# **Video Capture Solutions**

IEI provides complete video/audio capture solutions to fulfill the demands of various applications. IEI video capture solution includes hardware compression video capture products and uncompressed video capture products. Hardware compression video capture products can encode full HD video in H.264 format or full HD/4K video in HEVC format in real time. Uncompressed video capture products can capture analog and digital video signal, and support resolution from SD to 4K video signal. These products include cards and boxes with a variety of interfaces such as PCIe, PCIe Mini, USB 2.0 and USB 3.0.

## Hardware Compression Video Capture Products

## Full HD H.264 Compression Series





HDC-301MS



## 4K HEVC Compression Series Preliminary









HDC-301EL



UHDC-314E





HDC-304F



**Uncompressed Video Capture Products** 

Full HD









IVCME-C604

SD



IVC-200G-RS





## Video Capture Product Lines

Video	Recording		Interface					
Processing	i Video Input Channel		PCle	PCle Mini	USB 2.0	USB 3.0	PCI	PCI-104
	H.265 2160p60	4ch HDMI	UHDC-314E					
		1ch HDMI	HDC-301E					
	H.264 1080p60	2ch HDMI	HDC-302E					
Hardware Compression		2ch 3G-SDI	HDC-502E					
·		4ch HDMI	HDC-304E					
		1ch HDMI	HDC-301EL	HDC-301MS	HDB-301L			
	H.264 1080p30	1ch HDMI/DP/DVI-I/YPbPr	HDC-701EL					
Software Compression	By software	4ch NTSC/PAL		IVCME-C604			IVC-200G-RS	PM-1056
Uncompressed Video	By software	1ch HDMI	HSRC-301E			HDB-301R		

# Hardware Compression Video Capture Solution

## Low-power Consumption and High Video Quality

IEI hardware compression video capture cards offer an industry-leading low power consumption at full HD encoding with high picture quality. IEI HDC series products support frame processing of full HD video at 60p (1920\*1080) to further improve picture quality and compress video in the H.264 format in real-time. IEI UHDC series products support frame processing of 4K video at 60p (3840\*2160) and compress video in HEVC format in real-time.

These products enable recording and streaming video with high quality in the application of video streaming, broadcasting, distance education, operating room and game recording.

## Compatibility

IEI video capture products are compatible with most of the industrial motherboards and server motherboards. There are a lot of Linux versions in the world. IEI can help to provide correct drivers for you to use IEI video capture products. Furthermore, IEI can offer you the source code to develop your UI and application under specific agreement. IEI's video capture products are the perfect choice to build up your encoder system or solution.

## High Density & Low CPU Usage

Nowadays, 4K devices including 4K cameras, TVs and set-top boxes have become popular in market. The demand for 4K video is growing. However, 4K video data is so huge in size that converting to H.265 is necessary to increase efficiency. The H.265 format, often called HEVC (High Efficiency Video Coding), which is being adopted as the new standard, particularly at the commercial level.

Moving from H.264 to HEVC comes with a lot of advantages, but it's a significant overall upgrade, particularly for video editors. When you plan to handle 4K video by upgrading software for HEVC encoding, according to professional test, you need to use at least 6th generation Intel® Core™ i7 processors and NVIDIA GeForce graphics cards with GPU or AMD solution. And the system may only be able to encode 1CH 4K video and can not deal with lots of other processing.

Now, by choosing IEI's 4K HEVC Video Encoding Card, you can create a high density 4K HEVC encoding server without using high-end CPU processor and graphics card. This card is equipped with Socionext chipset which features very low-latency encoding, as low as 10ms, of 4K/60p video in HEVC/H.265. Multi-channel processing is also supported to enhance processing density of video streaming by up to 4 times more than that of conventional systems.

## Applications: H.264/ H.265 Video Encoder through HDC Series Capture Cards

## Video on demand (VoD)

## Distance Education/Training

An educational model is that the student and the teacher are in locations different from one another while the instruction is taking place. Ideal for this kind of education, the capture cards allow realtime capture or composition of two input sources, typically a live instruction with a powerpoint presentation.

## Sport/Game Broadcasting

The broadcasting of sport/game events is the coverage of sports/games as a television program. Spectators can engage in live conversations using broadcasting media. Through HD capture and broadcast, there is no virtually impact on the sport/ game performance.

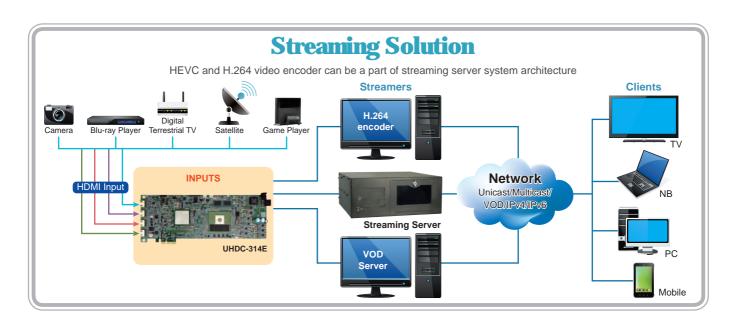
## Traffic Broadcasting

The traffic systems now provide more informative and communicative broadcasting program that improve transport outcomes such as transport safety, transport productivity, travel reliability etc. Traffic media in vehicles or transportation is getting popular since wireless environment is getting mature.









## Medical HD Video Recording

#### Endoscopy Surgery

Endoscopy typically refers to looking inside the body for medical reasons using an endoscope. Unlike most other medical imaging devices, endoscopes are inserted directly into the organ or incision. Clear and detailed image is necessary for precise operations.

#### Ultrasound Scanner

An ultrasound scanner can be used for most imaging purposes. Usually specialty applications may be served only by use of a specialty transducer. Most ultrasound procedures are done using a transducer on the surface of the body, but improved diagnostic confidence is often possible if a transducer can be placed inside the body.

#### Microscope

Microscope is an instrument used to investigate objects that are too small for the naked eye. Recently, electron microscopic captures and displays the image through electric devices that allow people to see objects in detail.





# UHDC-314E

PCI Express Video/Audio Capture Card with Four Channel HDMI Inputs, 3840x2160@60p, and H.265/H.264 Hardware Codec

Preliminary |

#### 4K HEVC Video Encoding Card





## Features

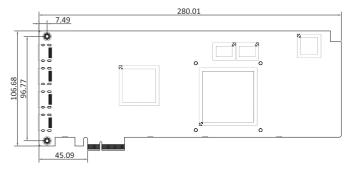
- 1-channel 4K/60p or 4-channel 1080/60p real-time HEVC, H.264/AVC & MPEG-2 hardware-based encoding
- Supports HEVC Main and Main 10 profiles
- Supports 4:2:0 and 4:2:2 at 8-bit or 10-bit
- Multiple cards in one system & multi-channel encoding supported
- IEI SDK and sample code for Windows and Linux are available

## **Specifications**

#### Interface

internated				
	Video input channel	4K x 1CH (Ch0) Full HD x 4CH		
Janual David	Video input type	HDMI1.4/2.0 (CH0) HDMI1.4 (CH1-3)		
Input Port	Audio input channel	(each HDMI supports two-channel stereo) x 4		
	Audio input type	each HDMI supports PCM, 16-bit, stereo, 48KHZ		
<ul> <li>PC Interface</li> </ul>				
Туре	PCIe Gen 2 x4			
<ul> <li>Compression</li> </ul>				
Compression	H.265 (HEVC) / H.264 (AVC)			
HEVC Profie	Main / Main 10			
HEVC Level	1.0 / 2.0 / 2.1 /3.0 / 3.1 / 4.0 / 4.1 / 5.0 / 5.1			
Bitrate 4K Format	3Mbps ~ 128 Mbps			
Bit Rate Control	CBR / VBR			
<ul> <li>Video Processing</li> </ul>				
Video Input Resolution	3840 x 2160 / 1920 x 1080 / 1280 x 720 / 720 x 480			
Frame Rate	60p/59.94p/50p/30p/29.97p/25p/24p/59.94i/50i			
8-bit Encoding from 10-bit Raw Data	Supported			
Color Depth	8-bit,10-bit			
Chroma Sampling	4:2:0/4:2:2			

## Dimensions (Unit: mm)



#### Audio Processing

	Audio Compression	MPEG-2 AAC/ HE-AAC V1/ MPEG-1 L2 (1Ch.)
	Audio Sampling Frequencies	48KHz
•	Software Support	
	Device Driver	Microsoft Windows 10 32/64-bit Linux ubuntu 16.04.1 32/64-bit
	SDK	Provide SDK and demo program
٠	Others	
	Dimensions	280.01(mm) x 106.68(mm)
	Operating Temperature	0°C - 60°C, non-condensing
	Power Consumption	<35W

## Packing List

1 x UHDC-314E	
1 x QIG	

## **Ordering Information**

Part No.	Description
UHDC-314E	PCI Express video/audio capture card with four HDMI input channels, 3840x2160@60p, and H.265/H.264 hardware codec

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Video Capture Solutions

## H.264 Hardware Compression Video Capture Product Selection Guide

1080p30 Full HD







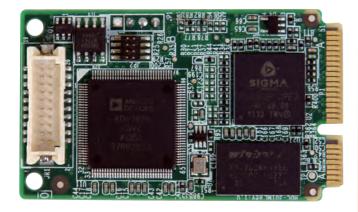


		1		
Products	HDC-301MS	HDC-701EL	HDC-301EL	HDB-301L
♦ Input				
Video Input Channel	1 channel			
Video Input Type	HDMI HDMI/DP/DVI-I/YPbPr HDMI			
Audio Input Channel		1 cha	nnel	
Audio Input Type		HDMI (s	stereo)	
No Delay Passthrough				
Video Output Channel	None		1 channel (1080p60)	
Video Output Type	None	None HDMI		
Audio Output Channel	None		1 channel	
Audio Output Type	None		HDMI (stereo)	
◆ PC Interface				
Туре	PCIe Mini	PCIe x1	PCIe x1	USB 2.0
Video Processing				
Hardware Encoder		H.264/AVC High I	Profile Level 4.1	
Recording Datarate		1Mbps ~ -	30Mbps	
Video Input Resolution	1920 x 1080 24p/25p/30p/50p/60p 1920 x 1080 60/59.94i/50i 1280 x 1024 30p 1280 x 800 60p 1280 x 768 60p 1280 x 720 50p/60p 1024 x 768 60p 800 x 600 60p 720 x 576 50p 720 x 480 60p 640 x 480 60p			
Recording Formats	1920 x 1080 24p/25p/30p 1280 x 1024 30p 1920 x 1080 24p/25p/30p 1280 x 800 60p 1280 x 720 50p/60p 1024 x 768 60p 800 x 600 60p 720 x 576 50p 720 x 480 60p 640 x 480 60p			
Audio Processing				
Audio Sampling Frequencies		44.1k, 4	8k Hz	
Audio Compression		MPEG4	I-AAC	
Recording Datarate		128k	bps	
◆ Functionality				
Multiple Card Support		4 cards, 4	channels	
Scaling	video scaling down compression	video scaling for special resolution, OSD, PiP, Cropping supported	video scaling do	own compression
♦ Others		, , ,		
Dimensions	51 x 30 (mm)	155 x 111 (mm)	83.8 x 68.9 (mm)	89 x 74.83 x 21.6 (mm)
Operating Temperature		0°C - 60°C (32°F - 140	)°F), non-condensing	
Power Consumption	3W	15W	4.5W	4.5W
Software Support				
OS Support	Windows 7/8.1/10 (32-bit & 64-bit)			
ee capport	Linux: Ubuntu 16.04 (64-bit) (Kernel version: 4.4.0-21-generic)			
SDK	Windows: Provides SDK and demo program with sample source code Linux: Provides SDK and demo program with sample source code			

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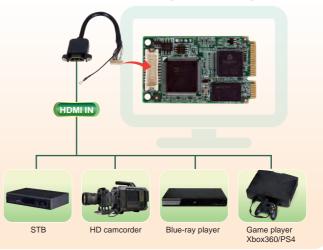
# HDC-301MS

PCIe Mini Video/Audio Capture Card with One Channel HDMI Input, 1920x1080@30p, and H.264 Hardware Encoder



## H.264 Hardware Encoder

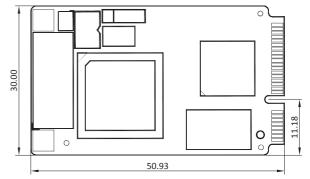
Video Recording/Streaming



## Dimensions (Unit: mm)

PCIe Mini

DM



#### Software Support

OS Support	Microsoft Windows 7/8.1/10 (32-bit & 64-bit) Linux: Ubuntu 16.04 (64-bit) (Kernel version: 4.4.0-21-generic)		
SDK	Windows: Provides SDK and demo program with sample source code Linux: Provides SDK and demo program with sample source code		
Functionality			
Multiple Card Support	4 cards, 4 channels		
Scaling	Video scaling down compression		
Others			
Dimensions	51 mm x 30 mm		
Operating Temperature	0°C ~ 60°C (32° ~ 140°F), non-condensing		

## Packing List

Power Consumption 3W

1 x HDC-301MS	
1 x HDMI input cable	
1 x QIG	

## **Ordering Information**

Part No.	Description
HDC-301MS-R10	PCIe Mini video/audio capture card with one channel HDMI input, 1920x1080@30p, and H.264 hardware encoder

## Features

- 1-channel HDMI input with H.264 hardware compression
- High quality video recording up to 1080p30
- Provides DirectShow filter
- Low power consumption
- Windows/Linux OS supported

## Specifications

#### Interface

•	◆ Interrace					
		Video input channel	1 channel			
	Input	Video input type	HDMI			
		Audio input channel	1 channel			
		Audio input type	HDMI (stereo)			
٠	PC Interface					
	Туре	PCIe Mini				
•	Video Processing					
	Hardware Encoder	H.264/AVC High Profile	Level 4.1			
	Recording Datarate	Up to 30Mbps				
	Video Input Resolution	1920 x 1080 24p/25p/30p/50p/60p 1920 x 1080 60i/59.94i/50i 1280 x 800 60p 1280 x 720 50p/60p 800 x 600 60p 720 x 480 60p		1280 x 1024 30p 1280 x 768 60p 1024 x 768 60p 720 x 576 50p 640 x 480 60p		
	Recording Formats	1920 x 1080 24p/25p/30 1280 x 800 60p 1280 x 720 50p/60p 800 x 600 60p 720 x 480 60p	р	1280 x 1024 30p 1280 x 768 60p 1024 x 768 60p 720 x 576 50p 640 x 480 60p		
•	Audio Processing					
	Audio Sampling Frequencies	44.1k, 48k Hz				
	Audio Compression	MPEG4-AAC				
	Recording Datarate	128kbps				
٠	System Requirement					
	System	Intel® Core™ 2 Duo 2.4GHz or above				
	Memory	2GB or more				

# **HDC-701EL Video Capture Card Solution**

The HDC-701EL video capture card supports full HD video compression using H.264 technology. It offers one-channel HDMI/DP/DVI-I/YPbPr input and one-channel HDMI bypass output. It supports multiple input types, and allows one-channel encode, PiP screen encode from two video sources, OSD screen encode, and cropping video for later encode. User can preview the video from HDMI bypass output during editing or encoding video.

