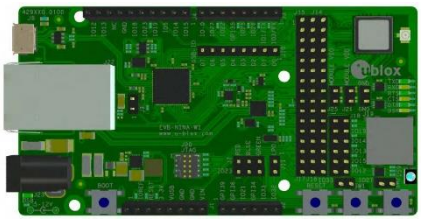
S

EVK-NINA-W1/EVK-NINA-B2

Evaluation kit for NINA-W1 and NINA-B2 modules

User guide



Abstract

This document describes how to set up the EVK-NINA-W1/EVK-NINA-B2 evaluation kits to evaluate NINA-W1 series and NINA-B2 series stand-alone modules. It also describes the different options for debugging and the development capabilities included in the evaluation board.

www.u-blox.com

UBX-17011007 - R07

Document information

Title	**EVK-NINA-W1/EVK-NINA-B2**	
Subtitle	Evaluation kit for NINA-W1 and NINA-B2 modules	
Document type	User guide	
Document number	UBX-17011007	
Revision and date	R07	5-Sep-2019
Disclosure restriction		

This document applies to the following products:

Product name	Software version	PCN reference
EVK-NINA-W101	N/A	-
EVK-NINA-W102	N/A	-
EVK-NINA-W131	N/A	-
EVK-NINA-W132	N/A	-
EVK-NINA-W151	N/A	-
EVK-NINA-W152	N/A	-
EVK-NINA-B221	N/A	-
EVK-NINA-B222	N/A	-

Contents

1 Product description

1.1 Overview

The EVK-NINA-W1/EVK-NINA-B2 evaluation kit includes an evaluation board, which can be used as a reference design for the NINA-W1 or NINA-B2 series modules, a quick start guide, and a USB cable.

For the NINA-B221 and the NINA-W1x1 module, the evaluation board is prepared with a U.FL coaxial connector for connecting the external antenna. The NINA-B222 and the NINA-W1x2 modules have an onboard antenna; thus the EVK-NINA-B222 and the EVK-NINA-W1x2 evaluation board does not have a U.FL connector.

The main features of the EVK-NINA-W1/EVK-NINA-B2 are:

- Available in several variants:
  - NINA-B221 and NINA-B222
  - NINA-W101 and NINA-W102
  - NINA-W131 and NINA-W132
  - NINA-W151 and NINA-W152
- All of the module pins are available at connectors or jumpers
- Can be powered through USB (J8) or external power supply (J23)
- Equipped with a Quad High Speed USB to Multipurpose UART/MPSSE IC (FT4232) that allows serial communication and flashing over USB.

The EVK-NINA-W1/EVK-NINA-B2 evaluation kits are available in the following variants, depending on the NINA module that is mounted on the EVK:

- EVK-NINA-B221 – Evaluation kit for NINA-B221 module, RF port available on U.FL connector (J21)
- EVK-NINA-B222 – Evaluation kit for NINA-B222 module with onboard antenna
- EVK-NINA-W101 – Evaluation kit for NINA-W101 module, RF port available on U.FL connector (J21)
- EVK-NINA-W102 – Evaluation kit for NINA-W102 module with onboard antenna
- EVK-NINA-W131 – Evaluation kit for NINA-W131 module, RF port available on U.FL connector (J21)
- EVK-NINA-W132 – Evaluation kit for NINA-W132 module with onboard antenna
- EVK-NINA-W151 – Evaluation kit for NINA-W151 module, RF port available on U.FL connector (J21)
- EVK-NINA-W152 – Evaluation kit for NINA-W152 module with onboard antenna

This section describes the main connectors and settings that are required to get started. Figure 1 and Figure 2 show the two different antenna variants of the EVK-NINA-W1/EVK-NINA-B2 evaluation board.

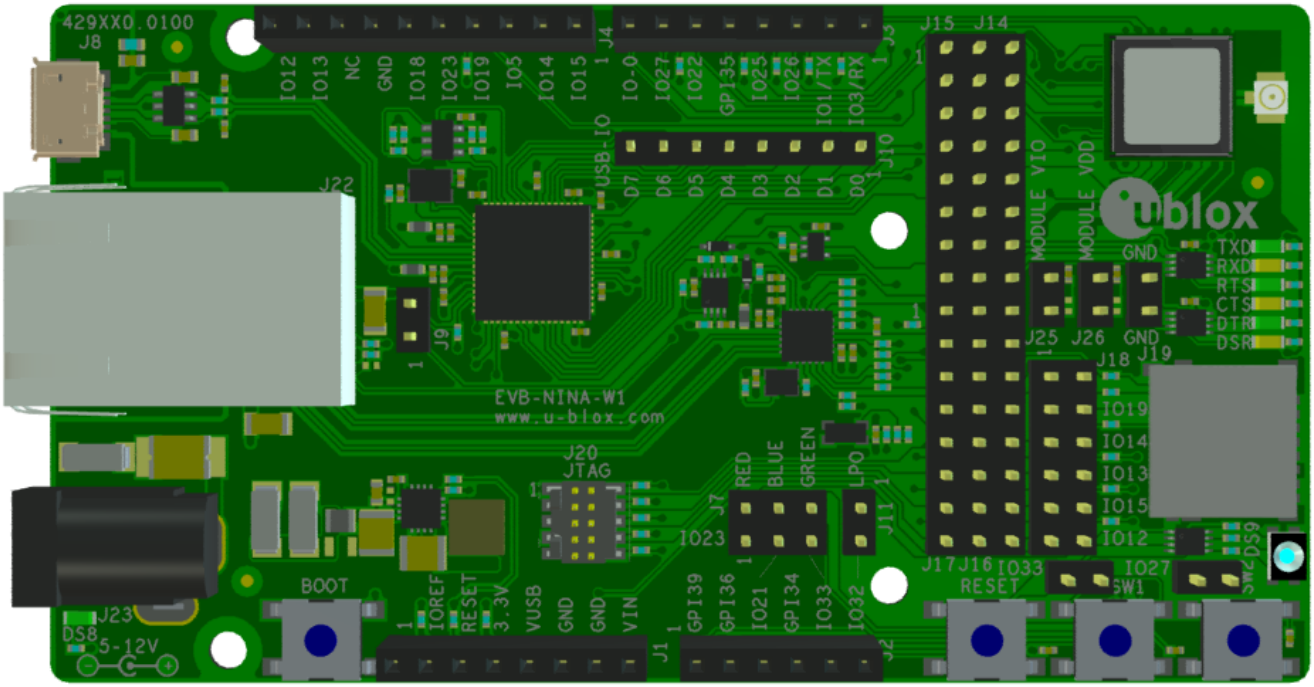


Figure 1: EVK-NINA-W1/EVK-NINA-B2 evaluation board with U.FL connector for external antenna

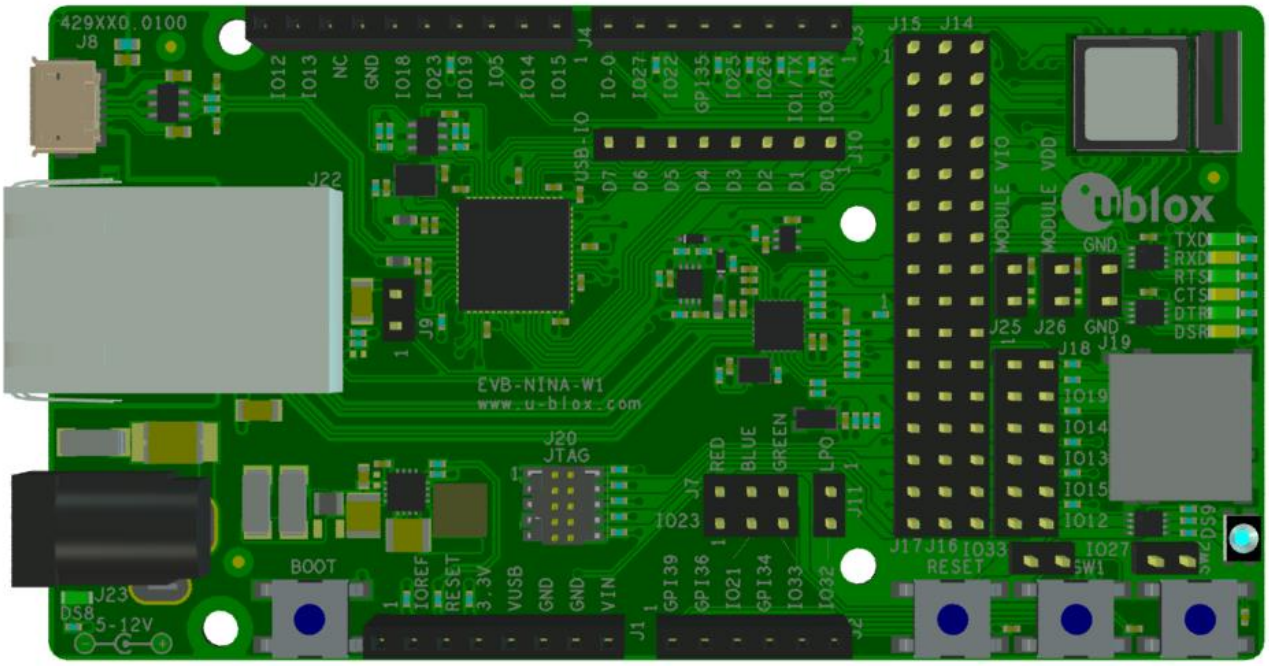


Figure 2: EVK-NINA-W1/EVK-NINA-B2 evaluation board with internal antenna

⚠ Take care while handling the EVK-NINA-B222 and EVK-NINA-W1x2. Applying force to the NINA module might damage the internal antenna.

