

CREATING NEW AV BUILDING BLOCKS

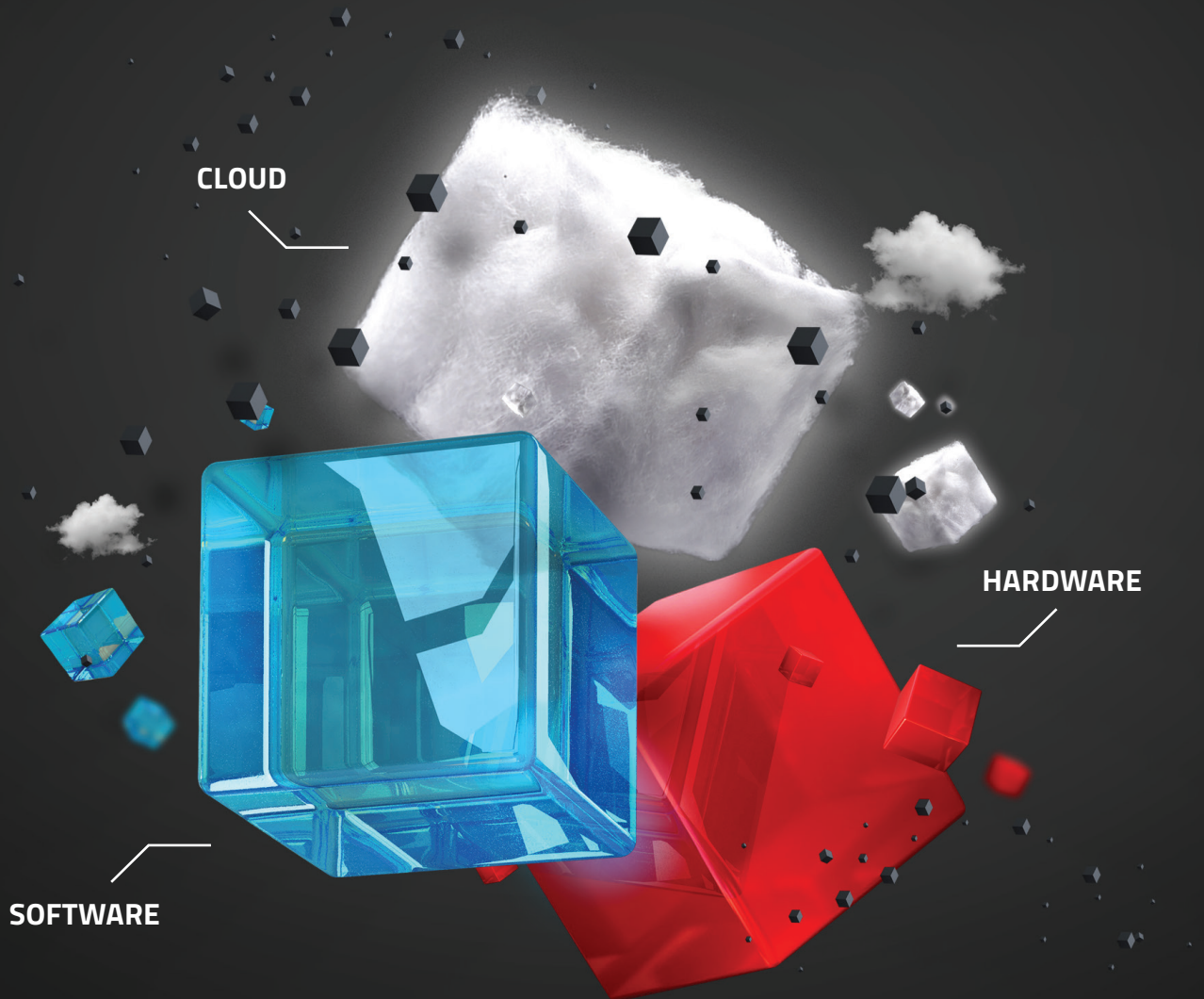


TABLE OF CONTENTS

KRAMER MAKES ITS CASE IN COURTROOM PRESENTATION TECHNOLOGY 3

IT’S TIME TO MOVE BEYOND THE BOX 4

DEUS EX MACHINA 6

CONTROL BEYOND THE BOX 8

VIA 2016: WE’VE BEEN WORKING OUT..... 10

KRAMER@WORK: WE HAVE YOUR SOLUTION..... 12

WHAT ONCE WERE DREAMS HAVE BECOME REAL..... 14

AV BEYOND THE BOX 16

INSTALLER PRODUCT SHOWCASE..... 18

KRAMER PRODUCT SHOWCASE 20

KRAMER SYSTEMS FUEL S.T.E.A.M. PROGRAM 22

CLOSE THAT BACK DOOR! 23

KRAMER KEEPS IT SIMPLE FOR AMEC 24

EXPERTS IN DETERMINATION – KRAMER ACADEMY™ RENEWS CTS PREP TRAINING 25

WELCOME TO THE SMART ROOM!..... 26

KRAMER TWISTED PAIR PRODUCTS HOT AT
BOSTON’S PIZZA RESTAURANT AND SPORTS BAR 27

JUST FOR FUN 28

SUBSCRIBE TO OUR YOUTUBE CHANNEL 29

EMPLOYEE PROFILE - DAVE BRIGHT 30



KRAMER MAKES ITS CASE

IN COURTROOM PRESENTATION TECHNOLOGY

Attorneys, judges, staff, and jurors are experiencing state-of-the-art presentation technology during trials at the Waukesha County Circuit Courts in Wisconsin. With the court's newly installed audio/video presentation systems, attorneys can present evidence in a variety of ways, conduct videoconferencing calls during hearings and annotate over any displayed materials during case presentation and witness testimony.

Thanks to professional audio/video installer ExhibitOne, of Phoenix, Arizona, each of Waukesha County's 17 courtrooms has a specially designed and integrated AV system that enhances courtroom proceedings. The selection of presentation sources and the audio and video quality are managed by Kramer Electronics products. According to Kevin Sanders, director of technical services at ExhibitOne, Kramer is the "go-to" product line when the company is installing presentation carts. "We recommended Kramer products based on identified court needs, the pricing constraints and the assortment of products available from Kramer that fit the needs of this client," Sanders said. "We always take the best product for the system, and in this case, Kramer was the best choice."

Each courtroom has a projection display for courtroom depositions, video monitors and large screen monitors for evidence viewing, and an evidence cart that houses a document camera, DVD player and also supplies multi-device connectivity for use by the attorneys. Lawyers can bring their own laptops or similar tablet devices and hook them into the AV presentation system.

Lawyers can bring their own laptops or similar tablet devices and hook them into the AV presentation system.

To take the uncertainty out of tapping into a central AV system, court staff prepared an extensive on-line system guide booklet which is helpful to both attorneys who are technically savvy and those who have less experience with electronics. For example, it provides guidance on CD/DVD media, connections needed for various laptops and related electronic devices, and procedures for videoconferencing calls. It also enumerates the various tools and input methods attorneys can use to present evidence: document camera, DVD player (composite input), laptop or tablet device (VGA w/audio) and HDMI.

Each of the courtrooms has a Kramer VP-420 ProScale™ digital scaler for computer graphics video and HDTV signals. The scaler scales the input to a selectable computer graphics video or HDTV output resolution, providing the flexibility required by the courtrooms. The systems also include Kramer PT-110EDID twisted pair transmitters and PT-120 twisted pair receivers for computer graphics signals. The system allows a maximum resolution of WUXGA for computer graphics video signals and 1080p for HDTV signals for sharp, detailed images, even with long-range signal distribution.

The audio system includes microphones throughout the courtroom, equipped with mute buttons where appropriate, as well as a white noise producer over the jury box that can mask any bench conversations. DVD players, laptops and cell phones can be connected to the audio system as well.

Sanders said the installation was well-orchestrated, but carefully timed. "We could not interfere with day-to-day proceedings, so we planned two courtrooms per installation visit," he said. "Although all of the rooms have the same basic electronics configuration, each one is shaped a little differently, so each one had its own challenges."

ExhibitOne trained the court's technology staff on the usage procedures and court staff, in turn, trained the lawyers. By making the guide book available on-line, visiting attorneys have access to the technology information, as well as contact information for additional questions. Sanders noted that court officials like the consistency of the courtrooms and the ease-of-use of the systems.

The final verdict: Kramer Electronics products make the Waukesha County Courthouse a high-tech environment that's easy for everyone to use.



IT'S TIME TO MOVE BEYOND THE BOX

Radical change is coming to our industry! The traditional, bulky AV matrix switcher equipped with dozens of inputs and outputs and connected with a swirl of cables is on the way out – and it has everything to do with “wagging the dog.”

Some perspective will help. Let's go back 25 years to a time when the most complex video connection you'd come across was a 15-pin VGA connector, and three wires were all you needed to move audio around. Maybe you needed to send video and audio to two monitors, so you picked up a simple distribution amplifier.

Or perhaps you needed to connect more than one video/audio signal combination to two or more monitors. So you installed a matrix switch, which could also handle composite video. And as the number of input and output connections increased, so did the size of your switch matrices. (Along with your equipment budget and cable needs.)

Fifteen years ago, the transition began in earnest from analog to digital signal transport. There were plenty of miscues and hiccups along the way, but you dealt with it all and simply changed to digital versions of your older analog matrix switches. Meanwhile, the number of input and output connections continued to grow (as did the switches and your electric bill). And all kinds of new connection issues popped up: EDID. HDCP. Crosstalk. Reclocking. Deep Color.

Today, our original concept of a simple switch for computer and video signals has grown way, way out of proportion. And we've complicated things by adopting a consumer display interface as the basis for exceedingly complex and expensive matrix switches used to transport AV signals around and through office buildings, laboratories, schools, and even hotels. We've pushed the envelope by porting those same AV signals over structured wire, optical fiber, and even short-range wireless connections.

