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Remote Access Gateway IGW/910

with DNP/9535

Hardware Reference

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CONTENT

1 INTRODUCTION

This document describes the basic hardware components of the Remote Access Gateway IGW/910.

1.1 Safety Guidelines

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

- The power supply should be in immediate proximity to the device.

- The power supply must provide a stable output voltage at 12..24 VDC ±10%. The output power should be at least 7 W.

- Please pay attention that the power cord or other cables are not squeezed or damaged in any way when you set up the device.

- Do NOT turn on the power supply while connecting any cables, especially the power cables. This could cause damaged device components! First connect the cables and THEN turn the power supply on.

- The installation of the device should be done only by qualified personnel.

- Discharge yourself electrostatic before you work with the device, e.g. by touching a heater of metal, to avoid damages.

- Stay grounded while working with the device to avoid damage through electrostatic discharge.

- The case of the device should be opened only by qualified personnel.

1.2 Conventions

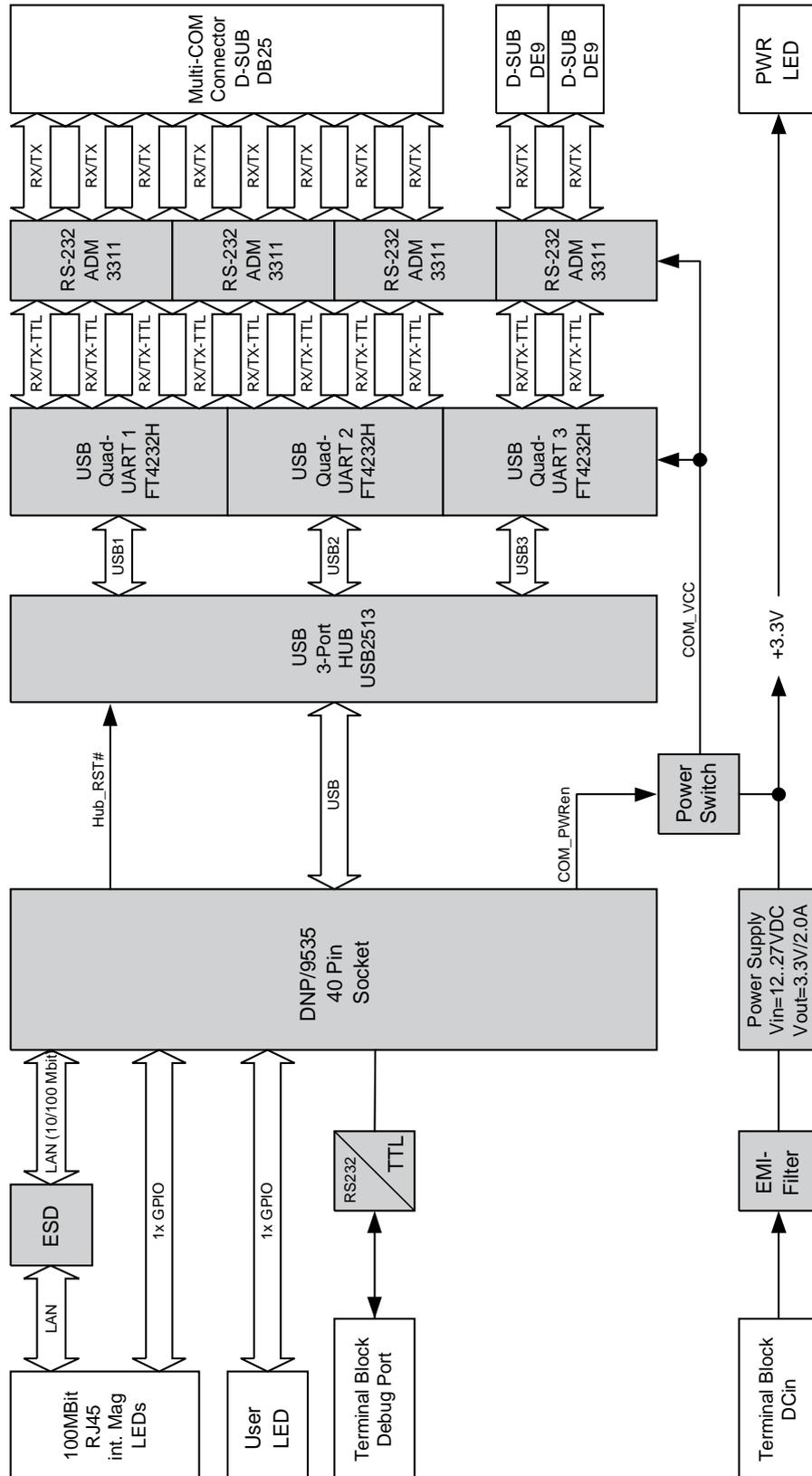| Convention	Usage
bold	Important terms and information
monospace	Filenames, Pathnames, program code, command lines

