

POEM Dash Quickstart Guide

Instructions for Running Serial Port Commands

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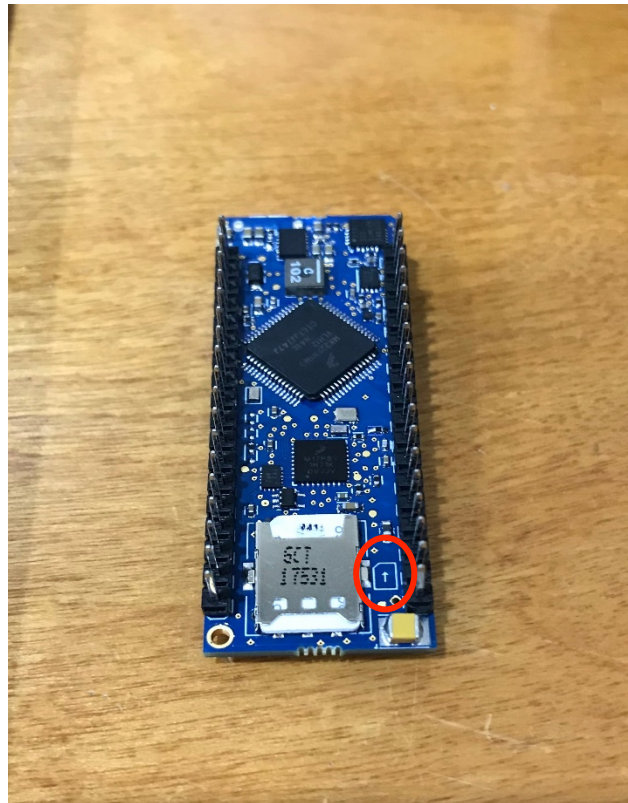
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I. SIM Card Management

Inserting SIM Card:

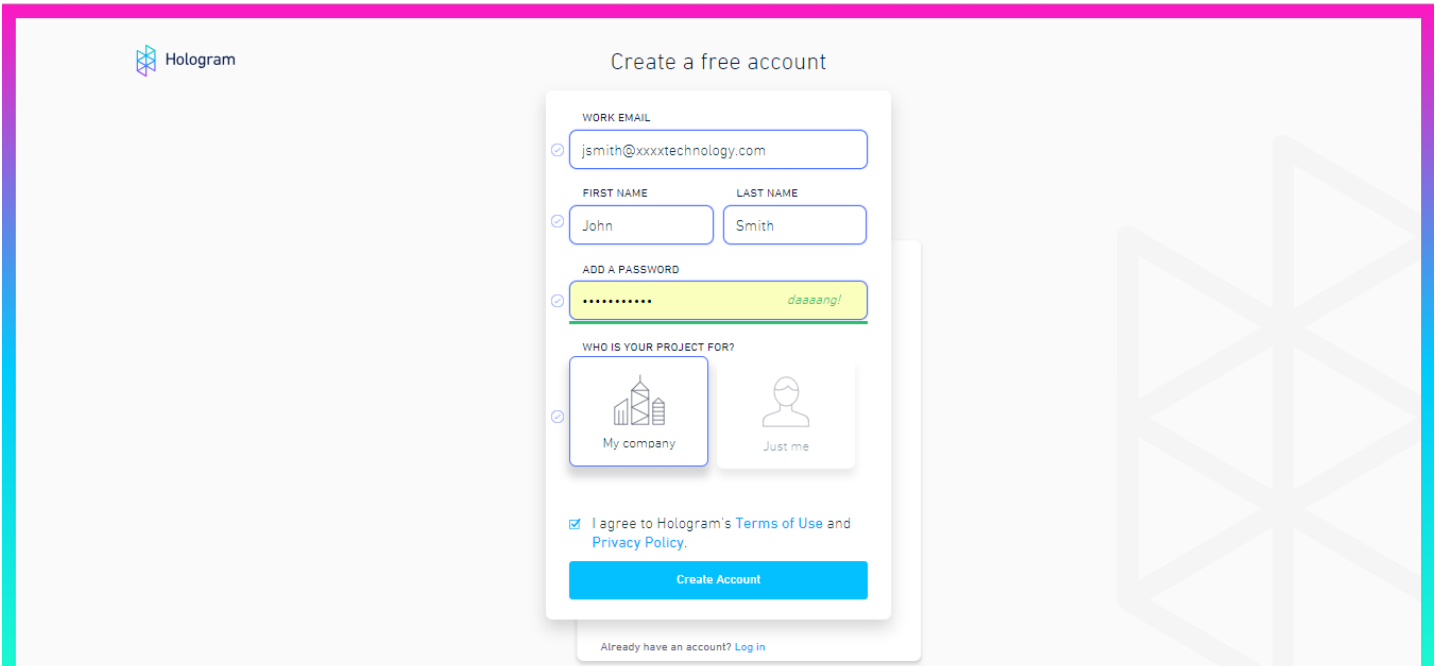
To properly insert your SIM card, pop it out of the carrier card and insert it into the back of the Dash in the small silver compartment that is the same size as the SIM. There is a small image of the SIM card next to the compartment that details the orientation it should be inserted.

Orienting SIM Card:



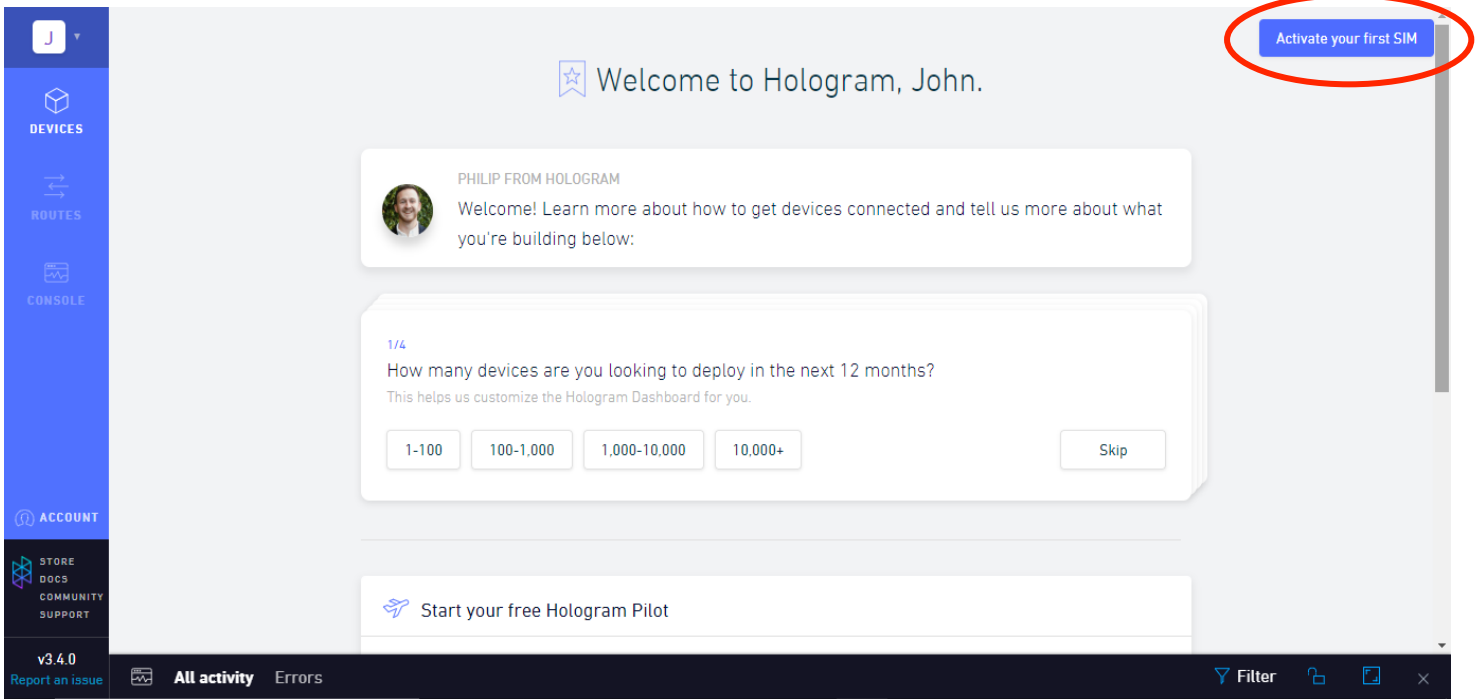
Creating a Hologram Account:

Go to <https://dashboard.hologram.io/> and create a new account. Enter your personal information and create a password. Select if your project is for your company or for yourself. Agree to Hologram's Terms of Use and Privacy Policy, and click "Create Account." You are all set!



Activating SIM Card:

Once you log in, there is a blue button at the top right corner labeled “Activate your first SIM.” Click this button to get started.



There are multiple payment plans to choose from, including a free Pilot Plan for your first SIM. Other plans have various prices and data sizes.

The screenshot shows the 'Select Plan' step in a dark-themed navigation bar with four steps: 1. Choose plan (active), 2. Add SIMs, 3. Add Payment, and 4. Review. The main content area is titled 'Select Plan' and features a 'Select Plan' button in the top right. Below the title, there are two plan options:

- Flexible Data:** A single plan with global coverage, pay-as-you-go or use data pools, and volume discounts as you scale. Starting at \$1.50 / DEVICE / MO.
- High Bandwidth:** Starting at 250mb per month, billed monthly, lower per KB rate, and available in the US and Globally. Starting at \$7.50 / DEVICE / MO.

Below the plans, the 'Coverage' section is set to 'Global' with a 'View Coverage Map' button.

The next step is adding your SIM card's number. This number is located below the gray barcode on the card your SIM came inside.