1.2 Kit includes

1.2.1 EVK-NINA-B221 and EVK-NINA-W1x1

The EVK-NINA-B221 and EVK-NINA-W1x1 evaluation kits include the following:

- EVK-NINA-B221 or EVK-NINA-W1x1 evaluation board
- 2.4 GHz foldable antenna (Ex-It 2400) with reverse polarity SMA connector

- RP-SMA - U.FL cable assembly, 100 mm length
- USB cable
- Quick Start guide

1.2.2 EVK-NINA-B222 and EVK-NINA-W1x2

The EVK-NINA-B222 and EVK-NINA-W1x2 evaluation kits include the following:

- EVK-NINA-B222 and EVK-NINA-W1x2
- USB cable
- Quick Start guide

1.3 I/O allocation

The block diagram in Figure 3 provides a better understanding of how I/O signals from the module are made available at connectors and/or interfaces of the EVK.

Sixteen (16) I/O signals are available at the middle row of the I/O allocator. These signals can be distributed to connectors and/or interfaces on the EVK by use of jumpers to connect the associated middle and outer row pin(s).

The signals IO-12, IO-13, IO-14 and IO-15 can be disconnected from the J4 connector by not populating the corresponding jumpers at J18. This can be useful if the SDIO signals D2, D3, CLK, and CMD are directed to the SD card reader (J19).

Eight signals are connected directly between the module and the J2 or J3 connector.

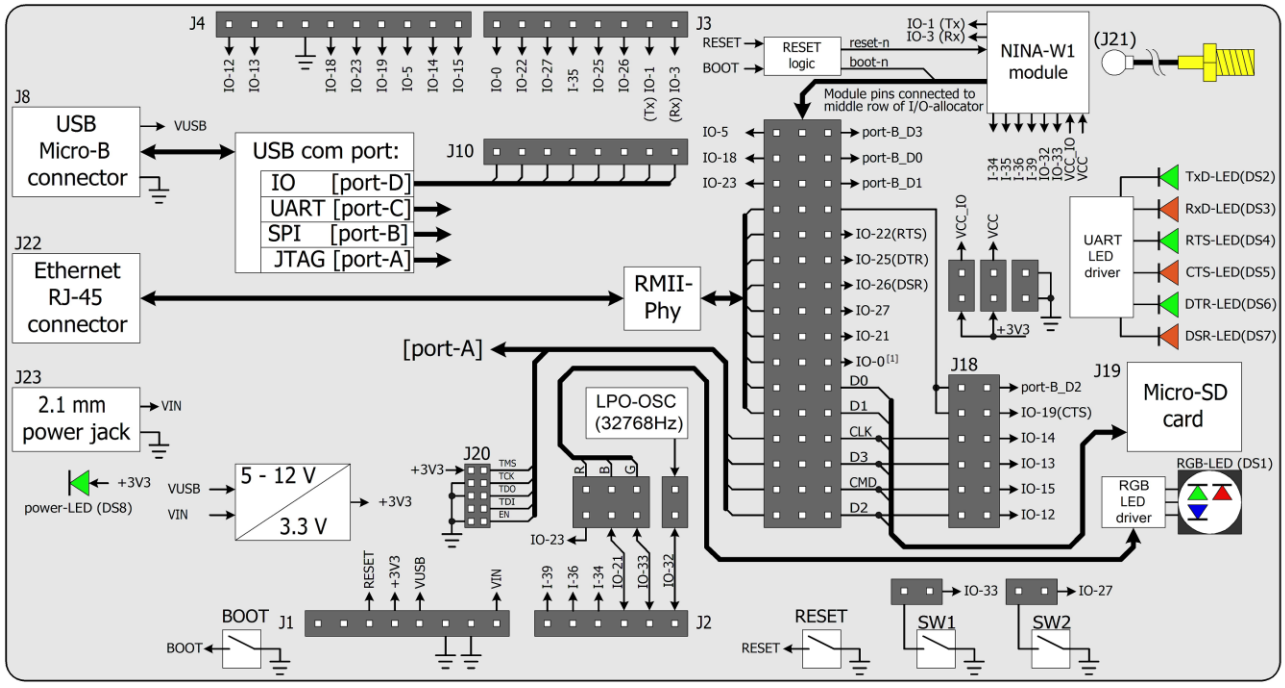


Figure 3: Block diagram of EVK-NINA-W10

☞ When reset-n is released, the module pin 27 is read as boot-n. When IO-0 is connected to the module, it must be held high during start up.

1.4 Jumper description

Parameter	Description	Name	Default
Enable SW1	Jumper at J5-1_J5-2 connects switch 1 to module pin-7	J5	☑
Enable SW2	Jumper at J6-1_J6-2 connects switch 2 to IO-27 (Jumper at J14-15_J14-16 must be populated to connect IO27 to module pin-18)	J6	☑
Enable RGB-LED	Jumper at J7-1_J7-2 connects RED LED to IO-23 (Jumper at J15-3_J14-5 must be populated to connect IO23 to module pin-1)	J7-RED	☑
	Jumper at J7-3_J7-4 connects BLUE LED to IO-21 (Jumper at J16-1_J16-2 must be populated to connect IO21to module pin-8)	J7-BLUE	☑
	Jumper at J7-5_J7-6 connects GREEN LED to IO-33	J7-GREEN	☑
IO/Interface select	Module pin to IO/Interface distribution	J14	See Table 3
IO/Interface select	Module pin to IO/Interface distribution	J15	See Table 3
IO/Interface select	Module pin to IO/Interface distribution	J16	See Table 3
IO/Interface select	Module pin to IO/Interface distribution	J17	See Table 3
IO/Interface select	Module pin to IO/Interface distribution	J18	See Table 3
Enable VCC_IO	Connects EVK internal 3.3 V to module pin-9 to supply module VCC_IO	J25	☑
Enable VCC	Connects EVK internal 3.3 V to modle pin-10 to supply module VCC	J26	☑

Table 1: EVK-NINA-W1/EVK-NINA-B2 jumper descriptions

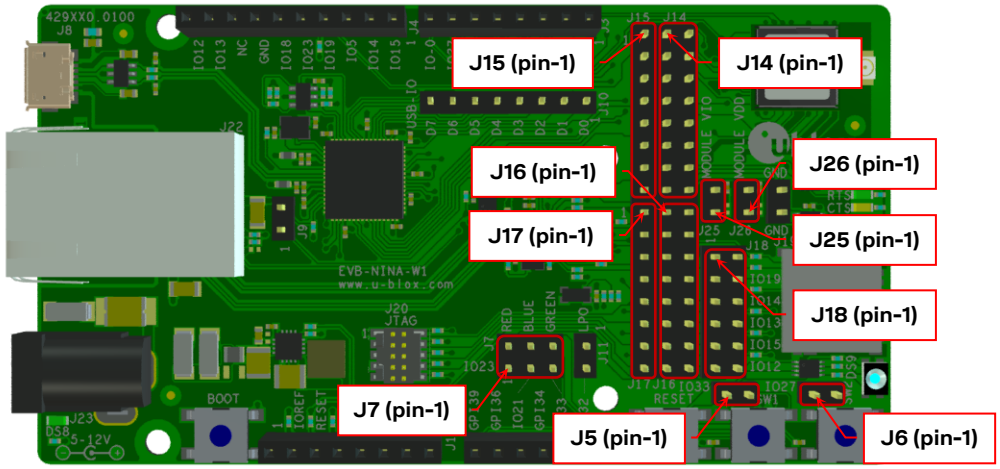


Figure 4: Jumper positions on the EVK

Middle row jumper pin	Connected to
J14-1	Module pin-28
J14-3	Module pin-29
J14-5	Module pin-1
J14-7	Module pin-21
J14-9	Module pin-20
J14-11	Module pin-16
J14-13	Module pin-17
J14-15	Module pin-18

Middle row jumper pin	Connected to
J16-1	Module pin-8
J16-3	Module pin-27
J16-5	Module pin-25
J16-7	Module pin-24
J16-9	Module pin-31
J16-11	Module pin-35
J16-13	Module pin-32
J16-15	Module pin-36