But we're clearly heading in the wrong direction. In the worlds of consumer electronics, IT, broadcast, and telecom, the trend is

contrary, moving away from big, bulky and proprietary hardware-based switches. Instead, these markets are embracing AV signal transport and control over conventional IT networks – you know, that TCP/IP stuff!

And that approach actually makes perfect sense. The hardware and interconnections used to move IT data around are equally capable of handling video and audio. Granted, we may need first to re-format the video and audio signals into packets and even provide some sort of compression for transmission efficiency. But that's not a big deal anymore, and easy to do – and best of all, not very expensive.

With a fast network, an Internet switch, and the right software, we can move away from those towering boxes of Big Hardware, once and for all.

There's no explanation or rationale anymore for the continued reliance on big, proprietary hardware for AV signal switching and distribution. It simply doesn't make sense in this day and age to keep buying and installing such products, particularly when the display interface standard in use is already too slow to handle the ever-growing crop of ultra-high definition displays with wider color gamuts and high frame rates, creating a serious short-term obsolescence problem.

And there's another factor coming into play: The cloud. If we want to share a video these days, the bigger challenge might be finding it on a remote server and streaming it back reliably to our meeting room or classroom – not loading up an optical disc and playing it back in the room, a media distribution model that is becoming less popular with each passing month.

Why should any of this surprise you? In previous issues of *Connections*, we've detailed

how trends in the world of consumer electronics now largely shape the future of commercial and professional electronics – a complete reversal from two decades ago. And this phenomenon is best described by the catchphrase we used at the start of this article: “Wagging the dog.”

Think of all the CE devices and technologies we use on a daily basis at home and at work – smartphones, tablets, screen mirroring, fast wireless, dongles for streaming video to televisions, and apps. Lots of apps for everything from controlling



our home lighting and thermostats to monitoring security cameras, ordering groceries, editing pictures, making dinner reservations, brewing coffee, and paying bills.

If we can do all of that stuff using nothing more than a smartphone or tablet, why can't we configure and control an AV system the same way? And get rid of racks of proprietary, energy-guzzling control systems along the way? And make our new control system so easy to use that anyone can program the functions they need in minutes?

Guess what? We can do all of this, thanks to the Internet, apps, and cloud storage. And we can also stream video and audio through the same network we're using to control everything. That's because software does most of the heavy lifting now, not hardware: With a fast network, an Internet switch, and the right software, we can move away from those towering boxes of Big Hardware, once and for all.

And that's the way it should be. Software-based signal switching and control makes it possible to streamline an installation – no need to buy more hardware than you need, since you're now connecting into an even bigger, expandable

virtual IT matrix. One server can handle multiple requests for streaming media – no need for racks of Blu-ray players. Cloud storage makes that media accessible to anyone at any time, on any network. And control of your AV devices on the network through mobile devices is the icing on the cake.

This doesn't mean we'll do away with all of the current interfacing standards any time soon. But our approach will move the problematic display interface architecture back to where it should have been all along – at the display, and not at the core of our switching and distribution system. Now we can join the rest of the world and use standard IT protocols, switches, and cabling to send our signals where they need to go, quickly and reliably.

This is the future of AV, and it's here now. We hope we've given you something to think about as you consider the design and configuration of your next AV switching, distribution, and control system so it doesn't become yet another installation of Big Hardware.

Time to move beyond The Box!

DEUS EX MACHINA

Everything you know about control systems is wrong. Or at the very least is about to get turned upside-down, thanks to the Internet of Things (IoT).

Yes, it's time to drag AV control systems out of the 20th century and look at them in a whole new way. Not as button pushes sending a few bits of serial data to turn on a projector, lower a screen, or adjust audio volume. (That's SO 1960s!) Nor should we be installing racks of proprietary hardware and spending hours creating lines of programming language that would mystify the average person. (That's SO 1980s!)

The era of IoT means that just about every electronic gadget – from appliances, televisions, and media players to thermostats, security systems, light dimmers, and even your car – can be monitored and controlled from wired and wireless Internet connections, using nothing more than your smartphone or tablet.

The era of IoT is also the era of “the Cloud,” also known as distributed storage. You don't need to have a physical copy of a movie to watch it – you can stream it from the Cloud, just as you can share and edit documents, exchange photos, archive and retrieve records, and even use the Cloud to provide extra computing power.

Now, think about marrying these two trends together – IoT and the Cloud - to create the ultimate in control systems: The capacity to access and install device drivers anywhere in the world at any time. The ability to quickly design and configure a control system, from anywhere using a simple web-based builder. The capability to monitor and update a control system from anywhere you can find an Internet or LTE connection.

Let's go a step further and combine IoT and the Cloud to give your control system the ability to track which AV devices are being used, when they're in use, which functions are being used, and for how long. (And maybe even who's using them!) And let's not stop there. We'll tie together multiple control systems in multiple rooms to provide us with analytics 24/7, and those systems will even talk to each other.

Sounds radically different than what you're used to, right? It gets better. How about having “brains” at the center of the system that are smart enough to know all of the capabilities of every piece of AV hardware in every room, as you're installing

it? Our “brains” will ensure you don't try to define the wrong kind of connection as you create the system. (In fact, it will actually be a few steps ahead of you in defining operating controls.)

You're probably thinking, “Wow – *this really is a different approach to control systems!*” And you'd be right. But the concept isn't all that radical – it simply anticipates what's already happening in the world of consumer electronics and scales that trend up for corporate, education, and institutional AV installations.

It all makes sense if you step away from pre-conceived notions of how a control system should work. You've already got the controller and touchscreen in your hand if you own a smartphone and/or tablet (and who doesn't?). So there's no need to re-invent the wheel. What we need now is an OS-independent “brains” that can run on any hardware platform to configure and run our IoT control system.

We should also have a simple graphical user interface (GUI) to help us quickly lay out and create a control system, using What You See Is What You Get (WYSIWYG) principles. And our control system should also have a dashboard to continuously monitor and provide status updates on all controlled devices, no matter where they are and how they're being used. On any mobile device or computer; anywhere, at any time.

In effect, we're creating an “on-demand” control system. While that sounds redundant (what control system *isn't* on-demand?), it really is a different way to implement control.

Current control systems can operate AV hardware and provide some degree of feedback and analytics within a closed loop of controlled devices, and that's it. But what if we've installed multiple wireless collaboration systems across many rooms and even throughout a campus? How do we know when they're in use, how often they're used, who's using them, and for how long? Which collaboration functions are popular, and which aren't? And how are users connecting to them with their laptops and mobile devices?

In the world of IoT, all of that data is readily available, and having access to it can help AV and IT facilities managers do their jobs a lot more effectively. Need examples? Perhaps the latest meeting gadget isn't so popular after all. Or maybe several meeting rooms are getting heavier use than others. Or maybe it's time to upgrade a particular piece of equipment sooner than expected. In any case, real-time analytics provide all you need to know and help you design, build, and use facilities more efficiently.

**The era of
IoT is also
the era of
“the cloud”**

This new approach to designing and implementing control systems doesn't mean we have to throw the baby out with the bathwater. Our system will still support legacy devices that can't communicate via IoT interfaces. And we'll incorporate traditional switches and keypads as before to send commands to our advanced "brains." (Sometimes it's just easier to flip a switch to turn on a light!)

Having these advanced "brains" around will greatly simplify programming. They will know that you're configuring a projector into a system and will build-in warm-up time for the lamp. They will know not to connect two media sources to each other if you make a mistake in configuration. And when you replace an older piece of AV hardware with an updated version, the "brains" will automatically know the best way to communicate with the

new gear and load all the operational commands you'll need.

What we've created is an easy-to-use control system that's essentially infinitely expandable and models itself after the most sophisticated control system found on the planet – the human body. All parts of the system are monitored by our advanced "brains" with continuous analytics streaming back from all controlled devices. Best of all, our "brains" are based in software – not in ASICs – and they can learn and evolve as the control system does.

We call our new solutions Kramer Control and Kramer Network. Kramer Control does the work and Kramer Network will provide the analytics and ROI tools.

Deus ex machina has arrived. Are you ready?







CONTROL BEYOND THE BOX

As opposed to legacy ProAV architectures comprising a Master processor unit and connected Slave units, Kramer Control Smart Units are stand-alone and interconnected in a distributed and inherently aware architecture. This architecture offers unprecedented agility so users can efficiently deploy control in any space at a fraction of the time and cost.

Kramer Control innate scalability allows users to cater to a single room or the largest of enterprises with the same instantaneous plug and play. **Kramer Control – Control Beyond the Box.**



VIA

2016:

WE'VE BEEN WORKING

VIA – the industry's most powerful, flexible, and secure wireless connectivity and collaboration platform – has some new tricks up its sleeve. And it comes in two new flavors for 2016.

The rapidly-growing market for wireless connectivity products has produced more than a few surprises. In some cases, customers want a fully-featured collaboration system with all the interactive bells and whistles: File sharing, annotation, chat, Full HD video streaming, and virtual whiteboarding.

In other cases, end users are clamoring for simple, quick “no fuss” connectivity products that facilitate mirroring and improved remote streaming of videos from sites like YouTube. And everyone wants to log into these products differently, using a variety of room codes and “quick access” products.

Well, we heard you, loud and clear! The VIA family has expanded for 2016 and now comes with an expanded toolkit to make these products more user-friendly than ever. And we haven't overlooked the needs of AV and IT administrators either. Here's what's on the menu for this year:

VIA Campus is a powerful addition to the VIA family. This wireless connectivity and collaboration platform runs the Windows 10 OS and includes the full VIA feature set (whiteboard, annotation, chat, file sharing, mirroring) plus the capacity for up to 255 simultaneous connections. Campus also includes e-polling and e-testing software for meetings, live instruction, and distance learning applications.

