SECTION 27 41 16

INTEGRATED AUDIO-VIDEO SYSTEMS AND EQUIPMENT

GUIDE SPECIFICATION

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Specifier: Please see PART 4 for a listing of products specified in this Guide Specification.

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# GENERAL

NOT USED in this Guide Specification. Specifier shall Specify PART 1 administrative and procedural requirements as needed.

# PRODUCTS

## Wireless Presentation Receiver 1

Specifier Note:

*The AirMedia® Receiver 3000 (AM-3000-WF) enables secure wireless collaboration in the modern digital workspace. Easy to deploy and manage, install the Receiver in conference rooms, huddle rooms, lounges, lobbies, or almost any space to establish a productive meeting environment.*

### Basis of Design

#### Crestron AM-3000-WF

Specifier Note:

AM-3000-WF
https://www.crestron.com/Products/Workspace-Solutions/Wireless-Presentation-Solutions/Crestron-AirMedia-Presentation-Systems/AM-3000-WF

### Device Definition

#### Wireless Presentation Receiver with the following capabilities:

##### Low profile form factor allows for mounting beside, beneath, or behind a display device

##### Content presentation from devices such as laptops, smartphones, and tablet devices via built in Wi‑Fi® network capabilities or via an external Wi‑Fi® wireless network

##### Support for simultaneous content presentation up to four (4) sources

##### Customizable welcome screen with instructions on how to connect to present

##### Space availability and meeting detail display support when integrated with calendar software

##### Pairing with touch screen from same manufacturer enables the following:

###### Manual controls for input source selection, display power on/off, and display volume and mute

###### Additional view of room schedule and meeting details

###### Display or digital signage on/off based on room occupancy or vacancy when paired with Power over Ethernet occupancy sensor from same manufacturer

##### Support for proprietary device provisioning and management service from same manufacturer

##### Support for a multitude of third-party digital signage applications

##### Support for proprietary room monitoring enterprise management service from same manufacturer

##### Setup via web browser, or proprietary provisioning services outlined in 2.1.2.1.7 and 2.1.2.1.9

##### Support for network security protocols such as 802.1x, Active Directory® authentication, and AES content encryption

##### Connection with wireless adapter from same manufacturer that interfaces with presentation device through USB‑C®

### Device Architecture

#### Environmental

##### Temperature: 32° to 104°F (-0° to 40° C)

##### Humidity: 10% to 90% RH (non-condensing)

##### Heat Dissipation: 46.0 BTU/hr

#### Construction

##### Chassis: Plastic, black finish, with (4) integrated mounting holes, vented sides

##### Mounting: Freestanding, surface mount

#### Dimensions

##### Height: 1.21 in. (31 mm)

##### Width: 5 in. (127 mm)

##### Depth: 5 in. (127 mm)

#### Weight

##### 11.64 oz (330 g)

### Functions

#### Communications

##### Ethernet

###### 100/1000 Mbps

###### Auto-switching

###### Auto-negotiating

###### Auto-discovery

###### Full/half duplex

###### TCP/IP

###### UDP/IP

###### DHCP

###### SSL

###### TLS (TLS 1.3 currently not supported)

###### SSH

###### SFTP (SSH File Transfer Protocol)

###### IEEE 802.1x

###### Active Directory authentication

###### HTTPS web browser setup and proprietary cloud-based device setup and management service support

######  802.3af compliant

##### Proprietary Wireless Presentation

###### Via Ethernet: IPv4, mDNS, TLS, AES

Specifier Note:

*Wireless presentation requires a wired network connection between the AM-3000-WF and an external Wi-Fi wireless access point (not included). Laptops may alternately connect to Proprietary Wireless Presentation platform using a wired Ethernet connection. Full-motion video performance is dependent upon the performance of the network and the sending device. Computer client software and mobile device apps are available for download at* [*www.crestron.com/airmedia*](http://www.crestron.com/airmedia)*.*

