Symphony™ Dispatch Platform

14017-1001-01
14017-1001-04

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NOTICE!

Repairs to this equipment should be made only by an authorized service technician or facility designated by the supplier. Any repairs, alterations, or substitutions of recommended parts made by the user to this equipment not approved by the manufacturer could void the user's authority to operate the equipment in addition to the manufacturer's warranty.

This product conforms to the European Union WEEE Directive 2012/19/EU. Do not dispose of this product in a public landfill. Take it to a recycling center at the end of its life.

L3Harris products comply with the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive.

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MANUAL REVISION HISTORY

REV	DATE	REASON FOR CHANGE
A	Nov/14	Added ESD warning in the Jackbox section after step 3 and a note in the footswitch section recommending anti-static flooring.
B	Jun/15	Added Backup Radio cable options and interconnect diagrams. Added microphone specifications. Provided additional clarification for installing Operator/Supervisor footswitch.
C	Oct/15	Added Auxiliary Digital Output relay ratings (Section 6.10.2) and revised Gooseneck Microphone kit part number in Section 6.6.
D	Jun/16	Revised backup radio switch functionality in Sections 6.15 and 6.15.4.
E	May/17	Incorporated addendum. Updated Sections 6.1 and 6.7.2.
F	Apr/20	Updated Sections 3.1, 3.2, 9.1, and Appendix B.
G	Feb/21	Updated to add XL Mobile Backup Radio.
H	Feb/22	Updated Section 6.13 and Appendix A.

1. REGULATORY AND SAFETY INFORMATION

1.1 SAFETY CONVENTIONS

The following conventions may be used in this manual to alert the user to general safety precautions that must be observed during all phases of operation, service, and repair of this product. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the product. L3Harris assumes no liability for the customer's failure to comply with these standards.

WARNING	**The WARNING symbol calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury. Do not proceed beyond a WARNING symbol until the conditions identified are fully understood or met.**
	The electrical hazard symbol indicates there is an electrical hazard present.
CAUTION	The **CAUTION** symbol calls attention to an operating procedure, practice, or the like, which, if not performed correctly or adhered to, could result in a risk of danger, damage to the equipment, or severely degrade the equipment performance.
NOTE	The **NOTE** symbol calls attention to supplemental information, which may improve system performance or clarify a process or procedure.
	The **ESD** symbol calls attention to procedures, practices, or the like, which could expose equipment to the effects of **E**lectro-**S**tatic **D**ischarge. Proper precautions must be taken to prevent ESD when handling circuit modules.

1.2 REGULATORY INFORMATION

1.2.1 FCC Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and,

2. This device must accept any interference received, including interference that may cause undesired operation.

1.2.2 FCC Information

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 in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, 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 AC outlet on a circuit different from that which the receiver is connected.

*   Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by L3Harris could void the user's authority to operate this equipment.

1.2.3 ICES/NMB-003 Compliance

Cet appareil de la classe A est conforme à la norme NMB-003 du Canada.

This device complies with Canadian ICES-003 Class A.

1.2.4 Safety Compliance

Approved for US and Canada. CAN/CSA-C22.2 No. 60950-1-07, UL 60950-1: Safety of Information Technology Equipment.

Approuvé pour les Etats-Unis et le Canada. CAN/CSA-C22.2 No. 60950-1-07, UL 60950-1: Sûreté d'équipement de technologie de l'information.

1.3   IMPORTANT SAFETY INSTRUCTIONS

- *SAVE THIS MANUAL*—It contains important safety and operating instructions for the installing and configuring the Symphony Dispatch Platform.

WARNING

Risk of Electric Shock or Fire. There are no user-servicable parts in the Symphony Dispatch Platform. Do not disassemble the platform. Contact L3Harris if service or repair is required. Incorrect reassembly may result in the risk of electrical shock or fire.

CAUTION

Prior to beginning the installation, carefully read, understand, and follow all related s*afety guidelines and documentation.* This manual includes warnings, recommendations, and safety precautions that must be observed.

- Only technically qualified service personnel are permitted to install or service the equipment.

- Do not use auxiliary equipment not recommended or sold by the manufacturer. To do so may result in a risk of fire, electric shock, or injury to persons.

- To reduce the risk of damage to the electric plug and cord, pull by the plug rather than the cord when disconnecting power.

- Make sure the cord is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.

- Do not use the platform with a damaged cord or plug; replace them immediately.

- Do not operate the platform if it has received a sharp blow, been dropped, or otherwise damaged in any way. Contact L3Harris for a replacement.

- ELECTROSTATIC DISCHARGE SENSITIVE COMPONENTS - This equipment contains CMOS and other circuit components that may be damaged by electrostatic discharge. Proper precaution must be taken when handling platform components. As a minimum, grounded wrist straps should be used at all times when handling components.

Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips). To prevent equipment damage, ensure all equipment is connected to a single-point ground system and keep all grounds leads as short as possible.

2. INTRODUCTION

The intent of this manual is to present both high-level and detailed installation information for the personnel responsible for installing and configuring the Symphony Dispatch Platform (SDP). Covered topics include general overviews on the platform's hardware and software requirements, hardware installation, and information for cabling the platform for use with approved options.

This manual assumes the reader has a working knowledge of the L3Harris Dispatch Console systems. This information may be obtained by reviewing the introductory sections contained in the related manuals listed in Table 2-1.

NOTE	The installation options described in this manual may not be applicable to the console system using the Symphony Dispatch Platform. Refer to the appropriate dispatch console installation and configuration manual for option installation and configuration details.

2.1 ADDITIONAL QUALIFICATIONS

Installation personnel should also have general knowledge of the Voice Network Interface Controller (VNIC) Digital Audio Switch and supporting services such as the Unified Administration System (UAS) and Regional or Centralized Network Managers (RNM or CNM). In addition, a good understanding of dispatch center customizations that may be required and a well-developed knowledge of the operating system are recommended. Ideally, administrators should hold or have held a supervisory-type position in a dispatch center and have excellent computer skills. Normally, information in this manual should *not* be made available to or be the concern of dispatchers using a C3 Maestro^{IP} or Symphony Dispatch Console on a day-to-day basis.

2.2 CONVENTIONS USED IN THIS MANUAL

This manual uses the following typographic conventions:

Boldface Font	Used to emphasize words, particularly important field names and commands.
`Courier Text`	Normal text in the courier font represents text displayed.
Italics	Manual Titles, emphasized words, and file names.
<Return> or <CR>	This represents pressing the RETURN or ENTER key to activate a command.
→	Denotes stepping from one menu bar item to a submenu item, such as **File → Exit**.

2.3   RELATED MANUALS

Throughout this manual, references are made to other manuals that include information supplemental to that provided here. The table below lists the L3Harris manuals referenced herein. It is recommended that the applicable manuals be available to administrative personnel during the performance of any console configurations or customization procedures.

Table 2-1: Related Manuals

MANUAL NUMBER	DESCRIPTION
Symphony Dispatch Systems:	
14221-3100-2010	Symphony Dispatch Console Dispatch Console Operator's Manual
14221-3100-4100	Symphony Dispatch Console Installation and Configuration Manual
14221-7400-6010 (this manual)	Symphony Dispatch Platform Product Manual
14221-3100-8140	Symphony PC Software Release Notes
14221-3100-8150	Symphony Baton Software Release Notes
C3 Maestro^{IP} Dispatch Systems:	
MM-009247-001	C3 Maestro^{IP} Dispatch Console Operator's Manual
14221-3100-2000	C3 Maestro^{IP} Dispatch Console with Symphony Dispatch Platform Installation and Configuration Manual
14221-7400-6010 (this manual)	Symphony Dispatch Platform Product Manual
MM-010878-001	MConfig^{IP} Console Configuration Editor Operator's Manual
AE/LZB 119 1896	C3 Maestro^{IP} Dispatch Console User-Definable Screen (UDS) Configurator Program User's Manual (UDS)
MS-009803-001	C3 Maestro^{IP} Dispatch Console Software Release Notes
Site Grounding and Lightning Protection:	
AE/LZT 123 4618/1	Site Grounding and Lightning Protection Guidelines and Installation Manual

2.4   CUSTOMER SERVICE

2.4.1   Technical Assistance

The Technical Assistance Center's (TAC) resources are available to help with overall system operation, maintenance, upgrades, and product support. TAC is the point of contact when answers are needed to technical questions.

Product specialists, with detailed knowledge of product operation, maintenance, and repair provide technical support via a toll-free (in North America) telephone number. Support is also available through mail, fax, and e-mail.

For more information about technical assistance services, contact your sales representative, or contact the Technical Assistance Center directly at:

North America:	1-800-528-7711
International:	1-434-385-2400
Fax Number:	1-434-455-6712
E-mail:	PSPC_tac@l3harris.com

2.4.2   Tech-Link

For more information about this and other L3Harris PSPC products, visit Tech-Link at https://premier.pspc.harris.com/.

Tech-Link provides access to Technical Documentation (downloadable PDFs), Software Revisions, Feature Encryption, pictorials of parts and accessories, and other information pertaining to our products.

2.4.3   Customer Care

If any part of the system equipment is damaged on arrival, contact the shipper to conduct an inspection and prepare a damage report. Save the shipping container and all packing materials until the inspection and the damage report are completed. In addition, contact the Customer Care center to make arrangements for replacement equipment. Do not return any part of the shipment until you receive detailed instructions from an L3Harris representative.

Contact the Customer Care center at https://www.l3harris.com/all-capabilities/pspc-customer-care or:

North America:

Phone Number:	1-800-368-3277
Fax Number:	1-321-409-4393
E-mail:	PSPC_CustomerFocus@l3harris.com

International:

Phone Number:	1-434-455-6403
Fax Number:	1-321-409-4394
E-mail:	PSPC_InternationalCustomerFocus@l3harris.com

2.5 ABBREVIATIONS AND ACRONYMS

The following table contains a list of abbreviations and acronyms used in this manual.

Table 2-2: Abbreviations and Acronyms

ARM RISC	ARM[1] Reduced Instruction Set Computing		P25	Project 25
CNM	Centralized Network Manager		PSAP	Public Safety Answering Point
CODEC	**Co**der-**dec**oder		PSTN	Public Switched Telephone Network
CPU	Central Processing Unit		PTT	Push-To-Talk
DDR RAM	Double Data Rate Random-Access Memory		RNM	Regional Network Manager
DSP	Digital Signal Processor		SAS	Site Access Switch
DVI	Digital Visual Interface		SSD	Solid-State Drive
EEPROM	Electrically Erasable Programmable Read-Only Memory		TCP	Transmission Control Protocol
			TRS	Tip-Ring-Sleeve
FPGA	Field-programmable Gate Array		UAS	Unified Administration System
HHC	Headset Hookswitch Control		VIDA®	Voice, Data, Interoperability, and Access
IP	Internet Protocol		VLAN	Virtual LAN
LAN	Local Area Network		VNIC	Voice Network Interface Controller
LCD	Liquid Crystal Display			
NENA	National Emergency Number Association		VTI	VIDA Telephone Interconnect
			WAN	Wide Area Network

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[1] ARM Holdings plc

3. DESCRIPTION

3.1 OVERVIEW

The Symphony Dispatch Platform (SDP) is a workstation designed for use with the L3Harris C3 Maestro[IP] or Symphony dispatch console systems. It is a single rack unit product that contains an audio processor board and an embedded computer. It can be placed on a surface (such as a dispatcher's desk) or it can be mounted in a rack or under a desk using the included mounting brackets. There are two variants: Symphony Dispatch Platform 1.0 (L3Harris part number 14017-1001-01) and Symphony Dispatch Platform 2.0 (L3Harris part number 14017-1001-04). Symphony Dispatch Platform 1.0 is designed for use with the L3Harris C3 Maestro[IP] or Symphony dispatch console systems. Symphony Dispatch Platform 2.0 is designed for use with only the L3Harris Symphony dispatch console system and it replaces Symphony Dispatch Platform 1.0.

The software (operating software and application software) is installed on the Solid-State Drive (SSD). The software installed on the SSD is described in Section 3.2.5 on page 17.

Figure 3-1: Symphony Dispatch Platform

Highlights of the Symphony Dispatch Platform include:

- Scalability for easy upgrades

- Flexible and simple mechanical configuration (mount in a rack, mount under a desk, or use as a desktop unit)

- Vibration resistant

- Remote configuration capability

- End-to-end voice encryption for secure communications

- Superior life-cycle management

- Support for trunked and conventional operation

- Ability to run the existing C3 Maestro[IP] application[2] or the Symphony application

- Silent operation with no moving components

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[2] The C3 Maestro[IP] application only runs on SDP 1.0, L3Harris part number 14017-1001-01.

3.2   ARCHITECTURE

The following sections describe the high-level architecture of the Symphony Dispatch Platform. The platform's specifications are listed in Appendix B.

3.2.1   General

As shown in Figure 3-2, the Symphony Dispatch Platform contains two primary subassemblies: the Symphony Embedded Computer and the Symphony Audio Processor, and a power supply sized to provide power to both subassemblies.

3.2.2   Symphony Embedded Computer

3.2.2.1   Symphony Dispatch Platform 1.0

For L3Harris part number 14017-1001-01, the Symphony Embedded Computer, also referred to as the PC, is built around the COM Express® ETXexpress Type 6 computer. The computer is capable of running Microsoft Windows 7, 8, 8.1, and 10 operating system, and runs the majority of the dispatch software's logic and user display interfaces. The computer interfaces with the Symphony Audio Processor using an internal Ethernet connection.

3.2.2.2   Symphony Dispatch Platform 2.0

For L3Harris part number 14017-1001-04, the Symphony Embedded Computer, also referred to as the PC, is built around the COM Express® Type 6 computer. The computer is capable of running the Microsoft Windows 10 operating system and runs the majority of the dispatch software's logic and user display interfaces. The computer interfaces with the Symphony Audio Processor using an internal Ethernet connection.

3.2.3   Symphony Audio Processor

The Symphony Audio Processor, also referred to as the "Audio Box," is the connecting hub for most of the console accessories. The processor collects audio from the microphones and other audio inputs and plays audio in the speakers and headsets.

The Audio Processor is built around an Applications Processor that contains two primary CPU cores: an ARM RISC CPU for general-purpose processing and systems control; and a DSP to efficiently handle communication and audio processing tasks. The processor includes the following primary components:

- ARM subsystem and associated memories performing general system control tasks, such as system initialization, configuration, power management, and interfacing with the platform main computer.

- DSP subsystem and associated memories providing memory storage and the mixing, equalizing, and dynamic audio processing. It also receives GUI instructions from the main computer.

- A set of I/O peripherals interfacing the CODECs and the FPGA I/O Expander

- The CODECs route audio to and from the DSP and the I/O expander routes peripheral controls, such as PPT commands, and interfaces with the and digital I/O ports.

- Memories including 1 Gb DDR RAM, 64 Mb RAM Flash, and an EEPROM

3.2.4   Front Panel LCD Display

The front panel LCD display interfaces with the DSP. It is used to indicate the following:

- Mode Differentiation (Operational or Configuration mode)

- Boot Status Reporting

- Bypass State Reporting

- Error Reporting
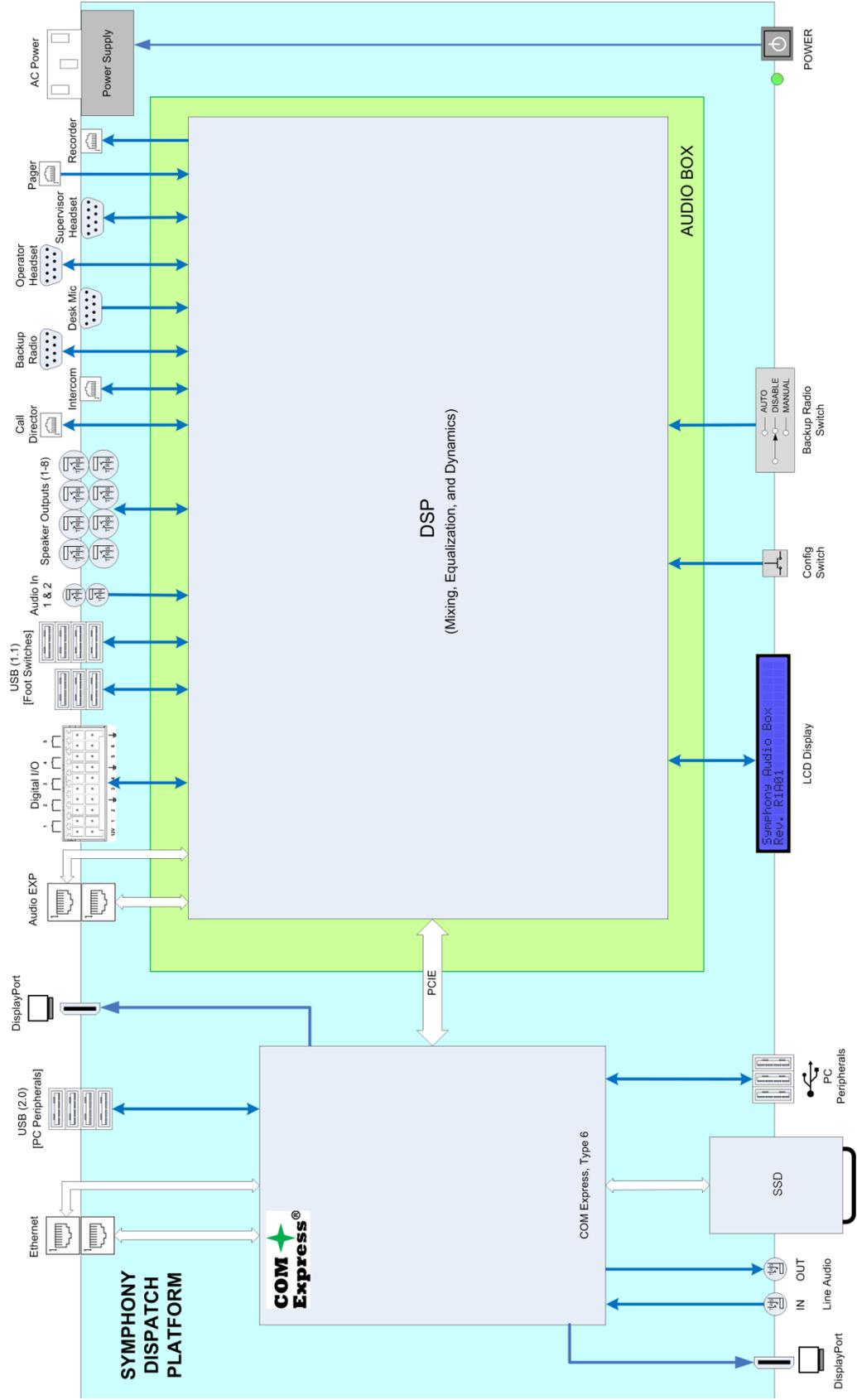
Figure 3-2: Symphony Dispatch Platform Architecture

3.2.5   Console Software

The Microsoft operating system software and the C3 Maestro^{IP} or Symphony application software is stored on a removable Solid-State Drive assembly. The software is typically preinstalled at the factory and shipped with the platform.

The Solid-State Drive assembly is a standard 2.5" physical form factor Solid-State Drive (SSD) mounted to a custom retention bracket. This assembly plugs into the platform's front panel and interfaces with the platform's built-in computer. The SSD specifications are listed in Section B.1.2.

The following tables list the software that may be installed on the Solid-State Drive:

A Solid-State Drive assembly for the Symphony Dispatch Platform 1.0 without software is identified by L3Harris part No. 14017-1002-01. A Solid-State Drive assembly for the Symphony Dispatch Platform 2.0 without software is identified by L3Harris part No. 14017-1002-05.

Table 3-1: C3 Maestro^{IP} Solid-State Drive (with Encryption) Sold with UD-ZN2B

MEDIA KIT PART NUMBER	MEDIA KIT DESCRIPTION
SK-009844-001	C3 Maestro^{IP} Media Kit (with encryption)
14004-0147-01	Windows 7, 32-bit with Service Pack 1

Table 3-2: C3 Maestro^{IP} Solid-State Drive (Non-Encryption) Sold with UD-ZN2C

MEDIA KIT PART NUMBER	MEDIA KIT DESCRIPTION
SK22873-0001	C3 Maestro^{IP} Media Kit (non-encryption)
14004-0147-01	Windows 7, 32-bit with Service Pack 1

Table 3-3: Symphony Solid-State Drive (Non-FIPS) Sold with UD-ZN4Z, UD-ZN4Y, UD-ZN4W, UD-ZN2A, UD-ZM1D, UD-ZM1E, UD-ZM1F, UD-ZM1G

MEDIA KIT PART NUMBER	MEDIA KIT DESCRIPTION
14004-0152-01	Symphony Console Application (non-encryption)
14004-0148-01	Windows 8.1 Pro, 64-bit Version Image for Symphony Dispatch Console (SDP 1.0 only)
14004-0245-01, R7	Windows 10 Enterprise 2015 LTSB, 64-bit Version Image for Symphony Dispatch Console (SDP 1.0 only)
14004-0245-01, R8 or later	Windows 10 Enterprise LTSC, 64-bit Version Image for Symphony Dispatch Console (SDP 2.0 only)

4.   UNPACKING AND CHECKING EQUIPMENT

4.1   MATERIALS INCLUDED

The following items are included in the Symphony Dispatch Platform shipping container:

- Symphony Dispatch Platform

- AC Power Cord

- Mounting Brackets and Cable Strain Relief assembly

4.2   UNPACKING AND INSPECTING EQUIPMENT

CAUTION

After removal from the shipping container, examine the components and installation items for broken, damaged, loose, or missing parts. If any are noted, contact an L3Harris representative immediately to discuss and arrange for the return of the equipment for replacement. Any unauthorized attempts to repair or modify this equipment will void the warranty and could create a safety hazard.

Upon receipt of the Symphony Dispatch Platform equipment, carefully unpack the equipment and verify that the order is complete. Inspect the equipment for any shipping damage. If there is any damage to the equipment, contact the carrier immediately and have their representative verify the damage. If you fail to report the shipping damage immediately, you may forfeit any claim against the carrier.

When unpacking the equipment, check the contents against the packing list. Contact your L3Harris representative and the carrier if any discrepancies are noted.

If the equipment is installed in a cabinet, carefully open the cabinet and inspect the contents to ensure that enclosed equipment has not been damaged during delivery. If damage has occurred, note details of the damage and, if necessary, contact the carrier immediately and have their representative verify the damage. Contact your L3Harris representative if the damage is such that the installation cannot proceed.

5. SYMPHONY DISPATCH PLATFORM INSTALLATION

This section provides information for installing the Symphony Dispatch Platform. When determining the location of equipment, consider the amount of tabletop space required, not only for the console, but also for the operator's working area. Also, consider where optional accessory items such as microphones, foot switches, and headset jackboxes may be placed.

5.1 SAFETY INSTRUCTIONS

Installers should observe the following safety instructions when installing the Symphony Dispatch Platform.

- Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified in Appendix B.

- Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

- Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

- Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

- Installers should review the recommended grounding procedures in the *Site Grounding and Lightning Protection Guidelines Manual,* AE/LZT 123 4618/1, and ensure a suitable ground is installed between the Symphony Dispatch Platform's ground lug and earth ground. Grounding must also comply with any local and national electrical codes.

NOTE	Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips). To prevent equipment damage, ensure all equipment is connected to a single-point ground system and keep all grounds leads as short as possible.

NOTE	Installers should ensure the socket-outlet is installed near the equipment and is easily accessible.

