Hyperie 8300 H/W Guide

R1.1

Revision History

2020-07-31	Initial release	
2020-10-09	R1.1 Add DIDO interface jumper setting.	

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Product Overview

Hyperie 8300 is a fanless, 19” rack mountable embedded computing platform designed for applications with critical environment requirements such as power industry. The hardware has high performance and low power consumption processor from Intel® Core™ i7-8665UE.
Hyperie 8300 is designed with modular and scalable concept that can be configured for various applications where multiple ethernet ports, serial ports and digital I/Os are required. Hyperie 8300 adapts very wide operating temperature and is robust when it comes to harsh EMC environment.

Product Features

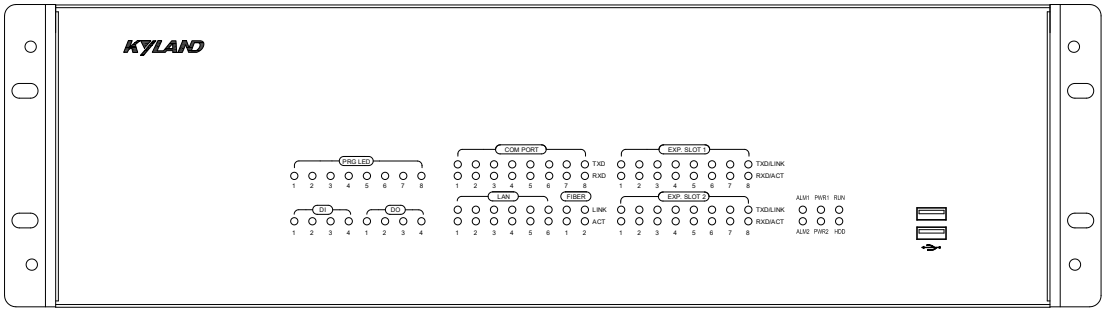
- High performance low power i7-8665UE Intel® Whiskey Lake processor
- 6x 10/100/1000Mbps Intel® Gigabit Ethernet
- 8x serial ports with RS232/485
- 8x programmable LED for user-specific application
- 2x dedicated expansion slots for multiple expansion I/Os
- Reliable -40°C start with pre-heating system
- Supports IRIG-B time synchronization
- Fanless, passive thermal dissipation

Hardware detailed specification

ITEM	DESCRIPTION
CPU	Intel® Whiskey Lake i7-8665UE 1.70GHz, Max. 4.40GHz 4 Cores, 8 Threads, 8MB Cache
Memory	16GB / Max. 64GB DDR4-2400 SO-DIMM
Graphics	Intel® HD Graphics 620
BIOS	AMI BIOS
Storage	2x Hot-swap 2.5” SSD with RAID 0/1 support
Expansion Module	2x expansion slots for use with the following items: a) Dual 1000M LC fiber Ethernet module b) Quad Ethernet module c) Octa digital I/O module
Ethernet Ports	6x Intel® i211-AT 10/100/1000Mbps
Serial Controller	COM3-COM10 LPC-based Fintek 81866 + Fintek 81216
Serial Ports	8x DB9 RS232/485 (RS232 5-wire/RS485 2-wire, isolation)
Console	1x DB9 RS232 (9-wire, non-isolation)
USB	2x USB 2.0 (Front panel) 5x USB 3.0/2.0 (Rear panel) 1x USB 2.0 (Internal for USB dongle)
I/O	4x 110V/220VDC digital input 4x digital output with relay contacts 2x alarm relay contacts
IRIG-B	1x IRIG-B TTL input 1x RS485 output
Power supply	110-220V AC/DC redundancy
LED indicator	TXD/RXD for serial ports LINK/ACT for Ethernet ports LED for expansion I/O cards 8x programmable LEDs 2x main power supplies 2x HDD active 1x System RUN 1x ALARM

