

PTZ Control Panel over IP	
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Sub-category	Application, Integration
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Introduction

Traditional CCTV surveillance systems use **control panels** to control the PTZ functions of the analog cameras. Larger surveillance systems use custom designed **control desks** where one of the functions is the PTZ control.

Those control devices normally use **RS-485** (or RS-232, RS-422) standard to connect to PTZ function of the camera.

It all works perfectly as long as the distance between the control center and the camera site is short, so that the direct cabling solution could be applied. However, when the distance is too long, IP-based solution becomes necessary – **connecting the camera site with the control center over IP-network.**

While planning the IP-network support, system integrators often face a dilemma – they have to choose either to stay analog and keep the existing control desk, or to go IP and give up the existing control desk because of compatibility problems.

This article will explain how the existing analog system can be combined with IP-network using ACTi solutions so that **both video streaming and the PTZ control via existing control panel will work perfectly.**



Why IP and Why ACTi?

Before learning about how the control panel could be applied to IP-solution, it is worth to take a moment and review all the cabling related benefits of using IP solution instead of analog solution.

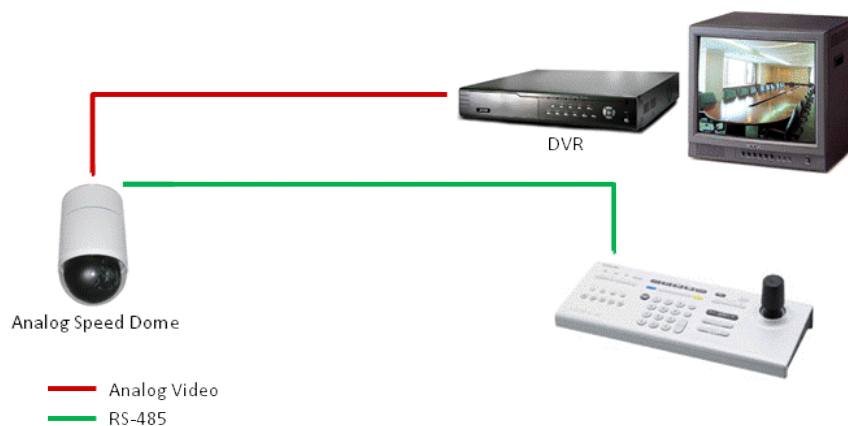
Service	Analog System	IP System
Video Stream	Need coaxial cable	Need just one Cat-5 cable, besides, it is possible to go wireless if necessary!
PTZ Control Stream	Need control cable with RS-485	
Audio Stream	Need audio cables for both ways	
Alarm System	Need alarm cables	
Power Supply	Need power cable	

Now, speaking more specifically about the integration of existing devices (including PTZ control panel) to IP-system, here is the comparison:

Existing Device	ACTi	Other IP Solution Providers
DVR	Yes	Yes
TV Monitor	Yes	Yes
Analog Camera	Yes	Yes
PTZ Control Panel	Yes	No

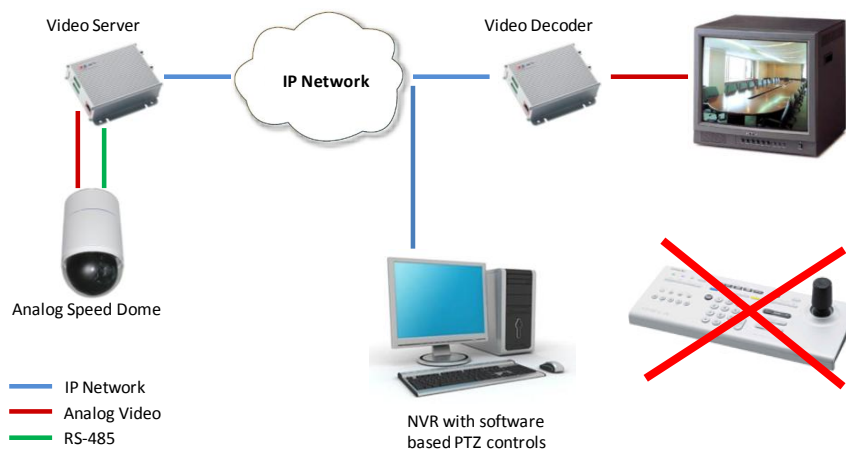
Different Solution Types

Typically, a CCTV solution is based on analog cameras, DVR, control panel and the TV screen. There are also Hybrid DVR solutions or Network DVR solutions used today together with analog cameras. Since this article is focusing on the use of existing PTZ Control Panel, the simplest scheme is used for explanation:



Other Manufacturers' IP-solution

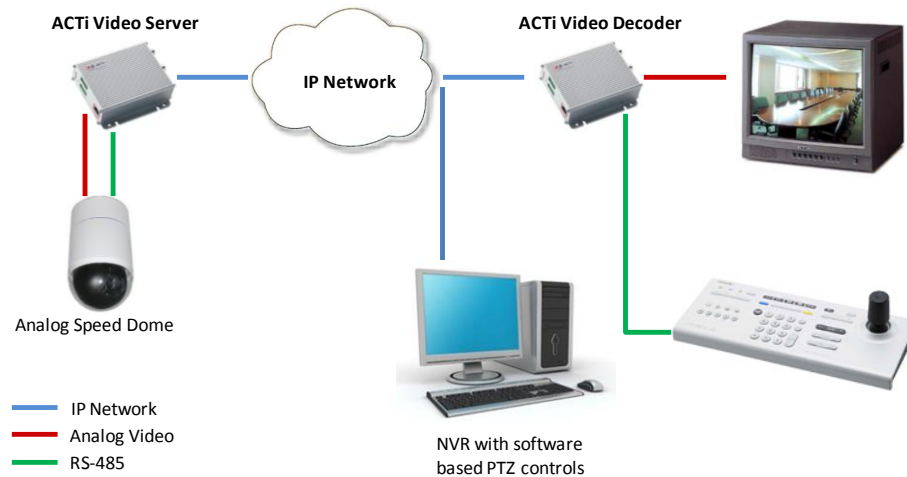
Most IP-camera manufacturers today provide both video servers and decoders to upgrade existing analog CCTV systems to IP solutions. Their video servers may receive PTZ command through IP network, including NVR and software based PTZ control (or their USB joystick extensions). But their video decoders do not support RS-485 connection, so there's no way to receive PTZ commands from existing analog controls. With this kind of solution, the control panel that used to be such a convenient tool for the security officer becomes now **unusable**.



Another serious disadvantage of giving up the control panel and using software based PTZ control instead is the **compatibility risk!** The Video Servers have to contain a wide range of popular PTZ protocols in order to be ready to serve the analog camera. Furthermore, even if the requested protocol is supported, there is always a risk that the analog camera manufacturer has made minor changes in the protocol resulting with miscommunication between NVR, Video Server and the analog camera.

ACTi IP-solution

ACTi Video Decoder is different from most manufacturers' for its RS-485 support. Therefore, **with ACTi solution it is possible to combine the analog system with IP-network and keep all the existing devices, including PTZ control panel!**



Because of its RS-485 support the ACTi Video Decoder the connection between the PTZ camera and the control panel is a **transparent tunnel** – whatever protocol was used before, it can still be directly used through this tunnel without any third party involvement. No command translation or mapping is needed.

In other words, if your control panel was able to control the analog camera with direct RS-485 connection before then **ACTi assures that it will also work over the IP-network as well by using ACTi Video Server and ACTi Video Decoder regardless of the protocol your devices are using.**

The Benefits of ACTi Solution

To sum up all of the above, the benefits of the RS-485 support in ACTi Video Decoder are listed below:

- Make a good use of previous investments (control panels, control desks)
- Keep existing control habits (those who got use to control panel might not easily re-learn to use software based PTZ controls)
- No need to spend more money to buy a USB-based joysticks to support software based PTZ controls
- Take away the risk of possible protocol compatibility problems that may occur in software based PTZ control systems
- **Most important:** Transparent PTZ Tunnel works for any PTZ protocol in the world! It makes ACTi solution to be easily integrated into any existing surveillance system!



ACTi Video Decoder **ACD-3100** is supporting RS-485, RS-422 and RS-232.