5.2   MOUNTING THE SYMPHONY DISPATCH PLATFORM

The Symphony Dispatch Platform can be mounted on a surface, in a rack, or under a desk (with or without an air gap). This section describes the different mounting methods for the platform and any additional parts required to complete each installation of the Symphony Dispatch Platform. Refer to Figure 5-1 to identify the parts required for a particular installation.
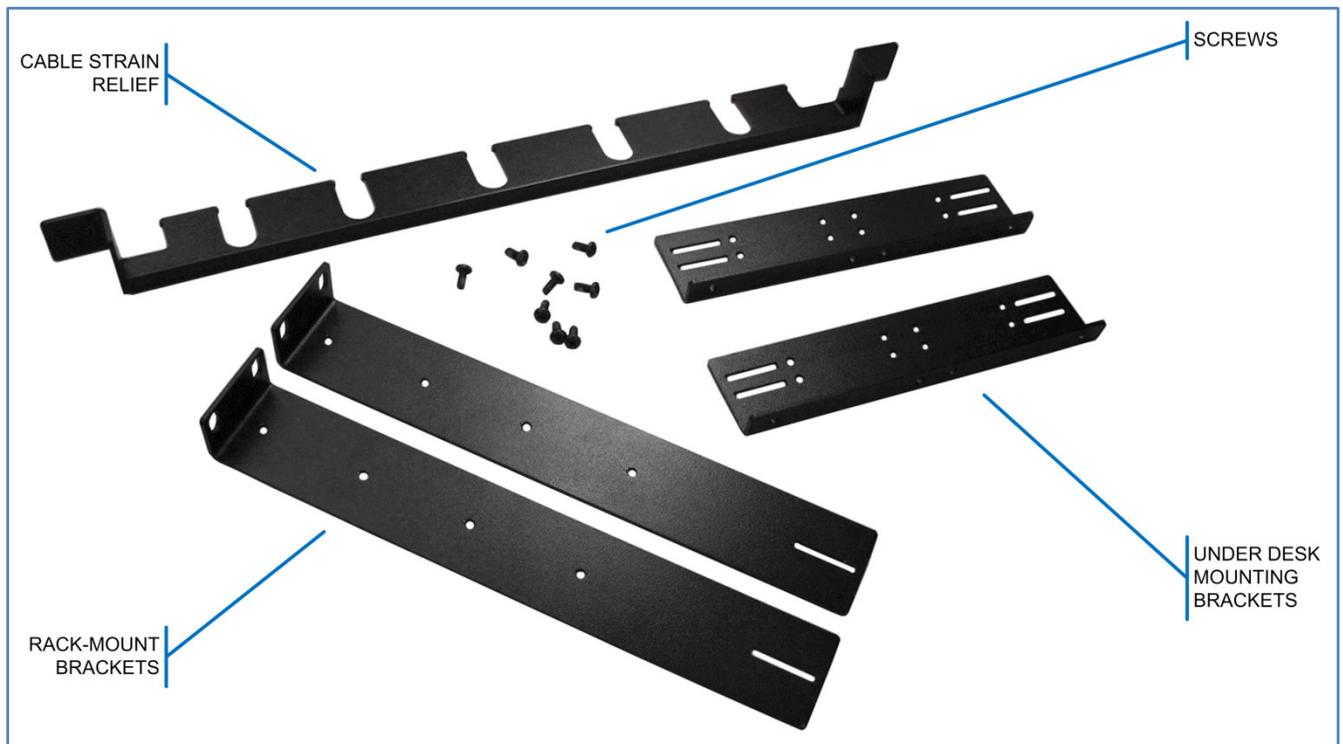
Figure 5-1: Mounting Brackets and Screws

5.2.1   Desktop/Surface Use

The Symphony Dispatch Platform is designed to sit on a desk top or other flat surface. Mounting brackets or additional hardware are not required.

5.2.2   Rack-Mounting

The Symphony Dispatch Platform can be rack-mounted in a standard 19" rack or cabinet. The two brackets required for rack-mounting the platform are L-shaped and 10.5 inches (26.67 cm.) long. These brackets, screws, and Cable Strain Relief assembly are shipped with the Symphony Dispatch Platform.

NOTE	When mounting in a rack or cabinet, be sure the Cable Strain Relief assembly is installed.

Tools/Material required:

- Phillips head screw driver

- Rack-Mount Brackets (supplied)

- Eight (8) 8-32 x 3/8" Phillips Flat-head Screws (supplied)

- Screws for mounting the platform to the rack or cabinet (not supplied)

Procedure:

Attach the mounting bracket to the Symphony Dispatch Platform as shown in Figure 5-2.

1. Attach one of the rack-mount brackets by aligning the mounting bracket holes with the holes in the platform and secure using four (4) 8-32 x 1/4" Phillips Flat-head Screws.

    The bracket's mounting tab should be in the front and pointing away from the platform.

2. Insert the Cable Strain Relief assembly as shown.

    The Cable Strain Relief assembly is inserted into each end of the mounting brackets. The horizontal tabs on each end of the Cable Strain Relief assembly fit into the slots as shown.

3. Attach the other bracket, inserting the Cable Strain Relief assembly, and securing the bracket to the platform by repeating the procedure in step 1.

4. Mount the platform in the rack or cabinet.

    Align the holes on the mounting bracket tabs with the holes on the front of the rack or cabinet. Secure the Symphony Dispatch Platform using screws of the appropriate number and size.

CABLE STRAIN RELIEF MUST BE
INSERTED IN REAR SLOTS WHILE
ATTACHING BRACKETS.

14.500

18.970

1.750

ATTACH RACK- MOUNT BRACKET USING
FOUR (4) 8-32 X 3/8" FLAT- HEAD PHILLIPS
SCREWS ON EACH SIDE. (8 PLACES TOTAL)
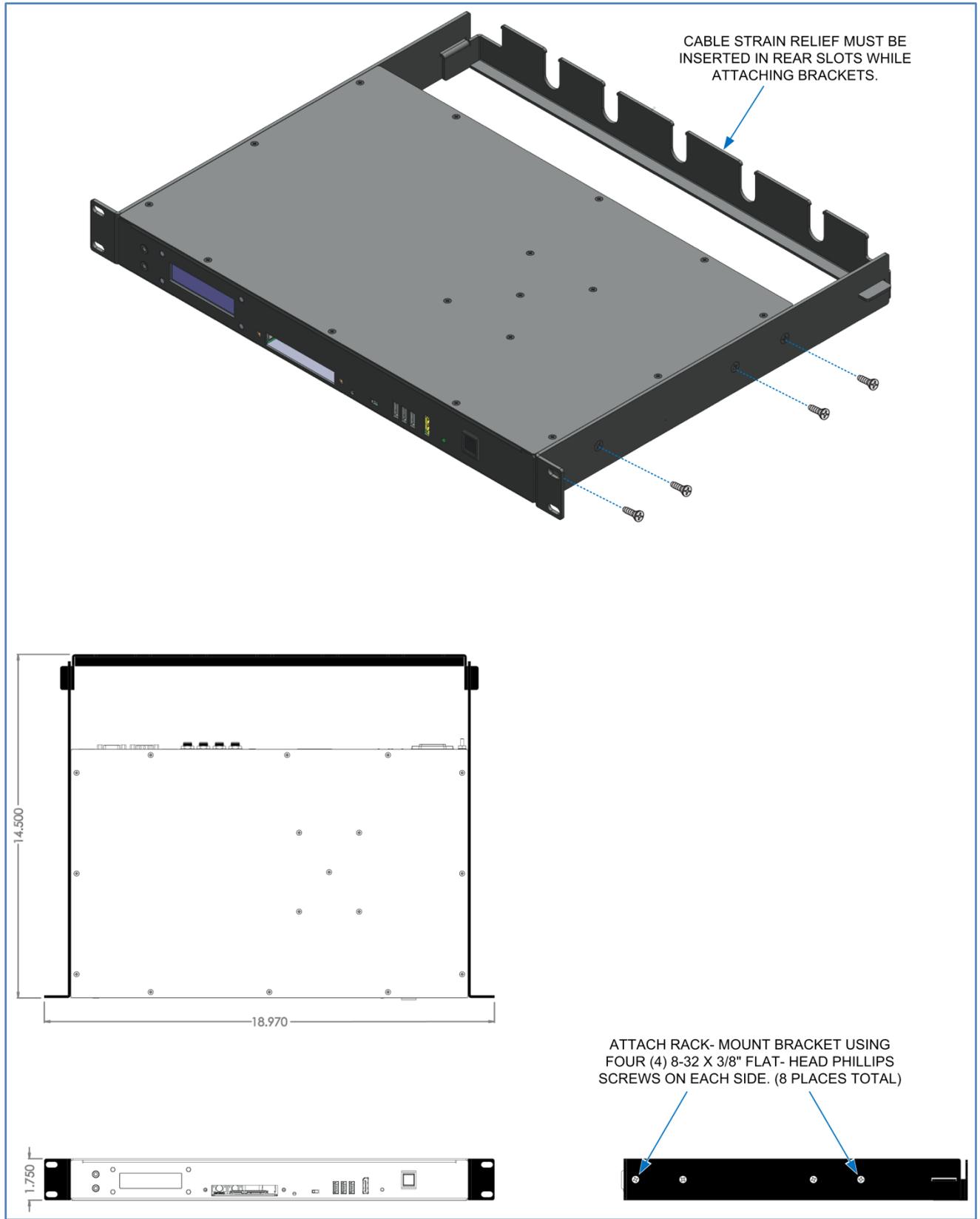
Figure 5-2: Attaching Rack-Mount Brackets

5.2.3   Under the Desk/Table Mounting

The Symphony Dispatch Platform can be mounted under a desk or table using the two (2) under desk mounting brackets supplied with the platform. The under desk mounting brackets are 7.6 inches (19.37 cm.) long with a narrow mounting flange on the long side. The mounting brackets and the screws required to attach the mounting brackets and the Cable Strain Relief assembly are shipped with the platform.

Tools/Material required:

- Phillips head screw driver

- Under Desk-Mount Brackets (supplied)

- Six (6) 8-32 x 3/8" Phillips Flat-head Screws (supplied)

- Screws for mounting the platform to the rack or cabinet (not supplied)

Procedure:

Refer to Figure 5-3 for a flush-mount installation and Figure 5-4 for an installation with a 1/2" air-gap between the platform and the desk.

> When mounting the platform beneath a desk or table, use the Cable Strain Relief assembly.

1. Determine the installation type, flush-mount or with a 1/2" air-gap (based on heat transfer characteristics of the desk material).

2. Attach one of the desk-mount brackets by aligning the mounting bracket holes with the holes in the platform.

> For flush-mount installations, use the bracket upper holes. For an air-gap installation, use the lower holes.

3. Secure the bracket using three (3) 8-32 x 1/4" Phillips Flat-head Screws.

4. Insert the Cable Strain Relief assembly as shown.

    The Cable Strain Relief assembly horizontal tabs are inserted into the slot at the end of the mounting brackets. Use the upper slot for a flush-mount installation and the lower slot for an air-gap installation.

5. Attach the other bracket, insert the Cable Strain Relief assembly, and secure the bracket to the platform by repeating steps 2 and 3.

6. Make a template identifying the mounting-hole locations.

7. Use the template and mark the hole locations under the desk. Drilling pilot holes is recommended.

8. Test fit the platform under the surface to insure holes line up and secure the platform to the desk.

CABLE STRAIN RELIEF MUST BE
INSERTED IN REAR SLOTS WHILE
ATTACHING BRACKETS.

USING THE UPPER MOUNTING HOLES, INSTALL
BRACKET USING THREE (3) 8-32 X 3/8"
PHILLIPS FLAT-HEAD SCREWS ON EACH SIDE.
(6 PLACES TOTAL)

3.250
14.500
5.710
3.250
1.500

17.526
18.026

1.750
0.250
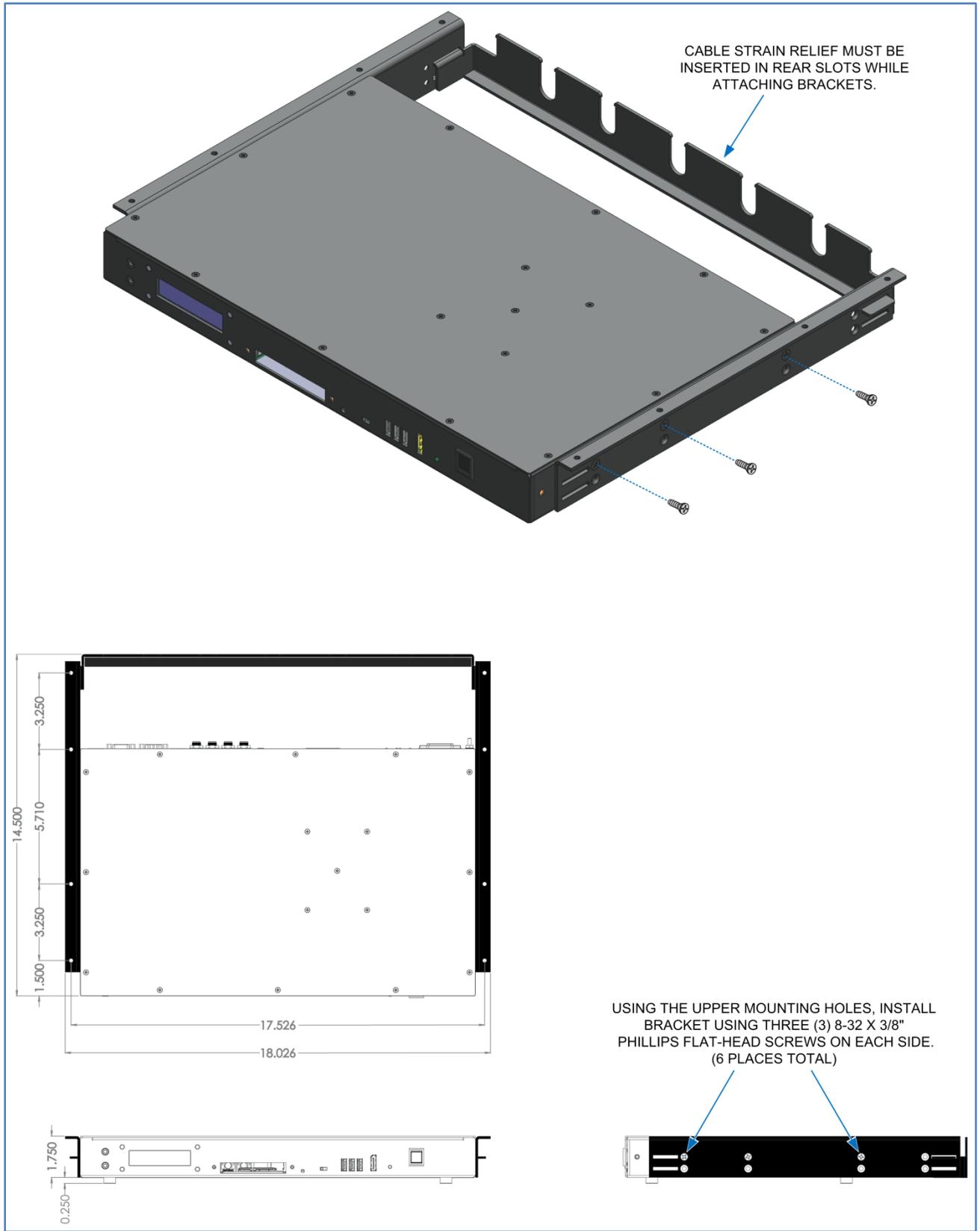
Figure 5-3: Attaching Brackets for Under the Desk Flush Mounting

CABLE STRAIN RELIEF MUST BE
INSERTED IN REAR SLOTS WHILE
INSTALLING BRACKETS.

INSTALL BRACKET USING THREE (3) 8-32 X 3/8"
PHILLIPS FLAT-HEAD SCREWS ON EACH SIDE. USE THE
LOWER MOUNTING HOLES TO CREATE 1/2" GAP WHEN
MOUNTING UNIT TO AN INSULATED MATERIAL.
(6 PLACES TOTAL)

3.250

14.500

5.710

3.250

1.500

17.526

18.026

2.250

0.250

0.500
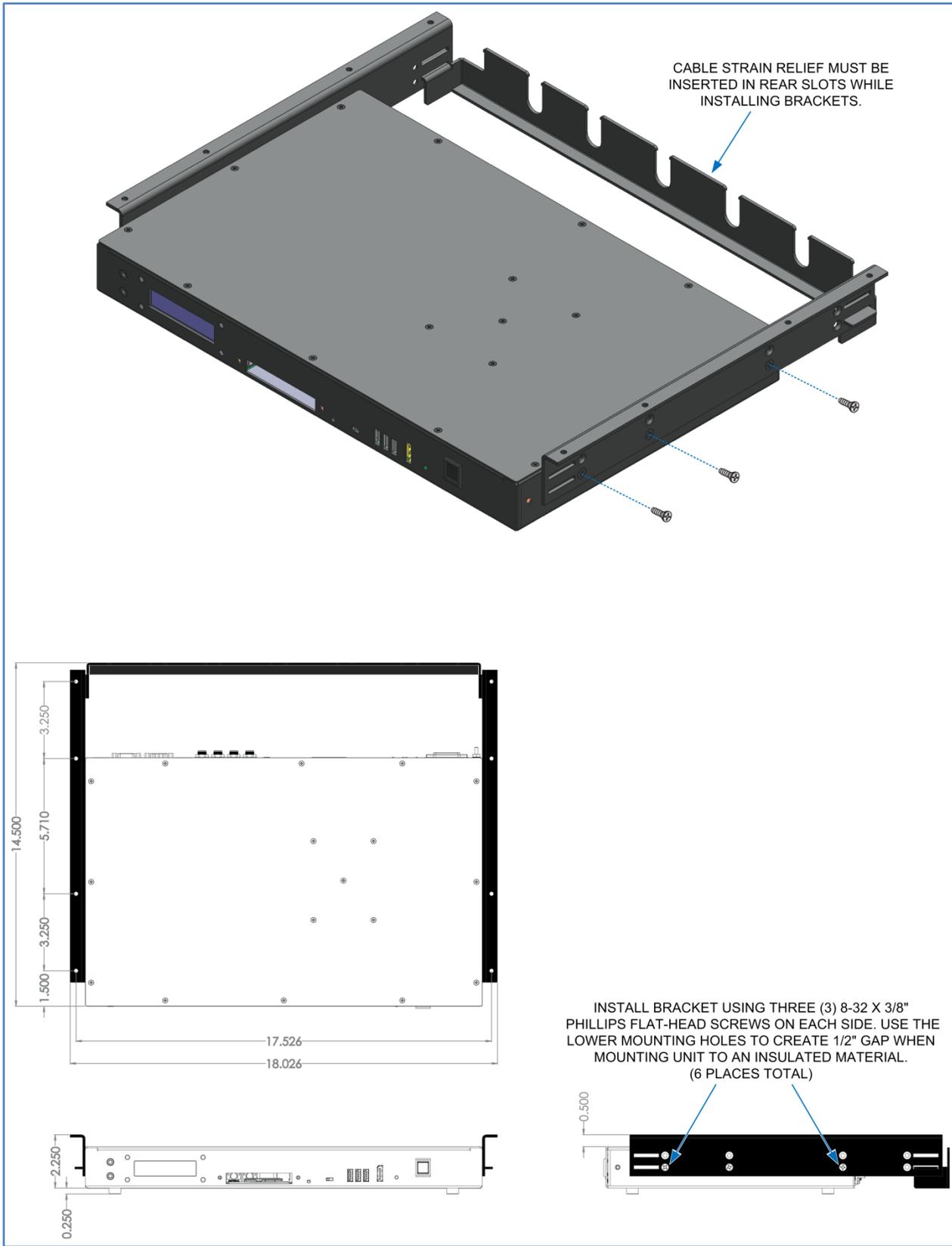
Figure 5-4: Attaching Brackets for Under the Desk Mounting with Air-Gap

5.3   REMOVING AND INSTALLING THE SOLID-STATE DRIVE ASSEMBLY

The console Solid-State Drive assembly has a unit identification label applied to the bottom of disk drive body. It contains the L3Harris part number including variant and revision. The format is: 14017-1002-XX Rev Y, where XX is the product variation and Y is the revision.

⚠ CAUTION	**NOT HOT SWAPPABLE** **DO NOT** remove or attempt to install the solid-state drive with power applied. Failure to observe this precaution will result in damaging the information on the solid-state drive, damage to system components, or both.

5.3.1   Installing the Solid-State Drive Assembly

The solid-state drive is susceptible to the effects of **E**lectro-**S**tatic **D**ischarge (ESD). When handling the solid-state drive, use a grounded wrist strap to prevent ESD from damaging the solid-state drive.

1.   Unpack the console solid-state drive.

    Remove the solid-state drive from the antistatic bag and carefully inspect the drive for damage. Contact your L3Harris representative if you notice any damage, or if any component is missing.

2.   Before installing the drive, record the product number and revision information.

    This information may be useful at a later time for troubleshooting purposes.