Table 1:   Conventions used in this document

1.3   Block Diagram

Figure 1: Block diagram of Remote Access Gateway IGW/910

1.4   Features and Technical Data

Processor	
Manufacturer / Type	Atmel ATSAM-A5D35 SoC
Clock speed	528 MHz
Memory	
RAM	256 MB SDRAM
Flash	4 MB NOR memory
Storage media	1x internal microSD card holder
Interfaces	
Ethernet	1x 10/100 Mbps (RJ45)
Debug Port	1x (screw terminal)
Serial I/Os	1x D-Sub DB25 (COM 1..8)
	1x D-Sub DE9 (COM 9)
	1x D-Sub DE9 (COM 10)
Special Functions	
Watchdog	1x Timer watchdog (hardware-based, software-configurable)
	1x Power supervisor (hardware-based)
Displays / Control Elements	
LEDs	1x Power
	1x System status (programmable)
	1x LAN LED for Ethernet interface
Electrical Characteristics	
Power supply range	12 .. 24 VDC ±10% from external power supply
Power consumption	< 7 W
Mechanical Characteristics	
Protection class	IP20 industrial case for 35 mm DIN-rail mounting
Mass	< 210 g
Dimensions	112 mm x 100 mm x 45 mm
Operating temperature	0 .. 60 °C
Storage temperature	-40 .. 85 °C
Standards and Certifications	
EMC	CE
Environmental standards	RoHS, WEEE

2   OVERVIEW
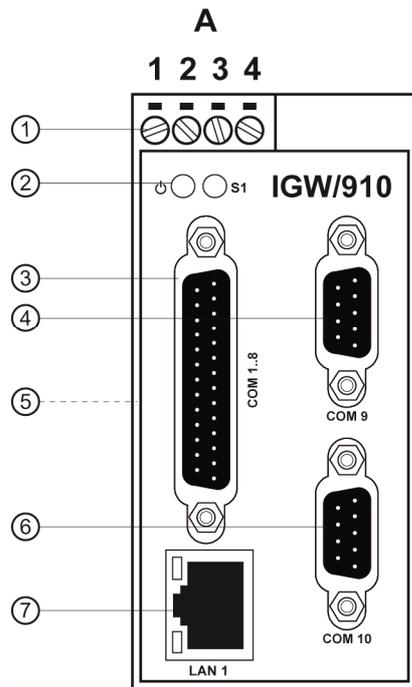
① Screw Terminals (Power & Debug)   ⑤ DIN-Rail Mounting (backside)
② Power LED & User LED S1   ⑥ COM Port 10
③ COM Ports 1..8   ⑦ Ethernet Interface LAN 1
④ COM Port 9

Figure 2: Overview Remote Access Gateway IGW/910

3 PINOUTS

3.1 Ethernet Interface

Pin	Name	Function
1	TX+	10/100 Mbps LAN, TX+
2	TX-	10/100 Mbps LAN, TX-
3	RX+	10/100 Mbps LAN, RX+
4	---	Bob-Smith Termination
5	---	Bob-Smith Termination
6	RX-	10/100 Mbps LAN, RX-
7	---	Bob-Smith Termination
8	---	Bob-Smith Termination

Table 2:   Pinout Ethernet interface

LED	Function
Green (top)	10/100BASE-T link/activity
Yellow (bottom)	Not Connected

Table 3:   Ethernet LED functions

3.2 Screw Terminals

| Terminal	Function
A1	Debug Port TXD
A2	Debug Port RXD
A3	Vin 12..24 VDC ±10%
A4	Ground

Table 4:   Pinout screw terminals

The debug port allows to access the DIL/NetPC DNP/9535 with a serial console.

