

MOD-BT development board

Users Manual



Pb-free, Green

All boards produced by Olimex are ROHS compliant

Rev. B, September 2009

Copyright(c) 2010, OLIMEX Ltd, All rights reserved

INTRODUCTION

MOD-BT is development board with UEXT female connector, which connected to other Olimex board with UEXT male connector can work as bluetooth serial port via RS232.

BOARD FEATURES

- BGB203 - combines the Bluetooth RF part, protocol stack, Link Controller (LC), Link Manager (LM), and Host Controller Interface (HCI) firmware of the Bluetooth system specification in one SiP with embedded software. Together with an antenna and a reference clock this device forms a complete Bluetooth solution.
- UEXT female connector
- on-board antenna
- three types power supply - 1.8V, 2.8V and 3.3V
- PCB: FR-4, 1.5 mm (0,062"), soldermask, silkscreen component print
- Dimensions: 35.9x18.8 mm (1.41 x 0.74")

ELECTROSTATIC WARNING

The MOD-BT board is shipped in protective anti-static packaging. The board must not be subject to high electrostatic potentials. General practice for working with static sensitive devices should be applied when working with this board.

BOARD USE REQUIREMENTS

Hardware: Some of our development boards with UEXT male connector.

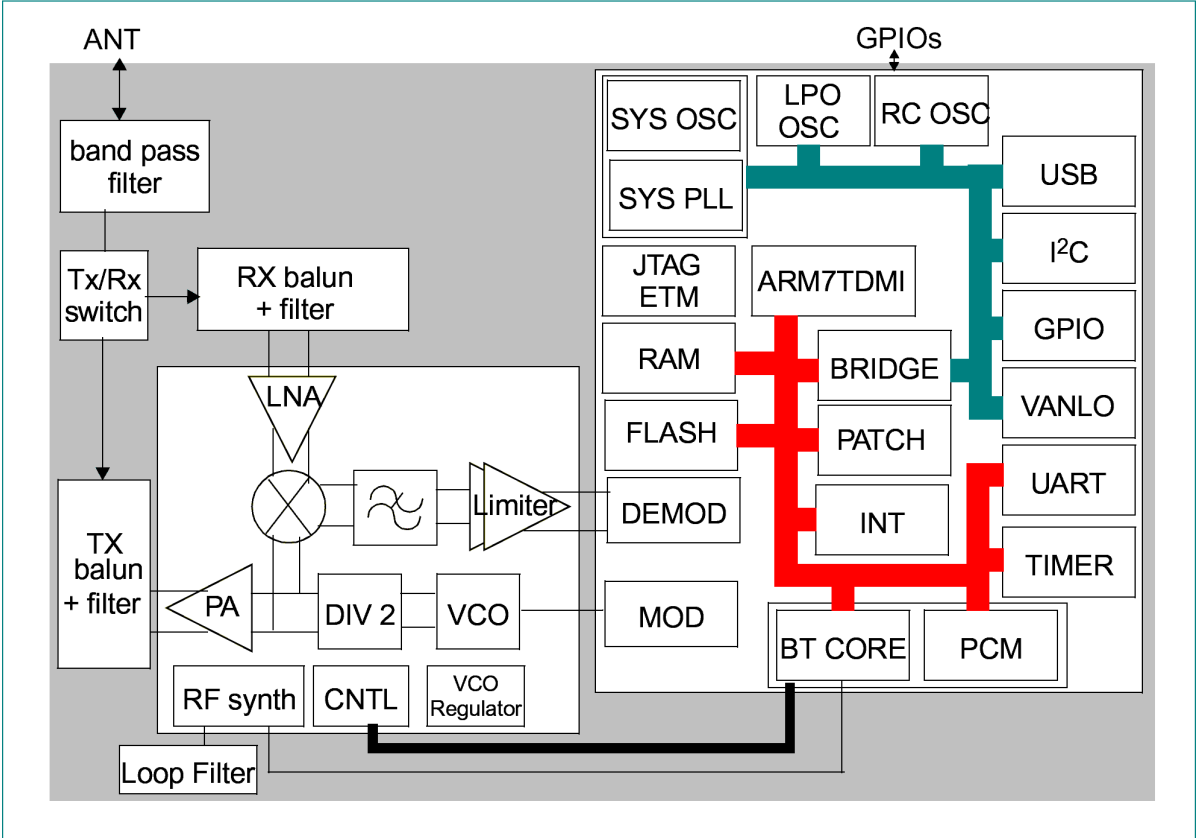
Bluetooth Controller Features

MOD-BT board use BGB203 bluetooth system-in-a-package radio with baseband controller with these features:

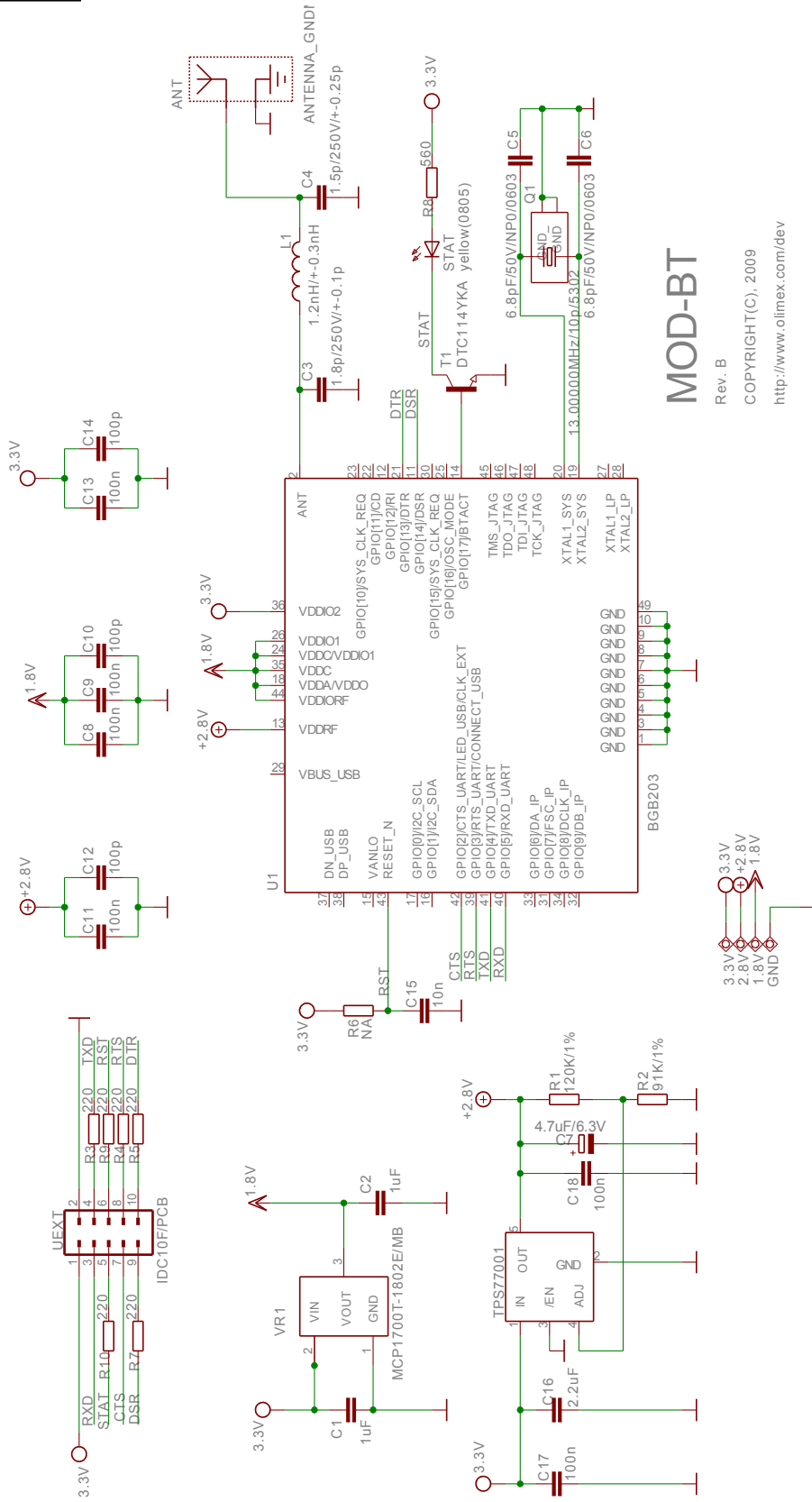
- General
 - Plug-and-play Bluetooth class 1 System-in-a-Package (SiP)
 - Includes all baseband and radio functionality, from HCI up to antenna, needs only external antenna and reference clock.
 - Fully compliant to Bluetooth Radio Specification version 1.2.
- Radio hardware
 - Fully integrated near-zero-IF receiver with high sensitivity (typical -88 dBm at antenna input)
 - Digital demodulator for improved reception quality
 - RSSI with high dynamic range
 - Programmable output pre-amplifier
 - Maximum output power up to +5.5 dBm typical
 - Includes high performance blocking filter for co-existence in GSM/DCS/WCDMA applications
 - Fully integrated low phase noise VCO operating in the 5 GHz frequency range
- Hardware features
 - Bluetooth burst mode controller with:
 - Ciphering, scrambling, CRC checking/generation, FEC encoding/decoding and data buffering control
 - Support for 7 slaves and three piconets, support of master-slave switch for new nodes entering the piconet, scatternet support with maximum one slave in master piconet while being slave in another piconet, support for 2 voice channels.
 - BT1.2 features :
 - Fast connection
 - EV3 (HV3+CRC)
 - AFH IP : AFH switch support as master, Channel assesment as master
 - Embedded 32-bit microprocessor consisting of
 - An ARM7TDMI-S RISC controller featuring low mW/MHz
 - Integrated Flash memory : 268 kBytes.
 - SRAM : 40 kBytes.
 - Voice processing with
 - A CVSD, A-law or m-law.