3.   Ensure platform power is off and power source is disconnected.

4.   Carefully slide the solid-state drive into the platform hard drive slot.

5.   Secure the solid-state drive assembly by turning the retaining thumbscrews in the clockwise direction. Do not over-tighten.
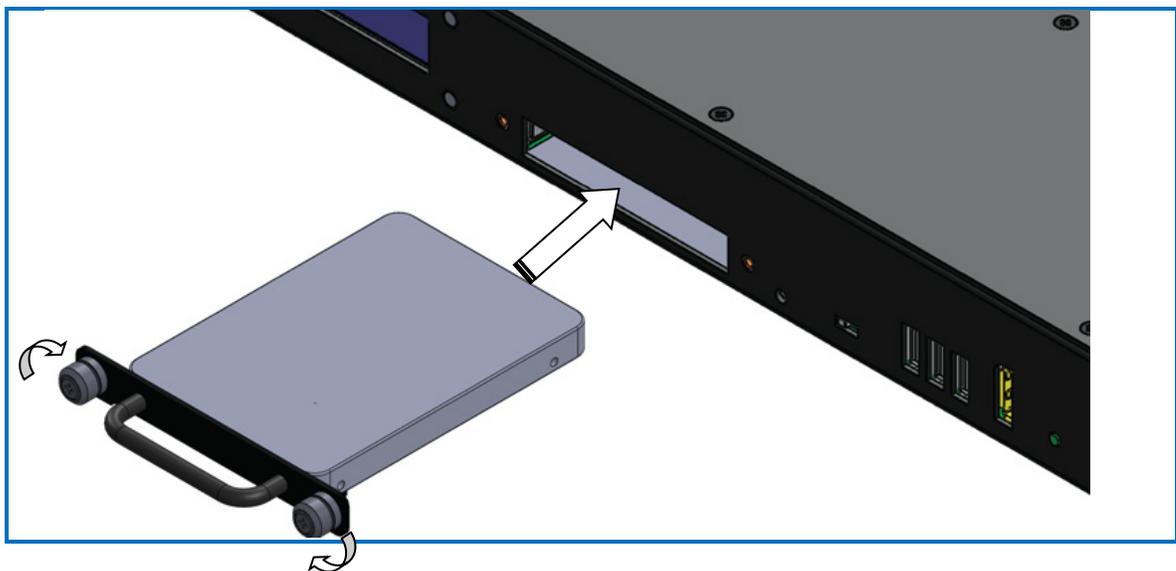
Figure 5-5: Installing Solid-State Drive

5.3.2   Removing the Solid-State Drive Assembly

1. Turn off platform and disconnect from power source.

2. Unscrew the retaining thumbscrews in the counter-clockwise direction.

3. Carefully slide the solid-state drive out of the platform.
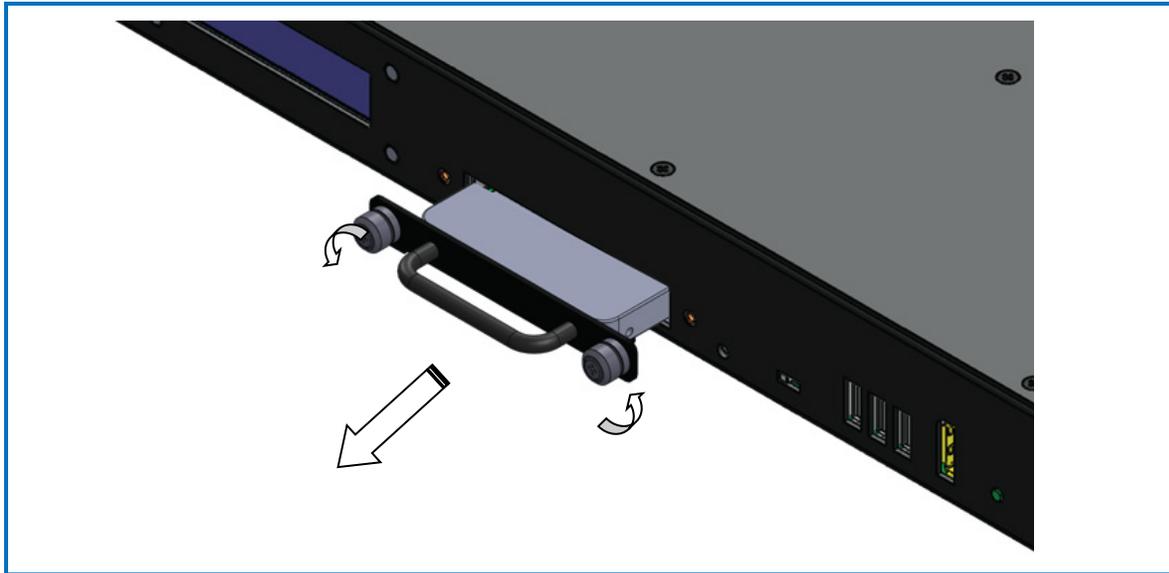
Figure 5-6: Removing Solid-State Drive

6. CONSOLE CABLING

	Make sure equipment is powered off before connecting cables. Do not apply power until told to do so. Devices must be powered up in a specific sequence for proper operation.
NOTE	
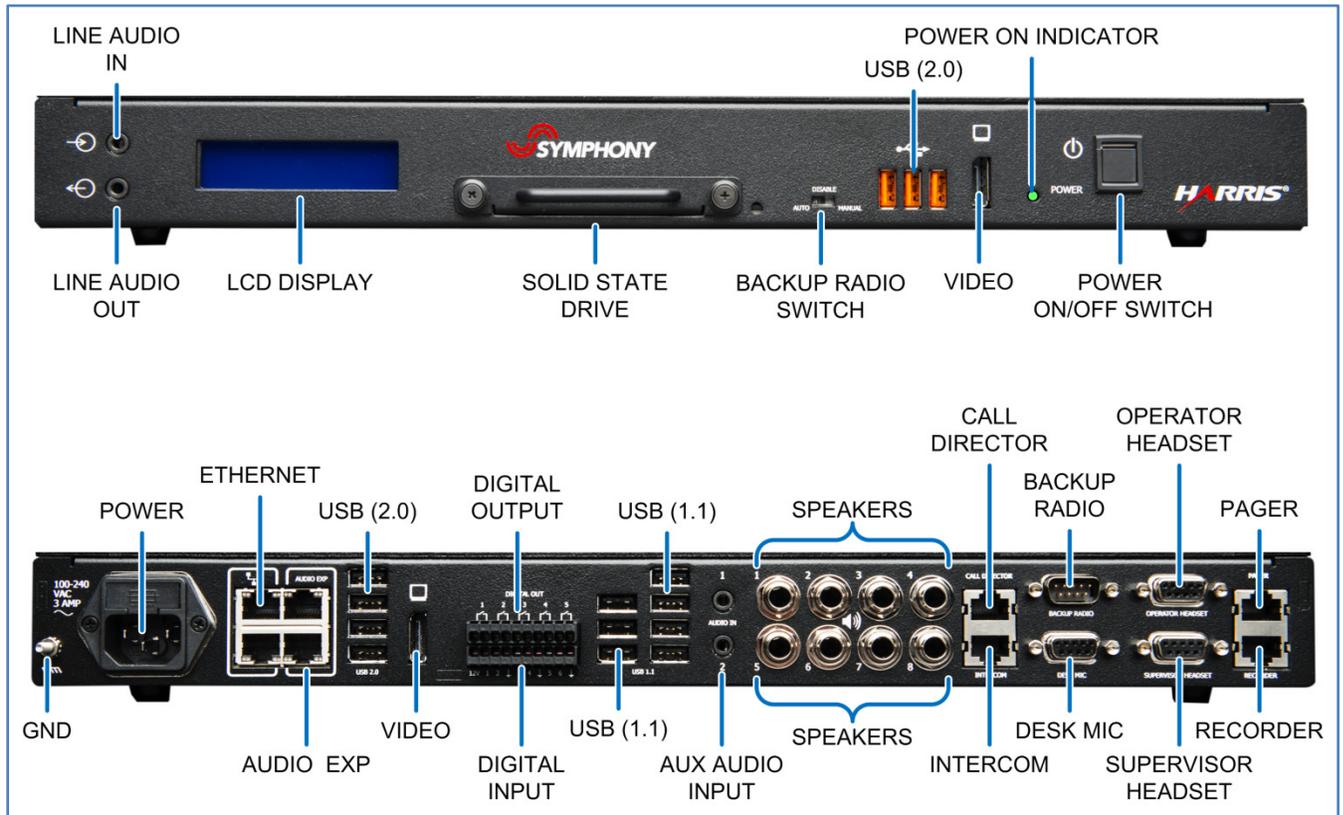
Figure 6-1: Symphony Dispatch Platform Front and Rear View

6.1 EQUIPMENT GROUNDING

Installers should review the recommended grounding procedures in the *Site Grounding and Lightning Protection Guidelines Manual,* AE/LZT 123 4618/1, and ensure a suitable ground is installed between the platform's grounding post and dispatch furniture ground as well as between jack boxes and the same furniture ground point. Grounding must also comply with any local and national electrical codes.

	To prevent equipment damage, ensure all equipment is connected to a single-point ground system and keep all grounds leads as short as possible. It is also recommended that surge protection be provided.
NOTE	

6.2 NETWORK CONNECTIONS

The Symphony Dispatch Platform uses Internet Protocol (IP) technology to connect to the L3Harris core network via a local area network (LAN) or a wide area network (WAN) that supports TCP/IP communication.

The platform connects to the network using a standard Category 5 (or better) RJ-45 to RJ-45 Ethernet Patch Cable. Connect the cable between the platform's Ethernet connector, located on the rear panel and identified by the Ethernet symbol, and the designated Site Access Switch (SAS) Virtual LAN (VLAN) port.
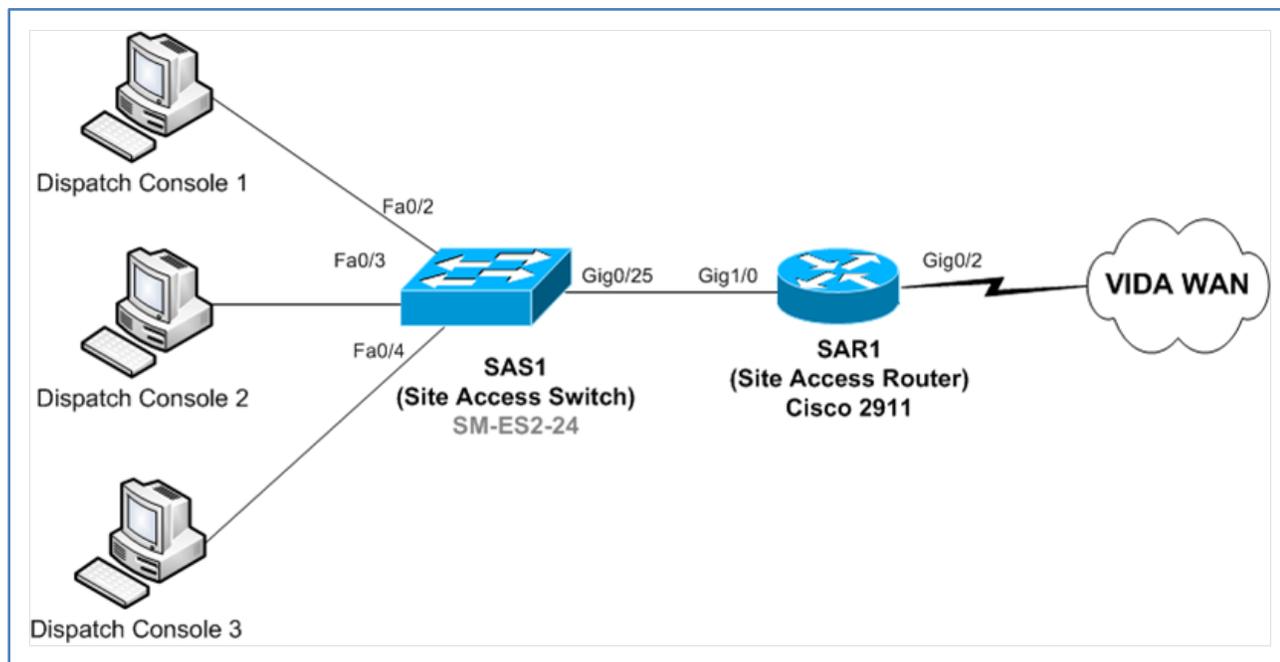
Figure 6-2: Standard Console Dispatch Site

6.3 CONNECTING THE KEYBOARD, MOUSE, AND MONITOR

6.3.1 Installing the Keyboard and Mouse

Connect the keyboard and mouse USB connectors to the platform's USB (2.0) ports located on the front or rear panel (recommended).

NOTE	Use the USB 2.0 ports.

6.3.2   Installing the Monitor

The following installations instructions are for connecting the platform to a monitor.

> **NOTE**
> The following monitor installation instructions are generic. Installers should always consult the monitor's installation instructions for specific location of connectors and calibration information.

1. Connect the Symphony Display Cable between the SDP **VIDEO** connector ⬜ located on the front or rear panel (recommended) and the monitor's video connector.

   The video cable and adapter, if necessary, depend on the monitor selection and whether a digital or analog signal is used. Installers should refer to the Symphony or C3 Maestro^{IP} Installation and Configuration Manual to identify the necessary cables and adapters.

> **NOTE**
> In some installations it may be necessary to connect the monitor to the VIDEO port on the front of the platform. Resolutions up to and including 1080p (1920x1080) are supported by all L3Harris-supplied cables. Cable runs longer than 15 feet at 1080p resolutions may require active cables (not supplied by L3Harris).

2. For Touchscreen monitors, connect a USB cable between the platform's **USB (2.0)** port •⟨⟨ located on the front or rear panel (recommended) and the monitor's USB port.

3. Connect the power cord to the monitor and then to a properly grounded AC outlet.

> **NOTE**
> Make sure that the power cord being used is the correct type. For operation outside the U.S.A., the cord should have the appropriate safety approvals for the country in which the equipment will be installed.

4. When directed, turn monitor ON before turning on the platform.

6.3.3   Installing Multiple Monitors

To Connect Two monitors:

There are two options for connecting two monitors:

1. Use a DisplayPort splitter (L3Harris does not provide).

   This method creates one big desktop screen that stretches across the monitors. The Windows® task bar will stretch across monitors too. Windows will show a single monitor with a very wide resolution.

   Pros: You can connect everything in the back of the Symphony Dispatch Platform.

   Cons:

   • If you maximize a windows application, it will span both monitors.

   • You can only place the monitors side-by-side (not over-under) unless your splitter supports an alternative configuration.

2. The second option is to connect one monitor to the rear DisplayPort and one monitor to the front.

This will create two desktops and the windows control panel will show two monitors. The Windows task bar will be located ONLY on the primary monitor.

Pros: Maximizing an application will constrain it to one monitor (it will not span). You can place the monitors in over-under or side-by-side configuration.

Cons: You must connect to the front DisplayPort.

To Connect Three or Four More Monitors:

To connect three or four monitors, use both DisplayPort connectors and a DisplayPort splitter. Connecting three monitors requires a single splitter and four monitors requires two splitters. Each DisplayPort drives a single "Windows" desktop, and the splitters enable each desktop to span to a second monitor.

6.4   CONNECTING SPEAKERS

The Symphony Dispatch Platform supports up to eight (8) analog speakers. The eight speaker outputs, located on the platform rear panel, are balanced with 300 ohm ± 10% impedance. The nominal output voltage is +4 dBu (see footnote[3]).

> The C3 Maestro^{IP} software supports four speakers.
>
> **NOTE**

The platform uses eight 1/4" Male TRS (tip, ring, and shield) stereo audio jacks for connecting the Select/Unselect speakers to the system. These outputs are described below:

- **Select Speaker** - The Select speaker output is available on speaker plug **#1**.

- **Unselect Speakers** - The Unselect speaker outputs are available on speaker plugs **#2** through **#8**.

---

[3] dBu - A logarithmic voltage ratio, relative to 0.775 Vrms, which is the voltage that produces 1 milliwatt when the load resistance is 600 ohms. A line level of +4 dBu is commonly used in professional audio systems.

The speaker recommended for use with the Symphony Dispatch Platform is the optional L3Harris "Nano Speaker for Symphony" (part number 14017-0100-01[4]). This speaker is designed for use anywhere sound reinforcement is needed. Each speaker has a power supply that converts AC power, ranging from 100 to 240 volts AC, 50/60 Hz, to 18 VDC.

Figure 6-3: External Speaker Front and Rear View

The following items are included with the speaker:

- AC-DC Power Supply: Input 100-240 VAC, 50/60 Hz; Output 18 VDC, 1.75 A

- Wall Mount Brackets

To install speakers:

1. Mount the speaker in a suitable location. Refer to the speaker user guide (included) for mounting instructions.

2. Plug one end of the audio cable (L3Harris Part 14017-0100-12) into the speaker's 1/4" Line level input connector and the other end into the desired Symphony Dispatch Platform desired speaker port.

3. Connect the speaker to a suitable power source.

   Connect the power supply (supplied) between the speaker **12-18 VDC** input power connector and the AC power outlet.

---

[4] Refer to Section B.2 for speaker specifications.

6.5   INSTALLING DESKTOP MICROPHONES

The Desktop Microphone (L3Harris part number MC-014121-003) interface is via the **DESK MIC** connector on the rear panel.

The older Desk Mic (Part Number MC-014121-001) is also compatible.

The analog audio signal is input via pins 9 and 5. The Symphony Desktop Microphone contains both a Monitor and PTT switch which are connected to the platform via the pins 3 and 6, respectively. Both of these signals are digital inputs. The DB-9F interface connector is wired as shown in Section A.7.2.

- Desk Mic Connector Type: DB-9F Receptacle

- Mating Part Number: DB-9M Plug

When using the Symphony Desktop Microphone, no cable modifications are required.

To install the Mic:

Plug the Symphony Desktop Microphone into the **DESK MIC** connector located on the rear panel.

> **NOTE**
>
> Before using the desktop microphone, the Mic Bias must be enabled. Please refer to the *Symphony Installation and Configuration Manual,* 14221-3100-4100 or the C3 Maestro^{IP} *Installation and Configuration Manual,* 14221-3100-2000.

The microphone gain can be adjusted using the mic audio trimmer pot (located on the bottom of the mic). By default, the pot is set to 275 ±25 mV rms at 1000 Hz (94 dBa SPL acoustic input at microphone port).

> **NOTE**
>
> Although the microphone gain is adjustable, the microphone is intended to be used relatively close to the talker, about 12 inches. Setting the gain for operation at longer distances makes the microphone more susceptible to picking up background room noise.

6.6   INSTALLING A GOOSENECK MICROPHONE

The Gooseneck Microphone interface is via the **DESK MIC** connector on the rear panel. The Gooseneck microphone kit (L3Harris part number CM-22218-0402M) includes the Gooseneck microphone, a DB-9M mating connector, and mounting fixtures. The connector needs to be attached to the microphone cable as described in the following procedure:

1. Mount the Gooseneck microphone as instructed by the manufacturer.

2. Attach a mating DB-9M connector (not supplied) to the microphone's cable:
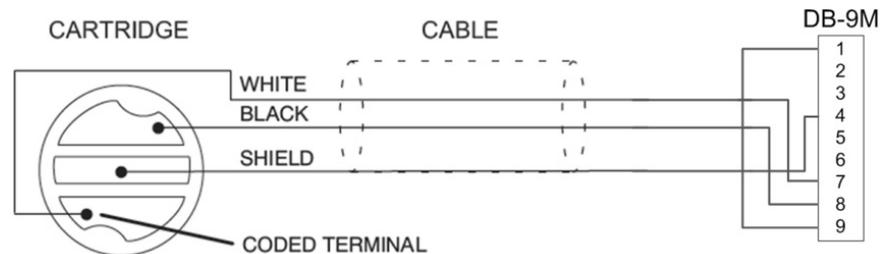
Figure 6-4: Gooseneck Microphone Wiring

   a. Connect the White wire to the positive audio input (pin 7).

   b. Connect the Black wire to the negative audio input (pin 8).

   c. Connect the shield to ground (pin 4).

   d. Connect a jumper wire between pins 1 and 9, so the amplified signal feeds into the normal Desk Mic circuitry.

NOTE

The Gooseneck microphone requires a preamp stage to boost its signal level. An input amplifier is available on pin 1 and has a fixed gain of 12 dB (± 2 dB).

NOTE

The Gooseneck microphone is designed for close-talking operation. For best performance, speak as close to the microphone as comfort permits. A distance of 1 to 5 cm (0.4 to 2 inches) provides the greatest discriminations between voice and background noise.

3. Plug the Gooseneck Microphone into the **DESK MIC** connector located the platform's rear panel.

6.7 INSTALLING OPERATOR AND SUPERVISOR HEADSETS

The headset provides the operator or supervisor with hands-free, high quality, comfortable, private monitoring, and dispatch capability. The Symphony Dispatch Platform supports headsets using either USB or DB-9 interfaces.

6.7.1 Operator and Supervisor Headset Connections

The DB-9F interface connector is wired as shown in Section A.9 and Section A.10. Each headset interfaces with the console by connecting to the platform's **Operator Headset** or **Supervisor Headset** connector, located on the rear panel. Each headset interface consists of the following lines:

- Headset Sense Switch input

- Ground

- Analog Ground

- Headset PTT

- Headset Speaker output

- Headset Microphone input

Each headset microphone, connected via pins 9 and 5, has a dedicated microphone audio path (i.e., the Operator path is not shared with the Supervisor Microphone interface). The Headset microphone audio input is software-programmable and capable of handling inputs ranging from -27 dBu to -15 dBu. Nominal level is -21.3 dBu.

In addition, the platform can provide a voltage source for the Headset Microphone input, equivalent to a 237-ohm pull-up resistor to 5 V. This is software configurable (on/off) and used to power electronics that are integrated into the Plantronics SHS 1890 or equivalent headset-adapter. This microphone bias is enabled by default in the Symphony and C3 Maestro^{IP} software, but can be disabled if another microphone type is used.

The Headset PTT and Headset Sense switches are digital inputs to the platform. The PTT connects to pin 6, the Sense switch to pin 3, and they share a ground on pin 4. The Operator and Supervisor switches are electrically isolated, and accommodate a switch closure to ground as their input signal.

The platform provides line level, single-ended audio output to the Headset earpiece outputs. It is connected via pins 7 and 8. Output impedance is 150 ohm or less. The nominal output level is -15 dBu, adjustable from -25 dBu to -5 dBu.

6.7.2 Installing the Jackbox and Headset Options

Using headsets that are connected to the platform using a Jackbox enables operators or supervisors to have hands-free mobility. The headsets connect to the Jackbox via a wired or wireless PTT adapter that uses a dual pronged PJ-7 style connector to plug into the Jackbox. The Jackbox is hardwired to the platform using separate connection points for the Supervisor and Operator headsets as shown in Figure 6-5.

The Symphony 6-wire Jackbox part number is 14017-0103-01. The older C3 Maestro^{IP} Jackboxes, part number CM-22218-000127 are also useable with the SDP.
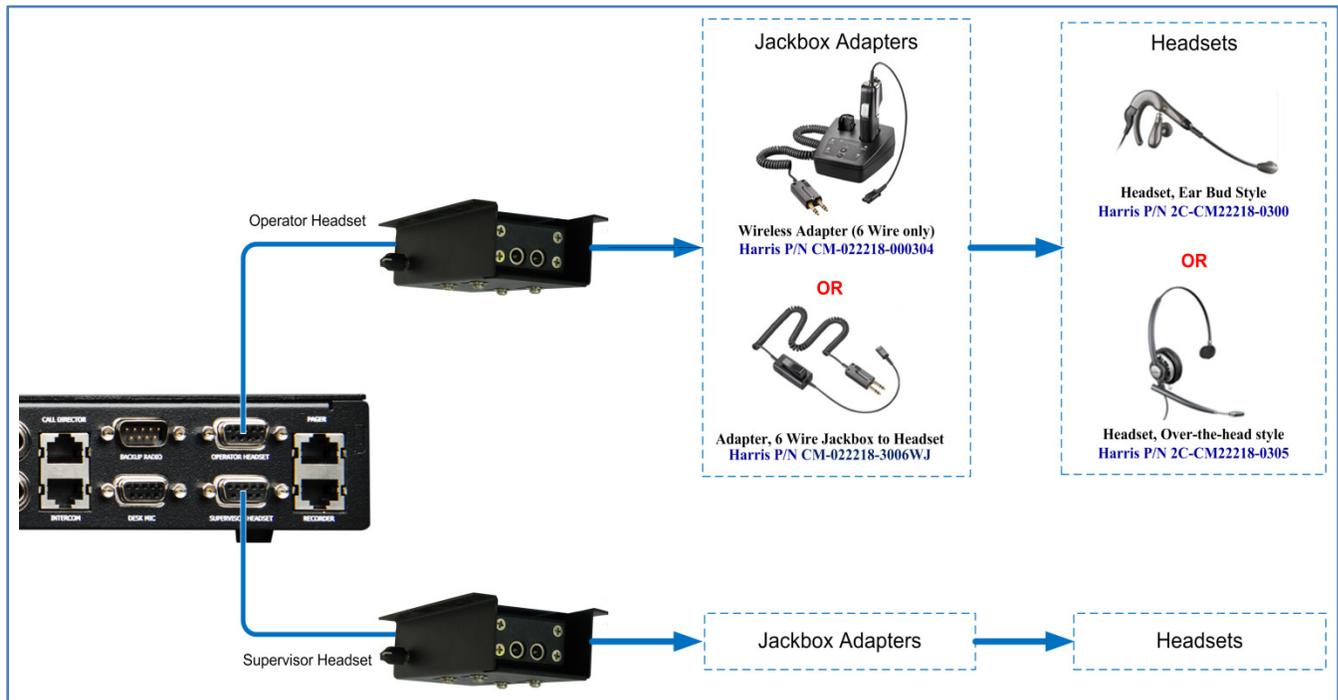
Figure 6-5: Wiring Headset Options

CAUTION

When using a 4-wire headset, disable the headset PTT function. This can be disabled from the Symphony Config application under "**Select / Hardware**."

When 4-wire headsets are used, the headset PTT MUST be disabled so that the console will not continuously key while the headset is inserted.   4-wire headsets adapters always short the PTT lines in the 6-wire jack boxes that Symphony uses.

1. Mount the Jackbox(es) in the desired location.

2. Connect the Jackbox(es) to the Symphony Dispatch Platform **OPERATOR HEADSET** or **SUPERVISOR HEADSET** connector using the DB-9(M) to DB-9(M) cable supplied with the Jackbox.

