

# SPI-ETHERNET INTERFACE CONVERTER SBC-USR-ES1



## **1. GENERAL INFORMATION**

Dear customer, thank you very much for choosing our product. In following, we will introduce you to what to observe while starting up and using this product. Should you encounter any unexpected problems during use, please do not hesitate to contact us.

## 2. USE WITH THE ARDUINO

## Wiring:

Connect your Ethernet module to your Arduino as shown in the diagram and table below. In this example, we use an Arduino Uno.



## Installation of the library:

In the code example, we will use the Ethernet library to create a webserver that displays the status of the analog pins.

First, if you have not already done so, you need to install the Ethernet library. To do this, click: **Sketch** -> **Include Library** -> **Manage libraries...** There, enter Ethernet in the search bar and install the library Ethernet by

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	✓ Thema	Alle	✓ Ethernet		
Arduino_Con by Ubi de Fe Arduino Libr More info	nectionHandl to, Cristian Ma tary for netwo	er Iglie, Andrea ork connectio	Catozzi, Alexander Ent n management (WiFi, (	itinger et al. GSM, NB, [Ethernet]) Originally part of ArduinoIoTCloud	Â
Ethernet by Various ( Enables nets Arduino Ethe permits you <u>More info</u> Version ausw	see AUTHORS work connect ernet (shield c to connect to ählen v Ir	5 file for deta ion (local and or board) to c a local netwo istallieren	ils) Version 2.0.0 INST/ Internet) using the Ar onnect to Internet. The urk also with DHCP and	TALLED Induino Ethernet Board or Shield. With this library you can use the a library provides both Client and server functionalities. The library i to resolve DNS.	
Adafruit IO A	rduino				
by Adafruit Arduino libra	ary to access	Adafruit IO.	Arduino library to acces	es Adafruit IO using the Adafruit AirLift, ESP8266, ESP32, NA hardware.	
More info		WICED, MKP	(1000, Ethemet, of PON		

## Code example:

## To open the example code, click in your Arduino IDE on: File -> Examples -> Ethernet -> Webserver

File	Edit Sketch	Tools Help			
	New	Ctrl+N	Δ		₽ P
	Open	Ctrl+O	Built-in Examples		
	Open Recent		01.Basics	>	
	Sketchbook		02.Digital	>	^
	Examples		03.Analog	>	
	Close	Ctrl+W	04.Communication	>	
	Save	Ctrl+S	05.Control	>	
	Save As	Ctrl+Shift+S	06.Sensors	>	
	Dama Catura	Chill, Childs, D	07.Display	>	
	Page Setup	Ctrl+Shift+P	08.Strings	>	
	Print	Ctrl+P	09.USB	>	
	Preferences	Ctrl+Comma	10.StarterKit_BasicKit	>	
	Quit	Ctrl+Q	11.ArduinoISP	>	
			Examples for any board		
			Bridge	>	
			Esplora	>	
			Ethernet	>	AdvancedChatServer
			Firmata	>	BarometricPressureWebServer
			GSM	>	ChatServer
			LiquidCrystal	>	DhcpAddressPrinter
			NTPClient	>	DhcpChatServer
			Robot Control	2	LinkStatus
			Robot Motor	>	TelnetClient
1			SD	2	UdpNtpClient
			SpacebrewYun	2	UDPSendReceiveString
			Stepper	>	WebClient
			Temboo	2	WebClientRepeating
			RETIRED	2	WebServer

In line 28 of the sample code, the IP address of the webserver is set. Make sure that the address is in the address range of your network and that this address is not already in use.

```
27 };
28 IPAddress ip(192, 168, 1, 177);
29
```

Now you can upload the programm to your Arduino.

You can open the webserver from any computer on the same network. To do this, enter the IP address of your webserver into your internet browser.

## Wiring:

Connect the module to your Raspberry Pi Pico as shown in the diagram and table below.



Raspberry Pi Pico	Ethernet module
3.3 V	V
GND	G
GPIO 10	SCK
GPIO 11	МО
GPIO 12	MI
GPIO 13	CS
GPIO 15	RST

## Code example:

We use a modified version of the Adafruit\_CircuitPython\_Wiznet5k library. If you don't have Circuit Python installed on your Raspberry Pi Pico yet, download the .UF2 file <u>here</u> and copy it to your Raspberry Pi Pico.

Now you can download the library used <u>here</u>. Unzip the downloaded zip file and copy the contents of the lib folder to the lib folder on your Raspberry Pi Pico. Now you can copy the contents of one of the sample library files, e.g. Pico\_W5500\_Ping\_Test.py into your code.py file on your Raspberry Pi Pico.

In the lines 18 and 19, you must adapt the IP address and subnet mask to your network:



If you now run the example, you should be able to see the following output in the command line of your development environment.



Our information and take-back obligations according to the Electrical and Electronic Equipment Act (ElektroG)

## Symbol on electrical and electronic equipment:



This crossed-out dustbin means that electrical and electronic appliances do not belong in the household waste. You must return the old appliances to a collection point. Before handing over waste batteries and accumulators that are not en-

closed by waste equipment must be separated from it.

#### **Return options:**

As an end user, you can return your old device (which essentially fulfils the same function as the new device purchased from us) free of charge for disposal when you purchase a new device. Small appliances with no external dimensions greater than 25 cm can be

disposed of in normal household quantities independently of the purchase of a new appliance.

Possibility of return at our company location during opening hours: SIMAC Electronics GmbH, Pascalstr. 8, D-47506 Neukirchen-Vluyn, Germa-

ny

#### Possibility of return in your area:

We will send you a parcel stamp with which you can return the device to us free of charge. Please contact us by email at Service@joy-it.net or by telephone.

## Information on packaging:

If you do not have suitable packaging material or do not wish to use your own, please contact us and we will send you suitable packaging.

## **5. SUPPORT**

If there are still any issues pending or problems arising after your purchase, we will support you by e-mail, telephone and with our ticket support system.

## Email: service@joy-it.net

Ticket system: http://support.joy-it.net Telephone: +49 (0)2845 98469-66 (10-17 o'clock)

For further information please visit our website: www.joy-it.net