SECTION 27 41 16.28

INTEGRATED AUDIO VIDEO SYSTEMS AND EQUIPMENT FOR CONFERENCE ROOMS

Product Specified in this section:

> *Crestron CCS-UC-1*
> *Crestron CCS-UC-1-AV KIT*

Table of Contents

SECTION 27 41 16.28

INTEGRATED AUDIO VIDEO SYSTEMS AND EQUIPMENT FOR CONFERENCE ROOMS

Specifier: The Specifier/Design Professional is responsible for the accuracy of all project specifications, including system application and coordination with related sections. This guide specification is provided as a convenience and requires editing to match actual project requirements. CRESTRON ELECTRONICS, INC. SHALL NOT BE LIABLE FOR ANY DAMAGES ARISING OUT OF THE USE OF ANY OF ITS GUIDE SPECIFICATIONS. For Crestron design assistance and design review please contact Sales Support Services Department at   800.237.2041 or techsales@crestron.com.

PART 1   GENERAL

1.1   SUMMARY

A.   Section Includes:

1.   An enterprise level networked tabletop conference system.

2.   Upon final installation and commissioning the system will provide:

    a.   Voice Calling & Audio Conferencing

    b.   BYOD Multimedia Presentation Capability

    c.   Videoconferencing & Web Collaboration Capability

    d.   Workplace Integration

B.   Related Requirements

1.   Section 12 24 13 — Roller Window Shades

2.   Section 23 09 23 — Direct Digital Control System for HVAC

3.   Section 25 08 00 — Commissioning of Integrated Automation

4.   Section 25 10 00 — Integrated Automation Network Equipment

5.   Section 25 11 13 — Integrated Automation Network Servers

6.   Section 25 13 13 — Integrated Automation Control and Monitoring Network Supervisory Control

7.   Section 25 13 16 — Integrated Automation Control and Monitoring Network Integration Panels

8.   Section 25 13 19 — Integrated Automation Control and Monitoring Network Interoperability

9.   Section 25 15 16 — Integrated Automation Software for Control and Monitoring Networks

10.   Section 25 50 00 — Integrated Automation Facility Controls

11.   Section 25 90 00 — Integrated Automation Control Sequences

12.   Section 26 09 43.13 — Digital-Network Lighting Controls

13.   Section 26 05 00 — Common Work Results for Electrical

14.   Section 26 09 23 — Lighting Control Devices

15. Section 26 09 36 — Modular Dimming Controls

16. Section 26 09 43 — Network Lighting Controls

17. Section 27 15 00 — Communications Horizontal Cabling

18. Section 27 41 00 — Audio-Video Systems

19. Section 27 41 13 — Architecturally Integrated Audio-Video Equipment

20. Section 27 41 16 — Integrated Audio-Video Systems and Equipment

1.2   REFERENCES

A.   Abbreviations and Acronyms

1.   BYOD – Bring Your Own Device

2.   UI – User Interface

3.   AV – Audio Video

PART 2   PRODUCTS

2.1   TABLETOP CONFERENCE SYSTEM

A.   Manufacturers:

1.   Basis-of-Design Manufacturer: Subject to compliance with requirements, provide products of **Crestron Electronics, Inc., Rockleigh, NJ 07647**, Phone 800-237-2041, Fax: 201-767-1903, www.crestron.com with the following components and characteristics.

B.   Basis of Design Product:

1.   Crestron CCS-UC-1

2.   Crestron CCS-UC-1-AV KIT

Specifier Note:
Multiple CCS-U-1 models are offered to accommodate different applications and budgets. The base unit (CCS-UC-1) supports full SIP VoIP speakerphone, Bluetooth, and USB Audio capabilities. The video package (CCS-UC-1-AV KIT) adds capabilities for multimedia presentation and videoconferencing, and includes a USB camera. Both models are powerable using PoE+, and versions of each are also offered with a 100-240V universal power pack included (CCS-UC-1 W/PS KIT & CCS-UC-1-AV W/PS KIT). All models come complete with all required cables.

C.   Tabletop Conference System Composition

1.   The Tabletop Conference System shall be composed of the following system components:

a.   User Interface

b.   Microphone

c.   Speaker

d.   Optional external microphone connection

e.   HDMI input and output

f.   USB camera and audio ports

g.   LAN ports

D.   External Device and System Integration

1.   Laptop running 3rd party soft codec

2.   Microsoft Exchange Server

3.   Crestron Fusion Cloud and Pinpoint App

4.   SIP compliant phone system

5.   Mobile phone with Bluetooth

6.   HDMI wired source device

7.   Wired or Wireless Ethernet video connection

Specifier: Only the CCS-UC-1-AV KIT version includes video presentation features. Please see CCS-UC-1 Spec. Sheet Packages table for more information.

