KAMAMI

KAmod RS232S-mini

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Źródło: https://wiki.kamamilabs.com/index.php?title=KAmod_RS232S-mini

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Description

KAmod RS232S-mini is a miniature RS232 standard to TTL standard converter, which contains all RS232 interface signals: RXD, TXD, DTR, DSR, RTS, CTS, DCD and RI. The direction of signal conversion is assigned in such a way that it corresponds to a DCE/Modem type device (slave device, TXD is the RS232 signal input, RXD is the RS232 signal output). The converter has a typical DB9 female connector on the RS232 side and 2.54 mm goldpins on the TTL side. It can operate at a supply voltage of 3...5.5 V.

Basic parameters

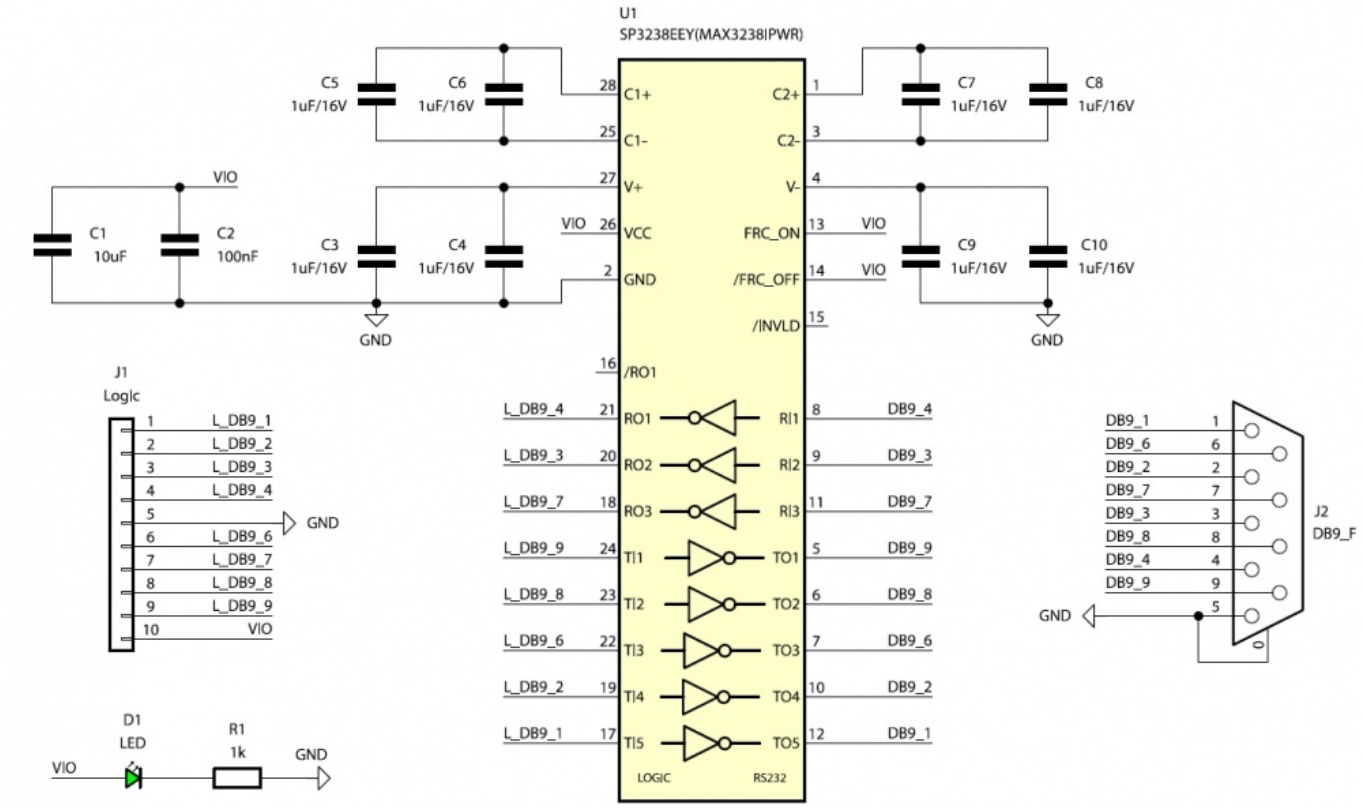
- RS232 to TTL standard converter, containing all 8 signals
- Based on MAX3238/SP3238
- Voltage on the TTL side 3...5.5 V
- Maximum transmission speed: 250 kbps
- ESD protection up to 15 kV HBM on the RS232 side

