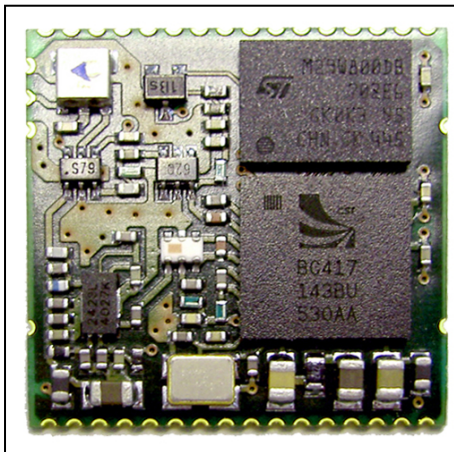




The Industrial Bluetooth® Adapter Solution for OEM partners

BlueBear - Industrial Long Range SPP-Bluetooth® 2.0 Module with EDR

The lesswire industrial Long Range BlueBear SPP-Bluetooth® Module is targeted for integration into different products of OEM partners enabling them to communicate over long distances with Bluetooth®. The module comes with a dedicated power amplifier and low noise amplifier. So the transmission power of the module can be increased up to +21dBm (adjustable by software) and the sensitivity of the receiver can be increased on average up to -94 dBm. These RF properties enable the modules to communicate over a distance of up to 500 meters in open areas. The industrial Long Range SPP-Bluetooth® Module provides an UART data interface for a transparent serial communication over Bluetooth®. Furthermore configuration parameters can be set by AT commands. With the BlueBear SPS module-option the GPIO signals can be analysed or switched. Furthermore the SPS option allows the configuration of the module with AT-commands via Bluetooth.



The industrial Long Range SPP-Bluetooth® Module comes with a completely integrated Bluetooth® stack including the Serial Port Profile (SPP) and is ready for SMD mounting. The modules allow for very fast connection establishment and achieve asynchronous transfer rates up to 3 Mbit/sec.

The Bluetooth® Module is accessible over RS-232 (3.3 V TTL-logic) interface, therefore all devices with RS-232 interface can be easily connected with other Bluetooth® devices. Typical applications are cable replacement solutions and production data acquisition.

For complex applications...

... you can easily switch to the pin compatible HCI Bluetooth® Module from lesswire. In addition to the HCI Bluetooth® Module lesswire offers you also the proper Bluetooth® stack, including all necessary profiles for embedded systems, Microsoft CE.Net, Microsoft XP / Vista as well as Linux.

Functions

Bluetooth®

- Bluetooth® Module with CSR-BC04-Chipset
- Radio class: Class 1
RF transmission power: max. +21 dBm adjustable
RF input sensitivity: typical -94 dBm
- Integrated Serial Port Profile (SPP)

Connectors

- USB/UART
- PCM
- 12 PIOs (VOH min. 3.1V / VOH min. 3.1V
VOL max. 0.2V / VOH min. 3.1V)
- 2 AIO's (VOH min. 3.1V / VOH min. 3.1V
VOL max. 0.2V / VOH min. 3.1V)
- SPI

Power supply

- 3,3V / max. 50mA (max.)

