**Long Distance High-Definition Compression Solution**

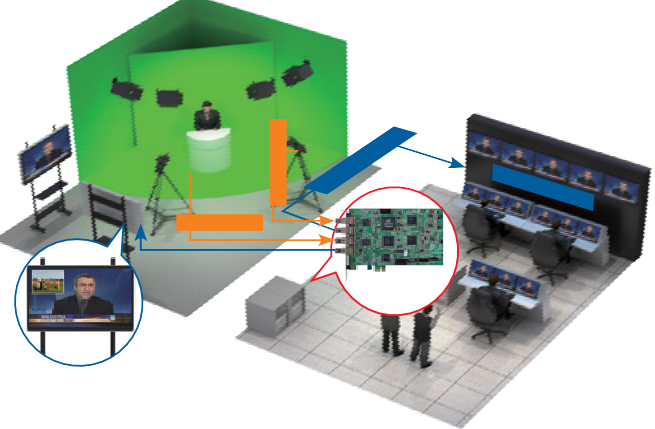
Nowadays, more and more equipments are equipped with SDI output for television studios and other broadcasting applications. SDI is a high capacity interface used as a way of exporting uncompressed digital video in real time. That makes it ideal for live feed productions (such as a live TV show), as well 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

**Broadcasting Solutions**

H.264 video encoder can be a part of streaming server in the application for broadcasting

**Preview for**

devices found in broadcast studios, including monitors, tape decks and switchers. SDI exports uncompressed SD and HD video over a coaxial cable.

**SDI total solutions**

1. **SDI**
2. **SDI**
3. **HDMI**

**Video Mixer**

**HDMI SDI**

**Video Mixer**

**Preview CH1 CH2**

**STILL FRZ**

**42” LCD TV/Monitor**

**Output CH3 CH4**

**OUT1 OUT2**

Camcorder #2

SDI IN CH1

**Master Audio Mix**

SDI Monitor #2

SDI IN CH2

SDI LOOP CH2

HDC-502E

**H.264 Encoder/**

**LAN**

**HD/SD-SDI Recorder (HDC-502E)**

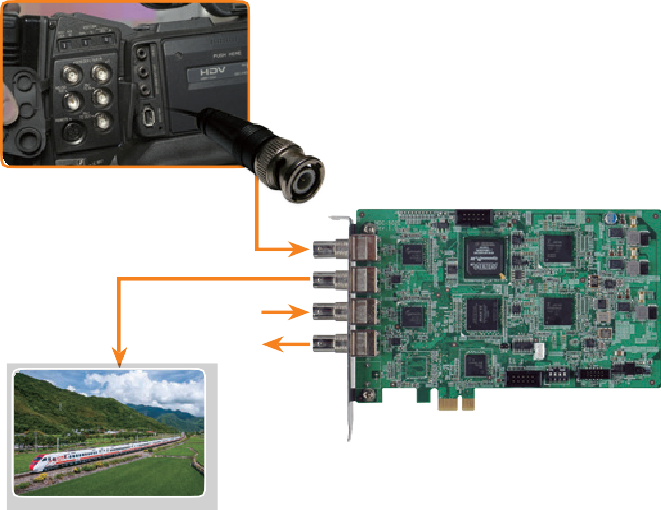
**Cloud**

**l**

**Streaming Server (HDC-502E) VOD**

* **Long Distance and High Quality Capture Card**

##  SDI in studio editing field



**HDC-502E**

SDI-In

SDI-Loop

SDI-In

SDI-Loop

**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

**HD-CCTV1 camera V.S. IP camera**

High definition

BNC

HD-CCTV1

C

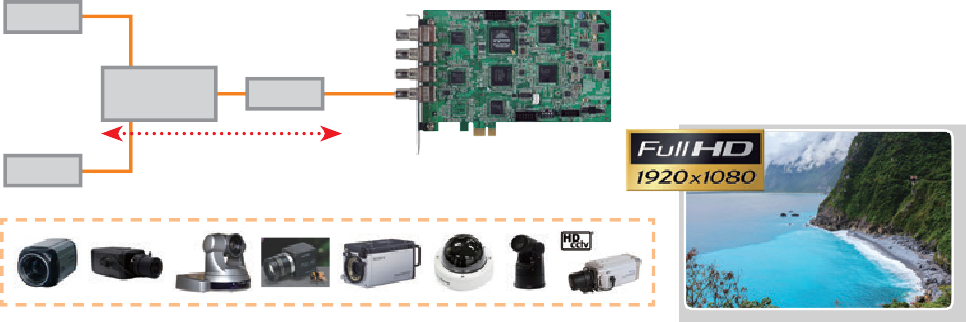
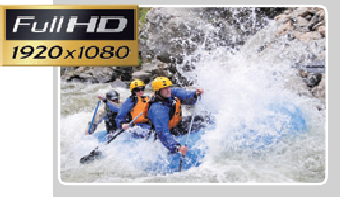
SDI