The screenshot shows the 'Add SIMs' step in the same dark-themed navigation bar. The main content area is titled 'Add SIMs' and features a 'Back to Plans' button and an 'Add Sims' button in the top right. Below the title, there is a purple box containing an image of a SIM card and its details:

- The SIM card image shows the URL 'START BUILDING hologram.io/start' and a barcode.
- A callout bubble highlights the SIM number: 99900123450004598765.
- Text below the callout states: 'The SIM number is an 18-22 digit code on the back of your SIM card.'

Below the purple box is a text input field with the placeholder text: 'Enter SIM numbers separated by commas, spaces, or line breaks'. At the bottom, there is a link: 'Ordered a 100-pack or more of SIM cards? Get Help Activating'.

You have the option of customizing your SIM's name, or giving it a tag for future reference.

The screenshot shows a web interface for adding SIMs. At the top, a dark navigation bar contains the steps: 1 Choose plan, 2 Add SIMs, 3 Add Payment, and 4 Review. The current step is 'Add SIMs'. Below the navigation bar, there are buttons for 'Back to Plans' and 'Add Sims'. The main content area features a table with two rows of device information:

DEVICE			
<input type="checkbox"/>	Eratz-Raven (12345)	●	-
<input type="checkbox"/>	Eratz-Raven (67890)	●	-

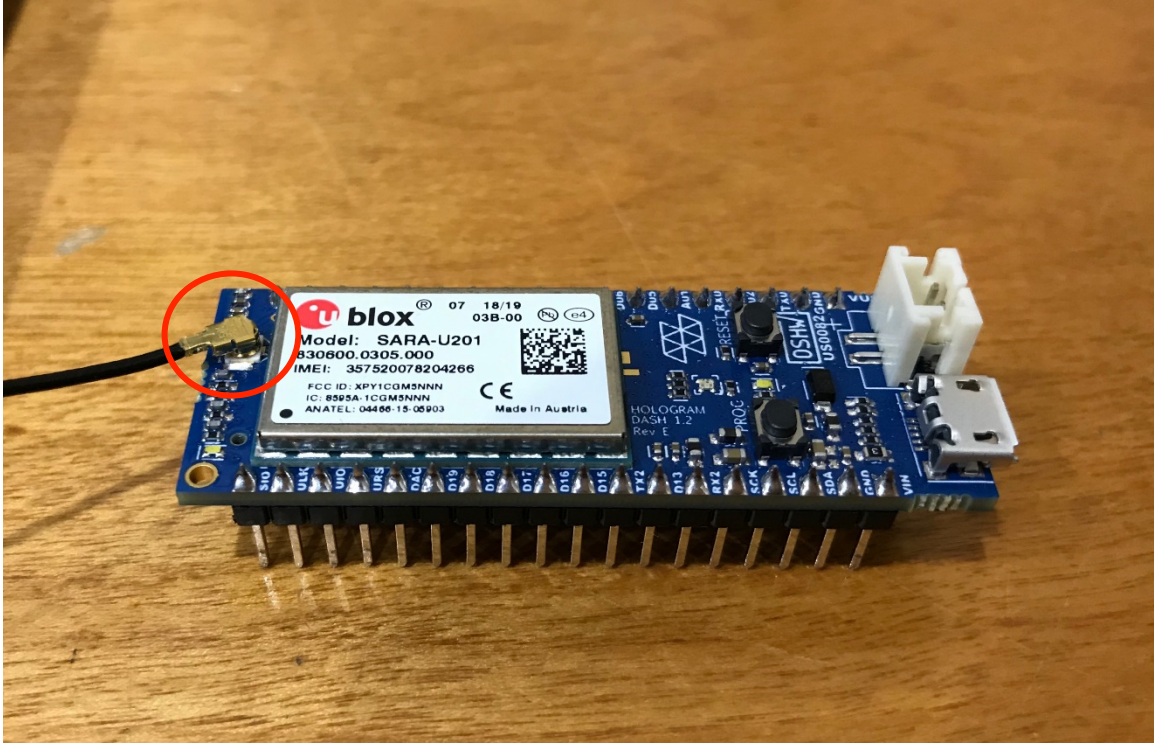
Below the table, a text box is pre-filled with 'brown-racoon', which is circled in red. Below this, there is a section for 'Assign tags' with a text box containing 'gray-racoon'. The text below the table reads: 'Add a name that gets applied to each SIM upon activation. We recommend making the name centric to the hardware version, end-user, geographical location, or similarly memorable. We generated a fun one for you.'

Enter your payment info. You can review your information before confirming your order. Congrats! You have activated your first SIM card.

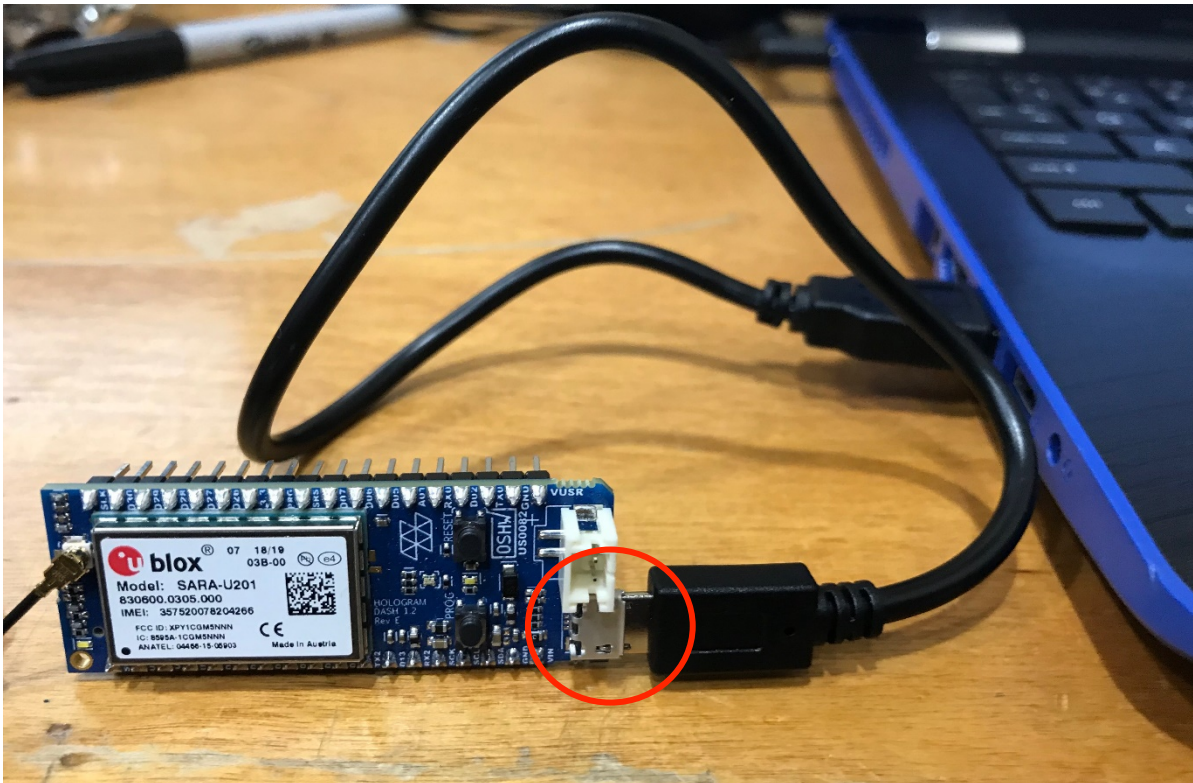
II. Dash Setup

Plug the large end of the USB into a USB port on your laptop or desktop. You should insert the smaller end into the Dash's port at the bottom right corner. The antenna is the part with the long black wire and black adhesive. The wire has a small gold end; press this onto the matching gold button located to the left of the white "ublox" box. Your Dash is set up!

Attaching antenna:



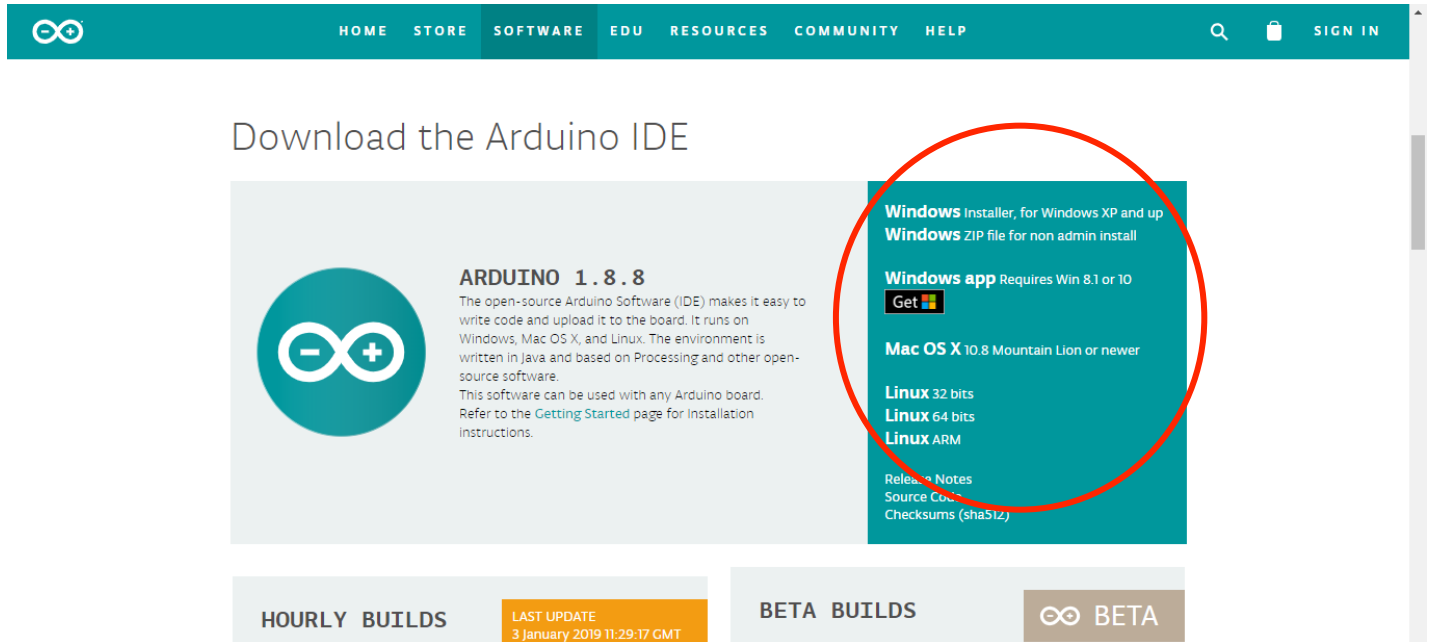
Plugging in USB:



III. REPL Program

Installing the Arduino IDE:

Use the link [Arduino.cc](https://www.arduino.cc) to begin installation. Choose the Windows, Mac, or Linux option that works best for you.

