

Technology Primer - Analog KVM Switch Solution

- [Tech Primer](#)
- [Block Diagram](#)
- [Core Chip Solution](#)
- [Peripheral Solution](#)
- [Design Resources](#)

Tech Primer

Traditional KVM solutions were implemented using multi-pole mechanical switches to allow a single keyboard, monitor and mouse to be switched between two or more computers. This mechanical implementation was quite limited in the number of devices which could be supported and often suffered issues with the integrity of the signals resulting from poor switch contacts. In addition machines which were not switched to the Keyboard, Mouse and Display at boot up, often fail to boot, or boot into an unwanted configuration (e.g. no keyboard or mouse support and low resolution display). Today's more advanced KVMs use solid state switching and may also simulate connection of the KVM peripherals to prevent boot up errors. These more advanced solid state KVMs usually fall into 2 categories, Analog KVMs and KVM over IP.

Analog KVM uses proprietary signalling to transfer signals from the machine to the remote Keyboard, video and mouse at the controller station. While this signalling takes place over a cat 5 cable, it is not Ethernet and cannot be connected to or routed by an Ethernet switch. The coded signals from keyboards and mouse are transferred to the control end through one of the pairs of CAT5 cable. Analog KVM benefits include low price, reliability, and low maintenance cost. But it is limited to operational distances of around 300m due to attenuation of the signal.

KVM over IP carries out sampling and coding on the video signals received from remote machines, and then transfers the coded signals to the control end through Ethernet working on TCP/IP standard. These signals are received and interpreted by applications on a remote machine with the Keyboard, Display and Mouse connected. KVM over IP has some advantages and disadvantages when compared to Local Remote KVM. While it is easier to expand and has no practical limit on distance, it suffers from latency issues and non real time operation associated with TCP/IP based systems.

Other Resources

- [KVM switch - Wikipedia, the free encyclopedia](#)
- [Choosing the Right KVM Switch](#)
- [okvm's KVM over IP](#)
- [KVM \(keyboard, video, and mouse\) switch having a network interface circuit coupled to an external](#)
- [network and communicating in accordance with a standard network protocol](#)
- [Cat5 Keyboard Video Mouse switch](#)