



# WG3221E00 User Guide

WG3221-00 Evaluation Board

Drift 0.1

Prepared By	Reviewed By	Approved By

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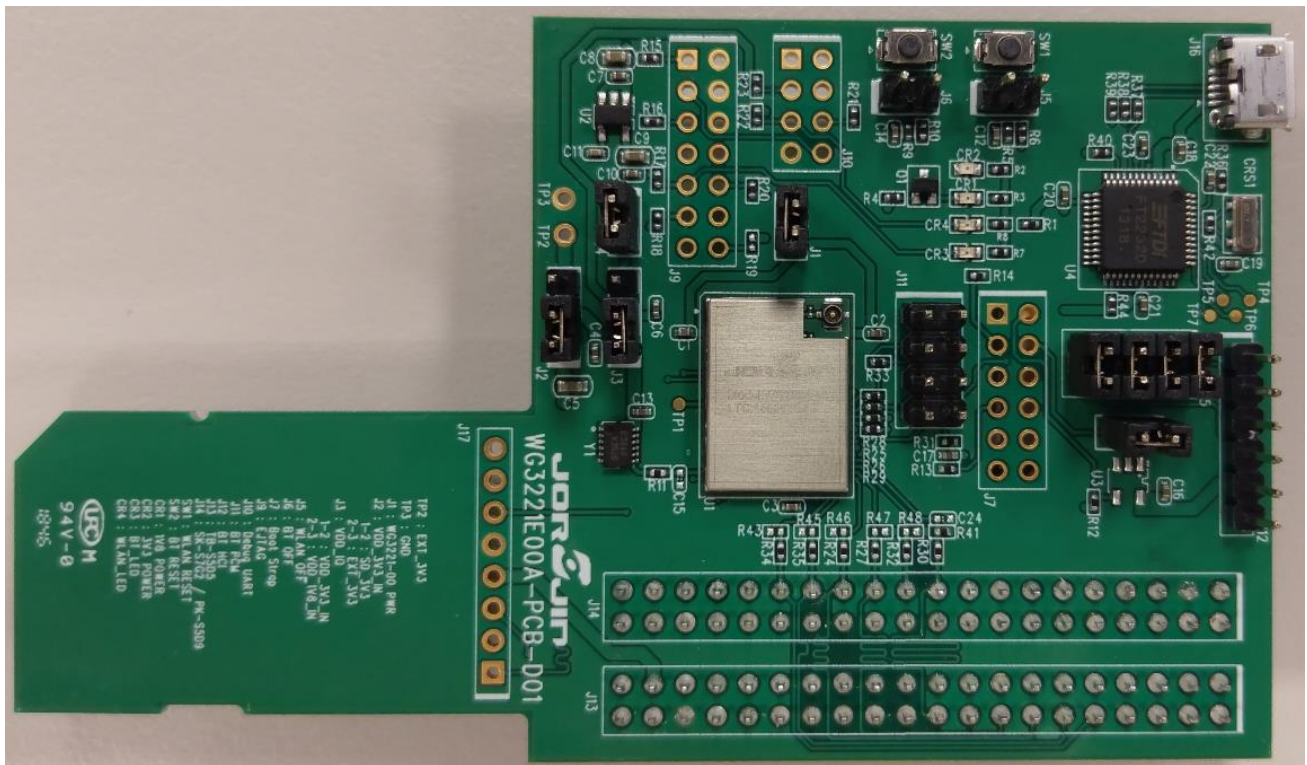
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## 1. INTRODUCTION

The Jorjin WG3221-00 is a wireless local area network (WLAN) and Bluetooth (BT) combination module to support 1 × 1 IEEE 802.11a/b/g/n/ac WLAN standards and BT5.0. This document is a user guide for the Jorjin WG3221-00 Evaluation Board. The WG3221E00 EVB is configured to SDIO for WLAN interface, as well as UART for Bluetooth.

This document is intended primarily for configuring the WG3221-00 for connectivity testing in the lab.

