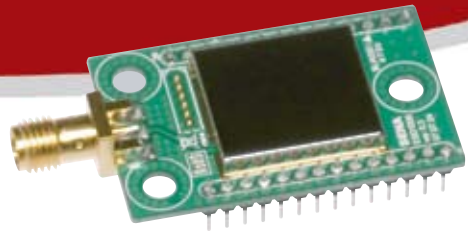


OEM Bluetooth-Serial Module, Parani™ ESD1000



Features

- Bluetooth Specification v2.0 + EDR
- Useful for Bluetooth-enabling users' devices
- Basic Transmit Power : Max. +18dBm, EDR Transmit Power : Max. +6dBm
- Receiving Sensitivity : -88dBm(0.1%BER)
- Supports Bluetooth profiles SPP(Serial Port Profile)
- External interface for USB, UART, PCM, I2C
- Interoperability with PDA, laptops etc.
- Supports firmware upgrade via windows-based software(ParaniUpdater)
- Working distance (In an open field) : Nom. 100 meters, up to 1000m using patch antenna
- Easy to use Windows configuration tool available.
- No external drivers required.

Pin Assignment Information

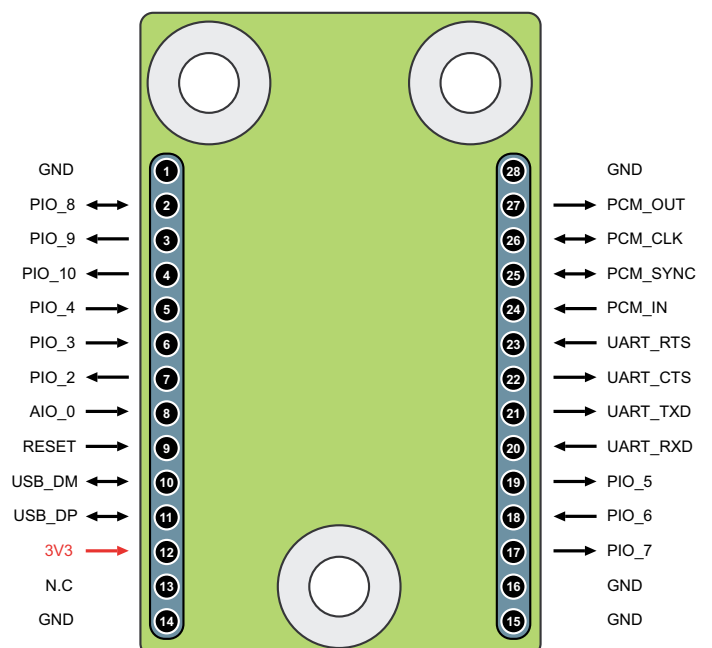
Pin NO.	Pin Name	Function	Direction	Description	Signal Level
1	GND	GROUND	-	GROUND	GROUND
2	PIO_8	I ² C_SDA	IN/OUT	I ² C_SERIAL_DTA	TTL
3	PIO_9	I ² C_SCL	OUT	I ² C_SERIAL_CLOCK	TTL
4	PIO_10	I ² C_WP	OUT	I ² C_WRITE_PROTECT	TTL
5	PIO_4	BT_MODE	IN	BT_MODE(0,1,2,3)SELECT	TTL
6	PIO_3	BT_INITIAL	IN	BT_INFO(LINK.MODE) INITIALIZE(ACTIVE 'L')	TTL
7	PIO_2	LOW_BATT _INDICATOR	OUT	LOW_BATTERY_INDICATOR (ACTIVE 'L')	TTL
8	AIO_0	BATT_MONITOR	IN	BATTERY MONITOR	ANALOG
9	RESET	HW_RESET	IN	HARDWARE_RESET(ACTIVE 'L')	TTL
10	USB_DM	USB_DM	IN/OUT	USB_DATA_MINUS	TTL
11	USB_DP	USB_DP	IN/OUT	USB_DATA_PLUS	TTL
12	3V3	VCC	IN	POWER_SUPPLY_3.3V	POWER
13	N.C	NOT CONNECT	-	NOT_CONNECT	-
14	GND	GROUND	-	GROUND	GROUND
15	GND	GROUND	-	GROUND	GROUND
16	GND	GROUND	-	GROUND	GROUND
17	PIO_7	UART_DCD	OUT	UART_DATA_CARRIER_DETECT	TTL
18	PIO_6	UART_DSR	IN	UART_DATA_SET_READY	TTL
19	PIO_5	UART_DTR	OUT	UART_DATA_TERMINAL_READY	TTL
20	UART_RXD	UART_RXD	IN	UART_RECEIVE_DATA	TTL
21	UART_TXD	UART_TXD	OUT	UART_TRANSMIT_DATA	TTL
22	UART_CTS	UART_CTS	OUT	UART_CLEAR_TO_SEND	TTL
23	UART_RTS	UART_RTS	IN	UART_READY_TO_SEND	TTL
24	PCM_IN	PCM_IN	IN	SYNCHRONOUS_DATA_INPUT	TTL
25	PCM_SYNC	PCM_SYNC	IN/OUT	SYNCHRONOUS_DATA_SYNC	TTL
26	PCM_CLK	PCM_CLK	IN/OUT	SYNCHRONOUS_DATA_CLOCK	TTL
27	PCM_OUT	PCM_OUT	OUT	SYNCHRONOUS_DATA_OUTPUT	TTL
28	GND	GROUND	-	GROUND	GROUND

Parani-ESD1000 is Class1 type Embedded Bluetooth Module for users to make their devices Bluetooth-enable. By default, it supports 100 meters of wireless transmit distance. The Parani-ESD1000 has an extension option so that users can extend the transmit distance up to 1000 meters using optional antennas. It supports Bluetooth v2.0+EDR specification, and various external interfaces such as UART, USB, PCM. GPIO and I2C. The Parani-ESD1000 also supports multiple Bluetooth connections up to three sessions.