- Signal conversion direction assigned in such a way that it corresponds to a DCE/Modem type device (slave device, TXD is the RS232 signal input, RXD is the RS232 signal output)
- Standard DB9 connector (D-SUB 9) female
- 2.54 mm goldpins on the TTL side for easy connection to evaluation boards
- Power supply 3...5.5 V, approx. 20 mA
- Board dimensions 24x30 mm (31x31 with DB9 connector), height approx. 17 mm

Standard equipment

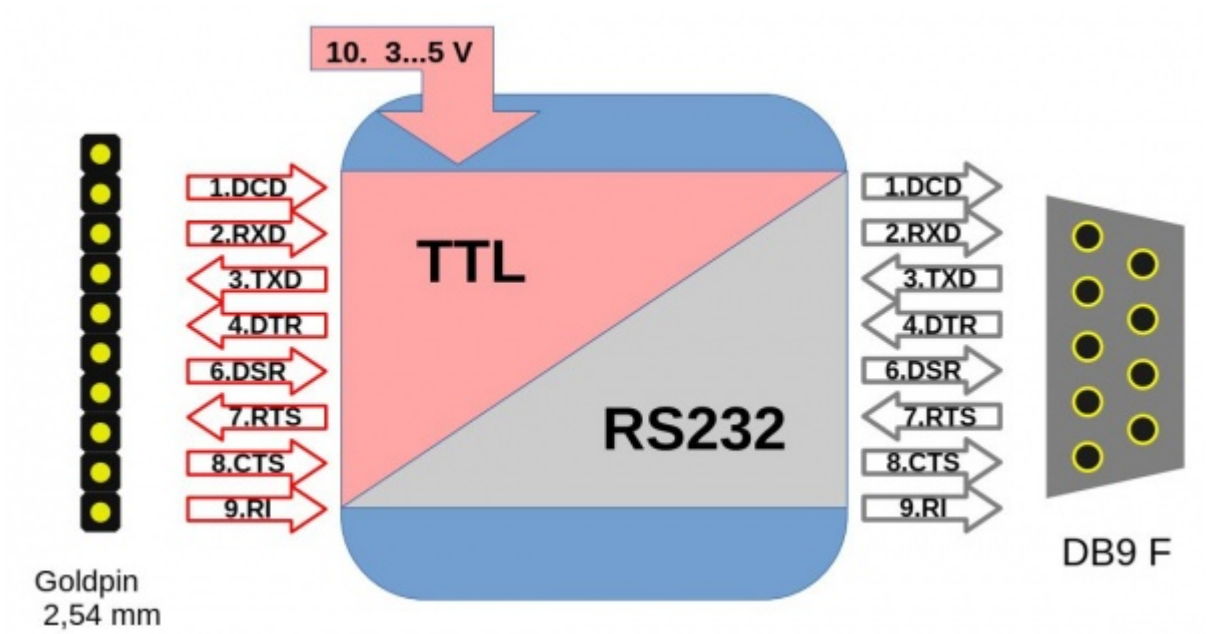
Code	Description
KAmod RS232S-mini	Assembled and started module

Electrical diagram

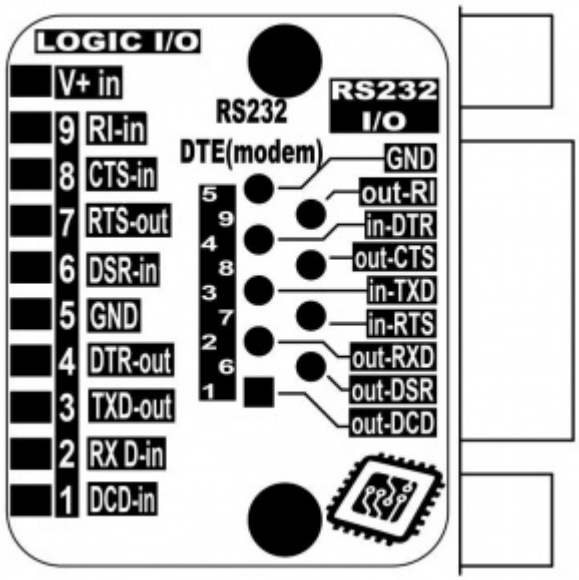


Functional diagram

The RS232 standard is used for digital communication in serial mode, and because in addition to the data lines it also contains lines for controlling and controlling the communication, it provides a stable connection resistant to interference. The voltages on the RS232 interface lines range from ±7 V to ±15 V, so connecting to a classic TTL digital system whose signals take values of 0/3.3 V or 0/5 V requires the use of an appropriate converter, such as KAmod RS232S-mini.
The direction of signal conversion for all 8 signals is assigned in such a way that it corresponds to the slave device - DTE/Host. The functional diagram shows which signals act as inputs and which as outputs on the TTL and RS232 sides.



