



Wi-Fi Module

User Manual

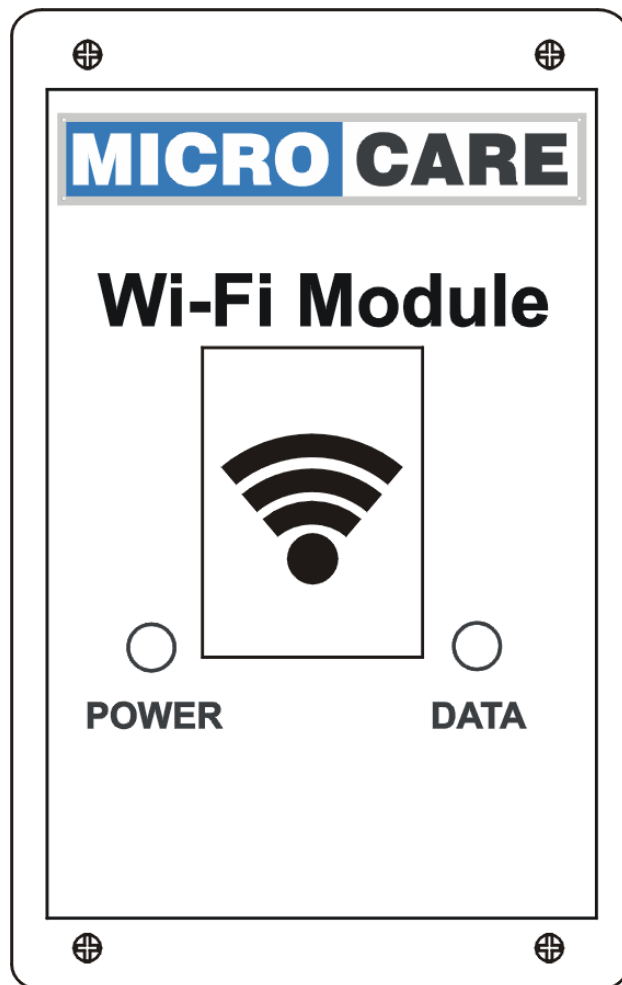


Table of Contents

1. INTRODUCTION	1
1.1 General Description	1
1.2 Key Features	1
2. CONNECTING THE WI-FI MODULE TO YOUR MICROCARE PRODUCT	2
2.1 Connecting between your Android phone and the Wi-Fi Module	3
2.1.1 Scanning QR code using Android phone	3
2.1.2 Manually:	3
2.2 Auto detection of Microcare Device:	3
2.3 Index page (Landing page)	4
2.4 Configure Wi-Fi module settings:	4
2.5 Changing the System Settings admin password:	5
2.6 Data logging settings (Requires Internet connection and Power monitor account):	5
2.7 Connecting the Wi-Fi module to an existing Wi-Fi network	6
2.8 Updating the firmware	7
2.9 Device information page	8

1. INTRODUCTION

1.1 General Description

The Microcare Wi-Fi module is designed to give remote wireless access to selected Microcare products such as Inverters, MPPTs & Three-Phase Pump Controllers. This access will give the user real-time data as well as the last 24 hour (last days') history of the unit making it easier to monitor, change and evaluate the performance. Configuration of your Microcare device and setting up becomes more accessible and easier with the Microcare Wi-Fi module, obtaining instant access to your system without the need for an internet connection.

