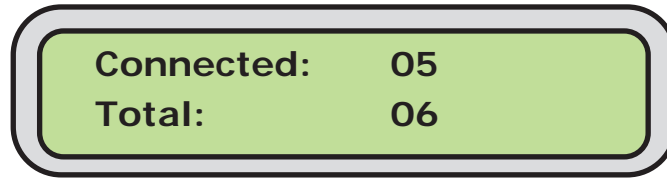
Figure 19, MagWeb GT Status Screen

Turn Off All: Shuts down the entire system (Figure 20). Choose *OK*, and the system of microinverters will be turned off. Choose *Cancel*, and the MagWeb GT will exit the menu.

```
OK
Cancel
```
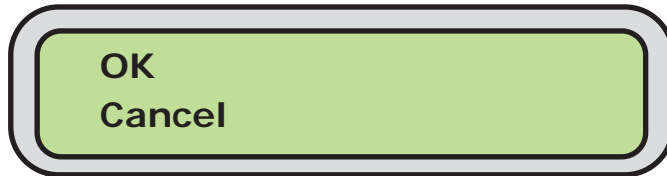
Figure 20, MagWeb GT Shutdown Screen

Note: Leaving the MENU button untouched for one minute returns the MagWeb GT to the main menu (Figure 17).

4.2   Resetting MagWeb GT to its Factory Defaults

Insert a paperclip—or something similar—into the Reset slot on the bottom of the MagWeb GT (see Figure 2) for three seconds or longer. The MagWeb GT resets to its factory settings.

5.0   Configuring the MagWeb GT

The MagWeb GT can be configured (& data reviewed) by either connecting it to a computer via the Local Area Network (LAN), or by directly connecting it to the Internet via its Ethernet port or local wireless.

5.1   Connecting to the MagWeb GT via LAN

1. Ensure both your computer and the MagWeb GT are correctly connected to the LAN.
2. Using a standard web browser on your computer, enter the IP address displayed on your MagWeb GT (as in Figure 14) into the computer's URL search field.

    The MagWeb GT's Home screen appears (Figure 21).

5.2   Connecting Directly to MagWeb GT via Ethernet

Using a Windows-based PC:

1. Connect the computer to the MagWeb GT using a CAT5 network cable.
2. Power up the MagWeb GT by connecting the power cable.
3. From your PC's Control Panel, select *Network and Sharing Center*.
4. Select *Local Area Connection* for the "*Unidentified Network*".
5. Press *Properties*.
6. Highlight *Internet Protocol Version 4 (TCP/IPv4)*.
7. Press *Properties*.
8. Select the *Use the Following IP Address* radial button, and then enter the IP Address and Subnet Mask as listed below. Do not enter anything in the DNS Server address section.

    IP Address: 192.168.131.1
    Subnet Mask: 255.255.255.0
9. Press *OK* on the IPv4 Properties, LAC Properties, and LAC Status windows consecutively to close them.
10. Close the Network and Sharing Center.
11. Using the web browser on your computer, enter the LAN IP Address (as in Figure 14) in the URL search field.

    The MagWeb GT's Home screen appears (Figure 21).

Using an Apple Mac:

1. Connect the computer to the MagWeb GT using a CAT5 network cable.
2. Power up the MagWeb GT by connecting the power cable.
3. Select the Apple icon in the menu bar to access System Preferences.
4. Select *Network* in the Internet & Wireless section of the System Preferences.
5. Select *Ethernet* on the left side of the Network window.

6. Select *Manually* from the Configure IPv4 drop-down menu.
7. Enter the following in the appropriate fields:

    IP Address: 192.168.131.1
    Subnet Mask: 255.255.255.0

8. Leave the *Router* field blank.
9. Press the *Apply* button.
10. Using web browser on your computer, enter the LAN IP address (as in Figure 14) in the URL search field.

    The MagWeb GT's Home screen appears (Figure 21).

5.3   Connecting Directly to MagWeb GT Wirelessly

1. Activate the Wi-Fi function on your PC.
2. Connect to the MagWeb GT's Wi-Fi – **ECU-WIFI_xxxx** (the "xxxx" refers to the last four numbers of your MagWeb GT's ID), and then connect. The first connection requires no password.
3. Using web browser on your computer, enter the wireless address (as in Figure 15) in the URL search field.

    The MagWeb GT's Home screen appears (Figure 21).

ENERGY COMMUNICATION UNIT	English	Chinese

| Home | Micro GT Status | Battery System Status | Administration |

Home

2016-09-01 10:46:45
Thursday

ECU ID	204000000322
Lifetime Generation	2,978.61 kWh
Last System Power	3,301 W
Generation of Current Day	33.30 kWh
Last Connection to Website	2016-09-01 10:41:20
Number of Inverters	6
Last Number of Inverters Online	4
Current Software Version	V4.0NA
Current Time Zone	America/Los_Angeles
ECU Eth0 Mac Address	80:97:1B:00:6A:B7
ECU Wlan0 Mac Address	60:C5:AB:E3:B4:19
Inverter Comm. Signal Level	4

ENVIRONMENTAL BENEFITS

CO_2 Offset Equivalent to

0 GALLONS

0 TREES

1 KG

Figure 21, MagWeb GT Home Screen

5.3.1   Viewing the MagWeb GT's Home Screen

The MagWeb GT's Home screen displays the following information:

- **ECU ID:** A unique number that identifies your MagWeb GT.
- **Lifetime Generation:** Amount of power this system has generated during its lifetime.
- **Last System Power:** Amount of power the system generated during its last polling cycle.
- **Generation of Current Day:** Amount of power generated during the most current day.
- **Last Connection to Website:** Last connection to EMA website.
- **Number of Inverters:** Number of microinverters programmed into the MagWeb GT.

