ONLOGIC

ML350G-10 Manual

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ML350 Quick Start Guide

1 - About OnLogic

OnLogic is powering innovation with highly configurable embedded and IoT computers engineered for reliability. Businesses worldwide depend on our solutions to operate in the toughest environments while tapping into the evolving Industrial Internet of Things.

This guide will introduce you to the ML350G-10 industrial fanless computer and the system specifications. For technical questions or support, please reach out via our contact information below.

You have a lot of choices when choosing computer hardware. The OnLogic Team wants to thank you for trusting our components to meet your application needs. The ML350G-10 is the result of input from partners like you. We've worked hard to create a system that meets the varied needs of industrial and IoT computing and we've manufactured this system under our strict quality assurance and immunity standards to serve you best. If you have any concerns about the quality or performance of this product, please contact us directly or visit our support page.

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2 - Legal Disclaimer

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Regulatory Compliance: This digital device is designed to comply with all applicable FCC Rules Part 15 and CE compliance requirements for electronic equipment. For more detailed or additional regulatory compliance information, please see the relevant product page at www.onlogic.com or contact OnLogic directly at info@onlogic.com.

3 - Safe Use and Installation Instructions

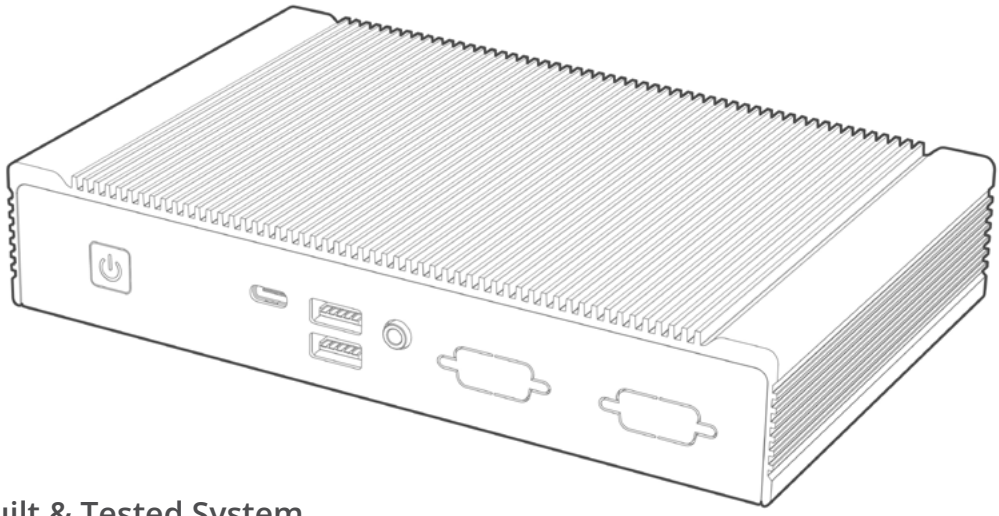
1. Do not open or modify the device. The device has been tested and complies with FCC and CE regulations. Modification of the device will void these certifications.
2. Install the device securely. Be careful handling the device to prevent injury and do not drop.
3. Wall or ceiling mounting device requires use of a mounting plate or pair of mounting brackets. Plate or brackets must be of metal construction and have a minimum thickness of 1mm.
4. Use M3x0.5mm Flat Head screws to attach mounting plate or mounting brackets to threaded holes on bottom of chassis. Screws should be minimum length of 4mm. Add 1mm of screw length for every mm of additional thickness of plate or bracket beyond 1.5mm.
5. Operational temperature must be between 0-50°C, or 0-40°C when using the UL listed configuration, with a noncondensing relative humidity of 10-90%.
6. The device can be stored at temperatures between 0-60°C.
7. Keep the device away from liquids and flammable materials.
8. Do not clean the device with liquids. The chassis can be cleaned with a cloth.
9. Allow at least 2 inches of space around all sides of the device for proper cooling. If device is mounted to vertical surface then recommended device orientation is so that heatsink fins allow air to rise unobstructed. Alternative orientations may result in reduced operational temperature range.
10. This device is intended for indoor operation only.
11. Use UL listed external power supply with rated output 9Vdc, 4.0A min. to 24Vdc, 1.5A min., NEC Class 2, or LPS output or equivalent.
12. Install the device only with shielded network cables.
13. Service and repair of the device must be done by qualified service personnel. This includes but is not limted to replacement of CMOS battery. Replacement CMOS bettery must be of same type as original.
14. Proper disposal of CMOS battery must comply with local governance.

