



# **Avaya 909A/909B Universal Coupler Installation Instructions**

June 2010  
Issue 4

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#### Notice

Every effort was made to ensure that the information in this document was complete and accurate at the time of printing. However, information is subject to change.

#### Warranty

Avaya Inc. provides a limited warranty on this product. Refer to your sales agreement to establish the terms of the limited warranty. In addition, Avaya's standard warranty language as well as information regarding support for this product, while under warranty, is available through the following Web site: <http://www.avaya.com/support>.

#### Preventing Toll Fraud

"Toll fraud" is the unauthorized use of your telecommunications system by an unauthorized party (for example, a person who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf). Be aware that there may be a risk of toll fraud associated with your system and that, if toll fraud occurs, it can result in substantial additional charges for your telecommunications services.

#### Avaya Fraud Intervention

If you suspect that you are being victimized by toll fraud and you need technical assistance or support, in the United States and Canada, call the Technical Service Center's Toll Fraud Intervention Hotline at 1-800-643-2353.

#### Disclaimer

Avaya is not responsible for any modifications, additions or deletions to the original published version of this documentation unless such modifications, additions or deletions were performed by Avaya. Customer and/or End User agree to indemnify and hold harmless Avaya, Avaya's agents, servants and employees against all claims, lawsuits, demands and judgments arising out of, or in connection with, subsequent modifications, additions or deletions to this documentation to the extent made by the Customer or End User.

#### How to Get Help

For additional support telephone numbers, go to the Avaya support Web site: <http://www.avaya.com/support>. If you are:

- Within the United States, click the *Escalation Contacts* link that is located under the *Support Tools* heading. Then click the appropriate link for the type of support that you need.
- Outside the United States, click the *Escalation Contacts* link that is located under the *Support Tools* heading. Then click the *International Services* link that includes telephone numbers for the international Centers of Excellence.

#### Providing Telecommunications Security

Telecommunications security (of voice, data, and/or video communications) is the prevention of any type of intrusion to (that is, either unauthorized or malicious access to or use of) your company's telecommunications equipment by some party.

Your company's "telecommunications equipment" includes both this Avaya product and any other voice/data/video equipment that could be accessed via this Avaya product (that is, "networked equipment").

An "outside party" is anyone who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf. Whereas, a "malicious party" is anyone (including someone who may be otherwise authorized) who accesses your telecommunications equipment with either malicious or mischievous intent.

Such intrusions may be either to/through synchronous (time-multiplexed and/or circuit-based), or asynchronous (character-, message-, or packet-based) equipment, or interfaces for reasons of:

- Utilization (of capabilities special to the accessed equipment)
- Theft (such as, of intellectual property, financial assets, or toll facility access)
- Eavesdropping (privacy invasions to humans)
- Mischief (troubling, but apparently innocuous, tampering)
- Harm (such as harmful tampering, data loss or alteration, regardless of motive or intent)

Be aware that there may be a risk of unauthorized intrusions associated with your system and/or its networked equipment. Also realize that, if such an intrusion should occur, it could result in a variety of losses to your company (including but not limited to, human/data privacy, intellectual property, material assets, financial resources, labor costs, and/or legal costs).

#### Responsibility for Your Company's Telecommunications Security

The final responsibility for securing both this system and its networked equipment rests with you - Avaya's customer system administrator, your telecommunications peers, and your managers. Base the fulfillment of your responsibility on acquired knowledge and resources from a variety of sources including but not limited to:

- Installation documents
- System administration documents
- Security documents
- Hardware-/software-based security tools
- Shared information between you and your peers
- Telecommunications security experts

To prevent intrusions to your telecommunications equipment, you and your peers should carefully program and configure:

- Your Avaya-provided telecommunications systems and their interfaces
- Your Avaya-provided software applications, as well as their underlying hardware/software platforms and interfaces
- Any other equipment networked to your Avaya products

#### TCP/IP Facilities

Customers may experience differences in product performance, reliability and security depending upon network configurations/design and topologies, even when the product performs as warranted.

#### Product Safety Standards

This product complies with and conforms to the following international Product Safety standards as applicable:

- IEC 60950-1 latest edition, including all relevant national deviations as listed in the IEC Bulletin—Product Category OFF: IT and Office Equipment.
- CAN/CSA-C22.2 No. 60950-1 / UL 60950-1 latest edition.

This product may contain Class 1 laser devices.

- Class 1 Laser Product
- Luokan 1 Laserlaite
- Klass 1 Laser Apparat

#### Electromagnetic Compatibility (EMC) Standards

This product complies with and conforms to the following international EMC standards, as applicable:

- CISPR 22, including all national standards based on CISPR 22.
- CISPR 24, including all national standards based on CISPR 24.
- IEC 61000-3-2 and IEC 61000-3-3.

Avaya Inc. is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Avaya Inc. The correction of interference caused by such unauthorized modifications, substitution or attachment will be the responsibility of the user. Pursuant to Part 15 of the Federal Communications Commission (FCC) Rules, the user is cautioned that changes or modifications not expressly approved by Avaya Inc. could void the user's authority to operate this equipment.

#### Federal Communications Commission Part 15 Statement:

For a Class A digital device or peripheral:

**Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.**

For a Class B digital device or peripheral:

**Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:**

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

#### Equipment With Direct Inward Dialing ("DID"):

Allowing this equipment to be operated in such a manner as to not provide proper answer supervision is a violation of Part 68 of the FCC's rules.

Proper Answer Supervision is when:

A. This equipment returns answer supervision to the public switched telephone network (PSTN) when DID calls are:

- answered by the called station,
- answered by the attendant,
- routed to a recorded announcement that can be administered by the customer premises equipment (CPE) user
- Routed to a dial prompt

B. This equipment returns answer supervision signals on all (DID) calls forwarded back to the PSTN.

Permissible exceptions are:

- A call is unanswered
- A busy tone is received
- A reorder tone is received

Avaya attests that this registered equipment is capable of providing users access to interstate providers of operator services through the use of access codes. Modification of this equipment by call aggregators to block access dialing codes is a violation of the Telephone Operator Consumers Act of 1990.

#### Automatic Dialers:

When programming emergency numbers and (or) making test calls to emergency numbers:

- Remain on the line and briefly explain to the dispatcher the reason for the call.
- Perform such activities in the off-peak hours, such as early morning or late evenings.

#### Toll Restriction and least Cost Routing Equipment:

The software contained in this equipment to allow user access to the network must be upgraded to recognize newly established network area codes and exchange codes as they are placed into service.

Failure to upgrade the premises systems or peripheral equipment to recognize the new codes as they are established will restrict the customer and the customer's employees from gaining access to the network and to these codes.

#### For equipment approved prior to July 23, 2001:

This equipment complies with Part 68 of the FCC rules. On either the rear or inside the front cover of this equipment is a label that contains, among other information, the FCC registration number, and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

#### For equipment approved after July 23, 2001:

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the Administrative Council on Terminal Attachments (ACTA). On the rear of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXX. If requested, this number must be provided to the telephone company.

The REN is used to determine the quantity of devices that may be connected to the telephone line. Excessive RENs on the telephone line may result in devices not ringing in response to an incoming call. In most, but not all areas, the sum of RENs should not exceed 5.0. To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. For products

approved after July 23, 2001, the REN for this product is part of the product identifier that has the format US:AAAEQ##TXXX. The digits represented by ## are the REN without a decimal point (for example, 03 is a REN of 0.3). For earlier products, the REN is separately shown on the label.

#### Means of Connection:

Connection of this equipment to the telephone network is shown in the following table:

Manufacturer's Port Identifier	FIC Code	SOC/ REN/A.S. Code	Network Jacks
Off premises station	OL13C	9.0F	RJ2GX, RJ21X, RJ11C
DID trunk	02RV2.T	AS.2	RJ2GX, RJ21X, RJ11C
CO trunk	02GS2	0.3A	RJ21X, RJ11C
	02LS2	0.3A	RJ21X, RJ11C
Tie trunk	TL31M	9.0F	RJ2GX
Basic Rate Interface	02IS5	6.0F, 6.0Y	RJ49C
1.544 digital interface	04DU9.BN	6.0F	RJ48C, RJ48M
	04DU9.1KN	6.0F	RJ48C, RJ48M
	04DU9.1SN	6.0F	RJ48C, RJ48M
120A4 channel service unit	04DU9.DN	6.0Y	RJ48C

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with this equipment, for repair or warranty information, please contact the Technical Service Center at 1-800-242- 2121 or contact your local Avaya representative. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant.

Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

#### Installation and Repairs

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. It is recommended that repairs be performed by Avaya certified technicians.

#### FCC Part 68 Supplier's Declarations of Conformity

Avaya Inc. in the United States of America hereby certifies that the equipment described in this document and bearing a TIA TSB-168 label identification number complies with the FCC's Rules and Regulations 47 CFR Part 68, and the Administrative Council on Terminal Attachments (ACTA) adopted technical criteria.

Avaya further asserts that Avaya handset-equipped terminal equipment described in this document complies with Paragraph 68.316 of the FCC Rules and Regulations defining Hearing Aid Compatibility and is deemed compatible with hearing aids.

Copies of SDoCs signed by the Responsible Party in the U. S. can be obtained by contacting your local sales representative and are available on the following Web site: <http://support.avaya.com/DoC>.

#### Canadian Conformity Information

This Class A (or B) digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe A (ou B) est conforme à la norme NMB-003 du Canada.

This product meets the applicable Industry Canada technical specifications/Le présent matériel est conforme aux spécifications techniques applicables d'Industrie Canada.

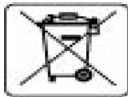
## European Union Declarations of Conformity



Avaya Inc. declares that the equipment specified in this document bearing the "CE" (Conformité Européenne) mark conforms to the European Union Radio and Telecommunications Terminal Equipment Directive (1999/5/EC), including the Electromagnetic Compatibility Directive (2004/108/EC) and Low Voltage Directive (2006/95/EC).

Copies of these Declarations of Conformity (DoCs) can be obtained by contacting your local sales representative and are available on the following Web site: <http://support.avaya.com/DoC>.

### European Union Battery Directive



Avaya Inc. supports European Union Battery Directive 2006/66/EC. Certain Avaya Inc. products contain lithium batteries. These batteries are not customer or field replaceable parts. Do not disassemble. Batteries may pose a hazard if mishandled.

### Japan

The power cord set included in the shipment or associated with the product is meant to be used with the said product only. Do not use the cord set for any other purpose. Any non-recommended usage could lead to hazardous incidents like fire disaster, electric shock, and faulty operation.

本製品に同梱または付属している電源コードセットは、本製品専用です。本製品以外の製品ならびに他の用途で使用しないでください。火災、感電、故障の原因となります。

#### If this is a Class A device:

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

#### If this is a Class B device:

This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラス B 情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをして下さい。

### Downloading documents

For the most current versions of documentation, see the Avaya Support Web site:

<http://www.avaya.com/support>

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# Chapter 1: Installing the 909 Universal Coupler

The 909 Universal Coupler (UC) is used between customer provided equipment (CPE) and the PBX to protect the PBX and the public network against longitudinal imbalance and hazardous voltages. It suppresses out-of-band frequencies and limits the power output to the PBX from the CPE. When used in loudspeaker paging applications, the UC prevents annoying clicks at the beginning and ending of pages and provides control circuitry to allow communication between the PBX and CPE.