- **Last Number of Inverters Online:** Number of microinverters checking in with the MagWeb GT.
- **Current Software Version:** Version of software firmware.
- **Current Time Zone:** The time zone that has been programmed into the MagWeb GT.
- **ECU Eth0 Mac Address:** The MagWeb GT's LAN address.
- **ECU Wlan0 Mac Address:** The MagWeb GT's WLAN address.
- **Inverter Comm. Signal Level:** The communication strength between the microinverters and the MagWeb GT—measured from 1-5, with a higher number of "=" symbols indicating an increased signal strength.

5.4   Using the Micro GT Status Screens

Use the Micro GT Status screen to view real-time system operation data for your PV array.

5.4.1   Viewing Real Time Data

From the MagWeb GT Home screen (Figure 21), select the *Micro GT Status* tab. The Real Time Data screen appears (Figure 22).
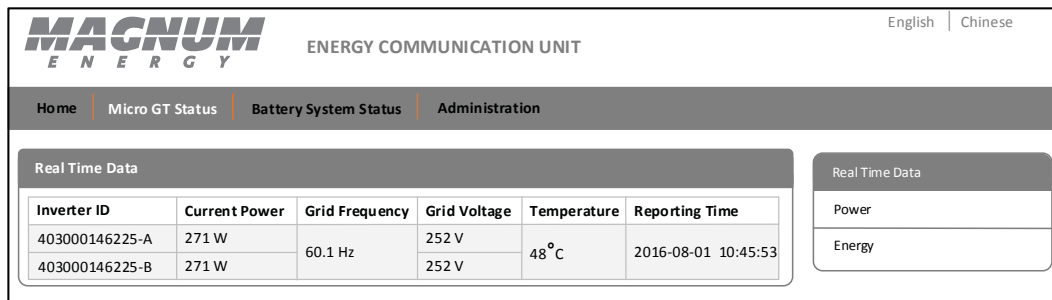
Figure 22, Real Time Data Screen

5.4.2   Viewing System Power Trends

- From the *Micro GT Status* tab, click *Power* from the list at right. The Power screen appears (Figure 23).
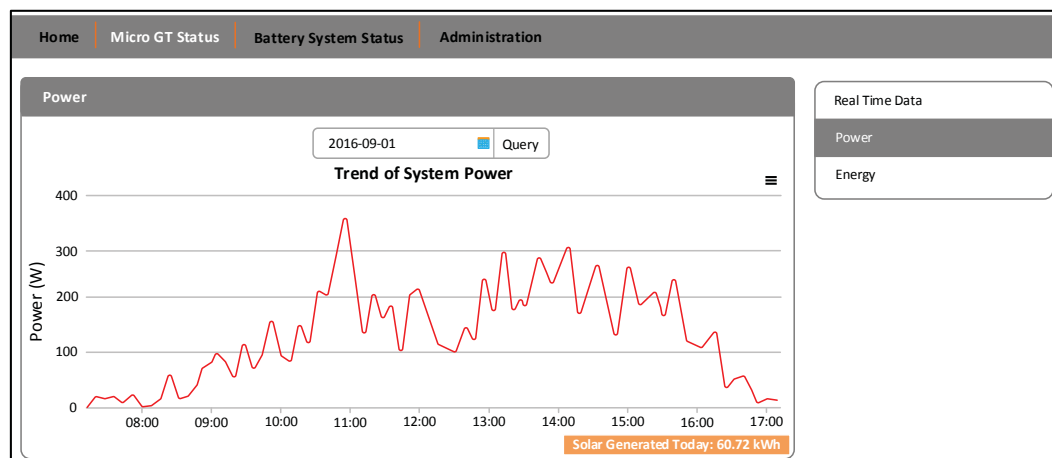
Figure 23, System Power Trend Screen

5.4.3 Viewing Energy Generation Statistics

1. From the *Micro GT Status* tab, click *Energy*. The Energy screen displays (Figure 24).

2. Press the *Query* drop-down to view performance data for the current week/month/year.

Figure 24, Power Generation Statistics Screens

5.5 Using the Battery System Status Screen

The Battery System Status screen enables you to view real-time operation data as supplied by any system-attached device (i.e., battery monitor, remote control, AGS, and pure sine wave inverter).

5.5.1 Viewing Battery System Status Data

From the MagWeb GT Home screen (Figure 21), select the *Battery System Status* tab. The Magnum System Status screen displays (Figure 25).