#### Multiple input types supported by HDC-701EL:

- HDMI interface
  VGA interface
- DP interface
- DVI-I interface
- YPbPr interface which supports sync on green

## **Video Scaler Functions**

- It can convert a signal from a lower resolution to a higher resolution without affecting the video quality.
- It can convert a non-standard resolution (such as 1280\*960) to the resolution supported by the HDC-701EL.

#### 

The video sources from two interfaces can be displayed on the same screen simultaneously and the PiP screen can be encoded by the HDC-701EL.



## **Applications**

same time

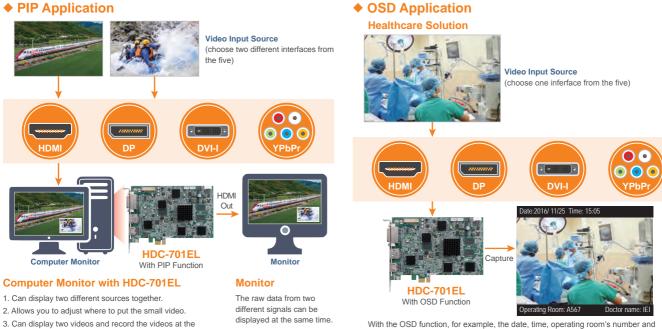
Information such as date, resolution etc. and the video source can be displayed on the same screen simultaneously and the OSD screen can be encoded by the HDC-701EL.



#### Cropping

Cuts the outer part of an image in order to improve the composition, emphasize the subject or change the ratio.





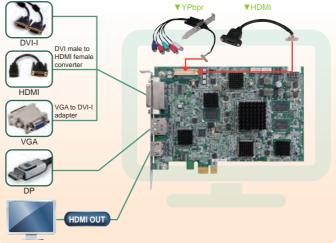
With the OSD function, for example, the date, time, operating room's number and doctor's name can be displayed on the monitor when using in a surgery room. The surgery with the OSD information can be recorded by using the HDC-701EL capture card and the file can be saved for future reference. The scenario described above is just one of many possible scenarios in which the HDC-701EL is used to capture video with OSD information. In addition to that, IEI is capable to customize the OSD information to be displayed for other applications based on customer's needs.

# HDC-701EL

PCI Express Video/Audio Capture Card with One Channel HDMI/DP/DVI-I/ YPbPr Input and One Channel HDMI Output, 1920x1080@30p, and H.264 Hardware Encoder



## H.264 Hardware Encoder Video Recording/Streaming



## Dimensions (Unit: mm)



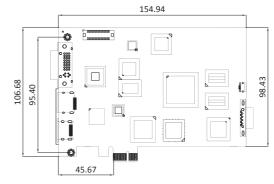
- 1-channel HDMI/DP/DVI-I/YPbPr input with H.264 hardware compression and 1-channel HDMI output
- High quality video recording up to 1080p30
- HDMI output supports video preview up to 1080p60, so you can watch video while recording or editing
- Provides DirectShow filter
- Equipped with video scaler for PIP, OSD, cropping (optional)
- Windows/Linux OS supported

## Specifications

#### ♦ Interface

	, mondoo					
		Video input channel	1 channel			
	lanut	Video input type	HDMI/DP/DVI-I/YPbPr			
	Input	Audio input channel	1 channel			
		Audio input type	HDMI (stereo video)			
		Video output channel	1 channel (1080p 60)			
	Output	Video output type	HDMI			
		Audio output channel	1 channel			
		Audio output type	HDMI (stereo)			
٠	PC Interface					
	Туре	PCle x1				
<ul> <li>Video Processing</li> </ul>						
	Hardware Encoder	H.264/AVC High Profile Level 4.1				
	Recording Datarate	Up to 30Mbps				

	Recording Datarate	Up to 30Mbps	
	Video Input Resolution	1920 x 1080 24p/25p/30p/50p/60p 1920 x 1080 60i/59.94i/50i 1280 x 800 60p 1280 x 720 50p/60p 800 x 600 60p 720 x 480 60p	1280 x 1024 30p 1280 x 768 60p 1024 x 768 60p 720 x 576 50p 640 x 480 60p
	Recording Formats	1920 x 1080 24p/25p/30p 1280 x 800 60p 1280 x 720 50p/60p 800 x 600 60p 720 x 480 60p	1280 x 1024 30p 1280 x 768 60p 1024 x 768 60p 720 x 576 50p 640 x 480 60p
♦ Audio Processing			
	Audio Sampling Frequencies	44.1k, 48k Hz	
	Audio Compression	MPEG4-AAC	
	Recording Datarate	128kbps	



#### ♦ System Requirement

	System	Intel® Core™2 Duo 2.4GHz or above		
	Memory	2GB or more		
• :	Software Support			
	OS Support	Microsoft Windows 7/8.1/10 (32-bit & 64-bit) Linux: Ubuntu 16.04 (64-bit) (Kernel version: 4.4.0-21-generic)		
	SDK	Windows: Provides SDK and demo program with sample source code Linux: Provides SDK and demo program with sample source code		
◆ Functionality				
	Multiple Card Support	4 cards, 4 channels		
	Scaling	Video scaling support, OSD, PIP, Cropping		
♦ Others				
	Dimensions	155 mm x 111 mm		
	Operating Temperature	0°C ~ 60°C (32° ~ 140°F), non-condensing		
	Power Consumption	15W		

## Packing List

1 x HDC-701EL	
1 x QIG	1 x Utility CD

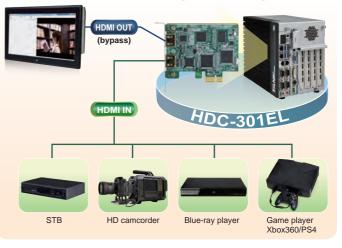
Part No.	Description
HDC-701EL-R10	PCI Express video/audio capture card with one channel HDMI/DP/DVI-I/YPbPr input and one channel HDMI bypass output,1920x1080@30p, and H.264 hareware encoder

# HDC-301EL

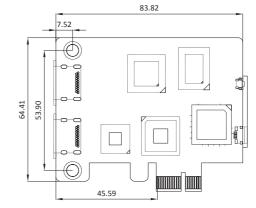
PCI Express Video/Audio Capture Card with One Channel HDMI Input and One Channel HDMI Bypass Output, 1920x1080@30p, and H.264 Hardware Encoder



## H.264 Hardware Encoder Video Recording/Streaming



## Dimensions (Unit: mm)



System Requirement

	System	Intel® Core™2 Duo 2.4GHz or above		
	Memory	2GB or more		
٠	Software Support			
	OS support	Microsoft Windows 7/8.1/10 (32-bit & 64-bit) Linux: Ubuntu 16.04 (64-bit) (Kernel version: 4.4.0-21-generic)		
	SDK	Windows: Provides SDK and demo program with sample source code Linux: Provides SDK and demo program with sample source code		
٠	◆ Functionality			
	Multiple Card Support	4 cards, 4 channels		
	Scaling	Video scaling down compression		
♦ Others				
	Dimensions	83.82 mm x 64.41 mm		
	Operating Temperature	0°C ~ 60°C (32° ~ 140°F), non-condensing		
	Power Consumption	4.5W		

## Packing List

1 x HDC-301EL		
1 x QIG		

## **Ordering Information**

Part No.	Description
HDC-301EL-R10	PCI Express video/audio capture card with one channel HDMI input and one channel HDMI bypass output,1920x1080@30p, and H.264 hareware encoder

# 7/8.1/10 32/64 H.264

## Features

- 1-channel HDMI input with H.264 hardware compression and 1-channel HDMI bypass output
- High quality video recording up to 1080p30
- HDMI bypass output supports low-delay video pass through up to 1080p60, so you can watch video while recording
- Provides DirectShow filter
- Low power consumption
- Low-Profile PCIe card
- Windows/Linux OS supported

## Specifications

Recording Datarate

#### Interface

•	Interface			
		Video input channel	1 channel	
	Input	Video input type	HDMI	
		Audio input channel	1 channel	
		Audio input type	HDMI (ste	reo)
		Video output channel	1 channel (1080p 60)	
	No Delay Pass	Video output type	HDMI	
	Through	Audio output channel	1 channel	
		Audio output type	HDMI (ste	reo)
•	PC Interface			
	Туре	PCIe x1		
•	Video Processing			
	Hardware Encoder	H.264/AVC High Profile Level 4.1		
	Recording Datarate	Up to 30Mbps		
	Video Input Resolution	1920 x 1080 24p/25p/3( 1920 x 1080 60i/59.94i/ 1280 x 800 60p 1280 x 720 50p/60p 800 x 600 60p 720 x 480 60p		1280 x 1024 30p 1280 x 768 60p 1024 x 768 60p 720 x 576 50p 640 x 480 60p
	Recording Formats	1920 x 1080 24p/25p/30 1280 x 800 60p 1280 x 720 50p/60p 800 x 600 60p 720 x 480 60p	Ĵр	1280 x 1024 30p 1280 x 768 60p 1024 x 768 60p 720 x 576 50p 640 x 480 60p
•	Audio Processing			
	Audio Sampling Frequencies	44.1k, 48k Hz		
	Audio Compression	MPEG4-AAC		

128kbps

## **Portable Video Capture Box's Solution**

## **Key Features**

## Perfect Quality



The video capture box performs high video quality with up to 1920x1080 30p recording format.

## Easy to Use

#### Setup Easily



With detailed instruction in the manual, users can easily setup the capture box with driver and AP, and the AP interface is easy to operate.

### Preview Easily



The capture box supports bypass function which includes two features:

- 1. The source from the HDMI port can be simultaneously and fully displayed in the bypass screen.
- 2. If the user chooses to record it, other tasks can also be performed and viewed in the same monitor without being affected, such as watching movie or playing video game with low latency.

## Easy to Record, Save and Steam Your Video



With encode chipset the capture box can realtime compress the HDMI input data to H.264 format and easily record without occupying CPU resource and performance and save your computer space at the same time. Moreover, the compressed video can also be streamed to the Internet.

## Easy Development



SDK and source code are provided to users for further development.

## Easy to Carry



The box is so light and small that you can carry it anywhere to perform video recording.



You can power on your capture box with the computer through a USB cable. It is very convenient since you don't even need an external power.

## Easy to Connect and Communicate

With USB 2.0 and HDMI port, it is very easy to connect the capture box with different devices as shown in the figure below.



## **Capture Box's Application**

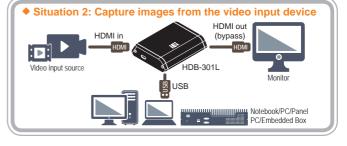
## Factory Conference Room

As shown in the figure above, the capture box can be applied in a factory conference room to perform lots of tasks, such as:

- 1. Job training recording.
- 2. Online video meeting recording/ Meeting minutes recording.
- 3. PowerPoint presentation recording.







## Factory Production Line

As shown in the figure above, the capture box can be applied in factory production line for:

- Machine operation recording to check if any abnormal conditions that need to be fixed.
- 2. SOP process recording to improve the yield rate.





