

HD-CCTV

EverFocus[®]
System & Solutions Provider

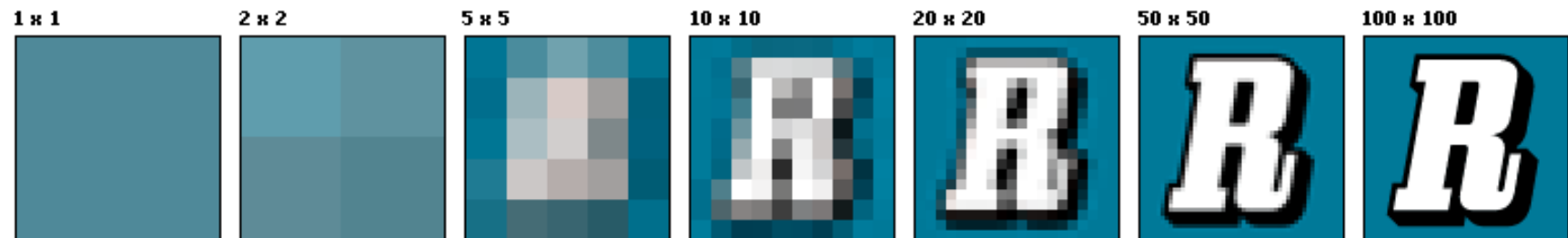
HD-CCTV
Megapixel over Coax
No Networking Required

DVRs, Cameras, Repeaters
Fiber Transmitters, Receivers, Monitors

 **EverFocus**

What's a Pixel?

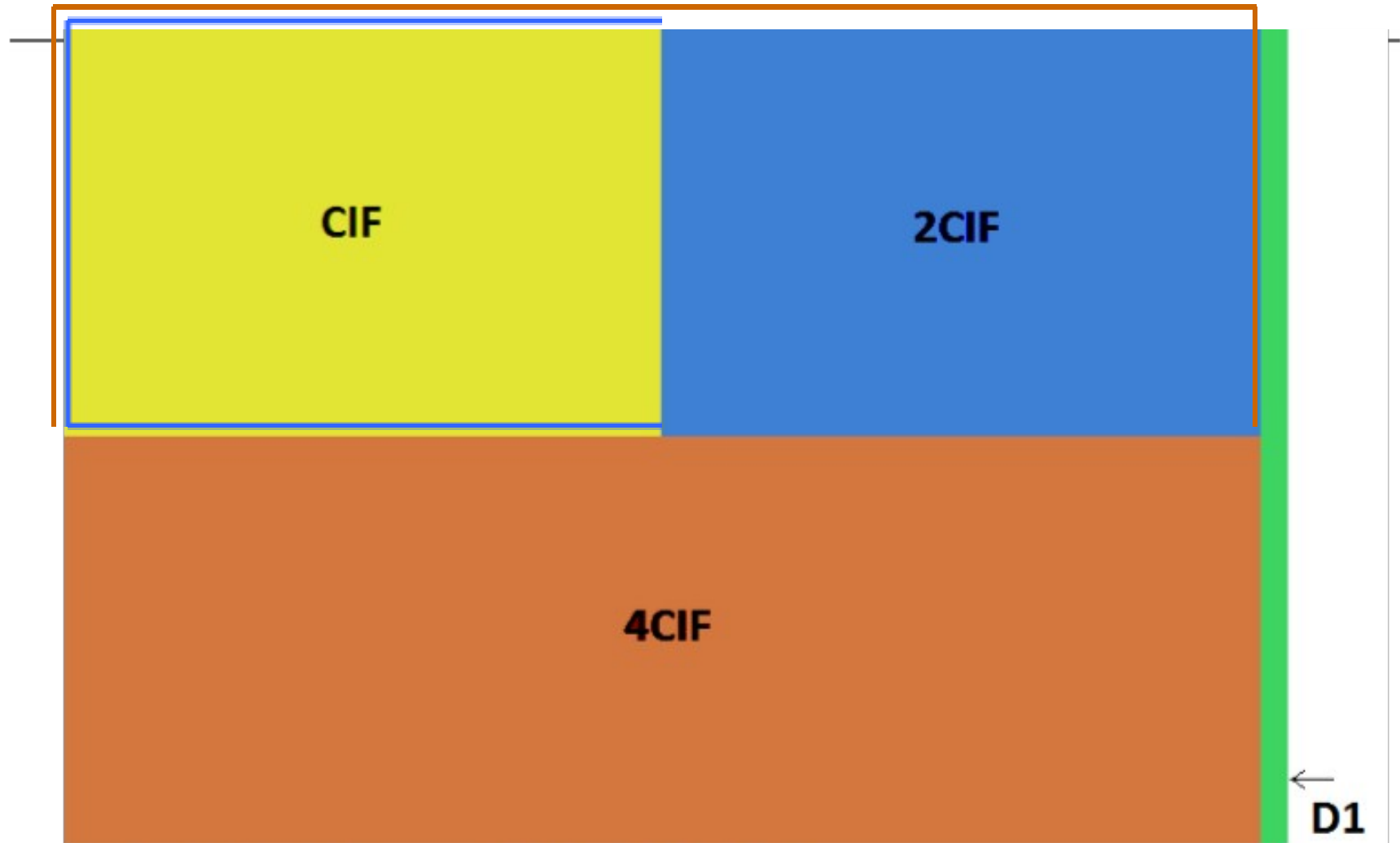
- Pix-el is a picture element
- Analog or digital
- Pictures composed of dots
- More Dots = better clarity



