

## MANUAL BADRED – FORD MUSTANG S197 EU TAIL LIGHTS KIT

Before you start assembling the modules, watch carefully our tutorial videos on our youtube channel:

[https://www.youtube.com/channel/UCCm8Q0hToxH8q3l0P99NV\\_g](https://www.youtube.com/channel/UCCm8Q0hToxH8q3l0P99NV_g)

Video of the installation of LED modules in the lamp:  
<https://www.youtube.com/watch?v=lhaszNZzXDE&t=129s>

### PRODUCT DESCRIPTION AND INSTALLATION:

Rev 1.1

The transmitter and receiver module has a status LED that signals the following states:

steady light = module not paired  
fast blinking every 100ms = pairing mode on  
slow blinking 1s = normal operation, the module is paired

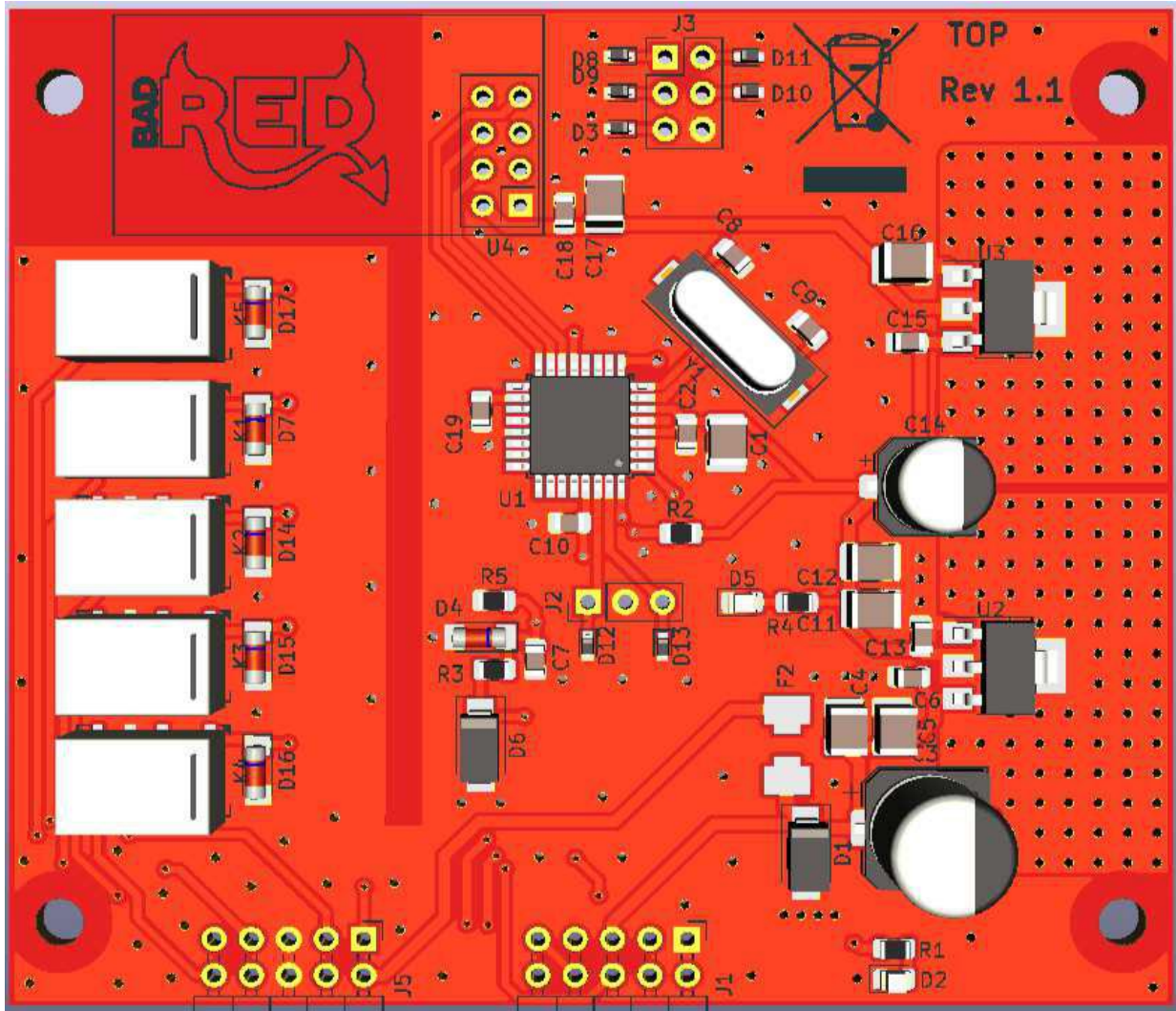
To pair the receiver module with the transmitter:

connect the transmitter module to the power supply  
in the receiver module, press the pairing button and while holding it, connect the receiver's power supply.  
status LEDs should start flashing quickly in both modules  
once pairing is complete, the modules will reboot themselves and go to normal operation.

If pairing is unsuccessful, the LEDs will stay on steadily.

Installation with the added badRED light switch adds the functionality of automatically switching on the lights after dusk. Before dusk in auto mode (drawing of a house with lights), the marker lights and parking lights should light up as daytime running lights.

BadRED transmitter connector layout:



BadRED light switch connector = J1:

10	9	8	7	6
5	4	3	2	1

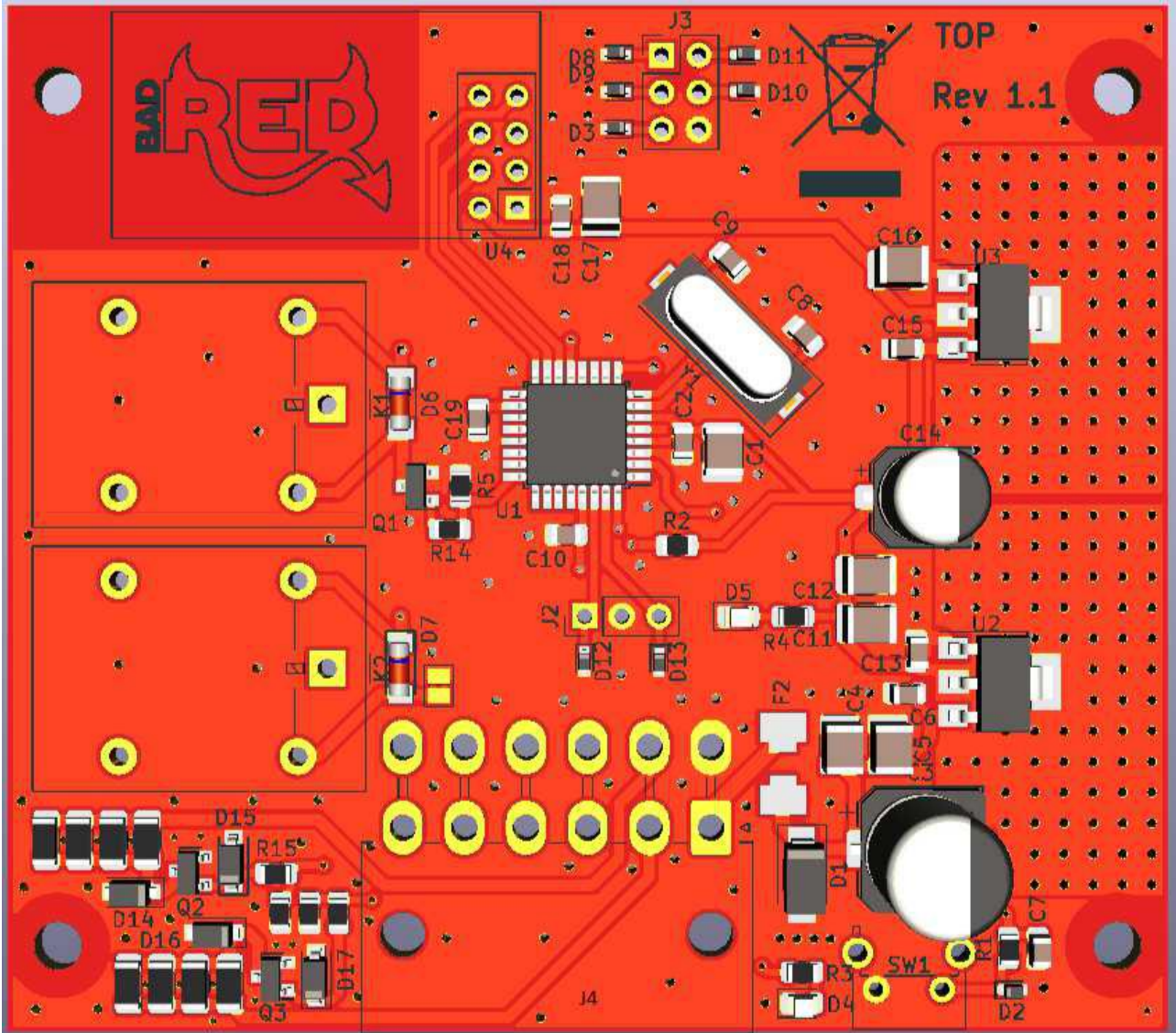
1 = day lights	6 = GND power
2 = AUTO mode / step 1	7 = rear fog lamps
3 = parking lights	8 = 12V power
4 = backlight	9 = lights off / step 0
5 = front fog lamps	10 = backlight

