

Module SDC-LE-02HS

Specification Document

V1.0

edition	revision content	date	Revision Author
V1.0	Initial Version	2026/5/18	WZJ

1. Product Overview

The SDC-LE-02HS is a dual-mode Bluetooth module featuring a surface-mount interface. Its serial port is compatible with 3.3V voltage level. Key features include:

- BT5.4 Dual Mode (PCaA15E2B On Board, QDID: 215269)
- 16-bit stereo, software EQ equalizer, 1-stage DRC dynamic range compression
- A 32-bit RISC-V CPU with a clock frequency of 125 MHz, featuring 4 MB of built-in Flash memory and 128 KB of built-in RAM.
- Supports audio playback via an expanded SD card

2. Electrical Parameters

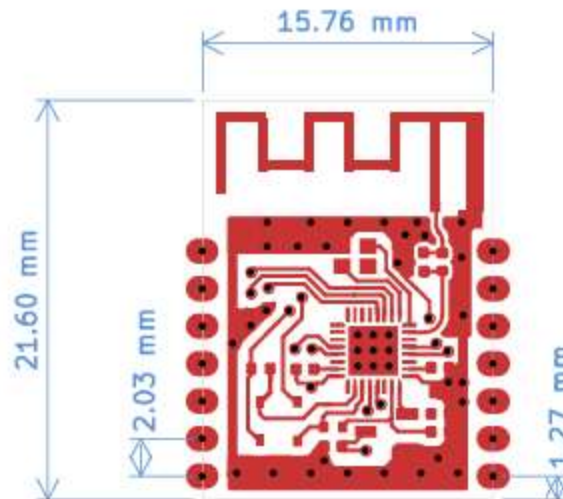
electrical character

name	least value	representative value	crest value	unit
I/O supply voltage	-	3.3	-	V
VDDIO	-	3.3	-	V
working temperature	-40		85	°C
Storage temperature	-65		150	°C

***Absolute maximum rated value; exceeding this may cause chip damage.**

IO parameter

name	least value	representative value	crest value	unit
VIL	-0.3		1.27	V
VIH	2.03		3.6	V



Module Dimension Diagram

4. Pin Definition

The SDC-LE-02HS features a total of 14 interfaces.

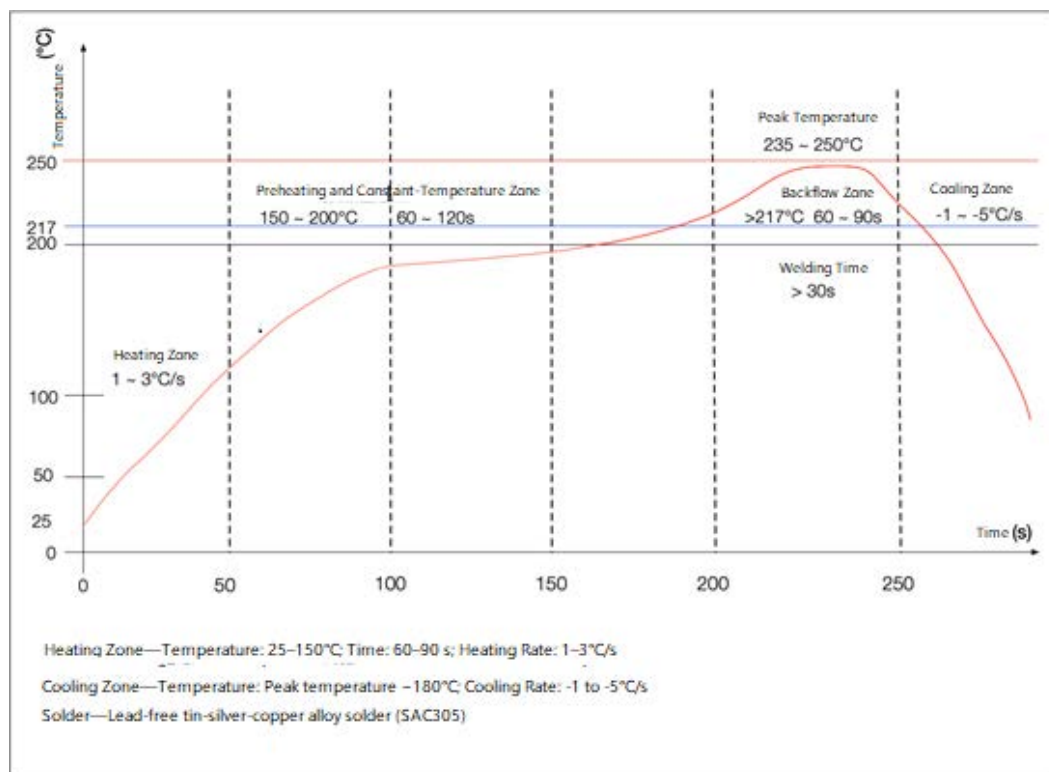
pin	Signal Name	description	Pin type	TFCARD
PA7	GPIO	GPIO-PA7/ADC2	I/O (Input/Output)	
(DM)PB4	USB_DM	USB data negative signal	I/O (Input/Output)	
(DP)PB3	USB_DP	USB data positive signal	I/O (Input/Output)	
PE0	MUTE	Mute control pin: Muted at low level	O (output)	
DACR	M DACR	Right channel audio output	O (output)	
DACL	M DACL	Left channel audio output	O (output)	
GND	GND	Power supply location	P (source)	
GND	GND	Power supply location	P (source)	
VBAT	VBAT	Positive terminal of the power supply, operating voltage range: 3.0V to 6V (typically 5V)	P (source)	
PE5	GPIO	GPIO-PE5/ADC7	I/O (Input/Output)	SDCMD
PB1	AUDIO	After audio connection, the output is low-level with a	O (output)	

