



HIKVISION

Hikvision Installer Training Program

First Choice for Security Professionals

CCTV System
Design

Product Selection

1.Site Survey-Camera Selection

- **By Resolution:** 2MP/4MP/8MP
- **By Appearance:** Bullet/Turret/ Dome/Boxing/Fisheye



**20 Series
Bullet Camera**



**21 Series
Dome Camera**



**23 Series
Turret Camera**



**25 Series
Mini Dome Camera**



**28 Series
Boxing Camera**



**29 Series
Fisheye Camera**



**26 Series
Bullet Camera**



**27 Series
Dome Camera**



**2T Series
Bullet Camera**

- **By Focus Lens:** FOV

Fixed Lens: 2.8mm/4mm/6mm

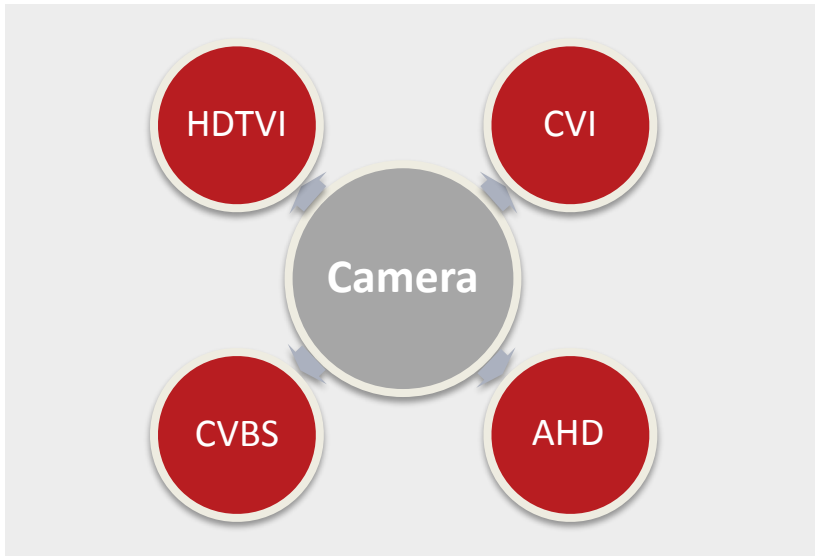
VF Lens: 2.8-12mm/8-32mm

Focal length(mm)	Distinguish details (human face)	Distinguish features (human profile)	Distinguish behavior (human activity)
X	X/2 m	X m	2X m

◆ X Means The Value of Focal Length

1. Site Survey-Turbo HD Analog Camera Selection

🗨️ **4 in 1**

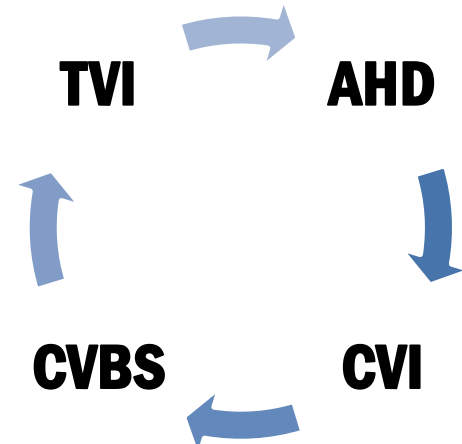


Signal output **switchable**



Switch Button

5 Seconds



1.Site Survey-Camera Selection, Object Distance

Object distance Focal length	2m	5m	10m	20m
f=2.7mm				
f=8mm				
f=12mm				
f=30mm				
f=50mm				

Focal length

Distance between the camera and object

1.Site Survey-Camera Selection, Camera Resolution

- Resolution refers to the number of pixels or individual color dots in an image. A high resolution image has more dots, which allows it to display more detail.

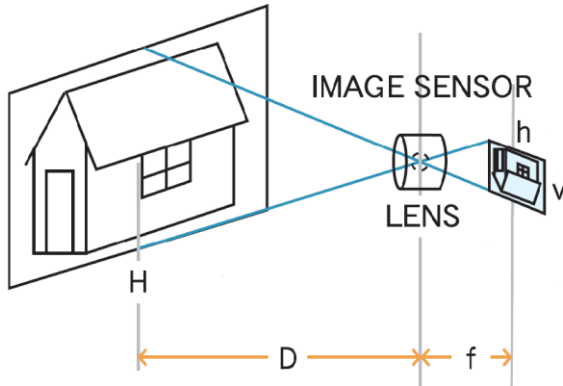


720P



4K

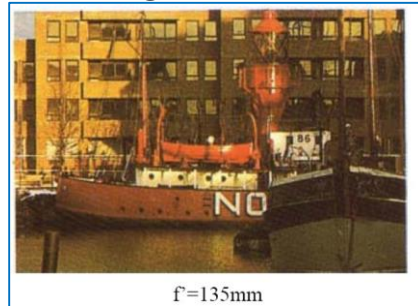
1.Site Survey-Camera Selection,FOV



$$\frac{f}{D} = \frac{v}{V} = \frac{h}{H}$$



Normal view



Telephoto view

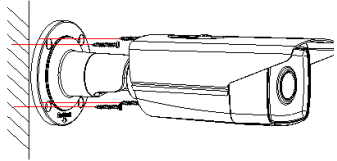
	1920x1080 1/3" & 1/2.8"		
	HFOV	VFOV	DFOV
2.8~12mm	113-33.8°	59-18.9°	137-38.8°
8~32mm	31.2-10.16°	17.4-5.76°	36-11.58°

- **Sensor Size Fixed**, longer focal length will make small FOV.
- **Focal Length Fixed**, larger sensor size will make large FOV.

