



## Discovery 105

Ultra-compact single channel encoder/decoder

### Overview

The Discovery 105 is a multi-function video encoder/decoder that uses the latest and most powerful H.264-SVC compression available which provides improved video quality, flexibility and scalability (see 'H.264-SVC compression'). The unit combines digital video capture/display, streaming, external storage and analytics within a single unit operating on an IP-based network. This encoder/decoder is part of the VisioWave IVP (Intelligent Video Platform), which is a cohesive family of precision engineered equipment designed to help protect people, property and critical infrastructure.

The unit either supports 1 analog video encoding (Discovery 105E) or 1 analog video decoding (Discovery 105D). It includes an integrated PTZ control port, 1 alarm input and 1 output. The USB port is already included for future extensions and for maximum flexibility. Also standard are GE video content analysis algorithms including Activity Detection and various camera health monitoring services (camera blur, obscuration, displacement). All of these features combined in an ultra-compact form factor establish the Discovery 105 as one of the most exciting newcomers in its class.

The Discovery 105 serves as an important video acquisition and hardware display equipment predestined to serve in solutions such as highways or urban surveillance. Encoded video from the Discovery 105E can be stored on units with internal storage (Discovery 1205/2415) or may be stored on video storage servers using GE's ECVRS. Live streams from the Discovery 105E are viewable directly from a VSC client workstation or via an SDK developed viewing application. The Discovery 105D provides decoding to analog monitors of any live or recorded H.264-SVC video stream that originated from any VisioWave H.264-SVC device (Discovery 105E/1205/2405/2415 and Evolution HD 3005). The seamless integration with other IVP devices via the Video Operating System (VOS) ensures all devices meet the needs of video applications, as well as to provide an integration platform for access control, energy management and other industry specific functions.



### Standard Features

- **H.264-SVC (Scalable Video Coding) includes**
  - True multi-streaming
  - Latest, most advanced compression standard
  - More capabilities than typical H.264 implementations via image/frame rate scalability
  - Reduced bandwidth (15-30%) and better image quality compared to MPEG4-ASP
  - Same quality from PTZ as from stationary cameras
- **A scalable network surveillance solution**
  - Part of the Intelligent Video Platform (IVP)
  - Hardware encoding (Discovery 105E) or decoding (Discovery 105D \*) unit
  - Supports 25/30 FPS (D1) and video content analysis
- **Simple to configure and install**
  - Remote system-wide configuration with easy-to-use software
  - Ultra-compact form factor
  - Mounting brackets for rack-mount or wall/ceiling fixing
- **Flexible video redirection**
  - Video streams can be sent to any recording IVP device that supports H.264-SVC
  - Video streams (live or recorded) can be viewed on analog monitors from any IVP H.264-SVC device
  - Video streams viewable from VSC (standard GUI) and from any viewer developed from the SDK
- **Leverage the power of the VisioWave VOS**
  - Common Video Operating System (VOS) allows all VisioWave devices to work together
  - Distributed intelligence for more flexibility
  - Supports live, playback and recording streams
  - Supports video protection, video redirection (device to device) and authentication

\* Available in August 2008

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## Specifications

<b>Physical</b>	Single channel encoder/decoder with ultra-compact form factor
Dimensions	72 (W) x 19 (H) x 95 (D) mm Weight: 300 g
Power supply	12V DC - 5W external power supply module
Power consumption	5 W (full load at 25°C)
Cooling device	Fanless cooling design
Temperature	Operating: -10°C to 50°C, max. 90% RH Storage: -40°C to 80°C
Conformity	FCC Class B (Declaration of Conformity) European Community CE (Declaration of Conformity) :EN55022 Class B, EN50130-4, EN60950 CFR47, Part 15 UL60950-1
<b>Interface port</b>	Phoenix Terminal Connector
Serial	1 serial port (1x RS485 master input or output pass through)
I/O	1 x Input (TTL, compliant with 48V input voltage) 1 x Output (open collector, compliant with 48V external power)
USB	1 x USB 2.0 (For future extensions)
<b>System</b>	
Processor	TI DM6446
System memory	128 MB DDR2
<b>Networking</b>	Embedded auto-sensing single Ethernet 10/100 ethernet LAN IP multicast, unicast and multi-unicast support Ethernet/IP CoS support (802.1p/Q)
<b>System monitoring</b>	Remote alarm notification through SNMP/ HTTP, e-mail or pager Alarm module: audible and visual notification for system status Embedded monitoring: temperature, watchdog timer, voltage Running on the VisioWave Video Operating System (VOS). Requires VOS 4.1.1 software release or higher
<b>Video</b>	Latest H.264-SVC compression Discovery 105E: encoding only Discovery 105D: decoding only Low bandwidth and low latency PAL (720x576 @ 25 FPS); NTSC (720x486 @ 30 FPS) 1 BNC composite video @75 Ohm

## Ordering Information

Part No.	Description
Discovery 105	Discovery 105 Series offers single channel video hardware encoding (Discovery 105E) and decoding (Discovery 105D) in an ultra-compact format and supports integrated video content analysis.

## H.264-SVC compression

The H.264-SVC compression delivers the best image quality for the bandwidth available in the industry. Unlike other H.264 or MPEG4 compression, GE's codec features true multi-streaming which allows a single encoding process to provide multiple simultaneous combinations (profiles) of image size (D1, CIF, QCIF) to be extracted at various frame rates. This flexibility allows the customer much greater control managing and optimizing bandwidth needs across the network. Furthermore, the scalable H.264-SVC stream doubles the number of simultaneous video streams that can be displayed on client workstation compared to other H.264 compression schemes.

Unlike traditional dual streaming which requires two independent encoders that produce one MPEG4-ASP stream and typically one MJPEG stream frequently with severe frame rate limitations, GE's H.264-SVC scalable multi-streaming technology provides more than 6 simultaneous stream combinations of frame rate and image size for multi-cast or unicast networks without limitation with a single encoder. This allows support for multiple simultaneous live, recorded and video analytic profiles. Live viewing streams may need different profiles for restricted bandwidth clients versus less restricted bandwidth client workstations. Recording streams may need different profiles whenever local high density and lower density centralized storages are combined in a single system. Additional stream profiles may be required to meet the needs of PDA video transmission as well as to feed advanced video analytic algorithms. GE's H.264-SVC compression is flexible enough to address true multi-streaming needs.



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