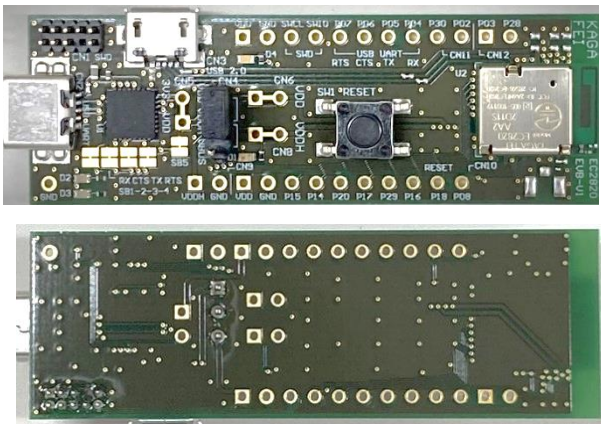
EVALUATION BOARD MANUAL
EC2820AA2-EVB / EC2820MA2-EVB

EVALUATION KIT MANUAL
EC2820AA2-EVK

for EC2820 Series Bluetooth® low energy Module



Contents

1.Introduction

This evaluation board is applicable for KAGA FEI's ***Bluetooth***® **low energy** module, EC2820 Series.

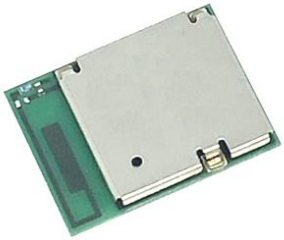
USB

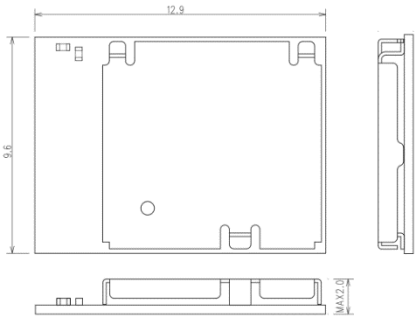
EC2820AA2-EVB / EC2820MA2-EVB

Serial UART interface and power supply are possible with one USB cable. And this board has the SWD connector terminal for software development.

2.Mounted module

EC2820 (9.6mm x 12.9mm x 2.0mm_MAX)





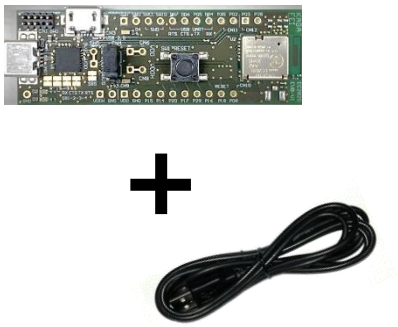
Nordic nRF52820 / ARM® Cortex™-M4 32 bit processor and 256kB Flash & 32kB RAM
47-pin Land Grid Array / 16GPIOs / SWD

- Basic Module –
KAGA FEI writes S140 SoftDevice to this product (EC2820AA2).
The user can develop unique application for the module.

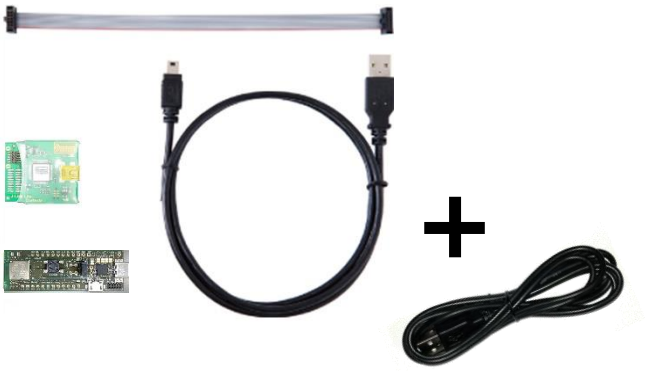
3.Content

1	EC2820AA2-EVB / EC2820MA2-EVB Evaluation Board + USB cable for Evaluation Board	1 pc
2	J-Link Lite (EC2820AA2-EVK Only) + USB cable for Evaluation Board *1	1 set