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# HDB-301L

USB 2.0 Video/Audio Capture Box with One Channel HDMI Input and One Channel HDMI Bypass Output, 1920x1080@30p, and H.264 Hardware Encoder



# Video Recording/Streaming

H.264 Hardware Encoder



Micro USB 2.0



## Features

- 1-channel HDMI input with H.264 hardware compression and 1-channel HDMI bypass output
- High quality video recording up to 1080p30
- HDMI bypass output supports low-delay video pass through up to 1080p60, so you can watch video while recording
- Provides DirectShow filter
- Windows/Linux OS supported

## Specifications

Recording Formats

Audio Processing
 Audio Sampling

Recording Datarate

Frequencies Audio Compression

#### Interface

•	Intenace					
		Video input channel	1 channel			
		Video input type	HDMI			
	Input	Audio input channel	1 channel			
		Audio input type	HDMI (stereo)			
		Video output channel	1 channel (1080p 60)			
	No Delay Pass	Video output type	HDMI			
	Through	Audio output channel	1 channel			
		Audio output type	HDMI (stereo)			
<ul> <li>PC Interface</li> </ul>						
	Туре	USB 2.0				
• '	Video Processing					
	Hardware Encoder	H.264/AVC High Profile	Level 4.1			
	Recording Datarate	Up to 30Mbps				
	Video Input Resolution	1920 x 1080 24p/25p/30p/50p/60p           1920 x 1080 60i/59.94i/50i         1280 x 1024 3           1280 x 800 60p         1280 x 768 6           1280 x 705 50p/60p         1024 x 768 6           800 x 600 60p         720 x 576 50           720 x 480 60p         640 x 480 60p				

1920 x 1080 24p/25p/30p

1280 x 800 60p

720 x 480 60p

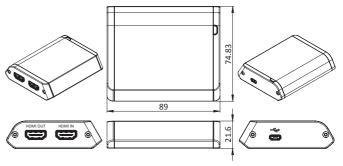
44.1k, 48k Hz

MPEG4-AAC

128kbps

1280 x 720 50p/60p 800 x 600 60p

## Dimensions (Unit: mm)



#### System Requirement

	System	Intel® Core™2 Duo 2.4GHz or above
	Memory	2GB or more
٠	Software Support	
	OS Support	Microsoft Windows 7/8.1/10 (32-bit & 64-bit) Linux: Ubuntu 16.04 (64-bit) (Kernel version: 4.4.0-21-generic)
	SDK	Windows: Provides SDK and demo program with sample source code Linux: Provides SDK and demo program with sample source code
◆ Functionality		
	Multiple Card Support	4 boxes, 4 channels
	Scaling	Video scaling down compression
٠	Others	
	Dimensions	89 mm x 74.83 mm x 21.6 mm
	Operating Temperature	0°C ~ 60°C (32° ~ 140°F), non-condensing
	Power Consumption	4.5W
	Weight	156g

## Packing List

1 x HDB-301L			
1 x USB cable (600mm)	1 x QIG		
Ordering Information			

Part No.	Description		
HDB-301L-R10	USB 2.0 video/audio capture box with one channel HDMI input and one channel HDMI bypass output, 1920x1080@30p, and H.264 hardware encoder		

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1280 x 1024 30p

1280 x 768 60p

1024 x 768 60p 720 x 576 50p

640 x 480 60p

## H.264 Hardware Compression Video Capture Product Selection Guide

1080p60 Full HD				
Products	HDC-304E	HDC-302E	HDC-301E	HDC-502E
♦ Input				
Video Input Channel	4 channels	2 channels	1 channel	2 channels
Video Input Type	HDMI	HDMI	HDMI	3G-SDI
Audio Input Channel	4 channels	2 channels	1 channel	2 channels
Audio Input Type	HDMI (stereo)	HDMI (stereo)	HDMI (stereo)	3G-SDI
◆ No Delay Passthrough				
Video Output Channel	1 channel (1080p60)	2 channels	1 channel	2 channels
Video Output Type	HDMI	HDMI	HDMI	3G-SDI
Audio Output Channel	1 channel	2 channels	1 channel	2 channels
Audio Output Type	HDMI	HDMI	HDMI	3G-SDI
◆ PC Interface				
Туре	PCIe x1	PCle x1	PCle x1	PCle x1
◆ Video Processing				
Hardware Encoder		H.264/AVC High	Profile Level 4.2	
Recording Datarate		2Mbps ~	- 30Mbps	
Video Input Resolution	1920 x 1080 60p / 59.94p / 50p 1920 x 1080 60i / 59.94i / 50i 1280 x 720 60p / 59.94p / 50p 720 x 480 60i / 59.94i 720 x 576 50i		1920 x 1080 60p / 50p / 30p / 25p /24p 1920 x 1080 60i / 50i 1280 x 720 60p / 50p / 30p / 25p /24p 720 x 480 60i 720 x 576 50i	
Recording Formats	1920 x 1080 60p / 59.94p / 50p 1920 x 1080 60i / 59.94i / 50i 1280 x 720 60p / 59.94p / 50p 720 x 480 60i / 59.94i 720 x 576 50i		1920 x 1080 60p 1280 x 720 60p	
◆ Audio Processing				
Audio Sampling Frequencies		44.1k,	48k Hz	
Audio Compression		MPEG-1 Au	udio Layer 2	
Recording Datarate		256	kbps	
Functionality				
Multiple Card Support	2 cards, 8 channels	4 cards, 8 channels	No	4 cards, 8 channels
Scaling		Ν	//A	
♦ Others				
Dimensions	230 x 116 (mm)	155 x 98.6 (mm)	168 x 69 (mm)	188 x 125 (mm)
Operating Temperature	0°C - 65°C (32°F - 140°F), non-condensing			
Power Consumption	12.7W	9.53W	6.07W	14.2W
Software Support				
OS Support	Windows 7/10	(32-bit & 64-bit)	Windows 7 32-bit	Windows 7/10 (32-bit & 64-bit)
OS Support	Linux: Ubuntu 16.04 (64-bit) Kernel version: 4.4.0-21 x64			
SDK			o program with sample source code program with sample source code	

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# HDC-304E

PCI Express Video/Audio Capture Card with Four Channel HDMI Inputs and One Channel HDMI Output, 1920x1080@60p, and H.264 Hardware Codec





## **Features**

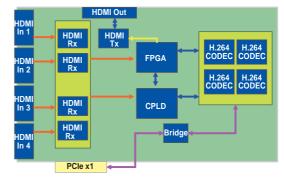
- 4-channel HDMI input with H.264 hardware compression and 1-channel HDMI output
- High quality video encoding or decoding up to 1080p60
- HDMI output port supports playback video file captured by HDC-30X series cards
- Enables the system to support up to 8-channel input by adding multiple video capture cards. The HDC-304E installed in IEI systems and backplanes could support over 8 channel inputs under Linux environment (supported capability may vary depending on customers' needs).
- Low power consumption
- SDK available for customer to create customized applications
- Windows/Linux OS supported

## Specifications

#### Interface

	Video Input	4 channels
	Video Input type	HDMI
	Audio Input	4 channels
	Audio Input Type	HDMI
	Video Output	1 channel
	Video Output Type	HDMI output cable kit
	Audio Output	1 channel
	Audio Output Type	HDMI output cable kit
	Bus Interface	PCle x1
	Loop Through	1 channel
• ]	Video Processing	
	Video Compression	H.264/AVC High Profile Level 4.2
	Input Resolution & Frame Rate	1920 x 1080 x 60p / 59.94p / 50p         720 x 480 x 60i / 59.94i           1920 x 1080 x 60i / 59.94i / 50i         720 x 576 x 50i           1280 x 720 x 60p / 59.94p / 50p         500 x 576 x 50i
	Record Resolution / Frame Rate / Bit Rate	1920 x 1080 x 60p / 59.94p / 50p, encoding video -bit rate from 6Mbps to 20Mbps 1920 x 1080 x 60i / 59.94i / 50i, encoding video -bit rate from 6Mbps to 20Mbps 1280 x 720 x 60p / 59.94p / 50p, encoding video -bit rate from 4Mbps to 20Mbps 720 x 480 x 60i / 59.94i, encoding video -bit rate from 2Mbps to 10Mbps 720 x 576 x 50i, encoding video -bit rate from 2Mbps to 10Mbps
•	Functionality	
	Multiple Card Support	2 cards, 8 channels

## System Block



<ul> <li>Audio Processing</li> </ul>	
Audio Compression	MPEG-1 Audio Layer 2
Bit Rate	256k
<ul> <li>System Requirement</li> </ul>	
System	x86 PC compatible computer, Intel® Pentium® 4 2.0GHz or above for video record Recommends using a DXVA or CUDA capable graphics card for real-time video playback
Memory	1GB or more
<ul> <li>Software Support</li> </ul>	
OS Support	Microsoft Windows 7/10 (32-bit & 64-bit) Linux: Ubuntu 16.04 (64-bit) Kernel version: 4.4.0-21 x64
SDK	Windows: Provides SDK and demo program with sample source code Linux: Provides SDK and demo program with sample source code
♦ Others	
Dimensions	230 mm x 116 mm
Operating Temperature	0°C ~ 65°C, non-condensing
Power Consumption	12.7W (12V@0.61A, 3.3V@1.63A)
Packing List	

1 x HDC-304E capture card	
1 x HDMI output kit	
1 x Utility CD	1 x QIG

## **Ordering Information**

Part No.	Description
HDC-304E-R11	PCI Express video/audio capture card with four channel HDMI inputs and one channel HDMI output,1920x1080@60p, and H.264 hardware codec

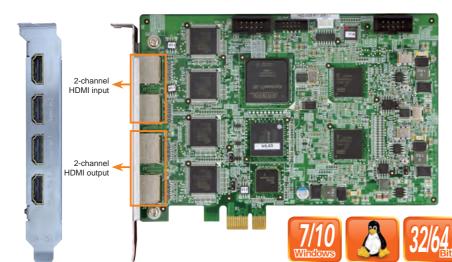
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# HDC-302E #

PCI Express Video/Audio Capture Card with Two Channel HDMI Inputs and Two Channel HDMI Outputs, 1920x1080@60p, and H.264 Hardware Codec



#### H.264 Hardware Codec



## Features

- 2-channel HDMI input with H.264 hardware compression and 2-channel HDMI output
- High quality video encoding or decoding up to 1080p60
- HDMI output port supports low-delay video pass through up to 1080p60, so you can check video while recording
- HDMI output port supports playback video file captured by HDC-30X series cards
- Low power consumption
- SDK available for customer to create customized applications
- Windows/Linux OS supported

## **Specifications**

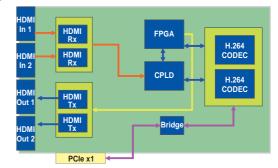
#### Interface

Bit Rate

256k

	Video Input	2 channels
	Video Input Type	HDMI
	Audio Input	2 channels
	Audio Input Type	HDMI
	Video Output	2 channels
	Video Output Type	HDMI
	Audio Output	2 channels
	Audio Output Type	HDMI
	Bus Interface	PCIe x1
	Loop Through	2 channels
٠	Video Processing	
	Video Compression	H.264/AVC High Profile Level 4.2
	Input Resolution & Frame Rate	1920 x 1080 x 60p / 59.94p / 50p         720 x 480 x 60i / 59.94i           1920 x 1080 x 60i / 59.94i / 50i         720 x 576 x 50i           1280 x 720 x 60p / 59.94p / 50p         50p
	Record Resolution / Frame Rate / Bit Rate	1920 x 1080 x 60p / 59.94p / 50p, encoding video -bit rate from 6Mbps to 20Mbps 1920 x 1080 x 60i / 59.94i / 50i, encoding video -bit rate from 6Mbps to 20Mbps 1280 x 720 x 60p / 59.94p / 50p, encoding video -bit rate from 4Mbps to 20Mbps 720 x 480 x 60i / 59.94i, encoding video -bit rate from 2Mbps to 10Mbps 720 x 576 x 50i, encoding video -bit rate from 2Mbps to 10Mbps
٠	Functionality	
	Multiple Card Support	4 cards, 8 channels
•	Audio Processing	
	Audio Compression	MPEG-1 Audio Layer 2

## System Block



#### System Requirement

	System	x86 PC compatible computer, Intel® Pentium® 4 2.0GHz or above for video record Recommends using a DXVA or CUDA capable graphics card for real-time video playback
	Memory	1GB or more
•	Software Support	
	OS Support	Microsoft Windows 7/10 (32-bit & 64-bit) Linux: Ubuntu 16.04 (64-bit) (Kernel version: 4.4.0-21 x64)
	SDK	Windows: Provides SDK and demo program with sample source code Linux: Provides SDK and demo program with sample source code
٠	Others	
	Dimensions	155 mm x 98.6 mm
	Operating Temperature	0°C ~ 65°C, non-condensing
	Power Consumption	9.53W (12V@0.46A, 3.3V@1.21A)

## Packing List

1 x Utility CD 1 x QIG	1 x HDC-302E	
1 x QIG	1 x Utility CD	
	1 x QIG	

Part No.	Description
HDC-302E-R11	PCI Express video/audio capture card with two channel HDMI inputs and two channel HDMI outputs, 1920x1080@60p, and H.264 hardware codec

# HDC-301E

PCI Express Video/Audio Capture Card with One Channel HDMI Input and One Channel HDMI Output, 1920x1080@60p, and H.264 Hardware Codec



#### H.264 Hardware Codec



## **Features**

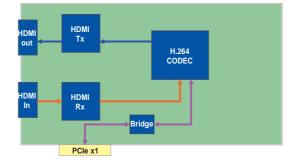
- 1-channel HDMI input with H.264 hardware compression and 1-channel HDMI output
- High quality video encoding or decoding up to 1080p60
- HDMI output port supports low-delay video pass through up to 1080p60, so you can check video while recording
- HDMI output port supports playback video file captured by HDC-30X series cards
- Low power consumption
- SDK available for customer to create customized applications
- Windows/Linux OS supported

