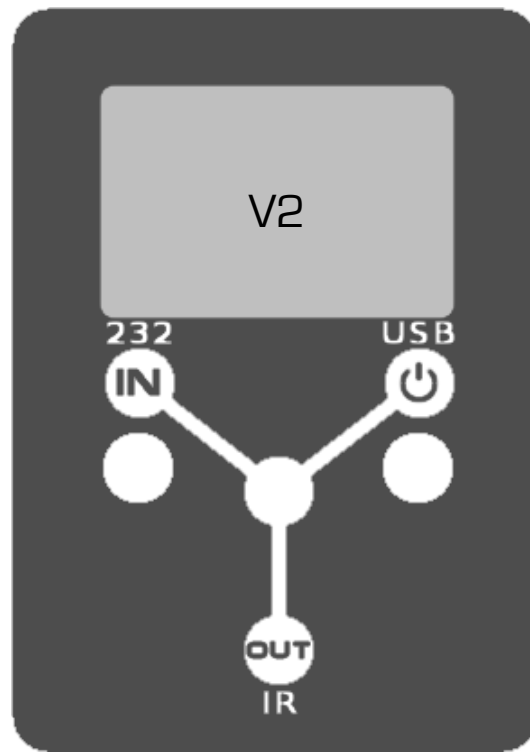


# ULTRA HD IP

Just Add  Power



## IR DONGLE

a.k.a.

# FLUX CAPACITOR

Revised 2018-12-12

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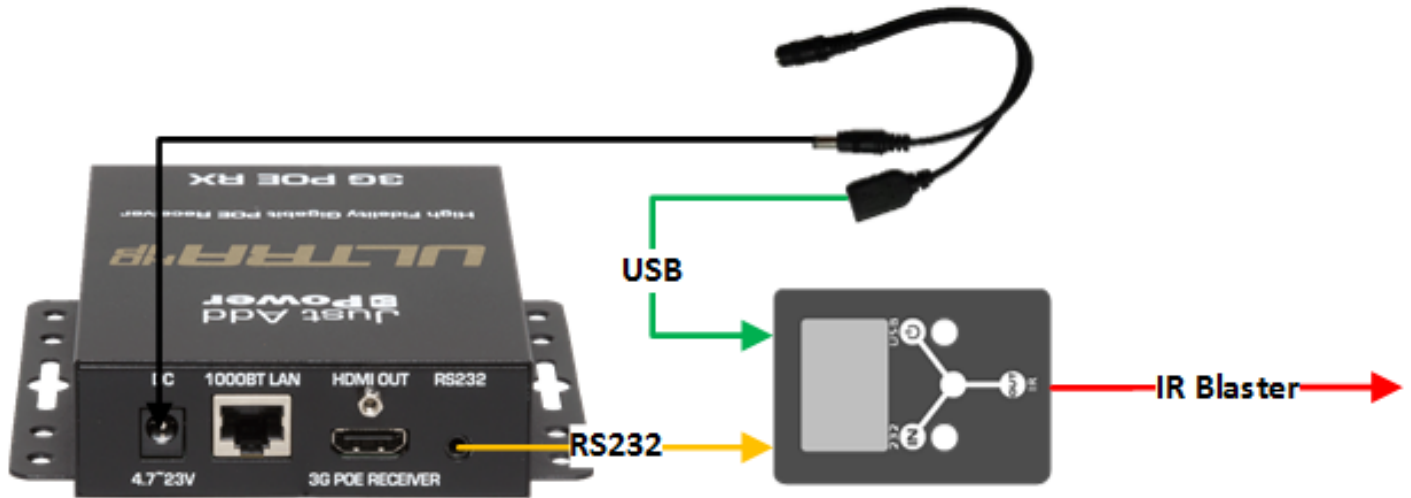
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# Introduction

Fear not! Just Add Power has rolled out the DeLorean, loaded it with Plutonium and banana peels, and jumped back to the future with an IR blaster in-hand.

The IR Dongle aka Flux Capacitor (VBS-HDIP-IRD) adds IR-functionality to Just Add Power by converting the serial port into an IR blaster.



