

Salinas r1.1 Hardware User Guide (Rev 1.1)

This document serves as a quick start Hardware Guide for the Salinas board.

This guide provides users with functional descriptions, configuration options for Salinas rev1.1; the board is distributed for limited number of clients to evaluate QuickLogic eFPGA performance.

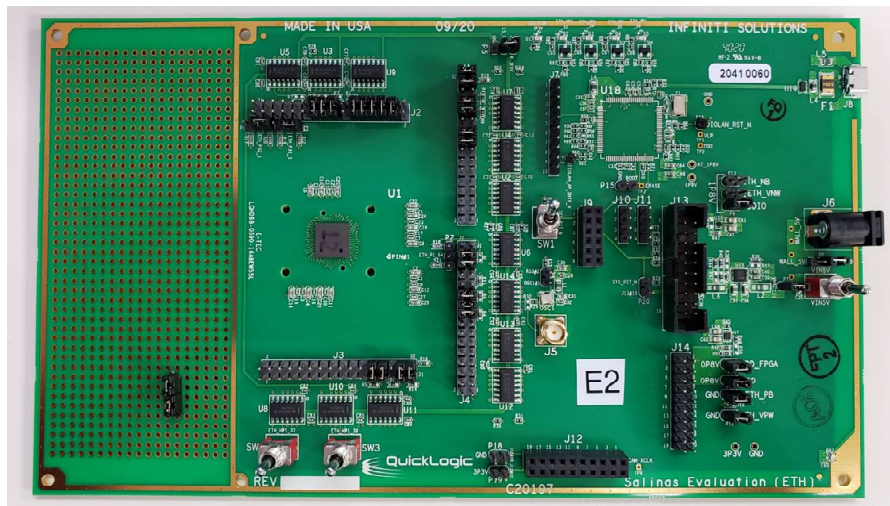


Figure 1: QuickFeather Low Power MCU Open Source Hardware Development Kit

Features:

- Arnold IC
- Fully isolated connections via shunts and jumpers
- 32.768MHz clock input
- Support for external clock input via SMA connector
- Powered from USB or a single Li-Po battery
- Power supply using either uUSB connection or 5VDC wall adapter
- Reset toggle switches
- Level translator from 1.8V (Arnold IC) to 3.3V IO for peripherals
- LEDs and control via Arnold IO

Applications

- Standalone FPGA performance evaluation
- MCU and FPGA performance evaluation

Getting Started

What You Need

- 1 × Salinas r1.1 board
- 1 x Olimex debugger with USB Type B cable
- 1x uUSB cable and power source (Laptop or wall AC-DC power)

Note: all parts are provided

Since the board does not come with pre-program, please follow the instruction of “readme.md” file from <https://github.com/QuickLogic-Corp/arnold-sdk>.

The detail descriptions for various connectors available on Salinas boards are described in the next chapter.

Components on the Board

- Arnold IC
- JTAG port (J13) for device programming and debug
- Expansion connectors (J9, J12, J14)
- Dedicated UART connector (J10)
- Dedicated I2C connector (J11)
- Jumpers to isolate Arnold IC
- 18V to 3.3V level translators for all Arnold IO
- Hardware reset switch (SW1)
- Power switch (SW4)
- 0.1" grid for prototype hardware expansion