## **Specifications**

#### Interface

Video Input	1 channel
Video Input type	HDMI
Audio Input	1 channel
Audio Input Type	HDMI
Video Output	1 channel
Video Output Type	HDMI
Audio Output	1 channel
Audio Output Type	HDMI
Bus Interface	PCIe x1
Loop Through	1 channel
Video Processing	
Video Compression	H.264/AVC High Profile Level 4.2
Input Resolution & Frame Rate	1920 x 1080 x 60p / 59.94p / 50p         720 x 480 x 60i / 59.94i           1920 x 1080 x 60i / 59.94i / 50i         720 x 576 x 50i           1280 x 720 x 60p / 59.94p / 50p         720 x 576 x 50i
Record Resolution / Frame Rate / Bit Rate	1920 x 1080 x 60p / 59.94p / 50p, encoding video -bit rate from 6Mbps to 20Mbps 1920 x 1080 x 60i / 59.94i / 50i, encoding video -bit rate from 6Mbps to 20Mbps 1280 x 720 x 60p / 59.94p / 50p, encoding video -bit rate from 4Mbps to 20Mbps 720 x 480 x 60i / 59.94i, encoding video -bit rate from 2Mbps to 10Mbps 720 x 576 x 50i, encoding video -bit rate from 2Mbps to 10Mbps
	Video Input type Audio Input Type Video Output Video Output Type Audio Output Type Bus Interface Loop Through Video Compression Input Resolution & Frame Rate Record Resolution /

## System Block

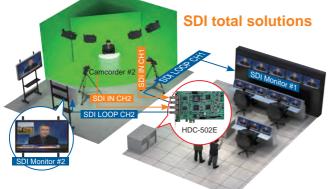


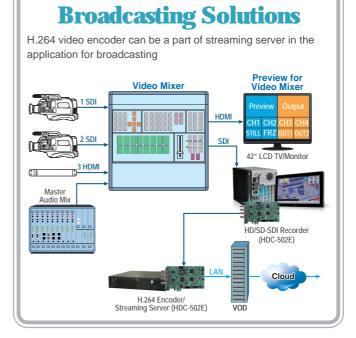
<ul> <li>Functi</li> </ul>	onality	
Multip	le Card Support	No
♦ Audio	Processing	
Audio	Compression	MPEG-1 Audio Layer 2
Bit Ra	ate	256k
<ul> <li>System</li> </ul>	m Requirement	
Syste	m	x86 PC compatible computer, Intel® Pentium® 4 2.0GHz or above for video record Recommends using a DXVA or CUDA capable graphics card for real-time video playback
Memo	ory	1GB or more
<ul> <li>Software</li> </ul>	are Support	
os s	upport	Microsoft Windows 7 32-bit Linux: Ubuntu 16.04 (64-bit) Kernel version: 4.4.0-21 x64
SDK		Windows: Provides SDK and demo program with sample source code Linux: Provides SDK and demo program with sample source code
SDK	5	source code Linux: Provides SDK and demo program with sample source
♦ Others	5 nsions	source code Linux: Provides SDK and demo program with sample source
♦ Others	-	source code Linux: Provides SDK and demo program with sample source code

Packing List		Ordering In	tormation
1 x HDC-301E		Part No.	Description
1 x Full size bracket		HDC-301E-R10	PCI Express video/audio capture card with one channel HDMI input and one channel HDMI output, 1920x1080@60p, and
1 x Utility CD	1 x QIG		H.264 hardware codec

# Long Distance High-Definition Compression Solution

Nowadays, more and more equipments are equipped with SDI output for television studios and other broadcasting applications. SDI is a high capacity interface used as a way of exporting uncompressed digital video in real time. That makes it ideal for live feed productions (such as a live TV show), as well as for editing and monitoring video at the highest possible quality. Since SDI is designed primarily for professional use, it is also compatible with a variety of video devices found in broadcast studios, including monitors, tape decks and switchers. SDI exports uncompressed SD and HD video over a coaxial cable.





SDI-Ir

SDI-In

SDI-Loop

SDI-Loop

Uncompressed raw data

for editing

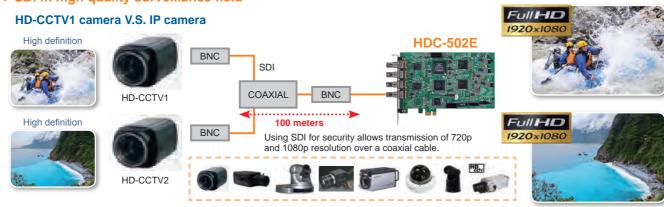
## Long Distance and High Quality Capture Card

#### SDI in studio editing field

**SDI (Serial Digital Interface)** is a family of video interfaces used for broadcast-grade video. A related standard known as high-definition serial digital interface (HD-SDI) provides a nominal data rate of 1.485 G-bit/s. IEI SDI product, the HDC-502E, is designed with 2-channel SDI input, 2-channel SDI loop and 1-channel SDI output for high quality and long distance signal transmission. It achieves this through a 100 m (HD-SDI)/300 m (SD-SDI) coaxial cable without compression and with no data loss for professional studio, broadcast and transportation video applications.

High definition capturing has become a trend of the industrial surveillance. The HD-CCTV camera with SDI interface provides long distance transmission compared to analog camera and IP camera. The advantage is that SDI interface can transmit high-definition 1080p video via coaxial cable instead of network cable. In other words, users can enjoy 1080p HD video over existing analog system without any changes.

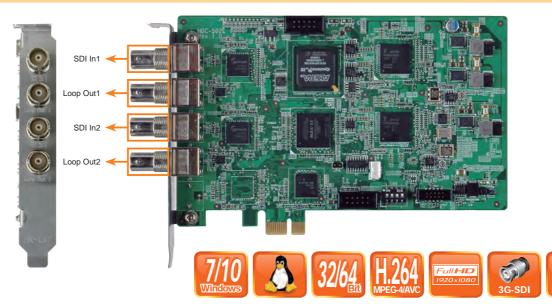
SDI in high quality surveillance field



**HDC-502E** 

# HDC-502E

PCIe Video/Audio Capture Card with Two Channel 3G-SDI Inputs, Two Channel 3G-SDI Loop Outputs, 1920x1080@60p and H.264 Hardware Encoder



## Features

- 2-channel 3G-SDI input with H.264 hardware compression and 2-channel 3G-SDI output
- High quality video encoding up to 1080p60
- Low power consumption
- SDK available for customer to create customized applications
- Applications: professional studio, broadcast and transportation video applications
- Windows/Linux OS supported

## Specifications

#### Interface

channels S-SDI channels
shannels
G-SDI
channels
-SDI
Cle x1

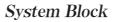
#### Video Processing Video Compression H.264/AVC High Profile Level 4.2 1920 x 1080 x 60p / 50p / 30p / 25p / 24p 720 x 480 x 60i Input Resolution & 1920 x 1080 x 60i / 50i 720 x 576 x 50i Frame Rate 1280 x 720 x 60p / 50p / 30p / 25p / 24p 1920 x 1080 x 60p, encoding video -bit rate from 6Mbps to Record Resolution / 20Mbps Frame Rate / Bit Rate 1280 x 720 x 60p, encoding video -bit rate from 4Mbps to 20Mbps Audio Processing Audio Compression MPEG-1 Audio Layer 2 Bit Rate 256k Functionality

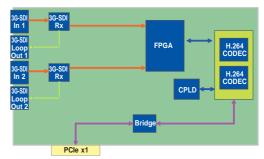
Multiple Card Support 4 ca

4 cards, 8 channels

## Packing List

1 x HDC-502E capture card	HDC-502E-R10	inputs, two channel 3G-SE
1 x Utility CD		H.264 hardware encoder
1 x QIG		





System Requirement

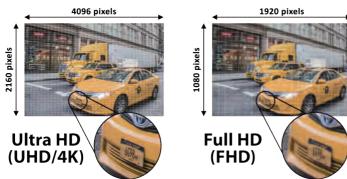
	System	x86 PC compatible computer, Intel® Pentium® 4 2.0GHz or above for video record Recommends using a DXVA or CUDA capable graphics card for real-time video playback
	Memory	1GB or more
•	Software Support	
	OS Support	Microsoft Windows 7/10 (32-bit & 64-bit) Linux: Ubuntu 16.04 (64-bit) (Kernel version: 4.4.0-21X64- generic)
	SDK	Windows: Provides SDK and demo program with sample source code Linux: Provides SDK and demo program with sample source code
♦ Others		
	Dimensions (WxH) (mm)	188 mm x 125 mm
	Operating Temperature	$0^{\circ}\text{C} \sim 60^{\circ}\text{C}$ (32°F $\sim$ 140°F), non-condensing
	Power Consumption	14.2W (12V@0.76A, 3.3V@1.52A)

Part No.	Description
HDC-502E-R10	PCI Express video/audio capture card with two channel 3G-SDI inputs, two channel 3G-SDI loop outputs, 1920x1080@60p, and H.264 hardware encoder

# **Uncompressed 4K/HD/SD Video Capture Solution**

4K is a new resolution standard designed for digital cinema and computer graphics. It has following advantages: higher image definition quality, more detailed picture, better fast-action and larger projection surface visibility. Recently, many camcorder manufacturers adopt 4K resolution to their recordings like Sony, Panasonic and so on.

IEI 4K uncompressed video capture card can import video from 4K camcorder into your media editing software on PC. It's the best and most efficient way to work 4K videos with your editing software.







Uncompressed 4K video capture card - HSRC-301E



Uncompressed Full HD video capture box - HDB-301R

## 4K Video Capture Application: Upgrade from SD to 4K Resolution

## Post-production

IEI HSRC-301E is the 4K video capture and playback card, supporting editing and video software which is compatible with DirectShow. You can do the realtime workflows in editing software while connecting 4K camcorder to IEI 4k uncompressed video capture card. HSRC-301E is a perfect part of your workflow!

## 4K Medical Video Identification

Medical devices, including microscopes, endoscopes, true HD cameras, vision microscopes etc, are all going in the direction of 4K Ultra HD resolution. IEI 4K uncompressed capture card will be the perfect choice of your 4K medical video systems.

## 4K Video Surveillance

#### Improved quality of video surveillance

4K has several advantages in terms of video quality and resoultion. More pixels added into the image allow the users to zoom into the picture without sacrificing image quality, therefore making this technology optimal for security. Covering a large warehouse or busy hallways would be easier with the added resolution. The IEI 4K uncompressed video capture card with smart surveillance software could be used in the applications like airports, shoppin malls, mega stores and so on.

One 4K camera with IEI 4K uncompressed video capture card can help magnify and positively identify small details like a face, an unattended package or a car license plate.







## Uncompressed Video Capture Product Selection Guide





Products	HDB-301R	HSRC-301E	
♦ Input			
Video Input Channel	1 channel	1 channel	
Video Input Type	HDMI	HDMI 1.4a	
Audio Input Channel	1 channel	1 channel	
Audio Input Type	HDMI (stereo)	HDMI 1.4a (stereo)	
No Delay Passthrough			
Video Output Channel	1 channel	1 channel	
Video Output Type	HDMI	HDMI 1.4a	
Audio Output Channel	1 channel	1 channel	
Audio Output Type	HDMI (stereo)	HDMI 1.4a (stereo)	
◆ PC Interface			
Туре	USB 3.0	PCIe x4	
Video Processing			
Color Space	YUV 4:2:2	RGB / YUV	
♦ Video Input Resolution			
Video Input Resolution	1920 x 1080 24p/25p/30p/50p/59.54p/60p         1680 x 1050 30p/60p       1280 x 720 30p/50p/59.94p/60p         1440 x 900 30p/60p       1024 x 768 30p/60p         1360 x 768 30p/60p       800 x 600 60p         1280 x 1024 x 30p/60p       720 x 576 50p         1280 x 800 30p/60p       720 x 480 59.94p/60p         1280 x 800 30p/60p       720 x 480 59.94p/60p         1280 x 768 30p/60p       640 x 480 60p	3840 x 2160 24p/25p/30p 1920 x 1080 24p/25p/30p/50p/60p 1920 x 1080 60i/59.94i/50i 1280 x 720 60p/50p	
Video Preview	1920 x 1080 24p/25p/30p/50p/59.54p/60p         1680 x 1050 30p/60p       1280 x 720 30p/50p/59.94p/60p         1440 x 900 30p/60p       1024 x 768 30p/60p         1360 x 768 30p/60p       800 x 600 60p         1280 x 1024 30p/60p       720 x 576 50p         1280 x 800 30p/60p       720 x 480 59.94p/60p         1280 x 768 30p/60p       640 x 480 60p	3840 x 2160 24p/25p/30p 1920 x 1080 24p/25p/30p/50p/60p 1920 x 1080 60i/59.94i/50i 1280 x 720 60p/50p	
◆ Audio Processing			
Audio Sampling Frequencies	44.1k,	48k Hz	
♦ Others			
Dimensions	105 x 58 x 18 (mm)	155 x 111 (mm)	
Operating Temperature	0°C - 60°C (32°F - 140°F), non-condensing		
Power Consumption	4W	15W	
♦ Software Support			
	Microsoft Windows 7/	8.1/10 (32-bit & 64-bit)	
OS Support	Linux: Ubntu 14.04.2 (64-bit ) (Kernel version: 3.16.0-30-generic)	Linux: Ubntu 16.04 (64-bit) (Kernel version: 4.4.0-21-generic)	
	Operating System that support UVC	N/A	
SDK	Windows: Provides SDK and demo program with sample source code Linux: Provides SDK and demo program with sample source code		

## HDB-301R USB 3.0 Capture Box Plug & Play! Never Missing a Moment!



## **1080P60 High Resolution & Ultra-Low Latency**

Every precious moment is captured by high definition 1080p resolution in 60 frames per second for you to enjoy high-speed and ultra-low latency video streaming.

The uncompressed video transferred from different HDMI devices (as consoles, camera...) could be real-time edited while maintaining the best possible quality and primitive color saturation. Get rid of unnatural, delay, cumbersome!



