

DIGILINX™ Application Note

NetStreams IP Video Distribution for Sports Bars

This application note addresses the use of *NetStreams* IP Video Distribution solutions used in a sports bar and provides three scenarios to illustrate how various configurations of the IP video system can be used.

A sports bar requires a video distribution system to route video and sometimes audio signals from A/V source components to remote display locations. At the remote locations, display devices such as a CRT, flat panel, or front projection systems are used to view the A/V sources sent from the headend.

Because the value of the entertainment experience is in direct proportion to the quality of the video, high definition video is a requirement in today's sports bar environments.

NetStreams Video Distribution solution provides high definition video quality, giving the owner a competitive advantage in the marketplace.

This application note does not provide specific instructions for wiring and installation. For specific instructions on how to connect devices, refer to the *DigiLinX Installation and Design Guide*, which is available on the Dealer section of the *NetStreams* website under *DigiLinX Manuals*.

IP Video vs. Traditional Approaches

Traditional distributed video systems typically used by owners of Sports Bars in the past have met only a portion of the needs of the entrepreneurs, owners, their customers, and their growing use of technology as a requirement for their business. These systems (such as broadband- or RF- and baseband) deliver inconsistent quality from display to display and are difficult to install, maintain, control, and expand. In fact, most video distribution systems leverage technologies that are 20 years old.

NetStreams Video Distribution solution provides benefits that traditional approaches cannot offer such as:

- Distribution of high definition video to multiple displays
- Predictable, consistent results at every display location
- Ease of use
- An easy way to install, configure, expand, and upgrade video systems when desired
- The ability to add new displays or sources as the business expands without additional matrix switches
- Support for up to 30 sources and a virtually unlimited number of displays
- Compatible with future IP-Based technologies, such as IPTV.



The
IP-Based
Distributed
Entertainment
Company.

Products Included:

DigiLinX

MediaLinX™

SwitchLinX™

ViewLinX™

TouchLinX™

KeyLinX™

SpeakerLinX™

Installing *DigiLinX* IP Video Distribution Systems in a Sports Bar

Using TCP/IP streams of data, the *DigiLinX* family of products work as the IP-Based intermediary between source and display units. At the source end, audio and video signals are converted into streams of TCP/IP data by a media converter device. At the display end, these same streams of data are converted back into audio and video signals for broadcast and amplification over a display or audio visual unit.

A *DigiLinX* IP video distribution solution for sports bars may include the following *NetStreams* products:

- *MediaLinX* A/V (MLAV300)- converts the audio and video signals from sound and video sources into TCP/IP streams of data
- Gigabit *SwitchLinX* (SW1024, 24 port or SW1048, 48 port) - a 1000Base-T Ethernet switch using IGMP (Internet Group Management Protocol) for multicasting and distributing large streams of IP audio and video over a network
- *SwitchLinX* (SW324) - a 100Base-T fast Ethernet switch using IGMP (Internet Group Management Protocol) for multicasting and distributing large streams of audio over a network
- *ViewLinX* (VL100) - converts the TCP/IP streams of audio and video into a signal for broadcast and amplification on a display source such as a television or audio visual projector
- *TouchLinX* (TL380) - a simple touch-activated screen used to control the sources and displays on a *DigiLinX* network from the bar or a manager's office
- *KeyLinX* (KL201)- single-gang, in-wall hard button keypad used as a cost-effective alternative to a *TouchLinX* to control the sources and displays on a *DigiLinX* network.

Typical Scenarios

The *NetStreams DigiLinX* distributed video solution is extremely scalable, making it a great video distribution solution for any size facility. The three following scenarios present potential configurations for a *DigiLinX* video network within a small sports bar, in the pool room of a larger sports bar, and in a large multi-room sports bar with expansion requirements.

