Dual-mode Bluetooth transparent transmission module

Technical Specifications

Antenna manufacturer company name:Shenzhen LightWind Technology Co., LTD

Address of antenna manufacturer:Room 24J, Qinghai Tower, No.7043, BeiHuan Road , Futian, Shenzhen, Guangdong, China

• Product Overview

The Bluetooth module is a module that supports the Bluetooth 4.2 standard protocol, as well as BT3.0 mode (BR/EDR) and BLE mode. This module follows the BT4.2 Bluetooth specification.

- Supported Standards BT3.0 + EDR；
- Supported Standards BLE protocol；
- Supported SPP protocol；
- Supported UART，I2C interface；
- Support low-power mode；
- Supports Bluetooth Class2 mode；
- Support 11 GPIO multiplexing channels；
- Industrial grade design；
- data encryption；
- Built in PCB antenna；
- Input voltage: Not using internal HVLDO input 1.8V~3.6V；
  Using internal HVLDO input of 3.1V~5.5V

• Application area

The Bluetooth module supports the Bluetooth SPP standard protocol and can send and receive data with all versions of Android phones. It also supports the latest Bluetooth standard BLE (BT4.2) and can be paired and connected with iOS devices that support BLE. It does not require MFI authentication or encryption chips, no additional development packages or licensing fees, and iOS devices do not need jailbreaking. It supports the permanent operation of background programs.

- Mobile peripheral devices;
- Computer peripherals;
- Wireless data transmission of medical equipment;
- Wireless data transmission of onboard instruments;
- remote controller;
- Wireless remote-controlled aircraft;
- Wireless gaming controller;

Electrical characteristics

Rating	Min		Typ		Max	Unit
VDD	1.8		/		3.6	V
VIO	VDD -0.3		VDD		VDD +0.3	V
HVIN	3.1		4.2		5.5	V
HVOUT	2.75		2.85		2.95	V
Work temperature	-20		/		+85	℃
Storage temperature	-40		/		+140	℃

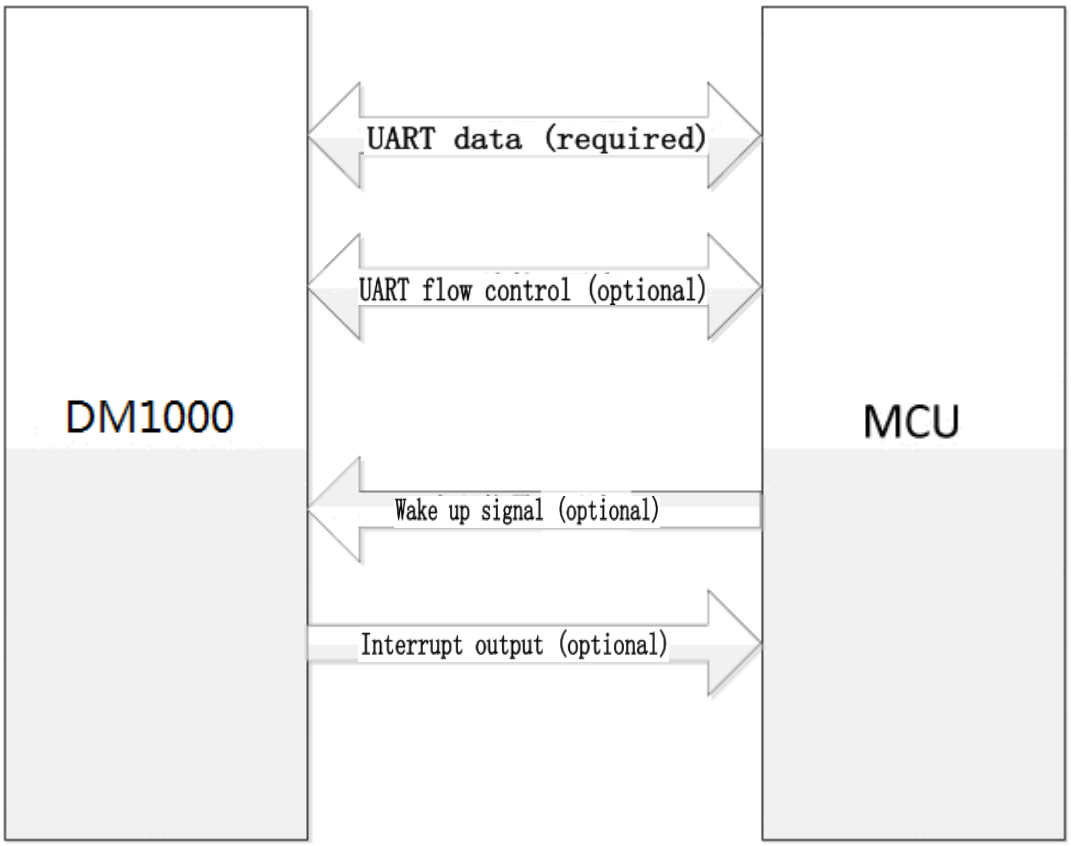
power consumption

W/O DC-DC		Parameter				Average Current	Unit
Sleep		/				620	nA
Sniff		500ms interval				21.99	uA
		ADV interval: 640ms					
Discoverable		Scan interval: 1280ms				138.66	uA
		Scan window: 11.25ms					
With DC-DC		**Parameter**				**Average Current**	**Unit**
Sleep		/				620	nA
Sniff		Sniff Interval:500ms				17.92	uA
		ADV interval: 640ms					
Discoverable		Scan interval: 1280ms				89.5	uA
		Scan window: 11.25ms					

