Areus Bluetooth Low Energy Module

Integration Manual

Areus Engineering GmbH
Hertzstraße 16
D-71083 Herrenberg
Germany

+49 7032 32098-0
info@areus.de
www.areus.de

Content

1. Preface

In order to get the best performance and obey regulations, the following guiedes must be followed when integrating the Areus Bluetooth Low Energy Module into customer applications. Car hast o be taken in three areas: Hardware integration, Software and Documentation. This manual describes the necessary steps in each area.

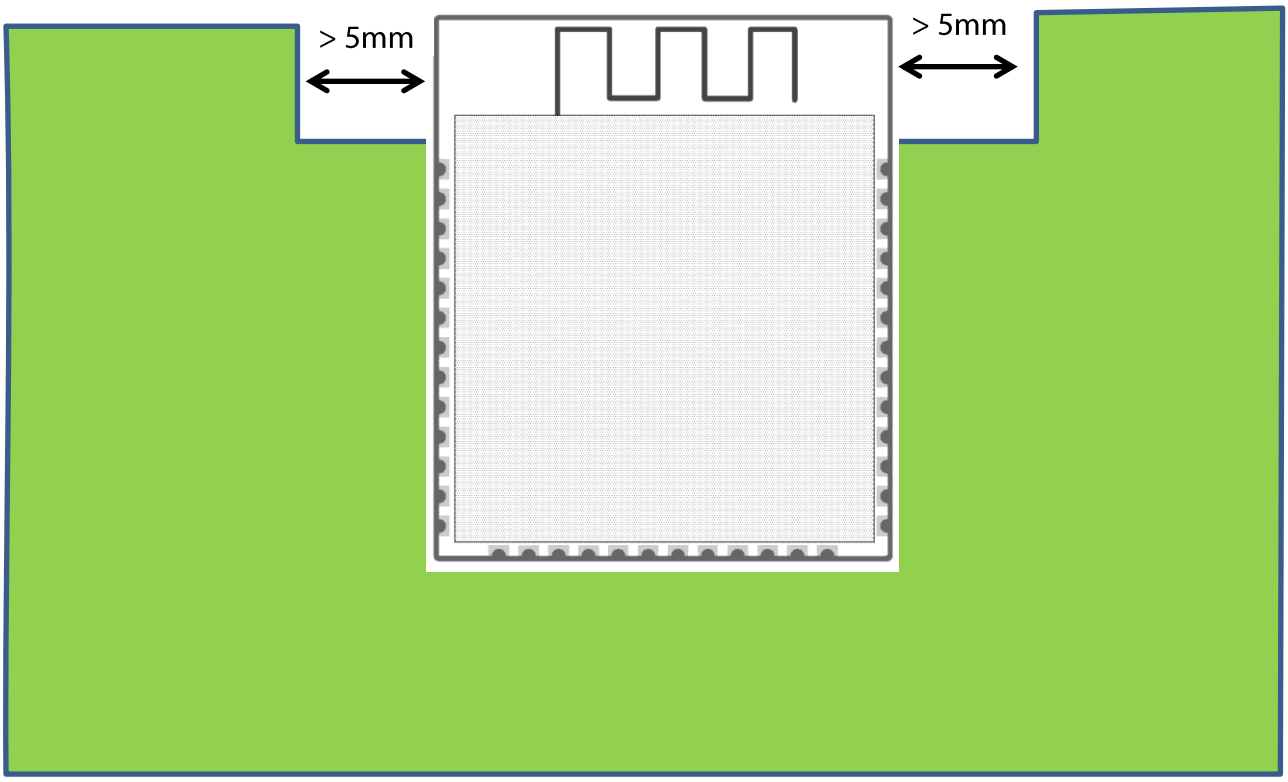
2. Hardware

The Areus Bluetooth Module is designed for direct soldering onto the target applicaiton PCB. Standard JEDEC PCB-free reflow soldering temperature profiles apply.

Schematic and Layout as well as STEP 3D models are available for custom board design upon request.

Further details for voltage and temperature range or pin assignement are inside of the user manual.

For best RF performance, place the module at the edge oft he target board, cutting out the board PCB as shown:



Keep a minimum distance of 5 mm between any high speed or high energy switching signals and the Areus Bluetooth Low Energy Module.

Keep any metal parts (e.g. housing, mounting screws etc.) at least 10 mm away from the module's PCB antenna.

3. Software

The Areus Bluetooth Low Energy Module's firmware consists of three parts: Boot loader, Bluetooth Low Energy Stack („SoftDevice") amd application firmware. Bootloader and Soft Device are available from Nordic Semiconductor's website or from Areus upon request.

Firmware programming is performed via an ARM SWD-Interface compatible programmer, e.g. a Segger J-Link / J-Flash device. For details, please refer to your programmer's manual.

For bootloader and SoftDevice programming, Nordic Semiconductor's nRFgo-Studio can be used. This tool is available on Nordic Semiconductor's website free of charge. For details please refer to www.nordicsemi.com.

4. Marking and Documentation

In order to obey regulation requirements, the following statement must be printed on the target application at a user-readable position:

The end user manual must contain the following regulatory information:

> *This device complies with Industry Canada licence-exempt RSS standard(s) and part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.*
>
> *Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.*
>
> *Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.*

The following text has to be put on the label of the end device:

Contains FCC ID: 2AIO7BLE
Contains IC: 21720-BLE

5. Regulatory and Safety Information

After integrating the module according the intergration and user manual, the following points must be considered:

The end-device must comply with the FCC regulations under regulation **chapter 1 part 15 B.** The compliance must be shown while the built-in RF module is in full operation, i.e. the module is in transmission mode and the emission levels show still compliance to **part 15 C**, regarding the fundamental and out-of-band requirements. At the end, the end-device manufacturer must choose the proper equipment authorization under the regulations of **subpart B of §15.101 .**

CE

FCC ID: 2AIO7BLE
IC: 21720-BLE

6. Revision History

Version	Issue Date	Author	Modifications
1.0	7.11.2016	O. Dengler	Initial version
1.1	10.11.2016	O. Dengler	Added regulatory statements