The 909 Universal Coupler will replace the 36A Voice Coupler, 89A Control Unit, and 278A Adapter in System 25, System 75, System 85, Definity® G1, G2, G3, and Int'l for the following applications:

- [Music-on-Hold](#)
- [Music-on-Hold and Deluxe Queuing](#)
- [Radio Paging Access \(with a J58824CD Interface Unit\)](#) (if not FCC approved)
- [Recorded Announcement Unit KS-16765 Connections](#)
- [Non-FCC Registered Equipment Provided for Recorded Announcement/Dial Dictation Equipment \(Analog Access\)](#)
- [Loudspeaker Paging with Background Music](#) (w/wo background music)
- [Malicious Call Trace](#)

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## Transmission Requirements

Talk path insertion loss, measured with transmission in both directions, shall be approximately  $-0.25\text{dB} \pm 0.25\text{dB}$  over the range of 300-3400 Hz with both source and termination impedance equal to 600  $\Omega$ . This insertion loss is maintained until the levels into the AUX trunk attempt to exceed  $-9\text{dBm}$  600 or  $-15\text{dBm}$  600. The path into the AUX trunk will have an optional maximum level of  $-9\text{dBm}$  600 or  $-15\text{dBm}$  600, but there is no maximum signal guarantee of levels going out to the CPE. This is a linear ALC and does not involve clipping. The voice band is filtered using a low pass filter with a 3dB knee at 3400 Hz having a roll-off of at least 20 dB/decade. Looking into each end, with the opposite end terminated in 600  $\Omega$ , we will see 600  $\Omega$  of impedance with a return loss of 18dB. The CPE can present an unbalanced load or source to the coupler, but the PBX AUX trunk will see a balanced load because of the coupler. The AUX trunk always presents a balanced load to the coupler. The Universal Coupler design goal is to

prevent annoying clicks and pops during relay transitions. Insertion loss, measured with transmission from the music source to the CT/CR outputs, shall be approximately  $-0.25\text{dB} \pm 0.25\text{dB}$  over the range of 300-3400 Hz with termination impedance equal to  $600\ \Omega$ . To allow connections to a wide variety of music sources, the following input impedance options will be offered:

- Balanced  $8\ \Omega \pm 2\ \Omega$  connection (simulating a speaker)
- High impedance ( $>50\text{K}\ \Omega$ ) balanced connection
- $1.5\text{K}\ \Omega \pm 0.25\text{K}\ \Omega$  connection (offered on the 278A paging unit)

The talk path does not have DC continuity, therefore it prevents reverse battery type signaling back to the AUX trunk on the talk path. The music source is assumed to have its own volume control.

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## Design Features

*Unit Power* The Universal Coupler can be powered from one of the following:

- An AUX Cabinet or wall field fuse panel that supplies  $-48\text{Vdc}$  and GRD, or
- The 1151D1,  $-48\text{V}$  plug-in power supply, provided with all 909B Universal Couplers.

*Talk Path* The T/R and CT/CR pairs are balanced  $600\ \Omega$  impedance terminations that have transformer isolation between the PBX or CPE and the coupler circuit. The CT and CR leads can be connected in either direction to the T and R leads of the CPE.

*Background Music* CMS1/M1 and CMS2/M2 present a balanced  $8\ \Omega$ ,  $1.5\text{K}\ \Omega$  or  $>50\text{K}\ \Omega$  impedance termination to a customer supplied music source for paging applications, depending on how the coupler is optioned.

*Seizure/Remote Busy-Out Control* The Seizure Control leads (PG1/BZ1, PG2/BZ2) and the Busy-Out Control leads (COS1, COS2) connect to opto-isolators capable of handling a maximum of 100ma of current, flowing in either direction, through the input diodes. The optos will turn on when they see a voltage difference of  $9.5\text{--}60\text{Vdc}$ , of either polarity, across the input diodes. In the case of the PG1/BZ1, PG2/BZ2 leads power can be obtained from a number of sources.

- An AUX Cabinet or wall field fuse panel
- The 1151D1,  $-48\text{V}$  plug-in power supply used to power the 909A/B
- Any approved plug-in AC-DC, power supply with a voltage output between  $9.5\text{Vdc}$  and  $60\text{Vdc}$ .

The COS1, COS2 control leads connect to a contact closure on the CPE. It is the method by which the



CPE can communicate with the PBX when it does not want to receive any in-coming calls. (For example: when a paging system microphone is being used to talk to one or all of its zones, they wouldn't want a page to come in from a phone call.)

*Busy/Busy-Out/Seizure Indication* The Busy/Busy-Out Indication leads (BSY1/BY1, BSY2/BY2) and the Seizure Indication leads (CBS1/C1, CBS2/C2) connect to normally-open relay contacts, when the relays are not activated, or, in the case of Local Busy-Out, a switch. The Busy/Busy-Out Indication leads provide  $\sim 256 \Omega$  of resistance for current limiting purposes.

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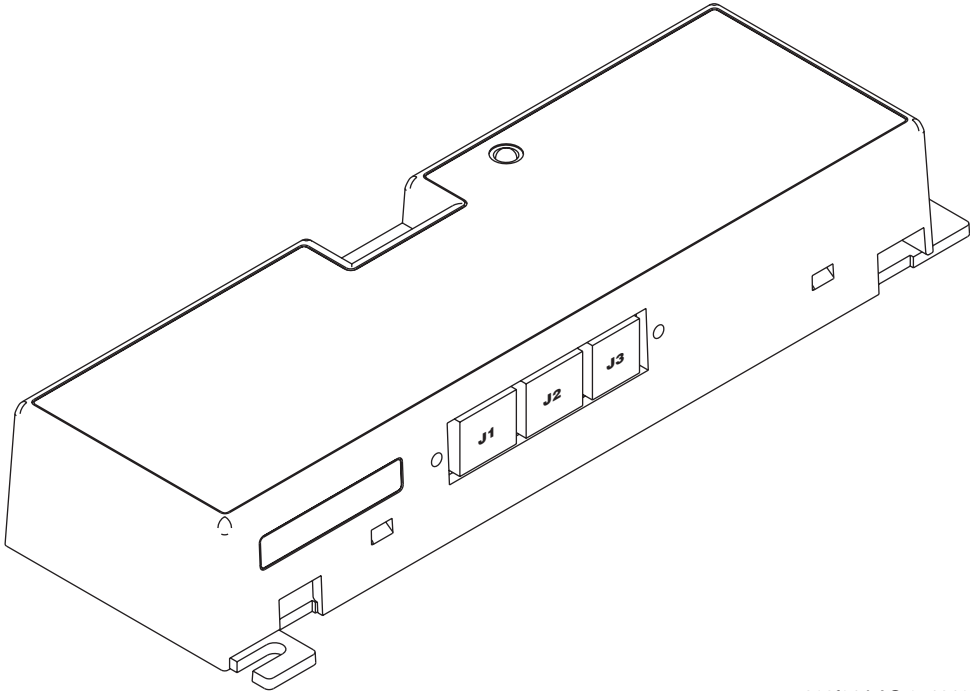
## Maintenance Provisions

Remote maintenance of the Universal Coupler is not possible due to the nature of the circuitry and the wide variety of equipment it must connect to. Functionality is tested by placing a call to a port connected to the coupler. If it performs as expected, the unit is good. Failure to make a connection to the CPE, as long as the PBX equipment is functioning correctly, or the presence of noise caused by the coupler itself indicates failure of the Universal Coupler. It should be replaced.

There is one yellow LED on the unit. It indicates that the talk path is in use. More specifically, it indicates that the PBX Seizure relay has been activated. CPE initiated Busy-out at this point, will break the physical connection between the PBX and the CPE, but may not cause the relay to release immediately. Manual initiated Busy-out will not cause a connection in progress to drop, but it will prevent the PBX from connecting another caller to the port when the current connection goes on-hook.

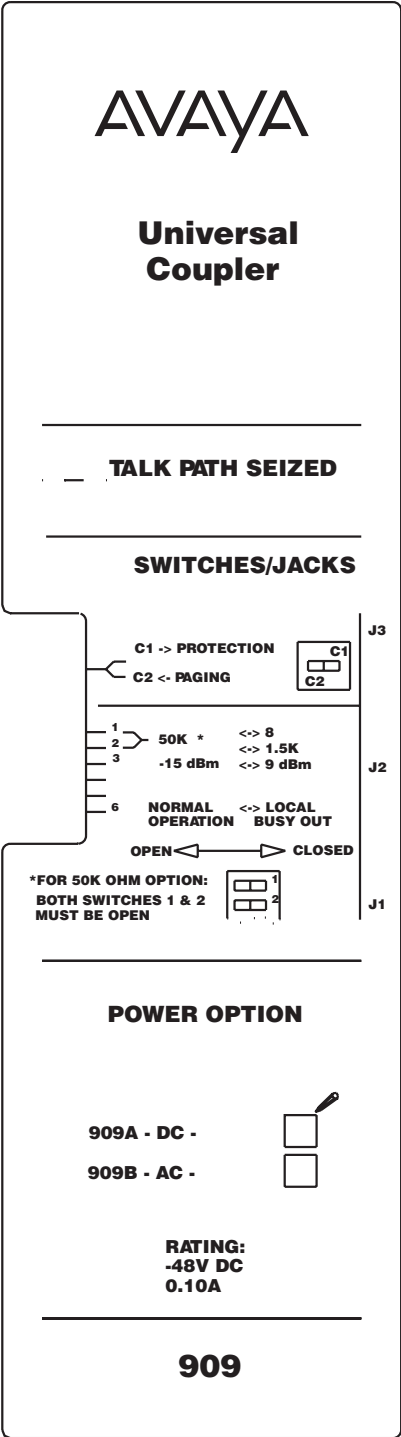
To reduce confusion during installation, the lead names on the UC are a combination of the appropriate lead names on the 36A, 89A, and 278A units. **This issue of the document only applies to 909A/B Universal Couplers which contain CPJ2 Series 2,3 or later circuit packs. Additional issues will be released to document any changes to the product.** The 909 unit is shown in [Figure 1](#) on the next page. A picture of the 909 front label is shown in [Figure 2](#) and [Figure 3](#) is a circuit block diagram. [Figure 4](#) shows a visual diagram of the pin-outs of the two types of jacks and three cable plugs used for the Universal Coupler.