## Included Hardware

The following hardware is included with the Flux Capacitor:

1. IR Emitter (3V, 0.1A)
2. 3.5mm-to-3.5mm stereo plug cable
3. USB A Male to Micro USB cable
4. USB power tap – Y cable



IR Emitter



Stereo plug

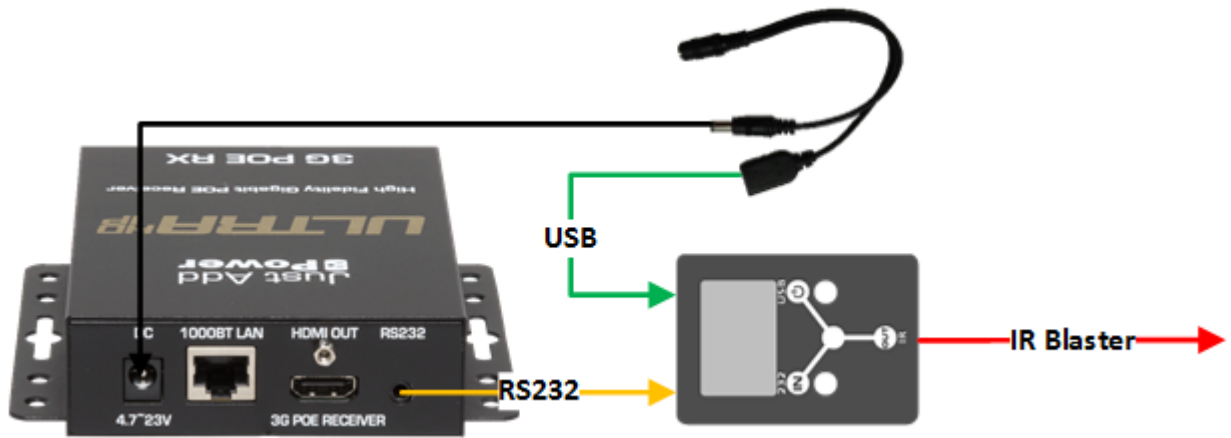


USB A Male  
to Micro USB



USB power tap

# Physical Connections

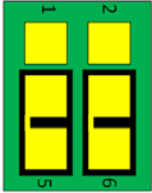
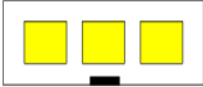
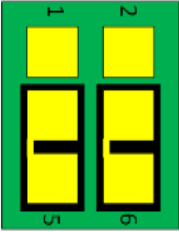
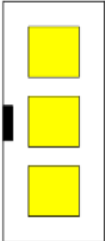


When a Just Add Power device is being powered over POE, the DC connector outputs enough wattage to power the Flux Capacitor when using the included USB power tap.

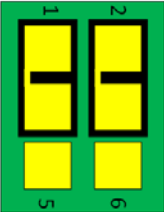
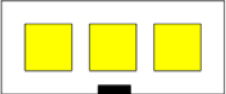
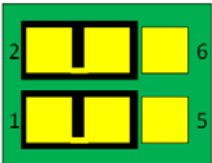

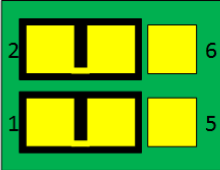
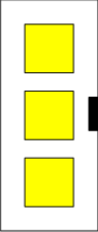
# Null Modem Positioning

The null modem jumper on the bottom of 2GΩ/3G and 3G devices must be in the **crossover** wiring position so that the Transmit and Receive pins are aligned between the IR Dongle and the Just Add Power device.

## Receiver













Model Number - Description	Null Modem Jumper Position
<p>505POE – 2GΩ/3G</p> <p>508POE – 3G</p> <p>509POE – 3G Daisy-Chain</p>	<p>Null Modem jumper bottom</p>   <p>3-pin Molex</p>
<p>515POE – 2GΩ/3G+</p> <p>518AVP – 3G+AVP</p>	<p>Null Modem jumper bottom</p>  <p>3-pin Molex</p> 

# Transmitter

Model Number - Description	Null Modem Jumper Position
<p><b>705POE – 2GΩ/3G</b></p> <p><b>707POE – 3G</b></p>	<p>Null Modem jumper top</p>   <p>3-pin Molex</p>
<p><b>715POE – 2GΩ/3G+</b></p> <p><b>718AVP – 3G+AVP</b></p>	<p>Null Modem jumper left</p>   <p>3-pin Molex</p>
<p><b>717HIFI – 3G+HIFI</b></p>	<p>Null Modem Jumper left</p>   <p>3-pin Molex</p>

