# UG581: SiWx917 Wi-Fi 6 and Bluetooth LE Dev Kit User's Guide

The SiWx917 Wi-Fi 6 and Bluetooth LE Dev Kit is a low-cost, small form factor development and evaluation platform for the SiWG917 Wireless System-on-Chip.

The board is a small and cost-effective, feature-rich, prototype and development platform based on the SiWG917 Wireless System-on-Chip. The SiWx917 Dev Kit is an ideal platform for developing energy-friendly IoT applications.

A built-in SEGGER J-Link debugger ensures easy debugging through the USB Type-C connector.
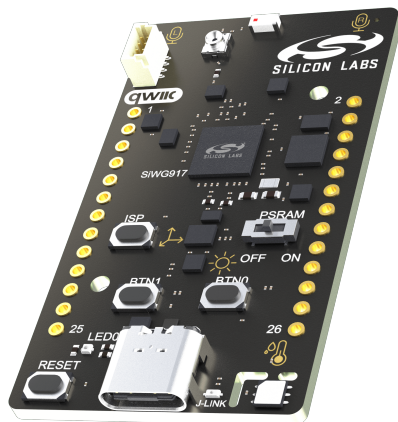
TARGET DEVICE

- SiWG917 Wireless System-on-Chip (SiWG917M111MGTBA)
- High-performance 2.4 GHz radio
- 32-bit ARM® Cortex®-M4 with 180 MHz maximum operating frequency
- 8 MB flash and 320 kB RAM

KIT FEATURES

- 2.4 GHz ceramic chip antenna
- Power control of on-board peripherals for ultra-low power operation
- Relative humidity and temperature sensor
- Ambient light sensor
- 6-axis inertial sensor
- MEMS stereo microphones
- RGB LED and two push buttons
- 26-pin 2.54 mm breakout pads
- Qwiic® connector
- SEGGER J-Link on-board debugger
- Virtual COM port
- Mini Simplicity connector (not mounted) for AEM using external Silicon Labs debugger
- USB powered

SOFTWARE SUPPORT

- Simplicity Studio™

Table of Contents

1. Introduction

The SiWx917 Wi-Fi 6 and Bluetooth LE Dev Kit (OPN: SiWx917-DK2605A) has been designed to inspire customers to make IoT devices and applications with the Silicon Labs SiWG917 Wireless System-on-Chip. The highlights of the board include different environmental sensors accessible to the SiWG917 wireless SoC. The peripherals have been grouped into power domains that can be turned on and off by the application code as needed.

Programming the SiWx917 Dev Kit is easily done using a USB Type-C cable and the on-board J-Link debugger. A USB virtual COM port provides a serial connection to the target application. Included on the board is a 64 Mbit QSPI PSRAM that can be used for running applications. The SiWx917 Dev Kit is supported in Simplicity Studio™, and a Board Support Package (BSP) is provided to give application developers a flying start.

Energy profiling and advanced wireless network analysis and debugging tools are available through the provided Mini Simplicity Connector using an external Silicon Labs debugger.

Connecting external hardware to the SiWx917 Dev Kit can be done using the 26 breakout pads which present peripherals from the SiWG917 Wireless such as I^{2}C, SPI, UART, and GPIOs. The board also features a Qwiic connector which can be used to connect hardware from the Qwiic Connect System through I^{2}C.

1.1 Kit Contents

The following item is included as a part of the kit:
- 1x SiWx917 Dev Kit board (BRD2605A)

1.2 Getting Started

Detailed instructions for how to get started with your new SiWx917 Dev Kit can be found on the Silicon Labs web page: https://www.silabs.com/dev-tools

1.3 Hardware Content

The following key hardware elements are included on the SiWx917 Dev Kit:
- SiWG917 Wireless SoC with 180 MHz operating frequency, 8 MB flash, and 320 kB RAM
- 2.4 GHz ceramic antenna for wireless transmission
- Silicon Labs Si7021 relative humidity and temperature sensor
- TDK InvenSense ICM-40627 6-axis inertial sensor
- Two ICS-43434 MEMS microphones
- Ambient light sensor (VEML6035)
- Macronix ultra low power 8 Mbit SPI flash (MX25R8035F)
- RGB LED and two push buttons
- Isolation switches for ultra-low power operation
- On-board SEGGER J-Link debugger for easy programming and debugging, which includes a USB virtual COM port
- Mini Simplicity connector for access to energy profiling and advanced wireless network debugging
- Breakout pads for GPIO access and connection to external hardware
- Qwiic connector for connecting external hardware from the Qwiic Connect System
- Reset button

1.4 Kit Hardware Layout
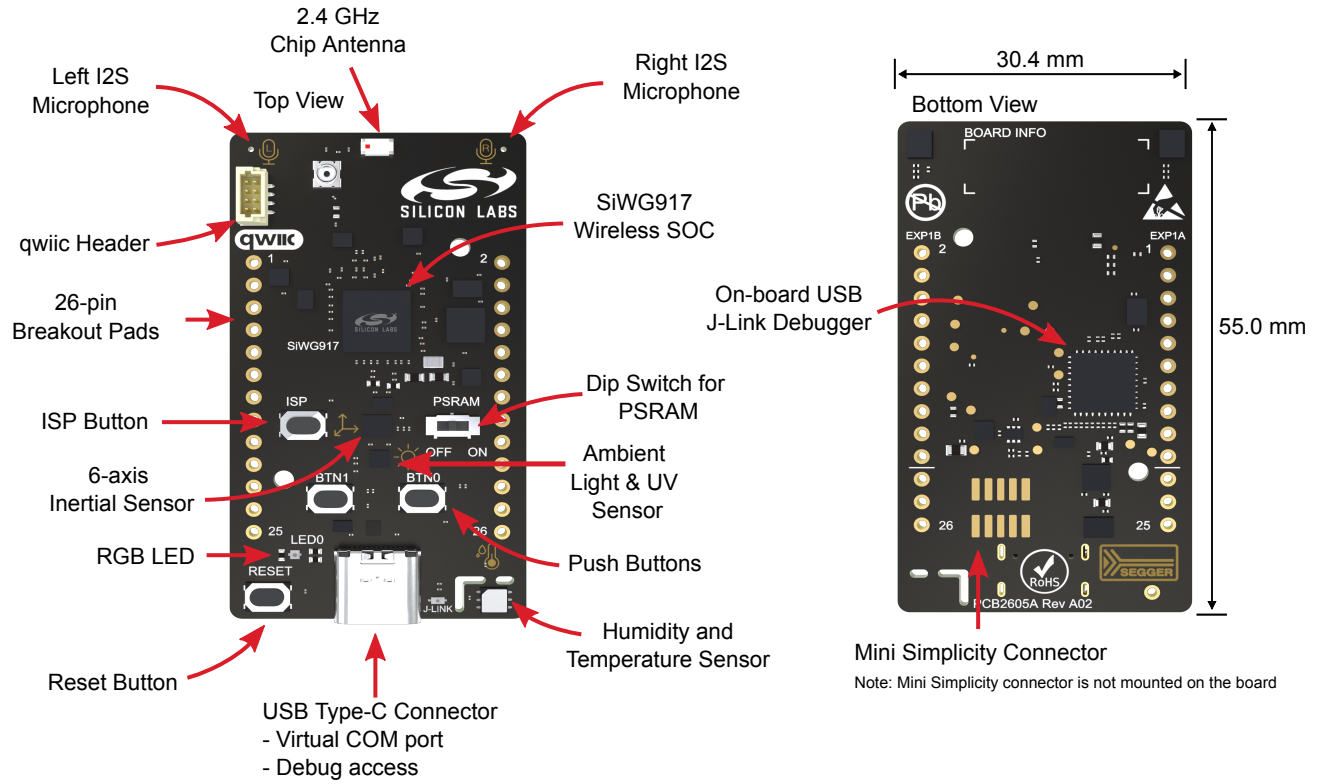
SiWx917 Dev Kit layout is shown below.

Figure 1.1. SiWx917 Dev Kit Hardware Layout

2. Specifications

2.1 Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
USB Supply Input Voltage	V_{USB}	—	5.0	—	V
Supply Input Voltage (VMCU supplied externally)[1]	V_{VMCU}	1.9	3.3	3.6	V
Operating Temperature	T_{OP}	-40	—	85	˚C
Note: 1. Brightness of the RGB LED will vary with the supply voltage. Due to manufacturing tolerances, functionality is not guaranteed over the entire working range.					