Perhaps its most significant feature is improved video playback from remotely streamed content sites, such as YouTube™. In the past, such videos often played back with frame rates as low as 12 fps, resulting in a jerky, stuttering presentation. Now, Campus plays back streamed videos at 30 fps from any device, with perfect lip sync using true H.264 video encoding and not basic “screen scraping” techniques.

VIA Go is the answer for end-users who want basic and quick connectivity across a wide range of devices and operating systems. It's designed for small huddle spaces and K-12

OUT



classrooms, allowing up to four shared screens to be shown simultaneously. Just log in and present! VIA Go also provides full mirroring for iOS (Airplay) connections as well as Android devices, including Chromebooks.

VIA Go also includes a wireless access point (WAP), which makes setting up a guest network for students and visitors a snap. This provides full access to VIA features while keeping the device isolated from existing faculty, administration, and corporate networks.

VIA Site Management – Configuring and updating VIA products has become increasingly more important. And we've recognized that by introducing VIA Site Management, a powerful, enterprise-wide management system enabling control and configuration of all VIA devices on your network.

With VSM, admins can now configure systems, update firmware, and perform maintenance on groups of VIA devices as well as individual units. VSM also monitors CPU usage, hard drive capacity, and device operational status, and generates reports on all monitored VIA devices; all using an intuitive and integrated dashboard. Admins can turn on/off individual features and set permissions across multiple devices.

VSM is installed on its own dedicated server and sits on the same network or subnet with installed VIA products. While VSM is intended to be installed on a single local area network (LAN), it can also work across campuses with virtual private networks (VPNs).

Connectivity – When it comes to connection options for wireless systems, the sky's the limit – apparently. And no one solution works for everyone, so we've come up with a few ways to get you logged in as quickly as possible so you can start collaborating and not fuss with Internet addresses and room codes.

VIA Pad makes connecting as easy as falling off a log. It connects to the USB port on your laptop and automatically locates the VIA system in your room, makes the connection, and logs you in. There's no need to install the VIA application on your desktop – it runs automatically as a virtual program.

Once logged in, all you have to do to present is tap VIA's blue button, and you're stepped in. Finished presenting? Tap the button again, and you're stepped out. Any VIA Pad can operate in Guest Mode, once linked to a specific VIA product. It can't get simpler than that.

Running the VIA app on your mobile device? You can now scan a QR code from the screen, or even a piece of paper, and use that to log in and present. No need to enter the VIA IP address and room code – just scan and you're in. Or you can tap your Android mobile device on a near field connection (NFC) tag to make an instant connection.

The point of all these devices is to let you concentrate on your presentation and leave the technical stuff to VIA. (Unless you like impressing other people with your ability to remember IP addresses and room codes...)

Mirroring – One popular feature of wireless connectivity and collaboration systems is desktop mirroring. Presenters often want to run their own applications and stream videos from remote sites, rather than use embedded software in the wireless platform.

VIA Collage, Campus, and Connect Pro all support full iOS 8 and 9 mirroring for video and audio, giving you true 30 fps streaming rates (iOS 9 only). VIA is also the first and only wireless connectivity product to support 30 fps streaming of YouTube content, and it connects as easily as any AirPlay™-compatible device.

For Android mobile devices and ChromeBook, VIA software versions 1.8 and 1.9 support OS version 5.0 (Lollipop) desktop and application mirroring. (Note that Android 5.0 mirroring doesn't currently include audio, only video.)

To top things off, we've added versatility to VIA Connect PRO with our latest software update. Now you can take an off-the-shelf wireless adapter and plug it into Connect Pro, turning this versatile connectivity solution into a wireless access point (WAP). As before, Connect PRO lets up to four users to share the main screen and use basic collaboration functions.

VIA: We've been working out – and it shows!

KRAMER@WORK

WE HAVE YOUR SOLUTION



Introducing Kramer@Work, a set of complete meeting room AV solutions for any need, and any budget. Kramer@Work delivers optimal, intuitive meeting environments for any room need or meeting style with five key AV elements — Presentation, Control, Collaboration, Connectivity, and Audio.

We've taken the hard work out of designing a practical AV system for four different kinds of meeting spaces, and created custom packages that are designed to get you connected and working quickly and easily. Our systems ensure your meetings run smoothly, with seamless, intuitive switching between presenters.

Our VIA collaboration platforms make wireless presentation and collaboration easy. Participants can edit a document together in real time, turn the main display into a whiteboard, share any size file, stream smooth HD video, chat with other participants, and collaborate remotely with 3rd-party conferencing and office apps.

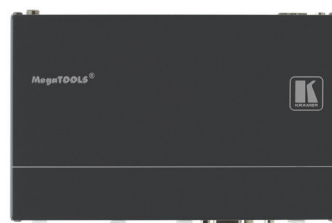
Most importantly, with K-Touch, we'll give you simple control over all AV and room functions – lights, shades, screens, sound, HVAC – from your iOS or Android tablet. And we tie everything together, from equipment mounted in racks to wall plates, tabletop connections, and a host of mobile devices. We even have a full line of in-ceiling, on-wall, and in-wall speakers for the highest possible audio clarity and room-wide coverage.

Executive Boardroom - Loaded with the most reliable and state-of-the-art audio-visual technology, this room solution

offers a high-end meeting experience for the modern executive. Participants enjoy user-friendly engagement tools, seamless, ultra-HD presentation, and the most sophisticated, powerful and easy-to-use room control solution on the market.

Our VP-558 presentation switcher lies at the core, providing four independent scaled images with embedded audio through HDMI and HDBaseT outputs. It also includes a 4x1 USB switcher, microphone input, independent stereo audio outputs, and two speaker outputs (one amplified).

Add in our DIP-20 HDMI/VGA Step-In Commander for tabletop access through HDBaseT, a WP-20 wall plate for HDMI, VGA, and audio, and Yarden 8-Y ceiling tile speakers. And we didn't forget tablet and smartphone users: Our VIA Connect PRO wireless presentation and collaboration platform can share up to four screens simultaneously from any mobile device, providing iOS and Android mirroring, whiteboard, chat sessions, and full 1080p/60 video streaming – all without needing a dongle.



Collaboration Room –

When teams need to get together and exchange ideas, Kramer is ready. This room makes presentation and collaboration seamless, easy and wireless with any laptop or mobile device. Meeting partic-

ipants enjoy an enhanced interactive experience focused on teamwork, not technology.

Start with our award-winning Collage wireless presentation and collaboration platform, which lets iOS, Windows, and Android mobile device users share files, chat, whiteboard with annotation, and view the main display on any device. Up to six screens can be shared at the same time (12 with dual display outputs), and video streams from any tablet, phone, or computer with full 1080p/60 fps playback. (Full mirroring provided for iOS and Android devices only.)

Add in our revolutionary K-Touch Cloud-based room control system, Galil closed-back ceiling speakers, and our PA-150 50W small form factor audio power amplifier for an immersive experience. For quick and easy connection of laptops, VIA Pad provides one-tap configuration, connection, and step-in operations. And you can ensure meeting rooms are used efficiently with our EventBoard Cloud-based room scheduling and meeting management application.

Classic Meeting Room - Our classic meeting room offers plug-and-present connectivity, basic collaboration tools and user-friendly touch control. Kramer's VS-62HA HDMI matrix switcher does the heavy work, assisted by our DIP-30 HDMI/VGA Step-In Commander.

For wireless connectivity, our VIA Connect PRO wireless presentation and collaboration platform can share up to four screens simultaneously from any mobile device, providing iOS and Android mirroring, whiteboard, chat sessions, and full 1080p/60 video streaming – all without needing a dongle.

For wired connections to laptops, add our elegant TBUS flush-mount multi-connection plate. Kramer's revolutionary K-Touch Cloud-based room control system, Yarden IH-1 hidden in-wall speakers, and 908 40W stereo audio amplifier and switcher complete the picture. And you can ensure meeting rooms are used efficiently with our EventBoard Cloud-based room scheduling and meeting management application.

Huddle Space – Informal meetings can happen any time and in any area – even one with just a few chairs and a

Classic Meeting Rooms



Collaboration Rooms



Huddle Spaces



coffee table. Kramer's VIA Connect PRO solution makes it easy to get things done in the casual and comfortable setting of any huddle space environment.

Connect PRO can share up to four screens simultaneously from any mobile device, providing iOS and Android mirroring, whiteboard, chat sessions, and full 1080p/60 video streaming – no dongle needed. You can even add an off-the-shelf wireless adapter and turn Connect PRO into a Wi-Fi wireless access point. Add a DIP-30 HDMI/VGA Step-In Commander and our cloud-based

K-Touch control system, and you're ready to huddle!

As we said earlier in this supplement, Kramer is a technology company – not a hardware company. We're all about offering solutions tailored to your exact needs, not big boxy pieces of hardware that offer more functions than you need. And Kramer@Work is the result – four powerful, flexible, and easy-to-use room AV solutions that get you up and running quickly and reliably – no matter what type of meeting you're having.

We've got your solution!

WHAT ONCE WERE DREAMS **HAVE BECOME REAL**

17 years ago, one of the world's largest communications industry trade shows was abuzz with this word: "Streaming." Numerous start-up companies (most of whom were gone a year later) showed off their latest techniques for sending and receiving postage stamp-sized video over rudimentary Internet connections.

Predictably, that fad came and went quickly. In 1999, it just wasn't practical to transmit high-quality video at normal frame rates over anything other than hard-wired video networks or satellite links. So we moved on to other things, leaving the worlds of AV and information technology (IT) in separate universes.

Over the years, several events transpired to change the landscape. High-definition video emerged. DSL and dial-up connections migrated to "broadband" hookups, with a corresponding increase in speed. Smartphones with built-in video cameras came to market, as did laptop computers. Services such as Skype™ and YouTube™ made it easy for people to videoconference and share video clips.

