HDMI®

Technical Training

Vanco's History

- Vanco was founded in Lake Bluff, IL in 1957

- Vanco has its origin as a provider of high quality mobile and CB accessories. Products were delivered by the company "Van" directly to the distributor and dealer locations throughout the Midwestern United States; thus the name Vanco. Today, although Vanco no longer uses the regional distribution "Van" concept, Vanco remains passionate about the customer and remains committed to high quality and innovative product development

- In the late 90s, Vanco committed supplying products to the Distribution Market, and stopped pursuing and selling dealer direct

Vanco Today

- Leading Supplier of Cutting Edge, Premium Home Theater and Networking Accessory Products

- Over 50 Years of Electronics Experience

- Vanco is Committed to Providing High Quality, Innovative Products with Impeccable Customer Service

Vanco Today

- Headquartered in Batavia, IL (40 Miles West of Chicago)

- Serving Only the Distribution Market in the United States, Canada, and Mexico

- Over 5,000 Products

- 53,000 sq ft. Facility

  - 43,000 sq ft. Floor Space
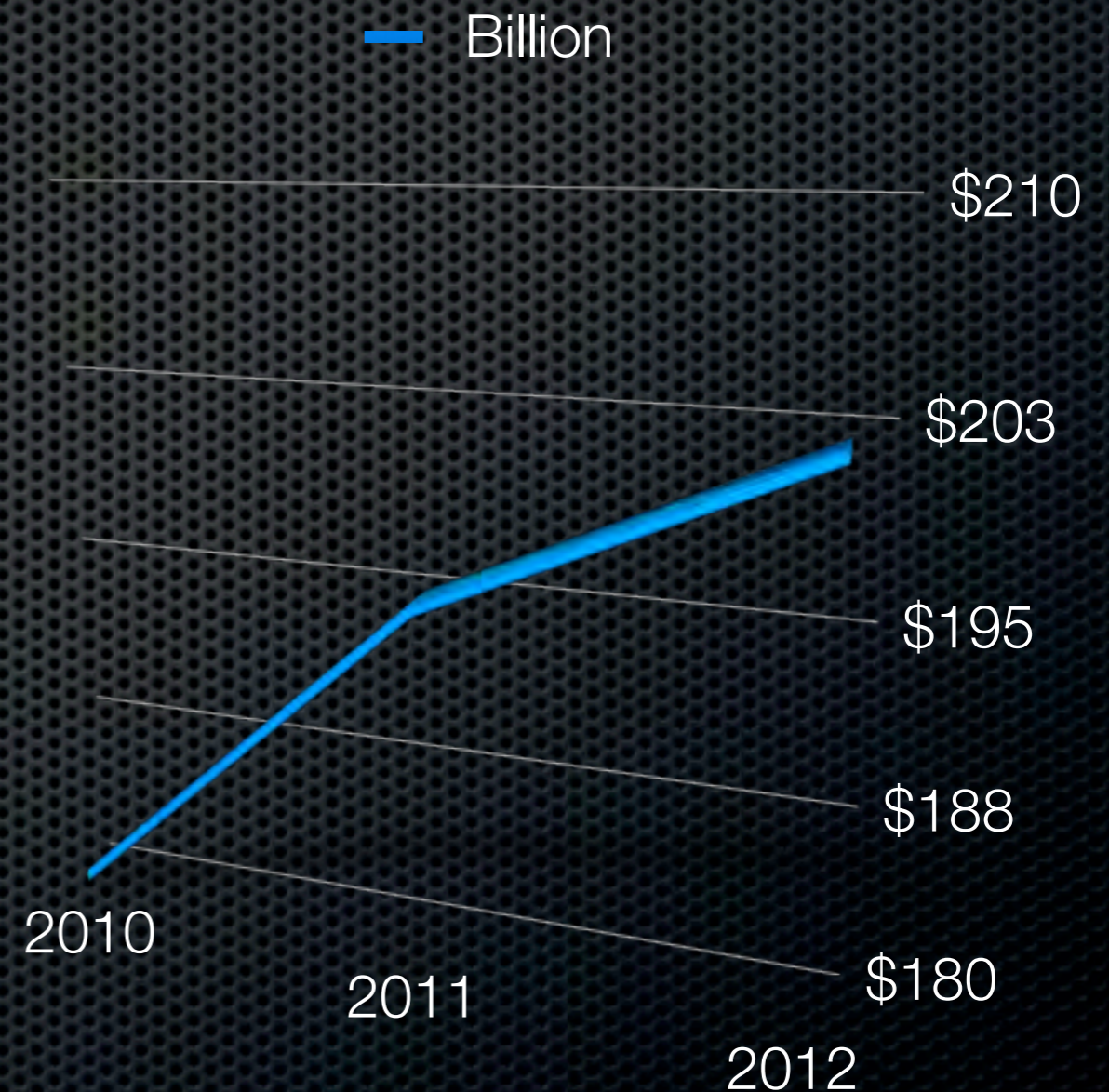
  - 10,000 sq ft. Mezzanine

Vanco's Competitive Edge

- Offer High Quality Products at the Most Competitive Price Points in the Industry