**Figure 1: WG32210-00 Evaluation Board**



## 2. HARDWARE DESCRIPTION

### 2.1. Board overview

The following figure and table describe physical sections of the board.

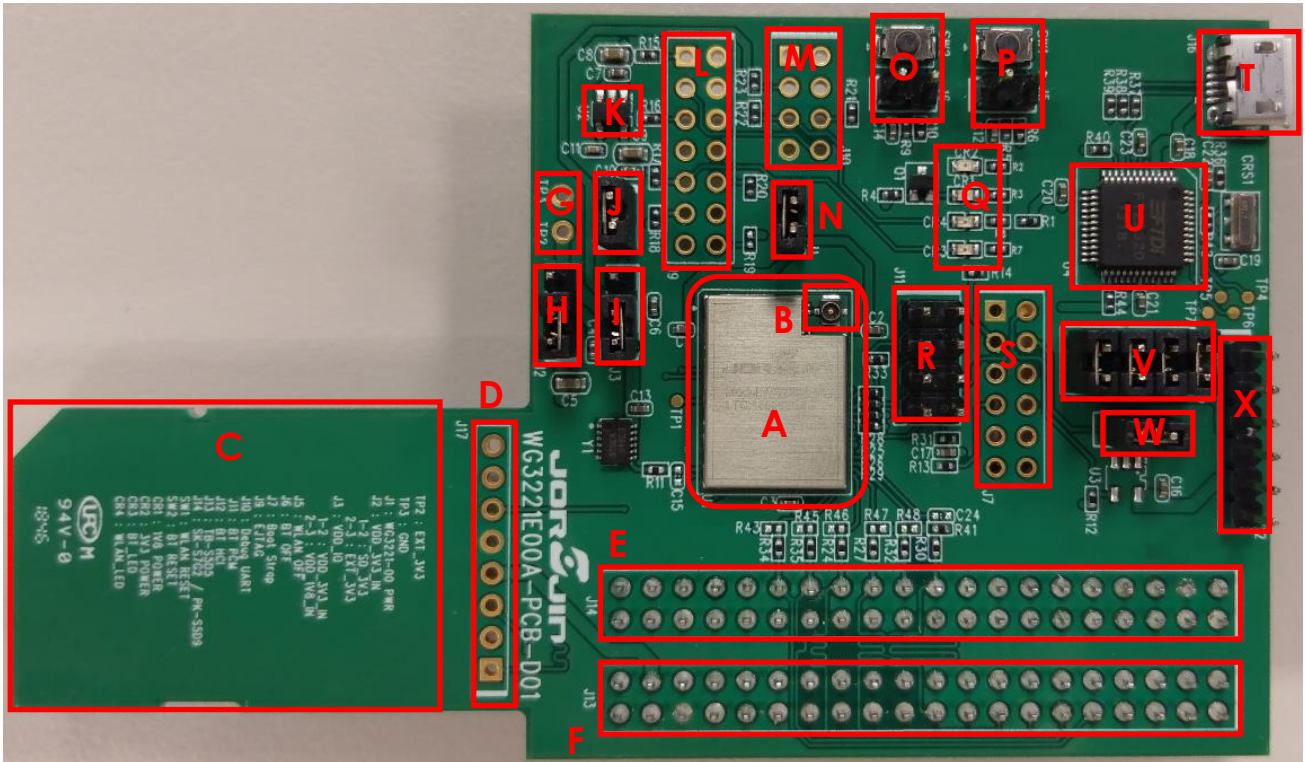


Figure 2: WG3221E00 board components

Table 1: WG3221E00 board component descriptions

Region	Description
A	WG3221-00 module
B	WLAN/BT RF signal I-PEX connector ( part Number : 20449-001E )
C	SDIO card for WLAN
D	WLAN SDIO signals for measurement
E	WLAN SDIO signals for Renesas SK-S7G2 and PK-S5D9 evaluation board
F	WLAN SDIO signals for Renesas TB-S5D5 evaluation board

