

FISHMAN

BLUETOOTH RECEIVER MODULE

ALM-A01-CSR8645

USER MANUAL



FCC ID: RMU-PROLBX500

IC: 10812A-PROLBX500

FCC Compliance Statement

This 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.

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital devices, 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 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.

Warning

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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 that may cause undesired operation of the device.

WARNING!

FCC and IC Radiation Exposure Statement:

The device complies with FCC's and IC's RF radiation exposure limits set forth for an uncontrolled environment under the following conditions:

1. This equipment should be installed and operated such that a minimum separation distance of 20cm is maintained between the radiator (antenna) & user's/nearby person's body at all times.
2. This transmitter must not be co-located or operating in conjunction with any antenna or transmitter.

BLUETOOTH

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1. INTRODUCTION

ALM-A01-CSR8645 is a complete Bluetooth solution and high-quality module with PCB antenna. It is built on ROM-based chip CSR8645 based on CSR BC08 Multimedia Core, fully compliant with Bluetooth core specification V4.1, with high performance stereo ADC and DAC and aptX Hi-Fi quality stereo codec.

It's a short range, compact and cost effective module, able to be embedded into your electronics devices which need Bluetooth connection.

2. FEATURES

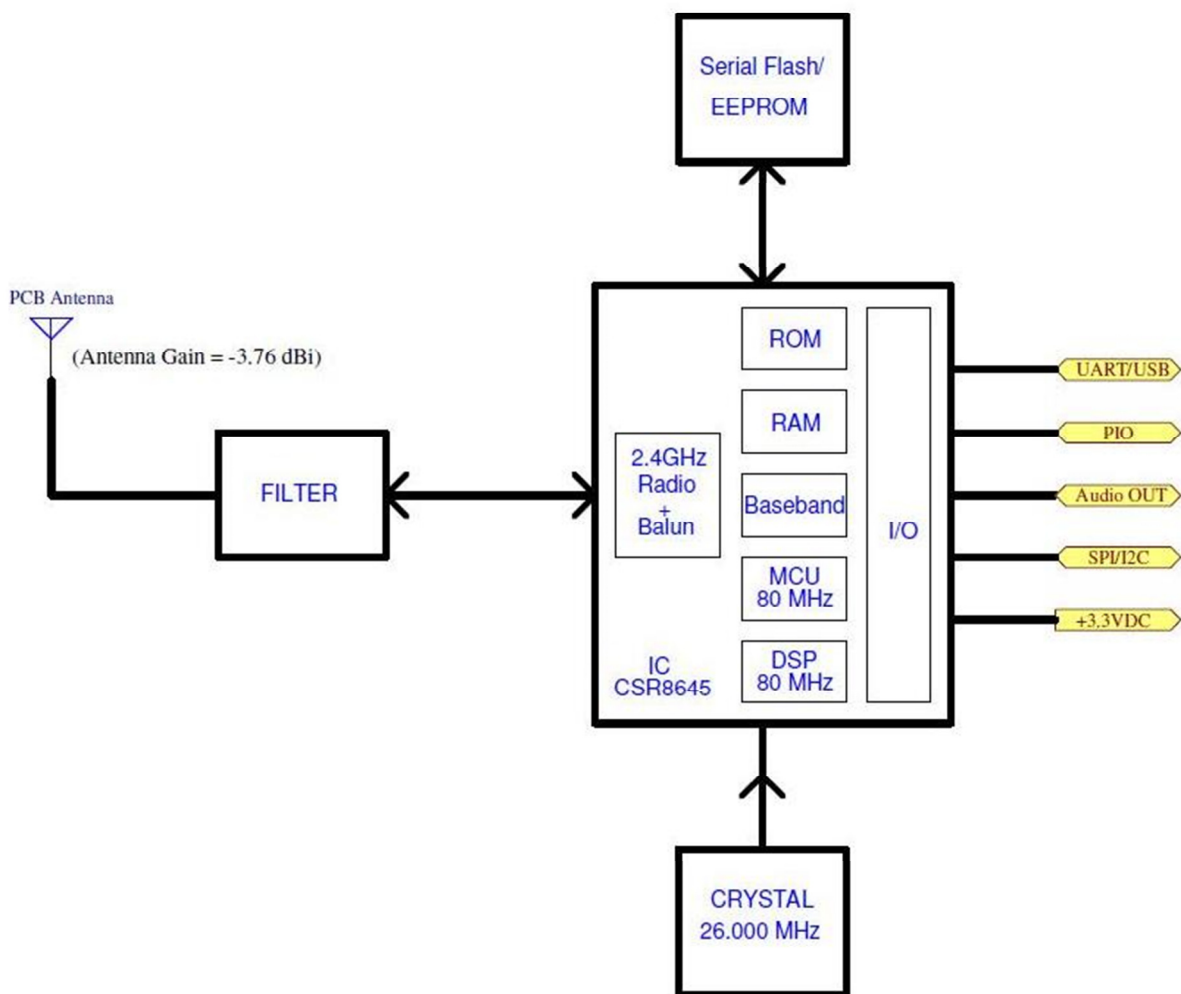
- A small and cost effective Bluetooth System
- Bluetooth specification v4.1 compliant
- Class 2, up to 10-meter range
- Security simple pairing
- Bluetooth Profile Supported: HSP, HFP, A2DP, AVRCP
- aptX, SBC, MP3 and AAC decoder support
- Multiple connections support (2HFP connections and 2A2DP connections)
- CSR's latest CVC technology for narrowband and wideband voice connections
- 5-band fully configurable EQ
- Parameters configurable
- Wired audio support: USB and analogue

