What I did while my wife was away

~ or ~

The Moose Light Project

2016 Ford F150 Platinum Super Crew 4X4

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Copyright: January 2017

Fort Greely, Alaska

Starting Point

This truck was not equipped or configured with AUX Switches. Without making the truck look "added to," a factory type solution would provide the correct solution.

<u>Constraint</u>: Grille mounted lights will not work with adaptive cruise control because the system senses something in front of the truck and locks brakes. I Decided to mount lights on the roof.

This project will work wherever the light are mounted.

To be installed in my 2016 Ford F150 Platinum Super Crew 4X4 that has all options except:

- **Moon Roof**
- **Rear Seat Entertainment System**

Research

- Web search led to:
  - No Aux Switches existed for the F150 that had the correct appearance.
    - Found various Aux Switches that could be drilled into dash or trim giving the “add on“ look.
  - Ford’s Roush Raptor has 4 Aux Switch set up in the pencil holder of the center console, giving the Platinum a Raptor look with brightly lit switches, hmmmmm.
  - Found that the new photos of the 2017 F250/350 Super Duty’s had 6 Aux Switches in the overhead console, Exact match to the console in the F150!!!
  - As an added bonus Found Ford SVE Bulletin Q-252

Ford's Service Bulletin Q-252

- Addresses 2017 and later F-Series Super Duty Upfitter Switches and provides wiring schematic, circuit labels, and drawings.
- Upfitter Switches are a discrete circuit with only 3 outside leads
  - IN: Hot 24/7
  - IN: Hot on Start/Run
  - OUT: Ground
- And
  - OUT: 6 power leads from switch to "added devices" like Moose Lights
    - 4 - 25amp circuits
    - 2 - 40 amp circuits
  - Option in Upfitter Relay Box allows for switch 5 and 6 to be either hot 24/7 or only during Start/Run

Decided to add this complete circuit to the F150

Q-252

SVE BULLETIN

SPECIAL VEHICLE ENGINEERING – BODY BUILDERS ADVISORY SERVICE

E-Mail via Website: www.fleet.ford.com/truckbbas (click "Contact Us")

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QVM Bulletin: Q-252 Date: 08 August, 2016

2017 and later F-Series Super Duty Upfitter Switches

Models Affected: 2017 to present model year F-250/350/450/550 Super Duty Trucks with optional Upfitter Switches

Description:

The Ford Upfitter Switches are optional overhead console mount switches (Option Code 66S) that control under hood mounted relays. These relays power six blunt cut wires that are taped on a harness near the upfitter auxiliary relay box that can be found on the driver's side of the engine compartment. The six blunt cut wires are as follows:

Switches	Circuit	Color	Fuse #	Rating
Aux 1	CB117	Brown / Green	F10	25A
Aux 2	CB114	Violet / Orange	F9	25A
Aux 3	CB116	Blue / Green	F8	25A
Aux 4	CB113	Gray / Brown	F7	25A
Aux 5	CB115	Brown / Blue	F1	40A
Aux 6	CB118	Gray / Orange	F2	40A

In addition to the upfitter switch blunt cut wires, this bundle contains the following blunt cut circuits:

Description	Circuit	Color	Fuse #	Rating
Run/ Start Output	CB111	Brown	F3	20A
Battery Hot Output	SB106	Brown / Red	F6	20A
PTO Relay Control	CE924	Blue / Green	N/A	N/A
PTO Relay Output	CB112	Green / White	F5	25A

All relays and fuses are located in the upfitter relay box.

Figure 1: 2017 Super Duty Upfitter switch location

NOTE: Upfitter Switches cannot be added to a vehicle that was not built with this option at production.

