

# HD-CCTV

**EverFocus**<sup>®</sup>  
System & Solutions Provider

**HDcctv**  
Megapixel over Coax  
No Networking Required

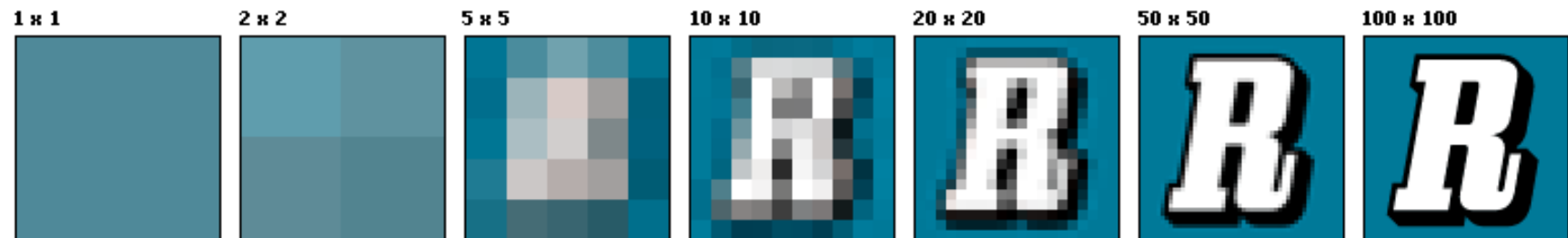
DVRs, Cameras, Repeaters  
Fiber Transmitters, Receivers, Monitors

 **EverFocus**

# What's a Pixel?

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

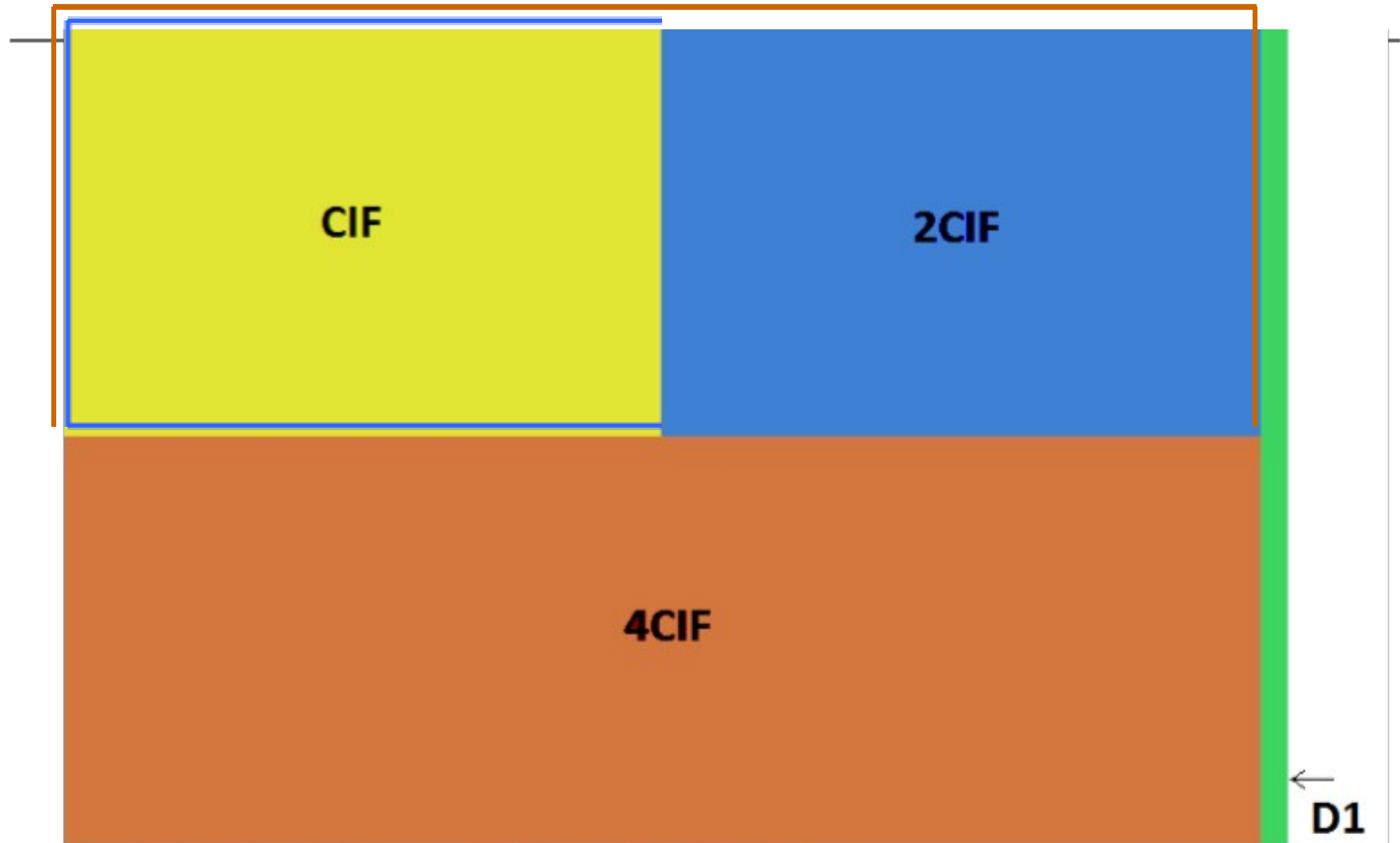


# How Many Pixels is Enough?

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- 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

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## DIGITAL VIDEO RESOLUTIONS SYSTEM H V TOTAL

**CIF** 352 X 240 = 84480

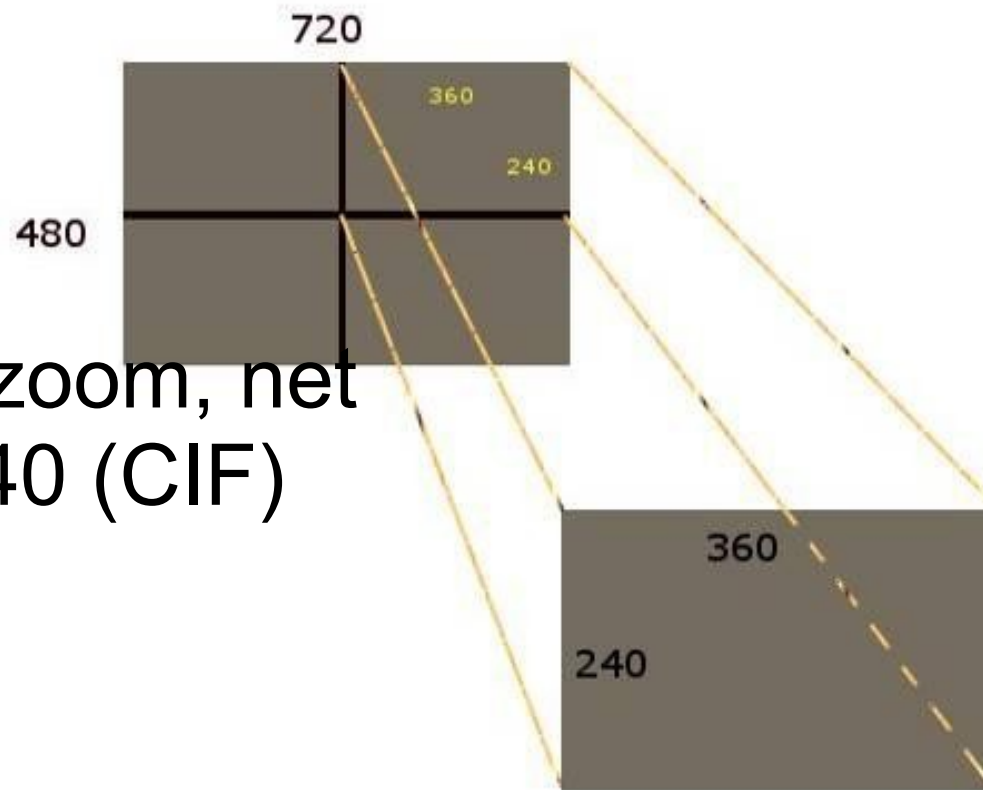
**2CIF** 720 X 240 = 172800

**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)

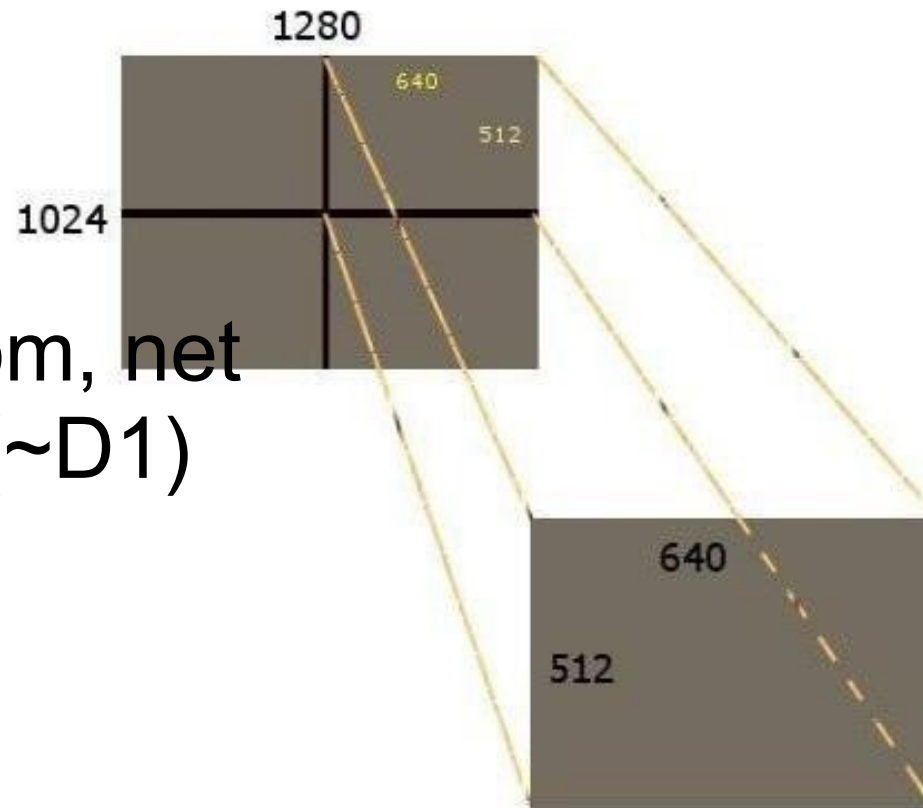
# Why Megapixel?

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- 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)?

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- 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)?

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- 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

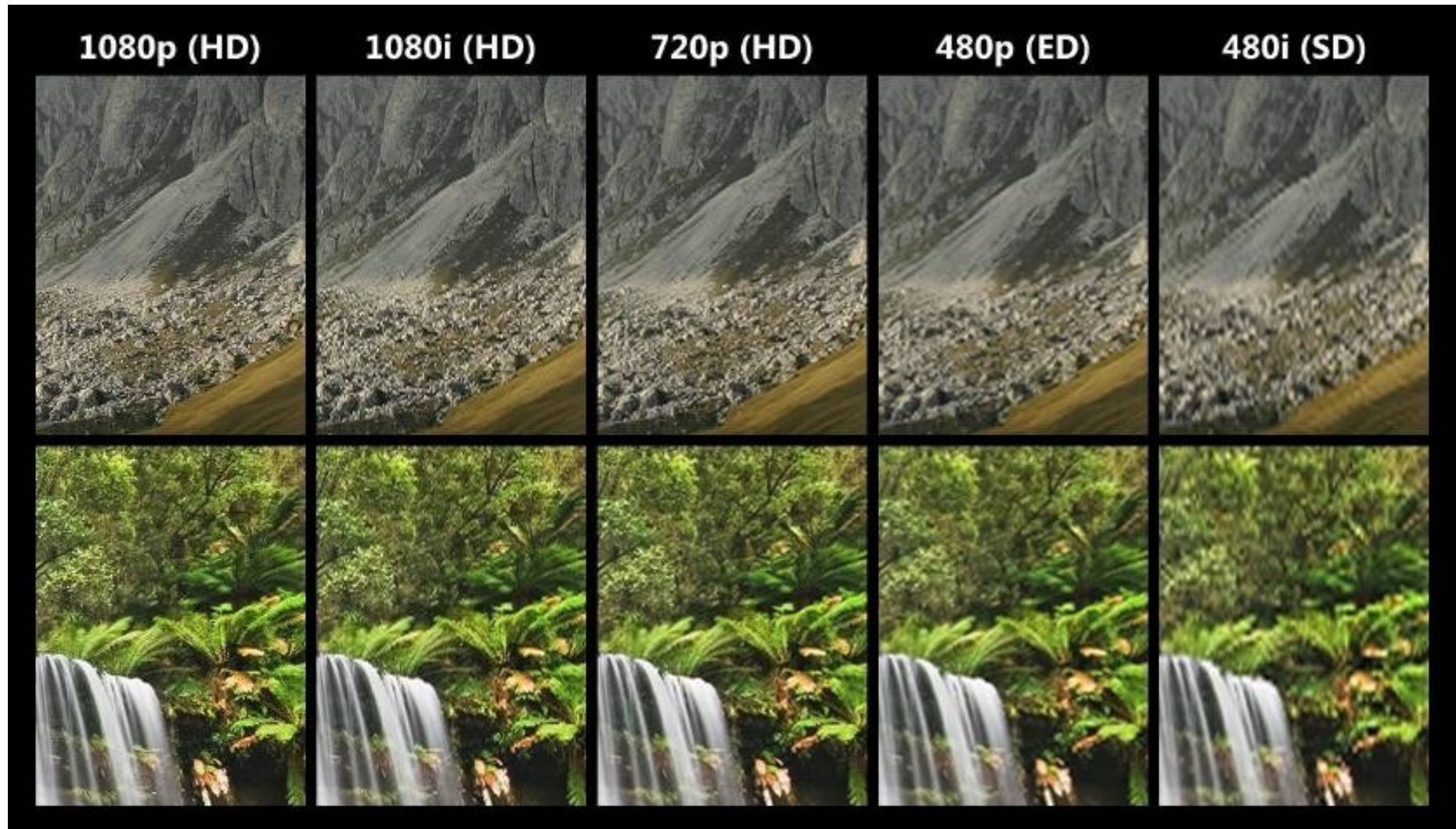
# What is HDTV?

