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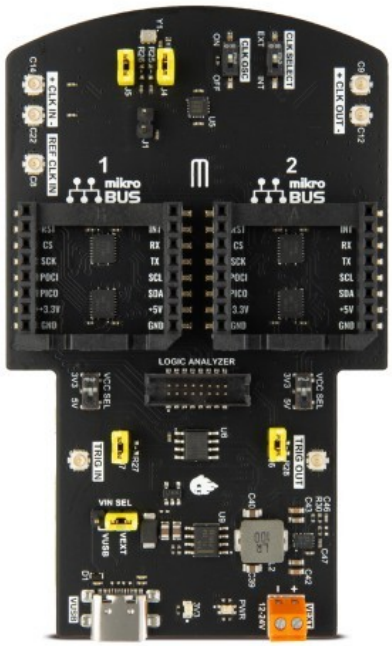
Red Pitaya Click Shield



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Click Shield for Red Pitaya

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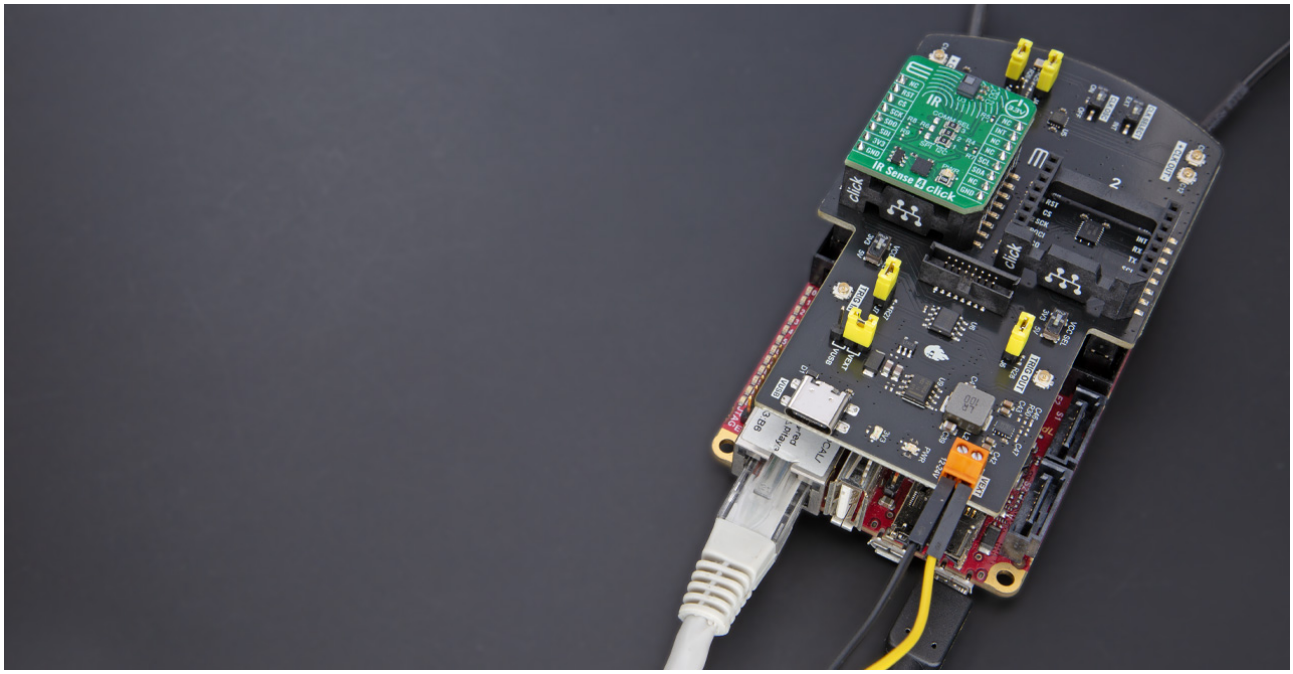

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Overview

Red Pitaya Click Shield is the perfect way to expand your development board's functionalities with the Red Pitaya pinout. The Red Pitaya Click Shield provides two mikroBUS™ sockets to add any functionality from our ever-growing range of **Click boards™**. We are fully stocked with everything, from sensors and WiFi transceivers to motor control and audio amplifiers. This versatile **Click Shield** offers users a seamless experience, with features like flexible power supply options, logic level control, logic analyzer capabilities, and clock signal distribution, ensuring a comprehensive solution for advanced engineering needs.

Note: Red Pitaya board is not included in the package. Buy it separately here.

