Qcom

SPECIFICATIONS

Bluetooth 2.0+EDR USB Module

QBTM400-01 (V6)
(IVT Software Supported Vista & WinXP)

Ver. 1A
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Approved by :

Contents:

- ## <u>Device Overall Description</u>

The QBTM400 is designed to provide Bluetooth2.0 + EDR function on a small form factor. The Bluetooth function is based on CSR BlueCore4-ROM Single Chip Bluetooth System, which implements the full speed class 2 Bluetooth operations with full 7 slave Piconet support. The interface of QBTM400 to host system is USB and full compliant with USB V1.1 and compatible with USB V2.0 Full Speed (12Mbits/s).
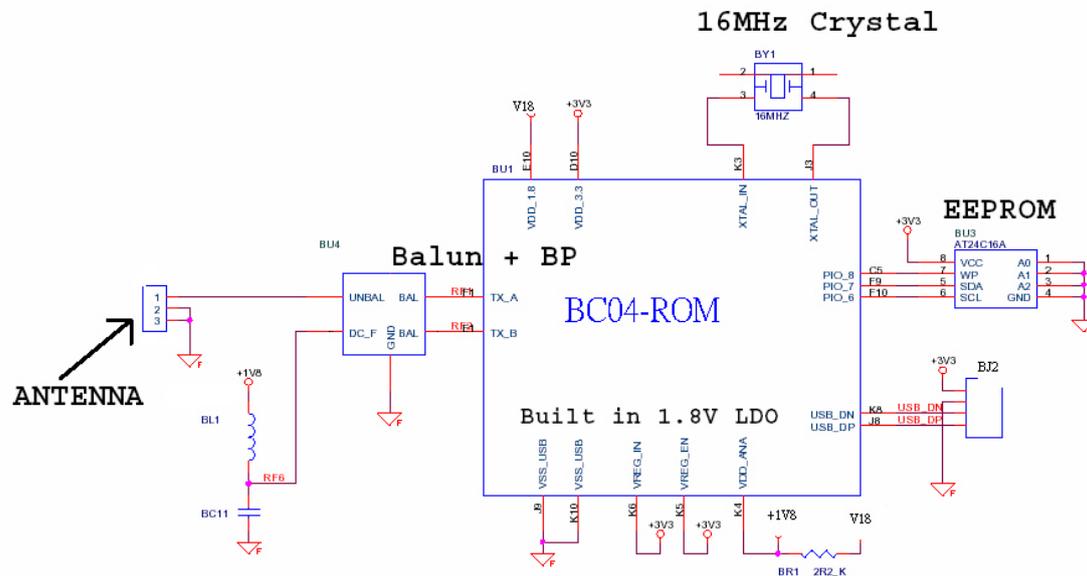
• **Bluetooth**

Features

- CSR BlueCore4-ROM Single Chip Bluetooth System
- Bluetooth 2.0 + EDR support
- Full Speed Class 2 Bluetooth operation with full 7 slave Piconet support
- Full Speed USB interface compliant with USB V1.1 and compatible with USB V2.0
- Single onboard Antenna connector support.

Specification Compliance

- Bluetooth Specification V1.1, V1.2, and V.2.0 compliant
- USB Specification V1.1
- compatible with USB V2.0 Full Speed (12Mbits/s)

Bluetooth 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

Channel Assignment

Country	Freq. Range	RF Channel
Europe* & USA	2400~2483.5MHz	Freq. = 2402 + k MHz k = 0~78
Japan	2400~2483.5MHz	Freq. = 2402 + k MHz k = 0~78

**Most Europe area except Spain and France

Bluetooth Power Consumption

Electrical Characteristics	Minimum	Typical	Maximum	Units
Supply Voltage	3.0	3.3	3.6	V
Continuous TX Supply Current		64		mA
Continuous RX Supply Current		43		mA
Idle mode		7		mA
Radio disable mode		0		mA

RF Characteristics

RF Characteristics	Minimum	Typical	Maximum	SPEC Requirement	Units
Antenna I/F Impedance		50			ohms
Ambient Operating Temperature Rage	0		70		C
Storage Temperature Rage	-20		85		C
Supply Voltage (3.3V only)	3.0	3.3	3.6		V
TX Supply Current (at 3.3V)		43			mA
RX Supply Current (at 3.3V)		64			mA
Idle mode Current		7			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)		165		140 ~175	kHz
Modulation Characteristics, $\Delta f2$ max (DH1 ,00001111, kHz)		180		>115	kHz
Modulation Characteristics, $\Delta f2$ avg /$\Delta f1$ avg		1.00		>=0.8	kHz
20 dB Bandwidth			>900kHz	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

Host Interface Connector

Connector: 1. Kabo (凱帛) Wafer-1.0-1001-1093

2. ACES 87213-1000

3. or compliance

Software & OS support

- Windows XP SP2 native supported Profiles - DUN, HCRP, HID, OPP, PAN-U and SPP

- 3rd Party Vendor support from IVT BlueSoleil (http://www.bluesoleil.com/), Included Profiles – A2DP, AG, AV, BIP, DUN, FTP, HCRP, HID, LAP, OPP, PAN-GN, PAN-U, SPP, SYNC and HS.

