



Contemporary Research display control installations include:

### Sports Facilities

AT&T Centers - Spurs and Heat  
Hershey Center  
Jacksonville Arena  
Louisiana Superdome  
Seattle Mariners  
Wachovia Center - 76ers

### Corporations

Home Depot  
Hyundai USA  
Lockheed Martin  
Mercedes Benz

### Worship Facilities

Willow Creek Church  
Criswell Center  
Prestonwood Baptist Church

### Entertainment

Maryland Live Casino  
Delta Downs Casino  
Margaritaville, Las Vegas

### Colleges

John Paul Jones Arena - UVA  
Wake Forest University

At Contemporary Research, we look at RF systems through the lens of integration. For that reason, we created a facility-wide TV and media control system that operates over the same RF cable as the channels. In use for over 15 years, the system has proved to be extremely reliable and simplified site's transition from analog to digital channels.

The success of Display Express control rests in its simplicity. Start with a selection of in-house channels, add our DX software or a custom control processor, distribute control over RF, and then integrate controllers at each TV, monitor or projector.

## 1 Channel Origination

- QMOD HD Modulator/IPTV Encoders process media from SDI, HDMI, Component and RGBHV sources in to HD in-house channels
- RF outputs from the modulators are combined and amplified for site distribution

## 2 Display Express

- Operates from Windows Win 7/8 Pro, Windows Server
- Available integrated in Display Express PC or software for site's PC
- Serves display control Web pages to PCs, tablets and smartphones
  - **Setup** pages create a database of controllers, groups, channels, and users
  - **Preset** pages create a database of commands linked to TVs
  - **Schedule** pages launch Presets by date, time, and cycle
  - **Alert pages** create buttons for video paging and alerts
- **Web Control Panels** can be created assigned to users
  - **Preset** panels trigger Presets from interactive buttons
  - **TV Control** panels select TVs and change channels, volume, and power
- Sends commands to the ICE-HE Head End

## 3 ICE-HE Control Channel

- ICE-HE receives commands from Display Express PC
- Creates a micro control channel between 4 and 5 that combines with other RF channels

## 4 TV Controllers

- Receive control channel, sends the rest of the channels to the TV
- Send RS-232 or IR commands to the TV for power, channel, inputs and volume

## 5 Tuner Controllers

- Tunes channels for use with video projectors and monitors
- Receive the control channel and manages projector via RS-232


**Display Express Software**

**Rack-Mount PC**

**ICE-HE**

**ICC1-232 TV Controller**

**ICC1-IRX TV Controller**

**ICC2-ATSC 4**

## Display Express Control Software

**Software** Serves Web pages for system setup, control, and scheduling  
Installed in site's Win 7/8 Pro PC, Windows Server, or Display Express PC

**Display Express PC** Rack-mount Windows 7 Pro PC with pre-installed Display Express software

**Physical** 19" W x 1.7" H (1RU) x 14" D, 10 lbs

**Software** Windows 7 Pro, Display Express control/scheduling software

**Drives** 250 GB HDD IDE

**Processing** Intel Dual-Core Celeron 1620, 1G DDR3 SRAM  
4USB 2.0 Ports, VGA and DVI outputs  
RJ-45 10/100 Mbps Ethernet port

**Includes** RS-232 cable for ICE-HE Head End, USB/RS-232 adapter

## Control Channel

### ICE-HE Ethernet Head End

**Control** RJ-45 Ethernet, RS-232 data inputs  
Use with Server-based applications or PC located remotely from Head End unit

**General** Communicates with SignStream control software  
Sends control commands through RF to iC-Net controllers  
Sends control data via RF, 74.7 MHz, narrow-band signal between channels 4 and 5  
Receives status data at 5.6MHz, below sub-channels from 2-way iC-Net controllers

**Physical** 19" W x 1.75" H (1RU) x 9" D, 3 lbs

**Includes** Rack mounting hardware  
12 VDC Power Supply, 500 mA

## TV Controllers

	ICC1-IRX	ICC1-232	ICC2-ATSC 4
<b>Type</b>	IR TV Control	RS-232 TV Control	RS-232 Controller ATSC/QAM Tuner
<b>Control</b>	Discrete IR control Power, Channels, Inputs	RS-232 commands Power, Channels, Inputs, Control Lockout	RS-232 Power, Channels, Inputs, Control Lockout
<b>Physical</b>	5.5" W x 1.1" H x 3.4" D 8 oz	5.5" W x 1.1" H x 3.4" D 8 oz	8.5" W x 2.0" H x 8.0" D 2 lbs
<b>Tuning</b>	By TV	By Display	ATSC, NTSC, QAM
<b>Sense</b>	CSM1: Xantech power current Sensor Tip+: CC-HSD for tube TVs		
<b>Outputs</b>	RF: In and Out	RF: In and Out	RF: In and Out Tuner RF: In HDMI, RGB/YPbPr, NTSC Video HDMI, Coax, Optical, Stereo Audio All outputs Simultaneous
<b>Includes</b>	PS12-500 power supply IC-IRE IR Emitter	PS12-500 power supply	PS12-15 1.5A power supply
<b>Optional</b>	Xantech CSM1 CC-HSD Sensor	CC-COM cable	CC-COM cable HD2-RC IR Remote (1 per system needed for setup)

CR products feature a full two-year warranty,  
six months for Display Express PC