- Single source for all Home Theater and Home Networking products

- Active Electronics are 100% Tested for Quality Control in the US

- A 1-year repair or replacement warranty on all HDMI active products

- Lifetime warranty on all HDMI cables

- Technical support via phone or email
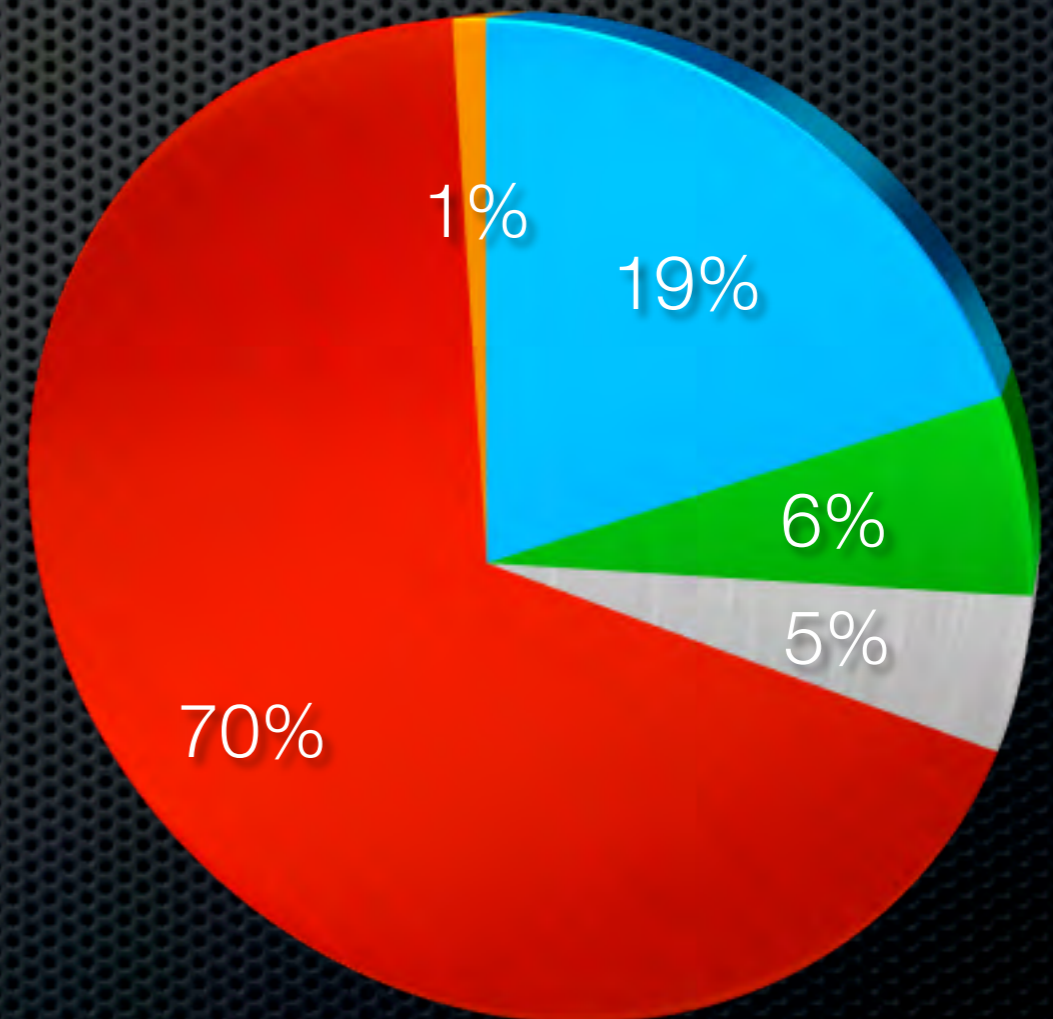
- 98% Fill Rate on all orders

CEA 2012 Sales Forecast

- Vanco is one of 64 companies that provided data

- The CE market grew from $181 Billion in 2010 to a $195 Billion in 2011 and is estimated to grow to $202 Billion in 2012

- Key in-home technology growth areas are in video and audio components with projected 2012 sales of $5.4 Billion and $4.5 Billion