2.2 Current Consumption

The operating current of the board greatly depends on the application. The table below attempts to give some indication of how different features of the board contribute to the overall power consumption. Note that the numbers are taken from the data sheets for the devices. For a full overview of the conditions that apply for a specific number from a data sheet, the reader is encouraged to read the specific data sheet.

Table 2.1. Current Consumption

Parameter	Symbol	Condition	Typ	Unit
SiWx917 Current Consumption[1]	$I_{SiWG917}$	Active current at 180MHz in high performance mode	50	µA/MHz
		Sleep without RAM Retention	1.5	µA
RH/Temp Sensor Current Consumption[2]	I_{Si7021}	Standby, -40 to +85 ˚C	0.06	µA
		RH conversion in progress	150	µA
		Temperature conversion in progress	90	µA
		Peak I_{DD} during I^2C operations	3.5	mA
Microphone Current Consumption[3,4,]	I_{MIC}	Sleep mode, f_s less than 3.125 kHz	12	µA
		Performance mode (V_{DD} = 1.8 V)	490	µA
IMU Current Consumption[5]	I_{IMU}	Full-chip sleep mode at 1.8 V supply	7.5	µA
		Accelerometer low power mode (Gyroscope desabled)	46	mA
QSPI PSRAM Current Consumption[6]	$I_{APS6404L}$	Standby current (standard room temp)	100	µA
Ambient Light Sensor Current Consumption[7]	$I_{VEML6035}$	Shutdown at 1.8 V supply	0.5	µA
		Operation mode at 1.8 V supply (ALS only)	170	µA
On-board Debugger Sleep Current Consumption[8]	I_{DBG}	On-board debugger current consumption when USB cable is not inserted (EFM32GG12 EM4S mode current consumption)	80	nA

Note:
1. From SiWG917 SoC data sheet.
2. From Si7021-A20 data sheet.
3. From ICS-43434 data sheet.
4. Per microphone.
5. From SICM-40627 data sheet.
6. From APS6404L-3SQR-ZR data sheet.
7. From VEML6035 data sheet.
8. From EFM32GG12 data sheet.

3. Hardware

The core of the SiWx917 Dev Kit is the SiWG917 Wireless System-on-Chip. The board also contains several peripherals connected to the SiWG917. Refer to section 1.4 Kit Hardware Layout for placement and layout of the hardware components.

3.1 Block Diagram

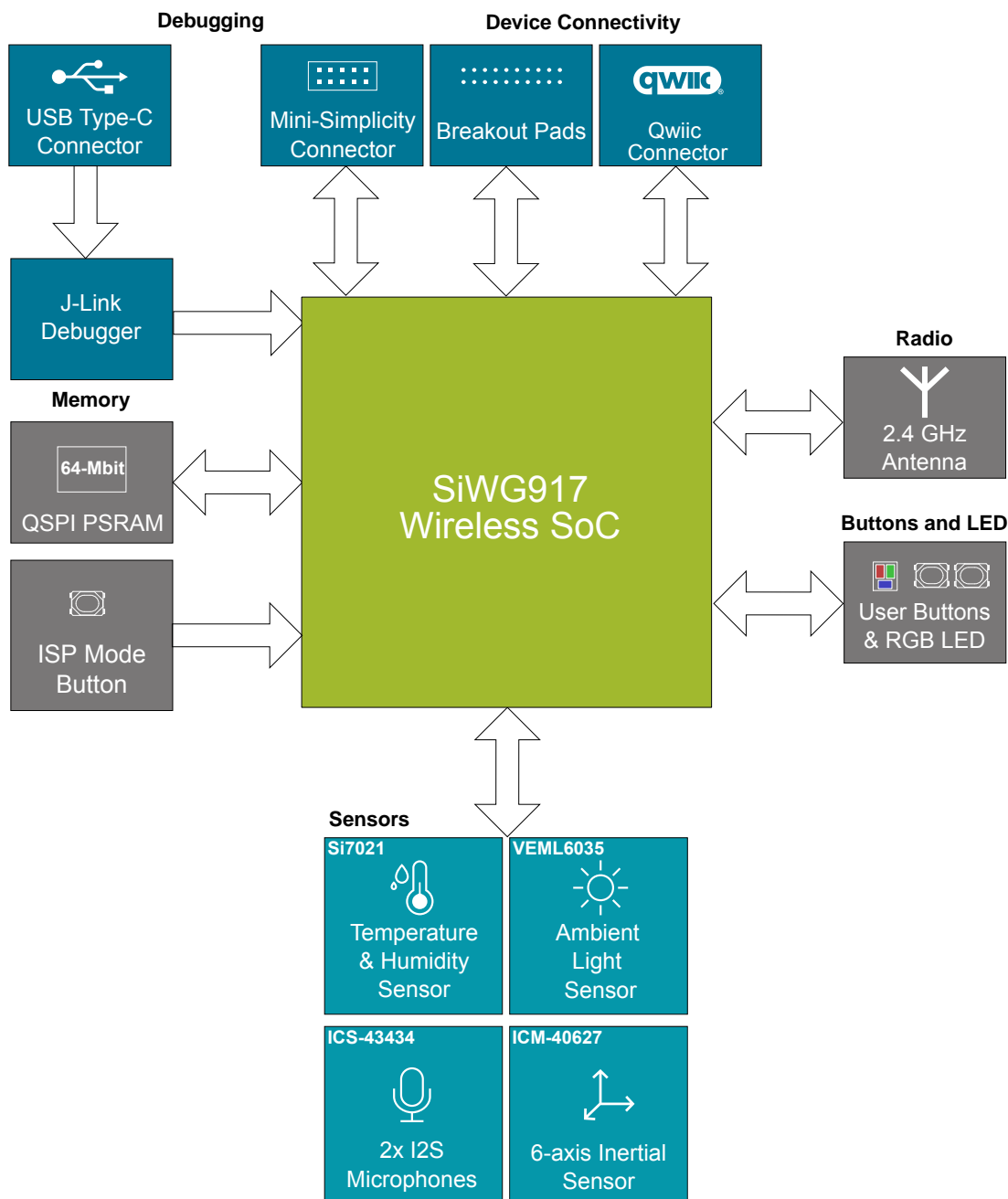An overview of the SiWx917 Dev Kit is illustrated in the figure below.

