

Instructions for Running the Current Stable Build of Aardvark

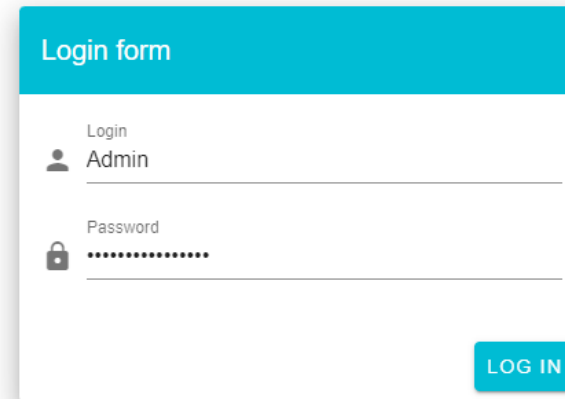
These slides are using the files from the stable Main branch of <https://github.com/TriEmbed/edger>

It is assumed that your wifi info has been entered, ant should is running, and aardvark has been started.

See <http://edger.app> for details on how to get to this point.

Login

- Point your browser to <http://localhost:8080> and this screen should appear
- This demo uses Chrome. Firefox also seems to work.
- Click **LOG IN** button



The image shows a login form with a teal header bar containing the text "Login form". Below the header, there are two input fields. The first field is labeled "Login" and contains the text "Admin". The second field is labeled "Password" and contains a series of dots representing a masked password. A teal button with the text "LOG IN" is located at the bottom right of the form.