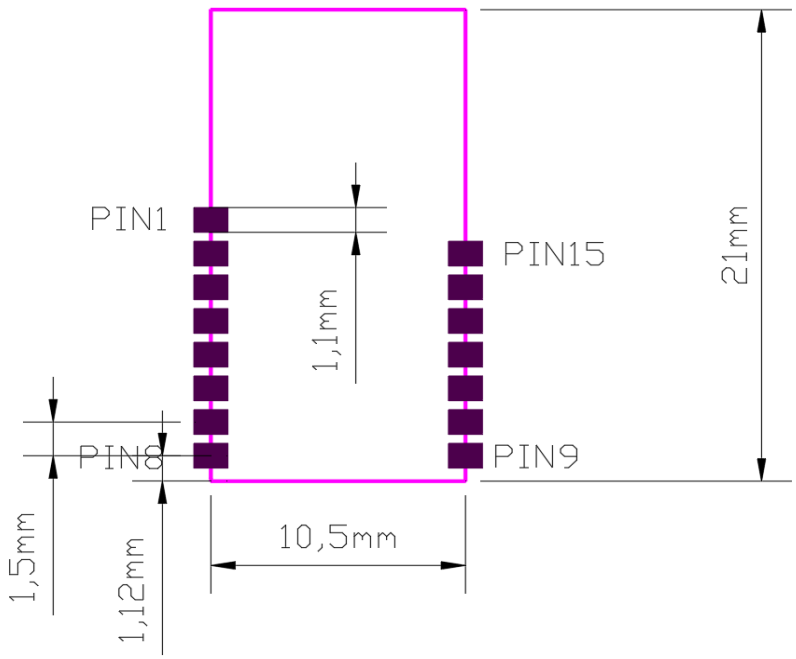
RF characteristics

Rating	Value	Unit
Basic Rate Transmission power	8	dBm
Basic Rate sensitivity	-90	dBm
BLE Transmission power	8	dBm
BLE sensitivity	-93	dBm

- Application Block Diagram



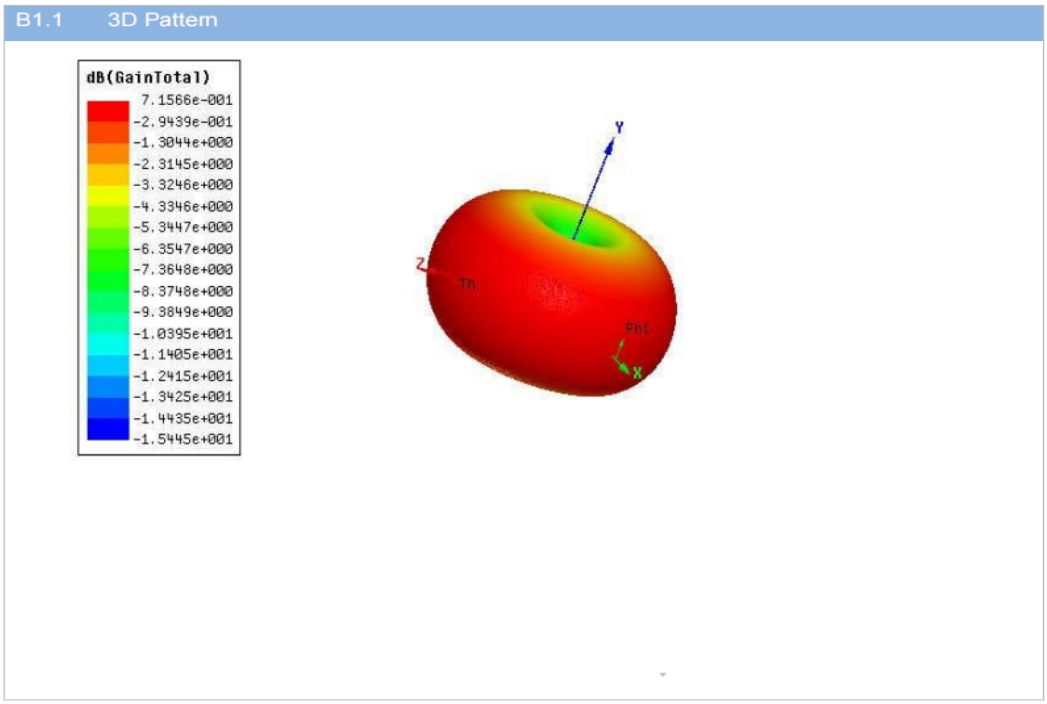
Module size and pin layout



Pin	symbol	function
1	NC	/
2	NC	/
3	NC	/
4	UART_TX	Module serial port sending pin
5	UART_RX	Module serial port receiving pin
6	GND	Module ground pins
7	VDD	module power supply 3.3V
8	GND	Module ground pins
9	GND	Module ground pins
10	RESET	Module reset pin
11	VDD	module power supply 3.3V
12	NC	/
13	NC	/
14	GND	Module ground pins
15	NC	/

