

SPECIFICATIONS

Bluetooth 2.0 + EDR USB Module

QBT400UB 01P
(printed PCB Antenna)

(Widcomm BTW Software Supported Vista & XP)

Ver. 1A
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Approved by :

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Device Overall Description

The QBT400UB is designed to provide Class 2 Bluetooth2.0 + EDR function on a small form factor USB interface module. The Bluetooth function is based on Broadcom BCM2045 single chip controller, which fully implements the Bluetooth 2.0 features (including AFH, Scatter Mode, QoS, eSCO, Fast Connect, LMP improvements, synchronization) and Enhanced Data Rate (EDR). The interface of QBT200UB to host system is HCI USB and full compliant with USB V2.0 Full Speed (12Mbits/s).

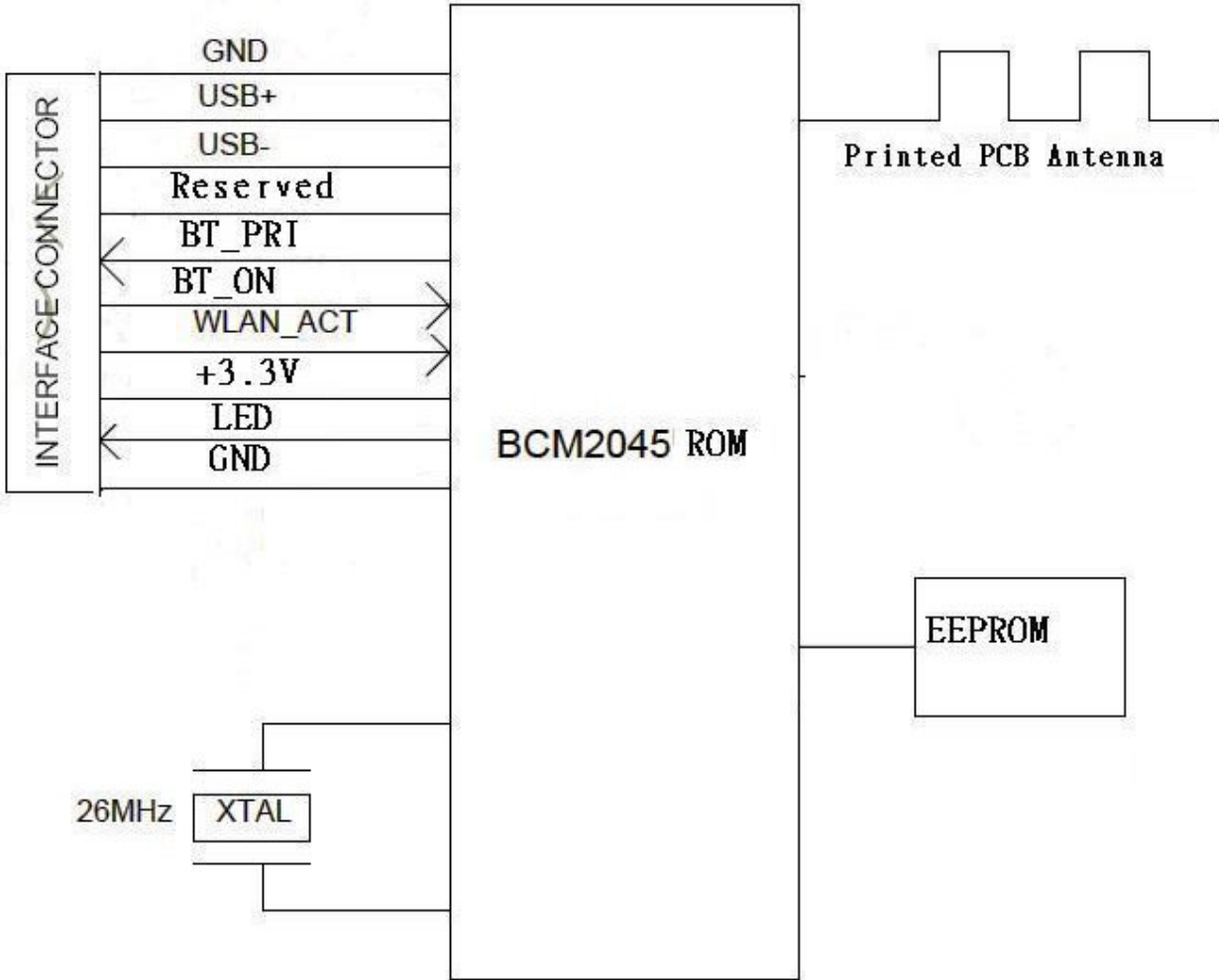
Features

- Broadcom BCM2045 ROM Single Chip Bluetooth System
- Bluetooth Core Specification version 2.0 compliant + EDR support
- Bluetooth Class 2 output power, multipoint operation with up to 7 active slaves support
- HCI USB transport support with USB version 2.0 full-speed compliant interface
- Printed PCB Antenna on board

Specification Compliance

- Bluetooth Specification V1.1, V1.2, and V.2.0 + EDR compliant
- USB Specification V1.1 and V2.0 Full Speed (12Mbits/s)
- Bluetooth 2.0 including EDR, AFH, Scatter Mode, QoS, eSCO, Fast Connect, LMP improvements, synchronization

Block Diagram



Modulation Methods

FHSS (Frequency Hopping Spread Spectrum) defined in Bluetooth Specification.

	Data Rate	Modulation scheme
Basic Data Rate	1 Mbps	GFSK
Enhanced Data Rate	2Mbps	$\pi/4$ - DQPSK
	3Mbps	8DPSK

Bluetooth Power Consumption

Electrical Characteristics	Minimum	Typical	Maximum	Units
Supply Voltage	3.0	3.3	3.6	V
