



White Paper

CCTV/DVR Extension

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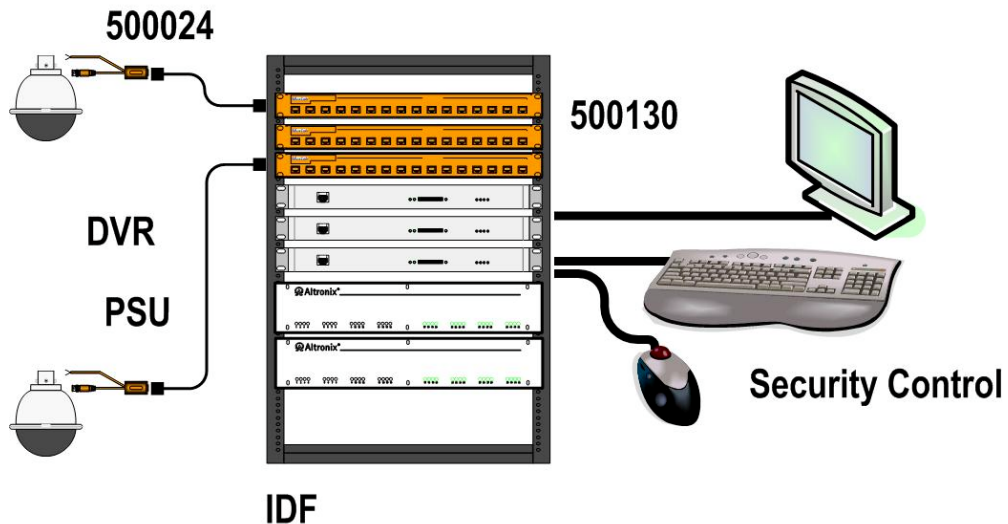
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Purpose

The purpose of this white paper is to describe MuxLab's integrated solution for CCTV/DVR Extension.

Introduction

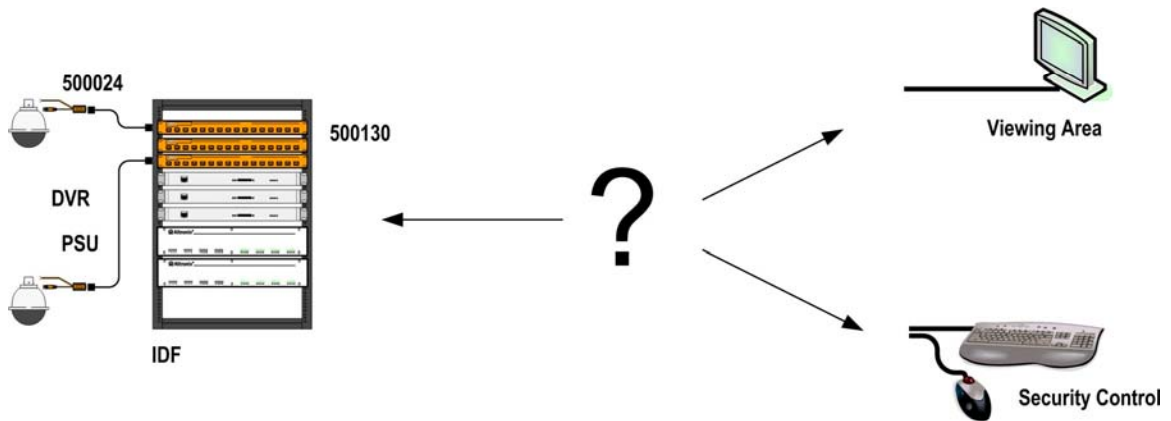
In an analog CCTV or hybrid analog/IP installation, CCTV cameras are typically connected to a DVR or IP encoder located in an Intermediate Distribution Frame (IDF). Following MuxLab's approach, the CCTV cameras are connected to the DVR via Cat5e/6 cabling using MuxLab's range of CCTV baluns and hubs. The DVR usually features composite video, VGA and HDMI outputs for external viewing; as well as keyboard/mouse control. However, this presents limitations in terms of how far away the monitoring and control function can be located.



