Bluetooth Module,



- · Bluetooth Class 1
- Fully qualified with Bluetooth v2.0 + EDR specification
 Transmit Power: +18dBm Typical
- Receive sensitivity: -90dBm (0.1% BER)
- Size: $27.1 \times 14.8 \times 2.4$ mm with shield can
- Extended operating temperature range: -20°C ~ +80°C
- Integrated 8Mbit Flash Memory
- · USB, Dual UART, I2C, PCM, PIO interfaces
- · 802.11 co-existence
- Field-proven SPP (Serial Port Profile) firmware supporting up to 4 simultaneous multiple connections
 RoHS Compliant

Specifications

Bluetooth	Fully qualified with Bluetooth v2.0 +EDR specification EDR (Enhanced Data Rate) compliant with v2.0 of specification for both 2Mbps and 3Mbps
Transmit Power	+18dBm Typical (Class1)
Receive Sensitivity	-90dBm (0.1% BER)
TX Output Spectrum- Frequency range	2401 MHz ~ 2480 MHz
UART	Up to 921 kbps
USB	V1.2
Interface	UART, USB, I2C, PCM, PIO
Power	2.7V~3.6V
Operating Temperature	-20°C ~ +80°C
Physical	27.1 mm x 14.8 mm x 2.4 mm
Properties	(1.06 in x 0.58 in x 0.09 in)
Approval	Bluetooth SIG (QDID: B015728)

The Parani-BCD100 is a Bluetooth Class 1 OEM module for OEM manufacturers who want to implement Bluetooth Class 1 functionality with their products cost effectively and also in timely manner. Users can build their own antenna circuit around the BCD100 to lower the overall cost while benefit from the BCD100's field-proven standard SPP (Serial Port Profile) firmware provided with no additional cost.

The BCD100 supports Class 1 Bluetooth transmission level for longer communication distance typically ranges from 100 m up to 1 km. The BCD100 supports UART, USB, I2C, PCM, PIO interfaces for the communication with the OEM products.

The BCD100 is provided with Bluetooth v2.0 compatible firmware runs internally for SPP (Serial Port Profile) applications by default. The SPP firmware supports up to 4 simultaneous multiple connections and is designed to work out-of-box for real world SPP applications such as POS (Point-of-sales), industrial automation, remote metering and other various applications. Optionally, the BCD100 can be supplied with only software stack up to HCI level so entire Bluetooth stack runs on the host side for the application such as USB dongles for computers, or OEM manufacturers can even develop and embed their own firmware into the BCD100.

The BCD100 is fully qualified with Bluetooth v.2.0+EDR specification so OEM manufacturers can save cost and time for overall OEM product certifications, which makes the BCD100 ideal solution for larger volume and cost sensitive applications.