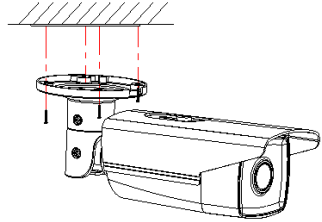
FOV: Field Of View

1.Site Survey-Camera Selection

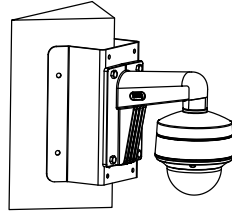
■ By Bracket:



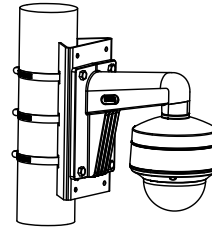
Wall Mount



Corner Mount



Pole Mount



In-Ceiling Mount

■ By Powering: POE/Hi-POE/Power Adaptor



First Choice for Security Professionals



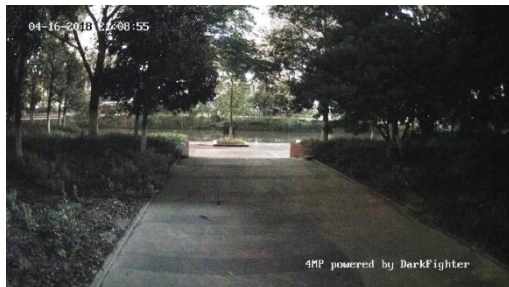
PoE Injector



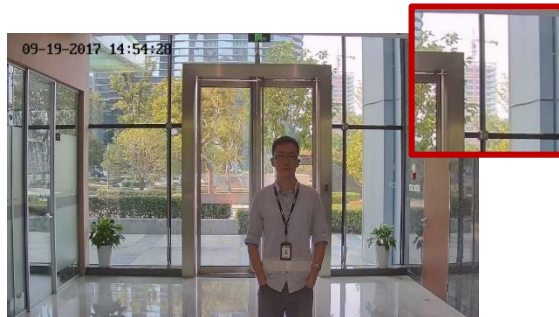
Power over Ethernet

1.Site Survey-Camera Selection

- **By Lightening Environment:** Low illumination/WDR/DNR...



Powered By Darkfighter



WDR



ColorVu

- **By Protection Level:** Indoor/Outdoor/IP67/IK10/NEMA 4X/ATEX...



2.Site Survey-Backend Device Selection

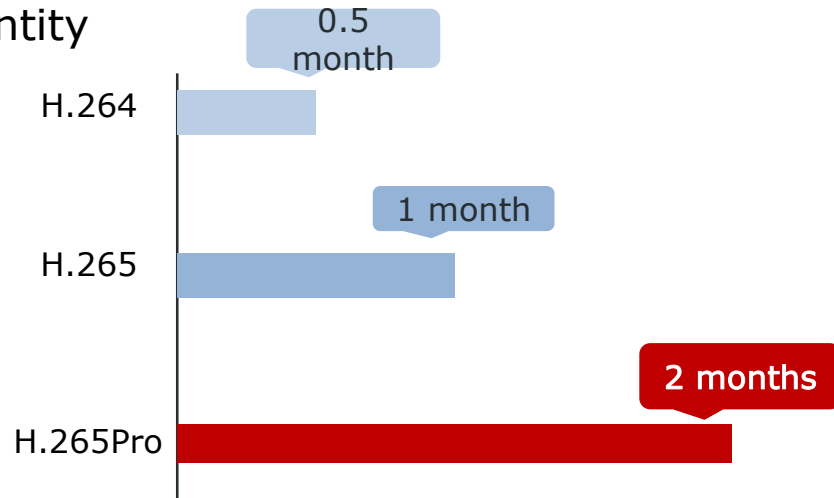
■ By Storage Capacity: HDD and the Quantity



8 pcs 2MP cameras
Or
2 pcs 8MP cameras



5TB
HDDS



■ By Bandwidth : (IP System/Turbo HD DVR)

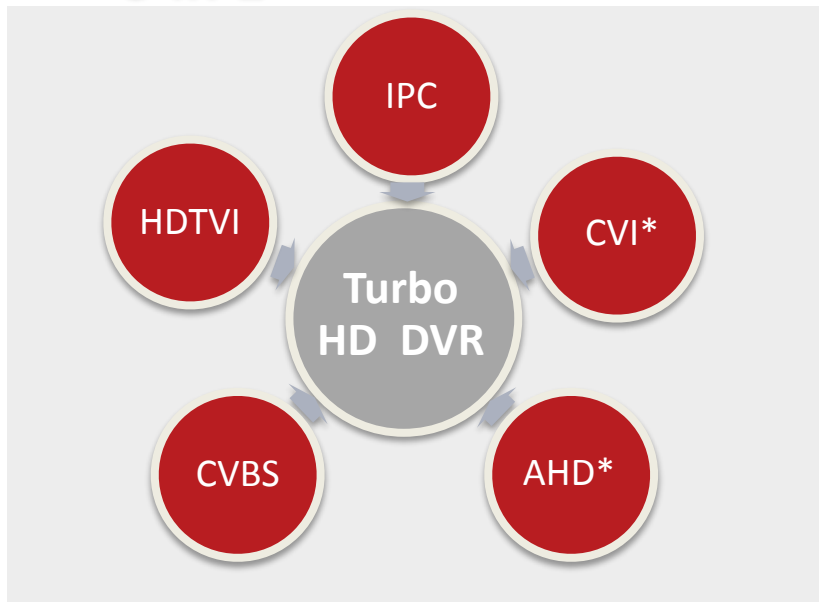
Bitrate : amount of data encoded per second ↑(bps) ↑ Quality

$$\text{Bandwidth (Mbps)} = \text{Bitrate (Main)} * N + \text{Bitrate (sub)} * M$$