How Many Pixels is Enough?

- Analog CCTV ~ 704x480 pixels
 - D1 /4 CIF
 - Sometimes 720x480
 - Round vs. square pixels
 - Standards for MPEG4/H.264 compression
- That's about 338,000 pixels
- Or ~1/3 megapixel
- 'Satisfactory' performance

Traditional Image Resolutions



D1 = 720x480

4CIF = 704x480

2CIF = 704x240

CIF = 352x240



Traditional Image Resolutions

DIGITAL VIDEO RESOLUTIONS SYSTEM H V TOTAL

CIF 352 X 240 = 84480

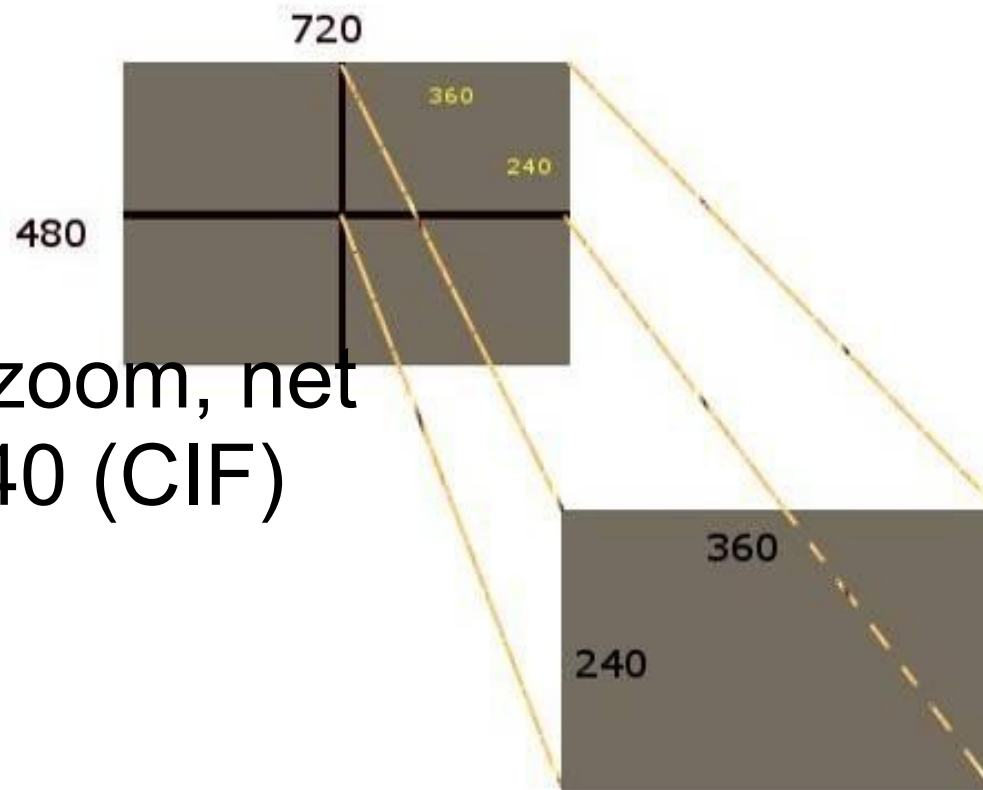
2CIF 720 X 240 = 172800

VGA 640 X 480 = 307200

4 CIF 704 X 480 = 337920

NTSC: D1 ~ 4 CIF

- NTSC resolution is ~704x480



- At 2X zoom, net is 352x240 (CIF)

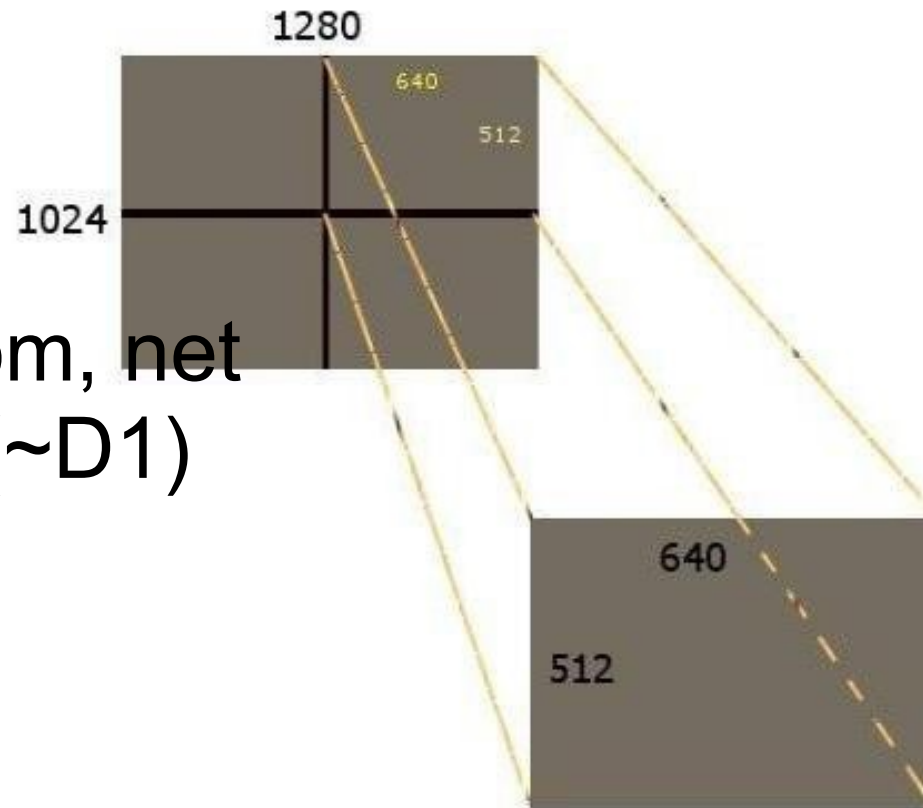
Why Megapixel?

- More pixels
- More detail
- Better ability to zoom
- Zoom image is useable
- Digital transmission for noise immunity



The more you start with....

- At 1.3 Megapixel resolution (1280x1024)



- At 2X zoom, net is 640x512 (~D1)

...the more you can zoom

Why *IP* (Network Cameras)?

- Right solution for *some* applications
- Send IP Video
 - Across the building
 - *Across the street*
 - *Around the world*
- Simplify installation if existing network wiring
- Multiple viewing and recording sites without matrix switchers
- Every PC becomes a monitoring/recording station
- Easy to piggyback RS485 and two-way audio

Why *IP* (Network Cameras)?