Originator: BBAS Date Issued: 08/08/16
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- **Q-252 NOTE: Upfitter Switches cannot be added to a vehicle that was not built with this option at production.**
- **Found that this is due to the fact that the input hot wires come from the truck's main wiring harness**
- **I will add separate hot wire.**

The Objective

Existing State:

No Aux Switches in the 2016 F150

Desired State:

From a F250 Super Duty with Aux Switches into the F150

Step One: Get Console

- Went to Ford Dealer and looked in every F250 in stock for a gas platinum: found a diesel platinum and copied the VIN

- At the Ford parts counter, with VIN in hand, matched part family with all variations to get a Ebony console with Aux Switches that had matching features in the F150:

HC3Z-28519A58-JG

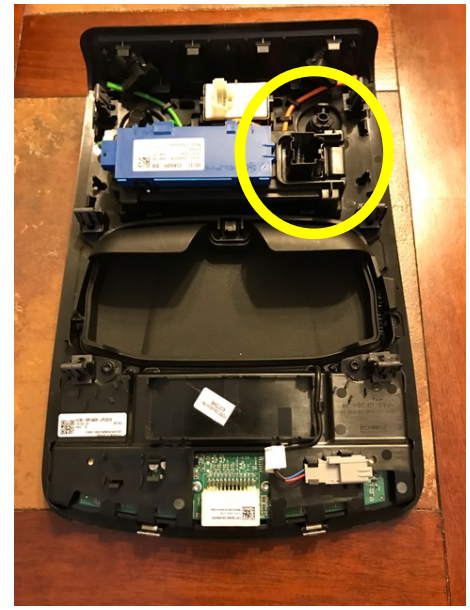
($269.97)

Wiring Project

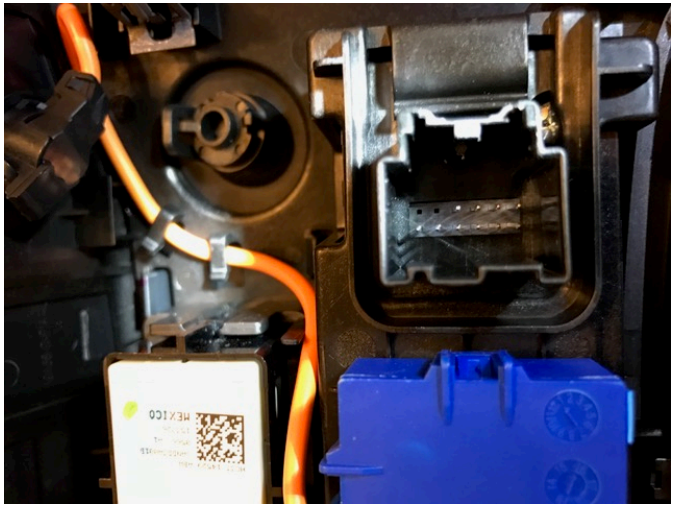
- Console Aux Switches need to be wired
- Relays need to be added to the circuit
- Fuses need to be added to the circuit
- Wire needs to be run
- Power needs to be located

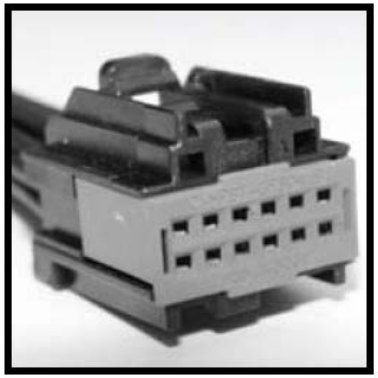
Console Wiring

- All but Aux Switch connector were already installed and it was plug and play
- Aux Switch Connector had to be built using