BNC

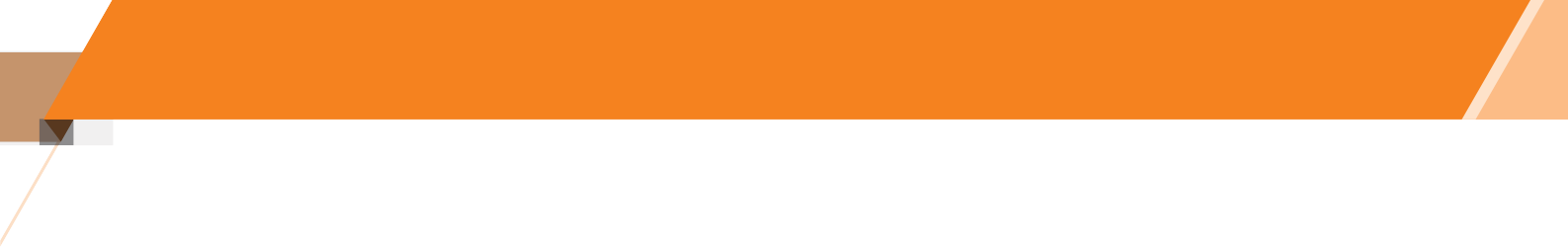
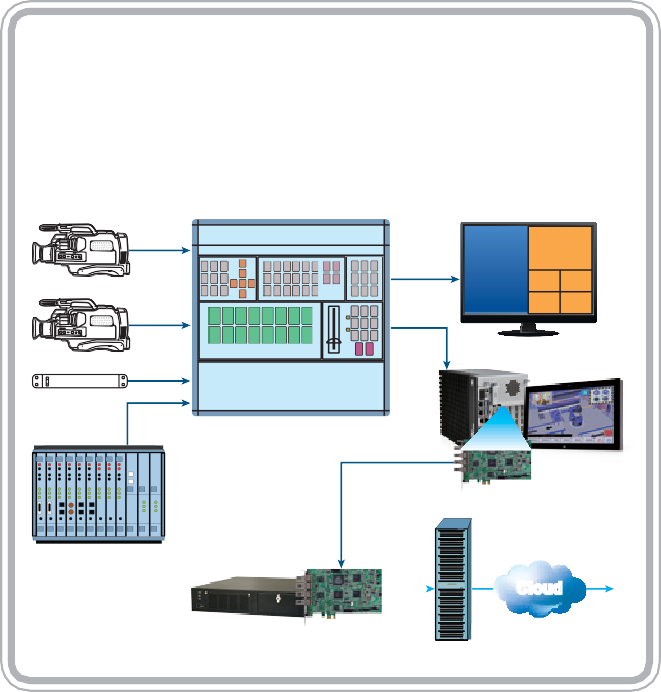
OAXIAL

Uncompressed raw data for editing

## HDC-502E



High definition





HD-CCTV2

BNC

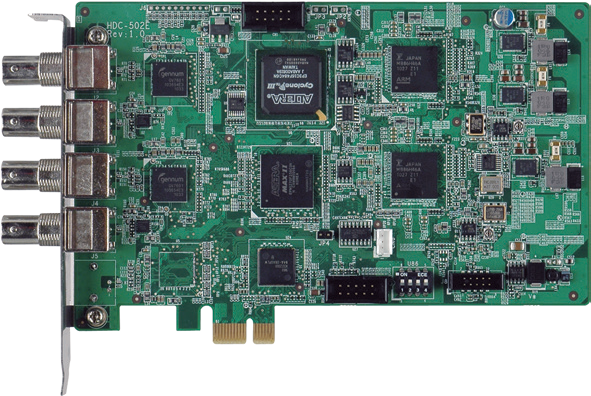
**100 meters**

Using SDI for security allows transmission of 720p and 1080p resolution over a coaxial cable.

**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***

SDI In1



***7/10***

Windows

***32/64***Bit

H.264

MPEG-4/AVC

3G-SDI

Loop Out1

SDI In2

Loop Out2



PCIe Bus

# *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

# *System Block*

***Specifications***

Interface

|  |  |
| --- | --- |
| Video Input | 2 channels |
| Video Input Type | 3G-SDI |
| Audio Input | 2 channels |
| Audio Input Type | 3G-SDI |
| Loop Through Output | 2 channels |
| Loop Through Type | 3G-SDI |
| Bus Interface | PCIe x1 |

Video Processing

|  |  |
| --- | --- |
| Video Compression | H.264/AVC High Profile Level 4.2 |
| Input Resolution & Frame Rate | 1920 x 1080 x 60p / 50p / 30p / 25p / 24p 720 x 480 x 60i  1920 x 1080 x 60i / 50i 720 x 576 x 50i  1280 x 720 x 60p / 50p / 30p / 25p / 24p |
| Record Resolution / Frame Rate / Bit Rate | 1920 x 1080 x 60p, encoding video -bit rate from 6Mbps to 20Mbps  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 cards, 8 channels |

# *Packing List*

System Requirement

**Out 2**

**Loop**

**3G-SDI**

**3G-SDI**

**In 2**

**Out 1**

**Loop**

**3G-SDI**

**3G-SDI**

**In 1**

**3G-SDI**

**Rx**

**3G-SDI**

**Rx**

**PCIe x1**

**Bridge**

**CPLD**

**H.264 CODEC**

**H.264 CODEC**

**FPGA**

|  |  |
| --- | --- |
| 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°C ~ 60°C (32°F ~ 140°F), non-condensing |
| Power Consumption | 14.2W [(12V@0.76A,](mailto:(12V@0.76A) 3.3V@1.52A) |

# *Ordering Information*

|  |  |
| --- | --- |
| 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 |

|  |
| --- |
| 1 x HDC-502E capture card |
| 1 x QIG |