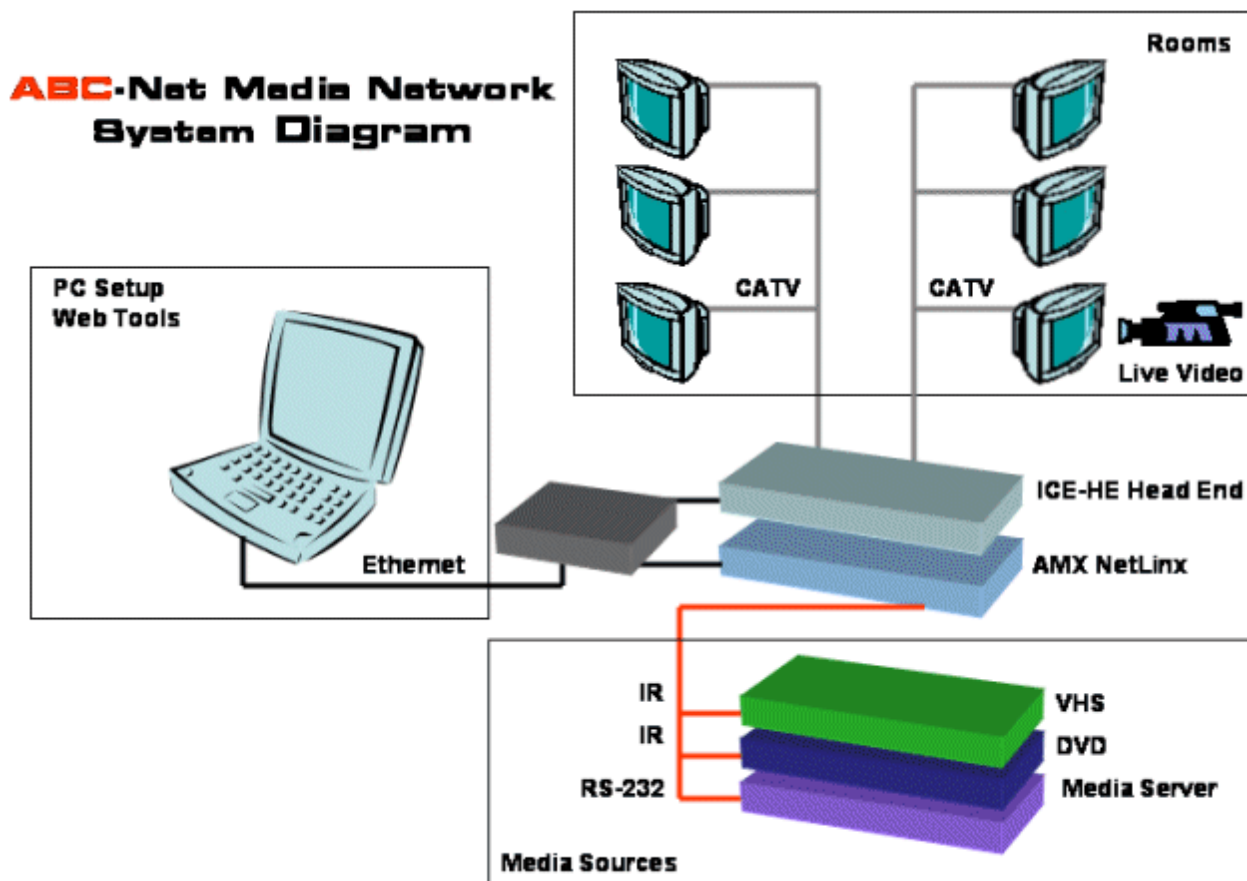


# ABC-Web Introduction



ABC-Web is a Web application that offers a variety of browser-based tools for Contemporary Research ABC-Net Media Networks. ABC-Web pages and databases reside in the AMX NetLinx Web Server, and can be accessed by a Web browser in the school network or remotely over the Internet.

Via the NetLinx controller, ABC-Web interacts directly with controlled media sources, and networks school TVs through the CATV system through the ICE-HE Ethernet Head End. ABC-Net is fully self-contained, and does not rely on external network servers or databases to manage the ABC-Net system.

As a Java application, ABC-Web is compatible with Windows, Apple, and Linux operating systems on the network. No additional software, other than Java, needs to be installed.

# ABC-Web Links Page



The Links page appears when your browser accesses the IP address of the ABC-Web control server. The page includes all the hyperlinks to iC-Web tools and resources.

- ABC-Web Links . This series of Web tools, which can access all ABC-Web features, are only available to one user at a time:
  - Setup - Defines ABC-Net system, one user can access
  - View - Displays status of ABC-Net system, one user can access
  - Media Center - Manages media sources and TV power/channel scheduling, one users
  - Room Control - Instructor control of classroom TV and media sources - up to 64 users at the same time
- ABC-Web Help. Both online HTML and downloadable Windows Help files
- Resources. Offers useful tools for ABC-Web developers. The Display Control Codes page list the current control commands for iC-Net controllers, used in the [Define Rooms](#) page

# ABC-Web Navigation



The top bar of ABC-Web includes tabs and buttons to navigate the ABC-Web pages.

- Tabs - select key ABC-Web tools from the tabs at the top of the window
  - The [Home](#) page
  - The [Setup](#) page helps the school set up and maintain the ABC-Net system database, including:
    - Network - defines network and email addresses, time and DST settings
    - System-wide features and channels
    - Room network addresses and on-screen names
    - Media resource channels, names, and control parameters
    - Special Options to handle unique requirements
  - The [View](#) page provides a graphic, real-time display of the ABC-Net network status, including:
    - Online/Offline status
    - Room name and network address
    - TV status, including current channel and power state
    - Instant control for power, channel and volume
- Menu Buttons - Select sub-pages, such as the System, Rooms, Media and Special Options pages shown above
- HE Online - Indicator at top left of page flashes red and green to show an active connection to the ICE-HE
- Time - graphic on the top left on the Home and View pages displays current time from user's PC

# ABC-Web Editing

There are two types of data entry tools in ABC-Web, data fields and tables.

## Fields

Tune Rings	
<b>Room TVs</b>	2,3-126
<b>Administration</b>	52,55,56,57
<b>Media Room</b>	2-35,52,55,56,57
<b>Select Media</b>	45,55,56,57,60,61,62,63,64

The data entry tools in the System and Network pages are in the form of *fields* - data blocks (shown in gray) that accept alphanumeric text. Simply enter the text in the fields.

## Tables

45	DVD 1	1	5	0
Channel	Label	Dev	Port	Type

The Rooms, Media, and Special Options pages use tables to edit and display data. The editing process is the same for all tables. The top row is used for entering data, the rows below display the list of rooms, channels, media, or options.

- If you're editing an existing row, select the desired row by clicking it with your mouse. The row will be highlighted in blue, and the data blocks at the top of the table will display the information from the highlighted row.
- If you're adding a new entry, you can start entering new data into the data blocks without selecting a row.
- When you click on a block, the background will turn from gray to white with red text, indicating that you can enter new information.
- After you enter the data, click on the same block or an adjacent block to turn the background back to gray with black text.
- When you are done entering the new data for the row, make sure all blocks are gray/black, then click Add or Edit to save the changes.

## Saving the System File

The information you've entered is only in temporary memory. You'll need to press the [Save System](#) button to save your work to permanent memory.

# ABC-Web Save System



When you click on the Setup Tab, you'll see Retrieve System and Save System buttons at the bottom left.

## Save System

Think of ABC-Web as a program like a word processor. You may see the new information you've entered on the screen, but the changes don't become permanent until you save the document.

Until you save the system file, the system will reboot from a power loss, Reset or Retrieve command using the current database in permanent memory, not what you've entered. So regardless of what page you've used to update ABC-Setup, you need to come back to the Setup page and save the system file.

## Retrieve System

This command will rebuild the ABC-Web data from the information inside the NetLinx controller. This is the same process that happens every time you launch ABC-Web. This feature can come in handy if you decide to erase any changes you've made since you last saved the database.

