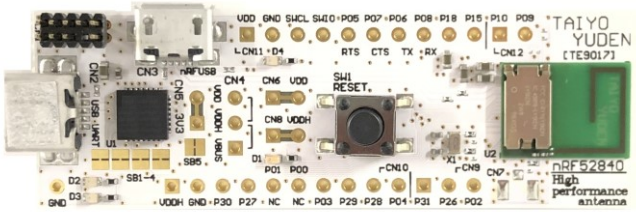
EVALUATION BOARD MANUAL
EBSKDN Series

EVALUATION KIT MANUAL
EKSKDN Series

for EYSKDN Series Bluetooth® low energy Module

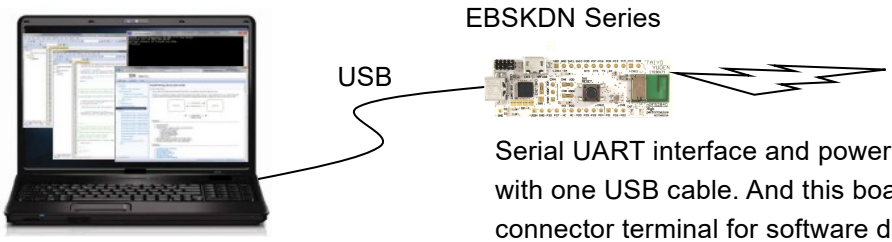
High performance antenna



EBSKDN, EKSKDN

Introduction

This evaluation board is applicable for Taiyo Yuden's ***Bluetooth***® **low energy** module, EYSKDN Series.



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

Mounted module

EYSKDN (9.6mm x 12.9mm x 1.3mm_MAX)
High performance antenna

Nordic nRF52840 / ARM® Cortex™-M4F 32 bit processor and 1MB Flash & 256kB RAM
38-pin Land Grid Array / 19GPIOs / SWD /USB2.0

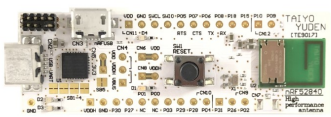
- Basic Module -

Taiyo Yuden writes firmware for S140 (EYSKDNZWB) SoftDevice to this product.
The user can develop unique application for the module.

Content

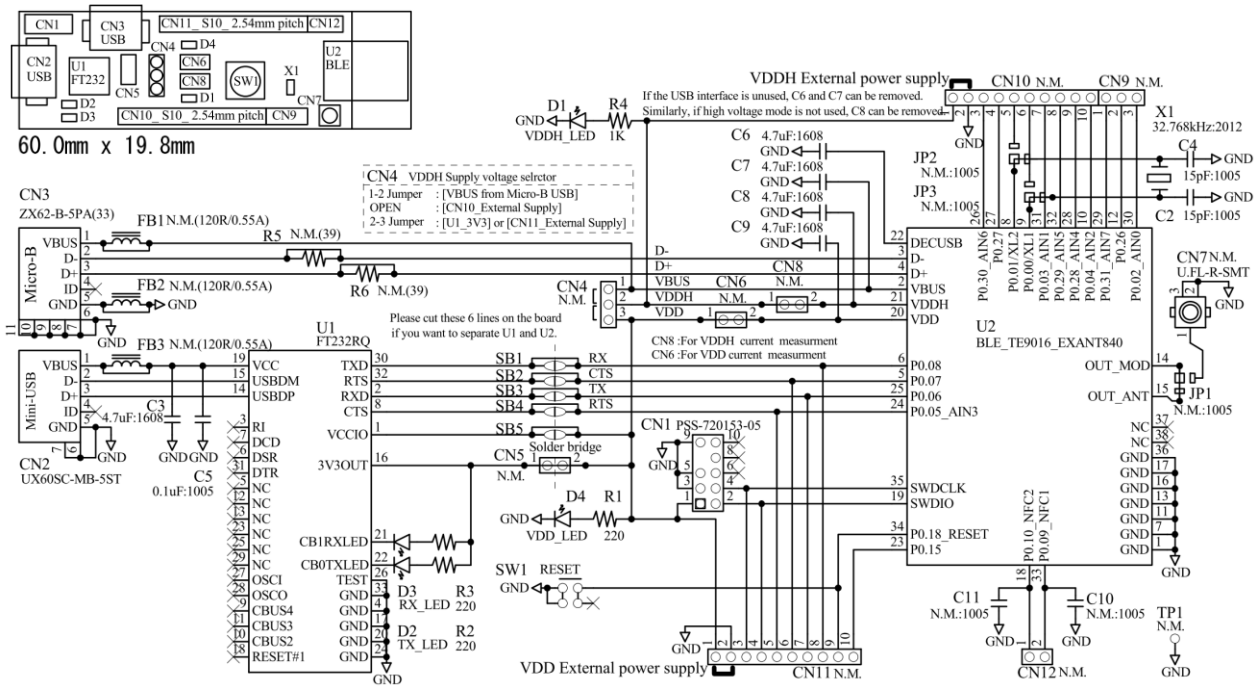
1	EBSKDN Series Evaluation Board	1 pc
2	J-Link Lite (EKSKDN Series Only)	1 set