Figure 3.1. Kit Block Diagram

3.2 Power Supply

The kit can be powered through one of these interfaces:

- USB Type-C
- Mini Simplicity connector

The figure below shows the power options available on the kit and illustrates the main system power architecture.
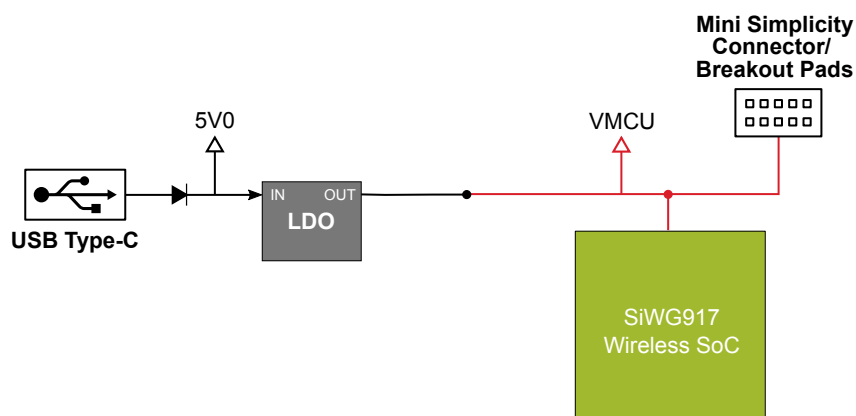

Figure 3.2. SiWx917 Dev Kit Power Architecture

Power is normally applied through the USB cable. When the USB cable is connected, VBUS is regulated down to 3.3 V.

Power can also be applied through the Mini Simplicity connector (or Breakout Pads). There must be no other power sources present on the kit as power is injected directly to the VMCU net. Powering the SiWx917 Dev Kit through the Mini Simplicity connector allows current measurements using the Advanced Energy Monitoring (AEM) as described in section 4.2 External Debugger.

Important: When powering the board through the Mini Simplicity connector (not mounted on board), the USB power source must be removed.

The power supply options are summarized in the table below.

Table 3.1. SiWx917 Dev Kit Power Options

Supply Mode	Typical Input Voltage	VMCU Source	3V3	5V
USB power	5.0 V	On-board regulator	On-board regulator	USB VBUS
Mini Simplicity	3.3 V	Debugger dependent	Disconnected	No voltage present

3.3 SiWG917 Reset

The SiWG917 can be reset by a few different sources:
- A user pressing the RESET button.
- The on-board debugger pulling the #POC_IN pin low.
- An external debugger pulling the #POC_IN pin low.

3.4 Peripherals

The SiWx917 Dev Kit contains a set of peripherals that can be accessed from the SiWG917. All the peripherals (except QSPI PSRAM) have enable signals which can be used to completely turn off the peripherals that are not in use, or they can be put into a state that draws minuscule amount of power. This allows for the lowest possible power consumption in every application. The following peripherals are accessible to the SiWG917:

- Silicon Labs Si7021 relative humidity & temperature sensor
- 2x TDK InvenSense ICS-43434 MEMS microphones with I2S output
- TDK InvenSense ICM-40627 6-axis inertial measurement sensor
- Vishay VEML6035 ambient light sensor
- AP Memory Technology APS6404L-3SQR-ZR QSPI PSRAM
- RGB LED and two push buttons

The figure below gives an overview of the peripherals that are connected to the SiWG917. Note that some of the peripherals share the same interface and enable signals.
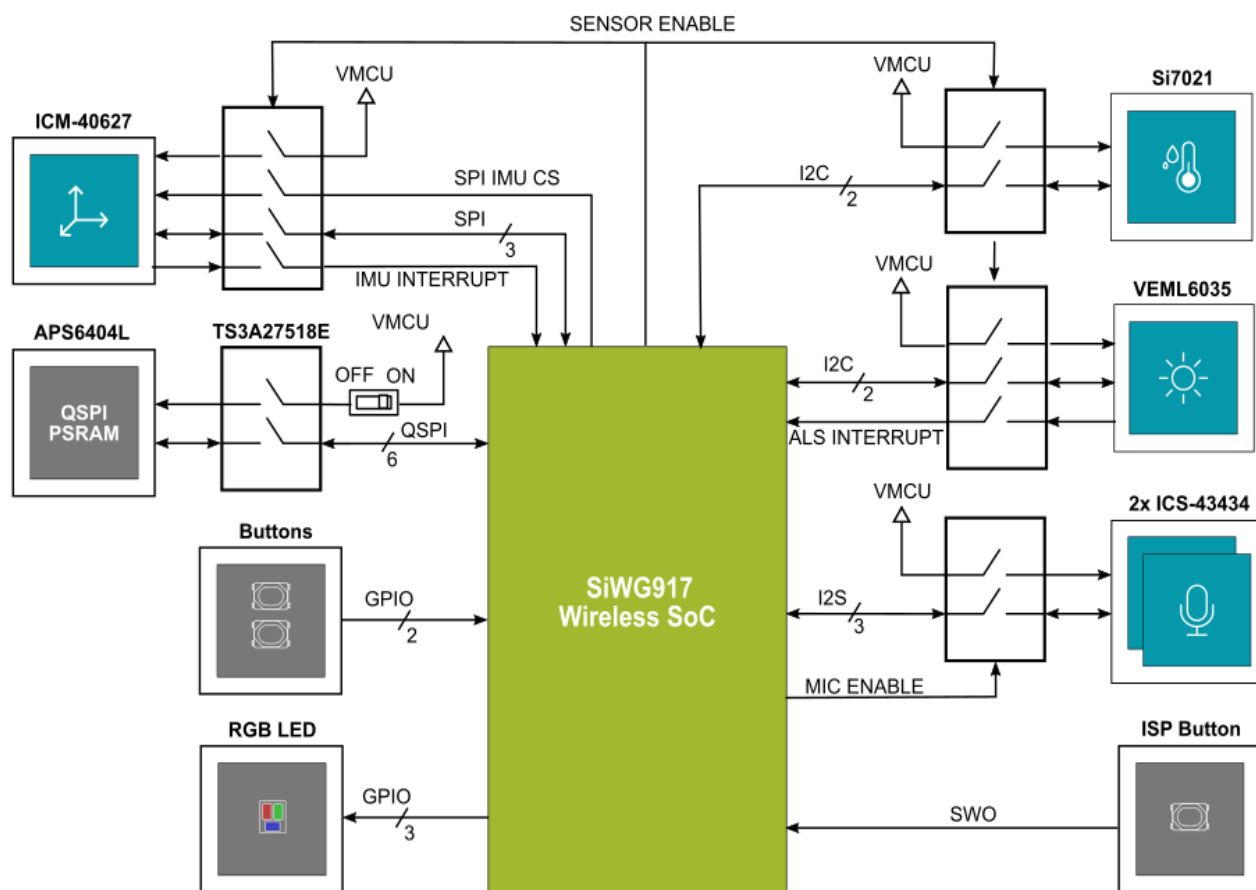

Figure 3.3. Peripherals

3.4.1 Si7021 Relative Humidity and Temperature Sensor

The Si7021 I^{2}C relative humidity and temperature sensor is a monolithic CMOS IC integrating humidity and temperature sensor elements, an analog-to-digital converter, signal processing, calibration data, and an I^{2}C interface. The patented use of industry-standard, low-K polymeric dielectrics for sensing humidity enables the construction of low-power, monolithic CMOS Sensor ICs with low drift and hysteresis, and excellent long term stability. The Si7021 offers an accurate, low-power, factory-calibrated digital solution ideal for measuring humidity, dew-point, and temperature in applications ranging from HVAC/R and asset tracking to industrial and consumer platforms.