Ford Mustang s197 (2013-2014) factory light switch = J5

1	2	3	4	5
6	7	8	9	10

1 = backlight	6 = lights off
2 = parking lights	7 = day lights
3 = GND power	8 = GND power
4 = AUTO mode	9 = not used
5 = front fog lamps	10 = 12V power

BadRED receiver connector layout:



J4 main connector:

12	11	10	9	8	7
6	5	4	3	2	1

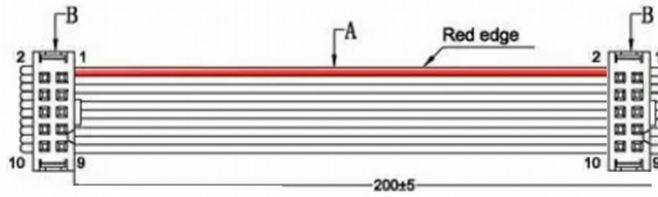
1 = 12V power supply, 2.5A fuse required on wire  
 2 = right lamp control signal  
 3 = right turn signal input - module 1  
 4 = stop - trunk  
 5 = stop - left lamp  
 6 = stop - right lamp

7 = GND power  
 8 = left lamp control signal  
 9 = left turn signal input - module 1  
 10 = fog lamp left  
 11 = fog lamp right  
 12 = stop - signal input

SW1 = pairing button

CONNECTOR TAPE PLUG-IN  
TO BADRED TRANSMITTER (J1)

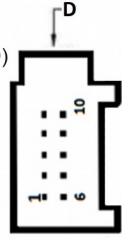
CONNECTOR TAPE PLUG-IN  
BADRED LIGHT SWITCH



PIN CONNECTION  
SOCKET (B) -> SWITCH (D)

- 2 -> 10
- 4 -> 9
- 6 -> 8
- 8 -> 7
- 10 -> 6
- 1 -> 5
- 3 -> 4
- 5 -> 3
- 7 -> 2
- 9 -> 1

BADRED LIGHT  
SWITCH SOCKET



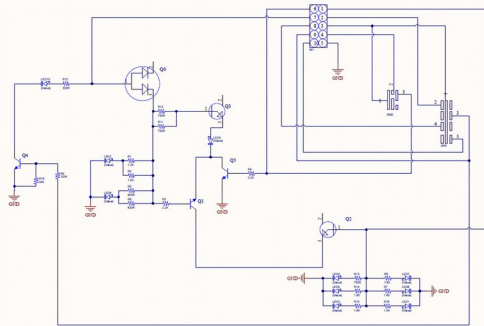
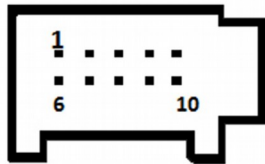
BADRED LIGHT SWITCH SOCKET/CONNECTOR = J1

