# amaze yourself with the SUPERB CAPTURE EXPERIENCE







Founded in 2011, Magewell has quickly emerged as a world-class manufacturer and R&D center of advanced audio and video capture devices, including PCle video capture cards, USB 3.0 video capture boxes, USB 3.0 video capture dongles, etc. Magewell has built its reputation on a commitment to providing quality products and reliable technical support. With the sole aim of becoming the lead in the industry, it rapidly responds to the needs for high speed of data transmission and clear image.

Magewell is proud to have seen its products become the choice of A/V system integrators, engineers and other professionals for applications in lecture/sports/game/religious events recording, video conferencing, live streaming, medical imaging, IPC, digital signage, video wall display, etc.

Customers can have easy access to Magewell products. Magewell has distributors/resellers located in Asia, Europe, Middle East and North America. They are always passionate about serving you. Online purchase is also available.

## Contents

Pro Capture Family		
Features		
HDMI Cards		
SDI Cards		
DVI Cards · · · · · · · · · · · · · · · · · · ·		
Mini Cards · · · · · · · · · · · · · · · · · · ·		
USB Capture <sup>™</sup> Family · · · · · · · · · · · · · · · · · · ·		1
Features · · · · · · · · · · · · · · · · · · ·		
Models		2
USB Capture <sup>™</sup> Boxes · · · · · · · · · · · · · · · · · · ·	;	2
Models		
First Generation Cards - Hybrid · · · · · · · · · · · · · · · · · · ·		
Models	]	2
First Generation Cards - 4K · · · · · · · · · · · · · · · · · ·	;	2
Models · · · · · · · · · · · · · · · · · · ·	]	2
CDV for Dro Conture Family		<u> </u>
SDK for Pro Capture Family		3
Compatible Software · · · · · · · · · · · · · · · · · · ·	:	3
Accessories	]	3
Solutions		3

## Pro Capture Family - Professional's choice



The Pro Capture Family brings you the best quality, performance and value. The cards are compatible with both Windows® and Linux so more A/V professional s can experience the incredible cards. You can find a model to meet your need, because Pro Capture Family captures all the popular video signals. A FPGA is used for video processing and data transmission, greatly reducing CPU usage. Various features are included to improve the user experience so users can start to capture easily, and the cards maintain stable performance after long periods of use.



## Multiple Streaming

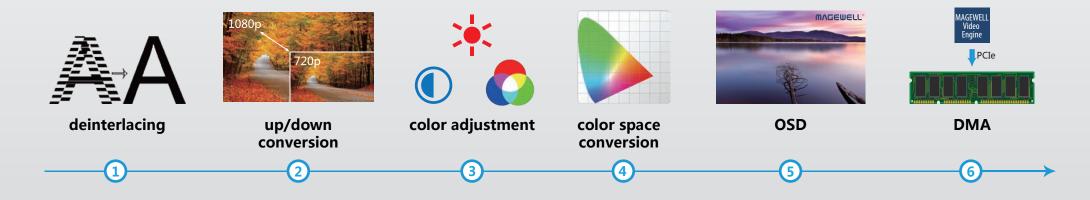
One video source can be sent as multiple streams to different software applications. The resolution, frame rate, deinterlacing mode, color adjustment, etc of each stream can be different. For example, users can live broadcast, record and preview a skiing contest simultaneously using Flash Media Live Encoder, Capture Express and Windows Media Encoder.



## Magewell Video Engine



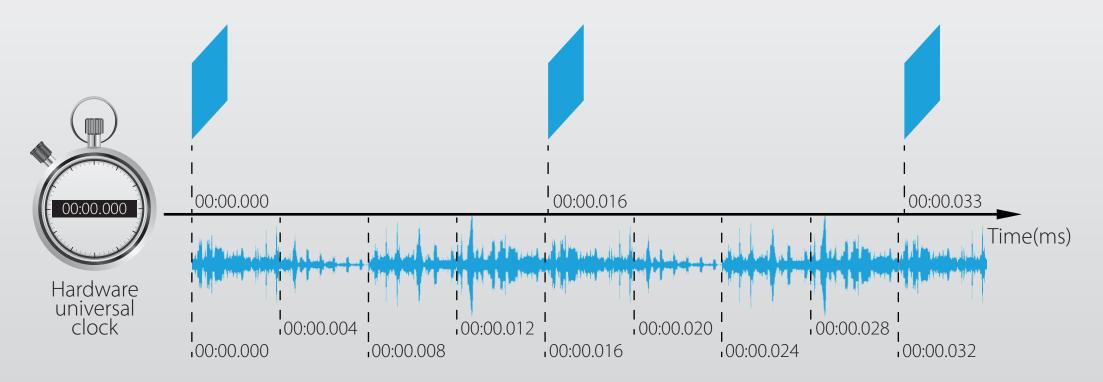
The hardware of Pro Capture Cards and the FPGA-based video engine support 4:4:4 10-bit RGB and YUV. The cards support full range (0-255) and limited range (16-235) in terms of quantization range, so the color of the output is more accurate. Pro Capture Family has various useful video processing functions, such as up/down scaling, aspect ratio conversion, cropping, hue/brightness/contrast/saturation adjustment, deinterlacing, color space conversion, etc. Video Processing is done by onboard hardware so requires ZERO CPU usage.

