

# pragmatic

# CATS

**COMPLETE AUDIO/VIDEO TRANSMISSION SYSTEM**



#### **About Pragmatic Communications**

The innovative engineers at Pragmatic quietly provide important technical solutions to several industries. For example, Pragmatic produces technology used to test and support cellular telephone systems. The company's wireless video technology is used by premier surveillance firms, elite fire departments in portable thermal imaging cameras, and in remote controlled robots used by law enforcement for hazardous environments. More than 90 percent of Pragmatic products made since 1994 **are still in use today.**



## Wiring can be the most challenging job in an audio/video installation.

Running heavy-gauge cables is time-consuming, laborious, and expensive. But a greater problem is signal degradation – noise, ground loops, signal attenuation, group delay distortion, et al. This can be mitigated – to some extent – by using expensive, high-grade cables. But in almost any multiroom installation, there is no easy way to maintain a high-quality signal – especially a video signal – over many hundreds of feet.

Unless, of course, you use CATS™... The Complete AudioVideo Transmission System from Pragmatic.

CATS distributes line-level stereo audio and composite video over standard Category 5 or Category 3 wire with no loss in quality over distances of 1,000 feet (video) or 5,000 feet (audio). CATS consists of a Transmitter that encodes the source signals using Pragmatic's patent-pending Bandwidth Domain Signal Processing (BDSP™), and a Receiver that decodes them at the end of the line. BDSP completely eliminates problems such as ground loops, noise pick-up, hum, frequency roll-off, and impedance mismatch, ensuring that the source signals experience no loss in quality.

In addition to carrying audio/video signals, the Cat-5 routes IR commands from the Receiver to the Transmitter, which then rebroadcasts the IR to the source components via an LED driver.

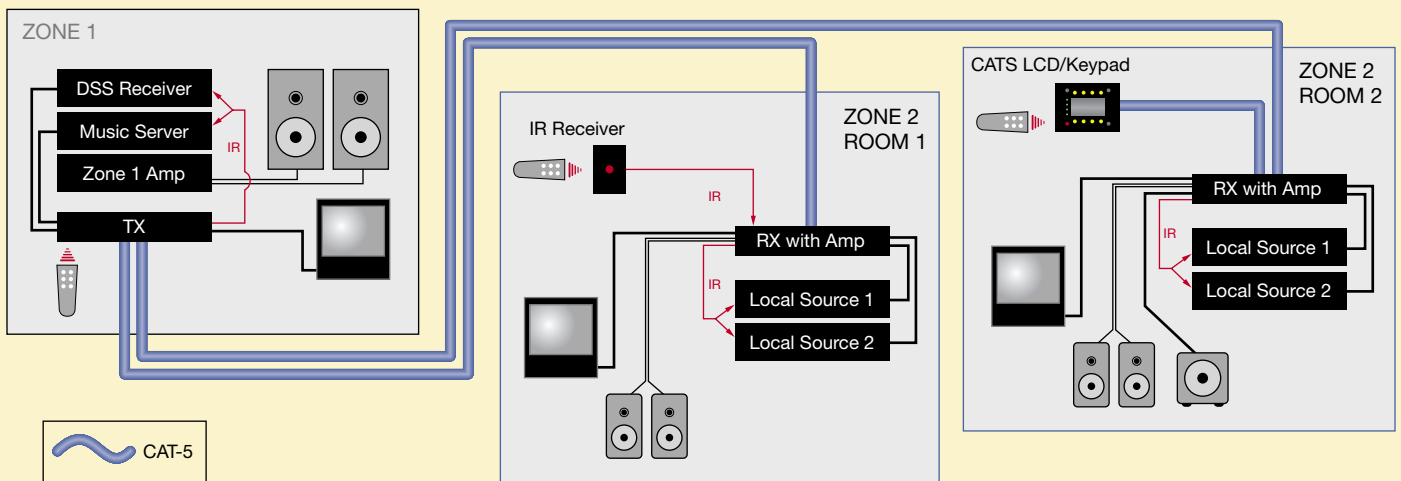
CATS Transmitters and Receivers are available as audio-only, video-only, or audio/video. Both are also available with or without

a built-in 25 watt-per-channel stereo amplifier. For installations where space is an issue, the Receivers are available in a four-gang junction box that includes the 25 wpc stereo amp.

Available accessories include in-wall amplified volume controllers, in-wall IR receivers, and the new CATS LCD/Keypad Controller. The fully programmable keypad can also be used for control of HVAC, lighting, security, and more.

A basic CATS network with one Transmitter and two Receivers forms a two-zone, three-room system with two central audio or audio/video sources. (A greater number of central sources can be incorporated by using a receiver or integrated amp with multiple A/V inputs.) Zone 1 comprises the room in which the central sources are located. Zone 2 comprises two additional rooms or areas, each of which can have two independent local sources. Each CATS A/V Transmitter will drive 1000 feet of Cat-5 wire and support multiple Receivers.

### Sample 2-zone, 3-room CATS network showing a variety of configuration options



- The Cat-5 wire carries all audio, video, and IR signals.
- ZONE 1 houses the CATS TX, to which the two central sources are connected. In this sample, a separate amplifier is used to power the room's large speakers. The composite video output from the TX feeds the room's TV monitor. Local IR signals are routed through the TX.
- ZONE 2, ROOM 1 features an amplified RX with an in-wall IR receiver. The composite video output from the RX feeds the room's TV monitor. A total of 4 sources (2 central, 2 local) are available in this room.
- ZONE 2, ROOM 2 uses an amplified RX with the new CATS LCD/Keypad Controller. The line output from the RX feeds a powered subwoofer; the composite video output feeds the room's TV monitor. A total of 4 sources (2 central, 2 local) are available in this room.
- In consideration of future upgrades: Locating an optional Cat-5 passive patch bay in ZONE 2 allows you to run just one Cat-5 from the TX, and then run separate Cat-5 from the patch bay to each room.
- An 8-source, 8-zone CATS A/V network can be created using the CATS 8x8 Router. The network can be enlarged to as many as 32 zones by linking multiple Routers.