10	9	8	7	6
5	4	3	2	1

- 1 = DAY LIGHTS
- 2 = AUTO MODE / STEP 1
- 3 = PARKING LIGHTS
- 4 = BACKLIGHT
- 5 = FRONT FOG

- 6 = GND POWER
- 7 = REAR FOG (BADRED MODULES)
- 8 = 12V POWER
- 9 = LIGHTS OFF / STEP 0
- 10 = BACKLIGHT

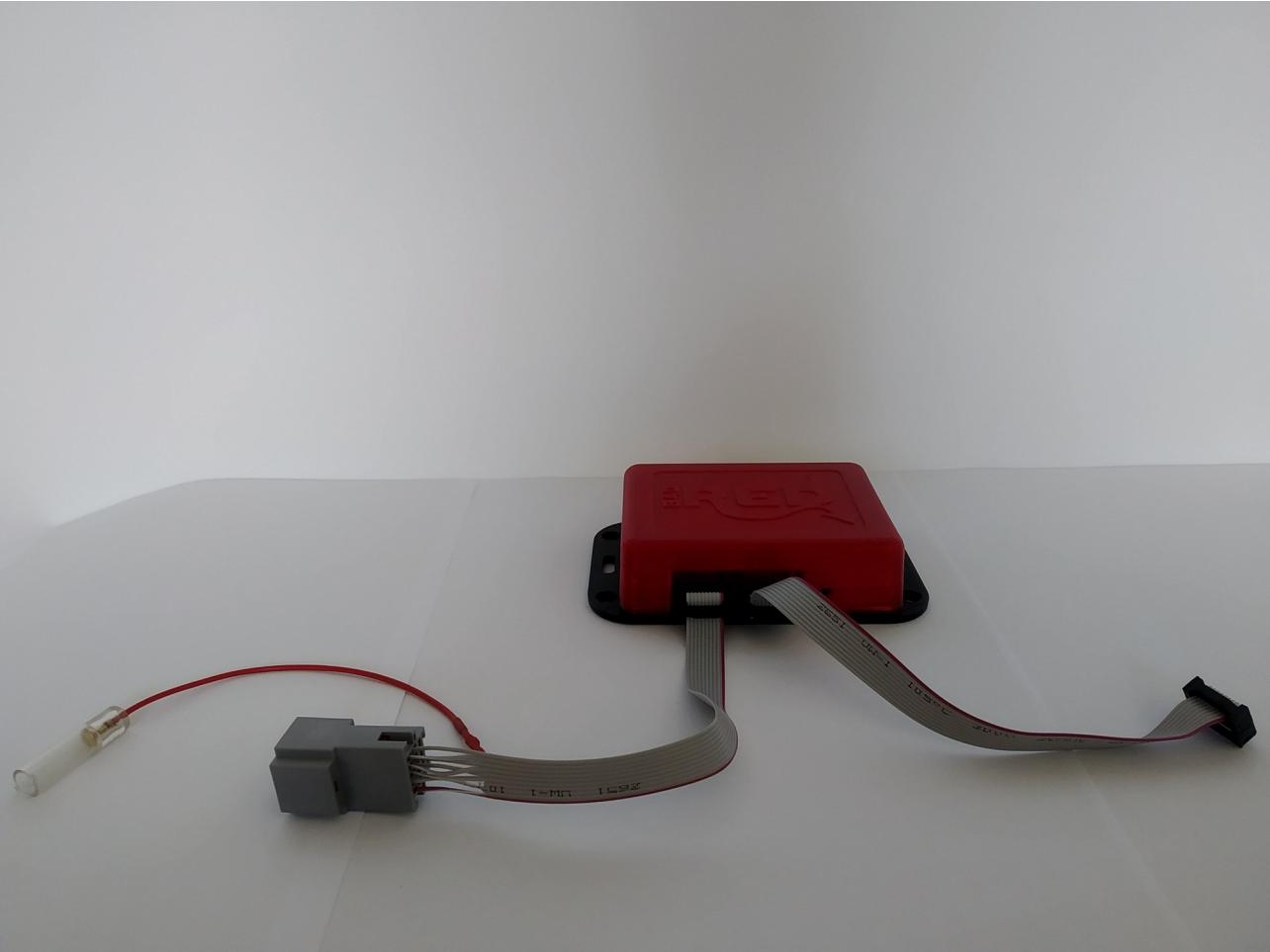
BADRED LIGHT SWITCH



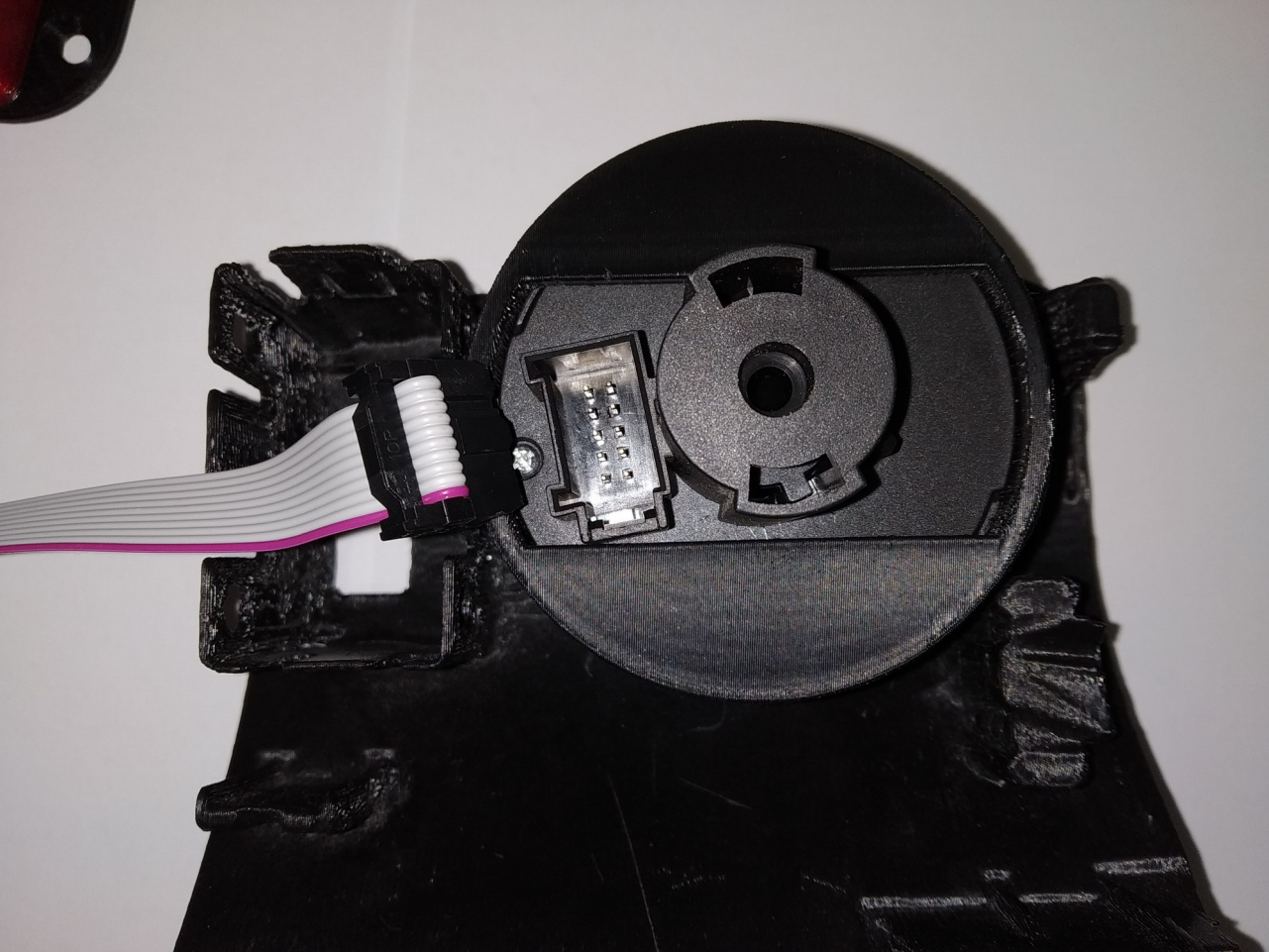
BADRED LIGHT SWITCH DIAGRAM



Correct installation of the cables to the transmitter module installed in the cockpit.



Correct installation of the cable from the badRED transmitter module to the badRED light switch:

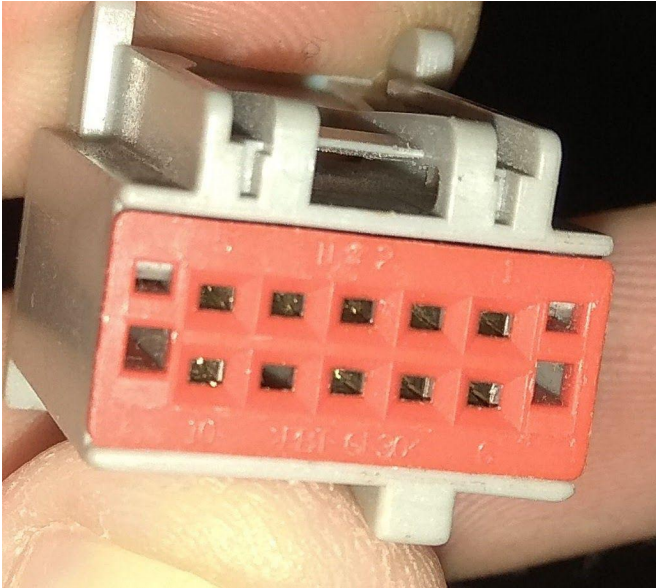


Correct installation of the cable from the badRED transmitter module to the badRED light switch:



Signals from the factory light switch cube plugged into the badRED transmitter connector:

1) Light switch



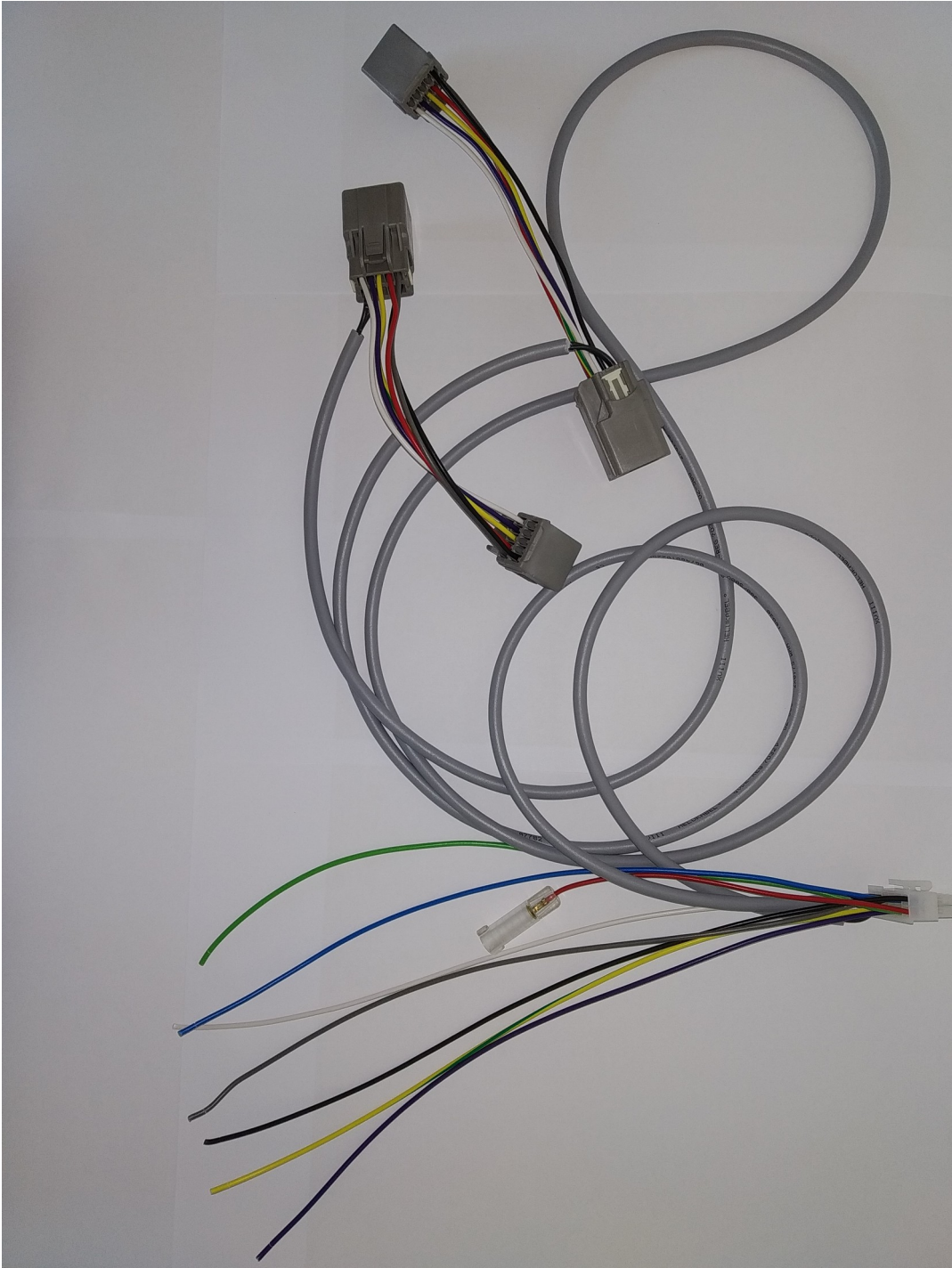
Pins

5	4	3	2	1
10	9	8	7	6

Signals

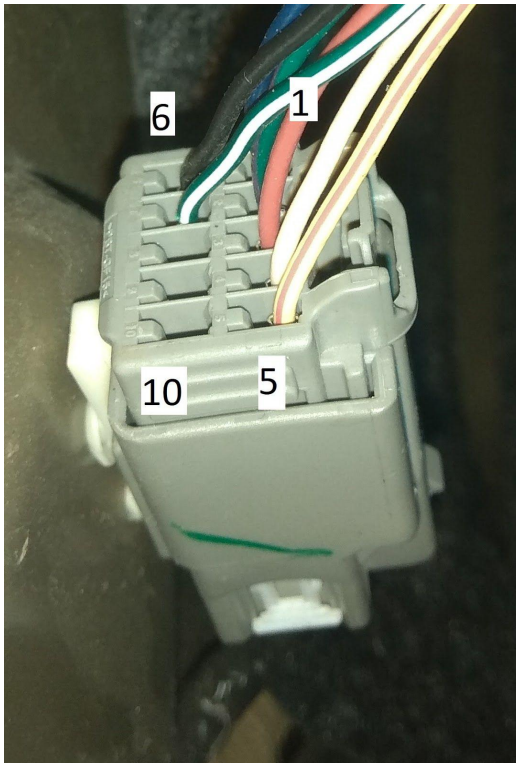
1 - backlight	6 - lights off
2 - parking lights	7 - day lights
3 - GND power	8 - GND power
4 - AUTO mode	9 - not used
5 - front fog lamps	10 - led indicator for front fog light





BadRED receiver module wiring harness plug-in in BCM Ford Mustang s197 (2013-2014):