Billion

$210

$203

$195
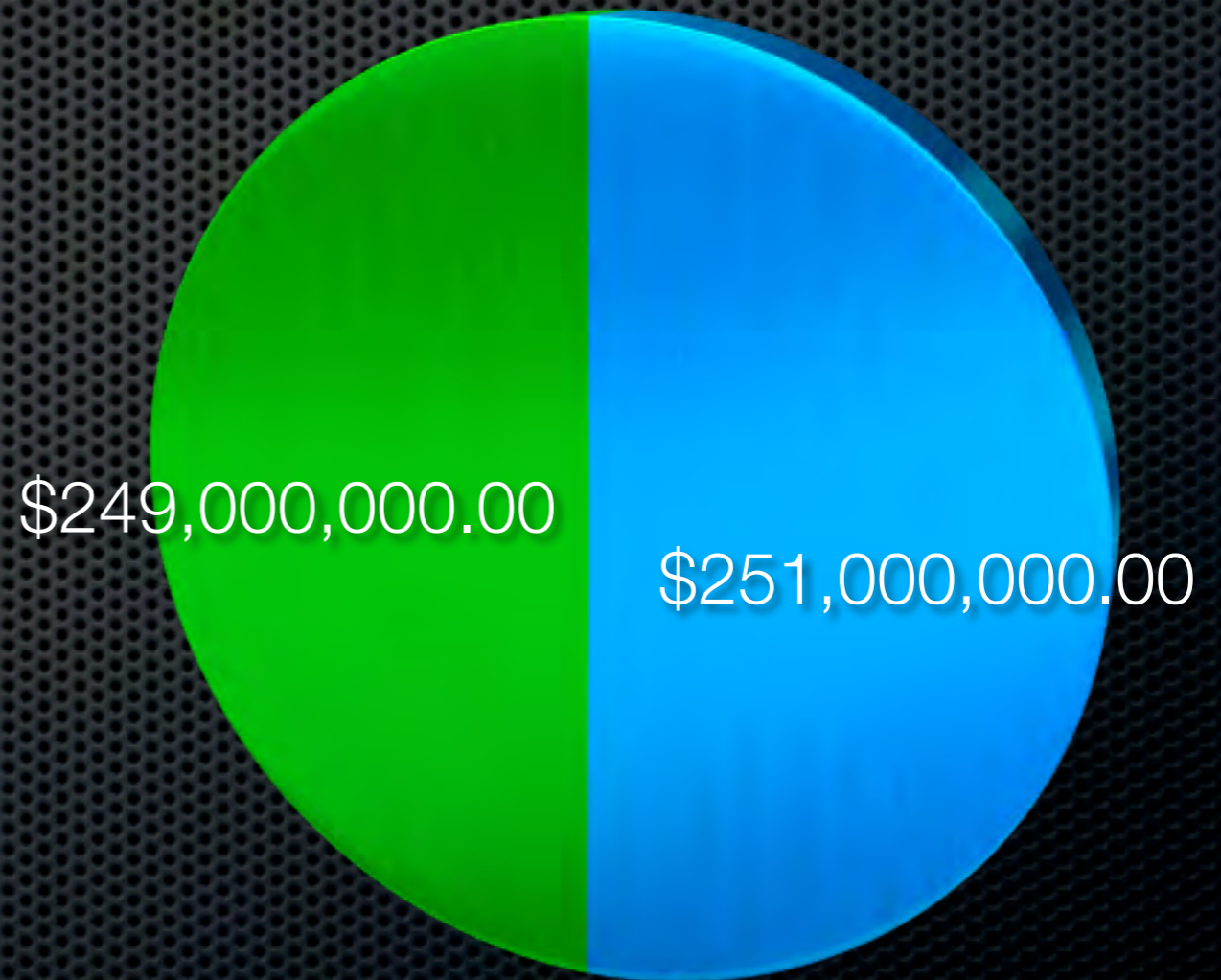
$188

$180

2010

2011

2012

2012 Home Theater Market

- In-Home Technologies are estimated to be a market with $93 Billion of Sales Revenues

- Digital Displays account for $17.2 Billion of Sales Revenue

- Video Components (players, receivers & recorders) account for $5.4 Billion of Sales Revenue

- Various types of Audio Systems account for $4.5 Billion of Sales Revenue

- Home Information Technologies (computers, modems) and Security account for $65 Billion of Sales Revenue

- Communications (Telephones, Fax Machines) account for less than $1 Billion of Sales Revenue

Legend:
- Digital Displays
- Video Components
- Audio Systems
- Home Information Technologies and Security
- Communications

Pie chart values:
- 1%
- 19%
- 6%
- 5%
- 70%

CE Accessories

- 23 Million A/V cables will be sold totaling $500 Million in sales

- Of that 23 Million, 8.9 will be HDMI cables totaling $251 Million in sales

HDMI Cables
All Other A/V Cables

$249,000,000.00

$251,000,000.00

How the HDMI® Specification has progressed

- 1.0 Initial in 2004 with Digital A/V protection

- 1.1 Added DVD Audio

- 1.2 Added PC & Super Audio CD

- 1.2.a Changed CEC (consumer electronic) Control

- 1.3 Added Deep Color Capability & Lip Synch

- 1.3a Changed Eye Diagram

- 1.4a Ethernet Channel, Audio Return, 3D, 4k x 2k Resolution = 4 times 1080p Resolution, 36 bit & 48 bit Deep Color Spaces

