



Monitoring Platform Resource – SolarEdge

Host Customer Owned Systems

This resource includes information on the following sections:

1. Introduction to Solar PV Monitoring
2. Getting Started
3. Monitoring Platform Basics
4. Alerts
5. System Troubleshooting

Quick Links:

- [SolarEdge’s Complete Monitoring Platform User’s Guide for System Owners](#)
- [Application Note – Alerts in the Monitoring Platform \(solaredge.com\)](#)
- [Application Note - SolarEdge Site Dashboard \(solaredge.com\)](#)
- [SolarEdge’s Remote Site Troubleshooting Guide for System Owners](#)

1. Introduction to Solar PV Monitoring

What is monitoring?

Solar PV monitoring is a way to track system performance over the lifetime of the system. Often, PV systems have a built-in monitoring system that connects the inverter to an online platform displaying daily production numbers. Alternatively, some PV systems may use a separate data acquisition system (DAS) to report system performance to an online platform.

Why is monitoring important?

Solar PV monitoring is a necessary function of a system’s operation and maintenance (O&M) plan. The monitoring platform allows system owners to compare the PV production from month to month or year to year. The monitoring platform will also display alerts if a system component is down. Keeping track of PV production is critical to ensure that the system is producing as expected.

How do I access my monitoring platform?

There are two ways to access your monitoring platform. For systems with SolarEdge inverters, one way is through the SolarEdge online monitoring platform, where you can find in-depth system production data and other details. The second way is through the mySolarEdge app, which allows you to view system production data anytime and anywhere on your smartphone or device.

You can access both the online monitoring platform and the mySolarEdge app with your SolarEdge login credentials. If you don’t have an account yet, contact your system installer to set up one.

Note: It is highly recommended to connect your system to the SolarEdge monitoring platform. This will ensure you and your system installer are provided with enhanced system performance monitoring and will yield assurance through immediate fault detection and alerts at different levels within the system.



2. Getting Started

To use the SolarEdge monitoring platform, your system installer will create and register your system and then add you to the platform as the system owner.

Once your system installer initiates your registration, you will receive an invitation e-mail with a link to a form to complete to activate your account:

1. Click the link sent to you in the invitation email message. The registration form is displayed:

A screenshot of the SolarEdge registration form. The form is titled "solar^{edge} Registration" and has a language dropdown set to "English (US)". It is divided into two main sections: "Contact Details" and "Settings".
Contact Details:
- First Name: [text input]
- Last Name: [text input]
- Email: [text input]
- Phone: [text input]
- Zip Code: [text input]
- Home Address: [text input, labeled "Optional"]
- Home Address 2: [text input, labeled "Optional"]
- Country: [dropdown menu]
- State/Region: [dropdown menu]
- City: [text input]
Settings:
- Password: [text input]
- Confirm Password: [text input]
- Display Units: [dropdown menu, set to "Imperial"]
- Language: [dropdown menu, set to "English (US)"]
Below the form, there are two checkboxes:
- An unchecked checkbox with the text: "I acknowledge that I have read, understood and agreed to the [Terms and Conditions](#) of the SolarEdge Monitoring Portal, and to the SolarEdge [Privacy Policy](#). I further acknowledge and accept that if a meter is in use in the PV system, I agree to the collection, display and processing of the energy consumption data on behalf of the site owner."
- A checked checkbox with the text: "Send me news and updates from SolarEdge".
At the bottom center of the form is a blue "Save" button.

Figure 1: Registration Form

2. Enter your details and select the required checkboxes.
3. Click **Save** to complete the registration and get access to your solar system.
4. When the "Thank You" page appears (Figure 2), click **Log in to the Monitoring platform**. The Login window is displayed (Figure 3).