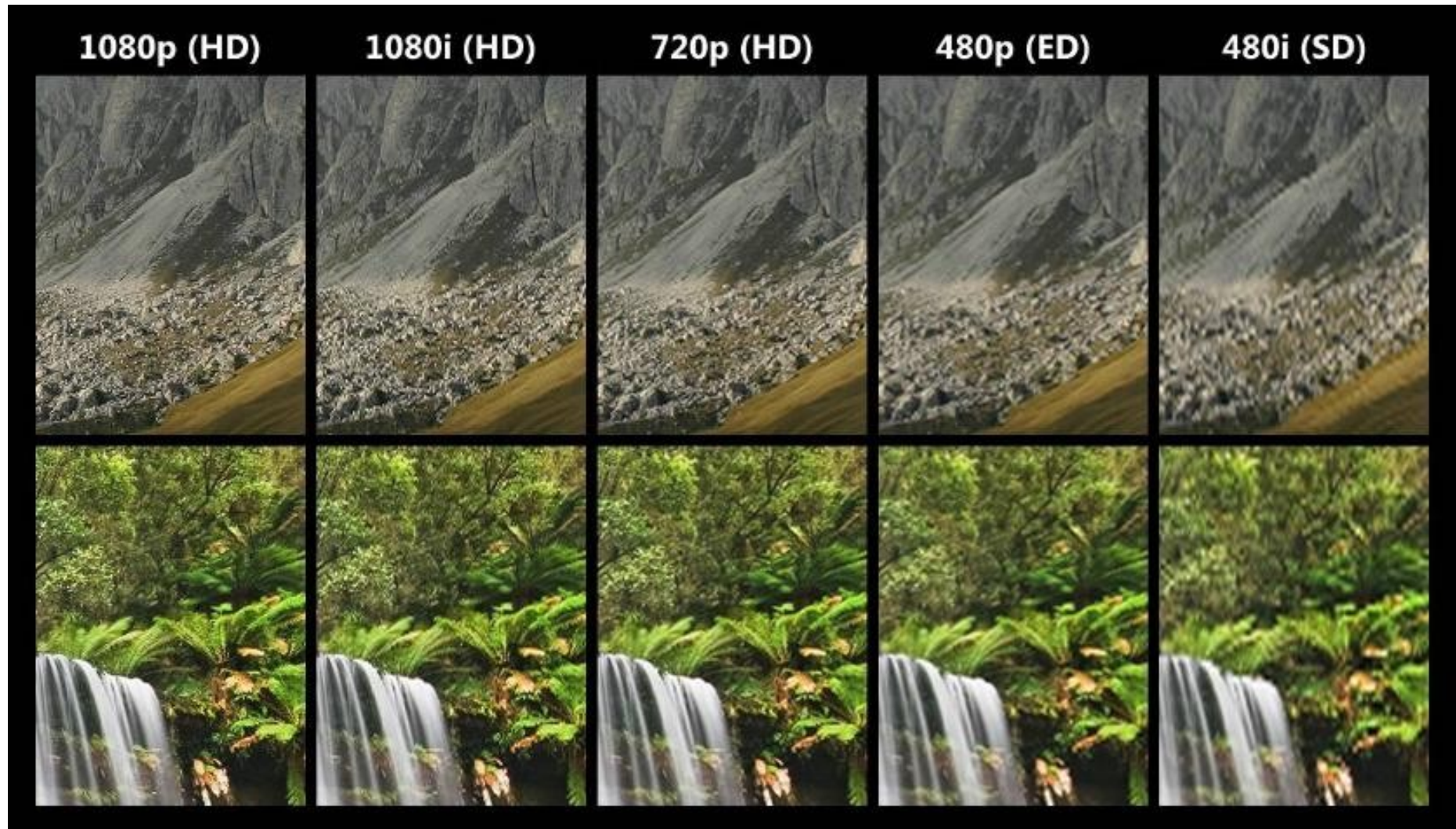
- Move image: camera ♥ screen
- Many pixels: much data
- Ethernet: high bandwidth
 - 10Mb/s to 1000Mb/s (Gb/s)
 - Remember: typical 30%-40% throughput
- Until now, the only way

What is HDTV?

