Technical description(UBTB1)

Main chipset : BROADCOM BCM2035 Bluetooth Transceiver & Baseband Processor
The features are as below :

Radio

- Bluetooth v1.1 specification compliant
- Bluetooth v1.2 specification compliant (include AFH, fast connection, etc.)

Transmitter

- Class 2 and Class 3 support without the need for an external power amplifier.
- Class 1 support using external power amplifier

Receiver

- On-chip channel filtering to ensure reliable operation.
- 2MHz low IF scheme to down-convert the received signal for demodulation.
- Provides an RSSI(Receiver signal strength Indicator) signal to the baseband.

Modulator & Demodulator

- The digital modulator performs the data modulation & Gaussian filtering required for GFSK signal
- The Digital Demodulator & Bit Synchronizer takes the low IF received signal & performs an optimal frequency tracking & bit synchronization algorithm.
- The calibration & control section provides the radio timing, command, & control functions & these have been optimized for power saving.

Physical interfaces

- Memory Interface
- UART(Universal Asynchronous Receiver Transmitter)
- USB(Universal Serial Bus)
- PIO(Parallel input Output)
- PCM(Pulse Code Modulation)

Function description

USB

This device is operated the USB(full speed) interface for communicating with other compatible digital device(ex. From a master host controller such as a PC).The device (USB Bluetooth Dongle) with a specific application software can offer the services as below:

- Audio Gateway
- File transfer

- PIM Item transfer
- Bluetooth serial port
- Head set
- PIM synchronization
- Dual-up Networking
- Network Access
- Fax

EEPROM
The EEPROM contains some configure data like power table, blue address, etc.
The configure data can be modified to meet the power or other specific requirement.

Crystal
The chip uses a fraction-N synthesizer to generate the radio frequencies, clock & data/packet timing. This enables it to operate from any of a multitude of frequency sources. This chip uses an external RF & IF loop filter will use the different values depending on the reference frequency or crystal being used. We use a 15.36MHz crystal here.

Switch and Filter and Antenna
A switch is used for to separate transmit & receive chain. An external BPF filter is positioned between the switch & antenna to reject other frequencies we don't want.

PA
Power amplifier is needed for Bluetooth class device to amplify the output power. It amplifies the output power around +20dB gain. The device is placed between the main chip & switch.