A more sophisticated network can be created by including the CATS 8x8 Router, which distributes and controls as many as eight sources in eight independent zones (or in as many as 32 zones by linking multiple Routers). A Router-equipped CATS network uses one Transmitter per source, and one Receiver per zone. Any source can be routed to any or all zones.

The Router can be controlled directly by IR remote or the new CATS LCD/Keypad Controller. An RS232/RS485 port also allows it to be controlled by popular controllers made by Crestron and AMX. In addition, Pragmatic offers the CATS Graphical User Interface software for Windows® 98 or Windows 2000 platforms. This client/server software allows control and configuration of a CATS entertainment network from any personal computer with LAN or Internet access.

Audio performance is not diminished as long as the total Cat-5 length from a Transmitter to the Router or from the Router to a Receiver does not exceed 5,000 feet. The limit for video signals (and consequently audio/video signals) is 1,000 feet. However, Pragmatic offers simple repeaters that can be used to extend the range to literally miles.

How will you know if you've exceeded a distance limit? Pragmatic makes this a no-brainer: The signal simply does not appear at the end of the line!

All CATS products use an outboard power supply. For areas where an AC source is not convenient, Pragmatic offers a Central Power Unit that distributes power from the central equipment location via 18/2 wire.



### CATS Transmitter (TX)

- Audio, Video, or Audio/Video models
- Optional built-in 25wpc stereo amp
- 2 line-level inputs
- 2 identical Cat-5 outputs
- 1 local line-level output
- IR receiver (front)
- IR input
- LED driver to send IR signals back to source components
- RS232/RS485 connection



### CATS 8x8 Router

- 8 Cat-5 inputs
- 8 Cat-5 outputs
- IR input
- RS232/RS485 connection



### CATS Receiver (RX)

- Audio, Video, or Audio/Video models
- Optional built-in 25wpc stereo amp
- 2 Cat-5 inputs
- 1 line-level output
- 2 local line-level inputs
- IR receiver (front)
- IR input
- LED driver to send IR signals back to source components
- RS232/RS485 connection



### CATS In-Wall Receiver

CATS Receiver in 4-gang junction box can be configured in a variety of ways. This unit features a 25-watt stereo amp with front-mounted A/V outputs, IR input, and coax jack for DC power.



### In-Wall IR Sensor

In-wall remote IR receiver



### In-Wall VC

Rotary volume control with built-in 25-watt stereo amp and Cat-5 input from Transmitter



### NEW CATS LCD/Keypad

Features 8 programmable soft keys, RS232/RS484 interface, Cat-5 output, front-mounted IR receiver and flashers, status LEDs, and 12 color choices for the field-replaceable buttons

## DMS, or CATS "Lite"

The Distributed Music System (DMS) from Pragmatic is an affordable solution to send high-quality audio signals over Cat-5, Cat-3, or even unshielded twisted pair wire in large residential or commercial installations. Like the BDSF used in CATS, the proprietary SuperTranz™ circuit in the DMS eliminates ground loops, AC voltage interference, noise pick-up, and hum introduction into the signal path.

The DMS Transmitter includes a built-in multi-channel audio switcher that can be controlled by IR or RS232/RS485 connection. One DMS transmitter can drive as many as 32 remote DMS Receivers. The in-wall DMS Receiver – which contains a built-in stereo amplifier in a one-gang junction box – is available in a variety of configurations.

DMS is clearly superior to traditional music distribution systems in both performance and cost.

## Wireless Products

Pragmatic offers an extensive line of wireless audio and video products that operate in the 900MHz and 2.4GHz bands. Like the DMS and CATS wired products, they use proprietary encoding and decoding that prevents virtually any signal degradation. The TrueMusic™ wireless stereo audio system delivers clean, rich sound that rivals the finest speaker cables. The TrueView™ high-performance wireless video system has a range of 600 feet and video bandwidth greater than 5MHz, making it ideal for high-quality video distribution where traditional cabling is not possible.



Pragmatic DMS Transmitter (front and back views above) and in-wall receiver. The receiver includes a 24x2 amp (upgradeable to 36x2 or 48x2), an IR sensor, and controls for source selection, volume, and power on/off. The receiver is also available as a simple amplified volume control with or without an IR sensor.

## Words of Praise for CATS

“What I liked the most was the ease of installation. It was exactly what you said, ‘Plug & Play.’ I could not imagine doing a system this big with coax. If you have anybody that doubts what your product can do, have them give me a call.”

*Lee Howell, Audio Video Design Group, OH*

“The future of audio and video is in distributed architectures where the idea is to get control, signal, and power as close to your displays and speakers as possible. We’re leaving behind the era of fire-breathing centralized amplifier racks with heavy, inefficient runs of huge copper wire. Pragmatic has been ahead of this curve for many years now and the CATS system offers the ideal solution for elegant A/V system design. Their latest innovations are without peer in our industry and have become essential to my work. In fact, nothing else makes sense anymore.”

*Rich Green, President, Rich Green, Ink*

“We wanted to use a twisted pair wire such as Cat-5 because it is readily available, low cost, easy to work with and it is commonly used with computers. The CATS technology from Pragmatic is designed around Cat-5 so it was ideal for the application. In fact, in a system of this size and complexity, I don’t think we could have done it without a product like CATS.”

*Engineering consultant Jim Smith describing a video conferencing system developed by PictureTel for the Federal Technology Service division of the General Services Administration*

