



Serial over IP

☒ Enable Serial over IP

Operation Mode:

☐ Type 1 - Dumb Redirection: (Recommended)
Any RS232 sent to a Transmitter is sent out all connected Receivers' RS232

☐ Type 2 - Guest Mode:
TELNET directly to port 6752. Gives discrete 2-way RS232 access when TX/RX are linked

☒ Type 3 - CLI Access:
Advanced command-line access. Requires significant programming.
For advanced programmers ONLY.

Baudrate Setting for RS232:

Baudrate: 9600

Data bits: 8

Parity: None

Stop bits: 1

Apply

SERIAL OVER IP

Revised 2017-03-27

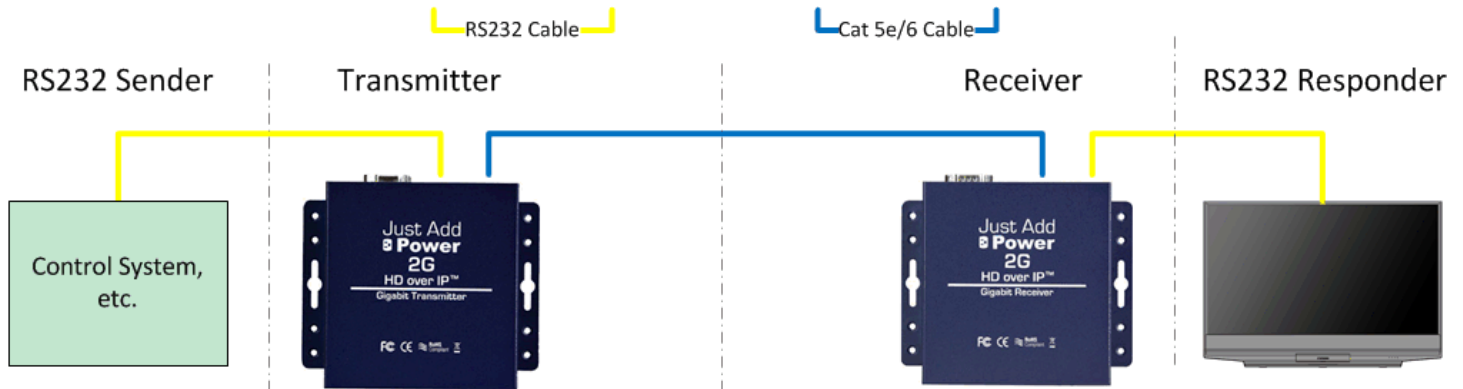
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Operational Modes

There are 3 Operational Modes of Just Add Power devices. Each provides a different method of connection and functionality.

Type 1 – Dumb Redirection



Type 1 RS232 is 2-way, so the RS232 Sender and Responder can be on opposite sides.

Features

- 2-directional
- Pass-through – commands will go to all possible devices
- Requires RS232 cable on sending and responding ends
- Does **NOT** require a switch – works in point-to-point situations
- Requires Transmitter <-> Receiver video connection to be active

Description

In this mode, the Just Add Power devices act as an RS232 “extension cord”. This means that commands entered into the RS232 port on a Just Add Power Transmitter will come out of the RS232 port on all Just Add Power Receivers that are watching that Transmitter. Similarly, commands entered into the RS232 port on a Just Add Power Receiver will come out of the RS232 port on the Just Add Power Transmitter that the Receiver is watching.

Note: On the Transmitter end, the type of RS232 cable (straight-through/crossover) does not matter.

Set Type 1

- Type 1 is the default setting for serial mode on all Just Add Power devices.
- Serial mode Type 1 can be set via the web interface by going to the Functions → Serial over IP section. Select Type 1 – Dumb Redirection for Operational Mode, and modify the Baudrate Setting.

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☐ Type 2 - Guest Mode:
TELNET directly to port 6752. Gives discrete 2-way RS232 access when TX/RX are linked

☐ Type 3 - CLI Access:
Advanced command-line access. Requires significant programming.
For advanced programmers ONLY.

Baudrate Setting for Type 1 and Type 2 RS232:

Baudrate: 9600

Data bits: 8

Parity: None

Stop bits: 1

- Serial mode Type 1 can be set via telnet through the command-line interface. Send this command:

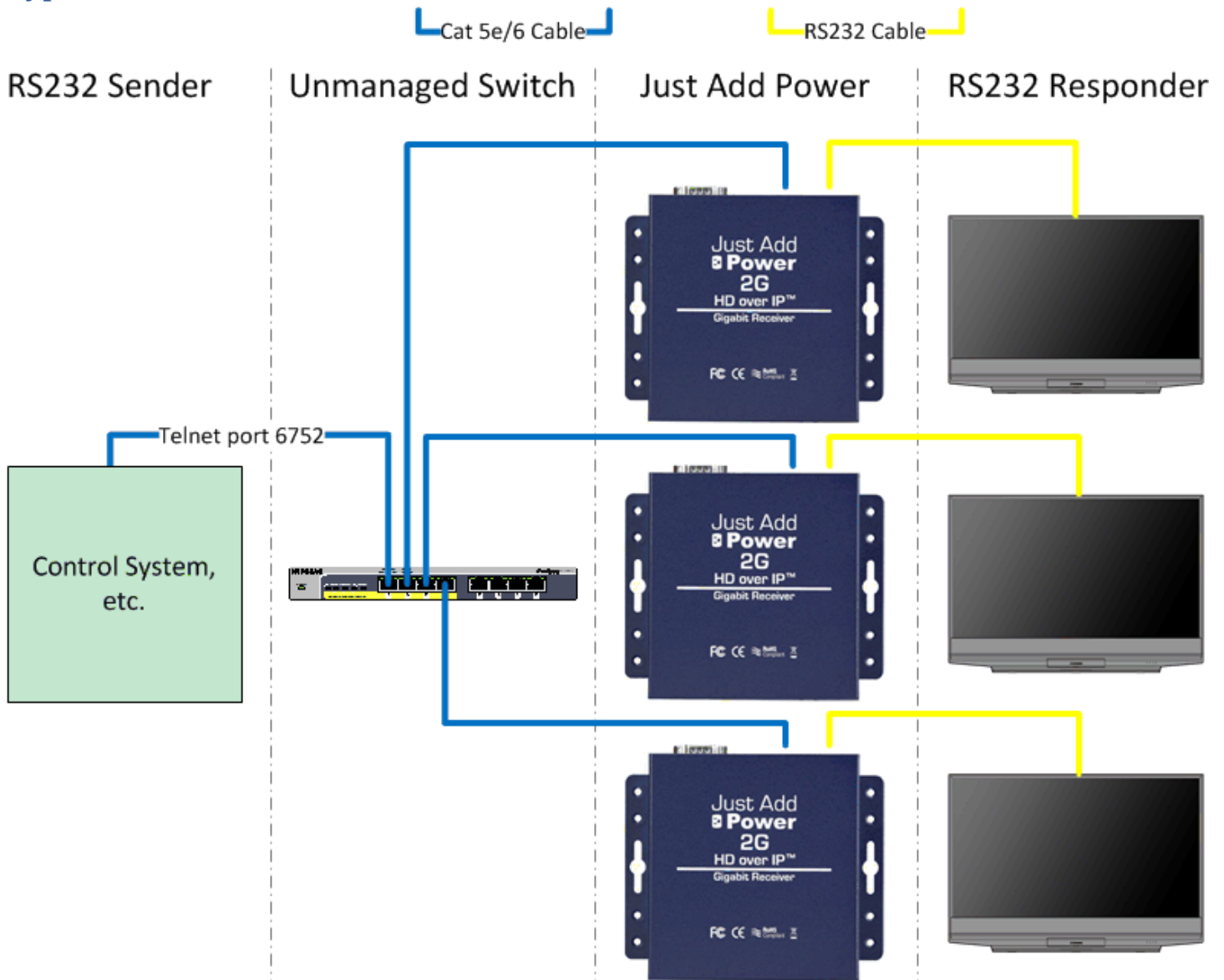
```
astparam s no_soip n;astparam s soip_type2 y;astparam s  
soip_guest_on n;astparam s s0_baudrate 9600-8n1;astparam  
save;sleep 1;reboot
```

The only variable in the command is marked as **9600** and must be set to the needed baud rate.