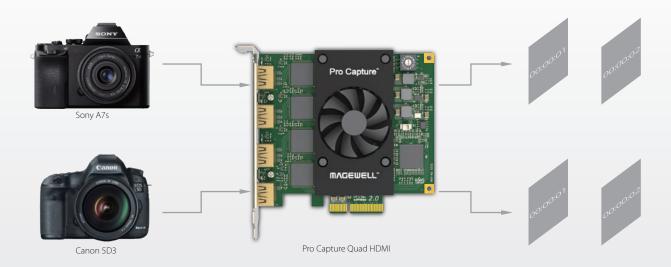


4:4:4 10-bit, YUV or RGB

## Hardware Timestamp

The accuracy of Magewell timestamp is within 100 ns. Magewell cards can accurately record the time when every frame of image is transmitted to the card and when it is stored in the on-board memory. The first sampling time of the audio frame is also recorded. Multiple Pro Capture cards that simultaneously capture multiple channels can use a common timestamp, so that all video and audio can be synchronized. Users can synchronize multiple capture channels of audio and video on different systems with the help of a network. This function is especially useful when compositing L and R channel of 3D video, 360 degree video and digital video wall display and recording.





## Support Time Code

The cards can analyze the timecode information (hour, minute, second and frame) in HDMI signal output by Sony/Canon DSLRs. The time code format the card can get is HH: MM: SS: FF. This function can be used to synchronize input signals from different DSLRs.

## Support OSD of Image, Logo and Caption

Software such as Flash Media Live Encoder and Windows Media Encoder do not have overlay function. With Pro Capture Family, users can save the investment in software but also overlap their logo on the video. If Magewell SDK is used, dynamic video can also be overlaid on the incoming video. All the OSDs are done by hardware, causing 0 CPU usage.



## Support Most Video and Audio Standards

Users can capture signals from almost every SDI output device, such as high-end video cameras (HD/3G-A SDI), switchers (3G-B SDI) and movie cameras (2K SDI). With the help of the Pro Capture Family, you will no longer find capturing non-standard signals to be a problem. Users can type in the resolution of non standard VGA to correctly capture the video. Manual adjustment of VGA timing is also possible. In terms of audio, both compressed and uncompressed formats are supported.



2K SDI



3G-B SDI



HD SDI



**HDMI** 



VGA



**CVBS** 



Component



### PCle 2.0

By using PCle 2.0 high speed interface, date transmission should be doubled compared to the first generation capture cards. The actual data transmission rate can be:



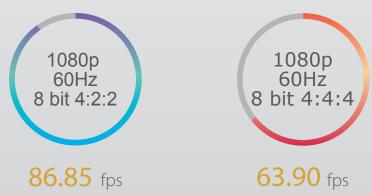


## 200 - 800<sub>MB/S</sub>

**Pro Capture Cards** 

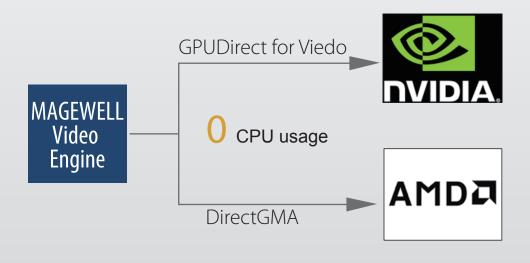
## Measured Frame Rate

To prove the excellent performance, Magewell conducted a test by using a Pro Capture with PCle 2.0 x1 interface to capture Full HD video. The real frame rate is shown as below.



## DMA Transmission Mode

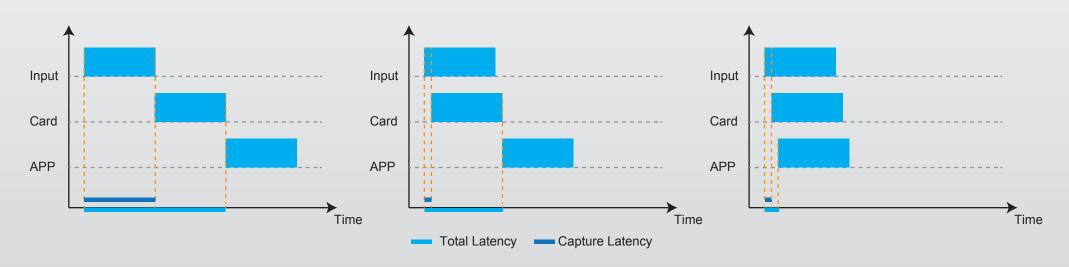
Pro Capture cards support NVIDIA GPUDirect for Viedo and AMD DirectGMA technology. Captured data will be directly transfered from the Magewell video engine to the graphics memory. This process is done solely by the FPGA and GPU; the CPU is not involved.



## Low-latency Mode

In low-latency mode, the cards start to process video before data transmission is fully finished. If SDK is used, user's application can also use the partial completion notification function to process partially transferred video lines before the whole frame is transferred.