Figure 1: 909 Universal Coupler



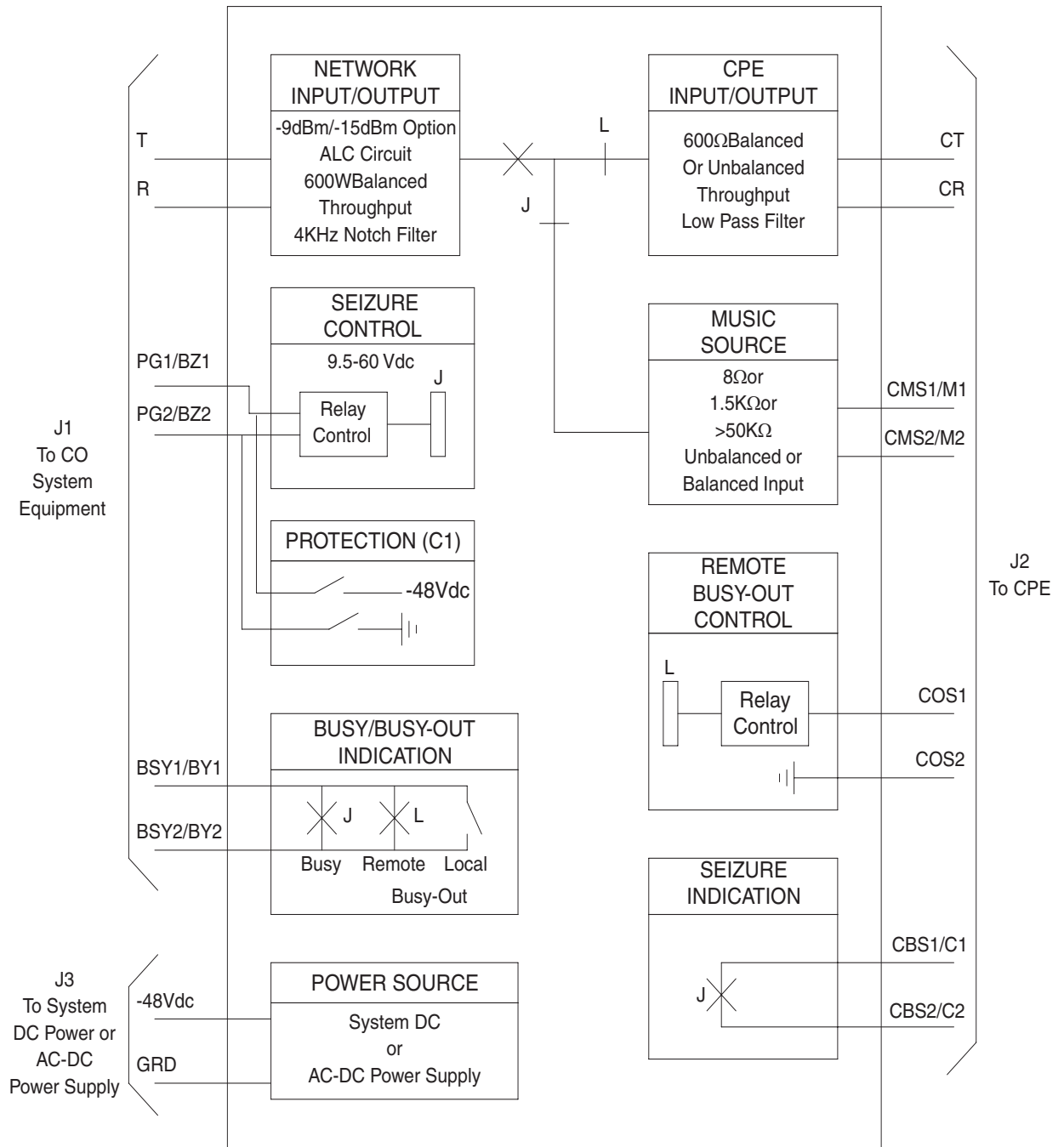
cy909f01 LAO 051810

Figure 2: 909 Front Label



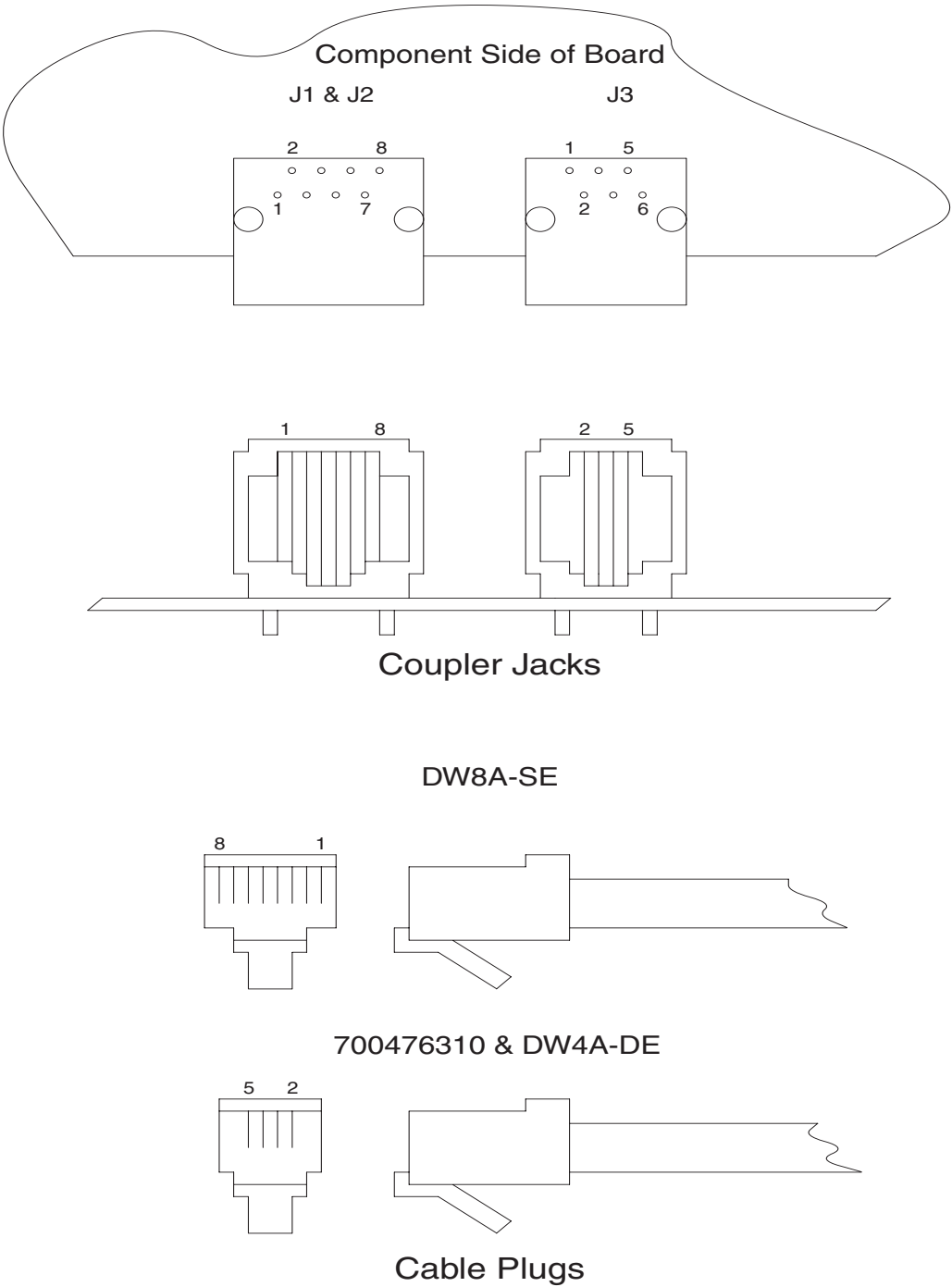
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Figure 3: Universal Coupler Circuitry



cy909f03 LAO 051810

Figure 4: Pin-Outs for Cable Plugs and Coupler Jacks



cy909f04 LAO 052510



# Chapter 2: Installation Procedure

The 909 Universal Coupler (UC) can be installed on any mounting frame in either a vertical or horizontal position. The housing has ears for screw-mounting and cutouts for snap-mounting the unit in an 89-type mounting bracket. The recommended locations are on the wall field or within an AUX cabinet. If the unit is shipped with a 1151D1 or other approved -48Vdc output plug-in power supply, locate the unit within 10ft of an unswitched 120VAC, 60Hz outlet.

**Note:**

In addition to meeting standard environmental considerations such as temperature, humidity, etc., the 909A/B must be installed in a location that can be accessed only by authorized personnel.

To install the unit, follow the steps below:

1. Locate the Protection/Paging switch (see [Figure 2](#)). This is the single two-position switch on the left side of the UC marked C1/C2. For AUX trunk paging and malicious call trace applications, set this switch to the C2 position. For all other applications set the switch to the C1 position.
2. Locate the six two-position switches immediately below the Protection/Paging switch. Determine if the output to the network should be -9dBm or -15dBm. For network output limited at -9dBm set the switches as shown in [Table 1](#).

**Table 1: Switch Settings for -9dBm Output Limit**

Switch No.	-9dBm Output Limit
1	don't care
2	don't care
3	closed
4	not used
5	not used
6	open

For network output limited to -15dBm set the switches as shown in [Table 2](#).

**Table 2: Switch Settings for -15dBm Output Limit**

Switch No.	-15dBm Output Limit
1	don't care
2	don't care
3	open
4	not used
5	not used
6	open

See [Figure 2](#) to determine which direction is open.

If the Protection/Paging switch is set to C1, switch setting is complete. Proceed to [Step 3](#).

If the Protection/Paging switch is set to C2 and the UC is being used for AUX trunk paging WITHOUT background music or malicious call trace, switch setting is complete. Proceed to [Step 3](#).

If the Protection/Paging switch is set to C2 and the UC is supplying background music to a CPE paging amplifier, determine the output impedance of the music source. The UC has a choice of 8 Ω termination, 1.5K Ω termination or >50K Ω termination. Determine which termination comes closest to matching the output impedance of the music source. If this information is unavailable, choose the >50K Ω termination. (This can be adjusted later.)

[Table 3](#), [Table 4](#), and [Table 5](#) shows the switch settings for each termination.

**Table 3: Switch Settings for Music Source with 8 Ω Output Impedance**

Switch No.	8 Ω Termination
1	closed
2	open
3	don't care
4	not used
5	not used
6	open



**Table 4: Switch Settings for Music Source with 1.5K  $\Omega$  Output Impedance**

Switch No.	1.5K $\Omega$ Termination
1	open
2	closed
3	don't care
4	not used
5	not used
6	open

**Table 5: Switch Settings for Music Source with >50K  $\Omega$  Output Impedance**

Switch No.	>1.5K $\Omega$ Termination
1	open
2	open
3	don't care
4	not used
5	not used
6	open

3. Connect a DW8A-SE cable between the modular jack "J1" on the UC and the switch via the wall field. Location of J1 is shown in [Figure 1](#). [Table 6](#) shows the J1 pin assignments.

**Table 6: J1 Pin Assignments**

Pin	Color	Designation	Description
1	W-O	-	not used
2	O	PG2/BZ2	Seizure control lead, connected to GRD on the UC when the P/P switch set to C1, or as shown in <a href="#">Figure 4</a> to <a href="#">Figure 17</a> when the P/P switch is set to C2

**1 of 2**

## Chapter 2: Installation Procedure

Pin	Color	Designation	Description
3	W-G	PG1/BZ1	Seizure control lead, connected to -48Vdc on the UC when P/P switch set to C1, or as shown in <a href="#">Figure 4</a> to <a href="#">Figure 17</a> when the P/P switch is set to C2
4	BL	R	Ring Lead
5	W-BL	T	Tip Lead
6	G	BSY2/BY2	Busy/Busy-Out lead, connected as shown in <a href="#">Figure 4</a> to <a href="#">Figure 17</a> when the P/P switch is set to C2
7	W-BR	BSY1/BY1	Busy/Busy-Out lead, connected as shown in <a href="#">Figure 4</a> to <a href="#">Figure 17</a> when the P/P switch is set to C2
8	BR	-	not used
<b>2 of 2</b>			

Pins 1-3 and 6-8 of J1 are not connected when the P/P (Protection/Paging) switch is set to C1.

Refer to [Table 9](#) for the wall field connections of your particular port pack.

4. Connect a DW8A-SE cable between the modular jack "J2" on the UC and the CPE equipment via the wall field. Location of J2 is shown in [Figure 1](#). [Table 7](#) shows the J2 pin assignments.

**Table 7: J2 Pin Assignments**

Pin	Color	Designation	Description
1	W-O	CMS1/M1	Customer provided music source
2	O	CMS1/M1	Customer provided music source
3	W-G	COS1	Remote Busy-Out Control contact closure from CPE
4	BL	CR	Customer Ring Lead
5	W-BL	CT	Customer Tip Lead
6	G	COS2	Remote Busy-Out Control contact closure from CPE
7	W-BR	CBS1/C1	Seizure indication provided to CPE
8	BR	CBS2/C1	Seizure indication provided to CPE

Pins 1-3 and 6-8 are not connected when the P/P (Protection/Paging) switch is set to C1.

5. Determine if your UC is the AC version or DC version. Mark the appropriate box on the front label of the unit (see [Figure 2](#)).
  - Presence of a 700476310 cable indicates this is the DC version and 909A should be marked.
  - Presence of a 1151D1 plug-in power supply and a DW4B-DE cable indicate this is the AC version and 909B should be marked.

**Table 8: J3 Pin Assignments**

Pin	Color	Designation	Description
1	none	-	no wire present
2	Brown	GRD	-48VRET or ground lead from system or from positive lead of AC-DC power supply
3	R		not connected
4	G		not connected
5	White	-48Vdc	-48Vdc or ground lead from system or from negative lead of AC-DC power supply
6	none		no wire present

If you have a 909B UC, and don't plan to power the control leads from the same power supply that powers the UC, plug the DW4B-DE cable into jack "J3" on the UC and into the 1151D1 or other approved -48Vdc output plug-in power supply. Location of J3 is shown in [Figure 1](#). Plug the power supply into an un-switched, 120Vac, 60Hz outlet located within 10 ft of the UC. Proceed to [Step 6](#).