3. Connect a grounding cable (supplied) between the Jackbox housing and the same dispatch furniture ground point that the Symphony Dispatch Platform's grounding post is connected.

Failure to connect the ground wire between the Jackbox and ground could increase the potential effects of **E**lectro-**S**tatic **D**ischarge (ESD). This may damage the equipment or application software.

4. The headsets may then be connected to the Jackboxes via the Public Safety PJ-7 style 2-prong connector as shown in Figure 6-5.

6.8 INSTALLING FOOTSWITCHES

The footswitches are available in single (14017-0201-01) or dual (14017-0201-02) footswitch models. Activating the single footswitch returns a USB scan code of 44 (Space Bar Key). On the dual footswitch, activating the left footswitch acts the same as a single footswitch; activating the right footswitch returns USB scan code of 31 (Backslash "\" Key). Both footswitches have holes for rigid floor mounting, if desired.

Figure 6-6: Single and Dual Footswitches

> **NOTE**
>
> It is recommended that the dispatch centers use some form of anti-static flooring beneath the footswitches.

To Installing the Footswitches:

1. Locate and or mount the footswitch as desired.

2. Plug the operator's footswitch USB connector into the bottom **USB 1.1** port in right USB port stack located on the back of the platform. (This connects it to the Audio Processor, not the PC.)

3. When installing a supervisor footswitch, plug the USB connector into the second from the bottom **USB 1.1** port in the right USB port stack.
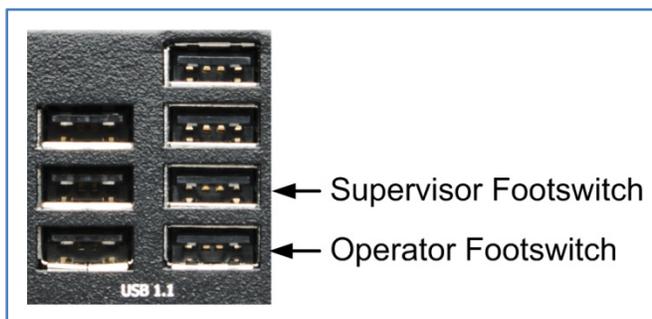
> **NOTE**
>
> When Symphony boots up, it will always identify the lower right USB 1.1 port as the operator footswitch port. Symphony also requires the operator footswitch to be plugged in for the supervisor footswitch to operate. If only the supervisor footswitch is plugged in, it will be interpreted as the operator footswitch. Footswitches should be plugged in when Symphony is not running, or Symphony should be rebooted to ensure the proper mapping of the footswitch ports.

6.9   AUDIO INPUT/OUTPUT CONNECTIONS

6.9.1   Auxiliary Audio Input

The Symphony Dispatch Platform includes two stereo auxiliary inputs, located on the rear panel and designated by the label **Audio In**. Using 3.5 mm TRS jacks, this connection allows inputting auxiliary audio sources which need to be routed to the headsets.

ⓘ **NOTE**	Before using the Auxiliary Audio Input, the feature must be enabled. Please refer to the *Symphony Installation and Configuration Manual,* 14221-3100-4100, or the C3 Maestro^{IP} *Installation and Configuration Manual,* 14221-3100-2000, for additional instructions.

6.9.2   Line Audio In and Line Audio Out

The Line Audio In (⊝) and Line Audio Out (⊝) connectors on the Symphony Dispatch Platform's front panel are the standard Line in Line Out from the ComExpress PC. The "PC audio out" at standard PC line level is sent over to the DSP/audio section, so that third-party application audio can be mixed into select or unselect speakers. This PC line audio out is summed with audio in of Aux 1 input (one of the two 3.5 mm rear Auxiliary Audio Input jacks). The Line Audio IN and Line Audio OUT connectors are 3.5 mm TRS jacks.

6.10   AUXILIARY INPUT/OUTPUT CONNECTIONS

Auxiliary input and output connections are made using the Auxiliary I/O Connector, shown in Figure 6-7, located on the Symphony Dispatch Platform's rear panel. The connector has six (6) optocoupler auxiliary input lines (bottom row) and five (5) output lines (top row) that can be used for interfacing with two-state external devices.
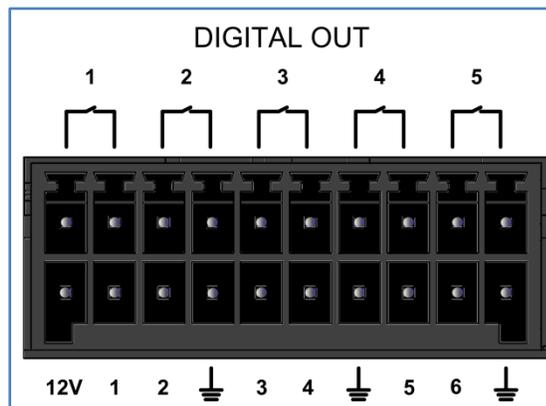
Figure 6-7: Auxiliary I/O Connector

6.10.1   Auxiliary Digital Inputs

Input signals are applied to pins 1 through 6 (connector lower section). Each Input line, diagrammed in Figure 6-8, is electrically isolated and normally accommodates a switch closure to ground as its input signal. The connector also provides +12V (pin 1), fused at one amp, and three grounding points. The 12 VDC can be used to drive external relays if needed (e.g., for switching 110 VAC).
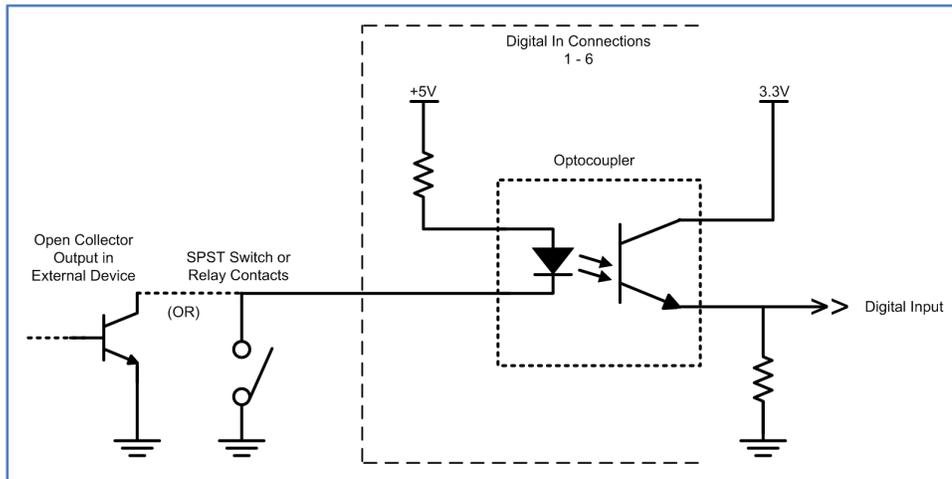
Figure 6-8: Auxiliary Digital Input Diagram

6.10.2   Auxiliary Digital Outputs

The Auxiliary Digital Output connections (connector upper section) consist of five solid-state single-pole, normally-open relay outputs (1 Form-A/SPST normally-open contacts). These relays are rated at 1 Amp, 60 Volts (AC or DC).

The platform design, as shown in Figure 6-9, enables the output relay control of either AC or DC loads. The purpose of the Digital Output connections is twofold, as described in the following paragraphs.
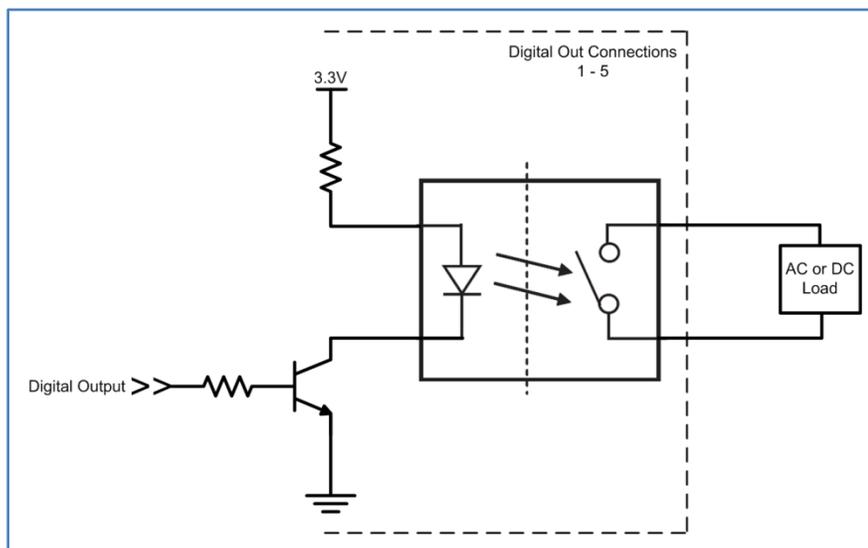
Figure 6-9: Auxiliary Digital Output Diagram

ℹ️ **NOTE**	The Symphony Dispatch Platform permits using an AC or DC powered load.

The initial software/GUI controlled digital output is referred to as "Console State Indication" or "On-Air Indication." This is intended to provide connectivity to a "light tree" or "Christmas tree" device. These devices are positioned at each dispatcher's location and are typically a vertical pole that has some number of colored lights. The lights are designed to be seen across a good-sized room. Supervisors use the lights to see which positions are loaded and which are not for purposes of tactical resource deployment and long-range resource planning.

The user defined software/GUI controlled digital output is referred to as "Local Aux I/O." Local Aux I/O enables the dispatcher to trigger a digital output by selecting a button (or icon) on the console display. This is intended to be used to control certain devices such as headset switches or to activate backup radios.

6.10.3 Making Connections

To make connections:

1. Remove mating connector if necessary by rocking it up and down while pulling.

   It is easier to insert the wires with the mating connector removed from platform.

2. Strip the wires 0.24-0.28 inches (6-7 mm) and insert them into the connector, as shown, using a tool with a small (2.5 x 0.4 mm) blade, similar to the Wago® Operating Tool (part No. 210-719).

   Use only 16-28 AWG wires.

3. Secure the wires using tie wraps.

4. Align the mating connector with the Auxiliary I/O receptacle, being careful to line up the connector keys. Push firmly to seat the connector.
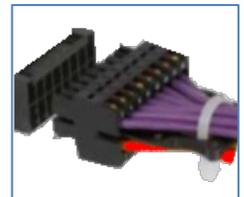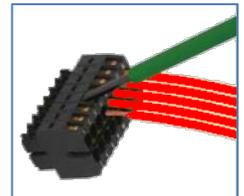
6.11 CALL DIRECTOR INTERFACE

6.11.1 Overview

The Call Director acts as the interface between the Symphony Dispatch Platform and a Public Switched Telephone Network (PSTN). This option enables dispatchers to patch radio calls to and from outside telephone lines using the same headset for both telephone and radio communications. The interface meets the requirements set forth by the *National Emergency Number Association (NENA) Generic Standards for E9-1-1 Equipment, NENA-04-001, Section 3.12, Radio/Telephone Headset Interface*.

When a dispatcher selects a telephone line, the telephone device closes the Off-hook Signal Contact. This causes the SDP Call Director Hook Switch Sense circuit to pass the headset audio to the telephone device. The headset audio remains connected to the telephone device until the telephone line is released. At this point, the telephone device opens the Off-hook Signal Contact and the Hook Switch Sense circuit returns the headset audio to the radio console. If the telephone line is placed on hold via the Hold button on the telephone device, the telephone device will open the Off-hook Signal Contact.

The platform Call Director interface uses an RJ-45 modular connector. The RJ-45 interface connector is wired as shown in Section A.6. The interface provides the following lines:

- Call Director Audio In +

- Call Director Audio In -

- Call Director Audio Out +

- Call Director Audio Out -

- Call Director Hook Switch Sense input

- Ground
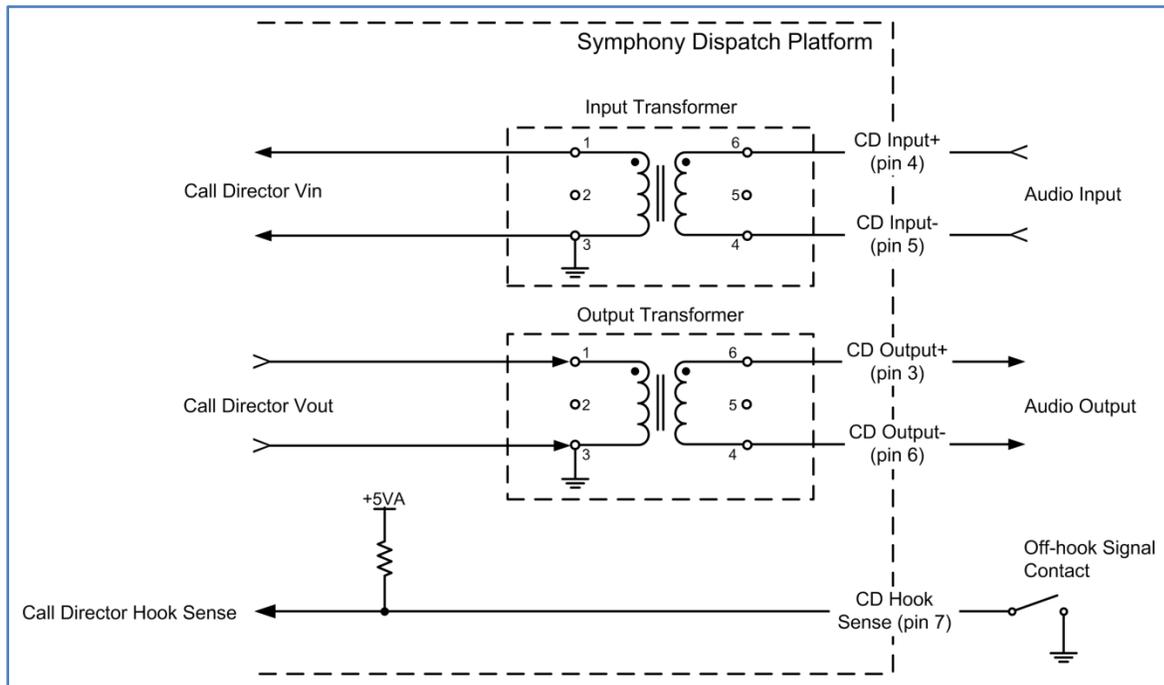
Figure 6-10: Call Director Interface Diagram

The Call Director Audio Input sends the audio from the Call Director to the platform's Audio Processor for recording and patching purposes. The transformer-coupled, balanced input presents a 600-ohm nominal input impedance. The nominal input level should be -10 dBu.

The Call Director Audio Output audio stream sends audio (usually radio traffic) to the telephone. The audio output is transformer-coupled, balanced, and presents a transformer-coupled 600-ohm nominal output impedance. The default nominal output voltage is -10 dBu.

The Call Director Hook Switch Sense input is electrically isolated and accommodates a switch closure to ground as its input signal. Single-ended logic input used to sense the Call Director hook is internally pulled to +5 VDC via 1k ohm resistor.

6.11.2 Installation

There are two ways to connect the Call Director:

- Using a custom box to translate the phone system to line in/out and hook sense digital line (compatible with both C3 Maestro^{IP} and Symphony). This custom box is not provided by L3Harris and typically must be fabricated to match the phone system's requirement.

- Connecting to a Cisco® Unified IP phone (C3 Maestro^{IP} only) is described in Section 6.11.3.

6.11.3 Installing Call Director for C3 Maestro^{IP}

This Call Director option incorporates a Cisco phone feature called Headset Hookswitch Control (HHC), which allows dispatchers to remotely receive a ring indication, adjust the volume, answer calls, end calls, and mute calls using their headset.

> **NOTE**
>
> To support the Call Director functionality, a Cisco POE Switch with Cisco Call Manager or Call Manager Express, and a VIDA Telephone Interconnect (VTI) system may be required.

6.11.3.1 Requirements

The following items are required:

- USB to RS-232 Cable Adapter with drivers, L3Harris part number CN24741-0001

- Call Director Serial Cable, L3Harris part number CA-018764-xxx (xxx= cable length, refer to Section A.6.2)

- Two Cat 5 RJ-45 to RJ-45 Ethernet cables

- Cisco Unified IP Phone model: 7942G, 7945G, 7962G, 7965G, or 7975G

6.11.3.2 Installing Cables

> **NOTE**
>
> Install the USB-RS-232 Cable Adapter drivers as described in the console's installation and configuration manual.

1. Connect an Ethernet cable between the Symphony Dispatch Platform **Call Director** port and the Cisco IP phone**10/100 PC** port. Refer to Figure 6-11.

2. Connect an Ethernet cable between the Cisco IP phone **10/100 SW** port and the designated port[5] on the Ethernet switch or other device interfacing the PSTN system.

   The interfacing device and the designated port will be identified by the system administrator or L3Harris system engineer.

---

[5] This must be a Power Over Ethernet (POE) port on the Ethernet switch to support the phone.

3. Plug the USB-RS-232 Adapter cable into a platform **2.0 USB** port.

NOTE The USB-RS-232 Cable Adapter must be plugged into a USB 2.0 port. Do not attempt to use a USB 1.1 port.

4. Connect the Call Director Serial cable between the Cisco IP phone **AUX** port (or RS-232 port) and the DB-9 end into the USB-RS-232 adapter.
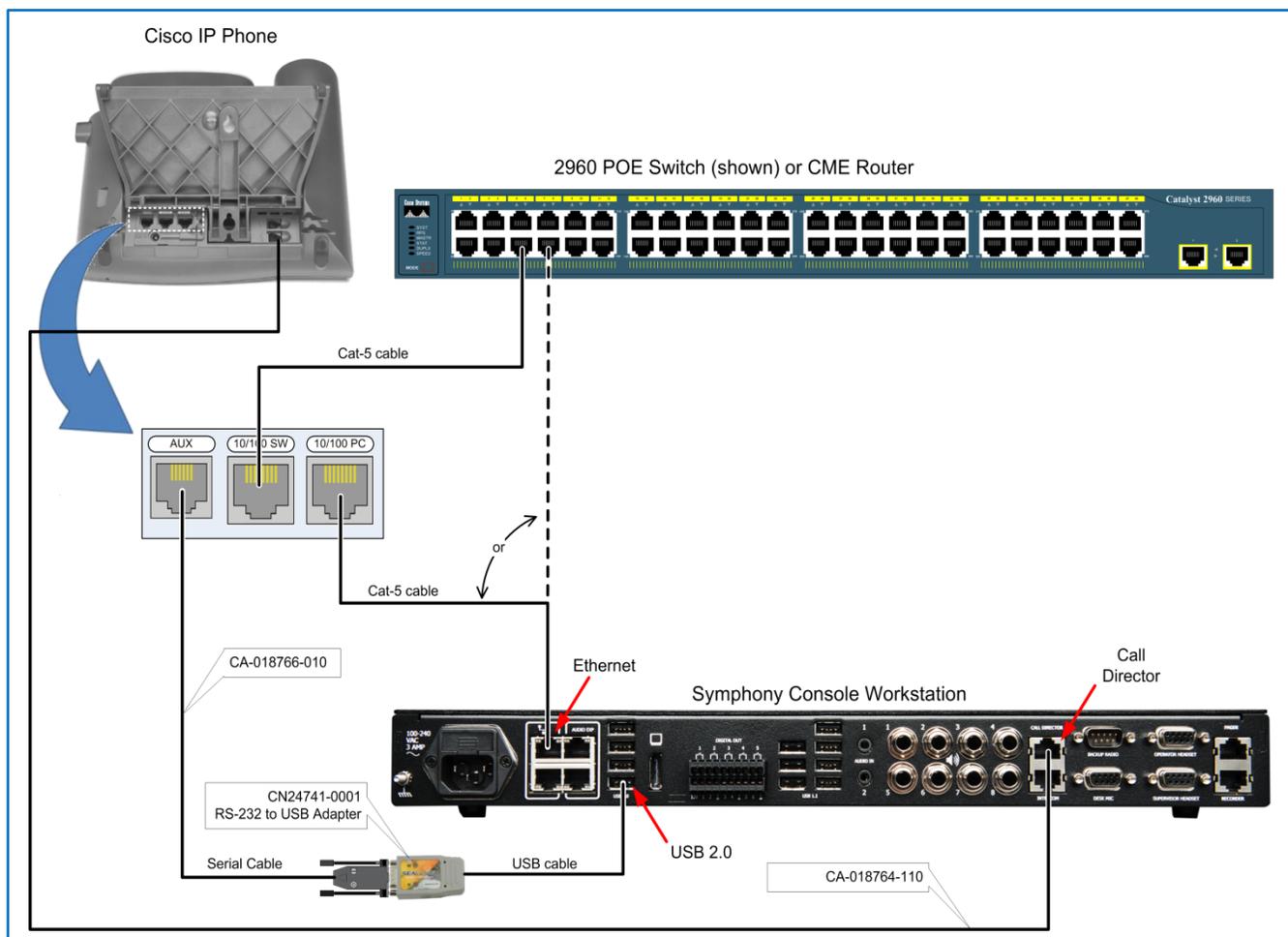
Figure 6-11: Sample Call Director Cabling Diagram

6.12 EXTERNAL ANALOG PAGING ENCODER INTERFACE

An optional External Analog Paging Encoder connects to the platform via an RJ-45 modular jack, labeled **PAGER**, located on the Symphony Dispatch Platform's rear panel.

The audio input path presents a transformer-coupled, balanced 600-ohm impedance to the external paging encoder and accepts analog paging signals between 275 Hz and 4000 Hz with a nominal input level of -10 dBu.

The platform interface provides the following lines:

- PTT input

- Ground

- Pager Audio In+

- Pager Audio In-

The pager audio is applied on the Pager Audio In contacts and is processed when the PTT Input, which is electrically isolated, provides a switch closure to ground. Typically, the PTT action is accomplished by a relay in the pager. The paging signal is sent to the headsets and speakers approximately 16 dB lower than other audio signal levels.

The platform can be configured so the external analog paging tones will also be heard in the Select audio or, if enabled, can be copied into the Select audio circuit at a level selected for Alert tones.

The platform External Analog Paging Encoder interface uses an RJ-45 modular connector. The RJ-45 interface connector is wired as shown in Section A.11.

The paging connector also contains extra digital inputs (pins 3, 6, and 7) intended for use as a remote backup radio switch. These inputs have no intended use with the paging encoder.

- Pin 3 – Backup Radio Manual Mode Enable

- Pin 6 – Backup Radio Auto Mode Enable

- Pin 7 – Remote Backup Radio Mode Switch

6.13 ANALOG LOGGING RECORDER INTERFACE

This section provides instructions for connecting an optional Analog Logging Recorder to the Symphony Dispatch Platform. The logging recorder is configured to continuously record dispatcher audio on radio channels and telephone calls.

To provide recorder support, the platform provides audio outputs that include both transmit and receive audio from the select and unselect speakers, as well as bi-directional telephone audio. The recorder connection located on the platform's rear panel is an RJ-45 modular jack labeled **RECORDER**.

The Analog Logging Recorder interface consists of the audio output lines:

- Select Audio +
- Select Audio -
- Unselect Audio +
- Unselect Audio -
- Telephone Audio In +/ABR Audio In+
- Telephone Audio In -/ABR Audio In-
- Telephone Audio Out +/ABR Audio Out+
- Telephone Audio Out -/ABR Audio Out-

The platform provides 600 ohm balanced nominal output for sending audio to recording devices. The output amplitude is typically set to -10 dBu[6], but can be adjusted from -20 to +0 dBu in 1 dB increments.

The "Telephone Audio In" line routes the Call Director (or other telephone interface) incoming audio to the logging recorder and the "Telephone Audio Out" line routes outgoing audio to the logging recorder from the Call Director (or other telephone interface).