1. EBSKDN

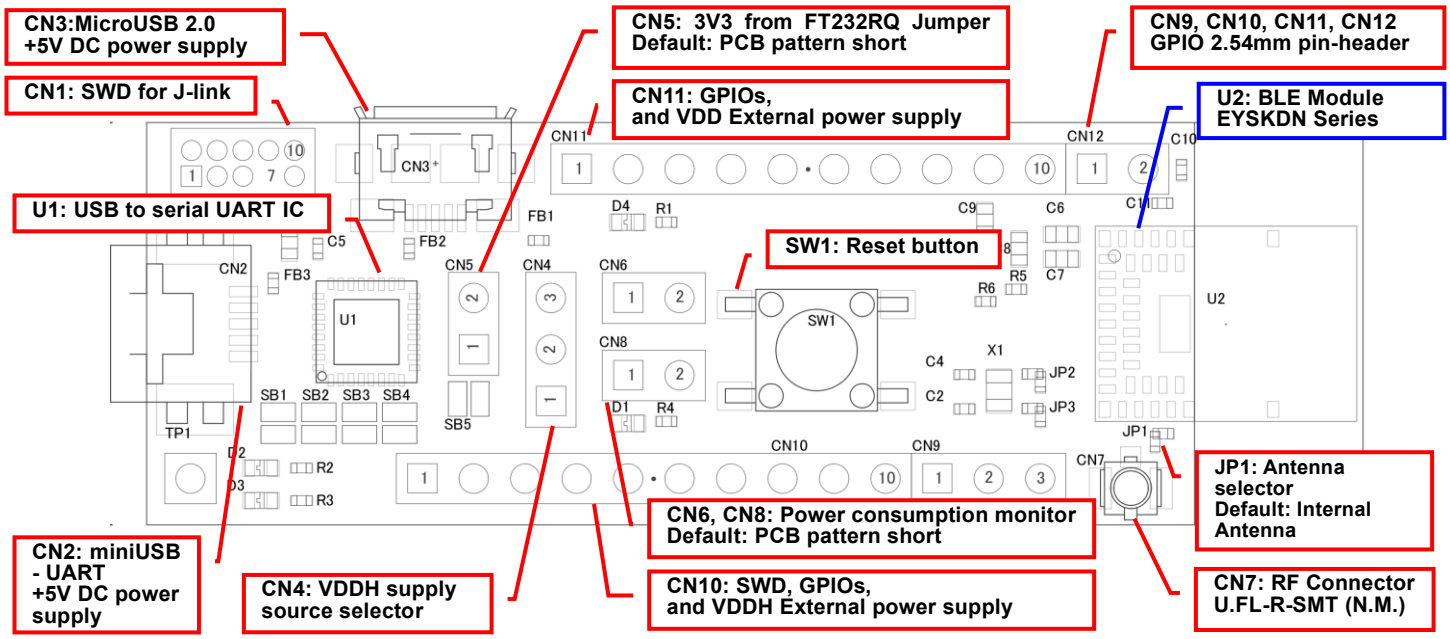


2. EKSKDN

Evaluation board circuit schematic

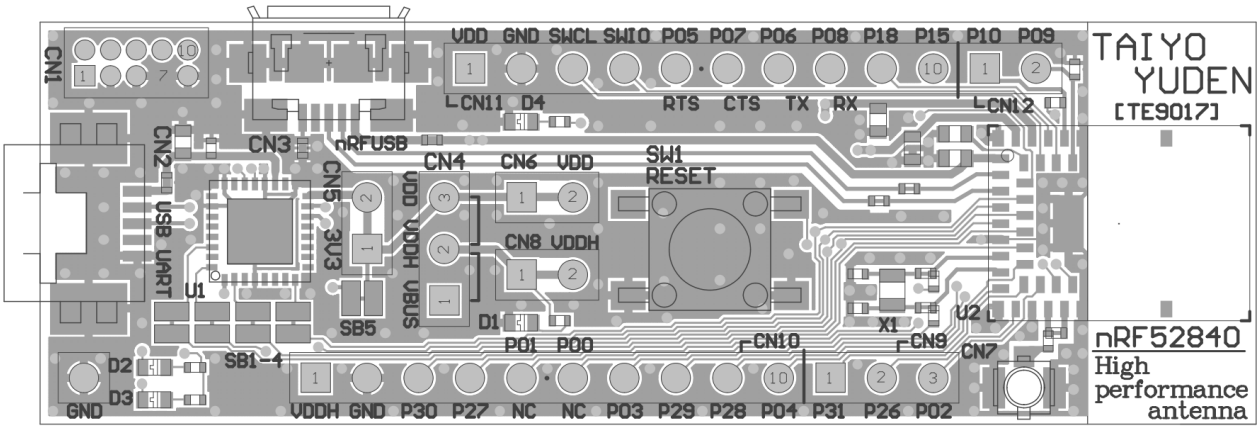


Evaluation board layout



1) The CN9 - CN12 headers are on a **2.54mm pitch 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, **D3 (LED):** UART RX Indicator
5) Please set a short **jumper on 2-3 pins of CN4**. Thereby, with only one miniUSB(for CN3) cable, the module can be operated most easily as normal voltage mode.