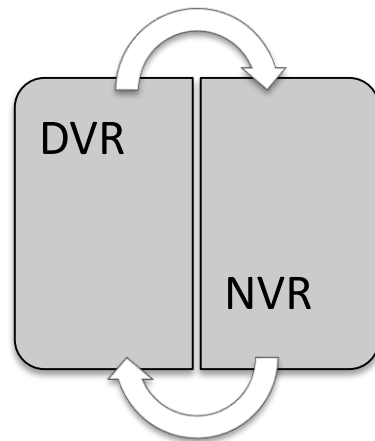
2.Site Survey-Backend Device Selection

- **By Accessing Capability:** IP Channels/Analog Channels

5 in 1



IP Channel Access

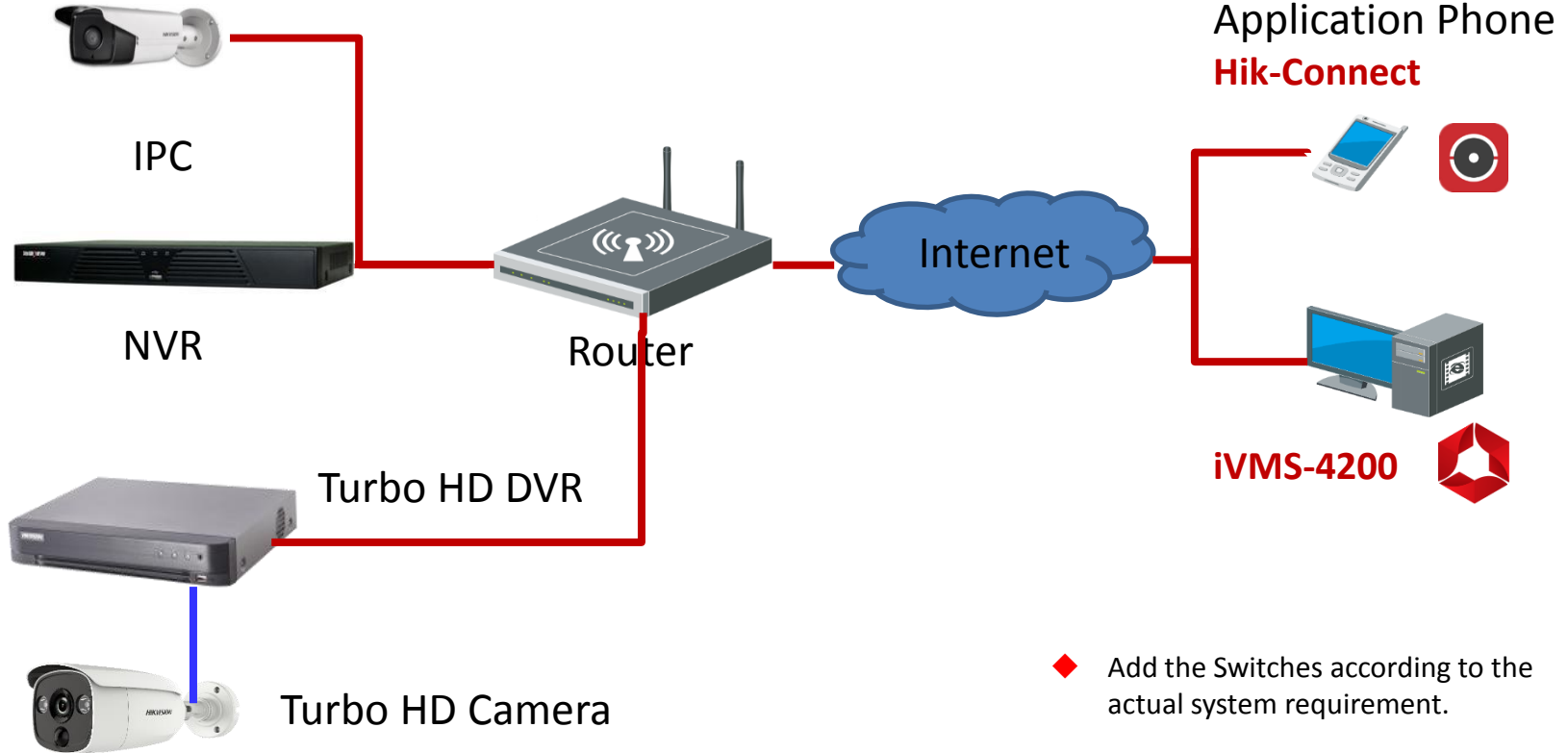


- No IP channel
- Fixed IP channel
- IP channel Expansion

CCTV System
Design

CCTV System Topology

3.Site Survey-CCTV System Topology

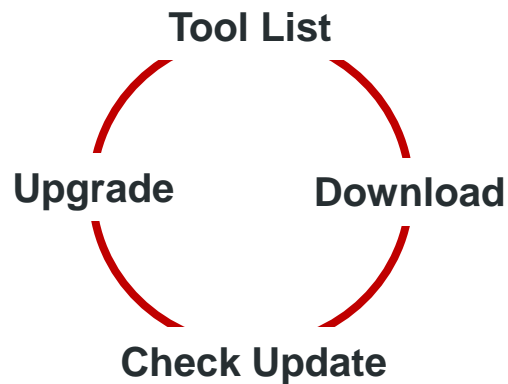


◆ Add the Switches according to the actual system requirement.