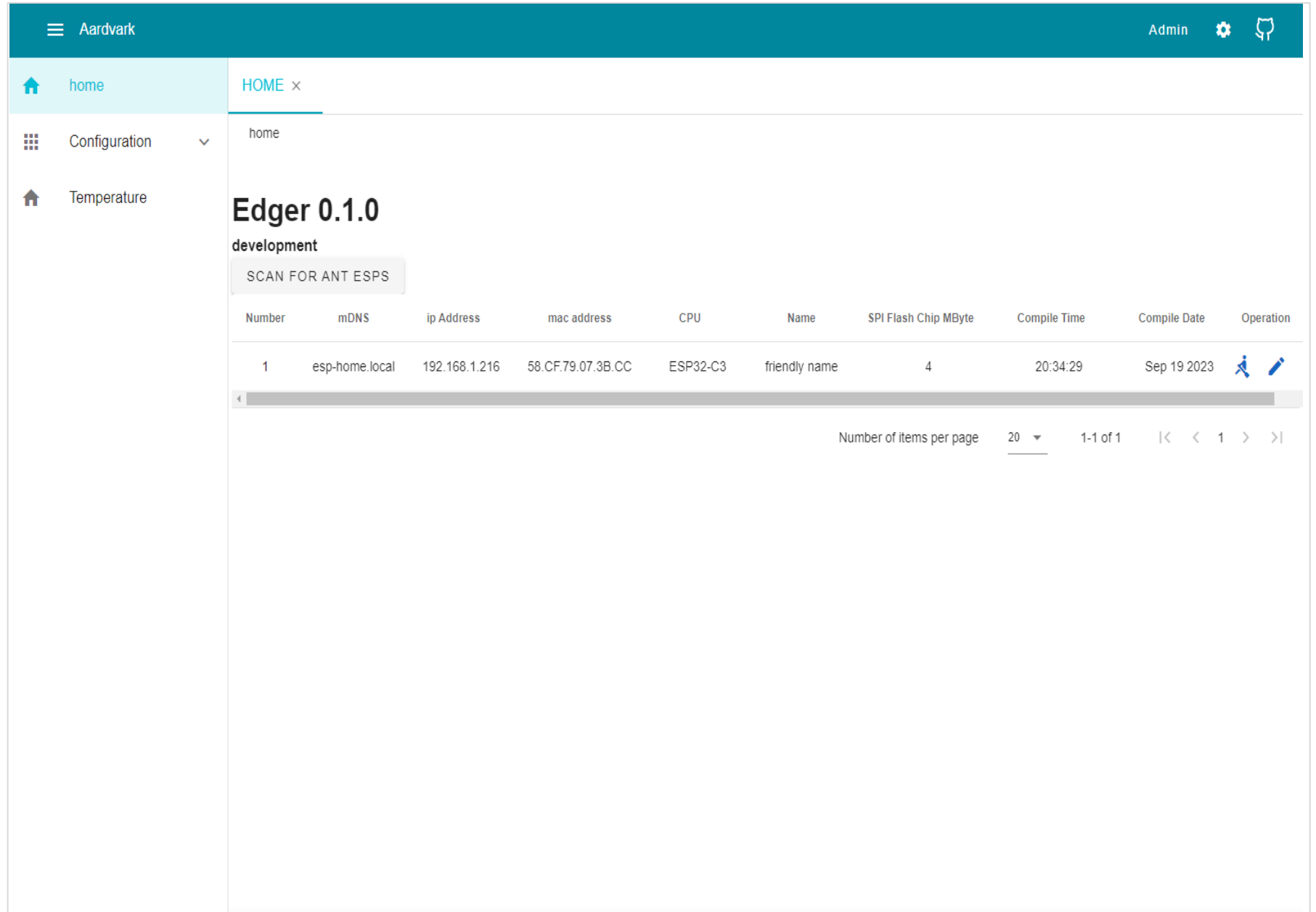
Home

- After a successful login, this Home screen should appear
- Click the **SCAN FOR ANT ESPS** button to find available devices
- If at least one device doesn't appear after the initial scan, you may need to repeat the scan a few times



The screenshot shows the Aardvark web interface. The top navigation bar is teal with 'Aardvark' on the left and 'Admin', a gear icon, and a GitHub icon on the right. The left sidebar has 'home' (selected), 'Configuration', and 'Temperature'. The main content area has a breadcrumb 'HOME x' and a sub-breadcrumb 'home'. Below this is the title 'Edger 0.1.0' and 'development'. A button labeled 'SCAN FOR ANT ESPS' is highlighted. Below the button is a table with columns: Number, mDNS, ip Address, mac address, CPU, Name, SPI Flash Chip MByte, Compile Time, and Compile Date. The table content is currently empty, with the text 'Waiting for scan...' centered. At the bottom right of the table area, there is a pagination control: 'Number of items per page' with a dropdown set to '20', and navigation arrows. At the very bottom of the page, there are three tabs: 'Recents', 'Favorites' (which is active), and 'Nearby'.

Scan for Devices

- After a successful scan, the available devices will be listed
- Click on the 'Witches Broom' icon at the right side of the device row to connect to the device.