Scenario 1: A Small Sports Bar

As shown in Figure 1, *NetStreams* has created a simple scenario of how *DigiLinX* products would work in a small sports bar. Currently, the bar has one large screen display unit for audio and video and two small screen display units for video only. This sports bar will need the following *DigiLinX* equipment:

- Three *MediaLinX* A/Vs for each of the source units
- One Gigabit *SwitchLinX* to function as the 1000Base-T Ethernet switch between the *DigiLinX* devices
- Three *ViewLinX* for each of the display units
- One *TouchLinX* to control the source and display devices

Two speakers are shown in the following figure that connect to the *DigiLinX* system (with a *SpeakerLinX*).

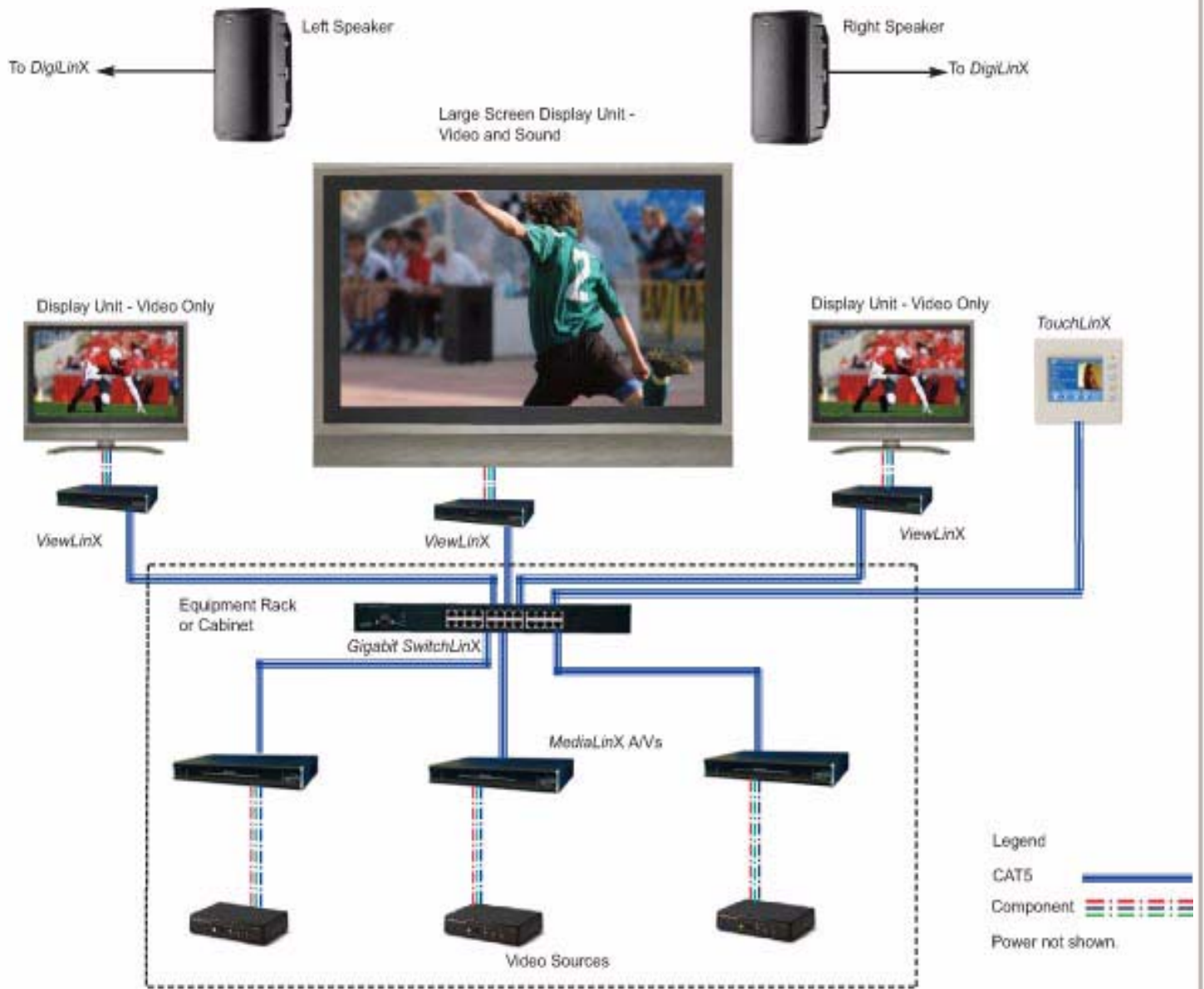


Figure 1 Scenario 1 - A Small Sports Bar

Scenario 2: Pool Room of a Larger Sports Bar

As shown in Figure 2, *NetStreams* has created a scenario of a larger sports bar containing a pool room with six display units for audio and video, and five source units. The following *DigiLinX* equipment would be needed:

- Five *MediaLinX* AVs for each of the source units
- One Gigabit *SwitchLinX* to function as the 1000-Base T Ethernet switch between the *DigiLinX* devices
- Six *ViewLinX* one for each of the display units
- Six *SpeakerLinX* with attached speakers
- Six *KeyLinX* to control the source and display devices

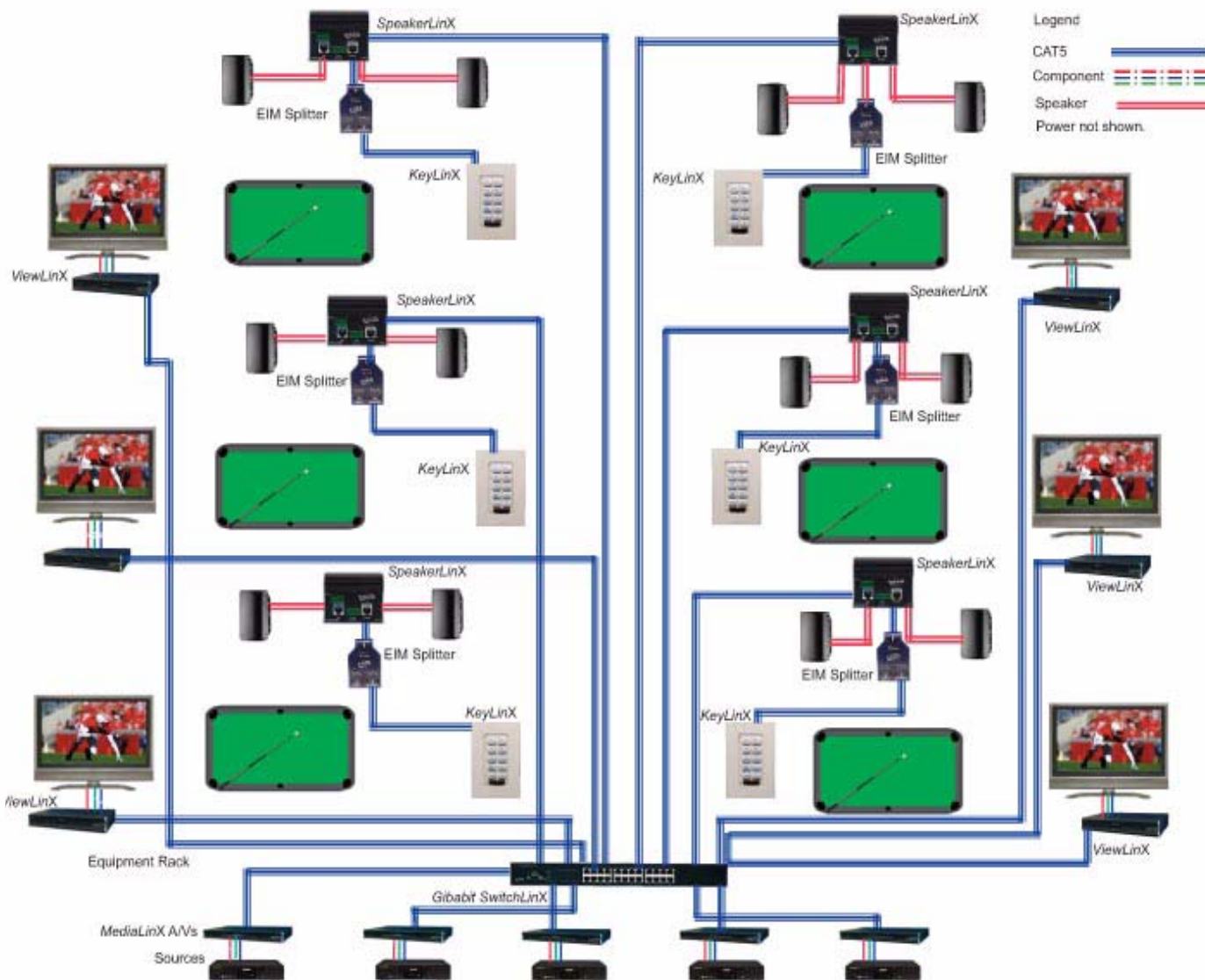


Figure 2 Scenario 2 - Pool Room of a Larger Sports Bar

Scenario 3: Multi-Room Sports Bar with Pool Room

Scenario 3 is a multi-room sports bar with a pool room addressing both current requirements and plans for expansion. This scenario explains which *DigiLinX* devices the owner requires to support current operations and shows how the initial configuration supports the bar owner's future requirements.

Current Configuration

Scenario 3 shows a multi-room sports bar with the ability to expand beyond its current capabilities. The owner currently has two bar rooms (both with two display units), a pool room with three large screen projector units, and two private rooms (one with a display unit and a large screen projector, and one with a display unit). Each private room has its own *SpeakerLinX* and speakers to accommodate two sound systems. The A/V Rack Room contains five source units.

Current DigiLinX Requirements

A brief inventory of the *DigiLinX* devices required for each room follows.

AV Rack Room:

- Five *MediaLinX* A/Vs, which convert the video signal from each of the five sources into five TCP/IP streams of data
- One Gigabit *SwitchLinX* SW1024, which is an IGMP enabled, multicasting, non-blocking 1000 Base-T Ethernet switch designed to handle the high demands of IP networked audio and video distribution.
- One *SwitchLinX* SW324, which is an IGMP enabled, multicasting, non-blocking fast Ethernet switch designed to handle the high demands of networked audio and video distribution.

Bar Room #1:

- Two *ViewLinX* that convert the TCP/IP streams of audio and video into a signal for broadcast on the two display devices
- One *TouchLinX* to control the source and display for Bar #1, the Pool Room, and the Private Room #1.

Bar Room #2

- Two *ViewLinX* that convert the TCP/IP streams of audio and video into a signal for broadcast on the two display units
- One *TouchLinX* acting as the user's control for the source and display units in Bar #2 and Private Room #2.

Pool Room.

- Three *ViewLinX* for converting audio and video signals for wide screen projection
- One *SpeakerLinX* connected to two speakers.

Private Room #1:

- One *ViewLinX* for wide screen projector viewing
- One *ViewLinX* for an additional display unit
- One *SpeakerLinX* connected to two speakers.

Private Room #2 consisting of:

- One *ViewLinX* connected to a display unit
- One *SpeakerLinX* connected to two speakers