- Power management: low power 1.8V operation for Bluetooth core
- PCB antenna (antenna gain -3.76 dBi)
- Compact size: 24.00mm x 17.80mm
- Surface mount package for embedded applications
- 3 LED outputs

3. BLOCK DIAGRAM



Bluetooth® Module ALM-A01-CSR8645



4. SPECIFICATIONS

- Operation Frequency Band 2.4GHZ ~ 2.48GHz unlicensed ISM band
- Bluetooth Specification V4.1
- Output Power Class Class 2
- Operation Voltage 1.8V/3.3V
- Operation current 21 mA
- Host Interface USB 2.0
- Audio Interface Analogue
- Dimension 24mm (L) x 17.8mm (W)

5. OPERATION INSTRUCTION

The following paragraphs explain the operation of the Bluetooth used in the Loudbox Mini, Loudbox Artist and Loudbox Performer systems. Assuming the Bluetooth® is not already powered on i.e. the green LED is off unless noted;

1. If the unit has been previously paired with another Bluetooth device the system will ready for operation once the Bluetooth® has been turned on. To turn on the Bluetooth® module the button must be pressed for less than 5 seconds. An ascending tone can be heard from the speaker indicating that the Bluetooth® is now operational. The LED will slowly flash indicating that the system is paused. Pressing the button momentarily will set the device to play mode and the LED will be on solid (no flashing).

2. To pair a device NOT previously paired, the Bluetooth® button must be held for at least 5 seconds. An ascending tone can be heard through the speaker indicating the Bluetooth® is operational. The Green LED will flash rapidly indicating it is in discover mode and is ready for pairing. At this point a device that has Bluetooth® capability can connect to the Bluetooth Module which is identified as “Fishman LBX”. Once paired, the LED will blink momentarily until the device plays music. When playing music the LED will stay on solid (no blinking). The music can be paused by momentarily pressing the button. Once the music is paused the LED will blink indicating “paused”. Pressing the button again will end the “pause” mode and begin playing music.
3. To turn off the Bluetooth® after it has been operational (LED On), the button can be held until a descending tone is heard at which point the LED will turn off and the Bluetooth® is disabled.