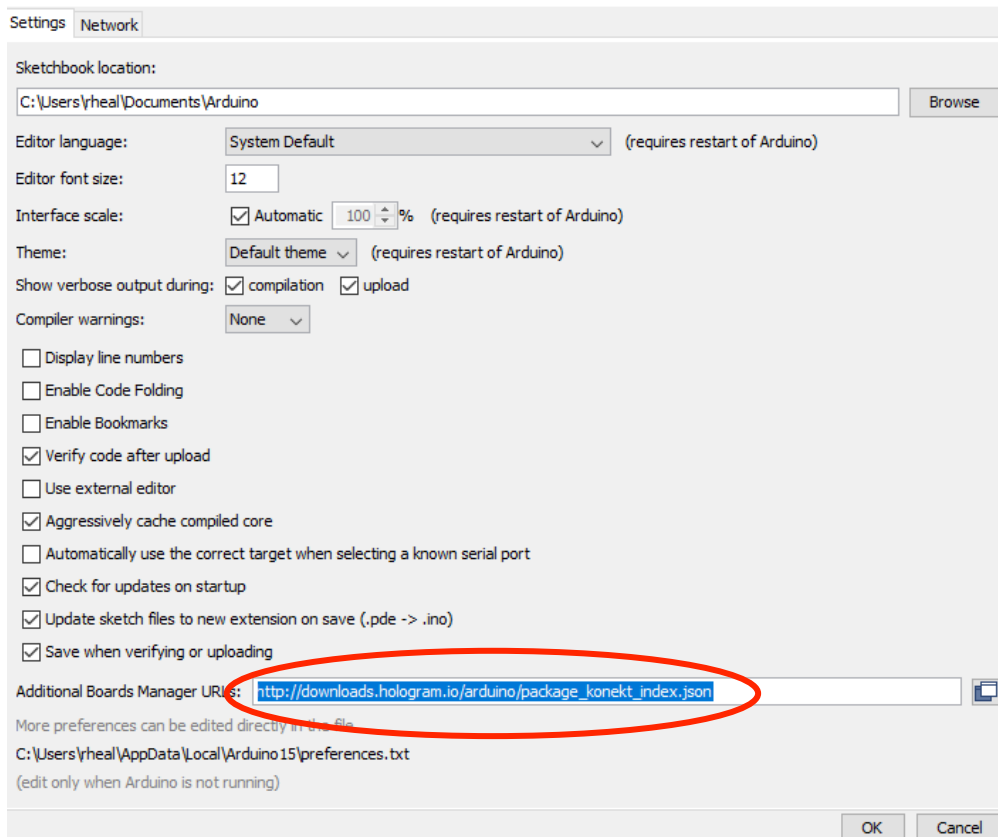


Go to the “Preferences” window (under “File” for Windows and Linux users).

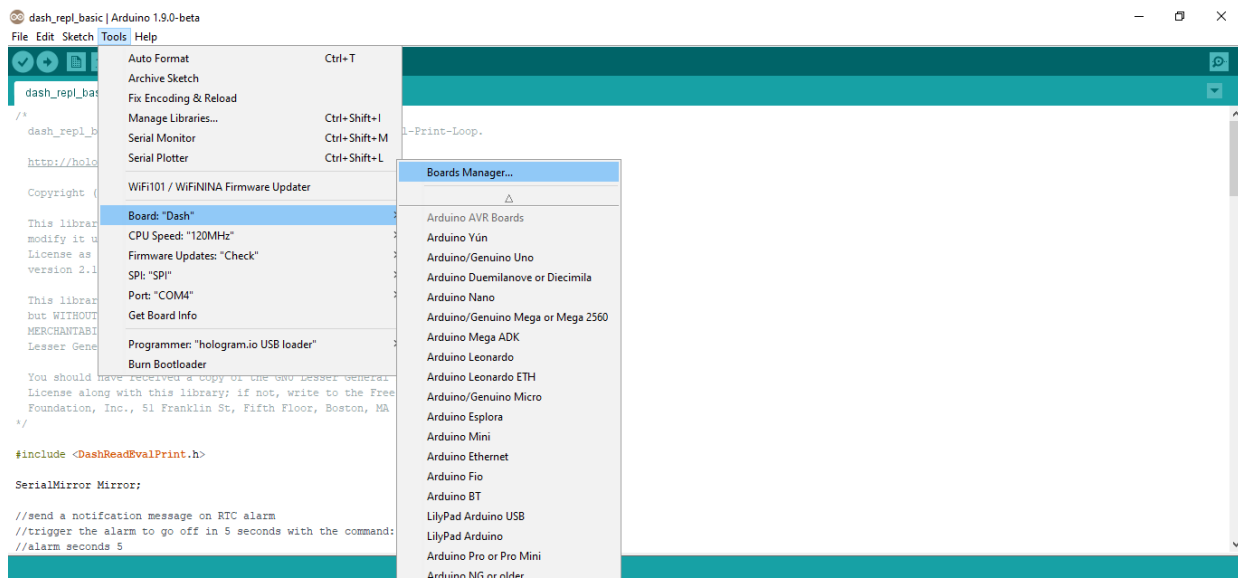


Enter the following URL in the input labeled “Additional Board Manager URLs.”:

http://downloads.hologram.io/arduino/package_konekt_index.json



Install the Dash’s board files by opening the “Board Manager.” This tab is under “Tools,” and then under “Board.”

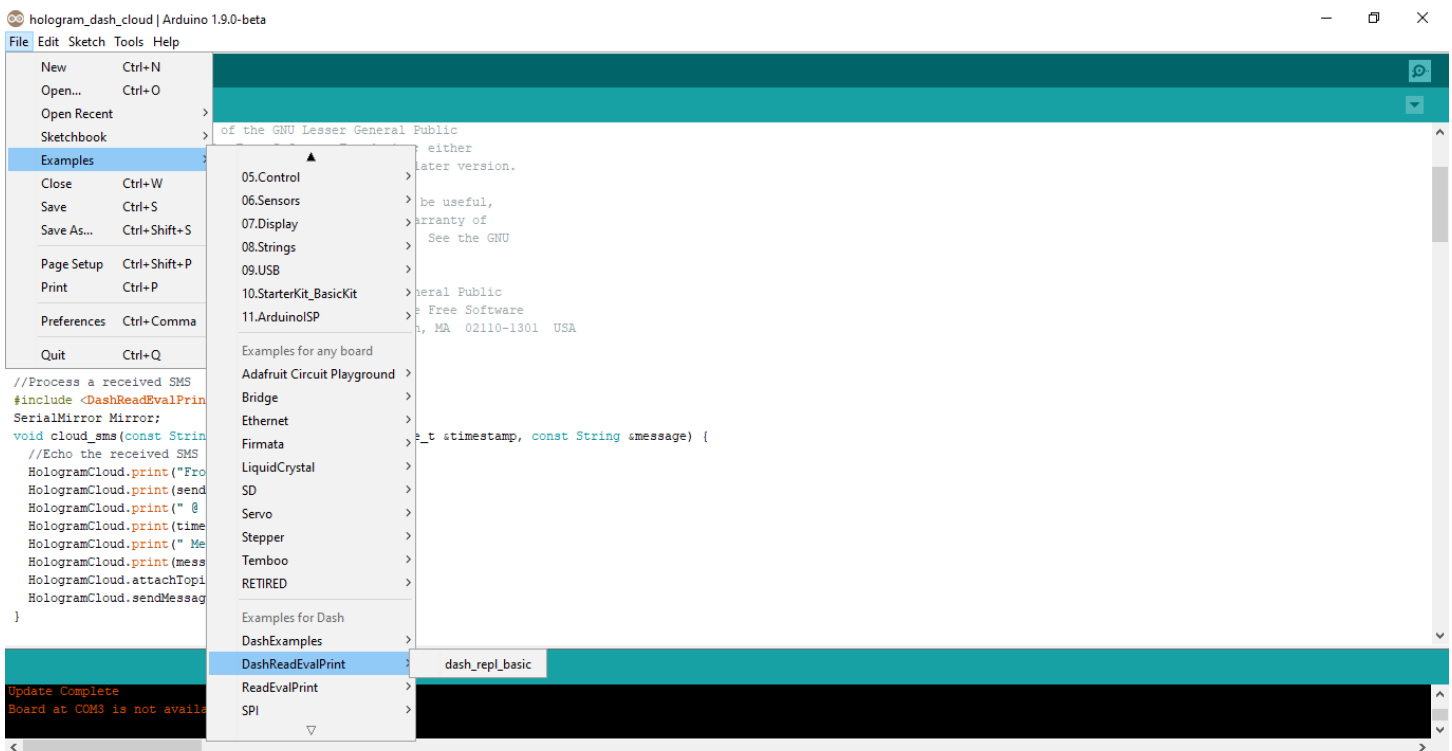


Choose the “Contributed” option in the “Type” drop down menu. Then, select “Konekt Dash/Dash Pro Boards.” Click “Install” and close the Boards Manager when installation is finished.

Confirm you have the latest version of the Dash libraries by going to “Boards Manager” again (“Tools” → “Board” → “Board Manager”). Click “Updateable” in the “Type” dropdown menu and if the list contains “Hologram Dash,” update to the most recent version.

Uploading dash_repl_basic:

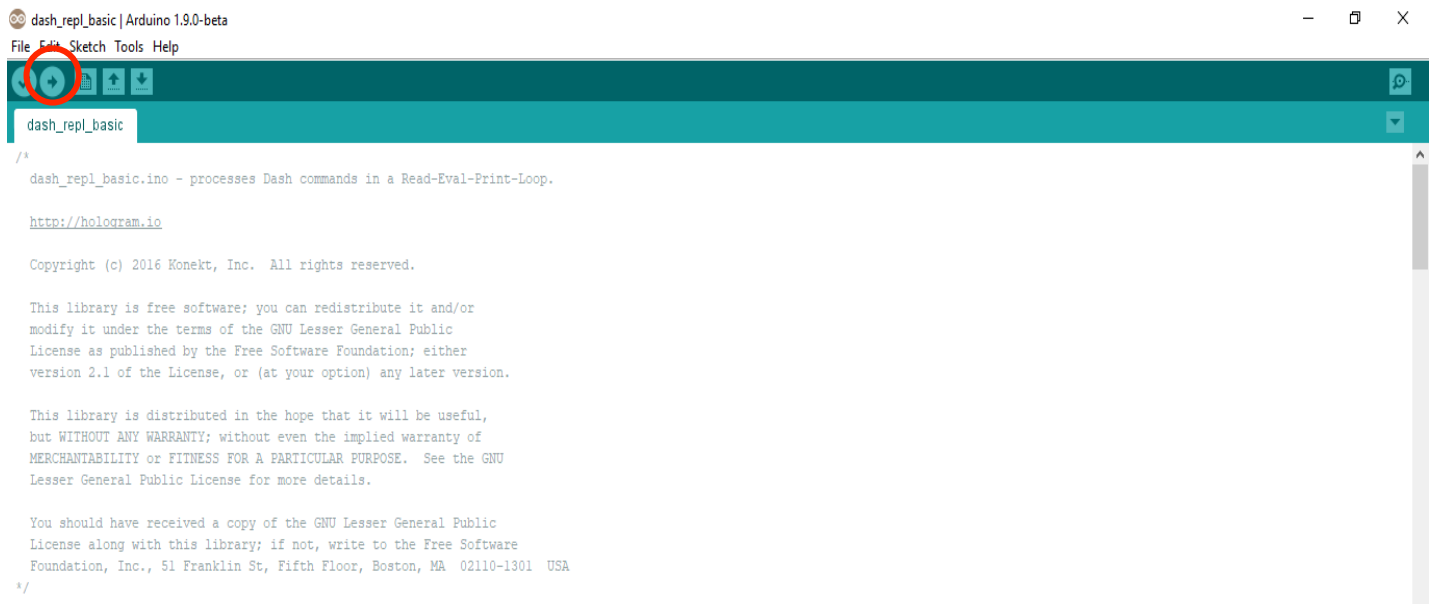
Go to “File,” “Examples,” and “DashReadEvalPrint.” There is a program called “dash_repl_basic” in this tab, and this program will let you send commands directly to the Dash. Open this program.



Connecting the Dash:

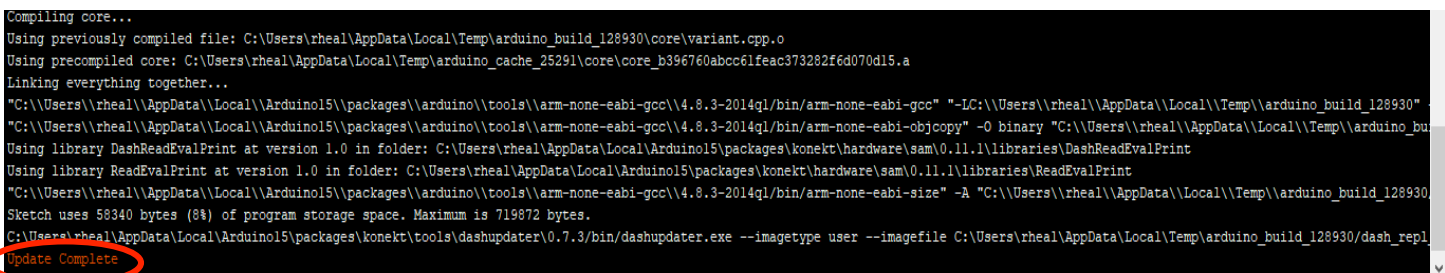
Press the “PROG” button on the Dash, which is the small black pushbutton that says PROG in white letters above it. A white LED light should start flashing on the Dash.

Click the dark blue arrow at the top left of the Arduino IDE, which should automatically compile and upload the program to your device.



The screenshot shows the Arduino IDE window titled "dash_rep1_basic | Arduino 1.9.0-beta". The menu bar includes "File", "Sketch", "Tools", and "Help". The "Tools" menu is highlighted with a red circle. The main editor area displays the code for "dash_rep1_basic.ino", which includes a copyright notice for Konekt, Inc. (2016) and a license statement for the GNU Lesser General Public License. The code also includes a URL "http://hologram.io" and a description of the library's purpose: "dash_rep1_basic.ino - processes Dash commands in a Read-Eval-Print-Loop."

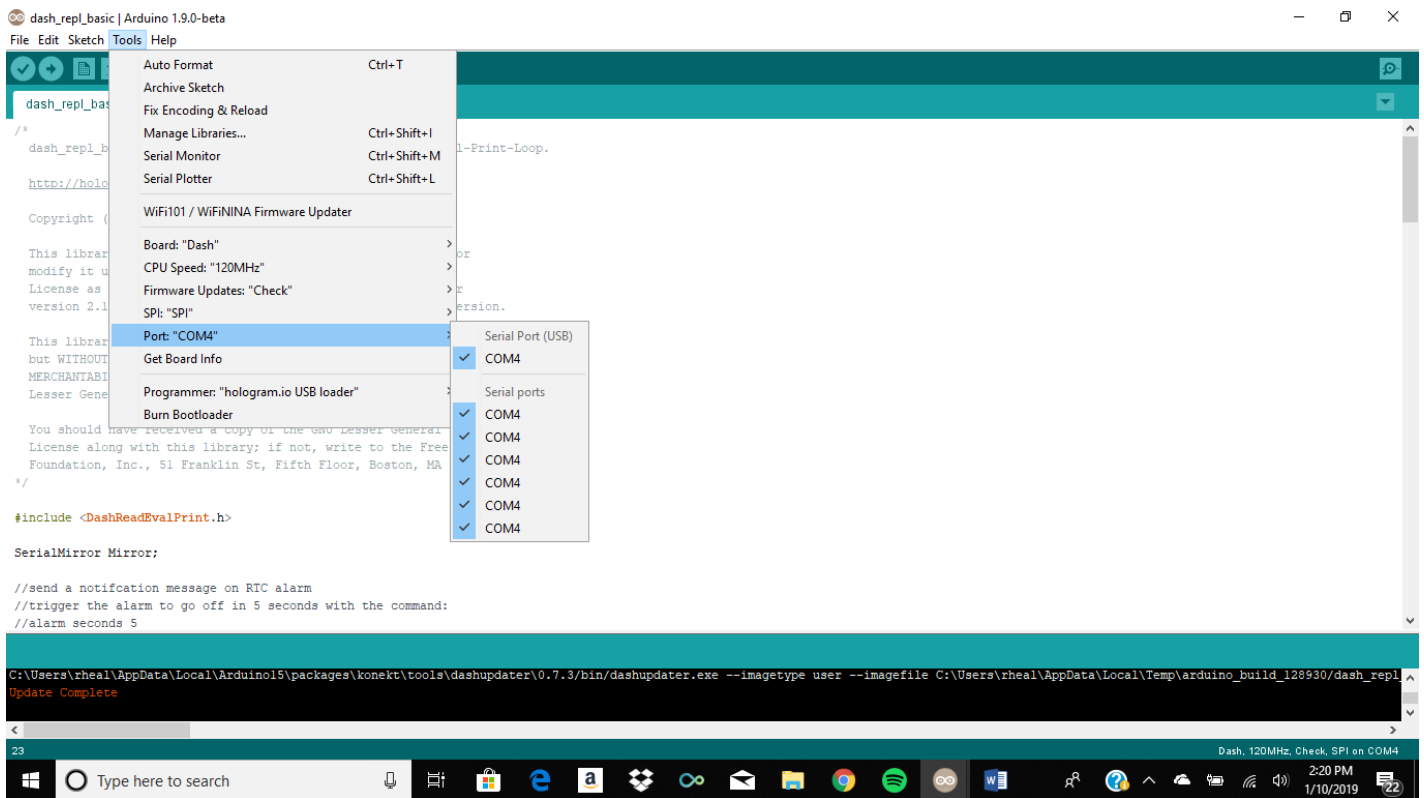
If the program successfully uploaded to your device, an orange “Update Complete” message should pop up at the bottom of your screen.



