

***NUEZ TECHNOLOGIES
PRIVATE LIMITED***

***Hikvision
CCTV System***

What is CCTV.....?

- ***Closed Circuit Television (CCTV) is the use of video cameras to transmit a signal to a specific place on a limited set of monitors.***
- ***It differs from broadcast television in that the signal is not openly transmitted though it may employ point to point, point to multipoint or mesh wireless links.***

Why Use CCTV....?

- ***Reduce Cost and Risk***
- ***Prevent and Deter Crime***
- ***Fool-Proof Coverage***
- ***Keep Your Employees Honest***
- ***Encourage Good Behaviour***
- ***Prevent Safety Incidents***
- ***Assist Law Enforcement***
- ***Increase Customers confidence***
- ***Reduce Property insurance Premiums***

Elements of CCTV systems

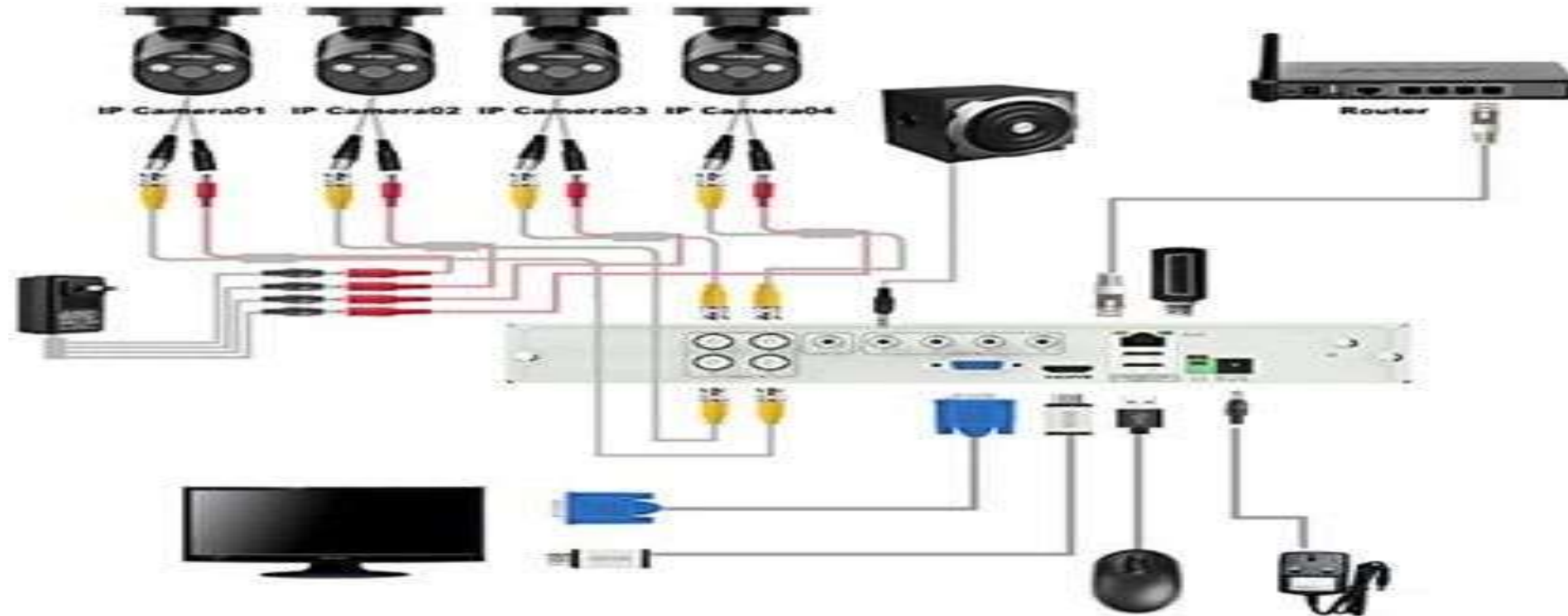
- Camera
- Lens
- Monitor Unit
- DVR/NVR
- Cable (coaxial / Ethernet)
- Storage Devices
- DC power supply (12V)



Types of CCTV system

- Analog CCTV system
 - Analog security cameras capture on analog video signal and transfer that signal over coax cable to the Digital Video Recorder (DVR). Each camera may be powered by plugging in the power supply right at the camera or by using RG59 Siamese cable which bundles the video and the power cables.
 - Requires an DVR to capture image.
- Digital / IP CCTV system
 - IP stands for Internet Protocol and basically refers to a digital video camera that can send and receive data via a computer network.
 - Require a NVR to capture image.