H/W monitor	System temperature CPU temperature Physical LAN link Main power status Main voltages Watchdog Timer
Ambient temperature	Operating temperature -40°C ~ +75°C (Pre-heating is required for -40°C startup)
	Storage temperature -40 °C ~ +85 °C
Humidity	5%~95% (+40 °C Non-condensing)
Dimension	438W x 132H x 330D mm (w/o mounting bracket)
Relay contact rating	5A 250V AC, 5A 30V DC
Construction	Chassis: SECC 1.2mm / Heat sinker: AL6063
Net weight	TBD

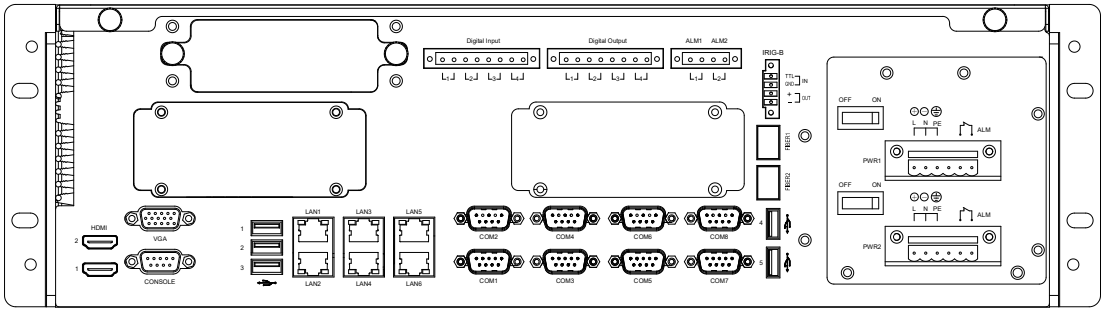
Front panel view



Front panel LED indicators

Refer to Appendix A for front panel LED indicators.

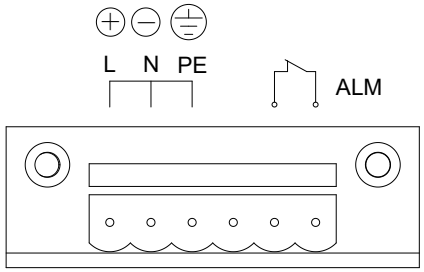
Rear panel view



Rear panel ports and connectors

Refer to Appendix B for rear panel ports and connectors.

Power supply terminal



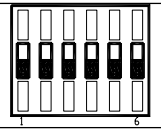
The power supply works with a wide range of input voltage, 110~220V AC/DC.

ALM pins are the dry contact of the internal relay built in the power supply, when the input voltage is missing or lower than the minimum allowable voltage and also when the output voltage is loss, the dry contact will become CLOSED to reflect a “POWER LOSS STATUS”.

Console (COM1) pin define

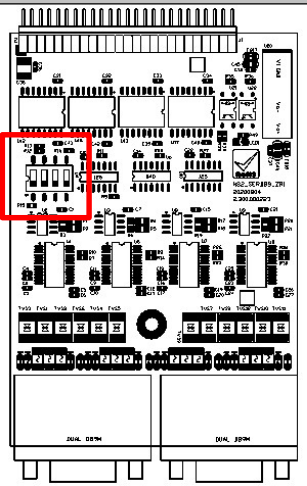
PIN	RS232	RS485	RS422
1	DCD	/	/
2	RXD	/	RX-
3	TXD	Data-	TX-
4	DTR	/	/
5	GND	GND	GND
6	DSR	/	/
7	RTS	Data+	TX+
8	CTS	/	RX+
9	RI	/	/

Console port is configurable with RS232/422/485 via an on-board DIP switch close to console port, the settings are as below table.