2) Lamp sockets - rear

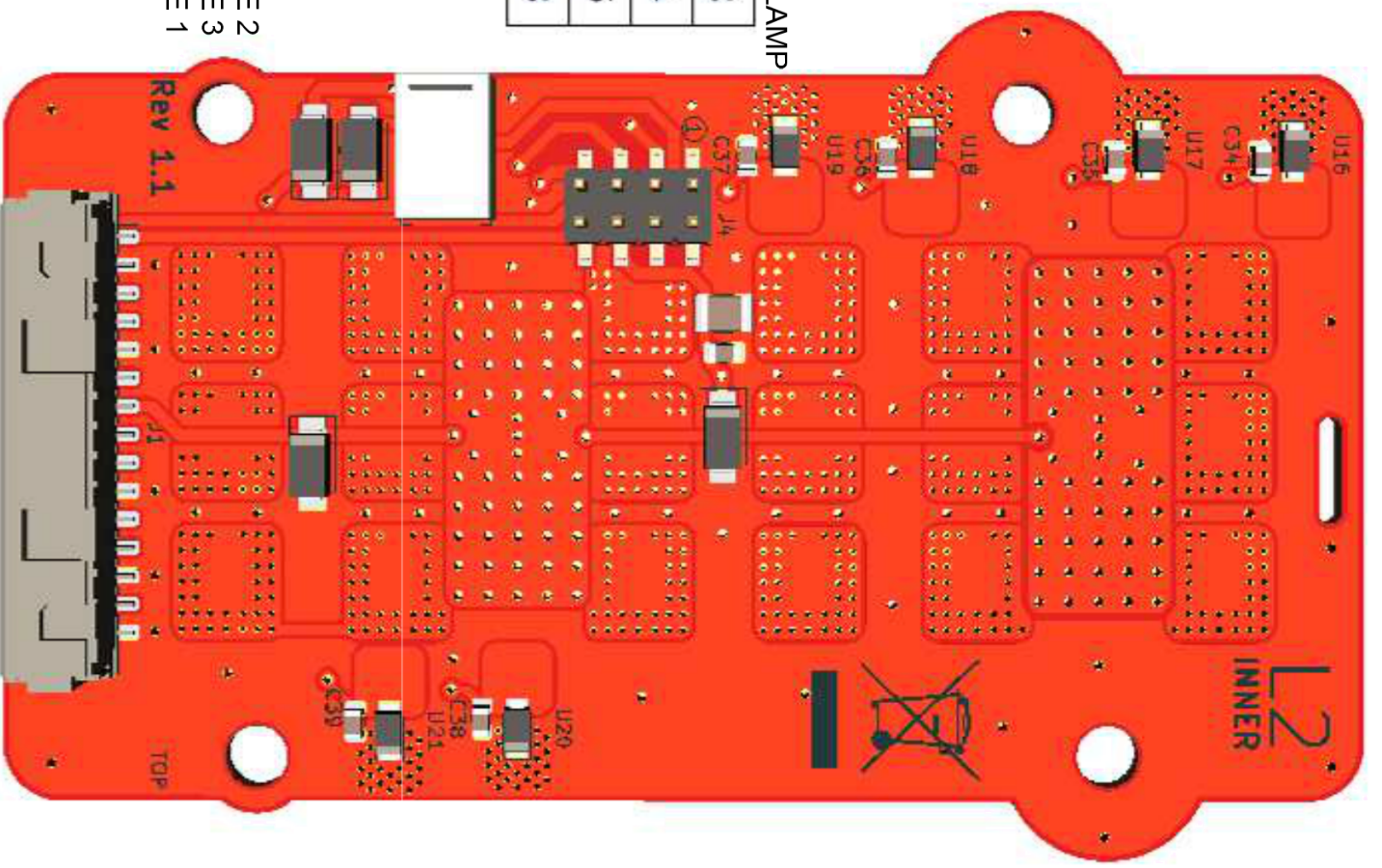


Pins

1	2	3	4	5
6	7	8	9	10

Signals

1 - Reverse 2 - day lights 3 - turn signal 3 4 - turn signal 2 5 - turn signal 1	6 - GND power 7 - control signal 8 - not used 9 - not used 10 - not used
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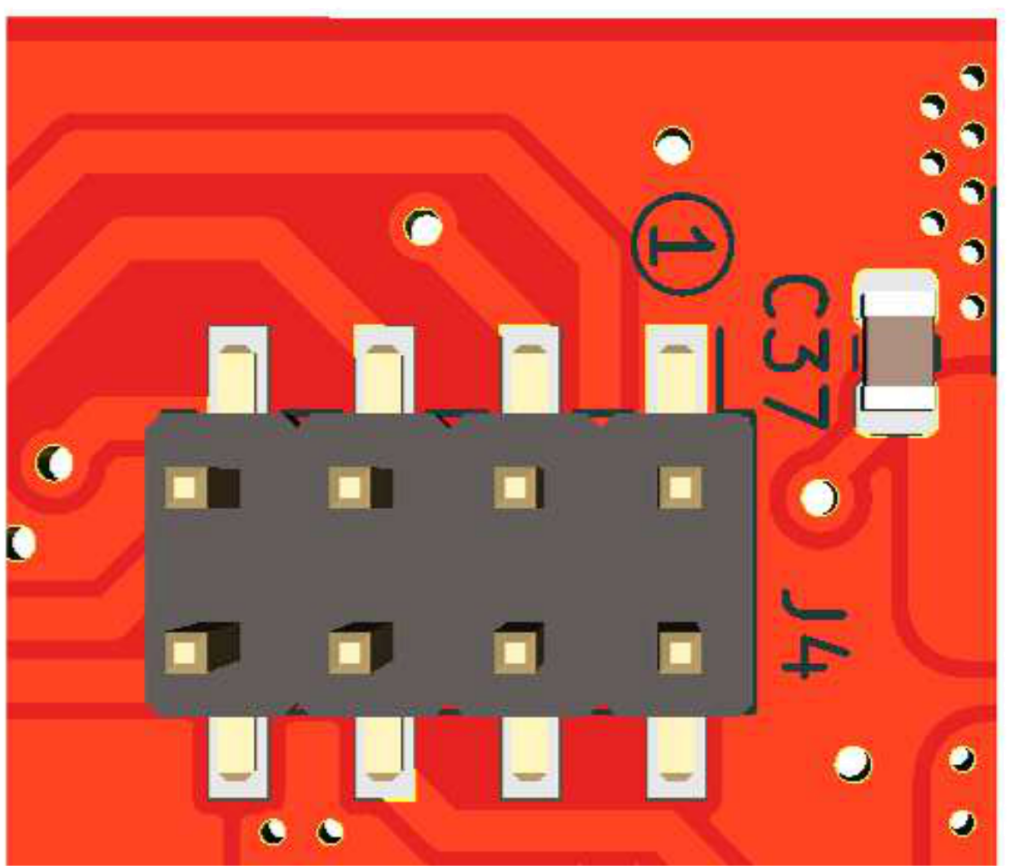


