



iCast1

User Manual

- By Shoreline IoT Inc.



Product Name: iCast1
Model: iCast Rev. C

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1 Overview

Shoreline’s iCast1 Wireless IoT Bridge & Software provides total end-to-end solution for remote asset monitoring and predictive maintenance of legacy industrial/commercial assets and sensors. The overall setup is accomplished with very low upfront cost and within a few minutes by the built-in intelligence of the iCast software and requires no assistance from specialized technicians.

The iCast1 device software records data from the legacy industrial equipment & sensors and performs protocol translations, data filtering, aggregation & buffering of data, local rules processing, device provisioning and secure registration with the Cloud or local edge gateway. The iCast1 Cloud software includes monitoring dashboards, notifications & alerts, user management, device management, sensor profile manager & over-the-air (OTA) updates.

2 Block Diagram

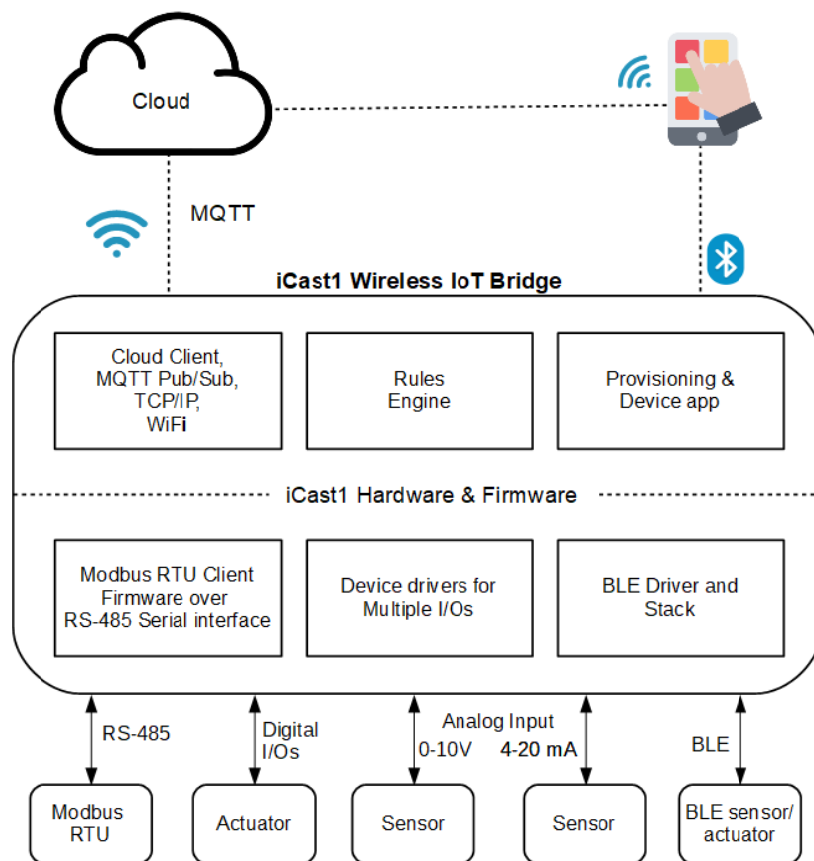


Figure 1: Block Diagram

3 Hardware Details

3.1 Product Images



Figure 2: Top and Bottom View

3.2 Interface List

iCast1 has two connectors as described below in the tables:

CONNECTOR 1

Pin Name	Function
12-24 VDC Power +	12-24 volts DC supply, positive terminal
12-24 VDC Power -	12-24 volts DC supply, negative terminal
RS-485 +	RS-485 positive terminal
RS-485 -	RS-485 negative terminal

CONNECTOR 2

Pin Name	Function
5V Output	5 volts DC output
DI Ref	Digital input reference
DI 4	Digital Input 4

3.5 LED Indications

PWR LED: LED ON indicates that the system power is OK and the main power is up. LED OFF indicates that the power to the device has been turned OFF.

Wi-Fi LED: LED ON and stable indicates that the device is connected to both Wi-Fi and cloud. LED blinking indicates that the provisioning to Wi-Fi and Cloud is in progress. LED OFF indicates that the device has not been provisioned to Wi-Fi or cloud.