On the converter board, on the lower description layer, there are precise markings for each signal on each connector:

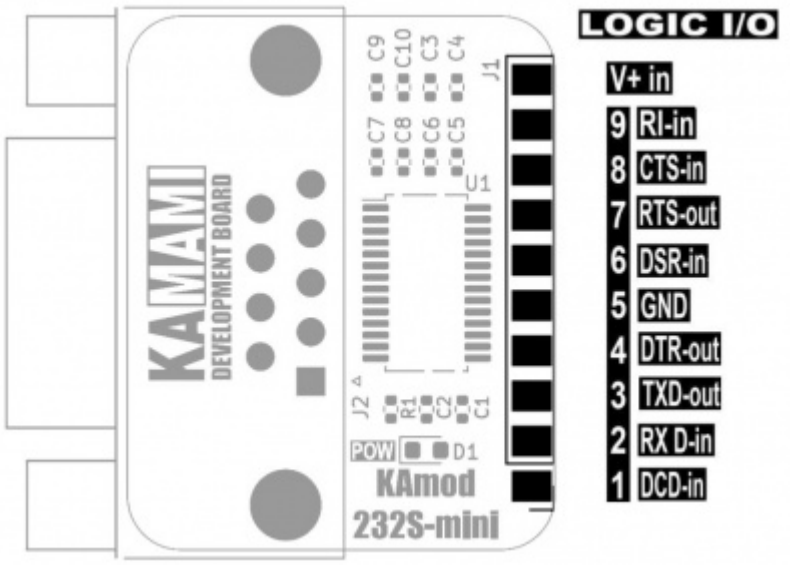


TTL connector (LOGIC I/O)

Connector	Function
LOGIC I/O Goldpin pins 1x10, 2.54 mm	• All RS232 interface signals adapted to the TTL standard are output

The LOGIC I/O connector allows you to connect the KAmod RS232S-mini converter with any digital system operating with a voltage of 3...5.5 V. The functions of the individual pins are as follows:

- pin no. 1 - TTL input; **DCD** signal - Data Carrier Detect (signal detecting the carrier wave by the modem);
- pin no. 2 - TTL input; **RXD** signal - Receive Data Line (data stream transferred from DCE/Modem to RS232 interface);
- pin no. 3 - TTL output; **TXD** signal - Transmit Data Line (output of the data stream sent to DCE/Modem via RS232);
- pin no. 4 - TTL output; **DTR** signal - Data Terminal Ready (readiness of the DTE/Host device for further cooperation with the DCE/Modem);
- pin no. 5 - ground, GND;
- pin no. 6 - TTL input; **DSR** signal - Data Set Ready (readiness of the DCE/Modem for further cooperation with the DTE/Host);
- pin no. 7 - TTL output; **RTS** signal - Request To Send (request to transmit data reported by the DTE/Host);
- pin no. 8 - TTL input; **CTS** signal - Clear To Send (readiness to transmit reported by the DCE/Modem - confirms receipt of the RTS signal);
- pin no. 9 - TTL input; **RI** signal – Ring Indicator - a "ring" signal sent by DCE/Modem.
- pin no. 10 – 3...5.5 V power supply input.