WARNING: There is danger of explosion if the CMOS battery is replaced incorrectly.

Wireless

If this product was configured with a wireless device, the FCC and IC IDs will be detailed on a label on the chassis.

4 - What's In The Box



ML350 Built & Tested System

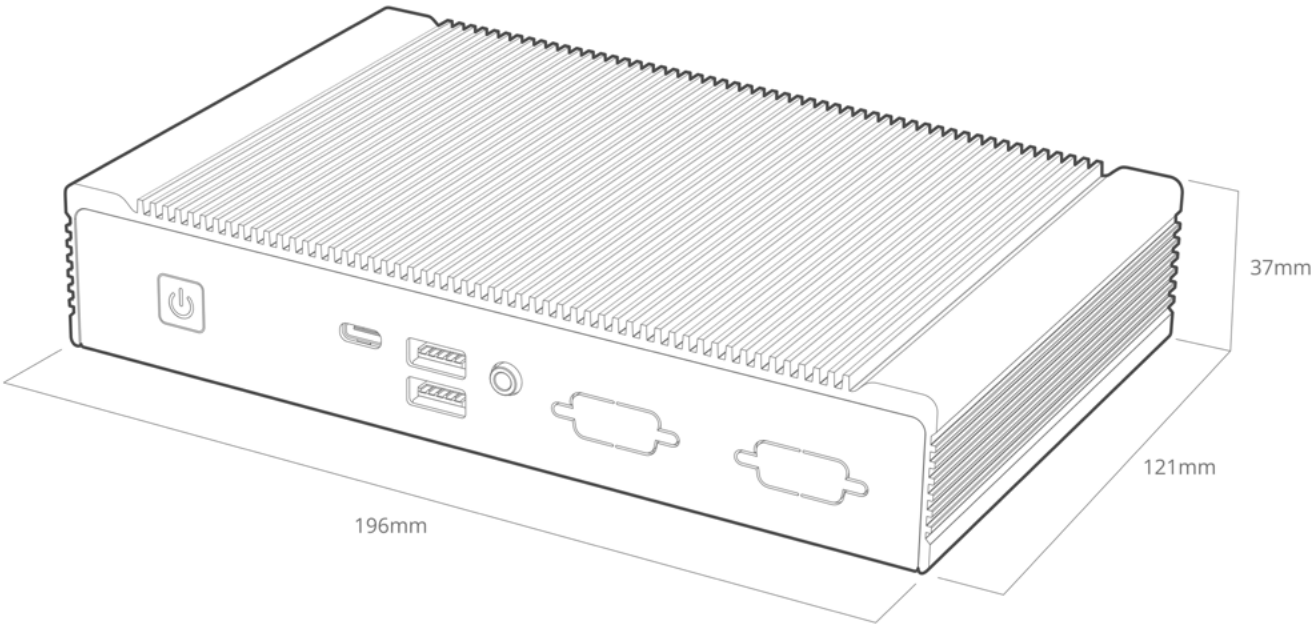
Any Selected Accessories

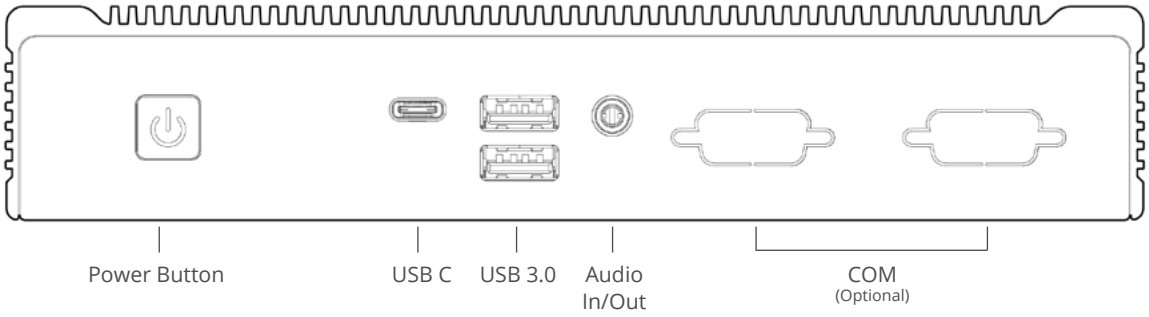
If you purchased additional items such as specific mounting brackets, power supplies or antennas, they will be located in the system box or within the outer shipping carton.

