

Overview

Smart RF05 is an embedded Bluetooth wireless communication module which supports Bluetooth BLE 2.4G wireless communication protocol. It has the characteristics of low power consumption, small size and strong signal with compact size This module integrates a 32-bit low power MCU. Provides a variety of smart lighting control applications for various scenarios.

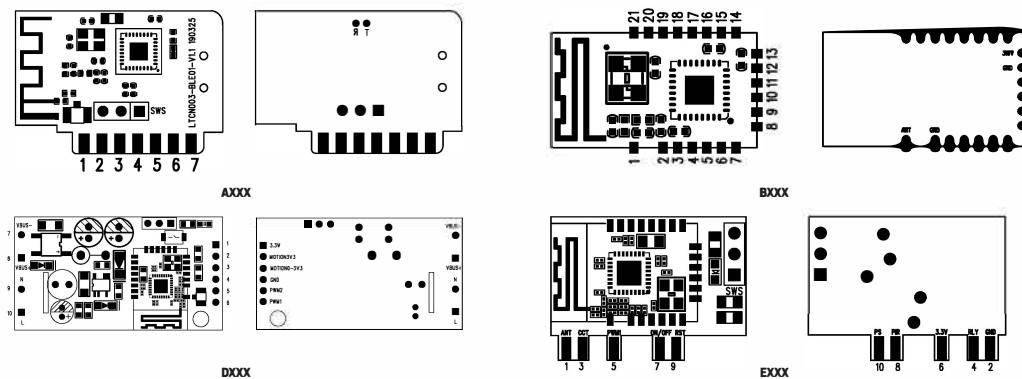
Features

- Integrated 32-bit low power MCU, enables various smart lighting control applications
- SOC module firmware built-in, completely code free
- Low-power consumption design, suitable for battery-powered devices. (switch application)
- Compatible with BLE 4.0
- RF data rates up to 2Mbps
- Transmit power up to +8dBm
- Receiving sensitivity up to -92dbm
- Supports onboard and external antennas
- Operating temperature range -40°C to 85°C

Module Specifications

The Smart RF05 module interface is designed as stamp holes.
 Pin spacing: 1.27mm (pin 1,2 spacing 2.54mm)
 Size: 10mm (L) x18mm (W)
 PCB thickness: 0.8mm

Outline Drawing



Technical Specifications

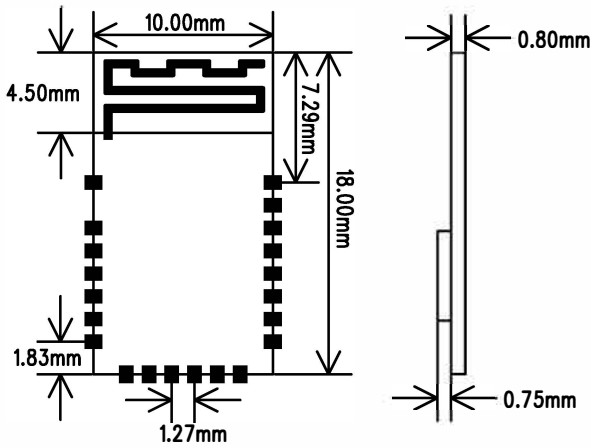
Electrical Parameters

Items	Minimum	Typical	Maximum	Unit
Operating voltage VDD	2.8	3.3	3.6	V
Operating temperature Ta	-40	-	85	°C
High-level input voltage VIH	0.7*VDD	-	VDD	V
Low-level input voltage VIL	VSS	-	0.3*VDD	V
High-level output voltage VOH	VDD-0.3	-	VDD	V
Low-level output voltage VOL	VSS	-	0.3	V

RF Parameters

Items	Specifications
Antenna	Onboard/External
Wireless standard	Bluetooth 4.0
Operating frequency	2402-2480MHz
Data transmission rate	1Mbps, 2Mbps
Maximum output power	+8dBm
Receiving sensitivity	-92dBm

Size and Package



Note: When using onboard antenna, please keep the antenna at least 15mm away from other metal components. No wire or copper around the antenna.

Model List

Picture	Model #	Description #
	B153/W	BLE module, 2KHz, Single Channel. Design for High Bay Sensor built-in.
	B258/W	BLE module, 2KHz, Dual Channel. Design for Low Bay Sensor built-in.
	B263/W	BLE module, 2KHz, Dual Channel. Design for Fixture Adapter.
	B502/W	BLE Module, RTC function, Design for Wall Switch, RTC devices.
	C265W/C257W	Adapter Board BLE module, 2KHz, Dual Channel, Sensor Ready. Design for Smart LED driver, CCT Selectable / CCT Tuning
	E266W/E267W	Adapter Board BLE module, 2KHz, Dual Channel, Sensor Ready. Design for driver on board (DOB), CCT Selectable / CCT Tuning A2D Circuits Built-in