CCTV system's block Diagram



CCTV Camera Types

- CCTV cameras are being installed where for purpose of security and crime prevention and detection. There are many type if CCTV cameras are available for this purpose.
- Indoor Camera
- Outdoor Camera
- IR day/night Camera
- Dome Camera
- Bullet Camera
- Vandal Proof Camera
- Hidden Camera
- Pen Tilt Zoom Camera



CCTV
CAMERA
TYPES

CCTV DESK

Indoor Camera

- Indoor camera as its name suggests used for indoor security mechanism.
- These are suitable for security Homes, School, Office, Hotels ect...



Outdoor Camera

- Outdoor camera as its name suggests used for outdoor places.
- They are mostly used for entry and exit points with limited night lighting.
- These cameras have hard Shell vandal proof casings.



IR Day / Night Camera

- IR day/night cameras are used for high alert security areas where surveillance needs to happen day and night.
- These cameras are used by military personnel, in parking lots and high security zones.
- The cameras are ideal for outdoor surveillance applications.



Dome Camera

- Dome cameras are installed inside a dark dome and are design in a way that they go unnoticed by visitors.
- These cameras can be rotated and tilted Manually.
- Dome cameras are used in public place like railway station, bus terminals and other areas where there is a huge gathering of People.



Bullet Camera

- Cylindrical
- Tapered shape, similar to that of a rifle bullet.
- Outdoor use.
- Installed inside protective casings, which protect against dust, dirt, rain, hail and other harmful elements.
- Require long distance viewing.
- Fixed or Varifocal lenses.

HIKVISION
TURBOHD



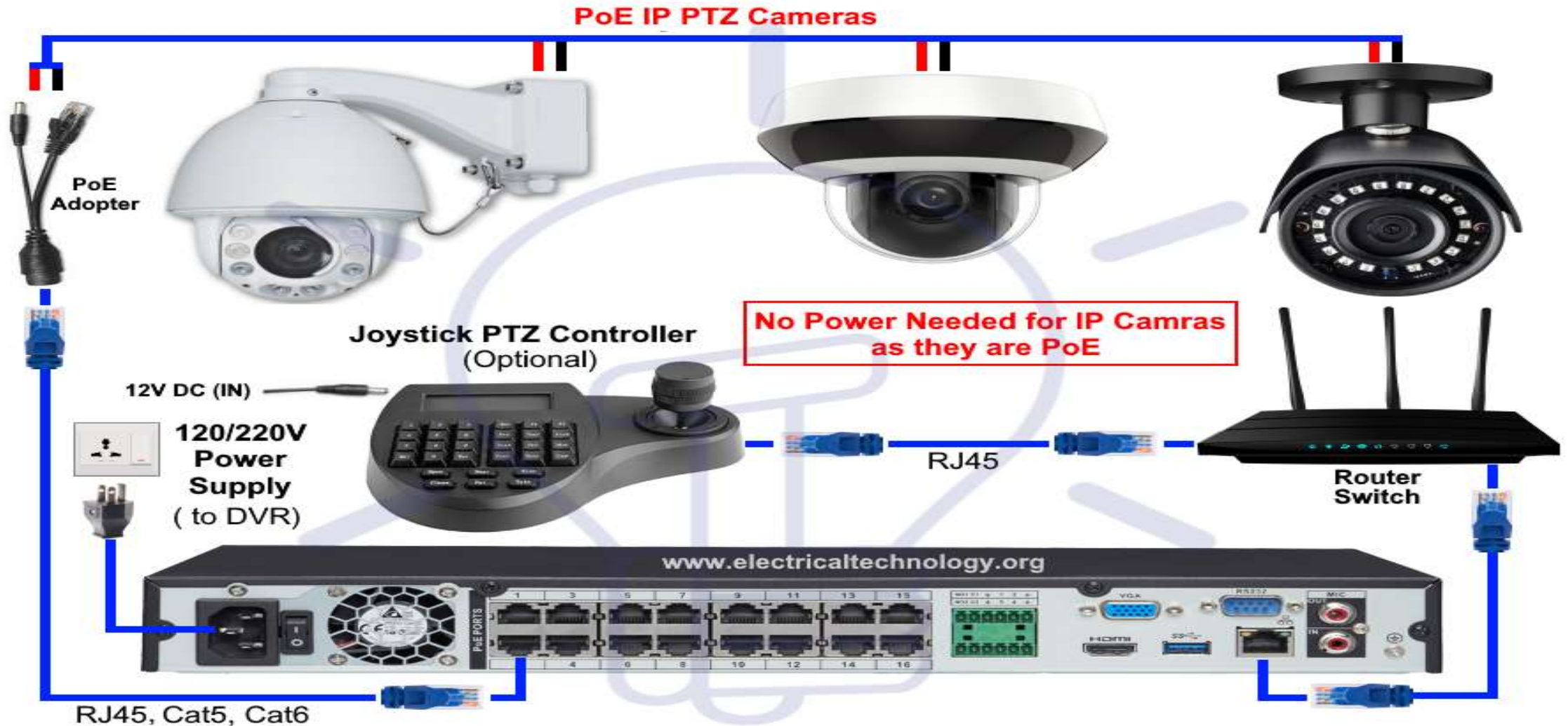
PTZ Camera (Pan Tilt Zoom Camera)