This function further reduces the total latency to about 64 video lines. In reality, the capture latency of 1080p60 RGB and YUY2 can be lower than 1 ms. Pro Capture Family is definitely a smart choice for professionals in video conference and live streaming industries.



#### **Normal Mode**

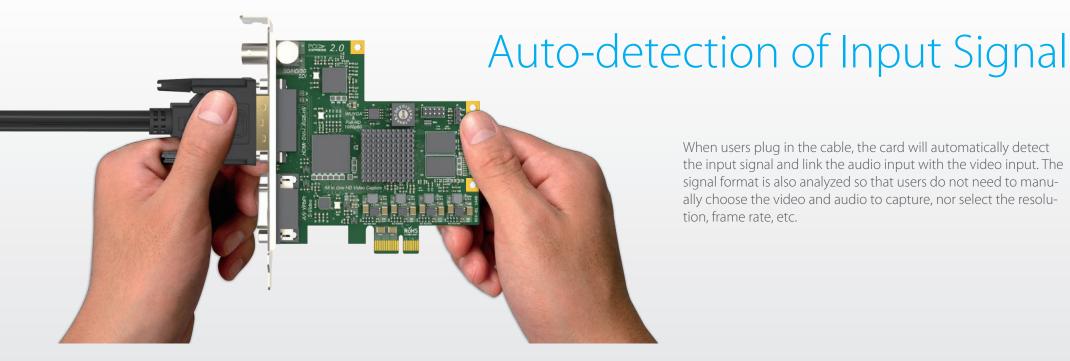
Capture latency of 1080p60 YUY2 is about 12 ms.

#### **Low-lantency Mode**

APP doesn't need to be modified to use this function. Capture latency of 1080p60 YUY2 is only about 1 ms.

## Low-lantency Mode & Partial Completion Notification

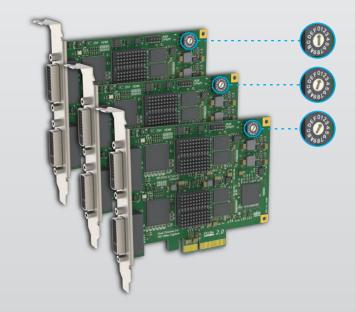
App needs to be optimized to process partially transferred video lines, so the total latency is further reduced

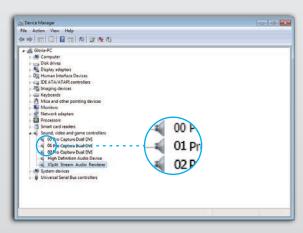


When users plug in the cable, the card will automatically detect the input signal and link the audio input with the video input. The signal format is also analyzed so that users do not need to manually choose the video and audio to capture, nor select the resolution, frame rate, etc.

## Multiple Cards on One Computer

Multiple Magewell cards can be mounted in the same computer and work simultaneously. Users can set the ID number on a rotary switch on each card. The number will appear as part of the card name in Device Manager and video capture software. This function is useful when multiple cards of the same model are installed and the user wants to locate a certain card quickly.





## Universal Driver

A universal driver is provided for all the cards in the Pro Capture Family so users do not need to find the driver for each card. This is very convenient and avoids installing the wrong driver. Driver installation is automatic.

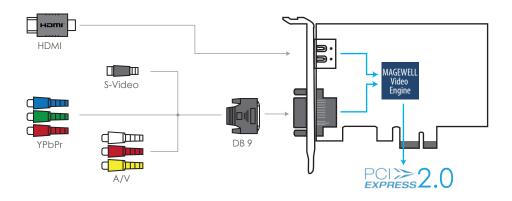


## Firmware Upgrade

The firmware of the Pro Capture Family can be upgraded. The benefit is that users can improve the performance of the cards or easily add functionality without changing the hardware. The firmware upgrade program handles all cards in the Pro Capture Family. Just one click and the program will inform you which one (s) need upgrading and automatically do the work for you. Support safe upgrade. If power is off or the system breaks down when the firmware is being upgraded, it will automatically restore to the initial version.

Magewell Firmware Upgrader -1	device, 1 need upgi	rade				_ D X
Name	Driver version	Install Driver	Firmware Version	Upgrade Firmware	Status	
Pro Capture SDI 0-0	1.2.1571		1.15	1.17	Erasing28%	

#### Pro Capture HDMI



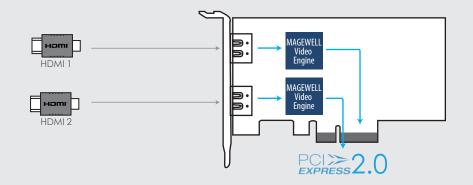
P/N: 11040



apture 1 HDMI/S-Video/YPbPr/CVBS and 1 unbalanced stereo audio
ost Interface PCIe 2.0 x
nput Interface · · · · · · 1 HDMI; 1 DB
00 90mm v 69 00mm



#### Pro Capture Dual HDMI



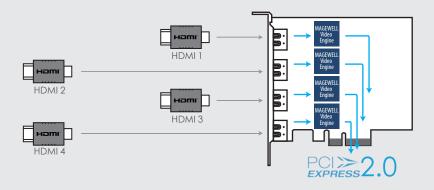
P/N: 11080



simultaneously capture 2 HDMI		
Host Interface	 	 PCIe 2.0 x
nput Interface · · · · · · · · ·	 	 · 2 HDN