On the SiWx917 Dev Kit, the Si7021 is connected through a switch. The switch must therefore be enabled by setting UULP_VBAT_GPIO_1 high before it can be used by the application. This enables power to the Si7021 and connects the I^{2}C lines used for the sensor to the SiWG917 I^{2}C bus. Note the presence of the pull-down resistor on the SENSOR_ENABLE line to pull it LOW by default. The figure below shows how the Si7021 is connected to the SiWG917.
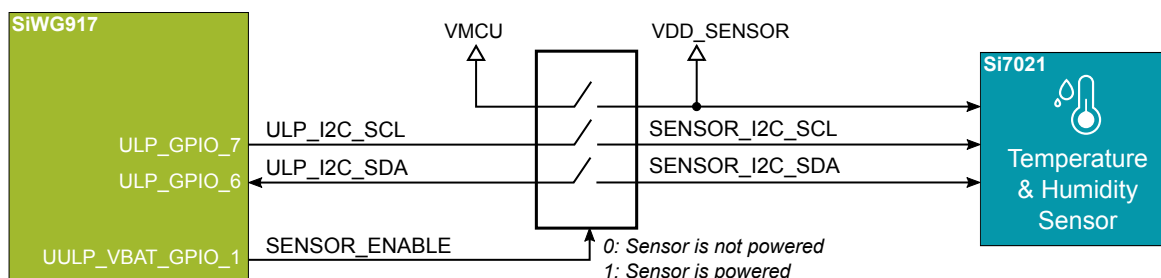

Figure 3.4. Si7021 Relative Humidity and Temperature Sensor

Although measures have been taken to thermally isolate the sensor from the board, temperature readings will be influenced when power is dissipated on the board. More accurate temperature measurements are achieved when powering the board through the Mini Simplicity connector as self-heating from the on-board LDO is eliminated and the on-board debugger is put in a low-power state.

3.4.2 ICS-43434 MEMS Stereo Microphones

The ICS-43434 microphones are omnidirectional MEMS microphones with a wideband frequency response and a digital I^{2}S output. The microphones include a MEMS sensor, signal conditioning, ADC, filters, and different operating modes. The ICS-43434 is a bottom port microphone, and it is placed on the bottom side of SiWx917 Dev Kit with acoustic ventilation holes going through to the top side. These holes let sound waves into the microphone package.

On SiWx917 Dev Kit, the ICS-43434 microphones are connected through a switch. The switch must therefore be enabled by setting UULP_VBAT_GPIO_0 high before it can be used by the application. This enables power to the microphones and connects the I^{2}S lines used for the sensor to the SiWG917. Note the presence of the pull-down resistor on the MIC_ENABLE line. The figure below shows how the ICS-43434 microphones are connected to the SiWG917.
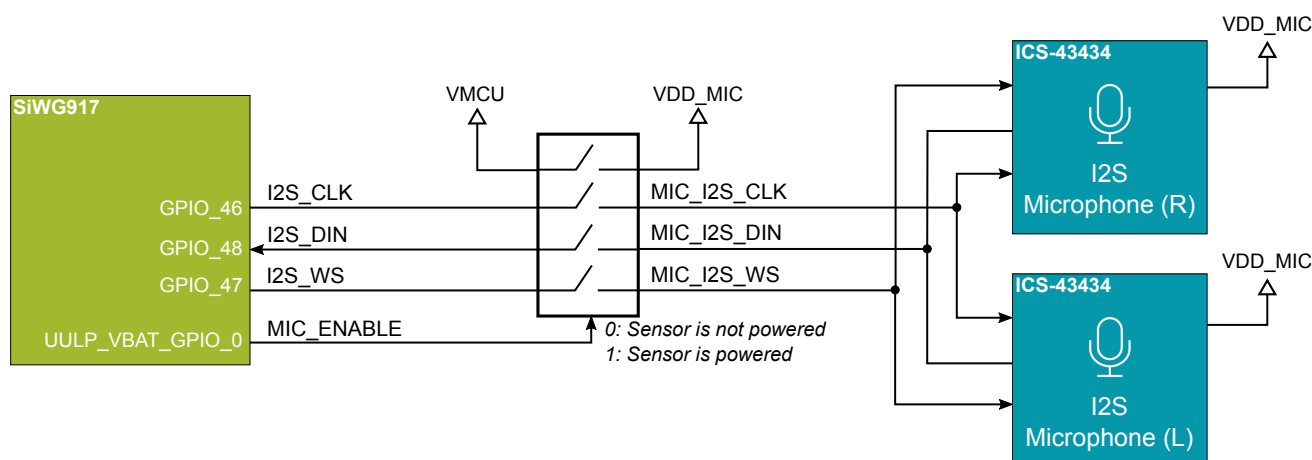

Figure 3.5. ICS-43434 MEMS Microphones

3.4.3 ICM-40627 6-Axis Inertial Sensor

The ICM-40627 is a 6-axis inertial sensor consisting of a 3-axis gyroscope and a 3-axis accelerometer. The sensor detects acceleration and angular rate in and around the X-, Y-, and Z-axes with integrated 16-bit ADCs and programmable digital filters.

On the SiWx917 Dev Kit, the ICM-40627 is connected through a switch. The switch must be enabled by setting UULP_VBAT_GPIO_1 high before it can be used by the application. This enables power to the ICM-40627 and connects the SPI lines used for the sensor to the SiWG917 SPI bus. Note the presence of the pull-down resistor on the SENSOR_ENABLE line to pull it LOW by default. The SPI CS line is also exported on the breakout pads, so simultaneous SPI operation on the breakout pads and IMU is not possible unless an alternative pin is used for SPI CS on the breakout pads. The figure below shows how the ICM-40627 is connected to the SiWG917.
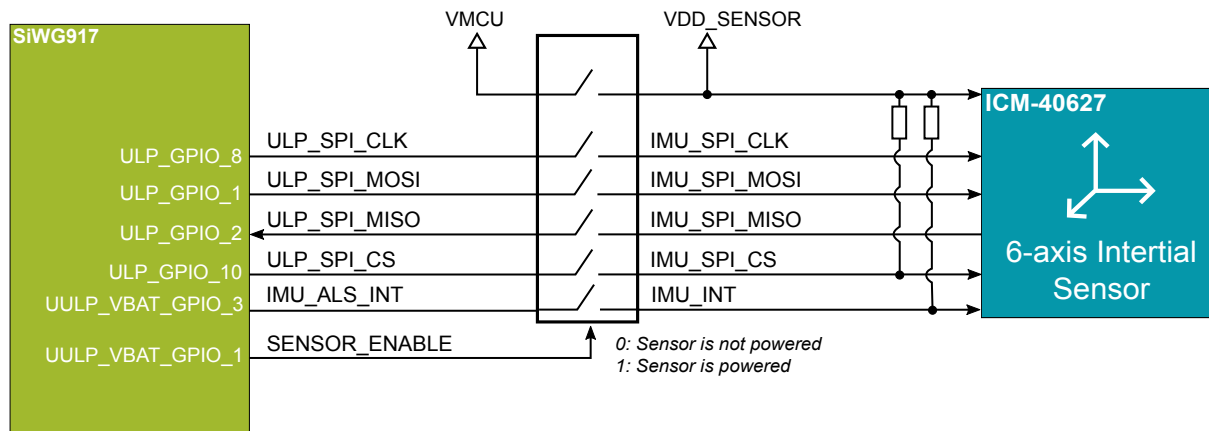

Figure 3.6. ICM-40627 6-Axis Inertial Sensor

The inertial sensor is located close to the geometrical center of the board. The coordinate system and rotation of the sensor follows the right-hand rule, and the spatial orientation of the board is shown in the figure below.
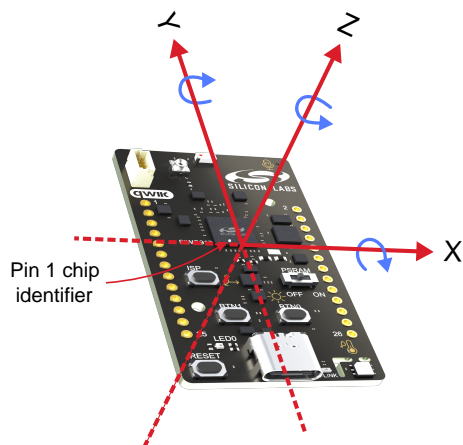

Figure 3.7. SiWx917 Dev Kit Spatial Orientation

3.4.4 VEML6035 Ambient Light Sensor

The VEML6035 is an ambient light sensor with I^2C digital interface.