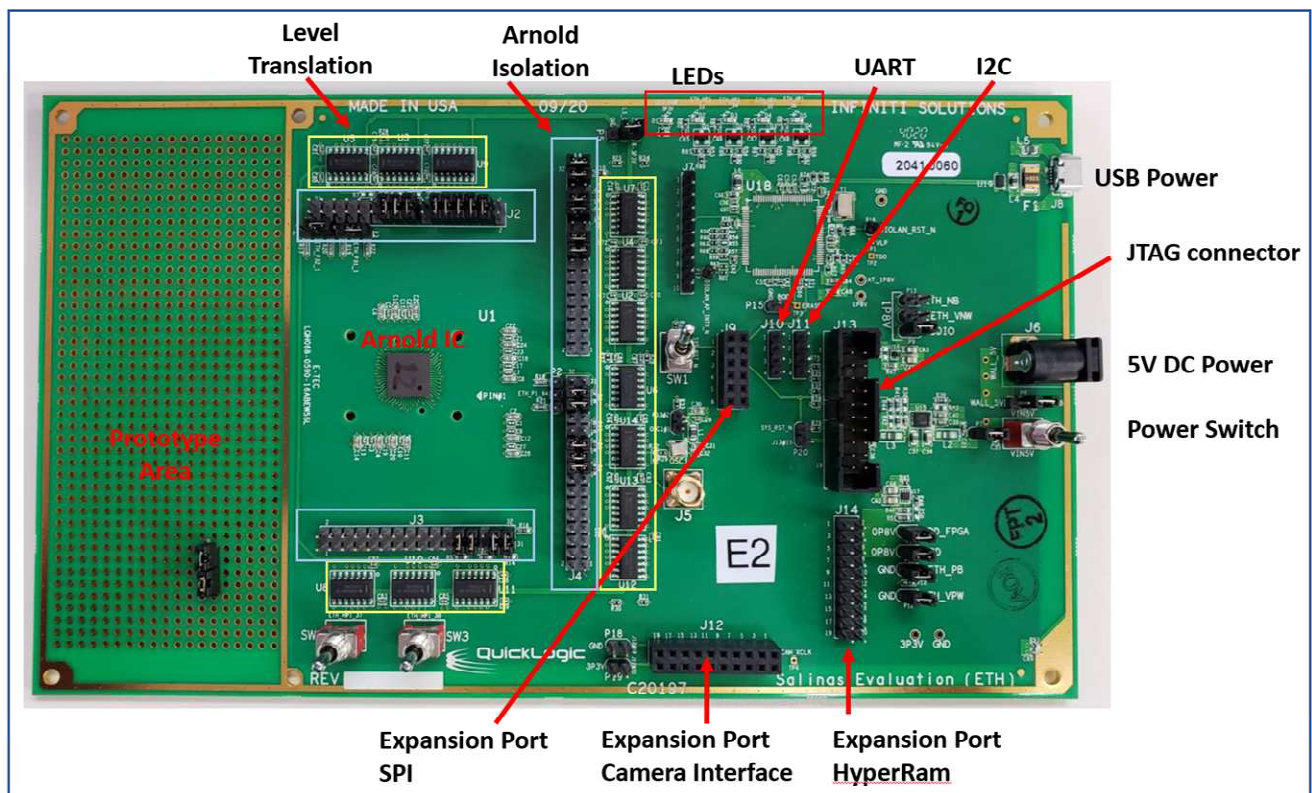


Figure 2: QuickFeather HDK Board Layout Overview

Hardware Switches

Power Switch (SW4)

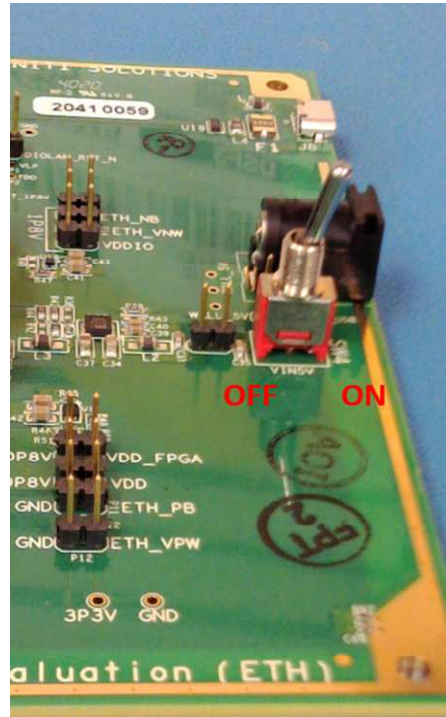


Figure 3: SW4 - Power switch

Reset Switch (SW1)