# Enable Layer 3

A Static Route is needed in order for a Control System or other network devices to access the IR Dongle

Feature	Layer 2	Layer 3
Matrix Switching		
RS-232 control of endpoints	 Limited	
CEC control		
Video Wall management		
Logical USB enable/disable		
On-screen Display		
Image Pull – preview video from a source or display		
Image Push – upload a background image		
<b>Flux Capacitor IR Dongle</b>		

There are two ways to enable Layer 3 access to Just Add Power devices:

1. The router in the system supports Static Routing. [Add a Static Route](#) to the router.
2. Change the [default gateway](#) of the Control System.

## Router with Static Route

1. Confirm that the router support Static Routing. If it does not, follow [Change Default Gateway](#) instructions instead.
2. Locate the Static Route information in the JADConfig Report
3. Log into the router Static Route section. Static Route is often in Network, Routing, or Advanced sections.

**Model: ABR-4400**  
Firmware Version: 4.0.7

**Routes**

**Active Routes**

Destination IP	Subnet Mask	Gateway	Metric	Interface
default	0.0.0.0	108.191.224.1	0	WAN
10.0.0.0	255.0.0.0	192.168.1.254	3	LAN
108.191.224.0	255.255.248.0	0.0.0.0	0	WAN
172.16.0.0	255.255.0.0	192.168.1.253	10	LAN
192.168.1.0	255.255.255.0	0.0.0.0	0	LAN
192.168.2.0	255.255.255.0	192.168.1.10	2	LAN
192.168.100.0	255.255.255.0	192.168.1.50	3	LAN

**Add Static Route**

Description	Interface	Destination IP	Netmask	Gateway	Metric	Modify
<input type="text"/>	LAN	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Add Cancel

**Static Route page on a Luxul ABR-4400**

4. Enter the Static Route information from the JADConfig Report into the router. If asked for a Metric, use 10.

Note that the following static route must be added to your router so that the control system can access the JAP devices:

Network: 192.168.200.0      Netmask: 255.255.255.0      Gateway: 192.168.1.77

**Static Route information from JADConfig Report**

### Add Static Route

Description	Interface	Destination IP	Netmask	Gateway	Metric	Modify
Just Add Power	LAN	192.168.200.0	255.255.255.0	192.168.1.77	10	Add Cancel

**Adding Static Route to Luxul ABR-4400**

5. Done. All devices on the network can access Just Add Power devices.



## Change Default Gateway

These steps will give a single device Layer 3 access to Just Add Power devices. Use this method if the router does not support Static Routing or to limit which devices can access Just Add Power devices.

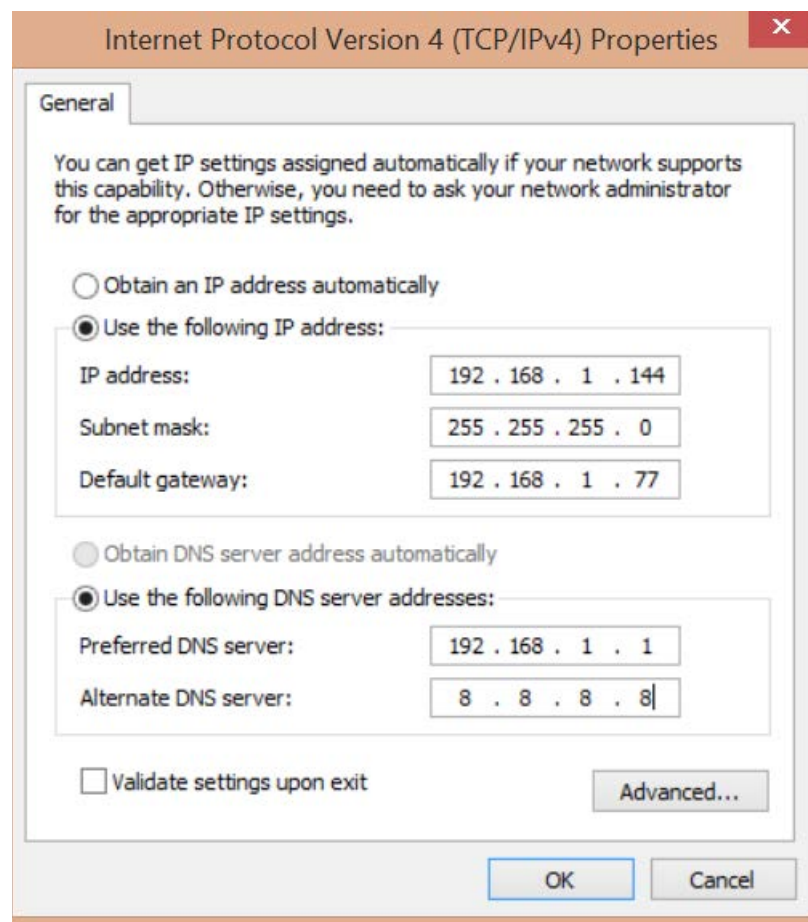
1. Locate the Static Route information in the JADConfig Report

