

# *Remote Access Gateway IGW/922 with DIL/NetPC ADNP/9200*

## Hardware Reference



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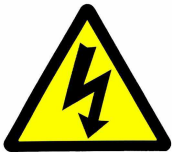
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# 1 INTRODUCTION

This document describes the hardware components and the necessary cable connections of the Remote Access Gateway IGW/922.

## 1.1 Safety Guidelines

Please read the following safety guidelines carefully! In case of property or personal damage by not paying attention to this document and/or by incorrect handling, we do not assume liability. In such cases any warranty claim expires.



**ATTENTION:** Observe precautions for handling – electrostatic sensitive device!

- Discharge yourself before you work with the device, e.g. by touching a heater of metal, to avoid damages.
- Stay ground while working with the device to avoid damage through electrostatic discharge.
- Please pay attention that the power cord or other cables are not squeezed or damaged in any way when you set up the device.
- The installation of the device should be done only by qualified personnel.
- The case of the device should be opened only by qualified personnel.

## 1.2 Conventions

Convention	Usage
<b>bold</b>	Important terms
<i>italic</i>	Filenames, user inputs and command lines
monospace	Pathnames, internet addresses and program code

**Table 1: Conventions used in this document**

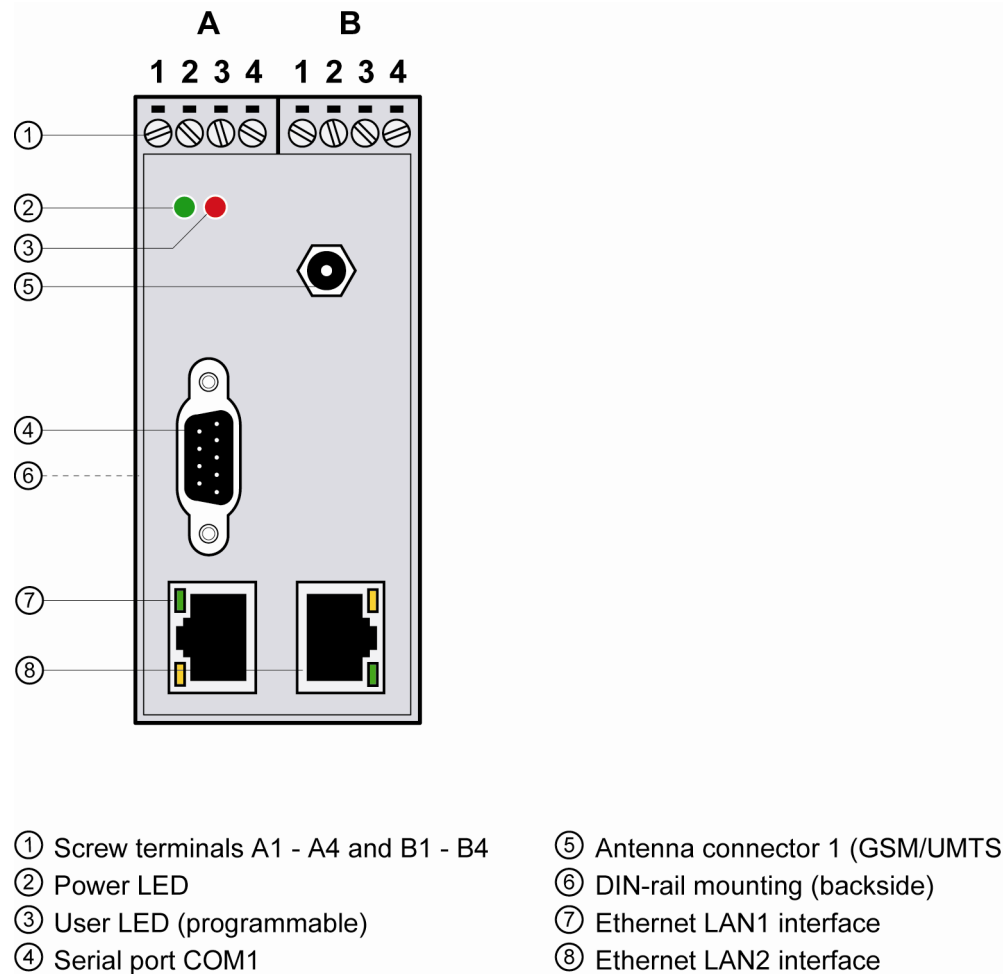
## 1.3 Features and Technical Data

<b>Processor</b>	
<b>Manufacturer / Type</b>	Atmel AT91RM9200 32-bit ARM9-MCU (DIL/NetPC ADNP/9200 on QIL-128 socket)
<b>Clock speed</b>	180 MHz
<b>Memory</b>	
<b>RAM</b>	64 MB SDRAM
<b>Flash</b>	32 MB NOR memory
<b>Interfaces</b>	
<b>Ethernet</b>	2x 10/100 Mbps (RJ45)
<b>Serial I/Os</b>	1x RS232 serial port with handshake (Sub-D) 1x RS232/RS485 serial port with software-selectable mode switch (screw terminal)
<b>Alarm output</b>	1x Semiconductor relay output (max. 30 VDC, 500 mA)
<b>Special Functions</b>	