		maximum voltage rating of 3.6 V.		
PB0	APP	After connection, the app outputs a low level with a maximum voltage rating of 3.6 V.	O (output)	
(TX)PE7	UART_TX	Serial TX data transmitter, compatible with 3.3V/5V voltage levels	O (output)	SDDATA
(RX)PE6	UART_RX	Serial RX data receiver, compatible with 3.3V/5V voltage levels	I (import)	SDCLK

Pin Function Definition Table

5. plant use

Furnace Temperature Curve



Reflow soldering temperature curve

It is recommended that the module undergo only one reflow soldering process.

ultrasonic vibration

Avoid exposing the module to vibrations from ultrasonic equipment such as ultrasonic welding

machines or ultrasonic cleaners. The vibrations from such equipment may resonate with the internal crystal oscillator of the module, leading to oscillator failure or malfunction, which can result in the module failing to operate or experiencing performance degradation.

For ultrasound application scenarios, please contact us to provide the specific model.

6. pack

Packaging Type	explain
Bandage pack	TBD
Disk packaging	TBD

FCC Statement

Any 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 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 Radiation Exposure Statement:

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

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.

OEM Guidance

1. Applicable FCC rules

This module has been tested and found to comply with part 15.247 requirements for Modular Approval.

2. The specific operational use conditions

This module can be used in IoT devices. The input voltage to the module is nominally 3.3V DC. The operational ambient temperature of the module is -40 to 85 degree C. Only the embedded PCB antenna is allowed. Any other external antenna is prohibited.

3. Limited module procedures

N/A

4. Trace antenna design

N/A

5. RF exposure considerations

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

6. Antenna

Antenna type :PCB Antenna; Antenna Max. Peak Gain 1.39 dBi

7. Label and compliance information

When the module is installed in the host device, the FCC ID label must be visible through a window on the final device or it must be visible when an access panel, door or cover is easily re-moved. If not, a second label must be placed on the outside of the final device that contains the following text: "Contains FCC ID: 2BT3H-SDC-LE-02HS "

The FCC ID can be used only when all FCC ID compliance requirements are met.

8. Information on test modes and additional testing requirements

a)The modular transmitter has been fully tested by the module grantee on the required number of channels,modulation types, and modes, it should not be necessary for the host installer to re-test all the available transmitter modes or settings. It is recommended that the host product manufacturer, installing the modular transmitter,perform some investigative measurements to confirm that the resulting composite system does not exceed the spurious emissions limits or band edge limits (e.g., where a different antenna may be causing additional emissions).

b)The testing should check for emissions that may occur due to the intermixing of emissions with the other transmitters, digital circuitry, or due to physical properties of the host product (enclosure). This investigation is especially important when integrating multiple modular transmitters where the certification is based on testing each of them in a stand-alone configuration. It is important to note that host product manufacturers should not assume that because the modular transmitter is certified that they do not have any responsibility for final product compliance.

c)If the investigation indicates a compliance concern the host product manufacturer is obligated to mitigate the issue. Host products using a modular transmitter are subject to all the applicable individual technical rules as well as to the general conditions of operation in Sections 15.5, 15.15, and 15.29 to not cause interference. The operator of the host product will be obligated to stop operating the device until the interference have been corrected .

9. Additional testing, Part 15 Subpart B disclaimer

The final host / module combination need to be evaluated against the FCC Part 15B criteria for unintentional radiators in order to be properly authorized for operation as a Part15 digital device. The host integrator installing this module into their product must ensure that the final composite product complies with the FCC requirements by a technical assessment or evaluation to the FCC rules,including the transmitter operation and should refer to guidance in KDB 996369. For host products with certified modular transmitter, the frequency range of investigation of the composite system is specified by rule in Sections 15.33(a)(1) through (a)(3), or the range applicable to the digital device, as shown in Section 15.33(b)(1), whichever is the higher frequency range of investigation. When testing the host product, all the transmitters must be operating. The transmitters can be enabled by using publiclyavailable drivers and turned on, so the transmitters are active. In certain conditions it might be appropriate to use a technology-specific call box (test set) where accessory devices or drivers are not available. When testing for emissions from the unintentional radiator, the transmitter shall be placed in the receive mode or idle mode, if possible. If receive mode only is not possible then, the radio shall be passive (preferred) and/or active scanning. In these cases, this would need to enable activity on the communication BUS (i.e., PCIe, SDIO, USB) to ensure the unintentional radiator circuitry is enabled.

Testing laboratories may need to add attenuation or filters depending on the signal strength of any active beacons (if applicable) from the enabled radio(s). See ANSI C63.4, ANSI C63.10 for further general testing details.