## **Compatible Software Tool**

IEI HDB-301R is compatible with various live streaming software with DirectShow architecture, such as OBS, XSplit, PotPlayer, Wirecast, VLC media player, Skype, etc. You can use the software tools you are familiar with to play video games, watch HDMI while editing, recording, and streaming.



OBS







## **Continuous Video Streaming**



## **Continuously Work**

IEI HDB-301R housing is made by ruggedized aluminum with excellent hot dissipation! One of the youtubers has done an 8-hour continuous steaming and enjoyed ultra-low latency without stop!

## **Best Applications**



Game Streaming



Signage Streaming



Auction Streaming



Enterprise Training Streaming

## **Perfect for Popular HDMI Video Devices**



PC

Desktop PC or notebook,

HDMI video output.

Game Consoles PS4, XBox One, Nintendo Switch.



Set-top Box

Apple TV, MOD, paid TV channels STB, satellite TV.



Player

DVD player, Blu-ray player or audio and video player, as Miracast wireless transmitter.



Photo Equipment

SLR Camera or Camera, as SONY.

\* Please be noted: It can be set as HDMI 1080P output on the device.

## HDB-301R Installation





# HDB-301R

USB 3.0 Uncompressed Video/Audio Capture Box with One Channel HDMI Input and One Channel HDMI Bypass Output, 1920x1080@60p



## Machine Vision/Broadcast & Post Production



## **Dimensions** (Unit: mm)



## **Features**

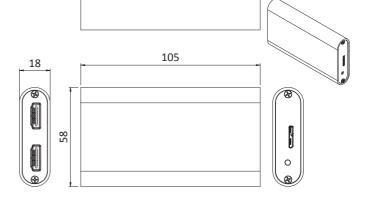
- 1-channel HDMI input and 1-channel HDMI bypass output
- Capture High-Definition HDMI video to your PC
- Capture with USB 3.0 bandwidth, enabling you to capture 1080p video at 60fps
- Deliver uncompressed video to your PC with ultra-low latency
- Preview the video with its original color and high video quality
- For audio mastering 48kHz audio, provides the power you need to integrate into any audio environment
- Compatible with OBS, XSplit, PotPlayer
- Support Windows & Linux (Ubuntu) OS

## **Specifications**

#### Interface

	Input	Video input channel	1 channel	
		Video input type	HDMI	
		Audio input channel	1 channel	
		Audio input type	HDMI (stereo)	
	No Delay Pass Through	Video output channel	1 channel	
		Video output type	HDMI	
		Audio output channel	1 channel	
		Audio output type	HDMI (stereo)	
♦ PC Interface				
	Туре	USB 3.0		
Video Processing				
	Color Space	YUV 4:2:2		
		1920 x 1080 24p/25p/30	)p/50p/59.54p/60p	

	Color Space	107 4:2:2	
	Video Input Resolution	1920 x 1080 24p/25p/30p 1680 x 1050 30p/60p 1440 x 900 30p/60p 1360 x 768 30p/60p 1280 x 1024 30p/60p 1280 x 800 30p/60p 1280 x 768 30p/60p	x/50p/59.54p/60p 1280 x 720 30p/50p/59.94p/60p 1024 x 768 30p/60p 800 x 600 60p 720 x 576 50p 720 x 480 59.94p/60p 640 x 480 60p
	Video Preview	1920 x 1080 24p/25p/30p 1680 x 1050 30p/60p 1440 x 900 30p/60p 1360 x 768 30p/60p 1280 x 1024 30p/60p 1280 x 800 30p/60p 1280 x 768 30p/60p	x/50p/59.54p/60p 1280 x 720 30p/50p/59.94p/60p 1024 x 768 30p/60p 800 x 600 60p 720 x 576 50p 720 x 480 59.94p/60p 640 x 480 60p
♦ Audio Processing			
	Audio Sampling Frequencies	44.1k, 48k Hz	



#### Preview System Requirement

• Treview Oystern Requirement					
	System	Intel® Core™ i5-3400 or above			
	Memory	4GB or more			
♦ Software Support					
	OS Support	Microsoft windows 7/ 8.1/10 (32-bit & 64-bit) Linux: Ubntu 14.04.2 (64-bit) (Kernel version: 3.16.0-30-generic) Operating System that support UVC			
	SDK	Windows: Provides SDK and demo program with sample source code Linux: Provides SDK and demo program with sample source code			
♦ Others					
	Dimensions	105 mm x 58 mm x 18 mm			
	Operating Temperature	$0^{\circ}\text{C} \sim 60^{\circ}\text{C}$ (32° $\sim$ 140°F), non-condensing			
	Power Consumption	4W			
	Weight	112g			

## Packing List

1 x HDB-301R	
1 x USB 3.0 cable	1 x QIG

Part No.	Description
HDB-301R-R10	USB 3.0 Uncompressed video/audio capture box with one channel HDMI input and one channel HDMI bypass output,1920x1080@60p

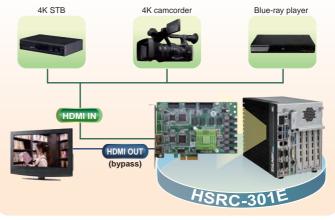
## Machine Vision

# HSRC-301E

PCI Express Uncompressed Video/Audio Capture Card with One Channel HDMI Input and One Channel HDMI Bypass Output, 4K@30p, 1920x1080@60p



## Machine Vision/Broadcast & Post Production





## Features

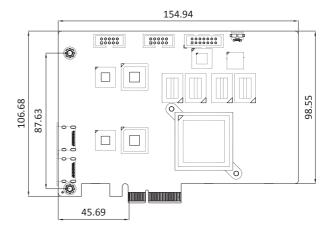
- 1-channel HDMI input and 1-channel HDMI bypass output
- Either one HDMI input supports 4K video signal
- Supports for 4:2:2 color spaces to provide the highest quality for your images
- $\bullet$  HDMI bypass output supports low-delay video pass through up to 4K@30, so you can watch original video while doing video processing
- Designed for professional video, machine vision, broadcast & post production industries
- For multi-channel audio mastering, 24-bit 48kHz audio provides the power you need to integrate into any audio environment
- Windows/Linux OS supported

## Specifications

#### Interface

	intoniaco		
		Video input channel	1 channel
	Input	Video input type	HDMI 1.4a
		Audio input channel	1 channel
		Audio input type	HDMI 1.4a (stereo)
		Video output channel	1 channel
	No Delay Pass	Video output type	HDMI 1.4a
	Through	Audio output channel	1 channel
		Audio output type	HDMI 1.4a (stereo)
PC Interface			
	Туре	PCIe x4	
♦ Video Processing			
	Color Space	RGB / YUV	
3840 x 2160 24p/25p/30p           Video Input Resolution         1920 x 1080 24p/25p/30p/50p/60p           1280 x 720 60p/50p			
3840x2160 24p/25p/30p           Video Preview         1920 x 1080 24p/25p/30p/50p/60p           1280 x 720 60p/50p			
♦ Audio Processing			
	Audio Sampling Frequencies	44.1k, 48k Hz	

#### Dimensions (Unit: mm)



#### System Requirement

	System	Intel® Core™ i7-4790 or above		
	Memory	DDR3-2600 8G or more		
♦ Software Support				
	OS Support	Microsoft Windows 7/8.1/10 32-bit / 64-bit Linux: Ubntu 16.04 (64-bit) (Kernel version: 4.4.0-21-generic)		
	SDK	Windows: Provides SDK and demo program with sample source code Linux: Provides SDK and demo program with sample source code		
♦ Others				
	Dimensions	155 mm x 111 mm		
	Operating Temperature	0°C ~ 60°C, non-condensing		
	Power Consumption	15W		

## **Packing List**

I x HSRC-301E	
I x QIG	1 x Utility CD

Part No.	Description
HSRC-301E-R10	PCI Express uncompressed video/audio capture card with one channel HDMI input and one channel HDMI output, 4K@30p, 1920x1080@60p

## Standard-Definition Software Compression Capture Card Selection Guide







Model Name	IVCME-C604	IVC-200G-RS	PM-1056
Form Factor	PCIe Mini	PCI	PCI-104
♦ Interface			
Video Input	4-channel composite video NTSC/PAL auto sensing	4-channel composite video NT	SC/PAL/SECAM auto sensing
Video Input Type	BNC (BNC+RCA to DB-26 cable included)	BNC	BNC
Audio Input	4 channels	N/A	N/A
Audio Input Type	RCA (BNC+RCA to DB-26 cable included)	N/A	N/A
Bus Interface	PCIe Mini	PCI Rev. 2.1 compliant	PCI Rev. 2.1 compliant
Alarm I/O	Yes	Yes	Yes
Card ID	N/A	DIP switch selectable w	ith LED for ID indication
LED Indicator	N/A	Ν	/A

#### Video Processing

Video Compression	Software compression					
Video Engine	1 x Conexar	nt CX25854	4 x Conexa	nt CX25878	1 x Conex	ant CX25878
Resolution & Frame Rate	NTSC: 720 x 576 720 x 480 720 x 288 720 x 240 352 x 240 320 x 240 160 x 120	PAL: 720 x 576 720 x 480 720 x 288 720 x 248 352 x 248 352 x 240 320 x 240 160 x 120	NT 720 × 480 720 × 240 640 × 288 352 × 288 320 × 240 240 × 176 160 × 120 88 × 72	SC: 720 x 288 640 x 480 640 x 240 352 x 240 240 x 180 176 x 144 128 x 96 80 x 60	PAL/ 720 x 576 720 x 288 704 x 576 640 x 288 352 x 288 320 x 240 240 x 176 160 x 120 88 x 72	SECAM: 720 x 480 720 x 240 640 x 480 640 x 240 352 x 240 240 x 180 176 x 144 128 x 96 80 x 60
	NTSC: Total 120fps @ D1 PAL: Total 100fps @ D1 fo		NTSC: Up to 120fps at al PAL/SEACAM: Up to 100		NTSC: Total 30fps @ D PAL/SEACAM: Total 25	1 for 4 channels fps @ D1 for 4 channels

#### + Audio Processing

Audio Compression	Software compression	N/A	N/A
Sampling Rate	32kHz, 44.1kHz, 48kHz, 96kHz (hardware spec.)	N/A	N/A
Quantization	24-bit (hardware spec.)	N/A	N/A

#### + System Requirement

System	x86 PC compatible computer	x86 PC compatible computer
Memory	512MB or above	256MB or above
Graphics	DirectX compatible VGA card supporting YUV overlay mode	DirectX compatible VGA card supporting YUV overlay mode
Software Support		

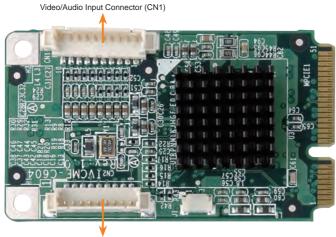
OS Support	Windows 7 (32-bit & 64-bit) Linux: Ubntu 14.04 (64-bit) Kernel version: 3.13.0-32-generic	Windows 98/SE/ME/2000/XP Linux Kernal 3.1	
SDK		Provides SDK and demo program with source code	
♦ Others			
Dimensions	51 mm x 30 mm	119.91 mm x 106.68 mm	95.89 mm x 90.17 mm
Operating Temperature		0°C ~ 60°C (32°F~140°F), non-condensing	
Power Consumption	1.65W, 3.3V@0.5A	15W, 3A@5V (with relay)	3.5W, 0.7A@5V (with relay)

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# IVCME-C604

PCIe Mini Video/ Audio Capture Card with 4-Channel Video/ Audio Input, Total 120fps@D1 for 4 Channels (NTSC)





GPIO Connector (CN2)

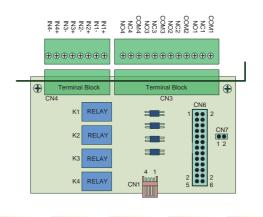
## **Features**

- Single card 4-channel composite video (NTSC/PAL) solution
- PCIe Mini card interface supported
- Compatible with Linux, Windows XP and Windows 7 (32-bit and 64-bit)
- Total 120fps @ D1 for 4 channels (NTSC)
- External GPIO daughter board with 4 inputs and 4 outputs (optional)
- SDK available for customer to create customized applications

## **Specifications**

٠	Interface
•	Interrace

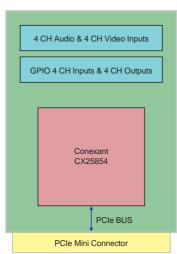
٠	Interface		
	Video Input	4-channel composite video NT	SC/PAL auto sensing
	Video Input Type	BNC (BNC to DB-9 cable inclu-	ded)
	Audio Input	4-channel analog	
	Audio Input Type	RCA (RCA to DB-9 cable inclue	ded)
	Bus Interface	PCIe Mini	
	Alarm IO	Yes	
•	Video Processing		
	Video Compression	Software compression	
	Video Engine	1 x Conexant CX25854	
	Resolution	NTSC: 720 x 576 720 x 480 720 x 288 720 x 240 352 x 240	PAL: 720 x 576 720 x 480 720 x 288 720 x 248
	Frame Rate	NTSC: Total 120fps @ D1 for 4 PAL: Total 100fps @ D1 for 4 c	
♦ Audio Processing			
	Audio Compression	Software compression	
	Sampling Rate	8kHz, 16kHz, 32kHz, 44.1kHz	and 48kHz
	Quantization	16-bit	
٠	System Requirement	t	
	Platform	x86 PC compatible computer	
	Memory	512MB or above	
٠	Software Support		
	OS Support	Microsoft Windows 7 (32-bit & Linux: Ubntu 14.04 (64-bit) Ker	· ·
٠	Others		
	Dimensions	51 mm x 30 mm	
	Operating Temperature	0°C ~ 60°C, non-condensing	
	Power Consumption	1.65W (3.3V@0.5A)	





