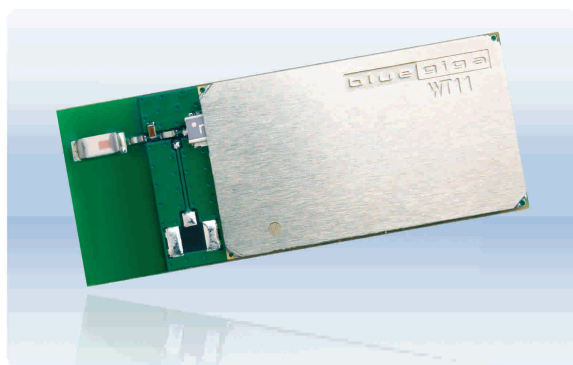# WRAP THOR
WT11 Bluetooth ® Module

Key Features

▷ Bluetooth® Class 1

▷ Two antenna options: integrated chip antenna or U.FL connector

▷ Enhanced Data Rates (EDR) with data throughput up to 2-3Mbps

▷ Support for Adaptive Frequency Hopping (AFH) and 802.11 co-existence

▷ USB version 2.0

▷ UART with bypass mode

▷ 8Mbits of external flash

▷ Supported profiles: SPP, DUN, OBEX and HCI

▷ Support for custom applications

▷ Industrial temperature range from -40C to +85C

▷ RoHS compliant

▷ Simple iWRAP™ firmware for controlling Bluetooth® wireless technology

▷ Fully qualified end product with Bluetooth® 2.0+EDR, CE and FCC

Description

WT11 is a next-generation, class 1, Bluetooth® 2.0+EDR (Enhanced Data Rates) module. It introduces three times faster data rates compared to existing Bluetooth® 1.2 modules even with lower power consumption! WT11 is a highly integrated and sophisticated Bluetooth® module, containing all the necessary elements from Bluetooth® radio to antenna and a fully implemented protocol stack. Therefore WT11 provides an ideal solution for developers who want to integrate Bluetooth® wireless technology into their design with limited knowledge of Bluetooth® and RF technologies.

WT11 module combined with Bluegiga's complete development, testing and verification service offering and excellent developer support, OEMs and designers ensure that their products reach the market rapidly and cost-effectively in relation to time and resources. Bluegiga has extensive in-house knowledge of both software and hardware offering customers a single point of contact to all Bluetooth® related issues.

By default WT11 module is equipped with powerful and easy-to-use iWRAP firmware. iWRAP enables users to access Bluetooth® functionality with simple ASCII commands delivered to the module over serial interface - it's just like a Bluetooth® modem. Entering the world of wireless Bluetooth® technology could not be easier!

With iWRAP software you have several implementation options:

● iWRAP can be configured to operate autonomously - just like a Bluetooth® cable replacer

● To create sophisticated applications - a host system can be used to control iWRAP with ASCII commands

● The GPIO interface in WT11 module can be used to connect host and iWRAP

Besides the iWRAP firmware Bluegiga also offers several other firmware options for WT11 module. Standard Host Command Interface (HCI) firmware is supported and an ideal solution for systems where the host system is capable running the entire Bluetooth® stack and profiles and WT11 is utilized as the physical radio over UART or USB interface.

Technical details

Firmware:

- iWRAP™ command interface for accessing the Bluetooth® functionality and for configuring the parameters with simple ASCII commands
- HCI firmware available for UART and USB interfaces
- Possibility to use / develop custom firmware
- 128-bit Bluetooth® encryption available for all firmware options

Hardware:

- Bluetooth® Class 1 radio (range up to 200 meters)
  - Nominal output power +19 dBm
  - Nominal sensitivity -84 dBm
  - Uses 2.4 GHz ISM band
  - Based on CSR's BC04 chipset
- Integrated antenna or U.FL connector
- Host processor interface with UART or USB
- SPI interface for firmware and parameter upgrades
- 6xGPIO
- PCM interface for Audio applications
- Supply voltage: regulated 3.2 – 3.4 VDC
- PCB form factor: 35.3 x 14 x 2.3 mm
- Operating temperature: -40 ºC to +85 ºC
- Metal shielding to prevent RF interference
- Reference designs available for HCI, cable replacement and audio applications

Product codes:

iWRAP Firmware, chip antenna	WT11-A-AI
HCI Firmware (USB), chip antenna	WT11-A-HCI
Custom Firmware, chip antenna	WT11-A-C
iWRAP Firmware, U.FL	WT11-E-AI
HCI Firmware (USB), U.FL	WT11-E-HCI
Custom Firmware, U.FL	WT11-E-C

Development and evaluation:

- WT11-A Evaluation Kit EKWT11-A
- WT11-E Evaluation Kit EKWT11-E
- CSR's BlueLab Professional SDK
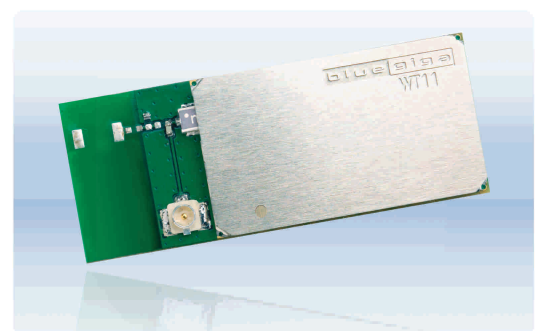
Other Bluegiga's products:

- WT12 Class 2 Bluetooth® module
- WRAP THOR® SMD module 2022-1
- WRAP THOR® Board-to-Board module 2022-1-B2B
  WRAP Access Server™ 2291, 2293

Certifications:

- Bluetooth® 2.0 + EDR
- CE, FCC

Applications:

- Cable replacement
- Point-of-sales systems
- Barcode readers and pay terminals
- Telemetry and machine-to-machine devices
- Logistics and transportation systems
- Automotive inspection and measurement systems
- Medical systems
- Fitness and sports telemetry devices
- PDAs and other portable terminals
- PCs and laptops

Preliminary information – details subject to change