

iBT-15 / iBT-15S

Bluetooth Dual Mode Module with HCI Interface

( Bluetooth® Declaration ID : B0xxxxx)

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1. Overview

iBT-15 / iBT-15S Class 2 Dual Mode Bluetooth module supporting Bluetooth 4.0 specification. It is implemented by using the Toshiba TC35661 dual mode Bluetooth chip. iBT-15 / iBT-15S is designed to interface with an external MCU with HCI command control for supporting audio or data applications.

2. Features

- A single chip radio and baseband IC for Bluetooth applications
- Fully Qualified Bluetooth 4.0 specification
- Class 2 power output (10 meter minimum)
- Support for 2-wires, 3-wires or 4 wires 802.11 co-existence
- HCI Interface to external MCU
- Build-in PCB antenna
- Supply voltage : 2.7V to 3.6V
- RoHS compliant
- Dimension: 19mm (L) x 15.2mm (W) x 2.2mm (H)

3. Applications

- Wireless speakers
- Stereo headset
- Hands-free car kit
- VoIP handsets
- Data Transfer
- Docking Stations

4. Pin Drawing

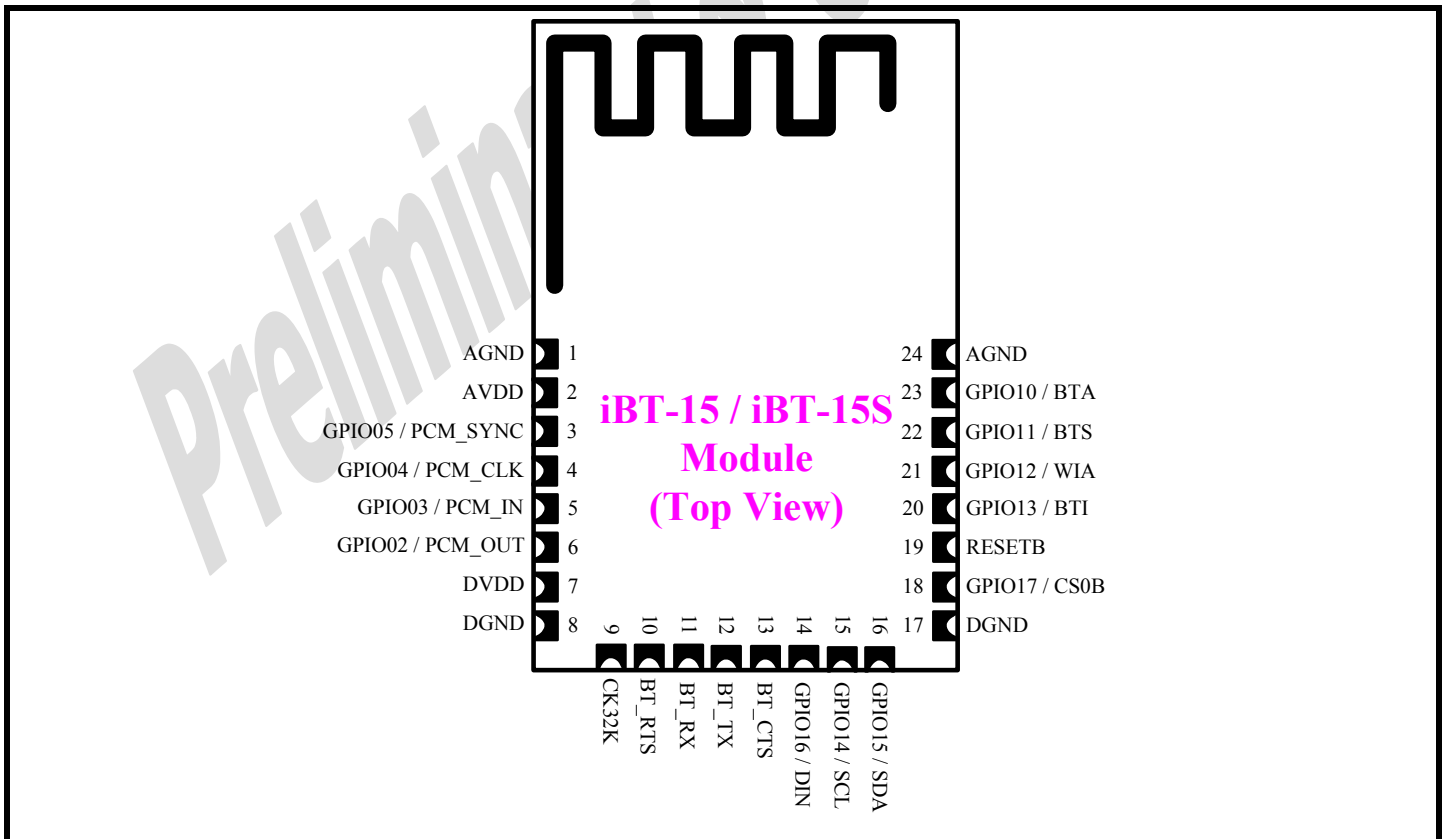


Figure 1 iBT-15 / iBT-15S Pin Diagram

5. Block Diagram

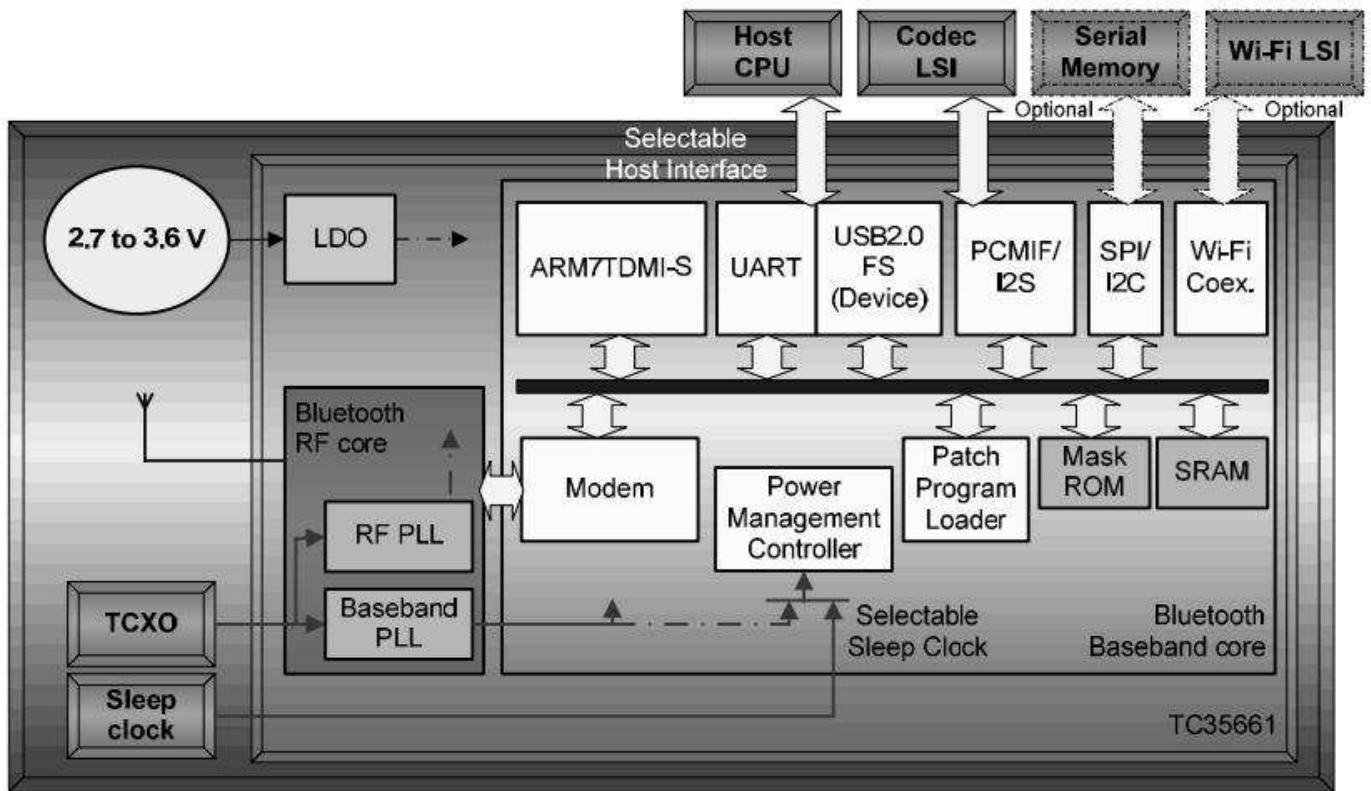


Figure 2 iBT-15 / iBT-15S Block Diagram

6. Pin Description

Pin No	Pin Name	Pin Type	Pin Descriptions
1	AGND		Ground for RF and Analog Circuitry
2	AVDD		3.3V supply voltage for RF and Analog Circuitry
3	GPIO05 / PCM_SYNC	IS	General Purpose I/O Port or PCM data sync
4	GPIO04 / PCM_CLK	IS	General Purpose I/O Port or PCM data clock
5	GPIO03 / PCM_IN	IS	General Purpose I/O Port or PCM data input
6	GPIO02 / PCM_OUT	O4	General Purpose I/O Port or PCM data output
7	DVDD		3.3V Supply Voltage for Digital Circuitry and I/O
8	DGND		Ground for Digital Circuitry and I/O
9	CK32K	IS	32.768kHz Clock for low power consumption operation. If not used, this pin must be pulled down by a 100kohm resistor
10	BT_RTS	O4	UART Ready To Send Signal
11	BT_RX	IS	UART Data Receive pin, from host to BT
12	BT_TX	O4	UART Data Transmit pin, from BT to host
13	BT_CTS	IS	UART Clear to Send Signal
14	GPIO16 / DIN	IS	General Purpose I/O Port or SPI memory data input
15	GPIO14 / SCL	O4	General Purpose I/O Port or I2C clock
16	GPIO15 / SDA	B4	General Purpose I/O Port or I2C Data
17	DGND		
18	GPIO17 / CS0B	O4	General Purpose I/O Port or SPI memory chip select
19	RESETB	IS	Active Low Module Reset