CLICK BOARD
COMBINATIONS

Main features

Red Pitaya Click Shield comes equipped with **two mikroBUS™ sockets**, allowing all the Click board™ devices to be interfaced with the Red Pitaya host board without effort. This way, MIKROE allows its users to add any functionality from our ever-growing range of **Click boards™**, such as WiFi, GSM, GPS, Bluetooth, ZigBee, environmental sensors, LEDs, speech recognition, motor control, movement sensors, and many more. More than **1.500 Click boards™**, which can be stacked and integrated, are now available.

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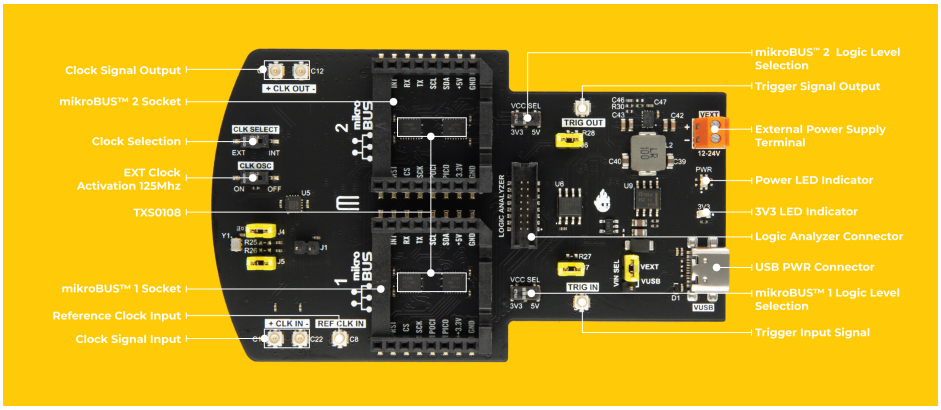

This Click Shield is the ideal companion for **Red Pitaya**, designed to unlock even more possibilities for your engineering and programming projects. It facilitates the seamless integration of **Click boards™** with your Red Pitaya host board, expanding its capabilities and versatility. The Red Pitaya represents a compact hardware platform that simplifies programming and empowers individuals to tackle diverse engineering projects. This credit card-sized marvel seamlessly integrates powerful hardware with user-friendly programming software, providing access to instant test and measurement tools. Its hallmark feature is the ease of use. Connect Red Pitaya to **sensors**, and you're coding in no time, thanks to its intuitive web-based interface.

Red Pitaya is an **open-source software**-defined instrument and an FPGA development platform that empowers individuals to tackle diverse engineering projects. This credit card-sized marvel combines the functionalities of multiple lab instruments (like oscilloscope, signal generator, and spectrum analyzer) with ample programming capabilities and open-source software to jumpstart any project. Additionally, the web interface allows users to connect to the instrument from the local network and **remotely control it**. The main features are two fast analog inputs and two fast analog outputs operating at 125MHz and 14 bits of resolution.

Controlling Red Pitaya **remotely** through SCPI commands using Python, MATLAB, or LabVIEW, writing custom API code in C or Python running on the board, or going full hardcore and reprogramming the FPGA itself, Red Pitaya has something to offer no matter if you are a complete beginner or an FPGA expert.

Red Pitaya Click Shield can be powered through an external power supply, supporting a wide voltage range from 12V to 24V, or via a USB Type C Connector, ensuring flexibility in your setup. Besides, the user is offered the possibility of using any Click board™ with the help of existing bidirectional level-shifting voltage translators, regardless of whether the Click board™ operates at a selected 3.3V or 5V logic voltage level. One distinctive feature of the Click Shield is its **Shuttle-like connector**, purpose-built for Logic Analyzer connection. This connector is your gateway to easily monitoring and analyzing SPI, UART, or I2C signals, providing valuable insights into your projects.

Another remarkable feature is the integration of the **ZL40213**, an **LVDS** clock fanout buffer with two identical output clock drivers. This component is designed to distribute low-jitter reference clocks from external or internal sources, depending on your needs. Whether for wired or optical communications applications, the Click Shield ensures minimal jitter, maintaining signal integrity. Moreover, the **Click Shield** extends its utility beyond clock signals with a dedicated section for trigger signal distribution and synchronization, making it a comprehensive solution for your advanced engineering needs.

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Once you connect the Red Pitaya host board with our **Red Pitaya Click Shield,** you can access hundreds of Click boards™, working with 3.3V or 5V logic voltage levels. Our Click boards™ are equipped with a library containing functions and example codes for MIKROE compilers available on **LibStock**, which can be used as a reference for further development.

