Bluetooth (Dual Mode) SPP Module Specification

Module Model

WBTDS01 - BT4.0+BLE/BT3.0/BT2.1+EDR

WBTS02 - BT4.0/BT3.0/BT2.1+EDR

[Revision History]

Version 0.1 Charles Lin (Jun. 18, 2014)

      1.   Preliminary

1. Functional description

● Overview

The WBTDS01/WBTS02 is a highly integrated BT4.0 (BLE), BT3.0, BT 2.1 + EDR module with embedding HID, and SPP profile into a small size (13mm x 27mm x 2.0mm). It's highly compliant with other BT devices due to using Broadcom chipset and easy to develop your product via UART interface to communicate with our module.

● Features

➢ Bluetooth 4.0+BLE/3.0/2.1+EDR (for WBTDS01 only)
➢ Bluetooth 4.0/3.0/2.1+EDR (for WBTS02 only)
➢ Support concurrent dual-mode (for WBTDS01 only)
➢ Bluetooth SPP profile embedded
➢ Bluetooth HID profile embedded (for WBTDS01 only)
➢ UART interface control
➢ Support both master and slave mode
➢ Embedded antenna with 10m distance
➢ Power circuit integration. Single power DC 3.3V input
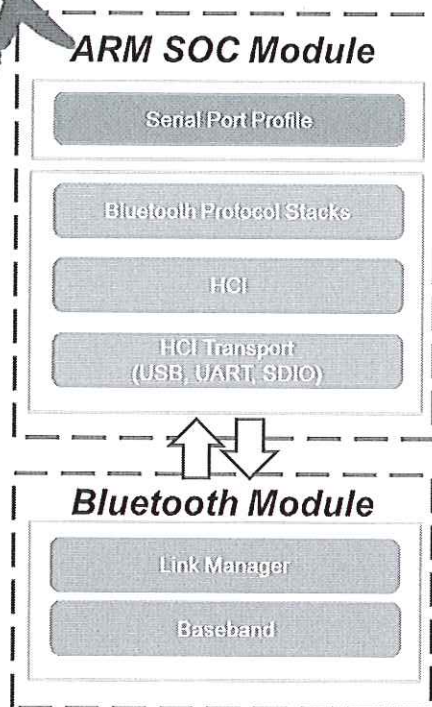➢ XTAL integration.
➢ Optional GPIO reserve
➢ RoHS compliant

● Applications

➢ Bar code reader
➢ Printer
➢ Point of sales
➢ Data terminal
➢ Toy
➢ Home automation
➢ Sensor receiver
➢ Health care
➢ Wireless touch screen device
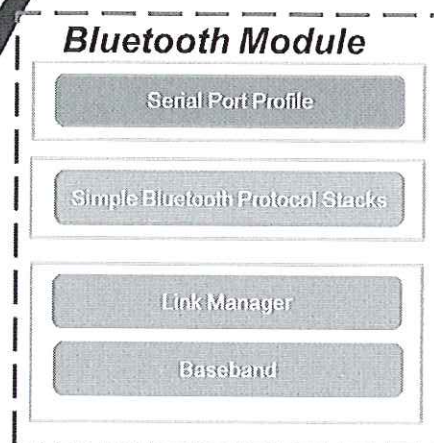➢ E-home gateway
➢ Others

● Benefit

Traditional BT Solution

ARM SOC Module

- Serial Port Profile
- Bluetooth Protocol Stacks
- HCI
- HCI Transport (USB, UART, SDIO)

Bluetooth Module

- Link Manager
- Baseband

Winstec SPP BT Module

Bluetooth Module

- Serial Port Profile
- Simple Bluetooth Protocol Stacks
- Link Manager
- Baseband

WIN

Save BOM Cost
Save Schedule
Save RD manpower

2. WBTDS01/WBTDS02 module specification

● Physical Characteristics

Parameter	Specification
Operating frequency band	2.4Ghz-2.48GHz ISM band
Bluetooth specification	V2.1+EDR, BT3.0, BT4.0(BLE)
Output power class	Class 2
Rx sensitivity	-88dBm
Operating voltage	3.3V
Main digital interface	UART
PIO control	GPIO
Dimension	27mm x 13mm x 2mm