Example

- 1) Set Operational Mode to Type 1 and the required baud rate setting on both the Transmitter and Receiver. The baud rate **MUST** match on all devices.
- 2) Setup Transmitter and Receiver to pass video. Type 1 will **NOT** work without video transmitting.
- 3) Use correct RS232 cable for [pinout of Just Add Power device](#). Use a Null Modem if necessary.
- 4) Connect sending device to Transmitter and responding device to Receiver.
- 5) Send commands.

Type 2 – Guest Mode



Control System connects over IP to Just Add Power device on port 6752

Features

- 2-directional
- Commands are targeted at individual devices
- Requires an Ethernet (telnet) connection at sending end and RS232 cable at responding end
- Requires a switch to route Ethernet traffic
- Does **NOT** require Transmitter <-> Receiver video connection to be active

Description

In Type 2, the RS232 port of the Just Add Power device is accessed via a telnet connection to port **6752**. Anything entered into the telnet session at the sending side will be sent out of the Just Add Power RS232 port on the responding side.

Set Type 2

- Type 1 is the default setting for serial mode on all Just Add Power devices.
- Serial mode Type 2 can be set via the web interface by going to the Functions → Serial over IP section. Select Type 2 – Guest Mode for Operational Mode, and modify the Baudrate Setting below.

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Operation Mode:

☐ **Type 1 - Dumb Redirection: (Recommended)**
Any RS232 sent to a Transmitter is sent out all connected Receivers' RS232

☒ **Type 2 - Guest Mode:**
TELNET directly to port 6752. Gives discrete 2-way RS232 access when TX/RX are linked

☐ **Type 3 - CLI Access:**
Advanced command-line access. Requires significant programming.
For advanced programmers ONLY.

Baudrate Setting for Type 1 and Type 2 RS232:

Baudrate: 9600 ▼

Data bits: 8 ▼

Parity: None ▼

Stop bits: 1 ▼

- Serial mode Type 2 can be set via telnet through the command-line interface. Send this command:

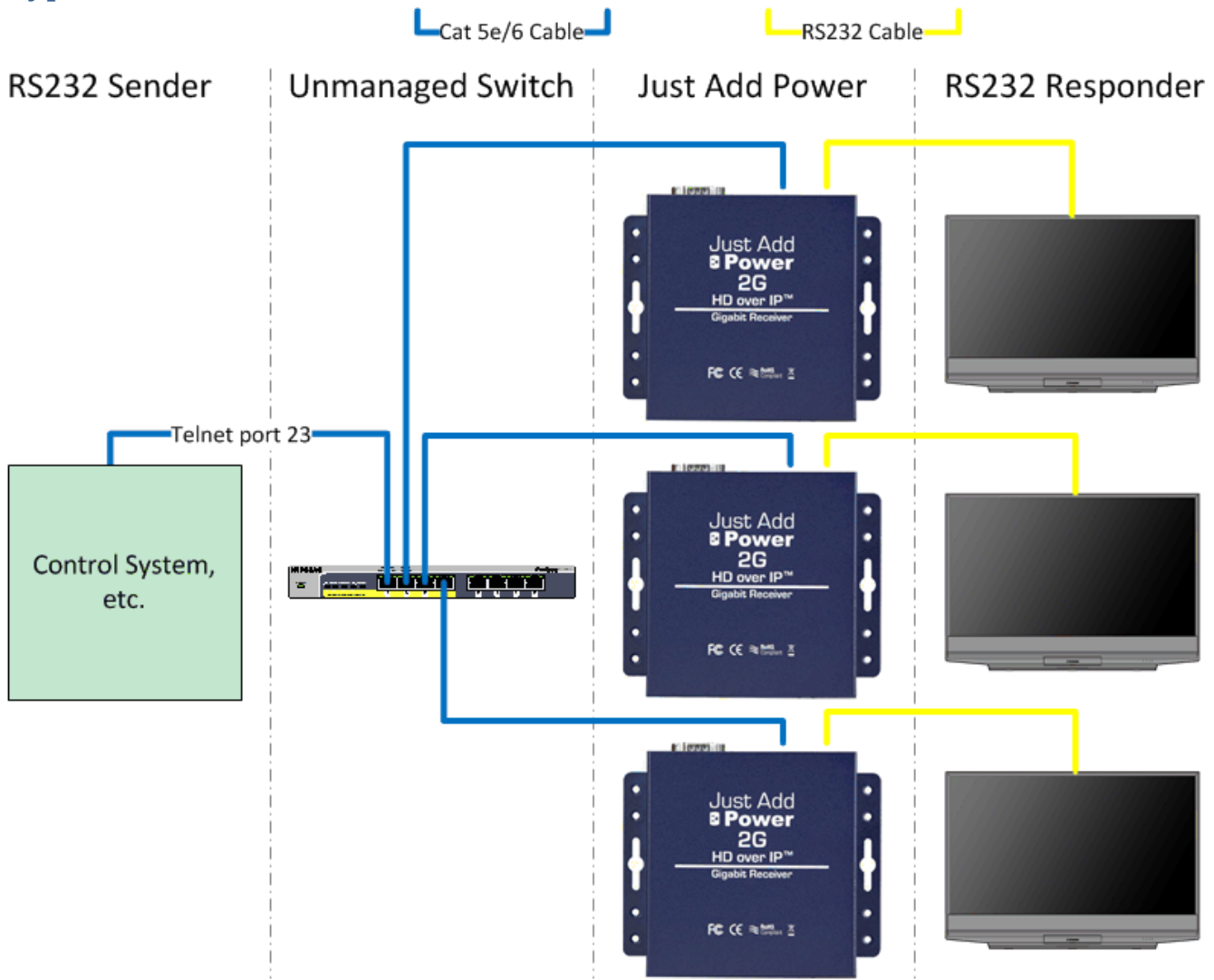
```
astparam s no_soip n;astparam s soip_type2 y;astparam s  
soip_guest_on y;astparam s s0_baudrate 9600-8n1;astparam  
save;sleep 1;reboot
```

The only variable in the command is marked as **9600** and must be set to the needed baud rate.

Example

- 1) Setup computer to have telnet access to Just Add Power device connected to responding device.
- 2) Set the Operational Mode to Type 2 and the baud rate for the Just Add Power device in the web interface to match the baud rate of the responding device.
- 3) Use correct RS232 cable for [pinout of Just Add Power device](#). Use a Null Modem if necessary.
- 4) Open telnet connection on **port 6752** to the IP address of the Just Add Power device.
- 5) Send commands
 - a. ASCII can be typed as normal
 - b. Hex values must be preceded with \x.
 - i. For example, to send hex codes 08 15 d6, enter \x08\x15\xd6

Type 3 – CLI Access



Control System connects over IP to Just Add Power device on port 23

Features

- 1-directional – sender-to-responder **ONLY**
- Commands are targeted at individual devices
- Requires an Ethernet (telnet) connection at sending end and RS232 cable at responding end
- Requires a switch to route Ethernet traffic
- Does **NOT** require Transmitter <-> Receiver connection to be active