The "Select Audio" lines route select audio to the logging recorder and the "Unselect Audio" routes a summation of specified Unselect audio outputs to the logging recorder.

The **RECORDER** RJ-45 modular jack is wired as indicated in Section A.13.

[6] At 600 Ohms, -10 dBu = -10 dBm

6.14 BACKUP RADIO

The Backup Radio feature enables the dispatcher to connect the console to a mobile radio in the event the network connection goes down. The PTT and audio signals from the desk microphone, headset, speakers, and footswitch are summed and sent to the radio in backup mode. The three-position Backup Radio switch (Auto, Disable, or Manual) located on the front of the Symphony Dispatch platform enables or disables the backup radio mode.

The Backup Radio Switch selects the Backup Radio mode from the following choices:

Figure 6-12: Backup Radio Switch

With a Backup Radio installed:

- In the **DISABLE** mode, the Backup Radio is always disabled.

- In the **MANUAL** mode, the Backup Radio is in a "Bypass Only" state and stays enabled and activated until the mode is changed.

- In the **AUTO** mode, the Backup Radio is engaged when the console is shut down and automatically disengages when the console starts.

> **NOTE**
>
> For C3 Maestro^{IP} only, setting the switch to **AUTO** allows the console application to switch to backup radio operation using an on-screen button.

6.14.1   Backup Radio Interface

The Backup Radio Interface consists of the following lines (see Section A.7 for the pinout):

- Asynchronous serial output (to the Backup Radio)

- Asynchronous serial input (from the Backup Radio)

- Microphone audio (an output to the Backup Radio)

- Speaker audio (an input from the Backup Radio)

- Ground

- Analog Ground

- PTT

- Receive active

The Backup Radio microphone signal output path has sufficient gain and gain adjustability to deliver any output level from -20 to +12 dBu (-22.2 to +9.8 dBVrms) when the input voltage is at nominal line level (-25 dBFS). The Output Impedance is 47 ohms ±10%.

The Backup Radio's receive audio input signal path has sufficient gain and gain adjustability to deliver nominal line level (-25 dBFS) to the console's digitization input when the receive audio input signal is within the range of -20 to +12 dBu (-22.2 to +9.8 dBVrms).

6.14.2   Connecting a Backup Radio to the Symphony Dispatch Platform

![Caution] **CAUTION**	**Do Not** attempt to use the original Enhanced Cabling Enclosure (ECE) backup radio cable to interface between the SDP backup radio connector and the backup radio. Failure to observe this caution will result in damage to the radio. Refer to Section 6.14.3 for additional details.

To Connect the Backup Radio:

Connecting a radio to the Symphony Dispatch Platform requires the following optional cables. The cable diagrams are shown in Section A.7.

- 14017-0104-01 - Backup Radio Interface Cable

- CA-013671-020 - DB-9M to DB-9F Serial Cable

- 14002-0174-01 - M5300/M7300/XG-75M/XG-100M Standard Option Cable, or

- 14002-0174-08 - XG-25M Standard Option Cable

- 14017-0106-01 - XL Mobile Backup Radio Interface Cable

![Note] **NOTE**	The cables for this installation are **not** provided with the Symphony Dispatch Platform and must be ordered separately. The backup radio switch on the front panel must be set to **Disable** if a backup radio is not installed.

Backup Radio Interface Cable 14017-0104-01 connects the SDP Backup Radio connector to the two cables connecting to the radio. This cable connects to the radio via Option Cable 14002-0174-01 and Serial Data Cable CA-013671-020. The Backup Radio Interface Cable's assembly and wiring diagrams are shown in Section A.7.4.

Serial Data Cable CA-013671-020 is used to transfer data between the SDP and the radio. This is a straight through cable that connects to the radio's 9-pin Serial Port connector. The cable's assembly and wiring diagrams are shown in Section A.7.2.

Option Cable 14002-0174-01 provides audio connections between the radio and the SDP. It connects to the 44-pin I/O connector on the rear of the radio. Although the cable breaks out into several smaller standardized connectors, only the 25-pin connector, P4, is used in the Backup Radio configuration. The cable's assembly and wiring diagrams are shown in Section A.7.3.

Backup Radio Interface Cable 14017-0106-01 connects the 9-pin Backup Radio connector on the rear of the SDP to the 44-pin I/O connector on the rear of the XL Mobile Radio.

1. Connect the Backup Radio Interface Cable DB-9M connector P1 to the Symphony Dispatch Platform **BACKUP RADIO** connector as shown in Figure 6-13.

2. Connect the Interface Cable DB-25M connector J2 to the Standard Option Cable DB-25F connector P4.

3. Connect the Connect the Interface Cable DB-9M connector J1 to the Serial Cable DB-9F connector P1.

4. Connect the Standard Option Cable 44-pin connector to the radio's 44-pin I/O connector.

5. Connect the Serial Cable DB-9M connector to the radio's Serial Port connector.
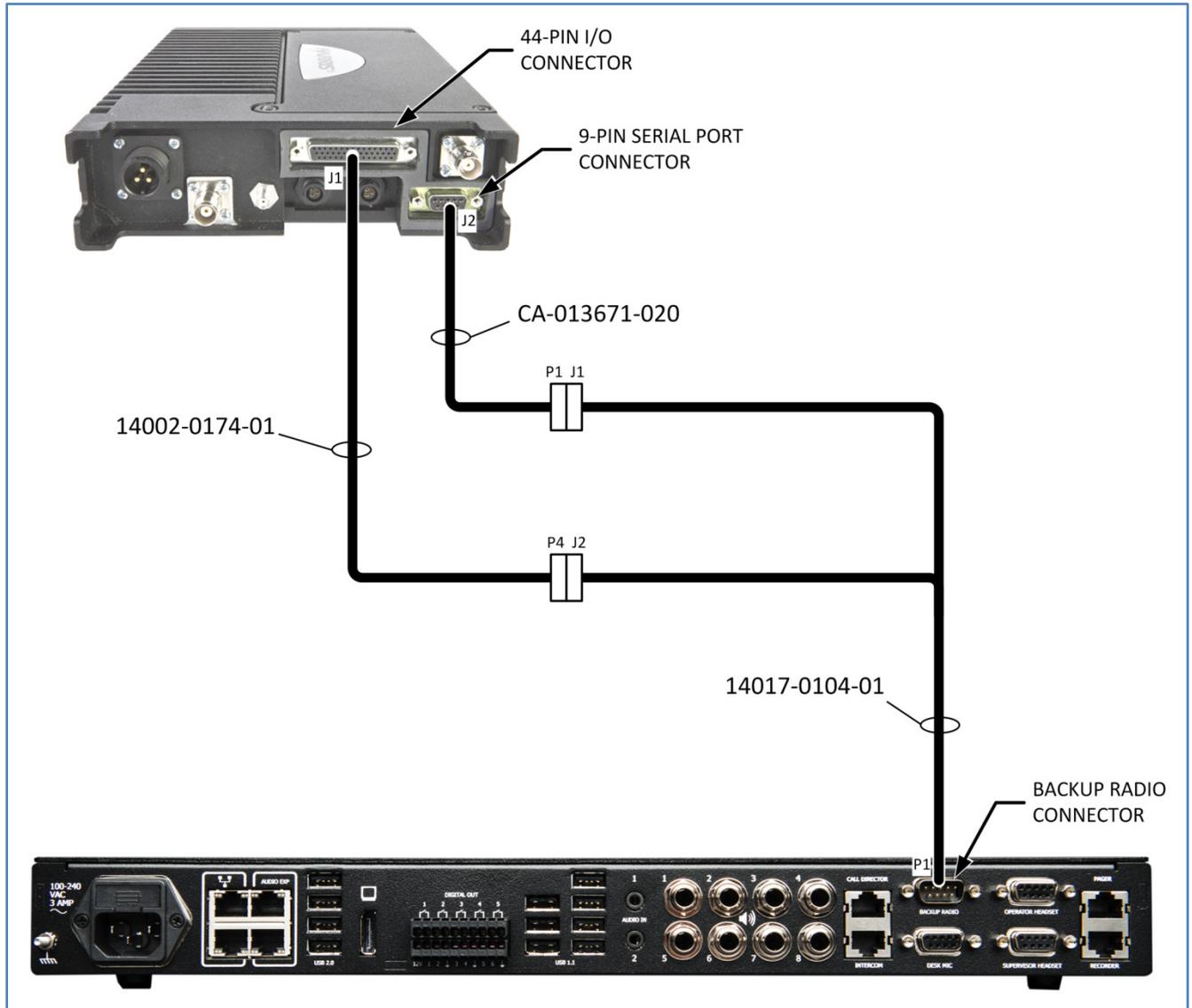
Figure 6-13: Sample Backup Radio Cable Interconnection Diagram (XG-100M Shown)

6.14.3 Backup Radio Connections

> ⚠️ **CAUTION**
>
> **Do Not** attempt to use the original Enhanced Cabling Enclosure (ECE) backup radio cable to interface between the SDP backup radio connector and the backup radio. Failure to observe this cautionary note will result in damage to the radio.

Table 6-1: ECE vs. Symphony Backup Radio Connections

LEGACY ECE BACKUP RADIO CONNECTOR PINOUT		SYMPHONY BACKUP RADIO CONNECTOR PINOUT	
DB-9F CONNECTOR	SIGNAL NAME	DB-9F CONNECTOR	SIGNAL NAME
1	GND	1	GND
2	NC	2	RD RS-232
3	Backup Radio MIC	3	TD RS-232
4	Audio GND	4	Radio Active
5	Radio Vol Hi	5	S GND RS-232
6	NC	6	Audio from Radio Vol Hi
7	Backup Radio PTT	7	Radio PTT
8	NC	8	Audio to Radio MIC
9	**12VDC**	**9**	**Audio GND**

See CAUTION note.

Table 6-2: SDP Backup Radio Connector to Radio Connectors

CONSOLE PLATFORM		RADIO		
BUR CONNECTOR	SIGNAL NAME	SERIAL PORT CONNECTOR	44-PIN I/O CONNECTOR	RADIO FUNCTION
1	Ground		8	Speaker Ground
2	RD RS 232	2		TX D
3	TD RS 232	3		RX D
4	Radio Active signal		2	OUT1
5	S Ground RS 232	5		Data Ground
6	Backup Radio Vol Hi		17	XTONEDEC (Spk)
7	Backup Radio PTT		18	PTT -> INP1
8	Audio to Radio MIC[7]		27	EXTMIC
9	Audio Ground		6	EXTALO

---

[7] The 14017-0104-01 Interface Cable has an inline capacitor connected between P1 pin 8 and J2 pin 24. This capacitor is located in the J2 connector shell.

6.14.4 <u>Backup Radio Remote Switch</u>

To Connect Remote Backup Radio Switch:

The Backup Radio can also be remotely controlled. Installing a remote switch is useful when the Symphony Dispatch Platform is not easily accessible to the dispatcher. This procedure provides instructions for mounting the switch on a desktop or some other location close to the dispatcher.

Three pins on the Paging Connector (pins 3, 6, and 7) can be used to connect an external backup radio switch. Pin 7, Remote Backup Radio Mode Switch, can be used to override or bypass Auto/On selection with a remote switch when the platform is mounted with an inaccessible Backup Radio switch. Remote "Off" is not required, but one of these digital inputs could be used. L3Harris does not provide a remote switch or cable for this purpose; it must be purchased or fabricated locally.

Position	Function	Connection
1	On	1 - 2
2	Off	None
3	On	2 - 3
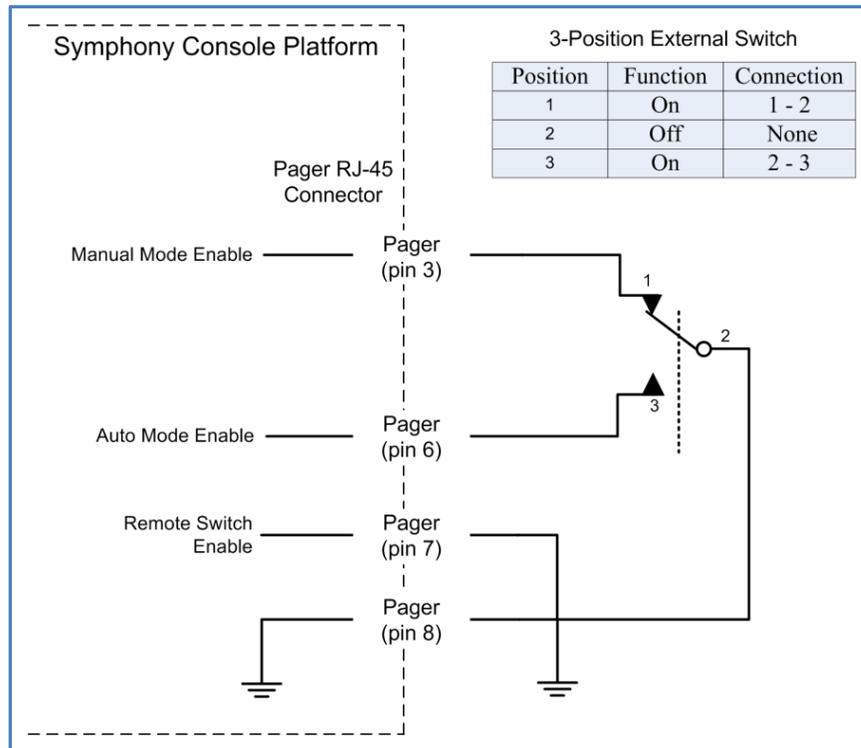
Figure 6-14: Sample Backup Radio Remote Switch Connection Diagram

To bypass the front switch, pull Pin 7 on the pager port to ground. At this point, the front switch is disabled and will be ignored.

- Pull only Pin 3 to ground enables **Manual** mode (acts as if the front switch is in the Manual position).

- Pull only Pin 6 to ground enables **Auto** mode.

- Pulling both to ground or neither to ground is the same as disabling from the front switch.

6.14.5   Configuring the XL Mobile Backup Radio to PTT

Use Radio Personality Manager 2 (RPM2) to configure the XL Mobile Radio to issue a digital Push to Talk (PTT) command to the Symphony Dispatch Platform. Open or create a personality file for the XL Mobile radio you are using as backup radio, and navigate to **Options → External IO Options**. Under **Keycode**, select PTT from the **Auxiliary Input 1** drop-down. Use RPM2 to write the updated personality to your XL Mobile backup radio.
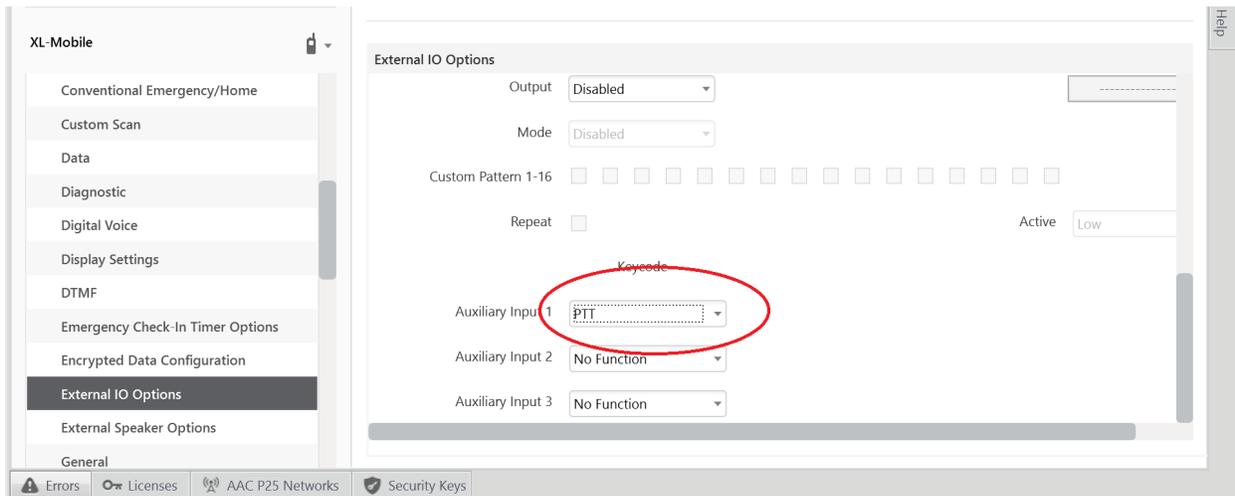
Figure 6-15: Configuring XL Mobile Radio to Send Digital PTT Command

6.14.6   Connecting Advanced Backup Radio to the Symphony Dispatch Platform

i **NOTE**	ABR and SIP functionalities are mutually exclusive. They both use the same audio line on the Symphony and hence only one of the features can be activate at any given time.

The Advanced Back-up Radio (ABR) feature on Symphony is an enhancement to the existing standard backup radio feature. The standard backup radio feature requires manual intervention to switch between backup radio and Symphony operations. The controls to change the talk group or volume are local to the XL Mobile. Additionally, the audio routing between XL Mobile to Symphony is analog, where audio passes through the audio box before reaching the application.

ABR is designed to fully automate the backup feature with no manual controls on the mobile. The audio is completely digitalized using IP connectivity between the radio and the Symphony. ABR leverages the user experience from the existing GUI, and it is configured similarly to that of other common communication modules. When VNIC connectivity goes down, the ABR module becomes the selected module, and the operator can readily dispatch through the backup radio, as shown in Figure 6-16.

Figure 6-16: ABR module when VNIC Disconnected

To Connect the Radio for Advanced Backup Radio Operation:

ABR is a licensed feature on Symphony and the set-up requires an XL Mobile Radio with RRI (Radio Remote Interface) running the software that supports ABR, an ethernet cable, and USB adapter as shown below.

Connecting a radio to the Symphony Dispatch Platform for Advanced Backup Radio operation requires the following.

- UD-AB2K – Ethernet Cable

- A30-1116-001 – Ethernet to USB Adapter

NOTE	The cables for this installation are **not** provided with the Symphony Dispatch Platform and must be ordered separately. The backup radio switch on the front panel must be set to **Disable** if a backup radio is not installed.
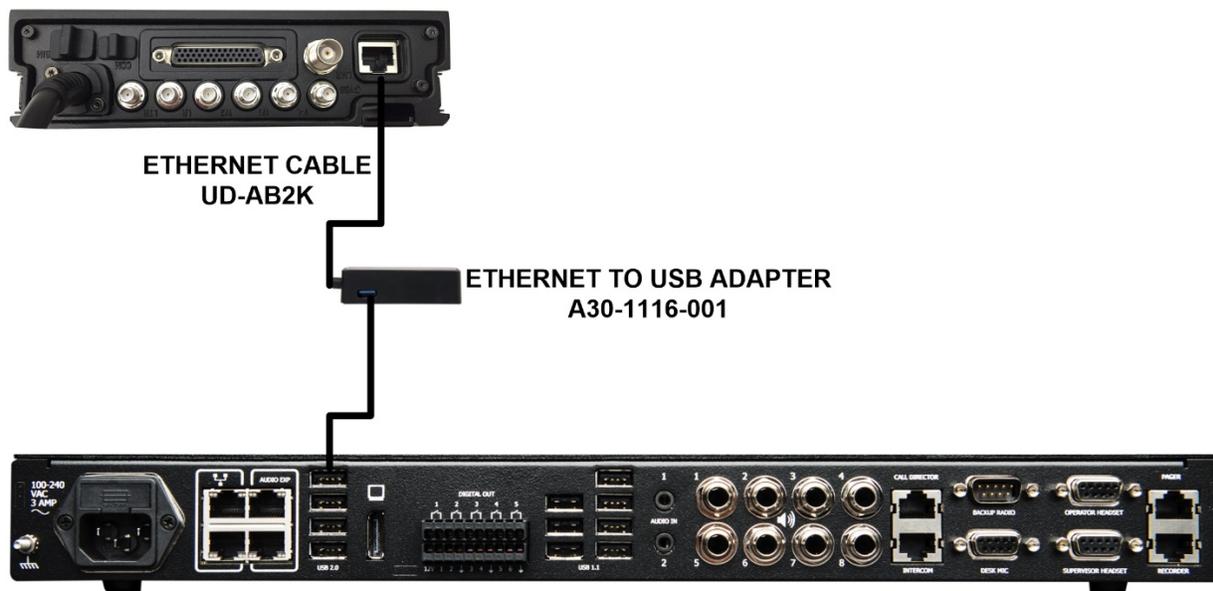
Figure 6-17: Advanced Backup Radio Interconnection Diagram

6.15 INTERNAL NETWORK

The Symphony Dispatch Platform contains two computers connected by an internal Ethernet network. The two computers are the Symphony Audio Processor and the Symphony Embedded Computer (PC). In Microsoft Windows, the internal network typically appears as "Ethernet 3" in the Network Adapter list.

The Audio Processor uses a "link-local" or IPv4LL IP address. The PC is configured to have no IP address on the internal interface. When configured this way, the PC also chooses a link-local address that is guaranteed not to conflict with the Audio Processor. The PC dispatch software automatically discovers the Audio Processor and does not need to know the Audio Processor's IP address.

Connecting a device to either of the Audio Exp ports is not supported at this time.

NOTE	Refer to Section 7.5 if configuration of the internal network is required.

7. OPERATING PROCEDURES

7.1 INITIAL OPERATION

When the console is started up for the first time, Windows may ask if the user wants to allow or block network traffic from the console executables. Allow these applications access to the network.

The Windows firewall can cause intermittent problems with the console operations. Under some circumstances it may block traffic between the console and the VNIC.

To ensure proper operations:

- Disable the Windows firewall completely.

  or

- Ensure that the network connections used to access the VNIC and the local audio box are set to "Private."

7.2 TURN ON EQUIPMENT

Consult with the system or dispatch center administration personnel for power-up authorization. Verify that all cabling, power connections, and other system hardware are interconnected as required. Refer to the vendor maintenance and installation manuals as necessary.

7.2.1 To Startup Equipment

1. Turn on the system's monitor.

    Apply power by pressing the power on/off switch, typically located on the monitor's front panel or side. A small power indicator light on this panel lights up when the unit is on. If necessary, refer to the documentation that came with the monitor for the exact location of the switch and/or additional details.

2. Turn on the Symphony Dispatch Platform.

    Apply power by pressing the power on/off switch located on the platform's front panel. A small tri-color LED on the panel lights up when power is applied. Refer to Table 7-1.

NOTE	The Symphony Dispatch Platform will power up automatically when plugged into a hot AC power socket or if power is restored after a power interruption.

Table 7-1: Symphony Dispatch Platform Power LED Description

FRONT PANEL INDICATOR	DESCRIPTION
OFF	No power is applied to the unit.
AMBER	System booting up.
GREEN	System operating normally.
RED	A system anomaly is detected or a download of code is in process. Refer to Section 8.3 on page 65 for troubleshooting information.

3. Turn on the speakers.

7.2.2 Log On

If prompted to log into the system, enter the default User Name and Password. Refer to the Symphony or C3 Maestro^{IP} Installation and Configuration Manual if necessary.

7.3 OPERATING MODES

The Audio Processor operates in two modes: Configuration and Operational.

- While in the Operational mode, the display line 1 will read "**Harris Symphony**" or "**Backup Radio Act**," depending on the current state, and line 2 will indicate state of the connection with the PC dispatcher software (Symphony or C3 Maestro^{IP}).

- Configuration Mode is entered when the Symphony Audio Processor Configuration Switch is pushed during the boot process. While in the Configuration mode, display line 1 will read "**Configuration Mode**" and line 2 will indicate the"<IP ADDR> /<Net Mask>" (i.e., 192.168.0.100/24).