#### Pro Capture Quad HDMI



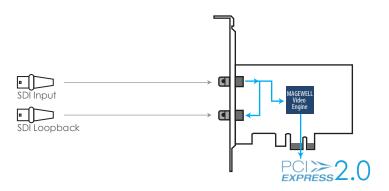


Simultaneously	capture 4	HDMI	signals
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Host Interface PCIe 2.0 x4
Input Interface · · · · · · · · · · · · · · · · · · ·
Size



#### Pro Capture SDI



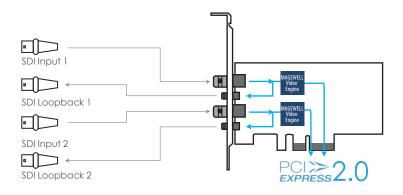
P/N: 11050



Capture 1 SD/HD/3G-SDI signal, including 1 loopback
Host Interface PCIe 2.0 x1
Input Interface · · · · · · · · · · · · · · · · · · ·
Loopback Interface · · · · · · · · · · · · · · · · · · ·
Size



#### Pro Capture Dual SDI



#### P/N: 11060

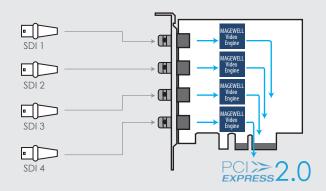


Simultaneously capture 2 SD/HD/3G-SDI signals, including 1 loopback for each	
input	

mpat	
Host Interface	PCIe 2.0 x4
Input Interface	2 BNC
Loopback Interface 2 SM.	A for loopback
Size	nm x 68.90mm



#### Pro Capture Quad SDI



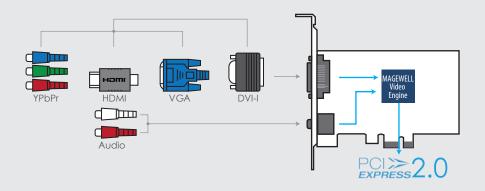


imultaneousi	ly capture 4	SD/HD/	/3G-SDI	signals
--------------	--------------	--------	---------	---------

Host Interface PCle 2.0 x4
Input Interface · · · · · 4 BNC
Size 100.15mm x 102.92mm



#### Pro Capture DVI



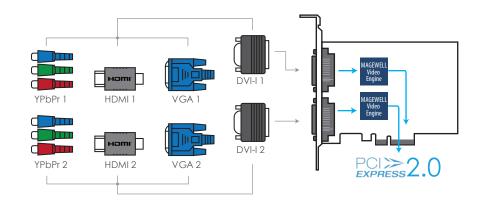
#### P/N: 11030



Host Interface PCle 2.0 x1
Input Interface 1 DVI-I; 1 3.5 mm audio jack
Size 100.30mm x 68.90mm



#### Pro Capture Dual DVI

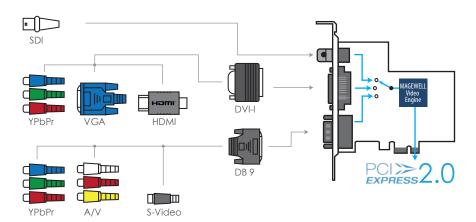




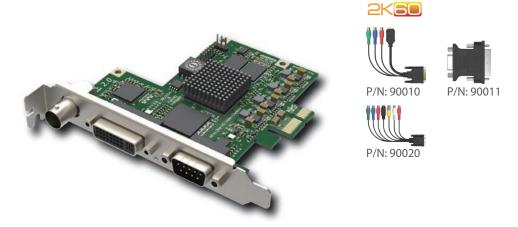
Simultaneously capture 2 HD (DVI/VGA/HDMI/YPbPr) signals		
Host Interface PCle 2.0 x4		
Input Interface · · · · · · · · · · · · · · · · · · ·		
Size 123.50mm x 91.30mm		



#### Pro Capture AIO



P/N: 11020

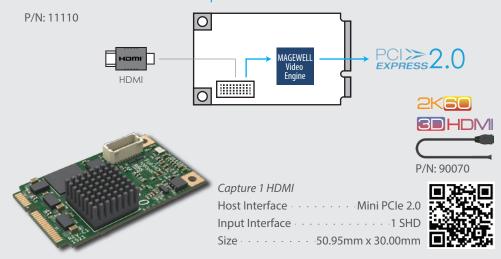


Capture 1 SDI/HDMI/DVI/VGA/YPbPr/S-Video/CVBS and 1 unbalanced stereo audio

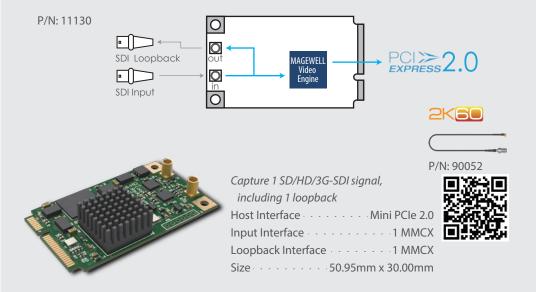
Host Interface PCle 2.0 x1
Input Interface 1 BNC; 1 DVI-I; 1 DB9
Size 106.30mm x 96.20mm



#### Pro Capture Mini HDMI



#### Pro Capture Mini SDI



## **USB Capture Family**



With a ruggedized metal housing, the capture dongle is suitable for all kinds of mobile video capturing settings and even for outdoors. The housing is more than pleasant to the eye, which also helps to cool the chip effectively. The dongle captures one channel of 1080p60 video, which can be either HDMI or SDI, depending on the model. USB Capture Family features incredibly good user experience because it is so easy to use and many functions are automatic.