Description

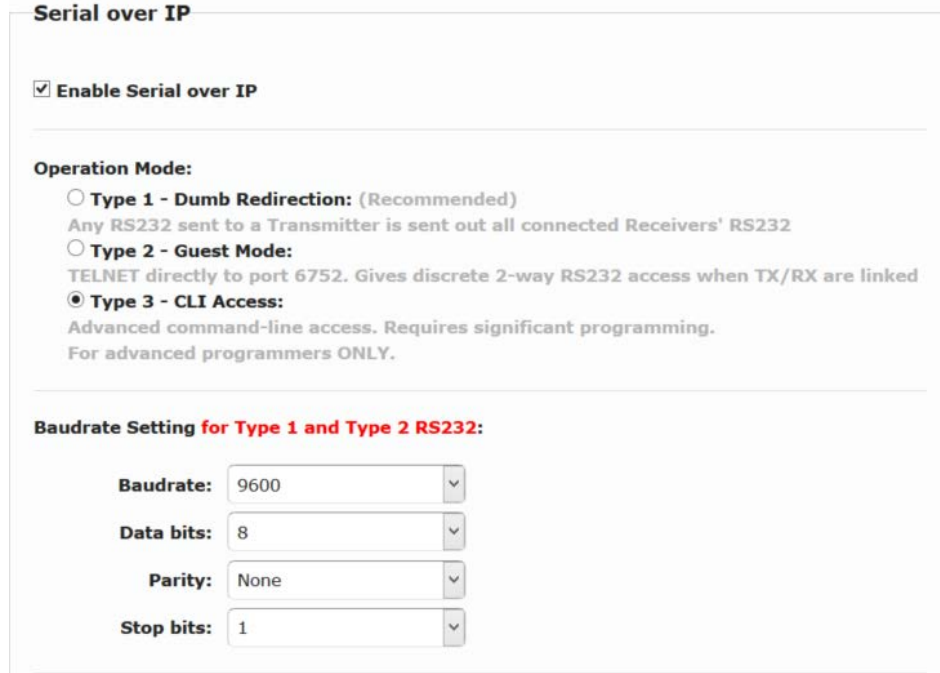
In Type 3, the RS232 port is accessed through the CLI of the Just Add Power device like all other Just Add Power features. The command structure for sending serial is:

```
stty baudrate -F /dev/ttyS0;printf "serial_string" > /dev/ttyS0
```

where **baudrate** is the baudrate of the responding device (9600, 38400, 115200) and **serial_string** is what will be sent out of the serial port.

Set Type 3

- Type 1 is the default setting for serial mode on all Just Add Power devices.
- Serial mode Type 3 can be set via the web interface by going to the Functions → Serial over IP section. Select Type 3 – CLI Access for Operational Mode. The baud rate setting does not affect this mode and must be sent as part of the command string for any baud rate that is **NOT** 9600.



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☐ **Type 2 - Guest Mode:**
TELNET directly to port 6752. Gives discrete 2-way RS232 access when TX/RX are linked

☒ **Type 3 - CLI Access:**
Advanced command-line access. Requires significant programming.
For advanced programmers ONLY.

Baudrate Setting for Type 1 and Type 2 RS232:

Baudrate: 9600

Data bits: 8

Parity: None

Stop bits: 1

- Serial mode Type 3 can be set via telnet through the command-line interface. Send the following command:

```
astparam s no_soip n;astparam s soip_type2 n;astparam s  
soip_guest_on y;astparam save;sleep 1;reboot
```

Example

- 1) Setup computer to have telnet access to Just Add Power device connected to responding device.
- 2) Set Operational Mode to Type 3 in the web interface. Baud rate setting in web interface does not affect this serial mode, as it is applied in the command in Step 4.
- 3) Open telnet connection on **port 23** to the IP address of the Just Add Power device. This accesses the main CLI of the Just Add Power device.
- 4) Use correct RS232 cable for [pinout of Just Add Power device](#). Use a Null Modem if necessary.
- 5) Send the code below (using a Carriage Return to enter it) and fill in the underlined variables needed:

```
stty baudrate -F /dev/ttyS0;printf "serial_string" > /dev/ttyS0
```

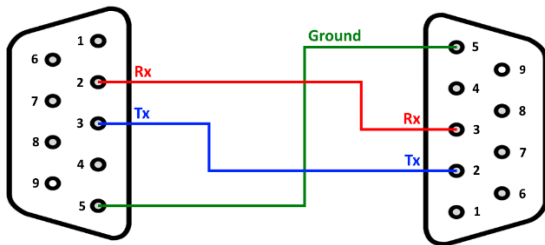
baudrate = 9600, 38400, 115200, etc. Baud rate of responding device

serial_string = code sent out of the serial port

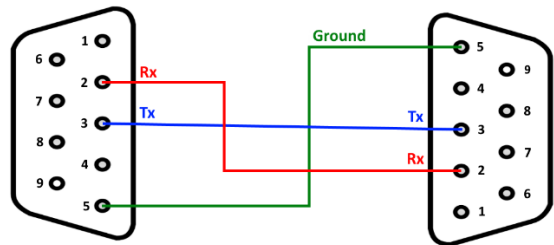
Null Modem

Pinout of the Transmit(TX) and Receive(RX) pins on the Just Add Power device must match their opposite on the responding device. If they do not match, then a Null Modem is needed to swap the Transmit and Receive pins.

[Null Modem vs Straight Through](#)



Null Modem

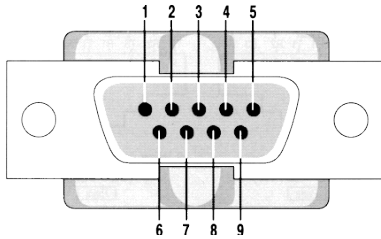


Straight Through

Device Pinouts

Receivers

2G – DB9 Male



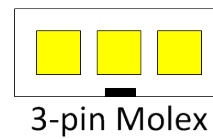
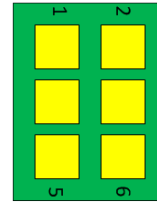
Pin	Signal
2	RX
3	TX
5	GND

2G+ Receiver – 3.5mm

The pinout needed depends on the location of the null modem jumpers on the bottom of the device.

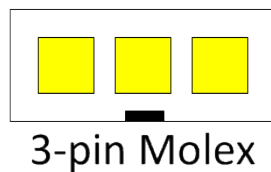
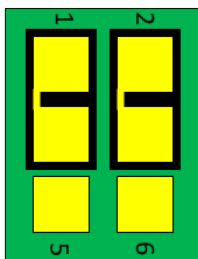


Null Modem
(no Jumper)

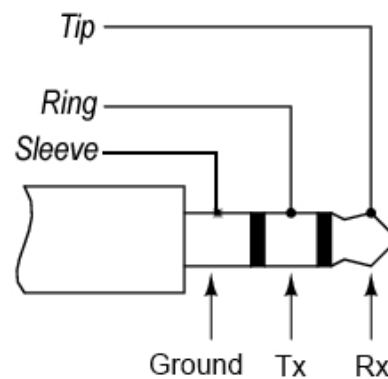


For serial control of most displays, the jumpers are on the top pins (assuming straight-through cable):

Null Modem Jumper



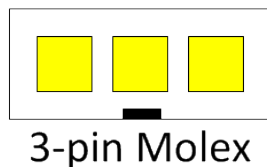
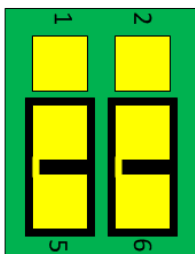
3-pin Molex



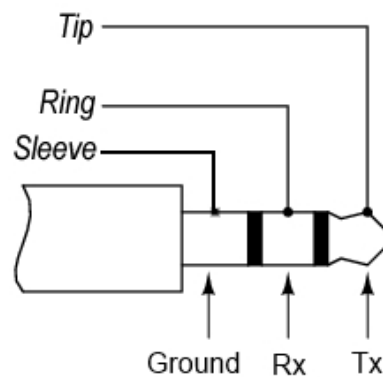
Normal Stereo Plug

For the Flux Capacitor IR Dongle, the jumpers are on the bottom pins (assuming straight-through cable):

Null Modem Jumper



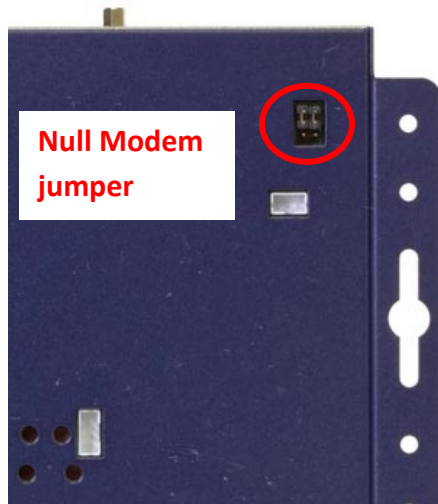
3-pin Molex



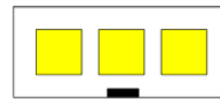
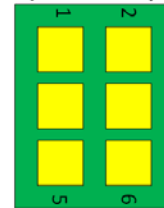
Normal Stereo Plug

2G+AVP Receiver – 3.5mm

The pinout needed depends on the location of the null modem jumpers on the bottom of the device.



