

# Product Bulletin

## FoamDDI 1.17 Software Release

Partners & End Users - All Regions

July, 2025

**Summary:** This software update includes Dark Sample Detection, improvements to Imaging System's quality, overall CPU and Memory footprint, and a number of bug fixes. This version limits the number of working modules to two FoamDDI Modules per LogicBox. Users who require more than 2 modules to be connected to a single LogicBox should contact [Service@ayalytical.com](mailto:Service@ayalytical.com).

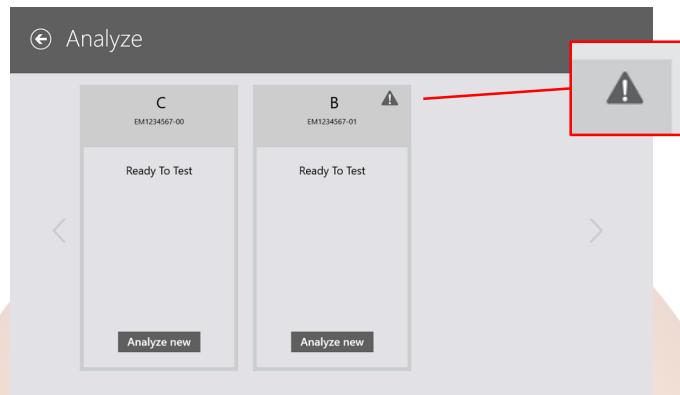
### Dark Sample Detection

The system now facilitates the analysis of darker-colored samples, such as dark brown, blue, purple, red, dark red, and near-black, through the integration of an IR lamp and a revised LED/lamp sequence. The IR lamp is activated during each primary capture (Sample, Tendency, and final Stability), thereby ensuring consistent illumination and enhancing foam-detection accuracy. This also preserves visibility in the event of a lower LED malfunction. These advancements similarly benefit the imaging of clear and neutral-toned samples.



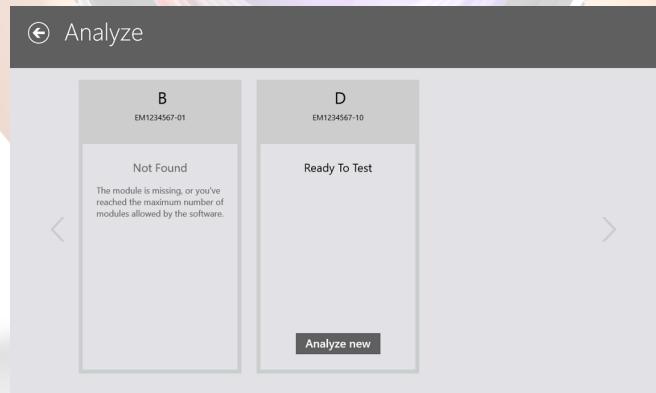
## Module Warning Message Dialog Box

For improved visibility, the module now shows a warning icon in the upper-right corner instead of the previous red header text. This icon can be clicked to open a dialog box with detailed warning messages, allowing for the scalable management of multiple alerts.