Red Pitaya technical & software support

Red Pitaya offers users a comprehensive understanding of their development solution by providing **detailed explanations** of all its elements and functionalities. In addition to in-depth hardware technical specifications, the Red Pitaya support team offers essential information related to software support, including the **necessary packages** required for the seamless operation of the solution. For a more detailed guide, please refer to the Red Pitaya User Manual page.

Power your inventions

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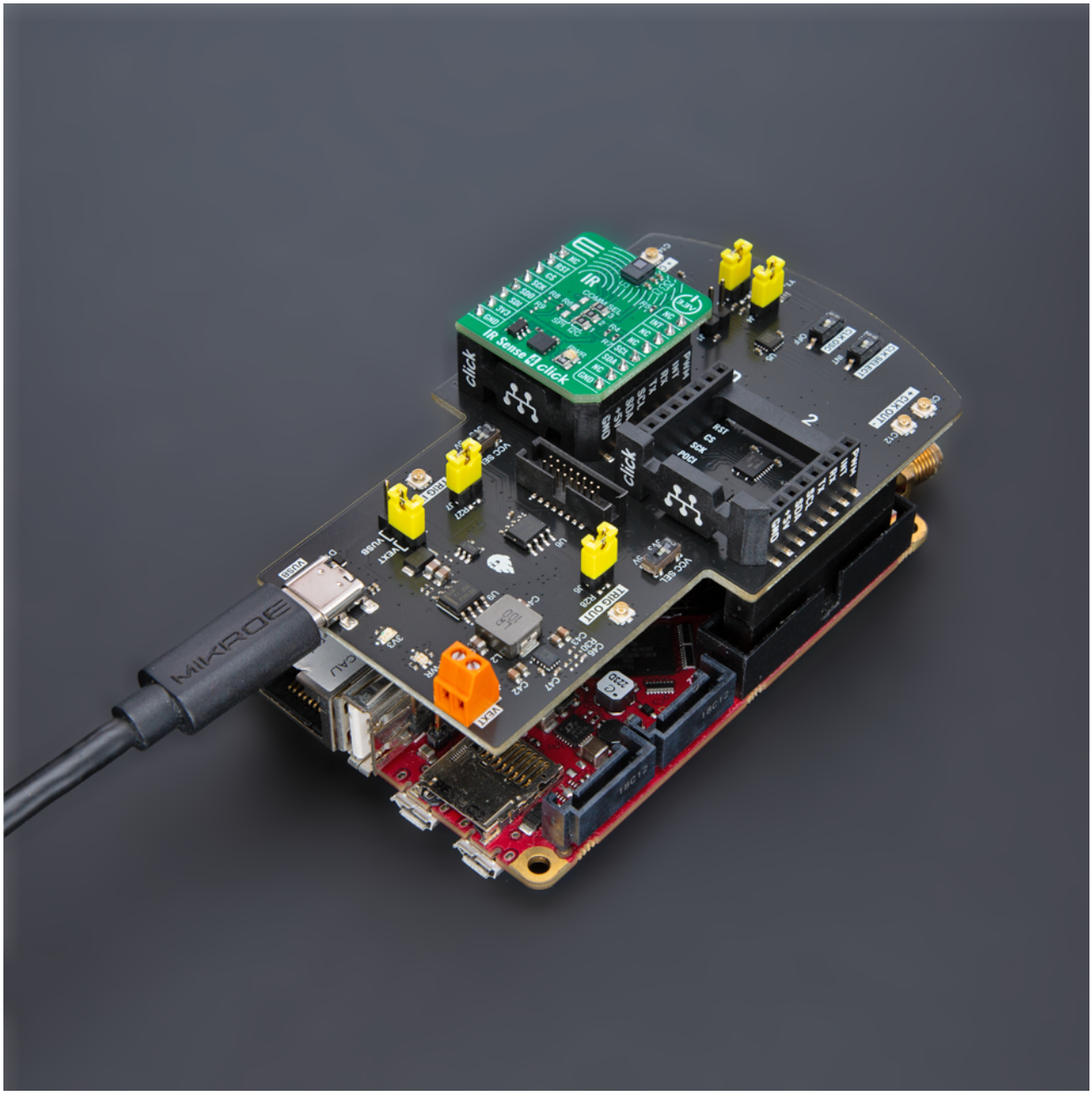

When the USB type C connector is connected to the Click Shield, the PWR diode will **glow Blue**, and at this setup, the connected Red Pitaya baseboard and all mikroBUS™ sockets will be powered from it.

