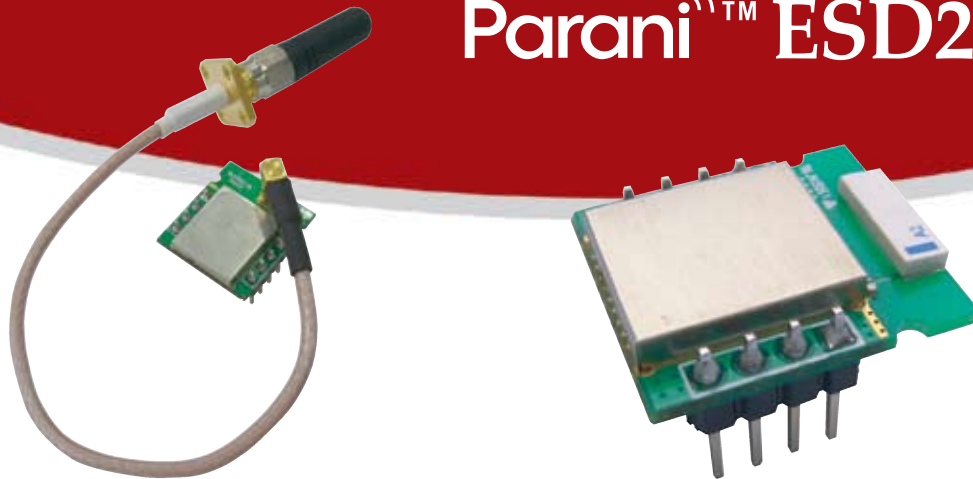


# OEM Bluetooth-Serial Module, Parani™ ESD200/210



## Features

- Output Interface UART, Compliant Bluetooth stack v1.2-improved AFH(Adaptive Frequency Hopping), Fast connection
- Transmit Power: Max. +4dBm
- Receiving Sensitivity: -80dBm(0.1%BER)
- Antenna gain - Chip: 0dBi, Stub: +2dBi, Dipole: +3dBi, Patch: +9dBi
- Compact size: 18 x 20 x 11.7(mm)
- Provides transparent RS232 serial cable replacement.
- Supports Bluetooth Serial Port Profile.
- Interoperability with PDA, laptops etc.
- Built-in chip antenna included
- Supports firmware upgrade via windows-based software (ParaniUpdater)
- Working distance(In an open field)
  - Parani-ESD200: Class 2, Nom. 30meters
  - Parani-ESD210: Class 2, Nom. 30meters, up to 300m using patch antenna
- Easy to use Windows configuration tool available.
- No external drivers required.

**Parani-ESD Series** is OEM Bluetooth-Serial Module type product line based on Bluetooth technology. Parani-ESD Series is designed for integration into user devices by on-board installation. They are connected to the device via built-in UART interface and communicate with other Bluetooth device.

Parani-ESD Series enables RS232-based serial devices to communicate wirelessly throughout the range of 30m~300m(Parani-ESD210-Class 2).

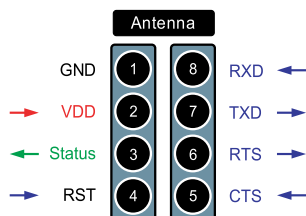
Parani-ESD200 has a built-in on-board antenna and Parani-ESD210 has an antenna connector for connecting external antenna. Users can extend Bluetooth communication range by connecting the external antenna to antenna connector.

