HX-24 Series

July 2013

HX-Series

HD-SDI Surveillance

A performance-minded display fitted with hard glass protection and advanced SDI inputs that promises to work admirably in security-critical environments

Market Position & Applied Markets

A 24" performance-minded display fitted with hard glass protection and advanced SDI inputs that promises to work admirably in security-critical and broadcasting environments

- Surveillance Systems
- TV Studio
- Broadcasting
- Industrial Process

Security & Surveillance

AV/Broadcasting

ⒶG neovo

Feature Highlights

- 1920 x 1080 Full HD resolution

- NeoV^{TM} Optical Glass

- Anti-Burn-in^{TM} technology

- AIP technology: PIP and PBP functions; 3D Comb Filter/Deinterlace/Noise Reduction; Image rotation; Freeze

- Versatile inputs: 3G SDI in/out, CVBS in/out, HDMI, DVI, VGA, Audio in

- SDI connection supports 3Gb/s, 1.5 Gb/s HD, SD SDI video inputs

- Capable of receiving digital video over 75Ω coaxial cable at great length using RG6 cable or equivalent

- Embedded audio in SDI up to 8 channels of 48kHz

- Eco Smart Sensor automatically adjusts backlight according to ambient lighting condition

- Durable metal housing

- Rigorous screening of the components for mission-critical 24/7 applications
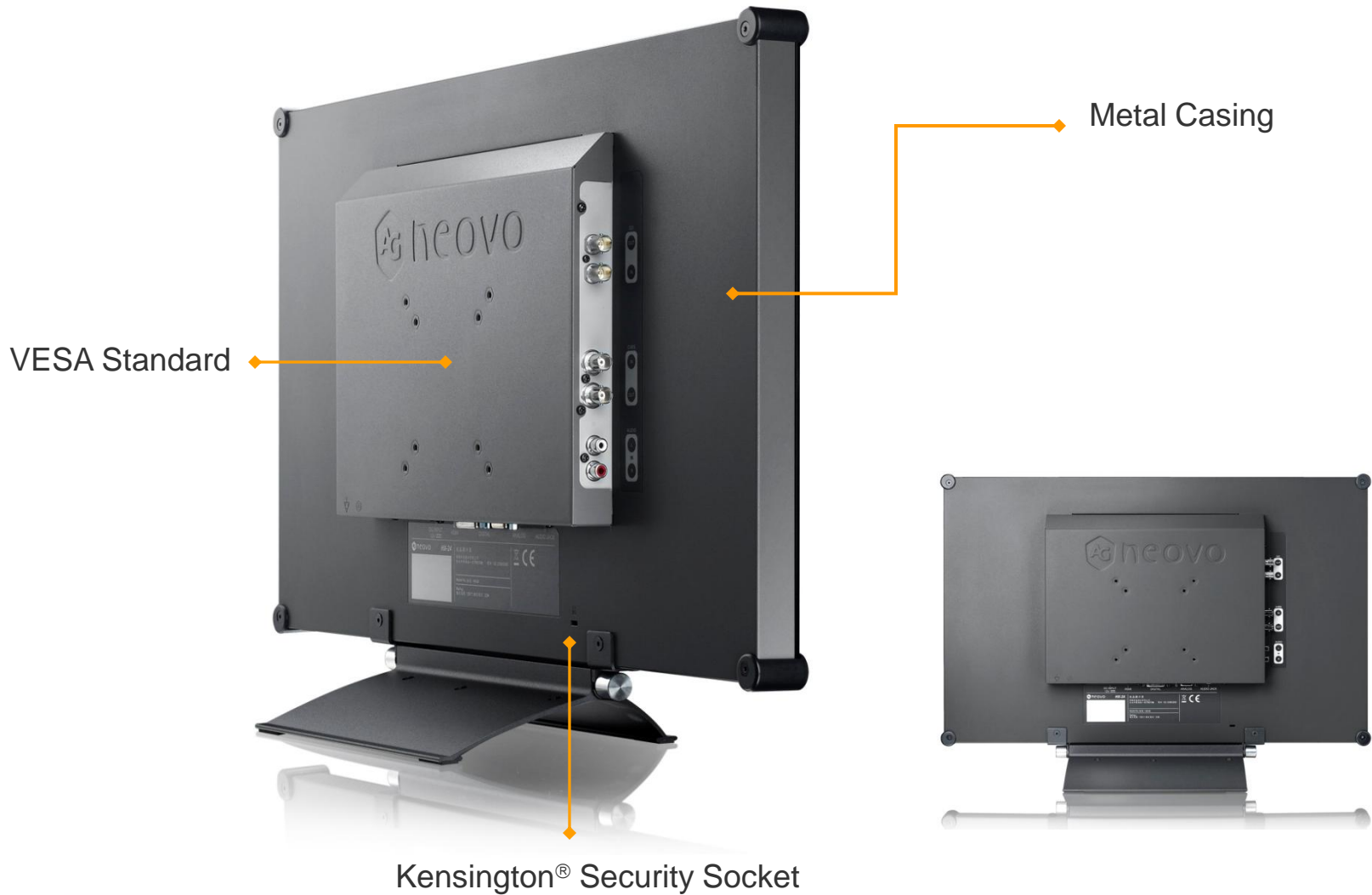
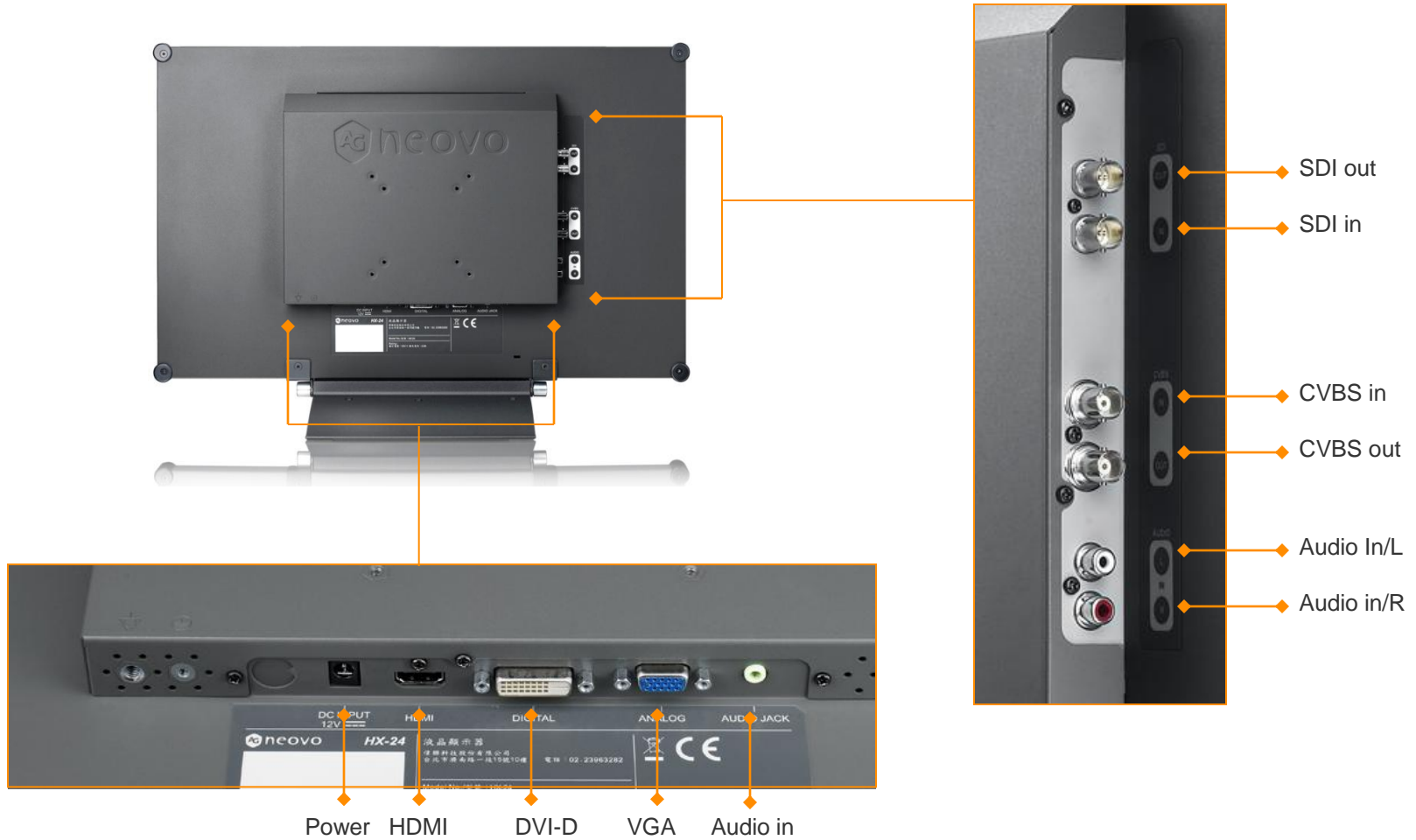**AG neovo**