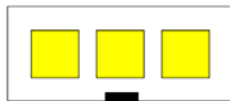
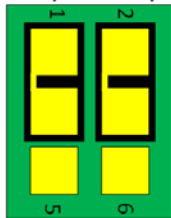
Null Modem
(no Jumper)



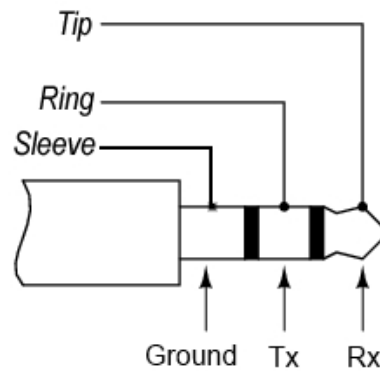
3-pin Molex

For serial control of most displays, the jumpers are on the top pins (assuming straight-through cable):

Null Modem
jumper top



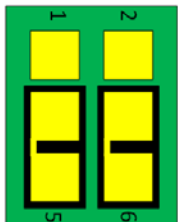
3-pin Molex



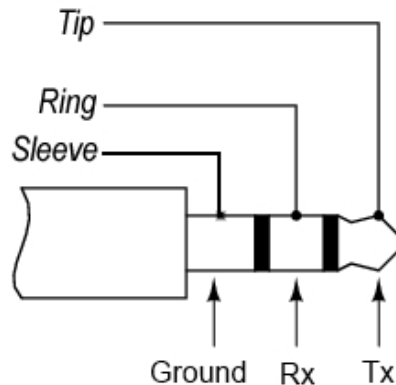
Normal Stereo Plug

For the Flux Capacitor IR Dongle, the jumpers are on the bottom pins (assuming straight-through cable):

Null Modem
jumper bottom



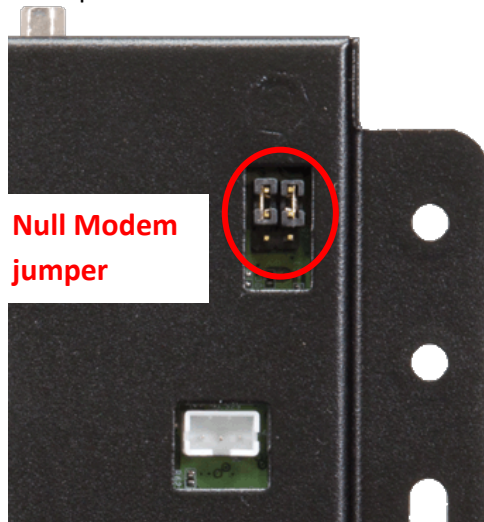
3-pin Molex



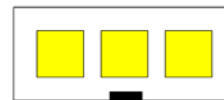
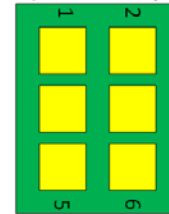
Normal Stereo Plug

2GΩ/3G Receiver – 3.5mm

The pinout needed depends on the location of the null modem jumpers on the bottom of the device.



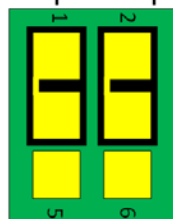
Null Modem
(no Jumper)



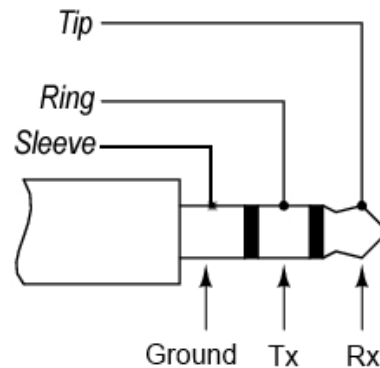
3-pin Molex

For serial control of most displays, the jumpers are on the top pins (assuming straight-through cable):

Null Modem
jumper top



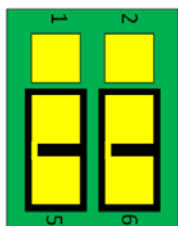
3-pin Molex



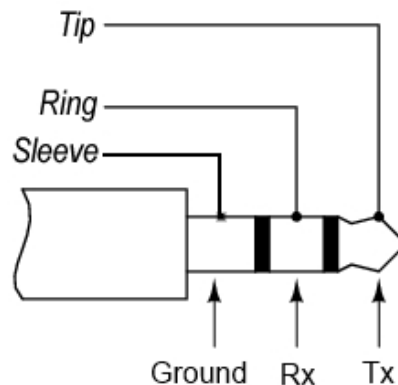
Normal Stereo Plug

For the Flux Capacitor IR Dongle, the jumpers are on the bottom pins (assuming straight-through cable):

Null Modem
jumper bottom



3-pin Molex



Normal Stereo Plug

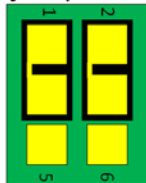
2GΩ/3G+ Receiver – 3.5mm

The pinout needed depends on the location of the null modem jumpers on the bottom of the device.

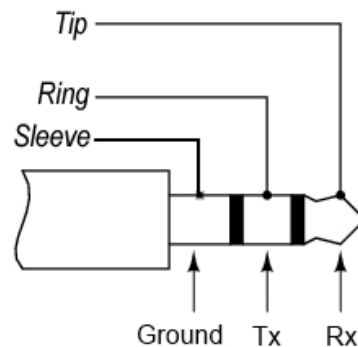
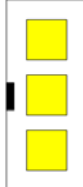


For serial control of most displays, the jumpers are on the top pins (assuming straight-through cable):

Null Modem
jumper top



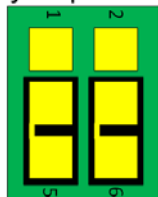
3-pin Molex



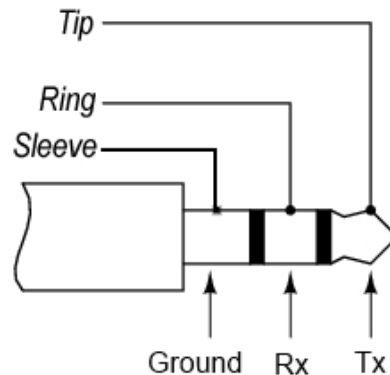
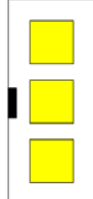
Normal Stereo Plug

For the Flux Capacitor IR Dongle, the jumpers are on the bottom pins (assuming straight-through cable):

Null Modem
jumper bottom



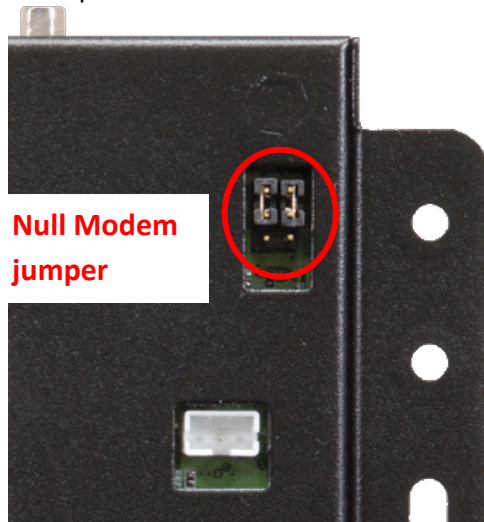
3-pin Molex



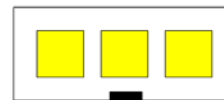
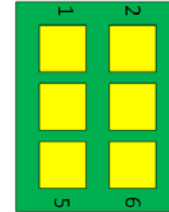
Normal Stereo Plug

3G Receiver – 3.5mm

The pinout needed depends on the location of the null modem jumpers on the bottom of the device.