## Easy to Use

- · Users don't need to install drivers on Windows®, Linux, or Mac OS X. Simply plug it in and driver will be automatically installed. The dongles are really plug-and -play and driverless.
- · The dongles automatically determine the input video format and automatically convert it to the specified output size and frame rate.
- · Automatically determine the input audio format and automatically convert it to 48 KHz PCM stereo audio.

## Incredible Compatibility

USB 3.0 interface is used and it is also compatible with USB 2.0. Users can connect the dongle with the host via USB 2.0 as well, but the transmission rate will be limited.

They are compatible with various software with DirectShow architecture. To name a few, xSplit, Streamstar, Vidblaster, VideoStitch, vMix, wirecast, Flash Media Live Encoder, etc.

The dongles run stably on the three major systems, including Windows® (7, 8, 8.1,10), Linux (kernel version 2.6.38 and above), Mac OS X (10.8 and above).



















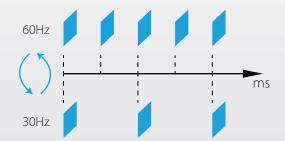


## Excellent Video Processing

- · Support up to 1920 x 1200p 60Hz (HDMI) and 1920 x 1080p 60Hz (SDI) video input.
- · Video output supports up to 1920 x 1200p 60 Hz.
- · Video and audio processing is done by the dongle and will not occupy CPU. The processing includes up/down scaling of video resolution, frame rate and audio sampling rate.
- · Support brightness, contrast, hue, saturation, and other image adjustment functions.
- · Support output format: 4:4:4, 4:2:2, YUY2, RGB 24, 8 Bit.









## Reliable and Stable

High quality chips and other components are used to ensure accurate video capture. The dongles pass through 7 x 24h continuous high load tests in high and low temperatures (0-50 degrees).

The USB 3.0 port of the dongle has a better grip than Micro USB 3.0 port, so it will not easily come loose after being used for a long time.

The internal structure of the metal housing is specially designed to help to cool the chip effectively.



USB 3.0 Port with a Firm Grip



Special Structure to Cool the Chip

#### USB Capture HDMI





#### Capture 1 HD HDMI signal

Host Interface	USB 3.0
Input Interface · · · · · · · · · · · · · · · · · · ·	· 1 HDMI
Size	30mm (L/W/H)

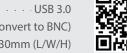


#### **USB Capture SDI**





Capture 1 SD/HD/3G-SDI signal			
Host Interface · · · · · · · · ·	 	 	 



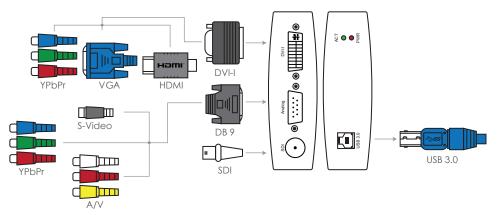


## **USB Capture Boxes**

Magewell capture boxes are a good choice when you want to capture multiple channels using one external device. The palm-size device is stable and reliable. USB 3.0 interface is used to ensure capture of HD video. There are many combinations of capture interfaces, including 6 SD, 2 HD, 1 HD + SD and 1 HD/SD. They are compatible with Windows and one PnP model can run on Windows<sup>o</sup>, Linux and Mac OS X. The outstanding video processing functions make your capture easier, such as deinterlacing, up/down conversion, color adjustment, phase correction, etc\*.

#### XI100XUSB-PRO

\*PnP version available. Please visit magewell website for details.



P/N: 20171



Capture 1 SDI/HDMI/DVI/VGA/YPbPr/S-Video/CVBS and 1 unbalanced stereo audioo

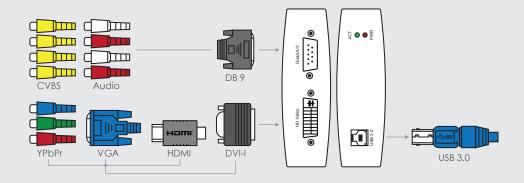
 Host Interface
 USB 3.0

 Input Interface
 1 BNC; 1 DVI-I; 1 DB9

 Size
 116mm x 116mm x 33mm (L/W/H)