On the SiWx917 Dev Kit, the VEML6035 is connected through a switch. The switch must therefore be enabled by setting UULP_VBAT_GPIO_1 high before it can be used by the application. This enables power to the VEML6035 and connects the I^2C lines used for the sensor to the SiWG917 I^2C bus. The I^2C lines are shared with other on-board I^2C peripherals. Note the presence of the pull-down resistor on the SENSOR_ENABLE line to pull it LOW by default. The I^2C bus is shared with the Qwiic Connector and is also exported on the breakout pads. The figure below shows how the VEML6035 is connected to the SiWG917.
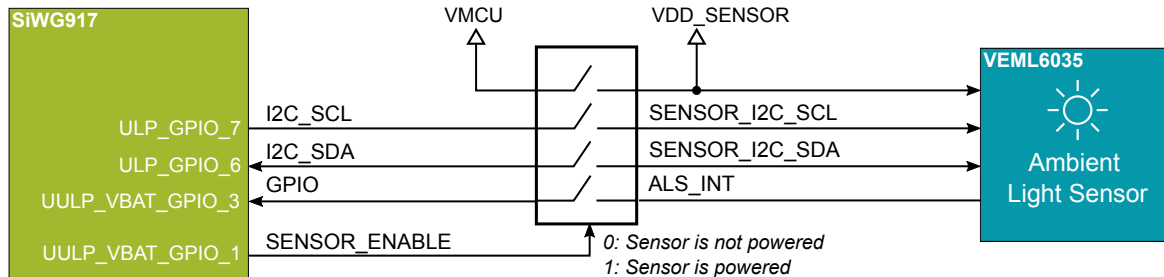
Figure 3.8. VEML6035 Ambient Light Sensor

3.4.5 External Memory

The SiWx917 Dev Kit includes a 64 Mbit QSPI PSRAM that is isolated through switch to the SiWG917. The APS6404L-3SQR-ZR device features a high speed, low pin count interface. To keep current consumption down, it is important that the PSRAM is always put in power off mode when not used. This is done by controlling a slide switch to turn off the supply to 6 channel multiplexer. The multiplexer provides the I/O and power isolation to the PSRAM. The figure below shows how the QSPI PSRAM is connected to the SiWG917.
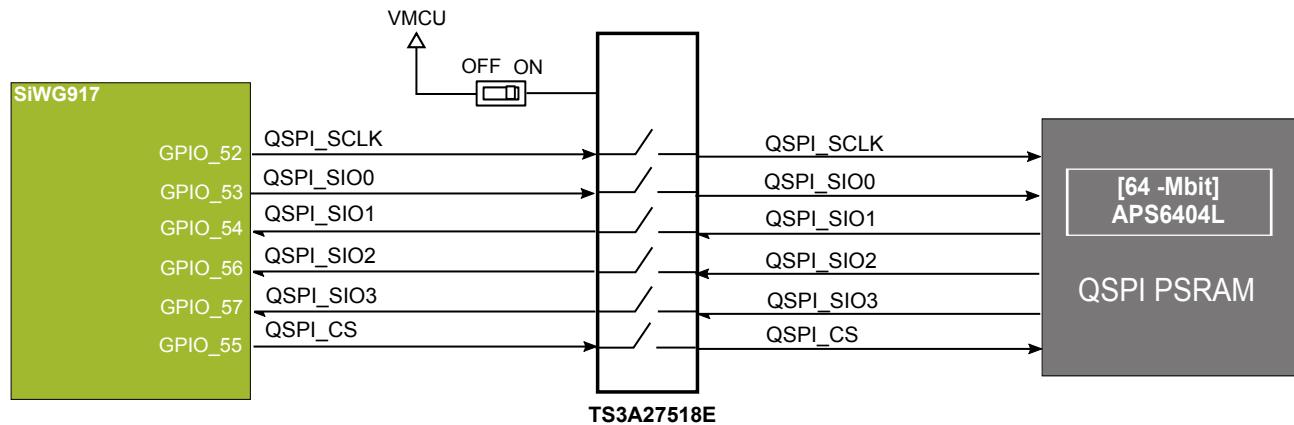
Figure 3.9. QSPI PSRAM

3.4.6 Push Buttons and RGB LED

The kit has two user push buttons marked BTN0 and BTN1. They are connected directly to the SiWG917 and are debounced by RC filters with a time constant of 1 ms. The buttons are connected to pins UULP_VBAT_GPIO_2 and GPIO_49.

The kit also features an RGB LED marked LED0, controlled by GPIO pins on the SiWG917. The LED is connected in an active-low configuration, and each color can be controlled using the SiWG917's GPIO pins.
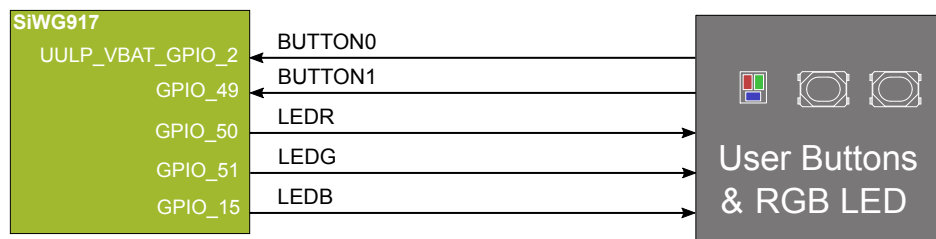
Figure 3.10. Buttons and RGB LED

3.4.7 ISP Mode Button

The kit feature an ISP button for In System Programming, which helps to load firmware to SiWx devices.
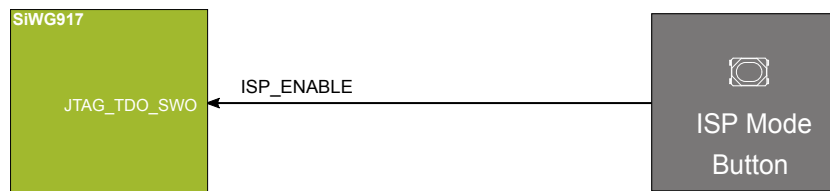
Figure 3.11. ISP Mode Button

3.5 On-board Debugger

The SiWx917 Dev Kit contains a microcontroller separate from the SiWG917 Wireless that provides the user with an on-board J-Link debugger through the USB Type-C port. This microcontroller is referred to as the "on-board debugger" and is not programmable by the user. When the USB cable is removed, the on-board debugger goes into a very low power shutoff mode (EM4S).

In addition to providing code download and debug features, the on-board debugger also presents a virtual COM port for general purpose application serial data transfer.

The figure below shows the connections between the target SiWG917 device and the on-board debugger. The figure also shows the Mini Simplicity Connector, and how this is connected to the same I/O pins.

