WILLIAMSAV

IR T2 - POE KT1 & KT2
POWER OVER ETHERNET WIRING GUIDE

Introduction

The IR T2 is shipped with Williams AV's TFP 057 (48VDC power supply). The IR T2 is also compatible with the Williams AV POE 001 Power over Ethernet injector, and with most POE switches.

Note: When using a POE switch, POE cannot be used/connected directly. The POE KT2 is still required.

Note: The IR T2 is NOT compatible with POE+ power supplies unless they are backwards compatible with POE standards.

Note: We cannot guarantee the audio quality of IR T2 units powered from a third-party POE switch, as they may introduce noise into the system.

POE KT1

This kit should be used for applications using the power supply included with the IR T2 (TFP 057). The kit includes:
- WCA 131
- WCA 133

POE KT2

This kit should be used for applications using POE 001 or a POE Switch. The kit includes:
- WCA 131
- WCA 132

Using POE

Williams AV has tested RS-232 control and balanced audio configurations with up to 300 ft. [91 m.] of CAT5 cable. Environmental interference can limit the length of cable depending on how it is being used. Unbalanced audio setups in excess of 20 ft. [6 m.] of cable are not recommended.
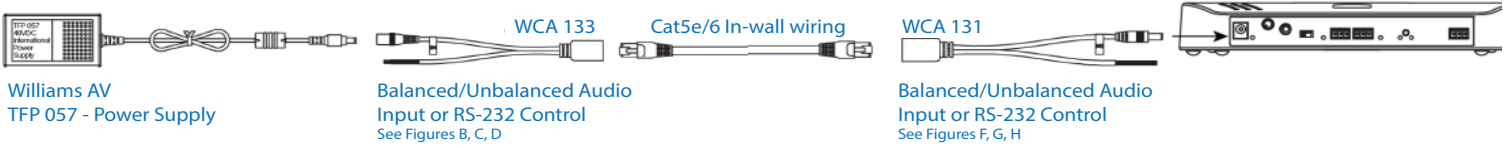
CAT5 cable contains four twisted pairs of wires, two of which are used for POE. Using Williams AV's passive POE injector kits (POE KT1 or POE KT2) allows the installer to use the remaining two pairs of wire for one of the following three options:
- 1 channel of balanced line level audio
- 1 or 2 channels of unbalanced line level audio
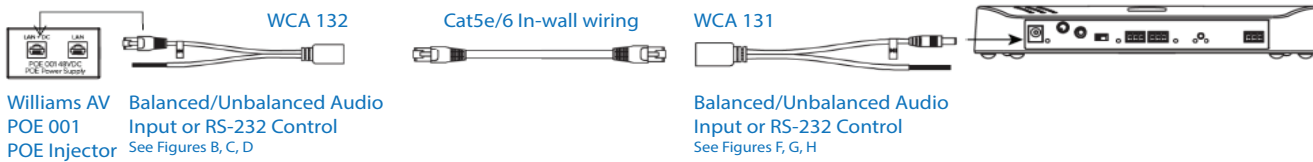- RS-232 control and monitoring signal

If using 2 channels of balanced line level audio, control/monitoring, and power, POE KT1 or POE KT2 will need to be used along with an additional CAT5 cable. One CAT5 cable will be connected to the POE injector kit and provide power and control, while the other CAT5 cable will provide audio.
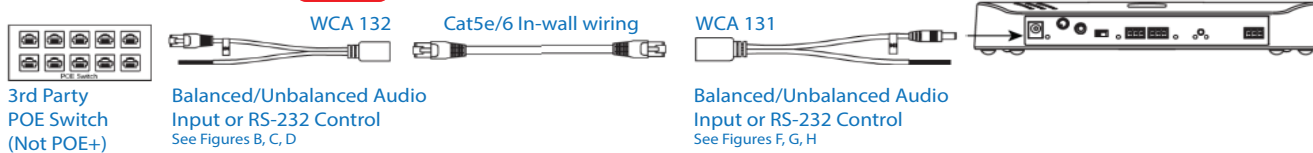
Input Diagrams

