



GDX Audio and Video Door Entry

System Expansion Unit: Audio & Video Installation Guide

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Health and Safety

Please read all these instructions and save them for later use.

The installation of this system must meet the requirements of the country of installation's National Wiring Regulations (BS7671, IET National Wiring Regulations in the UK) and EN60950-1. It must only be carried out by suitably competent, qualified and experienced personnel.



Injury or death by electric shock may result if ignored.

It must also comply with any local Fire, Health and Safety regulations. A secured door that may be part of an escape route must always be fitted with the following.

- A fail-safe lock so that the door will be released if the power fails. Ideally a magnetic lock should be used as these are less likely to jam or seize.
- A normally-closed break-glass or manual pull in the lock supply wiring so that in an emergency the fail-safe lock can be immediately powered off.



Risk of injury or death if ignored.

The controller must be earthed.

Isolate the controller power supply before working on the controller.



Failure to do so may damage the unit.

Cabling

The cabling used in the control systems, should be routed in a manner to avoid running alongside any heavy load switching signals either within equipment or wiring. Alternatively, you can use screened cable to reduce interference and/or cross the cable at right angles every 3.3–6.6ft / 1–2m to reduce the interference if possible.

Communications Cabling



Use CW1308 or a minimum of CAT5e U/UTP, multi-core, twisted pair with a bare/plain copper conductor.

Cabling for Lock Power



2-core 0.75mm standard flex

ESD Precautions

The product contains static-sensitive devices and earth grounding strap should be worn when handling the hardware.

RFID Devices

RFID technology is now widely used in a number of industries, it is possible that interaction between your credential and other devices in the vicinity may cause incorrect operation or recognition. Should you suspect that you have experienced such a problem, ensure the interfering device is out of range. **This only applies if any RFID devices have been fitted**

WEEE Directive and Product Disposal



At the end of its serviceable life this product should not be treated as household or general waste.

It should be handed over to the applicable collection point for the recycling of electrical and electronic equipment or returned to the supplier for disposal.

Lithium Batteries

Failure to read the following guidelines carefully may result in injury.

There is a danger of explosion if lithium batteries are incorrectly replaced or handled.

- Ensure that lithium batteries are never short circuited.
- Always store lithium batteries separately in non-conducting materials.
- Never replace a lithium battery with the incorrect type.
- Lithium batteries should be disposed of safely and legally according to your local area, state or country laws.

Equipment Electrical Rating

All electrical equipment should have electrical ratings clearly stated on an identification label and in any documentation provided. Any applicable fuse ratings will also be specified within the documentation.

Product Information

This section will list all relevant specifications and standards that apply to the GDX Audio Line Card.

Product Specifications

Weight	10 kg
Temperature	0 °C to +35 °C
Humidity	0% to 90% Relative Humidity
Input Voltage	240 VAC, 50 Hz
Power	0.8A at 240VAC

Product Approvals Standards

EMC	2014/30/EU
Safety	2014/35/EU
RoHS	2011/65/EU
WEEE	2012/19/EU

<https://pacgdx.com/compliance-declarations>

Product Enclosure Dimensions

Suitable wall fixings must be used for the mounting of wall equipment depending on the wall surface.

Size (mm)	600 (h) × 400 (w) × 100 (d)
Wall type	Brick
Max weight	10kg



Use appropriate fixings for the wall type.

1 System Expansion Unit (SEU) Audio Overview

A standard SEU allows the connection of up to two doors to 7 separate CCUs (marked LJB on the pcb) where 2 × Audio Distribution Cards (ADC) inside the SEU will handle 1 door each. More SEUs can be added if additional doors are needed.

The first ADC should have a CAN pair and common ground to each CCU, additional ADCs have the can and ground wired to the previous ADC.

Where concierge audio communication is required the first Audio Distribution Card must be assigned to the VoIP (Voice over IP) unit.



**7 × doors max. can be supported on a non-concierge system.
6 × doors max. can be supported on a system with concierge.**

2 Product Mounting

All equipment should be located in a safe location whilst remaining accessible for competent service personnel. It is the responsibility of the competent personnel to observe appropriate precautions when handling, lifting or installing heavy loads that require wall mounting.

- Equipment supplied within a lockable enclosure need not be installed within an area of restricted access.
- However, equipment not within a lockable enclosure should be located within an area of restricted access to competent personnel only.