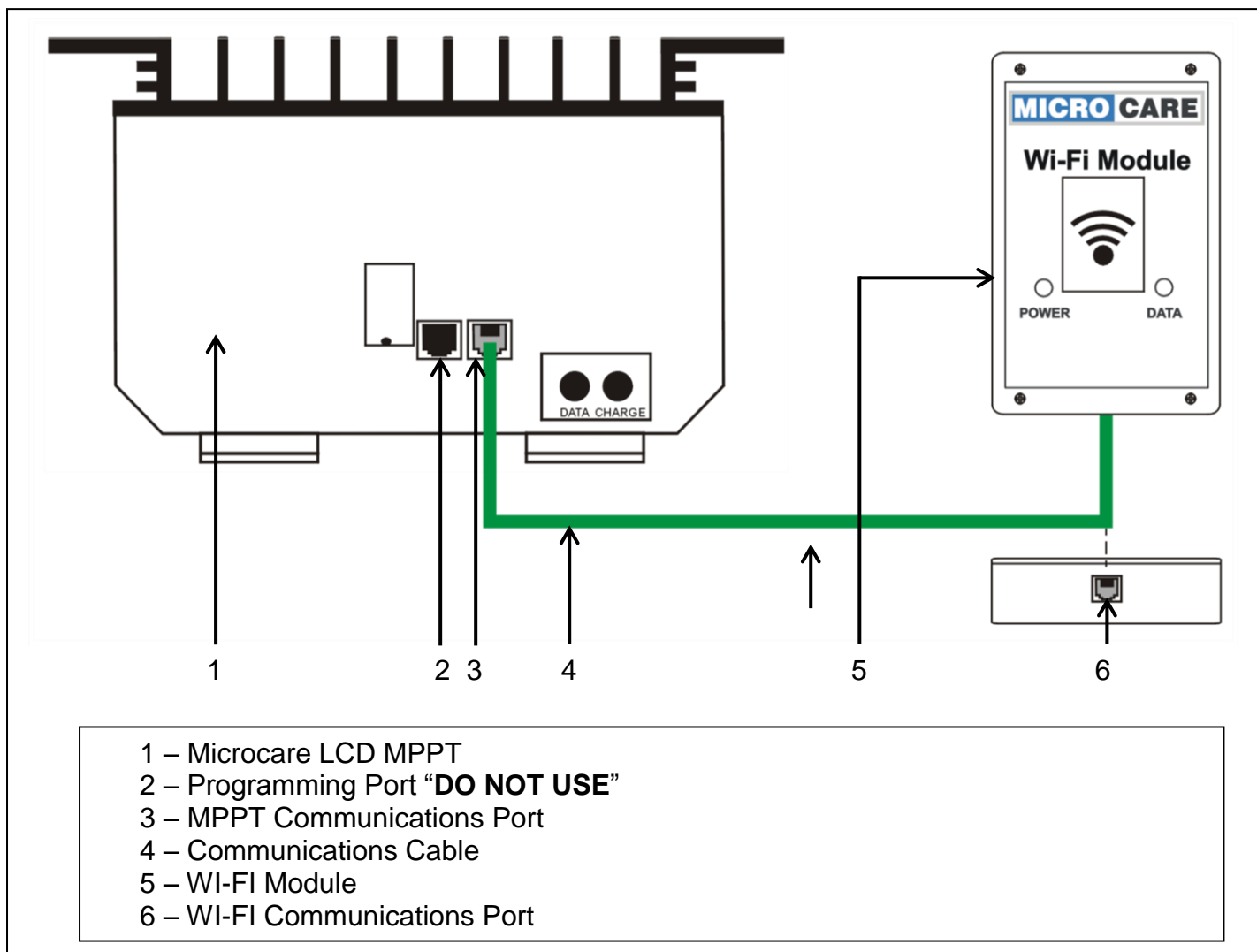
1.2 Key Features

Supports multiple Microcare Devices:

- Three-Phase Pump Controller
- MPPT
- Inverter

- Creates a Wi-Fi access point
- Connects to your Wi-Fi access point
- Provides real-time data from Microcare device
- Provides 24hour historical data from Microcare Devices
- Updates device settings over Wi-Fi
- Uploads data to the Microcare Powermonitor website
- "Over the Air" firmware updates

2. CONNECTING THE WI-FI MODULE TO YOUR MICROCARE PRODUCT



The Microcare device provides power to the Wi-Fi module via the communications cable.