Vanco's High Speed HDMI® Cables with Ethernet

- High Speed

- 1080p, 3D

- 100 Mb/s Ethernet Channel

- Audio return channel

- 10.2 Gbps

HDMI® Connectors

- Type A – 19 pin interface

- Type B – 29 pin interface

- Type C – 19 pin miniature interface

- Type D – 19 pin micro interface
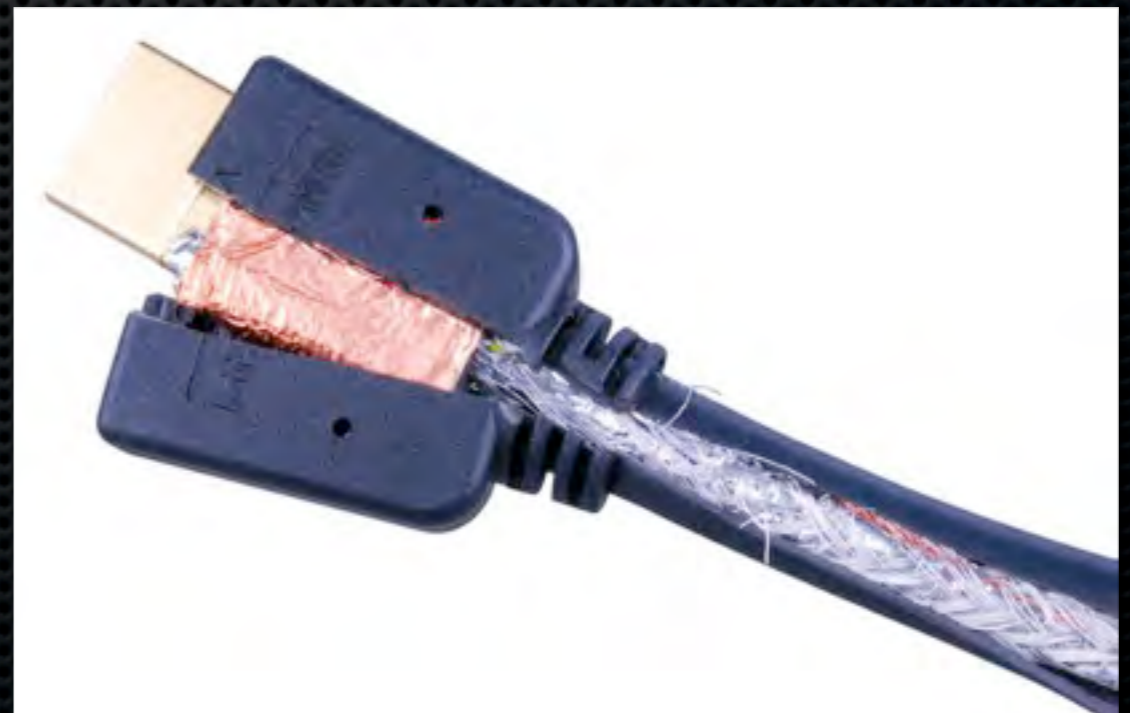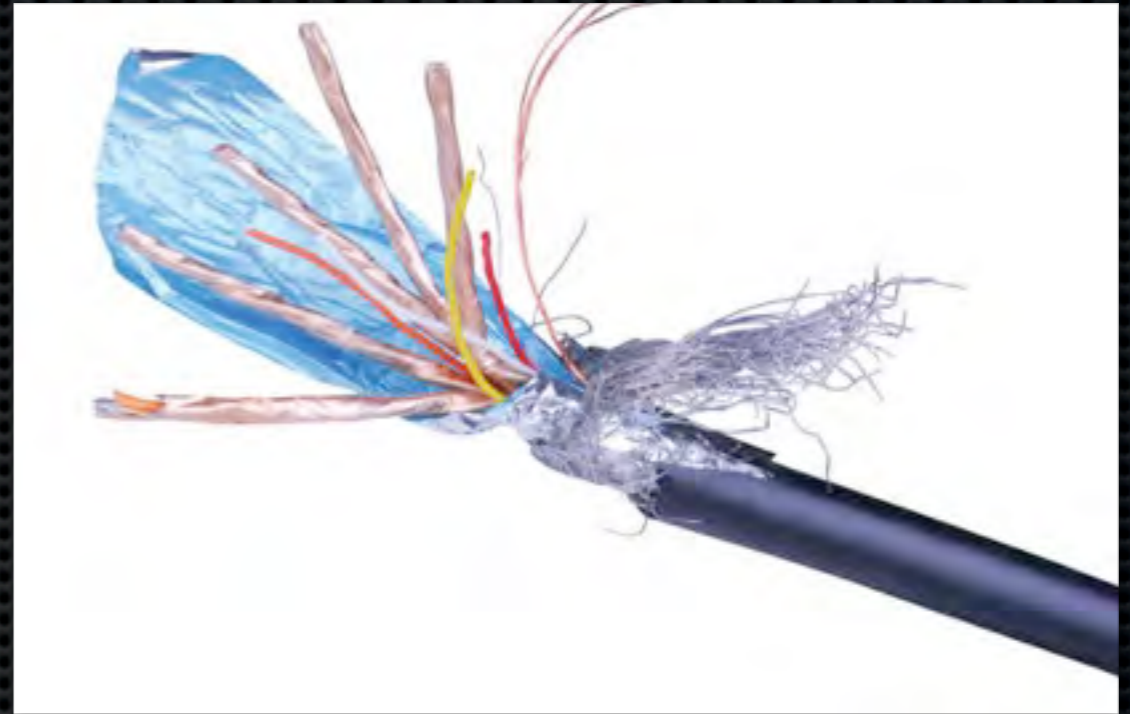
- Type E – 19 pin automotive

Cable Assembly Testing

- Electrical testing Includes signal eye diagram, rise & fall time, intra-pair & inter-pair delay skew, clock cycle, TMDS clock jitter, cross-talk, attenuation and impedance

- Mechanical tests include dimensions, temperature & humidity and vibration & shock tests