Pin Description



USB Interface USB_DP 11 USB data plus UART Interface UART_TXD 8 UART data output UART_FXD 7 UART data output UART_FXD 7 UART data output UART_FXD 7 UART data output UART_CTS 9 UART data output UART_CTS 9 UART clear to send active low PCM_INT_FXD 13 Synchronous data sync PCM_IN 12 Synchronous data output PCM_CLK 14 Synchronous data output PCM_SYNC 13 Synchronous data output SPI Interface SPI_CLK 20 SPI data output SPI_CSB 22 Chip select for SPI, active low SPI_CLK 21 SPI dock PIO_1 23 SPI dock PIO_1 24 Programmable input/output line PIO_2 29 Programmable input/output line PIO_16 26 Programmable input/output line PIO_6 26 Programmable input/output line	Function	Pin Name	Pin Number	Description
UART Interface UART_TXD 8 UART data output UART_RXD 7 UART data input UART_RXD 7 UART data input UART_CTS 9 UART clear to send active low UART_CTS 9 UART clear to send active low PCM Interface PCM_UN 12 Synchronous data output PCM_SNIC 13 Synchronous data output PCM_SNIC 13 Synchronous data output PCM_SNIC 13 Synchronous data output SPI_MSOI 23 SPI data output SPI_OSB 22 Chip select for SPI, active low SPL_CSB 22 Chip select for SPI, active low SPL_OS1 23 SPI data output PIO PIO_3 28 Programmable input/output line PIO_6 26 Programmable input/output line PIO_6 26 Programmable input/output line PIO_7 27 Programmable input/output line PIO_6 26 Programmable input/output line PIO_7 27	USB Interface	USB_DP	11	USB data plus
UART_RXD 7 UART data input UART_RTS 6 UART request to send active low PCM Interface PCM_OUT 15 Synchronous data output PCM Interface PCM_OUT 15 Synchronous data output PCM_IN 12 Synchronous data output PCM_SYNC 13 Synchronous data sync PCM_CLK 14 Synchronous data clock SPI Interface SPI_MSO 20 SPI data output SPI_CSB 22 Chip select for SPI, active low SPI_CLK 21 SPI clock PIO SPI clock PIO PIO_13 28 Programmable input/output line PIO_2 29 Programmable input/output line PIO_3 28 Programmable input/output line PIO_6 26 Programmable input/output line PIO_7 27 Programmable input/output line PIO_9 31 Programmable input/output line PIO_10 32 Programmable input/output line PIO_11 33		USB_DN	10	USB data minus
UART_RTS 6 UART request to send active low UART_CTS 9 UART clear to send active low PCM Interface PCM_OUT 15 Synchronous data output PCM_SYNC 13 Synchronous data output PCM_CLK 14 Synchronous data output PCM_CLK 14 Synchronous data clock SPI Interface SPI_MISO 20 SPI data input SPI_CSB 22 Chip select for SPI, active low SPI_CLK 21 SPI clock PIO_Interface PIO_2 29 Programmable input/output line PIO_13 28 Programmable input/output line PIO_2 29 Programmable input/output line PIO_3 28 Programmable input/output line PIO_5 25 Programmable input/output line PIO_6 26 Programmable input/output line PIO_9 31 Programmable input/output line PIO_10 32 Programmable input/output line PIO_11 33 Programmable input/output line	UART Interface	UART_TXD	8	UART data output
UART_CTS9UART clear to send active lowPCM InterfacePCM_OUT15Synchronous data outputPCM_IN12Synchronous data outputPCM_SYNC13Synchronous data outputPCM_CLK14Synchronous data clockSPI InterfaceSPI_MSO20SPI data outputSPI_CSB22Chip select for SPI, active lowSPI_CLK21SPI clockPIO InterfacePIO_229Programmable input/output linePIO_328Programmable input/output linePIO_625Programmable input/output linePIO_626Programmable input/output linePIO_626Programmable input/output linePIO_630Programmable input/output linePIO_931Programmable input/output linePIO_1032Programmable input/output linePIO_1133Programmable input/output linePIO_125Analogue programmable input/output linePIO_1133Programmable input/output linePIO_1133Programmable input/output lineAlO_15Analogue programmable input/output lineAlO_15GroundGND1GroundGND17GroundGND36GroundGND36Transmiter output/receiver input		UART_RXD	7	UART data input