3.3   COM Ports 1..8 (D-Sub DB25 male)

Pin	Name	Function
1	GND	Ground
14	RXD1	COM1 Serial Port: RS232 RXD
2	TXD1	COM1 Serial Port: RS232 TXD
15	GND	Ground
3	RXD2	COM2 Serial Port: RS232 RXD
16	TXD2	COM2 Serial Port: RS232 TXD
4	GND	Ground
17	RXD3	COM3 Serial Port: RS232 RXD
5	TXD3	COM3 Serial Port: RS232 TXD
18	GND	Ground
6	RXD4	COM4 Serial Port: RS232 RXD
19	TXD4	COM4 Serial Port: RS232 TXD
7	GND	Ground
20	RXD5	COM5 Serial Port: RS232 RXD
8	TXD5	COM5 Serial Port: RS232 TXD
21	GND	Ground
9	RXD6	COM6 Serial Port: RS232 RXD
22	TXD6	COM6 Serial Port: RS232 TXD
10	GND	Ground
23	RXD7	COM7 Serial Port: RS232 RXD
11	TXD7	COM7 Serial Port: RS232 TXD
24	GND	Ground
12	RXD8	COM8 Serial Port: RS232 RXD
25	TXD8	COM8 Serial Port: RS232 TXD
13	---	Not connected

Table 5:   Pinout COM Ports 1..8
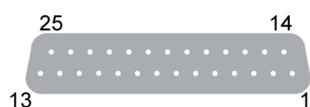
3.4   COM Port 9 (D-Sub DE9 male)

Pin	Name	Function
1	---	Not connected
2	RXD9	COM9 Serial Port: RS232 RXD
3	TXD9	COM9 Serial Port: RS232 TXD
4	---	Not connected
5	GND	Ground
6	---	Not connected
7	---	Not connected
8	---	Not connected
9	---	Not connected

Table 6:   Pinout COM Port 9
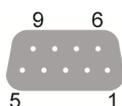
3.5   COM Port 10 (D-Sub DE9 male)

Pin	Name	Function
1	---	Not connected
2	RXD10	COM10 Serial Port: RS232 RXD
3	TXD10	COM10 Serial Port: RS232 TXD
4	---	Not connected
5	GND	Ground
6	---	Not connected
7	---	Not connected
8	---	Not connected
9	---	Not connected

Table 7:   Pinout COM Port 10
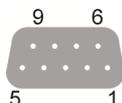
4   LINUX DEVICE MAP

This table shows which Linux device name is assigned to which interface of the IGW/910.

Interface Name	Linux Device Name	Note
LAN 1	`eth0`	
Debug Port	`ttyS0`	Linux console for debug, RS232 on DNP
COM 1	`ttyUSB0`	Serial port on quad UART 1
COM 2	`ttyUSB1`	Serial port on quad UART 1
COM 3	`ttyUSB2`	Serial port on quad UART 1
COM 4	`ttyUSB3`	Serial port on quad UART 1
COM 5	`ttyUSB4`	Serial port on quad UART 2
COM 6	`ttyUSB5`	Serial port on quad UART 2
COM 7	`ttyUSB6`	Serial port on quad UART 2
COM 8	`ttyUSB7`	Serial port on quad UART 2
COM 9	`ttyUSB8`	Serial port on quad UART 3
COM 10	`ttyUSB9`	Serial port on quad UART 3

Table 8:   Linux device map

5   HELPFUL LITERATURE

- DNP/9535 hardware reference

- SSV Web ConfigTool User Manual

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DOCUMENT HISTORY

Revision	Date	Remarks	Name	Review
1.0	2019-12-11	First version	WBU	FKI