

## Important MLA Firmware Update – March 2019

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As part of our ongoing commitment to our flagship product range, the following products are subject to an important firmware update:

**MLA/MLD (2.10.64), MLX (2.7.58), MLA Compact (2.16.51) and DSX (2.10.20)**

The update addresses a specific issue experienced when the products are used in AES mode where the audible result is a crackling noise around the array.

Whilst instances of this problem have been extremely rare, it is imperative for us to have trapped and removed this fault condition.

**PLEASE UPDATE ALL MLA/MLD, MLX, MLAC and DSX FIRMWARE VIA VU-NET NOW**

### Further Background

MLA series products buffer the AES signal as it passes from one speaker to the next. Before the last firmware update, this was limited to 48 or 96kHz. Within the last update, support for 44.1 and 88.2kHz was added.

An instance in the field showed that in a particular and very rare set of circumstances, the detection of 48/96 or 44.1/88.2 AES at the input to the first speaker in the array, could be subject to an incorrect selection of the incoming sample rate.

In this instance, a 48 or 96k signal could be incorrectly detected as a 44.1 or 88.2k signal instead. This event activates the sample rate converter (SRC) in the speaker in order to realign to 48kHz. When the SRC then detects that the incoming signal is in fact 48 or 96k, it will automatically switch back to the main signal path. Under normal operation this would be glitch-free and go unnoticed by the user.

For an audible problem to occur, there also has to be an intermittent fault with the U-NET network (this will be visible in VU-NET). The SRC in the speaker uses the U-NET master clock in order to convert 44.1/88.2 in to 48k. In non-SRC mode, the speaker does not rely on the U-NET clock for any analogue or AES signal clocking. The AES clock is derived from the incoming signal stream, as per the AES3 standard.

For the speaker to incorrectly detect 48 or 96kHz as 44.1 or 88.2kHz, there has to be some instability in the incoming AES signal. This can take the form of a glitch (as in momentary loss of AES clock from the upstream device), a poor quality AES signal (AES clock frequency drifting by more than 300ppm), or cable losses over distance creating too much skew in the rising edges of the signal (also referred to as the “eye pattern” closing).

When both the conditions above are present (U-NET instability and AES incoming signal is interrupted) there is a risk that the SRC will flip-flop between the 48/96k pass through to the 44.1/88.2k re-clocking. In this instance the buffering of the AES signal from the top cabinet in an array to its neighbour becomes interrupted. This can then set up a daisy chain of events where the cabinets in the same U-NET ring are subject to the same error state as the cabinet being fed with the incoming AES signal.

The audible result is a crackling noise that travels around the array, appearing to move from box to box at random. It is also possible that there will be more than one box making a crackling noise at any one time.

This firmware release has removed this fault condition.

### How to Update Firmware

To help guide you through the firmware update process via VU-NET please download the VU-NET User Guide and click on ‘Firmware Updates’ within the contents page.

**[CLICK HERE TO DOWNLOAD VU-NET USER GUIDE](#)**

If you have any queries, please contact our technical product support team [here](#).