G	External 3.3V power supply input points
H	3.3V power source selection
I	VIO power source selection
J	Current measurement jumper for 1.8V power
K	3.3V to 1.8V LDO
L	EJTAG debug mode connector. Not used.
M	Debug UART connector. Not used.
N	Current measurement jumper for 3.3V power of WG3221-00 module
O	BT function reset switch and jumper.
P	WLAN function reset switch and jumper.
Q	LED indicators
R	BT PCM signals connector.
S	Boot Strap/DEBUG connector. Not used.
T	UART to USB connector for BT function test.
U	UART to USB chip for BT function test.
V	Jumpers for BT HCI UART signals to USB interface.
W	HCI_UART_RXD test jump for debugging.
X	BT HCI UART signals for measurement or connecting to external circuit.

## 2.2. Power supply

Green LED CR2 (Figure 2: WG3221E00 board components" – region Q) signals the board is being powered 3.3V, either via:

- SD card – SD1 (Figure 2: WG3221E00 board components" – region C), J13 (Figure 2: WG3221E00 board components" – region F), or J14 (Figure 2: WG3221E00 board components" – region E)
- an external DC power supply from TP2 (+3.3V) and TP3(GND). (Figure 2: WG3221E00 board components" – region G)

Green LED CR1 (Figure 2: WG3221E00 board components" – region Q) signals the board is being powered 1.8, via the 3.3V to 1.8V LDO (Figure 2: WG3221E00 board components" – region K).

The jumper J3 (Figure 2: WG3221E00 board components" – region I) sets the VIO

power level.

**Table 2: WG3221E00 VIO power supply modes**

VIO power level	J3	Comment
3.3V	Fitted:1-2	The I/O pins signal level is 3.3V
1.8V	Fitted:2-3	The I/O pins signal level is 1.8V

### 2.3. SDIO interfaces

There are 4 SDIO connectors in the WG3221E00 for WLAN interface. The host CPU can be connected to SDIO interface through either one of the connectors.

**Table 3: WG3221E00 SDIO interface**

Connector	Region	Description
SD1	C	Standard SDIO card
J17	D	For external SDIO interface
J14	E	WLAN SDIO signals for Renesas SK-S7G2 and PK-S5D9 evaluation board
J13	F	WLAN SDIO signals for Renesas TB-S5D5 evaluation board

### 2.4. HCI UART interface

The host CPU can be connected to HCI interface through the J12 (Figure 2: WG3221E00 board components" – region X). When the J12 is connected to host CPU, the jumpers in J15 (Figure 2: WG3221E00 board components" – region V) must be removed.

The HCI UART can be also connected through USB –J18 (Figure 2: WG3221E00 board components" – region X). When the J18 is connected to USB host, the jumpers in J15 must be installed.

### 2.5. PCM/I2S interface

The BT PCM signals are connected to J11 (Figure 2: WG3221E00 board components" – region R).

## 2.6. LEDs

There are 4 LEDs (Figure 2: WG3221E00 board components" – region Q) indicate the board status.

**Table 4: WG3221E00 LEDs**

LED #	Description
CR1	It indicates the board is being powered 1.8V.
CR2	It indicates the board is being powered 3.3V.
CR3	It indicates the BT function.
CR4	It indicates the WLAN function.

## 2.7. WLAN/BT reset or off

The board has two buttons to reset the WLAN and BT function (Figure 2: WG3221E00 board components" – region O and P). The board also has two jumpers to turn off the WLAN and BT function.

**Table 5: WG3221E00 WLAN/BT reset and turn off**

Button #	Jumper #	Description
SW1	J5	Push the button to reset or fit the jumper to turn off WLAN function
SW2	J6	Push the button to reset or fit the jumper to turn off BT function