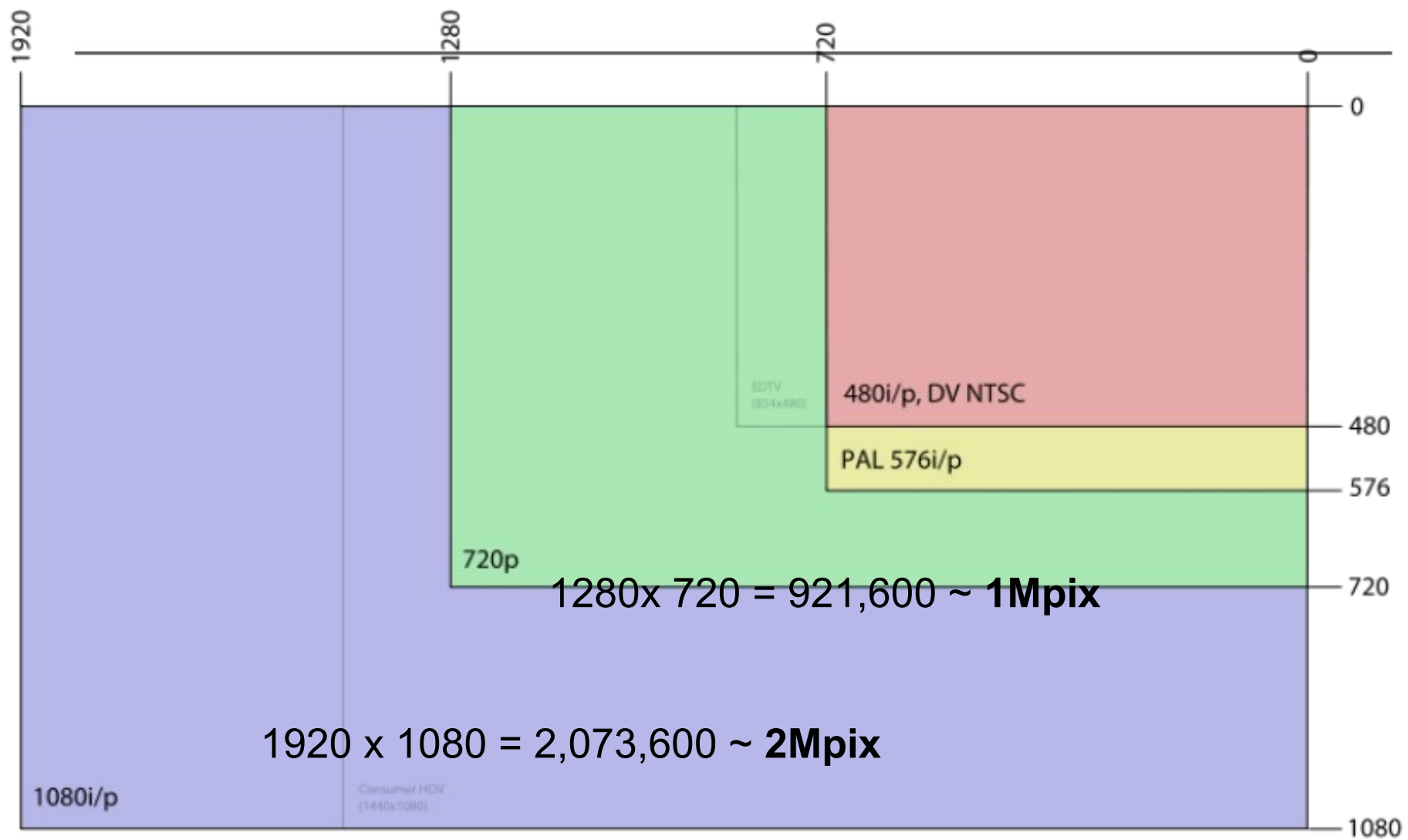
- Higher resolutions
- Current state of the art
 - Broadcast
 - Consumer
 - NOW Surveillance, too!
- 720 (~1Mpix) and 1080 (~2Mpix) lines
- Progressive and Interlaced
- Reference: NTSC is 525i



Resolution Comparison



HD Resolution vs SD Resolution



HDTV Improvement

- 720p
 - ~ 1 Megapixel
 - ~3X better than SD/NTSC
- 1080p
 - ~2 Megapixel
 - ~6X better than SD/NTSC



Can We Use This?