- PTZ stands for pan Tilt and zoom.
- Those are the movements the camera can do when somebody is remotely controlling it by using a computer or joystick.
- Most movable camera allow the person monitoring it to move the camera from right to left (pan), up to down(Tilt), and from right angle to wide angle.(close up Zoom)



Connecting method of PTZ Camera

How to Wire PoE IP PTZ Camera to NVR



Camera Selection

- Indoor or Outdoor
- Day/night Surveillance
- Lens selection Camera Form factor
- Video codec
- Motion Detection
- POE (only for IP) /power source
- Wireless
- Viewing

Monitor Unit

- The function monitors is to display video image for viewing.
- The selection of Monitor is as important to the quality of the image as the selection of cameras, lenses, and other components in the imaging chain.
- Liquid crystal display (LCDs) and LED displays, various sizes, and other features.
- Considerations for monitor selection.
- **Pixels**
- **Size**

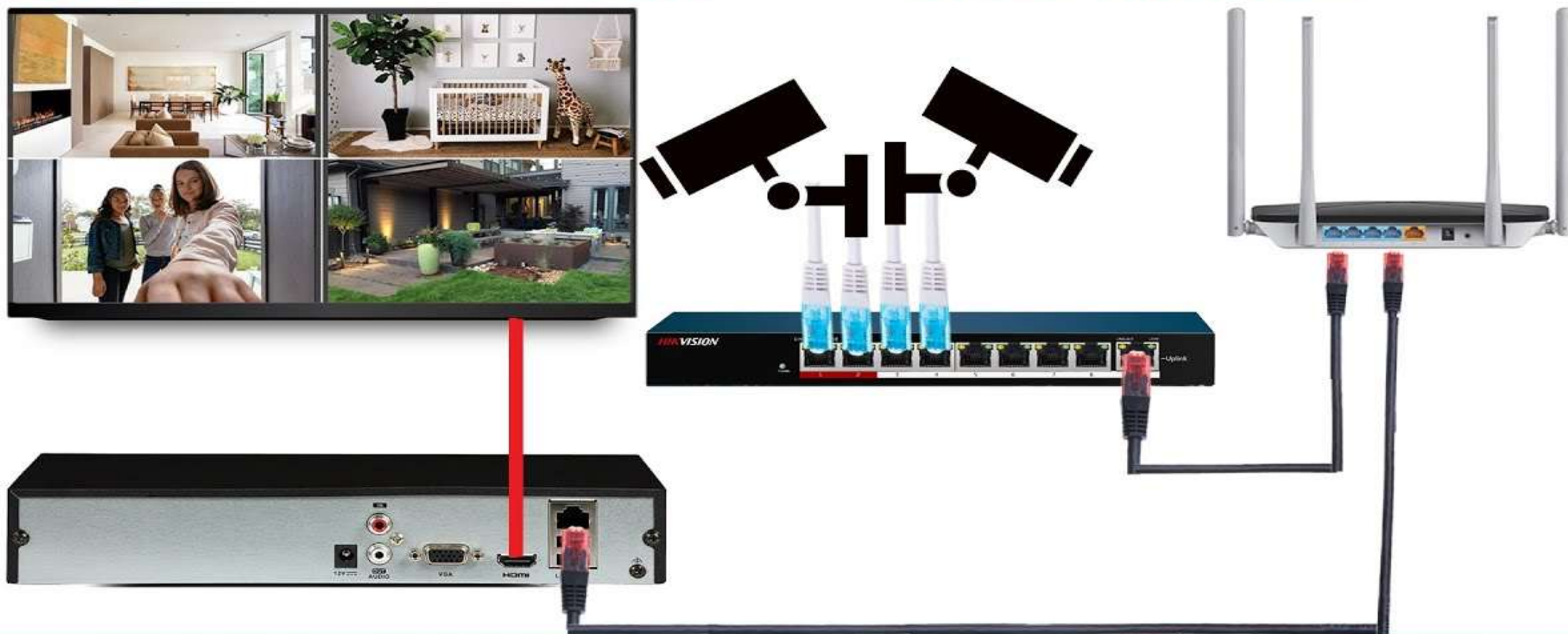


Video Recorder (DVR/NVR)

- Video Recorder is at the heart of the CCTV installation. They receive, manage, store and the record the video capture by the cameras.
- Video Recorders are two types
- DVR - Digital video recorder
- NVR – Network Video Recorder
- Not each DVR/NVR is the same. It comes in 4, 8 and 16 channel configurations. Each camera is connected to the channel. So it is important to buy the DVR/NVR with the right number of channels to support all your cameras. DVR/NVRs also vary in terms of recording speeds, compression, storage, and warranty.