● Protocol

Protocol	Type
RAW Data	Data input/output
AT Command	Module setting, proprietary command

● Interface and default setting

Interface	Signals
UART	RX, TX, CTS, RTS

3. Electrical specification

● Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.
Power supply voltage		3.3V	3.6V

● Power requirement

Parameter	WBTDS01 (w BLE)	WBTS02 (w/o BLE)
Peak Supply Current	100mA	95mA
Rx Current	36mA @ Class2	33mA @ Class2
Tx Current	49mA @ Class2	46mA @ Class2
Sleep	1mA @ Class2	150uA @ Class2
Sniff + Inquiry + Page	2mA @ Class2	750uA @ Class2

● Environment condition

Parameter	Specification
Operating temperature	- 25°C to + 70°C
Storage temperature	- 40°C to + 85°C

4. Pin description - WBTDS01

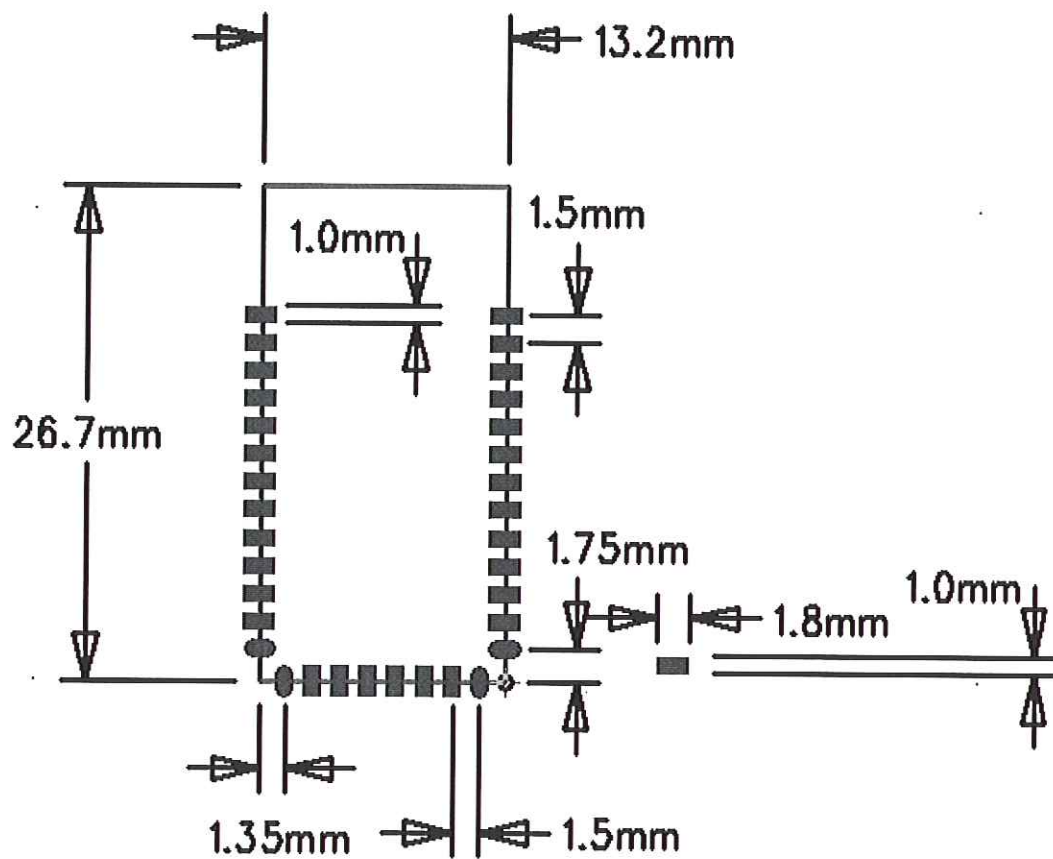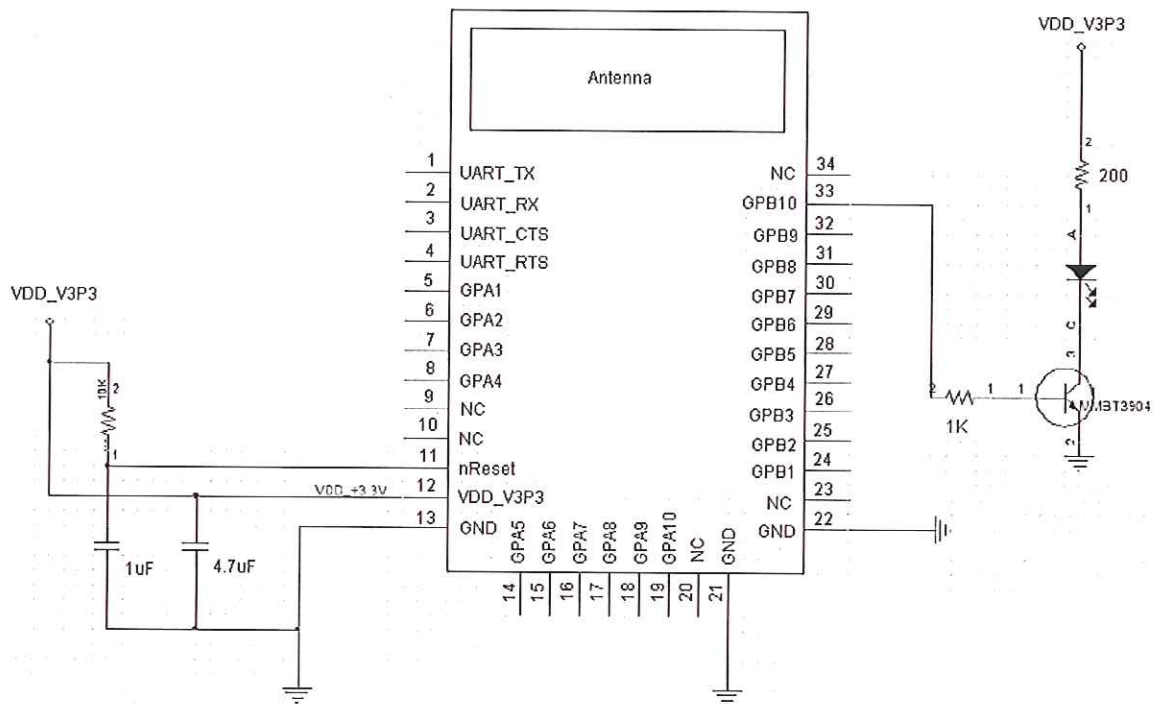| Pin	Name	I/O	Description
1	UART_TX	O	UART transmits data output
2	UART_RX	I	UART receives data input
