

Master Format Specifications

Guide Specification

Wi-Fi Hearing Assistance System

**SECTION 27 41 16.xx**

**RADIO COMMUNICATION SYSTEM & EQUIPMENT**

**WI-FI HEARING ASSISTANCE SYSTEM**

This document is intended to aid the specifier in developing a specification section for a Williams Sound Wi-Fi Listening System for use in churches, schools, auditoriums, conference rooms, and theaters.

Edit this master specification to suit your project requirements. Modify or add items as necessary. Delete items, which are not applicable. Words and sentences within brackets [ ] reflect a choice to be made regarding inclusion or exclusion of a particular item or statement.

This guide specification is based on the Construction Specifications Institute (CSI), Section Format standards. References to section names and numbers are based on MasterFormat 2004.

For specification questions, assistance with systems integration and specific product options contact:

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SPECIFICATIONs

PART 1 GENERAL

* 1. **SUMMARY**
1. Section Includes: Equipment for transmitting sound signals for the hard of hearing, using Wi-Fi signal technology.
2. System integration and performance depends on existing IT system architecture, access points used, wi-fi environment, and user end devices.
3. Users bring their own wi-fi-enabled devices to listen to the system; i.e. phone, tablet, etc. with earphones/headphones.
4. Some devices also allow for FM broadcasts; however, use of FM technology is not required.
	1. **SUBMITTALS**
5. General: Submit in accordance with Section 01330.
6. Product Data: For each specific piece of equipment.
7. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, required clearances, method of field assembly, components, and location of each field connection.
8. Closeout Submittals: Submit following in accordance with Section 01780.
	1. Operation and Maintenance Data: For equipment.
	2. **QUALITY ASSURANCE**
9. Installer Qualifications: Experienced installer must have some IT experience and is an authorized representative of the equipment manufacturer for both installation and maintenance of equipment required for this Section.
10. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.
11. Comply with NFPA 70.
12. Comply with UL 50.
	1. **WARRANTY**
13. Warrant products in system to be free of defects in operation for 2 years, including parts and labor. Warranty for cords, external power supplies and accessories is 90 days.