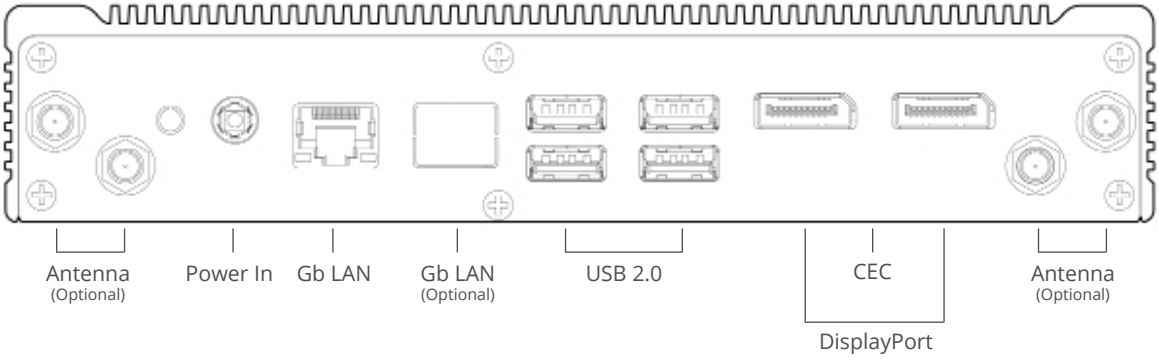
All drivers and product guides can be found on the corresponding product page at www.onlogic.com.