3	UART_CTS	I	UART clear to send input signal
4	UART_RTS	O	UART request to send output signal
5	GPA1	I/O	GPIO port A
6	GPA2	I/O	GPIO port A
7	GPA3	I/O	GPIO port A
8	GPA4	I/O	GPIO port A
9	NC		No connection
10	NC		No connection
11	nReset	I	Module reset
12	VDD_V3P3	P	Module input power
13	GND	G	Ground
14	GPA5	I/O	GPIO port A
15	GPA6	I/O	GPIO port A
16	GPA7	I/O	GPIO port A
17	GPA8	I/O	GPIO port A
18	GPA9	I/O	GPIO port A
19	GPA10	I/O	GPIO port A
20	NC	-	No connection
21	GND	G	Ground
22	GND	G	Ground
23	NC	-	No connection
24	GPB1	I/O	GPIO port B
25	GPB2	I/O	GPIO port B
26	GPB3	I/O	GPIO port B
27	GPB4	I/O	GPIO port B
28	GPB5	I/O	GPIO port B
29	GPB6	I/O	GPIO port B
30	GPB7	I/O	GPIO port B
31	GPB8	I/O	GPIO port B
32	GPB9	I/O	GPIO port B
33	GPB10	I/O	GPIO port B
34	NC	-	No connection

5. Mechanical dimension - WBTDS01

Figure 1: Board dimension

6. Reference Schematic - WBTDS01

Figure 2: Pin Assignment