###### Via wireless access point: IEEE 802.11/b/g/n/ac/ax, 2.4 GHZ or 5 GHz.

##### USB Device: USB 3.0 for computer console (installer setup and firmware update)

##### HDMI Output: HDCP 2.2, EDID, CEC; supports management of HDCP and EDID

#### Proprietary Wireless Presentation

##### OS Support: Apple® iOS®, Android™, Windows 10, Windows 11, macOS®, Chrome OS™

##### Video Frame Rate: Up to 30 fps, audio supported except on Android devices

##### Output resolutions: 640x480@60Hz, 800x600@60Hz, 1024x768@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x800@60Hz, 1366x768@60Hz, 1440x900@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60)

###### All video inputs will be scaled to the selected HDMI output resolution.

##### Bitrate Peak: 0.25 to 8.5 Mbps, variable depending on content complexity

##### Bitrate Average: 1.4 Mbps typical

###### The bitrate for Apple native mirroring may deviate from above depending on the OS version and content.

###### The Proprietary Wireless Presentation Extension for the Google Chrome browser relies on web technologies for screen sharing that are built-in to the web browser. Performance variations with motion video (quality and frame rate) may occur based upon the encoding capabilities of the Chrome OS device and the nature of the content being displayed (i.e., high-motion video).

##### Audio Format: Stereo

#### Video

##### Input Signal Types: Those from proprietary wireless presentation format with support for simultaneous display of up to four (4) devices

##### Maximum Input Resolutions

###### Presentation: 1920x1080@30Hz (1080p30)

###### With proprietary wireless presentation adapter device: 3840x2160@30Hz (4K30)

###### All video inputs will be scaled to the selected HDMI output resolution.

##### Output Signal Type: HDMI (DVI compatible when paired with an appropriate adapter or interface cable)

##### HDMI Output Resolutions: 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x800@60Hz \*, 1366x768@60Hz \*, 1440x900@60Hz \*, 1600x900@60Hz \*, 1600x1200@60Hz, 1680x1050@60Hz \*, 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 3840x2160@30Hz (2160p30), 3840x2160@50Hz (2160p50), 3840x2160@60Hz (2160p60)

###### Resolutions followed by \* denote reduced blanking option for given resolution

###### All video inputs will be scaled to the selected HDMI output resolution

##### Background & Logo File Support: GIF, JPEG, PNG

#### Audio

##### Input Signal Type: Via proprietary wireless presentation

##### Output Signal Type: HDMI

##### Input/Output Format: 2 channel LPCM

Specifier Note:

*Audio input signals are passed to the output without any processing. Volume control capability requires a display device with discrete volume, up, down, and mute commands available via CEC, IP, IR, or RS-232.*

### Connectors

#### microSD: For future use

#### HDMI OUTPUT: (1) HDMI Type A connector; HDMI digital video/audio output (DVI compatible when paired with an appropriate adapter or interface cable)

#### USB

##### (2) USB Type A connectors

##### (1) USB Type B connector

###### USB 3.0 device port for computer console

#### LAN PoE+: (1) 8-pin RJ-45 connector; 100Base-TX/1000Base-T Ethernet port and PoE+ Class 4

#### 24 VDC 1.25 A: (1) 2.1 x 5.5 mm DC power connector; 24 VDC power input

### Controls and Indicators

#### PWR: (1) White LED, indicates operating power supplied via the local power pack or PoE+

#### RESET: (1) Recessed push button for hardware reset

#### SETUP

##### (1) Recessed push button for onscreen IP address display and for pairing the device to presentation adapter by same manufacturer

##### (1) White LED, indicates pairing status

#### ONLINE: (1) White LED, indicates control system connection

#### HDMI OUT: (1) White LED, indicates HDMI signal presence at the HDMI output

#### microSD: For future use

#### LAN PoE+: (2) LEDs, green LED indicates Ethernet link status, amber LED indicates Ethernet activity

### Power

#### Power over Ethernet: IEEE 802.3af Class 4 Powered Device

#### Power pack (sold separately)

##### Input: 100-240 VAC, 50/60 Hz

##### Output: 1.25 A @ 24 VDC

#### Power Consumption: 13.5 W (typical)

### Compliance

#### Regulatory Model: M202018001

#### UL® Listed for US & Canada, CE, IC, FCC Part 15 Class B digital device

## Wireless Presentation Receiver 2

Specifier Note:

*The AirMedia® Receiver 3000 (AM-3000-WF-I) enables secure wireless collaboration in the modern digital workspace. Easy to deploy and manage, install the Receiver in conference rooms, huddle rooms, lounges, lobbies, or almost any space to establish a productive meeting environment.*

### Basis of Design

#### Crestron AM-3000-WF-I

Specifier Note:

AM-3000-WF-I
https://www.crestron.com/Products/Workspace-Solutions/Wireless-Presentation-Solutions/Crestron-AirMedia-Presentation-Systems/AM-3000-WF-I

Specifier Note:

The AM-3000-WF-I features a Wi-Fi radio that has a lower transmitter power output compared to the AM-3000-WF.

### Device Definition

#### Wireless Presentation Receiver with the following capabilities:

##### Low profile form factor allows for mounting beside, beneath, or behind a display device

##### Content presentation from devices such as laptops, smartphones, and tablet devices via built in Wi‑Fi® network capabilities or via an external Wi‑Fi® wireless network

##### Support for simultaneous content presentation up to four (4) sources

##### Customizable welcome screen with instructions on how to connect to present

##### Space availability and meeting detail display support when integrated with calendar software

##### Pairing with touch screen from same manufacturer enables the following:

###### Manual controls for input source selection, display power on/off, and display volume and mute

###### Additional view of room schedule and meeting details

###### Display or digital signage on/off based on room occupancy or vacancy when paired with Power over Ethernet occupancy sensor from same manufacturer

##### Support for proprietary device provisioning and management service from same manufacturer

##### Support for a multitude of third-party digital signage applications

##### Support for proprietary room monitoring enterprise management service from same manufacturer

##### Setup via web browser, or proprietary provisioning services outlined in 2.1.2.1.7 and 2.1.2.1.9

##### Support for network security protocols such as 802.1x, Active Directory® authentication, and AES content encryption

##### Connection with wireless adapter from same manufacturer that interfaces with presentation device through USB‑C®

### Device Architecture

#### Environmental

##### Temperature: 32° to 104°F (-0° to 40° C)

##### Humidity: 10% to 90% RH (non-condensing)

##### Heat Dissipation: 46.0 BTU/hr

#### Construction

##### Chassis: Plastic, black finish, with (4) integrated mounting holes, vented sides

##### Mounting: Freestanding, surface mount

#### Dimensions

##### Height: 1.21 in. (31 mm)

##### Width: 5 in. (127 mm)

##### Depth: 5 in. (127 mm)

#### Weight

##### 11.64 oz (330 g)

### Functions

#### Communications

##### Ethernet

###### 100/1000 Mbps

###### Auto-switching

###### Auto-negotiating

###### Auto-discovery

###### Full/half duplex

###### TCP/IP

###### UDP/IP

###### DHCP

###### SSL

###### TLS (TLS 1.3 currently not supported)

###### SSH

###### SFTP (SSH File Transfer Protocol)

###### IEEE 802.1x

###### Active Directory authentication

###### HTTPS web browser setup and proprietary cloud-based device setup and management service support

######  802.3af compliant

##### Proprietary Wireless Presentation

###### Via Ethernet: IPv4, mDNS, TLS, AES

Specifier Note:

*Wireless presentation requires a wired network connection between the AM-3000-WF and an external Wi-Fi wireless access point (not included). Laptops may alternately connect to Proprietary Wireless Presentation platform using a wired Ethernet connection. Full-motion video performance is dependent upon the performance of the network and the sending device. Computer client software and mobile device apps are available for download at* [*www.crestron.com/airmedia*](http://www.crestron.com/airmedia)*.*