Antenna

- External antenna

Operation

- Service channels for configuration and operation

Display

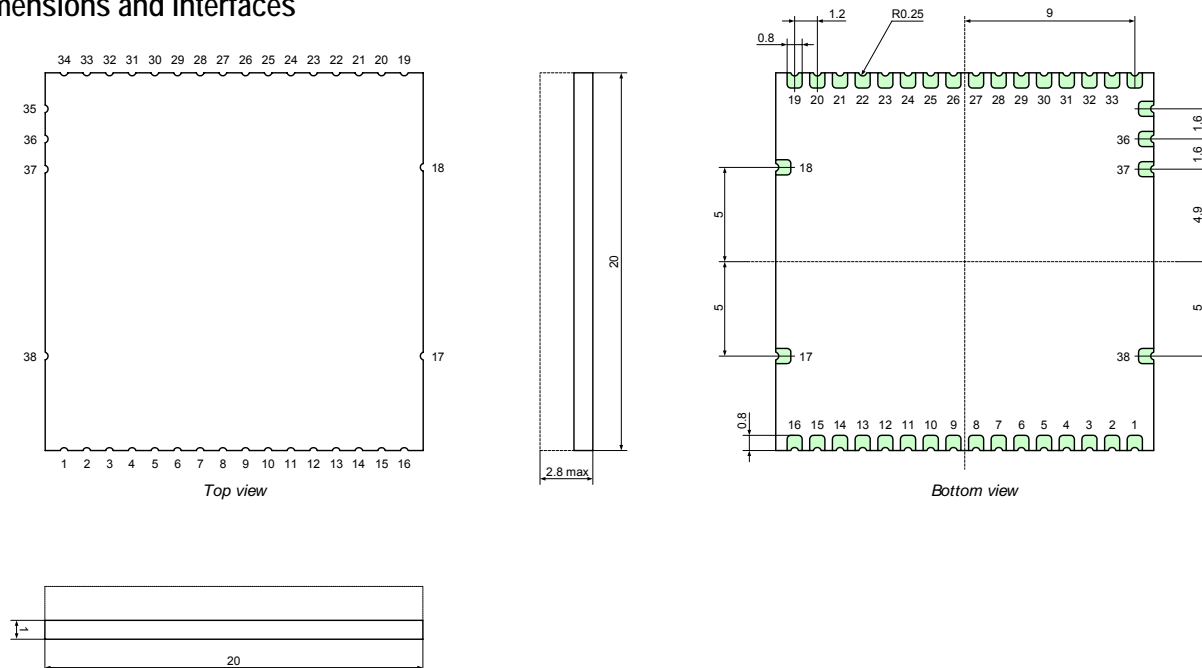
- Output pad for LED signals device state over GPIO

Configuration / Programming

- Setup of configuration parameters by using AT commands via UART or through Bluetooth (SPS option). Data is stored persistently in the module
- Serial Peripheral Interface (SPI) for programming (firmware update)



Dimensions and Interfaces



PIN Allocation

| | | | |
|----|------------|----|----------|
| 1 | GND | 20 | SPI_CSB |
| 2 | AIO[0] | 21 | SPI_MISO |
| 3 | AIO[1] | 22 | SPI_MOSI |
| 4 | USB_DP | 23 | PIO[4] |
| 5 | USB_DN | 24 | PIO[5] |
| 6 | UART_CTS | 25 | PIO[6] |
| 7 | UART_RTS | 26 | PIO[7] |
| 8 | UART_RX | 27 | PIO[8] |
| 9 | UART_TX | 28 | PIO[9] |
| 10 | PCM_IN | 29 | PIO[10] |
| 11 | PCM_OUT | 30 | PIO[11] |
| 12 | PCM_CLK | 31 | PIO[3] |
| 13 | PCM_SYNC | 32 | PIO[2] |
| 14 | RESETB | 33 | PIO[1] |
| 15 | VDD (3.3V) | 34 | PIO[0] |
| 16 | GND | 35 | GND |
| 17 | GND | 36 | RF I/O |
| 18 | GND | 37 | GND |
| 19 | SPI_CLK | 38 | GND |

Technical Data

| | |
|-------------------------------|--|
| Bluetooth® SIG Certification: | Bluetooth® 2.0 EDR |
| Transmission speed: | 200kbps max. |
| Frequency: | 2.4 – 2.4835 GHz (ISM Band) |
| Communication type: | Point-to-Point (cable replacement); Point-to-Multipoint |
| Communication protocols: | L2CAP, SDP, RFCOMM |
| Bluetooth® profiles: | General Access Profile, Service Discovery Profile, Serial Port Profile |
| Bluetooth® Radio: | Class 1 |
| RF output power: | max. +21 dBm (Class 1) configurable |
| RF Sensitivity: | typical – 94 dBm, at BER <0,1% |
| Radio/Baseband chip set: | CSR/CSR |
| Antenna: | External |
| Adapter: | Soldering pads on board |
| Management: | AT commands over terminal application (e.g. Hyper Terminal) |
| Modulation: | GFSK / $\pi/4$ DQPSF / 8DPSK |
| Operation temperature: | -40° to +85° Celsius |
| Powered: | 3,3V/50mA (max.) |
| Firmware update: | Firmware update via SPI / USB / UART |
| Security initialisation: | PIN Code |
| Security authentication: | Security mode 3 supported |
| Security encryption: | 128-bit encryption |
| Certification | ETTC |
| Dimensions: | 20,0mm x 20,0mm x 2,8 mm |
| Package Contents: | Bluetooth® module1 |

Part number:
AN00K60888