Note: *For specific information on the settings/data displayed, refer to the owner's manual for that particular device.*

MAGNUM ENERGY   English | Chinese

ENERGY COMMUNICATION UNIT

| Home | Micro GT Status | Battery System Status | Administration |

Magnum System Status

| Battery Monitor	
State of Charge:	100% SOC
DC Volts:	54.9 VDC
DC Amps:	1.2 DC Amps
Amp Hrs In/Out:	1 Amp Hrs
Min/Max DC Volts:	50.65 VDC Min/55.3 VDC Max
aAH/tAH Out:	100.0 AH/ 10.1542 kAH
Inverter (MS4448PAE)	
Status:	Float
Fault:	No Fault in Inv
DC Volts:	54.9 VDC
DC Amps:	11.4 Amps DC
AC Volts/Hz Output:	119 VAC/60.1 Hz
Input Amps:	28 Amps AC
Inv/Charger Amps:	0 Amps AC
AC Input Volts:	185 VAC
Battery Temp:	12°C /53.6 °F
Transformer Temp:	39°C /102.2 °F
FET Temp:	36°C /96.8 °F
Remote (ME-ARC)	
Inverter Stack Mode:	Standalone unit
Inverter Rev:	V6.0
Remote Rev:	V4.1
BMK Rev:	V2.1
AC Search:	5 Watts
AC Shore Amps:	30 Amps
Low VAC Dropout:	80 VAC
Charge Rate:	VAC/Hz
Low Battery Cut Out:	20.0 VDC
Absorb Voltage:	15 VDC
Float Voltage:	13.2 VDC
Equalize Voltage:	1.2 VDC
Batt Efficiency (BMK):	Auto
Battery Size (BMK):	800 Amps/Hrs

Figure 25, System Status Data

5.6   Using the Administration Screens

5.6.1   Managing Inverter IDs

The microinverter IDs <u>must be programmed</u> into the MagWeb GT for it to recognize them. The MagWeb GT will <u>NOT</u> automatically sense the microinverters.

Initial Programming of Inverter IDs into the MagWeb GT

1. Select the *Administration* tab at the top of the MagWeb GT's Home screen. The ID Management screen displays (Figure 26).
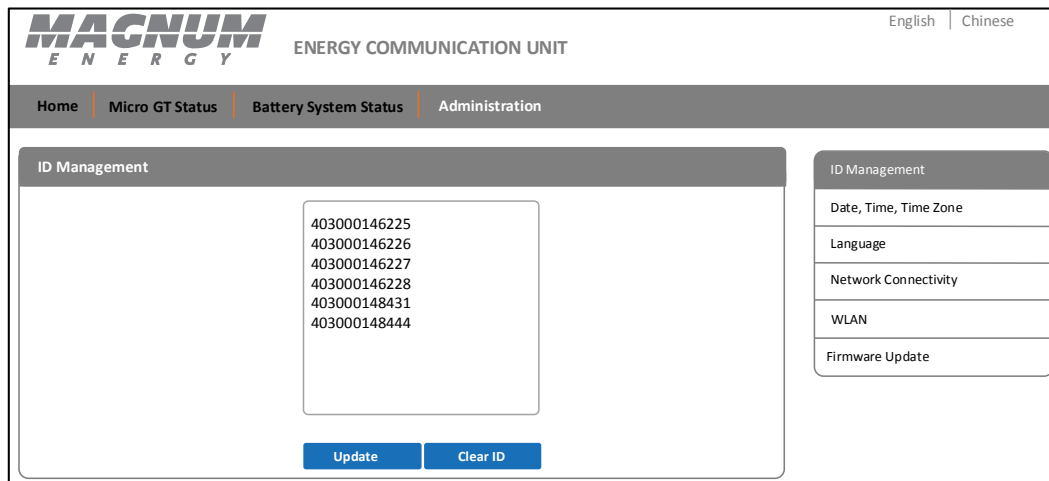
Figure 26, ID Management Screen

Note: *The inverter ID entry text box is blank if no inverter IDs have been entered.*

If Manually Entering the IDs

1. Enter each 12-digit microinverter ID. Press the ENTER key after every entry to ensure a line break between each.
2. Once all the IDs have been entered, press the *Update* button. An "ID updated successfully" message appears.
   Note: *If you have incorrectly entered an Inverter ID, highlight the ID to be modified, make the necessary change, and then press the Update button.*

If Using a Scanning Gun to Enter the IDs

1. Copy the scanned IDs into the text box on the ID Management screen.
2. Once all the IDs have been copied, press the *Update* button. An "ID updated successfully" message appears.

Adding an Additional Inverter ID

If the number of inverter IDs displayed on the screen is <u>less</u> than the actual number of microinverters installed:

1. Scroll to the end of the existing list, and then enter the new ID.
2. Press the *Update* button. An "ID updated successfully" message appears after a few seconds.