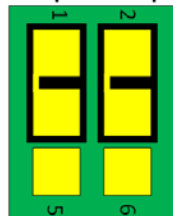
Null Modem
(no Jumper)



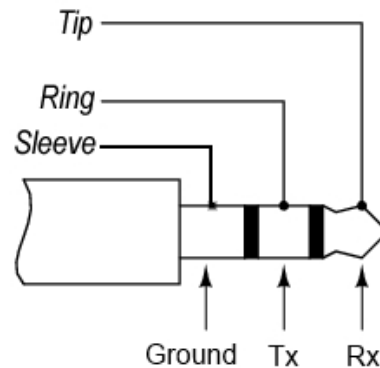
3-pin Molex

For serial control of most displays, the jumpers are on the top pins (assuming straight-through cable):

Null Modem
jumper top



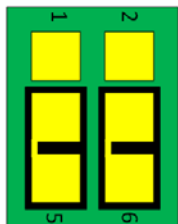
3-pin Molex



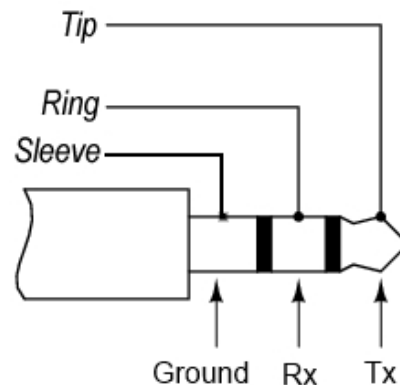
Normal Stereo Plug

For the Flux Capacitor IR Dongle, the jumpers are on the bottom pins (assuming straight-through cable):

Null Modem
jumper bottom



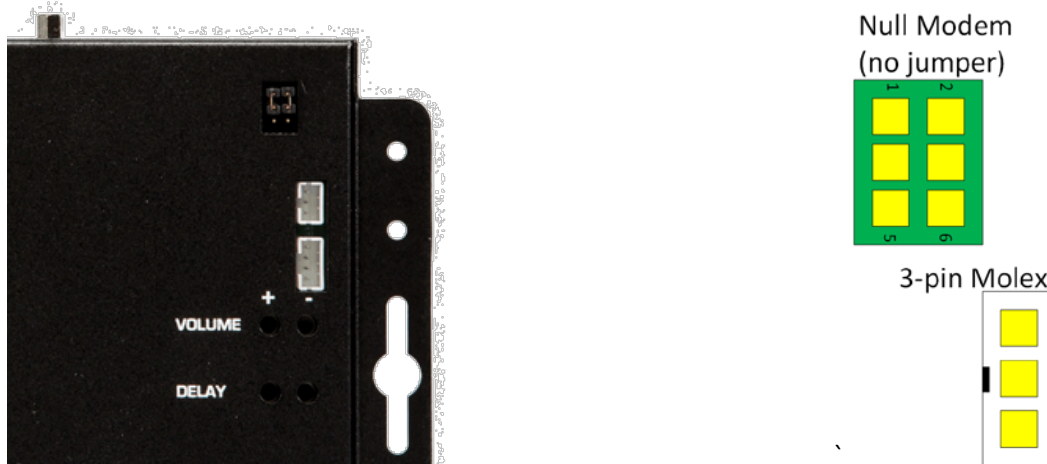
3-pin Molex



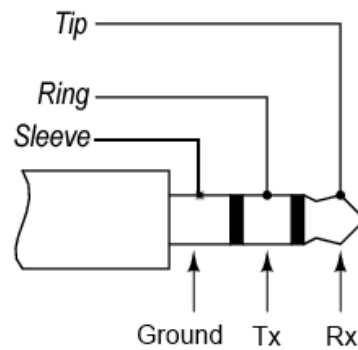
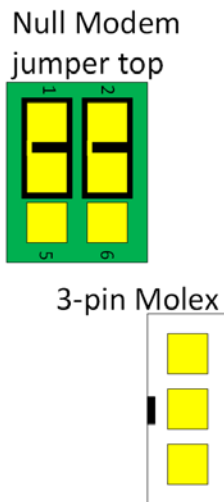
Normal Stereo Plug

3G+AVP Receiver – 3.5mm

The pinout needed depends on the location of the null modem jumpers on the bottom of the device.

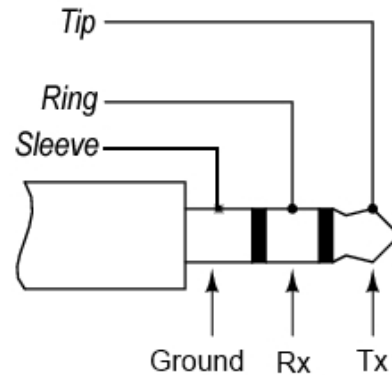
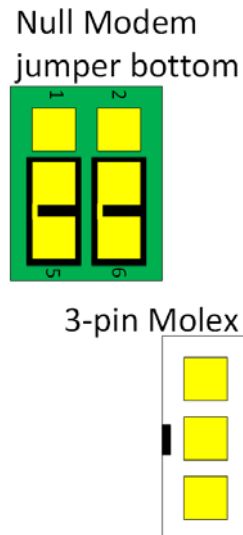


For **serial control of most displays**, the jumpers are on the top pins (assuming straight-through cable):



Normal Stereo Plug

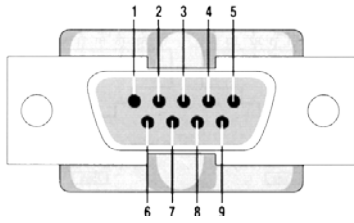
For the **Flux Capacitor IR Dongle**, the jumpers are on the bottom pins (assuming straight-through cable):



Normal Stereo Plug

Transmitters

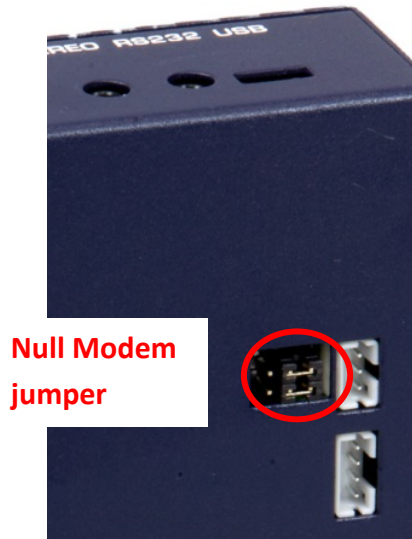
2G Transmitter – DB9 Female



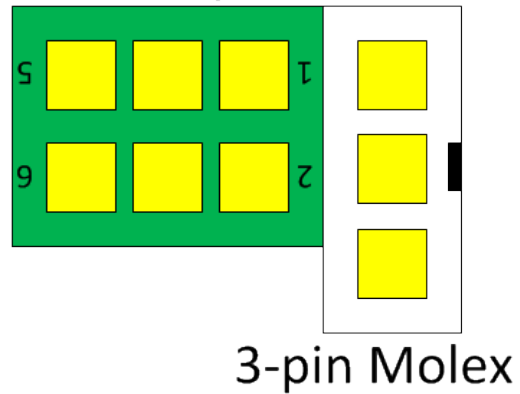
Pin	Signal
2	TX
3	RX
5	GND

2G+ Transmitter – 3.5mm

The pinout needed depends on the location of the null modem jumpers on the bottom of the devices.

