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## Audio Visual Room Control System

### Overview

Audio and Visual room control systems have been available for many years and provide industrial grade solutions for controlling various AV aspects of conference room configurations from simply turning on displays, projectors, and video conferencing systems, to full integration with blinds lights etc. However, these solutions, although robust and reliable, require proprietary hardware and software, custom programming, are difficult to modify after installation, and can be expensive. KCG has developed a system that runs on Windows (7, 8, 8.1 or 10) and uses industry standard and easily accessible components to provide a room control system. It also has Active Directory integration, supports Bring Your Own Device, and requires no custom programming to implement. The system is totally set up from a web based GUI interface.

### Functionality

The system provides the same as well as enhanced functionality over current offerings from major AV solution providers. For example:

- 1) Capability to create and modify profiles for room configurations. Administrators simply choose what devices are in the room, define a profile (i.e. Video Conferencing, Presentation, etc) which units should be powered on, which inputs need to be selected, and any other configurations desired. Once configured it is placed on the home screen and all a user needs to do is touch or mouse click the icon with the configuration. – [See Figure 1](#)
- 2) Audio Controls are built in with speaker and microphone volume being controlled from just about any screen including mute.
- 3) Video Conferencing Control is achieved via touch or mouse click with standard functionality provided from the manufacturer such as, place a call, hang up a call, search directory, mute, camera movement (near and far side) and presets, etc. – [See Figure 2](#)
- 4) Presentation control, if desired, can be set up so that any input can be placed on any output at any time. For example, a presentation profile is created and then a teacher could decide they want a student's display on the front projector screen, agenda on the left screen, and their presentation on the right screen. This is all achieved via touch control on a phone, laptop, tablet, or PC. – [See Figure 3](#)

### Advantages

The major advantages over what is currently on the market are:

- 1) There are no proprietary hardware requirements. A PC with Windows 7, 8, 8.1, or 10 is needed with at least 1 available USB port and IIS loaded.
- 2) There are no licenses or fees for mobile devices or any other devices to connect and no software to load. Simply point a browser to the PC in the room.
- 3) Integrates with Active Directory. Simply add the correct user and user roles into the AD group for the room(s) they are authorized, put a favorite on their browser for the room and they can control the room based on the permissions granted.

- 4) Administrators and Help Desk support can see every room in their enterprise with this software, they can also perform any task for the room remotely and fix any issues on the fly. – See Figure 4
- 5) There is no custom programming so if a display or unit needs to be replaced in several years, all that is needed to be done is tell the system which display or unit was replaced, download the manufacturers commands (if not already in the system) and the system is up and running.
- 6) Integrates with any AV device that supports TelNet, RS-232, Relay Port, or IR.
- 7) Cost is approximately one third of other systems.

## Control

Control of the units is can be achieved by any combination of:

- 1) Telnet
- 2) RS-232
- 3) Relay Port
- 4) IR

## Figures

Figure 1

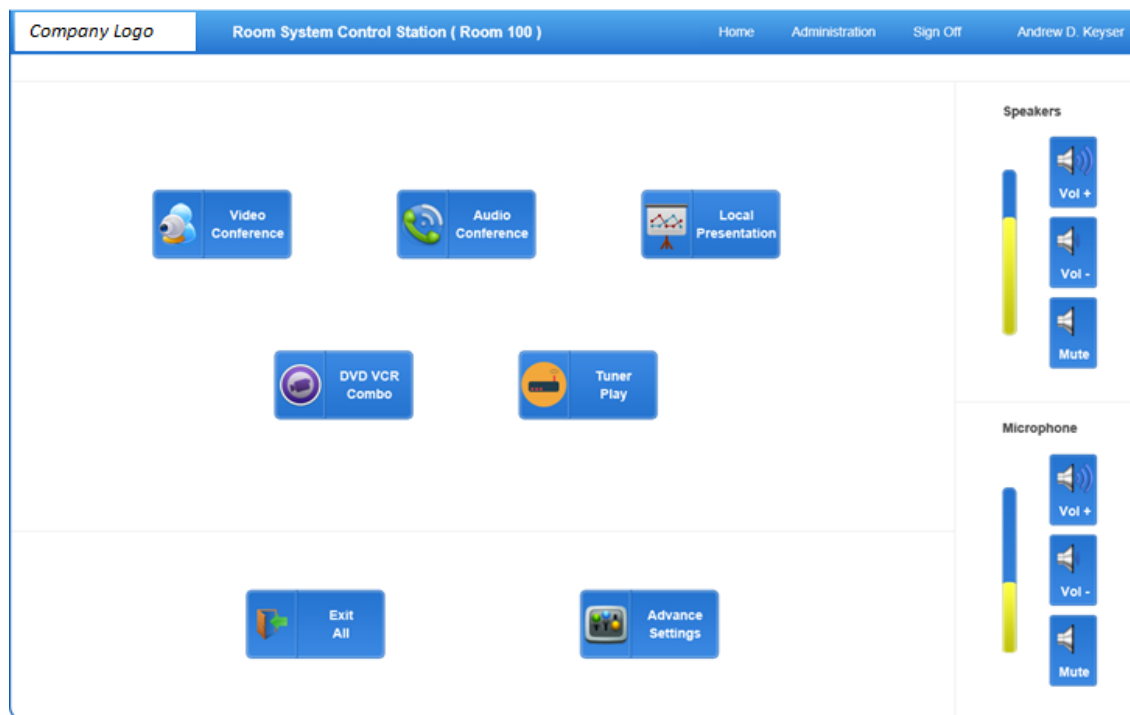




Figure 2

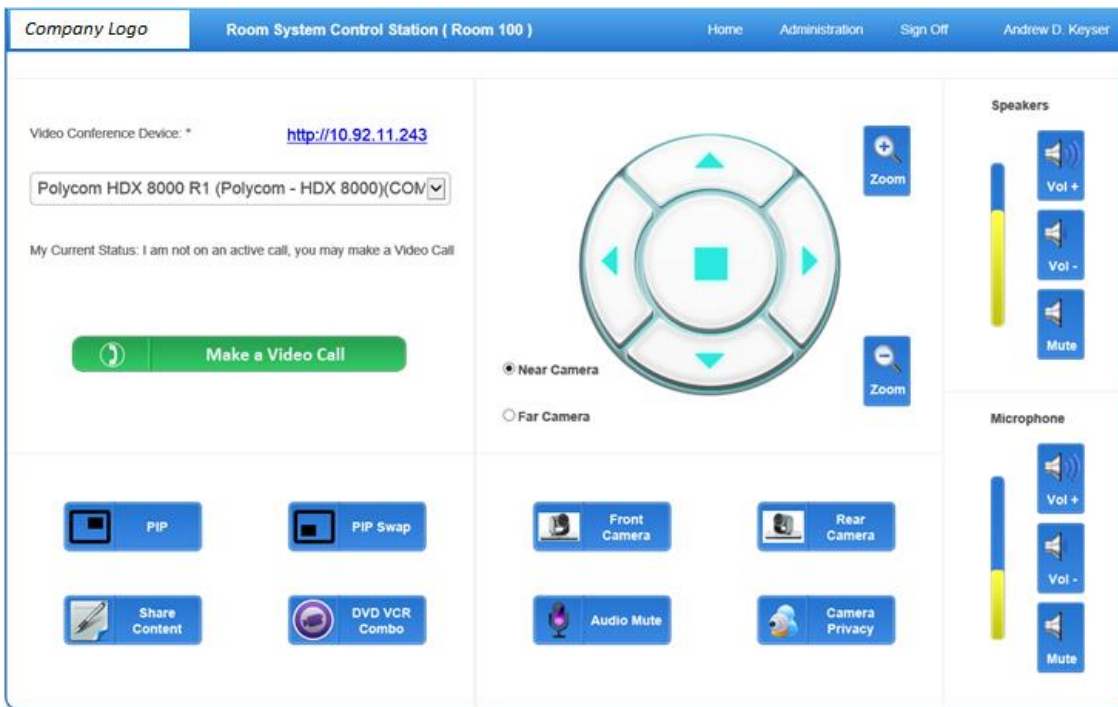


Figure 3

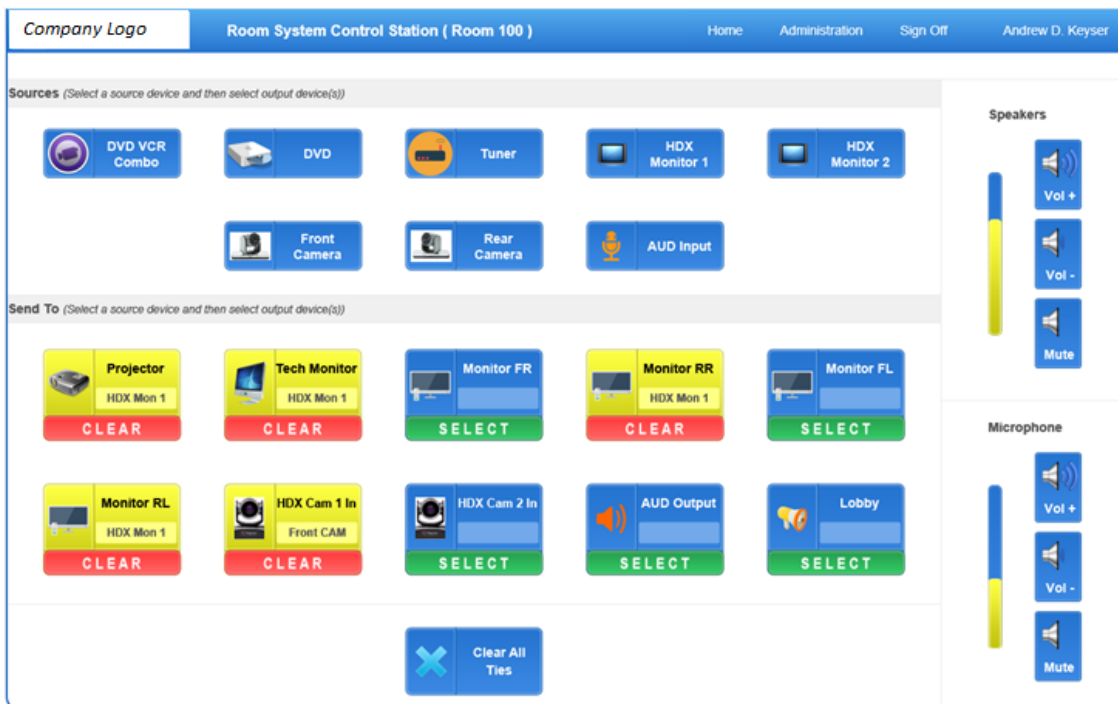




Figure 4

The screenshot displays a control interface for Room 100. At the top, a blue navigation bar includes the company logo, the title "Room System Control Station ( Room 100 )", and links for "Home", "Administration", "Sign Off", and the user name "Andrew D. Keyser".

The main area is divided into two sections: "Room 100" and "Rack".

**Room 100 Section:**

- Monitor 2:** Off, Input: HDMI 1 (Red indicator)
- Monitor 1:** On, Input: HDMI 1 (Green indicator)
- Front Camera (1):** On (Green indicator)
- Main Projector:** On, Input: HDMI 1 (Green indicator)
- Projector Screen:** Down
- Monitor 4:** Off, Input: HDMI 1 (Red indicator)
- Monitor 3:** On, Input: HDMI 1 (Green indicator)
- Rear Camera (2):** Off (Red indicator)

**Rack Section:**

- Matrix Switcher (Green indicator)
- Dist Amplifier (Green indicator)
- Polycom Group 700 (Green indicator)
- Polycom SoundStructure C15 (Green indicator)
- Clown 2 Channel Amp (Green indicator)

At the bottom of the interface, there are three large buttons: "End Video Conference" (red), "Audio Conference" (blue), and "Meeting Profile" (blue).