- Environmental include RoHS & REACH

The Vanco Difference

- 90% Braid coverage

- Connector retention

- 100% Foil coverage reduces interference

- Gel molding = connectors won't fall off

- Triple Shielding = Braid, individually insulate wires, insulated ends
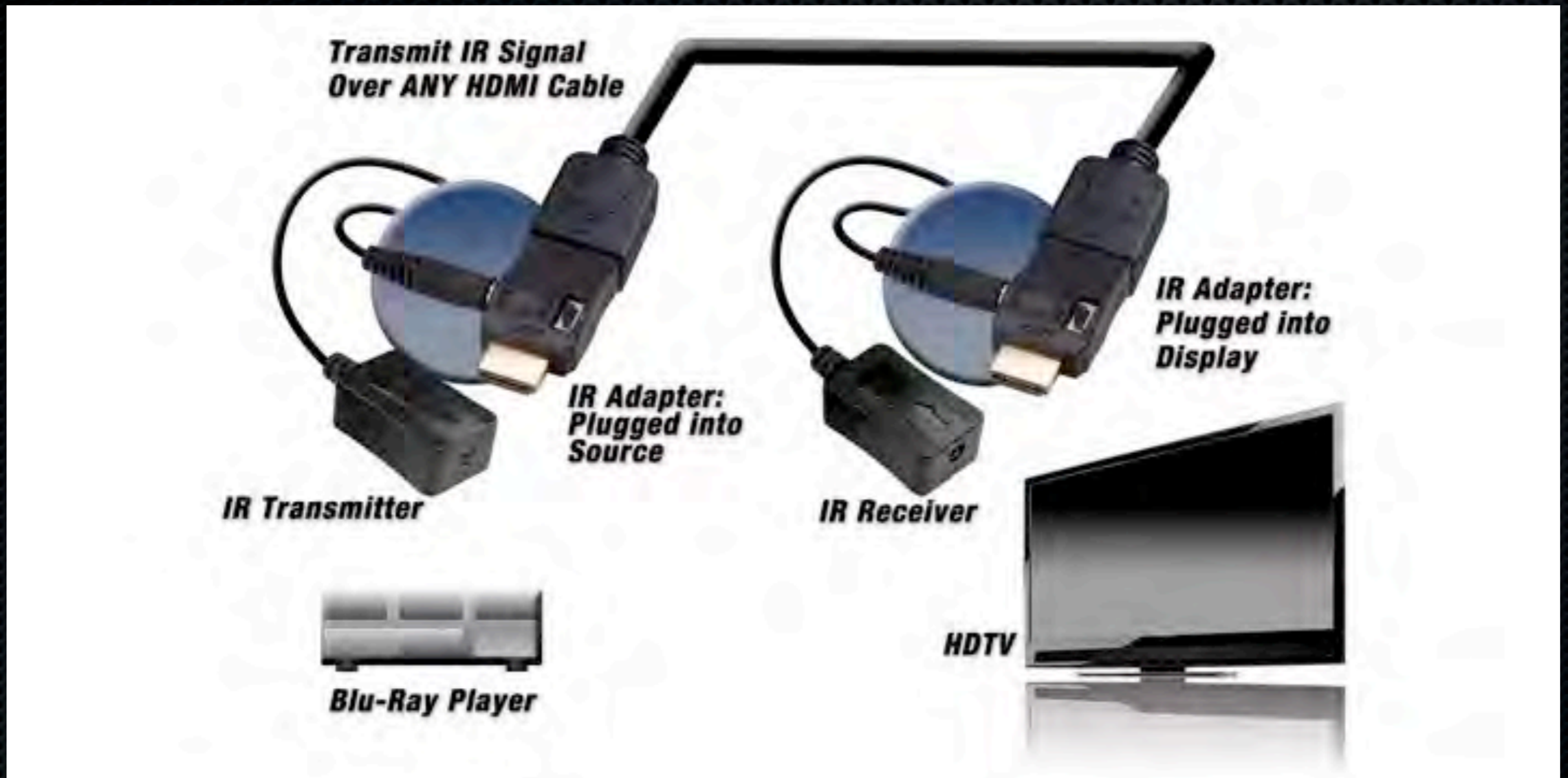
Vanco's Active Electronics

High Quality HDMI® Distribution Products for Home Theater

New HDMI® Electronics Features

- Automatic over-voltage and over-current protection is provided in all of the new electronics

- Fuse on the PCB board automatically shuts unit down unit when voltage or current abnormality is detected to avoid damage

- When voltage and current resume to normal levels, the circuit returns to normal operation

