

FrSky S.Port to UART Converter (with 2 ADC ports)

Thank you for purchasing the FrSky SP2UART adapter, which supports Data-Transmission through the S.Port Bus and Analog Signal input via the S.Port. To maximize your enjoyment and to ensure proper operation, please read through this manual thoroughly.

Specifications:

Model: SP2UART

Size: 44mmX15mmX7mm

Operational Voltage: DC 4 -10 V

Current Draw: 20mA @5V

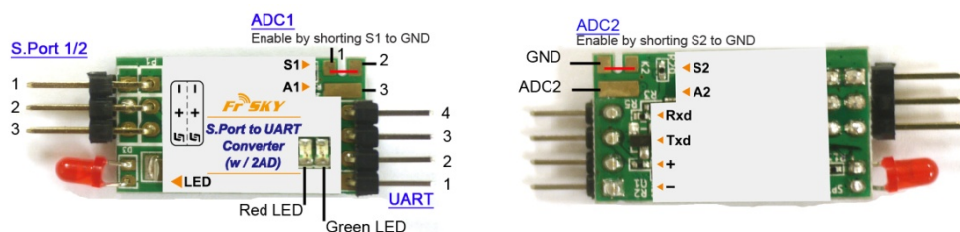
Weight: 3g

Operating Temperature Range: -40℃~85℃

Functions:

1. Serial port Data-Transmission through the S.Port Bus.
2. Analog Signal AD input via the S.Port.

Pin Definitions:



| | S.PORT | ADC1 | ADC2 | UART |
|-------|------------|--------|--------|------------|
| Pin 1 | GND | S1 | S2 | GND |
| Pin 2 | +5V | GND | GND | +5V |
| Pin 3 | Smart Port | ADin 1 | ADin 2 | TXD(RS232) |
| Pin 4 | | | | RXD(RS232) |

UART Definition & Data-Transmission:

Baud Rate: 300 bps (default), 8N1, no parity.

The Baud Rate can be reconfiguration to: 300bps, 600bps, 1200bps, 2400bps, 4800bps, 9600bps.

Capacity Options: Normal capacity (**Mode 1**); High capacity (**Mode 2**)

| | Direction | Capacity | Self-Correction |
|--------------------------------------|----------------|--|-----------------|
| Normal Capacity (Mode 1) | ---- | Max. 45 bytes/s Recommended: 30bytes/s | YES |
| High Capacity (Mode 2) | Bidirectional | Max. 90 bytes/s Recommended: 60bytes/s | NO |
| | Unidirectional | Max. 160 bytes/s Recommended:140bytes/s | |

Note:

1. The unit is set by default to **Normal Capacity (Mode 1)**. Note that the unit can be reconfigured between **Mode 1** and **Mode 2** Capacity.
2. Maximum Data capacity requires that RSSI be operating under ideal conditions, and that **ONLY** Host & Remote are using the S.Port Bus.
3. Data-Transmission requires that Host & Remote be in the same Capacity Mode.
4. Unidirectional Maximum Capacity requires that the Host (Type A) be in receive status.

To save communication bandwidth, it is recommended to set the ADC function OFF if UART Transmission is ON.

To Enable Data-transmission on S.PORT BUS, the **Host (Type A)** and **Remote (Type B)** devices are requiring use as pair and set in the same Capacity Mode.

EXAMPLE: Using XJT module and X8R receiver to demonstrate how to use Data-Transmission through the S.Port Bus

- The **Host (Type A)** is connected with the S.Port of the XJT module, while the **Remote (Type B)** is connected with S.Port of the X8R receiver. (Note that Mode A and Mode B positions are interchangeable.)
- When input data are received through the **Type B** UART, the **Type A** UART port will output the same data, and vice versa.

ADC Definition:

To enable input via ADC ports to S.Port, short S1/S2 to GND. This enables the ADC1/ADC2 ports.

Voltage Input Range: 0~3.3V

To save communication bandwidth, it is recommended to set the UART function OFF if ADC is ON.

S.PORT Definition:

Supports all S.Port Functions and firmware upgrades.

LED Status:

| S.PORT (Main LED): | | |
|--|--|-------------------------|
| | S.Port Connection | UART Data communication |
| Flashing - Slow | ✓ | ✓ |
| Flashing - Medium | ✓ | × |
| Flashing - Medium | × | ✓ |
| Flashing - Fast | × | × |
| Data input status (Red LED): | | |
| ON | UART input data overflow (caused by incorrect linking or exceeding maximum data transmit capacity) | |
| OFF | UART input data within acceptable capacity. | |
| Communication linking Status (Green LED) | | |
| Flashing | Linking Correct (flashing rate will decrease with lower RSSI) | |
| OFF | Not linked (RSSI too low, or sensor not connected to Bus) | |