Connect the communications cable to RJ11 port on Wi-Fi module and the RJ11 port on Microcare Device. (Do not connect any cable into the programming port of the Microcare Device)

As soon as the Microcare device is powered up the Wi-Fi module turns on and starts collecting data. RED LED is solid on.

Yellow LED pulses every 2 seconds.

2.1 Connecting between your Android phone and the Wi-Fi Module

The access point details can set up in 2 ways:

- By scanning the QR Code on the back of the WI-FI module
- Manual setup

2.1.1 Scanning QR code using Android phone

Use your Android phone

- Scan the WI-FI QR code on the back of the WI-FI module.
The following information will appear on phone screen.
SSID
ENCRYPTION
PASSWORD
Option to connect
- Scan the Landing Page QR code.



2.1.2 Manually:

Scan the list of available Wi-Fi Networks

Select MC-Smartcom

SSID: MC-SmartCom-xxxxx – unique ID for each Wi-Fi module

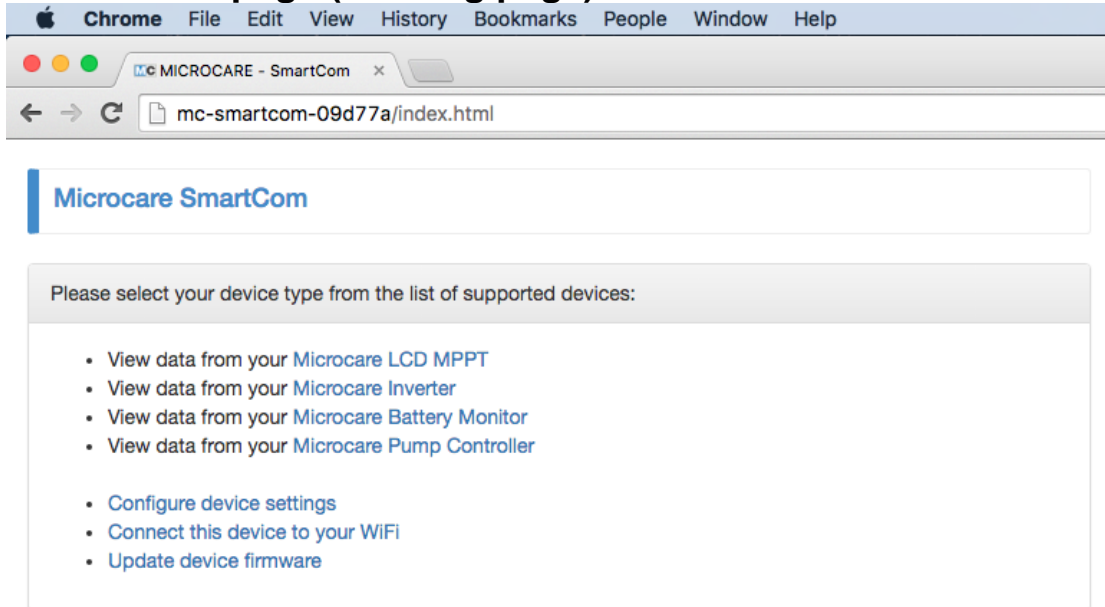
PSK: Default password is “Microcare” (without the quotes)

2.2 Auto detection of Microcare Device:

2.2.1 If the Microcare device supports the auto detection feature (Not currently available – only on new MPPT firmware and the new Pump Controller) the Wi-Fi module will automatically show the appropriate page for the device. I.e. if you have a MPPT, the default page shown will be the MPPT page. For an inverter, the Inverter page will be shown

2.2.2 If your Microcare device could not be detected, or it does not support the auto detection feature, the Wi-Fi module will show the default index page. On this page you can select your device type as well as access other Wi-Fi module features.