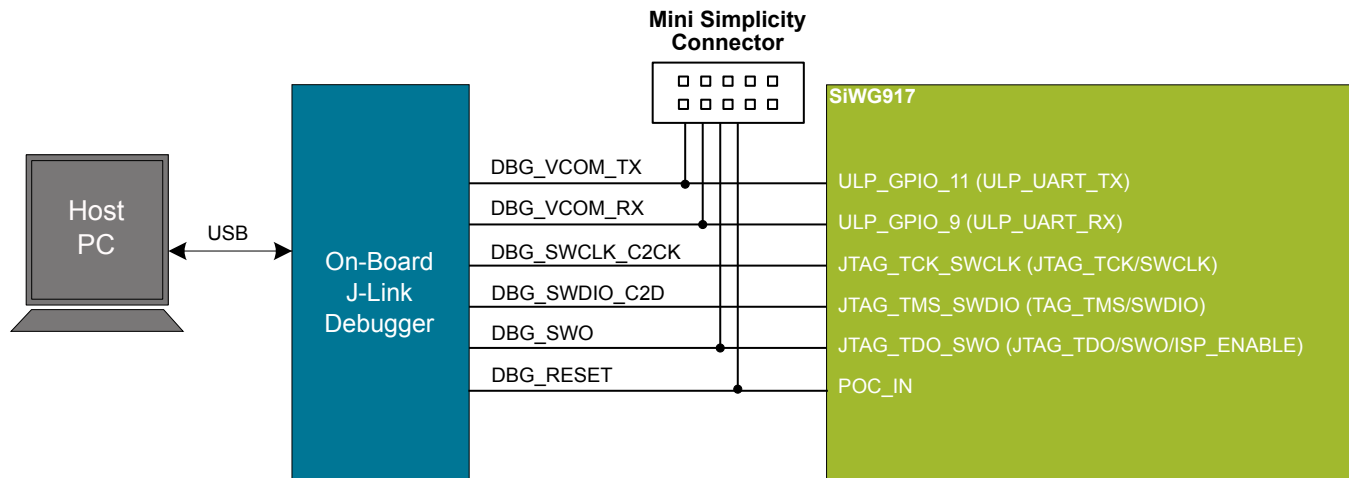Refer to section 4. Debugging for more details on debugging.

Figure 3.12. On-Board Debugger Connections

3.6 Connectors

The SiWx917 Dev Kit features a Mini Simplicity Connector, a USB Type-C connector, and 26 breakout pads. The connectors are placed on the either side of the board, and their placement and pinout are shown in the figure below. For additional information on the connectors, see the following sub-chapters.
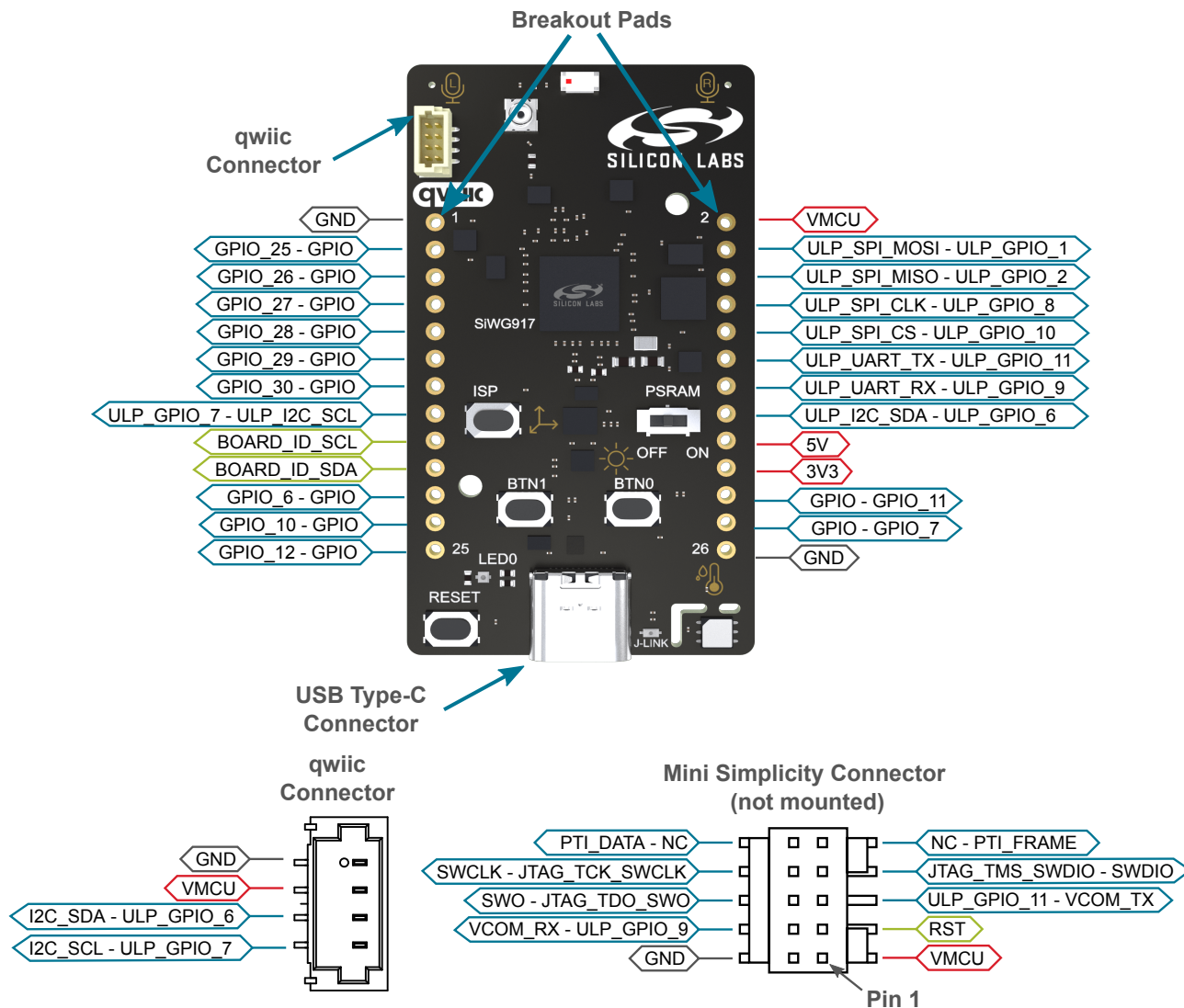

Figure 3.13. SiWx917 Dev Kit Connectors

3.6.1 Breakout Pads

Twenty six breakout pads are provided and allow connection of peripherals or add-on boards. Thirteen of the pads are located along the left side of the board and thirteen are located on the right side. The breakout pads expose I/O pins that can be used with most of the SiWG917's features. Additionally, the VMCU (main power rail), 3V3 (LDO regulator output), and 5V power rails are also exposed.

The breakout pads are pinned out similar to the EXP header found on other Silicon Labs Starter Kits, which ensures that commonly used peripherals such as SPI, UART, and I^{2}C buses are available on fixed locations. The rest of the pins are used for general purpose IO. The EXP header allows the definition of EXP boards that can plug into a number of different Silicon Labs starter kits.

The pin-routing on SiWG917 is very flexible, so most peripherals can be routed to any pin. However, pins may be shared between the breakout pads and other functions on the SiWx917 Dev Kit. The table below includes an overview of the EXP header and functionality that is shared with the kit.

