

SBT-50D Bluetooth Module User Manual

1. Introduction

The SBT-50D Bluetooth module is a module designed to optimize the functions required for electronic instruments. In particular, it supports Bluetooth audio functions and BLE MIDI functions when applied to electronic instruments such as electronic pianos and electronic drums, and supports the page turner function for electronic music score control depending on the option selection. SBT-50D is compatible with Bluetooth V5.1+BR+EDR+BLE specifications, and supports A2DP, AVRCP profiles, and BLE MIDI specifications using GATT.

2. Block diagram

Confidential

3. Features

- Size (20mm x 17mm x 2mm)
- Bluetooth V5.1+BR+EDR+BLE specification compatible
- CALSS 2 transmission output
- Support A2DP/AVCTP/SPP/GATT profiles
- Two channel 16bit DAC, SNR \geq 95dB
- Two channel 16bit ADC, SNR \geq 90dB
- Support 8K/11.025K/16K/22.05K/24K/32K/44.1K/48K sampling rate
- 2.2V ~ 5.5V operating voltage (Vbat)
- Support +6dBm transmission output, -90dBm reception sensitivity
- 0 ~ +40°C operating temperature

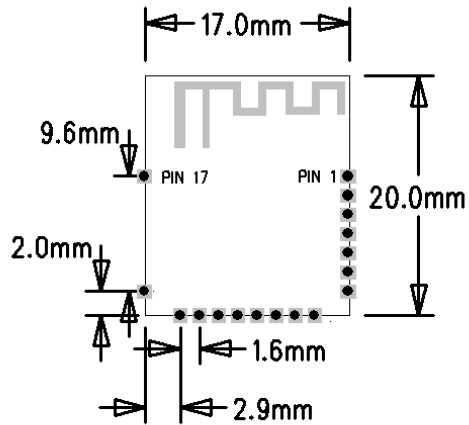
4. Applications

- Electronic musical instrument audio receiver (speaker), electronic musical instrument BLE MIDI,

5.Specifications

BLUETOOTH SPEC.	
CHIP SET	AC6966B
MODULE ID	SBT-50D
BT STANDARD	Bluetooth V5.1 specification
RF TX Output Power	4dBm (Class II)
Sensitivity	-90dBm@0.1%BER
Frequency Band	2.402GHz~2.480GHz ISM Band
Baseband Crystal OSC	24MHz
Major Interface	Speaker : Output (Differential) UART : Tx/Rx (BLE MIDI) GPIOs
Profile	A2DP, AVRCP, GATT(BLE MIDI)
Audio Processing	SBC, AAC Audio Decodes supported for BT audio
Power	
Supply Voltage	2.2V ~5V DC
Working Current	15mA Typical, Depends on profile
Standby Current	<1mA
Operation Environment	
Temperature	0°C to +40°C
Environmenta l	RoHS Compliant

6. PHYSICAL CHARACTERISTIC



7. PIN Description

No.	Name	Description
1	GND	Power Ground
2	Vbat	Power Supply
3	PB5	GPIO(High Voltage Resistance), PWM3, Status LED
4	PB4	GPIO, ADC7
5	PB1	GPIO(PULL UP), AD_KEY, ADC5
6	DACR	DAC Right Channel
7	DACL	DAC Left Channel
8	AGND	DAC Ground
9	PA0	UART1 TXD(MIDI OUT)
10	PA1	UART1 RXD(MIDI IN)
11	N.C	NO CONNECTION
12	USB DP	USB Positive Data, UART0 Txd
13	USB DM	USB Negative Data, UART0 Rxd
14	PC4	GPIO
15	PC5	GPIO
16	GND	Digital Ground
17	GND	Digital Ground

FCC Compliance Statement(Part 15.19 (3))

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(Part 15.105)

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 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 which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC Radiation Exposure Statement (Part 2.1093)

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.