PCM Interface PCM_OUT 15 Synchronous data output PCM_IN 12 Synchronous data input PCM_SYNC 13 Synchronous data input PCM_CLK 14 Synchronous data input SPI Interface SPI_MISO 20 SPI data output SPI_CLK 21 SPI data output SPI clock SPI_CLK 21 SPI data output SPI clock SPI_CLK 21 SPI clock SPI clock PIO_1nterface PIO_2 29 Programmable input/output line PIO_6 26 Programmable input/output line PIO_7 27 Programmable input/output line PIO_8 30 Programmable input/output line PIO_9 31 Programmable input/output line PIO_10 32 Programmable input/output line PIO_11 33 Programmable input/output line PIO_13 29 Programmable input/output line PIO_14 31 Programmable input/output line PIO_15 Analogue programmable input/out		UART_RTS	6	UART request to send active low
PCM_IN 12 Synchronous data input PCM_SYNC 13 Synchronous data input PCM_CLK 14 Synchronous data clock SPI Interface SPI_MISO 20 SPI data output SPI_CSB 22 Chip select for SPI, active low SPI_CLK 21 SPI clock PIO Interface PIO_2 29 Programmable input/output line PIO_1 24 Programmable input/output line PIO_5 25 Programmable input/output line PIO_6 26 Programmable input/output line PIO_7 27 Programmable input/output line PIO_9 31 Programmable input/output line PIO_10 32 Programmable input/output line PIO_11 33 Programmable input/output line AIO_0 4 Analogue programmable input/output line AIO_1		UART_CTS	9	UART clear to send active low
PCM_SYNC 13 Synchronous data sync PCM_CLK 14 Synchronous data clock SPI Interface SPI_MISO 20 SPI data output SPI_MOSI 23 SPI data output SPI_CSB 22 Chip select for SPI, active low SPI_CLK 21 SPI clock PIO Interface PIO_2 29 Programmable input/output line PIO_6 26 Programmable input/output line PIO_6 26 Programmable input/output line PIO_7 27 Programmable input/output line PIO_8 30 Programmable input/output line PIO_9 31 Programmable input/output line PIO_10 32 Programmable input/output line PIO_11 33 Programmable input/output line PIO_11 32 Programmable input/output line PIO_11 33 Programmable input/output line PIO_11 33 Programmable input/output line AIO_1 5 Analogue programmable input/output line AIO_1 <	PCM Interface	PCM_OUT	15	Synchronous data output
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SPI_CSB 22 Chip select for SPI, active low SPI_CLK 21 SPI clock PIO Interface PIO_2 29 Programmable input/output line PIO_13 28 Programmable input/output line PIO_2 29 Programmable input/output line PIO_5 25 Programmable input/output line PIO_6 26 Programmable input/output line PIO_7 27 Programmable input/output line PIO_8 30 Programmable input/output line PIO_9 31 Programmable input/output line PIO_10 32 Programmable input/output line PIO_10 32 Programmable input/output line PIO_11 33 Programmable input/output line AIO_0 4 Analogue programmable input/output line AIO_1 5 Analogue programmable input/output line <	SPI Interface	SPI_MISO	20	SPI data output
SPL_CLK 21 SPI clock PIO Interface PIO_2 29 Programmable input/output line PIO_3 28 Programmable input/output line PIO_4 24 Programmable input/output line PIO_5 25 Programmable input/output line PIO_6 26 Programmable input/output line PIO_7 27 Programmable input/output line PIO_8 30 Programmable input/output line PIO_9 31 Programmable input/output line PIO_10 32 Programmable input/output line PIO_11 33 Programmable input/output line AlO_0 4 Analogue programmable input/output line AlO_1 5 Analogue programmable input/output line		SPI_MOSI	23	SPI data input
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PIO_3 28 Programmable input/output line PIO_4 24 Programmable input/output line PIO_5 25 Programmable input/output line PIO_6 26 Programmable input/output line PIO_7 27 Programmable input/output line PIO_9 31 Programmable input/output line PIO_9 31 Programmable input/output line PIO_10 32 Programmable input/output line PIO_11 33 Programmable input/output line PIO_11 33 Programmable input/output line AIO_1 5 Analogue programmable input/output line AIO_1 6 Power supply for power amplifier, 3.3V GND 1 Ground		SPI_CLK	21	SPI clock