4 Setup of iCast1 Device

To setup the iCast1 device, the iCast mobile app must be downloaded and installed on a smartphone (currently iOS available). After installation of the application the following screen will be displayed on the mobile after the app starts:

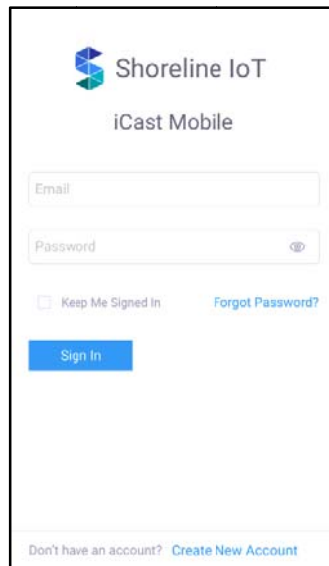
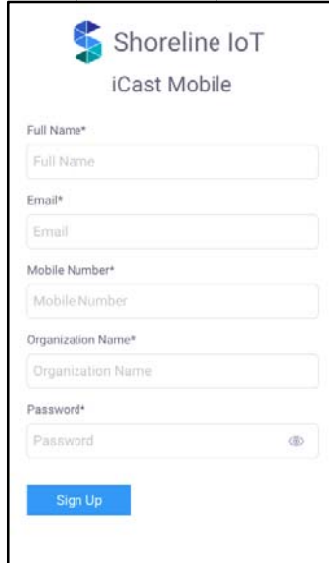


Figure 4: Login screen after startup

4.1 Create New Account

An account needs to be created, before any iCast1 devices can be added or provisioned. Clicking “Create New Account” button shows the following screen:



Shoreline IoT
iCast Mobile

Full Name*

Full Name

Email*

Email

Mobile Number*

MobileNumber

Organization Name*

Organization Name

Password*

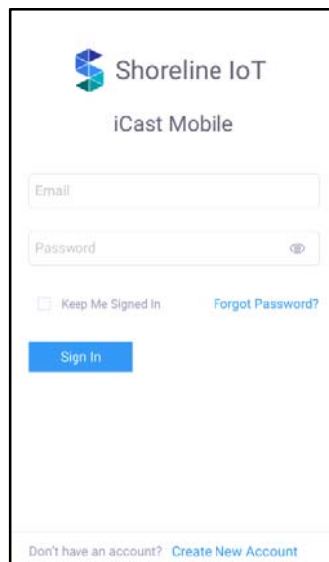
Password

Sign Up

Figure 5: Create New Account Screen

The user can then enter the details and click on the “Sign Up” button to create an account.

If sign up is successful, the user receives an email in his / her inbox with a verification link to verify the email address. Once the user clicks this link, he / she can login to his / her account. After user account is created, a pop-up will inform about verification email. After pressing OK button, the user will be directed back to the sign-in screen as below.



Shoreline IoT
iCast Mobile

Email

Password

Keep Me Signed In [Forgot Password?](#)

Sign In

Don't have an account? [Create New Account](#)

4.2 Add New Device

Once the user logs in with valid credentials, then for the first time, the following screen can be seen without any iCast associated with the account:

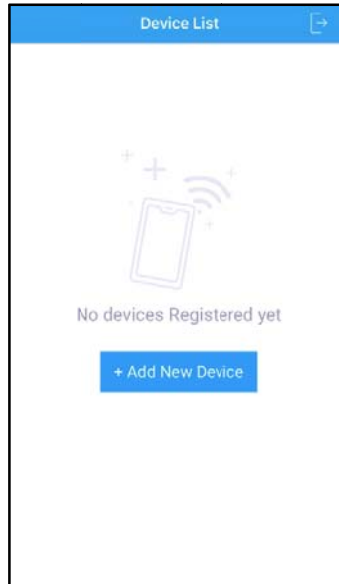


Figure 6: First time login with no devices added

4.2.1 Enter Device Details

To add a new iCast device, user will have to power on the iCast device. Verify the device has power with help of PWR LED on the device. Click on Add New Device on the screen shown above. The user can enter the device details on the screen shown below:

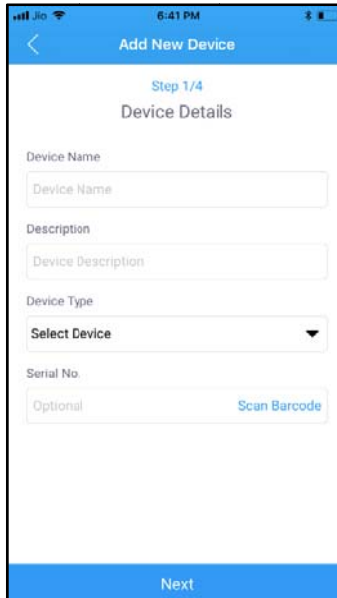
A screenshot of a mobile application interface titled "Add New Device". The screen is divided into a blue header bar with a back arrow, the title "Add New Device", and the time "6:41 PM". Below the header, it says "Step 1/4" and "Device Details". The form contains several input fields: "Device Name" with a text input field, "Description" with a text input field, "Device Type" with a dropdown menu currently showing "Select Device", and "Serial No." with a text input field. To the right of the "Serial No." field is a blue link labeled "Scan Barcode". At the bottom of the screen, there is a blue bar with the text "Next".