OPTION 1: IR T2 Power Supply `POE KT1`

WCA 133 Cat5e/6 In-wall wiring WCA 131

Williams AV
TFP 057 - Power Supply

Balanced/Unbalanced Audio
Input or RS-232 Control
See Figures B, C, D

Balanced/Unbalanced Audio
Input or RS-232 Control
See Figures F, G, H

OPTION 2: POE Injector `POE KT2`

WCA 132 Cat5e/6 In-wall wiring WCA 131

Williams AV
POE 001
POE Injector

Balanced/Unbalanced Audio
Input or RS-232 Control
See Figures B, C, D

Balanced/Unbalanced Audio
Input or RS-232 Control
See Figures F, G, H

OPTION 3: POE Switch `POE KT2`

WCA 132 Cat5e/6 In-wall wiring WCA 131

3rd Party
POE Switch
(Not POE+)

Balanced/Unbalanced Audio
Input or RS-232 Control
See Figures B, C, D

Balanced/Unbalanced Audio
Input or RS-232 Control
See Figures F, G, H

OPTION 4: Power, Audio, and Control

Connections to the IR T2 Two CAT5 cables need to be run to the IR T2

RS232 Control and Power
(see Power and Control Setup)
CAT5 Cable (Powered)

WCA 131

Wire this input for Control.

Power In

CH A Line Level Audio In CH B Line Level Audio In

Control RS-232 TX/RX/GND

Balanced Audio for CH A and CH B

Connect to Power

Red (In Phase, Ch A +)
White (Ch A GND)

Yellow (In Phase, Ch B+)
Black (Ch B, GND)

CAT5 Cable (Unpowered)

Red (In Phase, Ch A +)
White (Ch A GND)

To Ch A Line Level Audio In
+
GND

Yellow (In Phase, Ch B+)
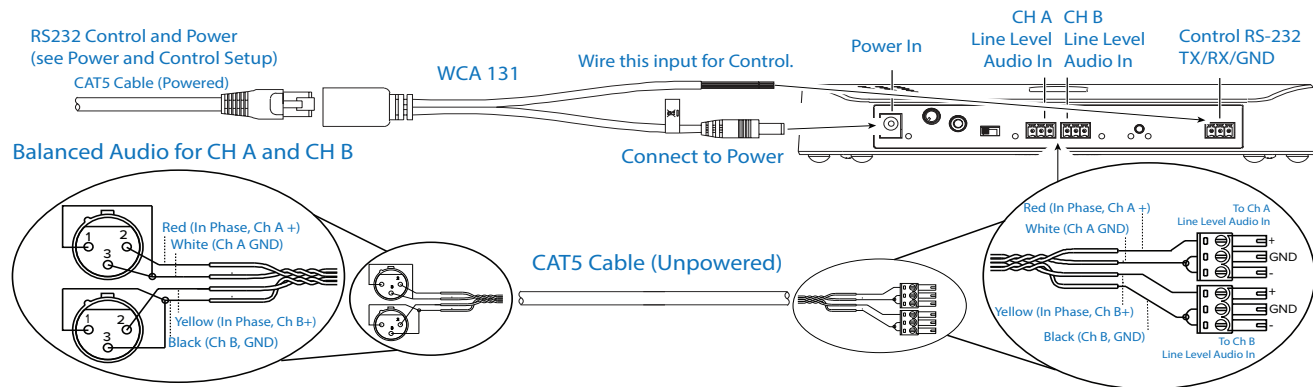Black (Ch B, GND)

To Ch B Line Level Audio In
+
GND

Figure A: Options Diagram

Cabling for Inputs

If using the POE 001 power over Ethernet injector, connect either the RJ-45 plug on the WCA 132 or a CAT5 cable directly to the port labeled LAN + DC (See Figure A).

Note that the WCA 132 can be plugged directly into the LAN port, which may not leave enough of a cable run to connect to the audio.

In all the figures below, check the color coding for the type of CAT5 cable used to determine wire colors if terminating a CAT5 cable.

