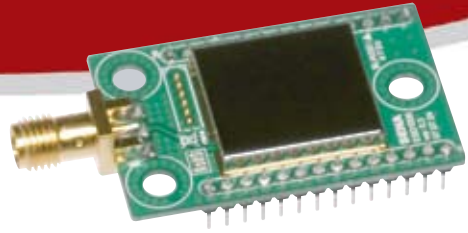


# OEM Bluetooth-Serial Module, Parani™ ESD1000



## 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 UART
- 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.

**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 external interface UART.

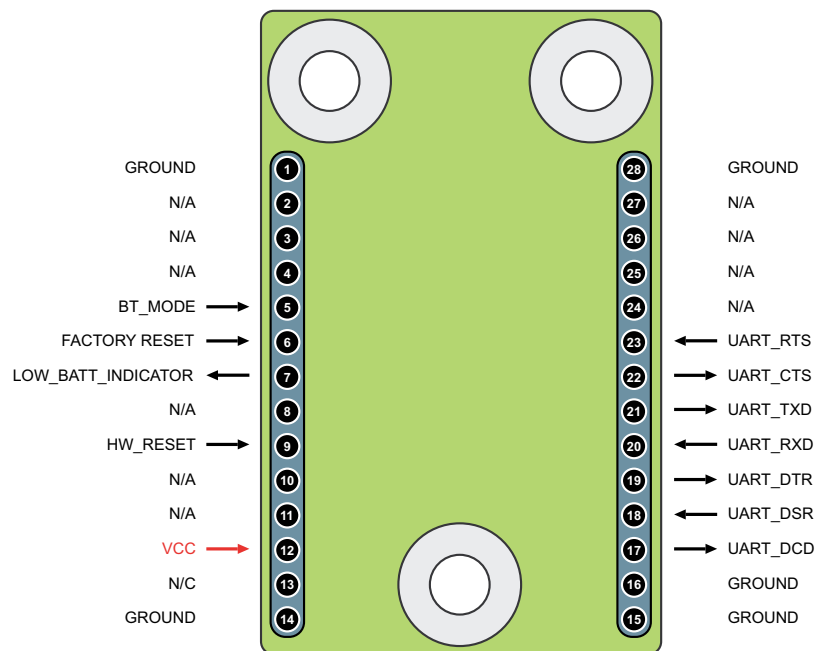
Users may configure the Parani-ESD1000 by using easy-to-use Windows-based utility software or by using standard AT command set.

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

## Pin Assignment Information

Pin NO.	Pin Name	Direction	Description	Signal Level
1	GROUND	-	GROUND	GROUND
2	N/A			
3	N/A			
4	N/A			
5	BT_MODE	IN	Pairing signal	TTL
6	FACTORY RESET	IN	Factory reset signal(Active 'L')	TTL
7	LOW_BATT_INDICATOR	OUT	Low battery status(Active 'L')	TTL
8	N/A			
9	HW_RESET	IN	Hardware reset signal(Active 'L')	TTL
10	N/A			
11	N/A			
12	VCC	IN	Power(3.3V)	POWER
13	N/C	-		
14	GROUND	-	GROUND	GROUND
15	GROUND	-	GROUND	GROUND
16	GROUND	-	GROUND	GROUND
17	UART_DCD	OUT	UART DCD(data carrier detect)	TTL
18	UART_DSR	IN	UART DSR(data set ready)	TTL
19	UART_DTR	OUT	UART DTR(data terminal ready)	TTL
20	UART_RXD	IN	UART RXD(receive data)	TTL
21	UART_TXD	OUT	UART TXD(transmit data)	TTL
22	UART_CTS	OUT	UART CTS(clear to send)	TTL
23	UART_RTS	IN	UART RTS(ready to send)	TTL
24	N/A			
25	N/A			
26	N/A			
27	N/A			
28	GROUND	-	GROUND	GROUND



## Specifications

### Serial Interface:

- UART
- 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)
 

SAT-G01R	-	SAT-G01R	100 meters
SAT-G01R	-	DAT-G01R	150 meters
DAT-G01R	-	DAT-G01R	200 meters
DAT-G01R	-	DAT5-G01R	300 meters
DAT-G01R	-	PAT-G01R	500 meters
DAT5-G01R	-	DAT5-G01R	400 meters
DAT5-G01R	-	PAT-G01R	600 meters
PAT-G01R	-	PAT-G01R	1,000 meters

#### [Antennas]

- SAT-G01R: +1dBi Stub Antenna
- DAT-G01R: +3dBi Dipole Antenna
- DAT5-G01R: +5dBi Dipole Antenna
- PAT-G01R: +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:

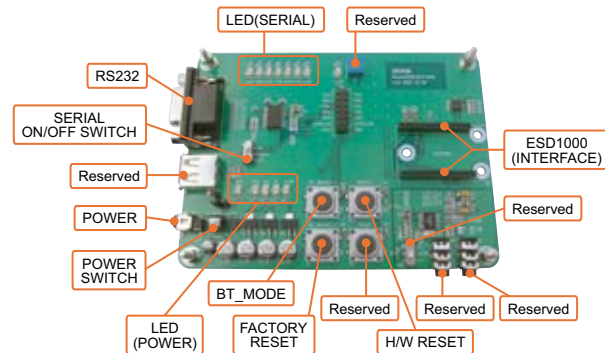
- FCC Part 15 Subpart C Section 15.247
- EN 60950-1: 2001
- ETSI EN 300 328
- ETSI EN 301 489-1
- ETSI EN 301 489-17
- MIC (Type Registration)
- TELEC (Type Certification)
- SIG

### 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, H/W Reset, LEDs for users' device development.



## Ordering Information

**ESD1000** Parani-ESD1000 OEM Bluetooth-Serial Module-Class1 with antenna extension option  
**ESD1000-00**

### 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:

- Parani-ESD1000 Module
- Jig board
- DC Power Adapter
- Serial data cable
- Quick Start Guide
- SAT-G01R Antenna: 1 dBi Stub Antenna- RP-SMA-Reverse right-hand thread
- 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