Advances in video compression/decompression (codec) techniques continued to lower the minimum bit rate to first stream SD, then HD, and now Ultra HD video. Today, the new High Efficiency

Video Codec (HEVC H.265) promises to deliver Ultra HD video (3840x2160 pixels) with the same frame rate and a bit rate of 20 Mb/s. That's 27 times the picture resolution with just double the bit rate SD video from 20 years ago!

Today, the convergence of AV and IT isn't an abstract concept: it's actually happened! Just about every audio and video gadget you can think of, professional and consumer, has a network interface card and can be assigned an IP address. And we can now tie everything together seamlessly – streaming, device configuration and monitoring, analytics and Cloud storage and retrieval – with a new concept: The Kramer Network.

In addition to streaming HD video, audio, and metadata to all connected devices on a network, we communicate with ALL installed Kramer hardware together, no matter where it sits, around the globe. Using nothing more than a web-interface, we can configure, update, and manage all of our AV hardware, both legacy and new.

We'll also be able to select any video and/or audio streams of any type, and send them to one or more destinations over a multicast IP network, using standard adaptive compression techniques to preserve image and sound quality by matching optimal streaming speeds to

network performance – even as available bit rates go up and down.

AV and IT systems administrators will have unprecedented access and control through the Kramer Network, which will provide a user-friendly, web-based interface from any single point in the network. It will reduce overall costs by enabling remote maintenance and operation for the vast majority of technical issues and help desk calls. It will also provide the ability to monitor everything on the network and give users incredibly valuable analytics to allow them to enhance the ROI of their AV and IT systems.

It's easier to grasp the concept if you imagine a large room full of AV equipment, with every device connected back to a large matrix switch. Change the physical interconnects from wired display interfaces to Ethernet paths. Add in a user-friendly graphical user interface (GUI). Finally, knock the walls down and expand the room and the number of devices by several orders of magnitude – and you've got the Kramer Network.

Not only have you gotten rid of large, bulky hardware switches that are difficult and costly to expand, you've also created an easily-scalable way to distribute AV content to whoever needs it from anywhere you're connected to the



Internet cloud. As we've written in previous issues of *Connections*, this concept of software-based switching (SBS) is a game-changer for the AV industry...and also in everyday use by telecom companies, broadcast and cable networks, and multichannel video program distributors (MVPDs).

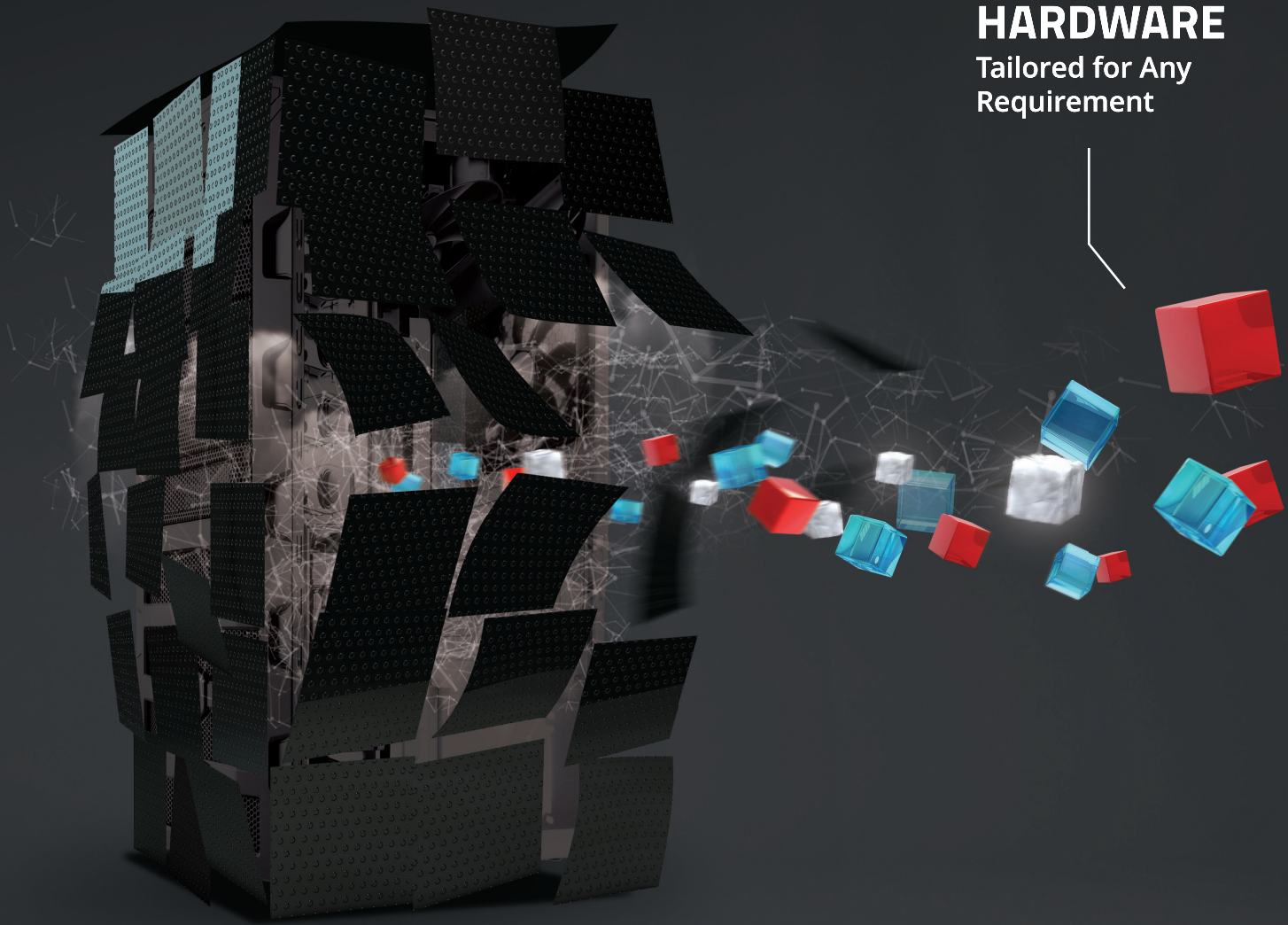
There's more. Hand-in-hand with Kramer Network, we've introduced new encoders and decoders. For greater coding flexibility, our KDS-EN4 encoder and KDS-DEC4 decoder will transport HDMI input signals to AVC H.264 video with H.264 or AAC audio, or convert non-HDCP content to Motion JPEG (MJPEG). Both models inte-

grate with the Kramer Network, set-up easily, and offer a standard Web GUI for configuration and operation. In addition, the KDS-EN4 provides three encoding modes, letting you optimize for low latency or high image quality.

In this issue of *Connections*, you'll also read about our incredibly advanced Kramer Control which taps into the power of the Kramer Network to provide you with real-time operation status, diagnostics, and even statistics that reveal what AV gear is being used, how often, in which locations, and when. That would have been next to impossible before the era of theCloud.

If it wasn't clear before, it should be now: The network is the future of AV. And networked AV expands our options by several orders of magnitude, as we can stream content from anywhere to anyplace, communicate with and control devices thousands of miles away, and access real-time, rich analytics about when, where, how, and even why our AV hardware is being used...using nothing more than a smartphone or a tablet.

Two decades ago, all of this science was wishful thinking, whimsy, and wild fantasy. Now, it's an everyday part of our lives. What once were dreams have become real!



HARDWARE

Tailored for Any
Requirement

AV BEYOND THE BOX

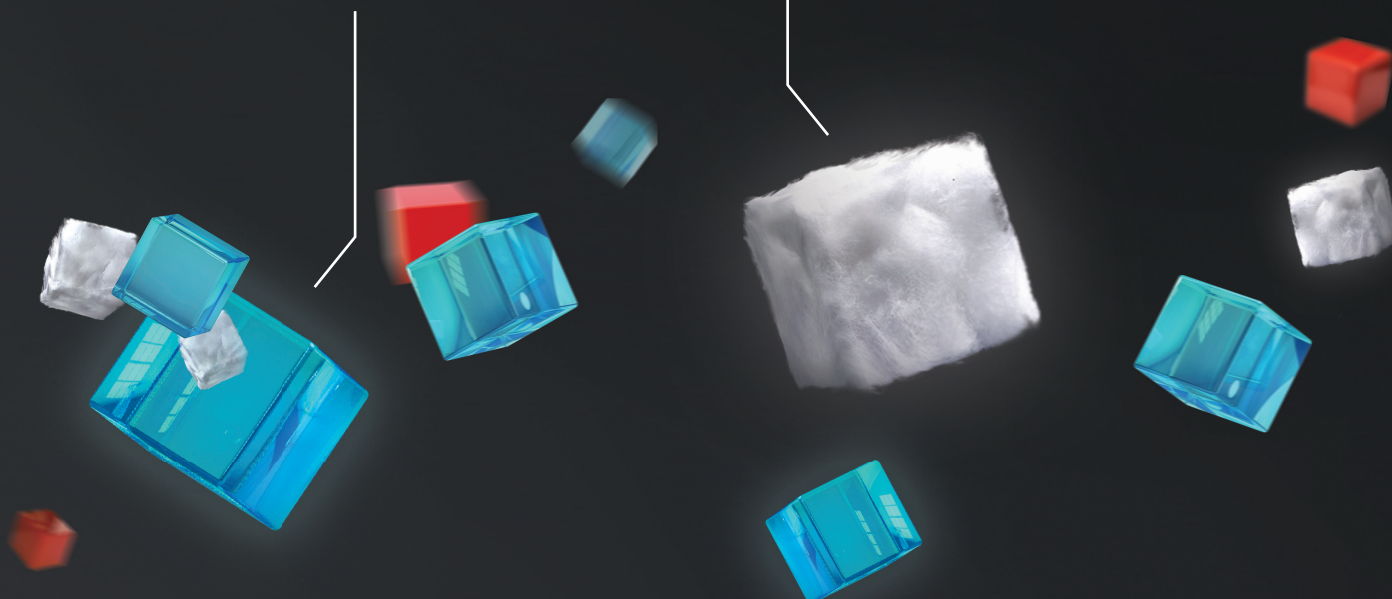
For years, the ProAV industry has been making the same huge boxes, with endless ports, settings, and features. However, most users don't use or need many of the features the box offers. Luckily, since the 90's, technology has evolved to allow replacement of unneeded hardware by software and cloud technologies. At Kramer, we believe it is finally time for AV solutions to move on too.

