

SIDEKIQ™ Z2

GETTING STARTED GUIDE

version 1.0

BEFORE YOU START

Congratulations! You are now the owner of Sidekiq Z2, the world's smallest wideband RF transceiver + Linux computer module. Each Sidekiq Z2 unit is fully tested by Epiq Solutions before shipment, and is guaranteed to be functional at the time it is received by the customer. **Improper handling and use of Sidekiq Z2 can cause the card to become non-functional.** In particular, the following list of actions are known to cause damage to Sidekiq Z2's hardware:

- Handling the Sidekiq Z2 unit without proper anti-static precautions (ESD protection)
- Inserting or removing Sidekiq Z2 from a host system when power is applied to the host system
- Connecting a transmitter to the RX port without proper attenuation – refer to Sidekiq Z2 Hardware Users Manual [1] for additional information
- Executing custom software and/or an FPGA bitstream that was not developed according to Epiq Solutions' guidelines
- Sidekiq Z2 comes with a one-year hardware warranty but please refer to Epiq's standard terms and conditions of sale for limitations

EVALUATION KIT USERS

For customers procuring the EVK, Sidekiq Z2 is pre-loaded with a reference design based on Analog Devices' Industrial I/O (IIO) software/FPGA reference design, an open source board support package available at [2]. All IIO support-related questions are managed through Analog Devices' web-based support forum available at [3].

EVK customers may upgrade to the Platform Development Kit (PDK) at any time (discounted for existing libsidekiq customers). Contact sales@epiqsolutions.com for more info.