The enclosure should be located in a dry environment, mounted vertically on a flat wall.

1. Open the enclosure (unlock with the key provided if necessary) but do NOT attempt to remove the door.
 - The galvanised back plate is removable, if this makes wall mounting easier, but it does not restrict access to the mounting holes.
 - Before fixing this unit to a wall remove any knock-outs that are required, located on the top and bottom of the line card enclosure, as these can be used for cable entries.
 - There are two × 20mm knockouts at the top and four × 20mm knockouts at the bottom of the enclosure.
 - Use appropriate grommets as required.



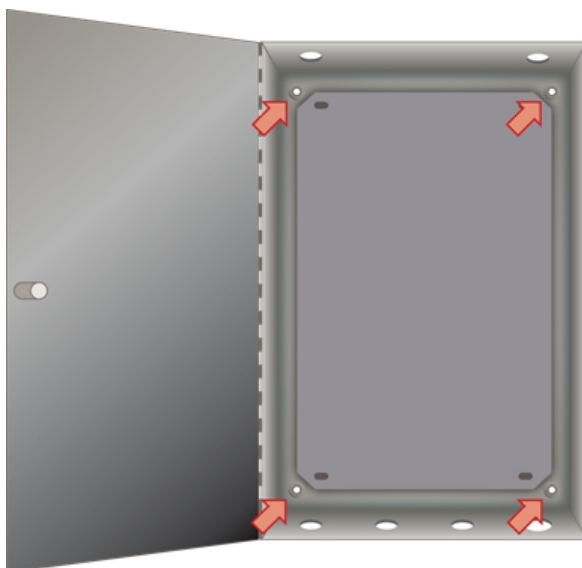
Only use the knock-outs provided to prevent potential damage to the line card.

Any attempt to create additional holes in the enclosure may cause metal shards from the drilling to cause electrical damage to the power supply and electronics contained within the line card.

2. Use the enclosure as a template to mark the four wall mounting holes.
3. Fix the enclosure securely to the wall using **appropriate** fixings for the wall surface.

GDx Enclosure

The four wall mounting holes are indicated below. Use appropriate wall fixings to secure the enclosure to the wall.



Enclosure mounting holes



The thermal resetting fuse for each handset will not require replacing if it activates. Resolve the problem and the fuse will reset itself once it cools in a few seconds.

3 Audio Distribution Card Address

The cards are addressed using the DIP switch bank.

- The card connected to the VoIP must be set to address 31 (all switches set to the 'ON' position).
- Each of the cards connected to a door entry panel must be set to the address of its associated entry panel.



The first door entry panel must be set to address 0.

The DIP switches follow binary notation rules and are shown below.

Switch changes will only apply after power cycle

Door 0	All switches OFF	
Door 1	Switch 1 ON	
Door 2	Switch 2 ON	
Door 3	Switches 1 + 2 ON	
Door 4	Switch 3 ON	
Door 5	Switches 1 + 3 ON	
VoIP 31 Used for concierge only	All switches ON	



Please ensure there are enough cores to supply connections for both comms and locks