# ABC-Web Setup Page

**ABC-Web** Home **Setup** View

HE Online Network System **Rooms** Media Special Options

**Event Control Setup**

Admin Device	Media Center Device	Remote Device	Alert Device	Media Event Timeout (Mins)
258	261	262	263	180
Info Channel	Weather Channel	Marquee Channel	Media End Channel	
52	21	0	52	

**Broadcasting Setup**

Admin Channel	Remote Channel	Volume Level Start	Volume Level End	Broadcast Delay (secs)
28	37	15	10	7

Devices excluded From Broadcasts

261, 258

**Tune Rings**

Room TVs

13, 21, 33

Administration

1-126

Media Room

2-35, 45-64

Select Media

45, 46, 54-57, 60, 66, 67

**Tune Mode**

<input checked="" type="checkbox"/> Both	<input checked="" type="checkbox"/> CATV
<input type="checkbox"/> Alpha	<input type="checkbox"/> Broadcast
<input type="checkbox"/> Numeric	<input type="checkbox"/> HRC
	<input type="checkbox"/> IRC

Save System Retrieve System

The ABC-Web Setup Page is accessed by clicking the Setup tab. The page includes three key elements:

- Page Buttons - buttons below the Setup tab select pages to define the overall System, [Rooms](#), [Media](#), and [Special Options](#)
- System Fields - on main Setup page, defines general system attributes
- Save/Retrieve System - buttons on lower left of System page save and retrieve the ABC-Net database

## System Fields

The System Fields are arranged into three sections:

- Event Control [Devices](#) and [Channels](#)- defines special system devices and channels
- [Broadcasting Setup](#) - assigns system broadcast channels
- [Tune Rings](#) - establishes channels available from school TVs

*Whenever changes are made, press the [Save System](#) button to store the updates.*

# Event Control - Devices

The screenshot shows a blue interface titled "Event Control Setup". It contains two rows of configuration fields. The first row includes: "Admin Device" (258), "Media Center Device" (261), "Remote Device" (262), "Alert Device" (263), and "Media Event Timeout (Mins)" (0). The second row includes: "Info Channel" (52), "Weather Channel" (21), "Marquee Channel" (0), and "Media End Channel" (52).

Admin Device	Media Center Device	Remote Device	Alert Device	Media Event Timeout (Mins)
258	261	262	263	0
Info Channel	Weather Channel	Marquee Channel	Media End Channel	
52	21	0	52	

The top row in the Event Control Setup section sets properties for ABC-Net system devices.

## Admin Device

Enter the device number of the Administrator's (principal's) TV controller. The Admin Device has special features unavailable to classrooms, including:

- Page all TVs, turning on power, setting volume and switching TVs to a video paging channel
- Page TV Zone
- Preview paging camera
- Page a user-selected individual
- Send all TVs to a user-selected channel
- Turn off all TVs
- End all Media Events
- Receive alert

The Administrator's TV controller includes a buzzer that sounds an alert signal. A second Administrator office can be added - see [Special Options](#). Depending on the rights assigned to the location, this could be a second administrator's office, a broadcasting room, or security alert station.

## Media Center Device

Enter the device number for the Media Center's TV controller. The Media Center receives the same privileges as the Administrator except for paging. The TV controller will respond to a Media Center page, sounding a buzzer (if installed) and displaying the name of the requesting room on the TV screen.

The Media Center can view channels defined in the Media Room Tune Rings section. In addition, the Media Center staff can turn all school TVs on and off, send them to the Weather Channel or any other channel.

A second Media Center station can be added - see [Special Options](#).

## Remote Broadcast Device

Using this feature, a facility could have a mobile remote broadcasting cart or fixed room that can broadcast video to all TVs, zones or an individual room. Enter the device number planned for this location's TV controller.

## Alert Device

In most applications, the Alert Device is the same number as the Admin Device. If a classroom sends a 911 or 912 code, a buzzer on the Admin TV controller would sound, and the number of the room sending the page

will appear on the Admin TV (the TV will also be forced on). Other sites would prefer that a security desk or assistant receive the classroom alert. To meet this need, install a TV and TV controller with buzzer at the desired location, and enter that device number in this field.

Two additional Alert Stations can be added, and the optional Administrator location can be used for alerts as well - see [Special Options](#).

## Event Time Out

Once a room selects a media source, the source will be automatically freed up and made available for control by others after the stated number of minutes elapse. This feature helps keep media available, even if users forget to release the media source when they're done.

*Whenever changes are made, press the [Save System](#) button to store the updates.*

# Event Control - Channels

Event Control Setup				
Admin Device	Media Center Device	Remote Device	Alert Device	Media Event Timeout (Mins)
258	261	262	263	0
Info Channel	Weather Channel	Marquee Channel	Media End Channel	
52	21	0	52	

The lower row in the Event Control Setup section defines special ABC-Net system channels.

## Info Channel

Enter is the channel assigned as the Information or Bulletin Board channel. Typically this will be school-specific information that is driven by presentation software.

## Weather Channel

Enter the system's weather channel number.

## Marquee Channel

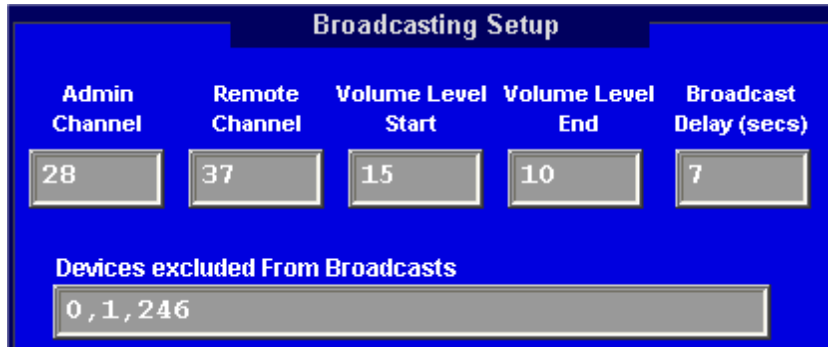
This is the default channel when a TV first powers up. Entering a zero (0) will set the TV controllers to display the last channel viewed. This can be the same as the Info Channel.

## Media End Channel

This is the End-of-Media Channel, or the channel media decks are sent to at the end of a media event. This can be the same as the Info Channel.

*Whenever changes are made, press the [Save System](#) button to store the updates.*

# Broadcasting Setup



Admin Channel	Remote Channel	Volume Level Start	Volume Level End	Broadcast Delay (secs)
28	37	15	10	7

Devices excluded From Broadcasts

0, 1, 246

The Broadcasting Setup section of the ABC-Web Setup window defines attributes for live broadcasts.

## Admin Broadcast Channel

Enter the channel number for the Administrator A/V camera and audio.

## Remote Broadcast Channel

Enter the channel for the Remote video and audio.

## Volume, Page On

This sets the level of the TV's audio when an A/V page is first initiated. Audio levels 0-63 set the level from off (0) to full volume (63).

## Volume, Page Off

This sets the level of the TV's audio when an A/V page completes. Audio levels 0-63 set the level from off (0) to full volume (63).

## Broadcast Delay

Enter the number of seconds to wait before broadcasting the page.

When an Admin or Remote page is started, the local video camera and TV is turned on and set to the paging channel. Then, after the defined wait period, the page will be broadcasted to the selected televisions. The delay gives the selected TVs time to turn on and display a page alert message. Pressing the Enter button on the user's remote will end the page.

## Devices Excluded from Broadcasts

Devices (Room TV Controllers) entered here will be skipped when any All TV broadcast is sent from the system.

*Whenever changes are made, press the [Save System](#) button to store the updates.*

# ABC-Web Tune Rings Setup

Tune Rings	
Room TVs	2,3-126
Administration	52,55,56,57
Media Room	2-35,52,55,56,57
Select Media	45,55,56,57,60,61,62,63,64

Every TV Controller in the system supports a Tune Ring – a rotating list of channels users can access using Channel Up and Channel Down or numeric entry on their remotes. Some channels are available to everyone in the system; other channels such as Media and Broadcast can only be viewed on command.

## Channel Syntax

You will be entering groups of channels available for general and specific areas in this section of the iC Toolkit window. You can enter individual channel numbers (such as 30, 31, 32) or a group of adjacent channels using a hyphen (such as 30-32). Commas must separate every channel and group – you can use spaces, but the software will ignore them. Entering 45, 65, 66 will be seen as 45,65,66 by the system, and 45 65 66 will be received as 456566 (not good).

## Room TVs

Enter the channels that all classrooms can view and access.

## Administration

Normally, the Administrator can view any channel in the system, including Media and Paging channels or any desired off-air broadcast channel.

## Media Room

These are the channels available for basic channel up/down or numeric entry. Typically local media decks and restricted access channels such as CNN, PBS, and other channels can be entered here.

## Select Media

These are media resources selected by the wireless remote Menu 1 command. Add the channels for local media sources, non-administrator live broadcasts, and restricted-access channels such as MTV, HBO, PBS, etc. will be entered here.

**Tip:** Acting as a distributed media system, ABC-Net delivers certain channels to all destinations, others by request. Rather than broadcast copyrighted media to all rooms, instructors must specifically select a media source or reserved channel before it can be controlled or viewed.

*Whenever changes are made, press the [Save System](#) button to store the updates.*

# ABC-Web Setup Tune Mode

The screenshot shows a window titled "Tune Mode" with a blue background. It contains two columns of checkboxes. The left column has three options: "Both" (checked), "Alpha", and "Numeric". The right column has four options: "CATV" (checked), "Broadcast", "HRC", and "IRC".