Deleting an Existing Inverter ID

If the number of inverter IDs displayed on the screen is <u>more</u> than the actual number of microinverters installed:

1. Highlight the IDs to be deleted from the list.

2. Press the *Update* button. An "ID updated successfully" message appears after a few seconds.

Note: *Combine the two tasks (Adding & Deleting IDs) when swapping out a microinverter. Add the new ID, and then delete the old ID.*

Note: *Pressing the Clear ID button will delete <u>all</u> IDs in the list.*

5.6.2   Changing the Date, Time, and Time Zone

It is critical for accurate power production reporting that the MagWeb GT is programmed with the correct date, time, and time zone.

1. From the *Administration* tab, select the *Date, Time, Time Zone* option from the list to the right. The Date, Time, Time Zone screen appears (Figure 27).
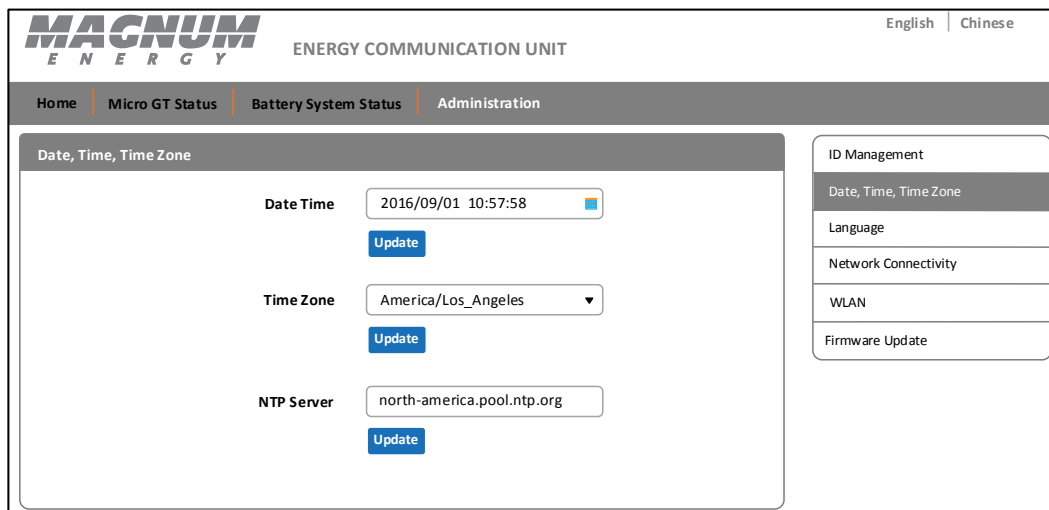
Figure 27*, Date, Time, Time Zone Option*

2. Click the calendar icon in the *Date Time* field (Figure 28).
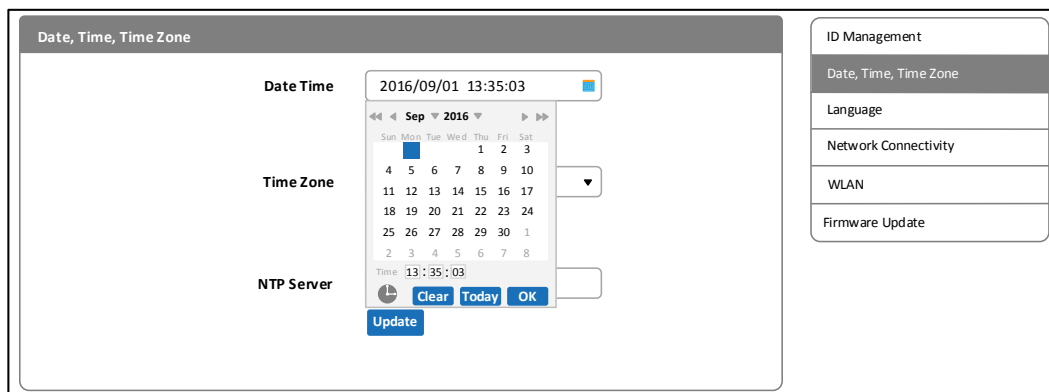

Figure 28*, Date Time Field*

Note: Date displays in "international date format" – YYYY/MM/DD.

3. Select the correct date on the calendar.
4. Enter the correct time, and then press the *Update* button.
5. Select the correct time zone from the *Time Zone* pull-down list.
6. Press the *Update* button.

5.6.3 Changing the MagWeb GT Language

You can switch languages (i.e., English or Chinese).

1. From the *Administration* tab, select the *Language* option from the list to the right. The Language screen appears (Figure 29).
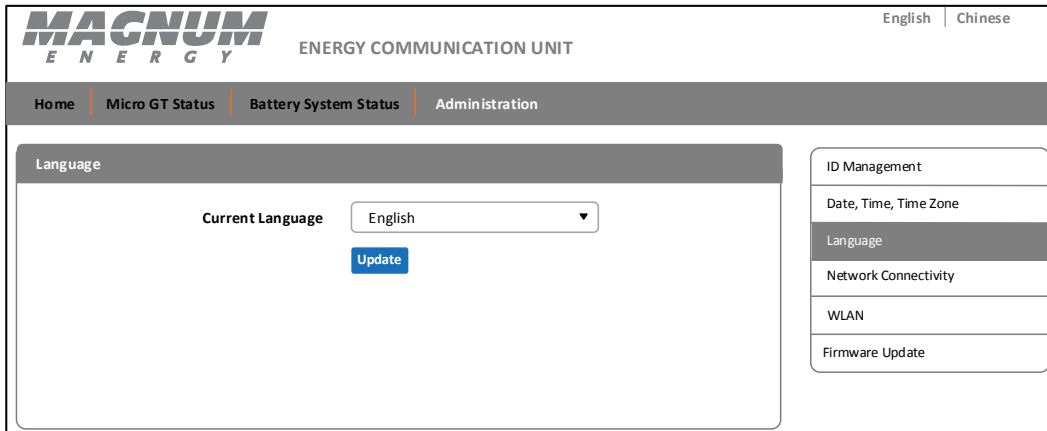
Figure 29, *Language Management Screen*