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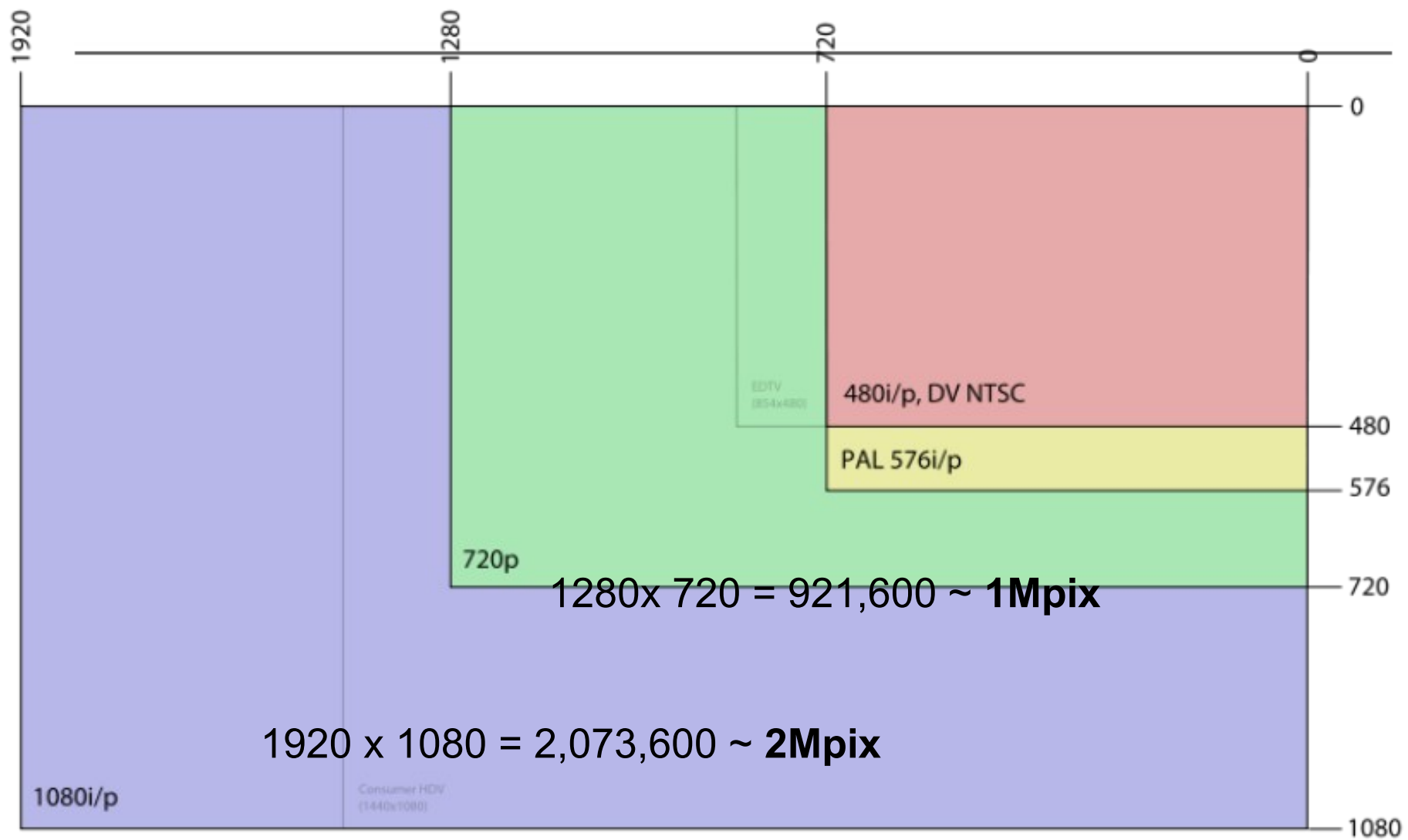
- Higher resolutions
- Current state of the art
  - Broadcast
  - Consumer
  - NOW Surveillance, too!
- 720 (~1Mpix) and 1080 (~2Mpix) lines
- Progressive and Interlaced
- Reference: NTSC is 525i



# Resolution Comparison



# HD Resolution vs SD Resolution



# HDTV Improvement

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



# Can We Use This?

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- 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

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



# HD-CCTV

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- 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?

