

BTnode rev3 – Product Brief

The BTnode is a versatile, autonomous wireless communication and computing platform based on a Bluetooth radio, a second low-power radio and a microcontroller. It serves as a demonstration and prototyping platform for research in mobile and ad-hoc connected networks (MANETs) and distributed sensor networks (WSNs). The low-power radio is the same as used on the Berkeley Mica2 Motes, making the BTnode rev3 a twin, both of the Mote and the old BTnode. Both radios can be operated simultaneously or be independently powered off completely when not in use, considerably reducing the idle power consumption of the device.

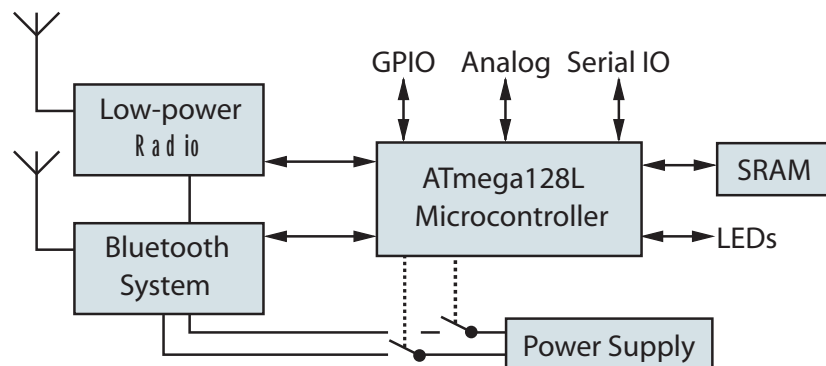
Availability – samples available

Pricing – USD 215 for samples, larger quantities upon request

Contract Manufacturer – Art of Technology, Zurich, Switzerland, email: btnode@art-of-technology.ch

Support – through the open-source community

BTnode rev3 system overview



System features

Core microcontroller – Atmel ATmega128L (AVR RISC 8 MHz @ 8 MIPS)

Core memories – 64+180 Kbyte SRAM, 128 Kbyte Flash ROM, 4 Kbyte EEPROM

Bluetooth subsystem – Zeevo ZV4002, supporting AFH/SFH Scatternets with max. 4 Piconets/7 Slaves
Bluetooth v1.2, integrated ARM7 core, 4 Mbit Flash for in-system development

Low-power radio – Chipcon CC1000 operating in ISM Band 433-915 MHz

External interfaces

UART, SPI, I2C, GPIO, ADC, Clock, Timer, LEDs

Standard Molex 1.25mm Wire-to-Board and Hirose DF17 Board-to-Board connectors

Power supply

Separate switchable supplies for Bluetooth, low-power radio, peripherals, and uC core

External DC supply 3.8–5 V or 2 AA cells with on/off switch

Switchable core voltage 3.3V available at extension connectors

Size – 58.15 x 33 mm attached to a 2 AA cell battery holder

Software Support

BTnut System Software and demo examples, standard C programming

TinyOS compatible

AVR-GCC tool chain on Win/Linux/MacOS/BSD

System programming and debugging

Single connector for in-system programming

AVR target via ISP, JTAG, serial bootloader or wireless network flooding

Linux emulation for fast prototyping

Standard IDEs/toolflows for AVR supported

Extensions

Modular extension port integrated

Generic sensor board extensions

FPGA extension board (prototype design available)

Additional resources – <http://www.btnode.ethz.ch>