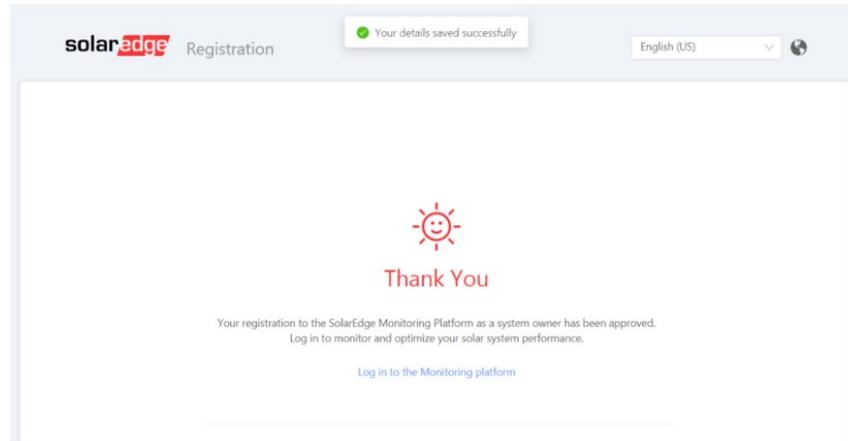


Figure 2: Thank You Page

To launch the SolarEdge monitoring platform follow these steps:

1. Visit monitoring.solaredge.com

- The Login window will be displayed:

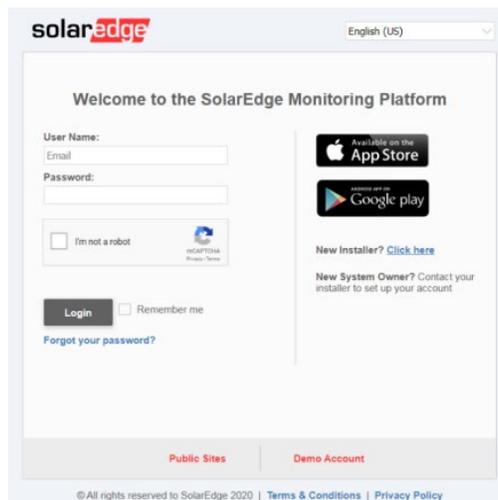


Figure 3: Login Window

2. Enter your e-mail and password (as filled in the registration form) and click **Login**.

3. If more than one site is assigned to you, the list of your SolarEdge sites appears in the Site List on the homepage. If only one site is available, the site's dashboard is automatically displayed, without needing to go through the Site List.



3. Monitoring Platform Basics

Dashboard introduction

The dashboard offers a comprehensive view of system performance and health and visualization of production and consumption data, along with an overview of on-site equipment, open alerts, and general information.

This section will provide a high-level overview of the various widgets and how to interpret the dashboard. For a full guide on SolarEdge's Monitoring Site Dashboard, refer to this article:

- [Monitoring Site Dashboard](#)

Dashboard overview

Depending on your monitoring platform access, you may see the data displayed below. This display shows the accumulated energy for the system, and each box specifies a value and its measurement unit.

Current Power 167.99 kW	Energy today 520.84 kWh	Energy this month 21.22 MWh	Lifetime energy 797.51 MWh
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Tips:

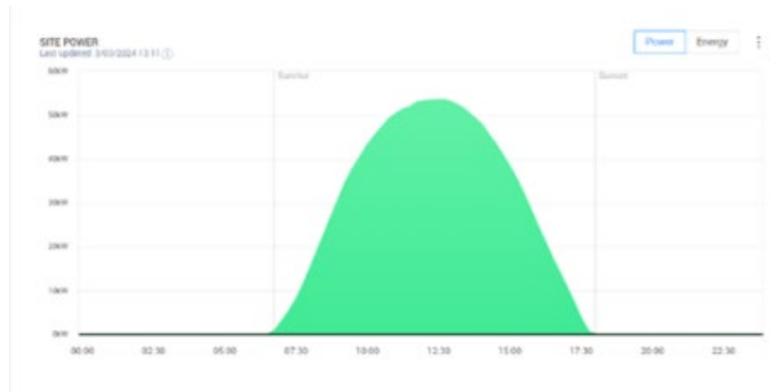
- This data can be used to understand your system's average daily energy production in kWh.
- After multiple months of data, you also will be able to understand your system's average monthly energy production in kWh.
- Understanding your system's expected production values will be useful when analyzing your system in the future. All PV systems will slowly degrade over their lifetime. However, if you notice a sudden drop in production on a given day that is not caused by weather conditions, contact your installer for further guidance.

Viewing your bell curve

System production data can be viewed as a daily, weekly, monthly or yearly graph.