Entrance Panel connections

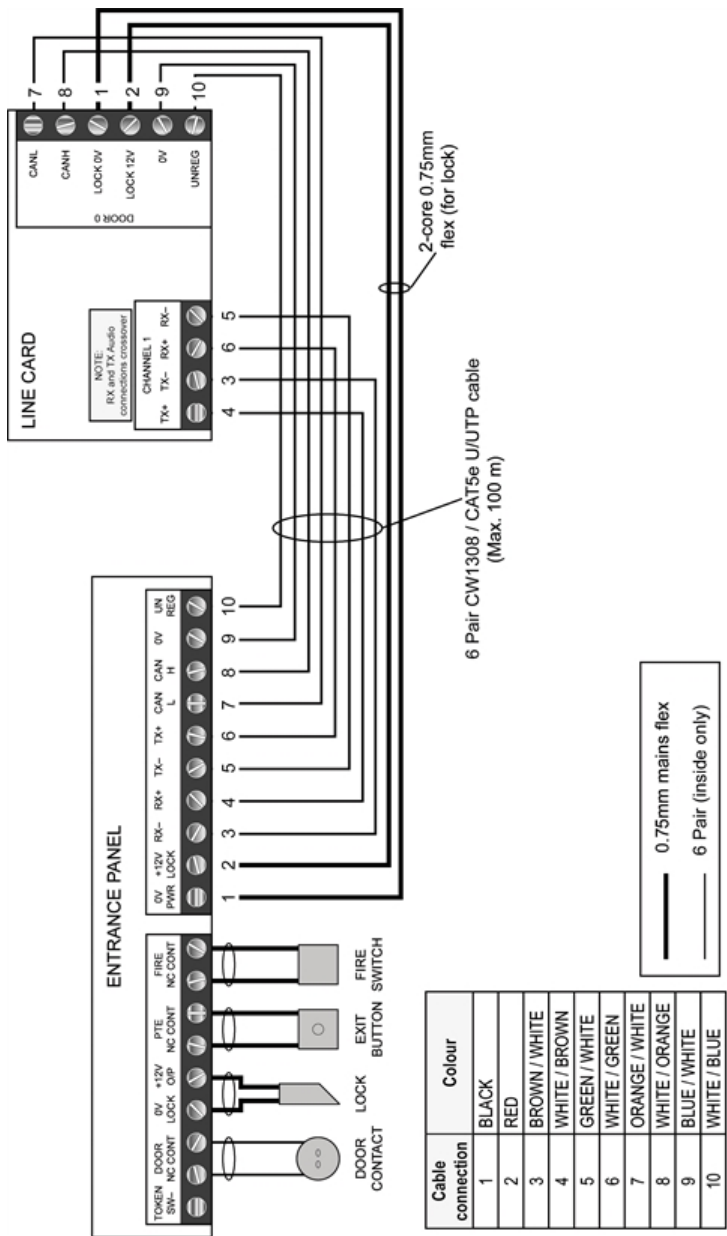
Cable run should be max. 100m.

Cable type	Cable use
6 pair CW1308	Door panel power, data and audio
2 core 0.75mm min. flex	Lock power



Door lock cabling (Entrance Panel to Line Card) must be separate to cabling for door panel power, data and audio.

