ADLINK
LEADING EDGE COMPUTING

Fanless Railway Onboard Data Collection System

DCS-RAPL

Datasheet

Preliminary



Features

- Intel Atom® x5-E3930 processor, up to 1.8GHz
- 4GB DDR3L memory (up to 8GB optional)
- 3x M12 GbE, 3x DB-9 Serial ports, 2x USB and 1x lockable DP port
- Power input voltage: 24VDC, 36VDC, 72VDC and 110VDC
- EN 50155 S2 interruption
- EN 50155 operating temperature OT3 ST1, -25°C to 70°C
- Storage: eMMC 5.0, 1x external accessible CFast slot

Specifications

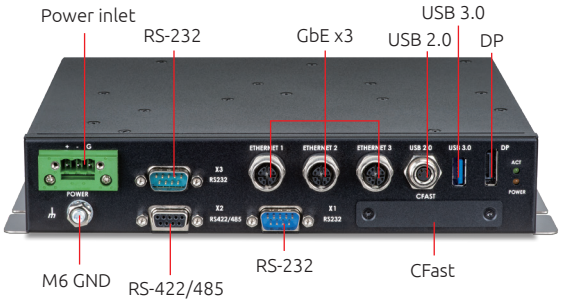
System	Processor	Intel Atom® x5-E3930 Processor, 2C/2T, 2M L2 Cache Base frequency 1.30GHz, Burst 1.8GHz. TDP 6.5W
	Memory	1x 204-pin DDR3L SODIMM socket, up to 8GB RAM Equipped with 4GB RAM by default
	Storage	1x 32GB eMMC 5.0 1x CFast slot, externally accessible with cover
	BIOS	UEFI BIOS
Front Panel I/O Interfaces	Ethernet	3x 10/100/1000BASE-T Ethernet ports via M12 X-coded, based on Intel® I210-IT, withstands 1KVrms isolation
	USB 2.0	1x USB 2.0 port via M8 connector, withstands 1000Vrms isolation (supports Full Speed only)
	USB 3.0	1x type A USB 3.0, 1600mA
	Serial Port	1x DB-9 RS-232 full, baud rate up to 38400bps, withstand 1K VAC rms, male connector for maintainance 1x DB-9 RS-232 serial port, withstand 1KVrms isolation, male connector 1x DB-9 RS-422/485 serial port, withstand 1KVrms isolation, female connector
	DP	1x DisplayPort with latch lock

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Specifications

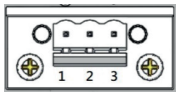
Power	Power Connector	1 x 3-pin screw terminal
	Ground	Shell ground: M6 bolt with nut
	Power Supply	+24V/+36V/+72V/+110VDC nominal power input 2KV isolation EN 50155 Interruption of voltage supply: Class S2 C1
	Power Consumption	22W full loading (Ubuntu 18.04.3 LTS)
	Connector isolation	Pressure: input to mechanical max. 2000VDC RMS Input to output max. 1500 VDC RMS RS-232/422/485/USB 2.0 to mechanical max 1000VAC RMS
Mechanical	Dimenstions	230.4mm x 190.7mm x 44.20mm (WxDxH)
	Weight	2.2kg
	Mounting	Wall mount
	IP	IP40
Environment	Operating Temp	-25°C to +70°C, EN 50155 class OT3 ST1
	Storage Temp	-30°C to +85°C
	Operating Humidity	10% to 90% non-condensing
	Storage Humidity	5% to 95% non-condensing
	Vibration	EN 50155 standard, method EN 61373: 2010, Category 1 Class B
	Shock	EN 50155 standard, method EN 61373: 2010, Category 1 Class B
	EMI/EMS	EN 50155, EN 50121-3-2:2016
	Fire & Smoke	EN 45545-2 HL3
	MTBF	302,345 hrs. (Telcordia Issue 4, GB, GC)
Operation System	OS	Linux Ubuntu 18.04 LTS, 64-bit
Others	LED Indicators	2x power LEDs on front panel Power-on (Orange) Operating (Green)

Mechanical Layout



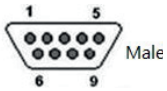
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DC Power Input connector



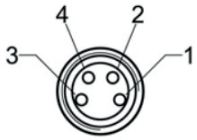
Pin	Signal
1	(+)
2	(-)
3	Chassis

RS-232 (DB9 Male)



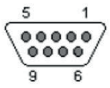
Pin	Signal Name
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

M8 A code USB



Pin	Signal Name
1	VCC
2	CN
3	CP
4	GND

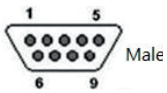
RS-422/RS-485(DB9 Female)



DB-9 Female

Pin	RS-422	RS-485
1		
2	RX+	
3		
4	TX+	D+
5	GND	GND
6	RX-	
7		
8	TX-	D-
9		

RS-232 (DB9 Male)



1	
2	RXDs
3	TXDs
4	
5	GND
6	
7	RTS
8	CTS
9	

M12 X code Ethernet (1~3)



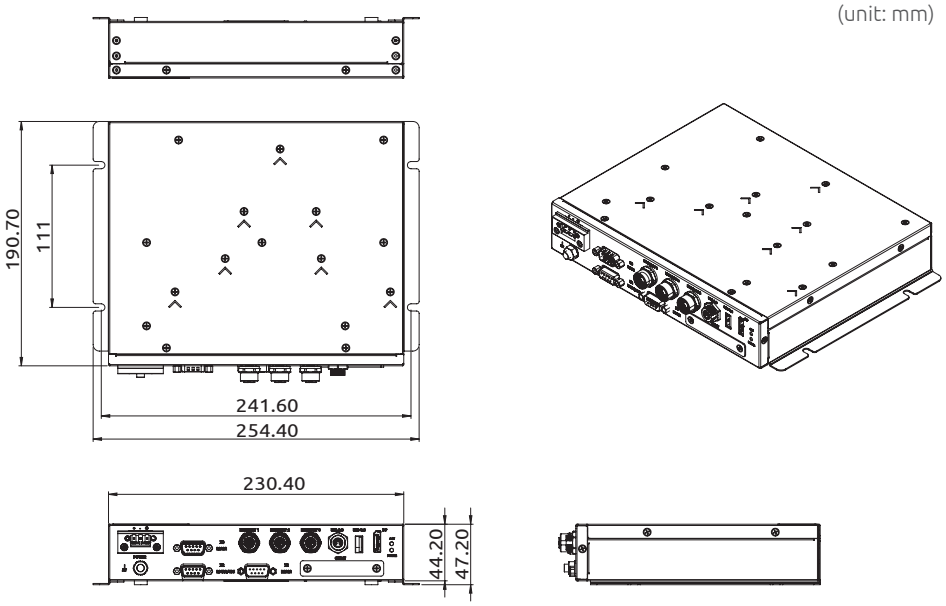
Pin Assignments

1	MDO0P
2	MDO0N
3	MDO1P
4	MDO1N
5	MDO3P
6	MDO3N
7	MDO2N
8	MDO2P

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Mechanical Drawing

(unit: mm)



Ordering Information

DCS-RAPL/3930/M4, CC	Data collection system with Atom x5-E3930, 4GB DDR4, 3x M12 Ethernet, 1x RS-422/485, additional serial ports, 1x M8 USB 2.0 port, 1x USB 3.0 Type A, 1x DP, 1x CFast slot, conformal coating

Optional Accessory

Power mating connector	3-pin female terminal block w/o flange (ADLINK P/N: 20-C1F0C-0030)

intel partner Titanium IoT Solutions

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