



Modular installation manual

- i. We recommend to keep 20cm distance when installing this module.
- WARNING ii. This module should not be installed and operating simultaneously with other radio without additional evaluation or FCC filing.
- iii. The host system should have proper label showing that it "Contains FCC ID : A3LBTM730B"

User Manual for BTM730B (for AIO PC)

1. Introduction

BTM730B BT Module containing Bluetooth 3.0 / Mac compatible Bluetooth Module/ Baseband optimized Radio with UART interface.

2. Hardware Configuration

2.1 Main Chipset Information

Item	IC Vendor	Part Number
Bluetooth 3.0 MAC/Baseband/Radio	CSR	BC05MM

2.2 Block Diagram

Block Diagram of BT Module is as Figure.1.

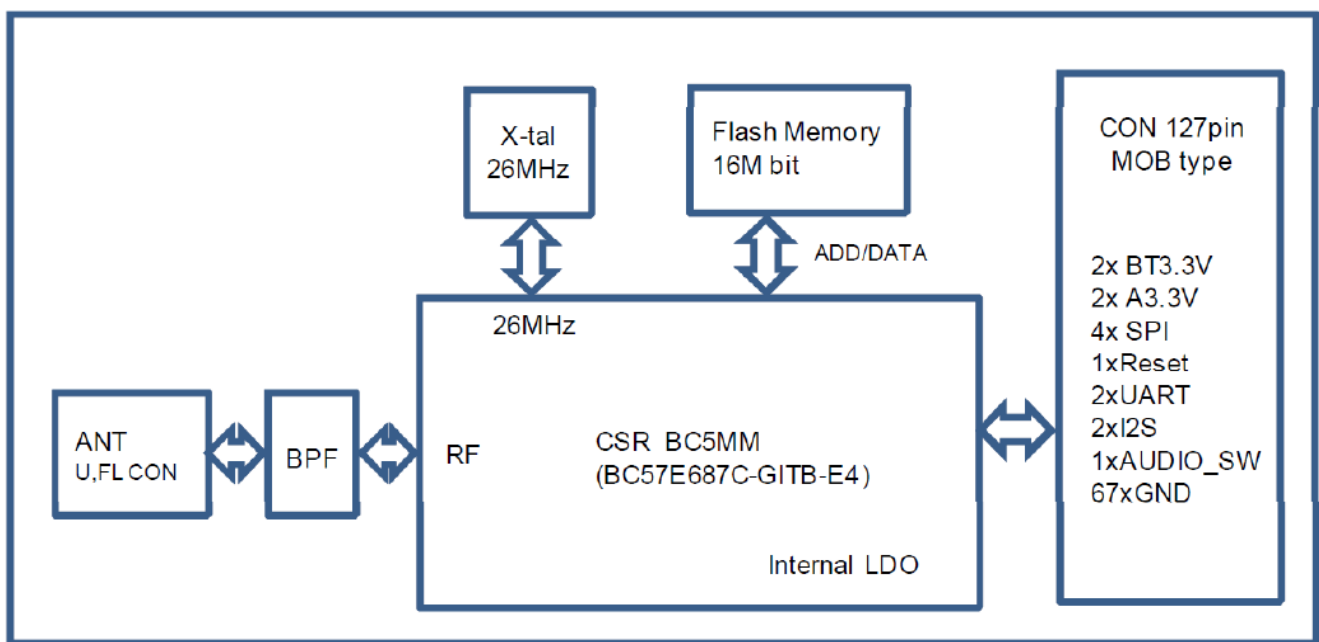


Figure.1 BTM730B Block Diagram

3. Operational Description

BTM730B BT Module is RF communication controller which is equipped with AIO PC for the users who use wireless devices.

A number of channels are 79 which are based on IEEE 802.15.1/1a and frequency range is 2402MHz ~ 2480MHz. Each channel has a bandwidth of 1 MHz.

- Transmitter

Baseband processor uses FHSS (Frequency Hopping Spread Spectrum) scheme to avoid interference from other signals by hopping to a new frequency after transmitting or receiving a packet.

BTM740B BT Module provides 1Mbps, 2Mbps (EDR), 3Mbps (EDR) data rate and 2FSK/DQPSK/8DPSK modulation.

Tx signal is modulated as Tx IQ by DAC (Digital-Analog Convertor) inside of baseband IC then it is transmitted through internal PA (Power Amplifier).

- Receiver

Transceiver IC is insulated by Low Noise Amplifier (LNA) to avoid undesirable noise interferences. RF signal is converted and demodulated as RX IQ by through intermediate frequency and RF filter then it is input to the processing unit.

- Power Class

BTM730B BT Module operate as BT Power Class 1 of IEEE 802.15.1/1a Standard.

- Interface

BTM730B BT Module supports standard UART interface and UART setting values are as Table.1.