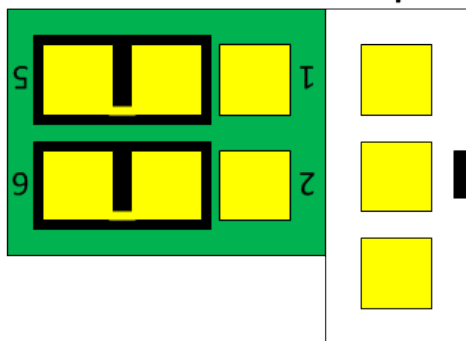


Null Modem (no Jumper)

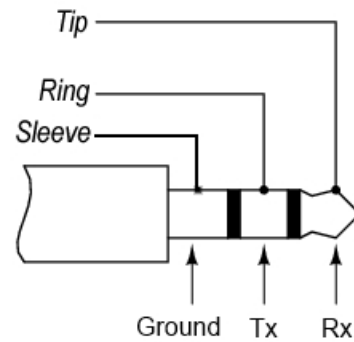


For serial control of most devices, the jumpers are on the left pins (assuming straight-through cable):

Null Modem Jumper



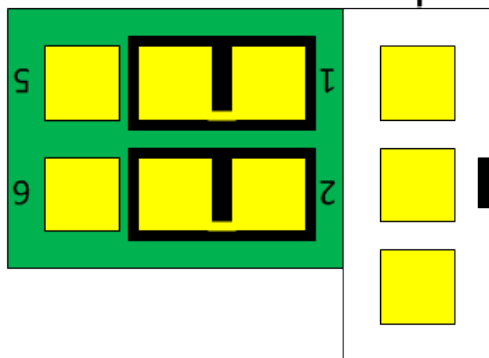
3-pin Molex



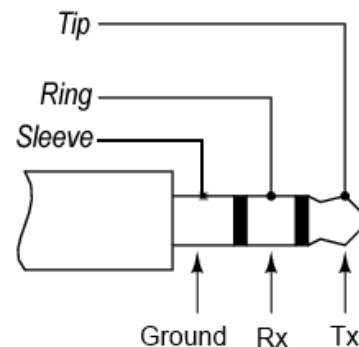
Normal Stereo Plug

For the Flux Capacitor IR Dongle, the jumpers are on the right pins (assuming straight-through cable):

Null Modem Jumper



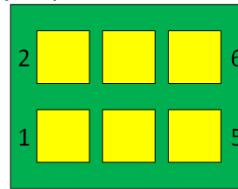
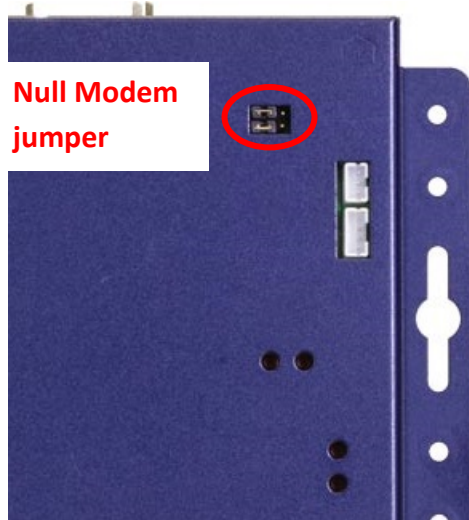
3-pin Molex



Normal Stereo Plug

2G+AVP Transmitter – 3.5mm

The pinout needed depends on the location of the null modem jumpers on the bottom of the devices.

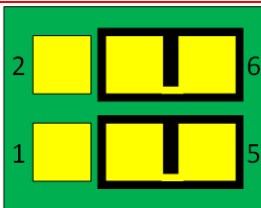


Null Modem
(no Jumper)

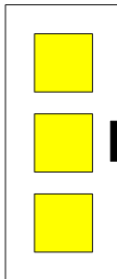


3-pin Molex

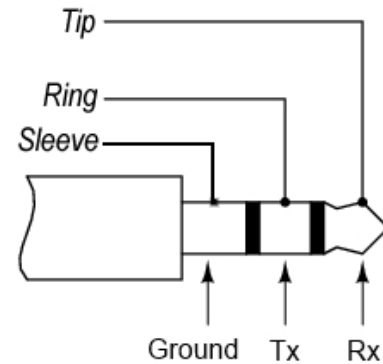
For serial control of most devices, the jumpers are on the left pins (assuming straight-through cable):



Null Modem
jumper right

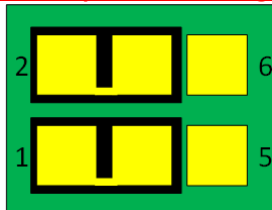


3-pin Molex

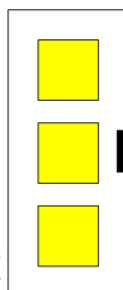


Normal Stereo Plug

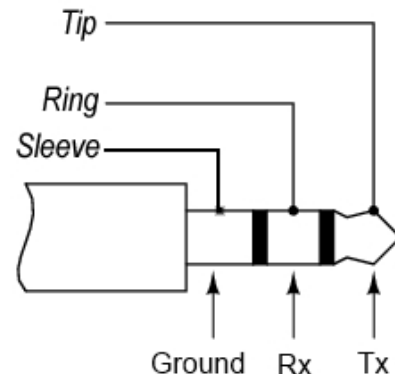
For the Flux Capacitor IR Dongle, the jumpers are on the right pins (assuming straight-through cable):



Null Modem
jumper left



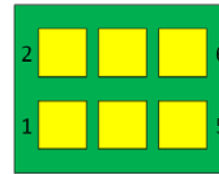
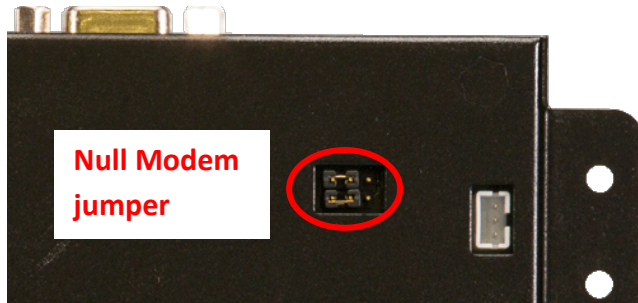
3-pin Molex



Normal Stereo Plug

2GΩ/3G VGA Transmitter – 3.5mm

The pinout needed depends on the location of the null modem jumpers on the bottom of the devices.

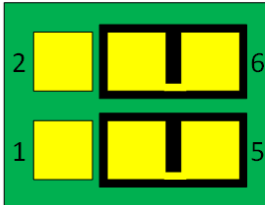


Null Modem
(no Jumper)

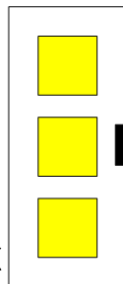


3-pin Molex

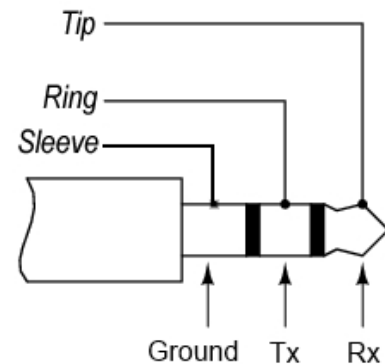
For serial control of most devices, the jumpers are on the right pins (assuming straight-through cable):



Null Modem
jumper right

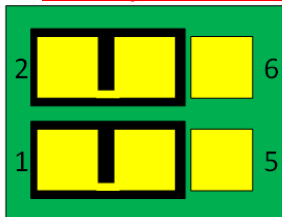


3-pin Molex

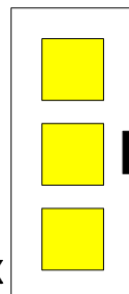


Normal Stereo Plug

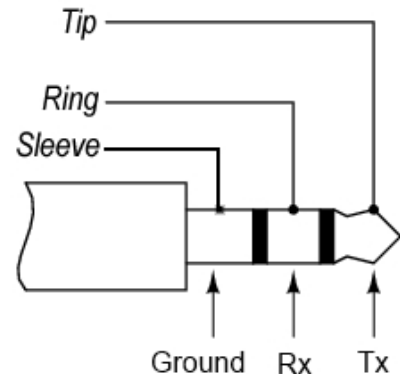
For the Flux Capacitor IR Dongle, the jumpers are on the left pins (assuming straight-through cable):



Null Modem
jumper left



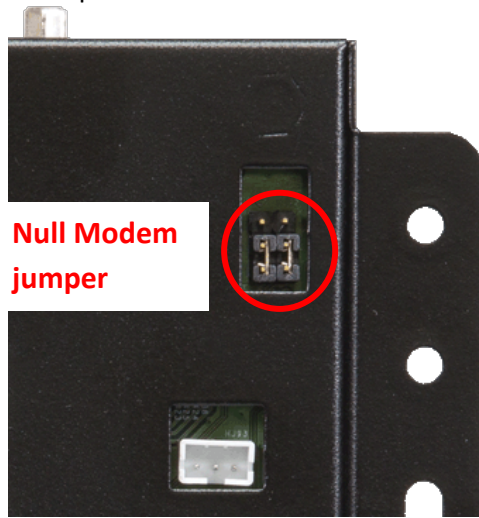
3-pin Molex



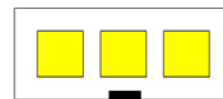
Normal Stereo Plug

2GΩ/3G Transmitter – 3.5mm

The pinout needed depends on the location of the null modem jumpers on the bottom of the device.