- Support of a direct link between PCM interface and BT1.2 core for the voice channels.
- Power management providing
 - Power-on reset
- Clocking
 - Low power clock crystal oscillator for low power mode, accepting 3.2KHz, 32KHz, and 32.768KHz.
 - Low-power system clock crystal oscillator with programmable on-chip capacitors for frequency adjustment with large pulling range accepting the frequency 12MHz, 13MHz, 24MHz and 26 MHz.
- Microprocessor interfaces
 - General purpose I/O-pins
 - I²C-bus interface
 - Multi port PCM interface (linear and log PCM up to 16 bit/sample supported)
 - UART with hardware handshake and IrDA support
 - USB interface (vddio2 : 3.3V).
 - System timers
 - Watch dog timer
 - JTAG for ICE and flash memory programming
 - ETM7 for real time trace.
 - Patch interface for ROM version emulation.
- Voltage range
 - Radio 2.75 V
 - Core 1.8 V
 - Peripheral pins 1.8 and 3.3V

BLOCK DIAGRAM



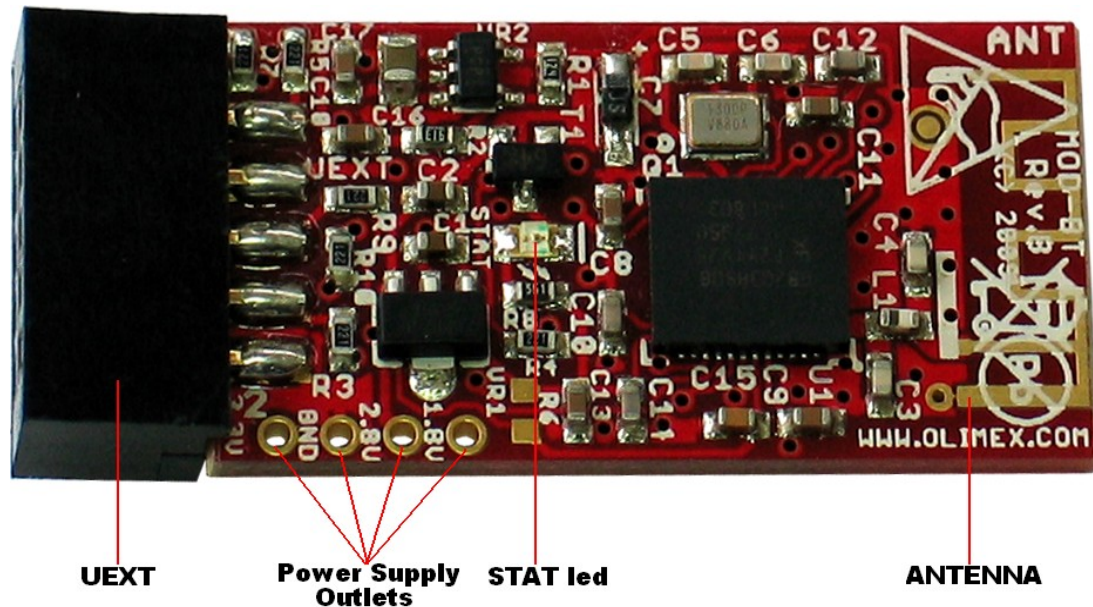
SCHEMATIC



MOD-BT

Rev. B
COPYRIGHT(C), 2009
<http://www.olimex.com/dev>

BOARD LAYOUT



POWER SUPPLY CIRCUIT

MOD-BT is typically power supplied by UEXT pin 1 and pin 2 with 3.3V.