Users may configure the Parani-ESD1000 by using easy-to-use Windows-based utility software or by using standard AT command set.

Typical application areas of the Parani-ESD1000 include:

- RS232 cable replacement
- Truck/Bus monitoring system
- Car Diagnostics
- Wireless POS system
- Wireless Machine(Healthcare/Industrial) monitoring
- Wireless Factory monitoring
- PLC programming
- Wireless Printing
- Wireless Logistics



Specifications

Serial Interface:

- UART, USB, PCM, GPIO
- 2mm Header 14 x 2
- Serial UART speed up to 921.6kbps
- CTS/RTS flow control, DTR/DSR for loop-back & full transfer

Bluetooth Interface:

- Bluetooth v2.0 + EDR
- Class 1
- Profiles: SPP
- Working distance (in open field)

Stub1	- Stub1	100 meters
Stub1	- Dipole3	150 meters
Dipole3	- Dipole3	200 meters
Dipole3	- Dipole5	300 meters
Dipole3	- Patch9	500 meters
Dipole5	- Dipole5	400 meters
Dipole5	- Patch9	600 meters
Patch9	- Patch9	1,000 meters

[Antennas]

Stub1: +1dBi Stub Antenna
 Dipole3: +3dBi Dipole Antenna
 Dipole5: +5dBi Dipole Antenna
 Patch9: +9dBi Patch Antenna

Max. Tx power: +18dBm

Receive Sensitivity: -88dBm

Antenna gain:

- Stub: +1dBi, Dipole: +3dBi, Dipole: +5dBi, Patch: +9dBi

Configuration:

- ParaniWin, ParaniWizard, ParaniUpdater
- Modem AT command set

Diagnostic LED:

- TXD, RXD, RTS, CTS, DTR, DSR, DCD on Jig board

Power:

- 3.3VDC
- Minimum: 10mA, Maximum : 60mA

Environmental:

- Operating temperature: -30°C to 80°C
- Storage temperature: -40°C to 85°C
- Humidity: 90% Non-condensing

Physical properties:

- Dimension (L x W x H):
 49 x 23 x 11 (mm)
 1.93 x 0.9 x 0.43 (in.)
- Weight: 6g

MTBF: 400.89 Years

Regulatory Approvals:

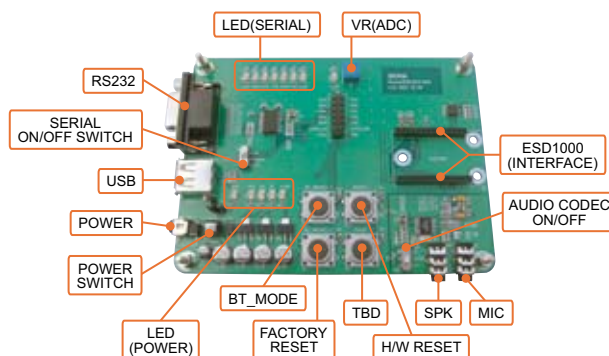
- FCC Part 15 Subpart C Section 15.247
- EN 60950-1: 2001
- ETSI EN 300 328
- ETSI EN 301 489-1
- ETSI EN 301 489-17
- MIC (Type Registration)
- TELEC (Type Certification)

Warranty:

- 1-year limited warranty

Parani-ESD1000 Starter Kit

The Parani-ESD1000 Starter Kit includes the evaluation board with the sample circuitry for Parani-ESD1000 interface, power, RS232 interface, USB, H/W Reset, LEDs, and Audio interface for users' device development.



Ordering Information

ESD1000 Parani-ESD1000 OEM Bluetooth-Serial Module-Class1 with antenna extension option

Single Unit Pack and 50-Unit Bulk Pack

Optional Accessories :

- SAT-G01R Antenna: 1 dBi Stub Antenna- RP-SMA-Reverse right-hand thread
- DAT-G01R Antenna: 3 dBi Dipole Antenna-RP-SMA-Reverse right-hand thread
- DAT5-G01R Antenna: 5 dBi Dipole Antenna-RP-SMA-Reverse right-hand thread
- PAT-G01R Antenna: 9 dBi Patch Antenna-RP-SMA-Reverse right-hand thread
- SEC-G01R : 15cm Antenna Extension Cable-RP-SMA-Reverse right-hand thread
- RFC-G01R: 1m Antenna Extension Cable-RP-SMA-Reverse right-hand thread for PAT-G01R

ESD1000SK Parani-ESD1000 Starter Kit

Includes:

- ESD1000 Module
- Jig board
- DC Power Adapter
- Serial data cable
- Quick Start Guide
- USB cable
- CD-ROM

U.S. / Canada / South America

Tel : +1 (408) 573-7425 Fax: +1 (408) 907-3738

EU / Africa

Tel : +33 (0) 1 53 53 16 29 Fax: +33 (0) 1 70 24 70 90

Asia / Pacific

Tel : +82-2-571-8283 Fax: +82-2-573-7710

Contact us via E-mail

General Information : info@sena.com
 Sales & Distribution : sales@sena.com
 Technical Support : support@sena.com

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