<b>RTC</b>	1x Real Time Clock with battery-backup (CR1225 Lithium 3 V)
<b>Watchdog</b>	1x Timer watchdog (hardware-based, software-configurable) 1x Power supervisor (hardware-based)
<b>Expansion</b>	1x internal 80-pin ESL connector for GSM/GPRS, UMTS/HSPA or WiFi add-on
<b>Displays / Control Elements</b>	
<b>LEDs</b>	1x Power 1x IGW start-up + VPN status (programmable) 1x LAN LED for each Ethernet interface
<b>Electrical Characteristics</b>	
<b>Power supply</b>	12 .. 24 VDC (typ. 24 VDC) from external power supply
<b>Power consumption</b>	< 3 W
<b>Mechanical Characteristics</b>	
<b>Protection class</b>	IP20 industrial case for 35 mm DIN-rail mounting
<b>Mass</b>	< 270 g
<b>Dimensions</b>	112 mm x 100 mm x 45 mm
<b>Operating temperature</b>	0 .. 70 °C
<b>Standards and Certifications</b>	
<b>EMC</b>	CE
<b>Environmental standards</b>	RoHS, WEEE
<b>Industrial standards</b>	VHPready (Virtual Heat & Power Ready)
<b>Security</b>	Penetration testing and dynamic analysis: fuzzing tested by SoftScheck GmbH

## 1.4 Main Applications

- Remote Access Security Gateway
- GPRS/UMTS Router

## 2 OVERVIEW



**Figure 1: Overview Remote Access Gateway IGW/922**

### 3 PINOUTS

#### 3.1 Screw Terminals

The table 2 shows the pinout of the screw terminals of the IGW/922.

		Pin	Power	COM2		Alarm
				RS232	RS485*	
A	B					
1 2 3 4	1 2 3 4					
		A1				Alarm -
		A2				Alarm +
		A3	V+ IN			
		A4	GND IN			
		B1				
		B2		TXD	RX/TX -	
		B3		RXD	RX/TX +	
		B4		GND	GND	

Table 2: Pinout of the screw terminals



\* **Please note:** The RS485 (officially called TIA/EIA-485-A) connection between your IGW/922 and the field devices needs termination resistors on both ends for proper operation. The IGW/922 does **not** offer internal termination resistors. Please make sure, that the RS485 cable connection is equipped with external termination resistors.

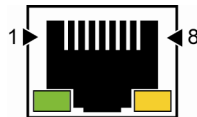
## 3.2 Ethernet LAN1 and LAN2

The Ethernet LAN1 and LAN2 interfaces are standard RJ45 connectors.

