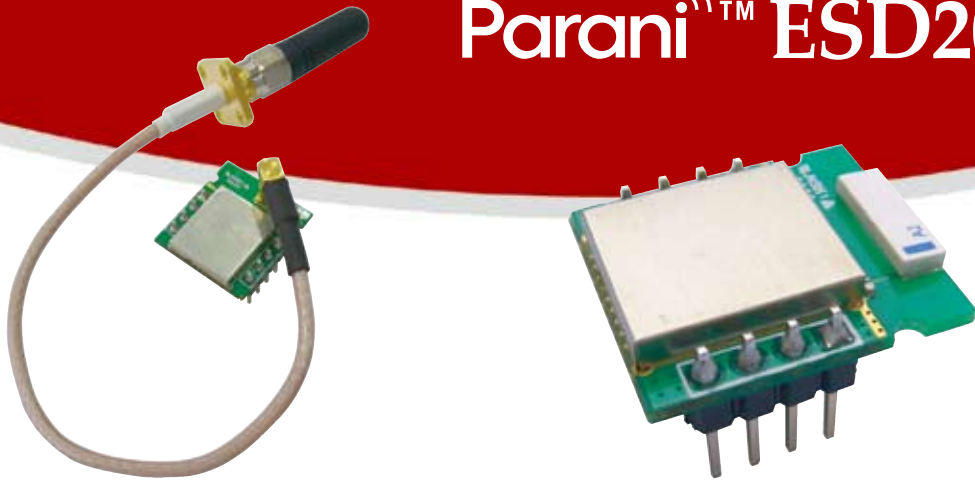OEM Bluetooth-Serial Module,

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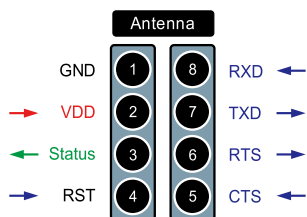Parani-ESD200 has a built-in on-board antenna and Parani-ESD210 has an antenna connector for connecting external antenna. Users can extend Bluetooth communication range by connecting the external antenna to antenna connector.

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

```
                    Antenna
         GND    [1]    [8]   RXD  ←
    →    VDD    [2]    [7]   TXD  →
    ←  Status   [3]    [6]   RTS  →
    →    RST    [4]    [5]   CTS  ←
```

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

SENA
www.sena.com

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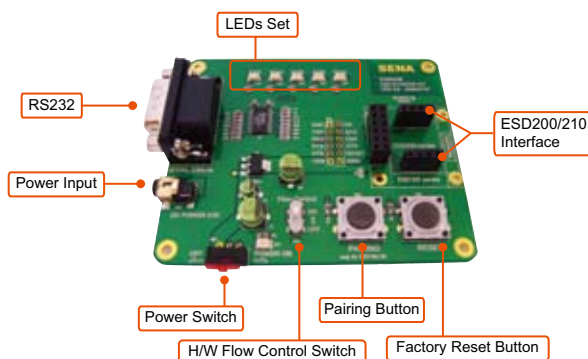- Parani-ESD200: 556.53 Years / Parani-ESD210: 562.74 Years

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.

Labels: LEDs Set, RS232, Power Input, ESD200/210 Interface, Power Switch, H/W Flow Control Switch, Pairing Button, Factory Reset Button

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

U.S. / Canada / South America
Tel: 408-448-1997 Fax: 408-907-3738
Sales and Support Toll Free (US/Canada): 8669-US-SENA (866-987-7362)
General Information Toll Free (US/Canada): 8668-US-SENA (866-887-7362)

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

Asia / Pacific
Tel: +82-2-576-7362 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

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