2. From the *Current Language* pull-down list, select a language.
3. Press the *Update* button.

5.6.4 Managing the Network Connection

The default network connection setting for the MagWeb GT is "DHCP," which allows the MagWeb GT to automatically establish a connection assignment from the router. The MagWeb GT can also be assigned a static IP address if the network design requires it.

Assigning a Static IP Address to the MagWeb GT

1. From the *Administration* tab, select the *Network Connectivity* option from the list to the right. The Network Connectivity screen appears (Figure 30).
    Note: Network connection defaults to the "Obtain an IP address automatically" option. If this is your choice, press Update button.
2. Select the *Use the following IP address* radio button. Five new fields appear below on the screen (see Figure 31).
3. Enter the *IP Address*, *Subnet Mask*, *Default Gateway*, *Preferred DNS Server*, and *Alternate DNS Server* (consult your local network administrator for these settings).
4. Press the *Update* button.

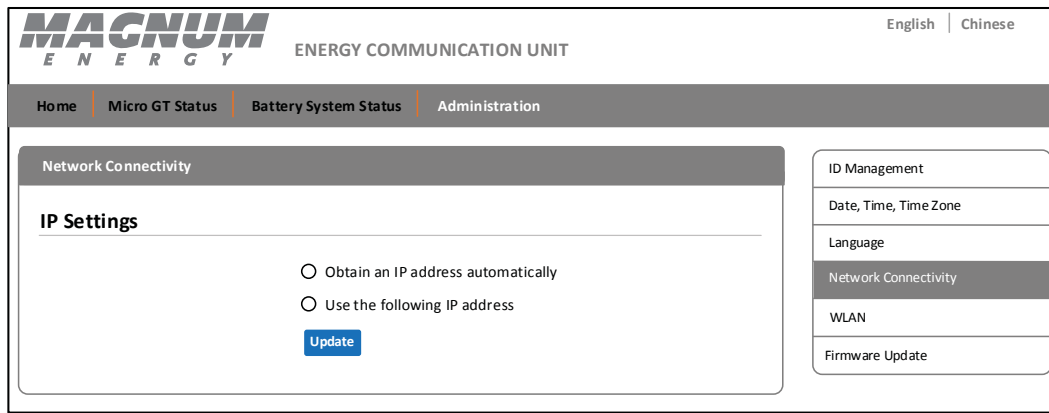The MagWeb GT has been assigned a static IP address.
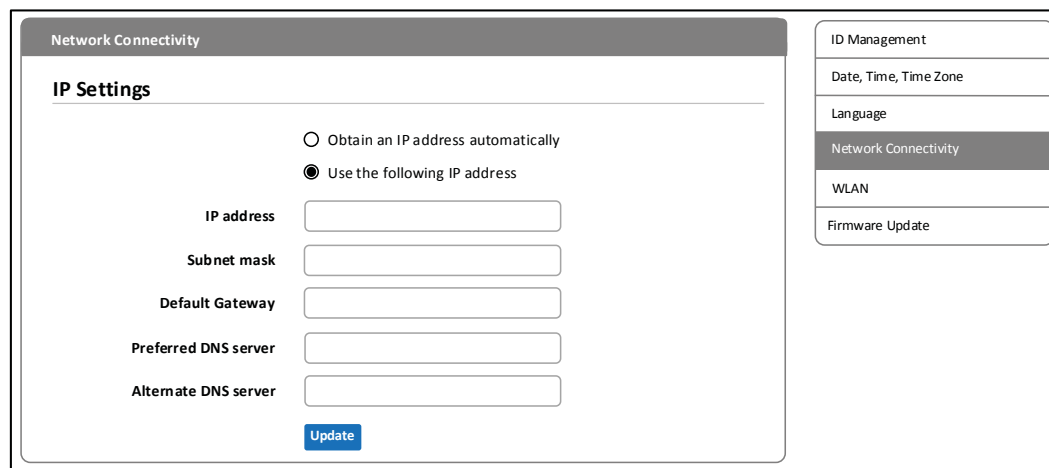
Figure 30, Network Connectivity Option

Figure 31, Static IP Address Fields

5.6.5   Managing the WLAN/Wireless Connection

The MagWeb GT operates in two communication modes: WLAN mode, and Local Wireless Access mode.

