

# Troubleshooting

- [Introduction to the HMS](#)

# Introduction to the HMS

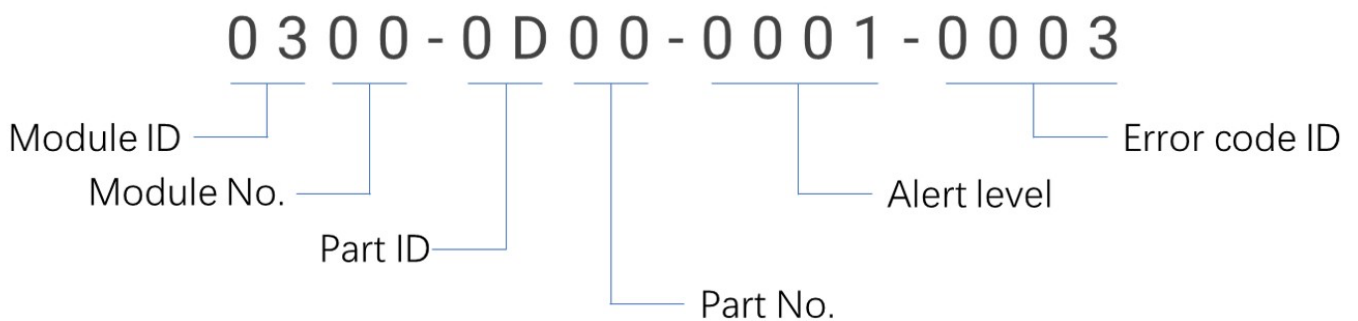
The Health Management System (HMS) is responsible for the monitoring and alerting of the printing system which includes:

- Hardware connections (How the system is connected)
- Issues with the physical hardware (Fans, Hotend, Heatbed)
- Motion system (Belts, rods)
- Printing issues picked up by AI (First Layer Scanning and Spaghetti Detection)

If an abnormal status is detected the HMS will alert the user to the issue and if required, provide a QR Code to further information from the Bambu Labs Wiki

## HMS Code Definition

Below is the HMS Numbering convention



## Module ID

Module ID	Module Abbreviation	Module Name
03	MC	Motion Controller
05	AP	Main Board
07	AMS	Automated Material System
08	TH	Tool Head
0C	XCAM	Bambu Micro Lidar
10	Studio	Studio
11	APP	APP

## Module Number

The number for the module, Normally this will be a zero in most cases, but it could be a different number if there are multiple modules connected, like two AMS

## Part ID

The part ID for the Module.

## Part Number

The number of the part in the specific module

## Alert Level

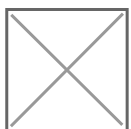
Level	Definition
0000	Invalid alert
0001	Error (Printing task stopped, alert must be eliminated before starting a task)
0002	Warning (Printing task pause, alert must be eliminated before resuming the task)
0003	Info (Information only )

## Error Code ID

The ID of the HMS Alert

## HMS Workflow

The HMS is a system of sensors monitored by the central management unit. The below is a simple diagram to show how it works.



## Error Code

For each alert the HMS displays a unique error code for it. For example, if there is an error with the heated bed temperature the code is 03000100010001. This error code can be searched on the Bambu Lab WIKI

# Notification

When the HMS detects an abnormality the printer takes actions based on the severity of the alarm; Warning status messages will show in the printer's LCD, whilst fatal errors will provide a popup message window on the printer's display and request for you to select an action.

The HMS will also send a notification message to Bambu Handy and Bambu Studio if connected to the printer

If the HMS detects that something is wrong in the system, it will provide the error message along with the error code on the screen. The notification method for each message is different, based on the level of severity. For fatal errors, it will pop up a message window on the machine's display and request user confirmation. For warning statuses, the HMS will just show a notification message on the right of the display screen. The HMS will also send a notification message to the mobile app.