5 - System Overview

5.1 - System Diagram



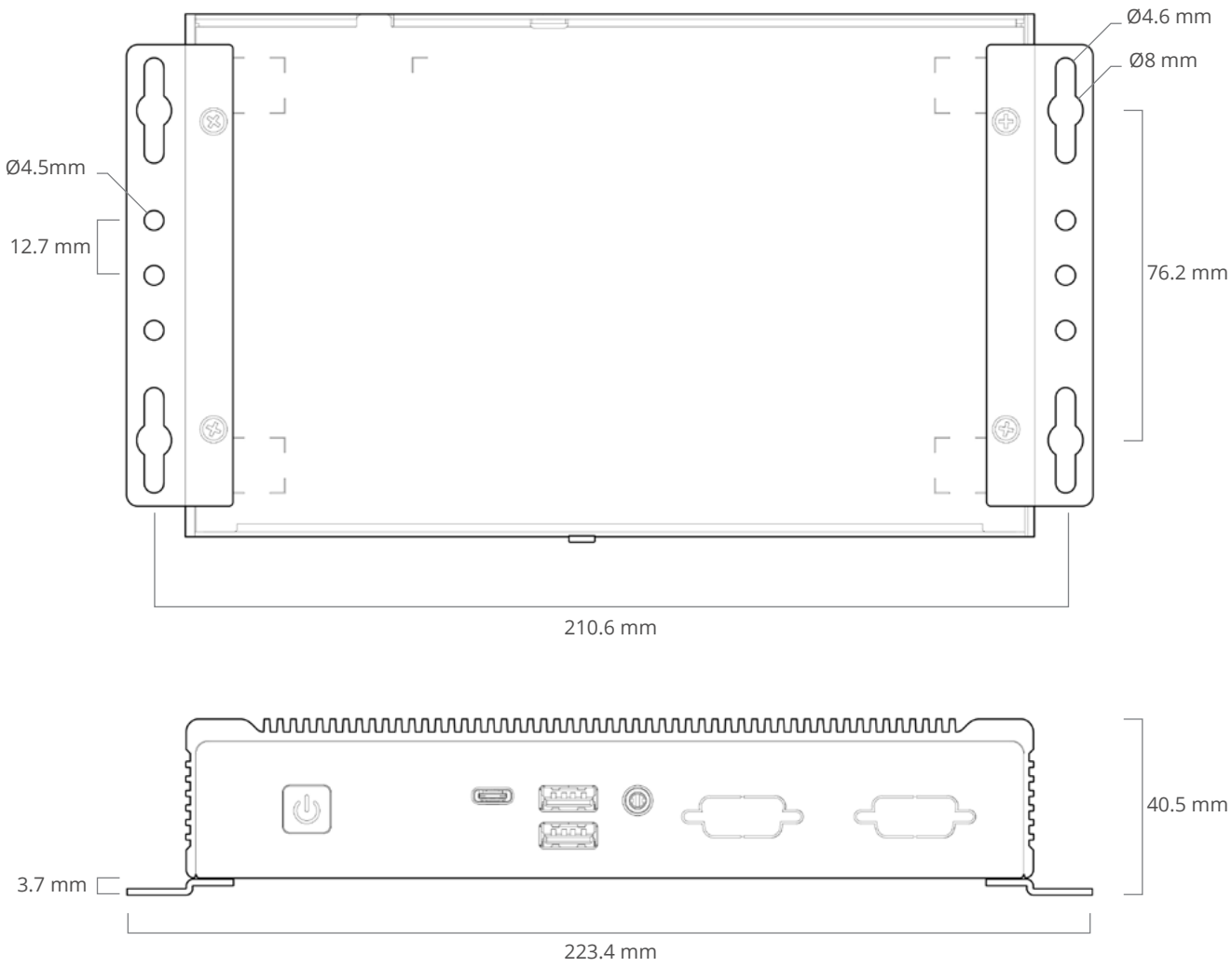




5.2 - System Specifications

		N3350	N4200
Processor and Chipset	Intel Apollo Lake with integrated graphics		
Memory	1 x 204-pin DDR3L SO-DIMM up to 8GB		
Audio Controller	Realtek ALC283 audio codec		
Expansion	Full-size/half-size mPCIe with PCIe, SATA, and USB signal	1	
	Full-size mPCIe with PCIe and USB signal	1	
	Full-size mPCIe with SATA and USB signal	1	
Rear I/O	DisplayPort, Version 1.2 (HDMI CEC option, supports dual mode and MST)	2	
	GbE LAN	1	2
	USB2.0	4	
Front I/O	USB3.0	2	
	USB type C 3.1	1	
	Audio jack; line-in/out	1	
	Power button	1	
Onboard I/O	USB2.0 pin header (2 USB supported)	1	
	RS-232/422/485 pin header	2	
	SATA power	1	
	CEC header	1	
	AT mode jumper header	1	
	RTC battery header	2	
	Ambient temperature header	1	
Super I/O Controller	NCT6793D		
LAN Controller	RTL8111G		
UEFI	Unified Extensible Firmware Interface (UEFI) resident in a Serial Peripheral Interface (SPI) Flash device Support for Advanced Configuration and Power Interface (ACPI) and System Management BIOS (SMBIOS)		
Environment	Operating temperature: 0°C ~ 50°C Operating temperature for UL listed configurations: 0°C ~ 40°C		
	Operation humidity: 10% ~ 90%		
	Storage temperature: 0°C ~ 60°C		
	Storage humidity: 5% ~ 95%		
Dimensions	196 x 121 x 37mm		
Mounting	Wall, DIN, VESA-75/100. (Additional mounting hardware required)		
Certifications	CE (EN 55022, EN55032, EN 55024, EN 60950-1) FCC part 15b, Class A RoHS, WEEE UL/IEC 62368-1, UL/IEC 60950-1		