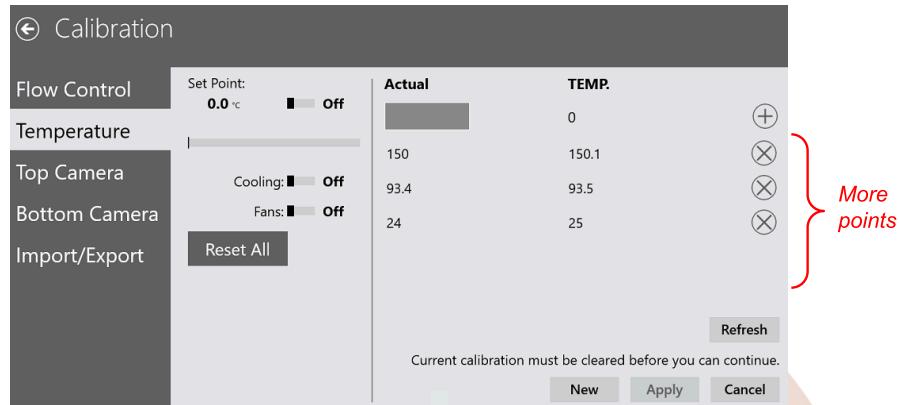
## Module Missing Status

The module now distinguishes between devices that have never been found (or connected) and those that have unexpectedly lost connection. Only devices that have lost connection will continuously attempt to reconnect. This improved status indication allows users to immediately identify which modules are present and which are offline.



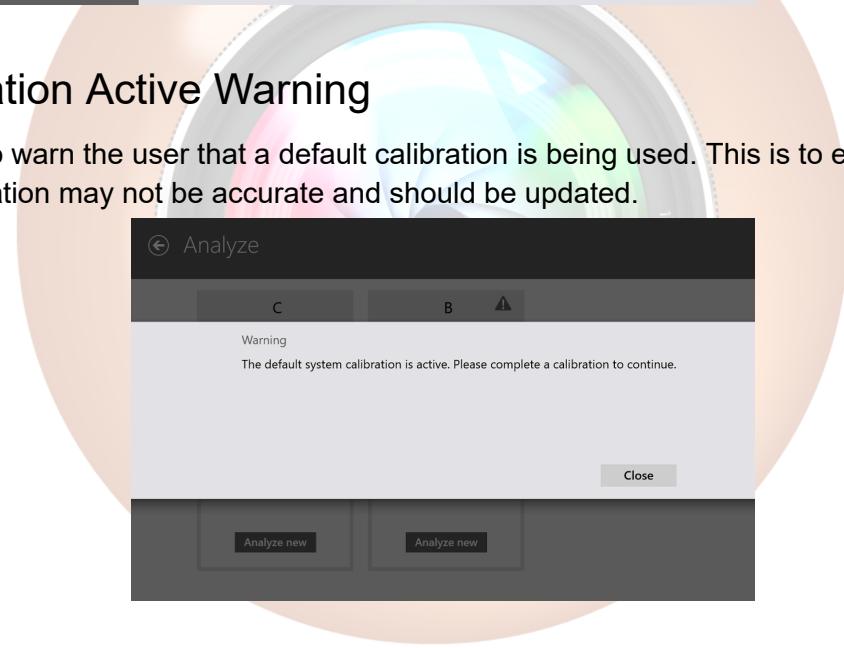
## More Calibration Points

Calibration Points have been expanded to allow up to four calibration points for Temperature and Flow (up from two).



## Default Calibration Active Warning

A message is used to warn the user that a default calibration is being used. This is to ensure that the user is aware that the calibration may not be accurate and should be updated.



## Module Limit

The software update imposes a restriction, limiting the number of connected modules to two. Should more than two modules be linked to LogicBox, only the initial two detected will establish a connection and become operational. There is currently no mechanism to prioritize the detection and utilization of specific modules. For users with more than two connected modules, the unlinked modules will remain visible in the list subsequent to the upgrade but will be inaccessible. These can be removed by navigating to **Settings > Modules** and clicking the '?' symbol. The module limit, which is set to two by default, is configured in **C:\ProgramData\Visaya\Visaya.Service.FOAM.xml** and is indicated adjacent to the **Refresh** button on the **Settings > Module** screen.