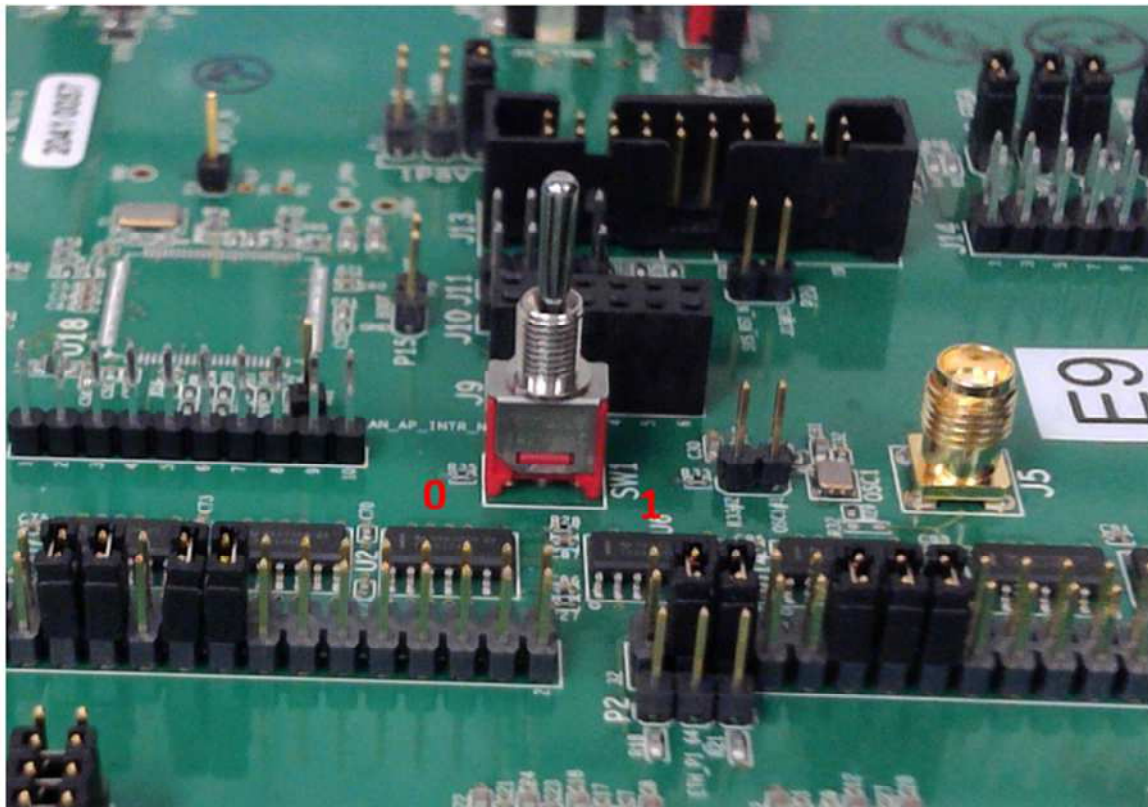


Figure 4: SW1 - Power switch

IO Switches (SW2, SW3)