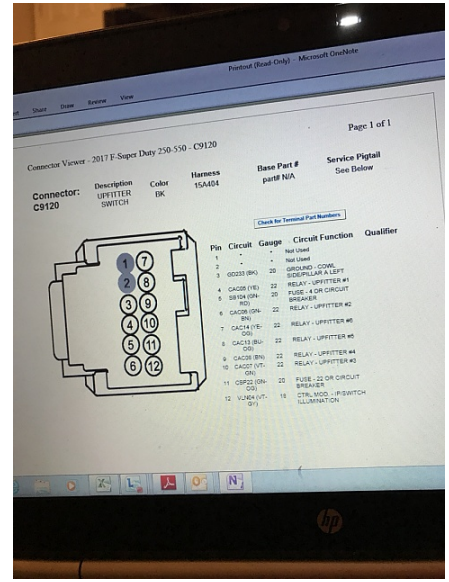


Inside overhead console





WPT834
4U2Z-14S411-MA



Connector View
2017 F-Super Duty 250-550
C9120

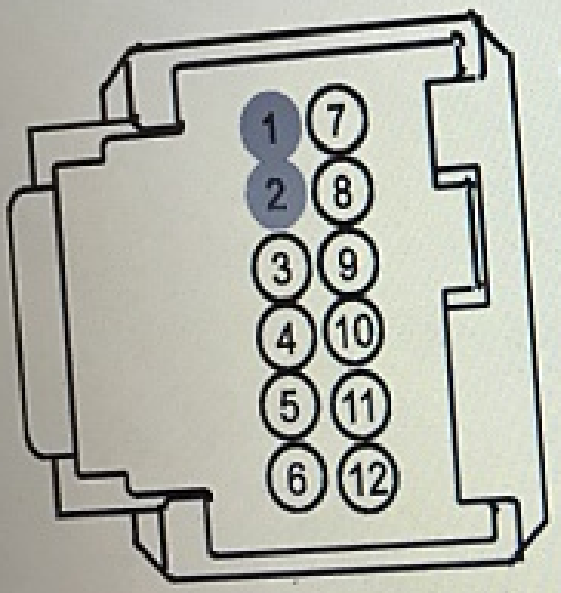
WPT834 or 4U2Z-14S411-MA pigtail needed ($19.00)

Printout (Read-Only) - Microsoft OneNote
Share Draw Review View

Connector Viewer - 2017 F-Super Duty 250-550 - C9120

Connector:	Description	Color	Harness	Base Part #	Service Pigtail
C9120	UPFITTER SWITCH	BK	15A404	part# N/A	See Below