Table 2: Available module pins at the middle row of jumpers J14 and J16

Connected to	Left row jumper pin	Middle row jumper pin	Right row jumper pin	Connected to	Default
IO-5, J4 pin-3	J15-1	J14-1	J14-2	SPI_CS, U5-PB-3	[J15-1_J14-1]
IO-18, J4 pin-6	J15-2	J14-3	J14-4	SPI_CLK, U5-PB-0	[J15-2_J14-3]
IO-23, J4 pin-5	J15-3	J14-5	J14-6	SPI_MOSI, U5-PB-1	[J15-3_J14-5]
reserved	J15-4	J14-7	J14-8	J18 pin-1_3	[J14-7_J14-8]
reserved	J15-5	J14-9	J14-10	IO-22, J3 pin-6 (RTS)	[J14-9_J14-10]
reserved	J15-6	J14-11	J14-12	IO-25, J3 pin-4 (DTR)	[J14-11_J14-12]
reserved	J15-7	J14-13	J14-14	IO-26, J3 pin-3 (DSR)	[J14-13_J14-14]
reserved	J15-8	J14-15	J14-16	IO-27, J3 pin-7	[J14-15_J14-16]
reserved	J17-1	J16-1	J16-2	IO-21, J2 pin-3	[J16-1_J16-2]
reserved	J17-2	J16-3	J16-4	IO-0, J3 pin-8	[J16-3_J16-4]
reserved	J17-3	J16-5	J16-6	reserved	
reserved	J17-4	J16-7	J16-8	reserved	
Reserved	J17-5	J16-9	J16-10	J18 pin-5	[J16-9_J16-10]
Reserved	J17-6	J16-11	J16-12	J18 pin-7	[J16-11_J16-12]
Reserved	J17-7	J16-13	J16-14	J18 pin-9	[J16-13_J16-14]
Reserved	J17-8	J16-15	J16-16	J18 pin-11	[J16-15_J16-16]

Table 3: IO-allocation via jumpers J14, J15, J16, and J17

Connected to	Left row jumper pin	Right row jumper pin	Connected to	Default
J14-8	J18-1	J18-2	SPI_MISO, U5-PB-2	
J14-8	J18-3	J18-4	IO-19, J4 pin-4 (CTS)	[J18-3_J18-4]
J16-10	J18-5	J18-6	IO-14, J4 pin-2	[J18-5_J18-6]
J16-12	J18-7	J18-8	IO-13, J4 pin-9	[J18-7_J18-8]
J16-14	J18-9	J18-10	IO-15, J4 pin-1	[J18-9_J18-10]
J16-16	J18-11	J18-12	IO-12, J4 pin-10	[J18-11_J18-12]

Table 4: IO-allocation via jumper J18

1.4.1 Default jumper configuration

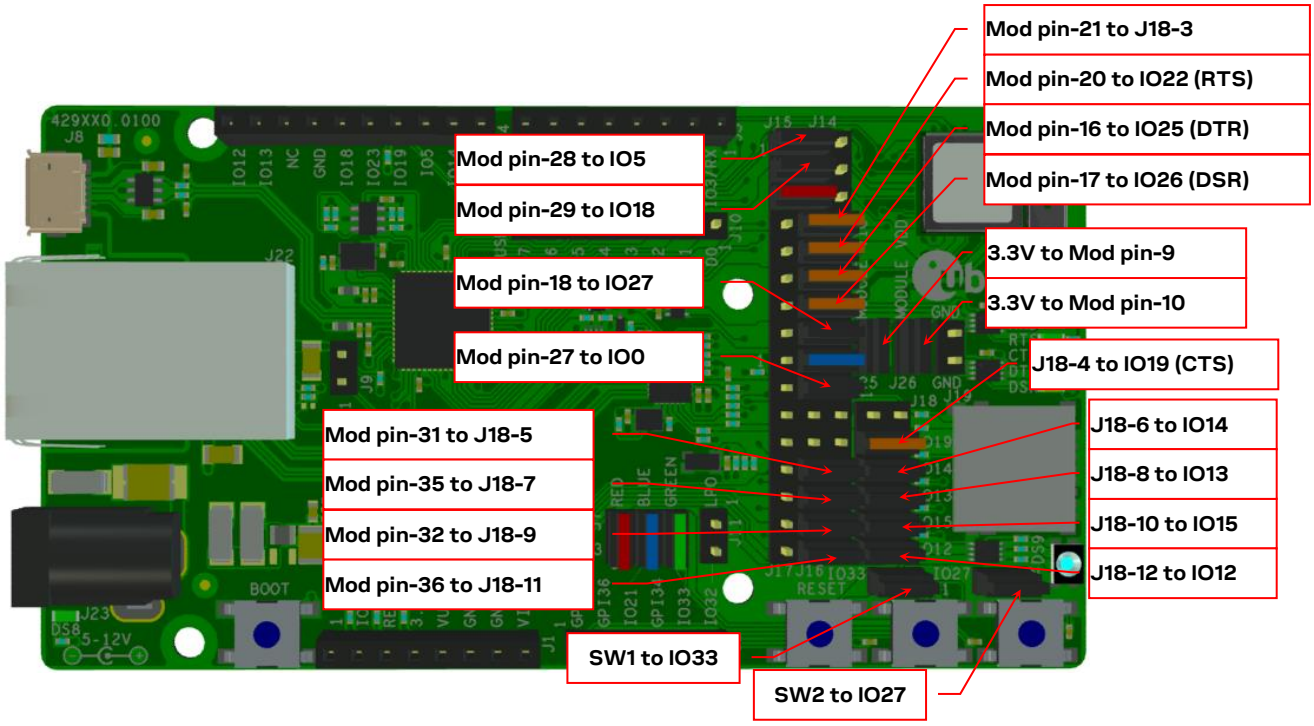


Figure 5: Jumper configuration to enable UART, IOs, and switches 1 and 2

1.4.2 RMII to PHY jumper configuration

The jumpers shown in Figure 6 must be inserted to connect the 10Base-T/100Base-TX PHY with the associated module RMII interface pins.

When the RMII PHY is connected to the module, the “BLUE-LED” is not available at IO-21.