The screenshot shows the terminal output of the Arduino IDE. The output includes the following text: "Compiling core...", "Using previously compiled file: C:\Users\rheal\AppData\Local\Temp\arduino_build_128930\core\variant.cpp.o", "Using precompiled core: C:\Users\rheal\AppData\Local\Temp\arduino_cache_25291\core\core_b396760abcc61feac373282f6d070d15.a", "Linking everything together...", and several lines of compiler commands. The final line of the output is "Update Complete", which is highlighted with a red circle.

At the top toolbar of your screen, click the “Tools” tab, and confirm that the correct PORT is selected by clicking on “Port,” and select the port you are using.

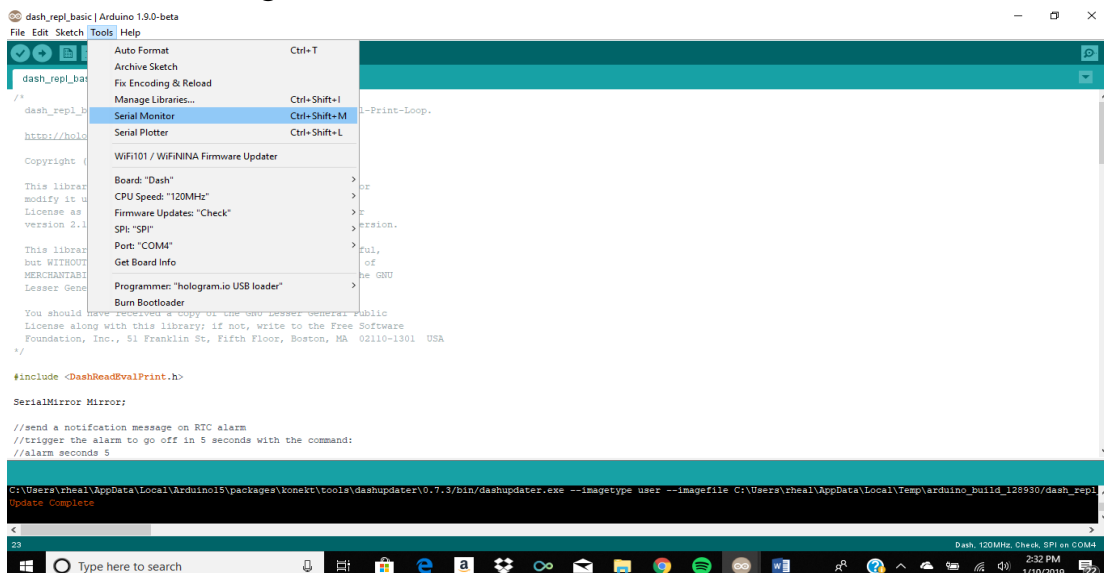
The port number should appear in the blue tab on the bottom of your screen, on the far right side.



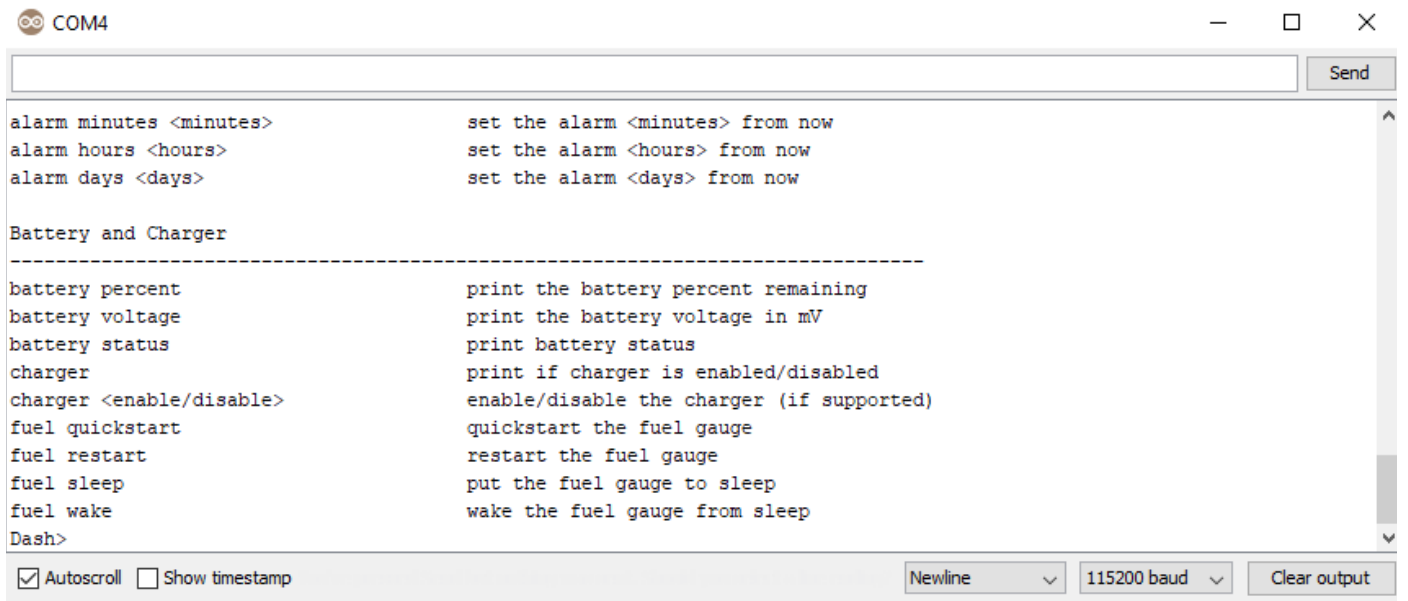
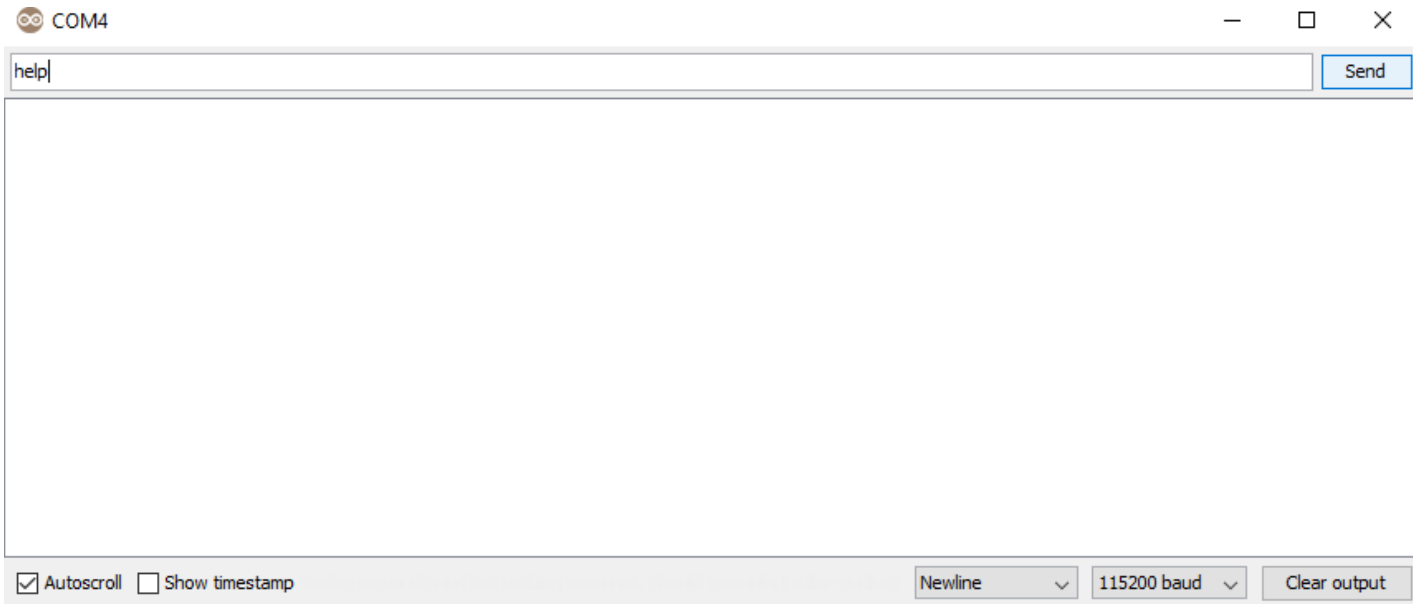
You are now ready to run serial port commands!

IV. Commands

All commands are executed through the Serial Monitor on the Arduino IDE. Click on the “Tools” tab again and click “Serial Monitor.”