Serial#	Position	Alias	Status	
EM1234567-01	B		On	^ v
EM1234567-10	D		On	^ v
EM1234567-11	E		On	^ v

Maximum number of modules allowed by the software: 2      Refresh

## General Improvements

- **Camera Temperature Logging:** All Cameras (including older cameras) will now log and report temperature (warning > 80C). This is a warning only, and the camera will continue to operate but may become unstable. Previously, the utility was limited to more recent cameras only.
- **New Image Settings:** Tuned image brightness, contrast, noise reduction, auto exposure settings, and more for most optimal imaging across various sample types. This is now optimized to work alongside changes to the IR Lamp during automatic routines.
- **New Camera Service:** Optimized camera service for thread safety and infinite (long duration) connectivity.
- **New Vision Pipeline:** Refactored the entire image handling into a single class, VisionPipeline, which manages the image processing steps in a clear and organized manner. Include result announcement, display, and manage video capture. Reducing memory & CPU footprint by eliminating replication and introducing reusable image buffers.
- **New Image Scaling (Binning):** The system now supports scalable imaging, allowing for dynamic adjustment of image resolution and processing based on the number of modules that are connected. This ensures optimal performance and resource utilization, especially in multi-module setups. In the case of Allied cameras, binning is activated to reduce USB network transmission.
  - 1 Module = Full Resolution (e.g. 1920x1080)
  - 2 Modules = 1/2 Resolution (e.g. 960x540)
  - 3 Modules = 1/3 Resolution (e.g. 640x360)
  - 4 Modules = 1/4 Resolution (e.g. 480x270)
- **Updated Vision Post Processor:** The vision post processor will run at the very end of the test to smoothen vision results and revise score (and times) of the final captured samples. The post processor was introduced in version 1.9 (2021) to improve final vision results. This change includes redesigning the entire post processing operation for optimal memory and CPU usage. Resulting in higher accuracy at 16% of the original size. The task previously took 12 seconds (100% CPU) to execute, and now only takes 2 seconds.

## Fixes

- **Video Buffering Status:** A spinner is displayed when the video is buffering, to indicate that the video is loading. Previously, it would appear frozen.
- To replicate: open the video, use the slider to move to the very end, wait 3 sec, then move the slider to the middle. This will cause a long running buffering operation.
- **vBoard Watchdog Timeout corrected on older units:** On older vBoards (Version A3) with firmware(s) 0.16 or 0.18 - the watchdog timer has been properly implemented. Like modern day vBoards, the vBoard will issue a self shutdown after 10 seconds of lost communication to the software. Modern vBoards include added functionality to pulsate the lower LED to indicate powered on and NOT connected, while the older vBoards have no indication of the watchdog error (although, all fans shutting down is still a good signal). To replicate: using a FoamDDI Gen with an older vBoard, enable all the fans using the Diagnostics mode. Then, disconnect via the USB cable and wait ~ 20 seconds. The fans should turn off automatically.
- **Seq 4 Stall Fixed:** When beginning a Seq 4, the NEXT button is now properly enabled only after the Stability timeout option is defined. Previously, the test could be continued without defining the time-out, which (in rare cases) could cause a STALL at the end of the sequence. The STALL would occur during the final stage of the Foam Stability step. The result would hold the sample at 150C for an extended period of time until the user decided to cancel the test. To Replicate: Reboot the LogicBox to clear the sticky start test fields (so that none are presented from the last run memory). Be sure that Settings > General > Stop test on Foam Collapse is set to OFF. Begin a New test > select D892 > select Seq 4 > leave the Report Options blank > click next and start the test. Observe the sequence run properly, but stall near the end.
- **Cold Sample Start:** The FoamDDI will allow a sample to be loaded at < 5C. Previously, if a sample was < 17C, starting a test would result in Temperature Probe Sensing Time-Out error. The user would often be left confused, and a workaround was using Diagnostics Mode to manually warm the sample. To replicate: place a sample (200mL) in a freezer and chill to < 17C. Begin a test and observe the Temperature Probe Sensing Time-Out error which would occur within the 1st 2 minutes of running.

Please contact [Service@ayalytical.com](mailto:Service@ayalytical.com) for more information and a link to download this new revision. This software is still compatible with Gen 1 FoamDDI Modules, although some older modules do not support the audible alert.