# Limitations

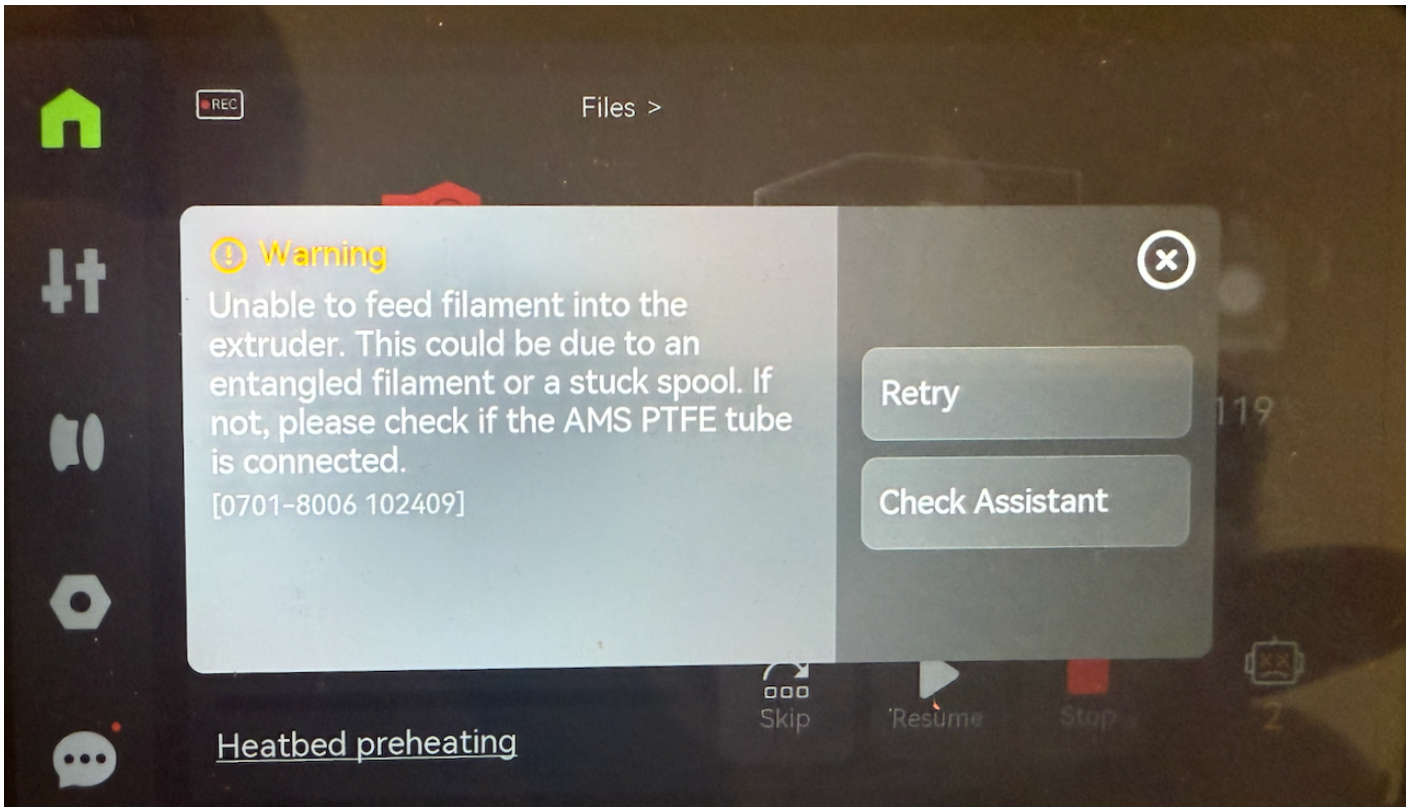
The HMS has some limitations as it is not able to cover all potential failures, due to:

- The HMS can not evaluate all failure modes of the printer as it does not have sensors to collect that data
- Some errors can not be identified directly such as lost steps.
- The HMS is not designed to find root causes of issues. For example a failed first layer may be caused by a number of reasons, such as incorrect flow rate, printing too fast. The HMS can only detect that it is possibly failed