E.   Video Presentation

1.   The Tabletop Conference System shall include an HDMI input connection for connection of a full-motion HD 1080p60 AV source to the room display.

2.   The Tabletop Conference System shall include a built-in Ethernet wired or wireless presentation gateway. In wireless Ethernet mode a video source may connect to the system wirelessly.

3.   The Tabletop Conference System shall include a USB HD camera for integration with BYOD laptop with web video conferencing software.

4.   The HDMI and presentation gateway shall be internally routed to the Tabletop Conference System's HDMI output for connection to the room display.

Specifier Note:
Videoconferencing & Web Collaboration
•   Mercury can turn any space into a videoconference room by simply connecting a laptop running Skype® for Business, Cisco WebEx®, GotoMeeting®, Slack®, or another web conferencing or UC application.
•   Connect the laptop via USB and Mercury provides enhanced audio along with a high-definition view of the whole room through the included USB camera.
•   No more huddling around a laptop to interact and share content with remote participants. Connect the laptop's HDMI output to allow the whole room to view content and camera images on the main display.
Please see link for more details: http://www.crestron.com/products/model/CCS-UC-1

F.   Speakerphone

1.   The Tabletop Conference System shall include full-duplex speakerphone support for the following:

a.   VoIP systems

b.   Bluetooth paired mobile device

c.   Laptop Softphone software

G.   Room Occupancy Detection

1. The Tabletop Conference System shall include built-in room occupancy sensing capabilities using motion detection and voice activity for determining occupied or unoccupied status state.

2. Controlled devices may be powered down in an unoccupied room state.

3. Through software management systems an unoccupied room may be made available on the management system calendar.

H. Touch Screen User Interface

1. The Tabletop Conference System shall include an integrated touch screen user interface with the following capabilities:

   a. Dialing voice calls

   b. Answering voice calls

   c. Muting microphone(s)

2. The Tabletop Conference System shall support integration with Microsoft Exchange and Crestron Fusion Cloud software management systems. Through software management system the following user interface features shall be supported:

   1) Manage room schedule

   2) View meeting progress showing time remaining

   3) Extend meeting end time

   4) Schedule new meeting

   5) Look up contacts

I. Mute Control

1. The Tabletop Conference system shall include a mute control with bright bi-color indicator for mute state visibility.

J. Network Management

1. The Tabletop Conference System shall support:

   a. Cloud-based provisioning enabling complete network configuration in advance of hardware installation, with touchless updates following installation.

   b. Individual configuration using a computer web browser.

   c. Crestron Fusion Cloud management enables monitoring and logging of room and equipment usage, as well as centralized help desk support.

K. Network Security

1. The Tabletop Conference System shall support advanced security features including:

   a. 802.1x authentication

   b. Active Directory credential management

   c. LDAP directory management

   d. SRTP, SSH, TLS, and HTTPS.

e. Secondary LAN port:

1) VoIP or built-in presentation gateway traffic may be isolated on a secondary network

2.2 HARDWARE SPECIFICATIONS

A. Communications

1. Ethernet: 10/100 Mbps (x2), auto-switching, auto-negotiating, auto-discovery, full/half duplex, TCP/IP, UDP/IP, CIP, DHCP, SSL, TLS, SSH, SFTP (SSH File Transfer Protocol), SRTP, IEEE 802.1X, Active Directory authentication, LDAP, digest access authentication, password login, HTTPS secure provisioning, IEEE 802.3at Type 2 compliant

2. VoIP: Open SIP, SDP, IETF SIP (RFC 3261 & companion RFCs), DTMF tone generation (RFC 2833 & in-band), low-delay audio packet transmission, adaptive jitter buffers, packet loss concealment

3. Bluetooth: Bluetooth 4.0 device pairing for wideband speech (HFP) and multimedia audio streaming (A2DP), proximity detection beacon

4. USB Device: USB 2.0 wired interface for computer running web conferencing software or USB Audio

5. USB Host: USB 2.0 for camera input

6. RS-232: 2-way display device control and monitoring up to 115.2k baud with software handshaking

7. IR/Serial: 1-way display device control via infrared up to 1.1 MHz or serial TTL/RS-232 (0-5 Volts) up to 19.2k baud

8. HDMI: HDCP 1.4, EDID, CEC

9. Presentation gateway: connects to mobile devices via wired or wireless Ethernet

10. Mic Pod: A2B bus protocol, single master, multiple slave; synchronous data, multichannel I2S/TDM to I2S/TDM

B. Audio

1. Codec Support: G.711, G.722, G.729

2. AEC: Limes Audio TrueVoice acoustic echo cancellation, automatic mic mixing, automatic gain control, and dynamic noise reduction; full-duplex IEEE 1329 Type 1 compliant