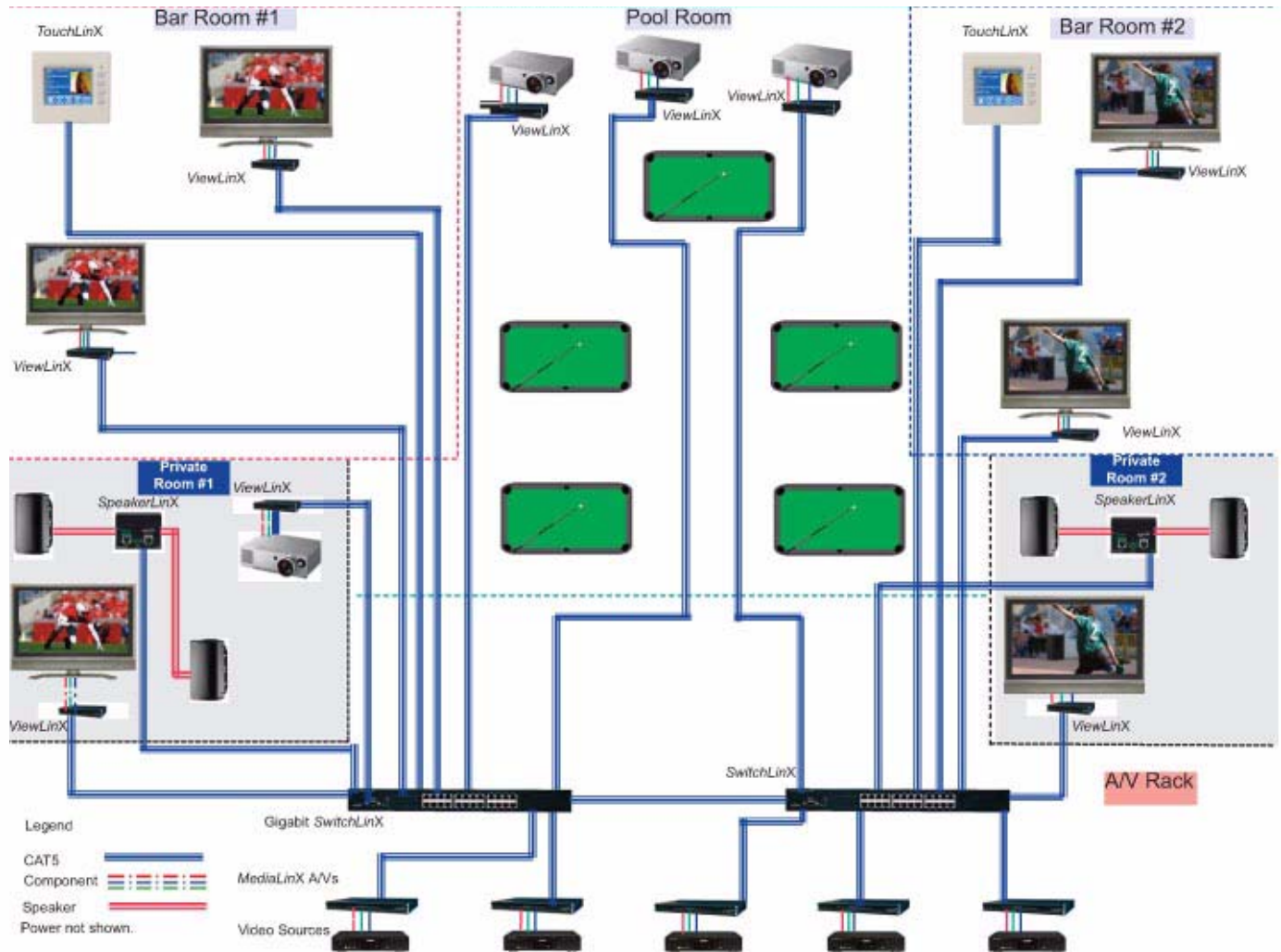


Figure 3 Scenario 3 - Multi-Room Sports Bar with Pool Room

Plans for Expansion

The owner in this scenario wants to eventually add a separate sports restaurant in an adjoining building in his complex. The owner intends to add booths, each with an individual display unit. Each booth will feature a built-in 17-inch display unit with individual channel control using a *TouchLinX*. To do this, the owner simply has to add one *ViewLinX* with each additional display unit for each booth.

The owner currently has 5 source units, and 10 display units for a total of 15 units, but intends to add 7 more display units for the additional booths for a total of 22 A/V units. The owner has installed one 24-port Gigabit *SwitchLinX* SW1024 and one *SwitchLinX* SW324. A 24-port *SwitchLinX* SW1024 can accommodate up to 22 source or display units (one port is reserved for linking to an SW324, and one port is reserved for connecting to the Internet or another network). If the owner had installed a 48-port (SW1048) Gigabit *SwitchLinX*, the owner could have up to 46 total units, enough for additional expansion.

The *DigiLinX* IP distributed entertainment system can support up to 30 sources and a virtually unlimited number of display devices.