WILLIAMS SOUND®

MasterFormat SPECIFICATIONS

Guide Specification

Wireless Induction Loop Hearing Assistance System

SECTION 27 41 16.xx

RADIO COMMUNICATION SYSTEM & EQUIPMENT
WIRELESS INDUCTION LOOP HEARING ASSISTANCE SYSTEM

This document is intended to aid the specifier in developing a specification section for a Williams Sound Induction Loop 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.

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PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Equipment for amplifying, transmitting and receiving sound signals for the hard of hearing, using Induction Loop signal technology.

B. Large-Area Loop Systems shall have a Network-Controllable Matrix Mixer/Amplifier with Crestron control capability and a Dante Input.

1.2 SUBMITTALS

A. General: Submit in accordance with Section 01330.

B. Product Data: For each specific piece of equipment.

C. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, required clearances, method of field assembly, components, and location of each field connection.

D. Closeout Submittals: Submit following in accordance with Section 01780.

1. Operation and Maintenance Data: For equipment.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Experienced installer who has taken an Advanced Loop Design Class and is an authorized representative of the equipment manufacturer for both installation and maintenance of equipment required for this Section.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.

C. Comply with NFPA 70.

D. Comply with UL 50.

E. Comply with IEC 60118-4.

1.4 WARRANTY

A. 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

2.1 MANUFACTURERS

A. Acceptable Manufacturers:

1. Williams Sound, Eden Prairie, MN.

2.2 ACCEPTABLE PRODUCTS

A. Transmitters (Amplifiers):

1. PLA DL 210 NET
2. PLA DL 210 NET D

B. Power Loop Wire and Tape:

1. PLW 014
2. PLW 037
3. PLW F500
4. FWT 001

C. Receivers:

1. PLR BP1
2. PLR SR1

D. Accessories:

1. Earphones
   a. EAR 008
   b. EAR 013
   c. EAR 014
   d. EAR 022
   e. EAR 042
2. Headphones
   a. HED 021
   b. HED 026
   c. HED 027
   c. HED 040
3. Neckloops
   a. NKL 001
4. Batteries
   a. BAT 001-2
   b. BAT 026-2
5. Carry Cases
   a. CCS 029
   b. CCS 030 35
6. Chargers
   a. CHG 3512 (for PLR BP1)
   b. CHG 518 (for PLR SR1)

2.3 COMPONENT PERFORMANCE CRITERIA

A1. Large Area Loop System (PLA DL 210 NET):

1. Dimensions: 2U Rackmount, 19” W x 3.5” H x 12” D. Chassis is 17” W.
2. Weight: 14.3 lbs (6.5 kg)
3. Color: Case - Black, white and blue legends on front, white legends on back. LCD - Backlit Blue.
4. Fan Cooling: Variable Speed, Temperature Controlled
5. Power: 100-240 VAC, 50/60 Hz, 500 Watt
6. Digital Input: (1x XLR); AES or EBU; 44.1kHz/48kHz
7. Analog Line Inputs: (2x RCA, L & R); -10dBV, 10kΩ input impedance
8. Mic/Line Inputs: (2x Phoenix Terminal Block); balanced or unbalanced.

9. Input impedance: 1.5kΩ Mic, 10kΩ Line. Configurable/accepts Mic, Line +4dBu, Line +8dBu, or Line -10dBV.
10. 70-100v Input: (1x Phoenix Terminal Block); speaker-level input, for distributed audio systems.
11. Line Outputs: (2x Phoenix Terminal Block); loop-through of Mic/Line inputs 1 & 2. +4dBu. Balanced or Unbalanced.
12. Loop Outputs: (2x Phoenix Terminal Block).
13. Required Loop Resistance: 0.5Ω to 1.5Ω (DC)
14. Output Current (Loop): One Loop, Output A or B: 12A rms; Two Loops, Outputs A and B: 10A rms each
15. Output Power (Speaker): 50 Watts X 1 Channel @ 4 Ω (35 Watts @ 8 Ω). Class D.
16. Loop Frequency Response: 100Hz to 10kHz @400mA (Output A or B)
17. Speaker Frequency Response: 20Hz - 20kHz (Output A)
18. Speaker Dynamic Range: 90 dB; A-weighted, typical
19. Speaker THD+N: 0.07%; 50 watts into 4Ω @ 20-20kHz
20. Loop THD: 1% at nominal power output, 1kHz sine wave
21. Front Controls: Front LCD display menu access/adjustment via control dial.
22. Remote Control/Configuration: Ethernet, USB, RS-232. Application “PC Mixer App” supports all 3 protocols.
23. Network Control: Ethernet; Standard RJ-45 jack. Supports PC App and Crestron Control.
24. RS-232: Standard DB-9 COM port connector.
25. USB: Standard-B jack. USB 1.1, 2.0 or 3.0 supported.
26. Warranty: 2 year limited
27. Approvals: CE, IC, UL, ULC, FCC, RoHS, RCM, WEEE, CB scheme

A2. Large Area Loop System with Dante Input (PLA DL 210 NET D):