2.3 Index page (Landing page)

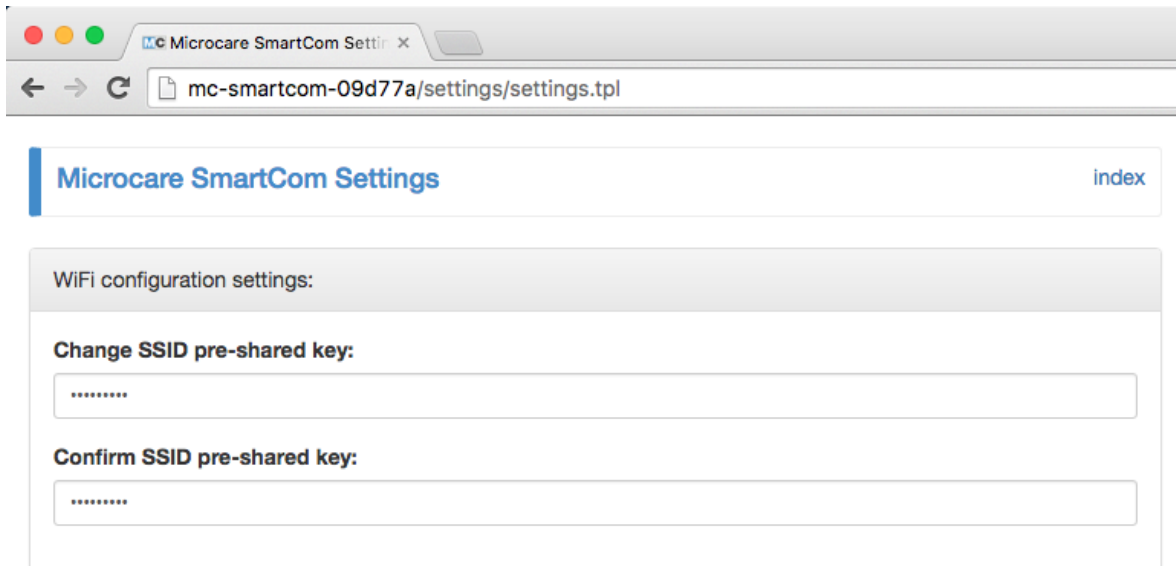


Select your Microcare device from the list of supported devices. This will take you to the device specific information page. More information regarding the device specific page can be found later on in the manual.

2.4 Configure Wi-Fi module settings:

When accessing the Settings page, you'll be prompted for a password. The default username and password is "admin" and "admin".

Changing the default PSK key:



The Wi-Fi module creates a secured Wi-Fi access point by default. In order to connect to the access point a pre-shared key is required. The default pre-shared key is "Microcare". The default key can be changed by entering a new pre-shared key into the SSID pre-shared key box and by re-typing the new pre-shared key into the pre-shared key confirmation box.

2.5 Changing the System Settings admin password:

System settings:

Change admin password:

Confirm admin password:

The system settings portion is protected by a username and password. The username is “admin”, without the quotes and the default password is “admin”, again, without the quotes. The password can be changed to a customer selected one. The password has a maximum length of 30 characters.

2.6 Data logging settings (Requires Internet connection and Power monitor account):

Data logging settings:

Log device data online using: (Requires account)

HTTP

API Key from your on-line account:

API key

Upload interval:

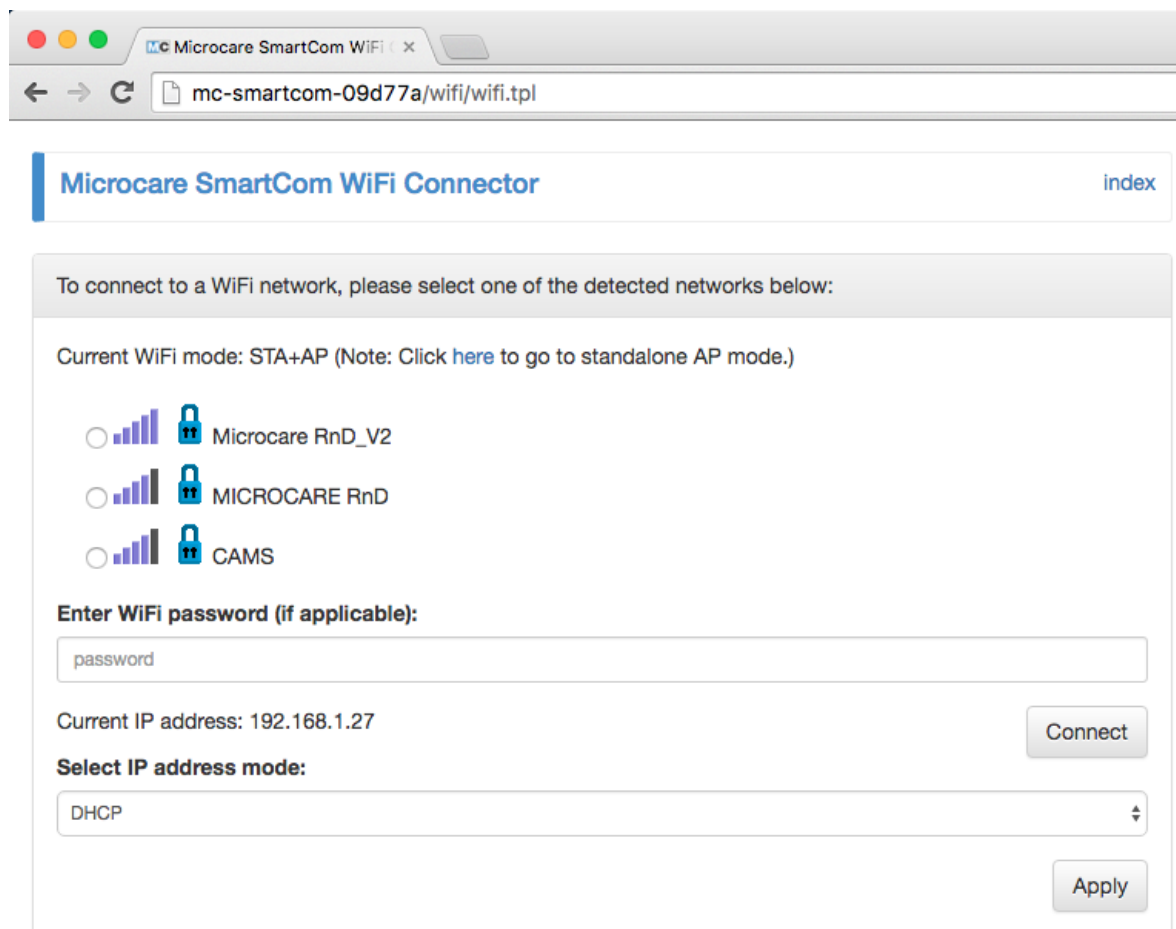
10 seconds

The data logging features enables the logging of the Microcare device data onto the Microcare Powermonitor website using the Wi-Fi module. By default, the data logging is disabled. In order to enable the data logging feature, sign up for an account on the Powermonitor website (<https://www.powermonitor.co.za>). From your account page, highlight the API-Write key value and copy/paste it into the API Key field on the Wi-Fi module settings page. The upload interval specifies at what frequency the data will be uploaded onto the Powermonitor website.

Once all changes have been made, click on the apply button to save the changes. The Wi-Fi module will reboot for the changes to take effect.