ν

## System Block



/ideo/Audio	Input	Connector	(CN1)
lucorAuulo	mput	Connector	

Pin No.	Signal	
1	GND	
2	Video In CH1	
3	Video In CH2	
4	Video In CH3	
5	Video In CH4	
6	Audio In CH1	
7	Audio In CH2	
8	Audio In CH3	
9	Audio In CH4	
10	GND	

GPIO Connector (CN2)		
Pin No.	Signal	
1	GND	
2	DI1	
3	DI2	
4	DI3	
5	DI4	
6	DO1	
7	DO2	
8	DO3	
9	DO4	

## Packing List

1	x IVCME-C604 capture card
1	x BNC to DB-9 cable
1	x RCA to DB-9 cable
1	x Video/Audio input cable kit
1	x Utility CD
1	x QIG





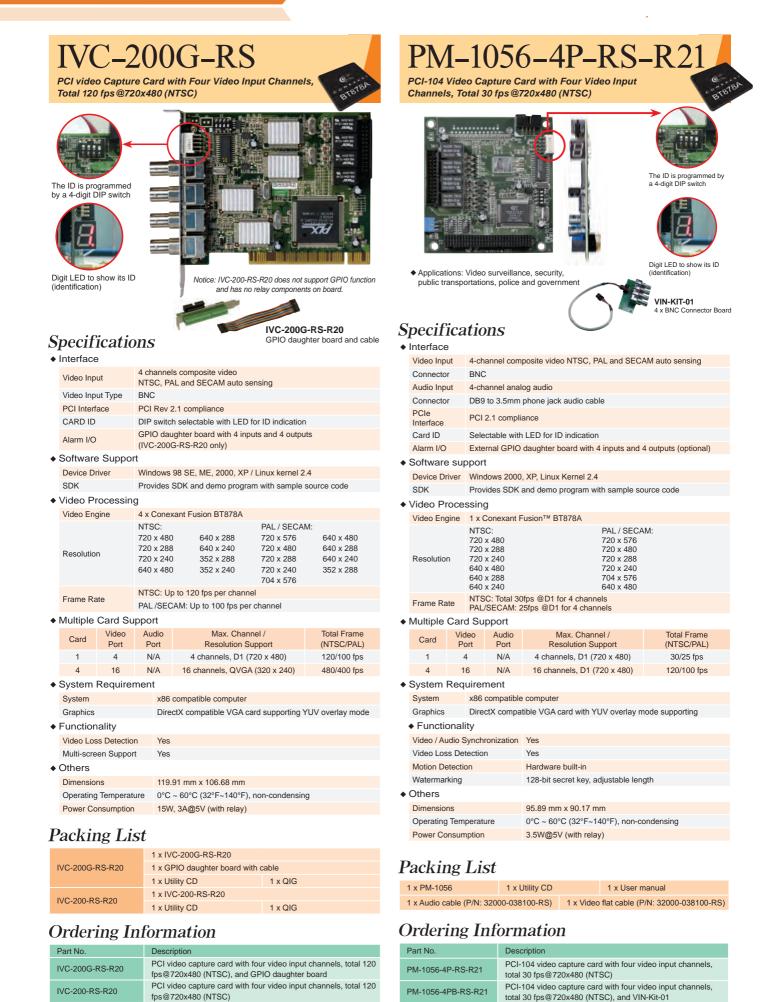
DB-9 to Input Jack



## **Ordering Information**

Part No.	Description
IVCME-C604-R10	PCIe Mini video/audio capture card with 4-channel video/ audio input, total 120fps@D1 for 4 channels (NTSC)
VIOCARD-GPIO-RS-R10	8 GPIO channels (4 digital inputs and 4 relay outputs)
32031-000100-100-RS	GPIO card to IVCME capture card connection cable

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# **Machine Vision Solution**

# **Industrial Camera & Barcode Reader**

## **IEI MV System Components**

Machine vision system needs more than just a camera, lens and light source. A stable vision system also requires computers for handling data transfer and image processes. Our goal is to provide compatible and solidify vision system which can greatly reduce your development time.



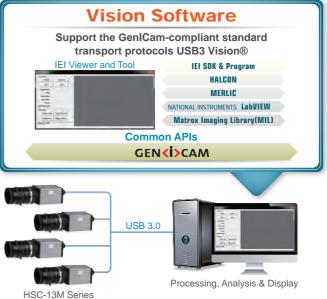
## Camera

The architecture of the IEI Camera is based on USB3 Vision and GenICam standard, which offers you compatible interface with name-brand machine vision software. The plug and play USB3 interface can easily reduce the complex of vision system.

IEI has developed lots of customized optical imaging products and has lots of patents (barcode) in the image algorithm. IEI, now, has the ability to customize image preprocessing and camera design and manufacturing.

## Software

IEI offers viewer and tools for you to configure camera parameters to capture and display images, and to evaluate the camera. If your current inspection software does not support USB3 Vision, IEI also provides a powerful SDK for you to develop your software to access IEI cameras.



## Industrial Computer

IEI offers high-quality and reliable industrial computers which are designed to against extreme environment to fulfill factory requirements. With high compatibility and performance, IEI industrial computers are suitable to be used with machine vision system. Additionally, the flexible expansion interface allows installation of add-on cards and peripheral devices such as PoE card, I/O board and motion board for different application environment.

## MVS-100-Q170

- platform with Intel® Q170 chipset and DDR4 memory
- 16-bit photocoupler-isolated digital I/O
- Great flexibility for hardware expansion
- 4 x Gigabit PoE (compliant with IEEE 1588/IEEE 802.3 af)
- Rich high-speed I/O interfaces on one side for easy installation
- 4 x USB3.0



Preliminary

## TANK-870-Q170

- 6th Gen Intel® Core™ i7 / i5 processor platform with Intel® Q170 chipset and DDR4 memory
- Triple independent display with high resolution support
- Rich high-speed I/O interfaces on one side for easy installation
- On-board power connector for providing power to add-on cards
- Great flexibility for hardware expansion
- 4 x USB 3.0



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## TANK-870E-H110

- 6th Gen Intel® Core™ i7 / i5 processor platform with Intel® H110 chipset and DDR4 memory
- Support dual display VGA+HDMI
- On-board internal power connector for providing power to add-on cards
- Great flexibility for hardware
   expansion
- 4 x USB 3.0



## IPCIE-4POE

## PoE Card

- PCI Express® x4 compliant
- Support for IEEE 802.3af for PoE (Power over Ethernet) with 15.4 watts per port
- Support link aggregation/jumbo frames (9 Kbyte)
- Supports 12V~24V AT/ATX DC input power



## **Camera Applications**

## PCBA Production & Inspection

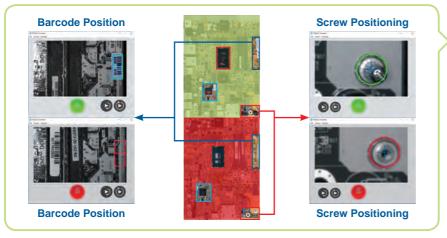
Industrial 4.0 is to implement a low volume and flexible manufacturing system. In electronics production lines, a variety of PCBAs can be produced, and a flexible inspection system for checking various PCBA components is the key to ensure the efficiency and effectiveness of mixing production.

Machine vision can bring great improvement on quality control of production lines. Almost all of the manufacturing processes need appearance inspection to check for defects, position, orientation...etc. to ensure devices such as motherboard, PCB have all components place on the accurate locations.





## Motherboard Appearance Inspection



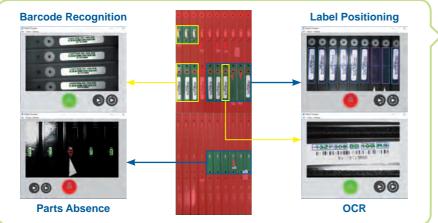
#### Functions:

- (1) BGA orientation
- (2) QFP shift
- (3) QFN missing
- (4) Screw missing
- (5) Label missing

#### Hardware Spec:

- 1 x HSC-13M3-O
- C-Mount 8mm lens
- TANK-870-Q170 i7 CPU IPC with I/O card

## PCB Appearance Inspection



#### > Functions:

- (1) Pin missing
- (2) Barcode reading
- (3) Label missing
- (4) OCR
- (5) Part missing(6) Part shifting
- Hardware Spec:

## • 1 x HSC-13M3-0

- C-Mount 8mm lens
- TANK-870-Q170 i7 CPU IPC with I/O card

## **Machine Vision**

Camera Lens (optional)

# HSC-13M3-O

USB 3.0 Monochrome Camera & Opto-isolated I/O, 1/2" On-semi CMOS, Global Shutter, 1280x1024 Pixels, without Lens, RoHS







## **Features**

- Compact 1/2" On-Semi CMOS sensor
- Large pixel: 4.8 µm
- Resolution: 1280 x 1024 (1.3-megapixel)
- Frame rates up to 150FPS with 1280 x1024 resolution
- Global shutter
- USB3 Vision V1.0

## **Specifications**

#### Camera

Jamera	
Resolution	1280 x 1024
Frame Rate (fps)	150FPS (Max)
Megapixels	1.3-megapixel
Chrome	Mono
Sensor Name	On-Semi PYTHON 1300
Sensor Type	CMOS
Readout Method	Global shutter
Sensor Size (inch)	1/2"
Pixel Size (µm)	4.8µm
Lens Mount	CS-mount
A/D Bits (ADC)	8-bit/10-bit
Acquisition Modes	Continuous, Single Frame, Multi Frame
Partial Image Modes	Pixel binning, decimation, ROI
Opto-isolated I/O Ports	1 input, 1 output
Non-isolated I/O Ports	1 RS-232
Auxiliary Output	5V, 100 mA max
Interface	USB 3.0
Machine Vision Standard	USB3 Vision v1.0
Compliance	CE, FCC
Software Support	

#### OS Support

SDK

 Others Dimensions Weight (gra

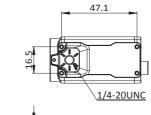
• S

SBR	sample source code
Others	
Dimensions (mm)	29 mm x 29 mm x 57 mm
Weight (grams)	85g
Operating Temperature	0° ~ 50°C
Storage Temperature	-30° ~ 60°C
Operating Humidity	20% ~ 80%
Storage Humidity	30% ~ 95%
Power Requirements	5V via USB 3.0 or 6-18V via Opto-isolated input

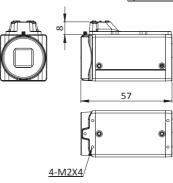
Microsoft Windows 7/8.1/10 (32-bit & 64-bit)

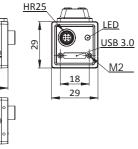
Windows: Provides SDK and demo program with

## Dimensions (Unit: mm)









## Packing List

1 x HSC-13M3-O	1 x Mounting bracket
1 x CS to C mount adapter	1 x QIG

## **Ordering Information**

Part No.	Description		
HSC-13M3-O-R10	USB 3.0 monochrome camera & opto-isolated I/O, 1/2" on-semi CMOS, global shutter, 1280x1024 pixels, without lens, RoHS		
32001-019800-100-RS	USB 3.0 cable, 1800mm, USB 3.0 A type male and micro USB 3.0 B type male+screw, RoHS		
32033-001000-100-RS	IO connecting cable with an 8-pin male connector (HR25-7TP- 8P), flying leads in 3 meter lengths, 28AWG, RoHS (custom lengths upon request)		
7I003-M1620MPW2-RS	Camera lens, 2/3", focal length 16mm, F2.0 C-Mount, RoHS		
7I003-M3514MP-RS	Camera lens, 2/3", focal length 35mm, F1.4 C-Mount, RoHS		
7I003-SV1214V-RS	Camera lens, 1/2", focal length 12mm, F1.4 C-Mount, RoHS		
7I003-SV1614V-RS	Camera lens, 2/3", focal length 16mm, F1.4 C-Mount, RoHS		
71003-SV2514V-RS	Camera lens, 1", focal length 25mm, F1.4 C-Mount, RoHS		

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## Machine Vision

Camera Lens (optional)

# HSC-13M4-E

USB 3.0 Monochrome Camera & Opto-isolated I/O, 1/1.8" E2V CMOS, Global Shutter, 1280x1024 Pixels, without Lens, RoHS







### **Features**

- Compact 1/1.8" E2V CMOS sensor
- Large pixel: 5.3 µm
- Resolution: 1280 x 1024 (1.3-megapixel)
- Frame rates up to 60FPS with 1280 x 1024 resolution
- Global shutter
- USB3 Vision V1.0 & GenICam standard
- IEI SDK

## Specifications

#### Camera

Camera	
Resolution	1280 x 1024
Frame Rate (fps)	60FPS (Max)
Megapixels	1.3-megapixel
Chrome	Mono
Sensor Name	E2V EV76C560
Sensor Type	CMOS
Readout Method	Global shutter
Sensor Size (inch)	1/1.8"
Pixel Size (µm)	5.3µm
Lens Mount	CS-mount
A/D Bits (ADC)	8-bit/10-bit
Acquisition Modes	Continuous, Single Frame, Multi Frame
Partial Image Modes	Pixel binning, decimation, ROI
Opto-isolated I/O Ports	1 input, 1 output
Non-isolated I/O Ports	1 RS-232
Auxiliary Output	5V, 100 mA max
Interface	USB 3.0
Machine Vision Standard	USB3 Vision v1.0
Compliance	CE, FCC
Software Support	