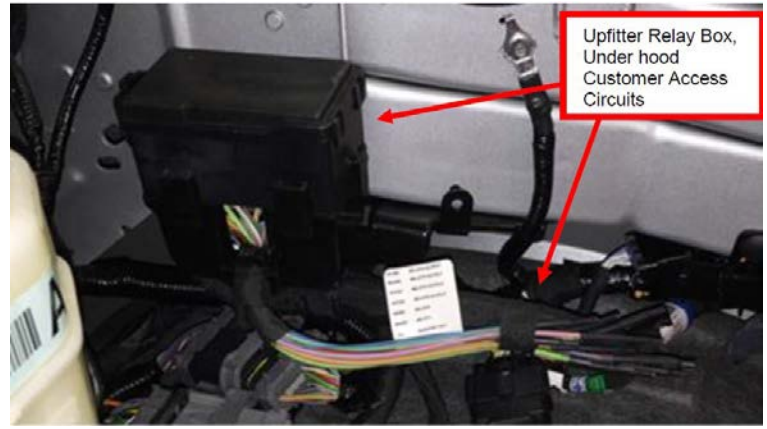
Check for Terminal Part Numbers

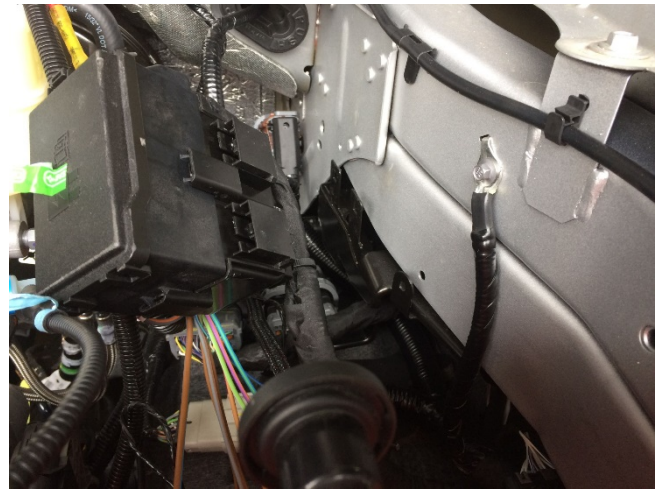


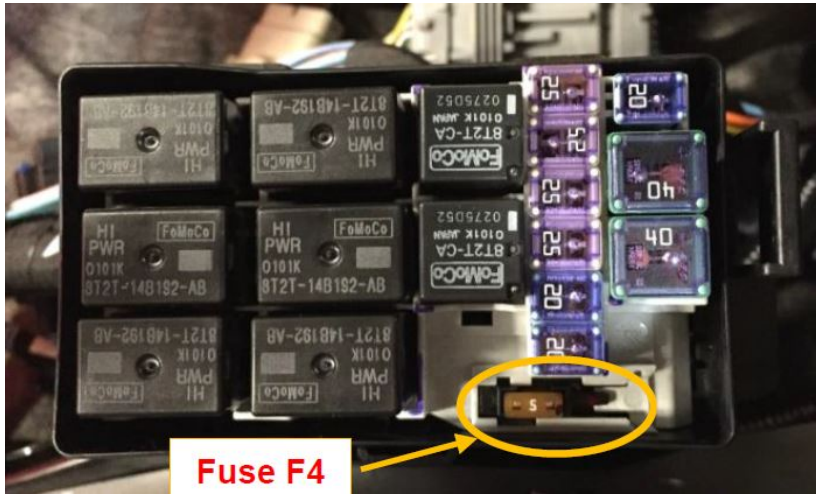
Pin	Circuit	Gauge	Circuit Function	Qualifier
1	-	-	Not Used	
2	-	-	Not Used	
3	GD233 (BK)	20	GROUND - COWL SIDE/PILLAR A LEFT	
4	CAC05 (YE)	22	RELAY - UPFITTER #1	
5	SB104 (GN-RD)	20	FUSE - 4 OR CIRCUIT BREAKER	
6	CAC06 (GN-BN)	22	RELAY - UPFITTER #2	
7	CAC14 (YE-OG)	22	RELAY - UPFITTER #6	
8	CAC13 (BU-OG)	22	RELAY - UPFITTER #5	
9	CAC08 (BN)	22	RELAY - UPFITTER #4	
10	CAC07 (VT-GN)	22	RELAY - UPFITTER #3	
11	CBP22 (GN-OG)	20	FUSE - 22 OR CIRCUIT BREAKER	
12	VLN04 (VT-GY)	18	CTRL MOD. - IP/SWITCH ILLUMINATION	

Relays and Fuses

- Decision: wire my own relays and fuses or purchase Upfitter Relay box from Ford
  - For ease of installation and reduce wiring confusion I chose to purchase Ford's Upfitter Relay Box
  - Wiring Diagram found in Q-252







Need Part number and cost

Desired Configuration

- 4 -Vision X 6.7” Moose Lights forward (28 amp)
  - 2 Canons and 2 Transporters
  - 2 switches required (10 gauge wire/40 amp)
    1) On tied to the high beam headlights
    2) On by switch

Mission Drift (add on project - I had 6 switches)

- 1 - 32” Xprite Double Light Arced Bar facing the rear
  - 2 switches required (12 gauge wire/15 amp)
    1) On tied to the reverse lights
    2) On by switch
- How to relay lights so they don’t get double power
- How to wire so both 40 amp circuits are used for Moose Lights
  - 24/7 for on and off by switch
  - Start/Run for High Beam Control