- How to connect?
- HDMI cables
 - Too short
 - Too expensive
 - Too complex
- Need a transport System
 - Hundreds of feet
 - Economical
 - Practical

Enter HD-SDI/HD-CCTV

- **High Definition—Serial Digital Interface**
- SMPTE292m complaint
- High Speed to Carry Data
- Digital for Noise Immunity
- Designed for
 - Longer Distances
 - Over ***Plain Old Coax!!***
 - Uses BNC Connectors



HD-CCTV

- 1 & 2 Megapixel HD
- Over RG59 coax with BNCs
- NO Networking
- NO IP addressing
- No Modems
- NO Routers
- NO Ports



How Does HD-CCTV Connect?



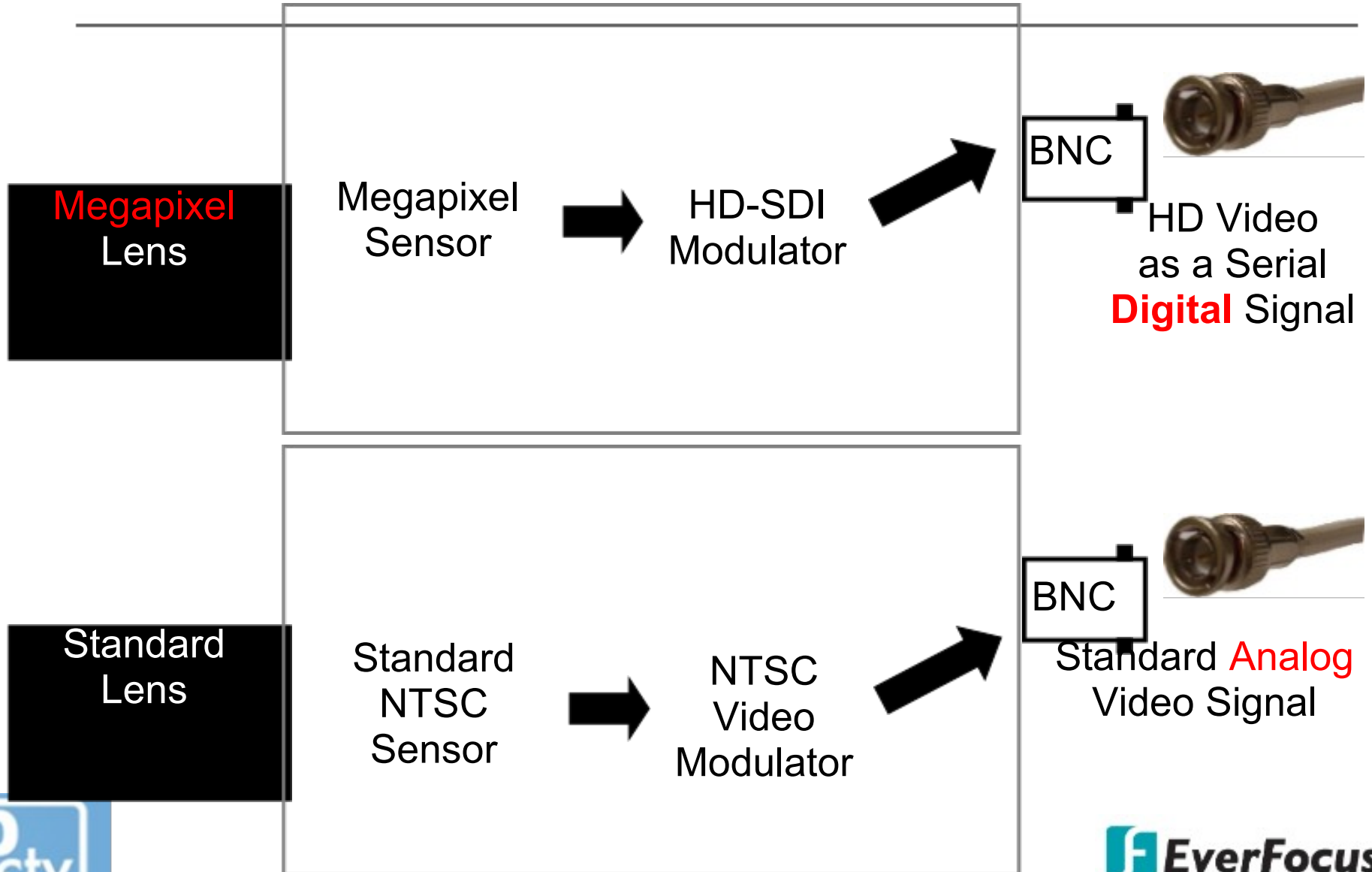
HDMI



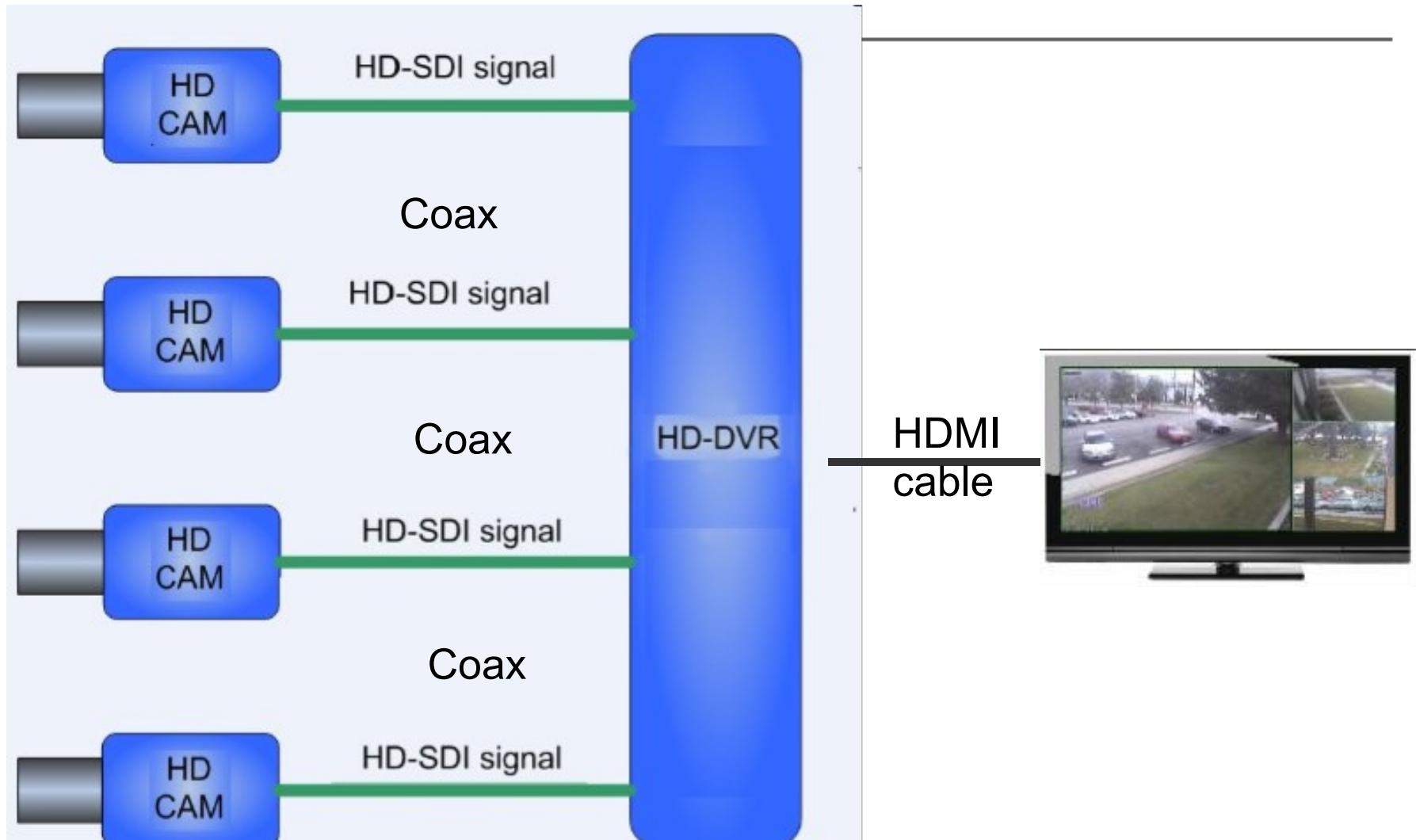
- Home run RG59 Coax
- BNC Connectors
- Sound familiar?