#### XI104XUSB



P/N: 20111

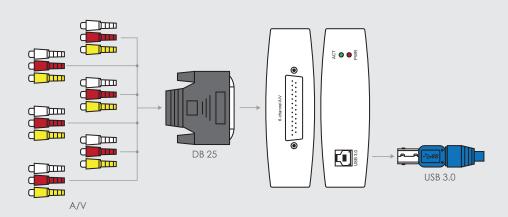


Simultaneously capture 1 HD (DVI/VGA/HDMI/YPbPr) and 4 A/V signals

Host Interface · · · · · · · · USB 3	.0
Input Interface 1 DVI-I; 1 DB	39
Sizo	٦)



#### XI006AUSB



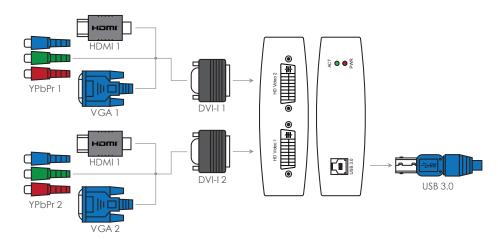
P/N: 20191



Simultaneously capture 6 A/V signals at D1/30 fps
Host Interface · · · · · · USB 3.0
Input Interface · · · · · · · 1 DB25
Size



#### XI200XUSB



P/N: 20181



multaneously capture 2 HD (DVI/VGA/HDMI/YPbPr)	
ost Interface · · · · · · · · · · · · · · · · · · ·	USB 3.0
put Interface	- 2 DVI-I
ze · · · · · 116mm x 116mm x 33mr	n (L/W/H)

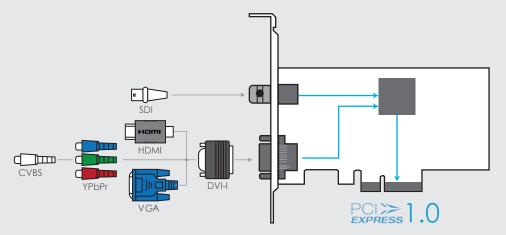


## First Generation Cards - Hybrid



Not enough PCIe slots? Need to capture multiple channels of both HD and SD signals? Magewell Hybrid Capture Card Family will solve your problem. These cards have been developed according to clients' actual need. The signals they can capture include DVI, HDMI, SDI, Composite, Component and VGA. They are widely used for lecture/sports/events recording, where different types of video source equipment are used.

#### XI100XE-PRO (Low Profile)



P/N: 10141

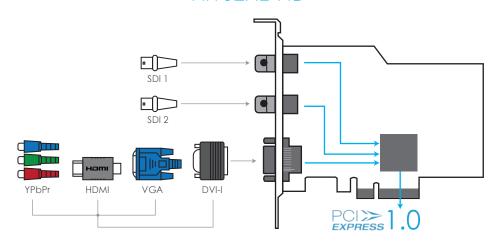


Capture 1 S	DI/HDMI/DVI	/VGA/YPbPr/CVBS and	1 unbalanced stereo audio
-------------	-------------	---------------------	---------------------------

Host Interface	PCle 1.0 x1
Input Interface	1 BNC; 1 DVI-I
C:	105 15mm v 60 00mm



#### XI102XE-HD





Simultaneously capture 1 HD (DVI/VGA/HDMI/YPbPr) and 2 SD/HD/3G-SDI signals

Host Interface PCIe 1.0 x4
Input Interface 2 BNC; 1 DVI-I
Size 117.00mm x 94.67mm



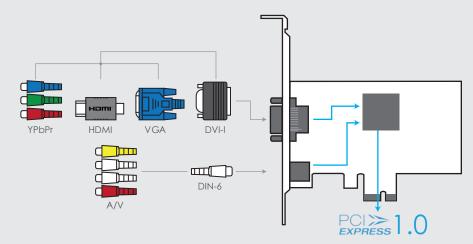
# XI102XE YPbPr HDMI VGA DVI-I A/V EXPRESS 1.0



Simultaneously capture 1 HD (DVI/VGA/HDMI/YPbPr) signal and 2 A/V signals
Host Interface PCIe 1.0 x1
Input Interface · · · · · · · · · · · · · · · · 1 DVI-I; 2 BNC; 1 3.5 mm audio jack
Size



#### XI102XE (Low Profile)



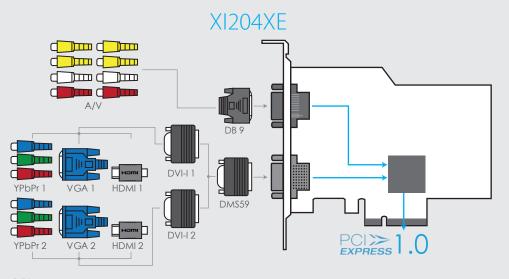
P/N: 10051



Simultaneously capture 1 HD (DVI/VGA/HDMI/YPbPr) and 2 A/V signals	
Host Interface	PCle 1.0 x
Land later for	LL 1 DIN

Size · · · · · · · 102.50mm x 64.50mm



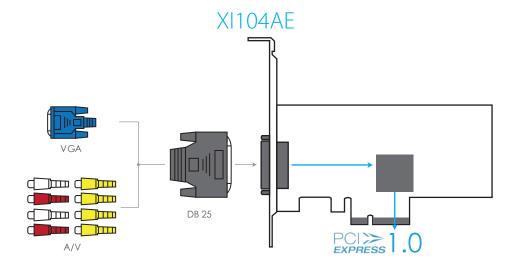




Simultaneously capture 2 HD(DVI/VGA/HDMI/YPbPr) signals and 4 A/Vsigna	ıls
--	-----