There are two more power supplies – 2.8V for Radio and 1.8V for the core.

RESET CIRCUIT

MOD-BT reset circuit includes pin 6 of UEXT connector, pin 43 (RESET_N) of U1 and C15 (10nF).

CLOCK CIRCUIT

Quartz crystal 13 MHz is connected to **BGB203** pin 20 (XTAL1_SYS) and pin 19 (XTAL2_SYS).

JUMPER DESCRIPTION

There are no jumpers on this board.

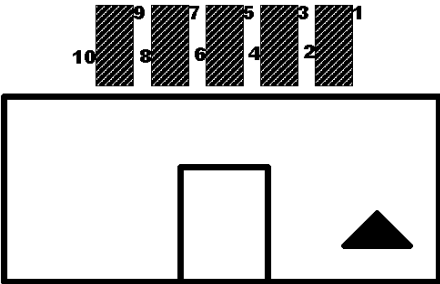
INPUT/OUTPUT

Status led (yellow) with name **STAT** – this led shows that +3.3V is applied to the board.

CONNECTOR DESCRIPTIONS

UEXT

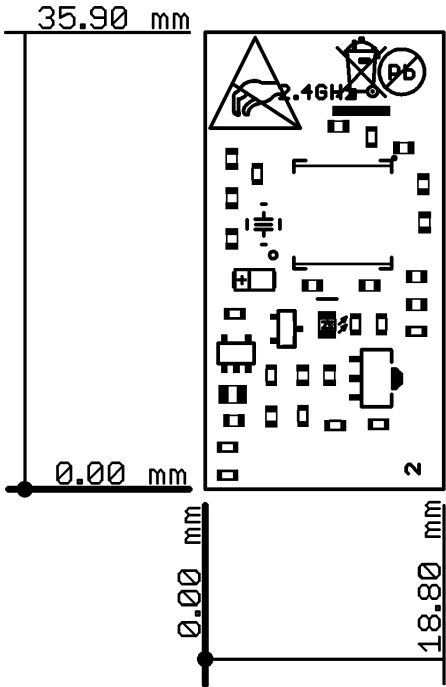
Pin #	Signal Name
1	3.3V
2	GND
3	RXD
4	TXD
5	STAT
6	RST
7	CTS
8	RTS
9	DSR
10	DTR



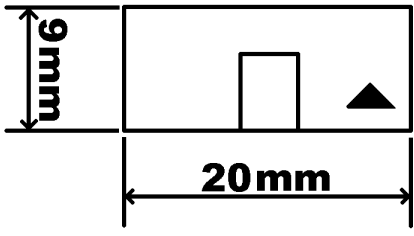
POWER SUPPLY OUTLETS



MECHANICAL DIMENSIONS



UEXT measures



ORDER CODE

MOD-BT - completely assembled and tested

How to order?

You can order to us directly or by any of our distributors.

Check our web www.olimex.com/dev for more info.

Revision history:

REV. B - create September 2009

Disclaimer:

© 2010 Olimex Ltd. All rights reserved. Olimex®, logo and combinations thereof, are registered trademarks of Olimex Ltd. Other terms and product names may be trademarks of others.

The information in this document is provided in connection with Olimex products. No license, express or implied or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Olimex products.

Neither the whole nor any part of the information contained in or the product described in this document may be adapted or reproduced in any material from except with the prior written permission of the copyright holder.

The product described in this document is subject to continuous development and improvements. All particulars of the product and its use contained in this document are given by OLIMEX in good faith. However all warranties implied or expressed including but not limited to implied warranties of merchantability or fitness for purpose are excluded.

This document is intended only to assist the reader in the use of the product. OLIMEX Ltd. shall not be liable for any loss or damage arising from the use of any information in this document or any error or omission in such information or any incorrect use of the product.

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: ocean@oceanchips.ru

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А