Both have a green LED. It is on when there is a LAN link established and blinks when there is traffic. The yellow LED is not connected.

Pin	Name	Function
1	TX+	10/100 Mbps LAN, TX+ Pin
2	TX-	10/100 Mbps LAN, TX- Pin
3	RX+	10/100 Mbps LAN, RX+ Pin
4	---	Not Connected
5	---	Not Connected
6	RX-	10/100 Mbps LAN, RX- Pin
7	---	Not Connected
8	---	Not Connected

Table 3: Pinout Ethernet interfaces

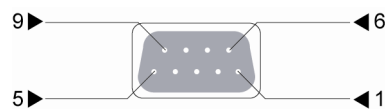


## 3.3 Serial Port COM1

The serial port COM1 is a standard Sub-D connector.

Pin	Name	Function
1	DCD	COM1 Serial Port, DCD pin (RS232)
2	RXD	COM1 Serial Port, RXD pin (RS232)
3	TXD	COM1 Serial Port, TXD pin (RS232)
4	DTR	COM1 Serial Port, DTR pin (RS232)
5	GND	Ground
6	DSR	COM1 Serial Port, DSR pin (RS232)
7	RTS	COM1 Serial Port, RTS pin (RS232)
8	CTS	COM1 Serial Port, CTS pin (RS232)
9	DCD	COM1 Serial Port, DCD pin (RS232)

Table 4: Pinout COM1 connector



## 4 CONNECTIONS

### 4.1 Serial Port COM2

To create an RS232 serial link on port COM2 of the Remote Access Gateway IGW/922 connect the adapter cable and the null-modem cable like shown in the figure below.