Transmit IR Signal Over ANY HDMI Cable

IR Adapter: Plugged into Display

IR Adapter: Plugged into Source

IR Transmitter

IR Receiver

Blu-Ray Player

HDTV

Super IR Control

Equipped with Super IR to control system operation from the display to the source
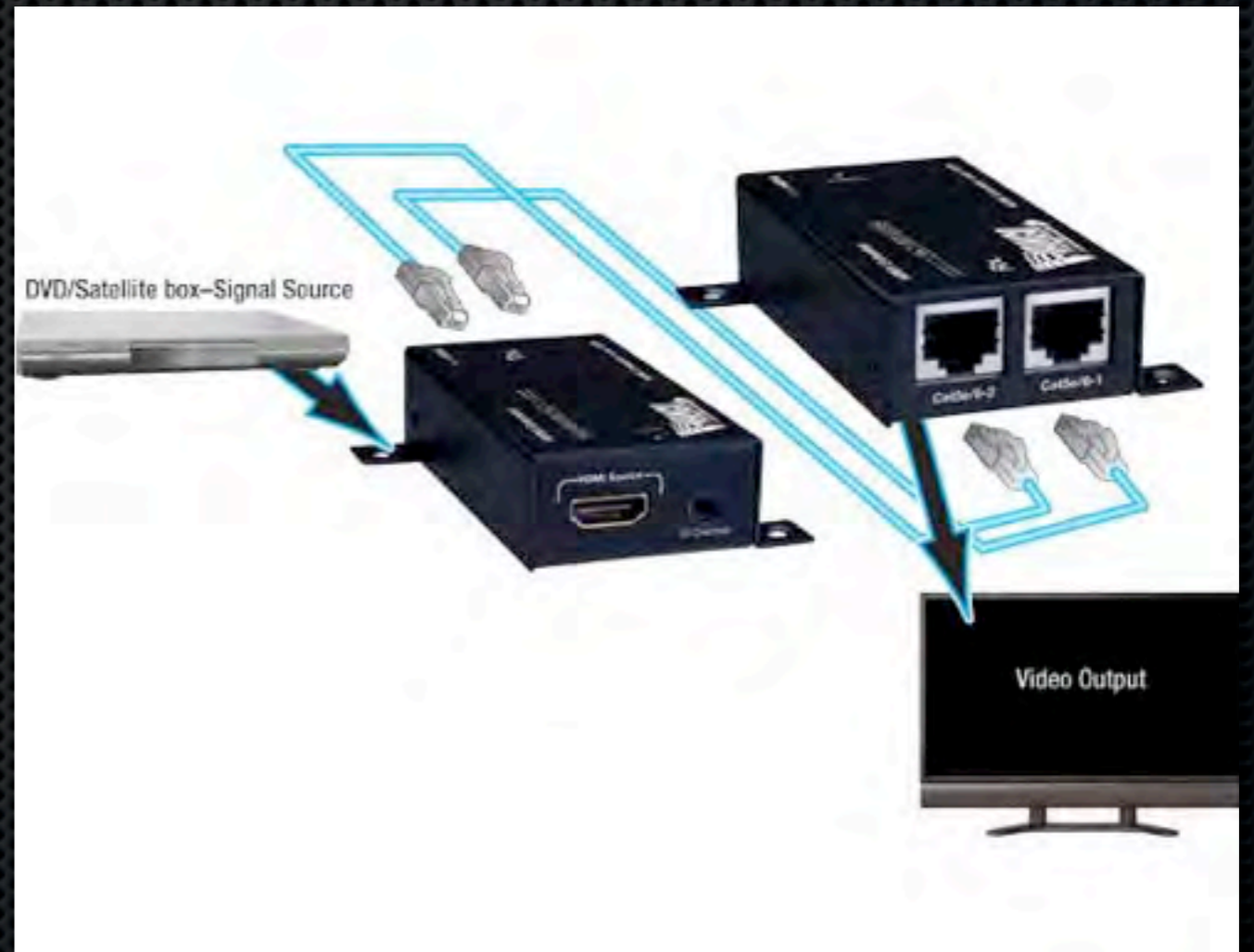
Offers a patented HDMI Adapter to allow an IR signal to travel over an HDMI cable connected between the display and the source

Allows IR control signals to travel in both forward and backward directions

System interfaces with universal remotes

HDMI® Extenders over Cat5e/Cat6 Cables

- Allows HDMI Audio/Video Signals to be transmitted over Dual Cat5e/Cat6 Cables

- Transmission Range: Extends 1080p resolutions up to 164 ft over Cat5e Cables; Extends 1080p resolutions up to 180 ft over Cat6 Cables

- High Speed Chip Set that Supports 3D, 4K x 2K

- Full HD1080P

- HDCP Compliant

- Super IR control system, IR transport channel can be forward or backward. IR transmitters and receivers are needed

- Supports IR control in the 38 kHz mode

- Part #s 280723 and 280713

HDMI® Extender over Coaxial Cable

- Allows HDMI Audio/Video Signals to be Transmitted Using one Coaxial Cable

- Transmission Range: Extends 1080p Resolution Up to 328 ft (100 m) over RG-6 Coaxial Cable (Dual and Quad-Shielded);Extends 1080p Resolution Up to 164 ft (50 m) over RG-59 Coaxial Cable

- Supports High Definition Resolution 1080p

- Up to 45 Receiver Units can be Cascaded from one Transmitter to Connect to Additional Flat Panel Displays