SOFTWARE

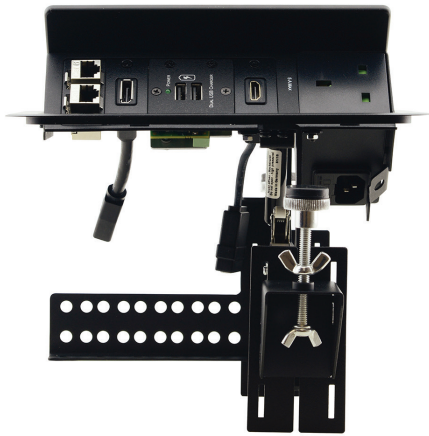
Software-Driven
Agile AV Solutions

CLOUD

Cloud-Wide
Visibility & Control



INSTALLER PRODUCT



TBUS-203XL

Pop-Up Table Mount Multi-Connection Solution

The TBUS-203xl is a furniture-mounted pop-up connection bus that easily installed into a table or podium top. The TBUS-203xl interface enables you to connect any equipment to systems installed in a room via five single inserts or two dual inserts and one single insert.

- Pneumatic Lift - Easy opening & closing by pressing down gently on the cover. When not in use, it lowers flush with the table.
- Power Input - Universal, USA, European and many other worldwide power sockets available.
- Elegant and Rugged Rectangular Design - The sturdy and attractive anodized aluminum enclosure provides maximum connectivity in the smallest possible footprint, and at the same time is cost-effective and easy to install.
- Installation - Requires tools and expertise to cut a 21.2cm x 12.2cm (8.4" x 4.8") rectangular hole in the surface of the furniture. Maximum table thickness is 7.6cm (3").
- Note - The power socket module is not included. Purchase the country-specific module separately.
- Available in Black (B) or Brushed Aluminum (BC)



K-ABLE/XL

Table Bus-Mounted Cable Retractors

The K-ABLE/XL is a TBUS-mounted cable extender, retractor and housing that is easily installed in any TBUS. The device is available with one of seven cable types and can be mounted in any TBUS without the need for any extra mounting brackets.

- Convenient - Easy to Install in any TBUS.
- Intuitive Use - Pull and stop or pull and retract.
- Available Cable Types - HDMI, VGA, audio (3.5mm), VGA & audio, CAT 6, USB & DP.
- Maximum Cable Extension up to 1.5m (4.9ft).
- Horizontal Mount - Easily mounts underneath a table or shelf.
- TBUS Compatibility - Mounts directly into the TBUS insert slot with no extra mounting bracket.

K-ABLE/XL-VGA/A	Cable Retractor - VGA & Audio
K-ABLE/XL-VGA	Cable Retractor - VGA
K-ABLE/XL-H	Cable Retractor - HDMI
K-ABLE/XL-DP	Cable Retractor - DisplayPort
K-ABLE/XL-A	Cable Retractor - 3.5mm Audio
K-ABLE/XL-LAN	Cable Retractor - Ethernet
K-ABLE/XL-USB	Cable Retractor - USB

SHOWCASE

CP-AOCH/XL

Plenum Rated Active Fiber Optic High-Speed HDMI Cables with Detachable Connectors

Kramer's AOCH/XL is a pluggable, Plug and Play HDMI active optical cable (AOC) that has unique removable HDMI-A ends allowing the cable to be very easily pulled through small-size conduits.

It offers the easiest install solution for HDMI, supporting resolutions up to 4K UHD over long cable runs (up to 100 meters) without the need for an external power supply or additional extenders. With its thin, flexible cable and small connector, the AOCH/XL delivers ultimate reliability and convenience.

- Video Resolution - 1080p full HD, Deep Color 48-bit, 3D, 4K @30Hz (4:4:4), 4K @60Hz (4:2:0).
- Embedded Audio - PCM 8-channel, Dolby Digital True HD, DTS-HD Master Audio.
- HDMI Compliance - HDCP, EDID, CEC.
- Construction - 4 optical fibers and 6 copper wires.
- No External Power - Powers the active units via the HDMI connector, consumes only 0.25W (50mA @5V).
- Very Thin Construction - 3.4mm (0.13") diameter.
- Small Bending Ratio - Only 6mm (0.24").
- Jacket Construction - Plenum rated CMP-OF (UL).
- Pull Strength - 500N (50kg).
- Varied Selection of Lengths - Available in versions from 10 to 100m (32.8 to 328ft).

Available Lengths:

CP-AOCH/XL-33	Fiber Optic High-Speed Pluggable HDMI Cable	33'
CP-AOCH/XL-50	Fiber Optic High-Speed Pluggable HDMI Cable	50'
CP-AOCH/XL-66	Fiber Optic High-Speed Pluggable HDMI Cable	66'
CP-AOCH/XL-98	Fiber Optic High-Speed Pluggable HDMI Cable	98'
CP-AOCH/XL-131	Fiber Optic High-Speed Pluggable HDMI Cable	131'
CP-AOCH/XL-164	Fiber Optic High-Speed Pluggable HDMI Cable	164'
CP-AOCH/XL-197	Fiber Optic High-Speed Pluggable HDMI Cable	197'
CP-AOCH/XL-230	Fiber Optic High-Speed Pluggable HDMI Cable	230'
CP-AOCH/XL-262	Fiber Optic High-Speed Pluggable HDMI Cable	262'
CP-AOCH/XL-295	Fiber Optic High-Speed Pluggable HDMI Cable	295'
CP-AOCH/XL-328	Fiber Optic High-Speed Pluggable HDMI Cable	328'
AD-AOCH/XL/TR	Replacement HDMI Connector	



KRAMER PRODUCT SHOWCASE

VSM-4x4HFS

4x4 Seamless Matrix Switcher/Multi-Scaler

The Kramer VSM-4x4HFS offers the fastest and cleanest switching and scaling experience in the market. Designed for presentation environments, the switcher/scaler features a 4x4 matrix switcher, as well as video wall (2x2), dual display (PIP/P&P) and quad display modes. The unit allows switching between inputs with a clean video cut (frame-to-frame switching with no glitches). Video wall mode comes with Bezel correction options. VSM-4x4HFS includes PixPerfect™ scaling, Kramer's high-precision pixel mapping and scaling technology. The VSM-4x4HFS supports HDMI resolutions with deep color, up to eight channels of audio and includes per-port HDCP and EDID settings. The VSM-4x4HFS also has 4 HDMI inputs and 4 scaled HDMI outputs and offers flexible control options, e.g., front panel buttons, IR remote control with OSD (On-Screen Display), RS-232, and a built-in Web browser.



WP-20

Active Wall Plate – 4K UHD HDMI & Computer Graphics with Ethernet, Bidirectional RS-232 & Stereo Audio over HDBaseT Transmitter

The WP-20 is a 4K UHD HDBaseT active wall plate auto switcher for HDMI, VGA and analog audio signals that supports resolutions up to 4K@60 UHD (4:2:0). The device has EDID management, various control options and audio embedding. The unit is a fully-featured auto-switcher with the convenience and simplicity of a wall plate. The WP-20 is easy to configure, can be powered remotely over Ethernet (PoE) and is designed for any-size room.



DIP-20

4K UHD HDMI & Computer Graphics with Ethernet, Bidirectional RS-232 & Stereo Audio over HDBaseT Transmitter & Step-In Commander

The DIP-20 is a 4K UHD, HDBaseT transmitter and Step-in commander for computer graphics video, HDMI, and unbalanced stereo audio signals embedding and de-embedding. The DIP-20 accepts HDMI and PC graphics video input, an Ethernet signal, serial data, and an unbalanced stereo audio input (that is embedded into the output signal). It transmits the signal via HDBaseT (twisted pair) cable to a compatible receiver (for example, the TP-588D or the TP-580RXR).

DIP-20 is a PoE (Power over Ethernet) provider and can power compatible PoE acceptors (for example, the TP-588D and the TP-590RXR). It supports resolutions up to 4K@60 UHD (4:2:0).



DIP-30

4K UHD HDMI & Computer Graphics Automatic Video Switcher

The DIP-30 is a 4K UHD automatic switcher for HDMI, VGA, Ethernet, data and unbalanced audio signals. The unit supports resolutions up to 4K@60 UHD (4:2:0) and various modes of input selection and transmits the signal via HDMI cable to a compatible receiver (for example the VS-62H or when connecting directly to a display/projector). The DIP-30 is a Step-in commander when connected to a matrix switcher that supports Step-in over HDMI such as the VS-62H.



VP-734

7-Input 4K UHD Presentation Switcher/Scaler

The VP-734 is a 7-input presentation switcher/scaler with four HDMI, one DisplayPort and two user-definable (universal) analog video inputs. It up- and down-scales to selectable graphics or HDTV output resolutions (up to 4K UHD). It also provides fast and smooth three second fade-thru-black switching between sources, which is ideal for live events such as House of Worship services. VP-734 supports analog and embedded audio inputs and outputs and includes rich audio functionality and a stereo loud-speaker output.



VP-558

11x4 Presentation Scaler/Matrix Switcher

The VP-558 is a powerful 11x4 ProScale™ presentation scaler/matrix switcher that can output four independent scaled images with embedded audio via both HDMI and HDBaseT.