CCTV System
Design

Hikvision Tools

1. CCTV System-Hikvision Tools Manager



Tools Manager



SADP



Remote Backup



Lens Selection



Hik Design Tool



Storage and
Network Calculator



Batch Configuration



VSPlayer

1.1 CCTV System-SADP Tool



- Device Activation;
- IP Address
- Modification
- Hik-Connect Service
- Password Reset

Total number of online devices: 19

ID	Device Type	Status	IPv4 Address	Port	Enhanced SDK Service...	Software Ver...	IPv4 Gate...	HTT
001	iDS-9616NX-18/FA	Active	10.9.97.28	8000	N/A	V4.1.54build ...	10.9.97.254	80
002	DS-7316HUHI-K4	Active	10.9.97.20	8000	N/A	V4.20.000bui...	10.9.97.254	80
003	DS-2TD4136-25	Active	10.9.97.88	8000	N/A	V5.5.2build 1...	10.9.97.254	80
004	DS-2CD2125G0-IMS	Active	10.9.97.54	8000	8443	V5.5.83build ...	10.9.97.254	80
005	DS-2CD2H85FWD-...	Active	10.9.97.123	8000	8443	V5.5.82build ...	10.9.97.254	80
006	iDS-2CD426G0/F-I	Active	10.9.97.37	8000	N/A	V5.4.66build ...	10.9.97.254	80
007	DS-2CD4A26FWD-...	Active	10.9.97.56	8000	N/A	V5.4.5build 1...	10.9.97.254	80
008	iDS-2PT9122DX-D/S	Active	10.9.97.91	8000	N/A	V5.4.10build ...	10.9.97.254	80
009	DS-2CD2725FWD-I	Active	10.9.97.17	8000	N/A	V5.5.51build ...	10.9.97.254	80
010	iDS-2VS235-F836	Active	10.9.97.252	8000	N/A	V5.5.7build 1...	10.9.97.254	80
011	DS-2CD7126G0/L-...	Active	10.9.97.71	8000	8443	V5.5.91build ...	10.9.97.254	80
012	DS-2DF6A236X-AEL	Active	10.9.97.79	8000	8443	V5.6.0build 1...	10.9.97.254	80
013	DS-2DF8436X-AEL	Active	10.9.97.34	8000	8443	V5.6.0build 1...	10.9.97.254	80
014	DS-2CD55C5G0-IZS	Active	10.9.97.23	8000	8443	V5.5.90build ...	10.9.97.254	80
015	DS-2CD2346G2-I	Active	10.9.97.38	8000	N/A	V5.5.61build ...	10.9.97.254	80
016	DS-2DE7232W-AE	Active	10.9.97.77	8000	8443	V5.6.0build 1...	10.9.97.254	80
017	DS-2CD2532F-IS	Active	10.9.97.32	8000	N/A	V5.2.0build 1...	10.9.97.254	80
018	IPC-B650H-Z	Active	10.9.97.16	8000	8443	V5.5.81build	10.9.97.254	80

Modify Network Parameters

- Enable DHCP
- Enable Hik-Connect

Device Serial No.:

IP Address:

Port:

Enhanced SDK Service Port:

Subnet Mask:

Gateway:

IPv6 Address:

IPv6 Gateway:

IPv6 Prefix Length:

HTTP Port:

Security Verification

Admin Password:

- **Search Active Devices Protocol** software is a user-friendly and installation-free online device search tool. It searches the devices within your subnet and displays the information of the devices. Using this software, you can also modify the basic network parameters including IP address, subnet mask, gateway, etc.

1.2 CCTV System-Batch Configuration



Batch Configuration

The screenshot displays the 'Batch Configuration' software interface. At the top, there is a toolbar with various actions like Refresh, Add, Delete, Upgrade, Batch Configuration, Export Device, Add IPC, Restore Default Parameters, Reboot, Wiper, ONVIF, Set via ISAPI, Health Monitoring, CGI, UPnP, Time Synchronization, Set Video Parameters, Bin, Upgrading Detection, and Download Cert. Below the toolbar, there are two tables showing device lists.

Table 1 (Top):

ID	Device Type	IP Address	Port	Chan...	Firmware Version	Serial No.	Upgrade	Operation	Status
001	DS-2CD55C5...	10.9.97.23	8000		V5.5.90 build 18...	DS-2CD55C5G0-L...	Unknown		Offline
002	DS-2CD7126...	10.9.97.71	8000		V5.5.90 build 18...	DS-2CD7126G0/...	Unknown		Offline

Table 2 (Bottom):

ID	Device Type	Security	IPv4 Address	Port	Firmware Version	IPv4 Gateway	HTTP Port	Device Serial No.	Subnet Mask	MAC Address	Encoding Cha
001	iDS-9616NX...	Activat...	10.9.97.28	80...	V4.1.54build 18...	10.9.97.254	80	iDS-9616NX-18/F...	255.255.25...	b4-a3-82-bc...	0
002	DS-7316HU...	Activat...	10.9.97.20	80...	V4.20.000build ...	10.9.97.254	80	DS-7316HUHI-K...	255.255.25...	00-40-3a-73-7...	16
003	DS-2CD55C5...	Activat...	10.9.97.23	80...	V5.5.90build 18...	10.9.97.254	80	DS-2CD55C5G0-L...	255.255.25...	94-e1-ac-6c-b...	0
004	DS-2TD4136...	Activat...	10.9.97.88	80...	V5.5.2build 180...	10.9.97.254	80	DS-2TD4136-252...	255.255.25...	a4-14-37-80-3...	0
005	DS-2CD4A26...	Activat...	10.9.97.56	80...	V5.4.5build 180...	10.9.97.254	80	DS-2CD4A26FW...	255.255.0.0	54-c4-15-6d-a...	0