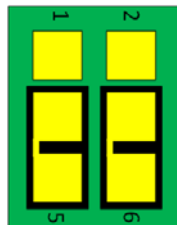
Null Modem
(no Jumper)



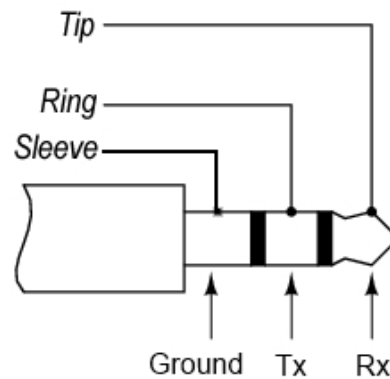
3-pin Molex

For serial control of most devices, the jumpers are on the bottom pins (assuming straight-through cable):

Null Modem
jumper bottom



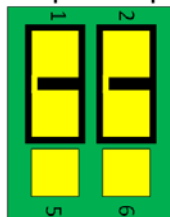
3-pin Molex



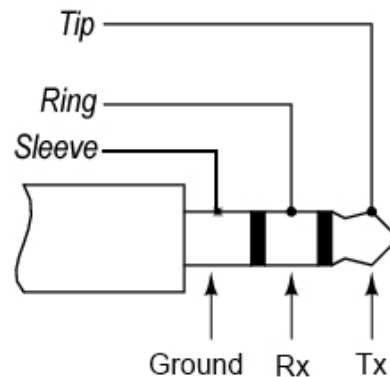
Normal Stereo Plug

For the Flux Capacitor IR Dongle, the jumpers are on the top pins (assuming straight-through cable):

Null Modem
jumper top



3-pin Molex

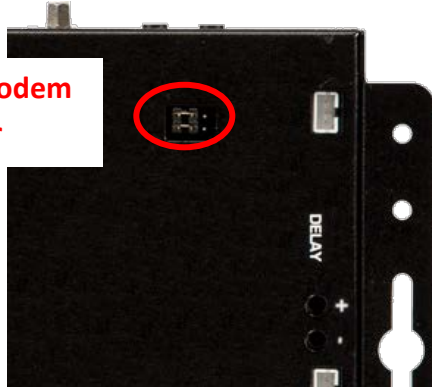


Normal Stereo Plug

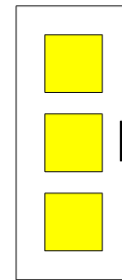
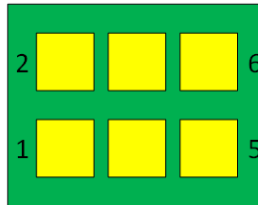
2GΩ/3G+ Transmitter – 3.5mm

The pinout needed depends on the location of the null modem jumpers on the bottom of the devices.

Null Modem
jumper



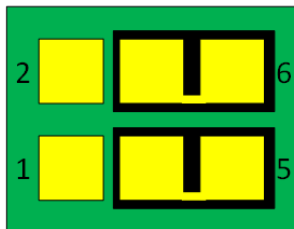
Null Modem
(no jumper)



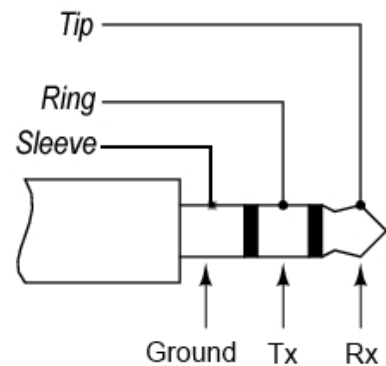
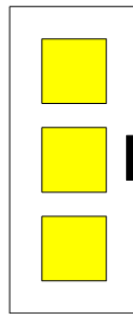
3-pin Molex

For serial control of most devices, the jumpers are on the right pins (assuming straight-through cable):

Null Modem
jumper right



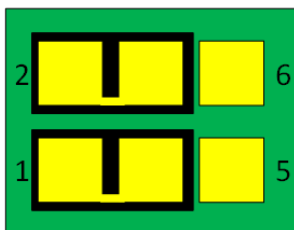
3-pin Molex



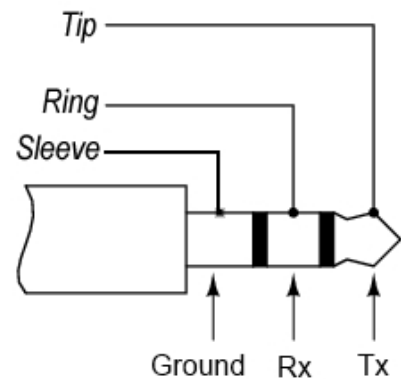
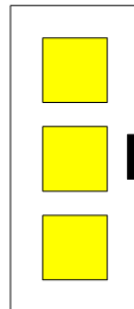
Normal Stereo Plug

For the Flux Capacitor IR Dongle, the jumpers are on the left pins (assuming straight-through cable):

Null Modem
jumper left



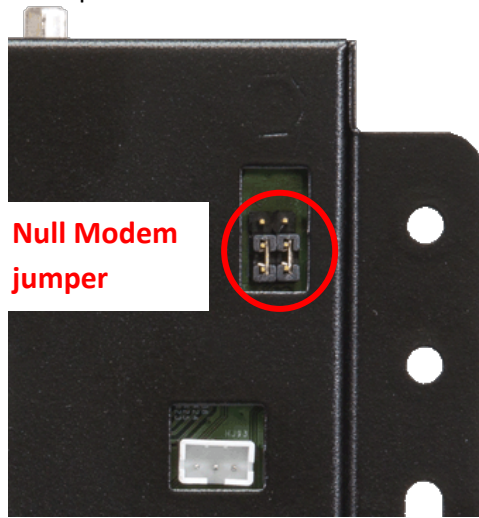
3-pin Molex



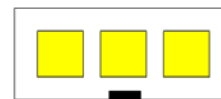
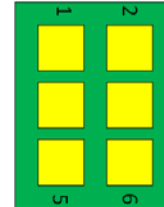
Normal Stereo Plug

3G Transmitter – 3.5mm

The pinout needed depends on the location of the null modem jumpers on the bottom of the device.



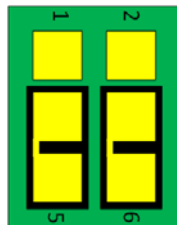
Null Modem
(no Jumper)



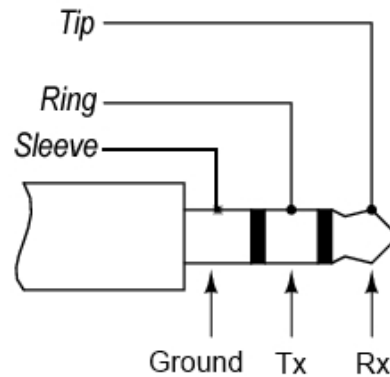
3-pin Molex

For serial control of most devices, the jumpers are on the bottom pins (assuming straight-through cable):

Null Modem
jumper bottom



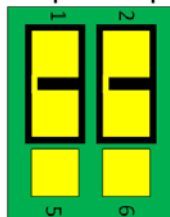
3-pin Molex



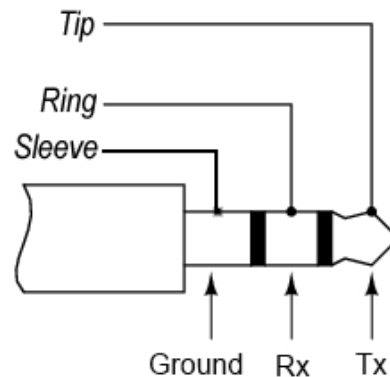
Normal Stereo Plug

For the Flux Capacitor IR Dongle, the jumpers are on the top pins (assuming straight-through cable):

Null Modem
jumper top



3-pin Molex



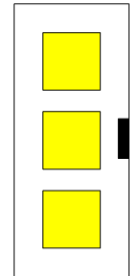
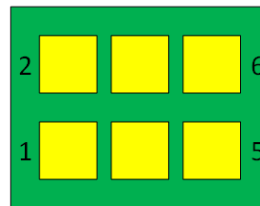
Normal Stereo Plug

3G+AVP Transmitter – 3.5mm

The pinout needed depends on the location of the null modem jumpers on the bottom of the devices.