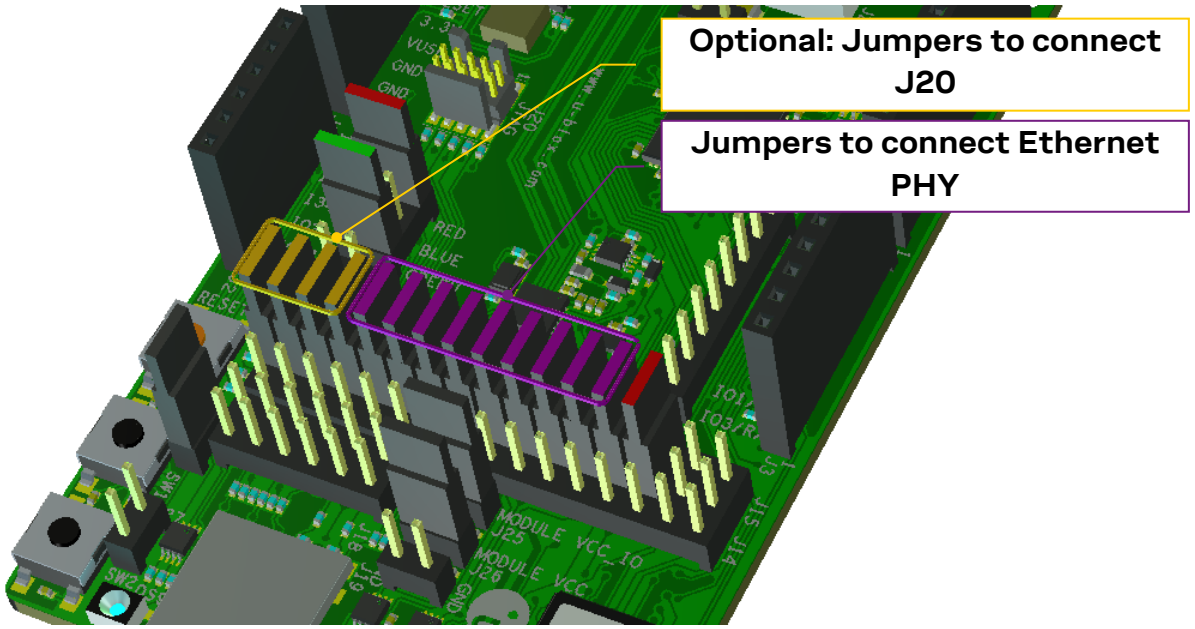


Figure 6: RMII to PHY jumper configuration

1.5 LEDs

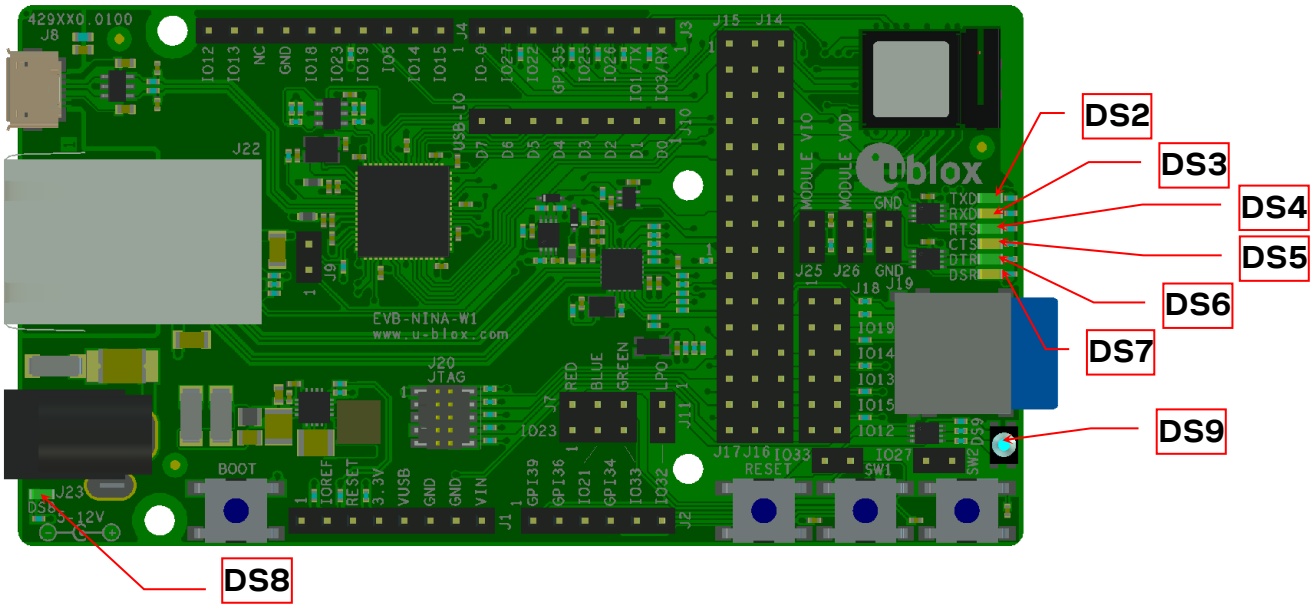


Figure 7: Position of LEDs on EVK-NINA-W1/EVK-NINA-B2

Function	Description	Name	Color
Power LED	Supplied from the EVK 3.3 V DC/DC converter	DS8	Green
UART TxD	Flashing LED indicates UART Tx activity (output from the module)	DS2	Green
UART RxD	Flashing LED indicates UART Rx acitivty (input to the module)	DS3	Amber
UART RTS	LED indicates UART RTS status (output from the module)	DS4 [1]	Green
UART CTS	LED indicates UART CTS status (input to the module)	DS5 [1]	Amber
UART DTR	LED indicates UART DTR status (output from the module)	DS6 [1]	Green
UART DSR	LED indicates UART DSR status (input to the module)	DS7 [1]	Amber
status	RGB LED shows status for u-connectXpress ☞ See the data sheet for NINA-W10, NINA-W13, NINA-W15 and NINA-B2 for additional information.	DS9 [1]	RGB

Table 5: EVK-NINA-W1/EVK-NINA-B2 LEDs description

☞ [1] To control the LEDs, the corresponding signal jumper(s) must be populated.

1.5.1 RGB-LED jumper configuration

The jumpers shown in Figure 7 must be inserted to connect the RGB-LED driver with the associated module pins.

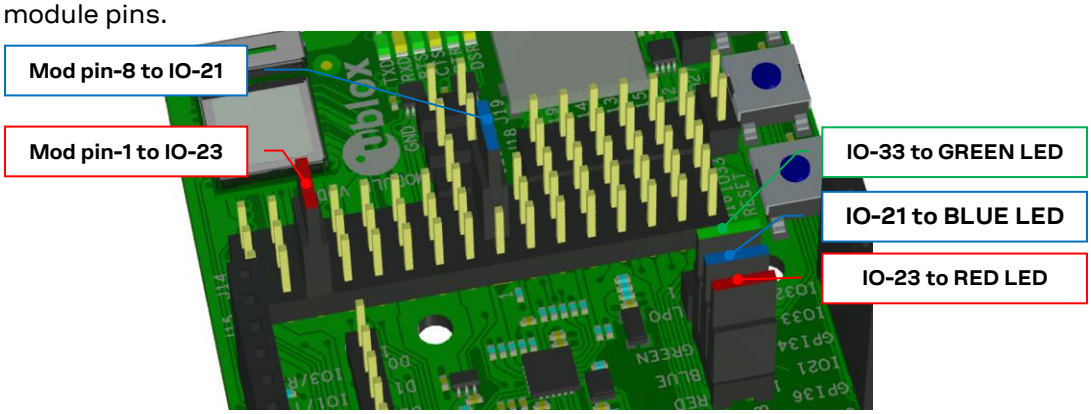


Figure 8: RGB-LED to IO signals jumpers

1.6 Connectors

The available connectors on the EVK-NINA-W1/EVK-NINA-B2 board are shown in Figure 9.

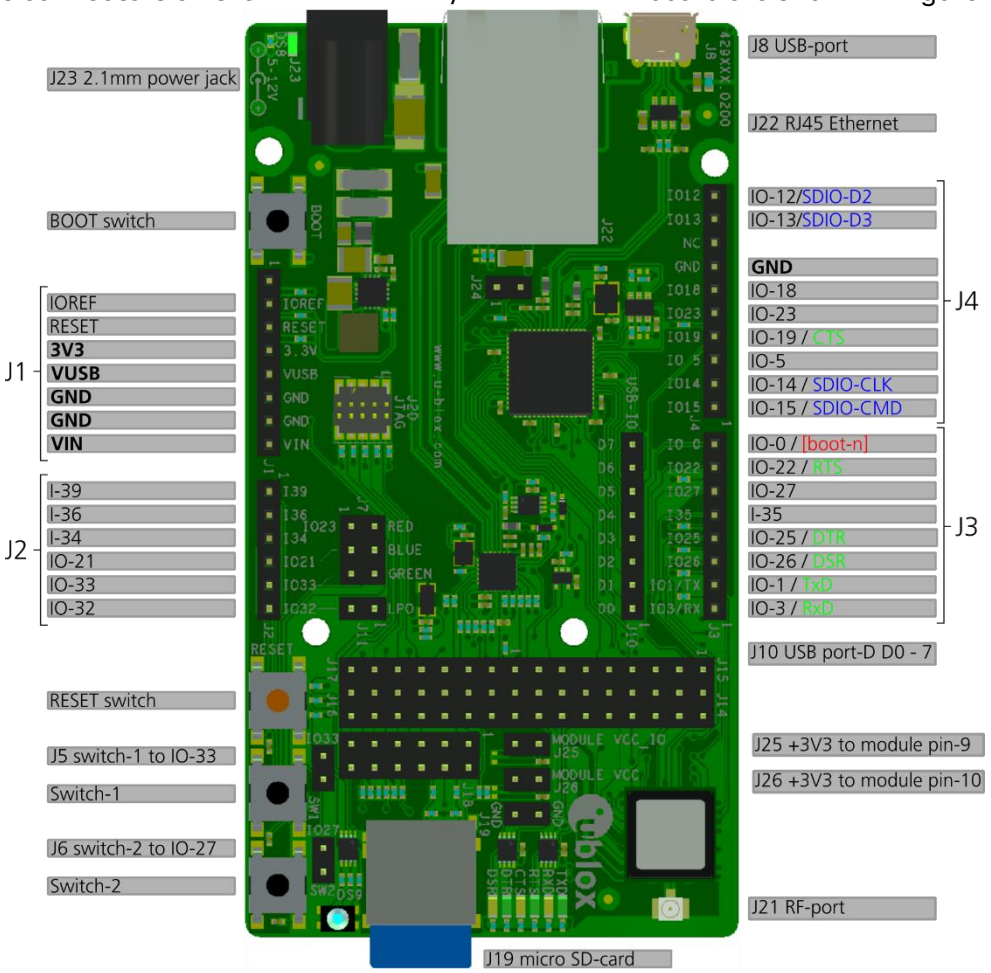


Figure 9: EVK-NINA-W1/EVK-NINA-B2 connectors

Connector	Description
J1, J2, J3, J4	Connectors for accessing the NINA-W1 IO signals (GPIO)
J8	USB connector; type Micro-B
J10	Reserved
J21	RF-port at U.FL coaxial connector for external antenna (not used on EVK-NINA-B221 or EVK-NINA-W1x2)
J22	RJ45 connector, RMII to PHY
J23	2.1 mm Power jack, positive center pin, 5 – 12 V

Table 6: EVK-NINA-W1/EVK-NINA-B2 connector descriptions

1.7 Buttons

The EVK-NINA-W1/EVK-NINA-B2 evaluation board has four buttons as explained in Table 7. Two of them can be connected to NINA pins via jumper configuration.