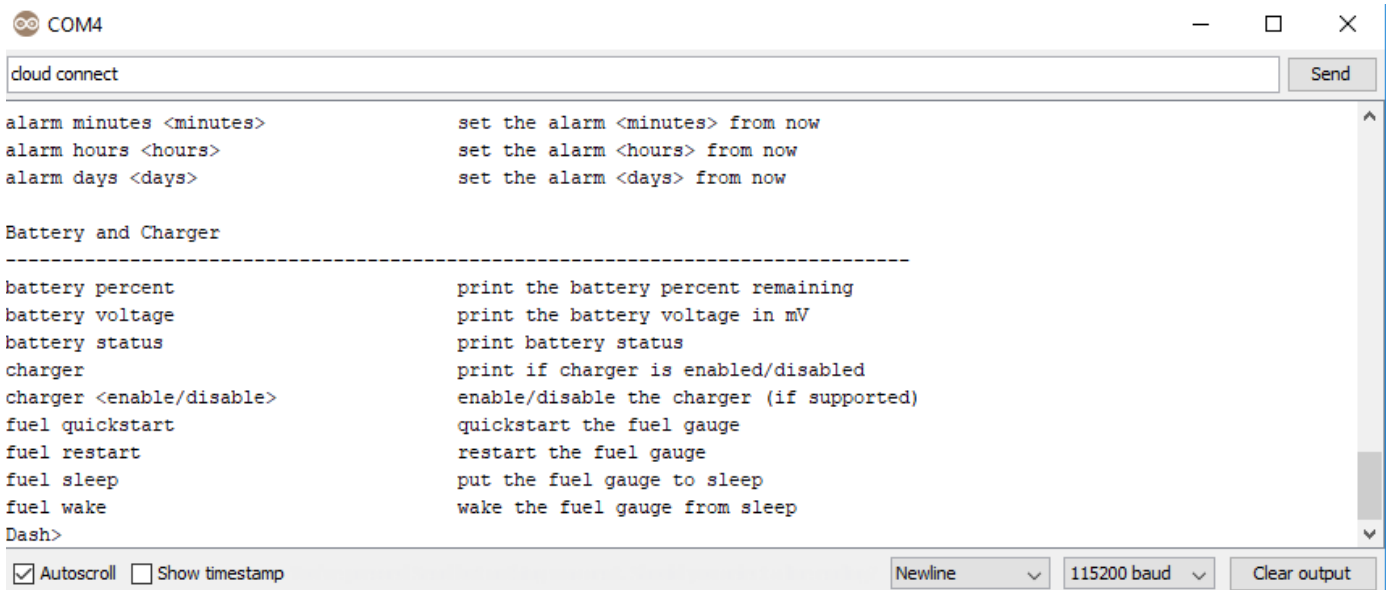


Type “help” into the search bar for a complete list of possible commands.

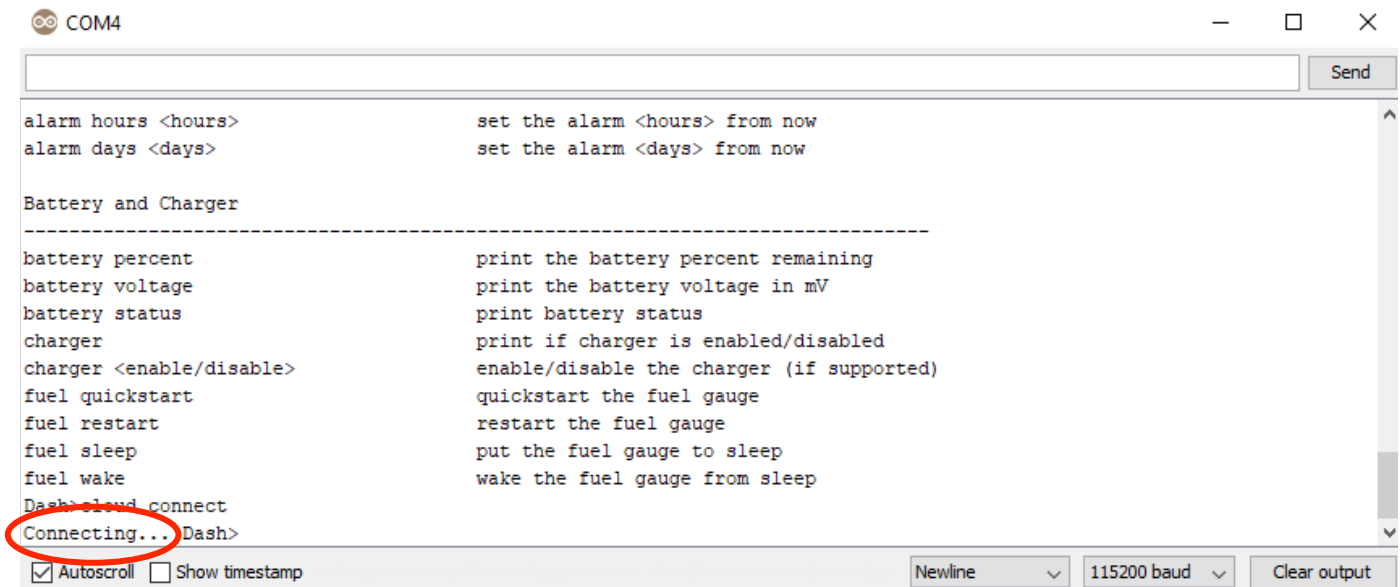


Cloud Connect:

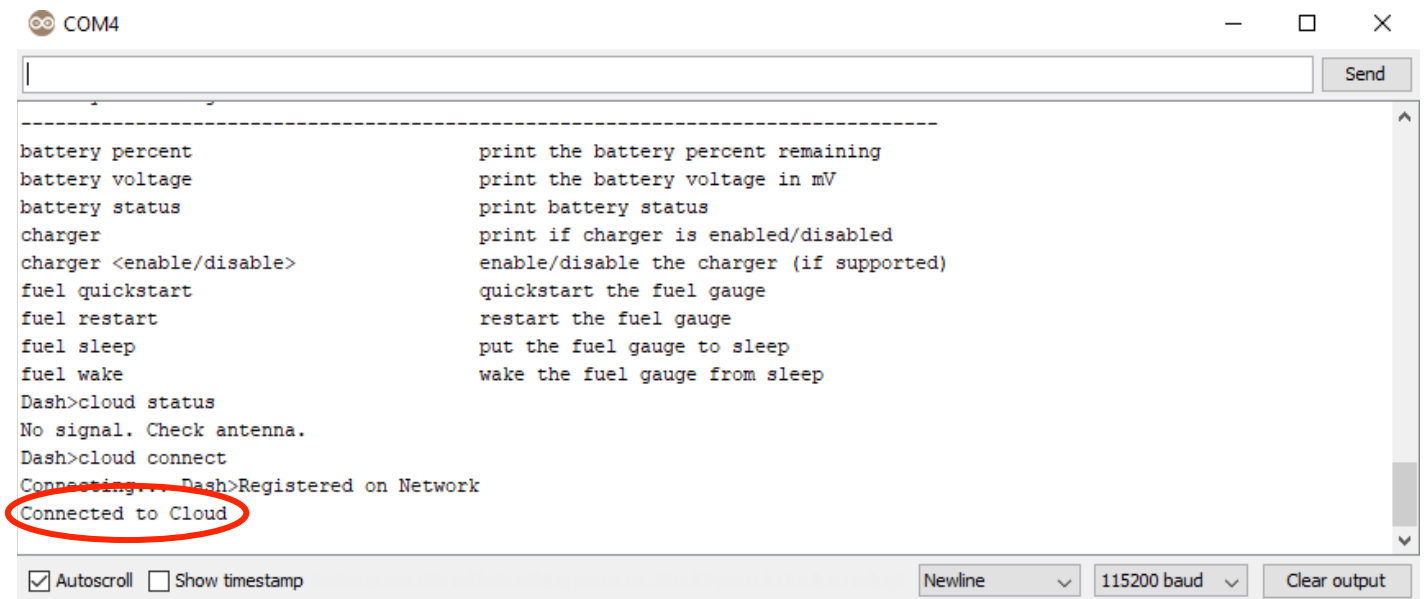
This will connect your device to the cloud, which is the first step in sending messages to/from your device. Type “cloud connect” into the top bar.



A message will appear in the output window that says “Connecting...”



The following messages will appear if the Dash successfully connected to the cloud.

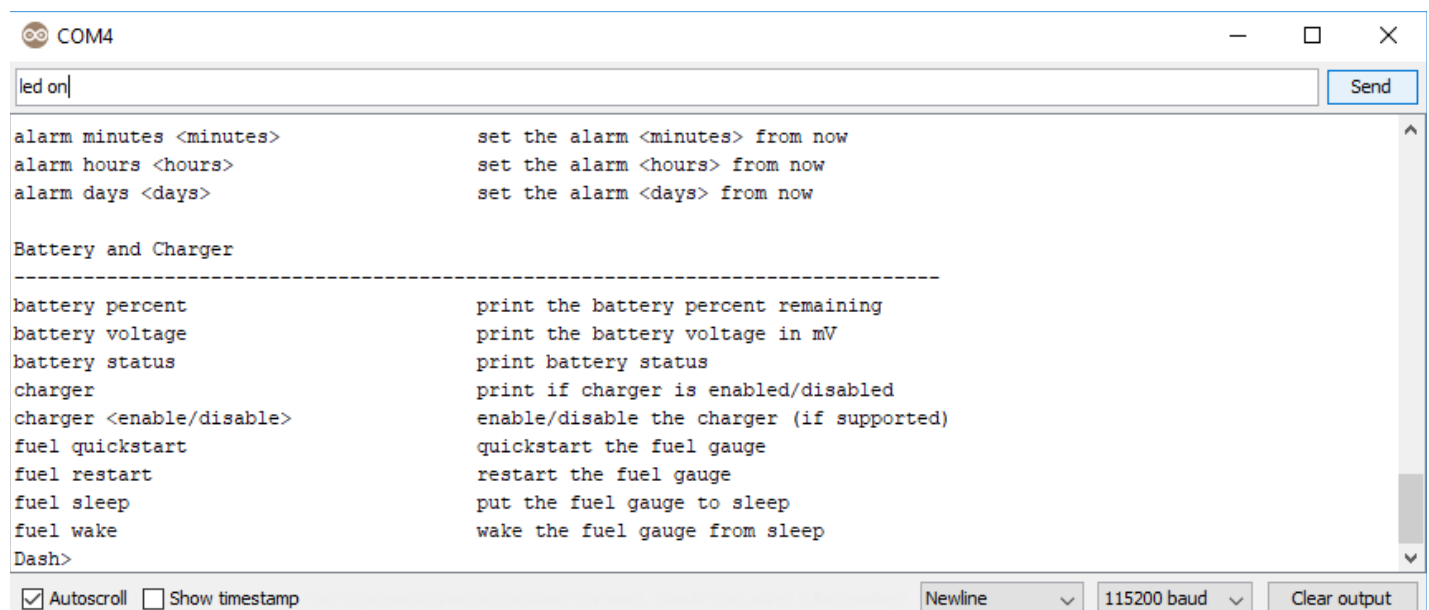


```
COM4
-----
battery percent          print the battery percent remaining
battery voltage         print the battery voltage in mV
battery status          print battery status
charger                  print if charger is enabled/disabled
charger <enable/disable> enable/disable the charger (if supported)
fuel quickstart         quickstart the fuel gauge
fuel restart            restart the fuel gauge
fuel sleep              put the fuel gauge to sleep
fuel wake               wake the fuel gauge from sleep
Dash>cloud status
No signal. Check antenna.
Dash>cloud connect
Connecting... Dash>Registered on Network
Connected to Cloud
-----
 Autoscroll  Show timestamp
Newline 115200 baud Clear output
```

LED:

You can turn the LED on and off using the various LED commands.