What's Inside a Camera?



Four Camera System



HD-CCTV Benefits

- Simple, Easy Transition/Upgrade
 - Uses familiar coax and BNC connectors
 - Change only camera/DVR/monitor
- Familiar, Reliable User Interface
 - Same setup/menus as before
 - Installer just sees additional resolutions
 - 1280 x 720 & 1980 x 1080
 - Conventional resolutions retained



HD-CCTV Benefits

- Surveillance-Grade Reliability
 - Continuous video stream
 - No packets to delay or drop
 - No compression distortion
 - No freezing/frame interruptions



HD-CCTV Benefits

- Full bandwidth per camera
 - ***Real time (30FPS) on every camera***
 - ***Full HD resolution on every camera***
 - Each coax adds a *full capacity path*
 - No 'network congestion'
 - No battles with IT managers
 - No IP-V6 concerns



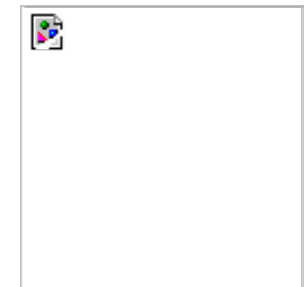
HD-CCTV Benefits

- True Live View
 - Real-Time Response
 - No added signal delay/latency
 - Practical speed dome P/T/Z control
- Higher resolutions
 - Improved quality
 - Crisp, clear, unadulterated digital images
 - Clearest possible analytics inputs
 - Digital P/T/Z



EverFocus HD-CCTV Initial Release

- Cameras
 - Field select
 - 1080p/2Megapixel
 - 720p/1Megapixel
 - Has NTSC Test Monitor Option
 - Use your EN220 to aim and focus!!
 - EQH5200 traditional type
 - EDH5240 indoor IR dome
 - EHH5200 outdoor vandal dome



EverFocus HD-CCTV Initial Release

- DVR
 - EPHD08
 - Paragon style case
 - 8 cameras
 - 1080p@120FPS / 720p@240FPS
 - HDMI/VGA (1920x1080) main monitor out
 - Storage up to 8TB internal
 - eSATA support for EDA450



HD-CCTV Cable Lengths

- Nominal RG-59 cable: 524'
- With RG6 cable: 755'
- With RG11 cable: 1083'

- Options for longer runs:
 - HD-CCTV repeater/booster
 - HD-CCTV Fiber media converters

HD-CCTV Accessories

- Repeater/Converter
 - EHA-SRX
 - For coax
 - Extends range of RG59 additional 500'
 - Has HDMI output
- Fiber Media Converter Sets
 - Multi mode fiber options
 - Single mode fiber options
 - Range from 1000' feet to several miles



IP Market Position

- IP is the right solution for *some* applications
- We have a broad IP offering
 - Indoor and outdoor cameras
 - Sophisticated PTZs
 - Video servers
 - NVR Hardware and software
- But, as an alternative to 'SD' CCTV.....

HD-CCTV Market Position

- Megapixel in continuous real time
- Megapixel without bandwidth limitations
- Megapixel without IP 'issues'
- Megapixel over RG59 coax
- Megapixel on a familiar DVR platform
- Megapixel conversion for existing CCTV
- Megapixel CCTV – easy as 1-2-3





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Thank you for viewing!