RX Supply Current (Max.)		50		mA
TX Supply Current (Max.)		56		mA
Idle mode		39		mA
Radio disable mode		22		mA
Sleep mode		0.4		mA

RF Characteristics

RF Characteristics	Minimum	Typical	Maximum	SPEC Requirement	Units
Antenna I/F Impedance		50			ohms
Ambient Operating Temperature Range	0		70		C
Storage Temperature Range	-20		85		C
Supply Voltage (3.3V only)	3.0	3.3	3.6		V
TX Supply Current (at 3.3V)		56			mA
RX Supply Current (at 3.3V)		50			mA
Basic Rate RX Sensitivity, 2402 MHz		< -70		-70	dBm
Basic Rate RX Sensitivity, 2441 MHz		< -70		-70	dBm
Basic Rate RX Sensitivity, 2480 MHz		< -70		-70	dBm
EDR RX Sensitivity, 2402 MHz		< -70		-70	dBm
EDR RX Sensitivity, 2441 MHz		< -70		-70	dBm
EDR RX Sensitivity, 2480 MHz		< -70		-70	dBm
TX Output Power, 2402MHz		2		-6 ~ +4	dBm
TX Output Power, 2441MHz		2		-6 ~ +4	dBm
TX Output Power, 2480MHz		2		-6 ~ +4	dBm
Initial Carrier Frequency Tolerance	>-10		<10	+/-75	kHz
Carrier Frequency Drift, DH3 (01010101)	>-10		<10	40	kHz
Carrier Frequency Drift, DH5 (01010101)	>-10		<10	40	kHz
Carrier Frequency Drift Rate, DH3 (01010101)	>-10		<10	20	kHz
Carrier Frequency Drift Rate, DH5 (01010101)	>-10		<10	20	kHz
Modulation Characteristics, $\Delta f1$ avg (DH1 ,00001111, kHz)		147		140 ~175	kHz
Modulation Characteristics, $\Delta f2$ max (DH1 ,00001111, kHz)		150		>115	kHz
Modulation Characteristics, $\Delta f2$ avg / $\Delta f1$ avg		1.02		>=0.8	kHz
20 dB Bandwidth			<1000	1000	kHz
TX Output Spectrum – Frequency Range (F_L)	2401			2400	MHz
TX Output Spectrum – Frequency Range (F_H)			2481	2483.5	MHz
Maximum Input Level		>-20		-20	dBm
EDR Maximum Input Level		>-20		-20	dBm

LED Status Definition

(Listed in order of priority, with the top being highest priority):