- Part # 280557

- ***Why Coax?*** It is a great solution piece when you need to achieve a further distance or if coax is already run behind the wall
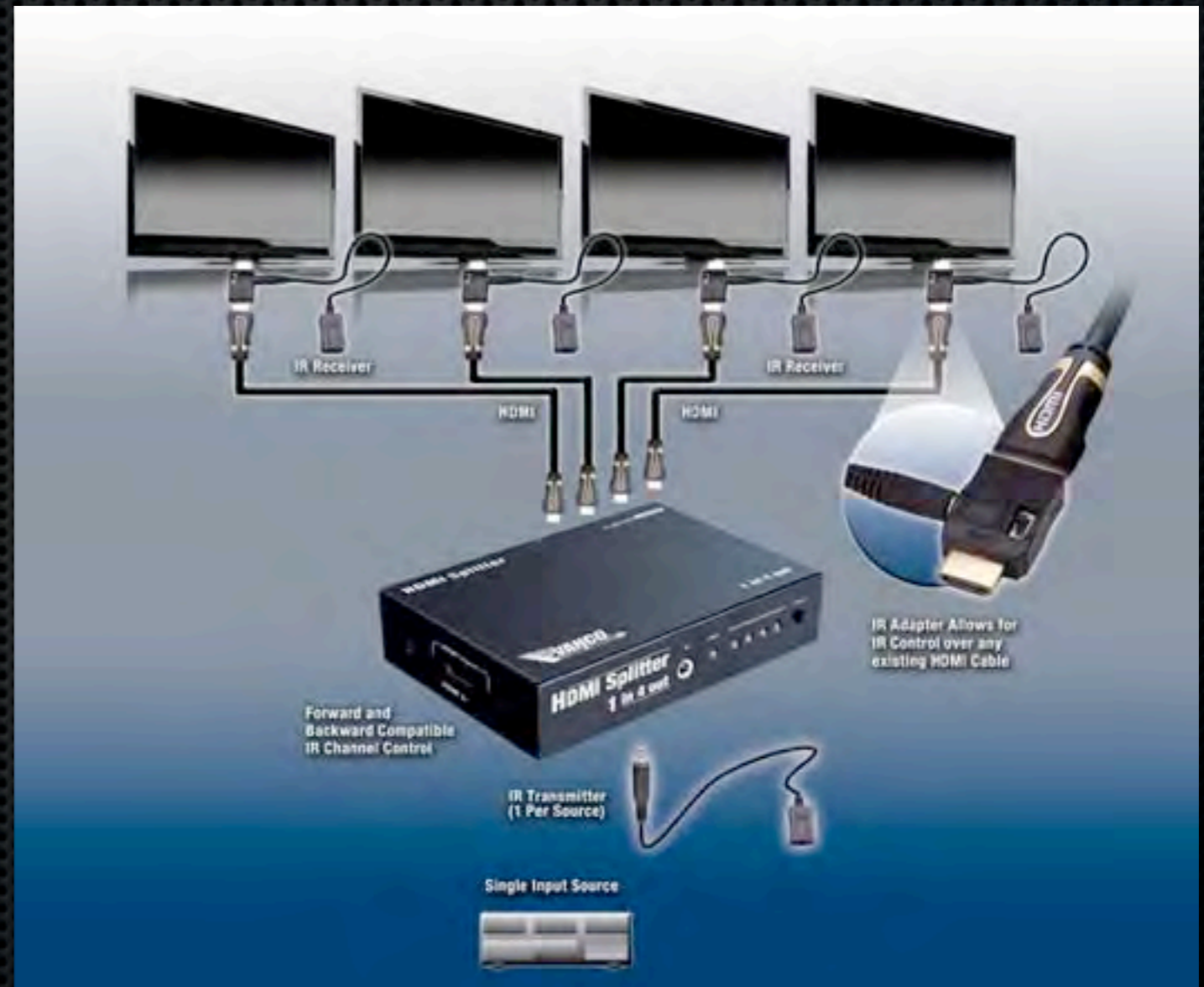
HDMI® Selector Switches

- Allows 3 or 5 HDMI Inputs to 1 HDMI Output

- Super IR control system, IR transport channel can be forward or backward. HDMI IR adapters and IR transmitters and receivers are needed

- Supports IR control in the 38 kHz mode

- High Speed Chip Set that Supports 3D, 4K x 2K

- Full HD1080P

- HDCP Compliant

- Smart switching technology

- Available in 5x1 (Part # 280710) and 3x1 (Part # 280711) Models

HDMI® Splitters

- Allows 1 HDMI Source to be Connected to Multiple HDMI Displays Devices

- Super IR control system

- Supports IR control in the 38 kHz mode

- High Speed Chip Set that Supports 3D, 4K x 2K

- Full HD1080P

- HDCP Compliant

- Built-in equalization support output

- Available in 1x2 (Part # 280702), 1x4 (Part # 280704), and 1x8 (Part # 280708) Configurations

HDMI® 4x8 Splitter/Switch

- Allows 4 HDMI Sources to be Connected to 8 HDMI Displays Devices

- Super IR & RS232 control system, IR transport channel can be forward or backward. HDMI IR adapters and IR transmitters and receivers are needed

- Supports IR control in the 38 kHz mode

- Part # 280705

HDMI® Splitters over UTP

- Allows 1 HDMI Source to be Connected to 4 or 8 HDMI Displays Devices over Dual Cat5e/Cat6 Cables

- Transmission Range: Extends 1080p resolutions up to 100 ft over Cat5e Cables; Extends 1080p resolutions up to 110 ft over Cat6 Cables

- Super IR control system

- Supports IR control in the 38 kHz mode

- High Speed Chip Set that Supports 3D, 4K x 2K

- Full HD1080P

- HDCP Compliant

- Built-in equalization support output

- Available in 1x4 (Part # 280714), and 1x8 (Part # 280718) Configurations

HDMI® Matrix Selector Switches

- Allows multiple HDMI Sources to be shown on multiple HDMI Displays Independently