Product Close-up

Front Angle

- NeoV™ Optical Glass

Product Close-up

Rear Angle

Metal Casing

VESA Standard

Kensington® Security Socket

neovo

Product Close-up

Connectivity

SDI out

SDI in

CVBS in

CVBS out

Audio In/L

Audio in/R

Power   HDMI   DVI-D   VGA   Audio in

AG neovo

SDI Introduction

The Introduction of SDI

- SDI stands for Serial Digital Interface
- The SDI is a standard for digital video transmission over coaxial cable
- Signals are uncompressed and are self-synchronized between the source (transmitter) and destination (receiver)

The Benefits of SDI

- No compromise on quality
- Uncompressed transmission of high-definition video signals
- Digital video data transmitted directly from a digital source
- Long-distance transmission

neovo

SDI Introduction

Types of SDI

Standard	Name	Bit rates	Video formats
SMPTE 259M	**SD-SDI**	**270 Mbit/s,** 360 Mbit/s, 143 Mbit/s, and 177 Mbit/s	**480i, 576i**
SMPTE 344 M	SD-SDI	540 Mbit/s	480p, 576p
SMPTE 292M	**HS-SDI**	**1.485 Gbit/s, and 1.485/1.001 Gbit/s**	**720p, 1080i**
SMPTE 372M	Dual Link HD-SDI	2.970 Gbit/s, and 2.970/1.001 Gbit/s	1080p
SMPTE 424M	**3G-SDI**	**2.970 Gbit/s, and 2.970/1.001 Gbit/s**	**1080p**

HX-24 supports the SDI format marked in blue

SDI Introduction

HX-24 SDI Specifications

Capable of receiving digital video over 75Ω coaxial cable at great length using RG6 cable or equivalent
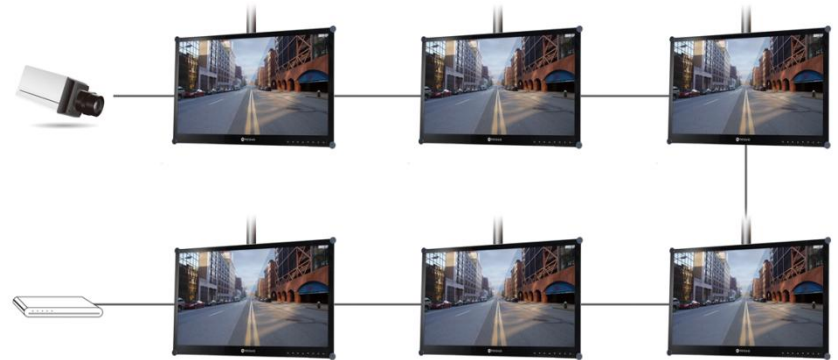
3G-SDI : 100m /RG6

HD-SDI : 150m /RG6

SD-SDI : 300m /RG6

SDI serial digital looping through

The HX-24 comes with SDI input and output so the signal can be looped through

SDI Displays in Real Practice – HD CCTV

Arguments about HD-CCTV over IP

- **No compression:**

The lossless video is merely useful when viewing in real time, and that storage still requires the images to be compressed via HD encoders or DVRs.

- **Low latency**

As IP-based video surveillance continues to improve, latency in HD network cameras (IP camera) is already barely noticeable.

- **Easy upgrade**

Although it allows the reuse of existing cables, additional cash has to be coughed up to replace front-end devices, optical transceivers and back-end recorders; sometimes cables might be replaced as not any cable can transmit high-quality images.