WLAN mode

The MagWeb GT connects to the local network router via its internal Wi-Fi capabilities (no need for a PLC bridge or Wi-Fi extender between the MagWeb GT and network router), allowing you to monitor and manage the MagWeb GT through the local network.

When functioning as a Wi-Fi hub, the MagWeb GT can directly communicate wirelessly with mobile devices, and/or a PC.

Setting the MagWeb GT to WLAN Mode

1. From the *Administration* tab, select the *WLAN* option from the list to the right. The WLAN screen appears.

2. Select the *WLAN* tab—if not already prominent (Figure 32). A list of available networks appears.

   Note: *If the Available Networks list fails to load, enter the router's IP address (as shown on the MagWeb's display screen - Figure 14) into the PC/smartphone browser's URL field.*
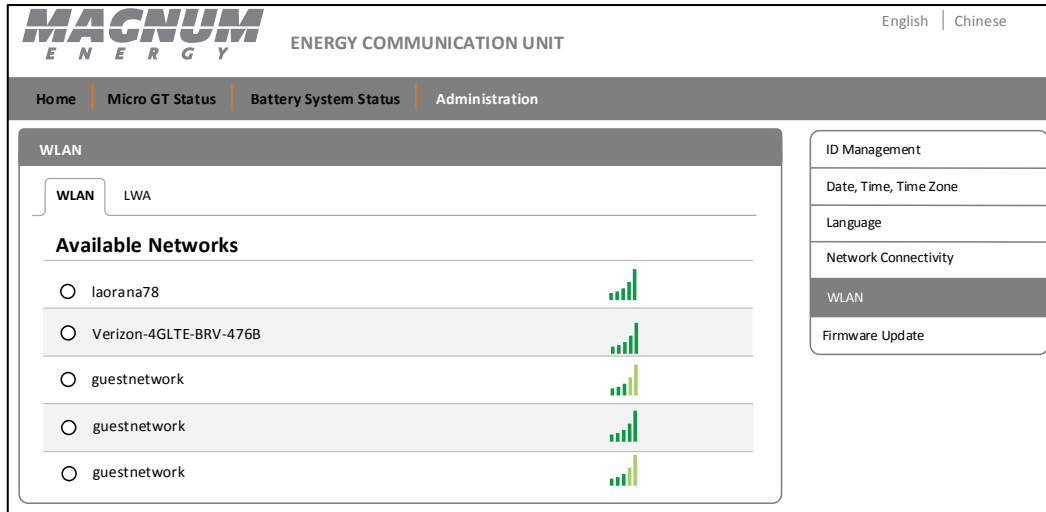

Figure 32, Available Networks Screen

3. Select the radio button next to the particular network that you wish to access. A password entry field will appear below the network name (Figure 33).

4. Enter the network password into the password entry field, and then press *Connect*.

   If the MagWeb GT has connected to the router, the *SSID* and *IP address* will show in those fields, respectively (see Figure 34). You can now connect by PC or phone to the router.

   Note: *To access the MagWeb GT's local network with a mobile device or PC, enter the IP address as shown on the WLAN Connection screen into your browser's URL search field.*
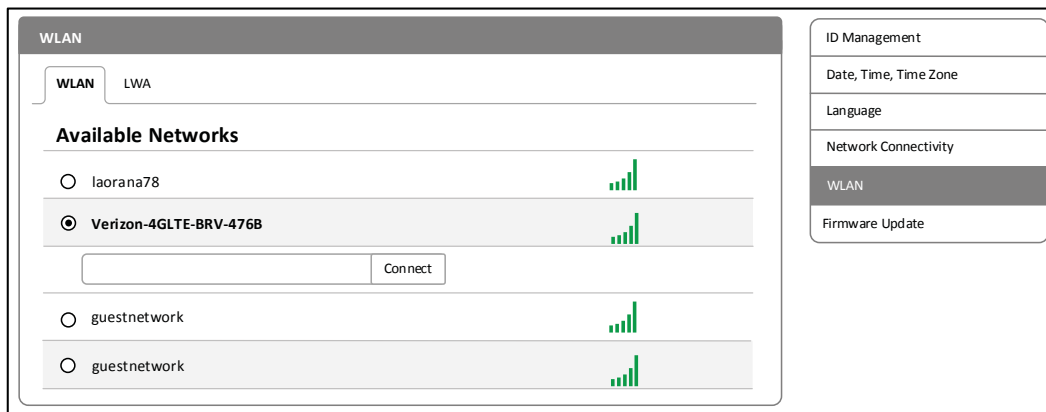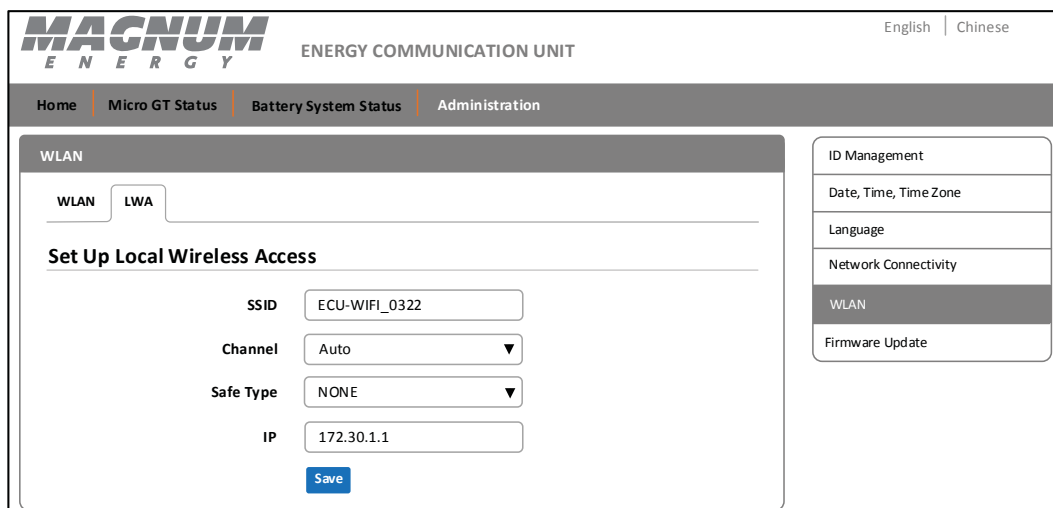