Host Interface PCle	1.0 x4
Input Interface	1 DB9
Size	ROmm





P/N: 10081

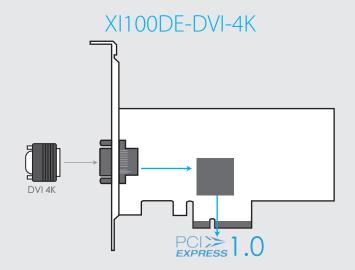


Host Interface PCIe 1.0 x4
Input Interface · · · · · · · · 1 DB25
Size



First Generation Cards - 4K





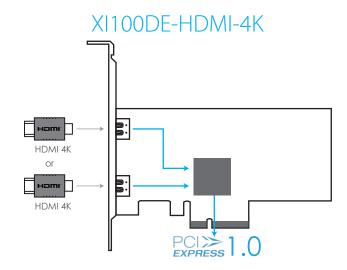
P/N: 10201



#### Capture 1 4K x 2K Ultra-HD HDMI signal

Host Interface PCIe 1.0 x4
Input Interface · · · · · · · · · · · · · · · · · · ·
Size 115.19mm x 68.88mm





P/N: 10121



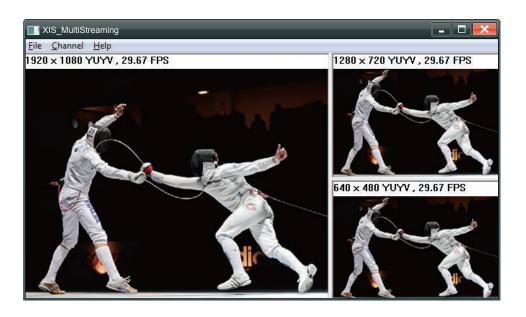
Capture 1 4K x 2K Ultra-HD HDMI and embedded LPCM audio signal	
Hast Interface	DCIo

Host Interface PCle 1.0 x4
Input Interface · · · · · · · · · · 2 HDMI (select either one of the interfaces)
Size



#### **Features**

## Multi-Streaming Output



## Obtain Data Package of InfoFrame

```
E:\Projects\xisdk_3_0\Bin\x64\Release\XID_HDMIInfoFrame.exe

Magewell Device SDK 3.0 - XID_HDMIInfoFrame
LibXIDevice Version V3.0.1

Find 4 channels.
Open channel - BoardIndex = 1. ChannelIndex = 0.
Product Name: Pro Capture Quad HDMI
Board SerialNo: A110150617030

Get HDMI InfoFrame AVI OK!
Length = 13. Buffer is 40 a8 00 05 00 00 00 00 00 00 00

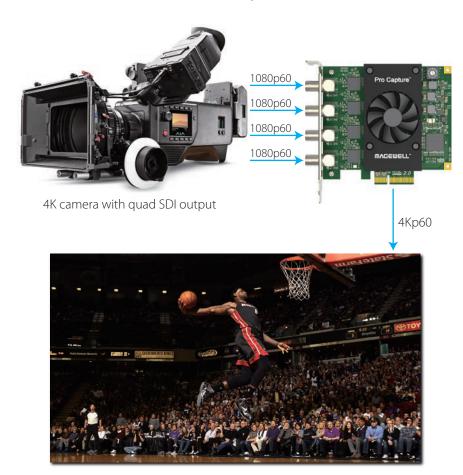
Get HDMI InfoFrame Audio OK!
Length = 10. Buffer is 07 00 00 13 00 00 00 00

Click any key to exit!
```

The same video source can be output at different data rates to any number of clients. The resolution, frame rate, deinterlacing, cropping, OSD etc. of each stream can be different.

Support to obtain original InfoFrame data package of HDMI, including AVI, Audio, SPD, MS, VS, ACP etc. Canon and Sony DSRL time code can be extracted.

## Multi-Device Synchronization



Support for A/V frame synchronization when capturing from multiple capture devices in one computer or in multiple computers. For example, the 4K video camera can output 4 channels of one quarter of a 4K video (1080p60). After Magewell card captures them, it will output a seamless 4K video.

#### Use Hardware OSD





Support for OSD of RGBA text or picture in real time by hardware so that CPU usage is greatly reduced. Multiple captured videos can be overlaid to achieve PIP (Picture-in-Picture) and PAP (Picture-And-Picture).

# Support Output of More Color Spaces

RGB15	BGR15	YUY2	1420
RGB16	BGR16	YUYV	IYUV
RGB24	BGR24	UYVY	NV12
RGBA	BGRA	YVYU	YV12
ARGB	ABGR	VYUY	NV21
AYUV	Y16	IYU2	RGB10
UYVA	GREY	V308	BGR10
V408	Y800	Y410	
VYUA	Y8	V410	

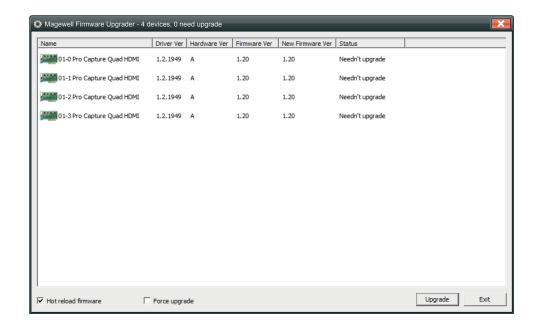
Up to 34 color spaces are supported, which includes 10-bit formats such as AYUV, V408, Y410, V410, RGB10 and BGR10.