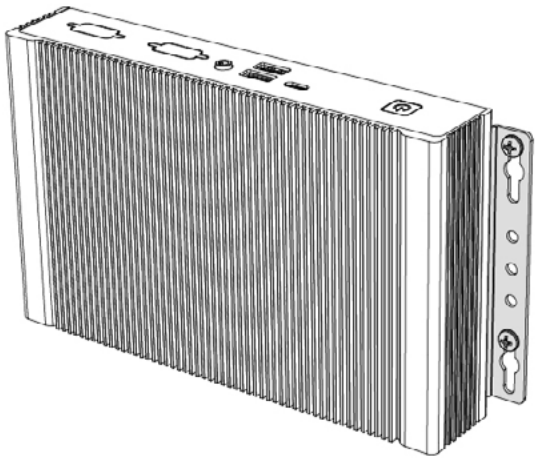
5.3 - Mounting Hole Pattern



5.4 - Mounting Guide

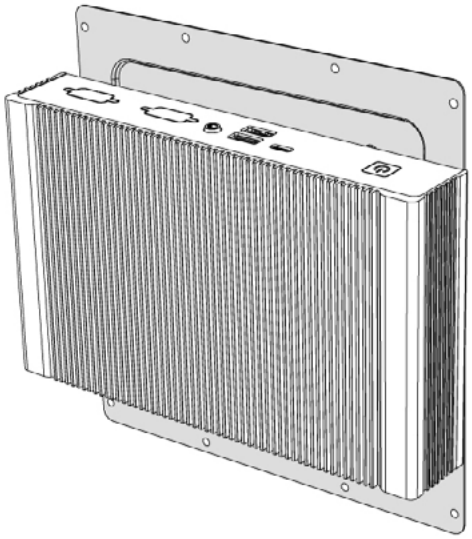
Wall Mounting

Step 1: Attach wall mount brackets to chassis
Step 2: Mark and prep holes in surface for mounting
Step 3: Fasten system to surface



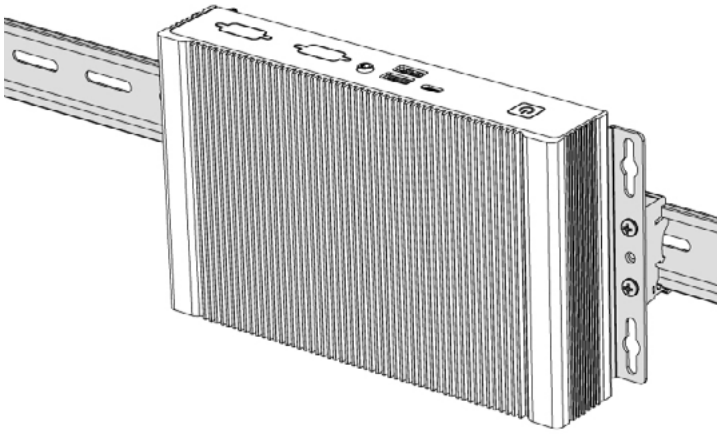
VESA Mounting

Step 1: Install 4 VESA Screws into your display/surface
Step 2: Attach VESA bracket to the chassis
Step 3: Hang combined system and bracket to display/surface