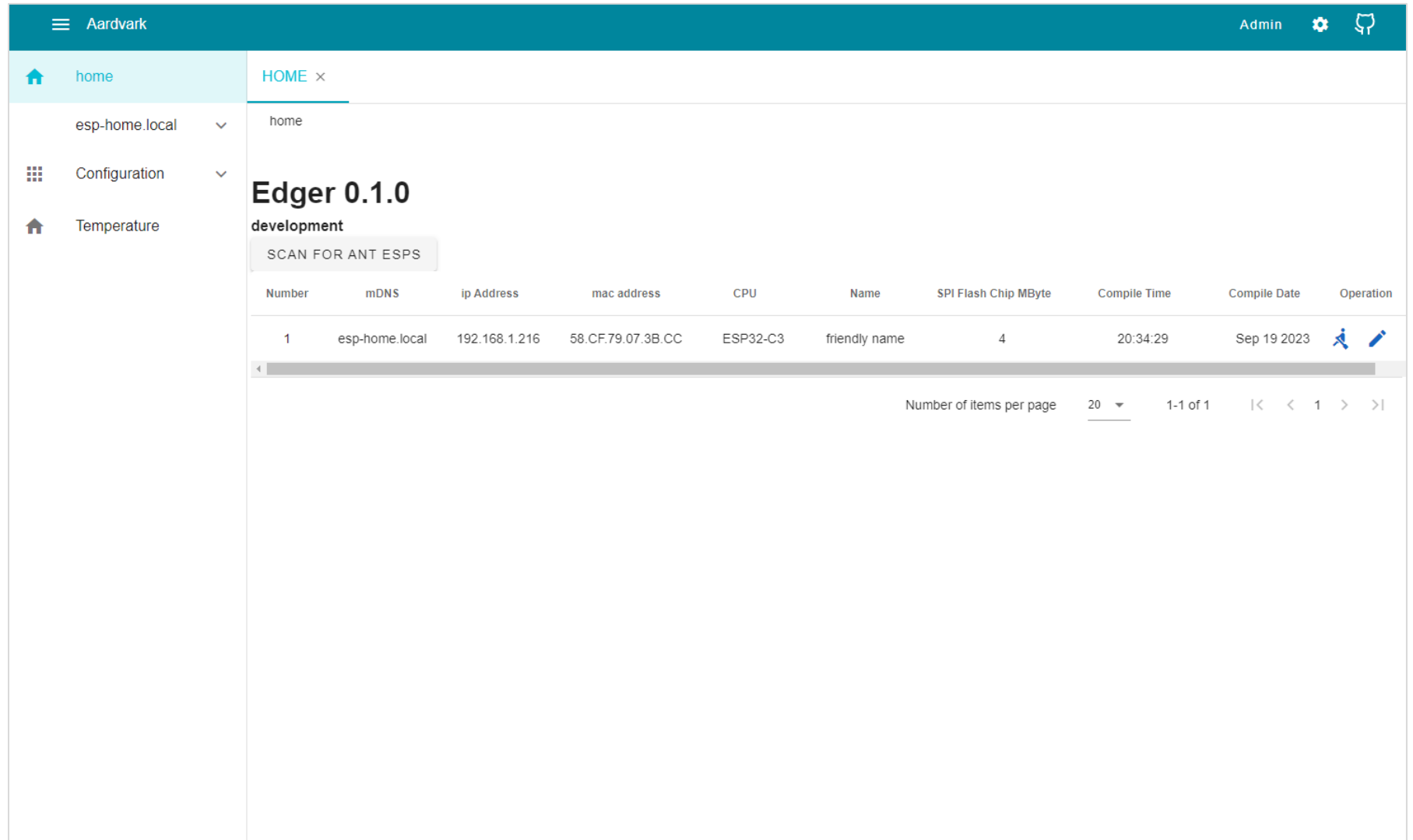
The screenshot shows the Aardvark web interface. The top navigation bar includes the name 'Aardvark', an 'Admin' link, and icons for settings and GitHub. The left sidebar contains 'home', 'Configuration', and 'Temperature' options. The main content area displays 'Edger 0.1.0 development' and a 'SCAN FOR ANT ESPS' button. Below the button is a table with the following columns: Number, mDNS, ip Address, mac address, CPU, Name, SPI Flash Chip MByte, Compile Time, Compile Date, and Operation. A single device is listed in the table.

Number	mDNS	ip Address	mac address	CPU	Name	SPI Flash Chip MByte	Compile Time	Compile Date	Operation
1	esp-home.local	192.168.1.216	58.CF.79.07.3B.CC	ESP32-C3	friendly name	4	20:34:29	Sep 19 2023	 



At the bottom right of the table, there is a pagination control showing 'Number of items per page' set to 20, '1-1 of 1', and navigation arrows.

Connect to ESP

- Once you are connected, esp-home.local will appear as an option in the left sidebar



The screenshot shows the Edger 0.1.0 development interface. The top navigation bar includes a hamburger menu, the name 'Aardvark', and 'Admin' with a settings gear and a GitHub icon. The left sidebar contains a 'home' button, a dropdown menu with 'esp-home.local', 'Configuration', and 'Temperature', and a 'HOME x' tab. The main content area displays 'Edger 0.1.0 development' and a 'SCAN FOR ANT ESPs' button. Below this is a table with the following data:

Number	mDNS	ip Address	mac address	CPU	Name	SPI Flash Chip MByte	Compile Time	Compile Date	Operation
1	esp-home.local	192.168.1.216	58.CF.79.07.3B.CC	ESP32-C3	friendly name	4	20:34:29	Sep 19 2023	 

At the bottom right of the table, there is a pagination control: 'Number of items per page' set to 20, '1-1 of 1', and navigation arrows.