If you have a 909B UC, and plan to power the control leads and the UC from the same 1151D1 plug-in power supply you will need to locate 2 700476310 cables (they are not shipped with the 909B), one to plug into the 1151D1 power supply and one to plug into J3 on the 909B UC. Punch down the power supply cable at the wall field in such a way that there are two more connecting points for the negative lead and two more connecting points for the positive lead of the power supply. Connect the Brown lead of the 700476310 cable that goes to J3 on the UC to the positive lead of the power supply. Connect the Yellow lead of the same cable to the negative lead of the power supply. Use the third connecting point of the positive and negative leads at the wall field to operate the control leads. Connect them according to [Figure 5](#) to [Figure 17](#) as appropriate. Proceed to [Step 6](#).

If you have a 909A UC, connect a 700476310 cable to -48Vdc/-48VRET at the wall field or on the AUX cabinet power bus if installed there. Make all cross-connects to bring -48V and -48VRET to the cable. Refer to [Table 8](#) for the correct way to connect this cable. Then plug the 700476310 cable into "J3" on the UC.



**CAUTION:**

If the cable is plugged into "J3" before all cross-connects are completed, arcing may occur at the cross-connect field and damage the Universal Coupler.

6. Check the UC for normal operation as follows:
  - Perform all administration needed for your application.
  - Check wiring connections (see [Table 6](#) to [Table 9](#)).

- If the Protection/Paging switch is set to C1, the yellow LED should be on, otherwise it should be off.
- Access the port connected to the UC and confirm operation. If the Protection/Paging switch is set to C2, it will light when the port is accessed. Break the connection.
- On the set of six switches below the Protection/Paging switch, close switch 6 (see [Figure 2](#)). Attempt to access the UC again. Access should be denied. Open switch 6.
- For paging applications with background music, confirm the presence of music on the intercom speakers.
- For paging applications with microphone triggered remote busy-out, confirm ability to override background music and page with paging amplifier microphone.
- For Music-on-Hold, use one station to call another. Have the first station place the second station on HOLD. There should be music heard at the second station.

If the applicable conditions above are not met, on a 909A UC or a 909B UC that powers the control leads off of the 1151D1 power supply used to power the UC, try reversing the -48Vdc and GRD leads. If the unit still does not work, remove the UC from service and replace it with a new unit.

**Table 9: Wall Field Connections**

Connect or Block Terminal	Lead Color	50-Pin Connector	110-Type Connector Block Group	SN231	TN742 TN742B TN769	TN763 TN763B TN763C	TN746
1	W-BL	26	1	T0	T.0	T.0	T.0
2	BL-W	1		R0	R.0	R.0	R.0
3	W-O	27				SZ.0	T.1
4	O-W	2				SZ1.0	R.1
5	W-GR	28		AL0		S.0	T.2
6	GR-W	3		S0		S1.0	R.2
7	W-BR	29	2	T1	T.1	T.1	T.3
8	BR-W	4		R1	R.1	R.1	R.3
9	W-SL	30				SZ.1	
10	SL-W	5				SZ1.1	
11	R-BL	31		AL1		S.1	
12	BL-R	6		S1		S1.1	
13	R-O	32	3	T2	T.2	T.2	
14	O-R	7		R2	R.2	R.2	
15	R-GR	33				SZ.2	
16	GR-R	8				SZ1.2	
17	R-BR	34		AL2		S.2	T.4
18	BR-R	9		S2		S1.2	R.4
19	R-SL	35	4	T3	T.3	T.3	T.5
20	SL-R	10		R3	R.3	R.3	R.5
21	BK-BL	36				SZ.3	T.6
22	BL-BK	11				SZ1.3	R.6
23	BK-O	37		AL3		S.3	T.7
24	O-BK	12		S3		S1.3	R.7
25	BK-G	38	5	T0	T.4	T.4	T.8
26	G-BK	13		R0	R.4	R.4	R.8
27	BK-BR	39				SZ.4	T.9
28	BR-BK	14				SZ1.4	R.9
29	BK-SL	40		AL0		S.4	T.10
30	SL-BK	15		S0		S1.4	R.10

*1 of 2*

Connect or Block Terminal	Lead Color	50-Pin Connector	110-Type Connector Block Group	SN231	TN742 TN742B TN769	TN763 TN763B TN763C	TN746
31	Y-BL	41	6	T1	T.5	T.5	T.11
32	BL-Y	16		R1	R.5	R.5	R.11
33	Y-O	42				SZ.5	
34	O-Y	17				SZ1.5	
35	Y-GR	43			AL1	S.5	
36	GR-Y	18			S1	S1.5	
37	Y-BR	44	7	T2	T.6	T.6	
38	BR-Y	19		R2	R.6	R.6	
39	Y-SL	45				SZ.6	
40	SL-Y	20				SZ1.6	
41	V-BL	46			AL2	S.6	T.12
42	BL-V	21			S2	S1.6	R.12
43	V-O	47	8	T3	T.7	T.7	T.13
44	O-V	22		R3	R.7	R.7	R.13
45	V-GR	48				SZ.7	T.14
46	GR-V	23				SZ1.7	R.14
47	V-BR	49			AL3	S.7	T.15
48	BR-V	24			S3	S1.7	R.15
49	V-SL	50		GRDD	GRD	GRD	GRD
50	SL-V	25		GRDD	GRD	GRD	GRD

**2 of 2**

This equipment is registered with the FCC, in accordance with Part 68 of its rules, as a blanket modification to the following systems:

- Avaya System 75 PBX, R1V4
- Avaya System 85 PBX, R2V5
- Avaya DEFINITY Communications System (G1)
- Avaya DEFINITY Communications System (G2)
- Avaya DEFINITY Enterprise Communications Server (G3)
- Avaya System 25 PBX

In compliance with the rules, you are to be advised of the following:

- Means of Connection: This equipment does not connect directly to the public telephone network.

- Installation and Operation Procedures: This is currently the only document to contain information about installation or operational procedures for the 909 Universal Coupler.
- Repair Instructions: If you experience trouble because your equipment is malfunctioning, the FCC requires that the equipment not be used and that it be disconnected from the network until the problem has been corrected. Repairs to the equipment can be made only by the manufacturer, the manufacturer's authorized agents, or by others who may be authorized by the FCC.
- Rights of the Local Telephone Company: If this equipment causes harm to the telephone network, the local telephone company may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice is not practical, you will be notified as soon as possible. You will also be informed of your right to file a complaint with the FCC.

Your local telephone company may make changes in its facilities, equipment, operations, or procedures that affect the proper functioning of this equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

- Customer Technical Contact: Avaya Technical Service Center, 1-800-242-2121.

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## Music-on-Hold and Deluxe Queuing