Problem

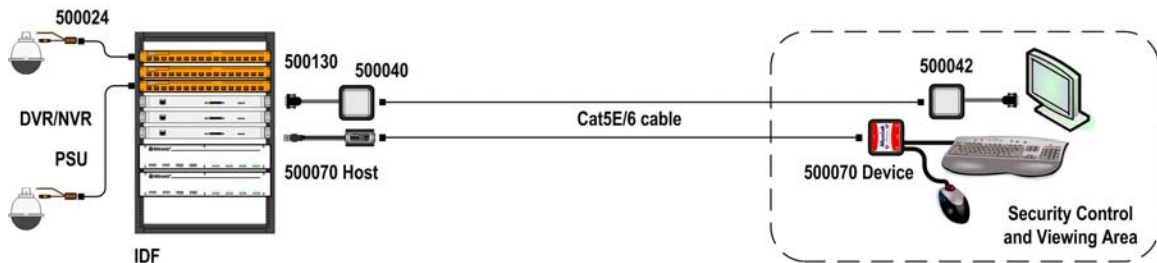
The use of single-use audio-video and data cable limits the distance at which the monitor and keyboard/mouse can be located, thereby limiting the flexibility of the security and surveillance system. Ideally it is preferable to take advantage of the existing structured cabling system to distribute the equipment to more convenient locations in the building.

For example in a real scenario, the keyboard/mouse and local monitor may be in a security room and the additional viewing monitors be situated in the reception or other areas. The problem is how to connect this equipment to the DVR without having to relocate the DVR or the personnel.



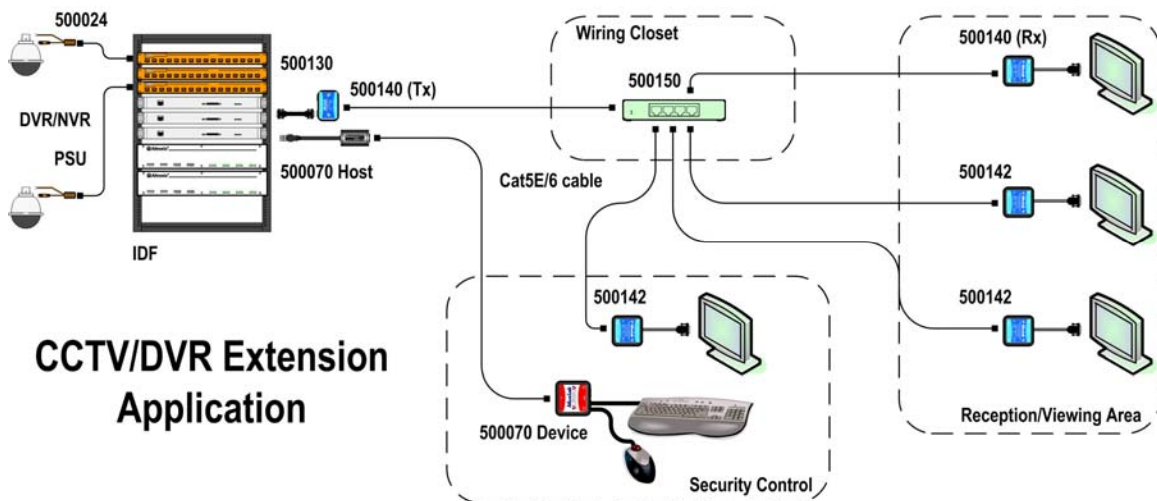
Solution A – Single Monitor Extension

The first scenario is used where there is only one remote VGA viewing monitor. The VGA monitor is connected via Cat5E/6 cable and terminated on VGA Baluns at both ends. This configuration is good for resolutions of 1024x768 up to 250 ft from the DVR. The USB 4-Port Extender Kit provides keyboard/mouse extension over a second Cat5E/6 cable. The USB 4-Port Extender Kit provides keyboard/mouse extension over a second Cat5E/6 cable.