Scan i2c connections

- To see the i2c connections, expand esp-home.local
- Then click on i2c->scan in the left sidebar
- This array of memory locations should appear

The screenshot shows the Aardvark web interface. The top navigation bar includes a menu icon, the name 'Aardvark', and an 'Admin' link with a settings gear and a GitHub icon. The left sidebar contains a home icon, 'home', 'esp-home.local', 'I i2c', 'S scan', 'I gpio', 'R Renesas', 'Configuration', and 'Temperature'. The main content area shows the breadcrumb 'HOME x SCAN x' and the path 'esp-home.local → i2c → scan'. Below this, it says 'Scan (active i2c)' and 'SCANI2C'. A table displays the scan results for memory locations 0x0 to 0x7f. The first row (0) is highlighted with a purple border.

	0x0	0x1	0x2	0x3	0x4	0x5	0x6	0x7	0x8	0x9	0xa	0xb	0xc	0xd	0xe	0xf
0																
1	0x10	0x11	0x12	0x13	0x14	0x15	0x16	0x17	0x18	0x19	0x1a	0x1b	0x1c	0x1d	0x1e	0x1f
2	0x20	0x21	0x22	0x23	0x24	0x25	0x26	0x27	0x28	0x29	0x2a	0x2b	0x2c	0x2d	0x2e	0x2f
3	0x30	0x31	0x32	0x33	0x34	0x35	0x36	0x37	0x38	0x39	0x3a	0x3b	0x3c	0x3d	0x3e	0x3f
4	0x40	0x41	0x42	0x43	0x44	0x45	0x46	0x47	0x48	0x49	0x4a	0x4b	0x4c	0x4d	0x4e	0x4f
5	0x50	0x51	0x52	0x53	0x54	0x55	0x56	0x57	0x58	0x59	0x5a	0x5b	0x5c	0x5d	0x5e	0x5f
6	0x60	0x61	0x62	0x63	0x64	0x65	0x66	0x67	0x68	0x69	0x6a	0x6b	0x6c	0x6d	0x6e	0x6f
7	0x70	0x71	0x72	0x73	0x74	0x75	0x76	0x77	0x78	0x79	0x7a	0x7b	0x7c	0x7d	0x7e	0x7f

At the bottom of the interface, there are tabs for 'Recents', 'Favorites', and 'Nearby'.

Perform i2c Scan

- Once the i2c array is visible, click on the **SCANI2C** button
- After a successful scan, some squares in the array will turn **red** and their values will change from hex -> decimal
- In this example, **119** indicates the i2c address of the attached DFRobot temperature sensor, and **8,9,10,11** indicate the i2c addresses of the FPGA

HOME x SCAN x

esp-home.local → i2c → scan

Scan (active i2c)