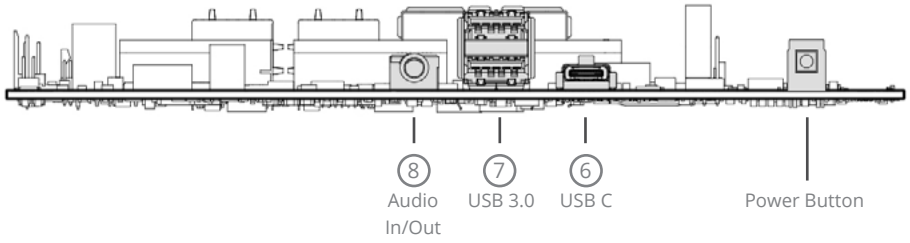


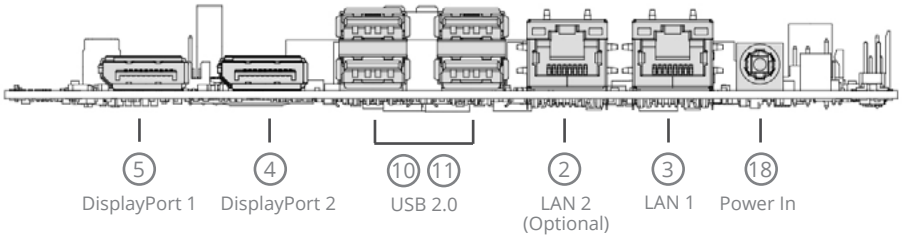
DIN Rail Mounting

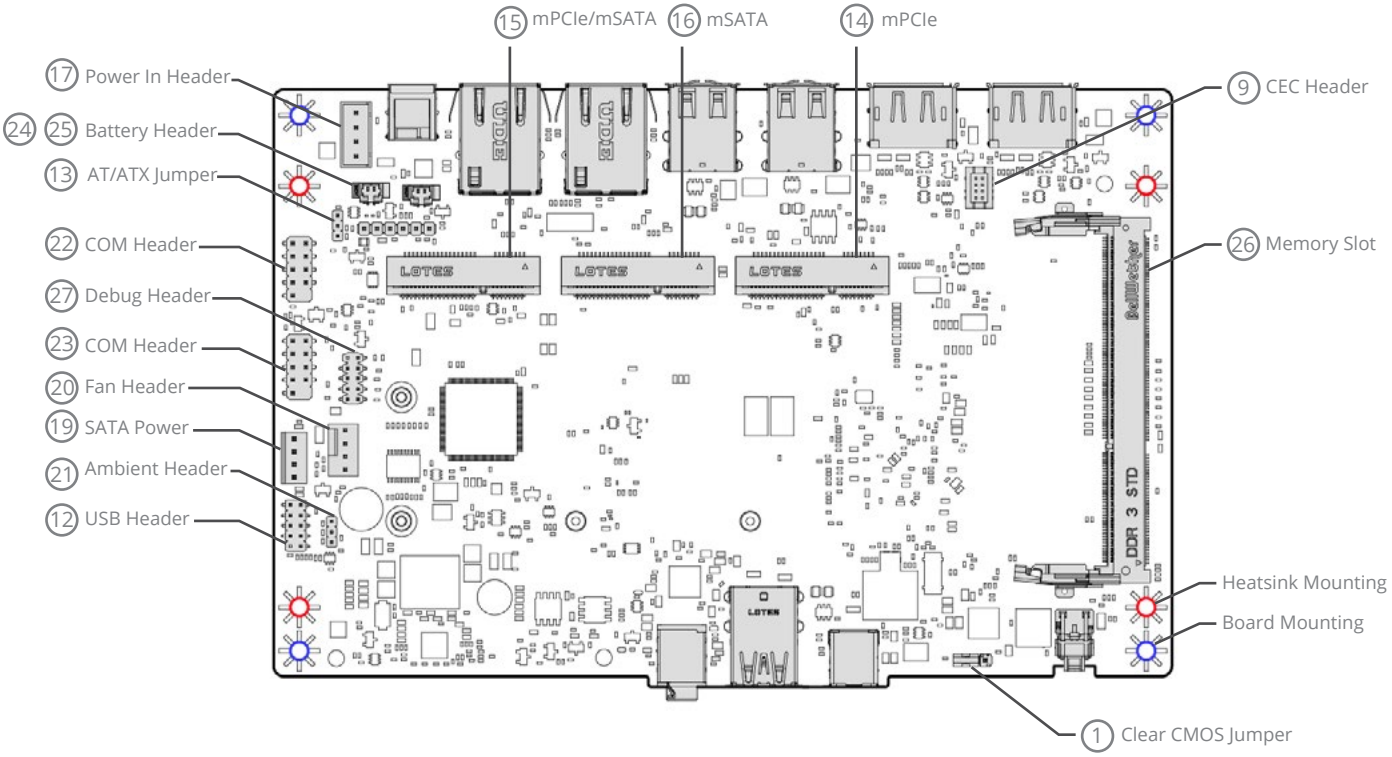
Step 1: Attach wall mounting brackets to the chassis
Step 2: Attach DIN Rail Clips to the mounting brackets
Step 3: Clip system to the DIN Rail



6 - Motherboard Overview







6.1 - Jumpers and Headers Guide

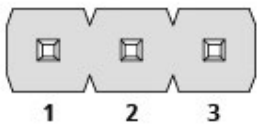
Number	Location	Function
1	J1_BIOS	BIOS Load Default Header/Clear CMOS
2	J2	LAN 1 Connector
3	J3	LAN 2 Connector
4	J4	DisplayPort 1
5	J5	DisplayPort 2
6	J6	USB Type C Connector
7	J7	USB 3.0 Connector
8	J8	Audio Connector
9	J9_CEC	CEC Header
10	J10	USB 2.0 Connector
11	J11	USB 2.0 Connector
12	J12_USB	USB 2.0 Header
13	J13_AT_ATX	AT/ATX Mode Jumper
14	J14_PCIE	Mini PCIe (PCIe+USB)
15	J15_MUX	Mini PCIe (PCIe+SATA+USB)
16	J16_SATA	mSATA (SATA+USB)
17	J18_Power_In	4 Pin Power Connector
18	J20	DC In
19	J21_SATA	SATA Power Header
20	J22_FAN	FAN Header
21	J23_AMBIENT	Ambient Sensor Header
22	COM1	Serial Port 1 Header
23	COM2	Serial Port 2 Header
24	XBT1_BATTERY	Coin Battery Header
25	XBT2_BATTERY	Coin Battery Header
26	SO_DIMM1	Memory Slot
27	DEBUG	Debug Header

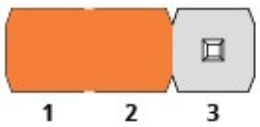
Refer to the following diagrams for configuring jumpers and onboard headers.

