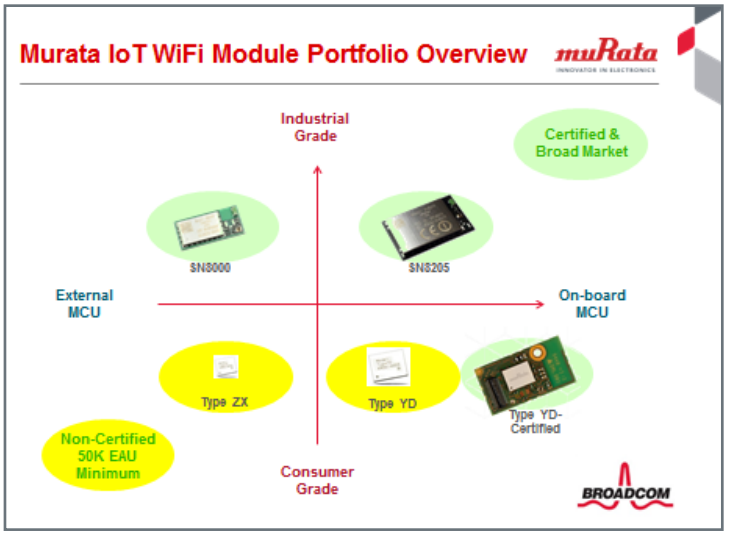
SN8205

Embedded Wi-Fi® module

Murata provides a number of solutions for IoT applications. When designing in the SN8205 Embedded Wi-Fi® module, the answers to these FAQs will assist you.



Q1. What is the advantage of Embedded Wi-Fi® over other solutions?

The embedded Wi-Fi® solution has a built-in micro-controller. The following can be run on the built-in MCU:

- Wi-Fi® driver
- Network Stack: IP, TCP, UDP, DHCP, DNS, SNTP, etc.
- Application: Web server, customer application

Benefits of the onboard MCU architecture:

- Simplified host software integration
- Easy data handling: all the network stack is handled by the module
- Easy host interface: UART, SPI
- Hostless solution: the module can be used standalone without a host

Q2. Why are SNs a great choice for IoT?

- Extended product life
- Uses TCXO instead of normal crystal
- Passed 1200 temperature cycle test: -40 to +85°C
- Wide Link Budget
- Wi-Fi® AP/STA dual mode
- Supporting Broadcom WICED™ SDK
- More peripheral I/Os than type YD: I2S, I2C
- Murata EZ Web Wizard Software Package (SN820x only)
- Socket type data interface: TCP, UDP, HTTP, SSL/TLS
- Built-in HTTP server and custom web content
- Web based I/O control: GPIO, I2C, UART

Q3. What software solution does Murata provide or partner with for quick IoT implementation?

Murata provides its own internal SNIC (Simple Network Interface Controller) software, available here.
In addition, Murata also partners with Ayala for Agile Enterprise IoT platform and with Electric Imp for cloud applications.
For a custom application a WICED™ solution from Broadcom can be used.

Q4. What is WICED™ and which Murata modules support it?

- WICED™ is a development system that vastly reduces the effort required to add wireless connectivity to embedded devices. The SDK enables developers to quickly create network connected applications targeted for low-resource microcontrollers. Apple MFi HomeKit ready and Universal Bluetooth Smart to WLAN bridge designs are also available.
- Both Murata's SN8205 and YD/YDD module solutions support WICED™.
- For support click here. More frequently asked questions on WICED™ can be found here.

Q5. How do I use WICED™ SDK?

HW

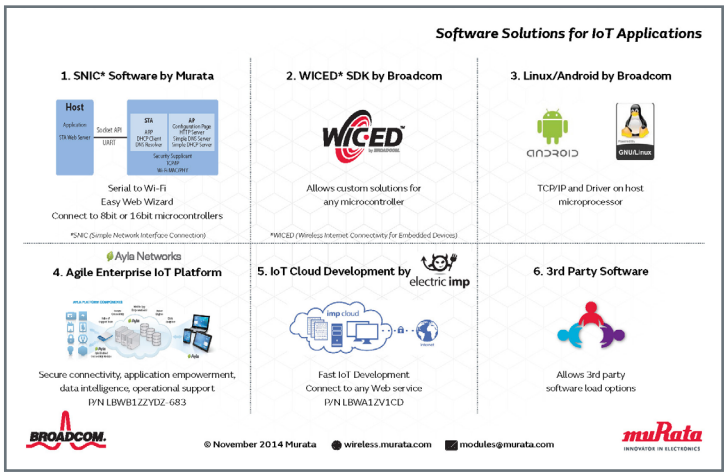
a. Purchase a SN8200 EVK+.
b. Register here to get an account.
c. Download the patch file for WICED™ SDK – Murata support up to SDK ver. 2.4.1.