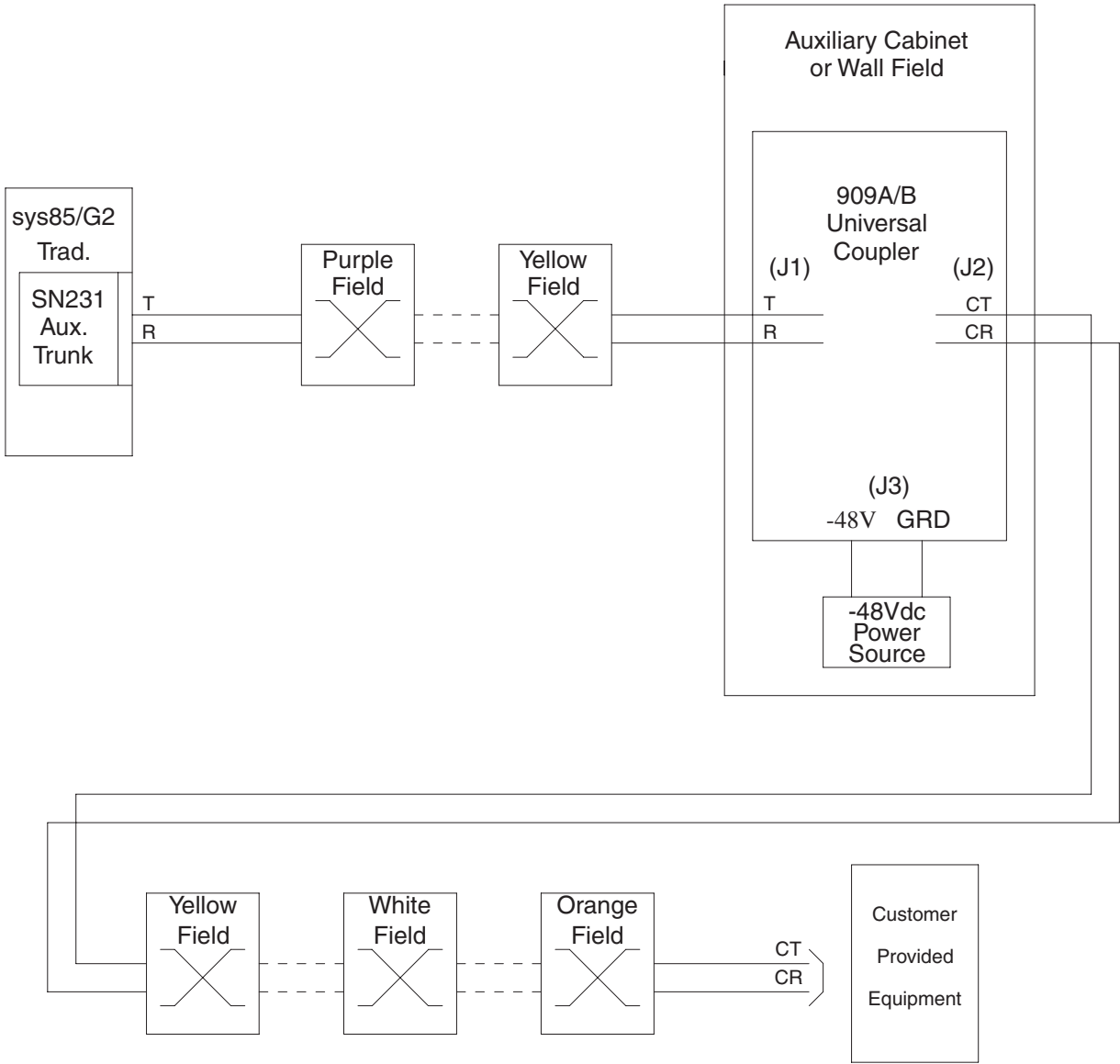
System 85 or Traditional Definity G2



Figure 5: Music-on-Hold and Deluxe Queuing for Sys85 or Trad. G2

# Music-on-Hold and Deluxe Queuing

System 85 or Traditional Definity G2



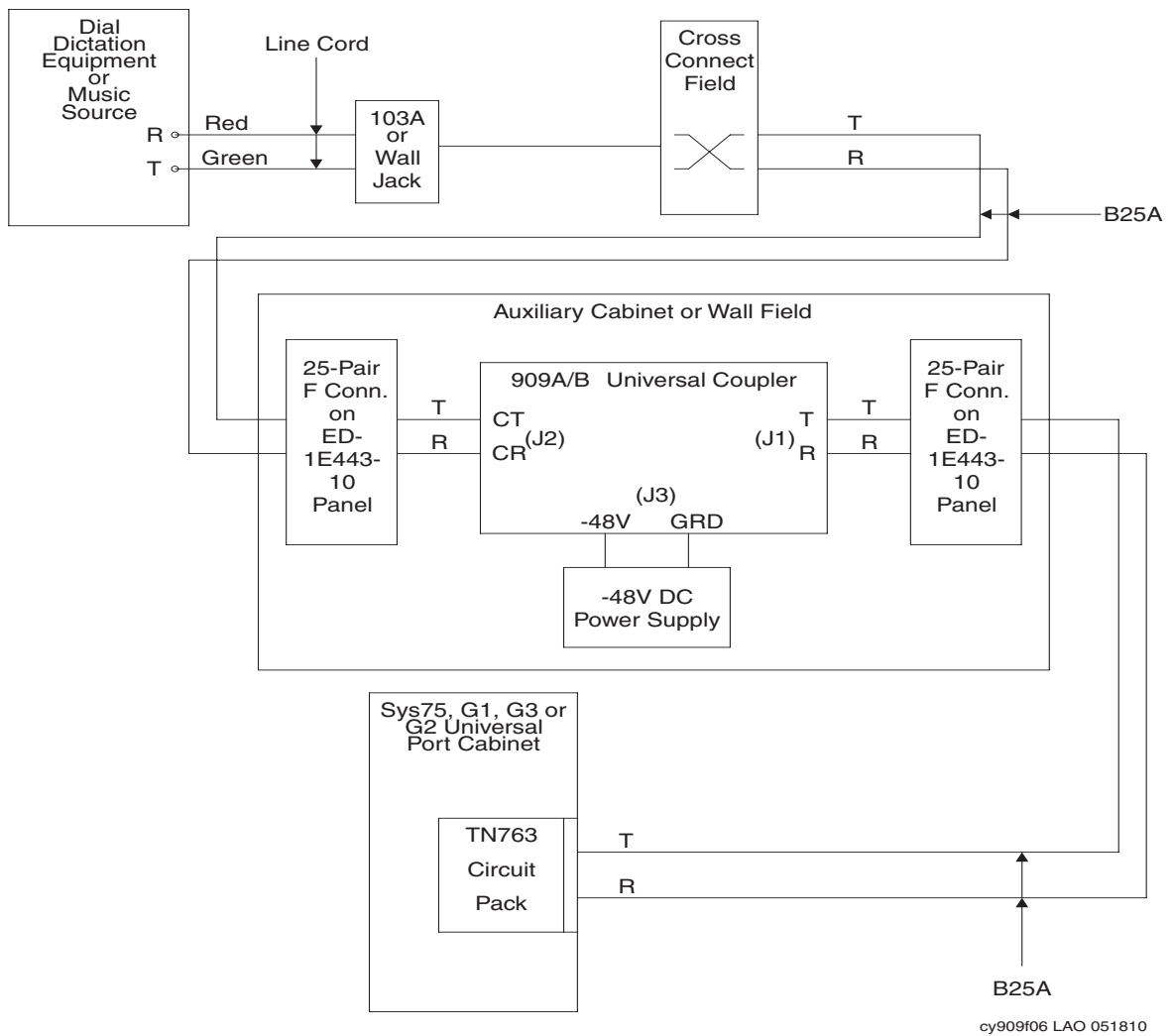
cy909f05 LAO 051810

# Non-FCC Registered Equipment Provided for Music-on-Hold and Dial Dictation Equipment (Auxiliary Access)

System 75, Definity G1, G3 or Universal Definity G2

Figure 6: Music-on-Hold and Dial Dictation for Sys75, G1, G3 or Univ. G2

Non-FCC Registered Equipment Provided for Music-on-Hold and Dial Dictation Equipment (Auxiliary Access)  
System 75, Definity G1, G3 or Universal Definity G2



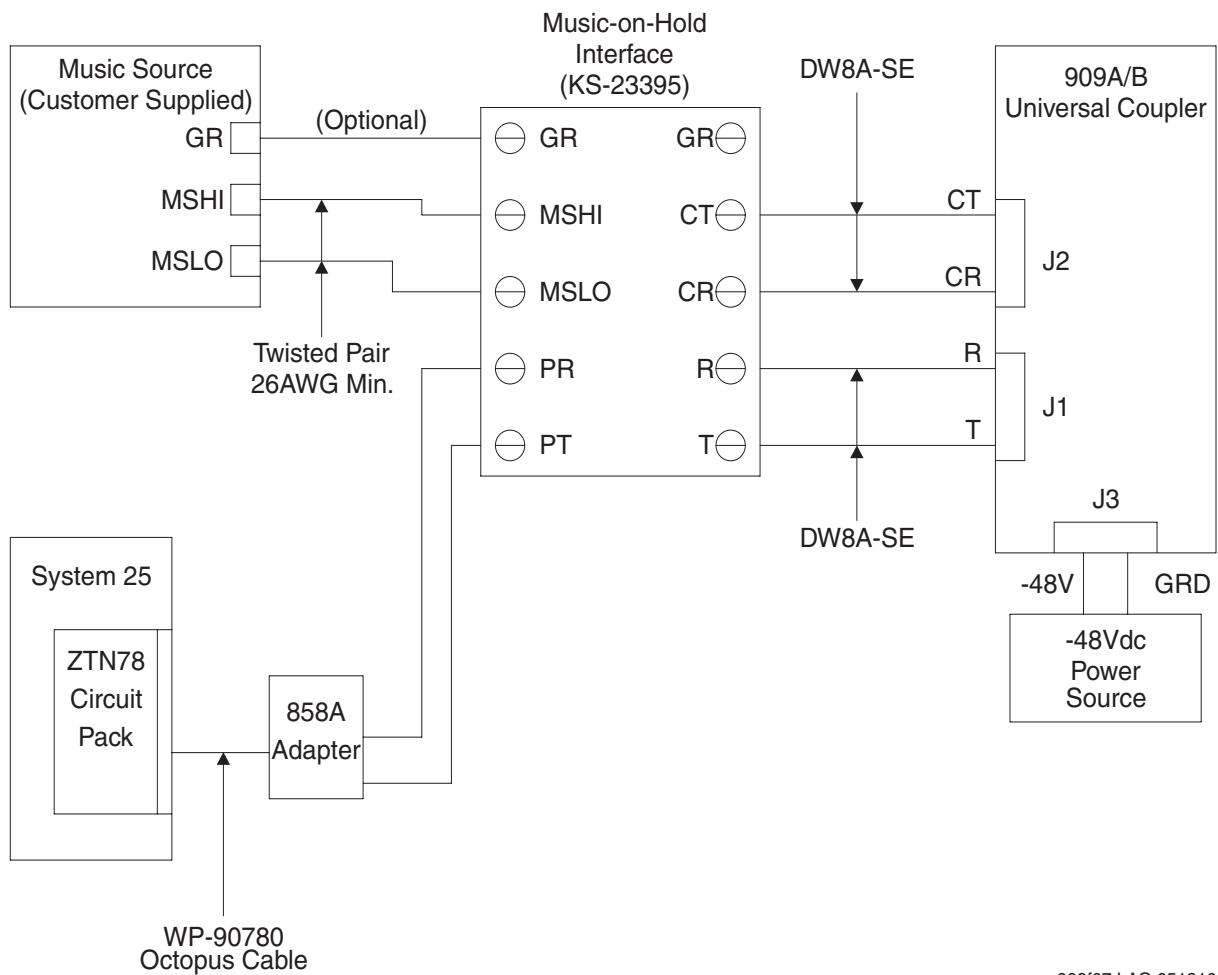
# Music-on-Hold

## System 25

Figure 7: Music-on-Hold for Sys25

### Music-on-Hold

#### System 25



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# Radio Paging Access (with a J58824CD Interface Unit)

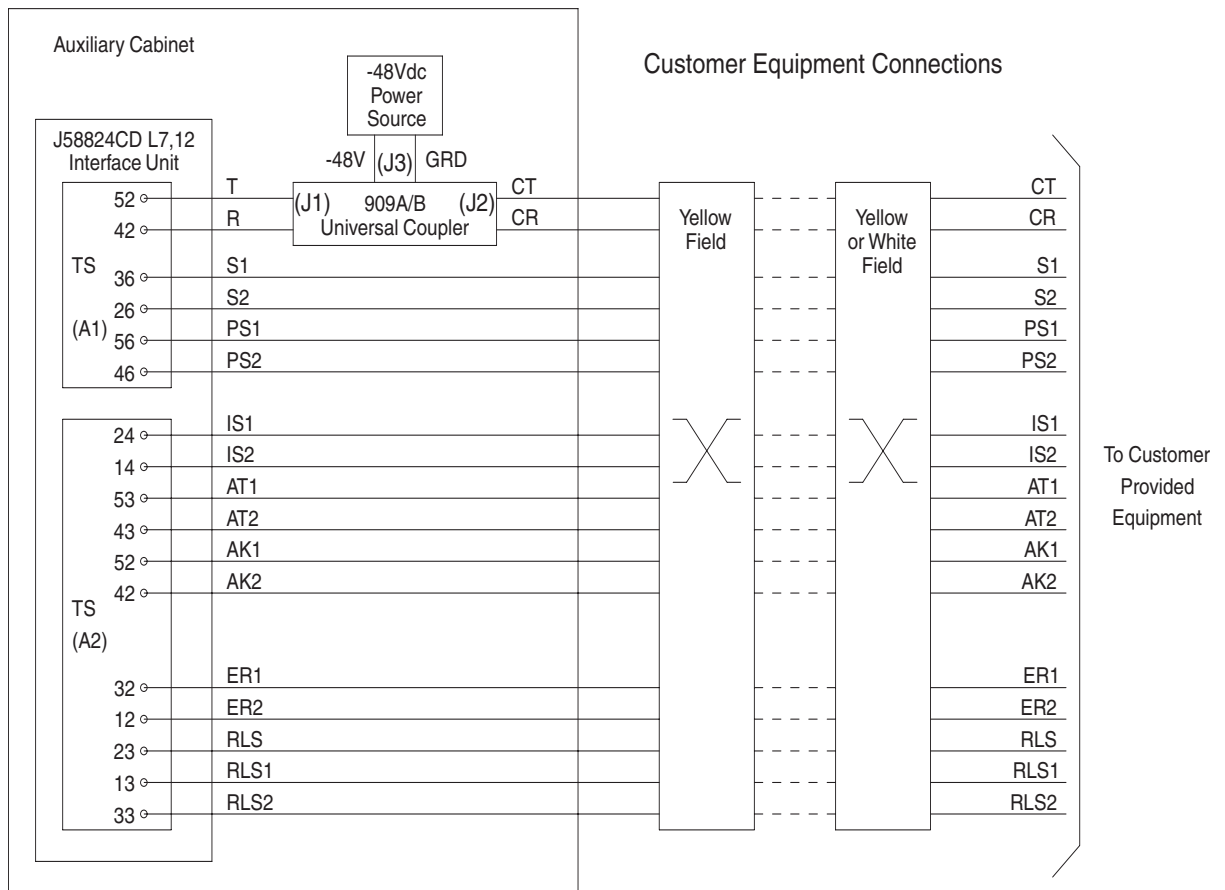
System 85 or Traditional Definity G2

Figure 8: Radio Paging Access for Sys85 or Trad. G2

## Radio Paging Access

(with a J58824CD Interface Unit)