PINS LEFT LAMP

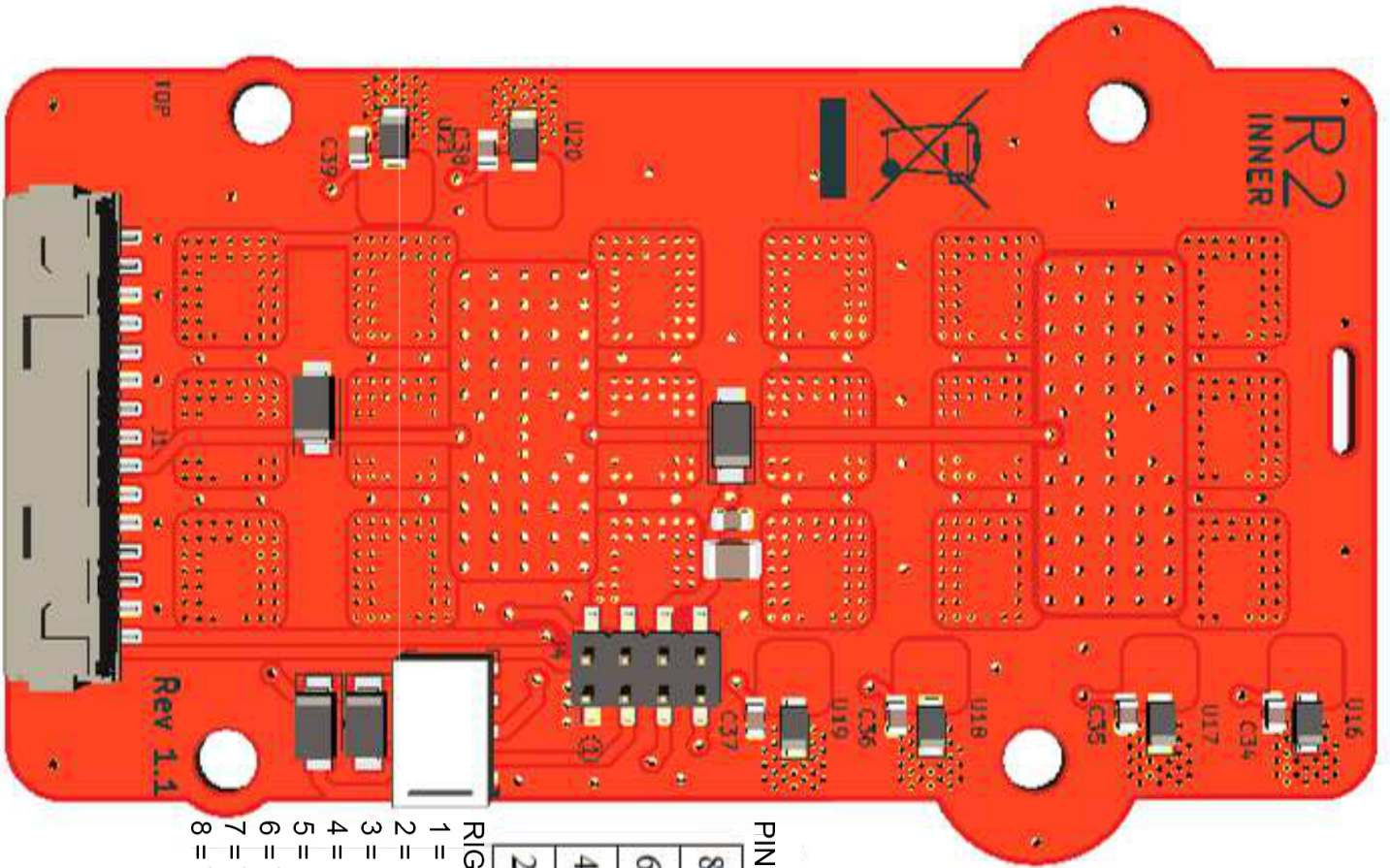
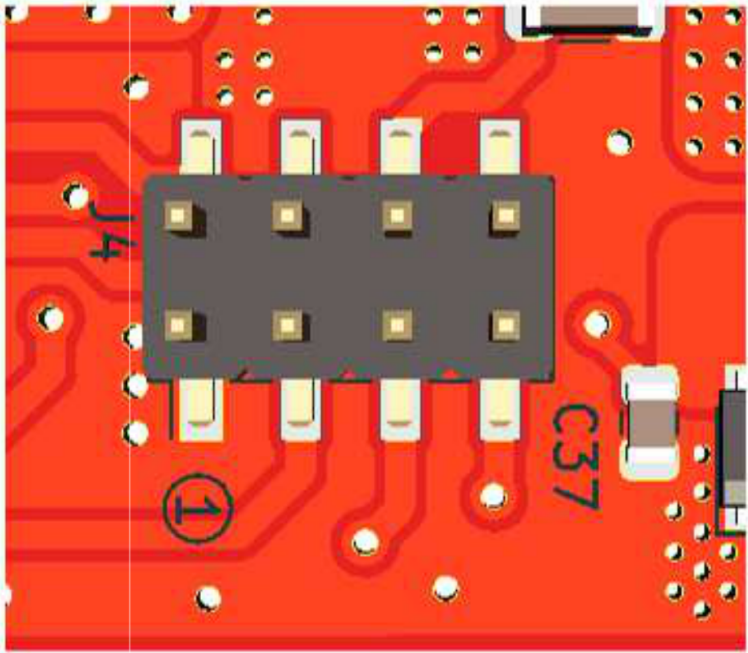
1	2
3	4
5	6
7	8

LEFT MODULES:

- 1 = GND
- 2 = STOP
- 3 = FOG
- 4 = DAY LIGHTS
- 5 = REVERSE
- 6 = TURN SIGNAL MODULE 2
- 7 = TURN SIGNAL MODULE 3
- 8 = TURN SIGNAL MODULE 1







PINS RIGHT TO CAMP

8	7
6	5
4	3
2	1

RIGHT MODULES:

- 1 = GND
- 2 = STOP
- 3 = FOG
- 4 = DAY LIGHTS
- 5 = REVERSE
- 6 = TURN SIGNAL MODULE 2
- 7 = TURN SIGNAL MODULE 3
- 8 = TURN SIGNAL MODULE 1

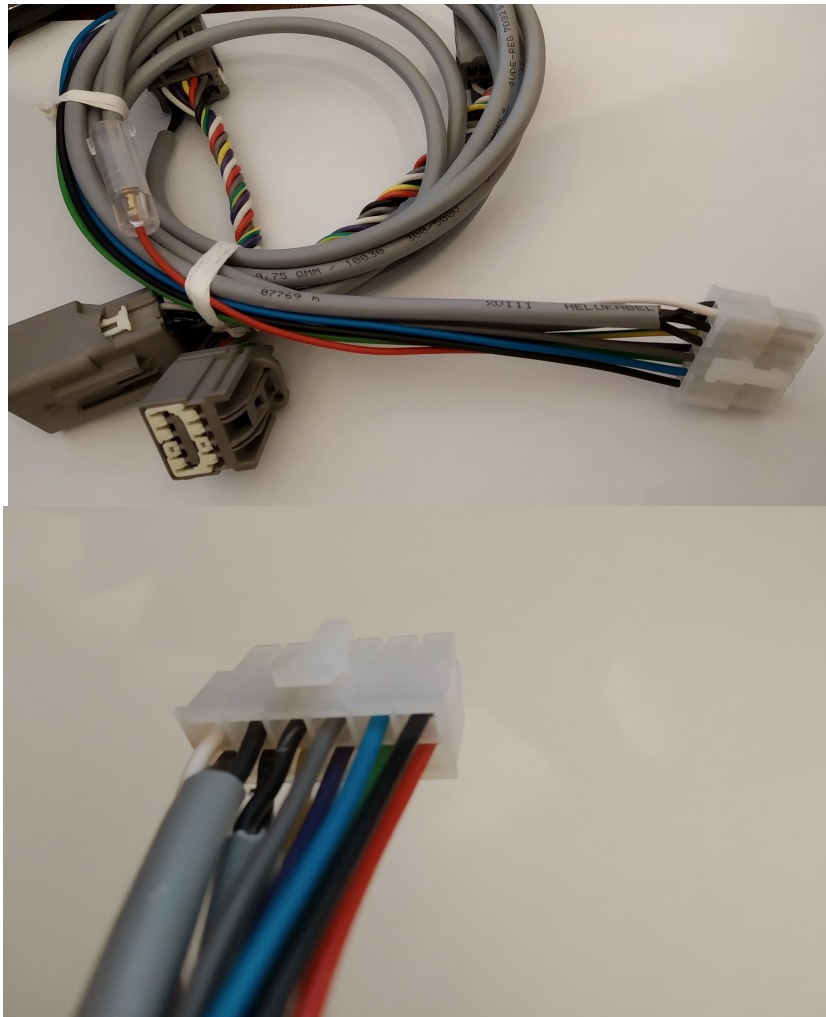
Connect the headRED receiver harness to the BCM harness:



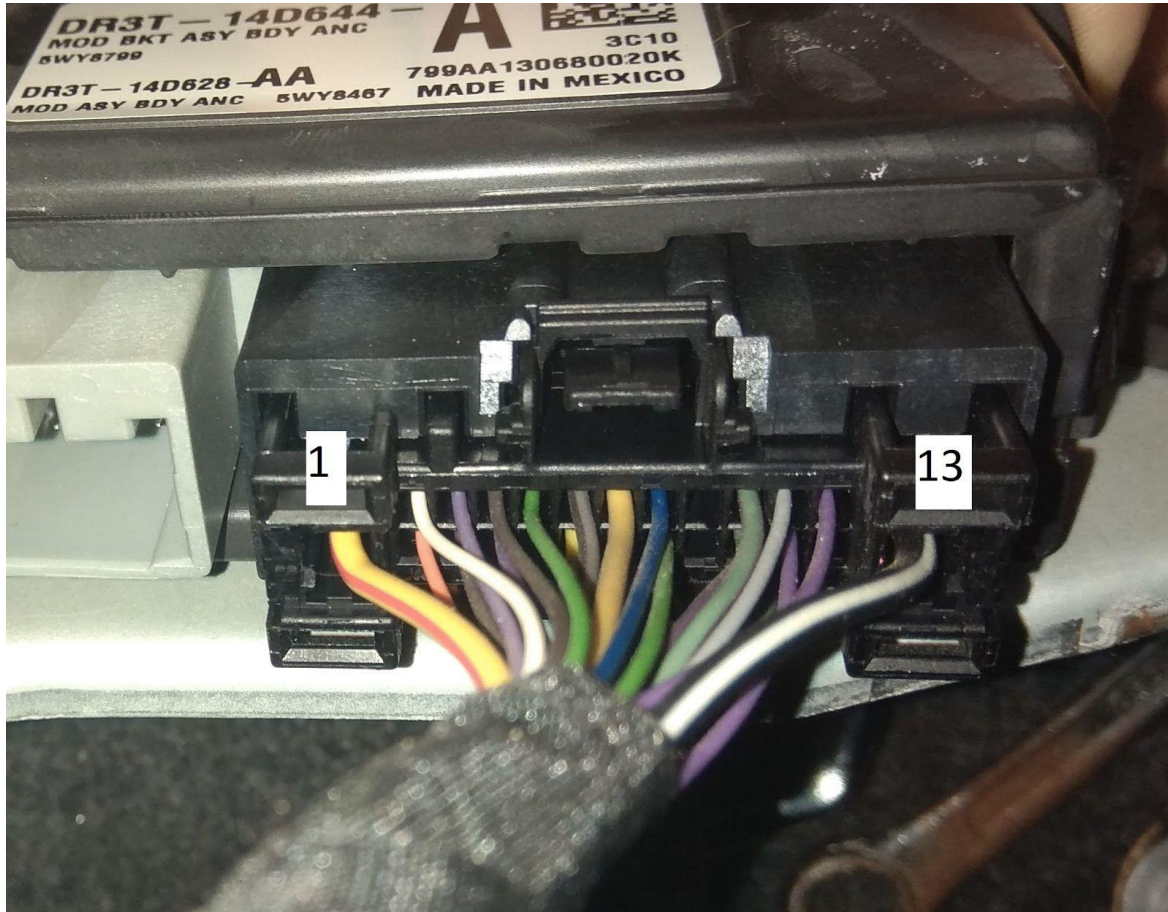
BadRED main connector J4 (WHITE PLUG):