NOTE	The Symphony Audio Processor Configuration Switch is accessed through a small hole in front and to the right of the Solid State Drive. This switch is very sensitive; press lightly so as not to damage the switch.

7.4   OPERATIONAL MODE

The Operational Mode is entered when the platform is booted up normally, that is without pressing the Configuration Switch.

Table 7-2: Symphony Dispatch Platform LCD Messages

LCD DISPLAY	DESCRIPTION	DISPATCH
Backup Radio Act **Disconnect Auto**	Backup radio is active, PC console software is not running.	Backup radio
Harris Symphony **Disconnected**	Backup radio is not active, PC console software is not running.	Not Possible
Backup Radio Act **Disconnect Manual**	Backup radio is active, forced by the manual switch. The PC console software is not running.	Backup radio
Backup Radio Act **Connect Manual**	Backup radio is active, forced by the manual switch. The PC console software is running.	Backup radio
Harris Symphony **Connected**	The PC console software is running.	Symphony or C3 Maestro^{IP} software

Once in operational mode:

- The Audio Processor will go directly to Bypass Mode (backup radio) if the Backup Radio Switch is set to **Manual**.

- If the switch is set to **Auto**, the Audio Processor will go into Bypass Mode (backup radio) until the console software connects.

- If the switch is set to **Disable**, the Audio Processor will wait for the PC software to connect.

7.4.1   Boot Status Reporting

During Boot, line 1 will read "**Booting….**" and Line 2 will be blank if there are no boot errors.

After Booting is complete and the C3 Maestro^{IP} or the Symphony application is connecting to the Console, line 1 will read "**Connecting….**" and line 2 will indicate the software version (**Rev.** <Code version>).

7.4.2   Bypass State Reporting

Refer to Table 7-2.

The Audio Processor operates differently depending on the state of the Backup Radio switch. If the switch is in the **Manual** position, the processor operates in the Bypass mode. If the switch is in the **Auto** or **Disable** position and the computer connection is established, the Audio Processor operates at the computer's direction. If the computer connection is not established after a time and the switch is in the **Auto** position, the processor will operate in the Bypass mode. If switch is in the **Disable** position and the computer connection is not established after a time, the Audio Processor enters an error state.

7.5 CONFIGURATION MODE

In configuration mode, the Audio Processor chooses a non-routable IP address and displays it on the front panel. Telnet is supported in this mode to perform any necessary configuration. The corresponding Ethernet adapter must be configured with a different IP address that is in the same subnet as the one displayed by the Audio Processor. The subnet mask must match that of the Audio Processor.

For example, if the Audio Processor is in the configuration mode and displays IP address 192.168.0.100/24. The PC's Ethernet adapter should be configured for 192.168.0.101 with a netmask of 255.255.255.0 (24 bits).

7.5.1 <u>Access Audio Processor in Configuration Mode</u>

NOTE

Configuration Mode is not currently used in any customer applications. Only perform the following procedures if directed by L3Harris Technical Assistance Center (TAC).

To configure Symphony Windows for telnet to the Audio Processor while it is in Configuration mode:

1. Navigate to **Control Panel → Network and Internet → Network Connections** to change adapter settings.

2. Right-click on **Ethernet 3** to display a drop-down menu.

3. Select **Properties** from the menu to display the **Ethernet 3 Properties** dialog.

4. Select **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**.

   The computer displays the **Internet Protocol Version 4 (TCP/IPv4) Properties** dialog.

NOTE
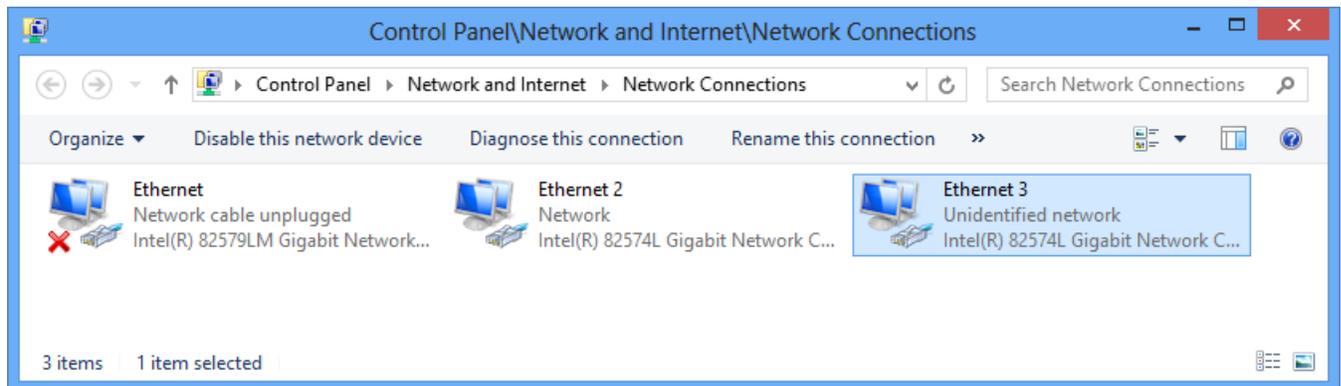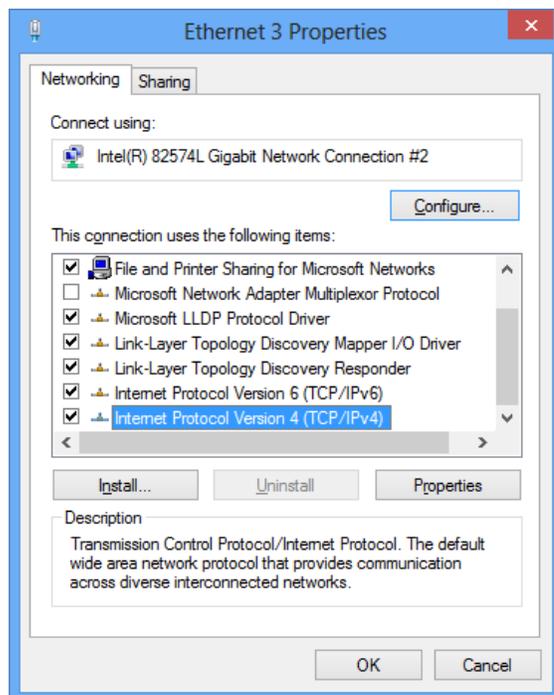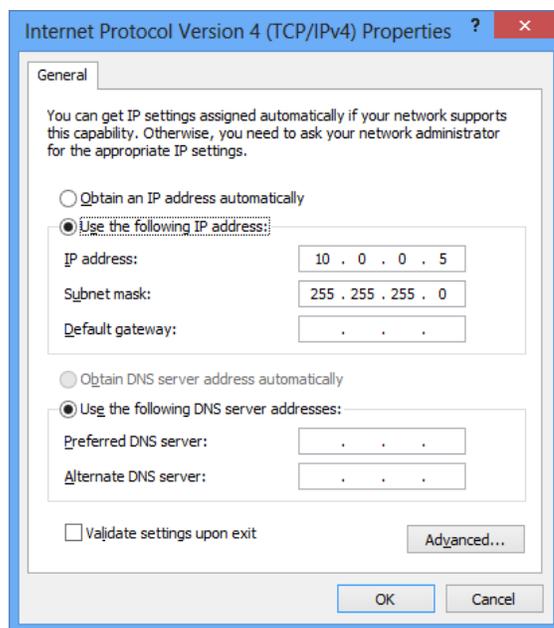
If you have been using the Symphony or C3 Maestro^{IP} application previously, record the settings, particularly the settings for IP address and Subnet mask. You will need to restore these settings when you are ready to resume normal activities on the Symphony Dispatch Platform.

5. Set the IP address to be 192.168.1.101 and the Subnet Mask to 255.255.255.0 (24-bit mask) to communicate with the Audio Processor while it is in Configuration Mode.

NOTE	The first three octets of the IP address match the first three octets displayed on the Symphony Dispatch Platform LCD while it is in the Configuration Mode. The fourth octet can be set to any valid value except 100, which is assigned to the Audio Processor.
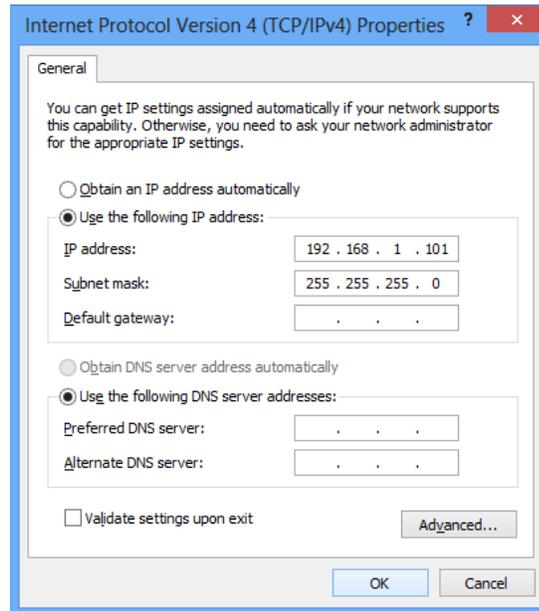
6. Open a Windows Compatible telnet client, such as PuTTY, and configure it to establish a telnet session with the Audio Processor.

7. Set the destination host IP address to be 192.168.1.100 (the value displayed on the Symphony Dispatch Platform LCD). Set the port to 23 and select Telnet as the connection type.
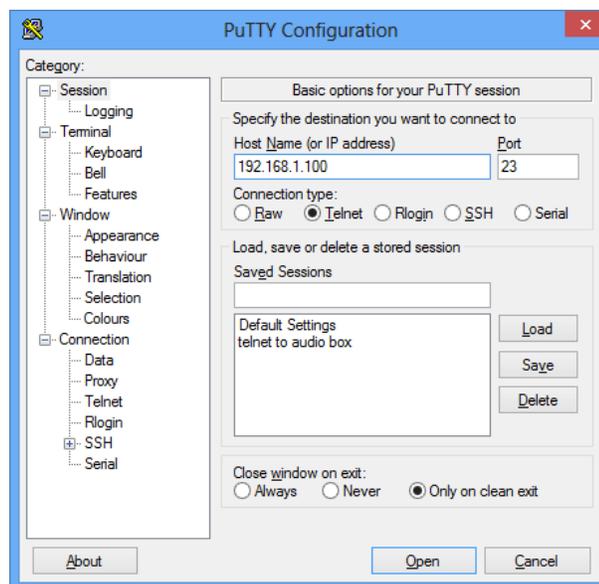
8. Open the session. The telnet client opens a telnet session and displays the Linux 'ssh' shell command prompt.
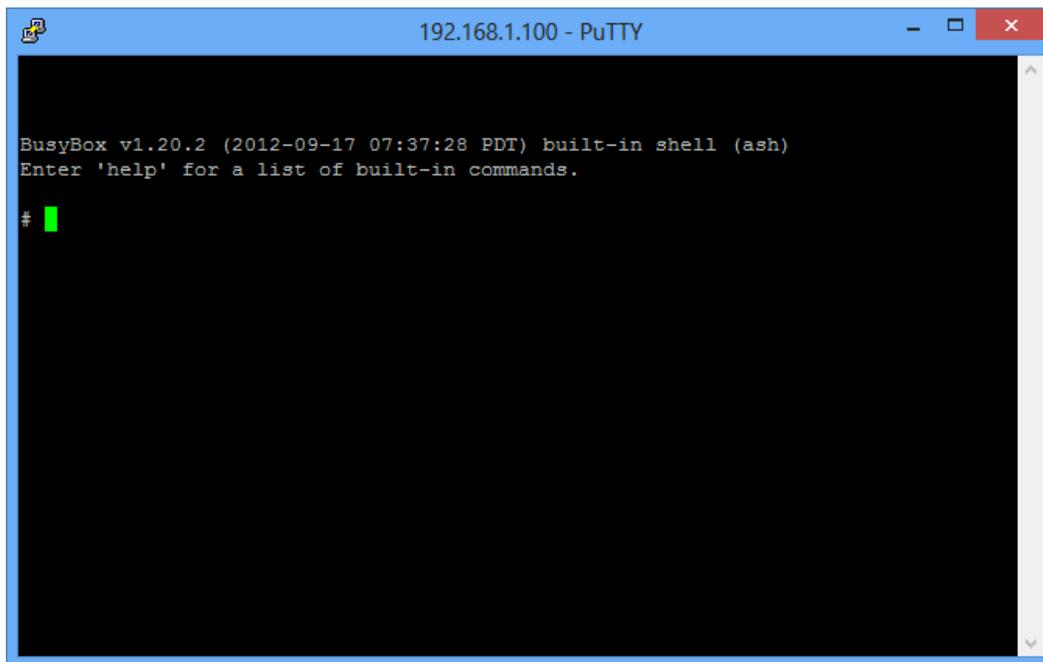
9. After configuration changes have been made, exit the shell and close the telnet session, by typing "exit" and pressing <Enter>. The shell window will close.

7.5.2 Restore Symphony Dispatch Platform to Normal Operating Mode

To restore the Symphony Dispatch Platform and the Audio Processor to normal operating mode do the following:

1. Navigate to **Control Panel → Network and Internet → Network Connections** to change adapter settings.
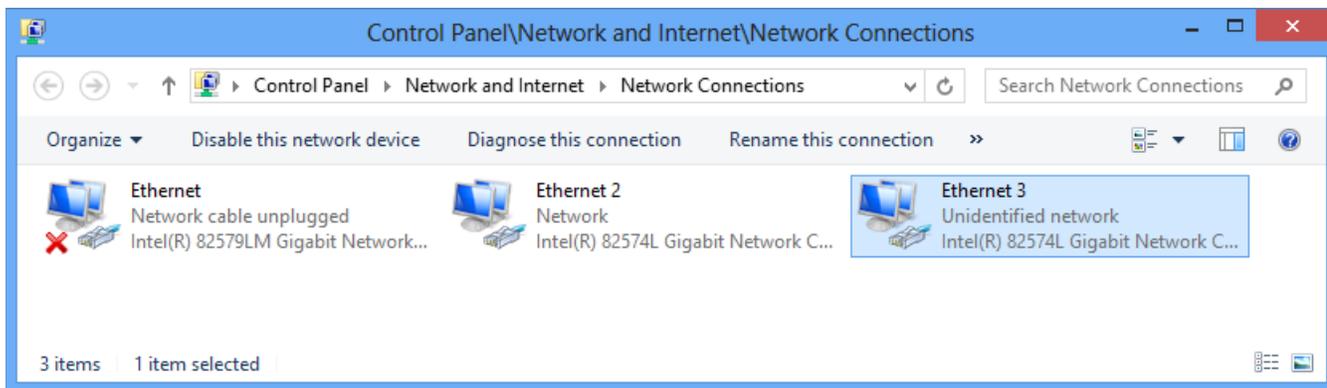
2. Right-click on "**Ethernet 3**" to display a drop-down menu.

3. Select "**Properties**" from the menu to display the **Ethernet 3 Properties** dialog.
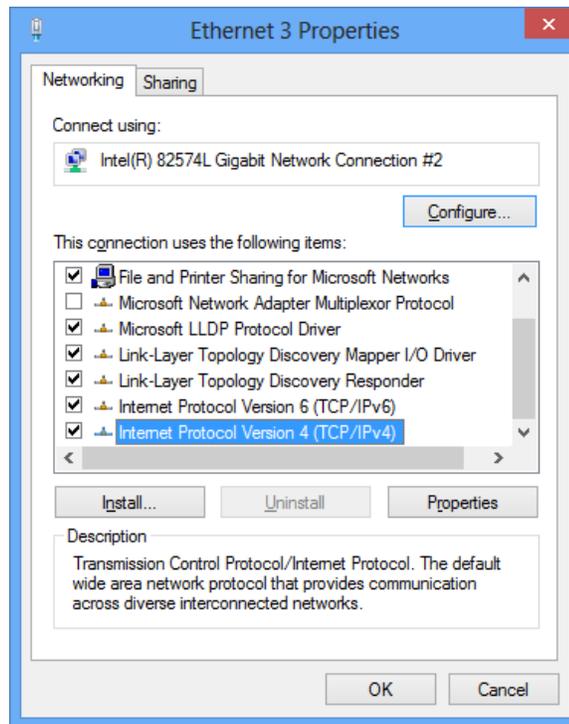
4. Select **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**.

    The computer displays the **Internet Protocol Version 4 (TCP/IPv4) Properties** dialog.
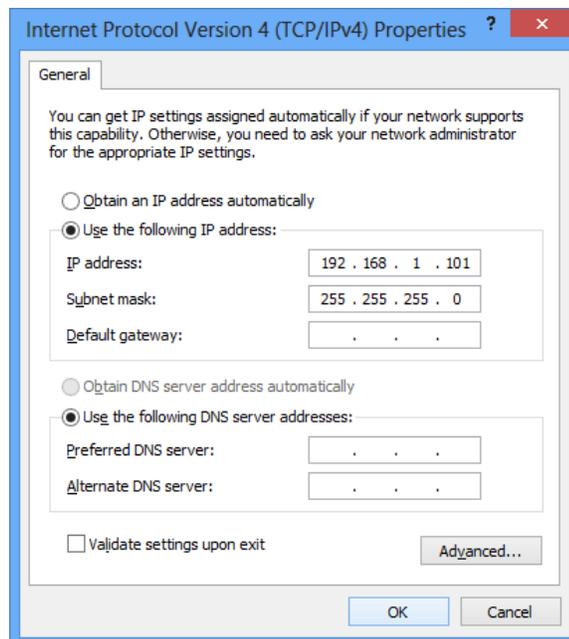
	If operating in Configuration Mode, the settings will be similar to those shown in step 4. If using the Symphony application previously, restore the NIC to values that were recorded before going into the Configuration mode. If you changed Audio Processor's operating mode IP settings while it was in Configuration mode, configure the NIC accordingly.
NOTE	

5. Select **Obtain an IP Address automatically** and click **OK**.
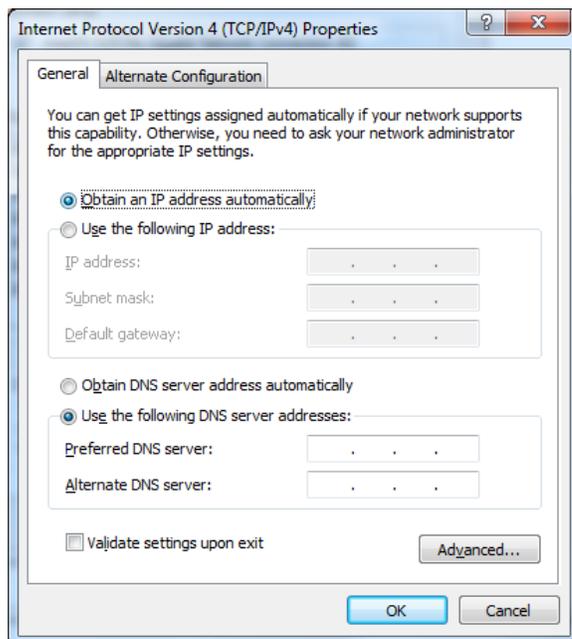
6. Power the Symphony Dispatch Platform off then back on.

8. MAINTENANCE

⚠️ **WARNING**	**There are no user-serviceable parts in the Symphony Dispatch Platform. Do not disassemble the platform. Return it to a qualified service shop when service or repair is required. Incorrect reassembly may result in the risk of electrical shock or fire.**

8.1 PERIODIC CARE

Periodic inspection and cleaning of the external surface of the platform is recommended to minimize the negative impact of environmental dust or debris. The frequency of inspection and cleaning is dependent upon the severity of the environmental conditions, but a minimum of every six months is recommended.

8.2 REPAIR

The Symphony Dispatch Platform has no internal user serviceable parts. If service is required, please contact the L3Harris Customer Care center (see Section 2.4.3) for assistance and the location of the nearest L3Harris authorized Service Center.

8.3 WARRANTY

Please register this product within 10 days of purchase. Registration validates the warranty coverage, and enables L3Harris to contact you in case of any safety notifications issued for this product.

Registration can be made on-line at https://www.l3harris.com/all-capabilities/pspc-customer-care.

Warranty information for U.S., Canadian, and International customers is available on the L3Harris PSPC website at https://www.l3harris.com/all-capabilities/pspc-customer-care.

9. TROUBLESHOOTING

9.1 STARTUP ERROR MESSAGES

The following describes the error messages that may be displayed on the splash screen during login.
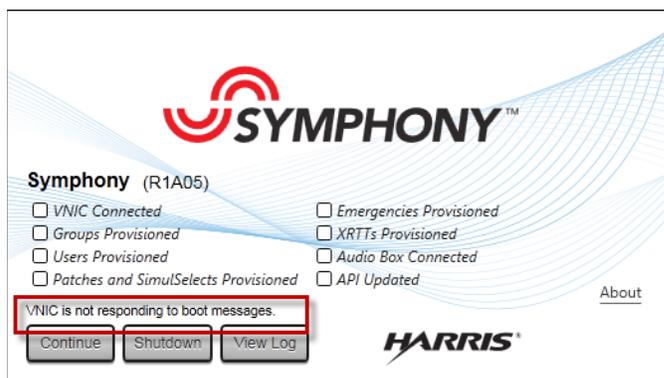
Figure 9-1: Example of Login Error

Table 9-1: Login Messages and Causes

MESSAGE	POSSIBLE CAUSES
Dispatcher is not authorized.	User ID is wrong or not in UAS. Password is incorrect. PSAP ID is incorrect or not in UAS.
Failed to login. Requested FlexPaths or Vocoders not allowed by VNIC. Check Max Talk Paths in UAS.	The PSAP's "Max Talk Paths" setting is less than the number of FlexPaths the console is licensed for.
VNIC protocol version is not supported.	The console is trying to login to a VNIC that does not support this console version.
VNIC is not responding to boot messages.	The VAS Server, VNIC Virtual machine, or VNIC application are not running. IP address/Hostname of the VNIC is wrong in connection manager. The console is trying to login to a VNIC that does not support this console version.
Unknown failure connecting to VNIC.	Various; logs should be submitted to TAC.
When starting Symphony application, system indicates a duplicate instance has been detected.	One instances of the GUI was detected. This may have resulted for improperly shutting down the previous instance. Restart the console computer.

MESSAGE	POSSIBLE CAUSES
VNIC is not responding to boot messages but Phone is available.	SIP Telephony is available. The VAS Server, VNIC Virtual machine, or VNIC application are not running. IP address/Hostname of the VNIC is wrong in connection manager. The console is trying to login to a VNIC that does not support this console version.
Unable to log into Console.	Symphony's ConsoleService is not running. Check Windows Task Manager. Console does not have valid Symphony licenses.

9.2   ERROR REPORTING

When the Audio Box processor detects a problem, it will update SDP LCD display with a code and error text. The error text string information will alternate with status information. These errors will also be reported to the console depending on the error reporting level. Error codes will scroll until a minute passes with no new errors.

9.2.1   Boot-Up Errors

During the Boot process, if there has been a fatal error in the previous boot and the SDP is rebooting, an error code is displayed. During Operational mode, error codes will be displayed when appropriate to inform the user of various error states.

If an error is detected which requires a reboot, line 1 will read "**Boot FAIL**" for 15 seconds and line 2 will indicate "**ERROR 20**" during the pause and subsequent reboot if the error is not critical.

During Boot, the Audio Processor MAC ID will be checked to verify that it has been changed from the default value. If the Audio Processor MAC ID is invalid, it will go into the Configuration mode. Line 1 will read "**Configuration Mode**" and line 2 will indicate "**INVALID MAC ID**."

If the Backup Radio switch is in the **Manual** position and the computer connection is not established after a time, line 1 will read "**ERROR - Manual**" and line 2 will indicate "**Disconnected**."