Table 3.2. Expansion Header Pinout

Pin	Connection	EXP Header Function	Shared Feature
		Right-side Breakout Pins	
2	VMCU	SiWG917 voltage domain, included in AEM measurements.	
4	ULP_GPIO_1	SPI_MOSI	IMU & Flash
6	ULP_GPIO_2	SPI_MISO	IMU & Flash
8	ULP_GPIO_8	SPI_CLK	IMU & Flash
10	ULP_GPIO_10	SPI_CS	IMU_SPI_CS (when SENSOR_ENABLE = 1)
12	ULP_GPIO_11	UART_TX	VCOM & Mini Simplicity
14	ULP_GPIO_9	UART_RX	VCOM & Mini Simplicity
16	ULP_GPIO_6	I2C_SDA	Qwiic I^{2}C bus
18	5V	Board USB voltage	
20	3V3	Board controller supply	
22	GPIO_11	GPIO	—
24	GPIO_7	GPIO	—
26	GND	Ground	
		Left-side Breakout Pins	
1	GND	Ground	
3	GPIO_25	GPIO	—
5	GPIO_26	GPIO	—
7	GPIO_27	GPIO	—
9	GPIO_28	GPIO	—
11	GPIO_29	GPIO	—
13	GPIO_30	GPIO	—
15	ULP_GPIO_7	I2C_SCL	Qwiic I^{2}C bus
17	BOARD_ID_SCL	Connected to Board Controller for identification of add-on boards.	
19	BOARD_ID_SDA	Connected to Board Controller for identification of add-on boards.	
21	GPIO_6	GPIO	—
23	GPIO_10	GPIO	—

Pin	Connection	EXP Header Function	Shared Feature
25	GPIO_12	GPIO	—

3.6.2 Qwiic Connector

The SiWx917 Dev Kit features a Qwiic connector compatible with Qwiic Connect System hardware. The Qwiic connector provides an easy way to expand the functionality of the SiWx917 Dev Kit with sensors, LCDs, and other peripherals over the I^2C interface. The Qwiic connector is a 4-pin polarized JST connector, which ensures the cable is inserted the right way.

Qwiic Connect System hardware is daisy chain-able as long as each I^2C device in the chain has a unique I^2C address.

Note: The Qwiic I^2C lines are shared with the on-board I^2C sensors, and are also exposed on the breakout pads.

The table below gives an overview of the Qwiic connections to the SiWG917.

Table 3.3. Qwiic Connector Pinout

Qwiic Pin	Connection	Shared Feature
Ground	GND	
3.3V	VMCU	
SDA	ULP_GPIO_6	Breakout pads, I^2C sensors
SCL	ULP_GPIO_7	Breakout pads, I^2C sensors

3.6.3 Mini Simplicity Connector

The Mini Simplicity connector is a 10-pin, 1.27 mm pitch connector that allows the use of an external debugger such as the one found on a Silicon Labs Wireless Starter Kit mainboard. See section for more details. The pinout of the connector on the board is described in the table below with the names being referenced from the SiWG917.

Table 3.4. Mini Simplicity Connector Pin Descriptions

Pin number	Function	Connection	Description
1	AEM	VMCU	Target voltage on the debugged application. May be supplied and monitored by the AEM on an external debugger.
2	GND	GND	Ground
3	RST	RESET	SiWG917 reset
4	VCOM_RX	PA06	Virtual COM Rx
5	VCOM_TX	PA05	Virtual COM Tx
6	SWO	PA03	Serial Wire Output
7	SWDIO	PA02	Serial Wire Data
8	SWCLK	PA01	Serial Wire Clock
9	PTI_FRAME	PC07	Packet Trace Frame
10	PTI_DATA	PC06	Packet Trace Data

3.6.4 Debug USB Type-C Connector

The debug USB port can be used for uploading code, debugging, and as a Virtual COM port. More information is available in section 4. Debugging.

4. Debugging

The SiWx917 Dev Kit contains an on-board SEGGER J-Link Debugger that interfaces to the target SiWG917 using the Serial Wire Debug (SWD) interface. The debugger allows the user to download code and debug applications running in the target SiWG917. Additionally, it also provides a VCOM port to the host computer that is connected to the target device's serial port for general purpose communication between the running application and the host computer. The Packet Trace Interface (PTI) is also supported by the on-board debugger which offers invaluable debug information about transmitted and received packets in wireless links. The on-board debugger is accessible through the USB Type-C connector.

An external debugger can be used instead of the on-board debugger by connecting it to the Mini Simplicity Connector. This allows advanced debugging features as described in section 4.2 External Debugger. When using an external debugger it is very important to make sure that there is no power source present on the SiWx917 Dev Kit, as the external debugger might source a voltage on the target power domain (VMCU).

Important: When connecting an external debugger that sources voltage to the VMCU net, the USB cable must be removed from the SiWx917 Dev Kit. Failure to do so will create power conflicts.

The figure below shows the possible debug options.
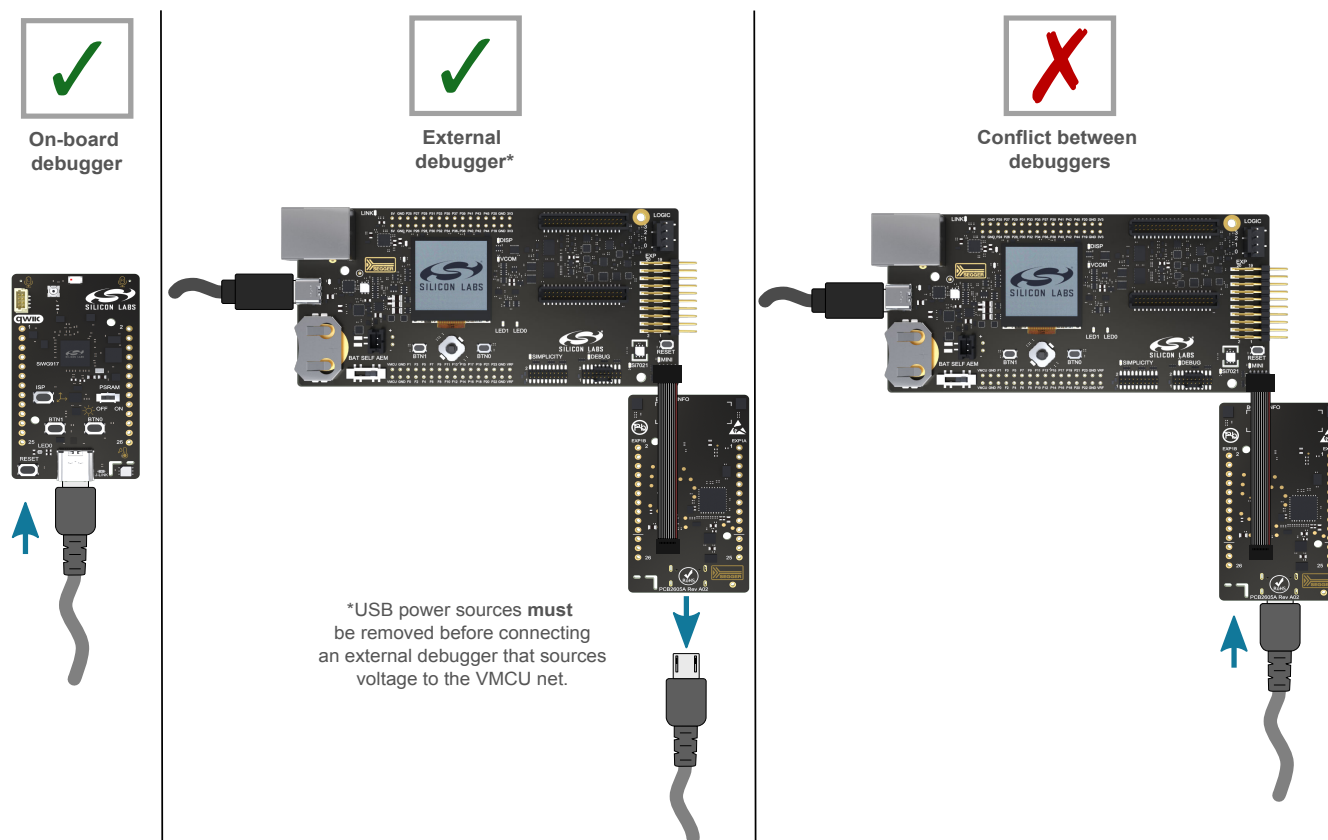
Figure 4.1. SiWx917 Dev Kit Debugging Possibilities

4.1 On-board Debugger

The on-board debugger is a SEGGER J-Link debugger running on an EFM32 Giant Gecko. The debugger is directly connected to the debug and VCOM pins of the target SiWG917.