Note that the following static route must be added to your router so that the control system can access the JAP devices:

Network: 192.168.200.0      Netmask: 255.255.255.0      Gateway: 192.168.1.77

Static Route information from JADConfig Report

2. Access the IP details of the computer/control system.
3. Manually set the IP details so that the Default Gateway of the computer/control system matches the Default Gateway given in the JADConfig Report.



Manually set Default Gateway

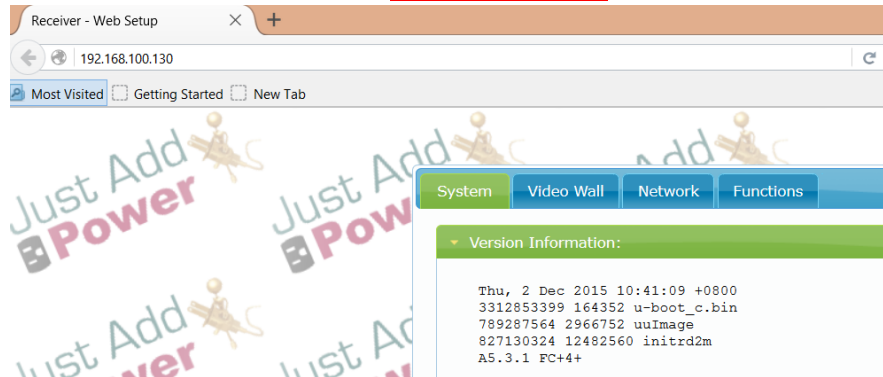
**Note:** Devices will still have internet access as long as DNS information is entered correctly.

4. Done. The computer/control system can now access Just Add Power devices.

# Device Settings

## V1

1. Update all Just Add Power devices to firmware **A5.31 FC+4+** or later.



2. [Enable Layer 3](#) routing
3. Set the serial mode on the Just Add Power device to Type 3 and baud rate to 9600
  - a. Log into the web interface
  - b. Go to the Functions tab
  - c. Scroll down to Serial over IP and select Type 3 – CLI Access
  - d. Set baud rate to 9600-8-None-1 (default setting)
  - e. Select Apply

**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

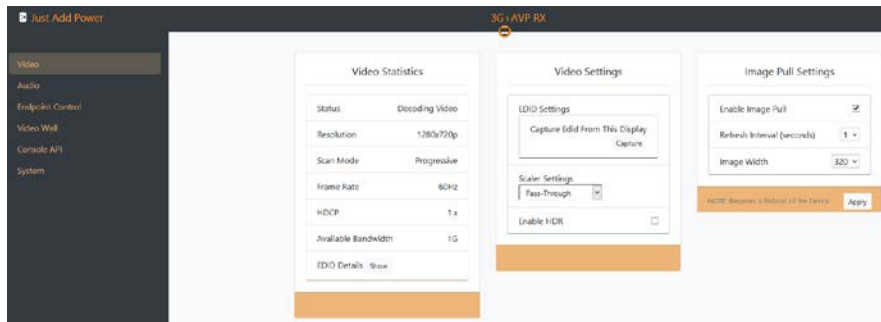
**Parity:** None

**Stop bits:** 1

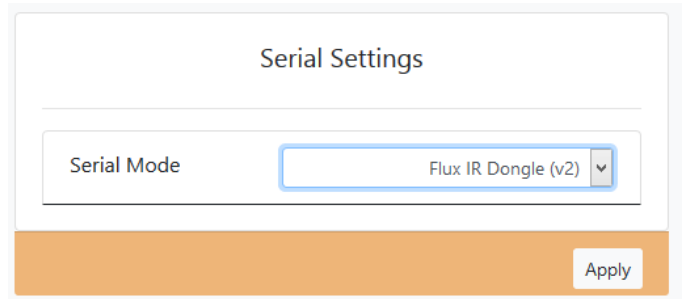
4. Reboot the unit.