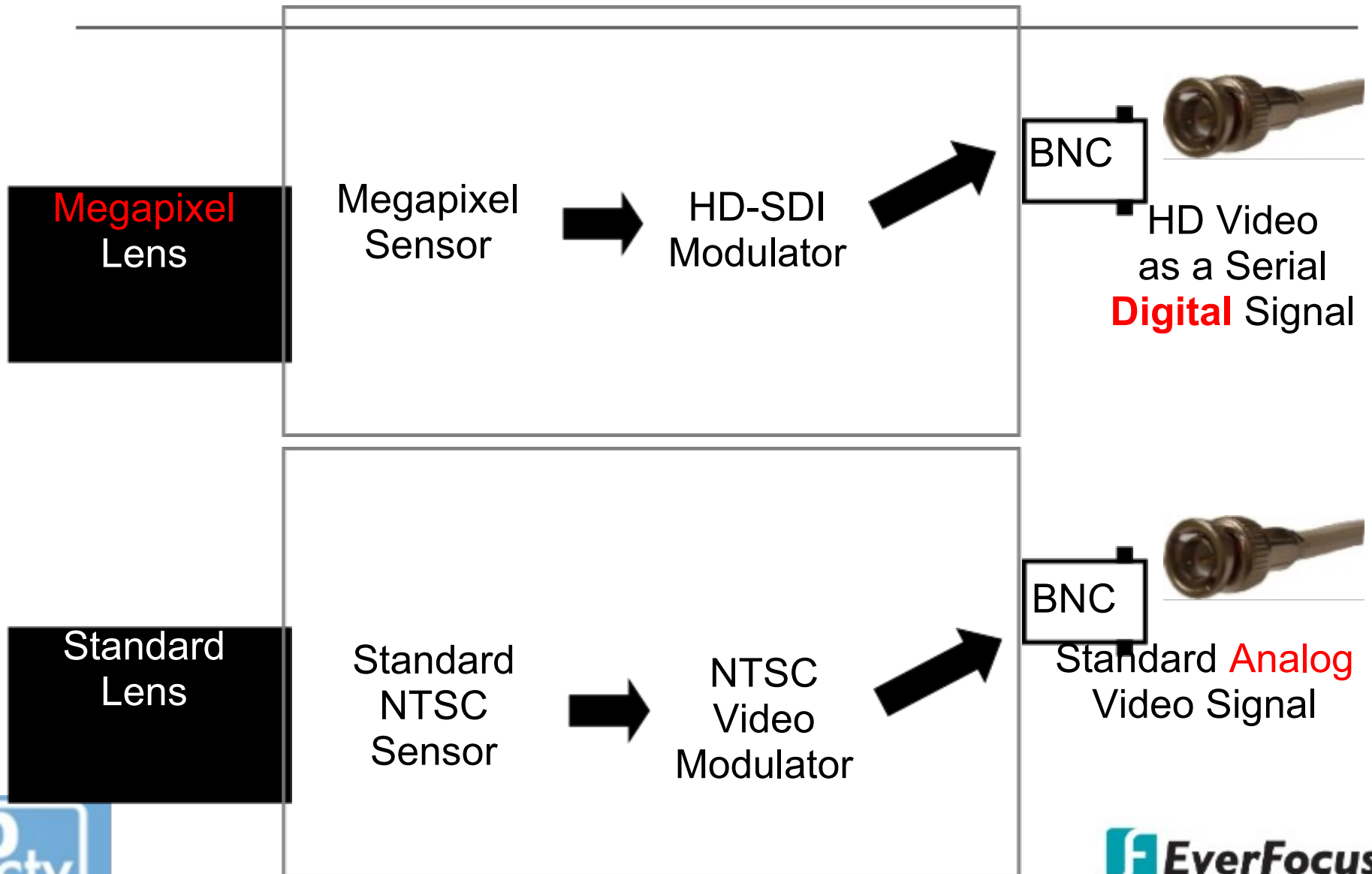


HDMI

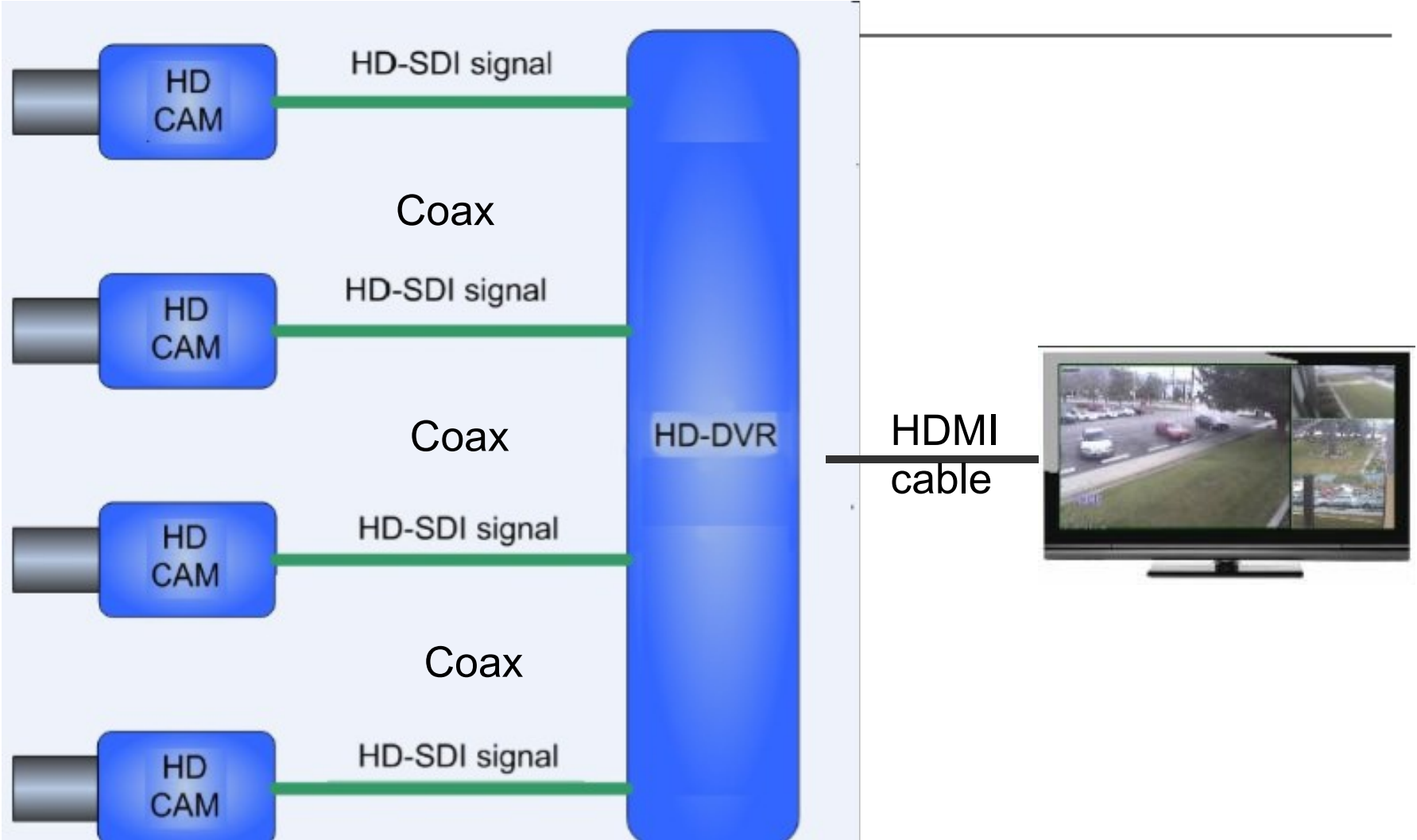


- Home run RG59 Coax
- BNC Connectors
- Sound familiar?

# What's Inside a Camera?



# Four Camera System



# HD-CCTV Benefits

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- 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

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



# HD-CCTV Benefits

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- 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

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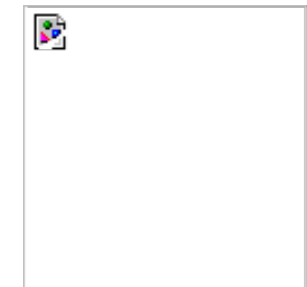
- True Live View
  - Real-Time Response
  - No added signal delay/latency
  - Practical speed dome P/T/Z control
- Higher resolutions
  - Improved quality
  - Crisp, clear, unadulterated digital images
  - Clearest possible analytics inputs
  - Digital P/T/Z



# EverFocus HD-CCTV Initial Release

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- 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

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- 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

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- 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

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- 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

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- 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

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- 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!