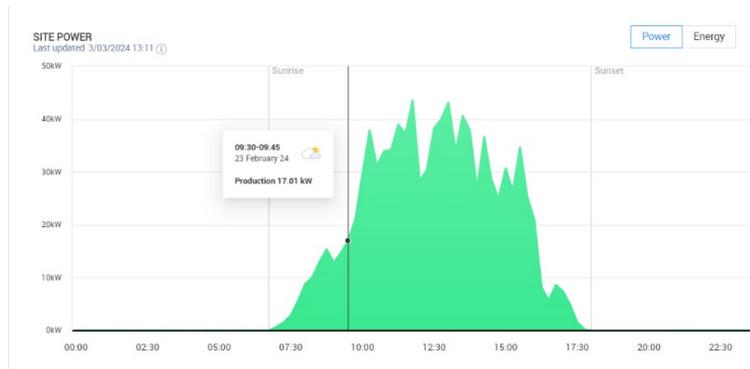
On a daily production view, the ideal shape is a bell curve. This is because the hours of solar production start around 9 a.m., production is highest around noon and production decreases until around 3 p.m. Systems do not generate electricity at night.

On days with little cloud coverage and standard conditions, the solar bell curve should appear like the image below:



Ideal Bell Curve

The bell curve may deviate due to cloud coverage or other weather events. On days with significant cloud coverage or overcast, the bell curve may appear like the following image:



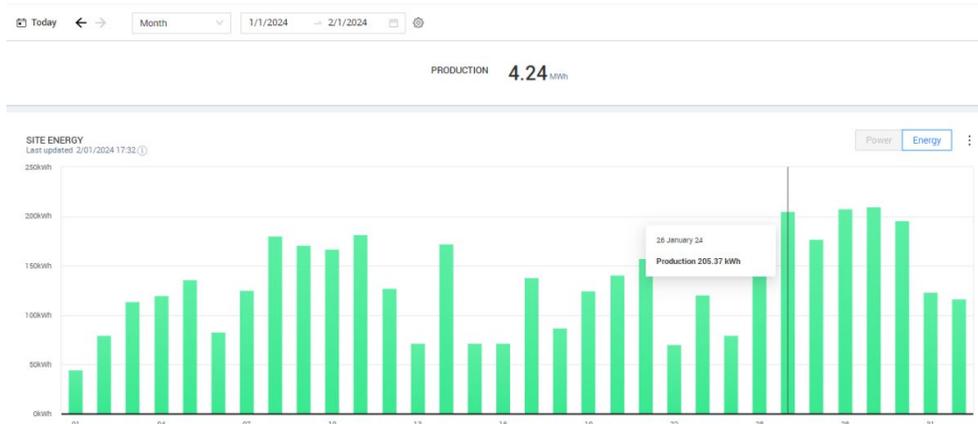
"Not-so-Perfect" Bell Curve

By hovering the mouse over the graph, an info box will appear displaying the weather conditions at that specific time.

[Viewing system production by day](#)

Key elements of the daily system production graph are:

- The total system production over the selected period appears at the top of the graph.
- Hover over any day to view that day's production.
- As shown in the graph below, production can vary day to day, which is expected from varying weather conditions.



System Production for January 2024

Viewing system production by month

Key elements of the monthly system production graph are:

- The total system production over the selected period appears at the top of the graph.
- Hover over any month's bar to view that month's total production.
- Due to seasonal variations and the amount of sunlight hours available, systems are expected to produce more energy in the summer and less in the winter, as shown in the following graph:

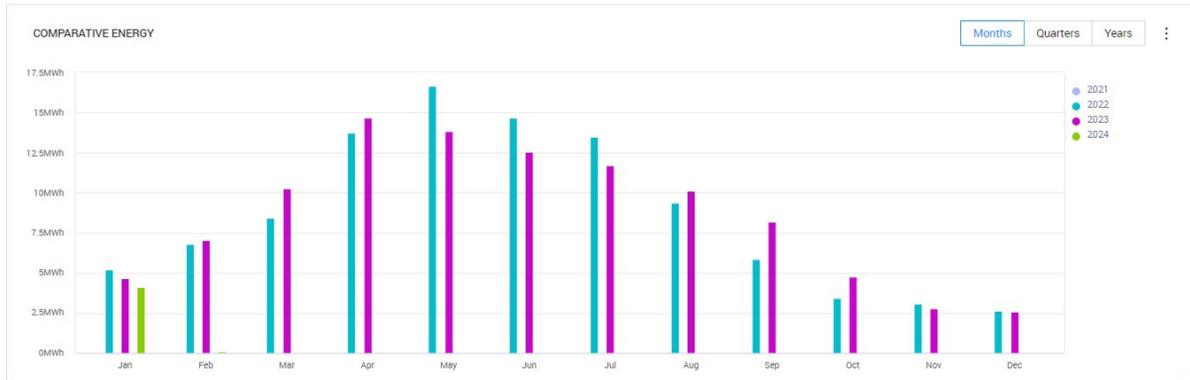


System Production from February '23 to February '24

Comparative production – year by year

Key elements of the comparative production graph are:

- Understand how the system has performed year to year.
- In the image below, the graph shows an expected curve when analyzing annual system production, where production is higher in summer and lower in winter.



*System Production for 2022, 2023 and January 2024
(this screenshot was taken from the end of January 2024)*

Layout

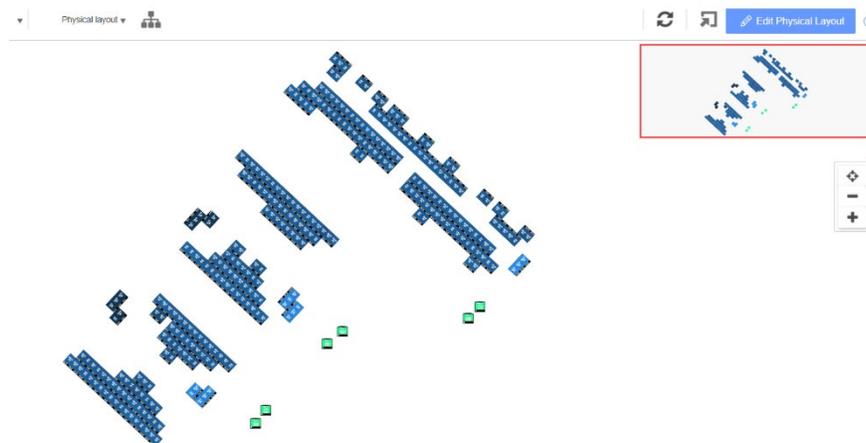
The layout view shows a schematic outline of system equipment, including inverters and modules.



To view the layout, select the layout icon that looks like this.

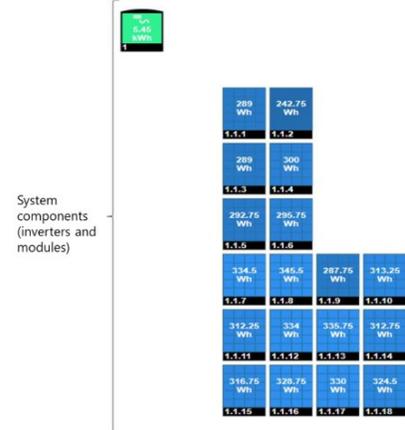
The layout view offers both physical layout and logical layout views, as follows:

1. **Physical layout:** Offers a virtual bird's eye view of the system's components and their location, which functions as a usable tool for troubleshooting maintenance problems. A sample physical layout schematic is shown in the figure below.



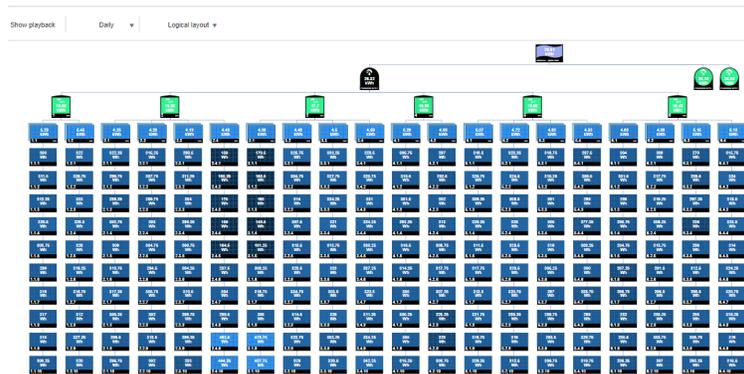
- i. Elements in the physical layout schematic:
 - i. Amount of Energy: Indicates the production by this component and its underlying components in a given period.