Button	Description
RESET	Reset button, triggers the reset logic that pulls module pin-19 low
BOOT	If reset is asserted pressing BOOT-switch will pull module pin-27 low
SW1	General function button connected to jumper J5 pin-2
SW2	General function button connected to jumper J6 pin-2

Table 7: EVK-NINA-W1/EVK-NINA-B2 buttons descriptions

1.8 Configuration options

Module pin number	IO- signal	Primary function	Accessible at Jumper/Connector	Module pin number	IO-signal	Primary function	Accessible at Jumper/Connector
1	GPIO-23		J14-5, [J4-5, J7-1] (1)	20	GPIO-22	UART_RTS	J14-9, [J3-7] (1)
2	GPI-34		J2-3	21	GPIO-19	UART_CTS	J14-7, [J4-4] (1)(2)
3	GPI-39		J2-1	22	GPIO-1	UART_TXD	J3-2
4	GPI-36		J2-2	23	GPIO-3	UART_RXD	J3-1
5	GPIO-32		J2-6, J11-2	24	GPIO-4		J16-7
6,12, 14	GND		J1-6,-7, J4-7, J12-1,-2	25	GPIO-2		J16-5
7	GPIO-33		J2-5, J5-1, J7-5	26, 30	GND		J1-6,-7, J4-7, J12-1,-2
8	GPIO-21		J16-1, [J2-4, J7-3] (1)	27	GPIO-0		J16-3, [J3-8] (1)
9	VCC_IO		J25-2	28	GPIO-5		J14-1, [J4-3] (1)
10	VCC		J26-2	29	GPIO-18		J14-3, [J4-6] (1)
13	RF-port	Antenna	J21	31	GPIO-14		J16-9, [J4-2] (1)(2)
16	GPIO-25	UART_DTR	J14-11, [J3-4] (1)	32	GPIO-15		J16-13, [J4-1] (1)(2)
17	GPIO-26	UART_DSR	J14-13, [J3-3] (1)	34	GPI-35		J3-5
18	GPIO-27		J14-15, [J3-6, J6-1] (1)	35	GPIO-13		J16-11, [J4-9] (1)(2)
19	RESET-N	RESET	(J1-3 via logic)	36	GPIO-12		J16-15, [J4-10] (1)(2)

Table 8: Module pin to IO signal conversion

☞ (1) Connector/jumper placed inside the brackets indicates that a jumper must be positioned at the corresponding position of the IO distribution jumpers J14 – J17 if the IO-signal is to be presented at the designated connector/jumper as mentioned in Table 3.

☞ (2) These IO signals require a second jumper to be positioned at the IO distribution jumper J18 as mentioned in Table 4.

1.8.1 Power supply

The supply voltage to the EVK-NINA-W1/EVK-NINA-B2 evaluation board can be sourced from the following connectors:

- USB (J8)

☞ Depending on your USB source, the USB supply current may be insufficient.

- External power supply (J23): The external supply voltage must be in the range 5 – 12 V

2 Setting up the evaluation board

The EVK-NINA-W10 is delivered without any software (open CPU) and the software must be developed by the user.

The EVK-NINA-B2, EVK-NINA-W13, and EVK-NINA-W15 are delivered with the u-blox connectivity software pre-flashed on the module.

⚠ The module is designed to be used only with the applicable software and only compatible software can be flashed on the module.

Before connecting the module, download and install the latest u-blox s-center evaluation software from the u-blox website.

Plug in external supply power at connector J23 or connect J8 (USB type Micro B) to a USB host using the USB cable. The status light (DS8) will turn green, indicating that the internal EVK 3.3 V is on.

⚠ When using the evaluation board with external antenna, before powering up the EVK, ensure that you have connected the 2.4 GHz antenna with the U.FL antenna connector (J21). Failing to do so may cause undesired operation.

⚠ Be careful to check polarity before connecting external power supply to the evaluation board. Center conductor is positive (+) and the ring is negative (-).

⚠ The current consumption during startup of the evaluation board can be high.

The operating system will install the correct COM port drivers automatically. The drivers will need to be installed only when you connect the unit to a new computer for the first time. For more information about the COM ports and their configuration, see the FTDI FT4232H Datasheet [6].

One COM port will automatically be assigned to the unit by the Windows OS. To view the assigned COM ports on Windows 7, follow the steps mentioned below:

- Open the **Control Panel** and click **Hardware and Sound**.
- Click **Device Manager** in **Devices and Printers**. This will open the Device Manager window where you can view the assigned COM ports.

2.1 EVK without software (open CPU)

The chapter is applicable to the following EVKs.

- EVK-NINA-W101
- EVK-NINA-W102

When using the NINA-W10 open CPU variant, it is not possible to download the u-blox connectivity software. Use the software developed and compiled using the Espressif SDK on this variant.

Information on how to build and FLASH the module when using Espressif SDK is available at the following URL - http://esp-idf.readthedocs.io/en/latest/get-started/index.html.

This URL webpage provides information on how to set up the software environment using the hardware based on the Espressif ESP32 such as NINA-W10 and also how to use the ESP-IDF (Espressif IoT Development Framework).

The following steps must be performed to compile, flash, and execute a program on NINA-W10:

- **Set up the Toolchain**
  - Windows, Mac, and Linux is supported

- **Get the ESP-IDF**
  - Download the GIT repository provided by Espressif
- **Setup Path to ESP-IDF**
  - The tool chain program can access the ESP-IDF using the IDF_PATH environment variable
- **Build and Flash**
  - Start a Project, Connect, Configure, Build and Flash a program

More information about this is available at http://esp-idf.readthedocs.io/en/latest/index.html

More information on this topic can be found in the NINA-W1 System Integration Manual [7].

2.2 EVK with u-blox connectivity software

This section is applicable for the following EVKs:

- EVK-NINA-B221
- EVK-NINA-B222
- EVK-NINA-W131
- EVK-NINA-W132
- EVK-NINA-W151
- EVK-NINA-W152

2.2.1 Starting up

Perform the following steps to enable communication with the module:

1. Start the u-blox s-center evaluation software.
2. Use the default baud rate 115200, 8N1 with flow control. Now, it is possible to communicate with the module through AT commands.

For a list of available AT commands, see the u-blox Short Range AT Commands Manual [5].

2.2.2 Getting the latest software

Go to the u-blox support web page to obtain the latest available software. Instructions on reflashing the evaluation board can be found in the Software section of the NINA-B2 System Integration Manual [8] or the NINA-W1 System Integration Manual [7].