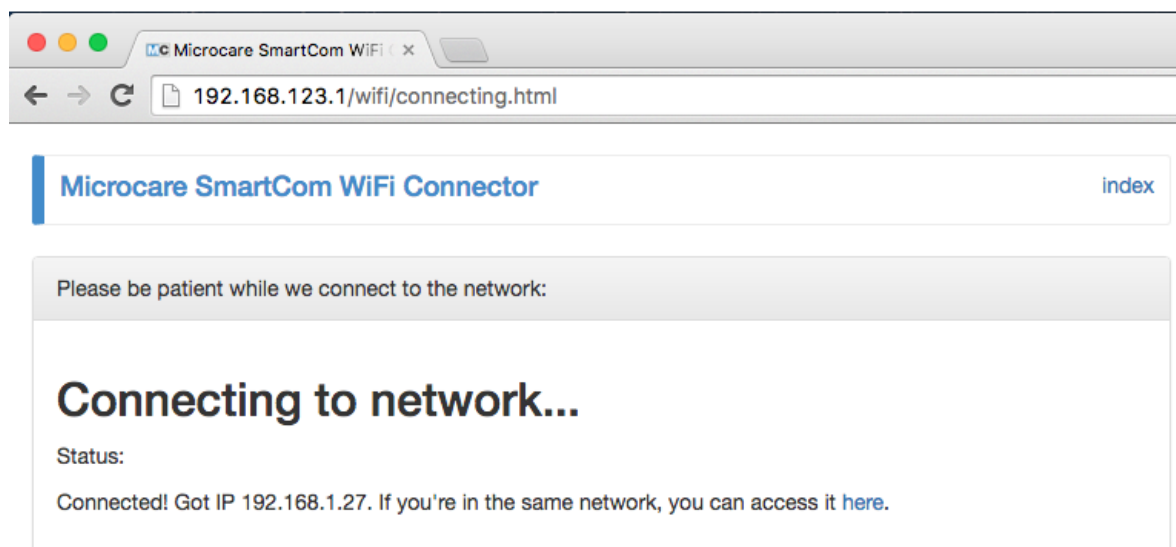
2.7 Connecting the Wi-Fi module to an existing Wi-Fi network

The Wi-Fi module can connect to an existing Wi-Fi network that is in range. In order to connect to an existing network navigate to the “Connect this device to your network” link. The Wi-Fi connector page is display listing all Wi-Fi networks that could be detected by the Wi-Fi module.



The screenshot shows a web browser window with the address bar displaying `mc-smartcom-09d77a/wifi/wifi.tpl`. The page title is "Microcare SmartCom WiFi Connector" with an "index" link. The main content area has a header: "To connect to a WiFi network, please select one of the detected networks below:". Below this, it states "Current WiFi mode: STA+AP (Note: Click [here](#) to go to standalone AP mode.)". There are three network options, each with a signal strength icon, a lock icon, and a name: "Microcare RnD_V2", "MICROCARE RnD", and "CAMS". Below the networks is a section "Enter WiFi password (if applicable):" with a text input field containing "password". The "Current IP address: 192.168.1.27" is displayed next to a "Connect" button. Underneath is a "Select IP address mode:" section with a dropdown menu set to "DHCP" and an "Apply" button.

Select the network that you would like to connect to and enter the pre-shared key, if required. Click the “Connect” button. A progress page is displayed:



The screenshot shows a web browser window with the address bar displaying `192.168.123.1/wifi/connecting.html`. The page title is "Microcare SmartCom WiFi Connector" with an "index" link. The main content area has a header: "Please be patient while we connect to the network:". Below this is a large heading "Connecting to network...". Underneath is a "Status:" section with the text "Connected! Got IP 192.168.1.27. If you're in the same network, you can access it [here](#)."

Assuming the Wi-Fi network has DHCP enabled, the Wi-Fi module will obtain an IP address automatically and the IP address is shown on the progress page.