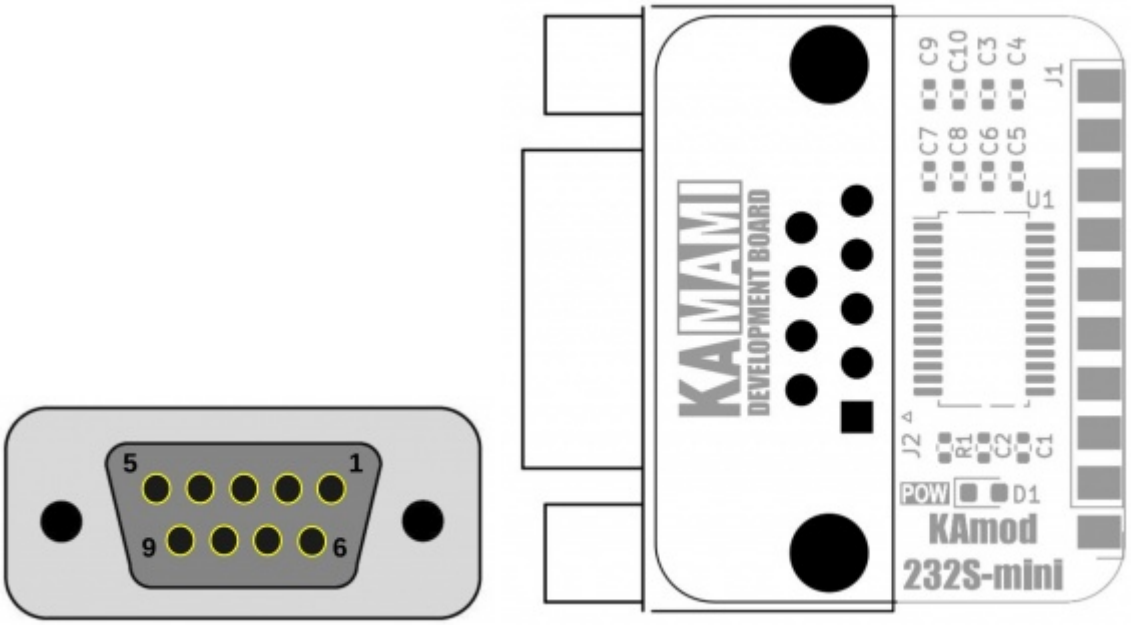
DB9 type RS232 connector

Connector	Function
DB9 (D-SUB 9)	• All RS232 interface signals in the corresponding voltage standard are output

The RS232 connector type DB9, also known as D-SUB 9, is a typical connector used to implement the RS232 interface. The DCE device, i.e. the slave device (this can be a modem or a mini printer), is equipped with a female DB9 connector. The KAmod RS232S-mini converter also includes a female connector.

The functions of the individual connector pins are as follows:

- pin no. 1 - RS232 output; signal**DCD** - Data Carrier Detect (signal that the modem detects the carrier wave);
- pin no. 2 - RS232 output; signal **RXD** - Receive Data Line (received data stream, sent from the DCE/Modem);
- pin no. 3 - RS232 input; **TXD** signal – Transmit Data Line (data stream directed to DCE/Modem);
- pin no. 4 - RS232 input; **DTR** signal – Data Terminal Ready (readiness of DTE/Host for further cooperation with DCE/Modem);
- pin no. 5 - ground, GND;
- pin no. 6 - RS232 output; **DSR** signal – Data Set Ready (readiness of DCE/Modem for further cooperation with DTE/Host);
- pin no. 7 - RS232 input; **RTS** signal – Request To Send (request to transmit data reported by DTE/Host);
- pin no. 8 - RS232 output; **CTS** signal – Clear To Send (readiness to transmit reported by DCE/Modem - confirms receipt of RTS signal);
- pin no. 9 - RS232 output; **RI** signal - Ring Indicator, a "ringing" signal transmitted by the modem.

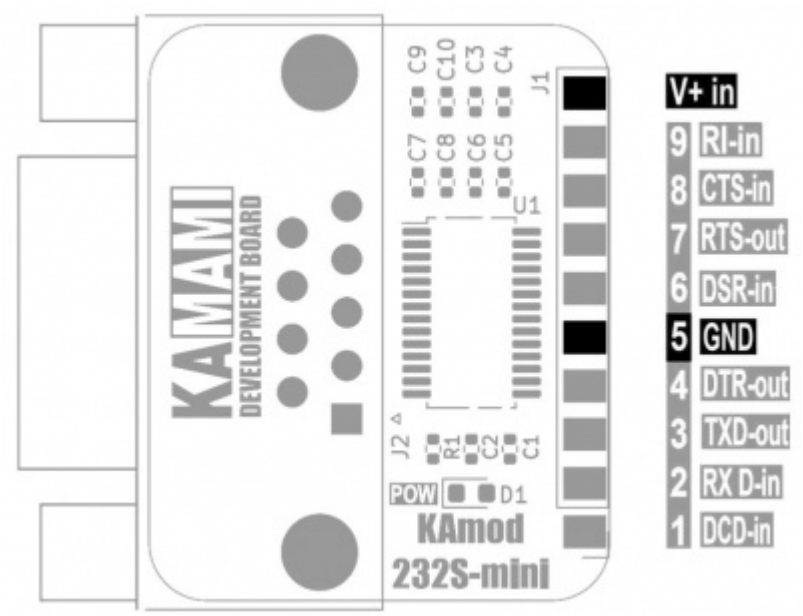


Power

Connector	Function
LOGIC I/O Goldpin pins 1x10, 2.54 mm	• Power input 3...5.5 V

The LOGIC I/O connector contains pins that connect the power supply to the KAmod RS232S-mini converter