- Super IR control system

- RS232 Control on the 4x4 model

- Supports IR control in the 38 kHz mode

- Locking HDMI Compatible

- High Speed Chip Set that Supports 3D, 4K x 2K

- Full HD1080P

- HDCP Compliant

- Supports Digital Audio Format, DTS-HD/Dolby-True HD/LPCM7.1/AC3/DTS/DSD

- Built-in equalization support output

- Available in 4x4 (Part # 280719), 4x2 (Part # 280716), and 2x4 (Part # 280717) Configurations

HDMI® Matrix Selector Switches over UTP

- Offers Unprecedented Flexibility and Convenience by Extending High Definition Audio/Video Signals from any of 8 (part # 280709) or 4 (part # 280707) HDMI Sources to any of 8 or 4 Remote Displays over Single Cat5e/Cat6 Cables

- Transmission Range: Extends 1080p resolutions up to 100 ft over Single or Cat5e Cables; Extends 1080p resolutions up to 110 ft over Single Cat6 Cables

- IR Control

- High Speed Chip Set that Supports 3D, 4K x 2K

- Full HD1080P

- HDCP Compliant

- Available in 8x8 (Part # 280709) and 4x4 (Part # 280707) Configurations

Splitter or Matrix?

Splitter

Displays an Identical Source on Multiple Televisions

Matrix

Displays Different Sources on Multiple TVs Simultaneously

EDID
What is it and why is it important?

- EDID – Extended Display Identification Data

- The HDMI signal will only travel between the source and display once the electronic key identifies the TV as being a display and not a digital recorder.

- This EDID authentication in conjunction with HDCP repeats itself every couple of seconds and if the response is lost, then the screen goes blank and audio stops

- Vanco's newest items feature reading and saving EDID function from displays

- EDID eliminates compatibility issues

Shaping the future of digital connectivity
HDBaseT Technology

What is HDBaseT?

- HDBaseT is a technology that allows for the transmission of uncompressed full HD digital video, audio, 100BaseT Ethernet, power over cable and control signals through a single 100m/328ft CAT5e/6 cable.

- HDBaseT Alliance was formed by LG Electronics, Samsung Electronics, Sony Pictures Entertainment and Valens Semiconductor to promote and commercialize HDBaseT™ technology. Vanco International and other manufactures supporting HDBaseT technology play a vital part in defining the future of multimedia transmission and data communication in the consumer electronics industry.

HDBaseT Features

Full HD Uncompressed Video

HDBaseT delivers uncompressed HD video up to 328 ft away and does not degrade the video quality. HDBaseT supports TV and PC video formats including standard video format, 720p, 1080i, 1080p, 3D and 2K/4K

Audio

Audio is passed through the same media as video, all standard formats are included.

100BaseT Ethernet

HDBaseT provides Internet capability, enabling televisions, stereos, computers and other CE devices to communicate with each other and access multimedia content, including video, pictures and music

Power over Cable

Sending power over the same Cat5e/Cat6 cable will give people the option to forgo plugging devices into the wall for power. In the future, HDBaseT will be able to power TVs, Blu-ray players and other devices up to 100 watts.

Various Control Signals

HDBaseT delivers different types of control signals with different purposes, starting from CEC that operates basic functionality such as power-on, power-off and play/stop, to RS232/USB and IR that operate remote equipment even when it is located in a different room

Where is HDBaseT Technology at Now?

Accessories! HDBaseT Technology is not built into CE Devices yet, but Vanco offers HDBaseT Matrix Switches and an HDBaseT extender. This allows you to connect CE devices and utilize HDBaseT technology.

HDBaseT Matrix Selector Switches

- Features HDBaseT Technology, optimized for whole-home or commercial distribution of uncompressed high-definition signals at three times the distance of HDMI cables without degradation, 16x16 and 8x8 available

- Transmission Range: Extends 1080p resolutions up 328 ft over a single Cat 5e or Cat 6 cable

- Includes Ethernet Extender Capability

- Reading and saving EDID function from displays

- Supports Dual Band IR in 38 kHz and 56 kHz modes

- Includes RS232 Extender over Cat5e/Cat6

- Seven switching modes are available: panel buttons, touch panel, local IR, IR call back from remote locations, RS-232, RS-485 and Ethernet

- FullHD1080P, HDCP compliant

- Provides three records to save the current state of the matrix routing switch

- 16x16 (Part # 280799) and 8x8 (Part # 280759) models available

Matrix vs. HDBaseT Matrix

8x8 Matrix over UTP

Dual Cat5e/Cat6

Transmits Audio, Video, IR up to 110 ft.

Part # 780709

8x8 HDBaseT Matrix

Single Cat5e

Transmits Audio, Video, IR and Ethernet up to 328 ft.

Part # 280759

HDBaseT Extender

- HDBaseT Extender can connect uncompressed full HD digital video, audio, 100BaseT Ethernet, and various control signals through a single 100m/328ft CAT5e/6 cable with RJ45 connectors

- Transmission Range: Extends 1080p resolutions up 328 ft over a single Cat 5e or Cat 6 cable

- Reading and saving EDID function from displays

- Part # 280726

Thank you
Questions