This section defines the channel format used for tuning, and how the on-screen channel labels will be displayed

## Channel Labels

Defines how on-screen channel text will be displayed when channel is selected

- Alpha - Name of channel (NBC, PBS, etc)
- Numeric - the channel number
- Both - numeric and alpha text

## Tuning Format

Select Broadcast (off-air) or Cable channel spacing (Standard CATV, HRC, or IRC)

# ABC-Web Network Configuration

**ABC-Web** Home **Setup** View

HE Online Network System Rooms Media Special Options

**This System**

This System Name  
CRC Inc. Default

ICE-HE IP Address  
192.168.1.34

11:18:20 11:18:16  
08/01/05 08/01/05 SET

Use DST

**Mail Server**

Mail Server IP Address

Mail Account Name

Mail User Name

Mail Password

**Admin Alert (911, 912)**

Alert 1

Alert 2

Alert 3

Alert 4

Alert 5

**Media Alert (900)**

Alert 1

Alert 2

Alert 3

Alert 4

Alert 5

The Network page defines the Ethernet elements of the ABC-Net system.

## This System

Edits and displays the school name and ICE-HE Ethernet address.

## Time

Enter current time in 24-hour military format, date, and if the location follows Daylight Savings Time.

## Mail Server

In addition to displaying security and Media Center alerts using on-screen text, ABC-Net can send an alert e-mail to computers or cell phones.

The first step in enabling this capability is to define access to the school POP3 mail server. Enter the IP address ("quad" format), account name, user name and password.

## Admin Alert

Enter up to 5 email addresses that will receive the alert.

## Media Alert

Enter up to 5 email addresses that will receive the alert.

*Whenever changes are made, press the [Save System](#) button to store the updates.*

# ABC-Web Rooms Setup

The screenshot shows the 'Room Device Definition' section of the ABC-Web interface. It features a table with the following data:

Device	Name	Display
513	Rm 513	30
256	Zone1	
257	Admin	
258	Rm 101	
259	Rm 102	
261	Media Rm	
262	B-Cast	
263	Security	
512	Zone2	
513	Rm 513	30
514	Rm 514	

The ABC-Web Rooms Setup Web page creates a database of ABC-Net room network addresses (device number) and name. The ABC-Net system connects to the room's TV controller using the device number. The room name makes it easy for people to identify the room, used in the ABC-View status page and on-screen TV text.

The *Display* field defines the display control commands sent from an ABC-Net controller. The IR or RS-232 commands for most makes of displays are already stored inside ICC1-IR, ICC2-IRC, and ICC2-VDC controllers, the field tells the controller which file to use. Smart TV controllers, which are preset to control Philips, RCA, or Zenith TVs, don't need a display code. You can find a list of codes in your controller's manual, on your main ABC-Web Links page in the control server, and at [www.crwww.com](http://www.crwww.com).

At this point you should have a System Map that defines the device number and name for each room. Rooms and common areas, such as hallway and cafeteria TVs, can be arranged into SmartZones. The SmartZone capability gives the school the ability to control a group of TVs using a Zone number, from 1 to 15. See the [ABC-Net SmartZone](#) and [System Map](#) pages for more information.

If all the displays in a [SmartZone](#) are the same, you can enter a Display Code in the Zone (such as Kiosks and Rooms above), and all controllers in the zone will be updated at the same time. If that's true, but with a few exceptions, you can enter a Zone Display Code, then enter the unique code for the ones that are different. iC-Web will update the zone first, then the exceptions next.

The center blue arrow buttons move the list row-by-row. The red buttons at the top and bottom move the rows by 10.

## Add Room

- Enter a room's Device number, Name, and Display code (if needed) into top entry boxes

- Click on the entry box to change the background color from green (entry) to white (ready to save)
- Click on the Add button
- The room is added, but not yet saved in permanent memory

### Edit Room

- Highlight a room by clicking on the desired room's row
- Enter a new device number and name into top entry boxes
- Click on the entry box to change the background color from green (entry mode) to white (save mode)
- Click on the Edit button
- The changes are added, but not yet saved in permanent memory

### Delete Room

- Highlight a room by clicking on the desired room's row
- Click on the Delete button
- The room is deleted, but not yet saved in permanent memory

*Whenever changes are made, press the [Save System](#) button to store the updates.*

# ABC-Web Media Setup

The screenshot shows the ABC-Web interface with the 'Setup' tab selected. Below the navigation bar, there are buttons for 'Network', 'System', 'Rooms', 'Media', and 'Special Options'. The 'Media' button is active, leading to the 'Media and Channel Definition' window. This window contains a table with columns for Channel, Label, Dev, Port, and Type. The row for Channel 54 is highlighted in blue. To the left of the table are 'ADD', 'EDIT', and 'DELETE' buttons. To the right are four directional arrow buttons (up, down, left, right).

Channel	Label	Dev	Port	Type
54	DMEDIA 1	1	10	11
13	PBS	0	0	0
21	WEATHER	0	0	0
28	PRIN	0	0	0
33	CNN	0	0	0
45	DVD 1	1	9	0
46	DVD 2	1	14	0
52	INFO	0	0	0
54	DMEDIA 1	1	10	11
55	DMEDIA 2	1	11	11
56	DMEDIA 3	1	12	11

The ABC-Web Media Setup page defines the channels, labels and properties of ABC-Net media resources.

- [CATV Channels](#) - enter channel number and label (up to 8 characters)
- [Analog Media Sources](#) - enter the sources' channel, label and control properties
- [Digital Media Server](#) - enter the sources' channel, label, control and video port

## Data Fields - Edit and Save Modes

All the Room, Media, and Special Options pages share the same data entry scheme. Data is entered in the fields above the list's header bar. If no rows are highlighted, the fields are blank. If a row is highlighted the row's data will appear in the Data Entry fields. If you click on a field to add or edit data, the block will turn green, signifying that you are changing the field's information. When you're done, clicking on the field (or an adjacent field in the row) will change the block to white, meaning the data is ready to be saved. When you're done editing the row, make sure all the blocks are white, then click the Add or Edit button to save the data. If a block is green, only the original data will be saved, not the new.

*Whenever changes are made, press the Save System button on the [System Setup](#) page to store the updates.*

# ABC-Web Channels Setup

### Media and Channel Definition

Channel	Label	Dev	Port	Type
28	PRIN	0	0	0
13	PBS	0	0	0
21	WEATHER	0	0	0
28	PRIN	0	0	0
33	CNN	0	0	0
45	DVD 1	1	5	0
52	INFO	0	0	0
55	DMEDIA 1	1	3	141
56	DMEDIA 2	1	3	142
57	DVD 2	1	6	0
60	LASERD	3	3	128

Click on the Media button on the ABC-Web Setup page to enter the Media and Channel Definition section. The Channels and Labels fields are used to define both CATV channels and Media sources.

## Add Channel

- Enter a Channel number and text Label (8 characters max) in the entry fields at the top
- Each box will be shaded green (ready for entry) when you add information, then white (ready to save) when you click the same field after entry
- When all entry fields are white, click on the Add button
- The channel is added to the database

## Edit Channel

- Highlight a channel by clicking on the desired room's row
- Enter new information into top entry boxes
- Click on the entry box to change the background color from green (entry mode) to white (save mode)
- Click on the Edit button
- The changes are added to the database

## Delete Channel

- Highlight a channel by clicking on the desired room's row
- Click on the Delete button
- The channel is deleted from the database

Whenever changes are made, press the [Save System](#) button to store the updates.

# ABC-Web Media Setup - Analog

### Media and Channel Definition

ADD

EDIT

DELETE

<b>45</b>	DVD 1	1	5	0
Channel	Label	Dev	Port	Type
13	PBS	0	0	0
21	WEATHER	0	0	0
28	PRIN	0	0	0
33	CNN	0	0	0
<b>45</b>	<b>DVD 1</b>	<b>1</b>	<b>5</b>	<b>0</b>
52	INFO	0	0	0
55	DMEDIA 1	1	3	141
56	DMEDIA 2	1	3	142
57	DVD 2	1	6	0
60	LASERD	3	3	128

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Media sources are added just like channels, entering the source's channel and on-screen text label. Then add the Device, Port, and Type information to define the control attributes. (See the [Channels](#) page on rules for adding, editing and deleting information.)

The Device and Port entries define the control port used by the NetLinx controller.

The sample device/port chart below uses the NetLinx NI-4000 with two NXC-IRS4 cards and two NXC-COM2 cards as an example, defining added control cards or other NetLinx controllers and architectures follow a similar pattern. There isn't a fixed sequence for adding NXC- cards, you can use any mix of RS-232 and IR cards.