Silkscreen Printing



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

Pin Descriptions

Pin No.	CN1 (1.27pitch)	CN9 (2.54pitch)	CN10 (2.54pitch)
1	VDD	P0.31_AIN7	VDDH
2	SWDIO	P0.26	GND
3	GND	P0.02_AIN0	P0.30_AIN6
4	SWDCLK	-	P0.27
5	GND	-	P0.01/XL2
6	NC	-	P0.00/XL1
7	(No pin)	-	P0.03_AIN1
8	NC	-	P0.29_AIN5
9	GND	-	P0.28_AIN4
10	NC	-	P0.04_AIN2

Pin No.	CN11 (2.54pitch)	CN12 (2.54pitch)
1	VDD	P0.10_NFC2
2	GND	P0.09_NFC1
3	SWDCLK	-
4	SWDIO	-
5	P0.05	-
6	P0.07	-
7	P0.06	-
8	P0.08	-
9	P0.18_RESET	-
10	P0.15	-

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.

For software development

Nordic-DK and Use case

Nordic nRF Connect etc.

NORDIC DK

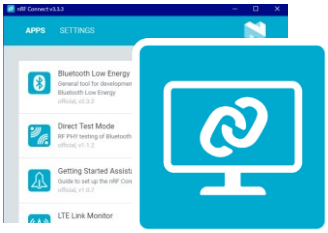
SWD

USB

EBSKDN

・SEGGER Embedded Studio

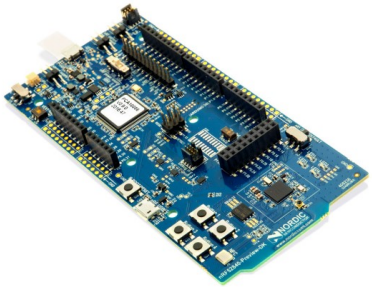
・nRF Connect for Desktop



・etc.

Nordic-nRF52840 DK

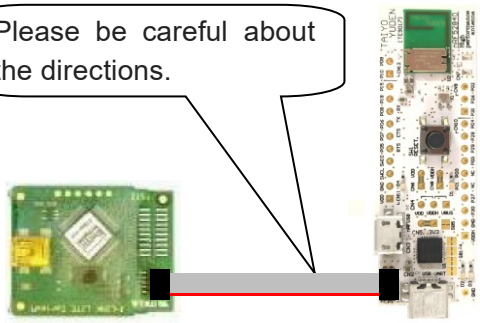
http://www.nordicsemi.com/eng/Products/nRF52840



SWD : Serial Wire Debug
For example, please use J-Link Lite CortexM-9 JTAG/SWD Emulator.
EKSKDNZWZ included

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

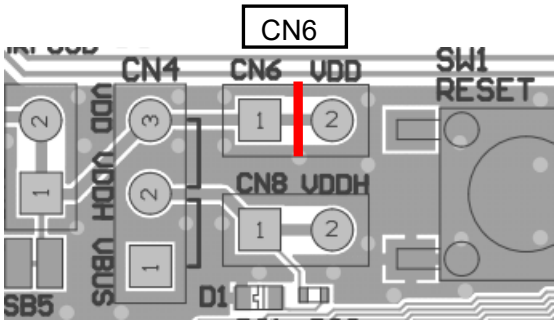
Please be careful about the directions.



MEMO

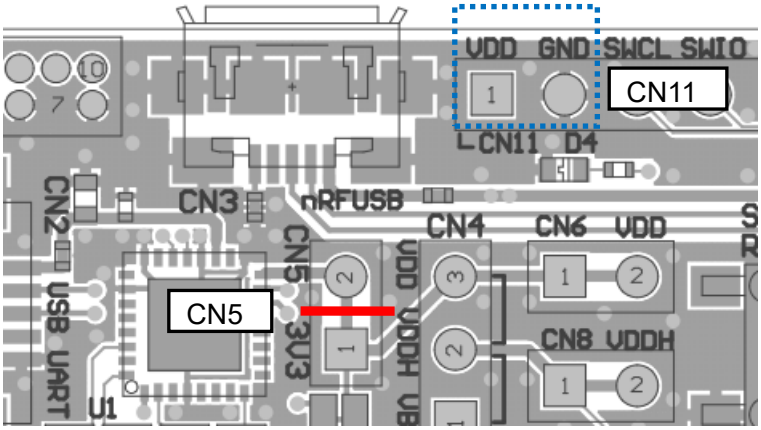
1) Current measurement

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. Similarly, VDDH is CN8.



2) About VDD power supply

When you use external power supply, please supply power from 1pin and 2pin of CN11. 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
P0.05	RTS
P0.06	TX
P0.07	CTS
P0.08	RX

4) Size and Coordinate information