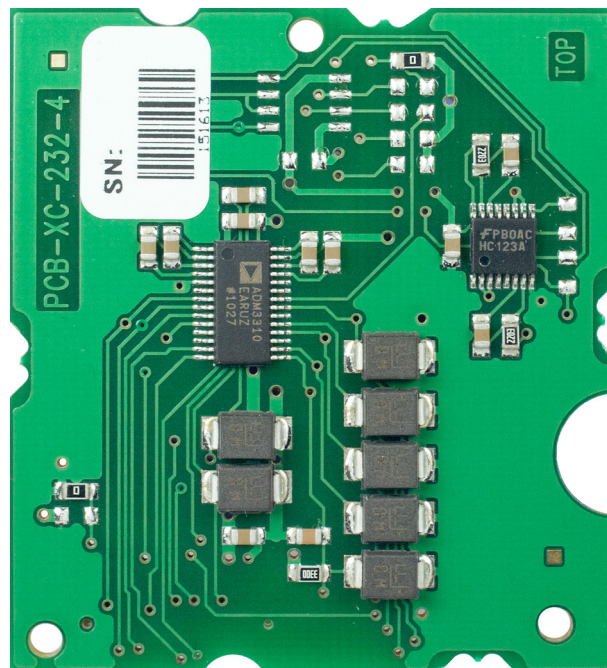


Expansion Port

# RS232

USER MANUAL



**B+B** SMARTWORX

Powered by

**ADVANTECH**

## Used Symbols



*Danger* – Information regarding user safety or potential damage to the router.



*Attention* – Problems that can arise in specific situations.



*Information, notice* – Useful tips or information of special interest.

## GPL Licence

Source codes under GPL licence are available free of charge by sending an email to:

[cellularsales@advantech-bb.com](mailto:cellularsales@advantech-bb.com).



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# 1. Safety Instruction



***Please, observe the following instructions:***

- The expansion port must be used in compliance with all applicable international and national laws and in compliance with any special restrictions regulating the utilization of the communication module in prescribed applications and environments.
- Use only the original Advantech B+B SmartWorx company accessories. Thus you will prevent possible health risks and damage to the devices and ensure compliance with all relevant provisions. Unauthorised adjustments or use of unapproved accessories may result in damage to the expansion port and breach of applicable laws. Use of unapproved adjustments or accessories may lead to cancellation of guarantee, which has no effects on your legal rights.
- Do not expose the expansion port to extreme conditions. Protect it from dust, moisture and heat.

## 2. Product Disposal Instructions

The WEEE (Waste Electrical and Electronic Equipment: 2012/19/EU) directive has been introduced to ensure that electrical/electronic products are recycled using the best available recovery techniques to minimize the impact on the environment. This product contains high quality materials and components which can be recycled. At the end of its life this product **MUST NOT** be mixed with other commercial waste for disposal. Check the terms and conditions of your supplier for disposal information.

## 3. Description of the Expansion Port



RS232 expansion port can be fitted to both of ports – PORT1 and PORT2.

This port is designed as an expansion board that allows to use of additional hardware interface for Advantech B+B SmartWorx routers and modems. This interface is physical connected on RJ45 connector on an appropriate router (or a modem). The expansion port RS232 is internal supplied from an appropriate router. RS232 converter is protected against overload the bus.

### 3.1 Pin-out of the Connector

Panel socket RJ45 (RS232 – DCE – Data Communication Equipment).

| Pin | Signal | Description                                        | Direction |
|-----|--------|----------------------------------------------------|-----------|
| 1   | RTS    | Request To Send                                    | Input     |
| 2   | CTS    | Clear To Send                                      | Output    |
| 3   | DTR    | Data Terminal Ready                                | Input     |
| 4   | DSR    | Data Set Ready – connect to +3 V through R 330 Ohm | Output    |
| 5   | GND    | Signal ground                                      |           |
| 6   | TXD    | Transmit Data                                      | Output    |
| 7   | CD     | Carrier Detect                                     | Output    |
| 8   | RXD    | Receive Data                                       | Input     |

Table 1: Pin-out of RS232 connector

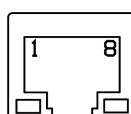


Figure 1: Connector



Example of a meter connection to router:

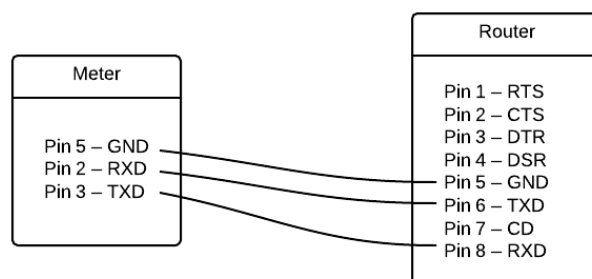


Figure 2: Meter connection to router



Example of a PC connection to router:

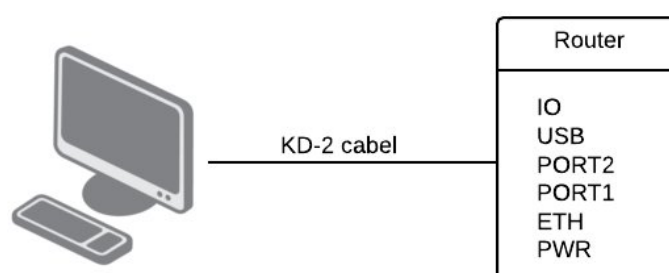


Figure 3: PC connection to router

Note: KD2 cable is connected to PC via serial port (for example COM1)



Example of a RS232 device connection to router (it's possible to use all RS232 ports):

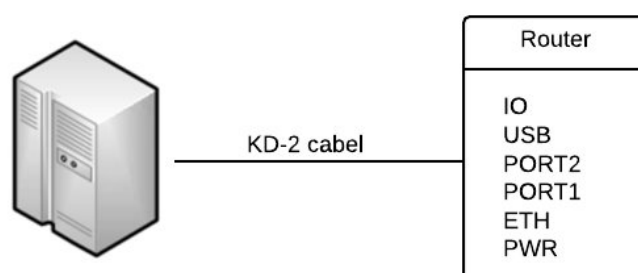


Figure 4: RS232 device connection to router

## 3.2 State Indication of RS232 Port

| LED diode  | Description of indication |
|------------|---------------------------|
| Green LED  | Indicates Receive data    |
| Yellow LED | Indicates Transmit data   |

Table 2: State indication of RS232 port



State indication of RS232 port is supported from 4th revision of boards.

## 3.3 Delivery Identification

| Trade name | Type name | Power supply    |
|------------|-----------|-----------------|
| XC-RS232   | XC-232    | Internal supply |

Table 3: Delivery identification

Example of expansion port label:

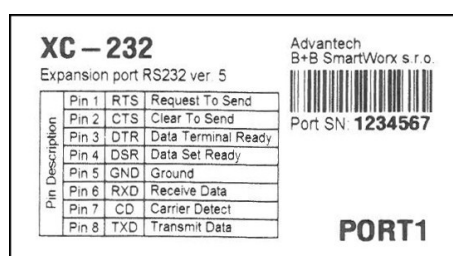


Figure 5: Expansion port label

### 3.4 Technical Specifications

| Expansion port RS232              |                                             |               |
|-----------------------------------|---------------------------------------------|---------------|
| Power supply                      | Internal                                    | +3,3 V        |
| Environment                       | Operating temperature                       | -30 to +60 °C |
|                                   | Storage temperature                         | -30 to +85 °C |
| Standards                         | Emission                                    | EN 55022/B    |
|                                   | Immunity                                    | ETS 300 342   |
|                                   | Safety                                      | EN 60950      |
|                                   | Isolation                                   | EN 60747      |
| RS232 specifications<br>(EN 1434) | Max. operating bus current                  | 15 mA         |
|                                   | Max. data rate                              | 230400 bps    |
|                                   | Max. overvoltage                            | ±30 V         |
|                                   | Max. total cable length (300 Bd, 200 nF/km) | 20 m          |

Table 4: Technical specifications

## 4. Recommended Literature

- [1] Advantech B+B SmartWorx: **Application Note – Expansion Port Mounting for v2 Routers (APP-0001-EN)**
- [2] Advantech B+B SmartWorx: **Configuration Manual – Cellular Industrial v2 Routers (MAN-0021-EN)**

## 5. Customers Support

### 5.1 Customer Support for NAM

Phone: +1-800-346-3119 (Monday – Friday, 7 a.m. to 5:30 p.m. CST)  
Fax: +1-815-433-5109  
E-mail: [support@advantech-bb.com](mailto:support@advantech-bb.com)  
Web: [www.advantech-bb.com](http://www.advantech-bb.com)

### 5.2 Customer Support for Europe

Phone: +353 91 792444  
Fax: +353 91 792445  
E-mail: [techSupport@advantech-bb.com](mailto:techSupport@advantech-bb.com)  
Web: [www.advantech-bb.com](http://www.advantech-bb.com)

### 5.3 Customer Support for Asia

Phone: +886-2-2792-7818 #1299 (Monday – Friday, 9 a.m. to 5:30 p.m. UTC+8)  
Fax: +886-2-2794-7327  
E-mail: [icg.support@advantech.com.tw](mailto:icg.support@advantech.com.tw)  
Web: [www.advantech.com](http://www.advantech.com)



#### Upkeep-advice:

- During cleaning of the router do not use aggressive chemicals, solvents and abrasive cleaners!



Hereby, Advantech B+B SmartWorx s.r.o. company declares that the router (radio equipment) with this expansion port installed is in compliance with EU Directive **2014/53/EU**. The router with this expansion port installed and no radio interface present is in compliance with EU Directives **2014/30/EU** and **2014/35/EU**.

The full text of the EU Declaration of Conformity of the corresponding router is available at the following internet address: [www.advantech-bb.cz/eudoc](http://www.advantech-bb.cz/eudoc)



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- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
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- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.