3. Microphones: Quad mic array with (4) cardioid electret elements; Pickup Range: 20 ft. (6 m) typical

4. Speaker: Full range speaker

5. Amplifier Power: 11 Watts maximum

6. Output Volume: 95 dB SPL at 0.5 m

7. Frequency Response: 90 Hz to 22 kHz

C. Video

1. Content Input Signal Types: HDMI (DVI & Dual-Mode DisplayPort compatible with separate adaptor), built-in presentation gateway

2. Pass-through Camera Input/Output Signal Type: USB

3. Display Output Signal Types: HDMI (DVI compatible with separate)

4. Content Input Resolutions: Up to 1920x1080@60Hz (1080p60)

5. Display Output Resolutions: 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60)

D. Occupancy Sensor

1. PIR Detection Range: 6 ft. (1.83 m) in front of touch screen, wakes system (touch screen and video display) and reports room occupancy to Crestron Fusion

2. Voice Activity Detection: Keeps room occupancy, touch screen, and display active as long as speech is detected through the microphones

E. Touch Screen

1. Display Type: TFT active matrix color LCD

2. Size: 7 inch (178 mm) diagonal

3. Aspect Ratio: 16:9 HD 720

4. Resolution: 1280 x 720 pixel

5. Touch Screen: Capacitive, multi-touch capable

6. Character Support: Unicode UTF-8

7. Language Support: Arabic, Chinese (Simplified), Chinese (Traditional), Czech, Danish, Dutch (NL), English (UK), English (US), Finnish, French (FR), German (DE), Greek, Hebrew, Hungarian, Italian (IT), Japanese (JP), Korean, Norwegian (NO), Polish, Portuguese, Portuguese (Brazilian), Romanian, Russian (RU), Slovak, Spanish (ES), Swedish, Thai

F. Buttons & Indicators

1. Mic Mute Symbol & Light Bar: (2) Capacitive "buttons" with bi-color LEDs, either button toggles between mute and unmute, the symbol LED blinks green when the unit is powering up, all LEDs illuminate red when the mic is muted (and a red border appears around the touch screen display), all LEDs illuminate green when the mic is unmuted if a USB device is connected or a SIP call is active

G. Connectors

1. G: (1) 6-32 screw; Chassis ground lug

2. LAN: (1) 8-pin RJ45 female; 10Base-T/100Base-TX Ethernet port; PoE+ PD port

3. AUX: (1) 8-pin RJ45 female; 10Base-T/100Base-TX Ethernet port; Alternate LAN connection for separate SIP or presentation gateway network.

4. IR: (1) 3.5 mm mini-phone jack; IR output port for display device control.

5. COM: (1) 3.5 mm TRS mini phone jack; Bidirectional RS-232 port for display device control.

6. USB B: (1) Micro-USB Type B female USB 2.0 device port

7. HDMI OUT: (1) 19-pin Type A HDMI female; Digital video/audio output for display device.

8. HDMI IN: (1) 19-pin Type A HDMI female; Digital video/audio input for presentation content source

9. MIC POD 1 – 2: (2) RJ9 4P4C female; For connection of up to two microphone pods.

10. USB/CAM: (1) USB Type A, female; USB 2.0 host port for camera.

11. 24V DC 2.5A: (1) 2.1 x 5.5 mm DC power connector; 24 Volt DC power input for universal power pack.

H. Power

1. Power Pack: Input: 100-240 Volts AC, 50/60 Hz

2. Power over Ethernet: IEEE 802.3at Type 2, Class 4 (25.5 W) PoE+ Powered Device

3. Power Consumption: 20 Watts typical

I. Environmental

1. Operational Temperature: 32° to 95° F (0° to 35° C)

2. Storage Temperature: -4° to 160° F (-20° to 70° C)

3. Humidity: 5% to 95% RH (non-condensing)

4. Heat Dissipation: 123 BTU/hr

J. Compliance

1. UL 60950-1, FCC Part 15 Class A, Japan MIC/VCCI Class A, ICES-003 Issue 5 Class A, EN55022:2010 Class A, AS/NZS CISPR22:2010 Class A, VCCI Class A, EN55024:2010, EN61000-3-2:2014, EN61000-3-3:2013, EN60950-1:2006, EN60950-A2:2013, EN60950-A11:2009, EN60950-A1:2010, EN60950-A12:2011, FCC 15.247, RSS 210 Issue 8, RSS Gen Issue 4, ETSI EN 301 489-1, ETSI EN 301 489-17, AS/NZS 4268:2012, NZ Telepermit, Australia A&C Tick, RoHS compliant

K.

2.3 INTEGRATION

A. Communication

1. Tabletop Conference System shall connect to user network(s) via built-in Ethernet ports.

PART 3 EXECUTION

Not Used

END OF SECTION 25 15 16