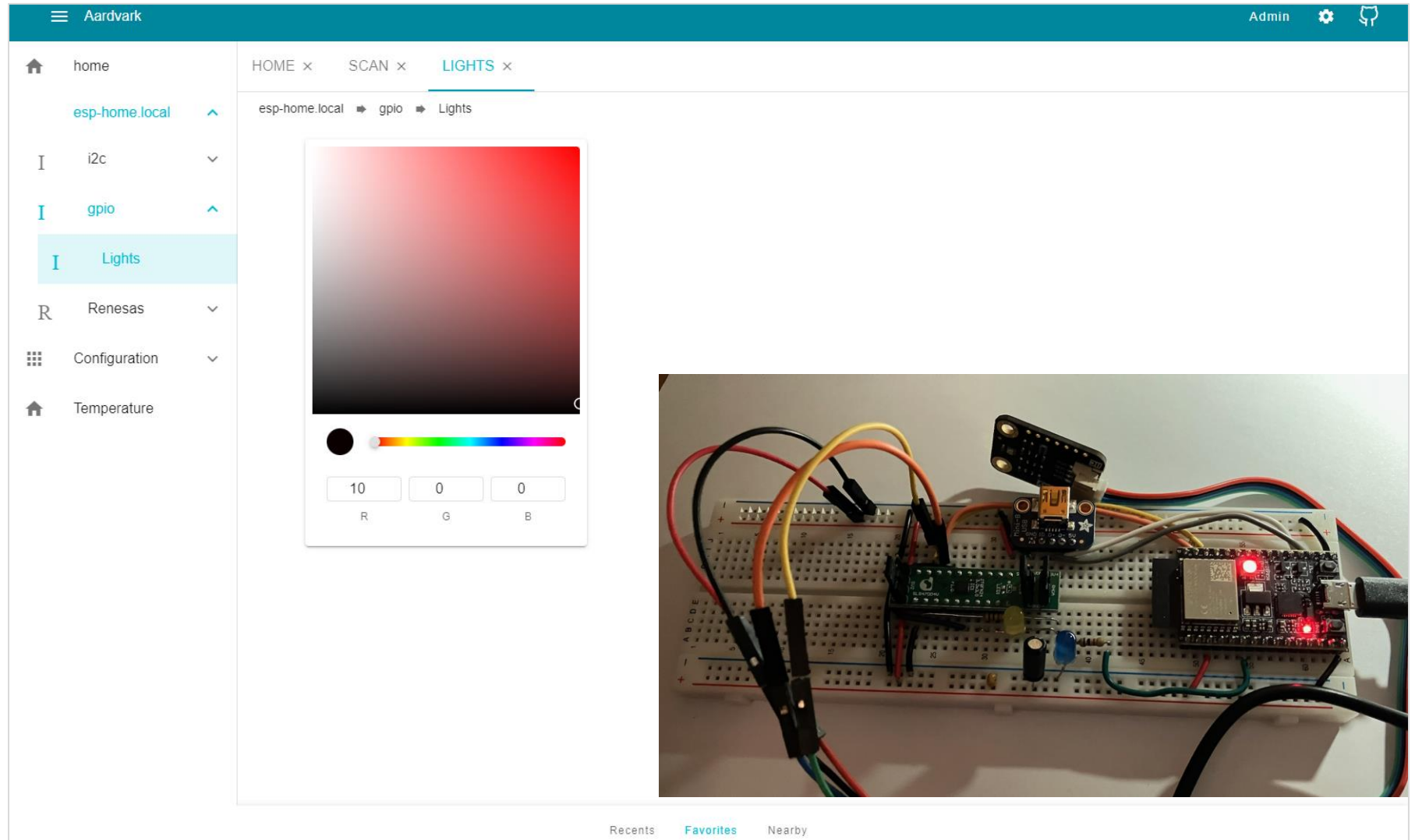
SCANI2C

```
{"mode":"MASTER","sda io num":1,"sda pullup en ":1,"scl io num":0,"scl pullup en":1,"master clk speed":50000}
```

	0x0	0x1	0x2	0x3	0x4	0x5	0x6	0x7	0x8	0x9	0xa	0xb	0xc	0xd	0xe	0xf
	0x0	0x1	0x2	0x3	0x4	0x5	0x6	0x7	8	9	10	11	0xc	0xd	0xe	0xf
1	0x10	0x11	0x12	0x13	0x14	0x15	0x16	0x17	0x18	0x19	0x1a	0x1b	0x1c	0x1d	0x1e	0x1f
2	0x20	0x21	0x22	0x23	0x24	0x25	0x26	0x27	0x28	0x29	0x2a	0x2b	0x2c	0x2d	0x2e	0x2f
3	0x30	0x31	0x32	0x33	0x34	0x35	0x36	0x37	0x38	0x39	0x3a	0x3b	0x3c	0x3d	0x3e	0x3f
4	0x40	0x41	0x42	0x43	0x44	0x45	0x46	0x47	0x48	0x49	0x4a	0x4b	0x4c	0x4d	0x4e	0x4f
5	0x50	0x51	0x52	0x53	0x54	0x55	0x56	0x57	0x58	0x59	0x5a	0x5b	0x5c	0x5d	0x5e	0x5f
6	0x60	0x61	0x62	0x63	0x64	0x65	0x66	0x67	0x68	0x69	0x6a	0x6b	0x6c	0x6d	0x6e	0x6f
7	0x70	0x71	0x72	0x73	0x74	0x75	0x76	119	0x78	0x79	0x7a	0x7b	0x7c	0x7d	0x7e	0x7f