## Super-low Latency Video Transfer



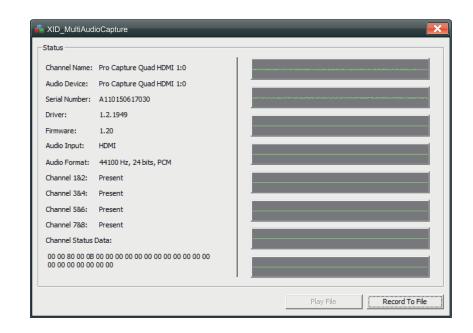
Support for 64 lines block transfer of data to reduce the capture time. Support for AMD Acceleration Parallel Processing (APP) and NVIDIA GPUDirect technology. Video data can be directly transferred to graphics memory.

## Firmware Upgrade



The Magewell SDK supports using the API to upgrade the firmware, so it is more convenient for the user to do deep integration and to do remote upgrade.

## Capture 8-Channel Audio



Support for capturing of IEC60958/IEC61937 audio, including uncompressed audio such as 5.1 channel, 7.1 channel, DTS, THX, SRS and compressed audio such as AAC and MP3.

## Compatible Software



Pro Capture Family





















First Generation Cards



Magewell devices adopt standard development interface, for example video capture interface based on DirectShow Filter, audio capture interface based on DirectSound, expansion interface based on IKsPropertySet. They are compatible with almost any software with DirectShow (Windows), V4L2 (Linux) and ALSA (Linux) architecture. If you are not sure whether Magewell products support your software, please send an email to sales@magewell.com for enquiry.



#### Windows

Amcap

Adobe Flash Media Live Encoder

Adobe Connect Camtasia Studio

Discover Video Multimedia Encoder

Discover Video Streamsie Google Plus Hangouts

Gotomeeting

Graphedit

Livestream

Microsoft Lync

OBS (Open Broadcaster Software)

Presentations 2Go Quicktime Player Real Producer Plus Resolume Skype

Streambox

Streamstar

Vidblaster Video Stitch

Vidyo

VirtualDub

VLC

Vmix

Watchout

Windows Media Encoder

Wirecast

XSplit Broadcaster

XSplit Gamecaster

Zoom.us



Linux

Adobe Connect Google Plug Hangouts

OBS (Open Broadcaster Software)

VirtualDub

Video Stitch

VLC(VideoLAN Client)

Zoom.us

Please contact us to obtain more information regarding Linux driver for Pro Capture Family.

USB Capture dongles can run directly on Linux and no manual installation of driver is needed



#### Mac OS X

Adobe Flash Media Live Encoder

Adobe Connect

Discover Video Streamsie

Google Plug Hangouts

Gotomeeting

OBS (Open Broadcaster Software)

QuickTime Broadcaster

QuickTime Player

Resolume

Skype

Streambox

Video Stitch

VirtualDub

VLC

vMix

Wirecast

Zoom.us

gstreamer

## Accessories

**DVI-I** Breakeout



- P/N: 90010
- DVI-I to 1 HDMI + 1 YPbPr breakout

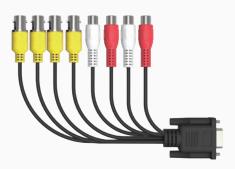


- P/N: 90011
- DVI-I to VGA adapter

#### DB9 Breakout

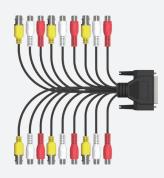


- P/N: 90020
- DB9 to 1 YPbPr + 1 S-Video + 1 A/V breakout



- P/N: 90021
- DB9 to 4 CVBS + 2 stereo audio breakout

#### DB25 Breakout



- P/N: 90040
- DB25 to 6 A/V breakout



- P/N: 90041
- DB25 to 1 VGA + 4 CVBS + 2 stereo audio breakout

## Accessories

#### DMS59 Breakout



- P/N: 90012
- DNS59 to 2 DVI breakout

#### DIN-6 Breakout



- P/N: 90030
- DIN-6 to 2 CVBS + stereo audio

#### MCX Breakout



- P/N: 90050
- MCX to BNC (for SDI)

#### SMA Breakout



- P/N: 90051
- SMA to BNC (for SDI)

#### MMCX Breakout



- P/N: 90052
- MMCX to SDI breakout

#### USB 3.0 Breakout



- P/N: 90061
- USB 3.0 cable (Type A + Type B)

#### USB 3.0 Breakout



- P/N: 90062
- USB 3.0 cable (Type A + Type A)

#### SHD Breakout



- P/N: 90070
- SHD to HDMI breakout



Medical Imaging IPTV