1. Dimensions: 2U Rackmount, 19” W x 3.5” H x 12” D. Chassis is 17” W.
2. Weight: 14.3 lbs (6.5 kg)
3. Color: Case - Black, white and blue legends on front, white legends on back. LCD - Backlit Blue.
4. Fan Cooling: Variable Speed, Temperature Controlled
5. Power: 100-240 VAC, 50/60 Hz, 500 Watt
6. Digital Input: (1x XLR); AES or EBU; 44.1kHz/48kHz
7. Dante™ Input (1x RJ-45)
8. Analog Line Inputs: (2x RCA, L & R); -10dBV, 10kΩ input impedance
9. Mic/Line Inputs: (2x Phoenix Terminal Block); balanced or unbalanced.
10. Input impedance: 1.5kΩ Mic, 10kΩ Line. Configurable/accepts Mic, Line +4dBu, Line +8dBu, or Line -10dBV.
11. 70-100v Input: (1x Phoenix Terminal Block); speaker-level input, for distributed audio systems.
12. Line Outputs: (2x Phoenix Terminal Block); loop-through of Mic/Line inputs 1 & 2. +4dBu. Balanced or Unbalanced.
13. Loop Outputs: (2x Phoenix Terminal Block).
14. Required Loop Resistance: 0.5Ω to 1.5Ω (DC)
15. Output Current (Loop): One Loop, Output A or B: 12A rms; Two Loops, Outputs A and B: 10A rms each
16. Output Power (Speaker): 50 Watts X 1 Channel @ 4 Ω (35 Watts @ 8 Ω). Class D.
17. Loop Frequency Response: 100Hz to 10kHz @400mA (Output A or B)
18. Speaker Frequency Response: 20Hz - 20kHz (Output A)
19. Speaker Dynamic Range: 90 dB; A-weighted, typical
20. Speaker THD+N: 0.07%; 50 watts into 4Ω @ 20-20kHz
21. Loop THD: 1% at nominal power output, 1kHz sine wave
22. Front Controls: Front LCD display menu access/adjustment via control dial.
23. Remote Control/Configuration: Ethernet, USB, RS-232. Application “PC Mixer App” supports all 3 protocols.
24. Network Control: Ethernet; Standard RJ-45 jack. Supports PC App and Crestron Control.
25. RS-232: Standard DB-9 COM port connector.
26. USB: Standard-B jack. USB 1.1, 2.0 or 3.0 supported.
27. Warranty: 2 year limited
28. Approvals: CE, IC, UL, ULC, FCC, RoHS, RCM, WEEE, CB scheme

B1. Power Loop Wire 14ga. (PLW 014): [*select as needed*]

1. Length: 500 ft
2. Spool Dimensions: 6.5" Dia.
3. Spool Weight: 9.8 lbs
4. Color: Black

B2. Power Loop Wire 18ga. (PLW 037): [*select as needed*]

1. Length: 120 ft
2. Spool Dimensions: 6.5" Dia.
3. Spool Weight: 9.8 lbs
4. Color: White

B3. Power Loop Wire Flat ¾” (PLW F500): [*select as needed*]

1. Length: 500 ft
2. Spool Dimensions: 8-1/8” Dia. x ¾” H

3. Spool Weight: 6.5 lbs
4. Color/Material: Copper

B4. Flat Wire Warning Tape (FWT 001): [*select as needed*]
1. Length: 180 ft
2. Spool Dimensions: 6" Dia. x 2" H
3. Spool Weight: 1.28 lbs
4. Color/Material: White cloth tape, blue lettering, "Gaffer Tape", adhesive releases without residue

C1. Receiver (PLR BP1): [*select as needed*]
1. Dimensions: 4.1"H x 2.85"W x 1.38"D (104 mm H x 72 mm W x 35 mm D).
2. Weight: 4.6 oz (130 g) with batteries, 2.6 oz (73 g) without batteries.
3. Color/Material: Black ABS/polycarbonate molded plastic case.
4. Battery Type: (2) AA (1.5VDC) Alkaline or NiMH (rechargeable).
5. Battery Life: Up to 200 hours with Alkaline batteries.
6. LED Indicator: Green LED indicates power on, flashes when batteries are low.
7. Headphone Jack: 3.5mm stereo TRS jack works with mono or stereo headphones.
8. Volume control: External switched thumb wheel controls power on/off and volume level.
9. Tone control: Rotary control inside battery compartment (1kHz reference at 400mA/m input with Tone at mid position)
10. Induction Coil: Maximum reception: receiver oriented vertically
11. Power Output: 35mW (max) into 33 ohms mono impedance
12. THD: <2%
13. Frequency Response: 300Hz to 10KHz, -6dB

C2. Receiver (PLR SR1): [*select as needed*]
1. Frequency Response: 70 - 5400 Hz
2. Distortion Factor: < 1 %
3. Signal-to-Noise Ratio: Typ. 60 dB
4. Battery type: BAT AP11A NiMH Battery Pack
5. Battery Charging Time: Approx. 6 hours
6. Operating Time: Approx. 6 hours
7. Maximum SPL: Approx. 120 dBA
8. Auto Power: Turn off / on switch built into arms
9. Weight: 1.6 oz. (47 g)
10. Warranty: 2 years
11. Approvals: CE, RoHS

D. Accessories: [*select as needed*]
1. Earphones
   a. [Wide Range Earphone: Model EAR 008]
   b. [Single Mini Earbud: Model EAR 013]
   c. [Dual Mini Earbud: Model EAR 014]
   d. [Surround Earphone: Model EAR 022]
   e. [Dual, in-ear, isolation: Model EAR 042]
2. Headphones
   a. [Deluxe Folding: Model HED 021]
   b. [Rear-wear, Mono: Model HED 026]
   c. [Heavy-duty, Folding, Mono: Model HED 027]
   d. [Protector, Dual-Earmuff: Model HED 040]
3. Neckloop
   a. [18in cord, 3.5mm plug): Model NKL 001]
4. Batteries
   a. [AA Alkaline: Model BAT 001-2]
   b. [AA NiMH: Model BAT 026-2]
5. Carry Cases
   a. [Small Briefcase for accessories: CCS 029]
   b. [Large 35-slot Case: Model CCS 030 35]
6. Chargers
   a. [12 Units, PLR BP1: Model CHG 3512]
   b. [5 Units, PLR SR1: Model CHG 518]

PART 3 EXECUTION

3.1 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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