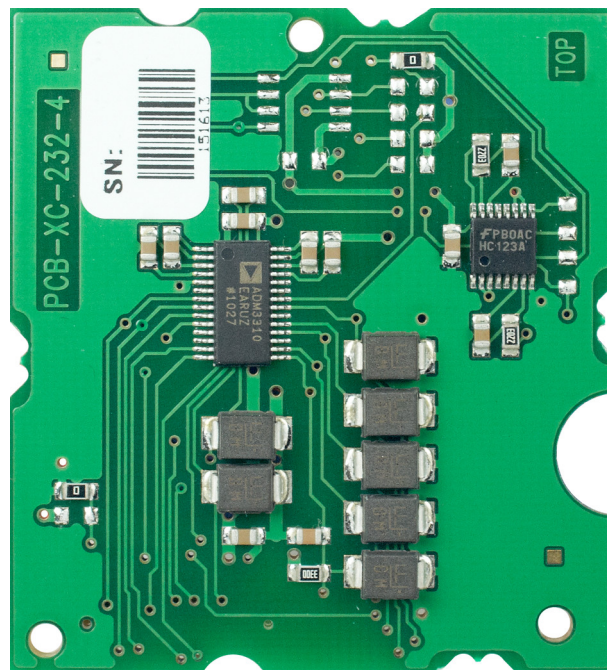


Expansion Port

# 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	RXD	Receive Data	Output
7	CD	Carrier Detect	Output
8	TXD	Transmit Data	Input

Table 1: Pin-out of RS232 connector

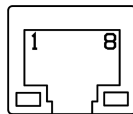



Figure 1: Connector

 Example of a meter connection to router:

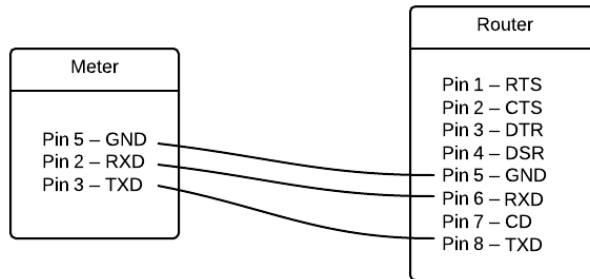



Figure 2: Meter connection to router

 Example of a PC connection to router:

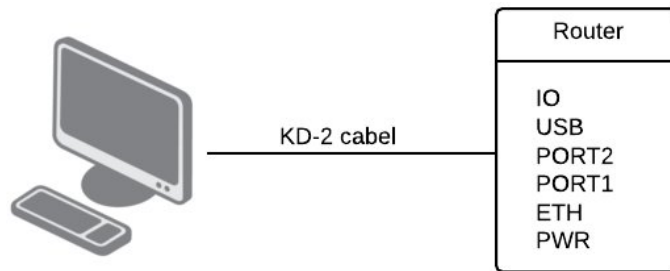



Figure 3: PC connection to router

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):

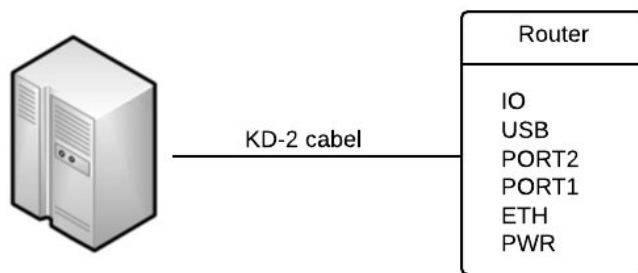


Figure 4: RS232 device connection to router

### 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:

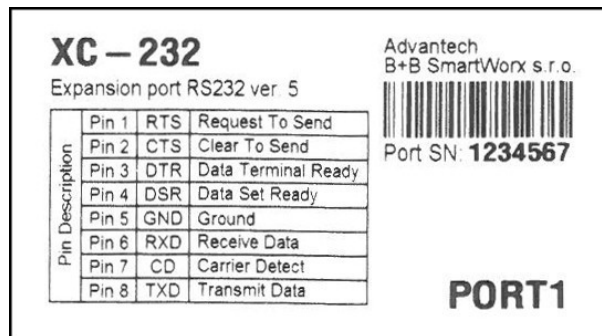


Figure 5: Expansion port label



### 3.4 Technical Specifications

<b>Expansion port RS232</b>		
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 (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!

**CE** 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)