****

**WaveCAST C Assistive Listening System**

1. Furnish and install a Wi-Fi wireless assistive listening system for use by the hearing impaired. The assistive listening system (ALS) shall be capable of broadcasting via Wi-Fi to up to 45 users in unicast mode. A multicast mode option must also be available for larger numbers of users with broadcast capability limited only by network capacity.

A1. Transmitter

The transmitter unit shall provide a combined 3-pin XLR / TRS audio input that allows for connection to either a balanced or unbalanced line level analog audio source or a balanced or unbalanced microphone with selectable phantom power. The unit shall be offered with an optional Dante audio input. The unit shall provide a 10/100 Base-T Ethernet port to stream audio to the network and broadcast audio over an existing or new Wi-Fi wireless network. The unit shall provide an unbalanced line level program audio output and an unbalanced phono headset jack for monitoring program audio. The unit shall provide a web control interface that allows the user to configure and manage the unit including channel naming and channel security controls. The unit shall employ a DSP (Digital Sound Processor) with an adjustable 0 - 50 dB audio input gain in 1dB increments, automatic gain control, audio signal limiters, high and low pass filtering, and an adjustable-range audio compressor control to optimize hearing assistance for hearing loss, music for high-fidelity playback, and voice for maximum speech intelligibility through custom presets. The unit shall employ an ADC (analog to digital converter) that provides a 16-bit, 48 kHz digital stream. The unit shall have a signal-to-noise ratio of 67 dB or greater and shall have an audio frequency response of 31 Hz - 16 kHz, ±3 dB and shall have a THC (total harmonic distortion) of less than 0.25% @ 1 kHz. The unit shall incorporate front panel buttons to control the unit via menus on a built-in OLED display, an audio input level indicator, and input overload indication. The unit shall support third-party room control through Telnet commands.

A2. Receiver

1. The receiver shall be a Wi-Fi-enabled smartphone or tablet with dedicated listening app downloaded from iOS or Android app stores. App will allow user to access available audio streams and adjust volume on their device.
2. Additionally, a dedicated Wi-Fi receiver with an embedded listening app shall be available to comply with legal assistive listening requirements. The dedicated Wi-Fi receiver shall be new in box (not refurbished or Remanufactured). device shall incorporate a setup button for configuration and shall incorporate a channel button that displays a list of available channels. The device shall have a multi-functional 6.8” full HD+ touch display that allows the user to choose a channel from a list of active channels, control and mute the volume, and cate the battery status, channel and Wi-Fi connection status. The device shall have the option of connecting a neckloop that sends optimized audio signals directly to hearing aids and cochlear implants equipped with telecoils. The device shall support the use of wireless headphones/earphones using Bluetooth 5.0. The device shall have a USB Type-C connector used for charging and firmware upgrades. The devices shall allow for field upgrades of the listening app. The device shall have a 6,000 mAh Lithium-Polymer battery with 40 hours runtime under normal audio streaming conditions. Battery should be able to be fully recharged in four hours or less. The device shall incorporate automatic battery charging circuitry and be compatible with a single block charger or a multi-slot charger.

Williams AV, products are specified.

1. Furnish and install the following:

	1. Williams AV WaveCAST C (WF T5C) Base Wi-Fi Transmitter (qty: 1ea.)
	2. Williams AV RPK 005 Rack Mount Kit (Qty: 1 ea.)
	3. Williams AV WaveCAST WAV Pro Wi-Fi (WF R2) Receiver with Williams AV AC CCS063 protective case and screen protector (Qty: 1 each or as needed, see note\*)
	4. Williams AV AC CHG001 single charger qty 1 TFP 069 Single power supply block and qty 1 AC WCA153 USB cord for WAV Pro Wi-Fi (WF R2) Receivers (Qty: 1 each or as needed, see note\*)
	5. Williams AV AC CHG406 6-Slot Charger with qty 6 WCA 144 USB cables and line cord for WAV Pro Wi-Fi (WF R2) Receivers (Qty: 1 each or as needed, see note\*)
	6. Williams AV EAR 008 Over-Ear, Hook Earphone for WAV Pro Wi-Fi (WF R2) Receivers (Qty: 1 each or as needed, see note\*)
	7. Williams AV EAR 022 Surround Earphone for WAV Pro Wi-Fi (WF R2) Receivers (Qty: 1 each or as needed, see note\*)
	8. Williams AV EAR 041 Single In-Ear Isolation Earphone for WAV Pro Wi-Fi (WF R2) Receivers (Qty: 1 each or as needed, see note\*)
	9. Williams AV EAR 042 Dual In-Ear Isolation Earphone for WAV Pro Wi-Fi (WF R2) Receivers (Qty: 1 each or as needed, see note\*)
	10. Williams AV HED 024 Folding Stereo Headphones for WAV Pro Wi-Fi (WF R2) Receivers (Qty: 1 each or as needed, see note\*)
	11. Williams AV NKL 008 Stereo Neck Loop for WAV Pro Wi-Fi (WF R2) Receivers, 8-16 Ω, 20-20 kHz, 118 dB @ 1 kHz (Qty: 1 each or as needed, see note\*)
	12. Williams AV IDP 008 ADA Wall Plaque (Qty: 1ea.)

\*The Americans with Disabilities Act (ADA) 2010 ADA Standards requires public facilities to provide auditory assistance devices:
<http://www.ada.gov/regs2010/2010ADAStandards/2010ADAStandards.pdf> (Section 706: Assistive Listening Systems)

Summary of the Americans with Disabilities Act (ADA): <https://williamsav.com/wp-content/uploads/2020/05/ADASummary2018.pdf>

Summary of Global Disability Legislation: <https://williamsav.com/wp-content/uploads/2021/02/Global_summary_of_disability_21.pdf>

**ADA Table 219.3 & IBC Table 1108.2.7.1 Receivers for Assistive Listening Systems**

|  |  |  |
| --- | --- | --- |
| **Capacity of Seating in Assembly Area** | **Minimum Number of Required Receivers**  | **Minimum Number of Required Receivers Required to be Hearing-aid Compatible**  |
| 50 or less | 2 | 2 |
| 51 to 200 | 2, plus 1 per 25 seats over 50 seats1 | 2 |
| 201 to 500 | 2, plus 1 per 25 seats over 50 seats1 | 1 per 4 receivers1 |
| 501 to 1000 | 20, plus 1 per 33 seats over 500 seats1 | 1 per 4 receivers1 |
| 1001 to 2000 | 35, plus 1 per 50 seats over 1000 seats1 | 1 per 4 receivers1 |
| 2001 and over | 55 plus 1 per 100 seats over 2000 seats1 | 1 per 4 receivers1 |
| *Rules differ in California* 1or fraction thereof |

ADA & IBC Compliance Calculator: <https://williamsav.com/hearing-compliance/>

**Contact Williams AV for a customized quote to accommodate area:**(952) 943-2252 | info@williamsav.com | [www.williamsav.com](http://www.williamsav.com)

A&E Specs are available in Microsoft Word format. Call Williams AV.

WF T5C Consultant Spec-1222