Appendix

A Layouts

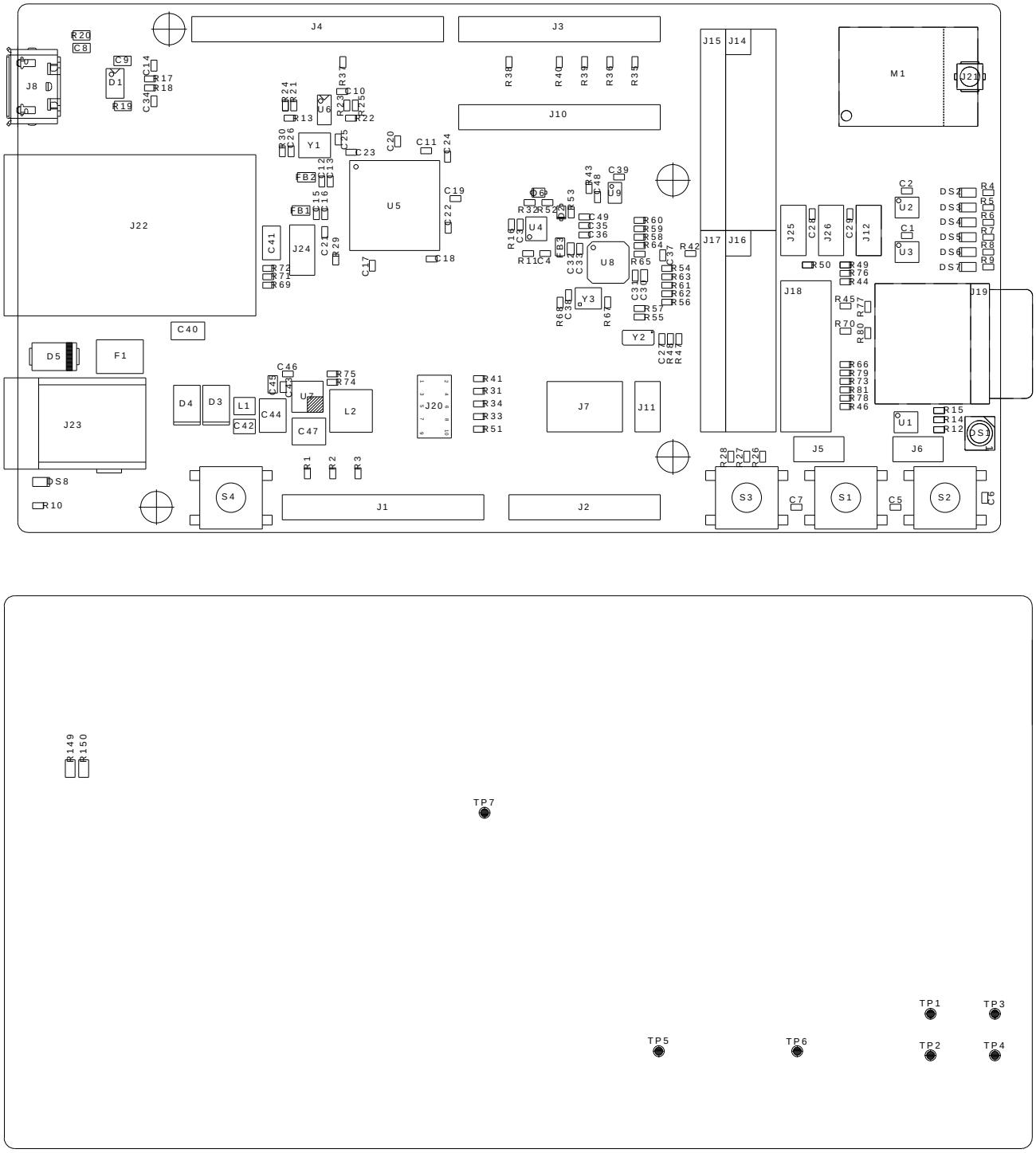
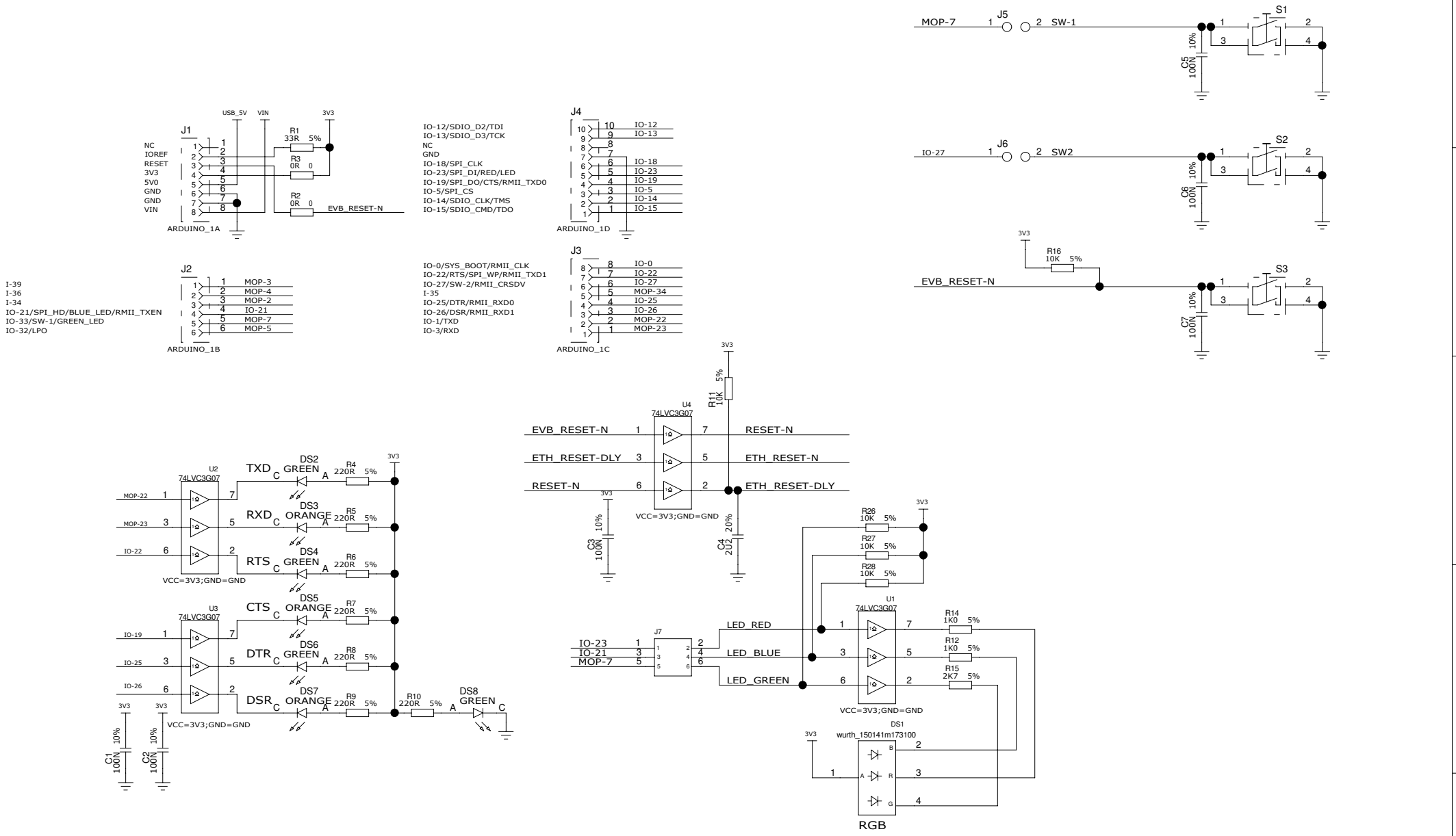
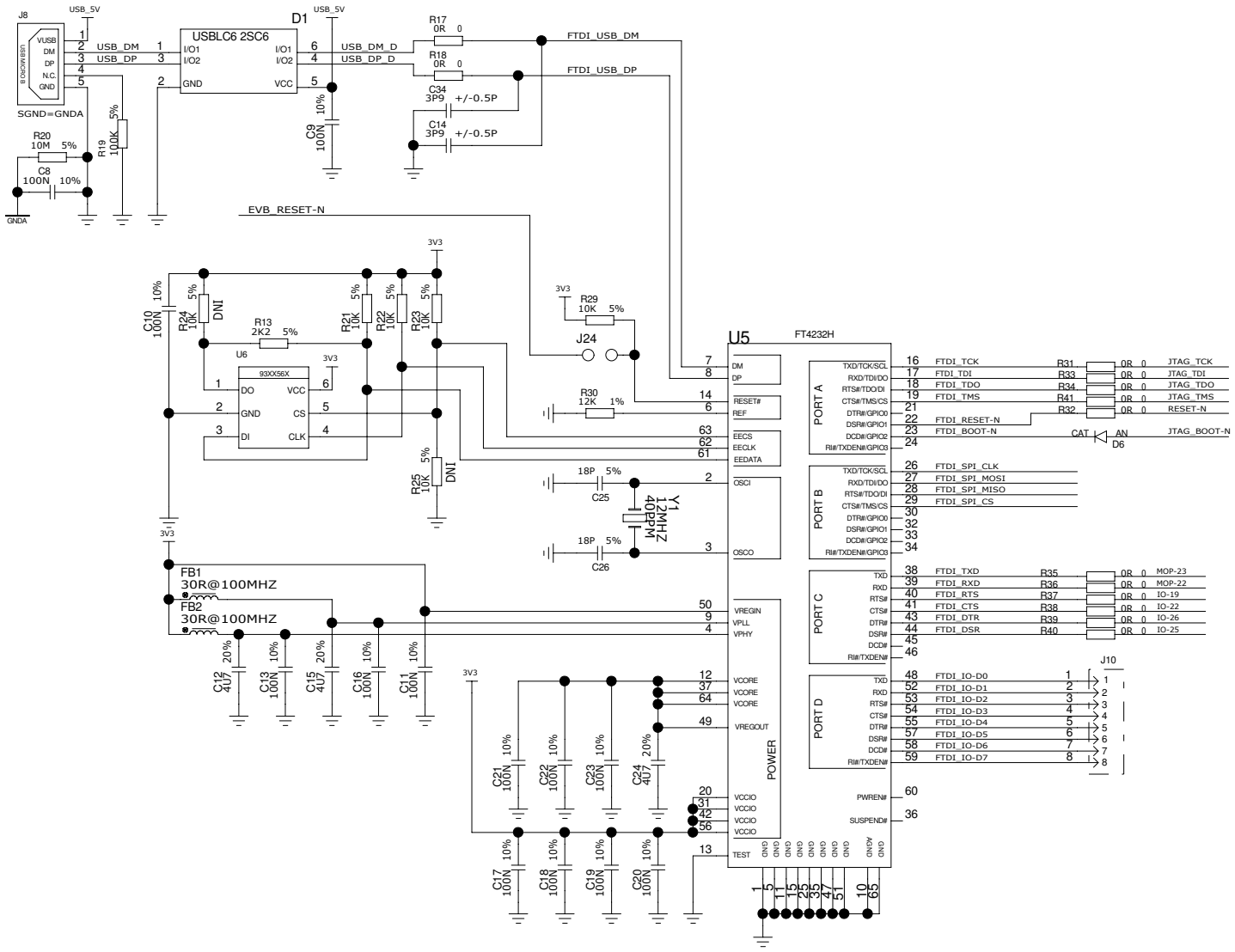