1. EC2820AA2-EVB / EC2820MA2-EVB



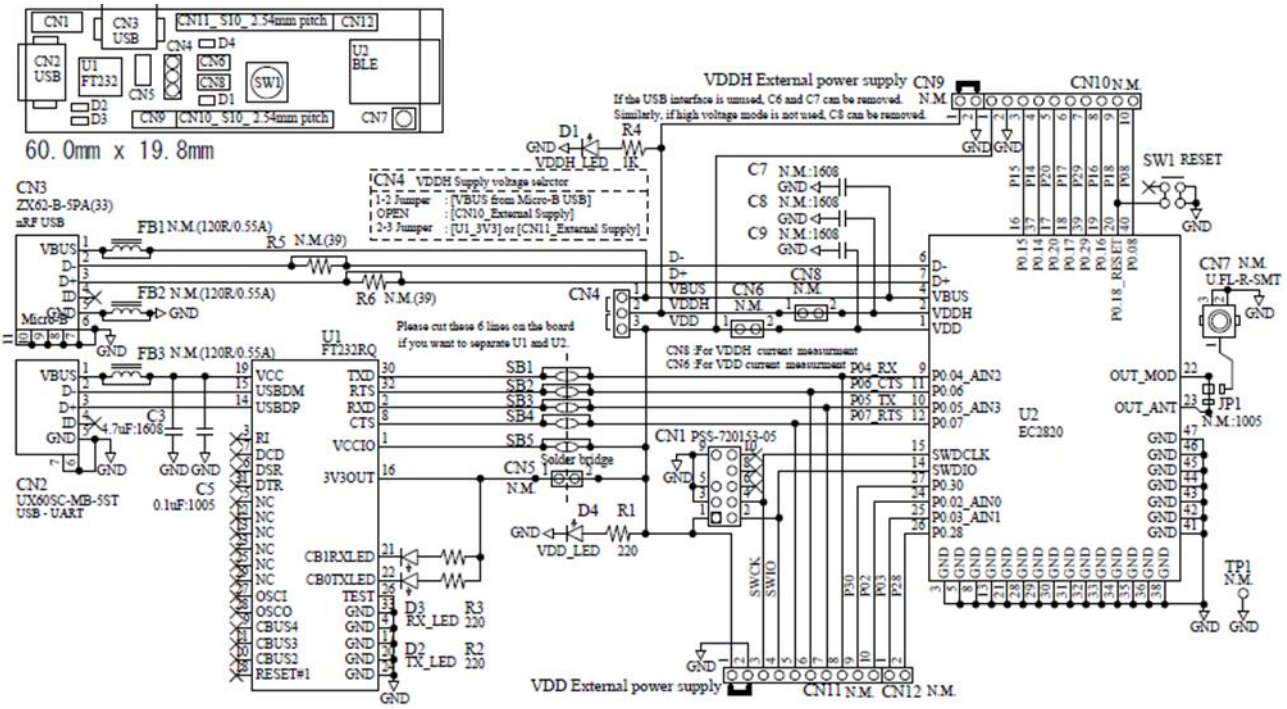
2. EC2820AA2-EVK



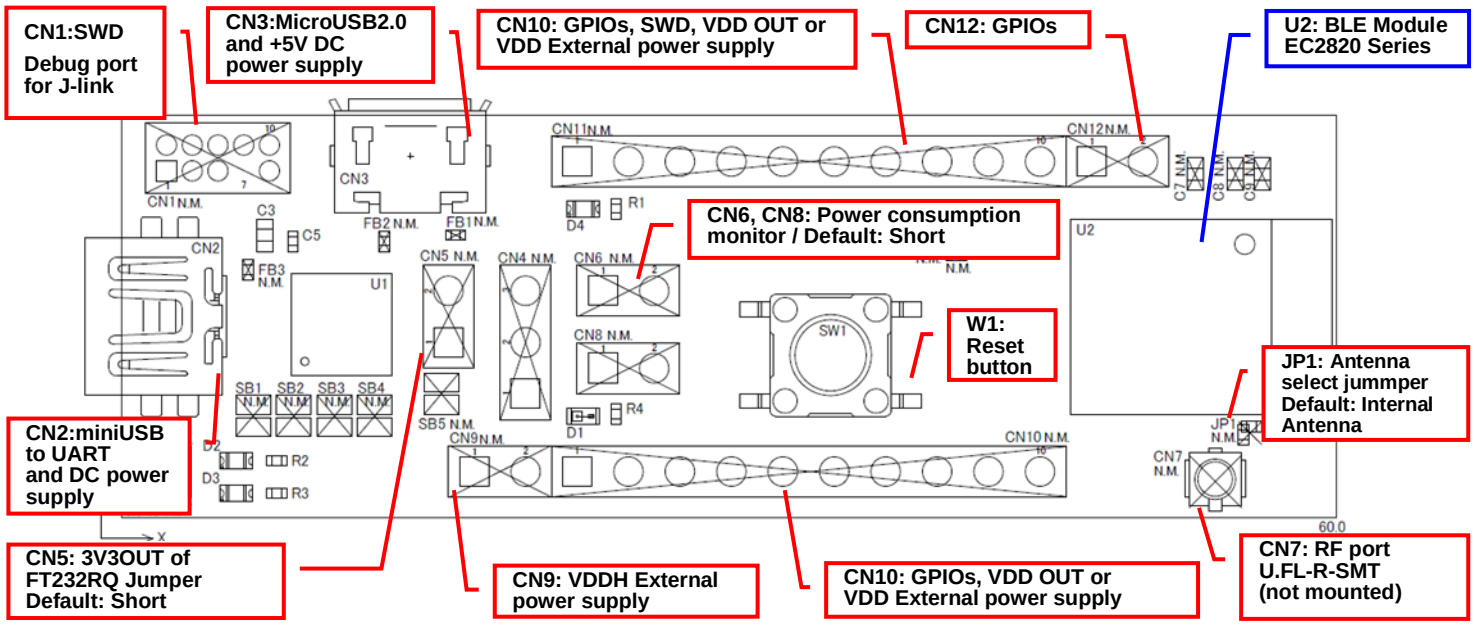
*1 Notes on using J-Link Lite

J-Link Lite is only delivered and supported as part of an evaluation kit, which includes an evaluation board. It may only be used with the evaluation board it came with, and not to be used for commercial product development.

4.Evaluation board circuit schematic

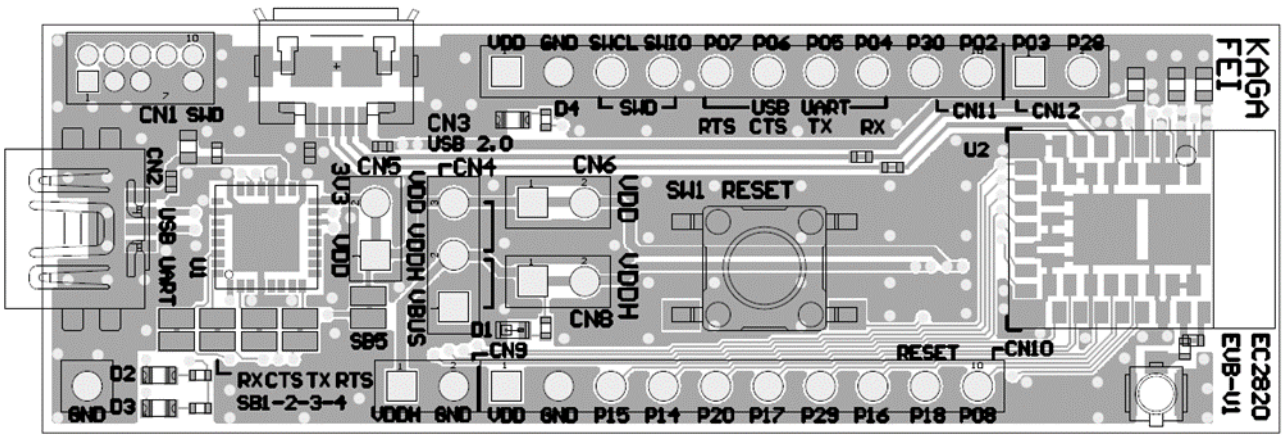


5.Evaluation board layout



1) All pin headers are 2.54mm pitch. And **CN9 - CN12** are on the **2.54mm grid**.
2) Many parts are not mounted. Please refer to (N.M.) in the circuit schematic.
3) **D1 (LED):** VDDH Indicator, **D4(LED):** VDD Indicator
4) **D2 (LED):** UART TX Indicator
5) **D3 (LED):** UART RX Indicator
6) **SW1 (Push button):** Module Reset (active low)

6.Silkscreen Printing



2-layer board : Line/Space : 100/100(um)

7.Pin Descriptions

Pin No.	CN9	CN10	CN11
1	VDDH	VDD	VDD
2	GND	GND	GND
3	-	P0.15	SWDCLK
4	-	P0.14	SWDIO
5	-	P0.20	P0.07
6	-	P0.17	P0.06
7	-	P0.29	P0.05_AIN3
8	-	P0.16	P0.04_AIN2
9	-	P0.18_RESET	P0.30
10	-	P0.08	P0.02_AIN0

Pin No.	CN12
1	P0.03_AIN1
2	P0.28
3	-
4	-
5	-
6	-
7	-
8	-
9	-
10	-

8.How to use

It is very easy just to tie this board to the PC with a USB cable. It is not necessary to change the setting of the board. The power supply of the module supplies by default 3.3V from 3V3OUT of FT232RQ.