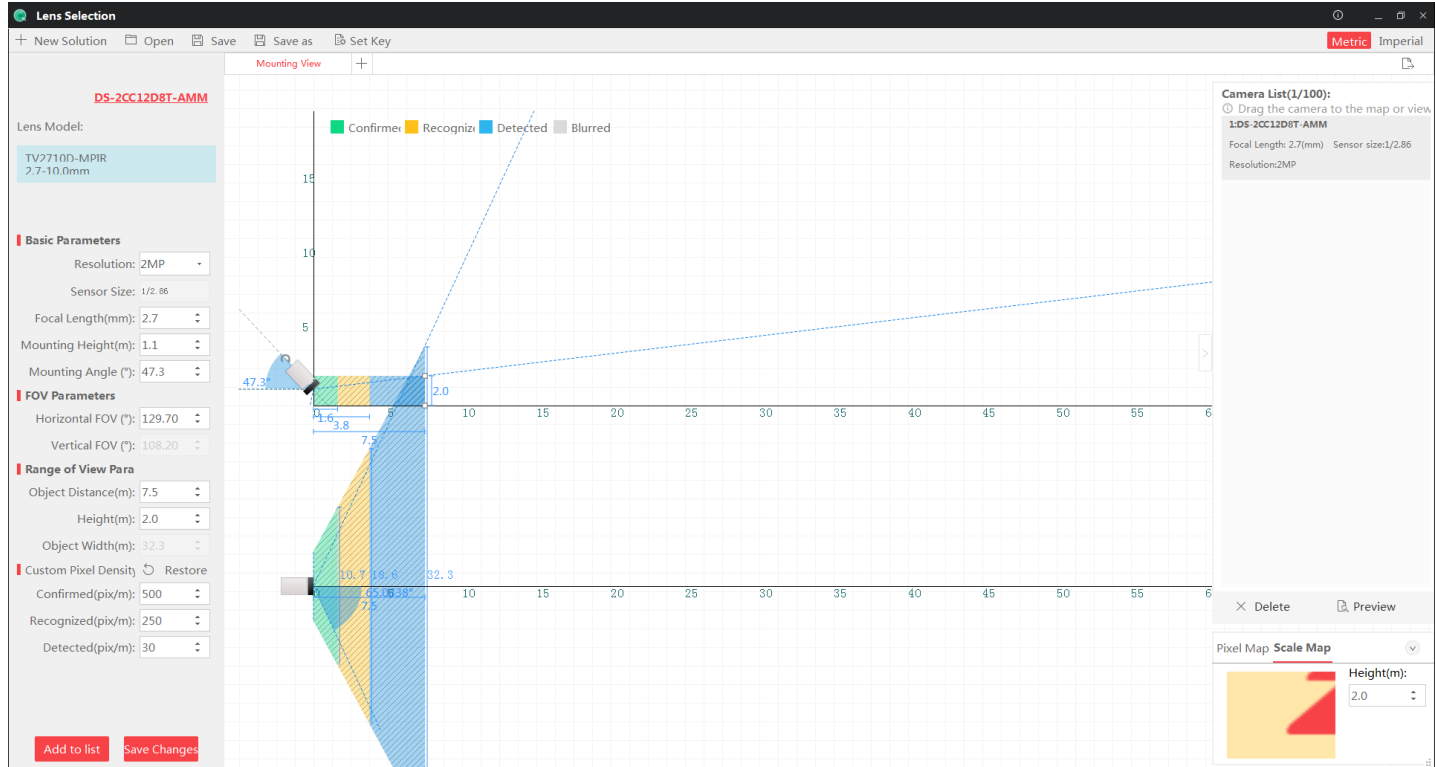
At the bottom of the interface, there is an 'Error Message(0)' field with a red 'x' icon.

- **Batch Configuration** is a versatile device management software for the DVRs, NVRs, IP Cameras, Encoders, and so on. You can activate devices, configure the parameters, manage the devices, upgrade devices in a batch with this tool.

1.3 CCTV System-Lens Selection



Lens Selection

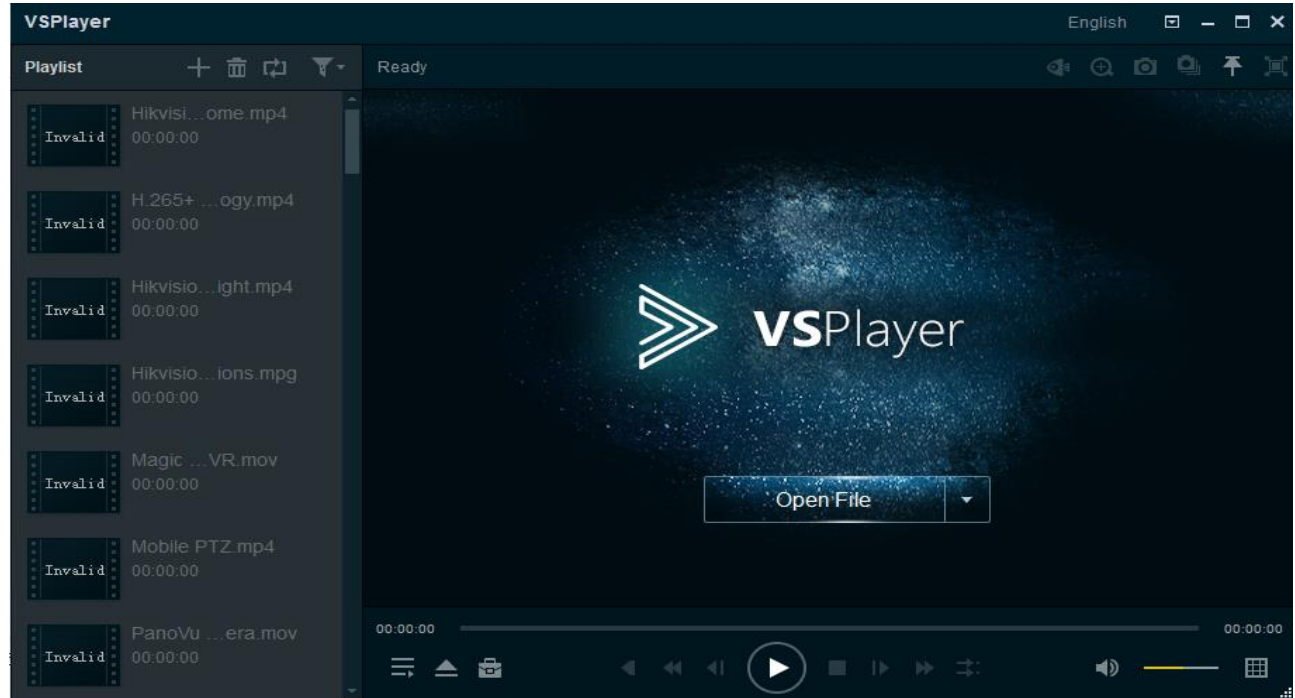


- **Lens Selection** helps to create the camera deployment on the map according to your requirements, and calculate the installation parameters, such as field of view and pixel density.