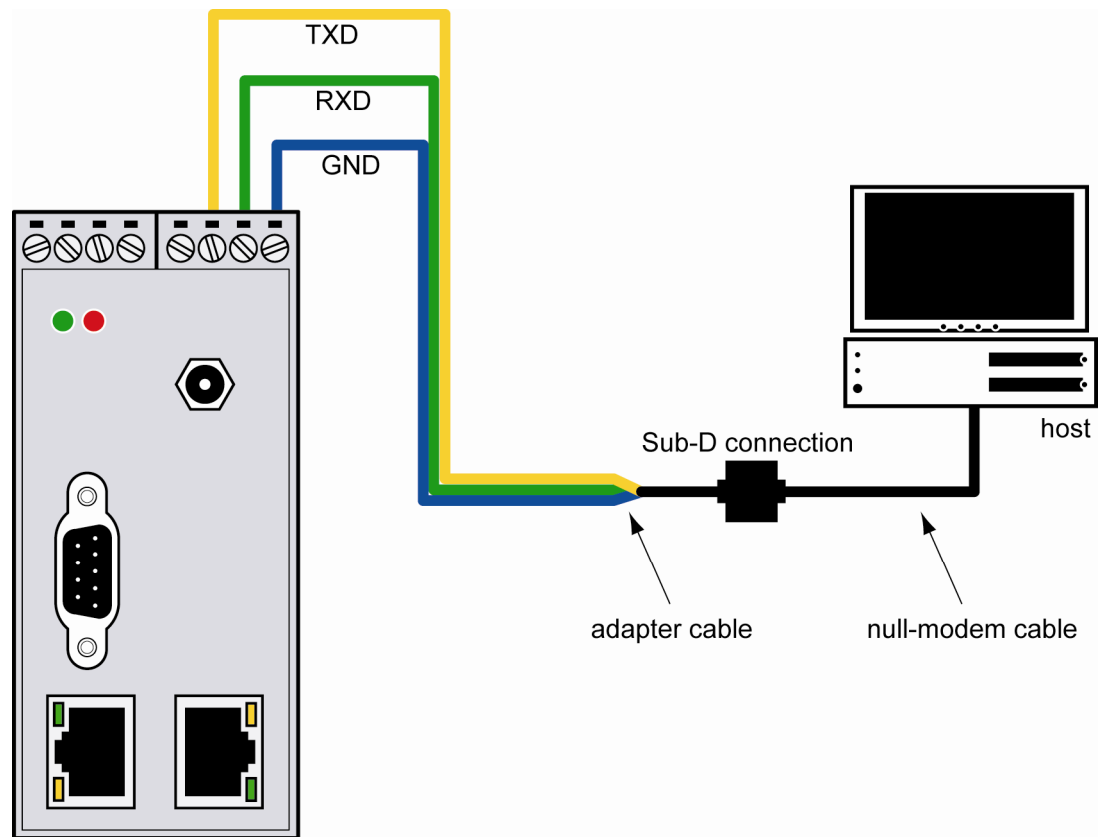


Figure 2: RS232 link on serial port COM2

Terminal	Signal
B2	COM2 Serial Port: TXD (RS232), RX/TX- (RS485)
B3	COM2 Serial Port: RXD (RS232), RX/TX+ (RS485)
B4	Ground

Table 5: Screw terminal COM2



## 4.2 Power Supply

The Remote Access Gateway IGW/922 needs a stable supply voltage of 11 .. 28 VDC. Use the power adapter cable to connect an external DIN-rail power supply like shown in the figure below. The power supply should be in immediate proximity to the Remote Access Gateway IGW/922. The power supply should be Class 2 (LPS).

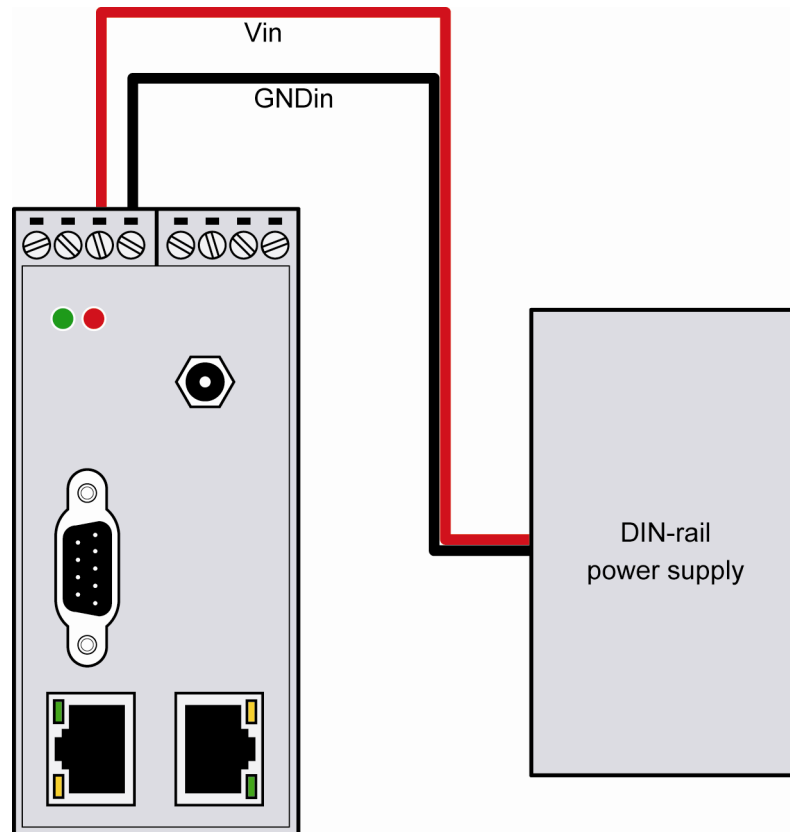
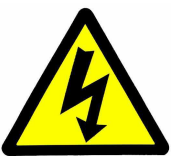


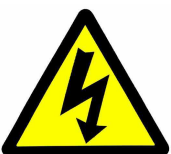
Figure 3: Power supply for the Remote Access Gateway IGW/922

Terminal	Signal
A3	Vin (11 .. 28 VDC)
A4	GNDin

Table 6: Screw terminal power



**CAUTION:** Providing the Remote Access Gateway IGW/922 with a higher voltage than the regular 11 .. 28 VDC could cause damaged board components! The output power should be at least 2.5 W.