7.4. RF Characteristics

DVDD=3.3V, operating temperature = 27 °C unless specified otherwise

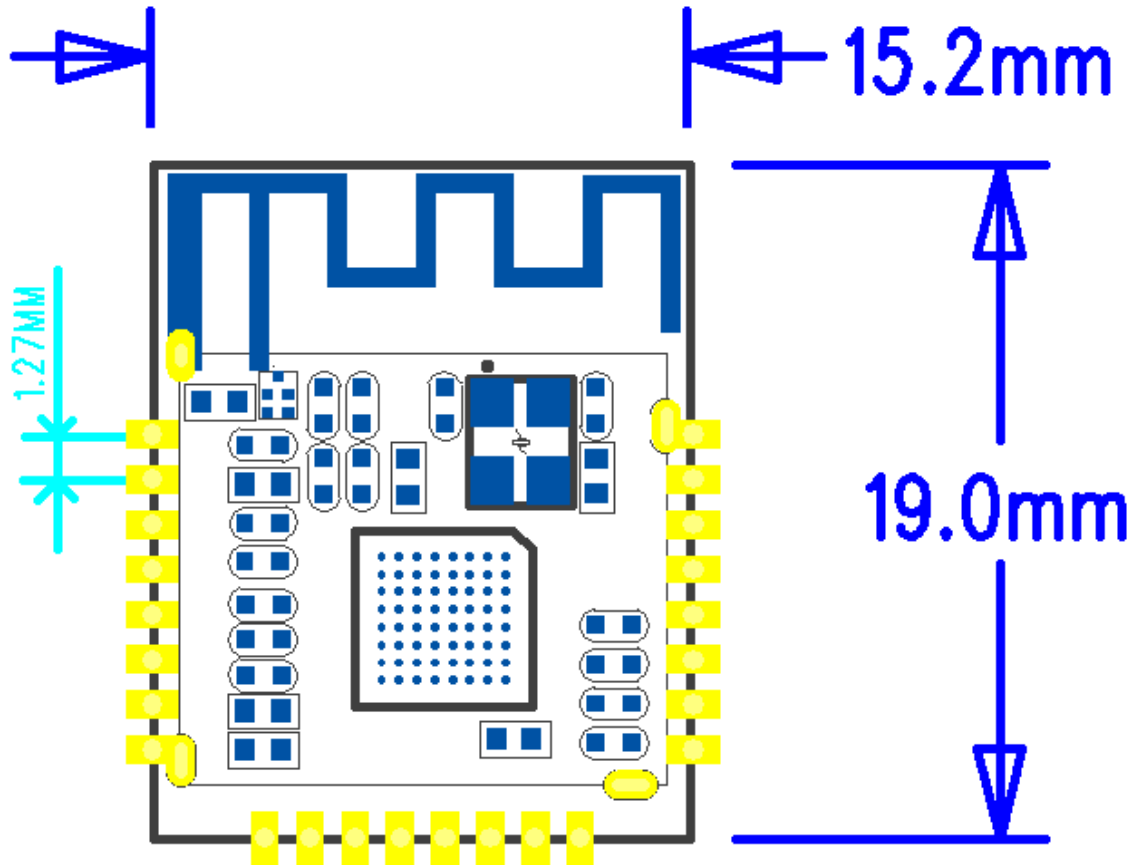
Receiver	Units	Miin	Typ	Max	Bluetooth Spec
Sensitivity at 0.1% BER	dBm				≤ -70
Maximum Receiver Signal at 0.1% BER	dBm				≥ -20
C/I Co-Channel	dB				≤ 11
Adjacent Channel Selectivity C/I +1MHz	dB				≤ 0
Adjacent Channel Selectivity C/I -1MHz	dB				≤ 0
2 nd Adjacent Channel Selectivity C/I +2Mhz	dB				≤ -30
2 nd Adjacent Channel Selectivity C/I -2Mhz	dB				≤ -20
3 rd Adjacent Channel Selectivity C/I +3Mhz	dB				≤ -40
3 rd Adjacent Channel Selectivity C/I -3Mhz	dB				≤ -40

DVDD=3.3V, operating temperature = 27 °C unless specified otherwise

Transmitter	Units	Miin	Typ	Max	Bluetooth Spec
RF Output Power	dBm				-6 to +4
RF Power Control Range	dBm				> 16
20dB Bandwidth for modulated Carrier	kHz				< 1000
Basic Data Rate Adjacent Channel Power					
2 nd Adjacent Channel (+/- 2Mhz)	dBm				≤ -20
3 rd Adjacent Channel (+/- 3Mhz)	dBm				≤ -40
Enhance Data Rate Adjacent Channel Power					
1 st Adjacent Channel (+/- 1MHz)	dBm				≤ -29
2 nd Adjacent Channel (+/- 2Mhz)	dBm				≤ -20
3 rd Adjacent Channel (+/- 3Mhz)	dBm				≤ -40
Initial Carrier Frequency Tolerance	kHz				-75 to +75

8. Module Dimension

8.1. iBT-15 / iBT-15S Module Dimension



9. PCB Layout Guidelines**9.1. iBT-15 / iBT-15S Antenna Clearance****9.2. iBT-15 / iBT-15S PCB Landing Pattern**

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Valence Semiconductor Design Ltd.
24/F., Wyler Centre, Phase 2, 200 Tai Lin Pai Road, Kwai Fong, New Territories, Hong Kong

<http://www.valencetech.com>

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