Typing “led on” or “led off” into the top search bar will power the LED on and off.

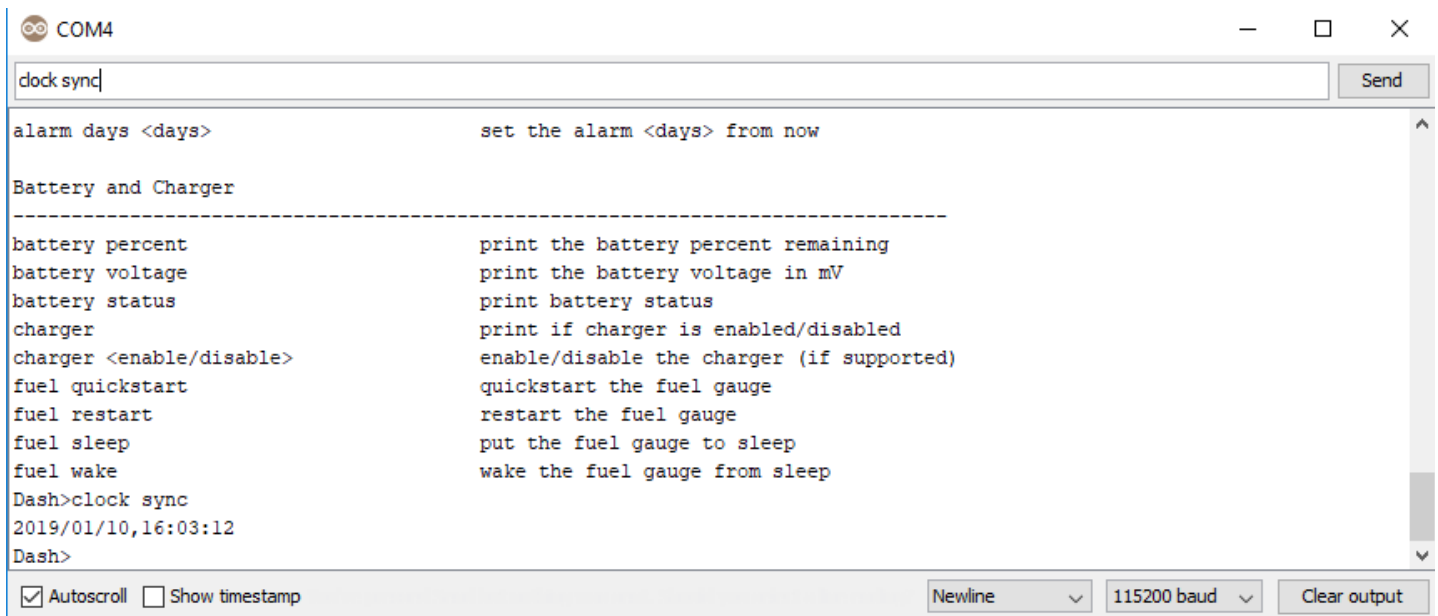


```
COM4
led on
-----
alarm minutes <minutes> set the alarm <minutes> from now
alarm hours <hours>     set the alarm <hours> from now
alarm days <days>     set the alarm <days> from now

Battery and Charger
-----
battery percent          print the battery percent remaining
battery voltage         print the battery voltage in mV
battery status          print battery status
charger                  print if charger is enabled/disabled
charger <enable/disable> enable/disable the charger (if supported)
fuel quickstart         quickstart the fuel gauge
fuel restart            restart the fuel gauge
fuel sleep              put the fuel gauge to sleep
fuel wake               wake the fuel gauge from sleep
Dash>
 Autoscroll  Show timestamp
Newline 115200 baud Clear output
```


Clock:

Type in “clock sync” to obtain the current time, which is synced with the network time.

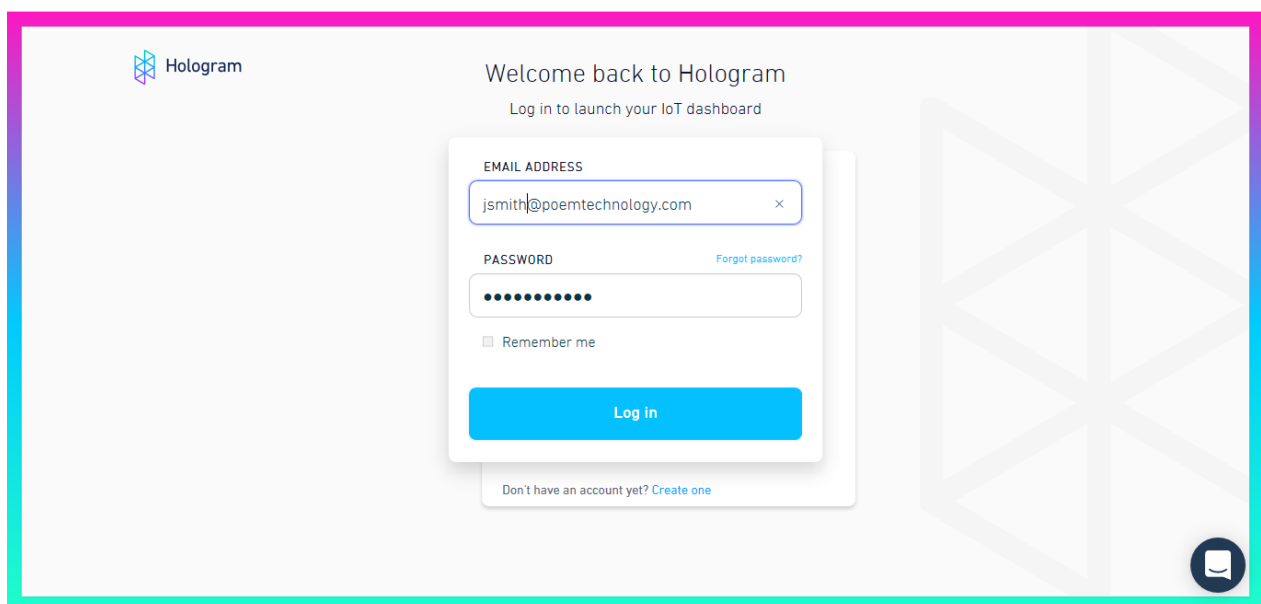


```
COM4
dlock sync| Send
alarm days <days>          set the alarm <days> from now
Battery and Charger
-----
battery percent             print the battery percent remaining
battery voltage             print the battery voltage in mV
battery status              print battery status
charger                     print if charger is enabled/disabled
charger <enable/disable>   enable/disable the charger (if supported)
fuel quickstart             quickstart the fuel gauge
fuel restart                restart the fuel gauge
fuel sleep                  put the fuel gauge to sleep
fuel wake                   wake the fuel gauge from sleep
Dash>clock sync
2019/01/10,16:03:12
Dash>
```

Autoscroll Show timestamp Newline 115200 baud Clear output

V. Messages

Sending personalized messages to the Dash is easier than ever using the REPL console. Using the link <https://dashboard.hologram.io/> log into the Hologram site.



Under “Device,” your SIM card name should appear. The status of your SIM card will display under state. “Live” simply means your card is activated.

The screenshot shows a web interface for managing SIM cards. On the left is a blue sidebar with navigation options: DEVICES, ROUTES, CONSOLE, ACCOUNT, STORE, DOCS, COMMUNITY, and SUPPORT. The main content area is titled 'All devices' and includes 'Manage' and 'Usage' tabs. A table lists device information. The 'STATE' column for the device 'Pilot (10149)' is circled in red and shows 'Live' with a green dot icon. Other columns include 'LAST ACTIVE' (a minute ago), 'USAGE' (9972B), 'PLAN & COVER...' (Pilot Plan - 1MB Global), and 'PHONE #'. The interface also features buttons for 'Activate SIM', 'Create organization', 'Add new tag', 'Select all', 'Manage', 'Tags', 'Send Message', and 'Search'. A footer bar shows 'v3.4.0', 'All activity', 'Errors', 'Filter', and window controls.