### 3. SCHEMATIC DIAGRAMS

Figure 3: WG3221E00: WG3221-00 module

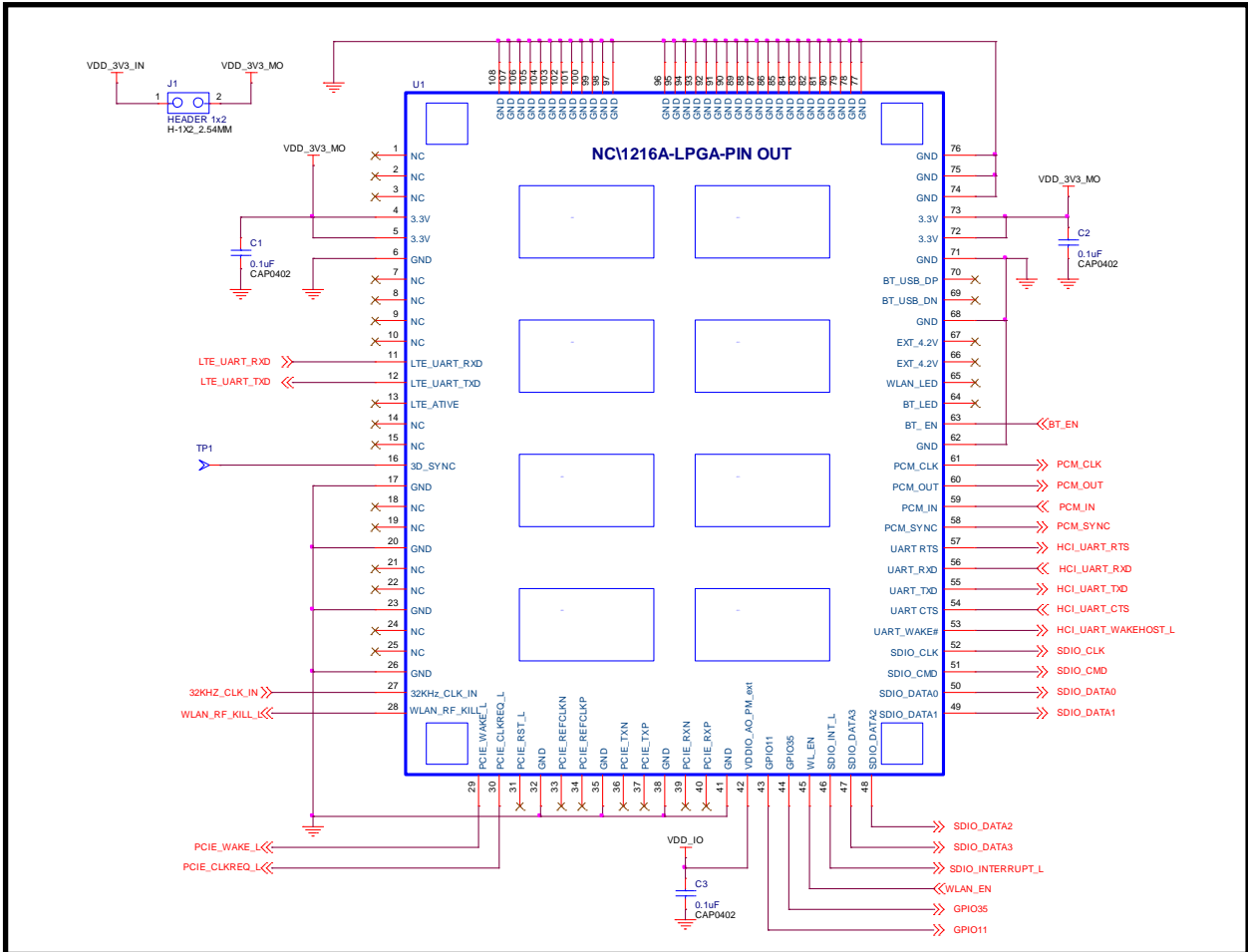


Figure 4: WG3221E00: Power

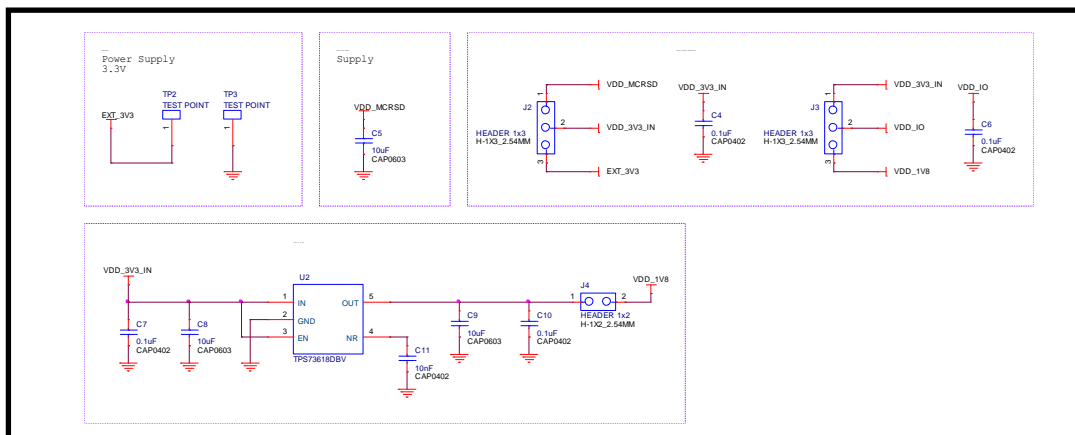