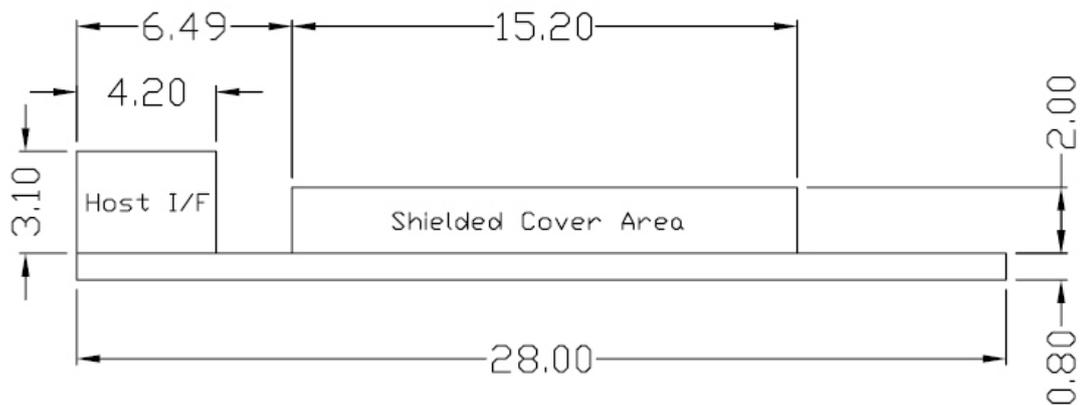** IVT Software Supported Microsoft Vista and Microsoft Windows XP SP2.

Regulation

Depend on OEM customer requirement

• **Mechanical Dimension**

- 28mm x 14mm x 3.9mm (L x W x H) +- 0.15mm
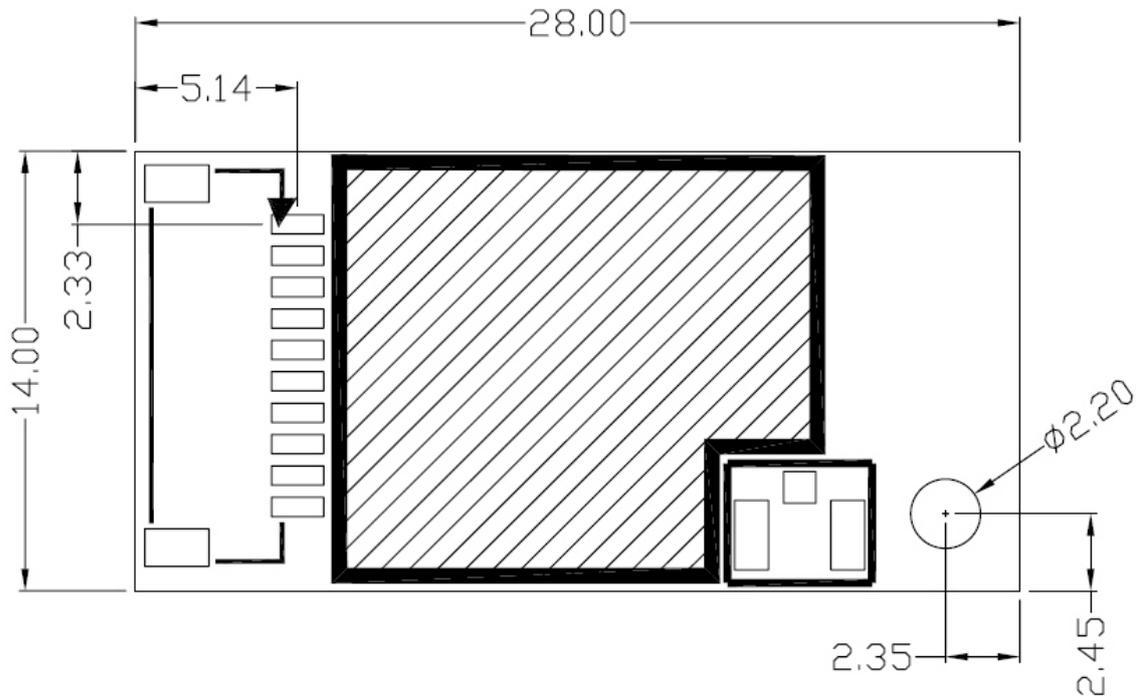
- Component height (unit: mm)

• __Pinout and Definition__

Pin#	Signal name	Description
1	GND	
2	USB_D+	USB data plus.
3	USB_D-	USB data minus.
4	Reserved	.
5	BT_Active	For WLAN & BT co-existence signal
6	BT_ON	Active High to enable BT radio function. Low to disable Radio function
7	WLAN_Active	For WLAN & BT co-existence signal
8	+3.3V	Positive supply for whole module.
9	LED	BT activity LED indicator. Active high to indicate the BT activity.
10	GND	

Pin1 Position: