PERFECT BROADCASTING SOLUTIONS

NDI **4K**

Reckeen 3D and Reckeen Lite technical specification.
There are three version of system 12G, 3G SDI or HDMI.

Video input

Reckeen SDI Virtual Studio System*

- **SDI Video Input**
  - 2 x 3G − 3G/HD/SD auto switching
  - 3G,12G* − 1 x 3G SDI and 1 x 12G SDI
- **HDMI**
  - 2 x HDMI 1.4 type A connector with support for 1080p60 one up to 4k 30p

Reckeen HDMI Virtual Studio System

- **HDMI**
  - 4xHDMI 1,4 type A connector with support for 1080p60 two up to 4k 30p

Monitor output

- **2x DP output for monitor**
- **2x HDMI output for monitor**

I/O port

- **Tally Output**
  - TL − DB9 − 4 channels
- **Reckeen External Keyboard port**
  - RS − DB9 − RS 232
- **Reckeen External Audio port**
  - LAN − Audio Link
- **Ethernet**
  - Gigabit Ethernet LAN

- **PC/2**
  - PC keyboard
- **USB**
  - 2 x USB 3.0 (front panel)
  - 4 x USB 3.0 (back panel)
  - 1 x USB 3.1 (back panel)

Audio output

- **Digital**
  - embedded stereo on each SDI and HDMI

- **Analog**
  - 2 x XLR two channels − professional balanced analogue audio stereo differential input (-10dBV, or 4dBu)
  - 2 x Jack 6,3mm two channels − professional balanced analogue audio stereo differential input (-10dBV, or 4dBu)
  - 1 x Jack 6,3mm − stereo Headphone output

Video standards

Reckeen SDI Virtual Studio System*

- **SDI**
  - SMPTE2082-1*
    - 2160p (29.97/25)
  - SMPTE−425M
    - 1080p (60/59.94/50/30/25)
  - SMPTE−292M
    - 1080p (30/29.97/25)
    - 1080i (60/59.94/50)
  - SMPTE−296M
    - 720p (60/59.94/50)
  - SMPTE−259M
    - PAL, NTSC
- **HDMI**
  - Video standard − HDMI spec 1.4

Reckeen HDMI Virtual Studio System

- **HDMI**
  - Video standard − HDMI spec 1.4

NDI

- **NDI input:**
  - 4 input interchangeably as cam 1 to cam 4 with supported stream key or Reckeen chroma key
  - 2 input interchangeably as media 1 and 2

- **NDI output:**
  - program out

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Video output

Reckeen SDI Virtual Studio System*

- **SDI Video Output**
  - 2 x SDI − 3G/HD
  - 3G,12G* − 1x3G/HD and 1x12G - 4k 30p
- **HDMI**
  - 2 x HDMI 1.4 type A connector with support for 1080p60 one up to 4k 30p

Reckeen HDMI Virtual Studio System

- **HDMI**
  - 2 x HDMI 1.4 type A connector with support for 1080p60 one up to 4k 30p

Audio input

- **Digital**
  - embedded stereo on each SDI and HDMI

- **Analog**
  - 2 x XLR two channels − professional balanced analogue audio stereo differential input (-10dBV, or 4dBu)
  - 2 x Jack 6,3mm two channels − professional balanced analogue audio stereo differential input (-10dBV, or 4dBu)
  - Two types of microphones − dynamic and condenser with + 48V phantom

Video formats

Reckeen SDI Virtual Studio System*

- **Input**
  - 2 x HDMI v1.4, 2 x SDI
    - 2160p 30/25 on one HDMI and 12G* SDI
    - 1080p 60/59.94/50/30/29.97/25
    - 1080i 60/59.94/50
    - 720p 60/59.94/50
  - PAL, NTSC
- **Output**
  - 2 x HDMI v1.4, 2 x SDI
    - 2160p 30/25 on one HDMI and 12G* SDI
    - 1080p 60/59.94/50/30/29.97/25
    - 1080i 60/59.94/50
    - 720p 60/59.94/50

Reckeen HDMI Virtual Studio System

- **Input**
  - 4 x HDMI v1.4
    - 2160p 30/25 on two HDMI
    - 1080p 60/59.94/50/30/29.97/25
    - 1080i 60/59.94/50
    - 720p 60/59.94/50
  - PAL, NTSC
- **Output**
  - 2 x HDMI v1.4
    - 2160p 30/25 on one HDMI
    - 1080p 60/59.94/50/30/29.97/25
    - 1080i 60/59.94/50
    - 720p 60/59.94/50

Features

- **Downstream Key −** x2
- **Media Format**
  - MPEG2, MPEG4 and H.264 containers: (avi, mpg, mpeg, mp4, mxf, mov)
  - Audio: WAV, MP3
- **Video Capture Format**
  - H.264 (.mp4) MPEG-2 (.mpg)
  - 1080p 60/59.94/50/30/29.97/25
  - 1080i 60/59.94/50
  - 720p 60/59.94/50
  - H.264 up to 4k 30p

- **Still Picture −** x2
- **Picture Format**
  - .png, .jpg, .bmp
- **Still Text −** x2
  - Still Editor included
- **Keyer −** x4
  - Chroma Key / Luminance Key
- **Streaming**
  - Facebook
  - YouTube
  - NicoNico
  - Ustream
  - NDI
  - and custom profiles

Software

- **Reckeen 3D package:**
  - 3D Production
  - 3D Studio Editor
  - Wizard
  - MS 3D Paint
  - Still Editor

- **Reckeen Lite package:**
  - Lite Production
  - VSM Lite Editor (also as a standalone version)
  - Still Editor

* 12G - There are two different hardware version of Reckeen SDI Virtual Studio System - 12G SDI and 3G SDI.

reckeen®
keen on record

RECKEEN
3D STUDIO

Reckeen 3D and Reckeen Lite

Perfect broadcasting solutions for professionals and beginners.

Reckeen 3D system enables you to produce professional TV programs in real-time. It is a multi-channel mixer that combines 4 video sources with computer graphics and media. Each of these video sources can be preprocessed with built-in chromatic keys and then placed in a virtual 3D scene, thus creating a virtual studio or an advanced composition combining computer graphics and video.

The system allows you to work in two independent modes – Reckeen 3D and Reckeen Lite – enabling you to customize the production process to suit your needs.

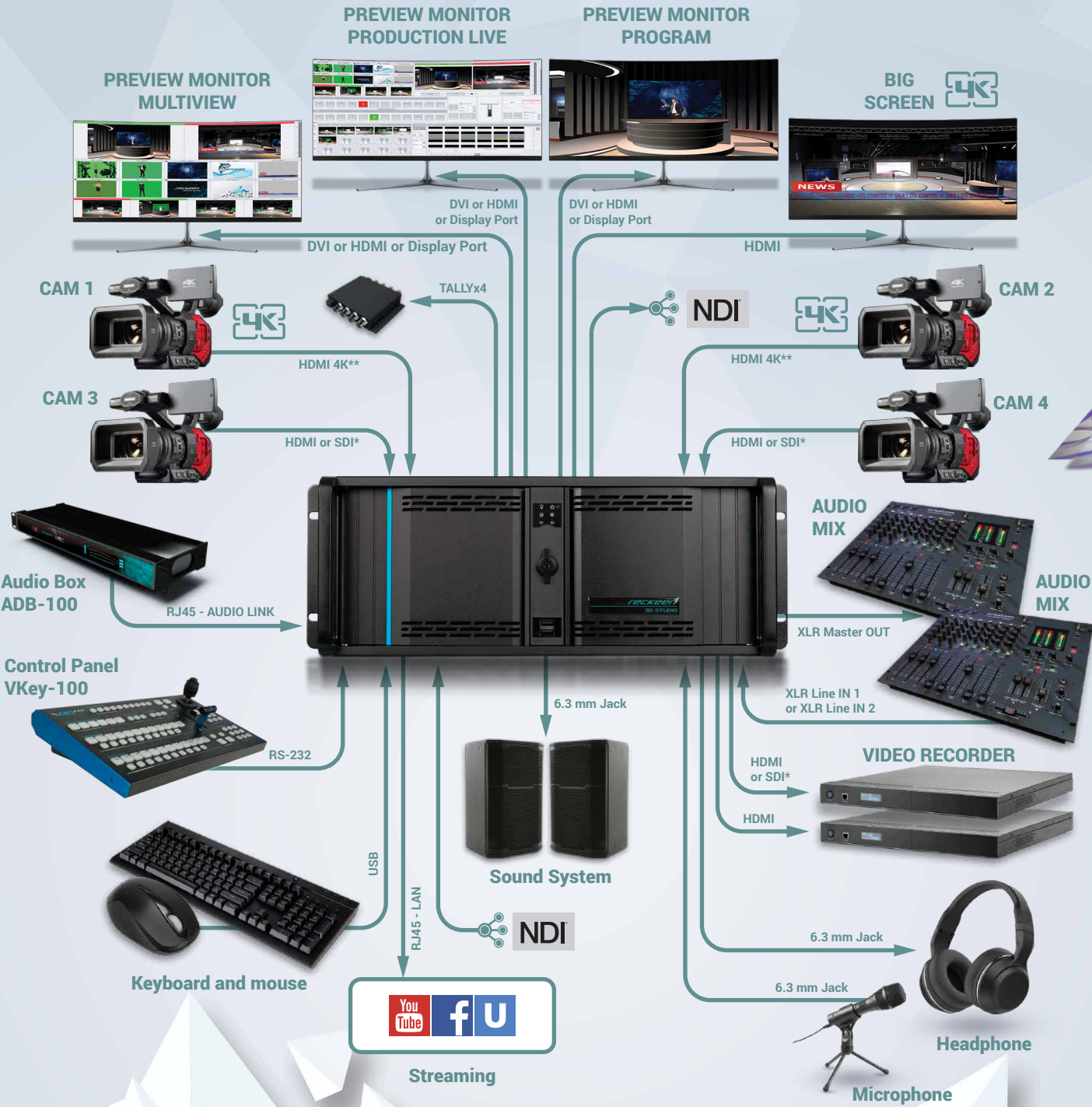## RECKEEN 3D Studio is actually 9 in 1!

RECKEEN 3D Studio is a complete set of tools and functionalities to create, record and broadcast the high-quality 3D video content.

- **Virtual Studio with Animations of any 3D object on a scene**
- **Mixer**
- **Still Editor - captions and graphics boards generator**
- **Wizard Studio Editor - stage design editor**
- **3D Studio Editor**
- **MS 3D Paint Editor**
- **Recorder**
- **Streamer**
- **Reckeen LITE system - the platform's simpler version for quick tasks and for the beginners**

3D Production

RECKEEN 3D Studio is a PC based system with an option of importing files in OBJ and FBX formats and objects from its own editors.

Up to two 4K camcordes or up to four Full HD (4x HDMI or 2x HDMI and 2xSDI /1x 12G and 1x 3G – depending on the version) can be connected to the Reckeen workstation, their signals will be keyed independently in a high quality. This means, in your virtual studio you can get up to four talent shots taken by four cameras in different locations. In addition, you have four virtual cameras with full range of motion available: pan, tilt, zoom, dolly, truck, arc, pedestal, cant and so on. Their positioning and switching between them reflects the cameraman's natural movements. Up to 15 shots can be assigned to each of the cameras. By default, they are set by the virtual studio designer and defined in the project, but you can customize them to fit your needs. Controlling virtual cameras is easy and convenient thanks to the specially designed VKey-100 keyboard with joystick.

Studio Editor Wizard

With RECKEEN 3D you get a ready-made designs package, but 3D Studio Editor and Wizard are also its integral parts, with their use you can prepare your very own designs, with supplied materials or starting from scratch, after your own ideas. The Wizard allows you to create stage designs quickly and efficiently on the basis of ready-made elements, while in the 3D Studio Editor you can personalize every detail you want.

Advanced features of the Studio Editor Wizard also allow you to design virtual 3D scenographies tailored to your individual needs and ideas. All you need is a short tutorial to be easily able to set the ambience of the studio, its size, textures to be used, colors, and equipment. You can implement unlimited number of ideas, and your video materials will always have a unique setting.

Still Editor

The Still Editor module allows you to create captions, text boards and news tickers. With an easy-to-use panel, suitable components can be downloaded from external files or created – even during the production and live editing.

MS Paint 3D

You can create 3D objects you want to place in the virtual studio scenography in MS Paint 3D editor, that you get preinstalled with RECKEEN 3D Studio. The application allows you to implement all the ideas, from the most original and crazy ones to the simplest ones, like three-dimensional subtitles. And all those created objects can be easily and intuitively moved to a virtual studio, even during the live production.

Diagram labels

PREVIEW MONITOR MULTIVIEW
PREVIEW MONITOR PRODUCTION LIVE
PREVIEW MONITOR PROGRAM
BIG SCREEN 4K

CAM 1
CAM 2
CAM 3
CAM 4

DVI or HDMI or Display Port
DVI or HDMI or Display Port
HDMI
DVI or HDMI or Display Port
TALLYx4
NDI
HDMI 4K**
HDMI 4K**
HDMI or SDI*
HDMI or SDI*

Audio Box ADB-100
RJ45 - AUDIO LINK

Control Panel VKey-100
RS-232

AUDIO MIX
AUDIO MIX
XLR Master OUT
XLR Line IN 1 or XLR Line IN 2

Keyboard and mouse

USB
RJ45 - LAN
NDI

6.3 mm Jack
Sound System

HDMI or SDI*
HDMI
VIDEO RECORDER

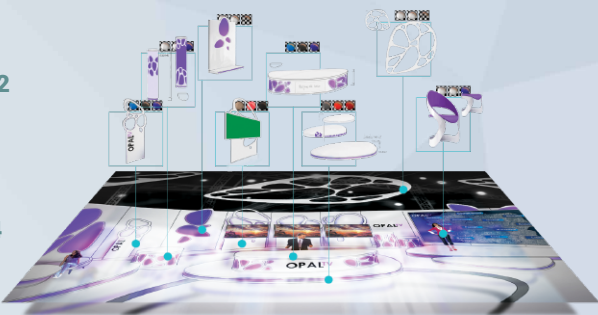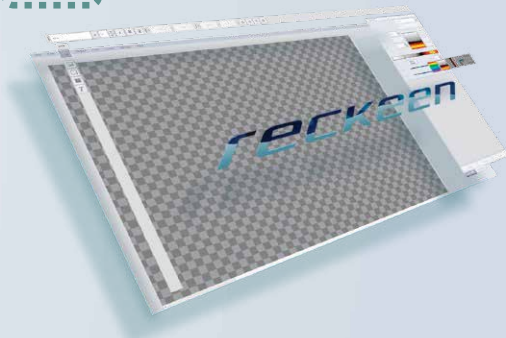6.3 mm Jack
6.3 mm Jack
Headphone
Microphone

Streaming

*SDI connectors only in Reckeen Studio version with HDMI-SDI card
**Virtual LITE studio offers a Full HD resolution, 4K resolution.
By purchasing additional License Key, You can upgrade it to 3D Studio &LITE with 4K resolution.