System 85 or Traditional Definity G2



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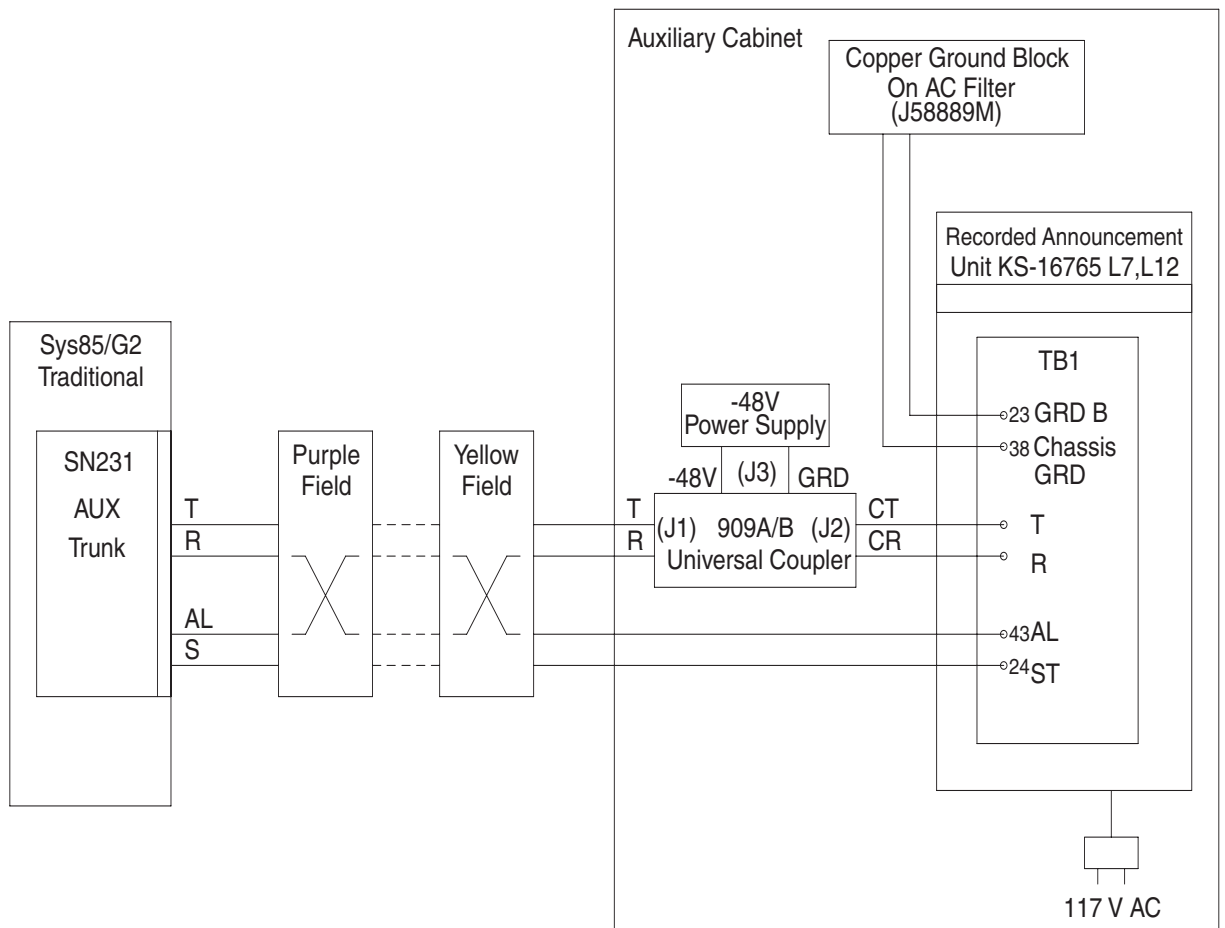
# Recorded Announcement Unit KS-16765 Connections

System 85 or Traditional Definity G2

Figure 9: Recorded Announcement Unit for Sys85 or Trad. G2

## Recorded Announcement Unit KS-16765 Connections

System 85 or Traditional Definity G2



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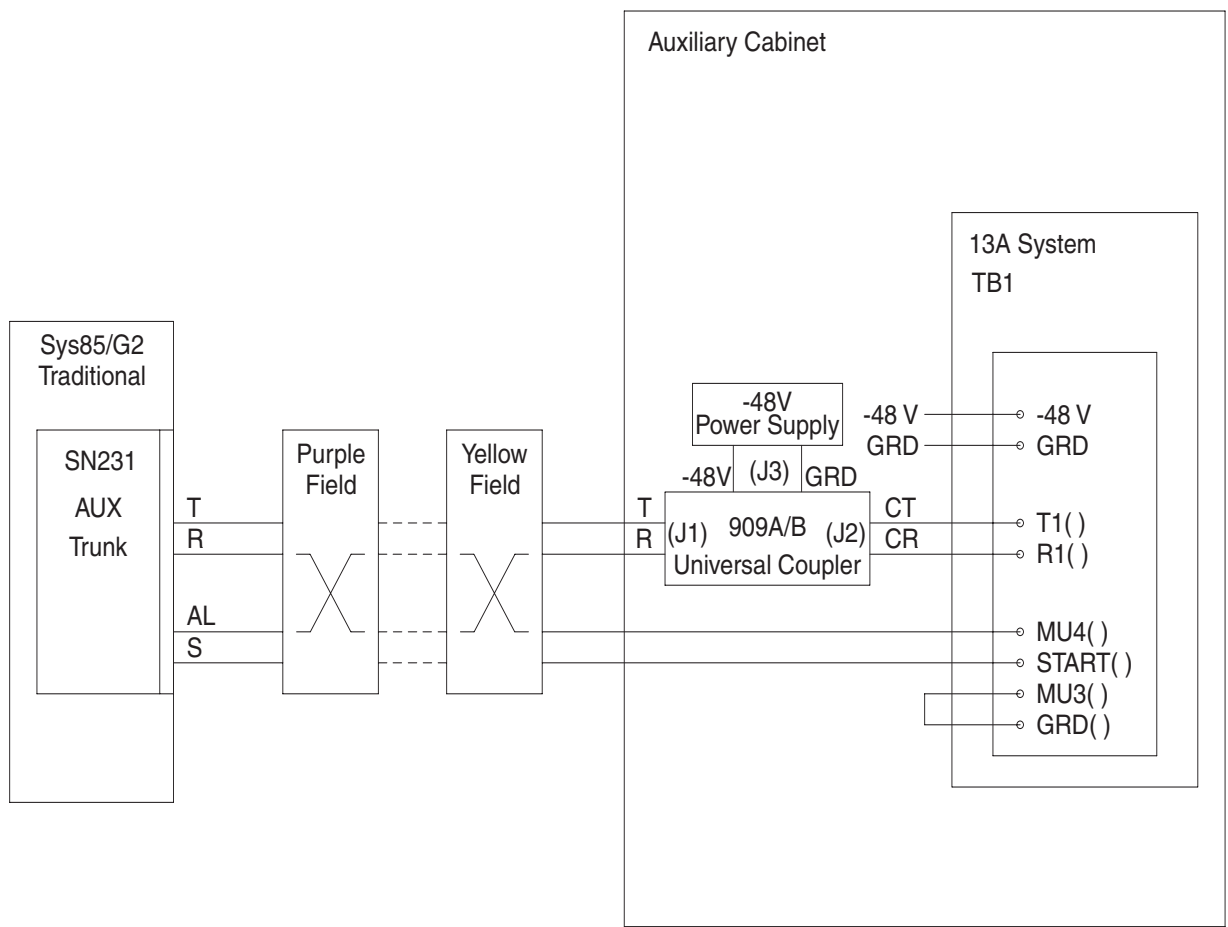
# 13A Announcement System Connections

System 85 or Traditional Definity G2

Figure 10: 13A Announcement System for Sys85 or Trad. G2

## 13A Announcement System Connections

System 85 or Traditional Definity G2



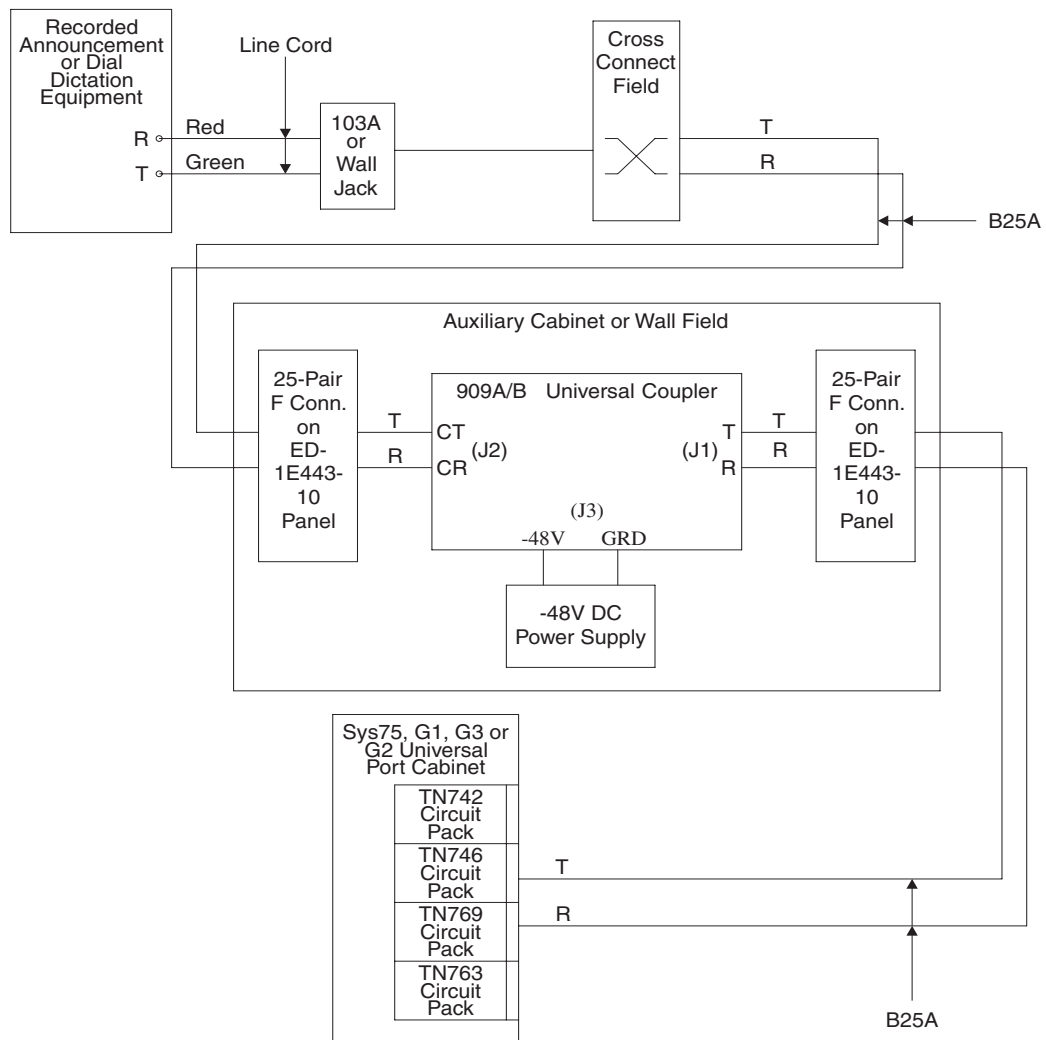
cy909f10 LAO 051910

# Non-FCC Registered Equipment Provided for Recorded Announcement/Dial Dictation Equipment (Analog Access)

System 75, Definity G1, G3 or Universal Definity G2

Figure 11: Recorded Announcement and Dial Dictation for Sys75, G1, G3 or Univ. G2