Figure 10: Primary and secondary side layouts of EVK-NINA-W1/EVK-NINA-B2

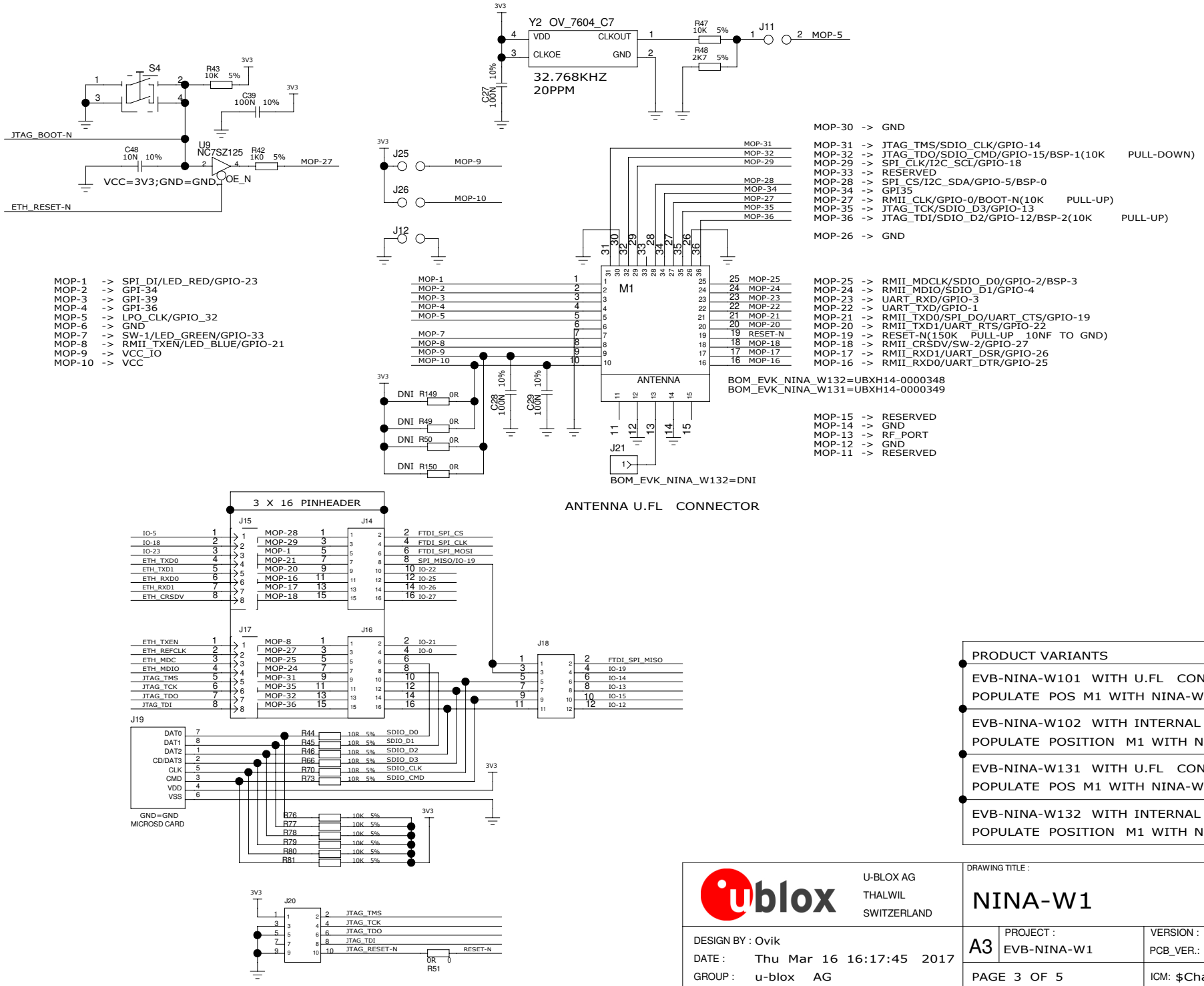
B Schematic drawings

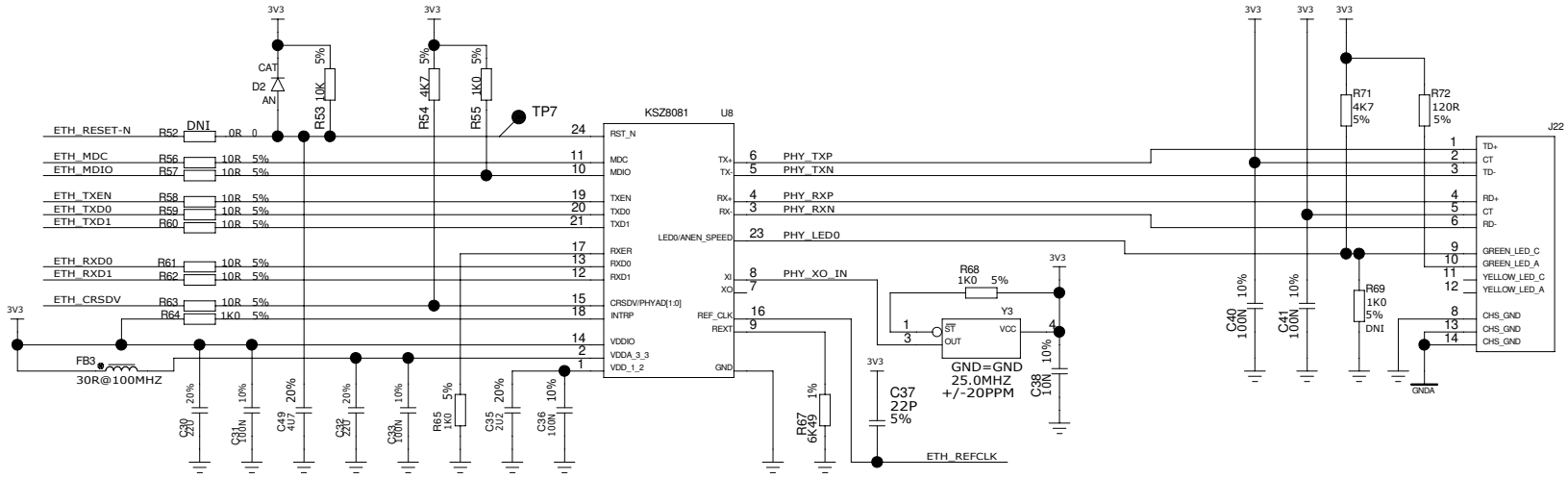


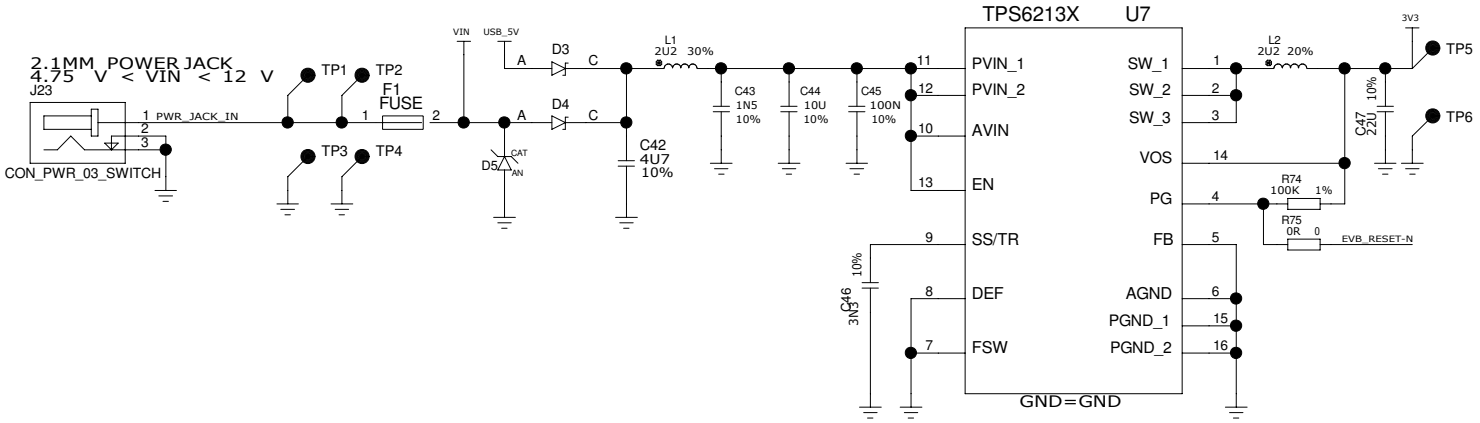
u-blox AG THALWIL SWITZERLAND	DRAWING TITLE : HEADERS/LED/SW	
DESIGN BY : Ovik DATE : Wed Mar 15 16:05:40 2017 GROUP : u-blox AG	A3 PROJECT : EVB-NINA-W1	VERSION : 04 PCB_VER.: B
	PAGE 1 OF 5	ICM: $Change: 583817



u-blox AG THALWIL SWITZERLAND	DRAWING TITLE : USB-FTDI INTERFACE	
DESIGN BY : Ovik DATE : Wed Mar 15 07:44:12 2017 GROUP : u-blox AG	A3 PROJECT : EVB-NINA-W1	VERSION : 04 PCB_VER.: B
	PAGE 2 OF 5	ICM: $Change: 583817