**CAUTION:** Do NOT turn on the power supply while connecting the power adapter cable with the Remote Access Gateway IGW/922. This could cause damaged board components! First connect the power adapter cable and THEN turn the power supply on.

### 4.3 Semiconductor Relay Output

The Remote Access Gateway IGW/922 offers a semiconductor relay output to switch an external alarm device with up to 30 VDC and 500 mA on and off.

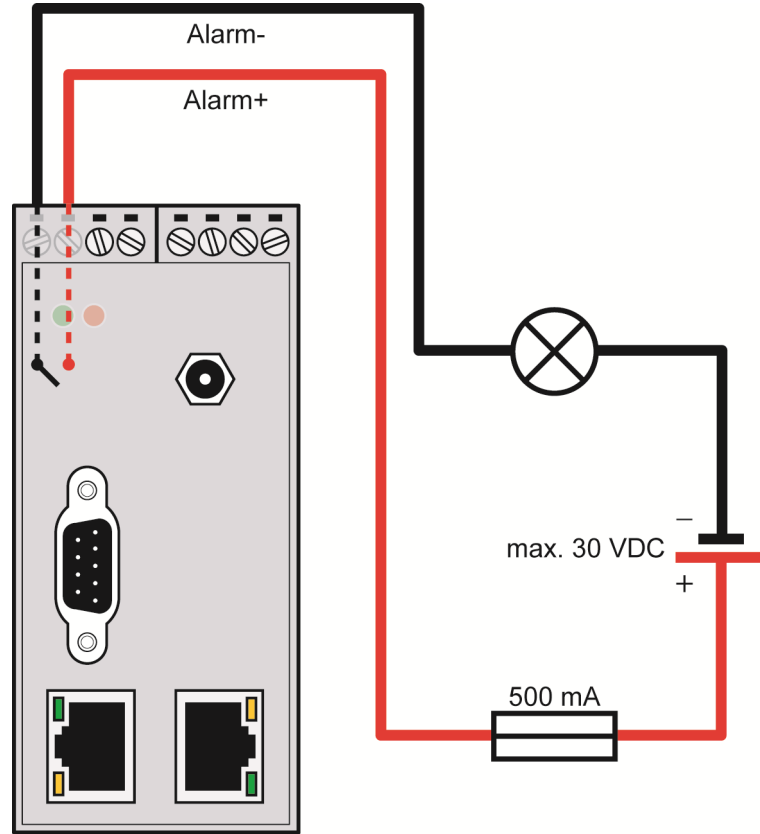
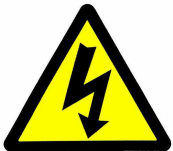


Figure 4: Connecting an external alarm device

Terminal	Signal
A1	Alarm- Semiconductor Relay Output (max. 30 VDC / 500 mA)
A2	Alarm+ Semiconductor Relay Output (max. 30 VDC / 500 mA)

Table 7: Screw terminal semiconductor relay output



**CAUTION:** Using the alarm output with more than the regular 30 VDC and 500 mA could cause damaged board components!

## 5 HELPFUL LITERATURE

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- DIL/NetPC ADNP/9200 hardware reference

## CONTACT

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## DOCUMENT HISTORY

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Revision	Date	Remarks	Name
1.0	2009-09-18	first version	WBU
1.1	2011-02-21	changed title	WBU
1.2	2012-01-16	warning added in chapter 3.4	WBU
1.3	2012-04-12	added new chapter 3.1 and 4	WBU
1.4	2012-07-25	edited chapter 1.1, 1.3 and 4.2	WBU
1.5	2015-08-26	edited chapter 1.3	WBU
1.6	2016-05-17	edited figure 4	WBU

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