Parameter		Possible Values
Baud rate	Minimum	1200 baud ($\leq 2\%$ Error)
	Maximum	9600 baud ($\leq 1\%$ Error)
Flow control		4Mbaud ($\leq 1\%$ Error)
Parity		RTS/CTS or None
Number of stop bits		None, Odd or Even
Bits per byte		1 or 2
		8

Table.1 UART Setting

- RF Specifications

RF specifications are as Table.2.

Parameter		Min	Typ.	Max	Unit
RF Characteristics					
RF Frequency Range		2.402	-	2.480	GHz
Output power		0	6.5	20	dBm
TX Spurious Emission 30.0MHz to 1.0GHz 1.0GHz to 12.5GHz 1.8GHz to 1.9GHz 5.15GHz to 5.3GHz		-	-	-30	dBm
TX Frequency Tolerance		-75	-	75	KHz
Carrier Frequency Drift		-20	-	20	KHz
TX Output Spectrum 20dB bandwidth		-	-	1	MHz
Modulation Characteristics	Delta F1	140	-	175	KHz
	Delta F2	115	-	-	KHz
	Delta F2 / F1	0.8	-	3	-
Receiver sensitivity BER at -70dBm		-	-	0.1	%
Maximum Input Level BER at -20dBm		-	-	0.1	%
RX Spurious Emission 30.0MHz to 1.0GHz 1.0GHz to 12.5GHz 1.8GHz to 1.9GHz 5.15GHz to 5.3GHz		-	-	-54	dBm

Table.2 RF Specifications

4. Pin Description

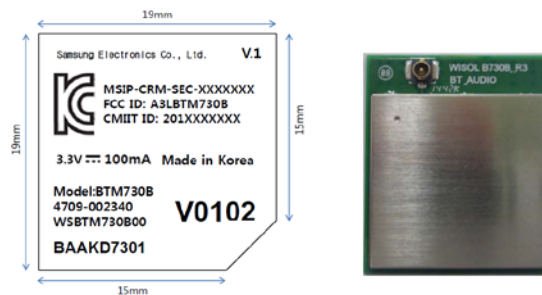
Pin descriptions are as Table.3.

PAD NO	Name	Interface	I/O	Description
68, 69	A3.3V	Analog	I	3.3V Power supply input
42	RESET	Digital	I	POR (Power of Reset)
52	UART Tx	Digital	O	UART data output
53	UART Rx	Digital	I	UART data input
55	I2S_WS	Digital	I/O	I2S Word select
57	I2S_SDOUT	Digital	I/O	I2S Data
58	I2S_SCLK	Digital	I/O	I2S Clock
63	BT_AUDIO_SW	Digital	I/O	Audio Mode Select S/W
1,2	BT3.3V	Analog	I	3.3V Power supply input
18	SPI_CLK	Digital	I/O	SPI clock
19	SPI_MISO	Digital	O	SPI data output
21	SPI_CS	Digital	I/O	Chip select for SPI
22	SPI_MOSI	Digital	I	SPI data input
3, 14, 17, 20, 23 29, 32, 35, 38, 59 64, 67, 70~89, 97~127	GND	Analog	-	Ground
4~13, 15, 16 24~28, 30, 31, 33, 34, 36, 37, 39, 40 41, 43~51, 54, 56 60, 61, 62, 65, 66, 90, 91, 92	NC	-	-	NO CONNECTOR

Table.3 Pin Description

5. Detail Specifications

- Frequency : 2402~2480 MHz
- Number of Channel : 79ch
- Oscillation : VCO
- Operating Voltage : TYP. DC 3.3 V (Operating Range : 3.1V~3.6V)
- Current Consumption : Max.100mA
- Dimension : 22 mm X 26 mm X 2.5 mm
- Weight : 2.5g
- Operating Temperature : -10℃ ~ +50℃
- Communication : Semi-Duplex Operation
- Modulation : 2FSK, pi/4 DQPSK, 8DPSK
- Label Location of Module:



- Host system labeling instruction :

We add following statement at label of each host.

"The product was mounted with a Bluetooth module (FCC ID: A3LBTM730B) which was certificated by FCC Part 15 Subpart C 15.247."

*** This wireless device may cause propagation interferences so can't available for life-saving services.**

This appliance and its antenna must not be co-located or operation in conjunction with any other antenna or transmitter. A minimum separation distance of 20 cm must be maintained between the antenna and the person for this appliance to satisfy the RF exposure requirements.

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.

Caution: Any changes or modifications to the equipment not expressly approved by the party responsible for compliance could void user's authority to operate the equipment.

- * Please use only allowed PIFA antenna below.
- * Use other antenna may subject to additional testing and filing to FCC.

SAMSUNG / COLOSSEUM BT

PRODUCT	ANTENNA
TYPE	INTERNAL ANTENNA DIRECT CONTACT (CARRIER + FPC + CABLE) Type.
SAMSUNG P/N	N/A
GALTRONICS P/N	02102073-05897
PRODUCT DRAWING	REV-P1
ANTENNA SPECIFICATION	REV-P1
MOLD TYPE	QDM (AI)
MOLD PHOTO	N/A
ANTENNA WEIGHT	4.37g