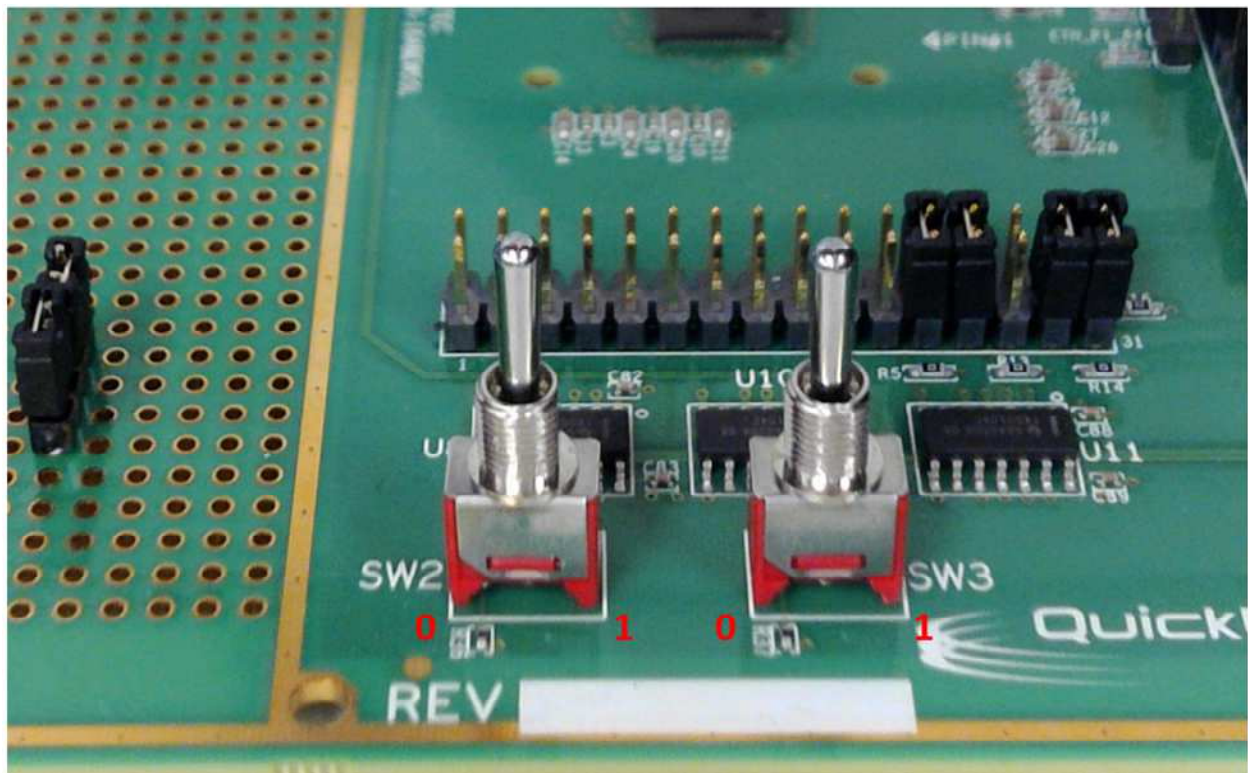


Figure 5: SW1 - Power switch

IO Expansion Connectors

All available IO on expansion connectors are 3.3V IO; the level translator changes the IO voltage from 3.3V to 1.8V for the Arnold IC.

Expansion connector J14



Figure 6: Connector J14

J14	Arnold Device Package Pin #	Dedicated Function
1	17	HYPER RAM CK
2	41	HYPER RAM CSn0
3	46	HYPER RAM CKn
4	42	HYPER RAM CSn1
5	33	HYPER RAM DQ0
6	43	HYPER RAM RWDS
7	34	HYPER RAM DQ1
8		3.3V
9	35	HYPER RAM DQ2
10		1.8V
11	36	HYPER RAM DQ3
12		GND
13	37	HYPER RAM DQ4
14	30	SPIs MISO
15	38	HYPER RAM DQ5
16	27	SPIs MOSI
17	39	HYPER RAM DQ6
18	29	SPIs CLK
19	40	HYPER RAM DQ7
20	28	SPIs SSn

Expansion connector J12



Figure 7: Connector J12

J12	Arnold Device Package Pin #	Dedicated Function
1		3.3V
2		GND
3	61	CAM SCL
4	60	CAM SDA
5	14	CAM VSYNC
6	1	CAM HSYCN
7	11	CAM PCLK
8		CAM_XCLK
9	56	CAM D7
10	55	CAM D6
11	54	CAM D5
12	53	CAM D4
13	52	CAM D3
14	51	CAM D2
15	50	CAM D1
16	49	CAM D0
17		NC
18		NC
19		GND - Must Install P18
20		3.3V - Must Install P19

Expansion connector J9, J10 and J11

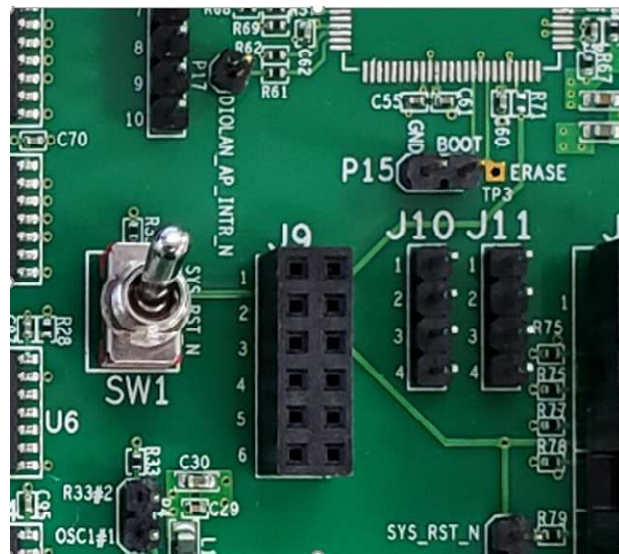


Figure 8: Connector J9, J10, J11

J9	Arnold Device Package Pin #	Dedicated Function
1	6	PMOD CSn
2	2	PMOD SI/SDIO0
3	3	PMOD SO/SDIO1
4	8	PMOD SCK
5		GND
6		3.3V
7	7	PMOD NC/CSn1
8	62	SYS_RST_N
9	4	PMOD WP/SDIO2
10	5	PMOD HLC/SDIO3
11		GND
12		3.3V

J10	Arnold Device Package Pin #	Dedicated Function
1		3.3V
2	9	UART RX
3	10	UART TX
4		GND

J11	Arnold Device Package Pin #	Dedicated Function
1		3.3V
2	60	I2C SDA
3	61	I2C SCL
4		GND