Definition of pins

B153

No #	Name	Description	Function
1	ANT	Antenna output pin	For external antenna
2	GND	Power supply -	-
3,5,6,7,9,11, 14,16,18,19	NA	-	-
4	RELAY	Relay control pin	3.3V high/low level voltage output
8	SWS	Program burning pin	-
10	RESET	RESET pin	Connect to GND for 3S to reset
12	GND	Power supply -	-
13	VCC	Power supply +	2.8-3.6V, 3.3V recommended
15	LED	LED indicator	-
17	PWM	Dimming output pin	Frequency 2KHz
20	PS_ANA	Analog light sensor signal input	light sensor dimming
21	PIR_ANA	Analog motion sensor signal input	-

B258

No #	Name	Description	Function
1	ANT	Antenna output pin	For external antenna
2	GND	Power supply -	-
3	RELAY	Relay control pin	3.3V high/low level voltage output
4	PIR_DIG	Digital motion detection signal input	3.3V high/low level voltage output
5	SEL	Single/Dual channel output selection	NC: Dual ; GND: Single
6,7,11,14, 16,18,19,21	NA	-	-
8	SWS	Program burning pin	-
9	CCT	Color temperature control pin	Single channel: NC; Dual channel: PWM color temperature control
10	RESET	RESET pin	Connect to GND for 3S to reset
12	GND	Power supply -	-
13	VCC	Power supply +	2.8-3.6V, 3.3V recommended
15	LED	LED indicator	-
17	PWM	Dimming output pin	Frequency 2KHz
20	PS_ANA	Analog light sensor signal input	Light sensor dimming

Definition of pins

B263

No #	Name	Description	Function
1	ANT	Antenna output pin	For external antenna
2	GND	Power supply -	-
3	RELAY	Relay control pin	3.3V high/low level voltage output
4	PIR_DIG	Digital motion detection signal input	3.3V high/low level voltage output
5	SEL	Single/Dual channel output selection	NC: Dual ; GND: Single
6,7,11,14, 16,18,19,21	NA	-	-
8	SWS	Program burning pin	-
9	CCT	Color temperature control pin	Single channel: NC; Dual channel: PWM color temperature control
10	RESET	RESET pin	Connect to GND for 3S to reset
12	GND	Power supply -	-
13	VCC	Power supply +	2.8-3.6V, 3.3V recommended
15	LED	LED indicator	-
17	PWM	Dimming output pin	Frequency 2KHz
20	PS_ANA	Analog light sensor signal input	Light sensor switch

B502

No #	Name	Description	Function
1	ANT	Antenna output pin	For external antenna
2	GND	Power supply -	-
3	DELAY	Delay power outage	Use in low power consumption
4,6,18,19,21	NA	-	-
5	SDA	I ² C data line	For RTC
7	SCL	I ² C clock line	For RTC
8	SWS	Program burning pin	-
9	K2	Key 2 input	Active at high level voltage
10	K3	Key 3 input	Active at high level voltage
11	K4	Key 4 input	Active at high level voltage
12	GND	Power supply -	-
13	VCC	Power supply +	2.8-3.6V, 3.3V recommended
14	LED1	LED indicator 1	-
15	LED2	LED indicator 2	Use in low power consumption
16	K5	Key 5 input	Active at high level voltage
17	K1	Key 1 input	Active at high level voltage
20	BatDet	Low power detection	Use in low power consumption

* Keep all NA pins empty.

RF05 - Bluetooth Module

Definition of pins

C265W

No #	Name	Description	Function
1	ANT	Antenna output pin	For external antenna
2	GND	Power supply -	-
3	RELAY	Relay control pin	3.3V high/low level voltage output
4	PIR_DIG	Digital motion detection signal input	3.3V high/low level voltage output
5	SEL	Two/Fourcolor temperature selections	NC: Two ; GND: Four
6,7,11,14, 16,18,19,21	NA	-	-
8	SWS	Program burning pin	-
9	CCT	Color temperature control pin	Frequency 2KHz
10	RESET	RESET pin	Connect to GND for 3S to reset
12	GND	Power supply -	-
13	VCC	Power supply +	2.8-3.6V, 3.3V recommended
15	LED	LED indicator	-
17	PWM	Dimming output pin	Frequency 2KHz
20	PS_ANA	Analog light sensor signal input	light sensor dimming

E266W

No #	Name	Description	Function
1	ANT	Antenna output pin	For external antenna
2	GND	Power supply -	-
4	PIR_DIG	Digital motion detection signal input	3.3V high/low level voltage output
5	SEL	Single/Dual channel output selection	NC: Dual ; GND: Single
3,6,7,11,14, 16,18,19,21	NA	-	-
8	SWS	SWS	Program burning pin
9	PWM2	Low color temperature PWM control output	Single output: NC; Dual output: PWM control low color temperature
10	RESET	RESET pin	Connect to GND for 3S to reset
12	GND	Power supply -	-
13	VCC	Power supply +	2.8-3.6V, 3.3V recommended
15	LED	LED indicator	-
17	PWM1	High color temperature PWM control output	Frequency 2KHz
20	PS_ANA	Analog light sensor signal input	light sensor dimming