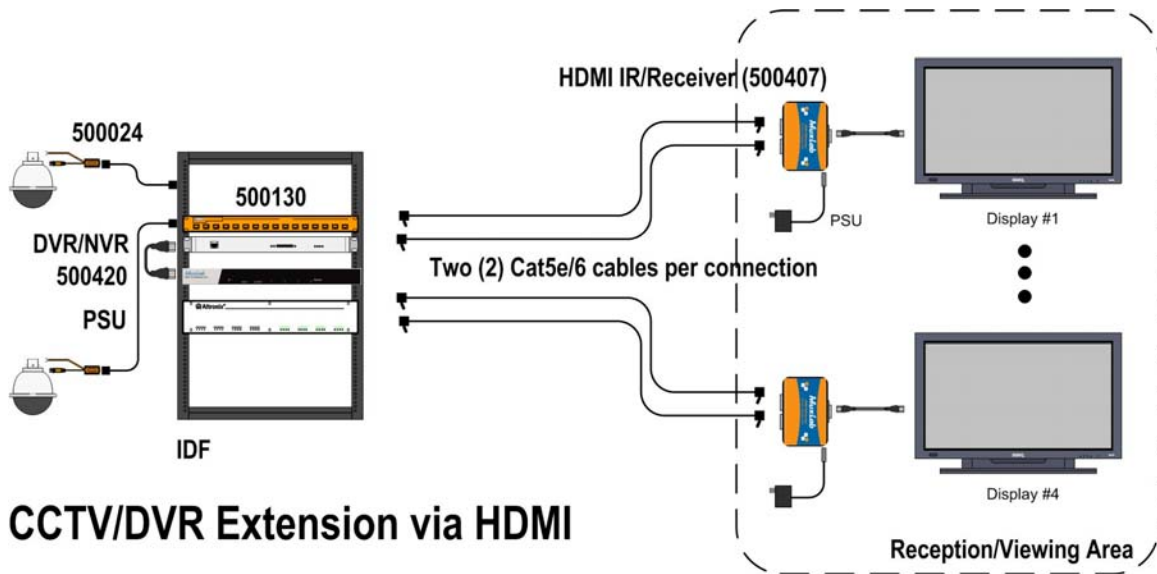
Solution B – Multi Monitor Extension

In this scenario, multiple monitors are required in the viewing area in which case an active VGA extension solution is needed. The VGA 1x4 Hub distributes the VGA source to up to four (4) monitors. The Active VGA Balun II Kit (500140) provides the connection between the DVR and the first monitor. Three (3) additional Active VGA Balun II Receivers are connected to the hub to support three additional monitors. The end result is that the DVR control and viewing functions By using them together, it is possible to preserve the investment in the CCTV DVR cabling system while allowing the control and viewing functions to be located in more convenient areas of the building.



Solution C – Multi Monitor Extension via HDMI

Newer DVR's also have an HDMI output that scale the CCTV video up to 1080p to take advantage of the highest resolution possible. The MuxLab HDMI 1x4 HDMI Distribution Hub (500420) allows this HDMI output to be distributed to other viewing stations in the building.



CCTV/DVR Extension via HDMI

Parts Description

The following section describes the MuxLab products shown in the previous solutions.

VGA Balun II (500040, 500042): This product is a passive balun that allows VGA to be transmitted at 1024x768 resolution up to 250 ft away from the VGA source. This product is appropriate for DVR extension where there is only one viewing monitor within relatively close range. The 500040 connects to the DVR and the 500042 connects to the monitor.



Active VGA Balun II Kit (500140): This product is active and is used when the distance between the DVR and the viewing monitor exceeds 250 ft or when multiple viewing monitors are needed. The 500140 includes one transmitter and one receiver.



Active VGA Balun II Receiver (500142): The 500142 is used in conjunction with the VGA Hub (500150) for additional viewing monitors. One 500142 is needed for each additional monitor.



Power Supply for 500142 (500144): The 500140, 500142 and 500150 may be powered remotely up to 150 ft. When the transmitter and receiver are more than 150 ft from the VGA Hub, then a 500144 is needed at the 500142.



VGA 1x4 Hub (500150): The VGA Hub distributes the DVR VGA output to up to four viewing monitors and works in conjunction with the 500140, 500142 and 500144. It is fully Cat5E/6 in and out and can supply remote power to the 500140 and 500142 up to 150 ft. Beyond 150 ft, at 500144 is needed at each balun.



USB 4-Port Extender Kit (500070): The 500070 allows the DVR keyboard/mouse to be remotely located up to 150 ft away from the DVR. Additional two ports are available for flash drive or other USB peripherals. The Device side unit plugs into the DVR and the remote side unit connects to the keyboard/mouse. The remote side device may be wall-mounted using MuxLab's Wall Mount Balun Fixture (500910).



HDMI 1x4 Distribution Hub (500420): The 500420 allows the DVR HDMI output to be distributed to up to four (4) displays located up to 150 ft away from the DVR.



HDMI IR Receiver (500407): The 500407 works in conjunction with the 500410 and is connected to each HDMI displays to convert Cat5e cable back to HDMI cable.



Conclusion

As CCTV cabling systems evolve, there is greater need to integrate other products in order to achieve the desired results. For more information about how MuxLab can help streamline your DVR extension needs, please contact MuxLab at 877-689-5228 or 514-905-0588.

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