Device	Port	Description
1	1	RS-232 Port 1 - ToolKit RS-232
1	2	RS-232 Port 2 - ICC-HE
1	3	RS-232 Port 3
1	4	RS-232 Port 4
1	5	RS-232 Port 5
1	6	RS-232 Port 6
1	7	RS-232 Port 7
1	9	Infrared Port 1
1	10	Infrared Port 2
1	11	Infrared Port 3
1	12	Infrared Port 4
1	13	Infrared Port 5
1	14	Infrared Port 6
1	15	Infrared Port 7
1	16	Infrared Port 8
1	17	I/O Port (not used)
13 (NXC-IRS4)	1	Infrared Port 9
	2	Infrared Port 10
	3	Infrared Port 11
	4	Infrared Port 12

14 (NXC-IRS4)	1	Infrared Port 13
	2	Infrared Port 14
	3	Infrared Port 15
	4	Infrared Port 16
15 (NXC-COM2)	1	RS-232 Port 8
	2	RS-232 Port 9
16 (NXC-COM2)	1	RS-232 Port 10
	2	RS-232 Port 10

The Type field defines the logic and commands used to control the media source.

Media Type	Description	Port Type
0	Standard IR	IR
1	Standard IR, Short Pulse	IR
2	Panasonic DVC	RS-232
3	Tascam DVD DV-D6500	RS-232
32	Chaparral Satellite Tuner	RS-232
128	Pioneer LD, DVD	RS-232
129	Sony LD	RS-232
130	Panasonic LD	RS-232

- IR-controlled sources are defined as zero (0), the standard control format.
- Some DVD players need a very short IR pulse for Menu Cursor control. If you experience erratic cursor movement for a player, change the Media Type setting to 1.
- RS-232 controlled sources are assigned a specific number, which tells the system which RS-232 commands to send to the source.

Several new DVD players include the standard Menu and Top Menu control functions. Users can access the Top Menu function (if included in player) by pressing the blank button between the Input and Down button on the IC-RC remote.

Media Type	Description	Port Type
0	Standard IR	IR
1	Standard IR, Short Pulse	IR
2	Panasonic DVC	RS-232
3	Tascam DVD DV-D6500	RS-232
32	Chaparral Satellite Tuner	RS-232
128	Pioneer LD, DVD	RS-232
129	Sony LD	RS-232
130	Panasonic LD	RS-232

Whenever changes are made, press the [Save System](#) button to store the updates.

# ABC-Web Media Setup - Digital

**Media and Channel Definition**

ADD

EDIT

DELETE

Channel	Label	Dev	Port	Type
54	DMEDIA 1	1	10	11
13	PBS	0	0	0
21	WEATHER	0	0	0
28	PRIN	0	0	0
33	CNN	0	0	0
45	DVD 1	1	9	0
46	DVD 2	1	14	0
52	INFO	0	0	0
54	DMEDIA 1	1	10	11
55	DMEDIA 2	1	11	11
56	DMEDIA 3	1	12	11

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## Digital Media Codes

Media Type	Description	Port Type
11	D-Link Digital Media Player	IR

Digital media is an exciting new resource for educators, allowing instructors to select digital media files instead of analog media and players. In partnership with D-Link, ABC-Net systems now allow users to handle and control digital media the same way as ordinary media, so operation requires no additional training or restructuring of the media distribution system.

A channel modulator is assigned to the output of each Digital Media Player, broadcasting the analog output to classrooms. Using this architecture for digital media presentation adds no overhead to the facility computer network or classroom computers. Any existing ABC system can be upgraded for digital media playback, even sites that don't have a computer network.

Setting up ABC-Net for D-Link digital media control is similar to analog media. Just enter a channel, control port, and Media Type.

## Digital Media Operation

The media staff will designate one computer to act as a file server to one or more D-Link Media Players. The included software defines a core folder in the PC to act as a server, allowing D-Link players to easily find the server. All players could share the same server, or the staff could set up other PCs to act as servers as well. Each player will link to a specific file server. Consult the D-Link manual for specific information.

When instructors select a Digital Media Player, they will first select the media type, such as Movies, Photos, or Music files. The default D-Link menu will be displayed when the source is selected. The instructor can select a Media Menu (Movie, Photo, or Music) using the DVD cursor keys on the IR remote or ABC-Web Room Control page. In addition, the teacher can press the DVD Menu key to flip through menus, or press the Top Menu key to show the main menu again.

Once a Media Menu is selected, the instructor uses the DVD cursor keys to select a desired folder, then a media title. To run a slideshow of photos from the Media Player, simply select the folder for the group of photos. The slides will play at a speed selected by the media staff.

*Whenever changes are made, press the [Save System](#) button to store the updates.*

# ABC-Web Special Options Setup



While the primary ABC-Web Setup pages define the typical ABC-Net system, additional features can be added by the Special Options page.

## Alternate Admin, Alert, Media Center, and Broadcasting Locations

Feature	Parameter 1	Parameter 1	Parameter 2
Second Admin Device	DFLT	PRIN2	Device #
Second Admin Alert	DFLT	ALERT2	Device # (same)
Second Admin Paging	CFLT	PRIN2	Channel #
Second Alert Station (no admin features)	DFLT	ALERT2	Device # (same)
Third Alert Station (no admin features)	DFLT	ALERT3	Device # (same)
Fourth Alert Station (no admin features)	DFLT	ALERT4	Device # (same)
Second Media Center	DFLT	MSTR2	Device #

The chart below shows several options that can be added. Using different combinations can create different room applications.

### Administrative/Broadcast Locations

- Second Administrative Office with full alert and broadcast capabilities - Define the PRIN2 device number, ALERT2 capability, and PRIN2 broadcast channel.
- Second Administrative Office with alert only - Define the PRIN2 device number, and ALERT2 capability.
- Second Broadcast Cart or Area Define the PRIN2 device number, and PRIN2 channel.

### Media Center

Add the MSTR2 Option command as shown in the chart. The second Media Center office can select channels assigned to the Media Center, receive a Media Alert call, and control school TVs (Menu 25 commands - see Administrator Media Guide).

### Security Alert Stations

Three additional Alert Stations can be set up to receive a Security Alert on a TV, a second Admin office and 2 additional Alert Stations.

*Whenever changes are made, press the [Save System](#) button to store the updates.*

# ABC-Web View

The screenshot displays the ABC-Web interface. At the top left, it says "HE Online" with a green dot. At the top right, the time is "08:17". The main content is a table with columns: Online, Device ID, Name, Smart, Chan, and Power. The table lists 10 devices. The first row, "Admin" (Device ID 257), has a green dot and "On" power. The second row, "Rm 101" (Device ID 258), has a green dot and "On" power. The third row, "Rm 102" (Device ID 259), has a blue dot and "Off" power. The remaining rows (261-516) all have green dots and "On" or "Off" power. To the right of the table are three circular buttons: a red triangle pointing up, a blue triangle pointing up, and a blue triangle pointing down. Below these are two "Page" labels. Further right are control panels for "Power" (checked, On), "Channel" (empty), and "Volume" (checked, 35). A "Send" button is at the bottom right.

Online	Device ID	Name	Smart	Chan	Power
●	257	Admin	S	52	On
●	258	Rm 101	S	52	On
●	259	Rm 102			
●	261	Media Rm	S	33	On
●	262	B-Cast	S	67	On
●	263	Security	S	13	Off
●	513	Rm 513	S	52	On
●	514	Rm 514	S	52	On
●	515	Rm 515	S	72	Off
●	516	Rm 516	S	52	On

Quick - which room is not like the others?

If you guessed Room 101 - you already know how to monitor an ABC-Net system using ABC-View. The "blue dot" indicates that the room is currently not on the network, while a "green dot" means that the room is online. In most cases, the problem can be resolved by sending someone to the room to check if the TV is plugged in or the RF cable is connected. Once the TV is powered up again, the blue dot will change to green in a few seconds.

The View page shown above is accessed from the ABC-View section of the ABC-Web server. This page provides system monitoring only, and can be viewed by multiple users.

The [ABC-Web Setup View](#) page adds the ability to control devices, reset the system or access other ABC-Web Setup pages.

# ABC-Web Setup View

Online	Device ID	Name	Smart	Chan	Power
<input checked="" type="checkbox"/>	257	Admin	S	52	On
<input checked="" type="checkbox"/>	258	Rm 101	S	52	On
<input type="checkbox"/>	259	Rm 102			
<input checked="" type="checkbox"/>	261	Media Rm	S	33	On
<input checked="" type="checkbox"/>	262	B-Cast	S	67	On
<input checked="" type="checkbox"/>	263	Security	S	13	Off
<input checked="" type="checkbox"/>	513	Rm 513	S	52	On
<input checked="" type="checkbox"/>	514	Rm 514	S	52	On
<input checked="" type="checkbox"/>	515	Rm 515	S	72	Off
<input checked="" type="checkbox"/>	516	Rm 516	S	52	On

Accessing the View page from the ABC-Setup server provides an additional set of management tools.

## Controlling TVs

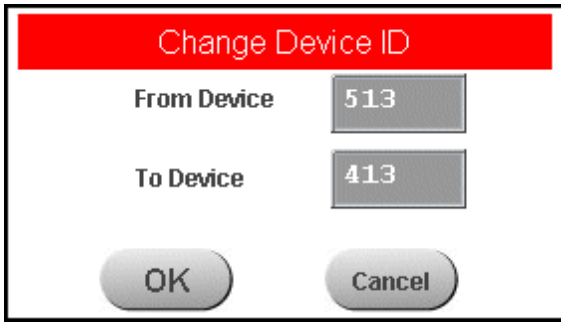
The built-in control panel can send several commands to a TV controller.