- ii. Color Code: In the layout schematic, all the elements of the diagram are color coded according to the amount of energy they have produced in the time frame specified. The color-coding is comparative, meaning a module which has produced the most energy over the selected time frame is displayed in light blue, while a module that has produced less energy is darker. The color-coding is also normalized, so the modules' color is relative to their full capacity. For example, a 300W module is the same color as a 400W module, when both produce the same percentage of their full capacity.



Note: If a physical layout was not created for the system, the logical layout would be the default view. Also, be sure to look at final day production data or close to end of day production data when evaluating underperformance. If no issues exist, end of day production values should be similar across all modules, given they experience the same amount of shading.

- 2. Logical layout: Offers a schematic view of the installation site, showing which modules are connected in each string, which strings are connected to each inverter, etc. A sample logical layout schematic is shown in the figure below.



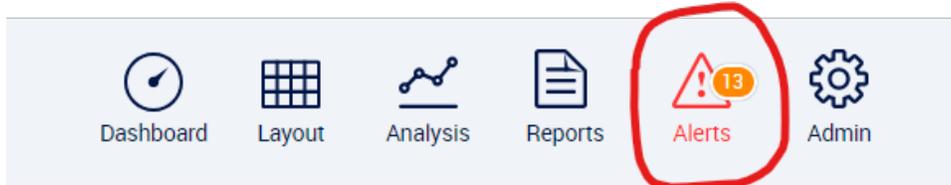
- i. Component types that are viewable in the logical layout:

Component	Description
	Site: Represents the site level. Displays the energy produced by the site for the selected period.
	Inverter: Represents an installed inverter. Displays the energy sum produced by the strings or modules connected to it.
	String: Represents strings of modules. Displays the energy sum produced by the modules comprising the string.
	Module: Represents a single module. Displays the energy produced by the module.

4. Alerts

Overview

The SolarEdge monitoring platform has an alert system that detects, diagnoses and notifies both system owners and solar installers on issues across their system fleet. The alert system enables a streamlined troubleshooting process. Alert notifications can be customized and configured by the user, and you can view all alerts by navigating to the alerts tab within your site’s dashboard, as outlined in red below.



Identifying alerts

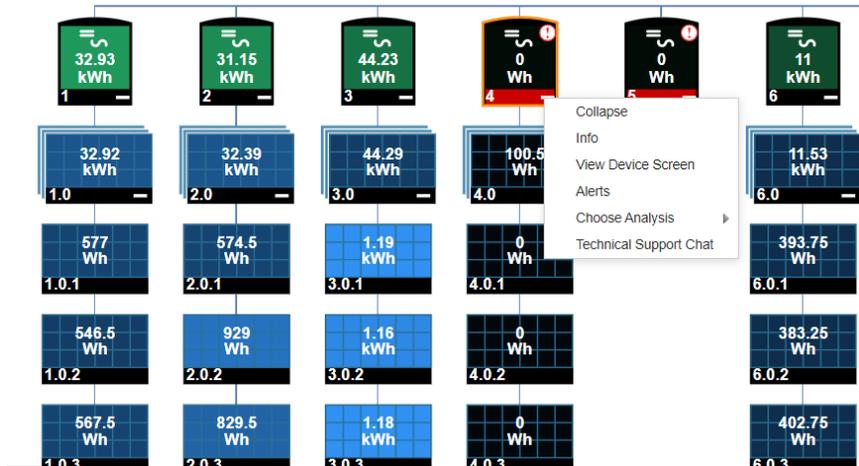
For each alert, an impact indicator is automatically calculated to help you spot urgent issues and decide how to deal with each alert cost-effectively. The impact indicator provides color-coded numeric values to rank issues across your system, by estimating the cost of each issue for energy loss and/or other operational expenses. The image below displays an example of types of alerts and their corresponding impact values:

<input type="checkbox"/>	IMPACT	ALERT TYPE	COMPONENT
<input type="checkbox"/>	6	Inverter production issue detected	Inverter 4
<input type="checkbox"/>	6	Inverter production issue detected	Inverter 5
<input type="checkbox"/>	2	No communication with Power Opti...	Panel 3.0.59
<input type="checkbox"/>	2	No communication with Power Opti...	Panel 3.0.78
<input type="checkbox"/>	2	No communication with Power Opti...	Panel 3.0.58
<input type="checkbox"/>	2	No communication with Power Opti...	Panel 3.0.60
<input type="checkbox"/>	2	No communication with Power Opti...	Panel 3.0.53
<input type="checkbox"/>	2	No communication with Power Opti...	Panel 3.0.79
<input type="checkbox"/>	1	No communication with Power Opti...	Panel 3.0.70
<input type="checkbox"/>	1	No communication with the Meter	Production Meter
<input type="checkbox"/>	1	No communication with the Meter	Production Meter