- **Long Distance**

Although HD-SDI can transmit longer signal, it still has limited transmission distance.

SDI Displays in Real Practice – HD CCTV

What application is suitable for HD CCTV?

Settings where low latency is critical and have short distances and few locations to cover do indeed see HD-SDI making much more sense than IP-based systems.

So applications like:

• Gaming

• Traffic monitoring

• Financial institutes

• Operating tables

• Safe city initiatives

neovo

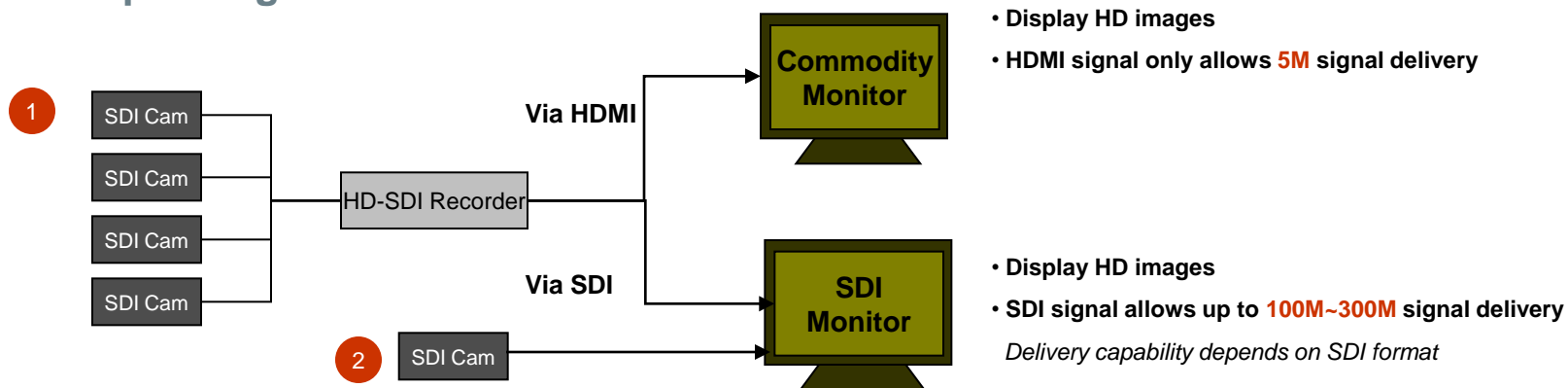# SDI Displays in Real Practice – HD CCTV

SDI monitors' role in HD CCTV

From the below diagram, it appears that SDI monitors are not a necessity in HD CCTV system where SDI cameras are linked mostly to HD recorders or DVRs; then signals transmitted via HDMI to the monitors. Unless, distance from the recorders or DVRs to the monitors is over the capability of HDMI cables (5M).

Therefore, SDI monitors are only required in HD-CCTV setups, when

1. The device to the monitor only provides SDI output

2. The setup requires a longer cabling from control room to the monitors

A simple diagram of HD-CCTV

- **Display HD images**
- **HDMI signal only allows 5M signal delivery**

- **Display HD images**
- **SDI signal allows up to 100M~300M signal delivery**
  Delivery capability depends on SDI format

AG neovo

SDI Input in Real Practice – Industrial Process

SDI monitors' role in industrial process

Large installations consist of complex cabling and wider variety of image sources. SDI monitors may not be the critical factor in the setup. However, smaller installations where high-quality images are essential and installations are rather straightforward might have a place for SDI monitors, for instance, mining industry.

Operating a mining truck isn't an easy job especially in a tough environment. In some applications, SDI cameras are built into the mining truck and link directly to the SDI monitors for real-time imaging during mining.

1. Long distance but still within certain length

2. Small installations (2-4 SDI monitors for one truck due to space limitations)

3. Straightforward diagram (Simply link camera to monitor)

AG neovo

SDI Input in Real Practice – Broadcast

SDI monitors' role in broadcasting

SDI connectivity is a must-have feature in broadcast applications. Most of professional broadcast monitors come with specialised software and other unique functions for studio production; however the price could be 3 to 4 times more higher. For general monitoring, a monitor with better panel, stable colour performance and SDI connectivity could be a low-cost solution for broadcast applications.

neovo

Thank You

www.agneovo.com