



This device allows Canon cameras with the SDM / CHDK enhancement to be remotely triggered by a RC receiver. Up to 2 RC channels can be used, resulting in 7 different triggers to the camera.

More info on SDM / CHDK at <http://www.gentles.ltd.uk/gentwire/usb.htm>

## Servo Operation

1. Connect the 3pin connector to a standard RC Receiver Servo output: +ve to **Red**, -ve to **Black**, servo to **Yellow/white**.
2. If using the second channel, connect RC to the single wire connection.  
(note this cable only has one wire to prevent power supply errors)
3. Connect the USB connector to the Camera USB port.
4. Enable the SDM / CHDK script on the camera.

Movement of the RC Transmitter stick from one extreme to the other will send a single trigger to the camera at either end and in the middle. The example scripts, or user generated scripts, can detect the following pulse lengths on the USB power with the `get_usb_power` function which counts with 10mS resolution:

Channel 1	USB Pulse	Channel 2	USB Pulse
Low position	30mS	Low position	120mS
Mid position	60mS	Mid position	150mS
High Position	90mS	High Position	180mS

In addition to the above, a 210mS pulse will be sent every 5 seconds if neither servo is connected to a RC receiver. If the RC receiver loses communication with the transmitter and the receiver stops sending pulses to the servos, then the USB output will go high continuously until communication is re-established.

## Joy-switch

The system can be triggered from standard joy-sticks on the RC transmitter, or by the pre-programmed switches on some RC systems. When using switches it is possible to move from end to end with the channel without producing the mid position pulse because the gentWIRE-USB2 averages 5 servo pulses before reacting to prevent false signals.

## Specification

Supply Voltage	3 to 5.5V. Operation is not guaranteed <3V). (absolute maximum voltage, 6.5V)
Supply Current	Average 1mA
Servo Pulses	Pulse threshold around 1.25 and 1.75mS, Pulses should be less than Supply V + 0.7V.
Weight	9 grams including 250mm wires & connectors.

## Scripting

Make sure that the camera is a Canon, it has been enhanced with SDM or CHDK, see <http://www.gentles.ltd.uk/gentwire/usb.htm>.

Please start by using the scripts provided on the site above to understand how to detect USB power in 10mS increments. Once familiar with the concept scripts can be easily created to trigger changes to the camera operation or trigger sequences of tasks.

## Diagnostics

Use the "test" script to check operation of the **gentled** in case your script is not fully working. <http://www.gentles.ltd.uk/gentwire/usb.htm>

Use a switch between the black and blue wires rather than the servo input, as this will distinguish between servo and usb-link problems. Use the RC system joy-stick to maximise the servo operation and decrease it's susceptibility to noise, then try operation on an auxiliary switch.

Note that some models of Camera need at least 4volts to trigger via USB.