Desired Configuration

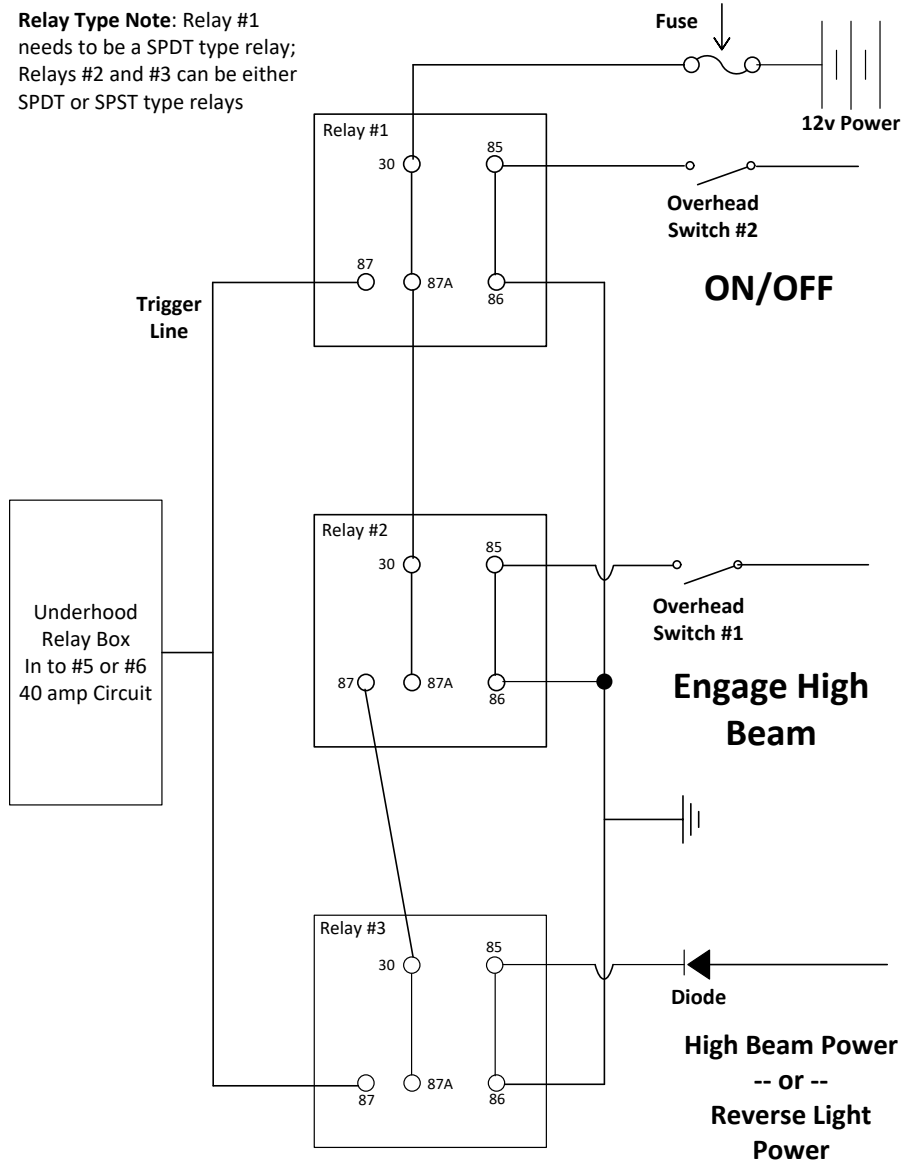
- 4 Vision X 6.7” Moose Lights forward mounted on Yakima Rack
  - 2 Canons and 2 Transporters
  - 2 switches required (10 gauge wire/25 amp)
    - Tied to the high beam headlights
    - On by switch
- 1 32” Xprite Double Light Arced Bar facing the rear
  - 2 switches required (12 gauge wire/15 amp)
    - Tied to the reverse lights
    - On by switch
- Switch Configuration input 22 gauge/output see Q-256

1) 25 amp
2) 25 amp
3) 25 amp
4) 25 amp
5) 40 amp
6) 40 amp

The Wiring

- Switches – console down driver’s side pillar
- Where to get power
  - 24/7
  - Start/Run
- Find control power
  - High beams and separate relay between switch and box
  - Reverse lights and separate relay between switch and box
- More to follow

The Chosen Wiring Diagram



Tools & Things

- Wire Stripper (recommend real wire stripper)
- 2-gang wire connector
- Crimping tool (recommended real crimping tool)
- Sealing Heat Shrink
- Heat Gun
- Many Tie wraps (used different color than Ford)
- Donor Vehicle with lights
  - Chose wife's Jeep Grand Cherokee while she was visiting mother - had rack and lights.
- Auto Trim Tools (excuse to buy tools: $23.96)
- Front - 10 Gauge Wire (White and Black)
- Rear - 16 Gauge Wire (White and Black)
- If drilling into truck and bolting, need washer front and back of aluminum Not planned

Moose lights Project

Before

After

The Hazards

Bibliography and Credits

- My Wife
- Ford Motor Company
  - Service Bulletin Q-252
  - Service Bulletin Q-256
  - Motorcraft 2008-9 Wiring Pigtail Kits Identification Guide
- www.f150forum.com
- National Fleet Parts
- Vision X
- Yakima Racks
- Craftsman Tools
- Seekins Ford Parts Department, Fairbanks, AK
- The Boeing Company