- Click on a row to select a room to control
- Click the control panel checkboxes to choose control options
  - Power - check Power box, select On or Off command
  - Channel - check Channel box, enter desired channel number
  - Volume - check Volume box, enter volume level or move slider
- Click Send to send commands to TV

## Reset System

Click button to reset NetLinX controller. If you have not saved changes to permanent memory (See [ABC-Setup](#)), your changes will be lost.

## Change Device ID

A dialog box titled "Change Device ID" with a red header. It contains two input fields: "From Device" with the value "513" and "To Device" with the value "413". At the bottom, there are two buttons: "OK" and "Cancel".

Change Device ID	
From Device	513
To Device	413
OK Cancel	

Allows the user to change a device address right from ABC-View. Because this function changes the ID stored in the TV controller itself, the change can only be made to online (green) controllers.

- Highlight the device row you want to change
- Click on the Change Device ID button, a Change ID pop-up will appear on the screen
- Enter the current device number
- Enter the new device number
- Click OK to enter the change

### Change Display Type

Allows you to change the [Display Type](#) of a controller without switching to the Rooms window.

### Finding Missing (Blue) Devices

If a device in an existing system goes offline, it's usually due to one of a few reasons:

- The controller's Smart TV is not plugged into AC power
- A generic TV controller (ICC2-IRC, ICC2-VDC) has lost power
- The RF cable has been removed from the Smart TV or generic controller
- There is a problem in the RF system or controller

When you're installing a new system, there may be several TV Controllers on the network that have not been set to the correct device ID number. The "blue dot" devices you'll see in ABC-View can't find a matching device on the network. When installers visit each room to check and set the correct device numbers at the controllers, you'll see the ABC-View status change in real time, from mainly blue to all green.

# ABC-Web Media Center



More than anyone else in the school media system, the Media Center staff needs to know what's going on. ABC-Web Media Center gives them the power to manage their media.

- [Select](#) page gives the staff the ability to assign media to any classroom.
- [Control](#) page controls any Media Center media source, so the staff can make sure the unit works and has the correct media loaded.
- [Events](#) page monitors all current media source assignments to classrooms, users can make sure they aren't loading media into a source currently in use, and they can also un-assign sources to free up resources to other classrooms.
- [Power](#) page creates a weekly cycle for TV power on/off and channels. Includes Zone control so user can schedule by groups. For example hallway and cafeteria TVs can be controlled independently from classroom TVs.

# ABC-Web Media Center - Select

ABC-Web **Select** Control Events Power

Click block on LEFT to select MEDIA  
Click block on RIGHT to select ROOM  
To accept selection, click ASSIGN

Media Sources	Rooms
DVD 1	Zone1
DVD 2	Admin
DMEDIA 1	Rm 101
DMEDIA 2	Rm 102
DMEDIA 3	Media Rm

↑ ↓ ← → ASSIGN

ABC-Net instructors can select media sources for control right from the classroom. With ABC-Web Media Center, so can Media Center staff. To assign a media source to a room, simply click a Media Source Name, click a Room Name, then click ASSIGN.

You can view (and delete) assigned media events from the [Events](#) page.

## Applications

- You can assign multiple classrooms to the same source. The first classroom assigned has control of the source, while subsequent classrooms can view the source, but cannot control.
- The instant a source is assigned to a room, the room's TV will turn on, and change to the source's channel. The media will not start in Play by itself. However, you can go to the [Control](#) page, select the source, and initiate Play, if needed.
- You can use the Select page to setup a team-teaching session, as well. To do this, you need a mobile AV system or fixed broadcast room that can send AV as a live broadcast channel. This channel should be set up in ABC-Net as a media source, so that only teachers can access the channel. To set up the session, simply assign all rooms in the session to the broadcast channel.

# ABC-Web Media Center - Control



Using the Media Center Control page, media staff can take control of the center's media sources.

Operation is easy; simply select a source by clicking on the name, then control with the buttons on the right.

# ABC-Web Media Center - Events

Device	Room	Chan #	Ctrl	Media Source
513	Rm 513	55	Y	DMEDIA 2
517	Rm 517	60	Y	LASERD
259	Rm 102	45	Y	DVD 1
258	Rm 101	46	Y	DVD 2
514	Rm 514	46	N	DVD 2

How do you know who is in control of the media sources? Want to change media in a source while it's not in use?

Just select the Events page for an at-a-glance view of what's going on.

- Device - the TV network address of a classroom
- Room Name - the name of the classroom that's currently linked to a media source
- Channel # - the TV channel currently displayed in the classroom
- CTRL - the level of control assigned to the classroom
  - Y - The classroom has the ability to control the source
  - N - The classroom can view, but not control the source
- Media Name - Name of the assigned media source

# ABC-Web Media Center - TV Power

The screenshot shows the ABC-Web TV Power interface. At the top, there are tabs for 'Select', 'Control', 'Events', and 'Power'. The current date is 08/01/05 and the time is 11:50:20. Below the tabs is a table with columns: Device, Room Name, Chan #, Day of Week, On Time, and Off Time. The table contains five rows of data. To the right of the table are controls for 'Event', including up and down arrows, a 'DELETE' button, and an 'ON' button. Below the table is a configuration section with a 'Room Name' list (B-Cast, Security, Zone2, Rm 513, Rm 514), an 'Add to Schedule' button, a 'Rooms' section with up/down arrows, a 'Day of Week' section with checkboxes for Monday through Sunday (Monday-Friday are checked), a 'Channel' field with the value 28, and 'Time On' (11:45) and 'Time Off' fields.

Device	Room Name	Chan #	Day of Week	On Time	Off Time
256	Zone1	33	MTWRF S	06:30	
512	Zone2	28	MTWRF	11:45	01:00
257	Admin	0	S	08:30	12:30
256	Zone1	0	MTWRF		16:30
261	Media Rm	16	MTWRF	07:30	

The ABC-Web TV Power page schedules TV power and channel operation for individual rooms, TV zones or all TVs. In the example above, Zone 1 TVs (Hallways) could be turned on and set to the school information channel, then Zone3 TVs (classrooms) turned on a little later, Zone3 sets (cafeteria TVs) could display news at 11:25, then turn off at 12:50 pm, than all TVs turn off at 4:45 pm.

## Create TV Schedule

- Select Room or Zone - by clicking on a Zone or a specific room. TVs in the school can be arranged into three zones, which are displayed at the top of the room list.
- Select Day Cycle - any combination of days can be checked.
- Channel - enter number if you want a specific channel to be displayed. Click the field, enter a number while it turns green, click the field again to change it to white.
- Time - enter a Time On and/or Time Off value; one or both can be entered.
- Schedule - Click the Schedule button to save the event.

## View Power Schedule

Press the Up/Down arrows at the upper right to view the list. To delete a schedule, click the line to highlight the row, then click Remove.

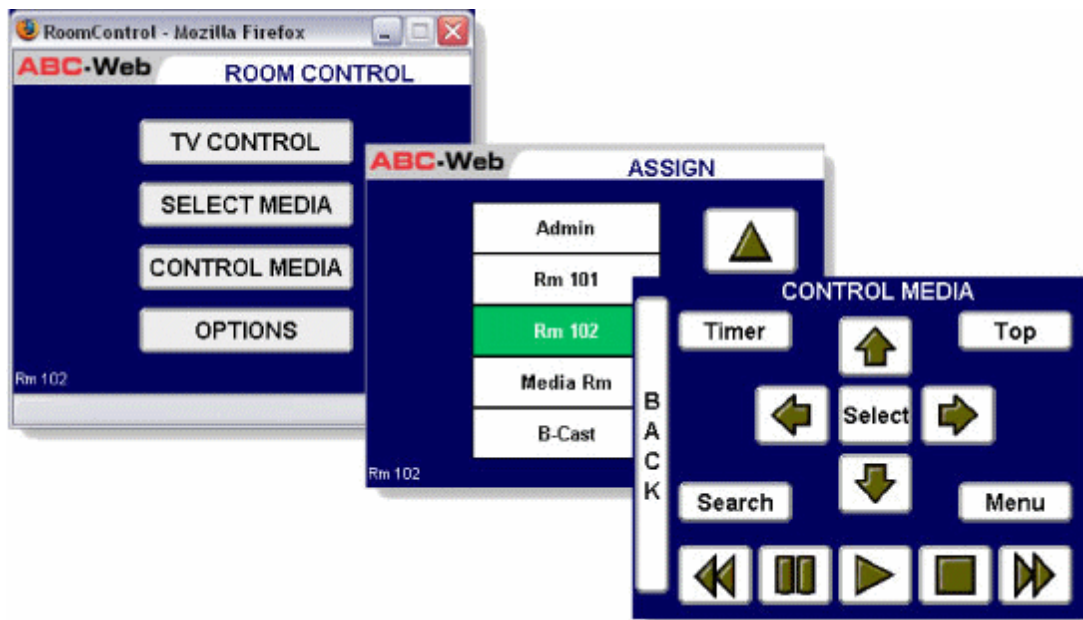
## Delete Event

To delete an event, highlight the event and press Delete.