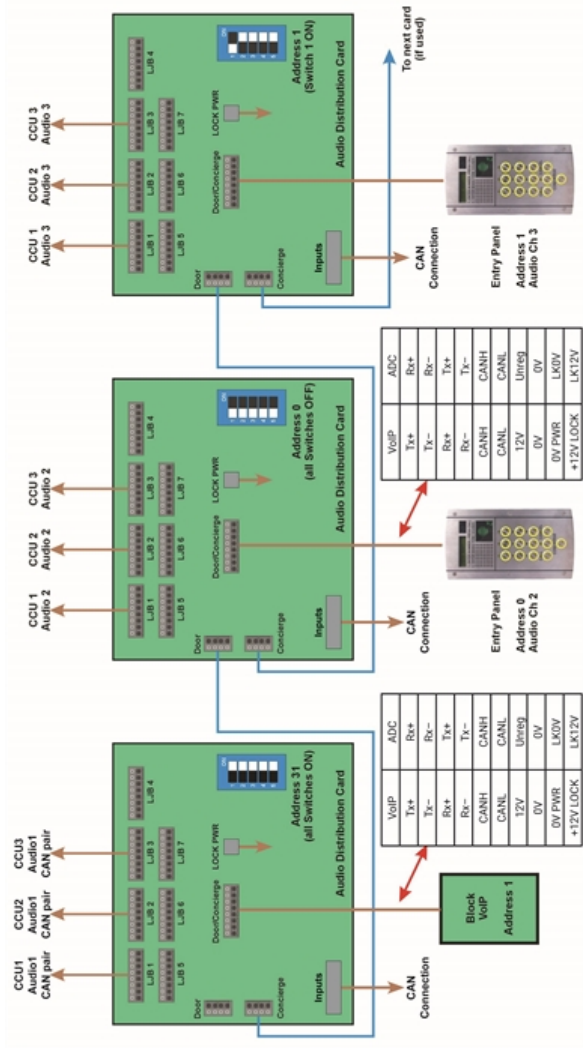
Door Entry Wiring



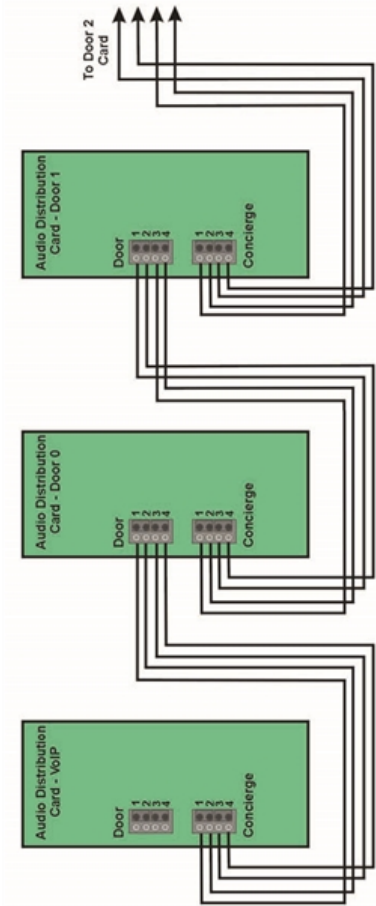
Audio Distribution Card Connection (with Concierge Audio)

For details of the audio connection between each card, refer to the Audio Connection from VoIP Card to Doors diagram.

LJB outputs on the VOIP Audio Switching Card must connect to Aud Ch. 1 on the Line Cards. The first door (Door 0) will use Audio channel 2.



Concierge Audio Connection from VoIP Card to Doors



The audio connection between the VoIP card and the first Door card is a direct 1:1, 2:2, etc. connection.



For remaining Doors: Concierge to Door connections are crossed over. See above diagram.

Concierge t-block connection pin	1	2	3	4
Door t-block connection pin	3	4	1	2

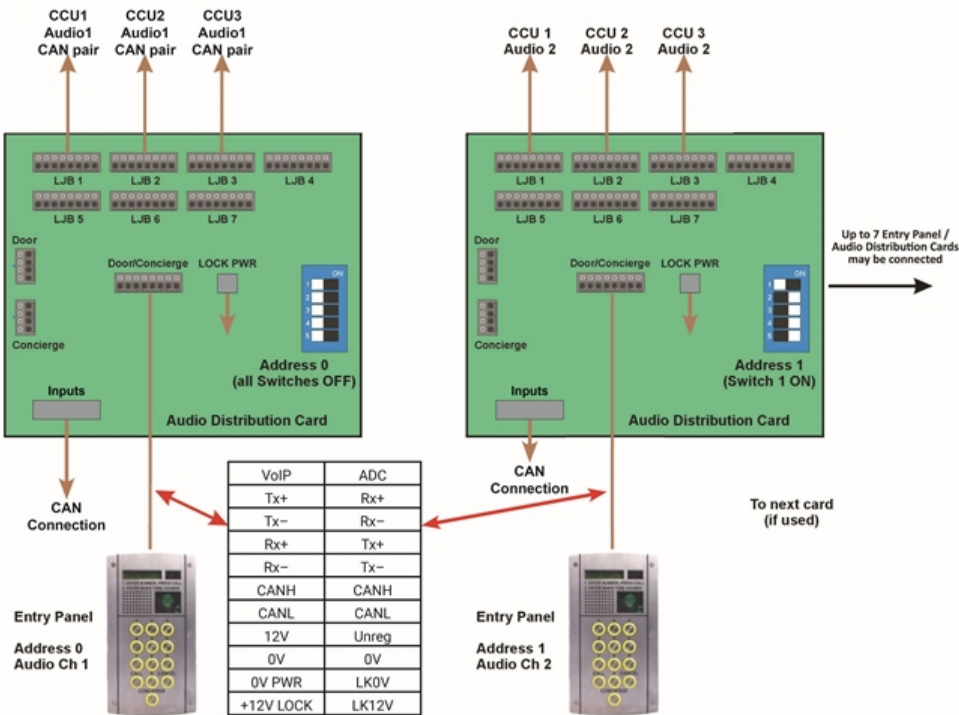
Audio Distribution Card Connection Options

This section shows the connections for a system that is **NOT** using Concierge audio.