# V2

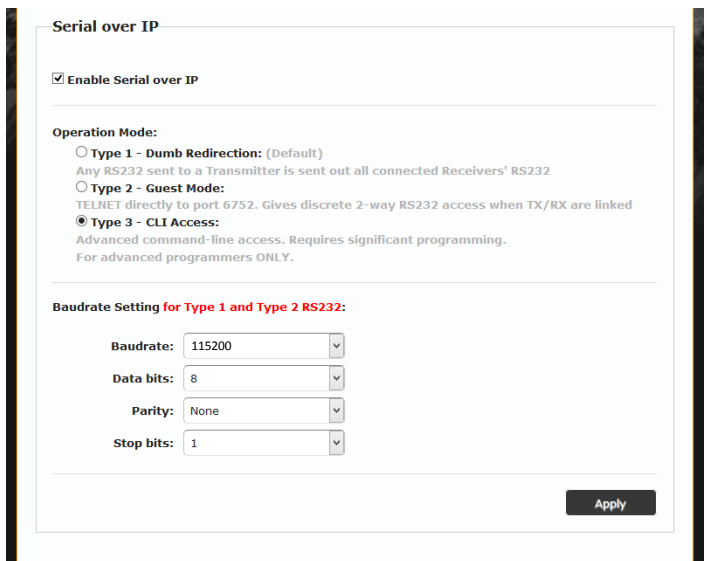
1. Update all Just Add Power devices to firmware:
  - a. **A6.5.5b** for 2G Systems
  - b. **justOS Bx.x.x** for 3G Systems



2. [Enable Layer 3](#) routing
3. For 3G devices on justOS, set the serial mode on the Just Add Power device to Type 3 and baud rate to 9600
  - a. Log into the web interface
  - b. Go to Endpoint Control
  - c. Select Serial Mode Flux IR Dongle (v2)
  - d. Select Apply



4. For 2G devices on A6.5.5b
  - a. Log into the web interface
  - b. Go to the Functions tab
  - c. Scroll down to Serial over IP and select Type 3 – CLI Access
  - d. Set baud rate to 115200-8-None-1
  - e. Select Apply



5. Reboot the unit.

# Send IR Codes

If using a Control System (AMX, Control4, Crestron, RTI, etc.), please see the documentation associated with that Control System.

When using a PC for testing:

1. Telnet to the IP address of the Just Add Power device at port 4998.
2. Enter IR commands in one of the following syntaxes:
  - a. Where Pronto codes are used and '\r' is a carriage return:

```
0000 0000 0000 0000 0000 0000 0000\r
```

- b. Where the 'sendir,1:1,1' Global Cache-accepted syntax is used with '\r' as carriage return:

```
sendir,1:1,1,38000,1,1,127,63,16,16,16,48,16,16,16,16,16,16,16,16,16,16,16,16,16,16,16,16,16,16,16,16,48,16,16,16,1000\r
```

# Troubleshooting

## It is not working

There are many parts to making a Flux Capacitor function correctly. Check these parts:

1. Layer 3 is enabled – Ping the Just Add Power device from a device with the correct network settings for Layer 3.
2. 5-volt power applied to Flux Capacitor – This can be done by the included Y-cable, a power outlet, the USB port on a 2G+ or 3G+ device, or an **active** 5V USB port on an endpoint device.
3. Serial cable and Null Modem jumper position are correct – Feed the serial output of the Just Add Power device into a computer serial terminal (like PuTTY) to confirm that commands are being sent out of the Just Add Power device as expected. See [Null Modem Positioning](#) for pinout information.
4. IR codes for the TV are correct – Try sending the IR codes through another method to confirm that the IR codes are correct.
5. The IR Dongle Version (V1 or V2) is correct
6. Control system has been configured correctly