PIO_4 24 Programmable input/output line PIO_5 25 Programmable input/output line PIO_6 26 Programmable input/output line PIO_7 27 Programmable input/output line PIO_9 31 Programmable input/output line PIO_9 31 Programmable input/output line PIO_9 31 Programmable input/output line PIO_10 32 Programmable input/output line PIO_11 33 Programmable input/output line AIO_0 4 Analogue programmable input/output line AIO_1 5 Analogue programmable input/output line AIO_1 6 9 QU 1 Ground GND 1 Ground GND 17 Ground GND 35 Ground GND 35 Ground GND 36 Transmitter output/receiver input	PIO Interface	PIO_2	29	Programmable input/output line
PIO_5 25 Programmable input/output line PIO_6 26 Programmable input/output line PIO_7 27 Programmable input/output line PIO_8 30 Programmable input/output line PIO_9 31 Programmable input/output line PIO_10 32 Programmable input/output line PIO_11 33 Programmable input/output line PIO_11 33 Programmable input/output line AIO_0 4 Analogue programmable input/output line AIO_1 5 Ground GND GND 1 Ground GND <tr< td=""><td></td><td>PIO_3</td><td>28</td><td>Programmable input/output line</td></tr<>		PIO_3	28	Programmable input/output line
PIO_5 25 Programmable input/output line PIO_6 26 Programmable input/output line PIO_7 27 Programmable input/output line PIO_8 30 Programmable input/output line PIO_9 31 Programmable input/output line PIO_10 32 Programmable input/output line PIO_11 33 Programmable input/output line PIO_11 33 Programmable input/output line AIO_0 4 Analogue programmable input/output line AIO_1 5 Ground GND 1 Ground GND 1 Ground GND 17 Ground GND 34 Ground GND 35 Ground GND 36 Transmitter output/receiver input		PIO_4	24	
PIO_6 26 Programmable input/output line PIO_7 27 Programmable input/output line PIO_8 30 Programmable input/output line PIO_9 31 Programmable input/output line PIO_10 32 Programmable input/output line PIO_11 33 Programmable input/output line PIO_11 33 Programmable input/output line AIO_0 4 Analogue programmable input/output line AIO_1 5 Ground GND GND 1 Ground GND GND 17 Ground GND			25	
PIO_8 30 Programmable input/output line PIO_9 31 Programmable input/output line PIO_10 32 Programmable input/output line PIO_11 33 Programmable input/output line PIO_11 33 Programmable input/output line AIO_0 4 Analogue programmable input/output line AIO_1 5 Analogue programmable input/output line AIO_1 5 Analogue programmable input/output line Power PVCC 3 Power supply for power amplifier, 3.3V +3V3 16 Power supply for system, 3.3V GND 1 Ground GND 17 Ground GND 19 Ground GND 34 Ground GND 35 Ground GND 35 Ground GND 36 Transmitter output/receiver input			26	Programmable input/output line
PIO_830Programmable input/output linePIO_931Programmable input/output linePIO_1032Programmable input/output linePIO_1133Programmable input/output lineAIO_04Analogue programmable input/output lineAIO_15Analogue programmable input/output lineGND1GroundGND17GroundGND34GroundGND35GroundGND36Transmitter output/receiver input		PIO_7	27	
PIO_9 31 Programmable input/output line PIO_10 32 Programmable input/output line PIO_11 33 Programmable input/output line AIO_0 4 Analogue programmable input/output line AIO_1 5 Analogue programmable input/output line AIO_1 5 Analogue programmable input/output line Power PVCC 3 Power supply for power amplifier, 3.3V +3V3 16 Power supply for system, 3.3V GND 1 Ground GND 2 Ground GND 17 Ground GND 19 Ground GND 34 Ground GND 35 Ground GND 35 Ground			30	Programmable input/output line