Figure 7: Entering device details

4.2.2 Select iCast to be provisioned

Once the device details have been added, the user needs to connect to the Wi-Fi of the iCast module that needs to be provisioned. The following screen is displayed:

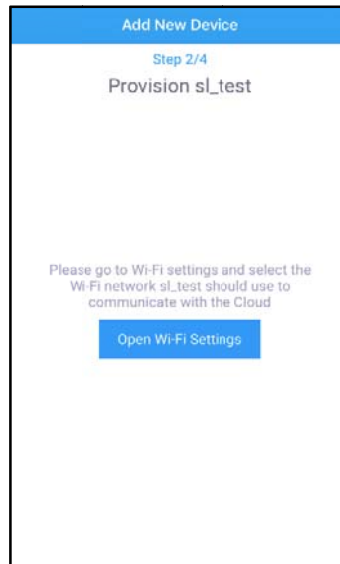


Figure 8: Prompt user to open Wi-Fi settings

Once the user clicks on Open Wi-Fi settings, the list of available Wi-Fi networks will be displayed as shown below:

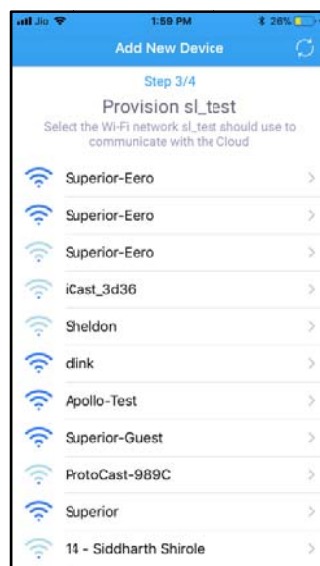


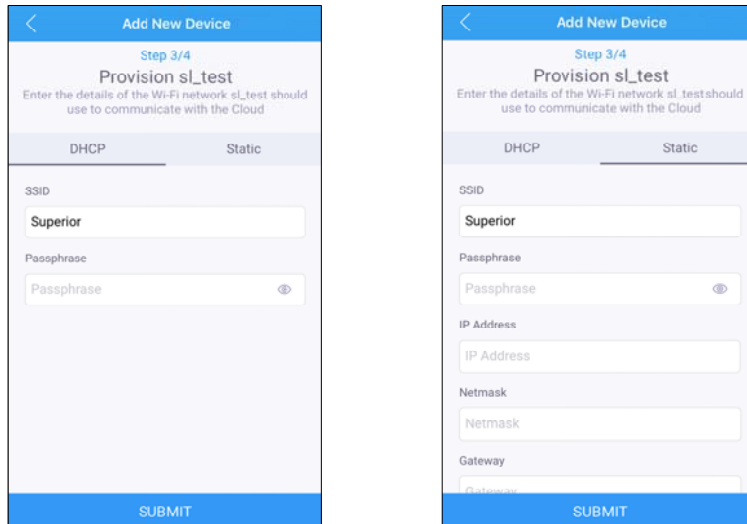
Figure 9: List of available Wi-Fi networks

The SSID for the iCast is in the form *iCast1_<last 4 nibbles of MAC address>*. For example, the iCast1 with MAC address 11:22:33:44:55:66 would have Wi-Fi SSID as “iCast1_5566”. The MAC address of the Wi-Fi is located on the top side of the iCast1 device.

The passphrase to connect to the iCast1 device is 12345678.

4.2.3 Select the Wi-Fi network for cloud connectivity

Once the user has connected to the iCast1 Wi-Fi, the Wi-Fi network over which the iCast1 needs to connect to the cloud needs to be selected. This network can be DHCP or static IP based, which is shown below. Enter the network credentials and click on 'Submit' to start the provisioning process.



The figure shows two side-by-side screenshots of a mobile application interface for adding a new device. Both screens are titled 'Add New Device' and 'Step 3/4 Provision sI_test'. The left screen is for DHCP configuration, showing a text field for SSID with the value 'Superior' and a text field for Passphrase. The right screen is for Static IP configuration, showing text fields for IP Address, Netmask, and Gateway. Both screens have a 'SUBMIT' button at the bottom.

Figure 10: Network Information

Once the credentials and network information are submitted, if successful the following pop-up will be displayed:

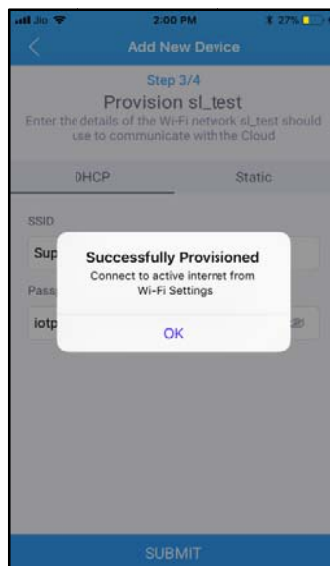


Figure 11: Provisioning successful

The user should connect to the access point that has an active Internet connection once OK is clicked on the above pop-up.