For more information on alert prioritization, refer to this article:

- [Alert Prioritization Using the Impact Indicator - Application Note](#)

In the layout tab you can also identify alerts. You can access alert details by right-clicking on the problem inverter or module and then click either “Alerts” or “Info” from the pop-up. By clicking on “Alerts,” it will take you to the alerts tab. By clicking on “Info,” it will show you component-specific details such as System Data, Errors and the Device Screen. See the Errors for Inverter 4 below:



Details for Inverter 4

System data **Errors** Device screen

Your last refresh: 3/8/2024, 12:47:42 PM REFRESH

Code	Description	Last Occurrence	QTY	
181	Internal error	03/08/2024 11:53	905	☰
188	Internal error	02/20/2024 07:24	1	☰

Note: If you notice your system is experiencing production issues, contact your solar installer.

Alert notifications

To learn more about configuring alerts and setting up alert notifications, refer to SolarEdge’s article:

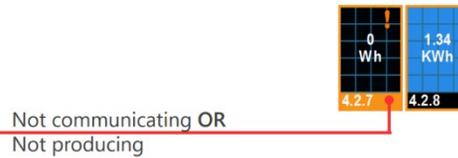
- [Alerts in the Monitoring Platform](#)

5. System Troubleshooting

Troubleshooting power optimizers and solar panels

If you notice a solar panel with less production than its neighbors, follow these steps to investigate:

1. In the layout tab of the online monitoring platform, you can select the individual panel to view its production for that day and its last communication.
2. Both a failure to communicate and a lack of production are reasons to contact your installer for further troubleshooting or repairs.



Name	Serial Number	Last Measured	Energy [Wh]
Panel 4.2.7	0004FA9A-98	04/04/2014 6:38 PM	0
Panel 4.2.8	0004FACA-C8	04/04/2014 6:38 PM	1,342.5

Communicating Not producing

Inverter communications

Every inverter in the system should report data to the monitoring platform every 15 minutes. If an inverter fails to communicate with the monitoring platform, then it can indicate multiple issues. For additional guidance on inverter communications, contact your solar installer.

Inverter production

Even if an inverter is communicating normally, it may still experience production issues. Notice in the image below that the operating inverters are highlighted in **green** and the problem inverter is highlighted in **black**. This makes it easier for owners to spot a troubled inverter when viewing the system in the layout tab.



MySolarEdge mobile app troubleshooting

It is recommended for all system owners and their on-site maintenance staff to install the mySolarEdge mobile app because of its many capabilities including, but not limited to real-time monitoring, energy efficiency insights, system performance insights and self-service capabilities.

For guidance on first-time login to the app, follow the steps from SolarEdge in this [link](#).



By using the mySolarEdge app, you can easily connect to your inverter's interface and see precise production information, communication details or test its internet connection. To connect to each inverter, you will need to scan its QR code on the side of the unit. For system owners with multiple inverters, please note that the data within the "Inverter Status" page is specific to that inverter and does not display whole-system data.

For guidance on connecting to your inverter's interface through the mySolarEdge app, follow the steps provided by SolarEdge:

- [Verifying Inverter Status](#)

6. Resources

Your system summary

Use the spaces below to track system details:

- Expected Annual Performance: _____ kWh
- System Size: _____ kW

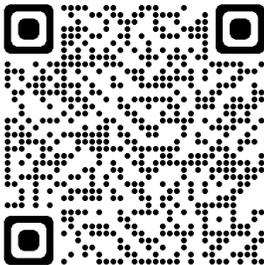
SolarEdge monitoring platform login credentials:

- Username: _____
- Password: _____

SOMAH's Technical Assistance and Support Services

If additional support is needed to navigate the SolarEdge monitoring platform or troubleshoot your system, please use the resources below to request SOMAH's Technical Assistance and Support Services.

- calsomah.org/TA-request
- QR code:



SOMAH TA and Support Services Request Form