**PART 2 PRODUCTS**

1. **MANUFACTURERS**
	1. Acceptable Manufacturers:
		1. Williams AV, Eden Prairie, MN.
2. **ACCEPTABLE PRODUCTS**
	1. Servers (Transmitters):
		1. WF T5
		2. WF T5 D
		3. WF T8
		4. WF T8 D
		5. FM T55
		6. FM T55 D
	2. Wi-Fi Receiver
3. **COMPONENT PERFORMANCE CRITERIA**
4. Wi-Fi Assistive Listening System (WF T5):
5. Size: 8.45" W x 8.25" D x 1.72"H (21.5 cm x 21 cm x 4.4 cm). Weight: 3.0 lbs (1.36 kg). Color: Black/Silver with silver legends on the front, white legends on the back.
6. Environment: Storage: 32° F to 104° F (0° C to 40° C); Operating-4° F to +158° F (-20° C to 70° C)
7. Network requirements: Wireless network must be available. Stronger networks can support more users than weaker networks.
8. Mobile device requirements: Apple iOS 9.1 or newer; Android 6.0 or newer; Blackberry and windows not supported
9. Audio inputs: (1x) Combination 3-pin XLR, 1/4" (TRS) jack for Mic or Line Level Analog Audio, Balanced or Unbalanced Line Level, or balanced or unbalanced microphone with Selectable Phantom Power
10. Ethernet jacks: RJ-45 on back of unit supports CAT 5e cable lengths up to 328 feet (100 meters); 10/100 Base-T IEEE 802.3 compliant, unique MAC address
11. Headphone Output: 1/4" TRS stereo jack, mono signal, 15.7 mW, maximum in 33 Ω (level adjustable in menu 0 to -40 dB in 2 dB steps)
12. Power Supply: Desktop Style Transformer (TFP 062); Input: 100-240 VAC, 50/60 Hz. IEC Line Cord; Output: 24 VDC, 750 mA, 18W. 2.5mm ID center positive barrel connector
13. User control interface: Front panel buttons or hosted web interface
14. Warranty: 2-year part and labor
15. Approvals: FCC, RoHS3, WEEE, Industry Canada, CE, PSE, RCM, CB Scheme
16. Wi-Fi Assistive Listening System with Dante
(WF T5 D):
17. Size: 8.45" W x 8.25" D x 1.72"H (21.5 cm x 21 cm x 4.4 cm). Weight: 3.0 lbs (1.36 kg). Color: Black/Silver with silver legends on the front, white legends on the back.
18. Environment: Storage: 32° F to 104° F (0° C to 40° C); Operating-4° F to +158° F (-20° C to 70° C)
19. Network requirements: Wireless network must be available. Stronger networks can support more users than weaker networks.
20. Mobile device requirements: Apple iOS 9.1 or newer; Android 6.0 or newer; Blackberry and windows not supported
21. Audio inputs: (1x) Combination 3-pin XLR, 1/4" (TRS) jack for Mic or Line Level Analog Audio, Balanced or Unbalanced Line Level, or balanced or unbalanced microphone with Selectable Phantom Power
22. Ethernet jacks: RJ-45 on back of unit supports CAT 5e cable lengths up to 328 feet (100 meters); 10/100 Base-T IEEE 802.3 compliant, unique MAC address.
23. Headphone Output: 1/4" TRS stereo jack, mono signal, 15.7 mW, maximum in 33 Ω (level adjustable in menu 0 to -40 dB in 2 dB steps)
24. Power Supply: Desktop Style Transformer (TFP 062); Input: 100-240 VAC, 50/60 Hz. IEC Line Cord; Output: 24 VDC, 750 mA, 18W. 2.5mm ID center positive barrel connector
25. User control interface: Front panel buttons or hosted web interface
26. Dante Audio Input: RJ-45 on back of unit supports Cat5e cable lengths up to 328 ft (100 m). 10/100 Base-T IEEE 802.3 compliant, unique MAC address, Cat5e shielded cable must be used to meet FCC requirements.
27. Warranty: 2-year part and labor
28. Approvals: FCC, RoHS3, WEEE, Industry Canada, CE, PSE, RCM, CB Scheme
29. Wi-Fi Multichannel Assistive Listening System
(WF T8):
30. Size: 8.45" W x 8.25" D x 1.72"H (21.5 cm x 21 cm x 4.4 cm). Weight: 3.0 lbs (1.36 kg). Color: Black/Silver with silver legends on the front, white legends on the back.
31. Environment: Storage: 32° F to 104° F (0° C to 40° C); Operating-4° F to +158° F (-20° C to 70° C)
32. Network requirements: Wireless network must be available. Stronger networks can support more users than weaker networks.
33. Mobile device requirements: Apple iOS 9.1 or newer; Android 6.0 or newer; Blackberry and windows not supported
34. Audio inputs: (1x) Combination 3-pin XLR, 1/4" (TRS) jack for Mic or Line Level Analog Audio, Balanced or Unbalanced Line Level, or balanced or unbalanced microphone with Selectable Phantom Power
35. Ethernet jacks: RJ-45 on back of unit supports CAT 5e cable lengths up to 328 feet (100 meters); 10/100 Base-T IEEE 802.3 compliant, unique MAC address
36. Headphone Output: 1/4" TRS stereo jack, mono signal, 15.7 mW, maximum in 33 Ω (level adjustable in menu 0 to -40 dB in 2 dB steps)
37. Power Supply: Desktop Style Transformer (TFP 062); Input: 100-240 VAC, 50/60 Hz. IEC Line Cord; Output: 24 VDC, 750 mA, 18W. 2.5mm ID center positive barrel connector
38. User control interface: Front panel buttons or hosted web interface
39. Warranty: 2-year part and labor
40. Approvals: FCC, RoHS3, WEEE, Industry Canada, CE, PSE, RCM, CB Scheme
41. Wi-Fi Multichannel Assistive Listening System with Dante (WF T8 D):
42. Size: 8.45" W x 8.25" D x 1.72"H (21.5 cm x 21 cm x 4.4 cm). Weight: 3.0 lbs (1.36 kg). Color: Black/Silver with silver legends on the front, white legends on the back.
43. Environment: Storage: 32° F to 104° F (0° C to 40° C); Operating-4° F to +158° F (-20° C to 70° C)
44. Network requirements: Wireless network must be available. Stronger networks can support more users than weaker networks.
45. Mobile device requirements: Apple iOS 9.1 or newer; Android 6.0 or newer; Blackberry and windows not supported
46. Audio inputs: (1x) Combination 3-pin XLR, 1/4" (TRS) jack for Mic or Line Level Analog Audio, Balanced or Unbalanced Line Level, or balanced or unbalanced microphone with Selectable Phantom Power
47. Ethernet jacks: RJ-45 on back of unit supports CAT 5e cable lengths up to 328 feet (100 meters); 10/100 Base-T IEEE 802.3 compliant, unique MAC address
48. Headphone Output: 1/4" TRS stereo jack, mono signal, 15.7 mW, maximum in 33 Ω (level adjustable in menu 0 to -40 dB in 2 dB steps)
49. Power Supply: Desktop Style Transformer (TFP 062); Input: 100-240 VAC, 50/60 Hz. IEC Line Cord; Output: 24 VDC, 750 mA, 18W. 2.5mm ID center positive barrel connector
50. User control interface: Front panel buttons or hosted web interface
51. Dante Audio Input: RJ-45 on back of unit supports Cat5e cable lengths up to 328 ft (100 m). 10/100 Base-T IEEE 802.3 compliant, unique MAC address, Cat5e shielded cable must be used to meet FCC requirements.
52. Warranty: 2-year part and labor
53. Approvals: FCC, RoHS3, WEEE, Industry Canada, CE, PSE, RCM, CB Scheme
54. Wi-Fi and FM Assistive Listening System (FM T55):
55. Size: 8.45" W x 8.25" D x 1.72"H (21.5 cm x 21 cm x 4.4 cm). Weight: 3.0 lbs (1.36 kg). Color: Black/Silver with silver legends on the front, white legends on the back.
56. Environment: Storage: 32° F to 104° F (0° C to 40° C); Operating-4° F to +158° F (-20° C to 70° C)
57. Network requirements: Wireless network must be available. Stronger networks can support more users than weaker networks.
58. Mobile device requirements if using Wi-Fi: Apple iOS 9.1 or newer; Android 6.0 or newer; Blackberry and windows not supported
59. Audio inputs: (1x) Combination 3-pin XLR, 1/4" (TRS) jack for Mic or Line Level Analog Audio, Balanced or Unbalanced Line Level, or balanced or unbalanced microphone with Selectable Phantom Power
60. Ethernet jacks: RJ-45 on back of unit supports CAT 5e cable lengths up to 328 feet (100 meters); 10/100 Base-T IEEE 802.3 compliant, unique MAC address
61. Headphone Output: 1/4" TRS stereo jack, mono signal, 14.85 mW at +9dB, maximum in 33 Ω (level adjustable in menu 0 to -40 dB in 2 dB steps)
62. Power Supply: Desktop Style Transformer (TFP 062); Input: 100-240 VAC, 50/60 Hz. IEC Line Cord; Output: 24 VDC, 750 mA, 18W. 2.5mm ID center positive barrel connector
63. User control interface: Front panel buttons or hosted web interface
64. Warranty: 2-year part and labor
65. Approvals: FCC, RoHS3, WEEE, Industry Canada, CE, PSE, RCM, CB Scheme