1.4 CCTV System-VSPlayer



VSPlayer



- **VSPlayer** software is a media player designed for Windows and Mac OS system. It provides an intuitive, convenient way for playing media files and video control, and supports multiple audio and video formats. It also supports playing the PanoVu camera video file in original mode or PTZ mode.

1.5 CCTV System-Remote Backup



Remote Backup

The screenshot shows the 'Remote Backup' software interface. At the top, there are navigation tabs: 'Manual Backup', 'Scheduled Backup', 'Video Search', 'Log Search', and 'Device Management'. Below these, the current backup status is shown: 'Manual Backup Current Backup Number 1' with a speed of '4431.6 KB/S'. A progress bar for backup '13' is shown at 77% completion, with a time of '00:00:04'. Below the progress bar, a list of backup items is shown, including '10.9.97.28 Di...' at 77% completion, with a size of '21MB/27MB' and a time range of '2019-05-07 11:23:21/2019-05-07 11:28:01'. A tooltip for '10.9.97.28 Digital Channel 08' is visible. At the bottom, there is an 'Error Information (5)' section with a 'Clear' button and a search filter. The error table is as follows:

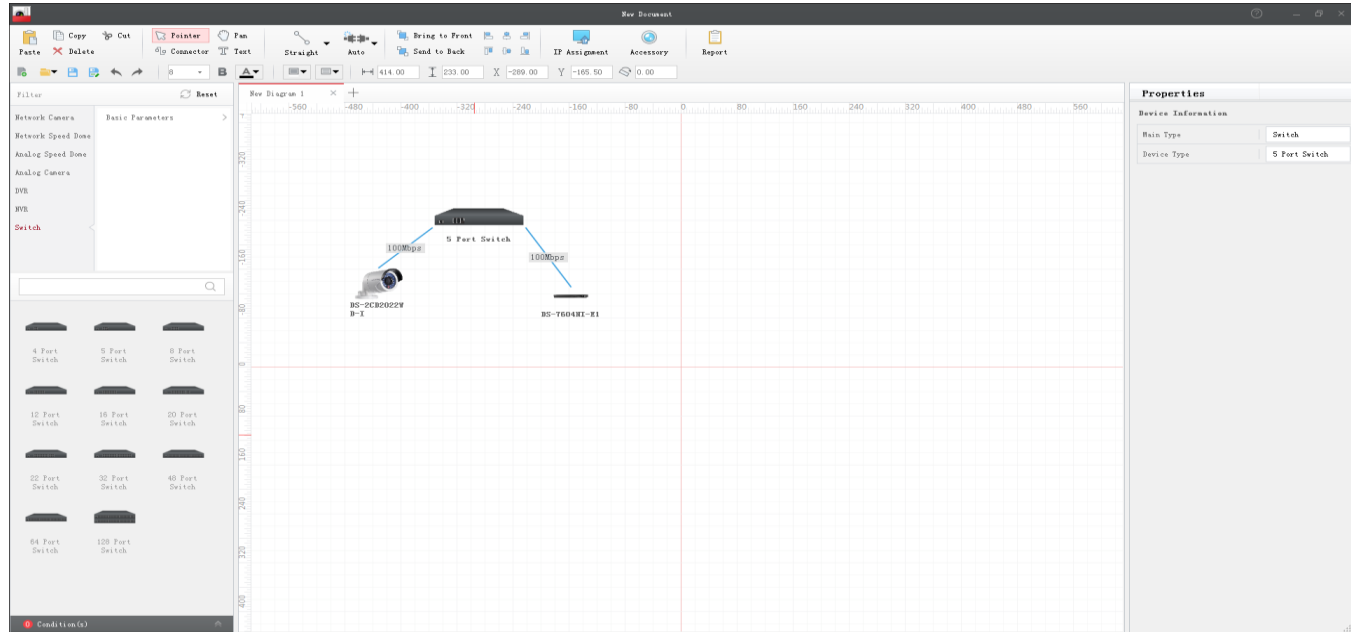
No.	Time	Days of the ...	Schedule Name	Device IP Address	Device Name	Back Details
0005	2019-05-07 11:26:59	Tue	12	10.9.97.28	10.9.97.28	10.9.97.28 Digital Channel 07 No video files can be backed up.
0004	2019-05-07 11:26:58	Tue	12	10.9.97.28	10.9.97.28	10.9.97.28 Digital Channel 06 No video files can be backed up.
0003	2019-05-07 11:26:54	Tue	12	10.9.97.28	10.9.97.28	10.9.97.28 Digital Channel 04 No video files can be backed up.
0002	2019-05-07 11:26:50	Tue	12	10.9.97.28	10.9.97.28	10.9.97.28 Digital Channel 02 No video files can be backed up.
0001	2019-05-07 11:26:49	Tue	12	10.9.97.28	10.9.97.28	10.9.97.28 Digital Channel 01 No video files can be backed up.

- **Remote Backup** software can backup the video files that stored in the device and save the video files to the local disks. It supports manual backup and scheduled backup.