# Using the HMS

You can utilise the notifications from the HMS to keep an eye on the system including some mechanical and hardware errors, as well as for troubleshooting when some issues occur that have caused the printing to fail. Bambu Labs have a wiki page and an howto for each error code and what to troubleshoot. If you are unable to resolve the error yourself, Bambu Labs offer after sales support via a support portal. The support portal can be accessed from the main Bambu Labs website

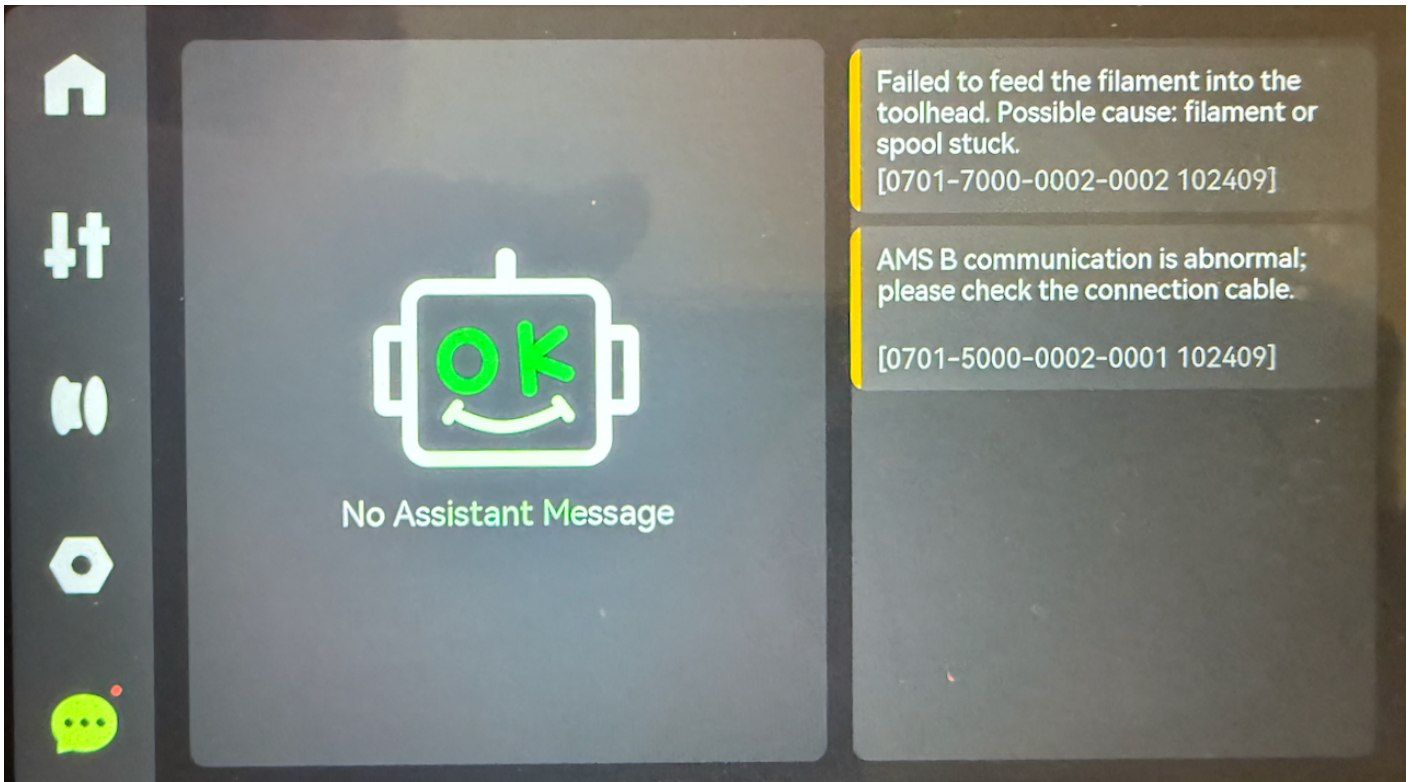
If a critical alert occurs it will put a dialogue message on the screen asking for you to take an action



The HMS messages can be found on the printer by clicking on the Assistant button at the bottom right of the screen.



This will then display any error messages on the screen



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