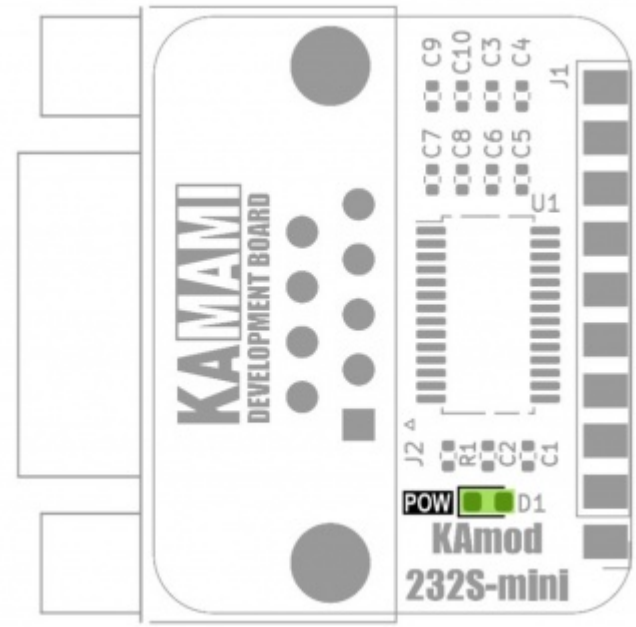
- pin no. 5 – ground, **GND**;
- pin no. 10 – **VIO**; voltage input from the range of 3...5.5 V, which will correspond to logical "1" for all signals on the LOGIC I/O connector.



Power signaling

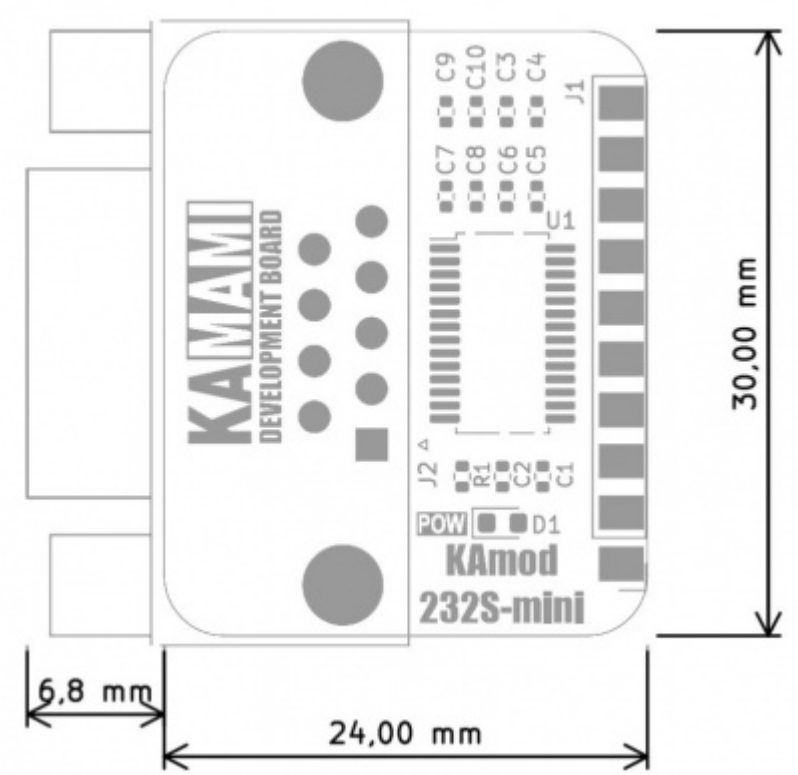
TYPE	Function
POW LED diode	• signaling correct power supply

The LED diode marked **POW** signals the presence of the converter's power supply voltage.



Dimensions

The dimensions of the KAmod RS232S-mini converter are 24x30 mm boards (31x31 with the DB9 connector). The module height is approx. 17 mm.



Links

- SP3238 datasheet
- MAX3238 datasheet

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