Access GPIO Pins

- Expand gpio->Lights in the left sidebar
- The color picker will appear, preset to deep red, as indicated by the location of the small white circle.
- This color is communicated to the LED attached to the GPIO pins of the ESP32, as shown in the photo (uppermost of the two LEDs)



The screenshot displays the Aardvark web interface. The left sidebar shows a navigation menu with 'Lights' selected under the 'gpio' category. The main content area shows a color picker interface for the 'Lights' control, with a color gradient and a small white circle indicating the selected color (deep red). Below the color picker are three input fields for RGB values: R (10), G (0), and B (0). The bottom right of the interface shows a photo of the physical hardware, which is an ESP32 microcontroller board connected to a breadboard with various components, including a USB-to-UART bridge and two LEDs. The top of the interface shows the 'Aardvark' logo and 'Admin' settings.

Access GPIO Pins

- Changing the slider position and/or the location of the small white circle using the color picker will change the color of the LED.
- The corresponding color change is shown in the photo.
- Communication between Aardvark and the ESP32/ant is occurring via the GPIO interface.

The image displays the Aardvark web interface for controlling GPIO pins. The interface is split into a sidebar and a main content area. The sidebar contains navigation options: home, esp-home.local, i2c, gpio, Lights, Renesas, Configuration, and Temperature. The main content area shows the 'Lights' control panel, which includes a color picker, a slider, and three input fields for RGB values (R: 0, G: 0, B: 5). Below the screenshot is a photograph of the physical hardware, showing an ESP32 module on a breadboard with various components and wires, and a blue LED illuminated.

Device Interfaces

- Expanding Configuration->device list will allow for direct communication with devices connected to the ESP via several different protocols.
- This is not yet fully implemented in the stable release used for this demo, but the next few slides give an idea of what is to come.

The screenshot shows the Aardvark web interface. The main content area displays the 'INTERFACES' configuration page. The 'INTERFACE' tab is selected, showing a table with 8 rows and 17 columns. The columns are labeled 0x0 through 0xf. The rows are labeled 0 through 7. The table contains hexadecimal values for each cell. To the right of the table are two 'ADD ITEM' buttons. At the bottom of the page, there are tabs for 'Recents', 'Favorites', and 'Nearby'.

	0x0	0x1	0x2	0x3	0x4	0x5	0x6	0x7	0x8	0x9	0xa	0xb	0xc	0xd	0xe	0xf
0	0	1	2	3	4	5	6	7	8	9	a	b	c	d	e	f
1	10	11	12	13	14	15	16	17	18	19	1a	1b	1c	1d	1e	1f
2	20	21	22	23	24	25	26	27	28	29	2a	2b	2c	2d	2e	2f
3	30	31	32	33	34	35	36	37	38	39	3a	3b	3c	3d	3e	3f
4	40	41	42	43	44	45	46	47	48	49	4a	4b	4c	4d	4e	4f
5	50	51	52	53	54	55	56	57	58	59	5a	5b	5c	5d	5e	5f
6	60	61	62	63	64	65	66	67	68	69	6a	6b	6c	6d	6e	6f
7	70	71	72	73	74	75	76	77	78	79	7a	7b	7c	7d	7e	7f