Input Wiring

Note: The figures below are shown using a WCA 133, but a WCA 132 can be used with the same wiring. In some cables, the yellow wire may be colored green.
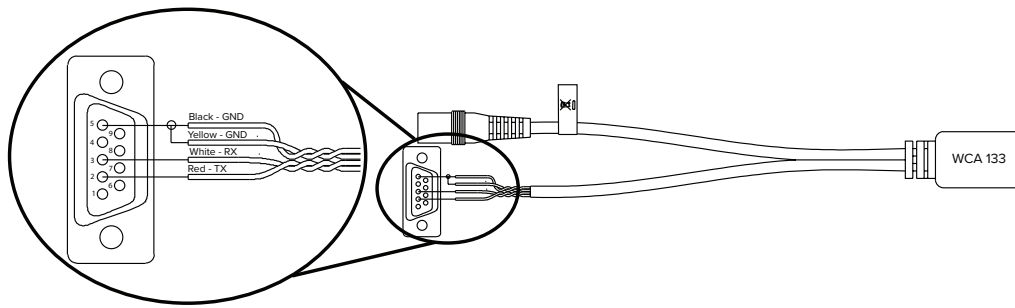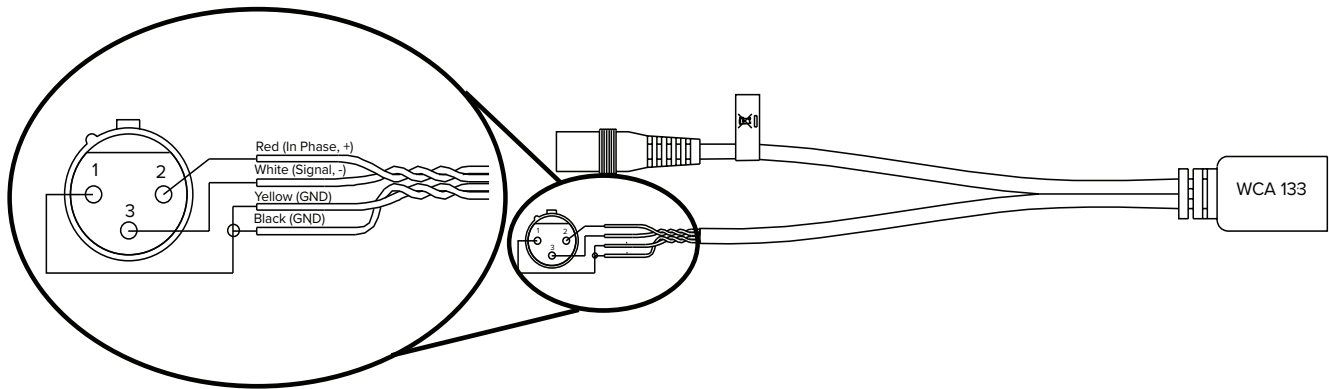
Figure B: RS-232 Control Input

Black - GND
Yellow - GND
White - RX
Red - TX

WCA 133

Figure C: Balanced Line Level Audio for Input

Red (In Phase, +)
White (Signal, -)
Yellow (GND)
Black (GND)
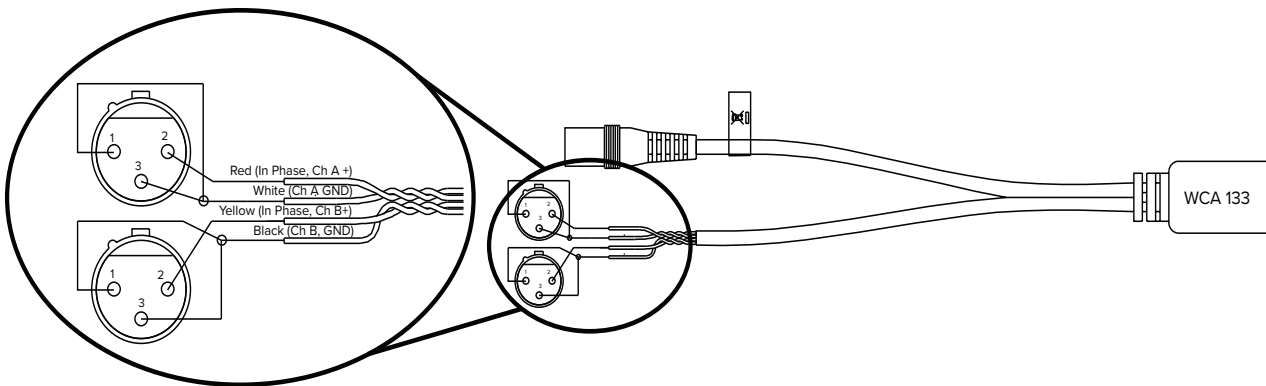
WCA 133

