



Programming a BC118 Discovery Kit using a CSR CNS12016v1A

Application Note



SIERRA
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Rev 1

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Due to the nature of wireless communications, transmission and reception of data can never be guaranteed. Data may be delayed, corrupted (i.e., have errors) or be totally lost. Although significant delays or losses of data are rare when wireless devices such as the Sierra Wireless modem are used in a normal manner with a well-constructed network, the Sierra Wireless modem should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death, or loss of property. Sierra Wireless accepts no responsibility for damages of any kind resulting from delays or errors in data transmitted or received using the Sierra Wireless modem, or for failure of the Sierra Wireless modem to transmit or receive such data.

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Revision History

Revision number	Release date	Changes
1	March 23, 2017	Initial revision in SWI template.

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>> 1: Introduction

The BC118 can be programmed using any CSR USB<->SPI converter and a level translator, if applicable.

Using a CNS10020V3A, however, is somewhat complicated due to the proprietary cable connection on the board. The only way to use the CNS10020V3A to program a BC118 DisKit, is to use the USB<->SPI as part of the CSR CNS12016v1A development kit, or similar, that exposes the SPI and PIO/SPI select PIOs.

Requirements

- CSR CNS12016v1A
- e2cmd.exe utility, part of CSR μ Energy, available in the */tools/bin* directory
- BC118 Development kit
- If not using BC118 DevKit, ensure that all boards connected use the same voltage levels!

>> 2: Preparation

1. Connect the CNS10020V3A and CSR CNS12016v1A together and to a PC and set up for programming as explained in CSR documentation.
2. Back up any firmware on your CNS10020V3A if you need it.
This is most easily done by taking a full EEPROM dump using *e2cmd*:
`e2cmd dump <destination_file_name>.img`
3. Erase the CNS10020V3A using *e2cmd*:
`e2cmd fill 0xffff`
4. Deselect SPI mode on the SPI/PIO pin by bridging in 1 and 2 on the SPI/PIO jumper.

3: Procedure

1. Connect the SPI lines and a common ground on the CSR CNS12016v1A header to the SPI lines on the BC118 Discovery Kit header. Please refer to [Figure 3-1](#) for details.
2. Ensure that the BC118 SPI/PIO jumper is set to SPI and that the CNS10020V3A SPI/PIO jumper is set to PIO.
3. Power the BC118 Discovery Board.
4. Proceed to program the BC118 as normal via μ Energy or e2cmd.

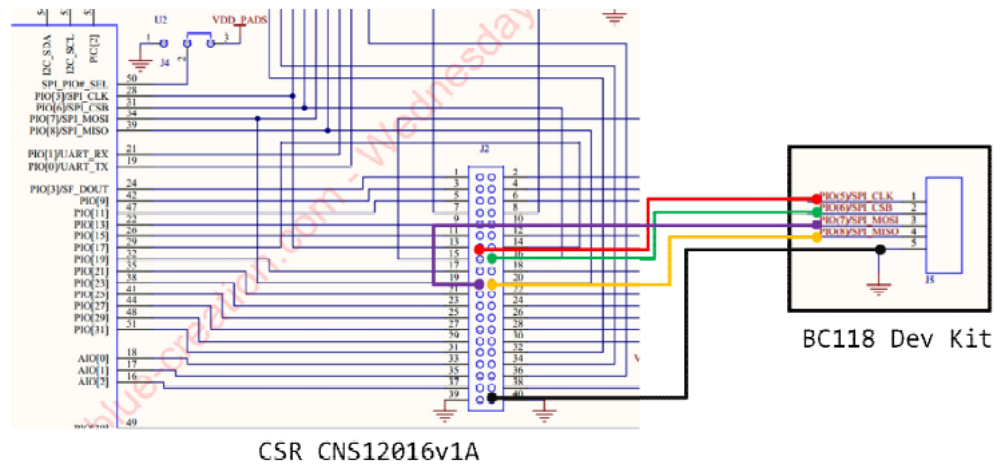


Figure 3-1: Connecting CNS12016v1A to BC118 Development Kit

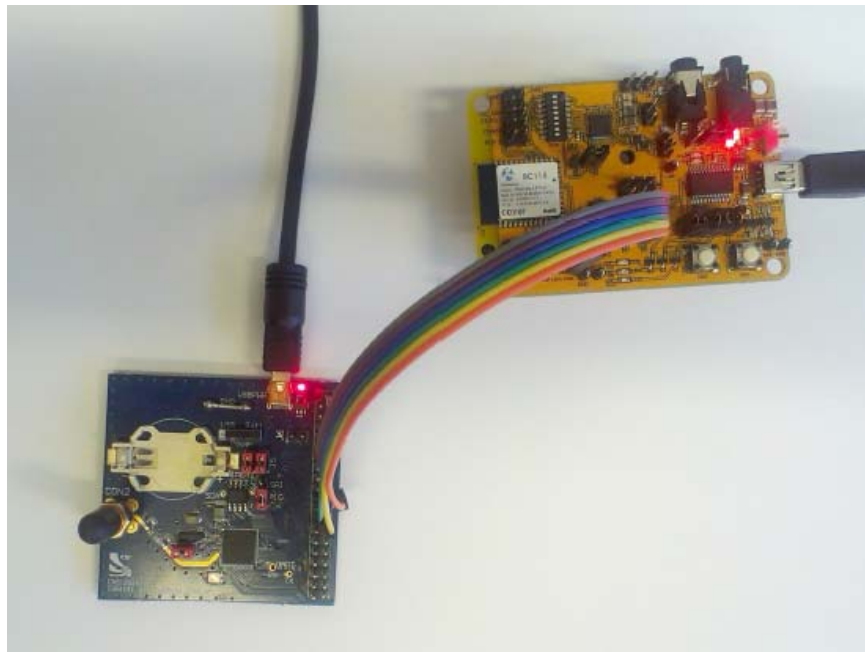


Figure 3-2: Physical Setup