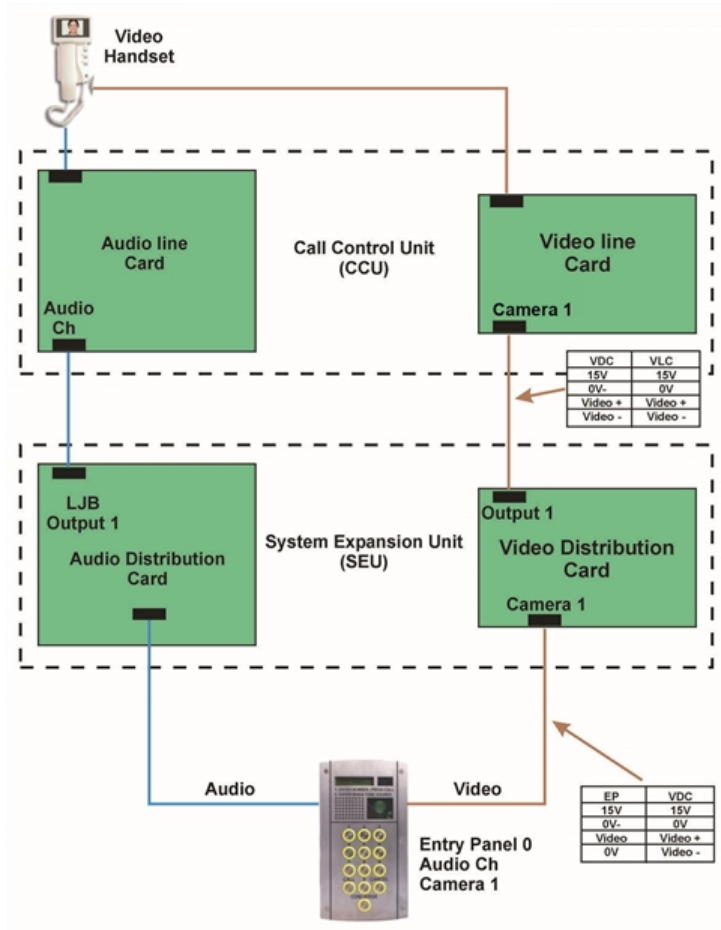
When Concierge audio is not used you do not need the VoIP unit or the 4 wire connections between concierge and door.

In this scenario it is possible to connect up to seven door entry panels. The method for connecting this, for an audio only system is shown below.



4 System Expansion Unit (SEU) Video Overview

The signal path connections are outlined below.