Figure 5: WG3221E00: SDIO interface

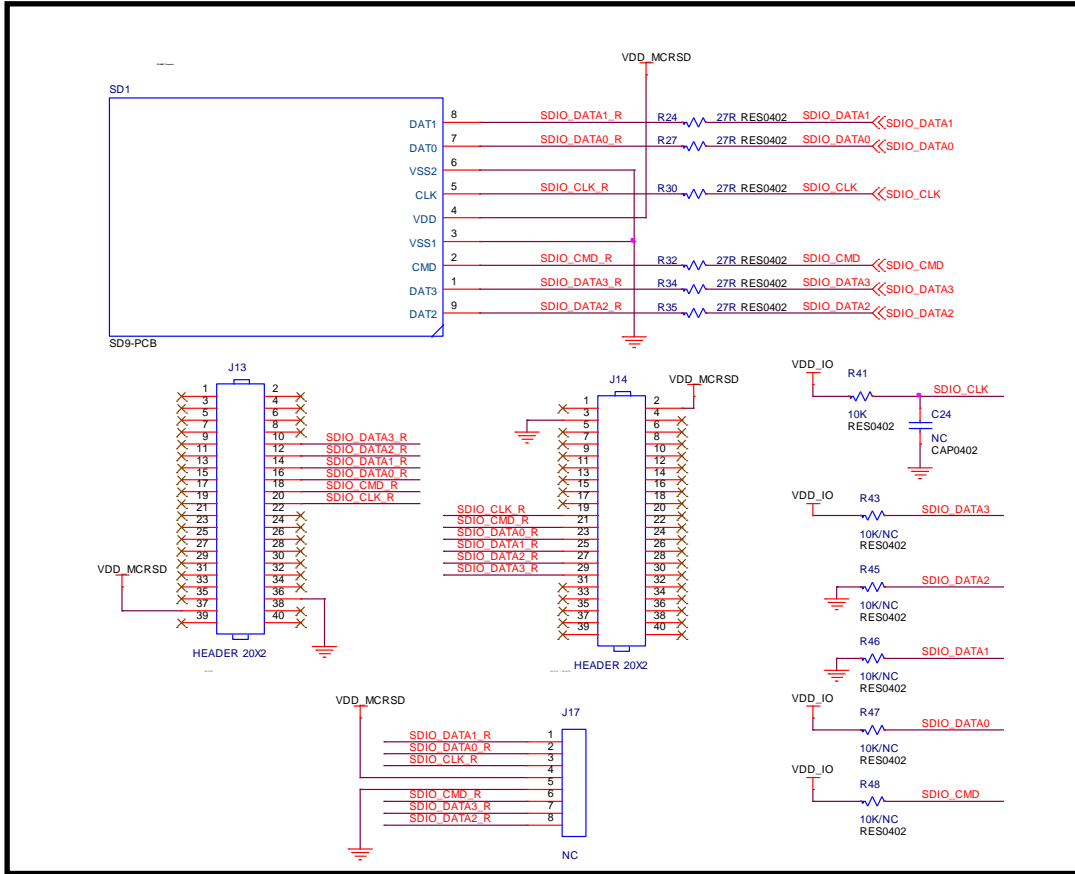


Figure 6: WG3221E00: UART to USB

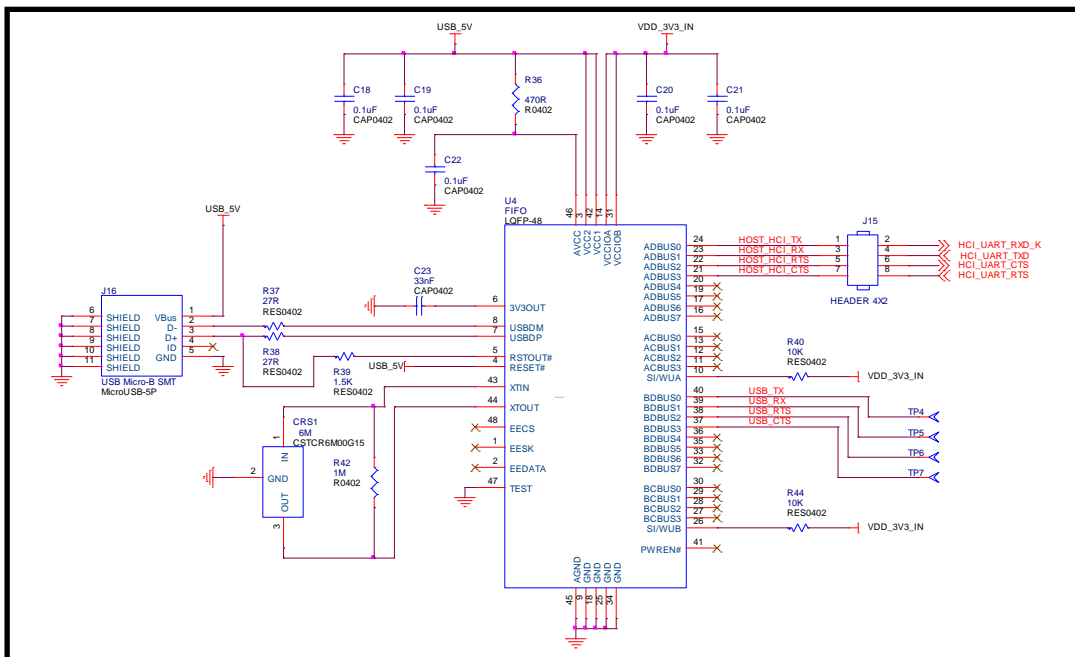