The VP-558 offers the best price performance of its kind in the industry. Featuring Kramer's renowned scaling technology, VP-558's four independent scaled outputs are perfect for applications that require multiple screens of various sizes and resolutions at different distances from the cabinet or rack.

The product's HDBaseT inputs and scaled outputs offer the flexibility to use a variety of input and output devices that are far away from the switching unit. The versatile VP-558 features 6 HDMI and 4 HDBaseT inputs along with an analog VGA input. The unit includes a 4x1 USB switcher, independent stereo audio outputs and a line output. VP-558 also has a microphone input, an amplified speaker output and audio DSP.

This product is an ideal matrix switcher solution for meeting rooms with video conferencing systems. With its integrated 4X1 USB switcher, the VP-558 is also an outstanding choice for setups that require USB switching with video and audio (e.g., a Smart Board). VP-558's control options include extensive built-in Web pages, OSD and RS-232.



TP-590TXR & TP-590RXR

4K UHD HDMI HDBaseT Line Transmitter & Receiver

The TP-590TXR and TP-590RXR are a 4K UHD extended range, HDBaseT 2.0 transmitter and receiver for HDMI, USB 2.0, audio, bidirectional RS-232 and IR signals. They support resolutions up to 4K@60 UHD (4:2:0). The TP-590TXR converts the HDMI, USB 2.0, audio, RS-232 and IR input signals into an HDBaseT twisted pair signal that it sends to the TP-590RXR for decoding. The TP-590TXR and TP-590RXR are capable of a range of 590 feet (180 meters) in Ultra mode, when utilizing Kramer BC-HDKat6a cables (for signals up to and including 1080P@60Hz 24bpp).

KRAMER SYSTEMS FUEL S.T.E.A.M. PROGRAM

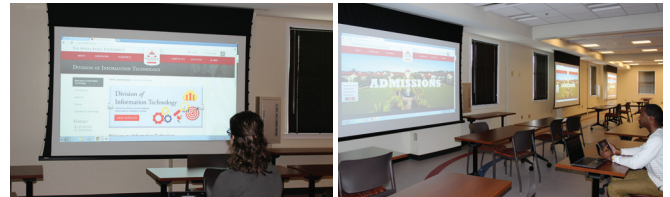


Putting into practice an effective S.T.E.A.M. program is a challenge at any level, but Valdosta State University was able to master it by creating a high-technology interface using Kramer Electronics products. S.T.E.A.M., which stands for Science, Technology, Engineering, Arts, and Mathematics, is the core discipline subject group for today's technology-driven education and workforce readiness.

Valdosta State University, located in Valdosta, Georgia, is the second regional university in the University System of Georgia, serving over 10,000 students in the colleges of arts, arts and sciences, business administration, and education and nursing. For its S.T.E.A.M. program, the school created a totally wireless BYOD interface to the presentation system that included the Kramer VIA Connect PRO and the Kramer Electronics K-Touch Cloud-based control solution.

Randy Scott, southeast regional director of Sales and Development at Inter Technologies, the local audio/video systems integrator, said the Kramer VIA product line lent itself very well to the application. "The S.T.E.A.M. Center is used by K-12 guests to spur their interest in STEAM-oriented careers, and the VIA Connect PRO along with the K-Touch control solution makes it extremely simple for these students to use," Scott said.

The system consists of eight VIA Connect PRO units, six K-Touch control solutions and a Kramer VSM-4x4HFS split room seamless matrix switcher. The VIA Connect PRO is a wireless collaboration and presentation solution that can be used with any laptop or mobile device for viewing, editing and commenting on documents in real time. It makes sharing files and editing easy. The VIA Connect PRO offers high quality video streaming, supporting full HD 1080p/60, and up to four participant screens can be displayed on the main screen. The K-Touch is a Cloud-based platform for control of automation



systems including lights, screens, video, sound, HVAC and more. It is compatible with any iOS or Android touch device.

The system is unified by the Kramer VSM-4x4HFS, a seamless matrix switcher that allows switching between inputs with a clean video cut. The VSM-4x4HFS supports HDMI resolutions with deep color, up to eight channels of audio and includes per-port HDCP and EDID settings.

According to Sterlin Sanders, assistant director of Technology Services at Valdosta University, the Kramer system allows participants in S.T.E.A.M.- related programming to bring any form of technology to use during classes. "We provide programming to the external education community, and we were looking for a solution that would allow instructors and students to use their own tablet, laptop or mobile device to collaborate on various assignments," Sanders said. "Our technician, Adrian Taylor, played a key role in getting the Kramer units up and running, and the system has been a big success at events like Science Saturday, when students in grades K-12 visited for a math education day."

Scott said the system has garnered glowing reviews from Valdosta University. "Kramer has positioned its solution very well in the BYOD wireless user interface arena," he said.

VSU offers a total of 50 undergraduate majors, 23 masters' degrees, nine educational specialist degrees and doctorates in education.

CLOSE THAT BACK DOOR!

The AV-IT convergence has happened. It's done. And it has raised a new problem for AV gear – security.

Huh?

Yes, all of the AV hardware you have connected to the Internet – along with your own computers, phones, tablets, and even appliances – are potential targets for hackers. Malware, ransomware, denial of service (DoS) attacks, and even hijacking are real threats to anything with an Internet connection – even your television.

And while they might not impact your connected projector, audio amplifiers, or control system, they could use these devices to access the rest of your network and do some real damage. (Believe it or not, Internet-connected thermostats have already been hacked!)

In short, if your device has an IP device and sits on a network that is accessible by the outside world, it is a potential target. Or worse, that device could become the back door to a greater security breach, depending on the number and strength of firewalls you have installed.

Take something as innocuous as a keyboard-video-mouse (KVM) extender. We use these all the time to remotely operate computers and view their displays and don't give them a second thought. But a KVM system connected to two or more computers does represent a potential back door for hackers!

All that's needed is to access the signal multiplexer through a hacked computer and gain access to other connected com-

puters through the KVM USB port. In short order, a multi-port KVM switcher can provide a wide-open doorway from one connected computer to another, after which secure data is put at risk.

The good news? Kramer now has a line of secure KVM switches to guard against that possibility. These products contain firewalls that isolate every connected computer from the end-user, providing secure video, audio, and USB channels. With these protected KVM switches, you can protect up to 16 different source computers at resolutions as high as 3840x2160 pixels (Ultra HD).

These switches also come in configurations that allow you to seamlessly cross from one display to the next while still maintaining a secure firewall, ideal for command and control display installations. As the cursor crosses the border from one display to another, the audio and keyboard follow automatically and securely. Up to 32 displays can be protected with one switch.

We can also provide a secure “tiling” switch, combining up to four computer

sources in one display with the same seamless cross-over operation for mouse and keyboard. What's more, we can also combine up to four computer sources onto two screens with your choice of image configurations – again, all behind a secure firewall. These products all conform to the National Information Assurance Partnership (NAIP) Protection Profile 3.*

For additional protection, a line of inline isolators provide protection for display and audio or display, audio, keyboard & mouse when guest computers are used in the same room with secure or sensitive computers. There's even a headphone “diode” product to ensure that headsets connected through USB ports can pass audio only in the intended direction, and that the stereo audio outputs can't be hacked and used as an eavesdropping device.



* - U.S. Government Approved Protection Profile - Protection Profile for Peripheral Sharing Switch Version 3.0

KRAMER KEEPS IT SIMPLE FOR AMEC

Simplicity was the key to AMEC's new audio/video system in its Houston oil and gas office. According to Tom Austin of Industrial Audio/Video Inc. (IAV), the local integrator who installed the system, the executives at AMEC wanted to be able to outfit conference rooms and training rooms with easy-to-use equipment that allowed the use of both HDMI and VGA. They wanted to get presentations up on the screen in two easy steps: 1) hook up a laptop and 2) a picture appears.

"They didn't want a control system or a confusing bunch of products," Austin said. "They wanted nothing at all on the table tops, so we designed a simple, easy-to-use system using Kramer products that were also easy to use."

IAV designed sleek, no-nonsense systems for three different parts of the building: the training room, the executive conference room and 23 smaller conference/training rooms. Each room had a simple system that accessed the necessary digital technology with the push of a single button. There was no adjusting of projectors, resizing screens or poor quality images on the screens.

The primary training room, which seats about 30 people, inherited equipment from the executive conference room. It included a smart tablet for annotating, two ceiling-mounted projectors and Kramer Electronics VGA and HDMI cables within a custom podium.

Twenty-three smaller conference/training rooms were outfitted with identical systems that included either a Kramer Electronics VP-434 or VP-435 scaler along with Kramer VGA and HDMI cables. In each room, the Kramer scaler converts



the selected video signal to a computer graphics or HDTV output resolution and outputs an HDMI signal, which is transmitted to the projector using CAT5 cabling. Because the cabling already existed in most of the rooms, it saved the time and money of re-wiring, Austin said. The VP-434 and VP-435 scalars, along with a CAT5 transmitter, switcher and all of the VGA, and HDMI cables, are housed under the conference room tables, so that there is no clutter on the tables themselves. Each system is controlled by a simple eight-button wall controller that has easy-to-understand functions.

The AMEC executive conference room also features a 25-ft. conference table – with nothing on it. IAV incorporated an under-the-table mounted Kramer Electronics auto-sensing VP-435 ProScale Digital Scaler to scale HDMI and VGA signals to a computer graphics output

resolution. The room also uses a Kramer FC-46 audio de-embedder for audio conferencing.

Austin said the installation was done in stages and by blocks of conference rooms. AMEC used the rooms Monday through Thursday, so the IAV team could only work in them on Friday and Saturday. It took about eight months to complete the installation at the pace of about three or four rooms each week. "The training room was the most sophisticated, and the others were simple, even though each one was a little different," Austin said. "We were very conscious of having no clutter on the table, and the under-table mounted units helped us achieve that."