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

Typical application areas of the Parani-ESD Series include:

- RS232 cable replacement
- Wireless Factory monitoring
- Truck/Bus monitoring system
- PLC programming
- Car Diagnostics
- Wireless Printing
- Wireless POS system
- Wireless logistics
- Wireless machine(healthcare/industrial) monitoring

## Pin Assignment Information



Pin no.	Pin name	Direction	Description	Signal Level
1	GND		Power Ground	Ground
2	VDD	Input	DC input (3.0 ~ 3.3V)	Power
3	Status	Output	Bluetooth Connect Detect (Active Low)	TTL
4	RST	Input	Reset (Active Low)	TTL
5	CTS	Input	UART Clear to Send	TTL
6	RTS	Output	UART Ready to Send	TTL
7	TXD	Output	UART data out	TTL
8	RXD	Input	UART data input	TTL

# OEM Bluetooth-Serial Module, Parani™ ESD200/210

## Specifications

### Serial Interface

- UART Interface, 2.54mm Header 1x4x2, 1200bps to 230 Kbps
- CTS/RTS flow control: Default

### Bluetooth Interface

- Bluetooth v1.2
- Class 2
- Level - Max. 4 dBm
- Protocols - RFCOMM, L2CAP, SDP
- Profiles - General Access Profile, Serial Port Profile
- Working distance
  - ESD200:
    - Nominal 30 meters
  - ESD210:
    - Default Antenna - Default Antenna 30 meters
    - Default Antenna - Dipole Antenna 50 meters
    - Dipole Antenna - Dipole Antenna 80 meters
    - Patch Antenna - Dipole Antenna 150 meters
    - Patch Antenna - Patch Antenna 300 meters

### Configuration

- ParaniWin, ParaniWizard, Modem AT command set

### Firmware Update

- ParaniUpdater

### Power

- 3.3VDC
- Nominal current consumption: 40mA @ 3.3VDC approximately

### Environmental

- Operating temperature: -10°C to 55°C
- Storage temperature: -20°C to 70°C
- Humidity: 90% Non-condensing

### Physical properties

- 18 x 20 x 11.7(mm) / 0.7 x 0.78 x 0.47(in.)
- Weight: ESD200 - 4g / ESD210 - 14g

### MTBF

- Parani-ESD200: 556.53 Years / Parani-ESD210: 562.74 Years

### Approvals

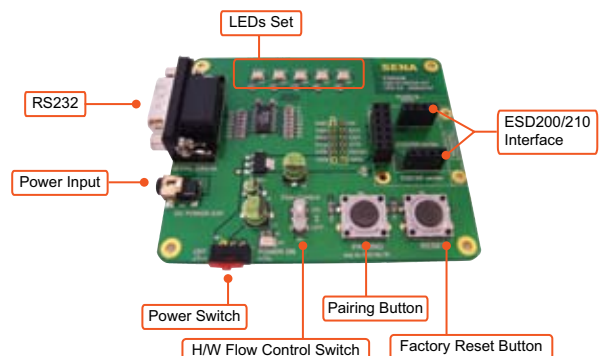
- FCC, CE

### Warranty

- 1-year limited warranty

## Parani-ESD Starter Kit

Parani-ESD Starter Kit includes the evaluation board with the sample circuitry for Parani-ESD200/210 interface, power, RS232 Interface, Reset, LEDs, Pairing, H/W flow control for user device development.



## Ordering Information

**ESD200** Parani-ESD200 OEM Bluetooth-Serial Module-Class2 with Built-in chip antenna

**ESD200-01 Includes:** Embedded On-board Antenna

**ESD210** Parani-ESD210 OEM Bluetooth-Serial Module-Class2 with antenna extension option

**ESD210-00 Includes:** Module only - antenna and cable NOT included

**ESD210-01 Includes**

- SAT: Parani-SAT Stub Antenna-SMA Male-Left Handed
- EEC: Parani-EEC 15cm Antenna Extension Cable

### Optional Accessories

- DAT: Parani-DAT Dipole Antenna-SMA Male-Left Handed
- PAT: Parani-PAT Patch Antenna-SMA R/A Female-Right Handed
- SLR: SMA-Male left handed to right handed adapter
- RFC: Parani-RFC 1m Antenna Extension Cable for Patch antenna

**Parani-ESD200SK** Starter Kit for Parani-ESD200

**Parani-ESD210SK** Starter Kit for Parani-ESD210

### Includes

- Any one of the following modules: ESD200, ESD210
- Jig board
- DC Power Adapter
- Serial data cable
- CD-ROM

### U.S. / Canada / South America

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