Figure 7: WG3221E00: HCI UART and PCM/I2S interface

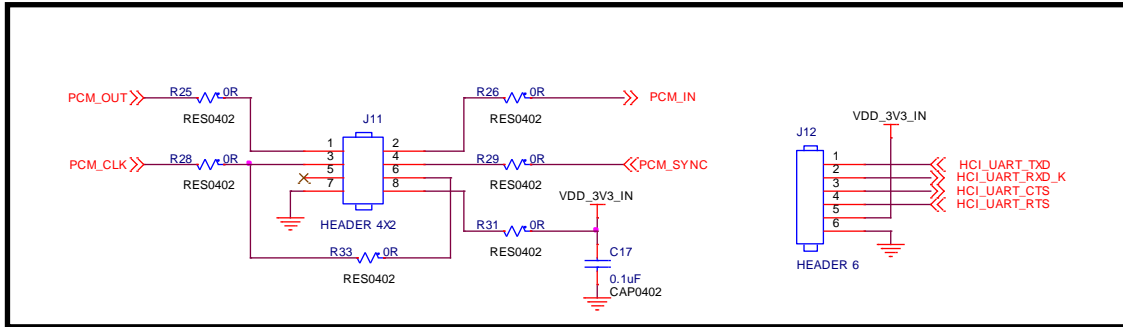


Figure 8: WG3221E00: LEDs

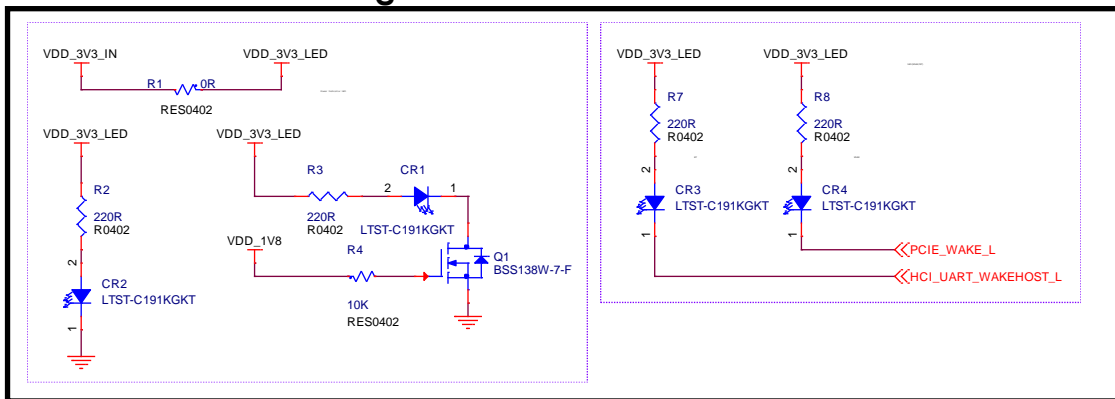