## Software Support OS Support

SDK

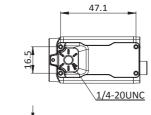
- SDK
- Others

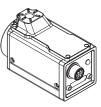
011013	
Dimensions (mm)	29
Weight (grams)	850
Operating Temperature	0° -
Storage Temperature	-30
Operating Humidity	209
Storage Humidity	309
Power Requirements	5V

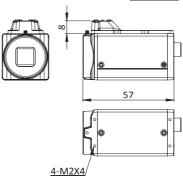
Microsoft Windows 7/8.1/10 (32-bit & 64-bit) Windows: Provides SDK and demo program with sample source code

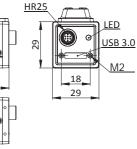
# 29 mm x 29 mm x 57 mm 85g 0° ~ 50°C -30° ~ 60°C 20% ~ 80% 30% ~ 95% 5V via USB 3.0 or 6-18V via Opto-isolated input

## Dimensions (Unit: mm)









## Packing List

1 x HSC-13M4-E	1 x Mounting bracket
1 x CS to C mount adapter	1 x QIG

## **Ordering Information**

Part No.	Description
HSC-13M4-E-R10	USB 3.0 monochrome camera & opto-isolated I/O, 1/1.8" E2V CMOS, global shutter, 1280x1024 pixels, without lens, RoHS
32001-019800-100-RS	USB 3.0 cable, 1800mm, USB 3.0 A type male and micro USB 3.0 B type male+screw, RoHS
32033-001000-100-RS	IO connecting cable with an 8-pin male connector (HR25-7TP- 8P), flying leads in 3 meter lengths, 28AWG, RoHS (custom lengths upon request)
7I003-M1620MPW2-RS	Camera lens, 2/3", focal length 16mm, F2.0 C-Mount, RoHS
7I003-M3514MP-RS	Camera lens, 2/3", focal length 35mm, F1.4 C-Mount, RoHS
7I003-SV1214V-RS	Camera lens, 1/2", focal length 12mm, F1.4 C-Mount, RoHS
7I003-SV1614V-RS	Camera lens, 2/3", focal length 16mm, F1.4 C-Mount, RoHS
71003-SV2514V-RS	Camera lens, 1", focal length 25mm, F1.4 C-Mount, RoHS

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# HTDB-100F/FM



## Specifications

<ul> <li>Electrical         <ul> <li>Interface</li> <li>RJ-45 to USB 2.0</li> <li>Input Voltage</li> <li>V</li> </ul> </li> <li>Operating Power</li> <li>W ~ 3 W</li> <li>Mechanical         <ul> <li>Dimensions (HxWxD)</li> <li>17.5 cm x 5.9 cm x 11.2 cm</li> <li>Weight</li> <li>120 g</li> </ul> </li> <li>Environmental         <ul> <li>Drop</li> <li>Designed to withstand 20 times of 1.8 m drops to concrete on each of the faces</li> <li>Sealing</li> <li>IP 41</li> <li>Operating Temperature</li> <li>O°C to 55°C (32°F to 131°F)</li> <li>Storage Temperature</li> <li>O°C to 55°C (13°F to 149°F)</li> <li>Humidity</li> <li>0 to 95% relative humidity, non-condensing</li> <li>Light Levels</li> <li>0 to 100,000 lux (9,290 foot-candles)</li> </ul> </li> <li>Light Source         <ul> <li>Aiming Pattern</li> <li>Green LED</li> <li>Illumination</li> <li>660 nm LED</li> <li>System Requirement</li> <li>IEI HTDB Utility</li> <li>Microsoft Windows 7/8.1/10 (32-bit &amp; 64-bit)</li> <li>Windows: Provides SDK and demo program with sample source code</li> <li>Linux: Provides SDK and demo program with sample source code</li> <li>Linux: Provides SDK and demo program with sample source code (Ubuntu 16.04 LTS)</li> </ul> </li> <li>Scan Pattern</li> <li>Area image (1280 x 1024 pixel array, 1.3-megapixel)</li> </ul>
Input Voltage       5 V         Operating Power       2 W ~ 3 W         • Mechanical
Operating Power       2 W ~ 3 W         • Mechanical
Mechanical     Dimensions (HxWxD)     17.5 cm x 5.9 cm x 11.2 cm     Weight     120 g     Environmental     Drop     Designed to withstand 20 times of 1.8 m drops to concrete     on each of the faces     Sealing     IP 41     Operating Temperature     -10°C to 55°C (32°F to 131°F)     Storage Temperature     -10°C to 65°C (13°F to 149°F)     Humidity     0 to 95% relative humidity, non-condensing     Light Levels     0 to 100,000 lux (9,290 foot-candles)     Light Source     Aiming Pattern     Green LED     Illumination     660 nm LED     System Requirement     IEI HTDB Utility     Microsoft Windows 7/8.1/10 (32-bit & 64-bit)     Windows: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code     Linux: Provides SDK a
Dimensions (HxWxD)       17.5 cm x 5.9 cm x 11.2 cm         Weight       120 g         Environmental       Designed to withstand 20 times of 1.8 m drops to concrete on each of the faces         Sealing       IP 41         Operating Temperature       0°C to 55°C (32°F to 131°F)         Storage Temperature       -10°C to 65°C (13°F to 149°F)         Humidity       0 to 95% relative humidity, non-condensing         Light Levels       0 to 100,000 lux (9,290 foot-candles)         Light Source       Aiming Pattern         Illumination       660 nm LED         System Requirement       Windows: Provides SDK and demo program with sample source code         Lipux: Provides SDK and demo program with sample source code (Ubuntu 16.04 LTS)
Weight       120 g         Environmental       Drop       Designed to withstand 20 times of 1.8 m drops to concrete on each of the faces         Sealing       IP 41         Operating Temperature       0°C to 55°C (32°F to 131°F)         Storage Temperature       -10°C to 65°C (13°F to 149°F)         Humidity       0 to 95% relative humidity, non-condensing         Light Levels       0 to 100,000 lux (9,290 foot-candles)         Light Source       Aiming Pattern         Illumination       660 nm LED         System Requirement       Itorsoft Windows 7/8.1/10 (32-bit & 64-bit)         SDK       Windows: Provides SDK and demo program with sample source code         Linux: Provides SDK and demo program with sample source code (Ubuntu 16.04 LTS)
Environmental         Drop       Designed to withstand 20 times of 1.8 m drops to concrete on each of the faces         Sealing       IP 41         Operating Temperature       0°C to 55°C (32°F to 131°F)         Storage Temperature       -10°C to 65°C (13°F to 149°F)         Humidity       0 to 95% relative humidity, non-condensing         Light Levels       0 to 100,000 lux (9,290 foot-candles)         Light Source       Aiming Pattern         Green LED       Illumination         660 nm LED       System Requirement         IEI HTDB Utility       Microsoft Windows 7/8.1/10 (32-bit & 64-bit)         SDK       Windows: Provides SDK and demo program with sample source code         Linux: Provides SDK and demo program with sample source code (Ubuntu 16.04 LTS)
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Drop     on each of the faces       Sealing     IP 41       Operating Temperature     0°C to 55°C (32°F to 131°F)       Storage Temperature     -10°C to 65°C (13°F to 149°F)       Humidity     0 to 95% relative humidity, non-condensing       Light Levels     0 to 100,000 lux (9,290 foot-candles)          Light Source       Aiming Pattern     Green LED       Illumination     660 nm LED          System Requirement       IEI HTDB Utility     Microsoft Windows 7/8.1/10 (32-bit & 64-bit)       SDK     Windows: Provides SDK and demo program with sample source code       Linux: Provides SDK and demo program with sample source code (Ubuntu 16.04 LTS)
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Storage Temperature       -10°C to 65°C (13°F to 149°F)         Humidity       0 to 95% relative humidity, non-condensing         Light Levels       0 to 100,000 lux (9,290 foot-candles)         Light Source       Aiming Pattern         Aiming Pattern       Green LED         Illumination       660 nm LED         System Requirement       Microsoft Windows 7/8.1/10 (32-bit & 64-bit)         SDK       Windows: Provides SDK and demo program with sample source code         Linux: Provides SDK and demo program with sample source code (Ubuntu 16.04 LTS)
Humidity       0 to 95% relative humidity, non-condensing         Light Levels       0 to 100,000 lux (9,290 foot-candles)         Light Source       Aiming Pattern         Aiming Pattern       Green LED         Illumination       660 nm LED         System Requirement       Wicrosoft Windows 7/8.1/10 (32-bit & 64-bit)         SDK       Windows: Provides SDK and demo program with sample source code         Linux: Provides SDK and demo program with sample source code (Ubuntu 16.04 LTS)
Light Levels       0 to 100,000 lux (9,290 foot-candles) <ul> <li>Light Source</li> <li>Aiming Pattern</li> <li>Green LED</li> <li>Illumination</li> <li>660 nm LED</li> </ul> <ul> <li>System Requirement</li> <li>IEI HTDB Utility</li> <li>Microsoft Windows 7/8.1/10 (32-bit &amp; 64-bit)</li> <li>SDK</li> <li>Windows: Provides SDK and demo program with sample source code Linux: Provides SDK and demo program with sample source code (Ubuntu 16.04 LTS)</li> </ul> <ul> <li>Scan Performance</li> </ul>
<ul> <li>Light Source         Aiming Pattern         Green LED         Illumination         660 nm LED         System Requirement         IEI HTDB Utility         Microsoft Windows 7/8.1/10 (32-bit &amp; 64-bit)         Windows: Provides SDK and demo program with sample source code         Linux: Provides SDK and demo program with sample source code         Linux: Provides SDK and demo program with sample source code (Ubuntu 16.04 LTS)         Scan Performance</li></ul>
Aiming Pattern     Green LED       Illumination     660 nm LED          System Requirement         IEI HTDB Utility        IEI HTDB Utility     Microsoft Windows 7/8.1/10 (32-bit & 64-bit)       SDK     Windows: Provides SDK and demo program with sample source code       Linux: Provides SDK and demo program with sample source code (Ubuntu 16.04 LTS)          Scan Performance
Illumination       660 nm LED            System Requirement           HIDB Utility          IEI HTDB Utility       Microsoft Windows 7/8.1/10 (32-bit & 64-bit)         SDK       Windows: Provides SDK and demo program with sample source code         Linux: Provides SDK and demo program with sample source code (Ubuntu 16.04 LTS)              Scan Performance
System Requirement     IEI HTDB Utility     Microsoft Windows 7/8.1/10 (32-bit & 64-bit)     Windows: Provides SDK and demo program with sample     source code     Linux: Provides SDK and demo program with sample     source code (Ubuntu 16.04 LTS)     Scan Performance
IEI HTDB Utility     Microsoft Windows 7/8.1/10 (32-bit & 64-bit)       SDK     Windows: Provides SDK and demo program with sample source code Linux: Provides SDK and demo program with sample source code (Ubuntu 16.04 LTS)       ◆ Scan Performance
SDK       Windows: Provides SDK and demo program with sample source code         Linux: Provides SDK and demo program with sample source code (Ubuntu 16.04 LTS)         ◆ Scan Performance
SDK     source code       Linux: Provides SDK and demo program with sample       source code (Ubuntu 16.04 LTS)
Scan Pattern Area image (1280 x 1024 pixel array, 1.3-megapixel)
Motion Tolerance Up to 350 cm/s for 13 mil UPC at optimal focus
Depth of Field 10 mm ~ 270 mm
FOV Vertical: 34.4° Diagonal: 53°
Print Contrast 20% minimum reflectance difference
MTF 100 lp/mm (>10%)
♦ Symbologies
1D UPC/EAN, UPC/EAN with supplementals, Bookland EAN, ISSN, UCC Coupon Extended Code, Code 128, GS1- 128, ISBT 128, Code 39, Code 39 Full ASCII, Code 93, Interleaved 2 of 5, Codabar, MSI
2D MicroPDF417, PDF417, Data Matrix, QR Code, Micro QR Code
◆ Certification
Electrical Safety         UL60950-1 2nd ed, CSA C22.2 No. 60950-1 2nd ed, EN60950-1/IEC60950-1 2nd ed
LED Safety IEC/EN62471
EMI/RFI FIC Part 15 Class B, EN55032 Class B, EN55024, Medical Electrical Equipment:EN60601-1-2, FCC Part 18

Handheld 1D/2D Barcode Reader, 1280x1024, 10 ~ 270 mm Reading Distance, USB Interface

New

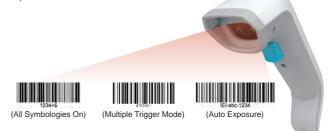
### **Features**

- Read 1D, 2D barcodes on paper and mobile phones
- Strong ability to read barcodes and to fast decode broken, curved and blurry printed barcode
- Read multiple barcodes by holding the trigger
- IP41 rating against dust and moisture
- Rugged design, 1.8 m/5.9 ft. drop to concrete
- Ergonomic and beautiful design for long time usage, suitable for left- and right-handed users
- Medical Grade Design: Anti-bacterial surface (HTDB-100FM)



## **Easy Setting for Barcode Preference or Symbology**

To configure the barcode reader, simply scan the corresponding barcode symbols listed in the user manual. For example, if the user needs to set the exposure mode to automatic, just scan the Auto Exposure barcode.



## **External Overview**



RJ-45 Port (RJ-45 to USB cable)

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## **Applications**



Medical

The HTDB-100F/FM can be used with medication cart or in operating room/ pharmacy/emergency room.



Industry The HTDB-100F/FM can be used in production lines or warehouses.



