

SN820x

**SN8200 to
SN8205
Migration
Guideline**

Application Note

Revision History

Revision	Date	Author	Change Description
1.0	10/29/2014	RF PD	Initial version

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1 Scope

Due to Broadcom's discontinuing WICED support for the STM32F103 microcontroller starting from version 3.x, Murata is discontinuing the SN8200 and SN8200UFL Wi-Fi modules. The Murata SN8205 and SN8205UFL are hardware drop in replacements. Depending on the firmware being used, some effort may be required to convert the firmware from the SN8200 series modules to the SN8205 series modules.

The SN8205 series offers a more powerful ARM Cortex M3 MCU with larger RAM and Flash than the SN8200 series. This application note explains in detail what needs to be done to convert from the SN8200 series to the SN8205 series.

2 Background

The SN8200 series includes an on-board STM32F103 MCU, while the SN8205 series uses an STM32F205 MCU with larger RAM and Flash as shown in the table below. Both series modules are compatible with the Broadcom WICED™ SDK. The larger RAM and Flash allows you to add larger applications or more user content in the SN8205 series modules.

Starting with the WICED™ SDK version 3, the STM32F103 has been dropped from the supported platform list. Future updates and new features will be available only on the STM32F205 platform.

Model #	P/N	Built-in STM	RAM Size	Flash Size
SN8200	88-00151-00	STM32F103	96KB	768KB
SN8200UFL	88-00151-02	STM32F103	96KB	768KB
SN8205	88-00158-00	STM32F205	128KB	1024KB
SN8205UFL	88-00158-02	STM32F205	128KB	1024KB

3 Overview

SN820x modules share the same design, see Figure 1. The only difference is the STM32 MCU. The two series of modules share the same RF front end design, physical size, and pin out. They also share the same FCC/IC ID. For details, please refer to the Murata *SN820x Family Data Sheet*.

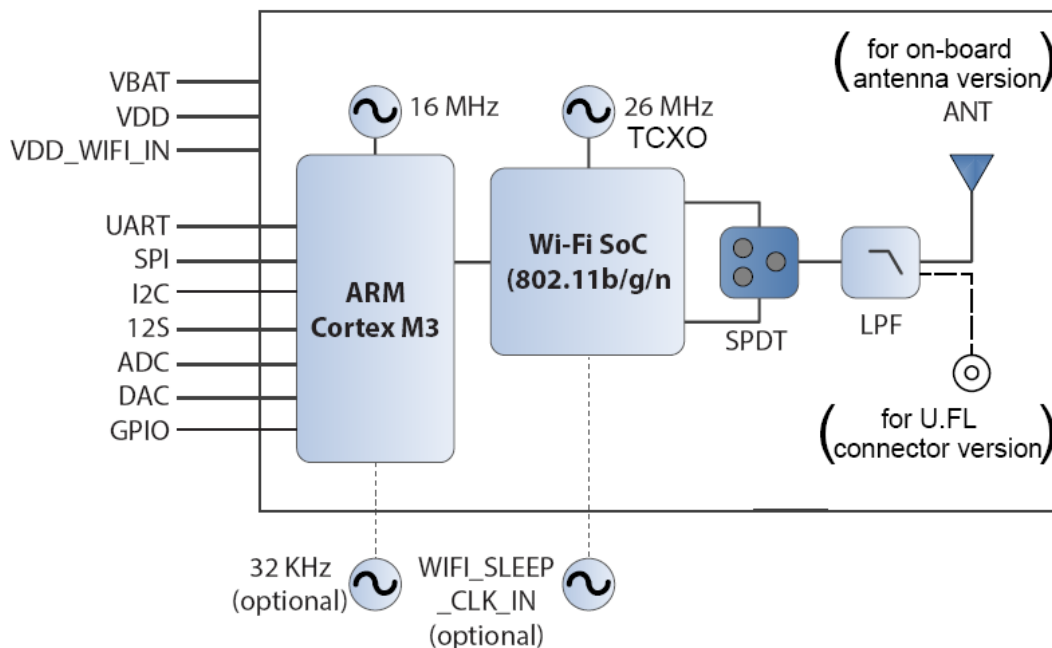


Figure 1 SN820x Block Diagram

The following sections address the changes required to convert a design from the SN8200 series to the SN8205 series modules.

4 Hardware

There is no hardware design change required when switching from SN8200 to SN8205 or from SN8200UFL to SN8205UFL. The two series of modules have the same size and pin out and recommended PCB landing pattern. For details of the recommended host (customer) PCB pattern, please refer to the Murata *SN820x Family Data Sheet* and the *SN820X Family User Manual*.

5 Software

The customer has two software options when using SN820x modules: the Murata SN820x SNIC Software or the Broadcom WICED™ SDK.

5.1 Murata SN820x SNIC Software

The Murata SNIC software has separate packages for the SN8200 and the SN8205 modules with the same feature set. As mentioned above, the SN8205 modules offer larger Flash space for customer web content when using the EZ Web Wizard feature.

5.1.1 SNIC Host Software

There is no need to modify the host software for the UART or SPI. The host API is identical for the SN8200 series and the SN8205 series. Please refer to the Murata *SNIC Serial Interface Specification* for details.

5.1.2 Firmware Configuration

Repeat the same configuration with the SN8205 SNIC Monitor tool as done with the SN8200 SNIC Monitor tool to generate the firmware image for SN8205. The procedure is identical. Please refer to the Murata *SN82xx SNIC EZ Web Wizard Development Platform User Manual* and the *SN8205 SNIC EVK+ User Guide*. These manuals are available on the Murata website.

5.1.3 Firmware downloading procedure

The firmware downloading procedure is the same for both the SN8200 series and SN8205 series modules when using the STLinkV2, ST Flash Tool. You will need to specify the STM32F205 instead of the STM32F103. Please refer to the Murata *SN820x Firmware Downloading Application Note* (AN-SN8200_002).

5.2 Broadcom WICED™ SDK

5.2.1 Firmware programming

For customers who have used the WICED™ SDK to develop custom firmware for the module, include the SN8205 series patch files when compiling the code to be loaded on the SN8205 series modules. Please refer to the Murata *WICED™ Application Development with SN82XX EVK* Document for details.

If you are using hardware resources of the STM32F103 that are not covered by the WICED™ SDK, you must make changes in your code to reflect the differences in the affected resources between the STM32F103 and the STM32F205. In this case, please refer to the STM data sheets for the STM32F103 and the STM32F205.

6 Regulatory

The SN8205 series shares the same RF design with the SN8200 series, and therefore share the same FCC, IC and Brazil Anatel certification ID. Both the SN8200 series and the SN8205 series have passed the ETSI EN 300 328 test. There is no need to re-do the FCC and IC certification tests when switching from SN8200 to SN8205 or from SN8200UFL to SN8205UFL.

Please refer to the Murata *SN820x Family Data Sheet* and the *SN820X Family User Manual* for instructions how to use the module certificate.

7 Assembly

The SN8205 series and the SN8200 series have the same packaging format. The reflow profile is the same for both series modules.

8 Performance and Reliability

The SN8205 and the SN8200 products have the same RF and reliability performance. Please refer to the Murata *SN820x Family Data Sheet* and the *SN820X Family User Manual*

9 Technical Support Contact

Contact Wireless module application support at modules@murata.com

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