Figure 9: WG3221E00: WLAN/BT reset and off

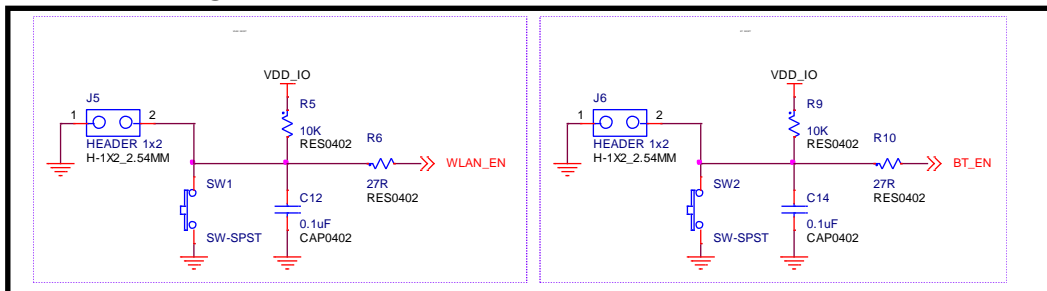


Figure 10: WG3221E00: 32.768KHz Clock source

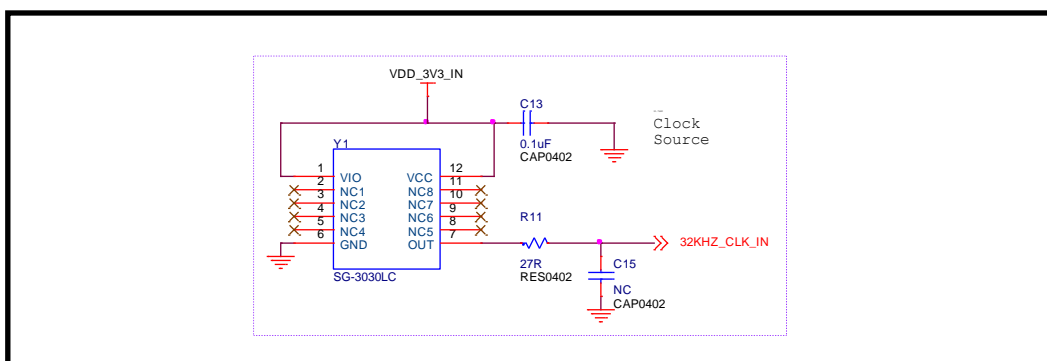