Figure D: Unbalanced Line Level Audio for Input

Red (In Phase, Ch A +)
White (Ch A GND)
Yellow (In Phase, Ch B+)
Black (Ch B, GND)

WCA 133

Output Diagrams

Power In

CH A
Line Level
Audio In

CH B
Line Level
Audio In

Control RS-232
TX/RX/GND

CAT5 Cable

WCA 131

To Phoenix connectors for audio
or control, see Figures F - H for
wiring.
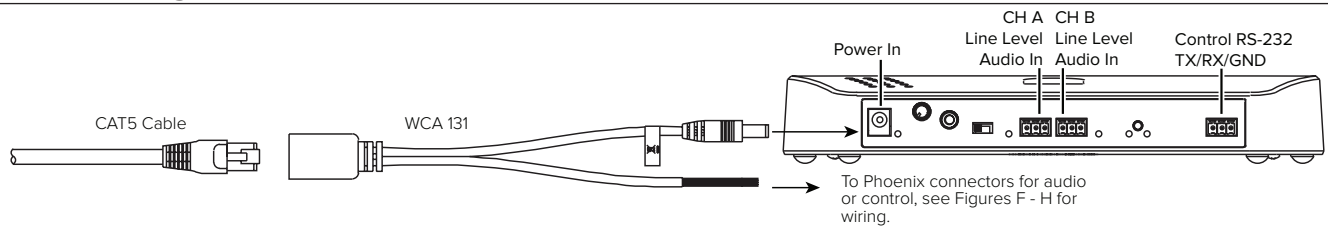
Figure E: POE Output Setup using a WCA 131 Adapter Cable and the IR T2 back panel.

Output Wiring

PLG 027
(included)

GND
TX
RX

Pin 1 - Red - TX
Pin 2 - White - RX
Pin 3 - Yellow - GND
Pin 6 - Black - GND

WCA 131

GND
TX
RX
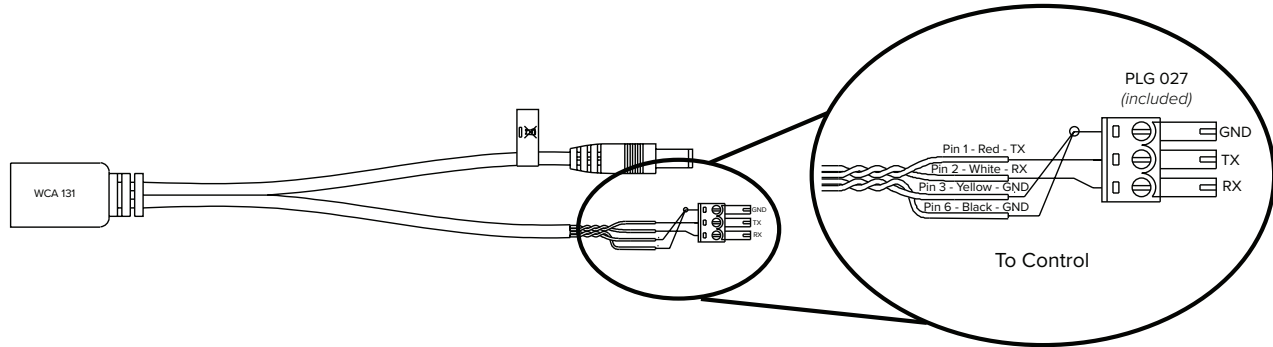
To Control

Figure F: RS-232 Control Output

Red (In Phase, +)
White (Signal, -)
Yellow (GND)
Black (GND)