4.2.4 Attach Profile

Once the provisioning is complete, the app asks if the user would like to attach a profile to the newly created device. A list of available profiles is displayed in the screen shown below, from which a user can attach and select from a list of profiles already available:

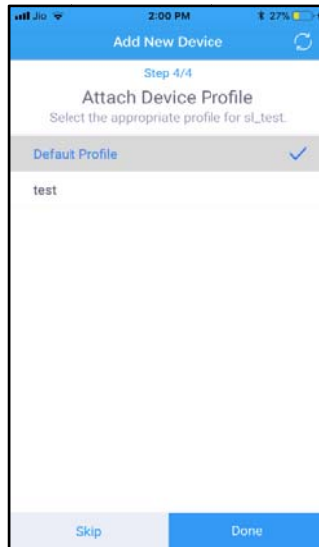


Figure 12: Attach Device Profile

This step is optional and can be skipped by pressing the 'Skip' button. To select a profile, click on the profile and click on 'Done'.

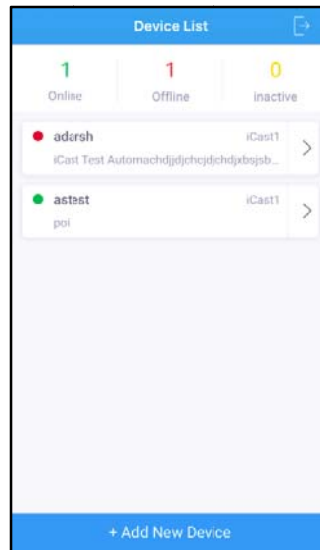
4.3 Device List

The list of added devices can be seen as shown below. The dashboard also displays the following counts:

Online - Devices that are connected to the cloud

Offline - Devices that are not reachable or have lost connectivity to the cloud

Inactive - Devices that have been added but not been provisioned



5 Device Dashboard

The iCast1 devices can also be accessed via a web browser at [link](#). Once the user logs in, the following screen is displayed:

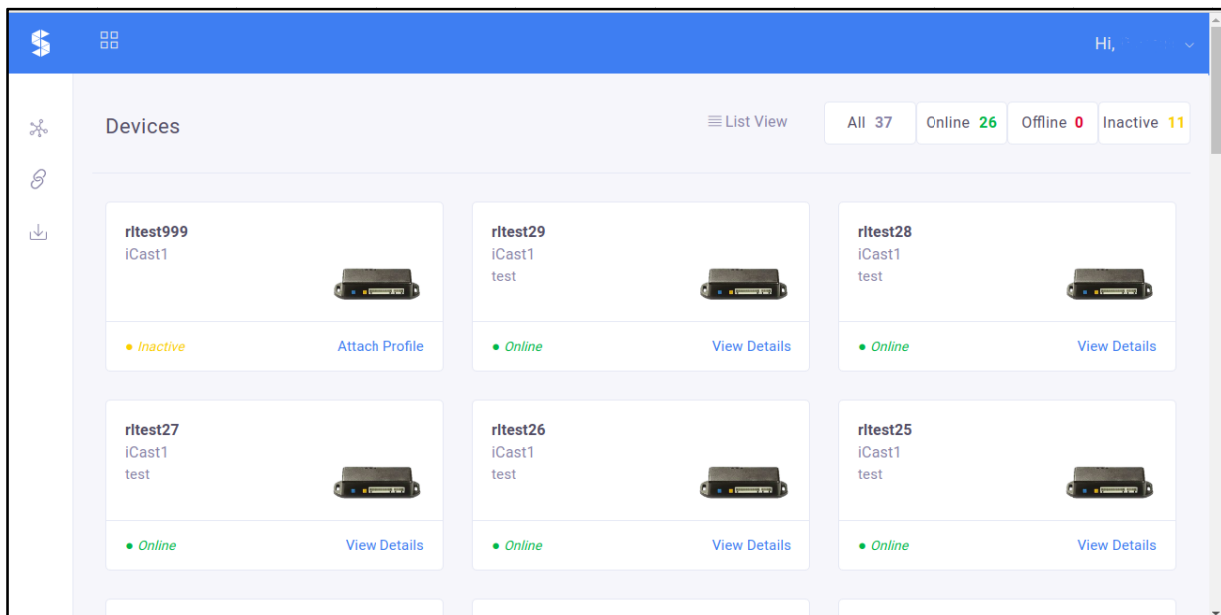


Figure 13: Web UI dashboard

The following options are available on this Web application home screen:

- Attach a profile to a device
- Viewing device details and real-time data
- OTA upgrades
- Data logs

FCC WARNING

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.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum 20cm distance between the radiator your body: Use only the supplied antenna.