S4
R43 10K 5%
C39 100N 10%
JTAG_BOOT-N
U9 NC7SZ125
C48 10N 10%
R42 1K0 5%
MOP-27
VCC=3V3;GND=GND
OE_N
ETH_RESET-N
Y2 OV_7604_C7
32.768KHZ
20PPM
C27 100N 10%
R47 10K 5%
R48 2K7 5%
J11
MOP-5
J25
MOP-9
J26
MOP-10
J12
M1
ANTENNA
DNI R149 0R
DNI R49 0R
DNI R50 0R
DNI R150 0R
C28 100N 10%
C29 100N 10%
J21
BOM_EVK_NINA_W132=DNI
MOP-1 -> SPI_DI/LED_RED/GPIO-23
MOP-2 -> GPI-34
MOP-3 -> GPI-39
MOP-4 -> GPI-36
MOP-5 -> LPO_CLK/GPIO_32
MOP-6 -> GND
MOP-7 -> SW-1/LED_GREEN/GPIO-33
MOP-8 -> RMII_TXEN/LED_BLUE/GPIO-21
MOP-9 -> VCC_IO
MOP-10 -> VCC
MOP-30 -> GND
MOP-31 -> JTAG_TMS/SDIO_CLK/GPIO-14
MOP-32 -> JTAG_TDO/SDIO_CMD/GPIO-15/BSP-1(10K PULL-DOWN)
MOP-29 -> SPI_CLK/I2C_SCL/GPIO-18
MOP-33 -> RESERVED
MOP-28 -> SPI_CS/I2C_SDA/GPIO-5/BSP-0
MOP-34 -> GPI35
MOP-27 -> RMII_CLK/GPIO-0/BOOT-N(10K PULL-UP)
MOP-35 -> JTAG_TCK/SDIO_D3/GPIO-13
MOP-36 -> JTAG_TDI/SDIO_D2/GPIO-12/BSP-2(10K PULL-UP)
MOP-26 -> GND
MOP-25 -> RMII_MDCLK/SDIO_D0/GPIO-2/BSP-3
MOP-24 -> RMII_MDIO/SDIO_D1/GPIO-4
MOP-23 -> UART_RXD/GPIO-3
MOP-22 -> UART_TXD/GPIO-1
MOP-21 -> RMII_TXD0/SPI_DO/UART_CTS/GPIO-19
MOP-20 -> RMII_TXD1/UART_RTS/GPIO-22
MOP-19 -> RESET-N(150K PULL-UP 10NF TO GND)
MOP-18 -> RMII_CRSDV/SW-2/GPIO-27
MOP-17 -> RMII_RXD1/UART_DSR/GPIO-26
MOP-16 -> RMII_RXD0/UART_DTR/GPIO-25
BOM_EVK_NINA_W132=UBXH14-0000348
BOM_EVK_NINA_W131=UBXH14-0000349
MOP-15 -> RESERVED
MOP-14 -> GND
MOP-13 -> RF_PORT
MOP-12 -> GND
MOP-11 -> RESERVED
ANTENNA U.FL CONNECTOR
3 X 16 PINHEADER
J15
J14
J17
J16
J18
J19
IO-5
IO-18
IO-23
ETH_TXD0
ETH_TXD1
ETH_RXD0
ETH_RXD1
ETH_CRSDV
ETH_TXEN
ETH_REFCLK
ETH_MDC
ETH_MDIO
JTAG_TMS
JTAG_TCK
JTAG_TDO
JTAG_TDI
FTDI_SPI_CS
FTDI_SPI_CLK
FTDI_SPI_MOSI
SPI_MISO/IO-19
IO-22
IO-25
IO-26
IO-27
IO-21
IO-0
FTDI_SPI_MISO
IO-19
IO-14
IO-13
IO-15
IO-12
DAT0
DAT1
DAT2
CD/DAT3
CLK
CMD
VDD
VSS
SDIO_D0
SDIO_D1
SDIO_D2
SDIO_D3
SDIO_CLK
SDIO_CMD
GND=GND
MICROSD CARD
J20
JTAG_RESET-N
RESET-N
R51 0R 0
PRODUCT VARIANTS
EVB-NINA-W101 WITH U.FL CONNECTOR
POPULATE POS M1 WITH NINA-W101
EVB-NINA-W102 WITH INTERNAL ANTENNA
POPULATE POSITION M1 WITH NINA-W102
EVB-NINA-W131 WITH U.FL CONNECTOR
POPULATE POS M1 WITH NINA-W131
EVB-NINA-W132 WITH INTERNAL ANTENNA
POPULATE POSITION M1 WITH NINA-W132
U-BLOX AG
THALWIL
SWITZERLAND
DESIGN BY : Ovik
DATE : Thu Mar 16 16:17:45 2017
GROUP : u-blox AG
DRAWING TITLE :
NINA-W1
A3
PROJECT : EVB-NINA-W1
VERSION : 04
PCB_VER.: B
PAGE 3 OF 5
ICM: $Change: 583817





U-BLOX AG THALWIL SWITZERLAND	DRAWING TITLE : POWER & ETHERNET		
DESIGN BY : Ovik DATE : Fri Mar 17 11:30:21 2017 GROUP : u-blox AG	A3	PROJECT : EVB-NINA-W1	VERSION : 04 PCB_VER.: B
		PAGE 4 OF 5	ICM: $Change: 583817

C Glossary

Name	Definition
COM	Communication
CTS	Clear to send
DSR	Data set ready
DTR	Data terminal ready
EVK	Evaluation kit
GND	Ground
GPI	General purpose input
GPIO	General Purpose Input/Output
IO	Input-output
LED	Light-Emitting Diode
PHY	Physical layer
U.FL	Miniature coaxial RF connector
USB	Universal serial bus
RF	Radio frequency
RMII	Reduced Media-Independent Interface
RTS	Request to send
UART	Universal asynchronous receiver/transmitter
USB	Universal serial bus
VCC	IC power-supply pin

Table 9: Explanation of abbreviations used

Related documents

[1] NINA-W10 data sheet, doc. no. UBX-17065507
[2] NINA-W13 data sheet, doc. no. UBX-17006694
[3] NINA-W15 data sheet, doc. no. UBX-18006647
[4] NINA-B2 data sheet, doc. no. UBX-18006649
[5] u-connect AT commands manual, doc. no. UBX-14044127
[6] FTDI FT4232H QUAD HIGH SPEED USB TO MULTIPURPOSE UART/MPSSE IC Datasheet - http://www.ftdichip.com/Support/Documents/DataSheets/ICs/DS_FT4232H.pdf
[7] NINA-W1 system integration manual, doc. no. UBX-17005730
[8] NINA-B2 system integration manual, doc. no. UBX-18011096

☞ For regular updates to u-blox documentation and to receive product change notifications, register on our homepage (www.u-blox.com).

Revision history

Revision	Date	Name	Comments
R01	22-May-2017	ovik, kgom	Initial release.
R02	04-Jul-2017	ovik, mwej	Updated Figure 9 and Table 8 due to pin swap on connectors J2 and J3. Updated schematic drawing (Appendix B). Updated assigned COM ports in section 2.1.
R03	09-Nov-2017	kgom	Renamed this document as EVK-NINA-W13 User Guide and updated the content due to the availability of a separate user guide for the EVK-NINA-W10x evaluation kits (UBX-17057549).
R04	12-Mar-2018	cmag	Updated the software version to 1.0.0 in the last table on page 2 and the “Related documents and links” section.
R05	29-Nov-2018	fbro, kgom	Renamed this document. Restructured the information to include support for EVK-NINA-W1 and EVK-NINA-B2.
R06	8-Jul-2019	ovik	Minor updates.
R07	5-Sep-2019	flun	Clarified the status for RGB LED in Table 5 (section 1.5).

Contact

For complete contact information, visit us at www.u-blox.com.

u-blox Offices

North, Central and South America

u-blox America, Inc.

Phone: +1 703 483 3180
E-mail: info_us@u-blox.com

Regional Office West Coast:

Phone: +1 408 573 3640
E-mail: info_us@u-blox.com

Technical Support:

Phone: +1 703 483 3185
E-mail: support@u-blox.com

Headquarters
Europe, Middle East, Africa

u-blox AG

Phone: +41 44 722 74 44
E-mail: info@u-blox.com
Support: support@u-blox.com

Asia, Australia, Pacific

u-blox Singapore Pte. Ltd.

Phone: +65 6734 3811
E-mail: info_ap@u-blox.com
Support: support_ap@u-blox.com

Regional Office Australia:

Phone: +61 2 8448 2016
E-mail: info_anz@u-blox.com
Support: support_ap@u-blox.com

Regional Office China (Beijing):

Phone: +86 10 68 133 545
E-mail: info_cn@u-blox.com
Support: support_cn@u-blox.com

Regional Office China (Chongqing):

Phone: +86 23 6815 1588
E-mail: info_cn@u-blox.com
Support: support_cn@u-blox.com

Regional Office China (Shanghai):

Phone: +86 21 6090 4832
E-mail: info_cn@u-blox.com
Support: support_cn@u-blox.com

Regional Office China (Shenzhen):

Phone: +86 755 8627 1083
E-mail: info_cn@u-blox.com
Support: support_cn@u-blox.com

Regional Office India:

Phone: +91 80 405 092 00
E-mail: info_in@u-blox.com
Support: support_in@u-blox.com

Regional Office Japan (Osaka):

Phone: +81 6 6941 3660
E-mail: info_jp@u-blox.com
Support: support_jp@u-blox.com

Regional Office Japan (Tokyo):

Phone: +81 3 5775 3850
E-mail: info_jp@u-blox.com
Support: support_jp@u-blox.com

Regional Office Korea:

Phone: +82 2 542 0861
E-mail: info_kr@u-blox.com
Support: support_kr@u-blox.com

Regional Office Taiwan:

Phone: +886 2 2657 1090
E-mail: info_tw@u-blox.com
Support: support_tw@u-blox.com