WCA 131

+
GND
-

+
GND
-

To Ch A or Ch B
Line Level Audio In

Figure G: Balanced Line Level Audio Output

To Ch A
Line Level Audio In

Red (In Phase, Ch A +)
White (Ch A GND)
Yellow (In Phase, Ch B+)
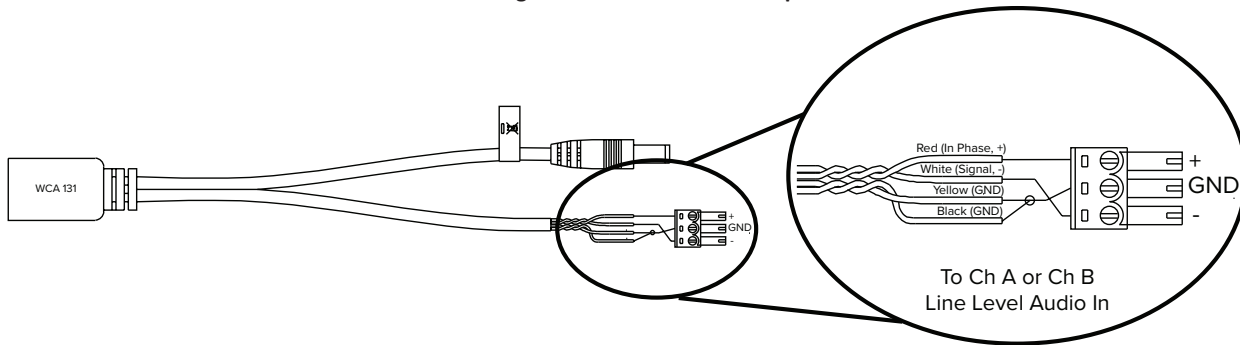Black (Ch B, GND)

WCA 131

+
GND
-

+
GND
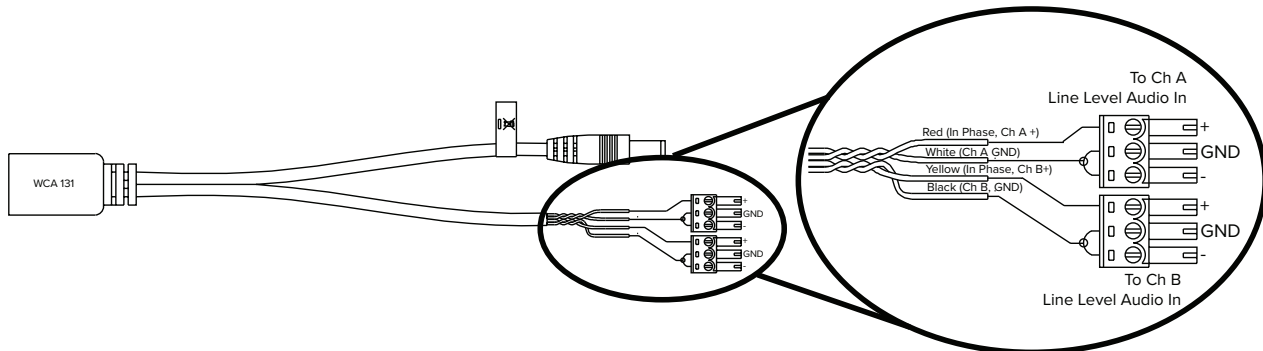-

+
GND
-

To Ch B
Line Level Audio In

Figure H: Unbalanced Line Level Audio Output

Connecting Audio, Power and Control

Providing power, audio and control options simultaneously requires two CAT5 cable runs. Power will only need to be provided on one of the adapters.

Note: Use of this product with power supplies not provided by the manufacturer voids the warranty of the product (see IR T2 user guide [MAN 217] for further details about warranty coverage).

For additional technical support, please contact TechBlue by calling +1-800-328-6190 or visit www.williamsav.com.