## Schedule On/Off

The SCHED button at the top right is green when the schedule is active. You can temporarily disable the schedule by clicking it. Button will change to OFF.

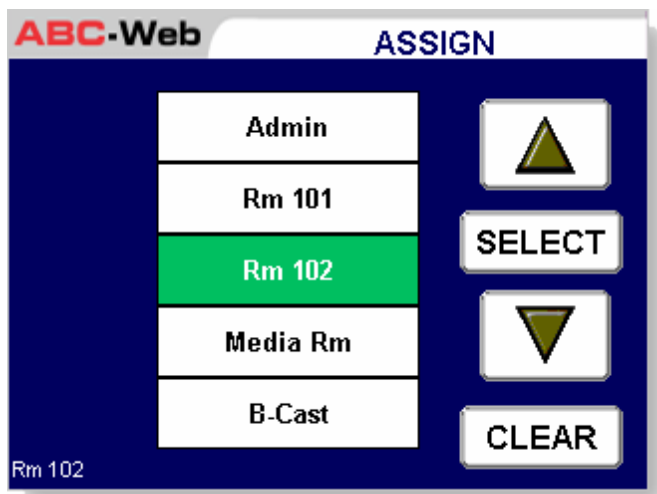
# ABC-Web Room Control



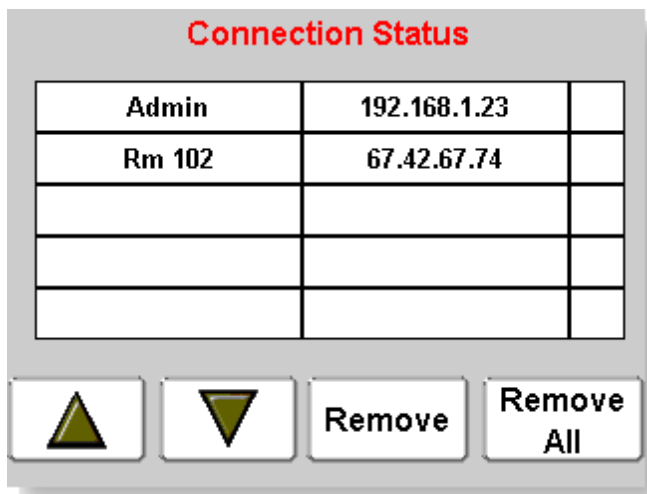
ABC-Web Room Control pages offer Web-based IP operation of the classroom TV, media selection, and control. The 320 x 240 pages deliver compact, intelligent control on networked PCs or wireless Web tablets and PDAs.

- [Assign](#) page links user to room
  - First-time user selects room from ABC-Net database
  - Automatically re-links user whenever page is accessed
- [TV Control](#) pages operates room TV with full power, channel, input and volume features
- [Select Media](#) page selects shared media resources using on-screen list
- [Control Media](#) pages controls selected media source
- [Options](#) page offers optional functions, including Security and Media alerts, and special Menu-selected functions

# ABC-Web Room Control - Assign



*Assign Page*



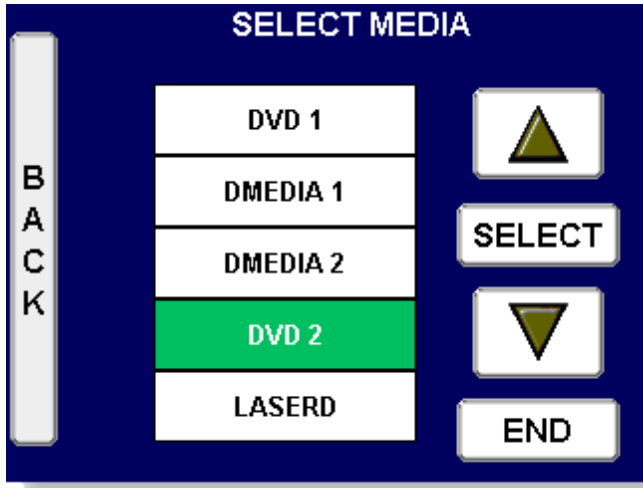
*Connection Page*

The Assign page appears when the Room Control pages are first accessed from the user's IP address. Use the arrow up/down buttons to search the list of for the desired room. Click on the room name to highlight the name, then click Select. This will link control from the IP address to the ABC-Net address of the room TV. From that point on, ABC-Web will automatically link the user's PC to the correct room whenever the Room Control pages is accessed.

Note - If the Room Control pages do not appear when accessed, your pop-up blocker may be turning them off. Go to your pop-up blocker's Always Allow Pop-Up From menu and select the ABC-Web address (shown as a "quad IP" address).

The ABC-Web administrator can monitor Room Control users from a Connection Status page, which lists the links between rooms and IP addresses. If incorrect room was selected for the user, or the room now uses a different IP address, the administrator can highlight and remove the old link. When the user re-connects to Room Control, the link can be re-assigned.

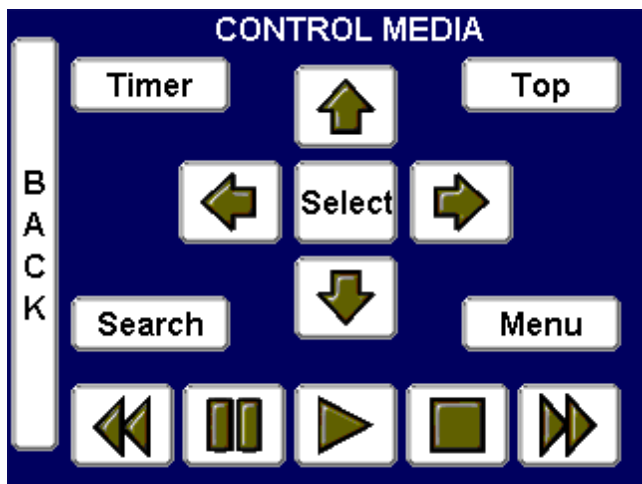
# ABC-Web Room Control - Select Media



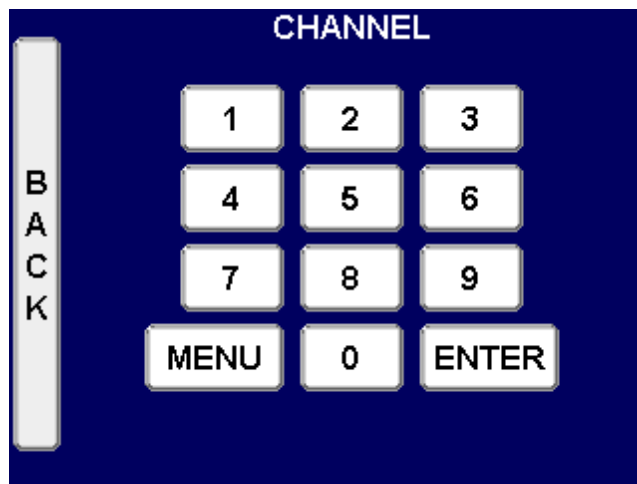
The Select Media page selects shared media resources using on-screen list.

- Press the Up and Down arrow keys to view the list of media sources
- Click on a media title to highlight in green
- Press Select to link the media to your room (TV will change channels automatically)
- Press End to unlink any media resources assigned to the room

# ABC-Web Room Control - Media Control



*TV Control Page*

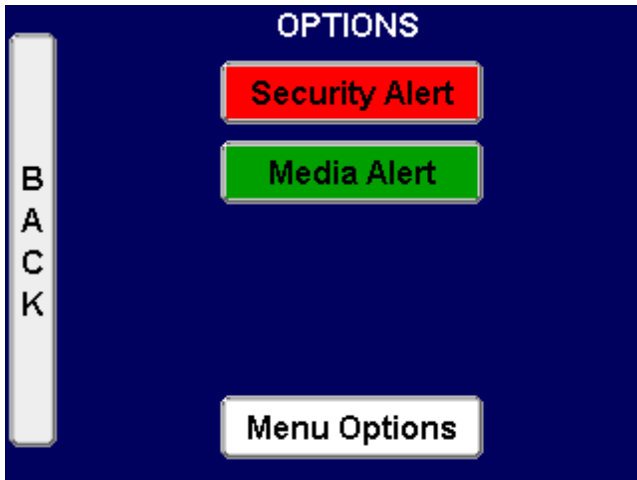


*TV Keypad Page*

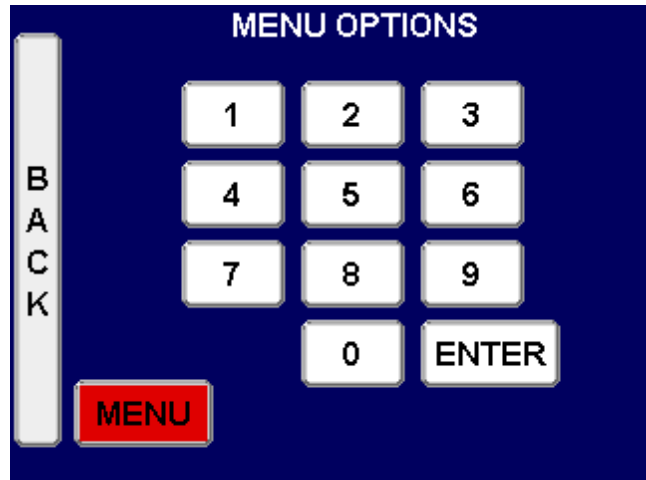
The Media Control will operate a currently assigned media source.