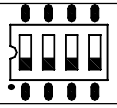


RS232	1-2 ON
RS422	3-5-6 ON
RS485	4-5-6 ON

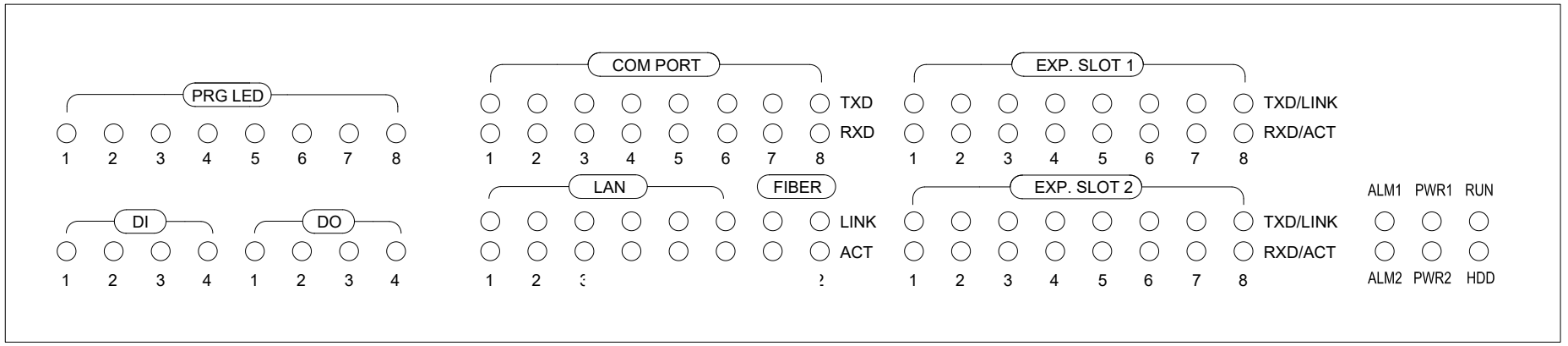
COM3-10 pin define

PIN	RS232	RS485	
1	/	/	
2	RXD	/	
3	TXD	D-	
4	/	/	
5	GND	GND	
6	/	/	
7	RTS	D+	
8	CTS	/	
9	/	/	
The picture to the right is the quad serial port interface module, on which a DIP switch is designed to switch between RS232/485 for each serial port, each position of the DIP switch controls one serial port.			

The DIP switch settings are as below.

	RS232	OFF
	RS485	ON

Appendix A - Front panel LED indicators



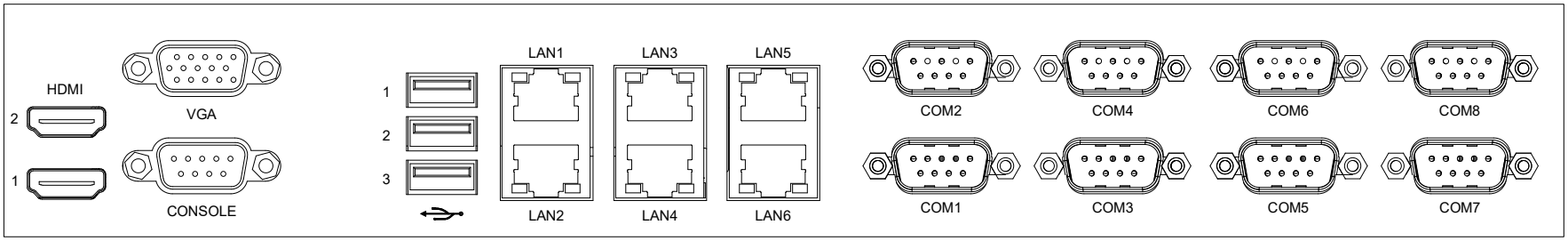
System Function LEDs

LED	Description
RUN	System boot status
HDD	Indication for SSD/HDD storage active
PWR1	Power supply #1 status
PWR2	Power supply #2 status
ALM1	Watchdog reset event
ALM2	User-defined alarm event

Programmable LEDs

H/W ADDR	LED#	PORT [n]	Bit [n]
0x4E	1	Port 0	Bit 0
	2	Port 0	Bit 1
	3	Port 0	Bit 2
	4	Port 0	Bit 3
	5	Port 0	Bit 4
	6	Port 0	Bit 5
	7	Port 0	Bit 6
	8	Port 0	Bit 7

Appendix B - Rear panel connectors



Appendix C – Dimension drawing