JTAG Connector J13

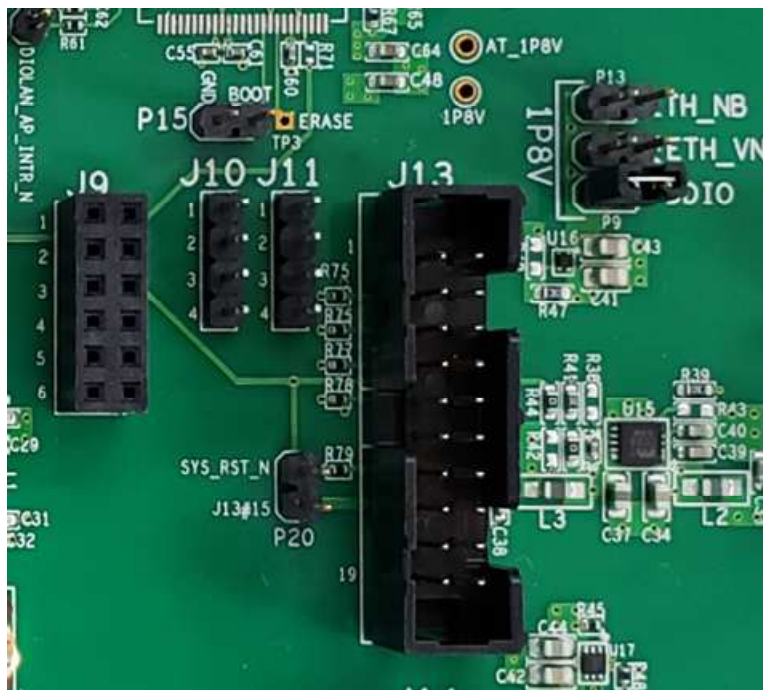


Figure 9: Connector J13

J13	Arnold Device Package Pin #	Dedicated Function
1		3.3V
2		NC
3	22	JTAG RSTn
4		GND
5	19	JTAG TDI
6		GND
7	21	JTAG TMS
8		GND
9	18	JTAG TCK
10		GND
11		NC
12		GND
13	20	JTAG TDO
14		GND
15	62	SYS_RST_N – Must Install P20
16		GND
17		NC
18		GND
19		NC
20		GND

Apply Power to the PCB

- Install shunt to select USB Power or Jack Power: P6
- Install shunt to enable power: P7
- Flip switch SW4 to ON

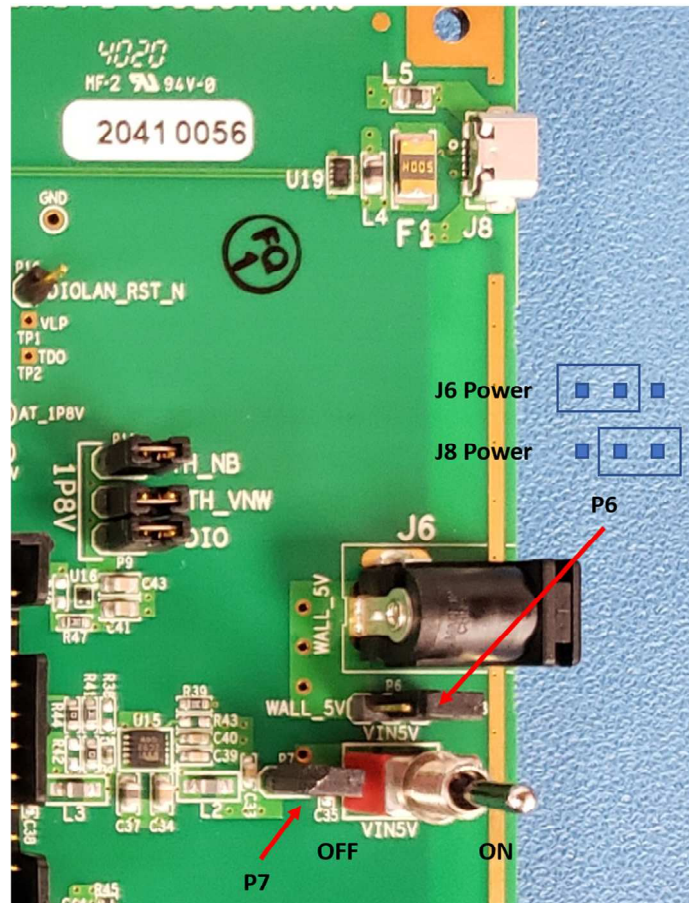


Figure 10: Connector J13

Revision

Version	Date	Revision
1.0	October 2020	First release.
1.1	November 2020	Update pin #