- Control functions are included for VCR- and DVD-style control
- The Search page offers chapter and frame search for laser disc players
  - Press Frame or Chapter search
  - Use keypad for numeric entry (number will be displayed on TV)
  - Press Enter to start search

# ABC-Web Room Control - Options



*Options Page*



*Menu Options Page*

The Options pages provide several options for the Room Control User.

- Security Alert sends a classroom alert signal to a security station
- Media Alert sends a request for help to the Media Center staff
- Menu Options includes a Menu key (same as on the ABC-Net IR remote) that can access special system functions

# Control Server Setup



The AMX NetLinx controller that serves as both a control and Web server for ABC-Web operation requires only one key setup function - creating a static IP address for the client's network. The ABC-Web software inside will define the rest of the system parameters.

## Static IP Address for Control Server and ICE-HE

The default IP address of the ABC-Web Control Server is 192.168.1.252. This will likely be a unique address, compatible with many networks. However, you should talk with the client's IT team and have them assign you a correct IP address, Subnet Mask, and Gateway for their network. While you're at it, also ask for a static IP address for the ICE-HE Ethernet Head End for the network - its default address is 192.168.1.251.

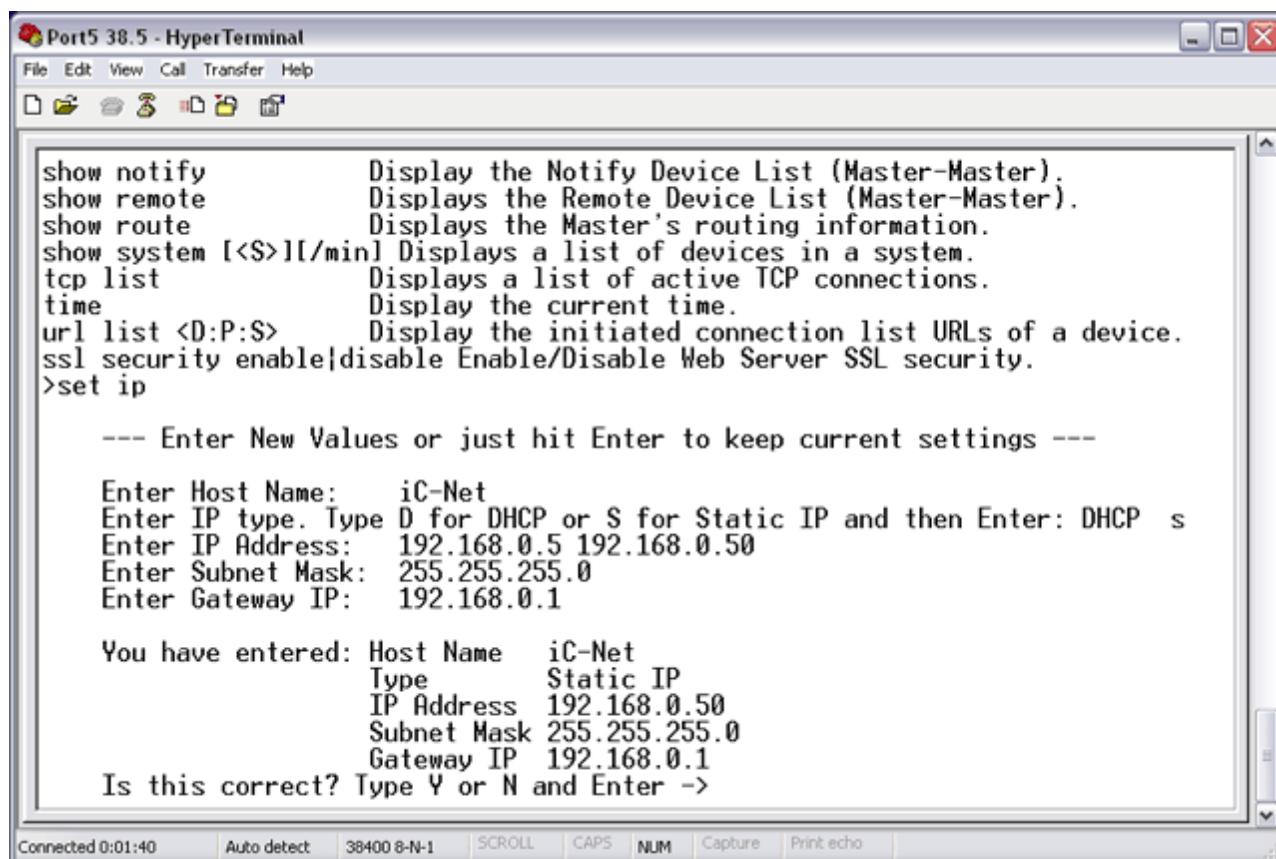
## Setting IP Address for Control Server

You'll need:

- A computer with RS-232 COM port or USB COM port
- A null modem cable (Wires 2 and 3 crossed, DB9 Female connectors at both ends).
- A Terminal program such as Windows HyperTerminal

Connecting:

- Connect the cable between the COM port and the Program port on the front of the Control Server
- Open the Terminal program and set it to the appropriate COM port, 38.4 Kb, 8 data bits, No parity, 1 stop bit and no handshaking. Normally, the Server's port is set to 38.4, it will automatically find the correct baud rate if it is different
- Enter a question mark (?) in terminal. A list of programming options will appear in Terminal as shown below
- Type ECHO ON in Terminal so you can see your entries



```
Port5 38.5 - HyperTerminal
File Edit View Call Transfer Help
[Icons]
show notify      Display the Notify Device List (Master-Master).
show remote     Displays the Remote Device List (Master-Master).
show route      Displays the Master's routing information.
show system [<S>][/min] Displays a list of devices in a system.
tcp list        Displays a list of active TCP connections.
time            Display the current time.
url list <D:P:S> Display the initiated connection list URLs of a device.
ssl security enable|disable Enable/Disable Web Server SSL security.
>set ip

--- Enter New Values or just hit Enter to keep current settings ---

Enter Host Name:   iC-Net
Enter IP type. Type D for DHCP or S for Static IP and then Enter: DHCP  s
Enter IP Address:  192.168.0.5 192.168.0.50
Enter Subnet Mask: 255.255.255.0
Enter Gateway IP:  192.168.0.1

You have entered: Host Name   iC-Net
                  Type       Static IP
                  IP Address  192.168.0.50
                  Subnet Mask 255.255.255.0
                  Gateway IP  192.168.0.1

Is this correct? Type Y or N and Enter ->
```

Connected 0:01:40   Auto detect   38400 8-N-1   SCROLL   CAPS   NUM   Capture   Print echo

## Setting IP Address

1. Enter the command "set ip" as shown above, then press Enter.
2. First, the server will display the current Host Name, which is set to iC Web. Press Enter to keep the name, or type another. The name only affects how the controller appears on the network and won't affect operation.
3. Next, the command Enter Type will appear, which is set at CR to Static. Press Enter to accept.
4. The next line will display the default Subnet Mask. Press Enter to accept, or type a new mask address and press Enter.
5. Next, the default Gateway is displayed. Press Enter to accept, or type a new address and press Enter.
6. Finally, the "Is this Correct?" question will appear. Press Y to accept, N to keep the old information, then press Enter to save.

## Setting ICE-HE IP Address

The default IP address for the ICE-HE when shipped is 192.168.1.251. The simplest way to change the IP address is to connect over the network, off-line router, or a "Turnaround" RJ-45 cable. If your computer is not set to the right group address (xxx.xxx.1.xxx), you'll need to temporarily set your IP address to a static IP with the same group.

- Enter the IP address of the ICE-HE into your browser.
- Click on the "ICE-HE IP Setup Tool" link at the bottom of the page
- Change the settings as needed.
- Add the new address in the ABC-Web Setup page.



# ABC-Net Terms

You'll run across several terms used throughout the manual.