SW

a. Go to the Broadcom webpage; register to get the WICED™ SDK 2.4.1.
b. Follow the SDK instruction to install the SDK on your PC.
c. Follow the patch file instructions to apply the SN8200 patch file.
d. 4. Search SDK document to identify the monitor mode API.

Q6. Where can I obtain WICED™ patch files for Murata modules?

The latest patch file is posted in three places:
a. my Murata support site
b. Murata product web page – go to the Software tab.
c. Broadcom WICED™ page.
Our latest patch file is for SDK v3.1.0. You can try it with v3.1.2. View here.
Murata provides a patch file to apply on WICED™ to enable development of SN8205 and YDD solutions. This patch file for WICED™ SDK 3.1.2 is available now from the WICED™ Forum.



Q7. What software solution does Murata provide or partner with for quick IoT implementation?

Murata provides it own internal SNIC software. This software is available here. SNIC software is built on top of WICED™ platform.

Q8. What documentation is available on SNIC software and HW package?

Data Sheet and Module User Manual – Murata website

EVK User Guide – Murata website

EVK Schematic – Murata website

SNIC UART – Included in Murata SNIC Package

- SN820x SNIC Serial Interface Specification
- SN820x SNIC UART Serial Interface User Manual
- SN820x SNIC UART Sample Application User Guide

SNIC SPI – Included in Murata SNIC Package

- SN820x SNIC Serial Interface Specification
- SN820x SNIC UART Serial Interface User Manual
- SN820x SNIC UART Sample Application User Guide

EZ Web Wizard – Included in Murata SNIC Package

- SN82xx EZ Web Wizard Simple Web Services URIs
- SN820x SNIC EZ Web Wizard User Manual

Application Notes – Knowledge Tree (reguires log in)

- AN_SN8200_001 SN8200 EVB Application Note
- AN-SN8200_002_SN820X-Firmware-Downloading App-Note
- AN_SN8200_003_SN820X_Internal-Control_App-note
- AN_SN8200_004 SN820X EVB Application Note
- AN_SN820x_005 SN8200 to SN8205 Migration Guideline Application Note (Coming soon)

Q9. How do I use Flow Control (YD)?

CTS/RTS enables hardware flow control.

Q10. Does SN8205 with SNIC support AP and STA mode?

SN8205 and SNIC software will support dual mode soft AP and STA modes.

Q11. Is SN8205 FCC certified? What other certifications must the customer undergo for their design?

Yes; SN8205 is FCC certified.
Regarding other certifications that may be required, it depends on application; for example:
If the device is going to be used within 20cm of a body it needs go through SAR testing.
If the device is used in Europe, it needs to have EU certification per EN-300.328 for wireless and EN 400.429 for safety.
Telec for use in Japan, Anatel for Brazil, etc.

Q12. If reference antenna is not used, what exact tests do I need to do at FCC now?

A similar antenna can be used and an FCC class 2 certification can be applied for replacing this antenna.

Q13. Can SN8205 be treated as SPI Master?

SN8205 HW has two STM32F205's SPI's ports (SPI1 and SPI3) brought to module pins. These SPIs can be used as master. SNIC software does not support SPI master mode; the user should look at WICED™ software for this support. Refer to Table 2.3 on the SN820x data sheet, which is available on the my Murata website (my Murata account required).

Q14. Does SN820x support RTC (Real Time Clock aka slow clock)?

SN820x doesn't have an internal RTC clock. User can connect an external 32.768KHz oscillator to the module in two places, one for ARM host processor and other for Wi-Fi® SLEEP clock. Refer to the SN820x data sheet at the my Murata website:

Technical support
Go to https://my.murata.com/en/home. You will need your serial number for registration.

Q15. Q. What support does Murata provide for modules?

In most cases support is provided through the Murata website. Inquiries can be made through the web page or through your sales representative. Click here and use the Contact Us form.
Murata provides technical support including technical documentation through the my Murata technical support web portal. You will need to obtain the Murata design kit and use the serial number on the mother board to register at my Murata. Register first to access my Murata, then request approval to access your product section. Once approved, you will have access to software as well as technical documentation to start development into your product. Be sure to read and agree to the SLA before getting the software.