12	11	10	9	8	7
6	5	4	3	2	1

1 = 12V zasilanie, wymagany bezpiecznik 2,5A1 = 12V power supply, 2.5A fuse required on the cable – wire <b>RED</b>	7 = GND power – wire <b>BLACK</b>
2 = right control lamp - wire <b>GREEN</b>	8 = left lamp control - wire <b>BLUE</b>
3 = right turn signal input - module 1 – wire <b>VIOLET</b>	9 = left turn signal input - module 1 - wire <b>GRAY</b>
4 = stop – trunk – wire <b>YELLOW-GREEN</b>	10 = left fog lamp
5 = stop – left lamp	11 = right fog lamp
6 = stop – right lamp	12 = stop – input signal - wire <b>WHITE</b>



3) BCM Connector (BLACK PLUG):



Black BCM plug pins:

	12	3	4	5	6	7	8	9	10	11	12	13
	24	23	22	21	20 XX	19 XX	18	17 X	16	15	X14	

#### Signals

- 1 - 12V power supply **YELLOW-RED** wire
- 2 - left turn signal - module 3
- 3 - left turn signal - module 2
- 4 - left turn signal - module 1 - wire **GRAY**
- 8 - left control - wire **BLUE**
- 13 - power GND - wire **BLACK-WHITE**
- 18 - right control - wire **GREEN**
- 19 - STOP input signal - wire **WHITE-VIOLET**
- 20 - STOP signal trunk - wire **YELLOW-GRAY**
- 22 - right turn signal - module 1 - wire **VIOLET**
- 23 - right turn signal - module 2
- 24 - right turn signal - module 2
- X - no wire going into the plug
- XX- cut the wire

**Connection of the BCM installation wires (black plug) with the badRED RECEIVER wire (white plug):**

BCM plug PIN -> badRED PIN cable:

- Pin 1 (RED-YELLOW) -> PIN 1 (RED)
- Pin 4 (GRAY) -> PIN 9 (GRAY)
- Pin 8 (BLUE) -> PIN 8 (BLUE)
- Pin 13 (BLACK & WHITE) -> Pin 7 (BLACK)
- Pin 18 (GREEN) -> Pin 2 (GREEN)
- Pin 19 and 20 cut - their signals must not enter the black BCM plug!
- Pin 19 (WHITE-VIOLET) - connect this wire from the harness side of the factory installation to Pin 12 (WHITE) from the badRED receiver plug - it should be cut off from the BCM plug side!
- Pin 20 (YELLOW-GREEN) - connect this wire from the factory wiring harness side to the YELLOW-GREEN Pin 4 (YELLOW-GREEN) from the badRED receiver plug - it should remain cut from the side of the BCM plug!
- Pin 22 (VIOLET) -> Pin 3 (VIOLET)

**WARNING! BADRED RECEIVER MODULE PLUGGED TO BCM BEST MOUNT ON METAL MOUNTING PLATE NEXT TO FACTORY BCM MODULE.**

**WARNING!**

**WHEN INSTALLING THE BADRED TRANSMITTER PLACED BEHIND THE LIGHT SWITCH (RED POWER CABLE WITH FUSE) MUST BE CONNECTED TO A CONTINUOUS 12V POWER SUPPLY. THIS MEANS THAT THE CABLE MUST BE +12V EVEN AFTER REMOVING THE KEY FROM THE IGNITION AND LOCKING THE VEHICLE. POWER TO THIS CABLE CAN BE DELIVERED DIRECTLY FROM THE BATTERY.**

**OTHERWISE, THE VEHICLE WILL FIND THERE A LACK OF A LIGHT SWITCH AND MAKES THE LIGHTS ACTUATED BY ITS SELF.**

**WARNING! When detaching the transmitter module, the light switch must be in the zero position ("0") - the light is off, and then disconnect the 12V power cord (red wire with cylindrical fuse). Only then can you disconnect the plugs from the transmitter module.**

**Connecting the transmitter: First, plug in the J1 and J5 plugs, and finally plug in the 12V power cable (red wire with a cylindrical fuse). Installation in this order prevents possible overvoltage - damage to fuses and / or electronics in an emergency.**

**WARNING!**

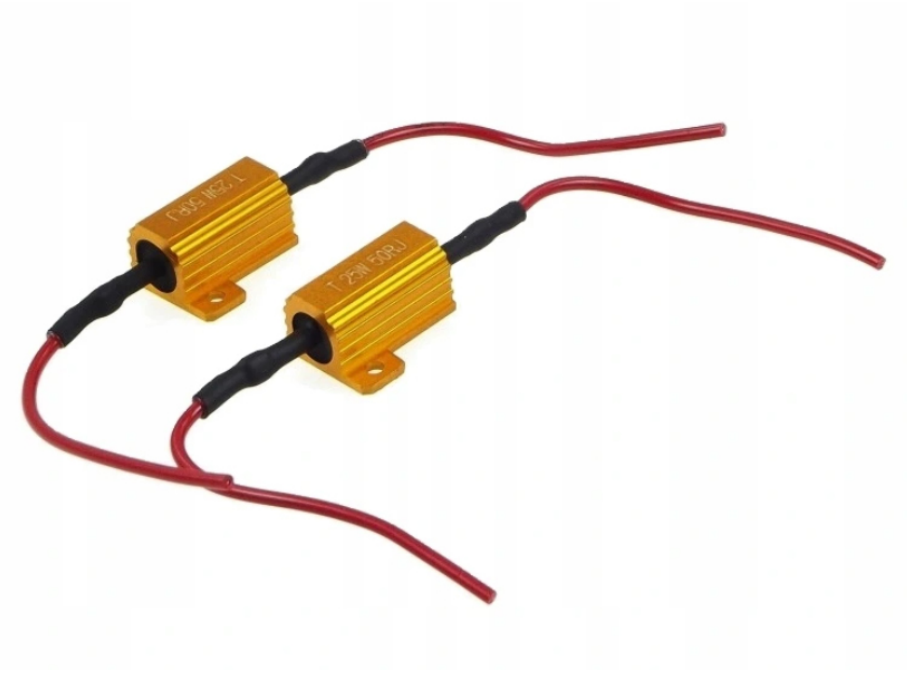
**If you find that the difference in the intensity of parking lamps / parking lamps in relation to the STOP and the fog lamps is too small, you can use a 50 Ohm resistor with a heat sink on the red wire of the beam entering the lamp (Pin 4). The heat sink of the resistor should be permanently attached to the vehicle's body in order to dissipate heat, and the remaining wires should be thermally insulated / isolated from the heat sink. This modification is not recommended by badRED.**



On this red cable  
-> Pin 4 you can use a resistor with a 50Ohm heat sink.