Term	Definition
Cat5	Refers to Category 5 wiring and connectors. Control data can be networked through Cat5 twisted-pair wiring, independently from cabling that carries TV channels. ABC Media Retrieval Systems can operate over Cat5 and Cat3 rated wiring.
Control System	A smart controller that acts as the central brain for an iC system. Handles key functions such as operating media sources, accessing mobile pagers, and storing all the system settings in non-volatile memory.
Device	An electronic controller connected on the iC-Net network.
Device Number	The numeric network address for each device. Every device is assigned a unique device number, from 257 to 4000. Network addresses 1-255 are reserved for integration with control systems such as AMX.
Head End (HE)	A Head End Network Controller is a component that manages control communication over the RF and wired iC-Net networks.
iC-Net	A high-speed network that communicates to Contemporary Research devices. The network provides 2-way operation over both broadband RF cable and devices connected by Category 5 cable.
SmartZones	The 4000 possible iC-Net addresses are divided into 16 zones, each consisting of 255 devices and one <i>virtual device</i> . Zones 1 - 15 are used to control groups of iC-Net devices, while Zone 0 is often reserved for <i>control system</i> devices.
RF Coax	The technology used by cable companies, schools, and corporate facilities to broadcast multiple TV channels over a single cable. In abc2K systems, control information can be transmitted through the same cable as the TV channels.
TV Controllers	Used interchangeably with the term <i>device</i> , controls a local TV, monitor, or projector, receives commands from wireless remote and transmits data to the Head End.
Virtual Device	A virtual device address is used to command all 255 physical devices within an iC-net Zone. For example, 256 the virtual device address for Zone 1. If a command is sent to device 256, any device addressed between 257 and 511 will respond.

# ABC-Net SmartZones

Several ABC-Net commands, such as a live broadcast command can access all TVs, a group or zone, or a specific TV.

The zone command takes advantage of the iC-Net device structure, which divides the 4000 possible device numbers into 15 groups, or SmartZones. All the devices within each zone can be controlled simultaneously by sending a command to a single virtual device number that represents all the controllers in that zone.

For example, noting the zone chart below, if we send a TV Power On command to device #256, any TV controller numbered between 257 and 511 will respond. If we send a TV Power Off command to device #4095, all devices in the system will respond accordingly. This is an immensely powerful feature, because a zone or all TVs can respond at the same time.

Zone	First Device	Last Device	Virtual Device
1	257	511	256
2	513	767	512
3	769	1023	768
4	1025	1279	1024
5	1281	1535	1280
6	1537	1791	1536
7	1793	2047	1792
8	2049	2303	2048
9	2305	2559	2304
10	2561	2815	2560
11	2817	3071	2816
12	3073	3327	3072
13	3329	3583	3328
14	3585	3839	3584
15	3841	4000	3840
All Zones			4095

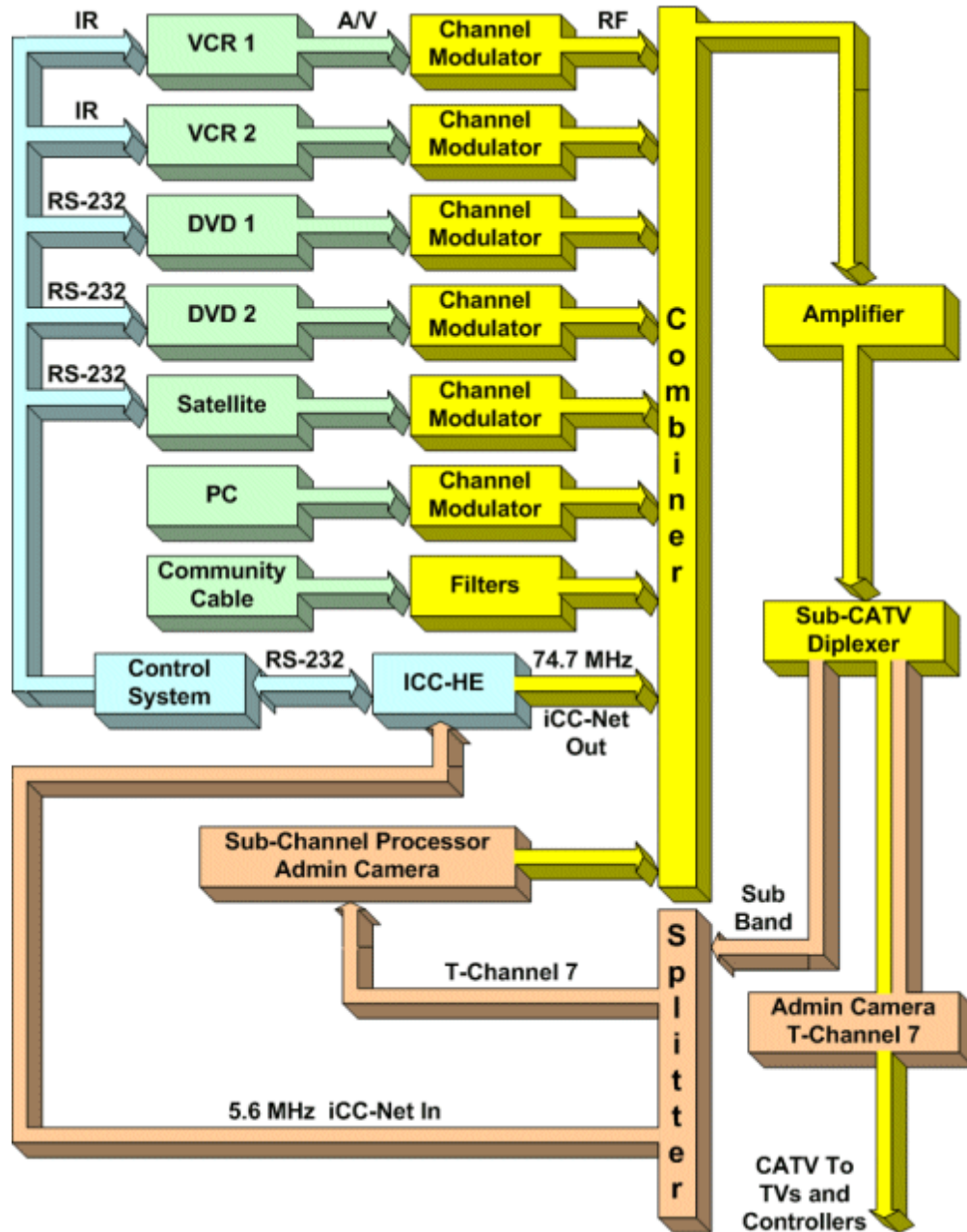
Tip: You've probably figured out that you never want to assign a virtual device number to an actual device in the system. If you assigned #1536 to a device, all the TV controllers in Zone 6 would respond every time you sent a command to that device.

## Sample System Map

One of the key planning steps for ABC-Net integrators is to create logical System Map, assigning device numbers to TV controllers so they fall into physical zones useful to the client. The device mapping could be sorted by grade or location; whichever suits the application.

ABC-Net Zone	Zone	Room	Device
1	W 1 <sup>st</sup> Floor		<i>256</i>
		W151	257
		W152	258
		W153	259
		W154	260
2	W 2 <sup>nd</sup> Floor		<i>512</i>
		W251	513
		W252	514
		W253	515
		W254	516
3	E 1 <sup>st</sup> Floor		<i>768</i>
		E151	769
		E152	770
		E153	771
		E154	772
4	E 2 <sup>nd</sup> Floor		<i>1024</i>
		E251	1025
		E252	1026
		E253	1027
		E254	1028
5	Gyms		<i>1280</i>
		G100	1281
		G150	1282
		G151	1283
6	Cafeteria		<i>1536</i>
		TV 1	1537
		TV 2	1538
7	Hallways		<i>1792</i>
		W1	1793
		W2	1794
		E1	1795
		E2	1795
15	Office		<i>3840</i>
		Admin	3841
		Media Center	3842
All Zones	All		<i>4095</i>

# ABC-Net RF Flow Diagram



The diagram above shows the structure of a typical ABC-Net coax control system. One of the key aspects for ABC-Net communication is to provide a forward and return (sub-channel) path for iCC-Net coax control data. Control data is sent out at 74.7 MHz and combined with other CATV channels. Return data from 2-way iCC-Net controllers is sent at a sub-band frequency, 5.6 MHz, received by a Sub-CATV diplexer ahead of the amplifier, and sent to the RF input of the Ethernet Head-End Controller.

There are two key filters added to the incoming cable signal before it is combined with the CATV system. A filter cuts out any RF noise at the 74.7 MHz frequency used by ICC-Net. The second filter, called a Low-Pass filter, blocks signals above channel 50, allowing a clean path for in-house media and live broadcast channels, which begin at Channel 55. There are other low-pass filters that allow higher cable channels, but the school channels will need to start at a higher frequency, usually 5 channels above the last cable channel.