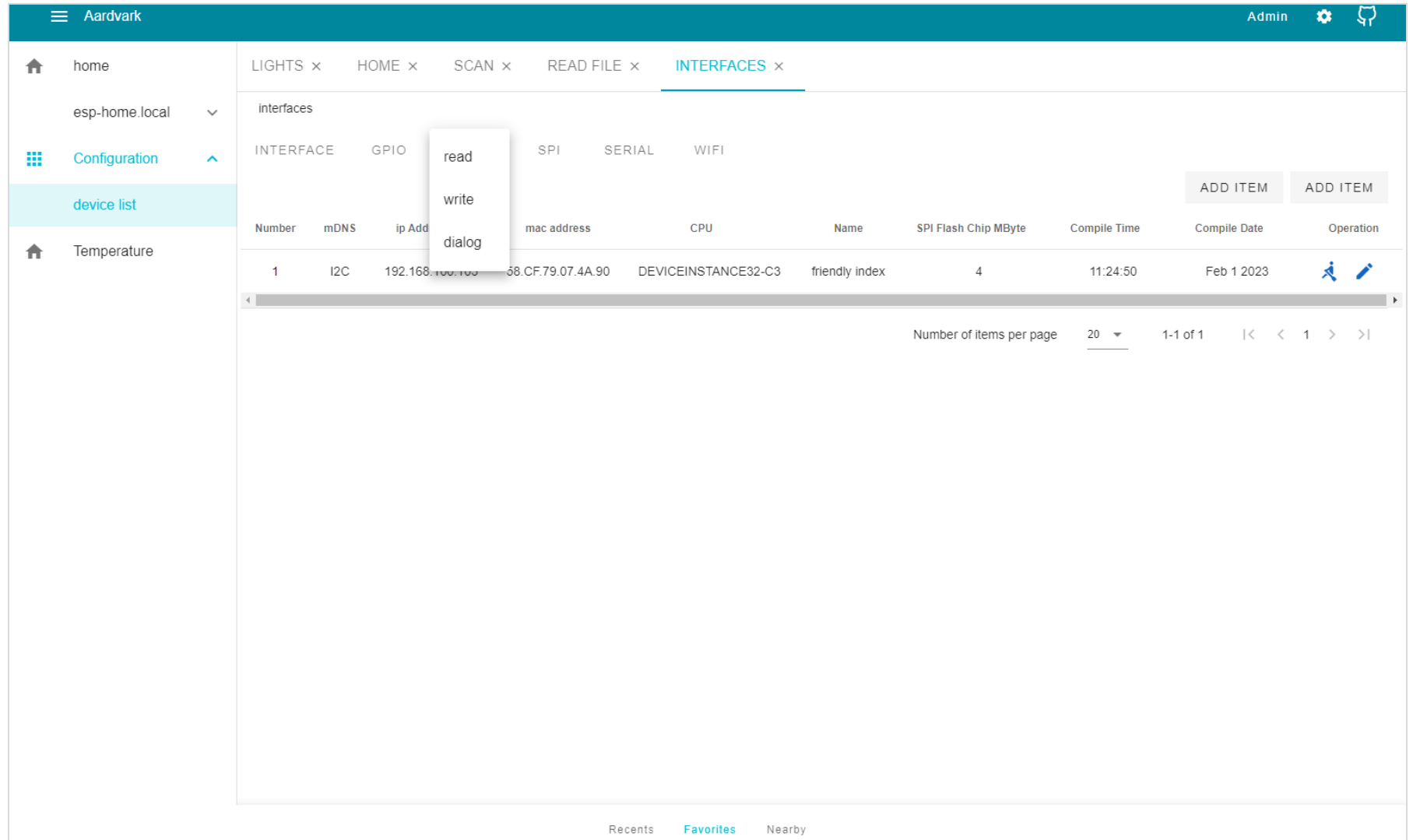
GPIO Interface

- Clicking on the GPIO heading gives an example of the GPIO commands to be available from Aardvark.

The screenshot displays the Aardvark web interface. The top navigation bar is teal and includes the text 'Aardvark' and 'Admin' with a settings gear icon and a GitHub logo. A sidebar on the left lists navigation items: 'home', 'esp-home.local', 'Configuration', 'device list', and 'Temperature'. The main content area is titled 'INTERFACES' and contains a table with columns for 'INTERFACE', 'I2C', 'SPI', 'SERIAL', and 'WIFI'. A dropdown menu is open over the 'INTERFACE' column, showing 'set', 'read', and 'write' options. The table contains one row with the following data: Number: 1, device instance: gpio.local, ip Address: 192.168.100.103, mac address: 58:CF:79:07:4A:90, CPU: DEVICEINSTANCE32-C3, Name: friendly index, SPI Flash Chip MByte: 4, Compile Time: 11:24:50, and Compile Date: Feb 1 2023. At the bottom right, there is a pagination control showing 'Number of items per page' set to 20, and '1-1 of 1' items. The footer includes 'Recents', 'Favorites', and 'Nearby' links.