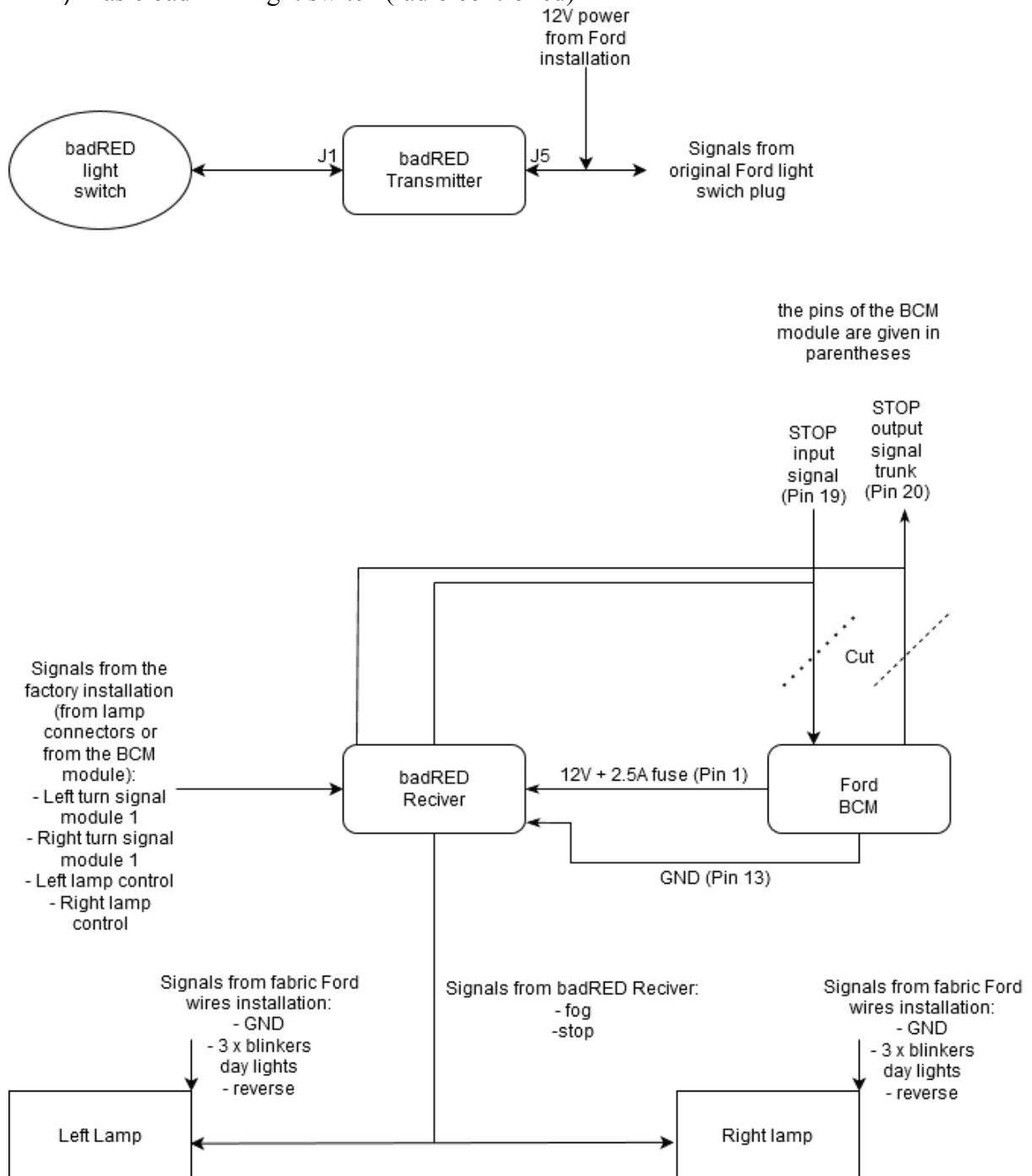


An example of a set of 50Ohm resistors with a heat sink.



Lamps can be connected to the installation in several configurations (four variants):

### 1) Basic badRED light switch (radio controlled)



2) Factory light switch + separate rear fog switch (radio controlled)

This variant includes an independent fog light switch:



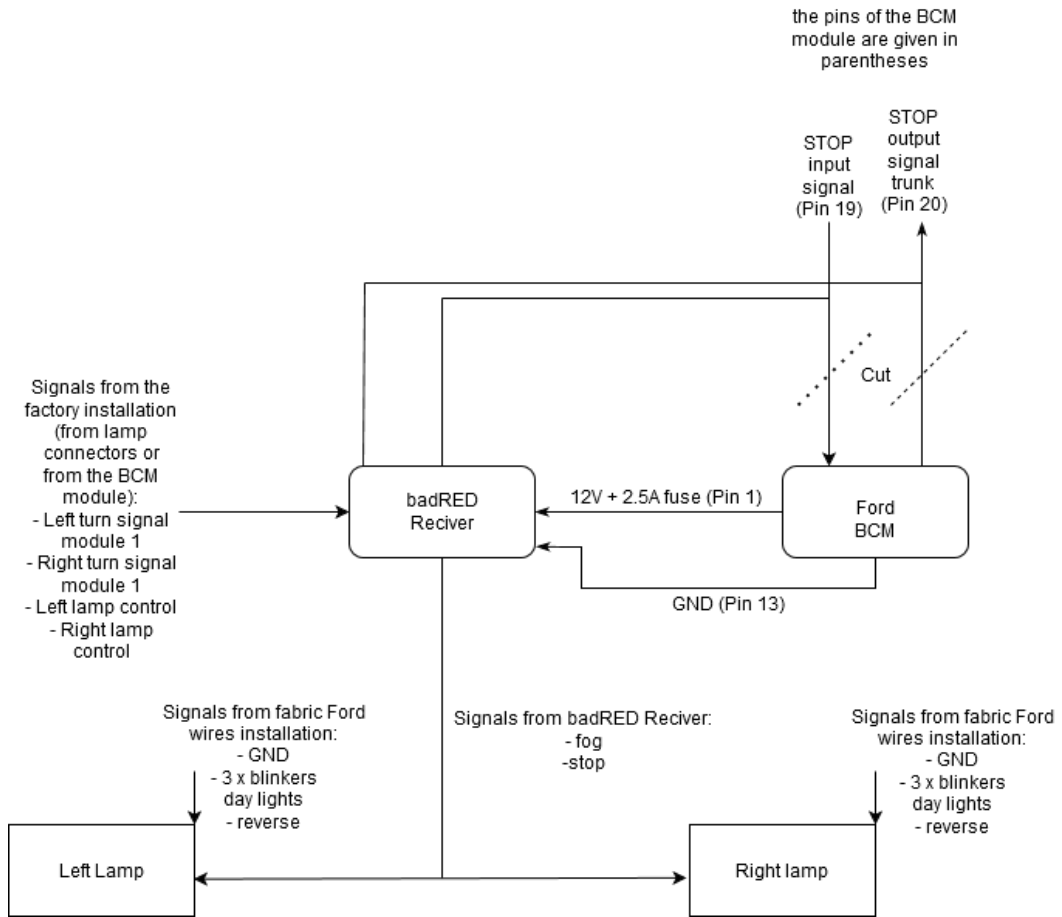
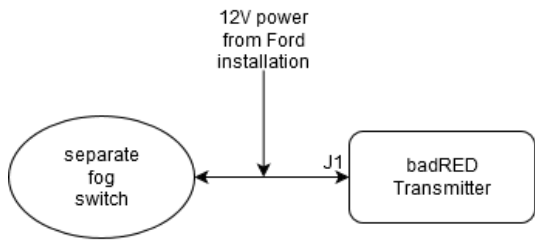
This switch should be connected to the badRED transmitter to the J1 socket on the plug side. The J5 socket remains without any plugged in.

The red wire ("+ 12V") must be connected to the constant power supply from the battery or the fuse box.

**WARNING!** The power supply on the cable must remain constant even after removing the key from the ignition switch.

Connect the brown wire to ground. This could be a metal cover under the steering wheel in the driver's knee area.

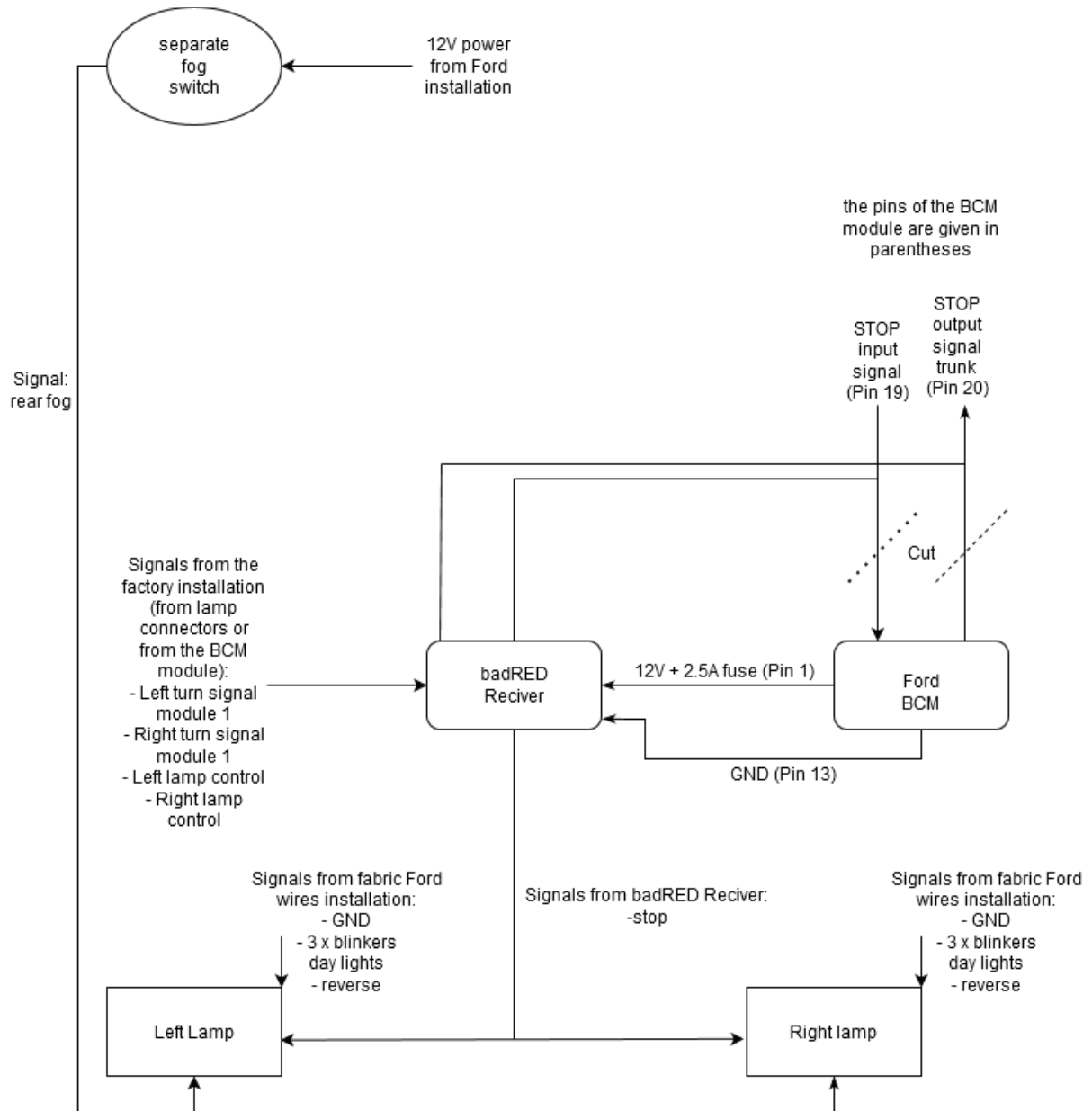
Connection diagram:



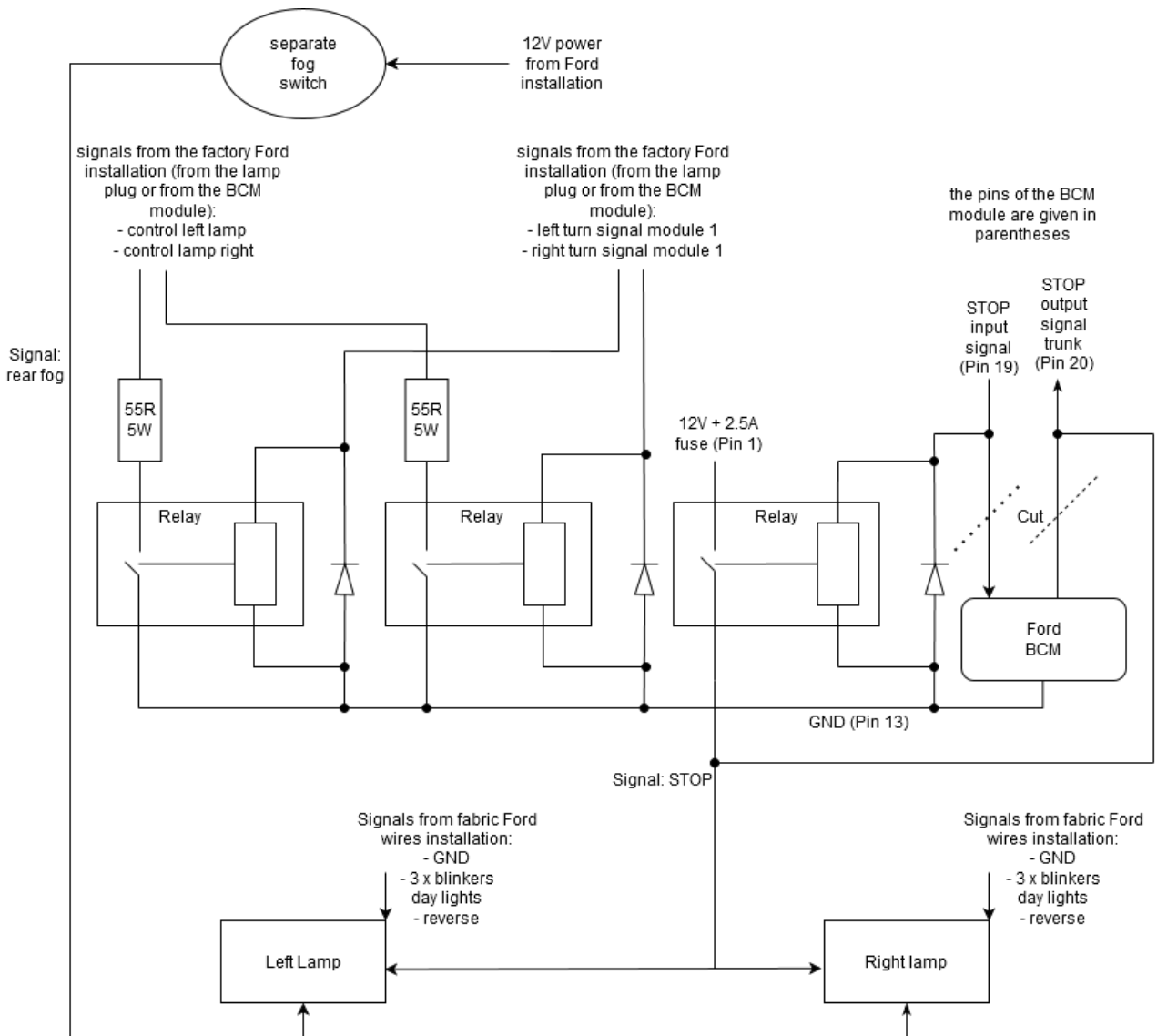


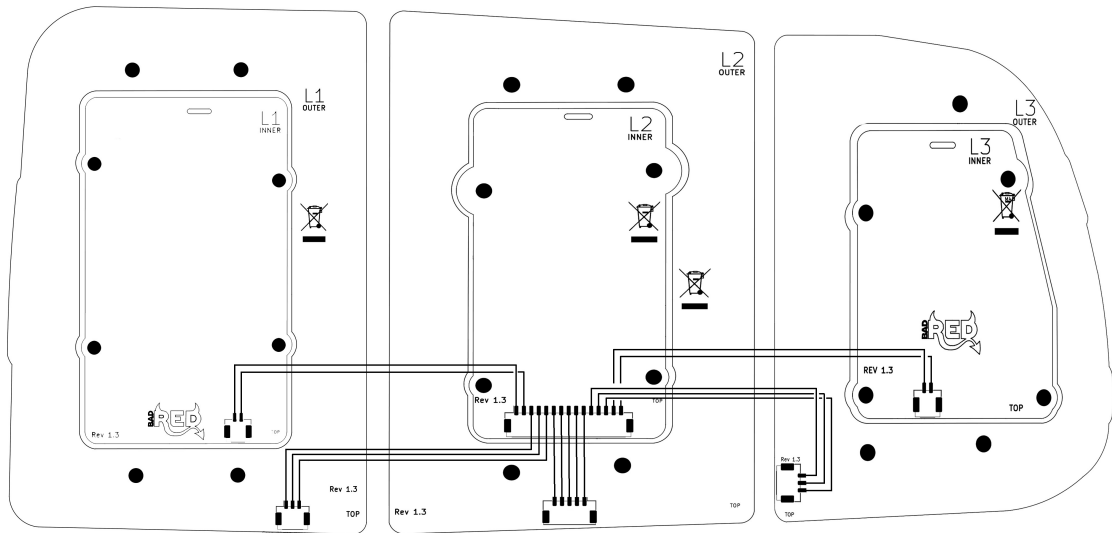
3) Factory light switch + separate rear fog switch (no transmitter, wired option with receiver module)

The factory light switch remains unmodified and the diagram shown is an additional installation .

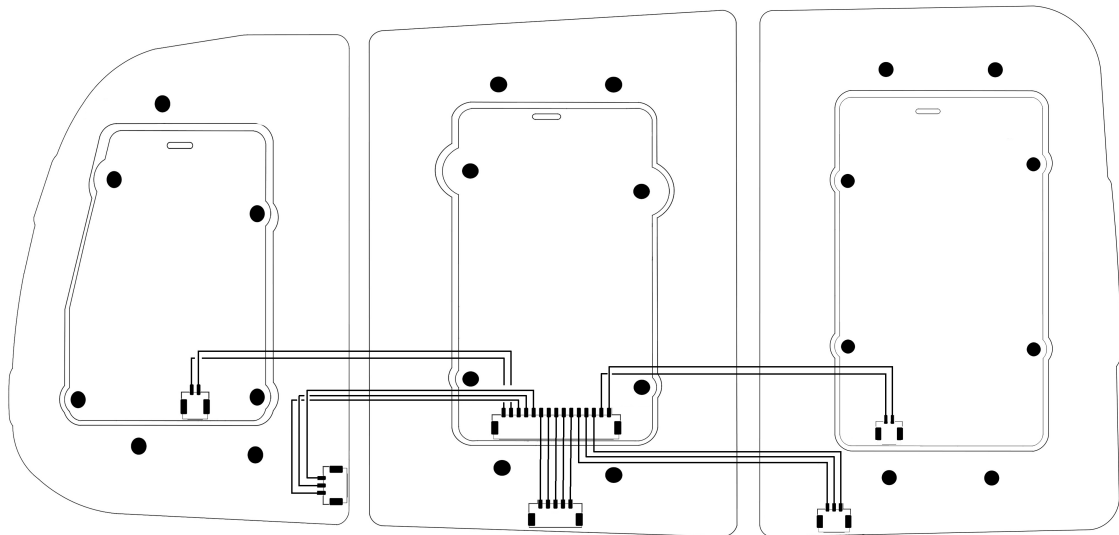


4) Factory light switch + separate rear fog switch (no transmitter – wired option without receiver and transmitter module = additional relays)





# LEFT LAMP



# RIGHT LAMP