IAV made an auto-sensing system that addressed the technical and aesthetic needs of the end user. Kramer Electronics scalars made it simple.

AMEC (LSE: AMEC) is a focused supplier of consultancy, engineering and project management services to its customers in the world's oil and gas, minerals and metals, clean energy, environment and infrastructure markets.

EXPERTS IN DETERMINATION – **KRAMER ACADEMY™ RENEWS CTS PREP TRAINING**

Jane Hughes is a member of an elite group of specialists who are making their mark on the electronics industry. She is one of only 1,027 InfoComm CTS-D, or Certified Technology Specialists in AV Design, worldwide. Achieving this status isn't easy, and sometimes it can be downright difficult.

Hughes, an independent contractor and control system programmer from the Dallas/Fort Worth area, decided to pursue her design certification in 2013. "I learned I could increase my status by getting certified," she said. "Video engineering is a complex field. When you add relevant credentials, it adds another dimension to the business."

Certification in any industry denotes a higher level of education, expertise or knowledge in the field. So, too, do the InfoComm-licensed courses for certification in the electronics industry. Obtaining these certifications is challenging and there are 8,163 CTS-Certified Technology Specialists to prove it. Less than 15 percent of these Certified Technical Specialists are also certified in either design or installation. Even fewer – about three percent – hold all three credentials.

Hughes had wanted to pursue the CTS-D expertise a few years earlier, but was sidetracked by a major road block. She had been diagnosed with breast cancer in 2004 and had a reoccurrence in 2010. She faced a double mastectomy, a year of chemotherapy and radiation, followed by over a year of reconstructive surgery. When she was finally feeling better in 2012, Hughes was determined to reach her goal of certification. She attended a CTS-D course and the CTS-D prep class that year and took the test at the InfoComm show in 2013. She was unsuccessful on the first attempt, but, being a fighter, she didn't give up. She learned that Kramer Electronics was teaching CTS certification preparation, including the CTS-D Prep class, adding these courses to its already successful Kramer Academy™ educational offerings.

Dedicated to the education and training of industry professionals on key concepts and technologies necessary for success in the AV marketplace, the Kramer Academy had received direct feedback from the market about the need for expanded CTS Prep instruction. Kramer was working with officials at InfoComm International to leverage its past experience of having taught the CTS Prep class to 1,400 students. "Kramer realizes the need to emphasize advanced education in the industry and to provide instruction on how to properly sell and design Pro AV equipment. Adding CTS Prep classes to prepare people to earn an expert certification is a natural progression for the Academy and an invaluable service to the entire industry," said Clint Hoffman, Vice President of Marketing at Kramer Electronics.

"The more professionals who take CTS and CTS-D Prep classes, the stronger the AV industry becomes, and based on Kramer's extensive training network, we are excited for the future," said David Labuskes, CTS, RCDD, Executive Director and CEO of InfoComm International.



Jane Hughes



Malissa Dillman
Kramer's Director of
Training & Education

The company's rejuvenated effort includes instruction by Malissa Dillman, CTS-D, CTS-I, Kramer Electronics Director of Education and Training. Dillman, who earned her certifications over a decade ago did so through the unwavering encouragement of her mentors.

"Students who have attended the Kramer-led CTS Prep classes in the past have a very high pass rate on the exam itself," said Dillman. "There is so much opportunity for growth in the marketplace, and we're excited to give people the quality curriculum and materials necessary to be successful in the certification process."

Dillman uses her 14 years of A/V experience and her unique understanding of the certification process to develop her passion of educating and encouraging others in the industry. Dillman is the recipient of the 2012 InfoComm Women in AV Award, and she was named 2013 InfoComm Educator of the Year – the only woman to receive this honor in the award's 10-year history.

Hughes was thrilled to learn that Dillman was delivering the CTS-D Prep courses. "When I received news that Malissa was now teaching the CTS-D Prep course, I decided to follow her advice and make one last attempt at preparing for the exam," Hughes said. She boarded a plane from Texas to Georgia to attend the Kramer-sponsored class in March 2016. "Malissa provided us with the materials to help us learn the necessary concepts, and we learned from her experience and understanding of the field," said Hughes. When she took the certification test again in April 2016, Hughes passed with flying colors.

Dillman is taking all of the Kramer Academy classes on the road to cities throughout the country. "Jane's experience just shows what determination can do to overcome the challenges we face," Dillman said. "Even through the personal challenges, she persevered. She's an inspiration to me."

Hughes credits Dillman for her success. "Malissa's ability to teach this material and her combination of knowledge and putting us at ease with learning really instilled confidence in being able to pass the test," Hughes said. "I suspect this process is not for the weak of heart, but if a person has a thorough understanding of the AV industry and wants to study hard, it is possible. Its benefits are mostly confidence and knowledge, but it's nice to have the letters behind my name on my business card."

Dillman said Kramer is committed to cultivating experts in the marketplace. "We're looking forward to bringing the CTS Prep and the CTS-D Prep class to more locations and having more successful professionals become part of this expert group," she said.

WELCOME TO THE SMART ROOM!

As you've seen in this issue of *Connections*, the Internet of Things (IoT) and the "cloud" have had a profound impact on the design, installation, and use of AV gear. In a nutshell, if it's got an IP address, we can configure and control it remotely, often using nothing more than a tablet or laptop.

But why stop there? Why not enable that same level of connectivity and control to the very rooms that we meet in? Better yet, let's do it using nothing more complicated than a tablet!

For most people, scheduling and using meeting rooms is a continual pain in the neck. Schedules constantly change. Meetings start late and run long. Sometimes a meeting is canceled, but the participants aren't notified promptly – or at all.

It's hard to get anything accomplished when you can't even get a meeting started. But that's all going to change thanks to EventBoard, a subscription-

Scheduling and using meeting rooms is a continual pain in the neck.

based "software as a service" (SaaS) Cloud management solution. EventBoard manages conference room scheduling, increases meeting efficiency, and (perhaps most importantly) provides detailed analytics about how, when, and by whom the room was used.

EventBoard works with all major enterprise calendaring platforms including Exchange™, Office 365™ and Google Apps™ and uses the iOS platform, running on iPad™ and iPad Mini™ tablets. These displays are mounted

outside the room and let anyone check the status of a room and meeting for the day, week, and month, schedule and re-schedule meetings, and select privacy options.

Using the same interface, anyone can book other rooms on the network, and meeting participants can also use the EventBoard interface to check-in. Each screen can display details about the meeting, such as the names of participants, topics to be covered, and time intervals. An easy-to-use online dashboard allows for simple and secure remote management of all devices running EventBoard.

That's quite an upgrade from your present hit-or-miss room scheduling system, isn't it? But here's where the power of IoT and analytics converge: EventBoard can store and provide details about which rooms are being used most frequently and when, how many participants attended (both per-meeting and on average). Now, admins will have a much clearer picture of which resources are underused and which are overused.

The EventBoard dashboard can also track and provide statistics on which pieces of AV gear were in use and for how long. That's a big help for AV admins in determining life-cycles for equipment and maintenance schedules. It also provides insight into future upgrades, separating the "trendy" products from those that actually increase productivity.

Wow. That's quite a departure from scribbling in a scheduling logbook or wandering the hallways hoping to find an empty room for an "ad hoc" get-together. So why deal with those hassles anymore? EventBoard keeps all of your scheduling and meeting info in one place (the Cloud) that's accessible to anyone, from any EventBoard screen at any time.

Are you ready to meet the smart room? (We'd love to introduce you!)



KRAMER TWISTED PAIR PRODUCTS HOT AT BOSTON'S PIZZA RESTAURANT AND SPORTS BAR



When Boston's Pizza in Grand Junction, CO, planned a major restaurant remodel complete with multi-media, Kramer Electronics products were there. In the two-day period that the restaurant/sports bar closed for remodeling, dozens of video displays and routing equipment were installed, transforming the space into a sight and sound extravaganza.

Jim Fraser, commercial/professional systems designer for All Sound Designs, a local audio/video integrator, created the system for Boston's Pizza. "The goal was to achieve a full HDMI system that would send a variety of HD video to screens throughout the facility," he said. "We chose the Kramer routing and switching product because of its performance and reliability. Also, the Kramer seven-year warranty is a huge bonus to my clients."

The Boston's Pizza A/V system includes seven Kramer Electronics VM-2HxI HDMI distribution amplifiers, each of which distribute HDMI signals to two identical outputs. Three sets of TP-573 DGKat™ twisted pair transmitters and TP-574 DGKat twisted pair receivers allow the system to move HD video and audio over a single twisted pair wire. The signals include satellite, local off-air broadcasts and promotional video from Boston's Pizza. Wireless interactive gaming is also available in the bar area on any of the big screen displays.

Guests are surrounded by crystal clear video throughout the facility. Four 80-in. flat panel displays line the east wall of the bar and a variety of 80-, 60-, 55- and 42-inch displays are showcased on the remaining walls. The dining room has three

47-inch and four 32-inch flat panel displays in each corner. Every display can receive video from any of the signal sources by using the independent control system. Serial control, IR control for the head end and monitors and IR distribution for the dining area displays allow the universal remote control system to reach the entire complex.

"The Kramer product is easy to use and control – each piece of equipment talks to the others, making it seamless and easy to operate," Fraser said.

All Sound Designs created and built a special rack system in the bar area to house the Kramer product and video sources. The six-foot rack pulls out and rotates 65 degrees for easy access to the equipment and wiring.

Boston's Pizza Grand Junction, CO, is the first of this nation-wide franchise in the state. Boston's Pizza has more than 50 locations across the U.S. and Mexico and 350 locations in Canada.