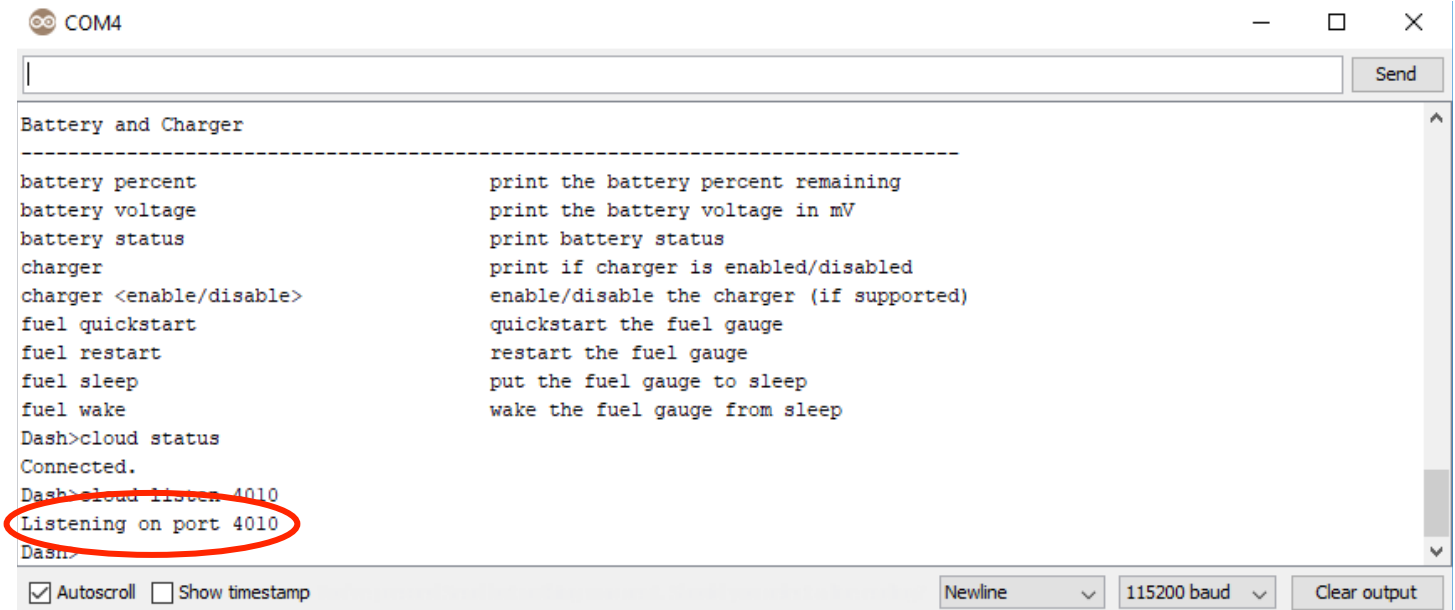
DEVICE	STATE	LAST ACTIVE	USAGE	PLAN & COVER...	PHONE #
Pilot (10149)	Live	a minute ago	9972B	Pilot Plan - 1MB Global	-

A “Connected” message means you are connected to the cloud.

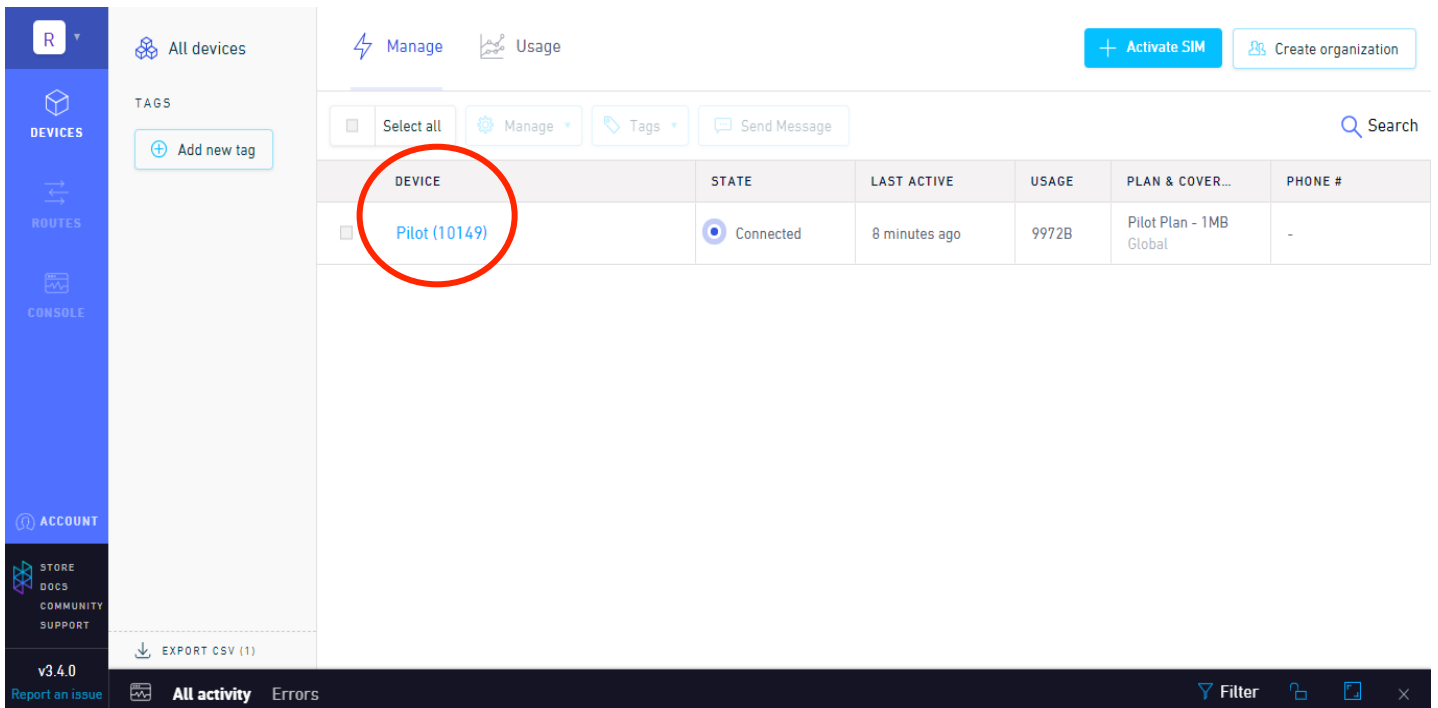
This screenshot is similar to the one above, showing the same SIM card management interface. In this instance, the 'STATE' column for the device 'Pilot (10149)' is circled in red and shows 'Connected' with a blue dot icon. The other columns and interface elements are identical to the previous screenshot.

DEVICE	STATE	LAST ACTIVE	USAGE	PLAN & COVER...	PHONE #
Pilot (10149)	Connected	8 minutes ago	9972B	Pilot Plan - 1MB Global	-

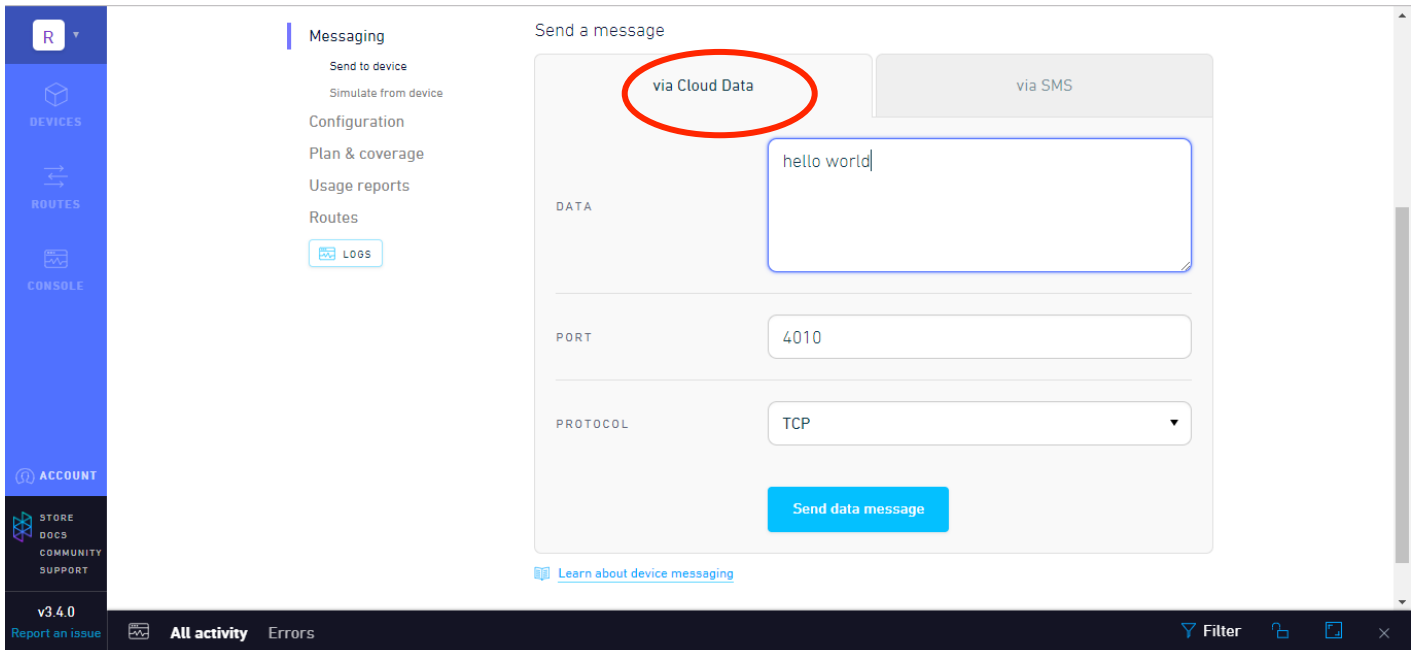
In the serial monitor, type “cloud listen xxxx” where xxxx is the port number. An output message should appear that says “Listening on port xxxx.”



Click on your device name on the Hologram website to send a message.



Using the “via Cloud Data” option will display a message onto the console. Confirm the port number is the same as the port number you are listening on. Type the message you want into the “Data” box and click the blue “Send data message” box.



Go back to your serial monitor, and your message should be displayed on the console.