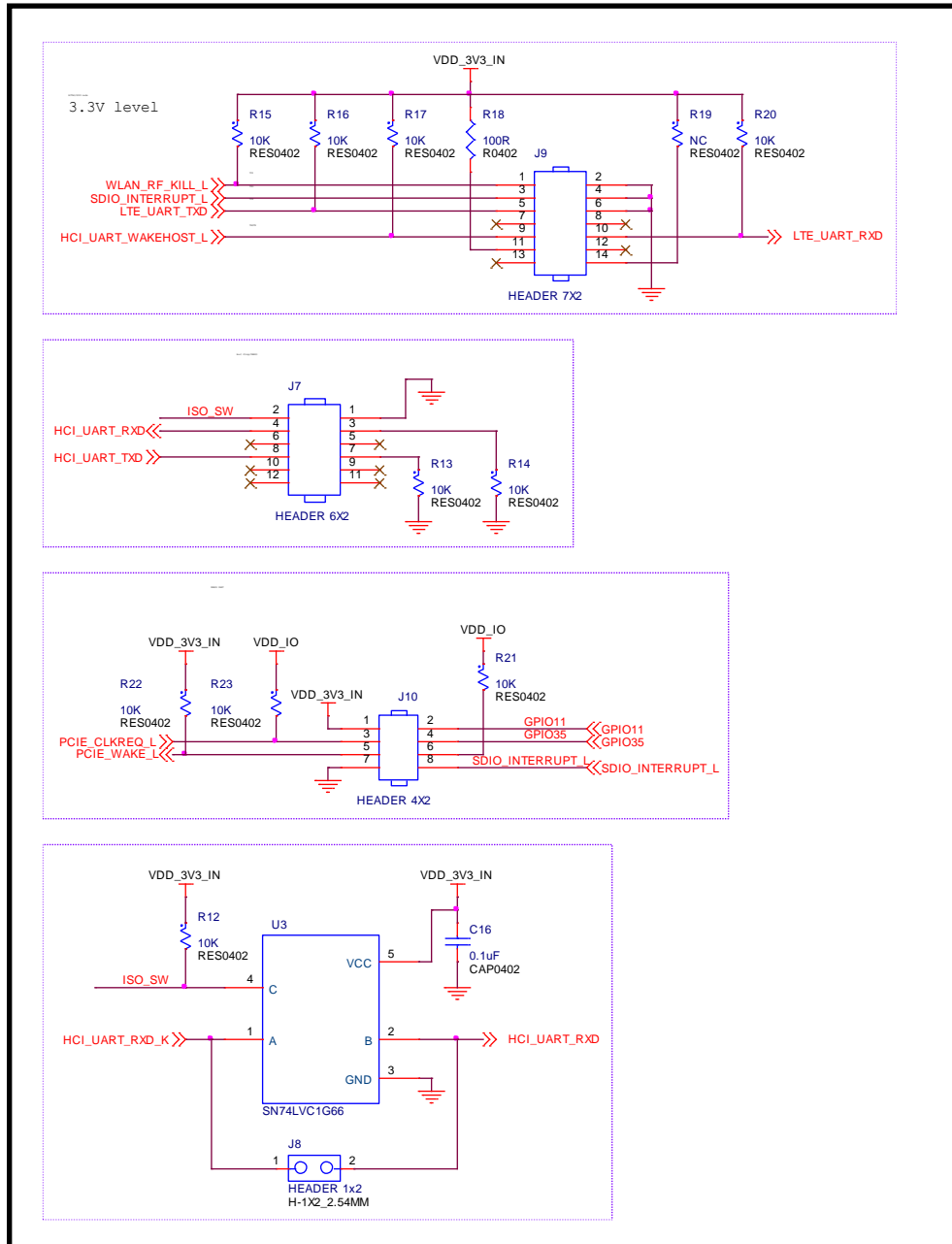


Figure 11: WG3221E00: 32.768KHz Clock source



#### 4. HISTORY CHANGE

Revision	Date	Description
D 0.1	2019/Jan/16	Draft release