- Sleep State is Solid OFF
- Radio Disabled is SOLID OFF
- USB Suspend is SOLID OFF
- Transmit/Receive State is BLINKING approximately 4 times/second
- Connected State is Blinking approximately 1 time/second
- Power-up state is SOLID ON

Host Interface Connector

- Connector: 1. Kabo Wafer-1.0-1001-1093
 - 2. ACES 87213-1000
 - 3. or compatible

Software & OS support

- Windows XP_SP2/Vista native supported Profiles - DUN, GAP, HCRP, HID, OPP, PAN-U, SDP and SPP.
- Widcomm BTW software (for **Windows XP / Vista**) Included Profiles – A2DP, AV, BIP, BPP, DUN, FTP, GAP, GAVDP, HCRP, HF, HID, HS, OPP, PAN-U, SDP, SPP and SYNC. (**Profiles might change without prior notice; please refer to the SW release document for detail.**)

Widcomm Software V5.x : BQB *Bluetooth* identifier B02568

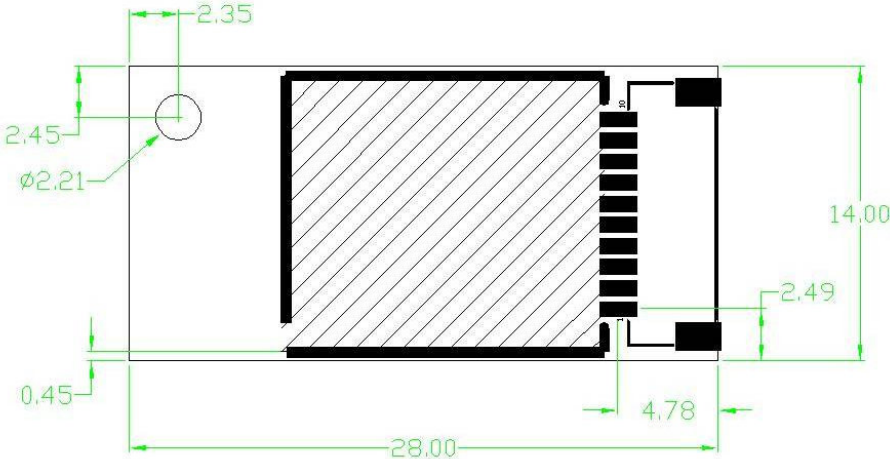
Widcomm Software V6.x : BQB *Bluetooth* identifier B012206

Regulation

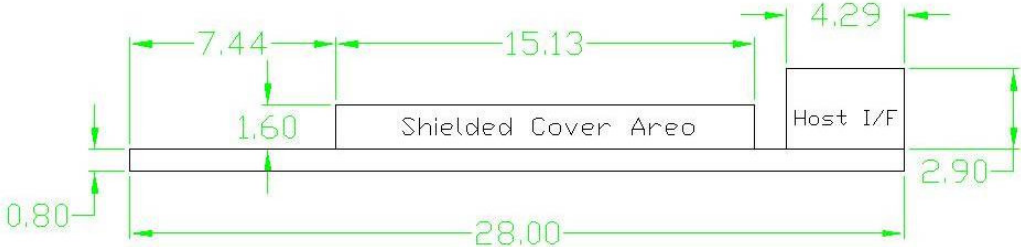
OEM upon Request !

Mechanical Dimension

- 28mm x 14mm x 3.7mm (L x W x H)



- Component height (unit: mm)



Pinout and Definition

Pin#	Signal name	Description
1	GND	
2	USB_D+	USB data plus.
3	USB_D-	USB data minus.
4	Reserved	Do Not Connect ! For Future expansion.
5	BT_Pri/ CH_Clk	BT Priority, WLAN_BT co-existence scheme, INTEL WCS Solution. (*)
6	BT_ON	Active Low to disable BT function. Normal High Enable.
7	WLAN_Active/ CH_Data	WLAN Active, WLAN_BT co-existence scheme, INTEL WCS Solution. (*)
8	+3.3V	Positive supply for whole module.
9	LED	BT activity LED indicator.
10	GND	

(*) For Non-INTEL WLAN co-existence scheme is upon request !