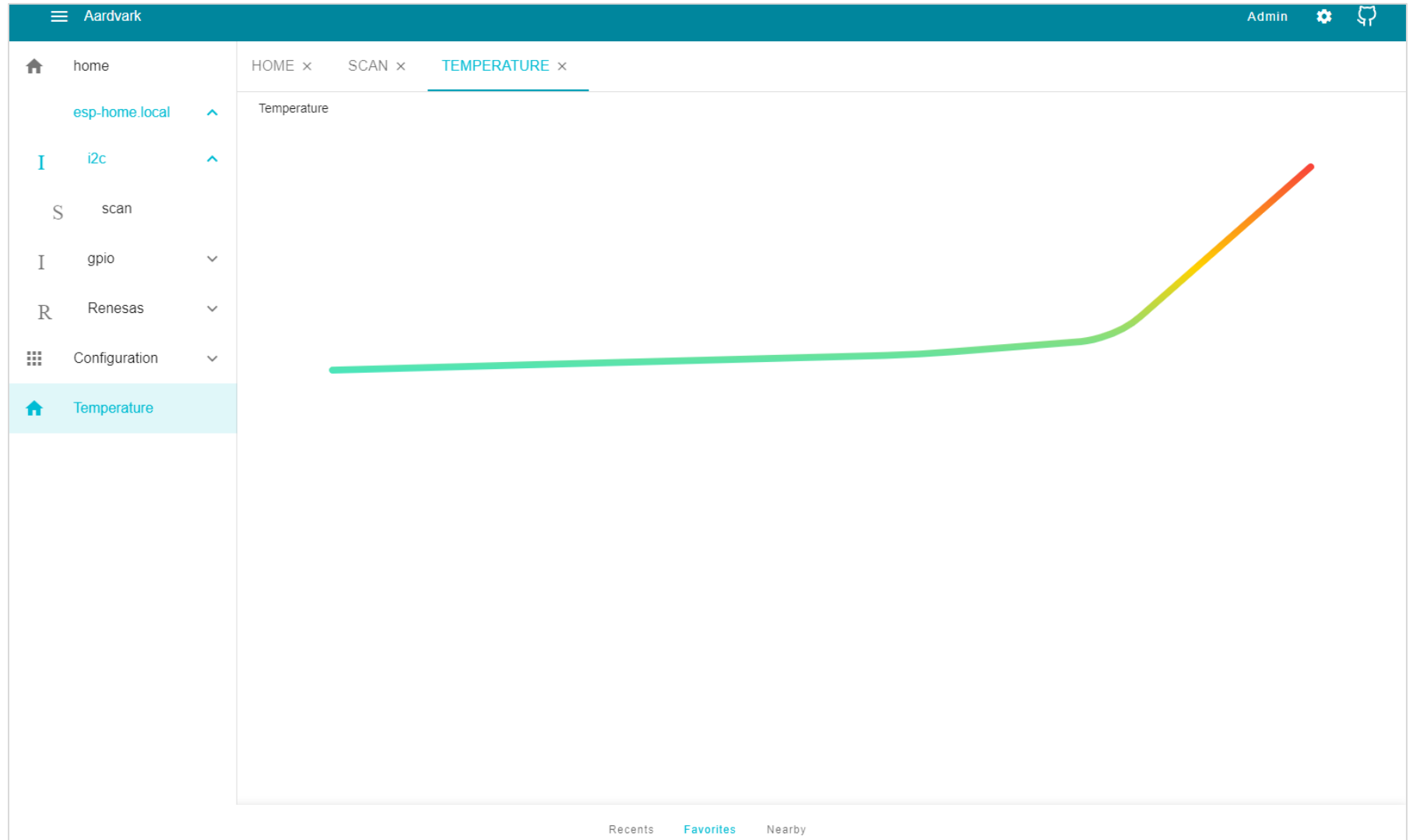
I2C Interface

- Clicking on the I2C heading gives an example of the I2C commands to be available from Aardvark.
- SPI, SERIAL and WIFI commands are not available with the configuration used for this demo.



Temperature - Start

- Clicking on Temperature in the left sidebar brings up a graph of the data currently being collected by the DFRobot Temperature Sensor.



Temperature - Changes

- The Temperature graph changes in realtime as the sensor readings change.
- Though currently limited to the predefined DFRobot temperature sensor, the fully implemented graphing function will be available to any connected device.