If the Wi-Fi network does not have DHCP running and a static IP address is required, a static IP address can be configured by selecting “static” from the IP address mode dropdown. Enter the IP address details and click Apply:

Select IP address mode:

Static IP

IP address:

192.168.1.100

Network Mask:

255.255.255.0

Gateway:

192.168.1.100

Apply

2.8 Updating the firmware

The Wi-Fi module allows for updating its firmware as well as the Microcare device firmware. In the event that Microcare requests a firmware update, navigate to the Firmware update page by selecting the “Update device firmware” link from the index page.

Microcare SmartCom Firmware Update (V1R0) [index](#)

Click on 'Choose file' and browse for the supplied *.ota or *.hex firmware file:

WARNING: use this facility with caution!

Choose File No file chosen

Update wireless firmware

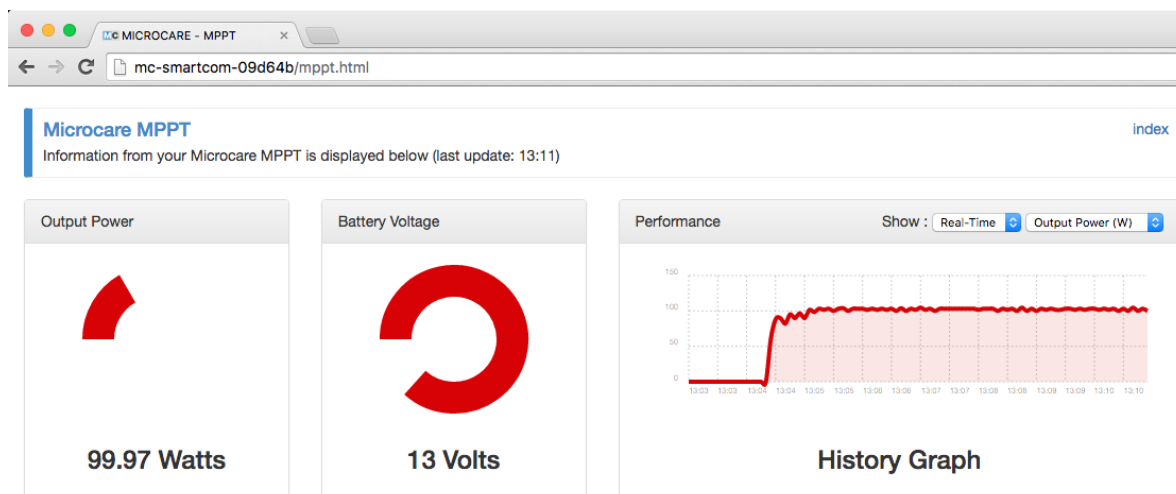
Choose File No file chosen

Update hardware firmware

Two firmware options are presented when the firmware update page is displayed. Select the appropriate firmware update image by clicking on the “Choose file” button and browsing for the saved file. Once the file has been selected, click on the “Update firmware” button to proceed with the update.

2.9 Device information page

Should be the Wi-Fi device detect your Microcare device successfully, the appropriate landing page will be displayed automatically. In the event that the auto detection could not detect the device, please select the appropriate page from the landing page.



Device Information

Description	Value
Device type	40A MPPT
Current status	Boosting
Panel voltage	21.2 V
Panel current	4.71 A
Battery voltage	13 V
Battery current	7.69 A
Output power	99.97 W

Update Settings

The following historical data can be displayed. Panel Voltage, Panel Current, Battery Voltage, Battery Current or Output Power.

The device information page shows the real-time information gather from your Microcare device. Below is an example

- Last page update
- Output Power
- Battery Voltage
- Performance graph shows the device performance over a period of time:
- Real-time Information is displayed by default and shows the data for the last 3 minutes.
- Historical information can be selected from the "Show" dropdown. The historical data shows the device performance over the last 24hours, averaged in 15 minute intervals. The historical data will be lost in the event of Wi-Fi connections loss or by switching off the MPPT.

Various metrics can be selected from the "Show" dropdown such as:

- Output Power
- Battery Voltage
- Panel Voltage

Device information shows information about the connected device