Non-FCC Registered Equipment Provided for  
 Recorded Announcement/Dial Dictation Equipment (Analog Access)  
 System 75, Definity G1, G3 or Universal Definity G2



cy909f11 LAO 052110

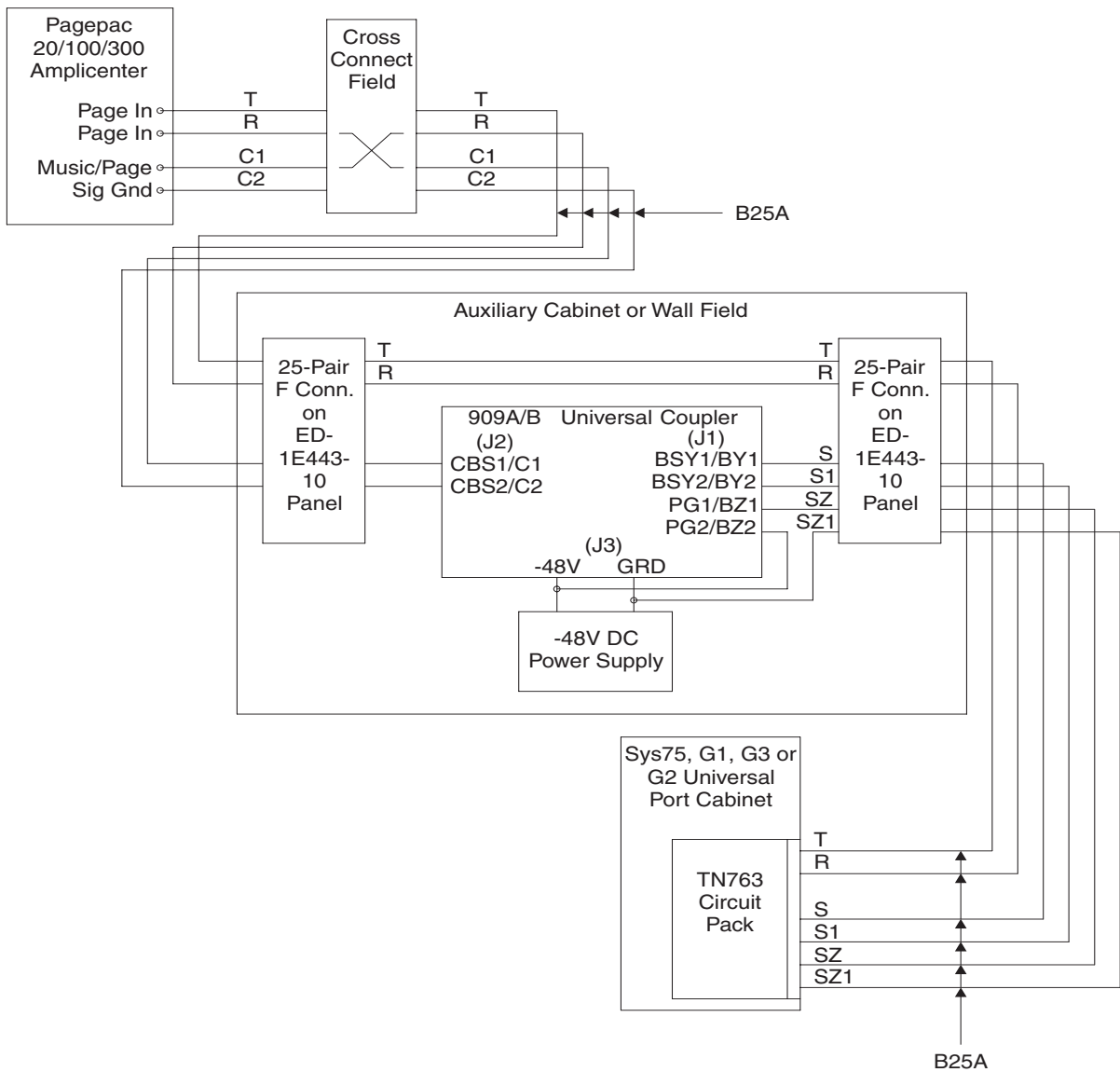
# Pagepac 20/100/300 Amplicenter

System 75, Definity G1, G3 or Universal Definity G2

Figure 12: Pagepac 20/100/300 Amplicenter for Sys75, G1, G3 or Univ. G2

## Pagepac 20/100/300 Amplicenter

System 75, Definity G1, G3 or Universal Definity G2



cy909f12 LAO 051910



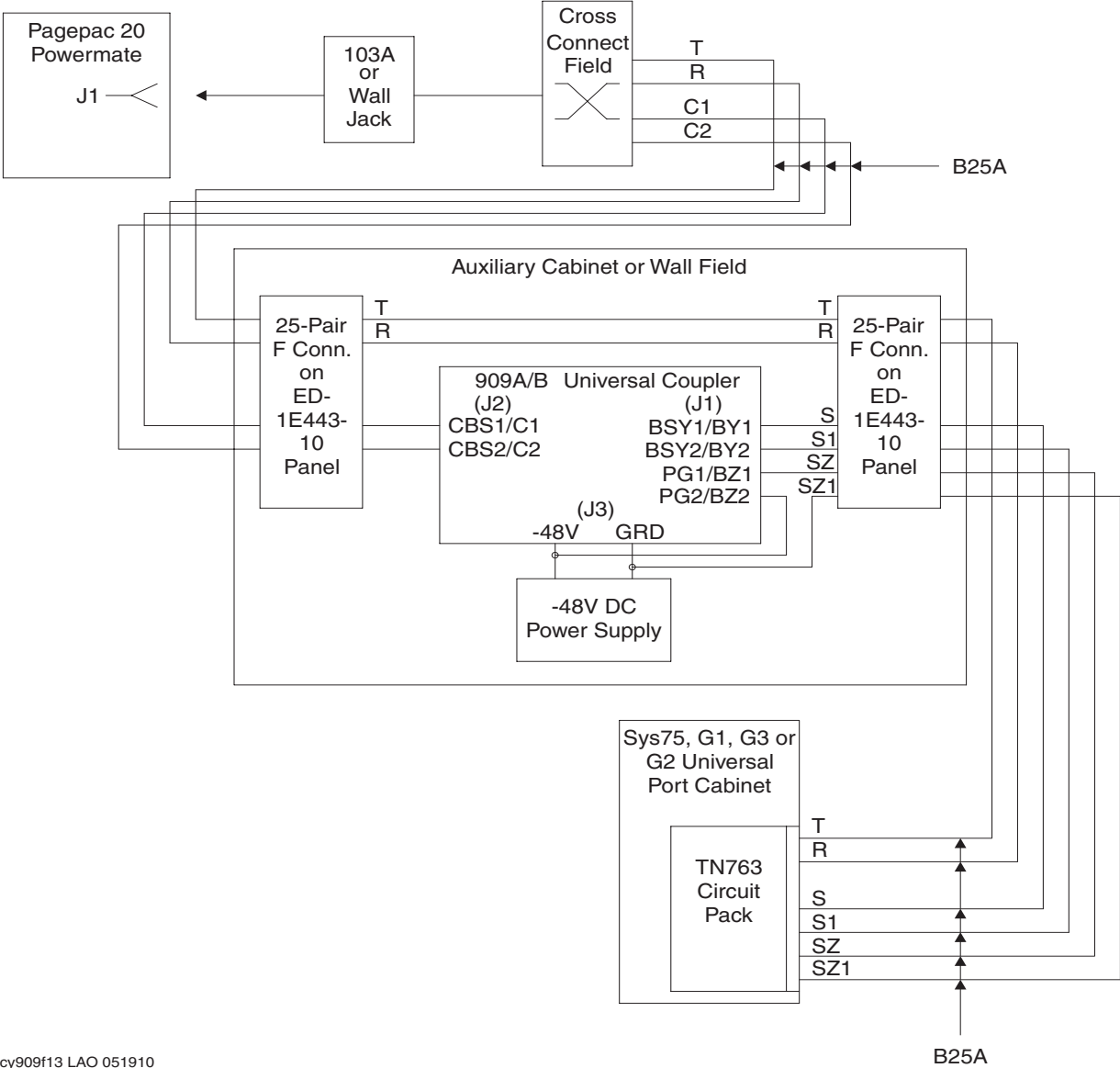
# Pagepac 20 without Zone-mate 9 or 39

System 75, Definity G1, G3 or Universal Definity G2

Figure 13: Pagepac 20 without Zone-mate 9 or 39 for Sys75, G1, G3 or Univ. G2

Pagepac 20 without Zone-mate 9 or 39

System 75, Definity G1, G3 or Universal Definity G2

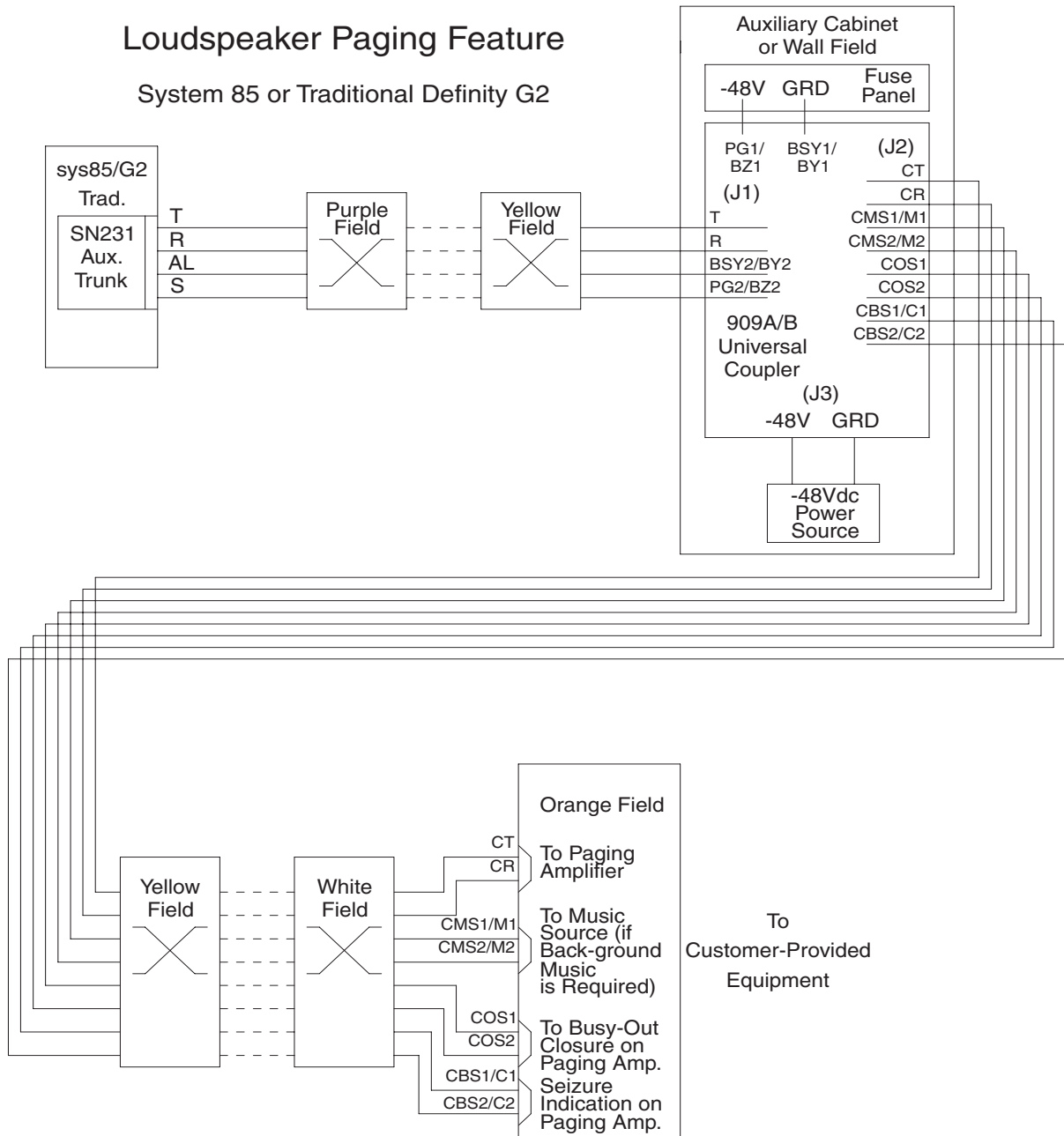


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# Loudspeaker Paging Feature