###### Via wireless access point: IEEE 802.11/b/g/n/ac/ax, 2.4 GHZ or 5 GHz.

##### USB Device: USB 3.0 for computer console (installer setup and firmware update)

##### HDMI Output: HDCP 2.2, EDID, CEC; supports management of HDCP and EDID

#### Proprietary Wireless Presentation

##### OS Support: Apple® iOS®, Android™, Windows 10, Windows 11, macOS®, Chrome OS™

##### Video Frame Rate: Up to 30 fps, audio supported except on Android devices

##### Output resolutions: 640x480@60Hz, 800x600@60Hz, 1024x768@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x800@60Hz, 1366x768@60Hz, 1440x900@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60)

###### All video inputs will be scaled to the selected HDMI output resolution.

##### Bitrate Peak: 0.25 to 8.5 Mbps, variable depending on content complexity

##### Bitrate Average: 1.4 Mbps typical

###### The bitrate for Apple native mirroring may deviate from above depending on the OS version and content.

###### The Proprietary Wireless Presentation Extension for the Google Chrome browser relies on web technologies for screen sharing that are built-in to the web browser. Performance variations with motion video (quality and frame rate) may occur based upon the encoding capabilities of the Chrome OS device and the nature of the content being displayed (i.e., high-motion video).

##### Audio Format: Stereo

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##### Maximum Input Resolutions

###### Presentation: 1920x1080@30Hz (1080p30)

###### With proprietary wireless presentation adapter device: 3840x2160@30Hz (4K30)

###### All video inputs will be scaled to the selected HDMI output resolution.

##### Output Signal Type: HDMI (DVI compatible when paired with an appropriate adapter or interface cable)

##### HDMI Output Resolutions: 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x800@60Hz \*, 1366x768@60Hz \*, 1440x900@60Hz \*, 1600x900@60Hz \*, 1600x1200@60Hz, 1680x1050@60Hz \*, 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 3840x2160@30Hz (2160p30), 3840x2160@50Hz (2160p50), 3840x2160@60Hz (2160p60)

###### Resolutions followed by \* denote reduced blanking option for given resolution

###### All video inputs will be scaled to the selected HDMI output resolution

##### Background & Logo File Support: GIF, JPEG, PNG

#### Audio

##### Input Signal Type: Via proprietary wireless presentation

##### Output Signal Type: HDMI

##### Input/Output Format: 2 channel LPCM

Specifier Note:

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### Connectors

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#### HDMI OUTPUT: (1) HDMI Type A connector; HDMI digital video/audio output (DVI compatible when paired with an appropriate adapter or interface cable)

#### USB

##### (2) USB Type A connectors

##### (1) USB Type B connector

###### USB 3.0 device port for computer console

#### LAN PoE+: (1) 8-pin RJ-45 connector; 100Base-TX/1000Base-T Ethernet port and PoE+ Class 4

#### 24 VDC 1.25 A: (1) 2.1 x 5.5 mm DC power connector; 24 VDC power input

### Controls and Indicators

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#### RESET: (1) Recessed push button for hardware reset

#### SETUP

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#### microSD: For future use

#### LAN PoE+: (2) LEDs, green LED indicates Ethernet link status, amber LED indicates Ethernet activity

### Power

#### Power over Ethernet: IEEE 802.3af Class 4 Powered Device

#### Power pack (sold separately)

##### Input: 100-240 VAC, 50/60 Hz

##### Output: 1.25 A @ 24 VDC

#### Power Consumption: 13.5 W (typical)

### Compliance

#### Regulatory Model: M202018001

#### UL® Listed for US & Canada, CE, IC, FCC Part 15 Class B digital device

# EXECUTION

NOT USED in this Guide Specification. Specifier shall Specify PART 3 On-Site work as needed.

# APPENDICES

## SPECIFIED PRODUCTS

Specifier Note: This Article includes Crestron products specified in this Guide Specification document. This Article is for reference only and should not be required in actual project manual unless included in an overall system equipment list.

### Crestron AM-3000-WF

### Crestron AM-3000-WF-I