

KVM TRIVIA Vol.3



What is display emulation?

DDC Emulation - Vol.1 -

Hello! My name is “Masked Writer K.” I work in ATEN as the writer of this column. For this issue, I’ll discuss a KVM technology that you may have overlooked while working in the server room, and it is called DDC Emulation.

This article has two parts. You are now reading part 1.

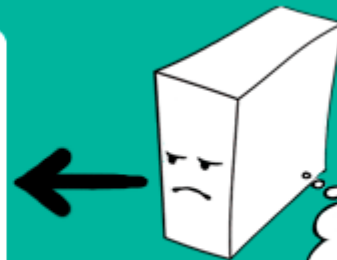
We know that a computer checks all devices that are connected to it during startup. Of course, this includes checking the display. KVM switches actually have a big role in communicating the display’s settings to the computer.

Displays have a chip called EDID into which information about display performance, such as resolution and refresh rate, is stored. When a computer queries the display’s information during boot up, the display sends the EDID. The computer then adjusts the output value in accordance with it. This exchange is called DDC (Display Data Channel) and it is standardized by an association called VESA.

1 Monitor Information



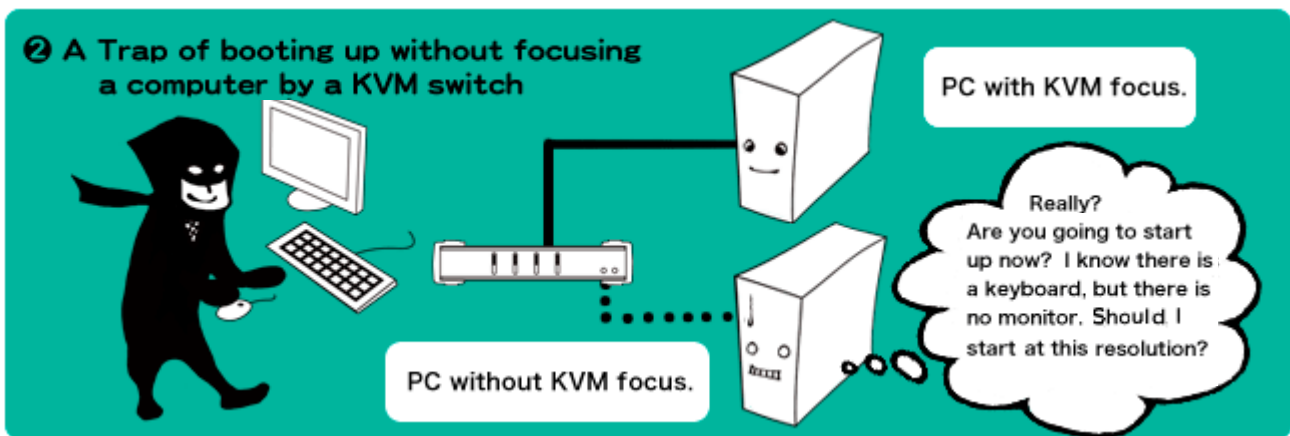
Manufacturer Name:….,
640x480@60Hz,
800x480@60Hz,
1024x768@60Hz,
1280x1024@60Hz,
……etc



Hm,
hum…
I see.

If the DDC communication failed for some reason, the computer cannot detect the display and may behave unexpectedly. The case varies depending on the hard disk installed. For example, the computer may boot at 640 x 480 resulting to a smaller resolution (or what is called a relic of AT-compatible), or fail to communicate with a device and freeze. Some computers may use the last display setting used – and this works well so that users do not realize that there is a problem.

The computer must be directly connected to a display that supports DDC and also one that can send its EDID during startup.



Although a computer and display are directly connected to each other, the DDC communication may still fail. This may be caused by disconnected cables, broken wires, or display troubles. Adding a KVM switch to the mix makes the computer-display exchange even more complicated. KVM switches control a number of computers from one console. So, a computer that is not the KVM focus assumes there is no display connected. Powering on the said computer results to the aforementioned booting problems.

For computer keyboards, the KVM switch can send an emulation signal and avoid errors. But this is not true about displays – so what is the solution? [[To be continued](#)]