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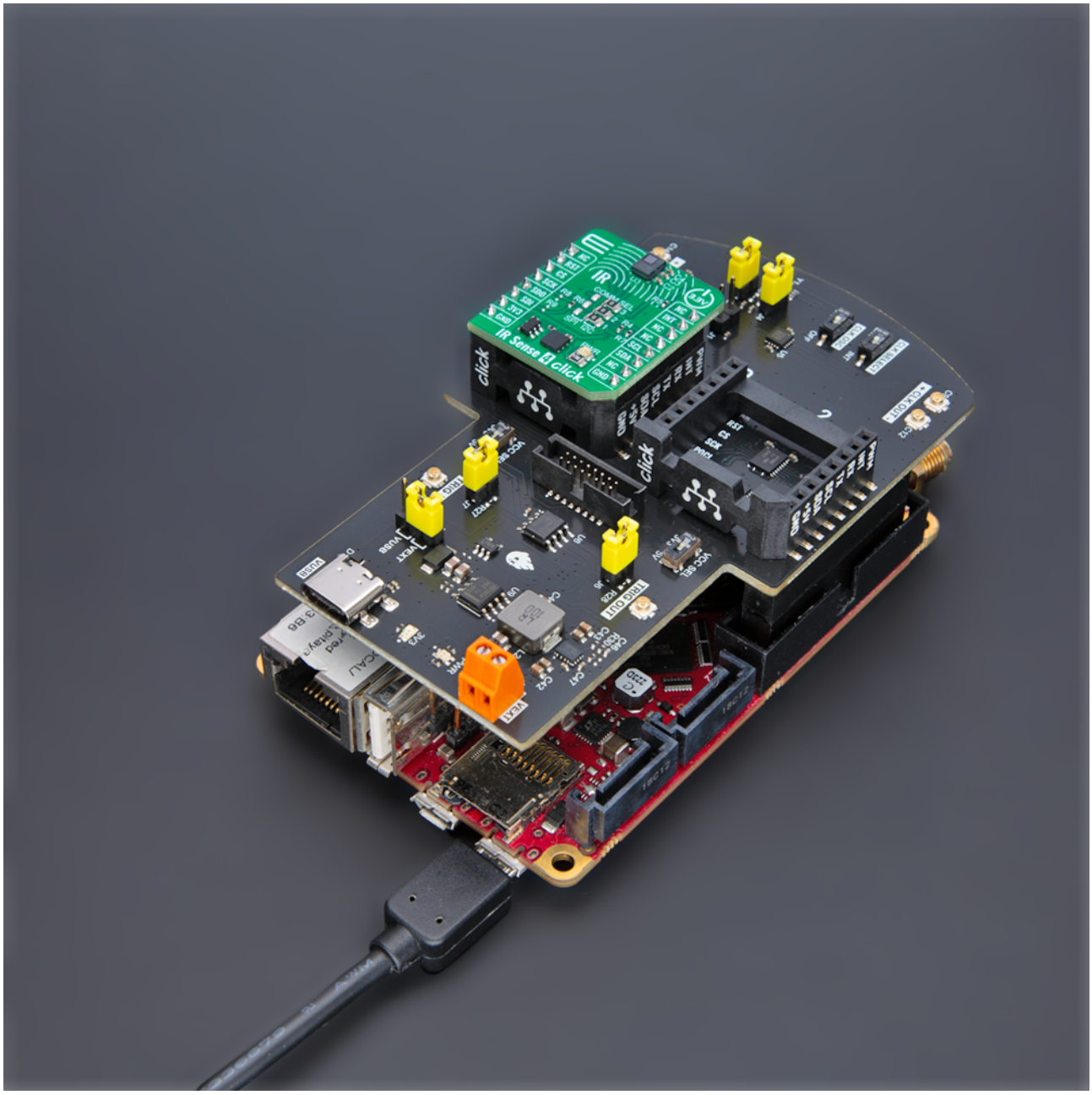

When the USB is connected to the Red Pitaya board, the PWR diode will **glow Green**, and at this setup, the Red Pitaya baseboard itself will be supplied, and it will provide power to the Click Shield, including all mikroBUS™ sockets.