Figure 33, WLAN Password Screen
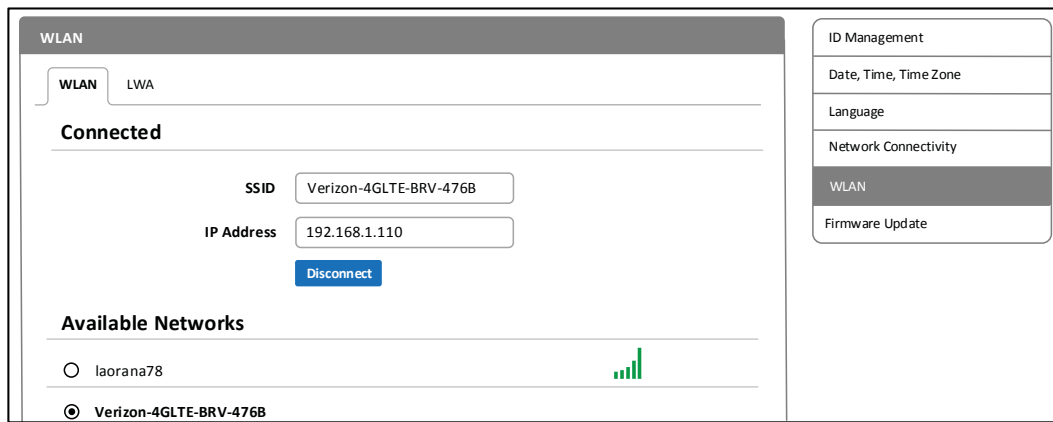
Figure 34, WLAN Connection Screen

Local Wireless Access mode

In Local Wireless Access mode, you can use your phone or PC to connect to the MagWeb GT in order to access the local network website.

Setting the MagWeb GT to Wireless Mode

1. From the Administration tab, select the WLAN option. The WLAN screen appears (Figure 32).

2. Select the *LWA* tab. The LWA Setup screen appears (Figure 35).

3. Scan the MagWeb GT's SSID onto your phone/PC, and then connect to the MagWeb GT.

4. Enter the MagWeb GT's IP address (**172.30.1.1**) in to the browser to access the local web.

5. Select a security type (optional) from the *Safe Type* drop-down button: *WEP*, *WPA2-PSK*. If you select a *Safe Type*, a *Password* field appears below the *Safe Type* field (Figure 36).

6. In the *Password* field, enter a 5 to 13 numeric password (record the password once set).

7. Press the *Save* button.

Figure 35, LWA Setup Screen

Figure 36, Security Password Field

5.6.7   Updating the MagWeb GT Firmware

The MagWeb GT allows you to upload and install updated firmware. Firmware updates are routinely provided to improve performance, fix issues, and to add new features or change functionality.

Visit Sensata's website (www.SensataPower.com) to download the latest MagWeb GT updates.

Once downloaded locally:

Updating Firmware

1. From the *Administration* tab, select the *Firmware Update* option. The Firmware Update screen appears (Figure 37).
2. Click the *Browse* button. A file search screen appears.
3. Navigate to the location of the update file.
4. Select the update file, and then click the *OK* button.
5. Click the *OK* button.

Figure 37, Firmware Update Screen

6.0   Troubleshooting

Problem: IP address shows ***"192.168.131.228"***

If the above IP address shows on the MagWeb's LCD, the MagWeb GT did not successfully obtain a DHCP IP address from the router.

Solution: Check network connectivity to the router or other DHCP server. Typically, the MagWeb GT is not communicating with the router. You may need to contact the Internet provider, or refer to your router's documentation for troubleshooting assistance.

Problem: A "–W" shows on the MagWeb GT LCD display

If the MagWeb's LCD display shows "–*W*", the MagWeb is either not communicating with the microinverters or the Internet.