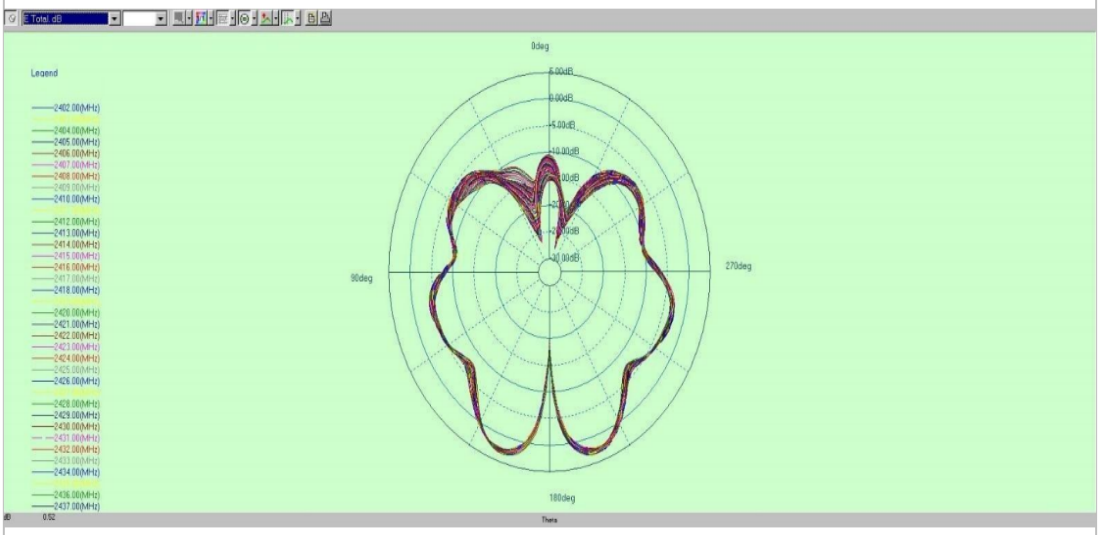
Module Sample Diagram

3D Pattern



B.2 1D Radiation Pattern

B2.1 PHI=0



Frequency	Gain (dBi)	Efficiency (%)
2402MHz	0.55	35
2403MHz	0.55	35
2404MHz	0.55	35
2405MHz	0.54	35
2406MHz	0.54	35
2407MHz	0.54	35
2408MHz	0.54	35
2409MHz	0.53	35
2410MHz	0.53	35
2411MHz	0.53	34
2412MHz	0.53	34
2413MHz	0.52	34
2414MHz	0.52	34
2415MHz	0.52	34
2416MHz	0.51	34
2417MHz	0.51	34
2418MHz	0.51	34
2419MHz	0.50	33
2420MHz	0.50	33
2421MHz	0.50	33
2422MHz	0.50	33
2423MHz	0.49	33
2424MHz	0.49	33
2425MHz	0.49	33
2426MHz	0.49	33
2427MHz	0.48	33
2428MHz	0.48	33
2429MHz	0.48	33
2430MHz	0.48	33
2431MHz	0.48	33
2432MHz	0.47	32
2433MHz	0.47	32
2434MHz	0.47	32
2435MHz	0.47	32
2436MHz	0.46	31
2437MHz	0.46	31
2438MHz	0.46	31

2439MHz	0.46	30
2440MHz	0.45	30
2441MHz	0.45	30
2442MHz	0.45	30
2443MHz	0.44	30
2444MHz	0.44	30
2445MHz	0.43	30
2446MHz	0.43	31
2447MHz	0.44	31
2448MHz	0.44	31
2449MHz	0.44	31
2450MHz	0.45	31
2451MHz	0.45	31
2452MHz	0.45	31
2453MHz	0.45	31
2454MHz	0.46	31
2455MHz	0.46	31
2456MHz	0.46	31
2457MHz	0.46	32
2458MHz	0.47	32
2459MHz	0.47	32
2460MHz	0.47	32
2461MHz	0.47	32
2462MHz	0.48	32
2463MHz	0.48	32
2464MHz	0.48	32
2465MHz	0.49	32
2466MHz	0.49	32
2467MHz	0.49	32
2468MHz	0.50	32
2469MHz	0.50	32
2470MHz	0.50	32
2471MHz	0.51	32
2472MHz	0.51	32
2473MHz	0.52	32
2474MHz	0.52	32
2475MHz	0.53	32
2476MHz	0.53	32
2477MHz	0.54	31
2478MHz	0.54	31
2479MHz	0.55	31
2480MHz	0.55	31