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CalAmp SCI BLE User Manual

FCC ID: APV-SC1204

IC ID: 5843C-SC1204



Author	Version	Date	Note of change
Francis Regan	1.0	4/8/2019	Original release
Francis Regan	1.1	4/09/2019	Added FCC & IC label instructions

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Introduction

This application note documents the use of the SCI_BLE chip in the SC1204 tracking device. The SCI_BLE is based off the nRF51822 chip which is a general purpose, ultra-low power SoC ideally suited for Bluetooth® Low Energy and 2.4 GHz proprietary wireless applications. It is built around the 32-bit ARM® Cortex™-M0 CPU with 256/128 KB flash and 32/16 KB RAM. The flexible 2.4 GHz radio supports Bluetooth Low Energy and 2.4 GHz proprietary protocols. The SCI_BLE module is not intended for OEM integrators or end users.

Description

The SCI_BLE uses a proprietary protocol. The SCI_BLE listens for BLE broadcast messages. The SCI_BLE sends out a signed broadcast message in response to a Logging Tag claiming to have data to upload. Upon receipt of the signed broadcast message from the Logging Tags will communicate multiple broadcast messages which the SCI_BLE will receive. It can only be installed in the CalAmp products at the grantee manufacturing facility.

Regulatory Information

Human Exposure Compliance Statement

Pursuant to 46 CFR § 15.247 of the FCC Rules and Regulations, personal communications services (PCS) equipment is subject to the radio frequency radiation exposure requirements specified in § 1.1307(b), § 2.1091 and § 2.1093, as appropriate.

CalAmp Wireless Networks Corp. certifies that it has determined that the module complies with the RF hazard requirements applicable to broadband PCS equipment operating under the authority of 46 CFR § 15.247 of the FCC Rules and Regulations. This determination is dependent upon installation, operation and use of the equipment in accordance with all instructions provided.

The module is designed for and intended to be used in fixed and mobile applications. “Fixed” means that the device is physically secured at one location and is not able to be easily moved to another location. “Mobile” means that the device is designed to be used in other than fixed locations and generally in such a way that a separation distance of at least 20 cm is normally maintained between the transmitter’s antenna and the body of the user or nearby persons. The SC1204 is not designed for or intended to be used in mobile applications (within 20 cm of the body of the user) and such uses are strictly prohibited.

To ensure that the module complies with current FCC regulations limiting both maximum RF output power and human exposure to radio frequency radiation, a separation distance of at least 20 cm must

be maintained between the unit's antenna and the body of the user and any nearby persons at all times and in all applications and uses. Additionally, in mobile applications, maximum antenna gain must not exceed 2 dBi.

FCC Rules and Industry Canada (IC) regulatory information

Labeling Requirements

The SC1204 will have the following listed on a label on the unit:

Contains FCC ID: APV-SC1204

Contains IC: 5843C-SC1204

Compliance Statement (Part 15.19)

The equipment device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received including interference that may cause undesired operation. Warning (Part 15.21)

Changes or modifications not expressly approved by CalAmp Wireless Networks Corp could void the user's authority to operate the equipment. Manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment.

Compliance Statement (Part 15.105(b))

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Industry Canada license-exempt RSS standard(s). 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.

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'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Class B digital device notice

“CAN ICES-3 (B)/NMB-3(B)”

RF Radiation Exposure Statement

This equipment complies with the FCC/IC radiation exposure limits set fourth for mobile transmitting devices operation in an uncontrolled environment. End users must follow the specific operating instructions to satisfy RF exposure compliance.

The equipment should only be used where there is normally at least 20cm separation between the antenna and all person/user.

This transmitter must not be co-located or operation in conjunction with any other antenna or transmitter.