DVR/NVR Parts and connection

HIKVISION NEW GUI INTERFACE NVR



**NVR & CAMERA UNBOXING | HDD INSTALL | POE CONNECTION
NVR ACTIVATION | ADD IP CAMERAS**

NVR/DVR HIKVISION



CABLES

- Coaxial / Ethernet
- CCTV can be analog or IP based.
- Depending on that the cables can be Coaxial cable or CAT5/CAT6 (RJ45) cables also known as Ethernet cables.
- Cable connected the camera with the DVR/NVR
- You can also find Siamese CCTV cables.
Siamese cables contain an coaxial cable that connects the camera to the DVR and an 18 gauge 2 conductor power cable that supplies power to the camera from the SMPS power supply.



CABLES

- VGA Cable
- Video Graphics Array is a standard type of connection for video devices such as monitors and projectors.
- HDMI Cable
- HDMI (High-Definition Multimedia Interface) provides an interface between any audio/video source for transferring uncompressed video data and compressed or uncompressed digital audio data from an HDMI compliant source device.



CABLE Connectors

- **BNC Connectors**
- A type of connectors used to connect coaxial cables.
- **RJ45 Connectors**
- A type of connectors used to connect Ethernet cables.



Storage devices

- Hard Disk Drive or HDD need to store the CCTV camera footage.
- It help to review the cctv footage.



Applications of CCTV camera

- Office
- Software buildings
- Business Parks
- Car parking
- Cash rooms
- Hotels
- Schools
- Retail
- Hospitals
- Shops
- Restaurants
- Stadiums
- Vandalism and theft
- Vending machines
- Public places and other large areas

Thank you.....