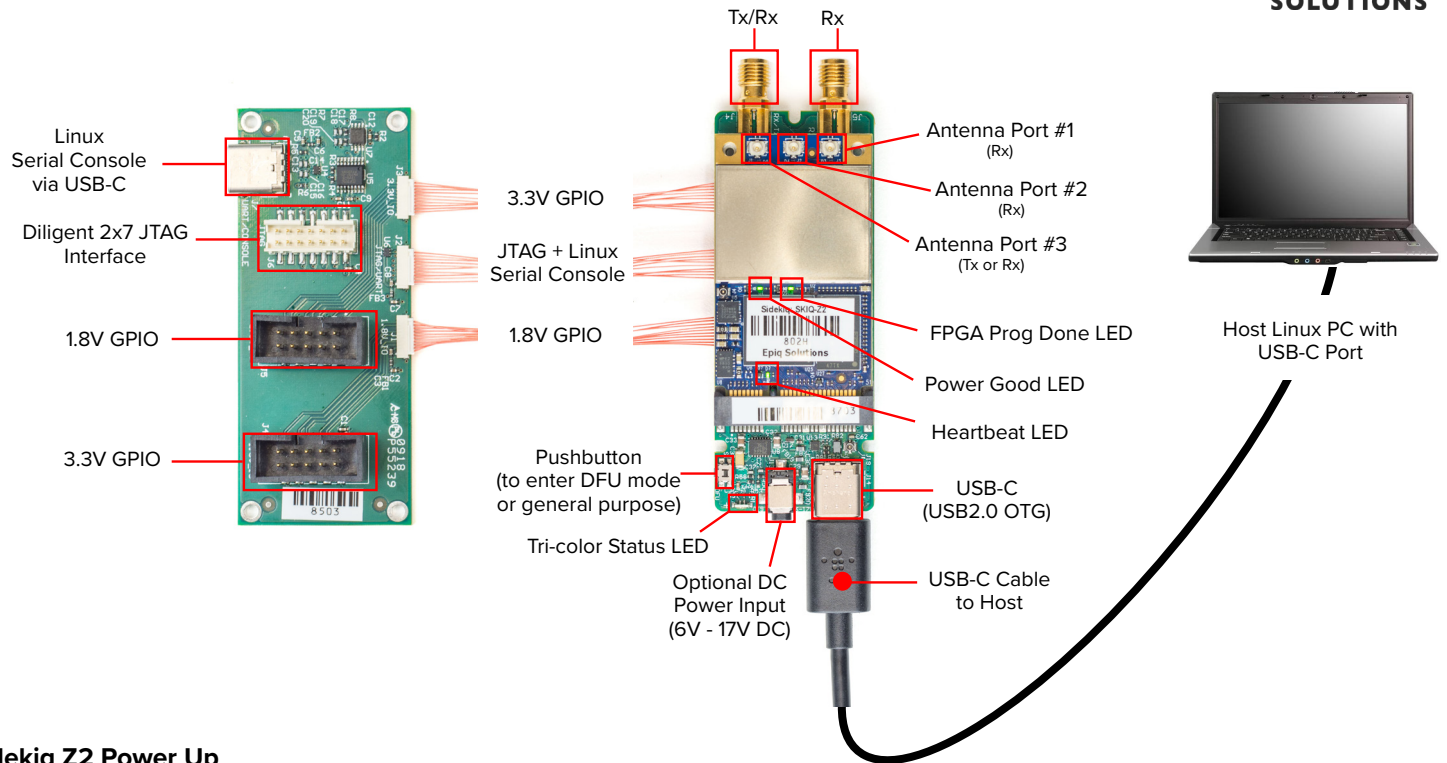
PLATFORM DEVELOPMENT KIT USERS

For customers procuring the PDK upgrade, Sidekiq Z2 is pre-loaded with Epiq's standard Sidekiq reference design, supporting the Epiq's libsidekiq API and an optimized FPGA reference design for customers wanting to leverage the enhanced feature set and receive dedicated support directly from the team at Epiq. All technical support questions, as well as documentation and release downloads, are managed through Epiq Solutions' private web-based support forum available at [4] (registration required).

References

- [1] Sidekiq Z2 Hardware User's Manual: <https://github.com/epiqsolutions/plutosdr-fw/tree/master/docs>
- [2] Analog Devices' IIO Reference Design + Board Support Package for Sidekiq Z2: <https://github.com/epiqsolutions/plutosdr-fw>
- [3] Analog Devices' Support Portal: <https://ez.analog.com/>
- [4] Epiq Solutions Support Portal: <https://epiqsolutions.com/support>

SEE OTHER SIDE FOR SET UP INSTRUCTIONS



Sidekiq Z2 Power Up

Step 1: To power up Sidekiq Z2 in the simple carrier card, use a host PC to provide both power and USB connectivity to the device through a standard USB-C to USB 2.0 A cable. In the example above, it is assumed that a Linux PC is being used as the host (running Ubuntu 16.04, though other Linux distributions should work as well). It is also possible to use Windows and MacOS as hosts.

Step 2: Insert the USB-C to USB 2.0 A cable to connect the host PC to the Sidekiq Z2 simple carrier card, and the Sidekiq Z2 card should power up automatically as indicated by the green Power Good indicator LED on Sidekiq Z2. In addition, the Heartbeat LED indicator on Sidekiq Z2 should also begin blinking after several seconds.

Step 3: Alternately, the DC wallwart included with the Sidekiq Z2 EVK/PDK can be used to power the Sidekiq Z2 + simple carrier card when not connected to a USB Host. This power adapter is typically used if a connection to a USB host is not utilized, such as when Sidekiq Z2 is deployed and running stand-alone.

Interfacing To Sidekiq Z2 Over USB

Once Sidekiq Z2 is powered up and the Linux kernel has booted, the device appears as a dual-purpose USB device consisting of a USB mass storage device, USB ethernet gadget network device, a serial console (`/dev/ttyACM0`), and an IIO data interface. The USB mass storage device should be automatically mounted on the host computer, allowing the contents of the mass storage device to be accessed by the host computer.

USB Ethernet Gadget Interface

A text file called `config.txt` containing network configuration information for the USB ethernet gadget interface is accessible on this mass storage device. This configuration file is used to set the default IP address of the USB ethernet gadget interface on Sidekiq Z2 (annotated as `"ipaddr"`, with a default value of 192.168.3.1), as well as the host PC's IP address for communicating with this USB device (annotated as `"ipaddr_host"`, with a default value of 192.168.3.9). The IP address configuration for either the host or Sidekiq Z2 can be updated by editing the `config.txt` configuration file, saving the file changes, properly ejecting the USB mass storage device, and then removing power to the Sidekiq Z2 / carrier card. Upon reinsertion of the USB cable, Sidekiq Z2 will power back up and the new IP address configuration will be utilized. At this point, the user can login to Sidekiq Z2 over ssh using a standard terminal application on the host Linux PC.

Default Login

The default root username is **"root"**, and the default root password is dependent on which BSP is loaded on to Sidekiq Z2. The Analog Devices' BSP has the default root password set as **"analog"**, while Epiq Solutions' BSP has the default root password set as **"epiq"**.

Interfacing To Sidekiq Z2 Over Serial Console

Access to the Linux serial console via the USB-C connector on the I/O expansion card requires the user to connect a USB-C cable between the I/O expansion card and a host PC USB 2.0 port running a serial terminal emulator program such as minicom, PuTTY, or screen. The I/O expansion card will enumerate over USB as a USB serial port (typically at `/dev/ttyUSB0` or similar on the host Linux system). The default Linux serial console on Sidekiq Z2 runs at a baud rate of 115.2 kbps, with 8 data bits, one stop bit, and no parity bits.