*The above applies only for Wi-Fi broadcasting. The FM T55 can broadcast over both Wi-Fi and FM. For additional FM broadcasting information, see the FM Masterformat Specification.*

1. Wi-Fi and FM Assistive Listening System with Dante
(FM T55 D):
2. Size: 8.45" W x 8.25" D x 1.72"H (21.5 cm x 21 cm x 4.4 cm). Weight: 3.0 lbs (1.36 kg). Color: Black/Silver with silver legends on the front, white legends on the back.
3. Environment: Storage: 32° F to 104° F (0° C to 40° C); Operating-4° F to +158° F (-20° C to 70° C)
4. Network requirements: Wireless network must be available. Stronger networks can support more users than weaker networks.
5. Mobile device requirements if using Wi-Fi: Apple iOS 9.1 or newer; Android 6.0 or newer; Blackberry and windows not supported
6. Audio inputs: (1x) Combination 3-pin XLR, 1/4" (TRS) jack for Mic or Line Level Analog Audio, Balanced or Unbalanced Line Level, or balanced or unbalanced microphone with Selectable Phantom Power
7. Ethernet jacks: RJ-45 on back of unit supports CAT 5e cable lengths up to 328 feet (100 meters); 10/100 Base-T IEEE 802.3 compliant, unique MAC address
8. Headphone Output: 1/4" TRS stereo jack, mono signal, 14.85 mW at +9dB, maximum in 33 Ω (level adjustable in menu 0 to -40 dB in 2 dB steps)
9. Power Supply: Desktop Style Transformer (TFP 062); Input: 100-240 VAC, 50/60 Hz. IEC Line Cord; Output: 24 VDC, 750 mA, 18W. 2.5mm ID center positive barrel connector
10. User control interface: Front panel buttons or hosted web interface
11. Dante Audio Input: RJ-45 on back of unit supports Cat5e cable lengths up to 328 ft (100 m). 10/100 Base-T IEEE 802.3 compliant, unique MAC address, Cat5e shielded cable must be used to meet FCC requirements.
12. Warranty: 2-year part and labor
13. Approvals: FCC, RoHS3, WEEE, Industry Canada, CE, PSE, RCM, CB Scheme

*The above applies only for Wi-Fi broadcasting. The FM T55 D can broadcast over both Wi-Fi and FM. For additional FM broadcasting information, see the FM Masterformat Specification.*

B1. Wi-Fi Receiver

* + 1. Size: 1.89” W x 0.5” D x 4.46”H (48 cm x 12.7 cm x 113.3 cm)
		2. Display: 2.0” (5 cm) full color OLED Touchscreen
		3. Receiver Jack: 3.5mm standard mono jack
		4. Battery Life: 6 hours
		5. Charge Time: About an hour
		6. Approvals: FCC, RoHS3, WEEE, Industry Canada, CE, RCM, Telec
		7. Warranty: 2-year part and labor

**PART 3 EXECUTION**

1. **INSTALLATION**

A. Install equipment to comply with manufacturer’s recommendations.

B. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with typical service loops, no excess. Use lacing bars in cabinets.

**3.2 GROUNDING**

A. Ground cable shields and equipment to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk, and other impairments.

**3.3 FIELD QUALITY CONTROL**

A. Operational Test: Perform tests that confirm proper operation of system and proper coverage in area where equipment will be used. System must meet IEC 60118-4 standard.

**3.4 DEMONSTRATION**

A. Demonstration and Instruction of Owner’s Personnel: Provide in accordance with Section 01800. Engage factory-authorized service representative to train Owner’s maintenance personnel to adjust, operate, and maintain equipment as specified.

**END OF SECTION**

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