When the debug USB cable is inserted, the on-board debugger is automatically activated and takes control of the debug and VCOM interfaces. This means that debug and communication will **not** work with an external debugger connected at the same time. The on-board LDO is also activated, providing power to the board.

When the board is powered from the Mini Simplicity Connector, the on-board debugger goes into a very low power shutoff mode (EM4S), consuming about 80 nA. This means that current consumption measurement of SiWx917 using the Mini Simplicity Connector will not be affected too much by the on-board debugger power consumption.

4.2 External Debugger

A Wireless mainboard from Silicon Labs can be connected to the Mini Simplicity Connector and used for debugging instead of the on-board debugger. For instruction on using the mainboard for debugging, see AN958: Debugging and Programming Interfaces for Custom Designs. Note that the Wireless STK Mainboard (BRD4001A) requires a BRD8010A STK/WSTK Debug Adapter to get access to the Mini Simplicity Connector. Debugging with an external Wireless mainboard gives access to the following debugging features:

- Debugging of the target device through SWD
- Communication using the VCOM port
- Packet Trace Interface (for wireless devices only)
- Advanced Energy Monitor

Note that the Mini Simplicity Connector **cannot** be used at the same time that the on-board debugger is active (USB cable is plugged in). For information on how to correctly connect to the kit, see Figure 4.1 SiWx917 Dev Kit Debugging Possibilities on page 19.

Powering the board when using the Mini Simplicity Connector with a Wireless mainboard can be done using the AEM voltage supply of the Wireless mainboard. When doing this, remove both the USB cable and the coin cell battery from the SiWx917 Dev Kit before connecting the Wireless mainboard to the Mini Simplicity Connector. The power switch on the Wireless mainboard should be set in "AEM." Power-cycling of the board, if necessary, is easily done by flipping the power switch on the Wireless to "BAT" and back to "AEM," assuming a battery is not inserted in the Wireless mainboard.

It is possible to have the SiWx917 Dev Kit powered by a battery and still use the Mini Simplicity Connector with a Wireless mainboard for debugging and communication. In this case, the power switch on the Wireless mainboard must be set to the "BAT" position and the coin cell battery on the Wireless mainboard must be removed. In this case, level shifters on the Wireless mainboard itself take care of interfacing to different voltage levels on the SiWx917 Dev Kit. Connecting the board to an external debugger in other ways than those described above might create power conflicts, compromise the ability to monitor power consumption, and hazardously feed power back to the on-board battery.

4.2.1 External Debugger Considerations

4.2.1.1 Power On Control (POC) and Reset

The power on control has two control options.

POC_OUT Connected to POC_IN:

The POC_IN input of the chip, should be made high only after supplies are valid to ensure the IC is in safe state until valid power supply is available. The POC_IN can be connected externally to the internally generated POC_OUT signal or can be controlled from external source like R/C circuit.

During power up, until the VBATT reaches 1.6 V , the POC_OUT signal stays low. Once the VBATT supply exceeds 1.6 V, the POC_OUT becomes high and the RESET_N is high at least 1.6 ms after VBATT supply is stable.

External Control for POC_IN:

The POC_IN and RESET_N signals can be controlled from external source like R/C circuits, RESET_N will be pulled low if POC_IN is low. POC_IN should be made high only after supplies are valid to ensure the IC is in safe state . For this a pull-up R/C circuit is applied across it to provide a delay, so that POC_IN should be high after 0.6 ms and RESET_N should be high after 1 ms of POC_IN high.

4.3 Virtual COM Port

The virtual COM port (VCOM) is a connection to a UART on the SiWG917 and allows serial data to be sent and received from the device. The on-board debugger presents this connection as a virtual COM port on the host computer that shows up when the USB cable is inserted.

Data is transferred between the host computer and the debugger through the USB connection, which emulates a serial port using the USB Communication Device Class (CDC). From the debugger, the data is passed on to the target device through a physical UART connection.

The serial format is 115200 bps, 8 bits, no parity, and 1 stop bit by default.

Note: Changing the baud rate for the COM port on the PC side does not influence the UART baud rate between the debugger and the target device. However, it is possible to change the VCOM baud rate through the kits' Admin Console available through Simplicity Studio.

Alternatively, the VCOM port can also be used through the Mini Simplicity Connector with an external Wireless mainboard. Using the VCOM port through the Mini Simplicity Connector with an external Wireless mainboard works in a similar way, but it requires that the USB cable to the on-board debugger is unplugged. The board controller on the Wireless mainboard then makes the data available over USB (CDC) or an IP socket. Flow control is not available over the Mini Simplicity Connector.

5. Schematics, Assembly Drawings, and BOM

Schematics, assembly drawings, and Bill of Materials (BOM) are available through Simplicity Studio when the kit documentation package has been installed. They are also available from the kit page on the Silicon Labs website: silabs.com.

6. Kit Revision History and Errata

6.1 Revision History

The kit revision can be found printed on the box label of the kit, as outlined in the figure below. The kit revision history is summarized in . The revision history given in this section may not list every kit revision. Revisions with minor changes may be omitted.

SiWx917 Wi-Fi 6 and Bluetooth LE Dev Kit

(1P) Part: SiWx917-DK2605A   (D) Date: 09-09-24

S.nr: 1632000960   (Q) Qty: 1
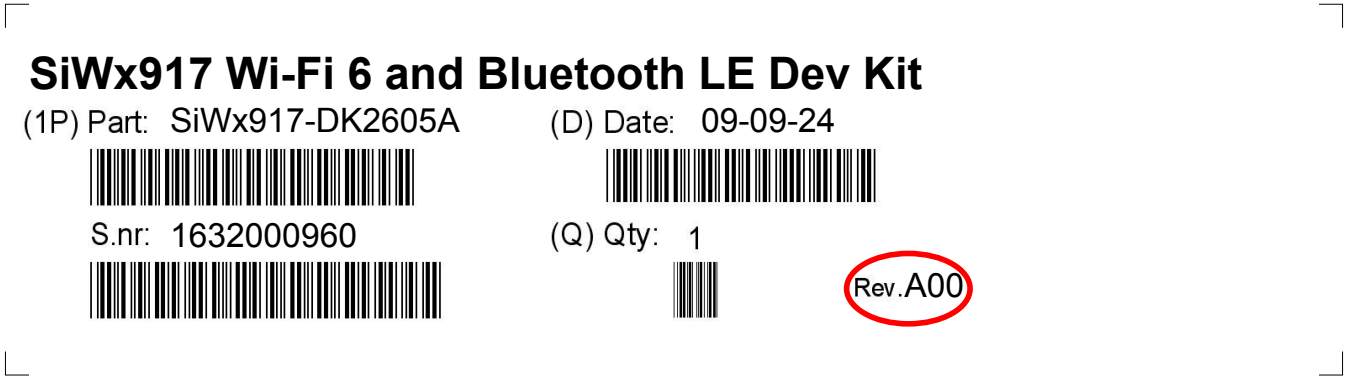
Rev.A00

Figure 6.1. Revision Info

Table 6.1. Kit Revision History

Kit Revision	Released	Description
A00	9 September 2024	Initial kit revision with BRD2605A Rev. A02.

6.2 Errata

There are no known errata at present.

7. Board Revision History and Errata

7.1 Revision History

The board revision can be found laser printed on the board, and the board revision history is summarized in Table 7.1 Board Revision History on page 24. The revision history given in this section may not list every board revision. Revisions with minor changes may be omitted.

Table 7.1. Board Revision History

Revision	Released	Description
A00	4 June 2024	Initial release.

7.2 Errata

There are no known errata at present.

8. Document Revision History

Revision 1.0

September, 2024

- Initial document release.

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