## System 85 or Traditional Definity G2

Figure 14: Loudspeaker Paging Feature for Sys85 or Trad. G2



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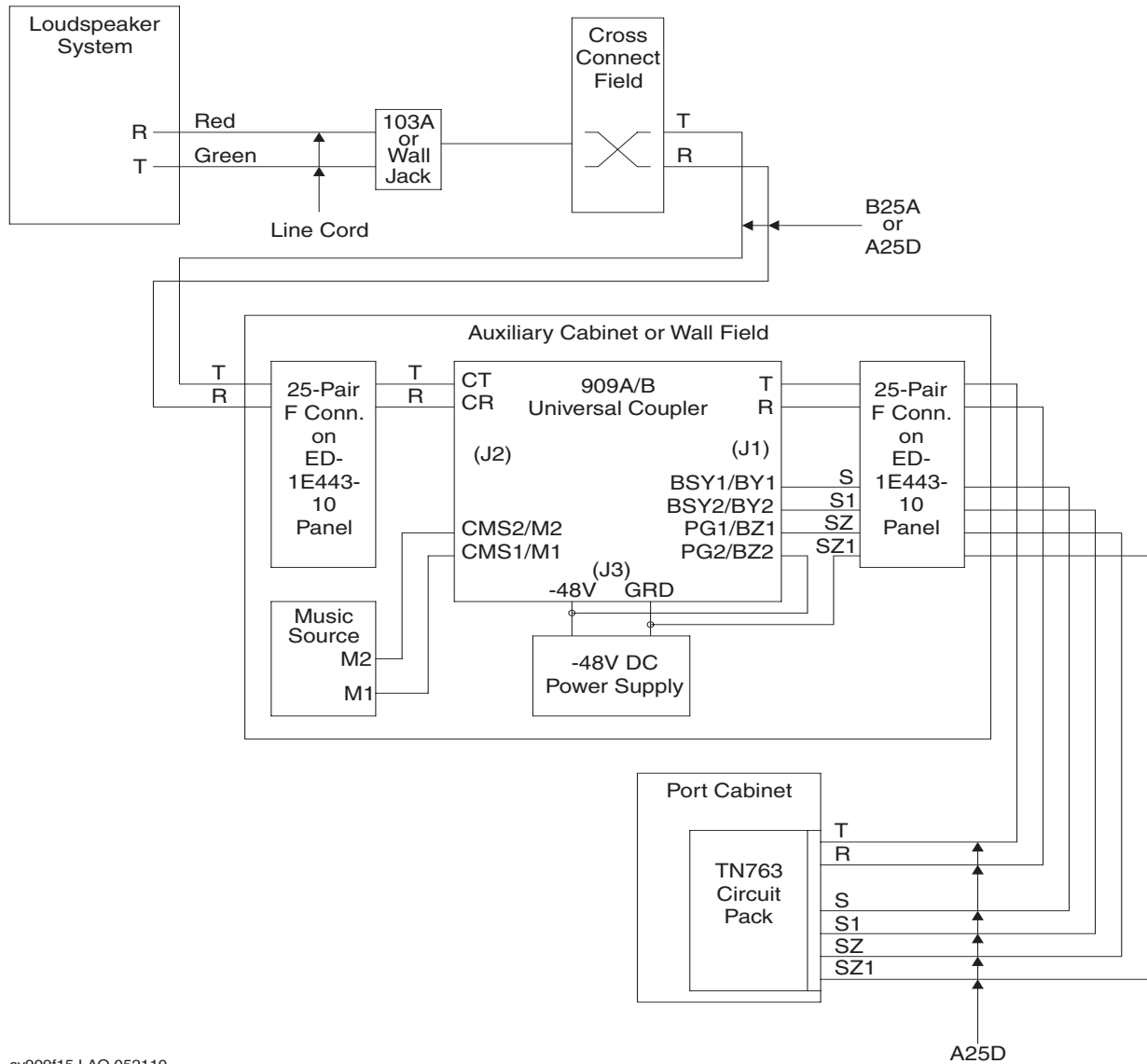
# Loudspeaker Paging with Background Music

System 25, System 75, Definity G1, G3 or Universal Definity G2

Figure 15: Loudspeaker Paging Feature for Sys25, Sys75, G1, G3 or Univ. G2

## Loudspeaker Paging with Background Music

System 25, System 75, Definity G1, G3 or Universal Definity G2

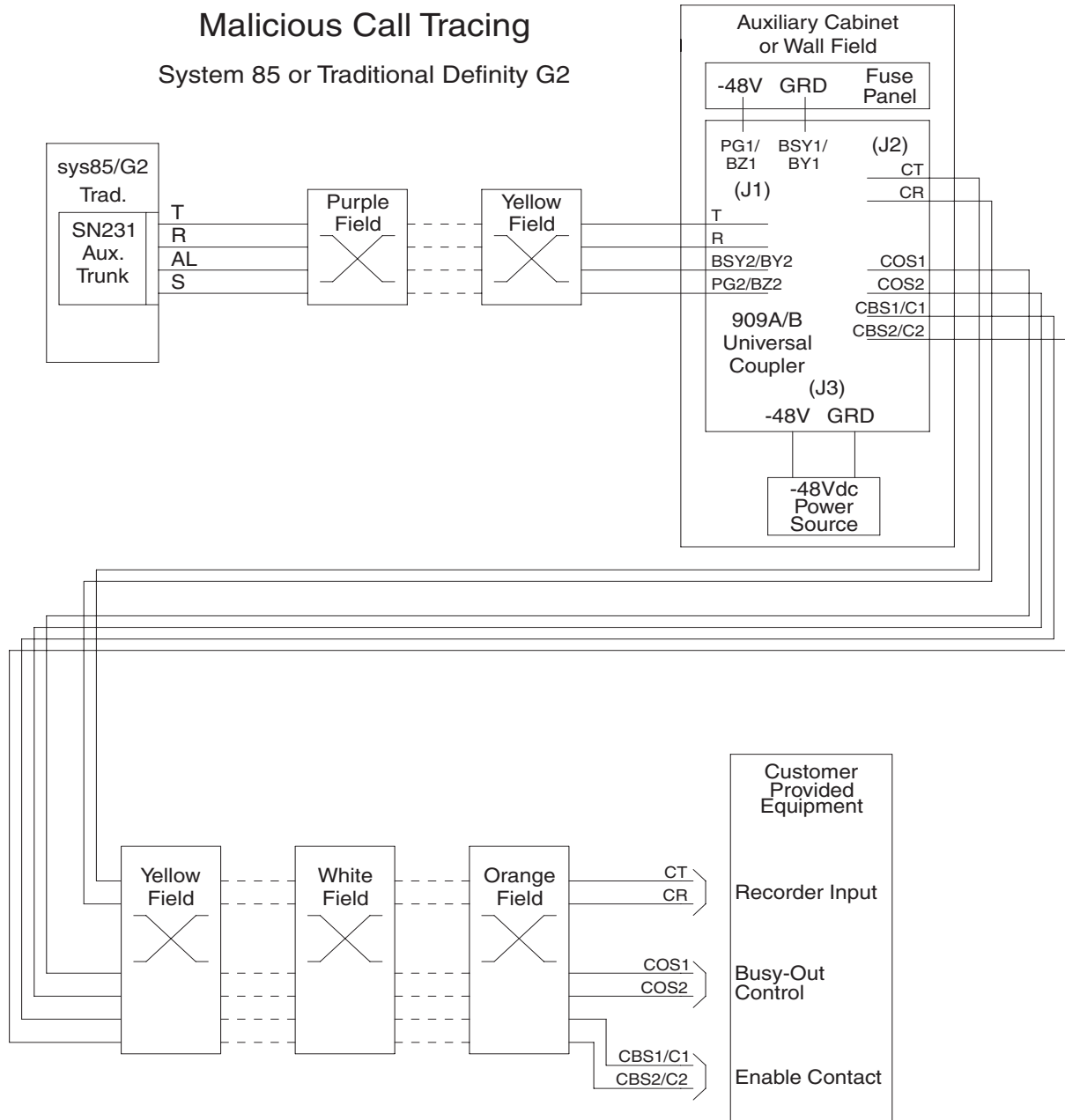


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# Malicious Call Tracing

## System 85 or Traditional Definity G2

Figure 16: Malicious Call Tracing for Sys85 or Trad. G2



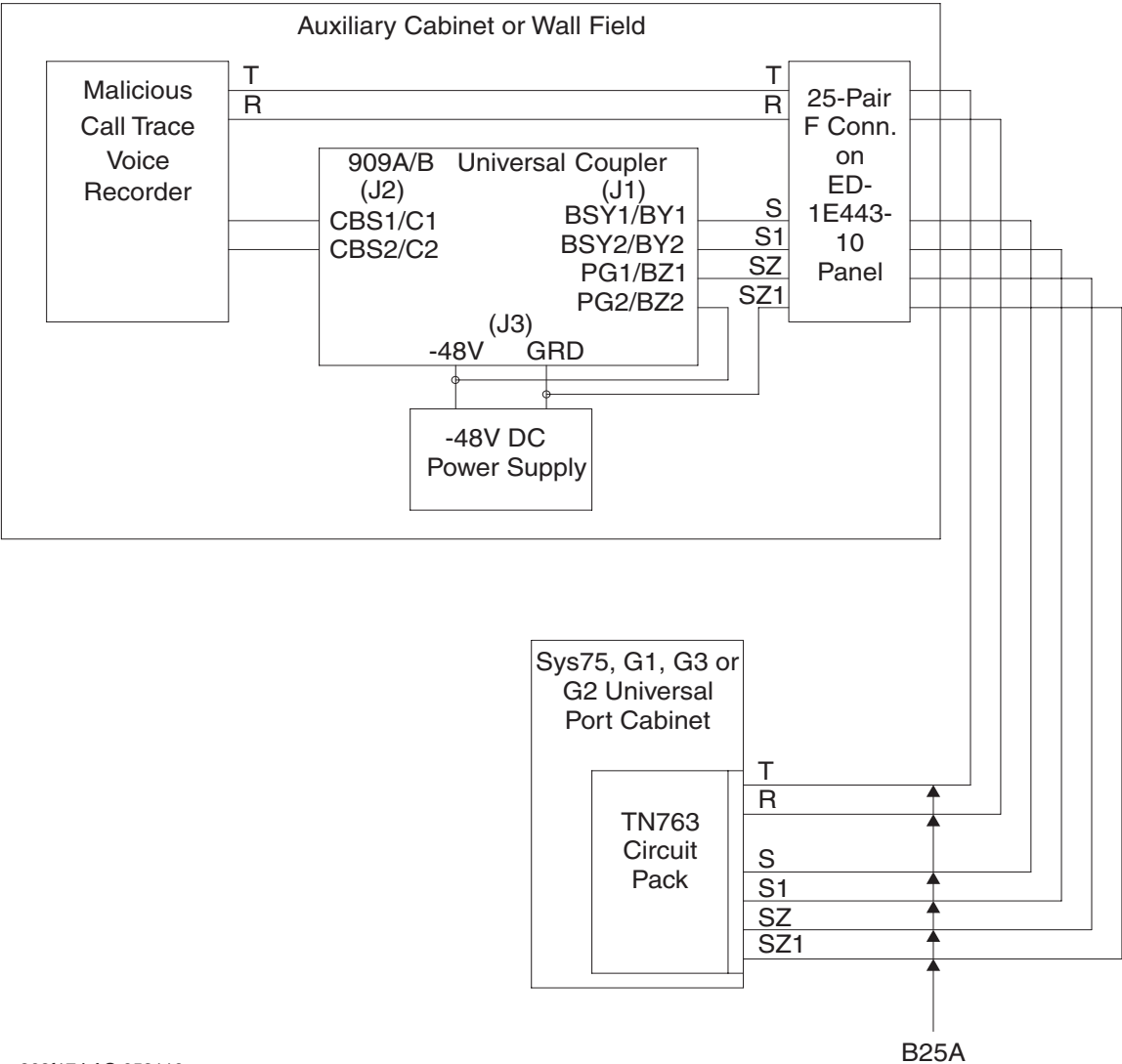
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# Malicious Call Trace

Definity G3r or Universal Definity G2

Figure 17: Malicious Call Trace for G3r or Universal G2

## Malicious Call Trace Definity G3r or Universal Definity G2



cy909f17 LAO 052110