9.For software development

・Nordic-DK and Use case

SWD

microUSB
miniUSB

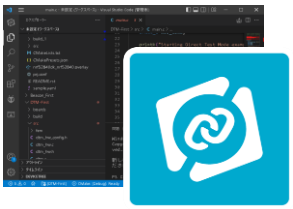
EC2820AA2-EVB

Nordic nRF Connect
etc.

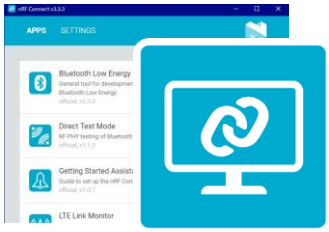
NORDIC DK

・SEGGER Embedded Studio

・Visual Studio Code



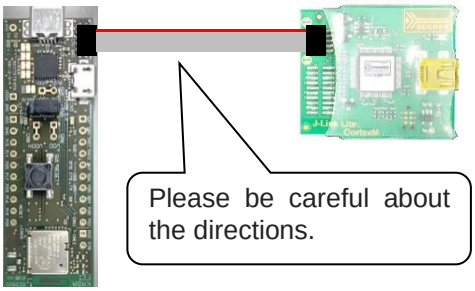
・nRF Connect for Desktop



etc.

SWD : Serial Wire Debug
It can be use J-Link Lite CortexM-9 JTAG/SWD Emulator that attached with EC2820AA2-EVK.

CN1 supports the connection of the 10 pin 1.27mm flat cable.



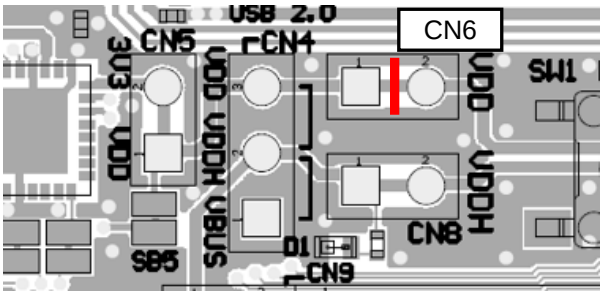
Please be careful about the directions.

・Nordic-nRF52833 DK
(for the nRF52820 and nRF52833)
https://www.nordicsemi.com/Products/Development-hardware/nRF52833-DK

10.MEMO

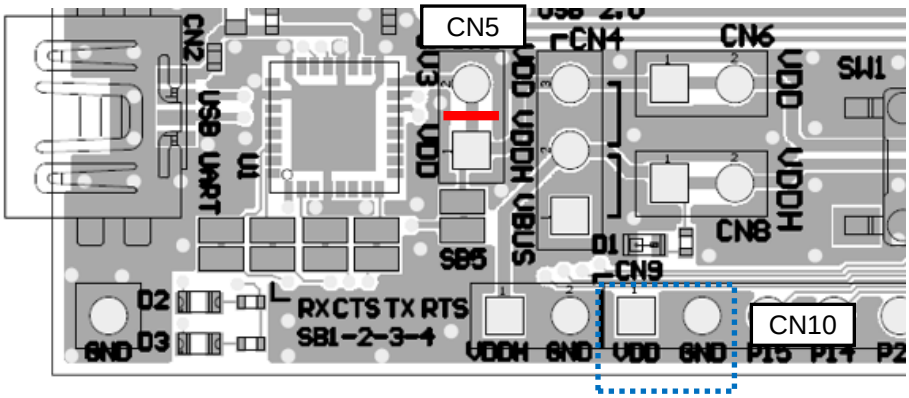
1) **Current measurement**

To measure VDD current, please cut the shorting 1pin and 2 pin of CN6. And connect an ampere-meter between the pins of connector CN6 to monitor the current directly. CN8 is the same.



2) **About VDD power supply**

When you use external power supply, please supply power from 1pin and 2pin of CN10. On this case, you cut short circuit 1pin and 2pin of CN5 and should separate 3V3OUT of FT232RQ.



3) **USB to serial UART interface**

It needs to install driver of FT232RQ to use USB for UART interface.
The drivers are available on FTDI website.

http://www.ftdichip.com/Drivers/D2XX.htm

In addition, by the application development, please assign GPIO as follows.

GPIO	UART
P0.07	RTS
P0.05	TX
P0.06	CTS
P0.04	RX

4) Size and Coordinate information