**Food** The HTDB-100F/FM can be used in discount stores or supermarkets.



## **Read Multiple Barcodes**

IEI handheld barcode reader has the capability to read multiple barcodes printed on one label. When you need to read multiple barcodes, just scan "Enabling to read multiple barcode" in the barcode preference of the user manual. Then, scan and read the barcodes one by one by continually holding the trigger button.

With this feature, you can not only reduce the frequency of button usage, but also increase efficiency. IEI barcode reader can block duplicate data from being sent. Therefore, lots of works for data comparison and information processing can be reduced in the application system.

## HTDB-100F/FM Decode Range

Barcode Type	code39	code128	UPCE
Symbol Denisity	7.5mil	7.5mil	13mil
Туре	*C39042368*	C1281903625	0 425261 4
Working Ranges	30mm - 145mm	35mm - 145mm	20mm - 250mm

Barcode Type	Data Matrix		QR code	
Symbol Denisity	10mil	20mil	10mil	20mil
Туре				
Working Ranges	35mm - 170mm	15mm - 270mm	35mm - 180mm	10mm - 270mm

## Packing List

1 x HDTB-100F/FM handheld 1D/2D barcode reader 1 x RJ-45 to USB cable 1 x QIG





Part No.	Description
HTDB-100FM-R10	Handheld 1D/2D Barcode Reader, 1280x1024, 10 ~ 270 mm reading distance, anti-bacterial surface, USB interface, RoHS
HTDB-100F-R10	Handheld 1D/2D Barcode Reader, 1280x1024, 10 ~ 270 mm reading distance, USB interface, RoHS

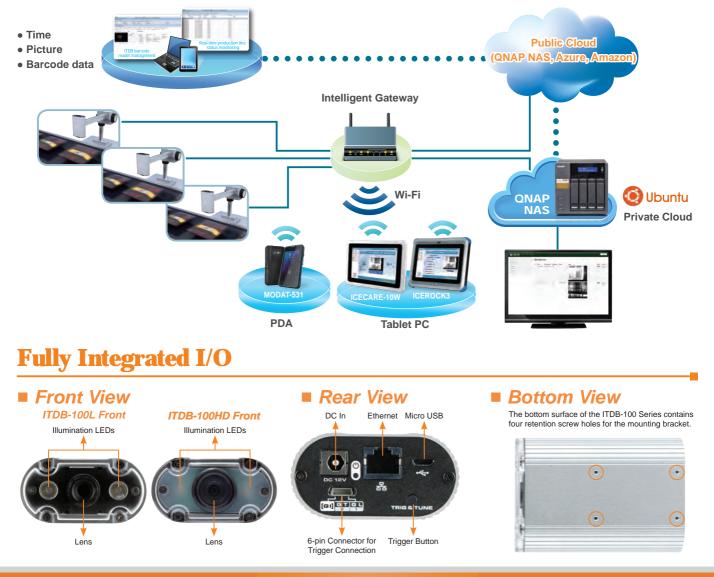
# ITDB-100 Series IoT High Speed 2D Barcode Reader



## Features

- Support remote monitoring and control via Android phones and tablets
- Connection I/O interface: USB, Ethernet TCP/IP
- Support hardware and software trigger modes, both with one shot, series shot, batch and presentation options
- Automatic or manual CMOS sensor configuration: exposure, gain and brightness options supported
- LED: External / Internal
- Image: Capture
- Image Format: BMP
- Region of Interest setting
- Firmware upgradable via USB / Ethernet
- Other Configurations:
- » Decode Timeout / Decode Interval

Installing ITDB Series barcode reader with QNAP NAS system allows you to manage your production lines in a more efficient way. An ITDB system that runs over an IP network infrastructure enables the decoded images and results to be distributed to any number of sites (e.g. QNAP NAS, Android tablet or phone and Windows PC), within the constraints of available bandwidth. With the TCP interface supported by the ITDB Series, the information can be instantly transmitted to the NAS system making real-time production line monitoring more efficient.



## **Successful Product Features**

Ease of Connectivity Popular interfaces are on board: USB, Ethernet TCP/IP

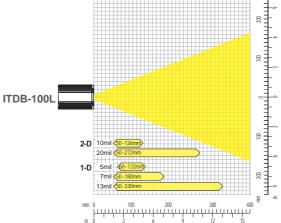


## Easy to Read

Multiple focal options provide application-specific scanning, leading to improved productivity

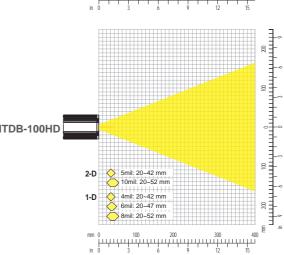
## ITDB-100L Decode Range

Typical Performance*	ITDB-100L-R10	
5 mil Code 39	60 mm - 132 mm	
7 mil Code 39	50 mm - 180 mm	
13 mil UPC	50 mm - 330 mm	
10 mil Data Matrix	50 mm - 126 mm	
20 mil QR	50 mm - 272 mm	
* Performance may be impacted by barcode quality and environmental conditions		



## ITDB-100HD Decode Range

Typical Performance*	ITDB-100HD-R10	
4 mil Code 39	20 mm - 42 mm	
6 mil Code 39	20 mm - 47 mm	
8 mil Code 39	20 mm - 52 mm	
5 mil Data Matrix	20 mm - 42 mm	
10 mil Data Matrix	20 mm - 52 mm	
* Performance may be impacted by barcode quality and environmental conditions		



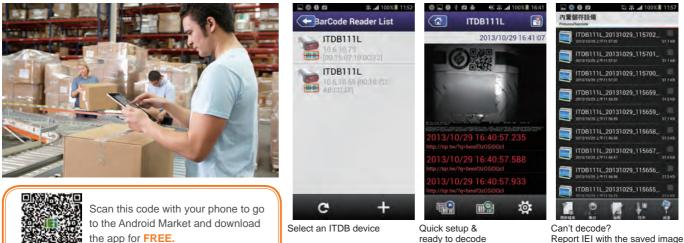
## Supported Barcode Types

Linear						
Codabar (NW7)	1234+\$	Code 128	IEI-abc-1234	Code 39	IEI-1234	
Code 93 and 93i	IEI-1234-/+	Interleaved 2 of 5	1234567890	MSI (1/2 CRC check)	01234567897	
UPC	9 87456 41230 7	ISBN	9 781234 567897	EAN	0123 4565	
			Stacked			
PDF417	PDF417 MicroPDF417					
Matrix						
Data Matrix		QR Code		Micro QR code		

\* Besides the above barcode types, IEI has the ability to develop an algorithm for any barcode type upon customers' requests.

## **IEI Barcode Solution**

IEI barcode quick-setup solution allows you to easily and quickly setup your ITDB Series barcode reader through an Android phone or tablet that has IEI barcode reader APK installed.



Quick setup & ready to decode

Report IEI with the saved image

IEI offers a barcode verifier software for Windows systems which is used to guarantee that the barcodes you print are 100% compliant to the ITDB barcode reader. Verification is akin to insurance: you hope you'll never need it but it's risky to function without it.





Barcode verification



Barcode reader configuration

## **Applications**

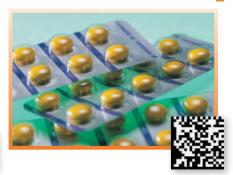


## Packaging

The ITDB-100 Series 2D barcode readers are ideally suited for to a wide range of packaging applications.



**Document Handling and Sorting** The ITDB-100 Series 2D barcode readers are perfect for sorting documents, envelopes, and more.



**Pharmaceuticals** The ITDB-100 Series 2D barcode readers provide accurate reading of multiple code formats in a single view.

## **Abundant Trigger Connection Ports**

## Support up to 2 Trigger Connection Ports

Group	Pin	Description
	1	Output of LED Flash Trigger
1	2	Ground for the Output LED Flash Trigger
	3	Input of Interrupt Trigger
2	4	Ground for the Input of Interrupt Trigger

## Mounting Way







Applications for Logistics Schematic Diagram

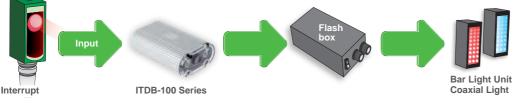


# **Digital Input and Output Connection**

# The ITDB digital input and output ports enable connection to external devices, such as detectors (e.g. proximity and photoelectric sensors), flash power controller box and lights (e.g. bar and coaxial light). When input and output mechanisms are connected, you can manually or automatically request through the ITDB management software either from a remote PC, android phone or tablet, QNAP NAS or using the ITDB's built-in logic.

## Accessories

- External Lighting » Bar Light Unit
  - » Coaxial Light
- Power Controller Box
- Trigger Sensors
- » Proximity sensor
- » Photoelectric sensor



\* I/O usage example: An ITDB attached to a photoelectric sensor and to a flash power controller system.

## 40 32 4-M2 1/4-20 UNC B 9 +0.10 D 50 ±0.10 ĥF 0 0 ±0.10 $\bigcirc$ 0 -0 2.50 - 1.4 30 JAC **ITDB-100 Series Dimensions** Mounting Bracket Dimensions

## **Dimensions** (Unit: mm)

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## Specifications

	Supported 1D Symbologies	Code 39, code 93, interleaved 2 of 5, UPC/EAN (ISBN, UPCA, UPCE, EAN13, EAN8) EAN 128, code 128, MSI, codabar		Operat Limits
	Supported 2D Symbologies	PDF-417, Micro PDF-417, QR Code/microQR Code, Data Matrix		the 6- Conne for Tri
	Sensor Major Specifications	Sensor: 1/3 inch CMOS with global shutter Resolution: 752 x 480 Acquisition: Max. rate 60fps		Conne
	Lens Major Specifications	Focus: Fixed ITDB-100L Code resolution: ≥0.33 mm Reading distance (at code resolution): 50 mm ~ 330		OS Su
		mm ITDB-100HD Code resolution: ≥0.2 mm Reading distance (at code resolution): 20 mm ~ 52 mm		SDK Softwa
	Illumination Element (nm)	2 x Red LEDs Visible red light (λ= 650 nm ~ 660 nm)		Mecha
L	I/O Interfaces	1 x Micro USB port (USB 2.0 data transmission rate: 480 M-bit/s)		Specif
		<ol> <li>x Ethernet port</li> <li>(Ethernet data transmission rate: 10/100 M-bit/s)</li> <li>x DC in jack (Φ2.5/Φ5.5)</li> <li>x 6-pin connector for trigger connection</li> <li>x Trigger and tuning control button</li> <li>x power indicator</li> <li>Acoustic indicators: Beeper</li> </ol>		Enviro
		Operating voltage: 12V/3.3A		Shock Resist
	Power Supply	Power consumption: Power on = 7.7 W Max. PD = 9.9 W		Vibrat

Operating Limits of the 6-pin Connector for Trigger Connection	Output of LED Flash Trigger Current: 8mA Voltage: 3.3VDC Input of Interrupt Trigger Current: 1.4mA@5VDC, 4mA@12VDC, 6.2mA@18VDC Recommended operating voltage: 5VDC ~ 18VDC Absolute voltage limits: 4.5VDC ~ 24VDC			
OS Support	Microsoft Windows 7/8.1 (32-bit & 64-bit) Microsoft Windows 10 (32-bit & 64-bit) via network connection			
SDK	Windows: Provides SDK and demo program with sample source code			
Software	AP (without source code): Provide software installer to use directly			
Mechanical Specifications	Housing: Die-casting aluminum Housing color: Silver Front cover: Transparent plastic Weight: 290 g (without mounting bracket) Dimensions (LxWxH): 89.8 mm x 62 mm x 32 mm			
Environment	RoHS compliant Operating temperature: 0°C ~ 50°C Storage temperature: -10°C ~ 60°C Permissible relative humidity: 90% (non-condensing) Ambient light safety: 2,000 lx, on code			
Shock Resistance	EN 60068-2-27 (2009-05)			
Vibration	MIL-STD-810F 514.5C-1 and IEC-60068-2-06			

## Packing List

Item	Part No.	Q'ty		
ITDB-100 Series	ITDB-100L-R10/ ITDB-100HD-R10	1		
Power Adapter	63000-FSP040DGAA1106-RS	1		÷.
Power Cord (US)	32701-000700-100-RS	1	Power Adapter	$\prec$
Power Cord (EU)	32702-000200-100-RS	1	$\cap$	5
Micro USB Cable	32001-016100-100-RS	1	G	-
Ethernet Cable	32000-113100-RS	1	Micro USB Cable	J
Mounting Bracket	42010-0172E4-00-RS-N	1		
Mounting Bracket Screw	44045-020061-RS	4	r.r.	
Trigger Connection Cable	32125-008200-100-RS	1		'
User Manual and Utility CD	7B000-000966-RS	1	Mounting Bracket Screw	J

Part No.	Description
ITDB-100L-R10	Image-based code reader system with 1D, 2D decoding code types, 752x480, 2 x LEDs, Reading distance (at code resolution): 50mm ~ 330mm, 12V DC Input, RoHS, I/O interface with 1 x USB 2.0, 1 x DC jack (Ф2.5хФ6.3), 1 x ethernet, 1x6-pin trigger port, 1 x trigger button
ITDB-100HD-R10	Image-based code reader system with 1D, 2D decoding code types, 752x480, 2 x LEDs, Reading distance (at code resolution): 20mm ~ 52mm, 12V DC Input, RoHS, I/O interface with 1 x USB 2.0, 1 x DC jack (Φ2.5xΦ6.3), 1 x ethernet, 1x6-pin trigger port, 1 x trigger button