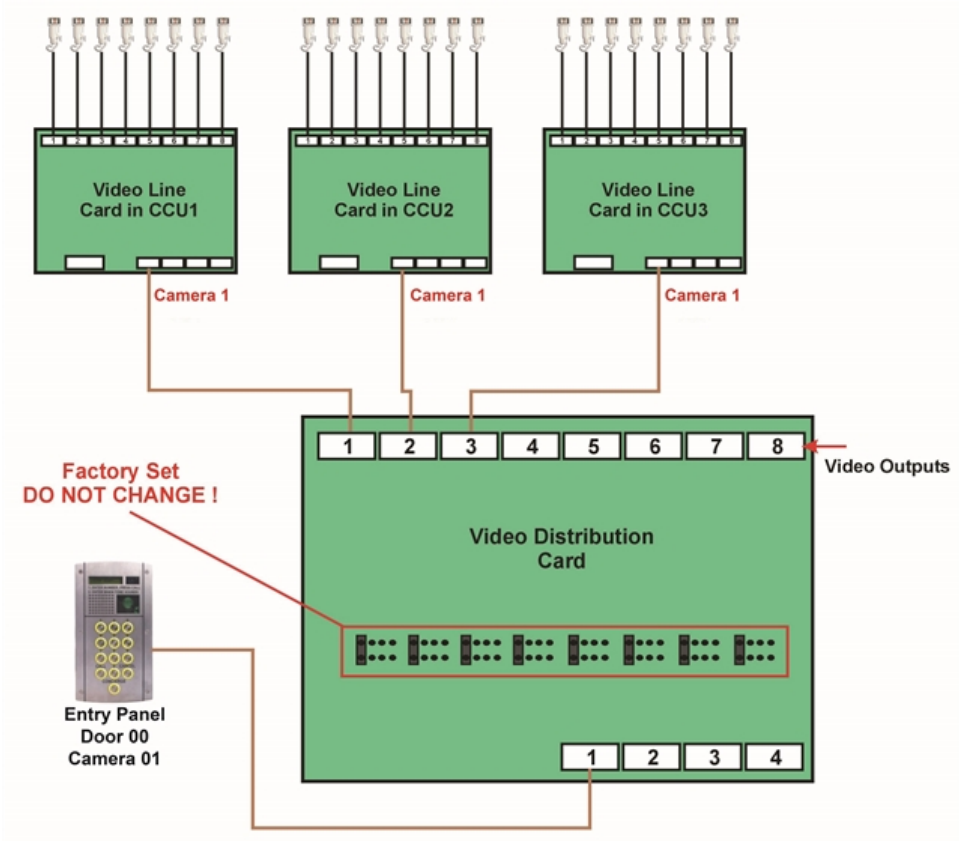
Video Cable Requirements

! All Video and Audio connections must use separate cables.

- Minimum 3 Pair Cable required between Camera and Video Line Card Board.
- Minimum 3 Pair Cable Required Between Video Line Card Board and Video Handset.

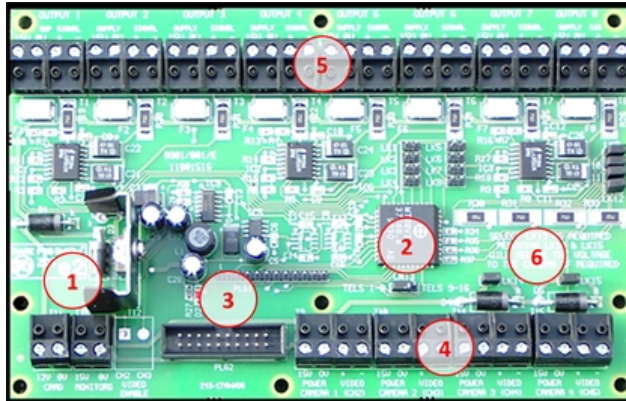
Video Distribution Card

The Video Distribution Card performs the same function for the video signals as the Audio Distribution Card does for the audio signals. It enables connection of each entry panel camera to one or more CCU enclosures.



Video Line Card

This card works in conjunction with the Audio Line Card. It connects up to four entry panel camera inputs to the selected telephone outputs.



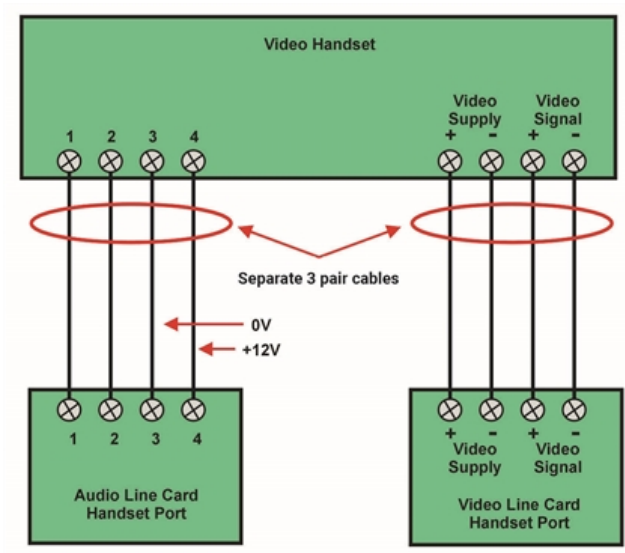
1. The card requires two dc supplies that are provided by a single power supply.
2. The default factory setting for Handset Selection jumpers set the video cards to handsets 1–8.
3. Control bus between Audio Line Card and Video Line Card. **DO NOT REMOVE.**
4. Each camera input channel is associated with the corresponding door e.g., Camera1 : Door0, Camera2: Door1, etc.

This leaves a number of possible configurations:

- i Audio Ch1 **MUST** be used for concierge when it is used. If Audio Ch1 is used for another connection, then **concierge cannot be used in the future.**
 - ii When using video and an Audio7 Linecard **WITHOUT** concierge, the entry panel on Audio Ch1 will be audio only, because it has no associated video channel on the video cards (does not apply to Audio2 Linecards).
 - iii Door 00 uses Camera 01, DR01 uses Camera 02.
5. Telephone outputs.
 6. These links must be left in the factory position (i.e. pins not linked).
 - These links set the camera power to 15V / 13.8V
 - All cameras are now 13.8Vdc

Handset Connection

! Use SEPARATE cables for the audio and video connections to avoid excessive noise in the audio.



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