1.5 CCTV System-Hik Design Tool



Hik Design Tool



- **Hik Design Tool** is a graphical drawing application for designing surveillance solution with multiple Hikvision products. You can search and select a desired product icon while drawing the system diagram. You can also edit the device quantity according to the actual needs. After the diagram is completed, you can export the diagram.

Hik Design Tool

MAP
Hik Design Tool can import a picture as the map, to help you allocate Hikvision devices in precise position

Report Export

Hik Design Tool can generate exportable system diagram with product shapes, product properties and device.

Device List

Hik Design Tool can help you select a series of the most recent models with reference, device parameters



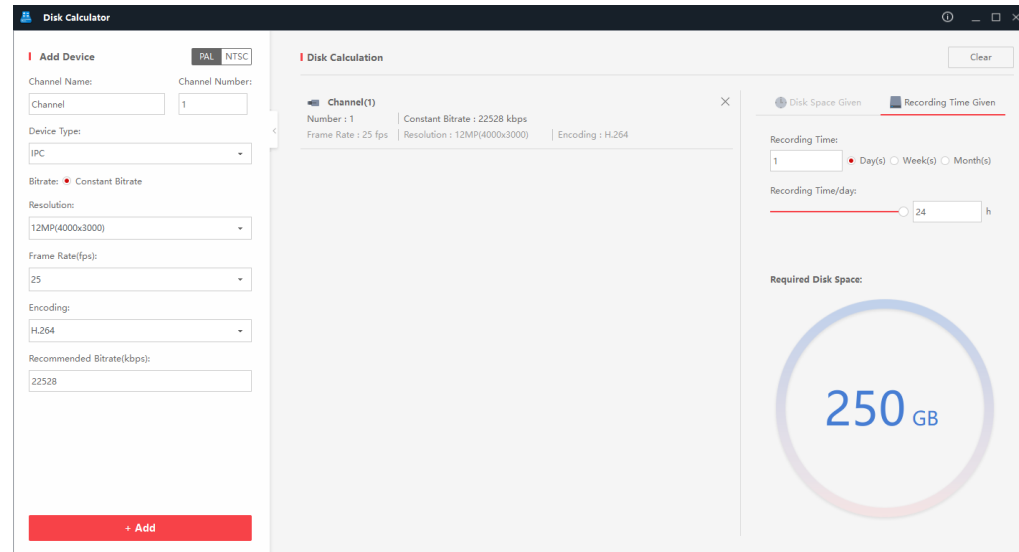
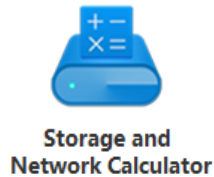
Component-based
To calculate bandwidth and storage for the system.

Bandwidth

To calculate bandwidth and storage for the system

1.6 CCTV System-Storage Calculation

$$\text{Storage Space (GB)} = \text{Bitrate (Kbps)} * 1000/8 * 3600 * 24 * \text{Cameras} * \text{Days}/1000\ 000\ 000$$



- **Storage and Network Calculator** software can calculate the video recording length, storage space, and bandwidth requirements for the selected cameras. After inputting project parameters, including channel name, channel number, video standard, scenarios complexity, resolution, frame rate encoding mode and recommended bitrate, related result will be generated automatically.

1.6 CCTV System-Hikvision Views

Product Comparison		
Image		
Mode	DS-2CD2025FWD -I	DS-2CD2035FWD -I
Name	2MP EXIR Mini Bullet network camera	3 MP Ultra-Low Light Network Bullet Camera
Max. Resolution	1920 × 1080	2048 × 1536
Frame Rate	50Hz: 25fps (1920 × 1080, 1280 × 960, 1280×720) 60Hz: 30fps (1920 × 1080, 1280 × 960, 1280 × 720)	50Hz: 25fps (2048 × 1536, 1920 × 1080, 1280×720) 60Hz: 30fps (2048 × 1536, 1920 × 1080, 1280 × 720)



Calculator

More Calculators Are On The Way

Recording Capacity
139353

NVR Channel
104770

Focal Length
73471

Bandwidth
44821



Hot Product

16:20:44 2017-12-15

HIKVISION

[I guess you want to ask]

1. How to Enable Hik-Connect Service in Device
2. How to configure alarm notification on Hik-connect ?
3. How to solve Hik-Connect offline issue
4. How to connect cameras located in different sites to one recorder?
5. How to configure alarms in the recorder menu