JUST FOR FUN

JUNE



**Take Your
Dog to Work
Month**

The Friday immediately following Father's day, is recognized as Take Your Dog to Work Day! This day is sponsored by Pet Sitters International to recognize the importance of dogs in our lives as both companions and protectors. This is also a day dedicated to encouraging you to help homeless dogs by adopting. As dog lovers here at Kramer, we also encourage you to save a life and adopt. Here are some amazing facts about our favorite furry friends:

- Dogs are capable of understanding up to 250 words and gestures. The average dog is said to be as intelligent as a two-year-old child.
- A dogs' sense of hearing is ten times more acute than a human's. Dogs are so perceptive that they can recognize a person just by the sound of their footsteps.

- It is a myth that dogs are color-blind. They can actually see in color, just not as vividly as humans. It is akin to our vision at dusk.
- When a dog sniffs where other dogs have marked, they can tell the gender, whether they've been spayed or neutered, if there's a female in heat, their health and stress level, and social status.
- Science shows that dog owners are less stressed, thanks to hormonal and chemical changes that occur from spending time with their pups.
- An estimated 1,000,000 dogs in the U.S. have been named as the primary beneficiaries in their owner's will.
- The oldest dog who ever lived was Bluey, an Australian Cattle Dog, who died at 29 ½ years old!

AUGUST



**Hug Your
Boss Month**

In order to strengthen workplace relationships, many companies celebrate National Hug Your Boss Day in August. If you are willing to hug your boss, then you may enjoy your job more than others, and this enjoyment may lead to increased productivity, morale and motivation at work. According to National Hug Your Boss Day statistics, 71% of Americans love their boss and 51% of employees think their boss definitely needs a hug.

- 14% of employees said their bosses cause stress and headaches; 24% of employees said their bosses make them feel de-valued and want to quit;

however, 62% of employees said that their bosses motivate them and raise their confidence.

- 75% of employees need a meeting with their boss regularly to help motivate them, while 33% said they need to see their boss each day in order to become motivated.
- 39% of employees say that a direct style of management motivates them, while 27% prefer a participative style.
- 56% of employees would invite their boss to the pub. Cheers!

SEPTEMBER



**Happy Cat
Month**

Cats are America's #1 companion. In honor of our feline friends, the month of September has been designated "Happy Cat Month;" dedicated to celebrating these beloved pets. Let's be honest, there's nothing better than an adorable purring ball of fur on your lap at the end of a long arduous day! Cats are some of the world's most lovable creatures, and here are some interesting facts about cats:

- There are 10 million more cats owned than dogs; over 30% of households in North America own a cat.
- Cats don't think of themselves as small humans, rather, they think of their humans as large cats.
- The way you treat a kitten in the early stages of its life will influence its personality traits later in life.
- When cats are happy or pleased, they squeeze their eyes shut. If a cat snores or rolls over on his back to expose his belly to its owner, it means they trust them.

- Kneading is a sign that your cat is happy, comfortable, and relaxed. You should feel proud if your cat deems you worthy of sharing this pleasure... it's their way of saying "I'm glad you're here."
- Cats give love bites. This can happen when you are petting them, rubbing their stomach, etc. These love bites are not done out of anger. It is their way of telling you they are enjoying the attention.
- Cats that suddenly start running around the house do so out of sheer boredom. It is their way of getting a little exercise, even though it may seem like they are crazy!
- Not every cat responds to the effects of catnip, because it doesn't have a specific gene. About 80% of cats DO have the gene, and enjoy the effects of catnip, which is purr-fectly safe and non-addictive.

SUBSCRIBE TO OUR **You Tube** CHANNEL!

On Kramer's YouTube Channel, www.youtube.com/KramerElectronicsLTD, you can find tons of helpful videos. We share walk-throughs and tutorials that will assist you in solving commonly encountered problems in the Pro AV Industry, Kramer product news and information, footage from major industry trade shows, and more. Below are some of the latest videos you can find on our channel!



AV Beyond the Box



Kramer Control

EMPLOYEE PROFILE



Dave Bright –

Retiring President of
Kramer USA and 2016
InfoComm Mackey
Baron Distinguished
Achievement Award
Winner, with his
wife, Debbie.

As he prepares to retire at the end of the year, Dave Bright is being honored with the 2016 InfoComm Mackey Baron Distinguished Achievement Award. It is an incredible and well-deserved honor.

The award's overall purpose is to call out an individual recognized by association members and the industry as worthy of a lifetime achievement award. Two major criteria are applied – the career accomplishments and the individual's contribution to the AV industry through InfoComm International. The Mackey Barron Distinguished Achievement Award is the highest honor bestowed on an industry member by the association.

Dave Bright has dedicated himself to the Pro AV industry for over 30 years, and has made a significant impact on the people in the industry through his hard-working and compassionate nature. Throughout his career at Kramer, he has always demonstrated an incredible passion for his employees, and truly looks out for their best interests. In doing so, he has created a wonderful family atmosphere that fosters creativity and innovation, two major keys to a successful business. He believes that relationships should come first and technology second.

Dave's unique approach to running a business has helped him to lead companies that have stayed on the cutting edge of technology and innovation, and with that same approach was also able to build a corporate culture of relationships, partnerships, and commitments to do the right thing in every instance. He is also extremely involved in the industry as he has been a trusted supporter of organizations such as InfoComm, NSCA, USAV, PSNI and many more. He has gone above and beyond to volunteer his time, as well as to utilize his personal and corporate resources and finances to support InfoComm through education, training and leadership. He is an avid believer in furthering education within the industry, and in providing students with the comprehensive knowledge necessary to succeed in the AV marketplace.

Prior to opening up Kramer USA, Dave worked for Mitsubishi for nearly 10 years where he played a large role in starting their Professional Electronics Division. After his time at Mitsubishi he went on to start his own business before he became Kramer's first employee in the U.S. and founded the Kramer U.S. office. He came to Kramer ready to succeed, and the incredible growth of Kramer's U.S. busi-

ness during his 18 plus years is evident that he did just that.

He has always been a thoughtful and inspiring leader, putting others before himself. He truly cares, and because of that an incredible number of people look up to him as a mentor; as the best example of how to do the right thing in business to create personal success, success for his company, success for those that work with him and success for the industry as a whole.

Dave currently resides in Clinton, NJ with his wife, Debbie, who helped him build Kramer and only recently retired herself. Their son Zack currently works for Kramer, while their daughter Casey works in the advertising industry in the Chicago area. When Dave is not hard at work, you can find him putting around on the golf course, maybe playing a little baseball or enjoying a good ol' Yankees game!

"Having worked for Dave directly for over 24 years he has been a mentor and father figure to me. My success and happiness at work and in life and the success and happiness of so many others over the years that have worked with him is 100% attributable directly to Dave. I can

never thank him enough." Clint Hoffman, VP of Marketing at Kramer.

"Dave has been a selfless leader in the industry – an example to so many of us with his approach to business – relationships first and technology second." Chris Miller, Executive Director of PSNI.

"For 13 years, Dave has provided me with guidance, wisdom, support, and most of all the encouragement to grow within Kramer and the AV Industry. His concern and caring spirit for all the employees is contagious, which makes KUS a great place to work. I will sincerely miss you Dave." Mike Lewis, VP of Installer Solutions at Kramer.

"Having worked for myself most of my life, I was a bit apprehensive about the thought of having a 'boss.' Well it's been 15 years now working for this very same boss who always puts the person before the job. This trait along with others, such as transparency and self-motivation, is what defines Dave as a terrific leader and someone I can most definitely call a friend. I will surely miss him!" Chris Kopin, Kramer's VP of Technology.

"I have been working with Dave Bright for over eleven years and it's never felt like an employee-to-boss relationship. Dave has a coaching management style, he is all about building and supporting his players to help them reach their potential. He likes to say 'Kramer people make the difference;' the truth is, the 'difference' is the result of Dave Bright's leadership." Tom McCarthy, Kramer's Sr. VP of Strategic Partner Sales.

"About 29 years ago Dave trusted me – a young cubicle dweller in an inside sales role – enough to move me halfway across the country to start up a sales region from scratch. Even if that was as far as things had gone, I would still be eternally grateful to him. But that was only the beginning – I've had the privilege of working for Dave for most of the 29 years that followed, and there are not enough words to express my appreciation for that trust and friendship we've shared over the years." Paul Bogan, Kramer Regional Sales Manager.

We can't say enough about Dave (Bright) and the continued support that he provides our company. Kramer is a company that stands out from the rest and continues to provide unparalleled support and innovation within the industry.

Aaron Alt, Mission Electronics

Layer upon layer of support. That's what keeps me coming back to Kramer. I've been working as a sales tech and project manager for over 25 years. If I can get quality products and great support, I'm happy. And more importantly... my customers are happy.

John Delmont, VMI

Even though the VIA product line upon release solved many problems with wireless presentation, the product continues to have its firmware updates and stays ahead of the curve. This gives me the ability to tell my customers it may not do everything you need right now, but it does the majority of their needs and that I have seen most concerns addressed and the update will be coming soon and they have continued to deliver and exceed expectations.

Tim McCarthy, Spinitar

My team and I regularly specify Kramer products for their consistent, solid solutions for AV transport. The website is very easy and intuitive to navigate and find the right product to meet the requirement. The protocol for their switcher and scaling products is simple and reliable. The VIA collaboration suite of products fits a very nice niche for us in the huddle space environment.

Ed Olsen, Unified AV

CONTROL BEYOND THE BOX



Kramer is reimagining control from the ground up. Using a first-of-its kind cloud-based builder, we've replaced the antiquated custom code setup with an intuitive, drag and drop interface. Install, configure, and modify your control system, whenever you desire, without any prior programming knowledge.

Presenting a new era in control and analytics, Kramer Control is the latest building block in Kramer's beyond the box AV solutions.



**AV BEYOND
THE BOX** ●●●

KramerAV.com