PIO_10 32 Programmable input/output line PIO_11 33 Programmable input/output line AIO_0 4 Analogue programmable input/output line AIO_1 5 Analogue programmable input/output line AIO_1 5 Analogue programmable input/output line Power PVCC 3 Power supply for power amplifier, 3.3V +3V3 16 Power supply for system, 3.3V GND 1 Ground GND 1 Ground GND 17 Ground GND 19 Ground GND 34 Ground GND 35 Ground GND 35 Ground		PIO_9	31	Programmable input/output line
PIO_11 33 Programmable input/output line AIO_0 4 Analogue programmable input/output line AIO_1 5 Analogue programmable input/output line Power PVCC 3 Power supply for power amplifier, 3.3V +3V3 16 Power supply for system, 3.3V GND 1 Ground GND 17 Ground GND 19 Ground GND 34 Ground GND 35 Ground GND 36 Transmitter output/receiver input		PIO_10	32	Programmable input/output line
AlO_0 4 Analogue programmable input/output line AlO_1 5 Analogue programmable input/output line Power PVCC 3 Power supply for power amplifier, 3.3V +3V3 16 Power supply for system, 3.3V GND 1 Ground GND 2 Ground GND 17 Ground GND 19 Ground GND 34 Ground GND 35 Ground GND 36 Transmitter output/receiver input		PIO_11	33	Programmable input/output line
AlO_1 5 Analogue programmable input/output line Power PVCC 3 Power supply for power amplifier, 3.3V +3V3 16 Power supply for system, 3.3V GND 1 Ground GND 2 Ground GND 17 Ground GND 19 Ground GND 34 Ground GND 35 Ground GND 35 Ground		AIO_0	4	Analogue programmable input/output line
Power PVCC 3 Power supply for power amplifier, 3.3V +3V3 16 Power supply for system, 3.3V GND 1 Ground GND 2 Ground GND 17 Ground GND 19 Ground GND 34 Ground GND 35 Ground GND 36 Transmitter output/receiver input		AIO_1	5	Analogue programmable input/output line
+3V3 16 Power supply for system, 3.3V GND 1 Ground GND 2 Ground GND 17 Ground GND 19 Ground GND 34 Ground GND 35 Ground Others RF_I/O 36 Transmitter output/receiver input	Power	PVCC	3	Power supply for power amplifier, 3.3V
GND 1 Ground GND 2 Ground GND 17 Ground GND 19 Ground GND 34 Ground GND 35 Ground Others RF_I/O 36 Transmitter output/receiver input			16	Power supply for system, 3.3V
GND 2 Ground GND 17 Ground GND 19 Ground GND 34 Ground GND 35 Ground Others RF_I/O 36 Transmitter output/receiver input		GND	1	
GND 17 Ground GND 19 Ground GND 34 Ground GND 35 Ground Others RF_I/O 36 Transmitter output/receiver input		GND	2	
GND 19 Ground GND 34 Ground GND 35 Ground Others RF_I/O 36 Transmitter output/receiver input		GND	17	Ground
GND 35 Ground Others RF_I/O 36 Transmitter output/receiver input		GND	19	
Others RF_I/O 36 Transmitter output/receiver input		GND	34	Ground
		GND	35	Ground
	Others	RF_I/O	36	Transmitter output/receiver input
		RESETB	18	Reset, active low, > 5ms to cause a reset

Applications

- · High-speed data transceiver systems for long distance communication
- · PCs/Personal Digital Assistants (PDA)
- · Bluetooth USB dongle
- · Bluetooth serial dongle
- · Bluetooth access points
- · Industrial automation devices
- · Remote metering devices
- · POS (Point-of-sales) devices

Software Stack

BCD100 is provided with Bluetooth v2.0 compatible firmware runs internally for SPP (Serial Port Profile) applications by default. The firmware is designed to work out-of-box for real world SPP applications such as POS (Point-of-sales), industrial automation, remote metering and other various applications.

Optionally, the BCD100 can be supplied with only software stack up to HCI level so users can develop and embed their own firmware version into the BCD100 or entire Bluetooth stack runs on the host side for the application such as USB dongle for computers. Regarding these custom firmware options, please contact a Sena representative for more detail.

Ordering Information

Part Number	Description
BCD100-01	Bluetooth v2.0+EDR class 1 OEM module, Reel type package, Minimum order quantity 100

For more information, please visit us at http://www.sena.com

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