

HD QUALITY CAMERAS ON EXISTING COAX CABLE

PUT “HD” IN YOUR CCTV

Analog CCTV cameras are by far the most common cameras in use today with their low cost, good resolution, and wide range of manufacturers they have been a mainstay in the market place. This mature technology was made possible by a common technical standard referred to as the NTSC (National Television Standards Committee) standard. This standard was used for analog TV transmission for over 50 years, but this system has a resolution limitation that prevents High Definition picture transmission.

The next step in the evolution of HD CCTV was the implementation of more costly IP video cameras that allow for nearly infinite picture resolution, but requires a two way path using a minimum of 2 twisted wires pairs. You must also set up the network communications with a computer to identify each piece of equipment in the system. Unfortunately if you are trying to replace an existing analog camera you will have to pull in a new type of cable.

Now the CCTV market can use the new SDI (Serial Digital Interface) method to send High Definition pictures at a full 30 fps (Frames Per Second). This is the standard developed and used for High Definition Television Broadcast and it is available for use in the CCTV industry. Manufacturers are now selling CCTV HD 1080p and 720p cameras with SDI outputs that use the existing coax cable to send signals back to any DVR equipped to receive them. What makes this SDI signal so attractive for the CCTV installer is that it uses the same coaxial cable that was previously used for the analog cameras. So you can replace the old low resolution camera with a new high definition camera without the expense of having to replace the coax cable.

When a technician wants to use the existing coaxial cable to install an SDI camera, they should check it to guarantee that the cable will handle the higher bandwidth required for the HD-SDI signal. Excessive loss in the cable will increase the received bit error rate and cause intermittent operation of your camera system. You can check for this loss by using the SDI-2 signal level meter. This meter will measure the SDI signal level and allow you to determine if the cable is unable to be used for the new SDI camera installation. To test any unknown cable you temporarily attach an SDI camera to the end of the cable, then go to the other end and connect the SDI-2 meter. The meter will display the signal loss in dB and millivolts peak-to-peak. You can quickly determine which cables will pass the signal and which cables will not.

Until recently the main drawback with using an SDI camera was the lack of up-the-coax PTZ camera control. This has recently been solved by using an SDI-D system manufactured by FM SYSTEMS, INC. to add any RS422 PTZ data to the SDI signal carried on the same coaxial cable. So it is now possible to add a camera to a system that previously used Vertical Interval PTZ Control and still have the PTZ controls. So one coaxial cable can carry the SDI High Definition video and also carry the data signal in either direction up or down the cable.

In some installations you might want to send contact closures along with the SDI signal up the coax cable or down the coax cable in the opposite direction. This can be accomplished by using an SDI-C system manufactured by FM SYSTEMS, INC. that inserts up to 8 contact closures onto the SDI signal and recovers it at the other end to operate 8 relays. It can be used for gate control, alarm telemetry, or any other contact/relay functions.

When examining all the HD CCTV video camera options always try to get the best performance with the least amount of complexity. You will find the cost of SDI output cameras to be generally less than the cost of IP Cameras because it requires less electronics to generate the signal. Also the installation costs will be lower because you can use the existing coax cable.

If you are looking on the internet, search for HD+SDI+CCTV and you will see a number of manufacturers and distributors selling HD SDI surveillance cameras and DVRs, or you may call me at: 800-235-6960 to get more information. Go to fmsystems-inc.com to see more.



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