9.2.2   Operational Errors

During Operational mode, if an error is detected, the application displays the error codes every four (4) seconds for four (4) seconds in duration in the "**EXX, EXX, EXX**" format. When it is displaying errors, the SDP uses both rows of the display (not just the second line). It continues to alternate between the normal and error display, until no new errors have been seen for 60 seconds.

The error display clears automatically after 60 seconds of no errors detected. If there are recurring errors, then the cause of the error condition must be fixed.

A list of more common errors and meanings is provided in Section 9.3 and a complete list of error codes is provided in Section 9.4.

9.3   SDP ERROR MESSAGES

Table 9-2 is a list of the more common errors that may occur.

Table 9-2: Error Codes and Meanings

ERROR CODE	ERROR TEXT STRING	ERROR MEANING
06	LOG_ERR_POLL_TIMEOUT	This error indicates the PC and Audio Box are no longer connected. (This error may "go away" because both the PC and the blue LCD display will indicate DISCONNECTED.)
0A	LOG_ERR_FORMAT_ERR	This error indicates a message between the PC and the Audio Box was not known.
15	LOG_ERR_LEN_LOADSW	This error indicates an error in the software update for the Audio Box.
16	LOG_ERR_LEN_IMAGE	This error indicates an error in the software update for the Audio Box.
17	LOG_ERR_LEN_IMAGE_FINAL	This error indicates an error in the software update for the Audio Box.
2E	LOG_ERR_MSG_NOT_CONNECTED	This error indicates that the console is sending a message to the Audio Box without a valid connection.
50	LOG_ERR_READ_MSGQ	This error indicates a communication error between the ARM and the DSP in the Audio Box.
51	LOG_ERR_WRITE_MSGQ	This error indicates a communication error between the ARM and the DSP in the Audio Box.
55	LOG_ERR_DSP_POLL_ERROR	This error indicates that the DSP is not responding to Polls (dead).
66	LOG_ERR_AUDIO_IN_NOT_CONN	This error indicates that the PC is sending audio without a valid connection to the Audio Box.
68	LOG_ERR_WRITING_AUDIO_TO_DSP	This error indicates that the DSP is not taking the audio packets (could indicate holes in audio or dead DSP).
7C	LOG_ERR_DSP_VERSION	This error indicates that the DSP code is not released for this ARM code.

9.4 ERROR MESSAGE LIST

This section lists the error messages that may be displayed.

ERROR CODE	ERROR TEXT STRING
00	LOG_ERR_INIT_AUTO_DISC
01	LOG_ERR_INIT_CONSOLE_CONTROL
02	LOG_ERR_INIT_DSP_CONTROL
03	LOG_ERR_INIT_AUDIO_IN
04	LOG_ERR_INIT_AUDIO_OUT
05	LOG_ERR_INIT_DIG_IN
06	LOG_ERR_POLL_TIMEOUT
07	LOG_ERR_AUTO_DISC_IP_STR
08	LOG_ERR_STR_TOO_LONG
09	LOG_ERR_AUTO_DISC_SEND
0A	LOG_ERR_FORMAT_ERR
0B	LOG_ERR_INIT_SYNC
0C	LOG_ERR_THREAD_FAILURE
0D	LOG_ERR_AUTO_DISC_SELECT
0E	LOG_ERR_AUTO_DISC_READ
0F	LOG_ERR_AUTO_DISC_SOCKET
10	LOG_ERR_AUTO_DISC_BIND
11	LOG_ERR_ADD_MEMBER
12	LOG_ERR_AUTO_DISC_THRD_SCKT
13	LOG_ERR_AUTO_DISC_THREAD_READ
14	LOG_ERR_THREAD_CREATE_AUTO
15	LOG_ERR_LEN_LOADSW
16	LOG_ERR_LEN_IMAGE
17	LOG_ERR_LEN_IMAGE_FINAL
18	LOG_ERR_SEND_STATE_CHANGE
19	LOG_ERR_RESEND_STATE_CHANGE
1A	LOG_ERR_CLOSE_GPIO
1B	LOG_ERR_OPEN_GPIO
1C	LOG_ERR_W_EEPROM_OUTPUT_STATE
1D	LOG_ERR_POLL_SIZE
1E	LOG_ERR_CHNG_OUTPUT_STATE_POLL
1F	LOG_ERR_CHNG_STATE_SIZE
20	LOG_ERR_LEN_STATE_ACK
21	LOG_ERR_LEN_CONN_START
22	LOG_ERR_SEND_CONN_NAK
23	LOG_ERR_INIT_WATCHDOG
24	LOG_ERR_SEND_CONN_ACK
25	LOG_ERR_LEN_CONN_ESTABLISH
26	LOG_ERR_SEND_ESTABLISH_NAK_CONN
27	LOG_ERR_SEND_ESTABLISH_NAK_POLICY
28	LOG_ERR_SEND_ESTABLISH_ACK
29	LOG_ERR_CCONTROL_WRITE_INVALID
2A	LOG_ERR_SEND_CCONTROL_MSG
2B	LOG_ERR_LEN_CCONTROL_MSG
2C	LOG_ERR_INVALID_PROTOCOL_VER
2D	LOG_ERR_UNCONNECTED_SOURCE
2E	LOG_ERR_MSG_NOT_CONNECTED

ERROR CODE	ERROR TEXT STRING
2F	LOG_ERR_CCONTROL_SELECT
30	LOG_ERR_CCONTROL_READ
31	LOG_ERR_CCONTROL_CREATE
32	LOG_ERR_CCONTROL_BIND
33	LOG_ERR_CCONTROL_THREAD_CREATE_SOCKET
34	LOG_ERR_CCONTROL_THREAD_READ
35	LOG_ERR_THREAD_CREATE_CCONTROL
36	LOG_ERR_OPEN_EEPROM
37	LOG_ERR_WRITE_EEPROM
38	LOG_ERR_OPEN_EEPROM_READ
39	LOG_ERR_READ_EEPROM
3A	LOG_ERR_EEPROM_VERSION
3B	LOG_ERR_EEPROM_CHECKSUM
3C	LOG_ERR_EEPROM_DEFAULTS
3D	LOG_ERR_FLASHC_OPEN
3E	LOG_ERR_FLASHC_WRITE
3F	LOG_ERR_FLASHC_READ
40	LOG_ERR_FLASH_READ_THREAD
41	LOG_ERR_FLASH_SIZE
42	LOG_ERR_FLASH_VERSION
43	LOG_ERR_INVALID_MSG_ID
44	LOG_ERR_FLASH_DEFAULTS
45	LOG_ERR_FLASH_APP_DEFAULTS
46	LOG_ERR_INVALID_LOCK
47	LOG_ERR_INVALID_UNLOCK
48	LOG_ERR_CREATING_MUTEX
49	LOG_ERR_UPDATE_WATCHDOG
4A	LOG_ERR_OPEN_WATCHDOG_INIT
4B	LOG_ERR_OPEN_WATCHDOG_UPDATE
4C	LOG_ERR_FLASH_CHKSUM
4D	LOG_ERR_THREAD_CREATE_DCONTROL
4E	LOG_ERR_INIT_AUDIO_CHANNELS
4F	LOG_ERR_INIT_MSGQ
50	LOG_ERR_READ_MSGQ
51	LOG_ERR_WRITE_MSGQ
52	LOG_ERR_FREE_MSGQ
53	LOG_ERR_DSP_MSG_FORMAT
54	LOG_ERR_DSP_WRITE_ERROR
55	LOG_ERR_DSP_POLL_ERROR
56	LOG_ERR_DSP_MSG_SIZE_ERROR
57	LOG_ERR_THREAD_CREATE_DIGINP
58	LOG_ERR_TEMP_SENS_READ
59	LOG_ERR_TEMP_SENS_RANGE
5A	LOG_ERR_AUDIO_STREAM_INIT
5B	LOG_ERR_DSP_SEND_NOT_CONNECTED
5C	LOG_ERR_THREAD_CREATE_STREAM
5D	LOG_ERR_INVALID_STREAM_DATA_SIZE
5E	LOG_ERR_WRITING_STREAM_DATA
5F	LOG_ERR_AUDIO_IN_THRD_SCKT
60	LOG_ERR_AUDIO_IN_READ_SCKT
61	LOG_ERR_AUDIO_IN_SOCKET

ERROR CODE	ERROR TEXT STRING
62	LOG_ERROR_AUDIO_IN_BIND
63	LOG_ERR_AUDIO_IN_SELECT
64	LOG_ERR_AUDIO_IN_READ
65	LOG_ERR_AUDIO_IN_SIZE
66	LOG_ERR_AUDIO_IN_NOT_CONN
67	LOG_ERR_AUDIO_IN_INVALID_IP
68	LOG_ERR_WRITING_AUDIO_TO_DSP
69	LOG_ERR_OPEN_DISPLAY
6A	LOG_ERR_SET_CHAR_DISPLAY
6B	LOG_ERR_WRITE_DISPLAY
6C	LOG_ERR_VOLUME_CONTROL_OPEN
6D	LOG_ERR_VOLUME_CONTROL_WRITE
6E	LOG_ERR_FLASH_OPEN
6F	LOG_ERR_FLASH_READ
70	LOG_ERR_FLASH_WRITE
71	LOG_ERR_TEMP_SENS_SEND
72	LOG_ERR_SEND_LOAD_ACK
73	LOG_ERR_SEND_LOAD_NAK
74	LOG_ERR_SEND_IMAGE_ACK
75	LOG_ERR_SEND_IMAGE_NAK
76	LOG_ERR_SEND_FINAL_ACK
77	LOG_ERR_SEND_FINAL_NAK
78	LOG_ERR_IMAGE_DOWNLOAD_TIMEOUT
79	LOG_ERR_MIXER_CLEAR_WRONG_MODE
7A	LOG_ERR_SEND_DSP_FAILED
7B	LOG_ERR_CONFIG_SWITCH
7C	LOG_ERR_DSP_VERSION
7D	LOG_ERR_UNKNOWN

APPENDIX A   SYMPHONY DISPATCH PLATFORM CONNECTOR PINOUTS
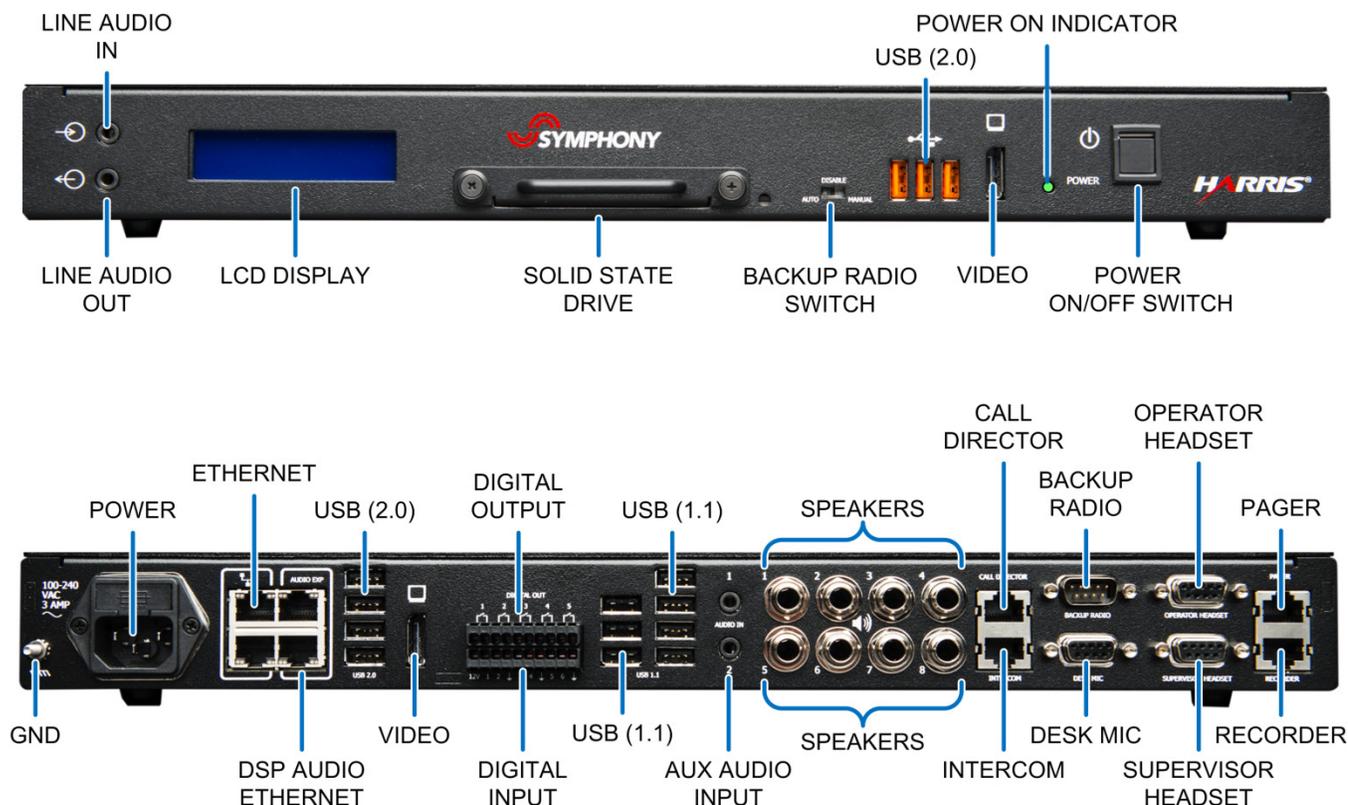
A.1   ETHERNET

Table A-1: Ethernet 10/100/1000 Ethernet Connector

RJ-45 ETHERNET CONNECTOR	PIN NUMBER	SIGNAL NAME
	1	Bi-Directional Pair +A
	2	Bi-Directional Pair +A
	3	Bi-Directional Pair +B
	4	Bi-Directional Pair -B
	5	Bi-Directional Pair +C
	6	Bi-Directional Pair -C
	7	Bi-Directional Pair +D
	8	Bi-Directional Pair -D

A.2 AUDIO EXP

Table A-2: DSP Audio 10/100BaseT Connector
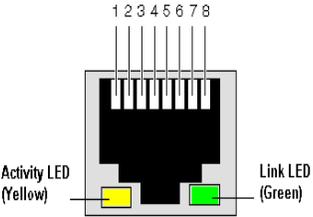
RJ-45 ETHERNET CONNECTOR	PIN NUMBER	SIGNAL NAME
	1	Transmit +
	2	Transmit -
	3	Receive +
	4	Reserved
	5	Reserved
	6	Receive -
	7	Reserved
	8	Reserved

A.3 USB 2.0

Table A-3: USB 2.0 Pinout

USB 2.0 CONNECTOR	PIN NUMBER	SIGNAL NAME
	1	+5V
	2	Data -
	3	Data +
	4	Ground
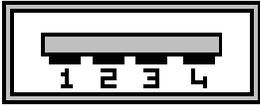
A.4 USB 1.1

Table A-4: USB 1.1 Pinout

USB 1.1 CONNECTOR	PIN NUMBER	SIGNAL NAME
	1	+5V
	2	Data -
	3	Data +
	4	Ground

A.5   VIDEO

Table A-5: DisplayPort Pinout

Pin out		
External connector (source-side) on PCB		
Pin 1	ML_Lane 0 (p)	Lane 0 (positive)
Pin 2	GND	Ground
Pin 3	ML_Lane 0 (n)	Lane 0 (negative)
Pin 4	ML_Lane 1 (p)	Lane 1 (positive)
Pin 5	GND	Ground
Pin 6	ML_Lane 1 (n)	Lane 1 (negative)
Pin 7	ML_Lane 2 (p)	Lane 2 (positive)
Pin 8	GND	Ground
Pin 9	ML_Lane 2 (n)	Lane 2 (negative)
Pin 10	ML_Lane 3 (p)	Lane 3 (positive)
Pin 11	GND	Ground
Pin 12	ML_Lane 3 (n)	Lane 3 (negative)
Pin 13	CONFIG1	connected to Ground[1]
Pin 14	CONFIG2	connected to Ground[1]
Pin 15	AUX CH (p)	Auxiliary Channel (positive)
Pin 16	GND	Ground
Pin 17	AUX CH (n)	Auxiliary Channel (negative)
Pin 18	Hot Plug	Hot Plug Detect
Pin 19	Return	Return for Power
Pin 20	DP_PWR	Power for connector

A.6   CALL DIRECTOR

A.6.1   Call Director Connector

Table A-6: Call Director Connector
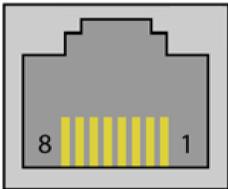
RJ-45 CONNECTOR	PIN NUMBER	SIGNAL NAME
	1	N/C
	2	Ground
	3	Call Director Audio Out+
	4	Call Director Audio In+
	5	Call Director Audio In-
	6	Call Director Audio Out-
	7	Call Director Hook Sense
	8	Ground

A.6.2   Call Director Serial Cable

L
(SEE PRODUCT LIST CHART)

"A"

AUDIO CABLE

PRODUCT NUMBER & REVISION
MANUFACTURER
DATE

P2

P1

PIN 4 — PIN 1

VIEW "A"
WIRING SIDE SHOWN

5 O 9
1 6

P1   P2

1 >   > 9
2 >   > 5
3 >   > 6
4 >   > 4
                                                       > 7
                                                       > 8
                                                       > 3
W1   > 2
                                                       > 1

WIRING DIAGRAM
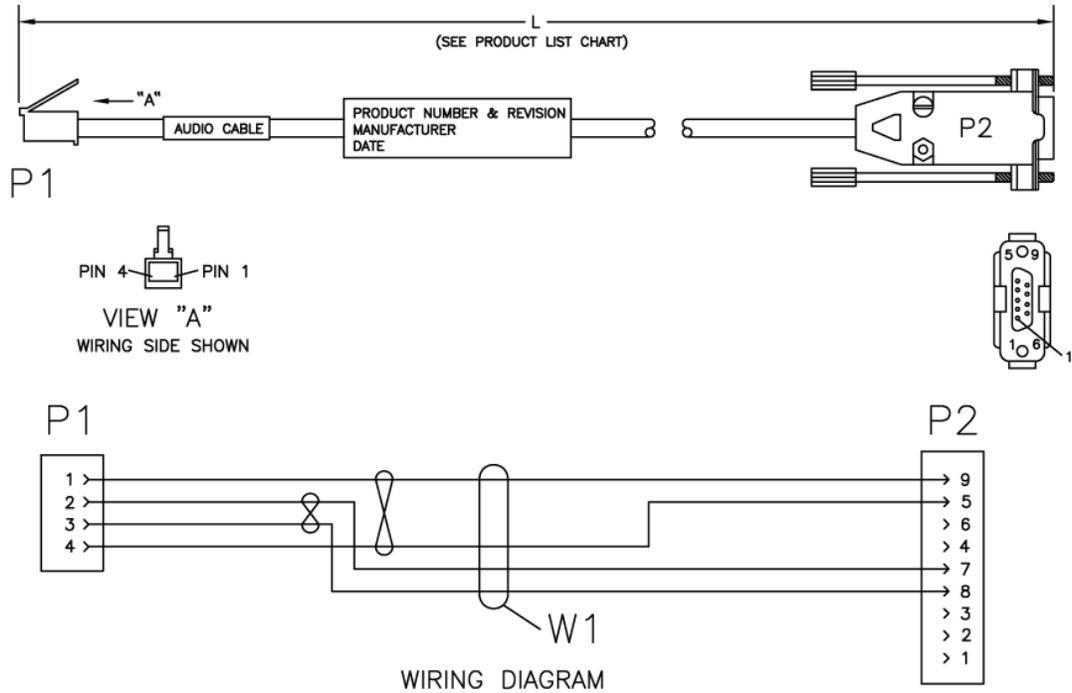
PRODUCT LIST		
PRODUCT NUMBER	DESCRIPTION	'L' DIM
CA-018764-002	CABLE, CALL DIRECTOR AUDIO	2 FEET
CA-018764-004	CABLE, CALL DIRECTOR AUDIO	4 FEET
CA-018764-006	CABLE, CALL DIRECTOR AUDIO	6 FEET
CA-018764-008	CABLE, CALL DIRECTOR AUDIO	8 FEET
CA-018764-010	CABLE, CALL DIRECTOR AUDIO	10 FEET
CA-018764-015	CABLE, CALL DIRECTOR AUDIO	15 FEET

A.7   BACKUP RADIO

A.7.1   SDP Backup Radio Connector

Table A-7: Backup Radio Connector

DB-9M CONNECTOR	PIN NUMBER	SIGNAL NAME
	1	Ground
	2	RD RS 232
	3	TD RS 232
	4	Radio Active signal
	5	S Ground RS 232
	6	Backup Radio Vol Hi (audio)
	7	Backup Radio PTT
	8	Audio to Radio MIC
	9	Audio Ground
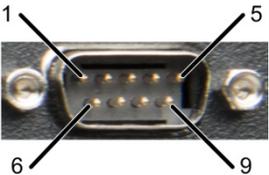
A.7.2   SERIAL DATA CABLE CA-013671-020

ASSEMBLY DIAGRAM

20 FEET
(6.1 METERS)

J1   J2

(LABEL HERE)

A ►   ◄ B

VIEW @ 'A'
(ENLARGED)

VIEW @ 'B'
(ENLARGED)

WIRING DIAGRAM

J1				J2
DCD	1		1	DCD
TD	2		2	TD
RD	3		3	RD
DSR	4		4	DSR
GND	5	DRAIN	5	GND
DTR	6		6	DTR
CTS	7		7	CTS
RTS	8		8	RTS
RI	9		9	RI

(Made From PS-CA-013671 Rev. -)

A.7.3 Option Cable 14002-0174-01 and 08

P1
(Pin-Out View)

PIN 1

PIN 44

ASSEMBLY DIAGRAM

P1
(Side View)

Approximately 66 inches
(170 centimeters)