Solution: Reboot the MagWeb by unplugging the power cord for at least seven (7) seconds, and then plugging it back in. If the LCD display still indicates "–W", check the communication between the microinverters and the MagWeb GT, or check your router.

Problem: A "!" following the *Reporting Inverters* number

If the reporting inverters number is followed by an "!", then the number of reporting inverters does not match the number of MicroGT 500 inverter IDs that have been programmed into the MagWeb GT. This may indicate the MagWeb GT is having difficulty communicating over the power line*. It could also be caused by low sunlight, resulting in PV module voltage that is too low for the microinverter to power up.

Solution: Plug the MagWeb GT into a different dedicated electrical socket. Keep it away from your router.

* Noise in the Wiring System

If there are loose wires in outlets or there are too many other appliances plugged in near the MagWeb GT, then a significant amount of "line noise" can build up. This is a phenomenon similar to static on a television screen, or background buzz on an AM radio station. Faulty electrical connections may be able to operate without actually shorting, but still be loose enough that the connection is creating noise in the line. This is common in older house wiring which may have a loose ground wire in one of the outlets, which can result in some level of noise.

Also, newer power systems that are designed with surge protection devices may have a dampening effect on communication through home wiring.

7.0   Specifications

Model: MagWeb GT	
Communication Interface	
Integrated Wi-Fi	802.11 g/n
Ethernet	10/100M Auto-sensing, Auto-negotiation
USB Interface	Standard
RS232	Standard
Power Requirements	
AC Outlet	110-240 VAC, 50-60 Hz
Power Consumption	2.5 W
Mechanical Data	
Dimensions (W x H x D)	18.2 cm x 11.3 cm x 4.2 cm (7.1″ x 4.4″ x 1.6″)
Weight	.38 kg (0.84 lbs)
Ambient Temperature Range	-20°C to +65°C (-4°F to 149°F)
Cooling	Natural Convection; No Fans
Enclosure Environmental Rating	Indoor - NEMA 1 (IP30)
Features	
Compliance	IEC 60950-1, EN60950-1, IEC 60529, ANSI/UL 60950-1, CAN/CSA C22.2 No.60950-1, UL50E, FCC part 15, EN61000-6-1, EN61000-6-3, ICES-003, AS NZS 60950-1, GB/T17799

Specifications subject to change without notice.
Ensure you have the most recent update.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This Class B digital apparatus complies with Canadian ICES-003.

8.0 Warranty & Service Information

8.1 Limited Warranty

Sensata Technologies warrants the MagWeb GT to be free from defects in material and workmanship that result in product failure during normal usage, according to the following terms and conditions:

1. The limited warranty for the product extends for 10 years beginning from the product's original date of purchase.

2. The limited warranty extends to the original purchaser of the product and is not assignable or transferable to any subsequent purchaser.

3. During the limited warranty period, Sensata will replace the MagWeb GT at our option—if such replacement is needed because of product malfunction or failure during normal usage. The limited warranty does not cover defects in appearance (cosmetic or decorative), or any structural or non-operative parts. Sensata's limit of liability under the limited warranty shall be the actual cash value of the product at the time the original purchaser returns the product for replacement, determined by the price paid by the original purchaser. Sensata shall not be liable for any other losses or damages.

4. Upon request from Sensata Technologies, the original purchaser must prove the product's original date of purchase by a dated bill of sale, itemized receipt.

5. The original purchaser shall return the product prepaid to Sensata in Everett, WA, or to one of Sensata's Authorized Service Centers (ASC). A replacement product will be returned prepaid to the original purchaser via a non-expedited surface freight within the contiguous U.S. and Canada; this excludes Alaska and Hawaii.

6. If Sensata replaces a product, its warranty continues for the remaining portion of the original warranty period or 90 days from the date of the return shipment to the original purchaser, whichever is greater. All replaced products become the property of Sensata Technologies.

7. This limited warranty is voided if:
   - the product has been modified without authorization
   - the serial number has been altered or removed
   - the product has been damaged through abuse, neglect, accident, high voltage, or corrosion
   - the product was not installed and operated according to the owner's manual

A RETURN MATERIAL AUTHORIZATION (RMA) NUMBER IS REQUIRED BEFORE RETURNING ANY PRODUCT

8.2 How to Receive Replacement Service

If your product requires warranty service, contact either:

- An authorized service center, at www.SensataPower.com, or,
- Sensata Technologies at:

    Telephone: 425-353-8833
    Fax: 425-353-8390
    Email: MagnumWarranty@Sensata.com

If returning your product directly to Sensata, you <u>must</u>:

1. Return the unit in the original, or equivalent, shipping container.
2. Receive a Return Materials Authorization (RMA) number from the factory <u>prior</u> to returning the product to Sensata for replacement.
3. Place the RMA numbers clearly on the shipping container or on the packing slip.

When sending your product for service, please ensure it is properly packaged. **Damage due to inadequate packaging is not covered under warranty.** We recommend sending the product by traceable or insured service.

MAGNUM
E   N   E   R   G   Y

Magnum Energy Products

Manufactured by:

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Everett, WA 98204
Phone: (425) 353-8833
Fax: (425) 353-8390
Web: www.SensataPower.com

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