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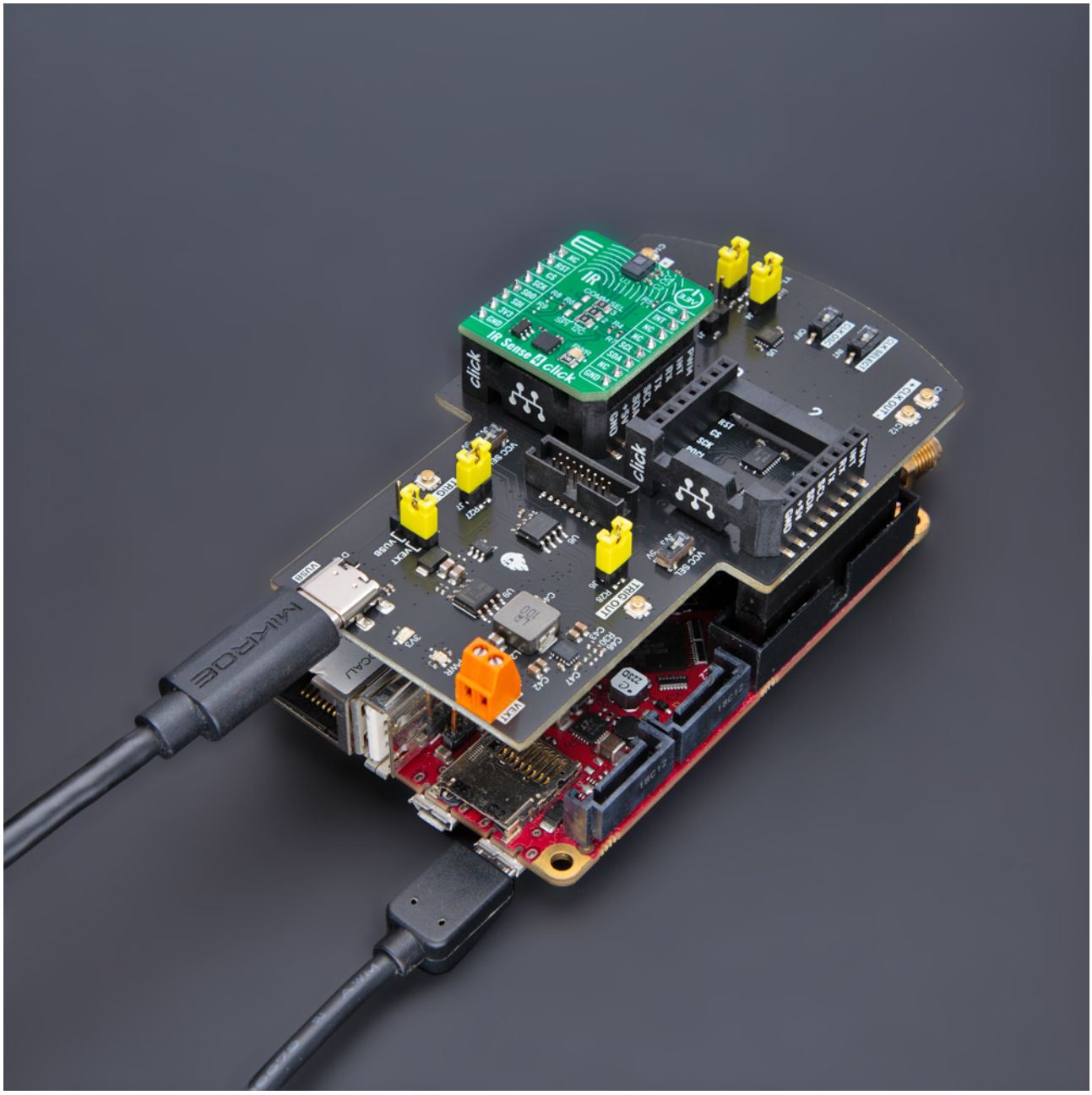

When the USB type C connector is connected to the Click Shield, and the other USB is connected to the Red Pitaya board, the PWR diode will **glow Cyan**, and at this setup, the mikroBUS™ sockets are powered from the Click Shield side.

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Specifications

Type	Adapter,Shield
Applications	Click Shield for Red Pitaya allows you to use Click boards™ on your Red Pitaya host board
Key Features	2x mikroBUS™ sockets, one Shuttle connector for Logic Analyzer, connector for connecting compatible Red Pitaya board, LVDS clock fan-out buffer, trigger signal distribution and synchronization, four TXS0108 level-shifting voltage translators, power part for converting 5V USB to the 3.3V, and more
Interface	Analog,GPIO,I2C,PWM,SPI,UART
Compatibility	mikroBUS™,RedPitaya
Input Voltage	3.3V or 5V,External

Resources

mikroBUS™

mikroSDK

Click board™ Catalog

Click Boards™

Downloads

Red Pitaya Click Shield 2D and 3D files

Red Pitaya Click Shield Schematic

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