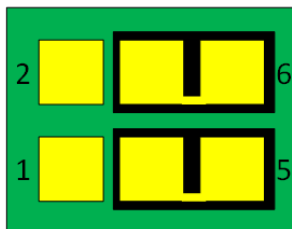
Null Modem
(no jumper)



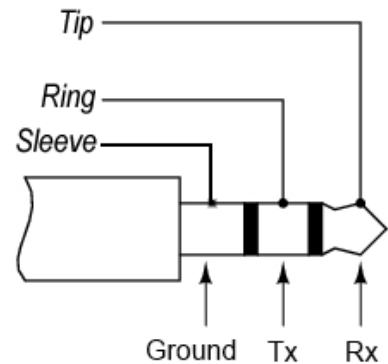
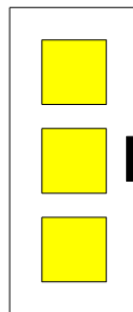
3-pin Molex

For serial control of most devices, the jumpers are on the right pins (assuming straight-through cable):

Null Modem
jumper right



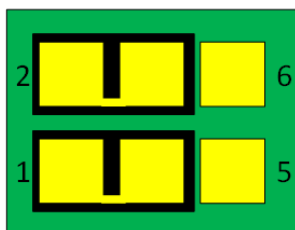
3-pin Molex



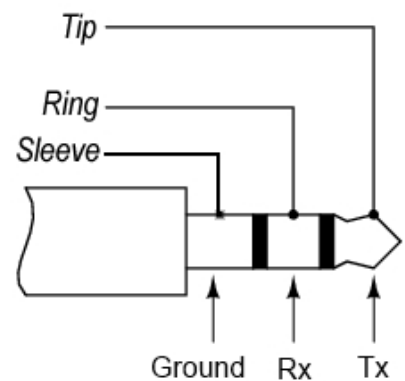
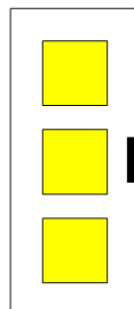
Normal Stereo Plug

For the Flux Capacitor IR Dongle, the jumpers are on the left pins (assuming straight-through cable):

Null Modem
jumper left



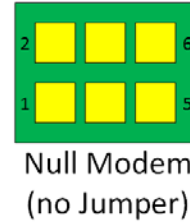
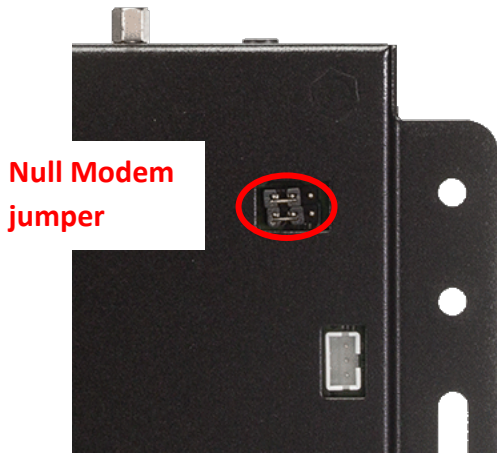
3-pin Molex



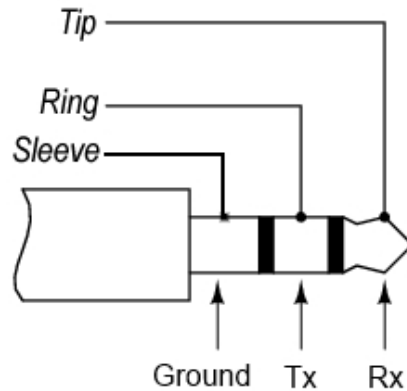
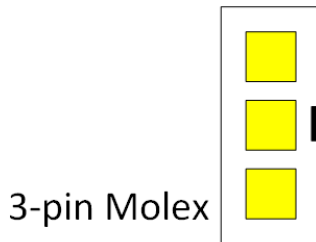
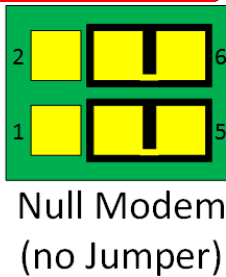
Normal Stereo Plug

3G+HIFI Transmitter – 3.5mm

The pinout needed depends on the location of the null modem jumpers on the bottom of the devices.

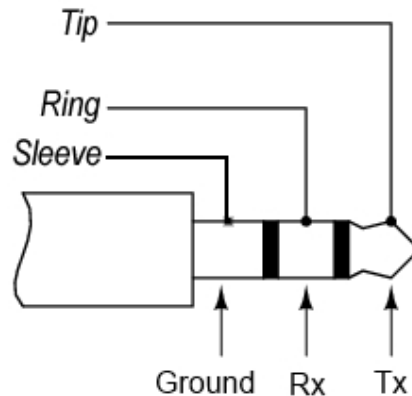
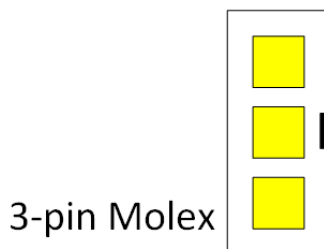
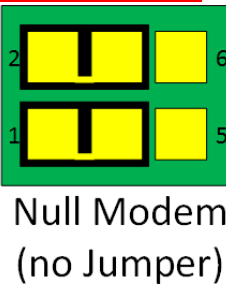


For serial control of most devices, the jumpers are on the right pins (assuming straight-through cable):



Normal Stereo Plug

For the Flux Capacitor IR Dongle, the jumpers are on the left pins (assuming straight-through cable):



Normal Stereo Plug

Troubleshooting

If the responding device is not acting as expected, please see below for possible reasons.

Baud Rate

The Baud Rate on the Just Add Power device(s) must match with the baud rate of the responding device. You can set the baud rate through the web interface of the Just Add Power device.

Serial over IP

☒ **Enable Serial over IP**

Operation Mode:

☐ **Type 1 - Dumb Redirection: (Recommended)**

Any RS232 sent to a Transmitter is sent out all connected Receivers' RS232

☒ **Type 2 - Guest Mode:**

TELNET directly to port 6752. Gives discrete 2-way RS232 access when TX/RX are linked

☐ **Type 3 - CLI Access:**

Advanced command-line access. Requires significant programming.

For advanced programmers ONLY.

Baudrate Setting for Type 1 and Type 2 RS232:

Baudrate:	9600	▼
Data bits:	8	▼
Parity:	None	▼
Stop bits:	1	▼

PuTTY

Replace the responding device with a computer running PuTTY. Setup PuTTY with the same baud rate settings as the Just Add Power device and monitor whether the commands are coming through and in what format they are coming in.

- 1) If no commands are coming through, the Transmit and Receive pins may be swapped. Try a Null Modem.
- 2) If no commands are coming through or what is coming through is not what was sent, the baud rate may be incorrect. Try changing the baud rate in PuTTY until the commands are coming through as expected.
 - a. Common baud rates:
 - i. 9600
 - ii. 38400
 - iii. 115200

Device Pinout

Confirm in the [Device Pinout](#) section above that the correct type of cable is being used (Null Modem or Straight Through) or that the Null Modem jumper is in the correct position (for 2G+ devices).