6.2 - Configuring Jumpers

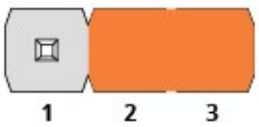
J1_BIOS

The J1_BIOS jumper loads the default BIOS settings. Short pins 2-3 for normal operation. Short pins 1-2 to clear the CMOS and reset the system setup configuration to default settings. If you experience challenges powering up, short pins 1-2 to troubleshoot.





Clear CMOS

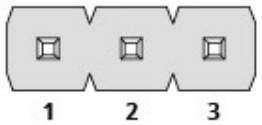


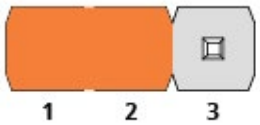
Normal

J13_AT_ATX

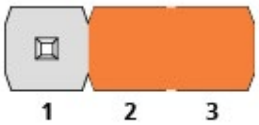
AT = Auto power on.

ATX = No auto power on.





AT Mode



ATX Mode

6.3 - Onboard Headers

An onboard header is a connection on the motherboard that permits connecting a peripheral component to an external port on the system

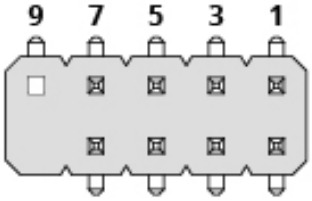
J9_CEC

The ML350G-31 can be configured with a module that allows for CEC functionality. The J9_CEC connector includes wiring connections for the HDMI Consumer Electronics Control (CEC).

COM1 and COM2

The motherboard includes the following COM ports:

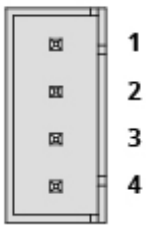
COM1: I/O port 0x3F8, IRQ 4
COM2: I/O port 0x2F8, IRQ 3



	RS232	RS422	RS485
1	DCD	TX (negative)	TX (negative)
2	RXD#	RX (positive)	N/A
3	TXD#	TX (positive)	TX (positive)
4	DTR	RX (negative)	N/A
5	GND	GND	GND
6	DSR	N/A	N/A
7	RTS	N/A	N/A
8	CTS	N/A	N/A
9	RI	N/A	N/A
10	Key	N/A	N/A

Power Headers J18_POWER IN

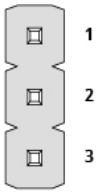
Connect DC power in to J18_POWER IN.



1	V+
2	GND
3	GND
4	V+

J23_Ambient Header

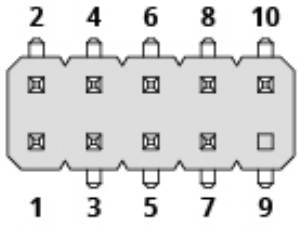
The J23_AMBIENT connector provides System Management Bus (SM Bus) communication.



1	SMBus Clock
2	SMBus Data
3	GND

J12_USB

The J12_USB connector supports two USB ports.

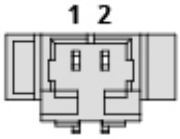


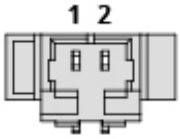
1	5V_USB
3	Data (Negative)
5	Data (Positive)
7	GND
9	Key

2	5V_USB
4	Data (Negative)
6	Data (Positive)
8	GND
10	None

XBT1_BATTERY and XBT2_BATTERY

Connect the system and backup batteries to the XBT1_BATTERY and XBT2_BATTERY connectors.





1	3V
2	GND

1	3V
2	GND

7 - UEFI

The ML350G-10 supports UEFI 64 bit only. UEFI updates can be downloaded directly from the system's product page at http://www.onlogic.com/ml350g-10.