P6

P2 1 2

P3 6 3 4 1

P5 1 6 5 9

WARNING!!
DO NOT CONNECT
DIRECTLY TO ANY
PC. DAMAGE
COULD RESULT

P4 1 14 13 25
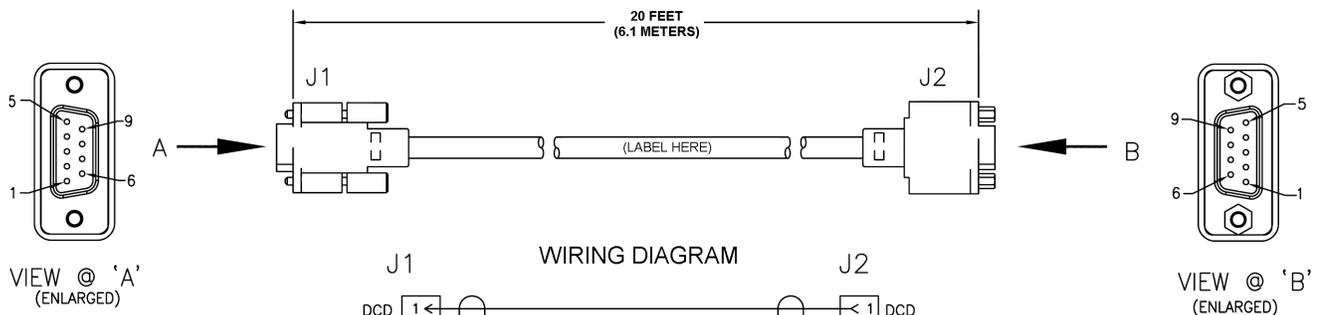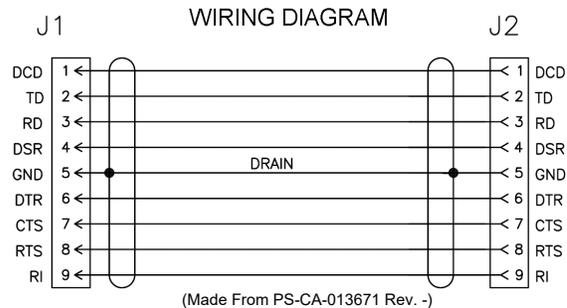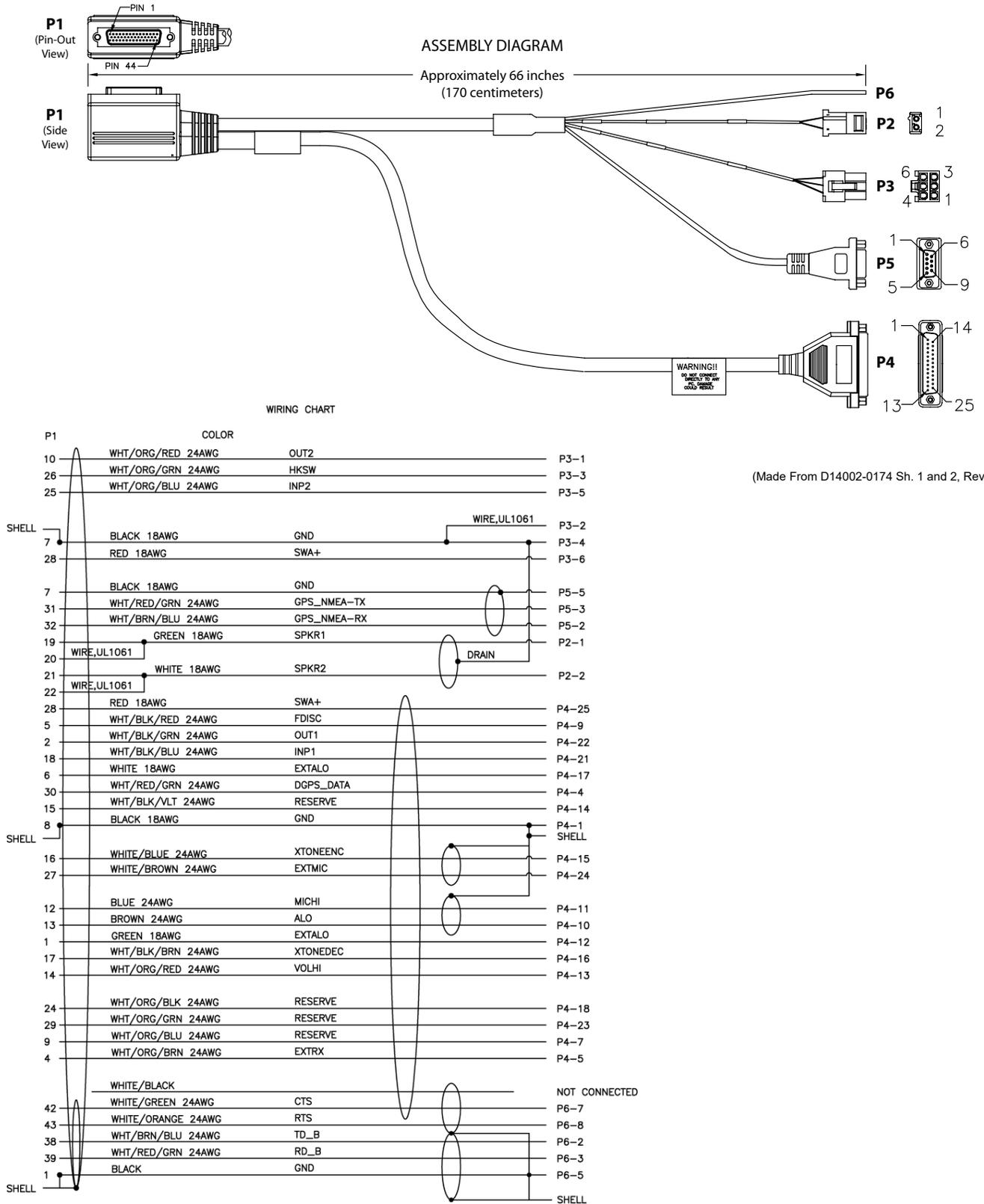
(Made From D14002-0174 Sh. 1 and 2, Rev. C)

WIRING CHART

P1	COLOR		
10	WHT/ORG/RED 24AWG	OUT2	P3-1
26	WHT/ORG/GRN 24AWG	HKSW	P3-3
25	WHT/ORG/BLU 24AWG	INP2	P3-5
			WIRE,UL1061 P3-2
SHELL 7	BLACK 18AWG	GND	P3-4
28	RED 18AWG	SWA+	P3-6
7	BLACK 18AWG	GND	P5-5
31	WHT/RED/GRN 24AWG	GPS_NMEA-TX	P5-3
32	WHT/BRN/BLU 24AWG	GPS_NMEA-RX	P5-2
19	GREEN 18AWG	SPKR1	P2-1
20	WIRE,UL1061		DRAIN
21	WHITE 18AWG	SPKR2	P2-2
22	WIRE,UL1061		
28	RED 18AWG	SWA+	P4-25
5	WHT/BLK/RED 24AWG	FDISC	P4-9
2	WHT/BLK/GRN 24AWG	OUT1	P4-22
18	WHT/BLK/BLU 24AWG	INP1	P4-21
6	WHITE 18AWG	EXTALO	P4-17
30	WHT/RED/GRN 24AWG	DGPS_DATA	P4-4
15	WHT/BLK/VLT 24AWG	RESERVE	P4-14
8	BLACK 18AWG	GND	P4-1
SHELL			SHELL
16	WHITE/BLUE 24AWG	XTONEENC	P4-15
27	WHITE/BROWN 24AWG	EXTMIC	P4-24
12	BLUE 24AWG	MICHI	P4-11
13	BROWN 24AWG	ALO	P4-10
1	GREEN 18AWG	EXTALO	P4-12
17	WHT/BLK/BRN 24AWG	XTONEDEC	P4-16
14	WHT/ORG/RED 24AWG	VOLHI	P4-13
24	WHT/ORG/BLK 24AWG	RESERVE	P4-18
29	WHT/ORG/GRN 24AWG	RESERVE	P4-23
9	WHT/ORG/BLU 24AWG	RESERVE	P4-7
4	WHT/ORG/BRN 24AWG	EXTRX	P4-5
	WHITE/BLACK		NOT CONNECTED
42	WHITE/GREEN 24AWG	CTS	P6-7
43	WHITE/ORANGE 24AWG	RTS	P6-8
38	WHT/BRN/BLU 24AWG	TD_B	P6-2
39	WHT/RED/GRN 24AWG	RD_B	P6-3
1	BLACK	GND	P6-5
SHELL			SHELL

A.7.4   Backup Radio Interface Cable 14017-0104-01

A.8   DESK MIC

Table A-8: Desk Mic Connector

DB-9F CONNECTOR	PIN NUMBER	SIGNAL NAME
	1	Gooseneck Preamp Output
	2	Ground
	3	Desk Mic Monitor Switch Input
	4	Ground
	5	Analog Ground/Desk Mic Audio In (Lo)
	6	Desk Mic PTT Switch Input
	7	Gooseneck Mic Audio + Input
	8	Gooseneck Mic Audio - Input
	9	Desk Mic Audio In (Hi)

A.9 OPERATOR HEADSET

Table A-9: Operator Headset Connector
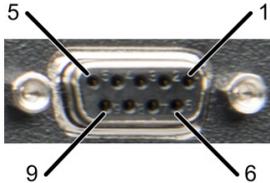
DB-9F CONNECTOR	PIN NUMBER	SIGNAL NAME
	1	Parallel Mic in
	2	Parallel Speaker out
	3	Operator Headset Sense Switch
	4	Ground
	5	Analog Ground
	6	Operator Headset PTT
	7	Operator Headset Speaker Out
	8	Analog Ground
	9	Operator Headset MIC In

A.10 SUPERVISOR HEADSET

Table A-10: Supervisor Headset Connector
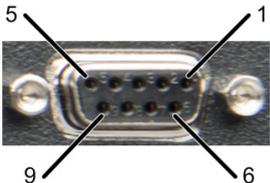
DB-9F CONNECTOR	PIN NUMBER	SIGNAL NAME
	1	Parallel Mic in
	2	Parallel Speaker out
	3	Supervisor Headset Sense Switch
	4	Ground
	5	Analog Ground
	6	Supervisor Headset PTT
	7	Supervisor Headset Speaker Out
	8	Analog Ground
	9	Supervisor Headset MIC In

A.11 PAGER

Table A-11: External Analog Pager Connector
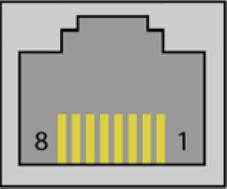
RJ-45 CONNECTOR	PIN NUMBER	SIGNAL NAME
	1	Pager PTT Input
	2	Ground
	3	Backup Radio Manual Mode Enable
	4	Pager Audio In+
	5	Pager Audio In-
	6	Backup Radio Auto Mode Enable
	7	Remote Backup Radio Mode Switch
	8	GND

A.12 BUILDING INTERCOM

Table A-12: Building Intercom Connector
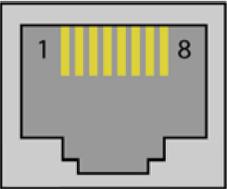
RJ-45 CONNECTOR	PIN NUMBER	SIGNAL NAME
	1	System Active IO
	2	Door unlock output 1
	3	Button contact 1
	4	Speaker/Mic 1
	5	Speaker/Mic 2
	6	Button contact 2
	7	Door unlock output 2
	8	Ground

A.13 LOGGING RECORDER

Table A-13: Analog Logging Recorder Connector
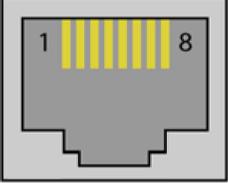
RJ-45 CONNECTOR	PIN NUMBER	SIGNAL NAME
	1	Telephone Audio In+/ABR Audio In+
	2	Telephone Audio In-/ABR Audio In-
	3	Recorder Unselect Audio-
	4	Recorder Select Audio+
	5	Recorder Select Audio-
	6	Recorder Unselect Audio+
	7	Telephone Audio Out+/ABR Audio Out+
	8	Telephone Audio Out-/ABR Audio Out-

A.14 SYMPHONY CONNECTOR SUMMARY
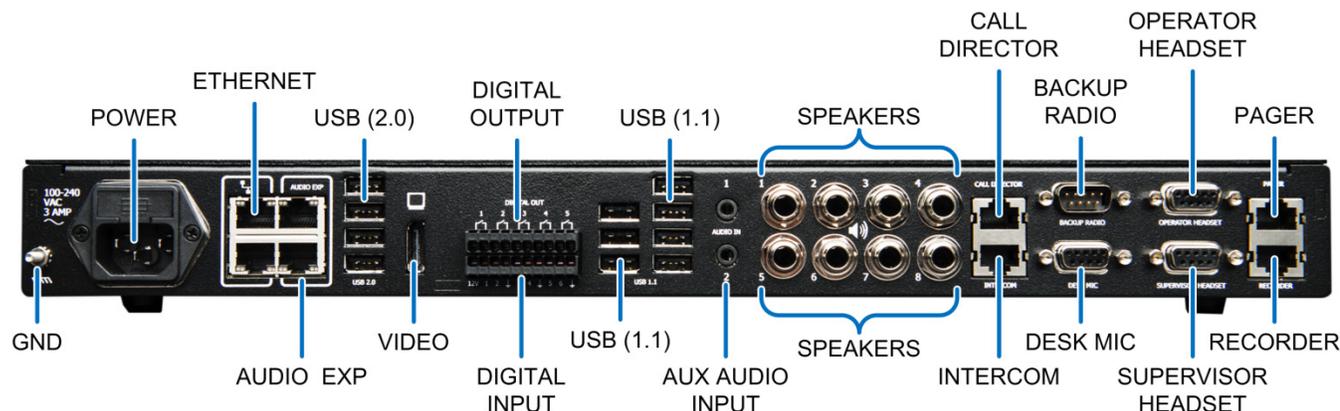
A.14.1 RJ-45 Connectors

PIN NUMBER	LOGGING RECORDER	INTERCOM	PAGER	CALL DIRECTOR
1	Telephone Audio In+/ABR Audio In+	System Active IO	Pager PTT Input	N/C
2	Telephone Audio In-/ABR Audio In-	N/C	Ground	Ground
3	Recorder Unselect Audio-	Button contact 1	N/C	Call Director Audio Out+
4	Recorder Select Audio+	Speaker/Mic 1	Pager Audio In+	Call Director Audio In+
5	Recorder Select Audio-	Speaker/Mic 2	Pager Audio In-	Call Director Audio In-
6	Recorder Unselect Audio+	Button contact 2	N/C	Call Director Audio Out-
7	Telephone Audio Out+/ABR Audio Out+	Door unlock output	N/C	Call Director Hook Sense
8	Telephone Audio Out-/ABR Audio Out-	Ground	N/C	Ground

A.14.2 DB9 Connectors

PIN NUMBER	BACKUP RADIO	DESK MIC	HEADSETS
1	Ground	Gooseneck Preamp Output	Parallel Mic in
2	RD RS 232	Ground	Parallel Speaker out
3	TD RS 232	Monitor Switch	Headset Sense Switch
4	Radio Active signal	Ground	Ground
5	S Ground RS 232	Analog Ground/Desk Mic (Lo)	Analog Ground
6	Backup Radio Vol Hi (audio)	Desk Mic PTT	Headset PTT
7	Backup Radio PTT	Gooseneck Mic + Input	Headset Speaker Out
8	Backup Radio MIC	Gooseneck Mic - Input	Analog Ground
9	Audio Ground	Desk Mic In (Hi)	Headset MIC In

APPENDIX B   SPECIFICATIONS

B.1   SYMPHONY DISPATCH PLATFORM

B.1.1   General Specifications Symphony Dispatch Platform 1.0

Physical

Geometry:	1 Rack Unit – 19" EIA Instrument Rack
Physical Dimensions (H x W x D):	1.75 x 16.75 x 10.5 in. (4.5 x 42.5 x 26.6 cm)
Mounting Space Requirements (H x W x D):	1.75 x 19 x 18.5 in. (4.5 x 48.3 x 47 cm)
Weight:	11 lbs. (5 kg) Maximum
Noise:	Meet Noise Emissions in accordance with ISO 9296
Mounting:	Ships standard with rubber feet mounted for desktop application.
	Mounting brackets supplied for rack or under desk mounting. Includes a cable strain relief bracket.

Environmental

Operating Temperature:	+32ºF to 122ºF (0ºC to +50ºC)
Storage Temperature:	-22ºF to +185ºF (-30ºC to +85ºC)
Humidity:	5% to 80%, non-condensing

Electrical

Input Voltage:	110 to 240 VAC, 50-60 Hz, nominal (85 to 264 VAC, 47 to 63 Hz)
Power:	50 Watts (Typical)
	75 Watts (Max w/ USB Fully Loaded)

Regulatory Compliance

Safety:	UL 60950-1
	CAN/CSA-C22.2 No. 60950-1-07,
EMC:	47 CFR, Part 15
	ICES-003 Class A

B.1.2   General Specifications Symphony Dispatch Platform 2.0

Physical

Geometry:	1 Rack Unit – 19" EIA Instrument Rack
Physical Dimensions (H x W x D):	1.75 x 16.75 x 10.5 in. (4.5 x 42.5 x 26.6 cm)
Mounting Space Requirements (H x W x D):	1.75 x 19 x 18.5 in. (4.5 x 48.3 x 47 cm)
Weight:	11 lbs. (5 kg) Maximum
Noise:	Meet Noise Emissions in accordance with ISO 9296
Mounting:	Ships standard with rubber feet mounted for desktop application.
	Mounting brackets supplied for rack or under desk mounting. Includes a cable strain relief bracket.

Environmental

Operating Temperature:	+32ºF to 104ºF (0ºC to +40ºC)
Storage Temperature:	-22ºF to +185ºF (-30ºC to +85ºC)
Humidity:	5% to 80%, non-condensing

Electrical

Input Voltage:	110 to 240 VAC, 50-60 Hz, nominal (85 to 264 VAC, 47 to 63 Hz)
Power:	50 Watts (Typical)
	75 Watts (Max w/ USB Fully Loaded)

Regulatory Compliance

Safety:	UL 60950-1
	CAN/CSA-C22.2 No. 60950-1-07,
EMC:	47 CFR, Part 15
	ICES-003 Class A

B.1.3   Platform Solid-State Drive Symphony Dispatch Platform 1.0

Features

Interface:	SATAII 3.0 Gb/s
Capacity:	64 GB or Higher

Drive Physical

Geometry:	Standard 2.5" SATA HDD Form Factor
Thickness:	9.5 mm
Mounting:	Attached mounting bracket with captive retention thumb screws.
Shock Endurance:	1,500 G
Vibration Endurance:	20 G

Environmental

Operating Temperature:	+32ºF to 158ºF (0ºC to +70ºC)
Storage Temperature:	-58ºF to 194ºF (-50ºC to +90ºC)
Humidity:	5% to 80%, non-condensing

Electrical

Input Voltage:	5V ±5%
Power:	Idle: <0.33W
	Active: <1.42W

B.1.4   Platform Solid-State Drive Symphony Dispatch Platform 2.0

Features

Interface:	SATA 3.0 6.0 Gb/s
Capacity:	240 GB

Drive Physical

Geometry:	Standard 2.5" SATA HDD Form Factor
Thickness:	9.5 mm
Mounting:	Attached mounting bracket with captive retention thumb screws.
Shock Endurance:	1,000 G/0.5 msec

Environmental

Operating Temperature:	+32ºF to 158ºF (0ºC to +70ºC)
Humidity:	5% to 80%, non-condensing

Electrical

Input Voltage:	5 V ±5%
Power:	Idle: <1.0 W
	Active: <2.4 W

B.1.5 Embedded Computer Specifications Symphony Dispatch Platform 1.0

PC Subsystem

Processor:	Intel® Dual Core™ i7 Ivy Bridge processor
Memory:	DDR3 SDRAM w/ ECC, 4 GB standard
Form Factor:	COM Express module (Type 6)
Storage:	64 GB extended temperature SATA interface Solid State Drive. Externally accessible and removable via front panel.

I/O Ports

USB:	Seven USB 2.0 ports:

- 4 stacked, USB Type-A connectors on the rear panel.
- 3 high retention, USB Type-A connectors on front panel

Ethernet:	Two 10/100/1000 Gigabit Ethernet ports w/ RJ-45 connectors.
Audio:	PC Line-In and Line-Out jacks on front panel w/ 3.5 mm TRS jacks.
Video:	Two Display Port Video Connections:

- One located on the front of the enclosure
- One located on the rear of the enclosure

B.1.6 Embedded Computer Specifications Symphony Dispatch Platform 2.0

PC Subsystem

Processor:	Intel® Dual Core™ i7 Kaby Lake processor
Memory:	DDR3 SDRAM w/ ECC, 16 GB standard
Form Factor:	COM Express module (Type 6)
Storage:	240 GB extended temperature SATA interface Solid State Drive. Externally accessible and removable via front panel.

I/O Ports

USB:	Seven USB 2.0 ports:

- 4 stacked, USB Type-A connectors on the rear panel.
- 3 high retention, USB Type-A connectors on front panel

Ethernet:	Two 10/100/1000 Gigabit Ethernet ports w/ RJ-45 connectors.
Audio:	PC Line-In and Line-Out jacks on front panel w/ 3.5 mm TRS jacks.
Video:	Two Display Port Video Connections:

- One located on the front of the enclosure
- One located on the rear of the enclosure

B.1.7   Audio Processor Specifications

Processor

Processor:	OMAP L-138B
Memory:	128 MB RAM
Storage:	32 MB Flash Memory

I/O Ports

USB:	Seven USB 1.1 ports, with Type-A connectors on rear panel for:

- USB Operator Foot Switch interface
- USB Supervisor Foot Switch interface
- 5 additional spare ports

Ethernet:	Two 10/100 Ethernet ports w/ RJ45 connectors. Labeled "Audio Exp" (Spare).
DB-9F Interfaces:	All located on Rear Panel:

- Operator Headset interface
- Supervisor Headset interface
- Analog Desk/Gooseneck Microphone interface
- Analog Backup Radio interface via DB-9 Male connector on rear panel

RJ-45 Audio Connectors:	All Located on rear panel:

- Paging Encoder interface
- Recorder interface
- Call Director interface
- Building Intercom interface

Aux Audio:	Two 2-channel Audio Inputs via 3.5 mm TRS jacks on rear panel (total of 4 channels).
Speaker Outputs:	8-Channel Analog Speaker interface on rear panel. ¼ inch TRS connectors with Auto Jack Detect Differential output.
Backup Radio Switch:	3-Position Mode selection switch mounted on front panel.

Display

LCD Display	Integrated 144 x 32 Graphic LCD Display Module on front panel, STN/Blue.

B.2   EXTERNAL SPEAKER (PART NUMBER 14017-0100-01)

Installation:	Desk Top or Wall Mountable
Controls:	On/Off Power Switch (rear), Volume Control (Level), Low Frequency Adjust (Low), High Frequency Adjust (High)
Indicators:	LED for Power and Signal
	Also has LED for audio traffic to help distinguish one speaker from another. (The "A" in Harris lights up when audio is coming out the speaker.)
Physical Dimensions (H x W x D):	5 x 4.25 x 4.5 in. (12.7 x 10.8 x 11.4 cm)
Weight:	1.75 lbs. (0.8 kg) maximum
Power Requirements:	External Power Supply:
12 to 18 VDC 1.3-1.8 A max	Input:100 to 240 VAC, 50/60 Hz
	Output: 12 VDC, 1.3 A
Performance Specifications:	
Impedance:	4 Ohm Impedance
Frequency Response:	150 Hz to 17 kHz
Power Out:	15 Watts
Connectors:	
Speaker DC Power:	5.5 mm Barrel Connector (Tip Positive VDC)
AC Power:	3-Prong Edison
Audio Line Input:	1/4" Input 22K Balanced (11K Unbalanced)

B.3   MICROPHONE

B.3.1   Gooseneck Microphone (Part Number 2C-CM22218-0402)

Type:	Dynamic, unidirectional (cardioids), close-talking
Frequency Response:	100 to 7,000 Hz
Impedance:	170 ohms actual
Output Level:	–61.5 dBV/Pa (.84 mV)*
	–41.5 dB (8.4 mV)**
	*1 Pa = 94 dBSPL **0 dB = 1V/100 μbar
Polarity:	Positive pressure on diaphragm produces positive voltage on white conductor with respect to black conductor.
Hum Pickup:	Maximum 15 dB equivalent SPL in m0e field

B.3.2   Desktop Microphone (Part Number MC-014121-003)

Frequency Response:	300 to 3,000 Hz ±5 dB (using 0 dB reference at 1000 Hz, 94 dBa SPL acoustic input at microphone port)
Impedance:	170 ohms actual
Output Level:	
Factory preset mic audio level:	275 ± 25 mV rms at 1000 Hz (94 dBa SPL acoustic input at microphone port)
Mic audio adjustment range (adjustable via user accessible trimmer pot on the bottom of the desk mic):	50 to 1000 mV rms at 1000 Hz (94 dBa SPL acoustic input at microphone port)
Audio Distortion:	Less than 3% for adjustment levels 100 to 500 mV rms at 1000 Hz (94 dBa SPL acoustic input at microphone port)

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About L3Harris Technologies

L3Harris Technologies is an agile global aerospace and defense technology innovator, delivering end-to-end solutions that meet customers' mission-critical needs. The company provides advanced defense and commercial technologies across air, land, sea, space and cyber domains.