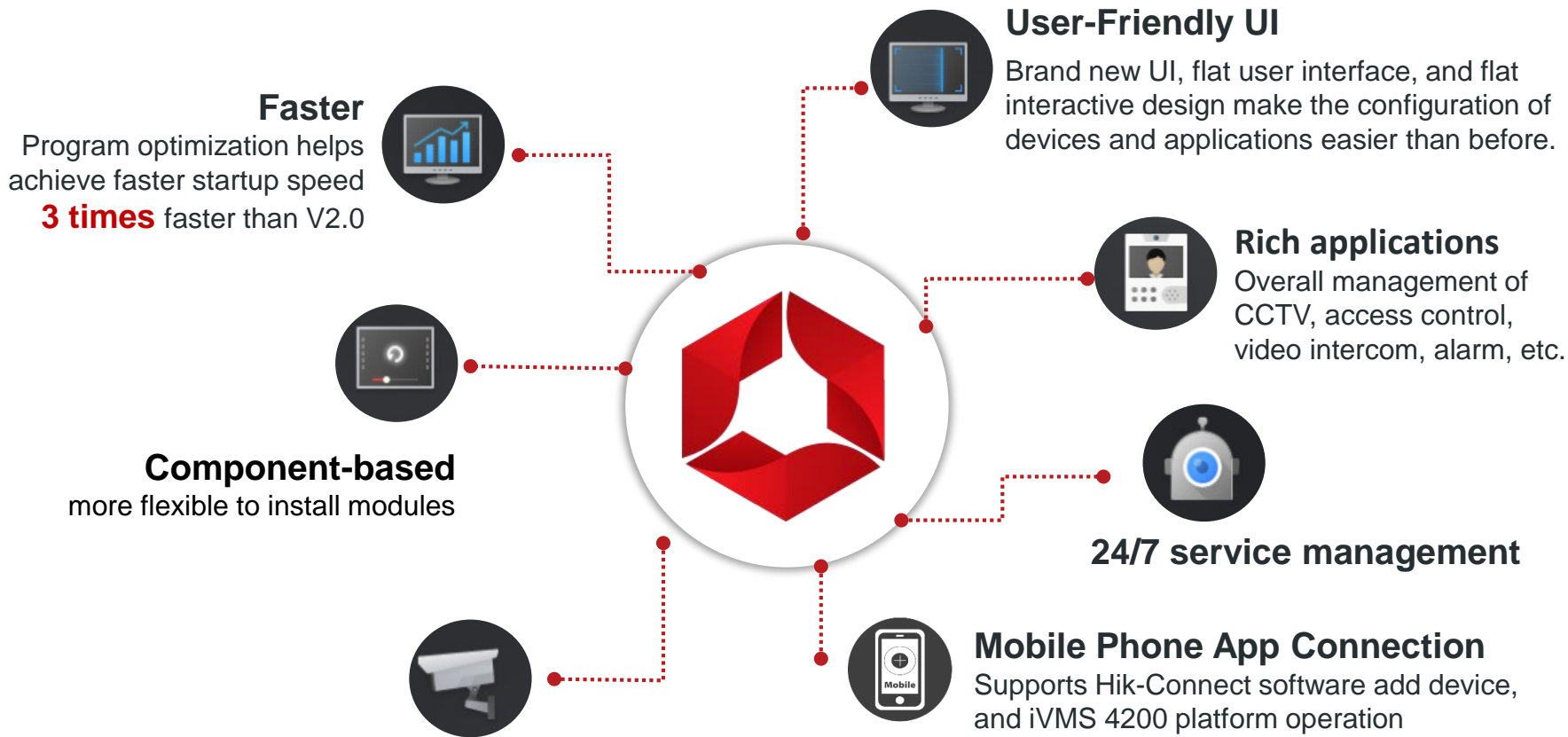
First Choice for Security Professionals

New Product

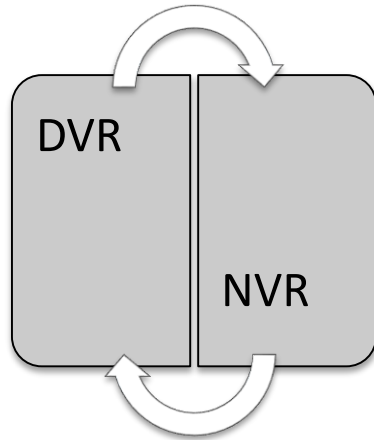


1.6 CCTV System- iVMS-4200 V3.1

HIKVISION

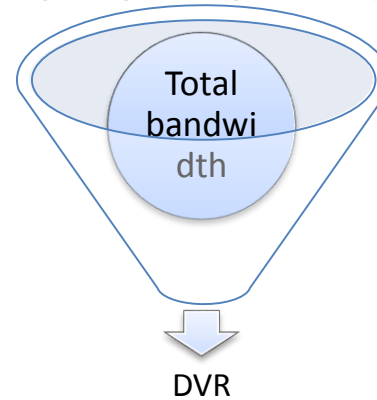


IP Channel Access



- No IP channel
- Fixed IP channel
- IP channel expansion

Bandwidth Control



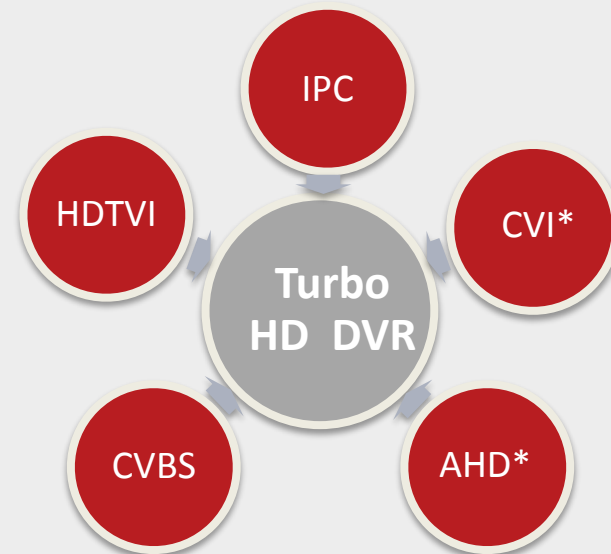
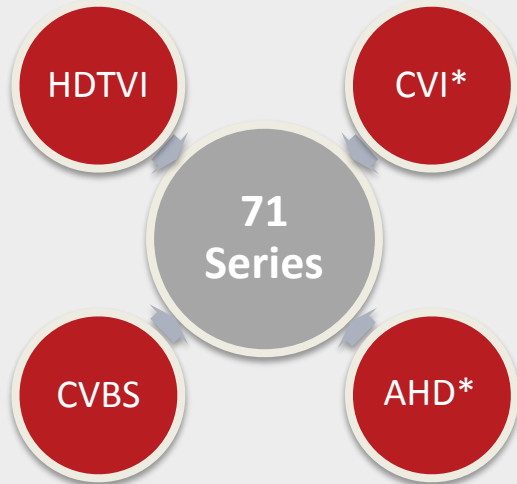
- By default, bandwidth on DVR can be taken as output bandwidth
- Once IP cameras access, it occupies corresponding bandwidth
- Output bandwidth is configurable (from v3.4.70)

Analog System Selection

Turbo Hybrid DVR

5 in 1

Turbo 3.0



Thanks!

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